STB FD 33388 5-22-98 K 29206V6C 9/15

M.4 DETERMINING APPROPRIATE MITIGATION MEASURES TO AVOID OR REDUCE DISPROPORTIONATE EFFECTS

In the February 11, 1994, Presidential Memorandum accompanying Executive Order 12898, President Clinton stated that "Mitigation measures outlined or analyzed in an environmental assessment, environmental impact statement, or record of decision, whenever feasible should address significant and adverse environmental effects of proposed Federal actions on minority and low-income communities." CEQ's environmental justice guidelines under NEPA reiterate this point. SEA's recommended mitigation measures for each of the environmental justice populations with potential high and adverse impacts as a results of the proposed Conrail Acquisition are described in other sections of this document and are discussed further in Chapter 7, "Recommended Environmental Conditions," of this Final EIS.

SEA analyzed information gleaned from site visits, public comments, and information regarding size and density of populations in the Areas of Potential Effect in the impacted areas. SEA determined whether mitigation measures recommended in this Final EIS for other environmental issue areas would be sufficient to eliminate or mitigate the disproportionately high and adverse impacts to minority and low-income populations. In those areas where SEA has found that resource mitigation would not be sufficient, SEA recommended additional mitigation where practicable. SEA also considered the appropriateness of modifying the recommended mitigation measures to address the disproportionate environmental impacts on environmental justice populations. In either case, SEA considered whether any additional recommended mitigation was reasonable, feasible, and within the Board's jurisdiction. SEA considered public comments and site visits to verify the results of the analysis at the locations which minority and low-income populations occupy. The discussion of general environmental justice mitigation actions is provided below.

M.5 PROPOSED ADDITIONAL OR TAILORED MITIGATION TO ADDRESS DISPROPORTIONATELY HIGH AND ADVERSE IMPACTS ON MINORITY AND LOW-INCOME POPULATIONS

Operation Respond: The Applicants shall provide and install Operation Respond software, including any necessary computer hardware and training, at the local emergency response center serving minority and low-income populations adjacent to or in the immediate vicinity of its rail line segment(s).

Tailored Emergency Response Plan: The Applicants shall adapt and modify the local components of its required emergency response plan to account for the special needs of minority and low-income populations adjacent to or in the immediate vicinity of rail line segments. The Applicants have agreed to fund participation in a training session at the National Training Center in Pueblo, Colorado, for a representative of each emergency response providers in cities where minority and low-income populations would be disproportionately vulnerable to high and

adverse hazardous materials transport risks, unless the Applicants and the communities signed Negotiated Agreements that achieved a similar purpose.

Defect Detectors: Due to the unique circumstances associated with hazardous materials transport in close proximity to heavily populated urban communities in the Greater Cleveland Area, SEA recommends that the Applicants surround the City of Cleveland with a "safety cordon" of improved defect detection capability These improvements can be characterized as follows: 10 placements of additional train detection devices on rail lines at approximately 15-mile intervals along the Applicants' main lines in the Greater Cleveland Area and 20 improvements of the functional capability of the detectors that now ring the city.

SEA recommends that these enhancements include improvement of the existing defect detectors, which are now equipped with hot bearing detection and dragging equipment detection, with the addition of the ability to detect abnormally high impact loads (for example, flat wheels) and cars that are carrying freight that may have shifted.

Quiet Zone: If FRA promulgates new regulations related to local alternatives to train horn sounding within 5 years of the effective date of the Board's final decision, NS shall inform the City of Mentor, Ohio, of these regulations and assist the community in identifying alternative safety measures to eliminate the need to sound train horns there. The Applicants shall also assist the community in seeking and receiving FRA approval for these alternative safety measures.

Table M-8 lists the tailored and additional actions that SEA has recommended to mitigate the disproportionate impacts to these populations. These mitigation actions are above and beyond those that SEA has recommended in Chapter 7, "Recommended Environmental Conditions," of this document to mitigate the resource impacts.

SEA recommended additional or tailored mitigation where it concluded that the mitigation for the resource impact was not sufficient to mitigate the disproportionate impact being borne by minority and low-income populations. SEA did not recommend additional environmental justice mitigation where it concluded that the mitigation recommended for the resource impacts would be sufficient to mitigate the disproportionate environmental impact to minority and low-income communities, or where a Negotiated Agreement between the Applicants and the community would achieve the same goal. The mitigation actions listed in Table M-8 are presented in more detail in Chapter 7, "Recommended Environmental Conditions," of this Final EIS.

Appendix N, "Community Evaluations," describes the results of SEA's environmental justice analysis for the proposed alternatives in Lafayette, Indiana, and Cleveland, Ohio, in addition to any other, or tailored, mitigation.

TABLE M-8
PROPOSED ADDITIONAL OR TAILORED MITIGATION FOR AREAS OF POTENTIAL EFFECT WITH DISPROPORTIONATELY HIGH AND ADVERSE EFFECTS ON MINORITY AND LOW-INCOME POPULATIONS

Rail Line Segment	Location	County	State	Impact	Additional Mitigation
CSX					
C-061	New London Village	Huron	OH	Hazardous Materials Transport	Operation Respond; Tailored Emergency Response Plan; Fund Training at Nat'l Center
C-066	Portage	Porter	IN	Hazardous Materials Transport	No Additional Mitigation
C-066	Defiance City	Defiance	OH	Hazardous Materials Transport	Operation Respond; Tailored Emergency Response Plan; Fund Training at Nat'l Center
C-066	Holgate Village	Henry	OH	Hazardous Materials Transport	Operation Respond; Tailored Emergency Response Plan; Fund Training at Nat'l Center
C-068	Willard	Huron	OH	Hazardous Materials Transport	Operation Respond; Tailored Emergency Response Plan; Fund Training at Nat'l Center
C-072	Cleveland Cleveland Heights	Cuyahoga Cuyahoga	OH OH	Hazardous Materials Transport	Defect Detector Ring; Operation Respond; Tailored Emergency Response Plan; Fund Training at Nat'l Center
C-073	East Cleveland Cleveland	Cuyahoga Cuyahoga	OH OH	Hazardous Materials Transport	Defect Detector Ring; Operation Respond
C-074	Berea	Cuyahoga	OH	Hazardous Materials Transport	Defect Detector Ring; Operation Respond; Tailored Emergency Response Plan; Fund Training at Nat'l Center

TABLE M-8
PROPOSED ADDITIONAL OR TAILORED MITIGATION FOR AREAS OF POTENTIAL EFFECT WITH DISPROPORTIONATELY HIGH AND ADVERSE EFFECTS ON MINORITY AND LOW-INCOME POPULATIONS

Rail Line Segment	Location	County	State	Impact	Additional Mitigation
C-075	Fostoria	Seneca	OH	Hazardous Materials Transport	Operation Respond; Tailored Emergency Response Plan; Fund Training at Nat'l Center
C-075	Tiffin Willard	Seneca Huron	OH OH	Hazardous Materials Transport	Operation Respond; Tailored Emergency Response Plan; Fund Training at Nat'l Center
NS					
N-045	Attica	Fountain	IN	Hazardous Materials Transport	Operation Respond; Tailored Emergency Response Plan; Fund Training at Nat'l Center
N-045	Danville	Vermilion	IL	Hazardous Materials Transport	No Additional Mitigation
N-046	Lafayette City	Tippecanoe	IN	Hazardous Materials Transport	Operation Respond; Tailored Emergency Response Plan; Fund Training at Nat'l Center
N-075	Cleveland Cleveland Heights Euclid	Cuyahoga Cuyahoga Cuyahoga	OH OH OH	Hazardous Materials Transport	Defect Detector Ring; Operation Respond; Tailored Emergency Response Plan; Fund Training at Nat'l Center
N-075	East Cleveland	Cuyahoga	OH	Hazardous Materials Transport	Defect Detector Ring; Operation Respond
N-075	Mentor	Lake	OH	Noise(H)	Quiet Zone Consultation
N-075	Painesville Wickliffe	Lake Lake	OH OH	Noise(H)	No Additional Mitigation

ATTACHMENT M-1

Environmental Justice Summary for Intermodal Facilities

[THIS PAGE INTENTIONALLY LEFT BLANK]

ATTACHMENT M-1
ENVIRONMENTAL JUSTICE SUMMARY FOR INTERMODAL FACILITIES

	Area of Potential Effect	Total Population	Total Minority Population Percentage	Total Low-Income Population Percentage	Minority Population >50 Percent or <50 Percent but 10 Percent > in County	Low-Income Population >50 Percent or <50 Percent but 10 Percent > in County	Population Meets Threshold for Environmental Justice Analysis
County	Philadelphia County, Pennsylvania	1,585,577	47.9	20.3	N/A		
Site	NS AmeriPort/South Philadelphia Intermodal Facility (NM-13)	0	0	0	No	No	No
County	Erie County, Ohio	76,779	10.3	9.0	N/A		
Site	Sandusky Intermodal Facility (NM-11)	2,416	1.6	6.0	No	No	No

[THIS PAGE INTENTIONALLY LEFT BLANK]

ATTACHMENT M-2

Summary of Areas of Potential Effect for the System and Each State

[THIS PAGE INTENTIONALLY LEFT BLANK]

Summary of AoPE for the System and Each State

State	No. of EJ Block Groups *AoPE	No. of Non-EJ Block Groups *AoPE	Total No. of Block Groups *AoPE
AL	27	54	81
DC	94	16	110
DE	30	75	105
GA	75	40	115
IL	72	132	204
IN	171	356	527
KY		1	1
MD	136	217	353
MI	49	67	116
MO	5	29	34
NC	62	116	178
NJ	97	196	293
NY	150	505	655
OH	652	1088	1740
PA	608	800	1408
SC	14	12	26
TN	23	74	97
VA	114	271	385
WV	9	35	44
Totals	**2388**	**4084**	**6472**

* *AoPE - Area of Potential Effect*

[THIS PAGE INTENTIONALLY LEFT BLANK]

ATTACHMENT M-3

Summary of Number of Environmental Justice, Nonenvironmental Justice, and Total Block Groups in Each County

[THIS PAGE INTENTIONALLY LEFT BLANK]

Summary of Number of EJ, Non-EJ and Total Block Groups in Each County

State	County	No. of EJ Block Groups *AoPE	No. of Non-EJ Block Groups *AoPE	Total No. of Block Groups *AoPE
AL	Chambers County	1	1	2
AL	Clay County	4	3	7
AL	Etowah County	4	5	9
AL	Jefferson County	0	14	14
AL	Randolph County	5	5	10
AL	Shelby County	4	14	18
AL	St. Clair County	0	7	7
AL	Talladega County	9	5	14
DC	District of Columbia	94	16	110
DE	New Castle County	30	75	105
GA	Butts County	2	5	7
GA	Clayton County	3	3	6
GA	DeKalb County	3	2	5
GA	Fulton County	45	5	50
GA	Henry County	4	7	11
GA	Meriwether County	3	3	6
GA	Monroe County	1	1	2
GA	Troup County	14	14	28
IL	Champaign County	0	12	12
IL	Christian County	1	11	12
IL	Cook County	46	42	88
IL	Macon County	11	8	19
IL	Macoupin County	1	7	8
IL	Madison County	4	21	25
IL	Montgomery County	1	7	8
IL	Piatt County	0	7	7
IL	Vermilion County	8	17	25
IN	Allen County	48	62	110

* *AoPE - Area of Potential Effect*

State	County	No. of EJ Block Groups *AoPE	No. of Non-EJ Block Groups *AoPE	Total No. of Block Groups *AoPE
IN	Carroll County	1	8	9
IN	Cass County	2	13	15
IN	De Kalb County	1	19	20
IN	Delaware County	21	15	36
IN	Elkhart County	0	9	9
IN	Fountain County	1	2	3
IN	Huntington County	2	15	17
IN	Kosciusko County	3	25	28
IN	La Porte County	0	11	11
IN	Lake County	66	31	97
IN	Madison County	1	6	7
IN	Marshall County	2	21	23
IN	Miami County	6	16	22
IN	Noble County	0	9	9
IN	Porter County	5	25	30
IN	St. Joseph County	0	3	3
IN	Starke County	0	5	5
IN	Tippecanoe County	9	36	45
IN	Wabash County	2	13	15
IN	Warren County	0	7	7
IN	Whitley County	1	5	6
KY	Greenup County	0	1	1
MD	Allegany County	6	7	13
MD	Anne Arundel County	16	12	28
MD	Baltimore city	46	22	68
MD	Baltimore County	2	17	19
MD	Cecil County	4	13	17
MD	Frederick County	0	10	10
MD	Howard County	6	7	13
MD	Montgomery County	14	45	59

* *AoPE - Area of Potential Effect*

State	County	No. of EJ Block Groups *AoPE	No. of Non-EJ Block Groups *AoPE	Total No. of Block Groups *AoPE
MD	Prince Georges County	35	64	99
MD	Washington County	7	20	27
MI	Monroe County	2	23	25
MI	Wayne County	47	44	91
MO	Carroll County	2	4	6
MO	Chariton County	1	8	9
MO	Randolph County	2	14	16
MO	Ray County	0	3	3
NC	Buncombe County	17	38	55
NC	Burke County	5	21	26
NC	Catawba County	9	19	28
NC	Halifax County	2	0	2
NC	Iredell County	11	7	18
NC	Madison County	1	6	7
NC	McDowell County	5	14	19
NC	Northampton County	3	0	3
NC	Rowan County	9	11	20
NJ	Bergen County	8	89	97
NJ	Camden County	13	6	19
NJ	Hudson County	2	6	8
NJ	Mercer County	17	27	44
NJ	Middlesex County	16	42	58
NJ	Union County	41	26	67
NY	Albany County	0	11	11
NY	Allegany County	0	2	2
NY	Broome County	25	70	95
NY	Chautauqua County	5	21	26
NY	Chemung County	20	29	49
NY	Delaware County	2	4	6
NY	Erie County	61	134	195

* *AoPE - Area of Potential Effect*

State	County	No. of EJ Block Groups *AoPE	No. of Non-EJ Block Groups *AoPE	Total No. of Block Groups *AoPE
NY	Genesee County	0	18	18
NY	Herkimer County	3	18	21
NY	Livingston County	0	3	3
NY	Monroe County	0	4	4
NY	Montgomery County	3	22	25
NY	Oneida County	2	3	5
NY	Ontario County	4	2	6
NY	Orange County	9	45	54
NY	Rockland County	3	8	11
NY	Schenectady County	0	12	12
NY	Schuyler County	0	5	5
NY	Steuben County	7	39	46
NY	Sullivan County	1	10	11
NY	Tioga County	4	26	30
NY	Wyoming County	1	13	14
NY	Yates County	0	6	6
OH	Allen County	6	[illegible]	32
OH	Ashtabula County	24	48	72
OH	Butler County	21	38	59
OH	Crawford County	6	[illegible]	36
OH	Cuyahoga County	327	231	558
OH	Defiance County	2	20	22
OH	Delaware County	1	28	29
OH	Erie County	3	21	24
OH	Franklin County	42	79	121
OH	Hamilton County	35	47	82
OH	Hardin County	2	10	12
OH	Henry County	1	8	9
OH	Huron County	5	29	34
OH	Lake County	9	67	76

* *AoPE - Area of Potential Effect*

State	County	No. of EJ Block Groups *AoPE	No. of Non-EJ Block Groups *AoPE	Total No. of Block Groups *AoPE
OH	Lorain County	18	56	74
OH	Lucas County	35	28	63
OH	Mahoning County	39	19	58
OH	Marion County	16	35	51
OH	Montgomery County	13	17	30
OH	Ottawa County	0	12	12
OH	Pickaway County	2	12	14
OH	Pike County	2	4	6
OH	Portage County	3	17	20
OH	Richland County	1	12	13
OH	Ross County	3	9	12
OH	Sandusky County	5	25	30
OH	Scioto County	2	9	11
OH	Seneca County	12	33	45
OH	Stark County	8	5	13
OH	Summit County	2	9	11
OH	Trumbull County	1	15	16
OH	Van Wert County	1	16	17
OH	Warren County	1	5	6
OH	Wood County	3	50	53
OH	Wyandot County	1	18	19
PA	Allegheny County	56	74	130
PA	Beaver County	24	46	70
PA	Bedford County	0	3	3
PA	Berks County	12	35	47
PA	Bucks County	13	53	66
PA	Cumberland County	3	28	31
PA	Dauphin County	30	51	81
PA	Delaware County	58	78	136
PA	Erie County	31	60	91

* *AoPE - Area of Potential Effect*

State	County	No. of EJ Block Groups *AoPE	No. of Non-EJ Block Groups *AoPE	Total No. of Block Groups *AoPE
PA	Fayette County	1	28	29
PA	Franklin County	5	20	25
PA	Lancaster County	0	5	5
PA	Lawrence County	0	32	32
PA	Lebanon County	6	25	31
PA	Lehigh County	7	13	20
PA	Montgomery County	1	3	4
PA	Northampton County	4	2	6
PA	Perry County	0	2	2
PA	Philadelphia County	343	184	527
PA	Pike County	0	8	8
PA	Somerset County	7	26	33
PA	Susquehanna County	1	7	8
PA	Westmoreland County	6	14	20
PA	York County	0	3	3
SC	Beaufort County	1	0	1
SC	Charleston County	8	12	20
SC	Colleton County	4	0	4
SC	Hampton County	1	0	1
TN	Cocke County	3	11	14
TN	Davidson County	13	22	35
TN	Hamblen County	1	5	6
TN	Hawkins County	0	19	19
TN	Jefferson County	0	4	4
TN	Sullivan County	6	13	19
VA	Alexandria City	12	14	26
VA	Arlington County	3	8	11
VA	Augusta County	0	14	14
VA	Botetourt County	2	6	8
VA	Buena Vista City	0	3	3

** AoPE - Area of Potential Effect*

State	County	No. of EJ Block Groups *AoPE	No. of Non-EJ Block Groups *AoPE	Total No. of Block Groups *AoPE
VA	Caroline County	3	5	8
VA	Chesterfield County	12	17	29
VA	Clarke County	1	7	8
VA	Colonial Heights City	0	7	7
VA	Dinwiddie County	1	1	2
VA	Emporia City	2	4	6
VA	Fairfax County	4	48	52
VA	Fredericksburg City	3	4	7
VA	Greensville County	5	0	5
VA	Hanover County	3	6	9
VA	Henrico County	1	11	12
VA	Manassas City	4	5	9
VA	Page County	2	20	22
VA	Petersburg City	20	2	22
VA	Prince George County	0	1	1
VA	Prince William County	6	9	15
VA	Richmond City	14	16	30
VA	Roanoke City	5	8	13
VA	Roanoke County	0	3	3
VA	Rockbridge County	1	8	9
VA	Rockingham County	0	10	10
VA	Spotsylvania County	2	1	3
VA	Stafford County	1	14	15
VA	Sussex County	2	1	3
VA	Warren County	3	10	13
VA	Waynesboro City	2	8	10
WV	Fayette County	4	8	12
WV	Jefferson County	2	10	12
WV	Marion County	1	6	7
WV	Nicholas County	2	0	2

** AoPE - Area of Potential Effect*

State	County	No. of EJ Block Groups *AoPE	No. of Non-EJ Block Groups *AoPE	Total No. of Block Groups *AoPE
WV	Raleigh County	0	6	6
WV	Wyoming County	0	5	5
Totals		**2388**	**4084**	**6472**

** AoPE - Area of Potential Effect*

ATTACHMENT M-4

Summary of Noise Scoring by State

[THIS PAGE INTENTIONALLY LEFT BLANK]

Summary of Noise Scoring By State

State	No. EJ *AoPE Scoring		No. Non-EJ *AoPE Scoring		Total No. *AoPE Scoring	
	Low	High	Low	High	Low	High
AL	27	0	54	0	81	0
DC	94	0	16	0	110	0
DE	30	0	75	0	105	0
GA	59	16	36	4	95	20
IL	45	27	86	46	131	73
IN	129	42	208	148	337	190
KY	0	0	1	0	1	0
MD	125	11	185	32	310	43
MI	49	0	67	0	116	0
MO	5	0	29	0	34	0
NC	62	0	116	0	178	0
NJ	97	0	196	0	293	0
NY	133	17	386	119	519	136
OH	499	153	794	294	1293	447
PA	538	70	713	87	1251	157
SC	14	0	12	0	26	0
TN	10	13	52	22	62	35
VA	114	0	271	0	385	0
WV	9	0	35	0	44	0
Totals	**2039**	**349**	**3332**	**752**	**5371**	**1101**

** AoPE - Area of Potential Effect*

[THIS PAGE INTENTIONALLY LEFT BLANK]

ATTACHMENT M-5

Summary of Noise Scoring by County

[THIS PAGE INTENTIONALLY LEFT BLANK]

Summary of Noise Scoring By County

State	County	No. EJ *AoPE Scoring		No. Non-EJ *AoPE Scoring		Total No. *AoPE Scoring	
		Low	High	Low	High	Low	High
AL	Chambers County	1	0	1	0	2	0
AL	Clay County	4	0	3	0	7	0
AL	Etowah County	4	0	5	0	9	0
AL	Jefferson County	0	0	14	0	14	0
AL	Randolph County	5	0	5	0	10	0
AL	Shelby County	4	0	14	0	18	0
AL	St. Clair County	0	0	7	0	7	0
AL	Talladega County	9	0	5	0	14	0
DC	District of Columbia	94	0	16	0	110	0
DE	New Castle County	30	0	75	0	105	0
GA	Butts County	2	0	5	0	7	0
GA	Clayton County	3	0	3	0	6	0
GA	DeKalb County	3	0	2	0	5	0
GA	Fulton County	29	16	1	4	30	20
GA	Henry County	4	0	7	0	11	0
GA	Meriwether County	3	0	3	0	6	0
GA	Monroe County	1	0	1	0	2	0
GA	Troup County	14	0	14	0	28	0
IL	Champaign County	0	0	0	12	0	12
IL	Christian County	1	0	11	0	12	0
IL	Cook County	38	8	40	2	78	10
IL	Macon County	0	11	0	8	0	19
IL	Macoupin County	1	0	7	0	8	0
IL	Madison County	4	0	21	0	25	0
IL	Montgomery County	1	0	7	0	8	0
IL	Piatt County	0	0	0	7	0	7
IL	Vermilion County	0	8	0	17	0	25
IN	Allen County	48	0	62	0	110	0
IN	Carroll County	0	1	0	8	0	9
IN	Cass County	0	2	0	13	0	15
IN	De Kalb County	0	1	7	12	7	13
IN	Delaware County	21	0	15	0	36	0
IN	Elkhart County	0	0	0	9	0	9
IN	Fountain County	0	1	0	2	0	3
IN	Huntington County	2	0	15	0	17	0

* *AoPE - Area of Potential Effect*

State	County	No. EJ *AoPE Scoring		No. Non-EJ *AoPE Scoring		Total No. *AoPE Scoring	
		Low	High	Low	High	Low	High
IN	Kosciusko County	3	0	16	9	19	9
IN	La Porte County	0	0	5	6	5	6
IN	Lake County	43	23	24	7	67	30
IN	Madison County	1	0	6	0	7	0
IN	Marshall County	2	0	13	8	15	8
IN	Miami County	2	4	9	7	11	11
IN	Noble County	0	0	0	9	0	9
IN	Porter County	4	1	13	12	17	13
IN	St. Joseph County	0	0	0	3	0	3
IN	Starke County	0	0	5	0	5	0
IN	Tippecanoe County	0	9	0	36	0	45
IN	Wabash County	2	0	13	0	15	0
IN	Warren County	0	0	0	7	0	7
IN	Whitley County	1	0	5	0	6	0
KY	Greenup County	0	0	1	0	1	0
MD	Allegany County	6	0	7	0	13	0
MD	Anne Arundel County	16	0	12	0	28	0
MD	Baltimore city	36	10	7	15	43	25
MD	Baltimore County	1	1	9	8	10	9
MD	Cecil County	4	0	13	0	17	0
MD	Frederick County	0	0	3	7	3	7
MD	Howard County	6	0	7	0	13	0
MD	Montgomery County	14	0	45	0	59	0
MD	Prince Georges County	35	0	64	0	99	0
MD	Washington County	7	0	18	2	25	2
MI	Monroe County	2	0	23	0	25	0
MI	Wayne County	47	0	44	0	91	0
MO	Carroll County	2	0	4	0	6	0
MO	Chariton County	1	0	8	0	9	0
MO	Randolph County	2	0	14	0	16	0
MO	Ray County	0	0	3	0	3	0
NC	Buncombe County	17	0	38	0	55	0
NC	Burke County	5	0	21	0	26	0
NC	Catawba County	9	0	19	0	28	0
NC	Halifax County	2	0	0	0	2	0
NC	Iredell County	11	0	7	0	18	0
NC	Madison County	1	0	6	0	7	0

* *AoPE - Area of Potential Effect*

State	County	No. EJ *AoPE Scoring		No. Non-EJ *AoPE Scoring		Total No. *AoPE Scoring	
		Low	High	Low	High	Low	High
NC	McDowell County	5	0	14	0	19	0
NC	Northampton County	3	0	0	0	3	0
NC	Rowan County	9	0	11	0	20	0
NJ	Bergen County	8	0	89	0	97	0
NJ	Camden County	13	0	6	0	19	0
NJ	Hudson County	2	0	6	0	8	0
NJ	Mercer County	17	0	27	0	44	0
NJ	Middlesex County	16	0	42	0	58	0
NJ	Union County	41	0	26	0	67	0
NY	Albany County	0	0	0	11	0	11
NY	Allegany County	0	0	2	0	2	0
NY	Broome County	25	0	70	0	95	0
NY	Chautauqua County	5	0	21	0	26	0
NY	Chemung County	20	0	29	0	49	0
NY	Delaware County	2	0	4	0	6	0
NY	Erie County	52	9	98	36	150	45
NY	Genesee County	0	0	5	13	5	13
NY	Herkimer County	0	3	0	18	0	21
NY	Livingston County	0	0	3	0	3	0
NY	Monroe County	0	0	0	4	0	4
NY	Montgomery County	0	3	0	22	0	25
NY	Oneida County	0	2	0	3	0	5
NY	Ontario County	4	0	2	0	6	0
NY	Orange County	9	0	45	0	54	0
NY	Rockland County	3	0	8	0	11	0
NY	Schenectady County	0	0	0	12	0	12
NY	Schuyler County	0	0	5	0	5	0
NY	Steuben County	7	0	39	0	46	0
NY	Sullivan County	1	0	10	0	11	0
NY	Tioga County	4	0	26	0	30	0
NY	Wyoming County	1	0	13	0	14	0
NY	Yates County	0	0	6	0	6	0
OH	Allen County	6	0	26	0	32	0
OH	Ashtabula County	19	5	39	9	58	14
OH	Butler County	21	0	38	0	59	0
OH	Crawford County	5	1	26	4	31	5
OH	Cuyahoga County	226	101	138	93	364	194

** AoPE - Area of Potential Effect*

State	County	No. EJ *AoPE Scoring		No. Non-EJ *AoPE Scoring		Total No. *AoPE Scoring	
		Low	High	Low	High	Low	High
OH	Defiance County	0	2	0	20	0	22
OH	Delaware County	1	0	28	0	29	0
OH	Erie County	3	0	21	0	24	0
OH	Franklin County	42	0	79	0	121	0
OH	Hamilton County	35	0	47	0	82	0
OH	Hardin County	2	0	7	3	9	3
OH	Henry County	0	1	0	8	0	9
OH	Huron County	0	5	11	18	11	23
OH	Lake County	3	6	41	26	44	32
OH	Lorain County	17	1	36	20	53	21
OH	Lucas County	34	1	27	1	61	2
OH	Mahoning County	26	13	11	8	37	21
OH	Marion County	11	5	28	7	39	12
OH	Montgomery County	13	0	17	0	30	0
OH	Ottawa County	0	0	12	0	12	0
OH	Pickaway County	2	0	12	0	14	0
OH	Pike County	2	0	4	0	6	0
OH	Portage County	3	0	17	0	20	0
OH	Richland County	0	1	0	12	0	13
OH	Ross County	3	0	9	0	12	0
OH	Sandusky County	5	0	25	0	30	0
OH	Scioto County	2	0	9	0	11	0
OH	Seneca County	2	10	8	25	10	35
OH	Stark County	8	0	5	0	13	0
OH	Summit County	2	0	9	0	11	0
OH	Trumbull County	1	0	15	0	16	0
OH	Van Wert County	1	0	16	0	17	0
OH	Warren County	1	0	5	0	6	0
OH	Wood County	2	1	10	40	12	41
OH	Wyandot County	1	0	18	0	19	0
PA	Allegheny County	6	50	29	45	35	95
PA	Beaver County	12	12	21	25	33	37
PA	Bedford County	0	0	3	0	3	0
PA	Berks County	12	0	35	0	47	0
PA	Bucks County	13	0	53	0	66	0
PA	Cumberland County	3	0	28	0	31	0
PA	Dauphin County	30	0	51	0	81	0

* *AoPE - Area of Potential Effect*

State	County	No. EJ *AoPE Scoring		No. Non-EJ *AoPE Scoring		Total No. *AoPE Scoring	
		Low	High	Low	High	Low	High
PA	Delaware County	58	0	78	0	136	0
PA	Erie County	31	0	60	0	91	0
PA	Fayette County	1	0	28	0	29	0
PA	Franklin County	5	0	20	0	25	0
PA	Lancaster County	0	0	5	0	5	0
PA	Lawrence County	0	0	16	16	16	16
PA	Lebanon County	6	0	25	0	31	0
PA	Lehigh County	7	0	13	0	20	0
PA	Montgomery County	1	0	3	0	4	0
PA	Northampton County	4	0	2	0	6	0
PA	Perry County	0	0	2	0	2	0
PA	Philadelphia County	335	8	183	1	518	9
PA	Pike County	0	0	8	0	8	0
PA	Somerset County	7	0	26	0	33	0
PA	Susquehanna County	1	0	7	0	8	0
PA	Westmoreland County	6	0	14	0	20	0
PA	York County	0	0	3	0	3	0
SC	Beaufort County	1	0	0	0	1	0
SC	Charleston County	8	0	12	0	20	0
SC	Colleton County	4	0	0	0	4	0
SC	Hampton County	1	0	0	0	1	0
TN	Cocke County	3	0	11	0	14	0
TN	Davidson County	0	13	0	22	0	35
TN	Hamblen County	1	0	5	0	6	0
TN	Hawkins County	0	0	19	0	19	0
TN	Jefferson County	0	0	4	0	4	0
TN	Sullivan County	6	0	13	0	19	0
VA	Alexandria City	12	0	14	0	26	0
VA	Arlington County	3	0	8	0	11	0
VA	Augusta County	0	0	14	0	14	0
VA	Botetourt County	2	0	6	0	8	0
VA	Buena Vista City	0	0	3	0	3	0
VA	Caroline County	3	0	5	0	8	0
VA	Chesterfield County	12	0	17	0	29	0
VA	Clarke County	1	0	7	0	8	0
VA	Colonial Heights City	0	0	7	0	7	0
VA	Dinwiddie County	1	0	1	0	2	0

* *AoPE - Area of Potential Effect*

State	County	No. EJ *AoPE Scoring Low	No. EJ *AoPE Scoring High	No. Non-EJ *AoPE Scoring Low	No. Non-EJ *AoPE Scoring High	Total No. *AoPE Scoring Low	Total No. *AoPE Scoring High
VA	Emporia City	2	0	4	0	6	0
VA	Fairfax County	4	0	48	0	52	0
VA	Fredericksburg City	3	0	4	0	7	0
VA	Greensville County	5	0	0	0	5	0
VA	Hanover County	3	0	6	0	9	0
VA	Henrico County	1	0	11	0	12	0
VA	Manassas City	4	0	5	0	9	0
VA	Page County	2	0	20	0	22	0
VA	Petersburg City	20	0	2	0	22	0
VA	Prince George County	0	0	1	0	1	0
VA	Prince William County	6	0	9	0	15	0
VA	Richmond City	14	0	16	0	30	0
VA	Roanoke City	5	0	8	0	13	0
VA	Roanoke County	0	0	3	0	3	0
VA	Rockbridge County	1	0	8	0	9	0
VA	Rockingham County	0	0	10	0	10	0
VA	Spotsylvania County	2	0	1	0	3	0
VA	Stafford County	1	0	14	0	15	0
VA	Sussex County	2	0	1	0	3	0
VA	Warren County	3	0	10	0	13	0
VA	Waynesboro City	2	0	8	0	10	0
WV	Fayette County	4	0	8	0	12	0
WV	Jefferson County	2	0	10	0	12	0
WV	Marion County	1	0	6	0	7	0
WV	Nicholas County	2	0	0	0	2	0
WV	Raleigh County	0	0	6	0	6	0
WV	Wyoming County	0	0	5	0	5	0
Totals		**2039**	**349**	**3332**	**752**	**5371**	**1101**

** AoPE - Area of Potential Effect*

ATTACHMENT M-6

Summary of Hazardous Materials Transport Scoring by State

[THIS PAGE INTENTIONALLY LEFT BLANK]

Summary of HazMat Scoring By State

State	No. EJ *AoPE Scoring		No. Non-EJ *AoPE Scoring		Total No. *AoPE Scoring	
	Low	High	Low	High	Low	High
AL	27	0	54	0	81	0
DC	94	0	16	0	110	0
DE	30	0	75	0	105	0
GA	75	0	40	0	115	0
IL	64	8	123	9	187	17
IN	123	48	129	227	252	275
KY	0	0	1	0	1	0
MD	136	0	217	0	353	0
MI	49	0	67	0	116	0
MO	5	0	29	0	34	0
NC	62	0	116	0	178	0
NJ	97	0	196	0	293	0
NY	131	19	448	57	579	76
OH	293	359	674	414	967	773
PA	577	31	740	60	1317	91
SC	14	0	12	0	26	0
TN	23	0	74	0	97	0
VA	114	0	271	0	385	0
WV	9	0	35	0	44	0
Totals	**1923**	**465**	**3317**	**767**	**5240**	**1232**

** AoPE - Area of Potential Effect*

[THIS PAGE INTENTIONALLY LEFT BLANK]

ATTACHMENT M-7

Summary of Hazardous Materials Transport Scoring by County

[THIS PAGE INTENTIONALLY LEFT BLANK]

Summary of HazMat Scoring By County

State	County	No. EJ *AoPE Scoring		No. Non-EJ *AoPE Scoring		Total No. *AoPE Scoring	
		Low	High	Low	High	Low	High
AL	Chambers County	1	0	1	0	2	0
AL	Clay County	4	0	3	0	7	0
AL	Etowah County	4	0	5	0	9	0
AL	Jefferson County	0	0	14	0	14	0
AL	Randolph County	5	0	5	0	10	0
AL	Shelby County	4	0	14	0	18	0
AL	St. Clair County	0	0	7	0	7	0
AL	Talladega County	9	0	5	0	14	0
DC	District of Columbia	94	0	16	0	110	0
DE	New Castle County	30	0	75	0	105	0
GA	Butts County	2	0	5	0	7	0
GA	Clayton County	3	0	3	0	6	0
GA	DeKalb County	3	0	2	0	5	0
GA	Fulton County	45	0	5	0	50	0
GA	Henry County	4	0	7	0	11	0
GA	Meriwether County	3	0	3	0	6	0
GA	Monroe County	1	0	1	0	2	0
GA	Troup County	14	0	14	0	28	0
IL	Champaign County	0	0	12	0	12	0
IL	Christian County	1	0	11	0	12	0
IL	Cook County	46	0	42	0	88	0
IL	Macon County	11	0	8	0	19	0
IL	Macoupin County	1	0	7	0	8	0
IL	Madison County	4	0	21	0	25	0
IL	Montgomery County	1	0	7	0	8	0
IL	Piatt County	0	0	7	0	7	0
IL	Vermilion County	0	8	8	9	8	17
IN	Allen County	25	23	20	42	45	65
IN	Carroll County	0	1	0	8	0	9
IN	Cass County	0	2	0	13	0	15
IN	De Kalb County	0	1	0	19	0	20
IN	Delaware County	21	0	15	0	36	0
IN	Elkhart County	0	0	0	9	0	9
IN	Fountain County	0	1	0	2	0	3
IN	Huntington County	0	2	0	15	0	17

* *AoPE - Area of Potential Effect*

State	County	No. EJ *AoPE Scoring Low	No. EJ *AoPE Scoring High	No. Non-EJ *AoPE Scoring Low	No. Non-EJ *AoPE Scoring High	Total No. *AoPE Scoring Low	Total No. *AoPE Scoring High
IN	Kosciusko County	3	0	16	9	19	9
IN	La Porte County	0	0	5	6	5	6
IN	Lake County	66	0	31	0	97	0
IN	Madison County	1	0	6	0	7	0
IN	Marshall County	2	0	13	8	15	8
IN	Miami County	0	6	0	16	0	22
IN	Noble County	0	0	0	9	0	9
IN	Porter County	4	1	13	12	17	13
IN	St. Joseph County	0	0	0	3	0	3
IN	Starke County	0	0	5	0	5	0
IN	Tippecanoe County	0	9	0	36	0	45
IN	Wabash County	0	2	0	13	0	15
IN	Warren County	0	0	0	7	0	7
IN	Whitley County	1	0	5	0	6	0
KY	Greenup County	0	0	1	0	1	0
MD	Allegany County	6	0	7	0	13	0
MD	Anne Arundel County	16	0	12	0	28	0
MD	Baltimore city	46	0	22	0	68	0
MD	Baltimore County	2	0	17	0	19	0
MD	Cecil County	4	0	13	0	17	0
MD	Frederick County	0	0	10	0	10	0
MD	Howard County	6	0	7	0	13	0
MD	Montgomery County	14	0	45	0	59	0
MD	Prince Georges County	35	0	64	0	99	0
MD	Washington County	7	0	20	0	27	0
MI	Monroe County	2	0	23	0	25	0
MI	Wayne County	47	0	44	0	91	0
MO	Carroll County	2	0	4	0	6	0
MO	Charlton County	1	0	8	0	9	0
MO	Randolph County	2	0	14	0	16	0
MO	Ray County	0	0	3	0	3	0
NC	Buncombe County	17	0	38	0	55	0
NC	Burke County	5	0	21	0	26	0
NC	Catawba County	9	0	19	0	28	0
NC	Halifax County	2	0	0	0	2	0
NC	Iredell County	11	0	7	0	18	0
NC	Madison County	1	0	6	0	7	0

** AoPE - Area of Potential Effect*

State	County	No. EJ *AoPE Scoring		No. Non-EJ *AoPE Scoring		Total No. *AoPE Scoring	
		Low	High	Low	High	Low	High
NC	McDowell County	5	0	14	0	19	0
NC	Northampton County	3	0	0	0	3	0
NC	Rowan County	9	0	11	0	20	0
NJ	Bergen County	8	0	89	0	97	0
NJ	Camden County	13	0	6	0	19	0
NJ	Hudson County	2	0	6	0	8	0
NJ	Mercer County	17	0	27	0	44	0
NJ	Middlesex County	16	0	42	0	58	0
NJ	Union County	41	0	26	0	67	0
NY	Albany County	0	0	11	0	11	0
NY	Allegany County	0	0	2	0	2	0
NY	Broome County	25	0	70	0	95	0
NY	Chautauqua County	0	5	0	21	0	26
NY	Chemung County	20	0	29	0	49	0
NY	Delaware County	2	0	4	0	6	0
NY	Erie County	47	14	98	36	145	50
NY	Genesee County	0	0	18	0	18	0
NY	Herkimer County	3	0	18	0	21	0
NY	Livingston County	0	0	3	0	3	0
NY	Monroe County	0	0	4	0	4	0
NY	Montgomery County	3	0	22	0	25	0
NY	Oneida County	2	0	3	0	5	0
NY	Ontario County	4	0	2	0	6	0
NY	Orange County	9	0	45	0	54	0
NY	Rockland County	3	0	8	0	11	0
NY	Schenectady County	0	0	12	0	12	0
NY	Schuyler County	0	0	5	0	5	0
NY	Steuben County	7	0	39	0	46	0
NY	Sullivan County	1	0	10	0	11	0
NY	Tioga County	4	0	26	0	30	0
NY	Wyoming County	1	0	13	0	14	0
NY	Yates County	0	0	6	0	6	0
OH	Allen County	6	0	26	0	32	0
OH	Ashtabula County	11	13	20	28	31	41
OH	Butler County	21	0	38	0	59	0
OH	Crawford County	6	0	30	0	36	0
OH	Cuyahoga County	26	301	47	184	73	485

* *AoPE - Area of Potential Effect*

State	County	No. EJ *AoPE Scoring Low	No. EJ *AoPE Scoring High	No. Non-EJ *AoPE Scoring Low	No. Non-EJ *AoPE Scoring High	Total No. *AoPE Scoring Low	Total No. *AoPE Scoring High
OH	Defiance County	0	2	0	20	0	22
OH	Delaware County	1	0	28	0	29	0
OH	Erie County	3	0	15	6	18	6
OH	Franklin County	42	0	79	0	121	0
OH	Hamilton County	35	0	47	0	82	0
OH	Hardin County	2	0	10	0	12	0
OH	Henry County	0	1	2	6	2	7
OH	Huron County	0	5	13	16	13	21
OH	Lake County	6	3	26	41	32	44
OH	Lorain County	0	18	0	56	0	74
OH	Lucas County	35	0	28	0	63	0
OH	Mahoning County	39	0	19	0	58	0
OH	Marion County	13	3	31	4	44	7
OH	Montgomery County	13	0	17	0	30	0
OH	Ottawa County	0	0	12	0	12	0
OH	Pickaway County	2	0	12	0	14	0
OH	Pike County	2	0	4	0	6	0
OH	Portage County	3	0	17	0	20	0
OH	Richland County	1	0	12	0	13	0
OH	Ross County	3	0	9	0	12	0
OH	Sandusky County	5	0	25	0	30	0
OH	Scioto County	2	0	9	0	11	0
OH	Seneca County	0	12	4	29	4	41
OH	Stark County	8	0	5	0	13	0
OH	Summit County	2	0	9	0	11	0
OH	Trumbull County	1	0	15	0	16	0
OH	Van Wert County	1	0	16	0	17	0
OH	Warren County	1	0	5	0	6	0
OH	Wood County	3	0	36	14	39	14
OH	Wyandot County	0	1	8	10	8	11
PA	Allegheny County	56	0	74	0	130	0
PA	Beaver County	24	0	46	0	70	0
PA	Bedford County	0	0	3	0	3	0
PA	Berks County	12	0	35	0	47	0
PA	Bucks County	13	0	53	0	66	0
PA	Cumberland County	3	0	28	0	31	0
PA	Dauphin County	30	0	51	0	81	0

* *AoPE - Area of Potential Effect*

State	County	No. EJ *AoPE Scoring Low	No. EJ *AoPE Scoring High	No. Non-EJ *AoPE Scoring Low	No. Non-EJ *AoPE Scoring High	Total No. *AoPE Scoring Low	Total No. *AoPE Scoring High
PA	Delaware County	58	0	78	0	136	0
PA	Erie County	0	31	0	60	0	91
PA	Fayette County	1	0	28	0	29	0
PA	Franklin County	5	0	20	0	25	0
PA	Lancaster County	0	0	5	0	5	0
PA	Lawrence County	0	0	32	0	32	0
PA	Lebanon County	6	0	25	0	31	0
PA	Lehigh County	7	0	13	0	20	0
PA	Montgomery County	1	0	3	0	4	0
PA	Northampton County	4	0	2	0	6	0
PA	Perry County	0	0	2	0	2	0
PA	Philadelphia County	343	0	184	0	527	0
PA	Pike County	0	0	8	0	8	0
PA	Somerset County	7	0	26	0	33	0
PA	Susquehanna County	1	0	7	0	8	0
PA	Westmoreland County	6	0	14	0	20	0
PA	York County	0	0	3	0	3	0
SC	Beaufort County	1	0	0	0	1	0
SC	Charleston County	8	0	12	0	20	0
SC	Colleton County	4	0	0	0	4	0
SC	Hampton County	1	0	0	0	1	0
TN	Cocke County	3	0	11	0	14	0
TN	Davidson County	13	0	22	0	35	0
TN	Hamblen County	1	0	5	0	6	0
TN	Hawkins County	0	0	19	0	19	0
TN	Jefferson County	0	0	4	0	4	0
TN	Sullivan County	6	0	13	0	19	0
VA	Alexandria City	12	0	14	0	26	0
VA	Arlington County	3	0	8	0	11	0
VA	Augusta County	0	0	14	0	14	0
VA	Botetourt County	2	0	6	0	8	0
VA	Buena Vista City	0	0	3	0	3	0
VA	Caroline County	3	0	5	0	8	0
VA	Chesterfield County	12	0	17	0	29	0
VA	Clarke County	1	0	7	0	8	0
VA	Colonial Heights City	0	0	7	0	7	0
VA	Dinwiddie County	1	0	1	0	2	0

* *AoPE - Area of Potential Effect*

State	County	No. EJ *AoPE Scoring		No. Non-EJ *AoPE Scoring		Total No. *AoPE Scoring	
		Low	High	Low	High	Low	High
VA	Emporia City	2	0	4	0	6	0
VA	Fairfax County	4	0	48	0	52	0
VA	Fredericksburg City	3	0	4	0	7	0
VA	Greensville County	5	0	0	0	5	0
VA	Hanover County	3	0	6	0	9	0
VA	Henrico County	1	0	11	0	12	0
VA	Manassas City	4	0	5	0	9	0
VA	Page County	2	0	20	0	22	0
VA	Petersburg City	20	0	2	0	22	0
VA	Prince George County	0	0	1	0	1	0
VA	Prince William County	6	0	9	0	15	0
VA	Richmond City	14	0	16	0	30	0
VA	Roanoke City	5	0	8	0	13	0
VA	Roanoke County	0	0	3	0	3	0
VA	Rockbridge County	1	0	8	0	9	0
VA	Rockingham County	0	0	10	0	10	0
VA	Spotsylvania County	2	0	1	0	3	0
VA	Stafford County	1	0	14	0	15	0
VA	Sussex County	2	0	1	0	3	0
VA	Warren County	3	0	10	0	13	0
VA	Waynesboro City	2	0	8	0	10	0
WV	Fayette County	4	0	8	0	12	0
WV	Jefferson County	2	0	10	0	12	0
WV	Marion County	1	0	6	0	7	0
WV	Nicholas County	2	0	0	0	2	0
WV	Raleigh County	0	0	6	0	6	0
WV	Wyoming County	0	0	5	0	5	0
Totals		**1923**	**465**	**3317**	**767**	**5240**	**1232**

** AoPE - Area of Potential Effect*

ATTACHMENT M-8

Summary of Safety and Delay Scoring by State

[THIS PAGE INTENTIONALLY LEFT BLANK]

Summary of Safety and Delay Scoring By State

State	No. EJ *AoPE Scoring		No. Non-EJ *AoPE Scoring		Total No. *AoPE Scoring	
	Low	High	Low	High	Low	High
AL	27	0	54	0	81	0
DC	94	0	16	0	110	0
DE	30	0	75	0	105	0
GA	75	0	40	0	115	0
IL	71	1	128	4	199	5
IN	151	20	310	46	461	66
KY	0	0	1	0	1	0
MD	136	0	215	2	351	2
MI	49	0	65	2	114	2
MO	5	0	29	0	34	0
NC	62	0	116	0	178	0
NJ	97	0	196	0	293	0
NY	150	0	503	2	653	2
OH	652	0	1062	26	1714	26
PA	602	6	791	9	1393	15
SC	14	0	12	0	26	0
TN	23	0	74	0	97	0
VA	114	0	269	2	383	2
WV	9	0	35	0	44	0
Totals	**2361**	**27**	**3991**	**93**	**6352**	**120**

** AoPE - Area of Potential Effect*

[THIS PAGE INTENTIONALLY LEFT BLANK]

ATTACHMENT M-9

Summary of Safety and Delay Scoring by County

[THIS PAGE INTENTIONALLY LEFT BLANK]

Summary of Safety and Delay Scoring By County

State	County	No. EJ *AoPE Scoring		No. Non-EJ *AoPE Scoring		Total No. *AoPE Scoring	
		Low	High	Low	High	Low	High
AL	Chambers County	1	0	1	0	2	0
AL	Clay County	4	0	3	0	7	0
AL	Etowah County	4	0	5	0	9	0
AL	Jefferson County	0	0	14	0	14	0
AL	Randolph County	5	0	5	0	10	0
AL	Shelby County	4	0	14	0	18	0
AL	St. Clair County	0	0	7	0	7	0
AL	Talladega County	9	0	5	0	14	0
DC	District of Columbia	94	0	16	0	110	0
DE	New Castle County	30	0	75	0	105	0
GA	Butts County	2	0	5	0	7	0
GA	Clayton County	3	0	3	0	6	0
GA	DeKalb County	3	0	2	0	5	0
GA	Fulton County	45	0	5	0	50	0
GA	Henry County	4	0	7	0	11	0
GA	Meriwether County	3	0	3	0	6	0
GA	Monroe County	1	0	1	0	2	0
GA	Troup County	14	0	14	0	28	0
IL	Champaign County	0	0	12	0	12	0
IL	Christian County	1	0	11	0	12	0
IL	Cook County	45	1	40	2	85	3
IL	Macon County	11	0	8	0	19	0
IL	Macoupin County	1	0	7	0	8	0
IL	Madison County	4	0	21	0	25	0
IL	Montgomery County	1	0	7	0	8	0
IL	Piatt County	0	0	5	2	5	2
IL	Vermilion County	8	0	17	0	25	0
IN	Allen County	48	0	58	4	106	4
IN	Carroll County	0	1	6	2	6	3
IN	Cass County	2	0	8	5	10	5
IN	De Kalb County	0	1	17	2	17	3
IN	Delaware County	9	12	14	1	23	13
IN	Elkhart County	0	0	6	3	6	3
IN	Fountain County	1	0	2	0	3	0
IN	Huntington County	1	1	14	1	15	2

* *AoPE - Area of Potential Effect*

State	County	No. EJ *AoPE Scoring, Low	High	No. Non-EJ *AoPE Scoring Low	High	Total No. *AoPE Scoring Low	High
IN	Kosciusko County	3	0	23	2	26	2
IN	La Porte County	0	0	9	2	9	2
IN	Lake County	63	3	31	0	94	3
IN	Madison County	1	0	6	0	7	0
IN	Marshall County	2	0	20	1	22	1
IN	Miami County	6	0	15	1	21	1
IN	Noble County	0	0	6	3	6	3
IN	Porter County	5	0	23	2	28	2
IN	St. Joseph County	0	0	3	0	3	0
IN	Starke County	0	0	5	0	5	0
IN	Tippecanoe County	7	2	20	16	27	18
IN	Wabash County	2	0	12	1	14	1
IN	Warren County	0	0	7	0	7	0
IN	Whitley County	1	0	5	0	6	0
KY	Greenup County	0	0	1	0	1	0
MD	Allegany County	6	0	7	0	13	0
MD	Anne Arundel County	16	0	12	0	28	0
MD	Baltimore city	46	0	22	0	68	0
MD	Baltimore County	2	0	17	0	19	0
MD	Cecil County	4	0	13	0	17	0
MD	Frederick County	0	0	10	0	10	0
MD	Howard County	6	0	7	0	13	0
MD	Montgomery County	14	0	45	0	59	0
MD	Prince Georges County	35	0	64	0	99	0
MD	Washington County	7	0	18	2	25	2
MI	Monroe County	2	0	23	0	25	0
MI	Wayne County	47	0	42	2	89	2
MO	Carroll County	2	0	4	0	6	0
MO	Chariton County	1	0	8	0	9	0
MO	Randolph County	2	0	14	0	16	0
MO	Ray County	0	0	3	0	3	0
NC	Buncombe County	17	0	38	0	55	0
NC	Burke County	5	0	21	0	26	0
NC	Catawba County	9	0	19	0	28	0
NC	Halifax County	2	0	0	0	2	0
NC	Iredell County	11	0	7	0	18	0
NC	Madison County	1	0	6	0	7	0

** AoPE - Area of Potential Effect*

State	County	No. EJ *AoPE Scoring Low	No. EJ *AoPE Scoring High	No. Non-EJ *AoPE Scoring Low	No. Non-EJ *AoPE Scoring High	Total No. *AoPE Scoring Low	Total No. *AoPE Scoring High
NC	McDowell County	5	0	14	0	19	0
NC	Northampton County	3	0	0	0	3	0
NC	Rowan County	9	0	11	0	20	0
NJ	Bergen County	8	0	89	0	97	0
NJ	Camden County	13	0	6	0	19	0
NJ	Hudson County	2	0	6	0	8	0
NJ	Mercer County	17	0	27	0	44	0
NJ	Middlesex County	16	0	42	0	58	0
NJ	Union County	41	0	26	0	67	0
NY	Albany County	0	0	11	0	11	0
NY	Allegany County	0	0	2	0	2	0
NY	Broome County	25	0	70	0	95	0
NY	Chautauqua County	5	0	19	2	24	2
NY	Chemung County	20	0	29	0	49	0
NY	Delaware County	2	0	4	0	6	0
NY	Erie County	61	0	134	0	195	0
NY	Genesee County	0	0	18	0	18	0
NY	Herkimer County	3	0	18	0	21	0
NY	Livingston County	0	0	3	0	3	0
NY	Monroe County	0	0	4	0	4	0
NY	Montgomery County	3	0	22	0	25	0
NY	Oneida County	2	0	3	0	5	0
NY	Ontario County	4	0	2	0	6	0
NY	Orange County	9	0	45	0	54	0
NY	Rockland County	3	0	8	0	11	0
NY	Schenectady County	0	0	12	0	12	0
NY	Schuyler County	0	0	5	0	5	0
NY	Steuben County	7	0	39	0	46	0
NY	Sullivan County	1	0	10	0	11	0
NY	Tioga County	4	0	26	0	30	0
NY	Wyoming County	1	0	13	0	14	0
NY	Yates County	0	0	6	0	6	0
OH	Allen County	6	0	26	0	32	0
OH	Ashtabula County	24	0	48	0	72	0
OH	Butler County	21	0	38	0	59	0
OH	Crawford County	6	0	26	4	32	4
OH	Cuyahoga County	327	0	231	0	558	0

** AoPE - Area of Potential Effect*

State	County	No. EJ *AoPE Scoring		No. Non-EJ *AoPE Scoring		Total No. *AoPE Scoring	
		Low	High	Low	High	Low	High
OH	Defiance County	2	0	20	0	22	0
OH	Delaware County	1	0	28	0	29	0
OH	Erie County	3	0	20	1	23	1
OH	Franklin County	42	0	79	0	121	0
OH	Hamilton County	35	0	46	1	81	1
OH	Hardin County	2	0	8	2	10	2
OH	Henry County	1	0	6	2	7	2
OH	Huron County	5	0	29	0	34	0
OH	Lake County	9	0	67	0	76	0
OH	Lorain County	18	0	56	0	74	0
OH	Lucas County	35	0	28	0	63	0
OH	Mahoning County	39	0	19	0	58	0
OH	Marion County	16	0	33	2	49	2
OH	Montgomery County	13	0	17	0	30	0
OH	Ottawa County	0	0	12	0	12	0
OH	Pickaway County	2	0	12	0	14	0
OH	Pike County	2	0	4	0	6	0
OH	Portage County	3	0	17	0	20	0
OH	Richland County	1	0	12	0	13	0
OH	Ross County	3	0	9	0	12	0
OH	Sandusky County	5	0	22	3	27	3
OH	Scioto County	2	0	9	0	11	0
OH	Seneca County	12	0	31	2	43	2
OH	Stark County	8	0	5	0	13	0
OH	Summit County	2	0	9	0	11	0
OH	Trumbull County	1	0	15	0	16	0
OH	Van Wert County	1	0	16	0	17	0
OH	Warren County	1	0	5	0	6	0
OH	Wood County	3	0	41	9	44	9
OH	Wyandot County	1	0	18	0	19	0
PA	Allegheny County	56	0	74	0	130	0
PA	Beaver County	24	0	46	0	70	0
PA	Bedford County	0	0	3	0	3	0
PA	Berks County	12	0	35	0	47	0
PA	Bucks County	13	0	53	0	66	0
PA	Cumberland County	3	0	26	2	29	2
PA	Dauphin County	30	0	51	0	81	0

* *AoPE - Area of Potential Effect*

State	County	No. EJ *AoPE Scoring		No. Non-EJ *AoPE Scoring		Total No. *AoPE Scoring	
		Low	High	Low	High	Low	High
PA	Delaware County	58	0	78	0	136	0
PA	Erie County	25	6	56	4	81	10
PA	Fayette County	1	0	28	0	29	0
PA	Franklin County	5	0	17	3	22	3
PA	Lancaster County	0	0	5	0	5	0
PA	Lawrence County	0	0	32	0	32	0
PA	Lebanon County	6	0	25	0	31	0
PA	Lehigh County	7	0	13	0	20	0
PA	Montgomery County	1	0	3	0	4	0
PA	Northampton County	4	0	2	0	6	0
PA	Perry County	0	0	2	0	2	0
PA	Philadelphia County	343	0	184	0	527	0
PA	Pike County	0	0	8	0	8	0
PA	Somerset County	7	0	26	0	33	0
PA	Susquehanna County	1	0	7	0	8	0
PA	Westmoreland County	6	0	14	0	20	0
PA	York County	0	0	3	0	3	0
SC	Beaufort County	1	0	0	0	1	0
SC	Charleston County	8	0	12	0	20	0
SC	Colleton County	4	0	0	0	4	0
SC	Hampton County	1	0	0	0	1	0
TN	Cocke County	3	0	11	0	14	0
TN	Davidson County	13	0	22	0	35	0
TN	Hamblen County	1	0	5	0	6	0
TN	Hawkins County	0	0	19	0	19	0
TN	Jefferson County	0	0	4	0	4	0
TN	Sullivan County	6	0	13	0	19	0
VA	Alexandria City	12	0	14	0	26	0
VA	Arlington County	3	0	8	0	11	0
VA	Augusta County	0	0	14	0	14	0
VA	Botetourt County	2	0	6	0	8	0
VA	Buena Vista City	0	0	3	0	3	0
VA	Caroline County	3	0	5	0	8	0
VA	Chesterfield County	12	0	17	0	29	0
VA	Clarke County	1	0	6	1	7	1
VA	Colonial Heights City	0	0	7	0	7	0
VA	Dinwiddie County	1	0	1	0	2	0

** AoPE - Area of Potential Effect*

State	County	No. EJ *AoPE Scoring		No. Non-EJ *AoPE Scoring		Total No. *AoPE Scoring	
		Low	High	Low	High	Low	High
VA	Emporia City	2	0	4	0	6	0
VA	Fairfax County	4	0	48	0	52	0
VA	Fredericksburg City	3	0	4	0	7	0
VA	Greensville County	5	0	0	0	5	0
VA	Hanover County	3	0	6	0	9	0
VA	Henrico County	1	0	11	0	12	0
VA	Manassas City	4	0	5	0	9	0
VA	Page County	2	0	20	0	22	0
VA	Petersburg City	20	0	2	0	22	0
VA	Prince George County	0	0	1	0	1	0
VA	Prince William County	6	0	9	0	15	0
VA	Richmond City	14	0	16	0	30	0
VA	Roanoke City	5	0	8	0	13	0
VA	Roanoke County	0	0	3	0	3	0
VA	Rockbridge County	1	0	8	0	9	0
VA	Rockingham County	0	0	10	0	10	0
VA	Spotsylvania County	2	0	1	0	3	0
VA	Stafford County	1	0	14	0	15	0
VA	Sussex County	2	0	1	0	3	0
VA	Warren County	3	0	9	1	12	1
VA	Waynesboro City	2	0	8	0	10	0
WV	Fayette County	4	0	8	0	12	0
WV	Jefferson County	2	0	10	0	12	0
WV	Marion County	1	0	6	0	7	0
WV	Nicholas County	2	0	0	0	2	0
WV	Raleigh County	0	0	6	0	6	0
WV	Wyoming County	0	0	5	0	5	0
Totals		**2361**	**27**	**3991**	**93**	**6352**	**120**

* *AoPE - Area of Potential Effect*

ATTACHMENT M-10

Environmental and Nonenvironmental Justice Communities with High and Adverse Multiple Impacts

[THIS PAGE INTENTIONALLY LEFT BLANK]

Environmental Justice Communities with "High and Adverse" Multiple Impacts

CSX SEGMENTS										
Segment# / Place Name	County	State	# of Block Groups	Population within the APE			Resource Scoring			Multiple Resource Sc. (Avg)
				Total (Sum)	Minority (Sum)	Poverty (Sum)	Noise (Avg)	Hazmat (Avg)	Traffic (Avg)	
C-061										
Grafton village	Lorain County	OH	1	260	65	2	3.5	5.0	0.0	37.3
New London village	Huron County	OH	1	179	5	36	3.5	5.0	0.0	37.3
Totals/Averages:			2	439	70	38	3.5	5.0	0.0	37.3
C-063										
Defiance city	Defiance County	OH	2	628	249	105	3.5	4.0	0.0	28.3
Garrett city	De Kalb County	IN	1	550	12	88	3.5	4.0	3.0	37.3
Holgate village	Henry County	OH	1	330	84	31	3.5	4.0	0.0	28.3
Portage city	Porter County	IN	1	11	0	[illegible]	3.5	4.0	0.0	28.3
Totals/Averages:			5	1519	345	226	3.5	4.0	0.8	30.5
C-068										
Willard city	Huron County	OH	2	640	64	159	3.0	5.7	0.0	41.1
C-072										
Cleveland	Cuyahoga County	OH	45	11755	9277	5139	4.5	5.3	0.0	48.7
Cleveland Heights cit	Cuyahoga County	OH	1	550	141	110	4.5	5.3	0.0	48.7
Totals/Averages:			46	12305	9418	5249	4.5	5.3	0.0	48.7
C-073										
Cleveland	Cuyahoga County	OH	26	9269	8599	2951	4.0	5.3	0.0	44.4
East Cleveland city	Cuyahoga County	OH	22	11085	10929	3004	4.0	5.3	0.0	44.4
Totals/Averages:			48	20354	19528	5955	4.0	5.3	0.0	44.4
C-074										
Berea city	Cuyahoga County	OH	1	593	236	28	3.5	5.0	0.0	37.3
C-075										
Fostoria city	Seneca County	OH	3	758	137	125	3.0	4.7	0.0	30.8
Tiffin city	Seneca County	OH	2	1301	58	351	3.0	4.7	0.0	30.8
Willard city	Huron County	OH	2	21	2	6	3.0	4.7	0.0	30.8
Totals/Averages:			7	2080	197	482	3.0	4.7	0.0	30.8
Totals/Averages for CSX			111	37930	29858	12137	3.6	4.8	0.2	36.9

NORFOLK SOUTHERN SEGMENTS										
Segment# / Place Name	County	State	# of Block Groups	Population within the APE			Resource Scoring			Multiple Resource Sc. (Avg)
				Total (Sum)	Minority (Sum)	Poverty (Sum)	Noise (Avg)	Hazmat (Avg)	Traffic (Avg)	
N-044										
Fort Wayne city	Allen County	IN	23	5376	2155	1277	2.5	5.0	0.0	31.3
Huntington city	Huntington Count	IN	2	513	15	98	2.5	5.0	1.5	35.8
Peru city	Miami County	IN	2	366	24	79	2.5	5.0	0.0	31.3
Wabash city	Wabash County	IN	2	742	28	180	2.5	5.0	0.0	31.3
Totals/Averages:			29	6997	2226	1634	2.5	5.0	0.4	32.4
N-045										
Attica city	Fountain County	IN	1	498	10	93	3.0	5.0	0.0	34.0
Danville city	Vermilion County	IL	8	3687	1666	1381	3.0	5.0	0.0	34.0
Totals/Averages:			9	4185	1676	1474	3.0	5.0	0.0	34.0
N-046										
Delphi city	Carroll County	IN	1	534	7	105	3.5	5.0	3.0	46.3
Lafayette city	Tippecanoe Count	IN	9	3125	373	825	3.5	5.0	1.1	42.9
Logansport city	Cass County	IN	2	312	9	93	3.5	5.0	0.0	37.3
Peru city	Miami County	IN	4	1184	101	255	3.5	5.0	0.0	37.3
Totals/Averages:			16	5155	490	1278	3.5	5.0	1.0	40.9
N-070										
Erie city	Erie County	PA	2	666	130	245	1.0	4.0	5.0	42.0
N-075										
Ashtabula city	Ashtabula County	OH	4	680	181	255	2.0	5.0	0.0	29.0
Cleveland	Cuyahoga County	OH	71	16532	11384	6493	2.0	5.0	0.0	29.0
Cleveland Heights cit	Cuyahoga County	OH	1	625	160	125	2.0	5.0	0.0	29.0
East Cleveland city	Cuyahoga County	OH	27	17705	17310	5252	2.0	5.0	0.0	29.0
Euclid city	Cuyahoga County	OH	4	4743	3225	630	2.0	5.0	0.0	29.0
Geneva city	Ashtabula County	OH	1	470	69	127	2.0	5.0	0.0	29.0
Mentor city	Lake County	OH	1	552	9	93	2.0	5.0	0.0	29.0
Painesville city	Lake County	OH	1	178	44	15	2.0	5.0	0.0	29.0
Wickliffe city	Lake County	OH	1	22	3	0	2.0	5.0	0.0	29.0
Totals/Averages:			111	41507	32385	12990	2.0	5.0	0.0	29.0
Totals/Averages for Norfolk Southern			167	58510	36907	17621	2.5	5.0	0.5	33.2

Non-Environmental Justice Communities with "High and Adverse" Multiple Impacts

CSX SEGMENTS										
Segment# / Place Name	County	State	# of Block Groups	Population within the APE			Resource Scoring			Multiple Resource Sc. (Avg)
				Total (Sum)	Minority (Sum)	Poverty (Sum)	Noise (Avg)	Hazmat (Avg)	Traffic (Avg)	
C-061										
Berea city	Cuyahoga County	OH	7	1503	49	53	3.5	5.0	0.0	37.3
Eaton Estates CDP	Lorain County	OH	1	140	2	4	3.5	5.0	0.0	37.3
Grafton village	Lorain County	OH	2	914	5	62	3.5	5.0	0.0	37.3
Greenwich village	Huron County	OH	1	2	0	0	3.5	5.0	0.0	37.3
Lagrange village	Lorain County	OH	1	164	0	7	3.5	5.0	0.0	37.3
New London village	Huron County	OH	2	495	19	36	3.5	5.0	0.0	37.3
Olmsted Falls city	Cuyahoga County	OH	4	2148	72	37	3.5	5.0	0.0	37.3
Unincorporated	Huron County	OH	3	99	0	9	3.5	5.0	0.0	37.3
Unincorporated	Lorain County	OH	12	1530	20	79	3.5	5.0	0.0	37.3
Wellington village	Lorain County	OH	4	1775	45	214	3.5	5.0	0.0	37.3
Totals/Averages:			**37**	**8770**	**212**	**501**	**3.5**	**5.0**	**0.0**	**37.3**
C-065										
Unincorporated	Wood County	OH	2	315	7	8	3.0	2.7	5.0	41.1
C-066										
Albion town	Noble County	IN	2	370	4	22	3.5	4.0	0.0	28.3
Auburn city	De Kalb County	IN	3	356	9	11	3.5	4.0	0.0	28.3
Avilla town	Noble County	IN	2	408	4	20	3.5	4.0	0.0	28.3
Bremen town	Marshall County	IN	1	1421	61	20	3.5	4.0	0.0	28.3
Chesterton town	Porter County	IN	1	18	0	0	3.5	4.0	0.0	28.3
Defiance city	Defiance County	OH	10	3174	428	369	3.5	4.0	0.0	28.3
Deshler village	Henry County	OH	2	496	44	40	3.5	4.0	1.5	32.8
Garrett city	De Kalb County	IN	4	1381	32	145	3.5	4.0	1.5	32.8
Hamler village	Henry County	OH	1	229	28	17	3.5	4.0	0.0	28.3
Hicksville village	Defiance County	OH	4	708	25	55	3.5	4.0	0.0	28.3
Kingsford Heights to	La Porte County	IN	1	11	1	1	3.5	4.0	0.0	28.3
La Paz town	Marshall County	IN	1	470	8	26	3.5	4.0	0.0	28.3
Nappanee city	Elkhart County	IN	6	2471	34	154	3.5	4.0	1.0	31.3
Portage city	Porter County	IN	5	2560	178	106	3.5	4.0	0.0	28.3
Sherwood village	Defiance County	OH	1	212	6	26	3.5	4.0	0.0	28.3
Syracuse town	Kosciusko County	IN	2	636	14	28	3.5	4.0	1.5	32.8
Unincorporated	De Kalb County	IN	5	543	11	41	3.5	4.0	0.0	28.3
Unincorporated	Marshall County	IN	6	726	9	41	3.5	4.0	0.5	29.8
Unincorporated	Porter County	IN	6	980	23	65	3.5	4.0	1.0	31.3
Unincorporated	St. Joseph County	IN	1	62	0	6	3.5	4.0	0.0	28.3
Unincorporated	La Porte County	IN	4	402	6	37	3.5	4.0	1.2	31.9
Unincorporated	Kosciusko County	IN	7	1133	26	36	3.5	4.0	0.7	31.9
Unincorporated	Elkhart County	IN	3	143	1	5	3.5	4.0	1.0	31.3
Unincorporated	Noble County	IN	5	464	8	36	3.5	4.0	1.8	33.7
Unincorporated	Defiance County	OH	5	385	7	16	3.5	4.0	0.0	28.3

Unincorporated	Henry County	OH	3	108	1	5	3.5	4.0	0.0	28.3
Walkerton town	St. Joseph County	IN	2	461	5	64	3.5	4.0	0.0	28.3
Totals/Averages:			94	20328	973	1392	3.5	4.0	0.4	29.7
C-068										
Greenwich village	Huron County	OH	1	214	0	20	3.0	5.7	0.0	41.1
Unincorporated	Huron County	OH	2	205	1	28	3.0	5.7	0.0	41.1
Willard city	Huron County	OH	3	680	50	68	3.0	5.7	0.0	41.1
Totals/Averages:			6	1099	51	116	3.0	5.7	0.0	41.1
C-069										
Brook Park city	Cuyahoga County	OH	1	29	1	0	3.5	5.3	0.0	40.7
Brooklyn city	Cuyahoga County	OH	3	2125	77	82	3.5	5.3	0.0	40.7
Brooklyn Heights vill	Cuyahoga County	OH	1	333	3	14	3.5	5.3	0.0	40.7
Cleveland	Cuyahoga County	OH	14	5357	212	447	3.5	5.3	0.0	40.7
Cuyahoga Heights vil	Cuyahoga County	OH	1	157	1	5	3.5	5.3	0.0	40.7
Parma city	Cuyahoga County	OH	12	3795	111	179	3.5	5.3	0.0	40.7
Totals/Averages:			32	11796	405	727	3.5	5.3	0.0	40.7
C-070										
Unincorporated	Seneca County	OH	2	209	3	16	2.0	4.0	3.0	29.0
C-072										
Cleveland	Cuyahoga County	OH	8	4774	450	826	4.5	5.3	0.0	48.7
Cleveland Heights cit	Cuyahoga County	OH	4	261	46	39	4.5	5.3	0.0	48.7
Cuyahoga Heights vil	Cuyahoga County	OH	1	46	0	1	4.5	5.3	0.0	48.7
Garfield Heights city	Cuyahoga County	OH	1	4	0	0	4.5	5.3	0.0	48.7
Totals/Averages:			14	5085	496	866	4.5	5.3	0.0	48.7
C-073										
Bratenahl village	Cuyahoga County	OH	1	77	6	3	4.0	5.3	0.0	44.4
C-074										
Berea city	Cuyahoga County	OH	8	1640	148	99	3.5	5.0	0.0	37.3
Brook Park city	Cuyahoga County	OH	9	3995	222	136	3.5	5.0	0.0	37.3
Cleveland	Cuyahoga County	OH	4	434	30	34	3.5	5.0	0.0	37.3
Middleburg Heights c	Cuyahoga County	OH	1	74	2	2	3.5	5.0	0.0	37.3
Totals/Averages:			22	6143	402	271	3.5	5.0	0.0	37.3
C-075										
Attica village	Seneca County	OH	1	25	0	1	3.0	4.7	0.0	30.8
Fostoria city	Seneca County	OH	1	0	0	0	3.0	4.7	0.0	30.8
Republic village	Seneca County	OH	1	184	0	23	3.0	4.7	0.0	30.8
Tiffin city	Seneca County	OH	8	2822	114	234	3.0	4.7	0.0	30.8
Unincorporated	Huron County	OH	2	98	1	6	3.0	4.7	0.0	30.8
Unincorporated	Seneca County	OH	9	816	22	82	3.0	4.7	0.0	30.8
Willard city	Huron County	OH	2	743	53	125	3.0	4.7	0.0	30.8
Totals/Averages:			24	4688	190	471	3.0	4.7	0.0	30.8
Totals/Averages for CSX			234	58510	2745	4371	3.5	4.6	0.3	34.6

STB FD 33388 5-22-98 K 29206V6C 10/15

NORFOLK SOUTHERN SEGMENTS										
Segment# / Place Name	County	State	# of Block Groups	Population within the APE			Resource Scoring			Multiple Resource Sc. (Avg)
				Total (Sum)	Minority (Sum)	Poverty (Sum)	Noise (Avg)	Hazmat (Avg)	Traffic (Avg)	
N-041										
Unincorporated	Allen County	IN	1	467	23	44	2.5	4.3	3.0	34.0
N-044										
Fort Wayne city	Allen County	IN	18	5304	397	476	2.5	5.0	0.3	32.3
Huntington city	Huntington Count	IN	9	4429	93	416	2.5	5.0	0.3	32.3
Peru city	Miami County	IN	5	1961	112	195	2.5	5.0	0.0	31.3
Roanoke town	Huntington Count	IN	1	376	9	32	2.5	5.0	0.0	31.3
Unincorporated	Huntington Count	IN	5	542	8	36	2.5	5.0	0.0	31.3
Unincorporated	Miami County	IN	4	187	6	20	2.5	5.0	0.0	31.3
Unincorporated	Wabash County	IN	5	350	8	30	2.5	5.0	0.0	31.3
Unincorporated	Allen County	IN	7	995	33	33	2.5	5.0	0.4	32.6
Wabash city	Wabash County	IN	8	3021	103	336	2.5	5.0	0.4	32.4
Totals/Averages:			62	17156	769	1574	2.5	5.0	0.2	31.8
N-045										
Attica city	Fountain County	IN	1	164	0	17	3.0	5.0	0.0	34.0
Danville city	Vermilion County	IL	2	552	81	58	3.0	5.0	0.0	34.0
Lafayette city	Tippecanoe Count	IN	2	149	4	6	3.0	5.0	0.0	34.0
Shadeland town	Tippecanoe Count	IN	2	189	2	17	3.0	5.0	0.0	34.0
Tilton village	Vermilion County	IL	2	423	5	54	3.0	5.0	0.0	34.0
Unincorporated	Vermilion County	IL	5	228	5	45	3.0	5.0	0.0	34.0
Unincorporated	Tippecanoe Count	IN	4	415	17	58	3.0	5.0	0.8	36.3
Unincorporated	Fountain County	IN	1	46	0	2	3.0	5.0	0.0	34.0
Unincorporated	Warren County	IN	5	223	1	16	3.0	5.0	0.0	34.0
Williamsport town	Warren County	IN	2	668	3	62	3.0	5.0	0.0	34.0
Totals/Averages:			26	3057	118	335	3.0	5.0	0.1	34.2
N-046										
Delphi city	Carroll County	IN	3	933	9	38	3.5	5.0	1.0	40.3
Lafayette city	Tippecanoe Count	IN	18	7021	335	643	3.5	5.0	2.3	46.4
Logansport city	Cass County	IN	9	3482	114	435	3.5	5.0	1.3	41.3
Peru city	Miami County	IN	5	1662	120	238	3.5	5.0	0.0	37.3
Unincorporated	Cass County	IN	4	544	23	29	3.5	5.0	0.8	39.5
Unincorporated	Tippecanoe Count	IN	10	815	17	20	3.5	5.0	1.2	40.9
Unincorporated	Carroll County	IN	5	201	1	25	3.5	5.0	0.6	39.1
Unincorporated	Miami County	IN	2	166	6	11	3.5	5.0	1.5	41.8
Totals/Averages:			56	14825	625	1439	3.5	5.0	1.1	40.8
N-070										
Erie city	Erie County	PA	1	520	26	119	1.0	4.0	5.0	42.0
N-075										
Ashtabula city	Ashtabula County	OH	1	986	70	203	2.0	5.0	0.0	29.0
Cleveland	Cuyahoga County	OH	17	5071	644	753	2.0	5.0	0.0	29.0
Cleveland Heights cit	Cuyahoga County	OH	4	437	75	64	2.0	5.0	0.0	29.0
Eastlake city	Lake County	OH	2	1056	19	39	2.0	5.0	0.0	29.0
Euclid city	Cuyahoga County	OH	7	1667	211	54	2.0	5.0	0.0	29.0
Geneva city	Ashtabula County	OH	4	1051	34	88	2.0	5.0	0.0	29.0

Madison village	Lake County	OH	2	650	6	46	2.0	5.0	0.0	29.0
Mentor city	Lake County	OH	8	2215	36	95	2.0	5.0	0.0	29.0
Painesville city	Lake County	OH	5	4695	303	477	2.0	5.0	0.0	29.0
Perry village	Lake County	OH	1	279	3	14	2.0	5.0	0.0	29.0
Unincorporated	Lake County	OH	9	2987	69	145	2.0	5.0	0.0	29.0
Unincorporated	Ashtabula County	OH	7	2034	122	252	2.0	5.0	0.0	29.0
Wickliffe city	Lake County	OH	5	3508	46	123	2.0	5.0	0.0	29.0
Willoughby city	Lake County	OH	7	2835	91	145	2.0	5.0	0.0	29.0
Willowick city	Lake County	OH	2	772	24	27	2.0	5.0	0.0	29.0
Totals/Averages:			81	30243	1753	2525	2.0	5.0	0.0	29.0

Totals/Averages for Norfolk Southern	227	66268	3314	6036	2.6	5.0	0.4	33.3
---	---	---	---	---	---	---	---	---

ATTACHMENT M-11

Summary of MRS Scoring at State Level

[THIS PAGE INTENTIONALLY LEFT BLANK]

Summary of MRS Scoring at State Level

State	VL to M EJ	H to VH EJ	VL to M NEJ	H to VH NEJ	VL to M BG	H To VH BG
AL	27	0	54	0	81	0
DC	94	0	16	0	110	0
DE	30	0	75	0	105	0
GA	75	0	40	0	115	0
IL	64	8	123	9	187	17
IN	123	48	152	204	275	252
KY	0	0	1	0	1	0
MD	136	0	217	0	353	0
MI	49	0	67	0	116	0
MO	5	0	29	0	34	0
NC	62	0	116	0	178	0
NJ	97	0	196	0	293	0
NY	150	0	505	0	655	0
OH	432	220	841	247	1273	467
PA	606	2	799	1	1405	3
SC	14	0	12	0	26	0
TN	23	0	74	0	97	0
VA	114	0	271	0	385	0
WV	9	0	35	0	44	0
Totals	2110	278	3623	461	5733	739

M-85

[THIS PAGE INTENTIONALLY LEFT BLANK]

ATTACHMENT M-12

Summary of MRS Scoring at County Level

[THIS PAGE INTENTIONALLY LEFT BLANK]

Summary of MRS Scoring at County Level

State	County	VL to M EJ AoPE *	H to VH EJ AoPE *	VL to M NEJ AoPE *	H to VH NEJ AoPE *	VL to M Total AoPE *	H To VH Total AoPE *
AL	Chambers County	1	0	1	0	2	0
AL	Clay County	4	0	3	0	7	0
AL	Etowah County	4	0	5	0	9	0
AL	Jefferson County	0	0	14	0	14	0
AL	Randolph County	5	0	5	0	10	0
AL	Shelby County	4	0	14	0	18	0
AL	St. Clair County	0	0	7	0	7	0
AL	Talladega County	9	0	5	0	14	0
DC	District of Columbia	94	0	16	0	110	0
DE	New Castle County	30	0	75	0	105	0
GA	Butts County	2	0	5	0	7	0
GA	Clayton County	3	0	3	0	6	0
GA	DeKalb County	3	0	2	0	5	0
GA	Fulton County	45	0	5	0	50	0
GA	Henry County	4	0	7	0	11	0
GA	Meriwether County	3	0	3	0	6	0
GA	Monroe County	1	0	1	0	2	0
GA	Troup County	14	0	14	0	28	0
IL	Champaign County	0	0	12	0	12	0
IL	Christian County	1	0	11	0	12	0
IL	Cook County	46	0	42	0	88	0
IL	Macon County	11	0	8	0	19	0
IL	Macoupin County	1	0	7	0	8	0
IL	Madison County	4	0	21	0	25	0
IL	Montgomery County	1	0	7	0	8	0
IL	Piatt County	0	0	7	0	7	0
IL	Vermilion County	0	8	8	9	8	17
IN	Allen County	25	23	36	26	61	49

** VL: Very Low*

VH: Very High

AoPE: Area of Potential Effect

State	County	VL to M EJ AoPE *	H to VH EJ AoPE *	VL to M NEJ AoPE *	H to VH NEJ AoPE *	VL to M Total AoPE *	H To VH Total AoPE *
IN	Carroll County	0	1	0	8	0	9
IN	Cass County	0	2	0	13	0	15
IN	De Kalb County	0	1	7	12	7	13
IN	Delaware County	21	0	15	0	36	0
IN	Elkhart County	0	0	0	9	0	9
IN	Fountain County	0	1	0	2	0	3
IN	Huntington County	0	2	0	15	0	17
IN	Kosciusko County	3	0	16	9	19	9
IN	La Porte County	0	0	5	6	5	6
IN	Lake County	66	0	31	0	97	0
IN	Madison County	1	0	6	0	7	0
IN	Marshall County	2	0	13	8	15	8
IN	Miami County	0	6	0	16	0	22
IN	Noble County	0	0	0	9	0	9
IN	Porter County	4	1	13	12	17	13
IN	St. Joseph County	0	0	0	3	0	3
IN	Starke County	0	0	5	0	5	0
IN	Tippecanoe County	0	9	0	36	0	45
IN	Wabash County	0	2	0	13	0	15
IN	Warren County	0	0	0	7	0	7
IN	Whitley County	1	0	5	0	6	0
KY	Greenup County	0	0	1	0	1	0
MD	Allegany County	6	0	7	0	13	0
MD	Anne Arundel County	16	0	12	0	28	0
MD	Baltimore city	46	0	22	0	68	0
MD	Baltimore County	2	0	17	0	19	0
MD	Cecil County	4	0	13	0	17	0
MD	Frederick County	0	0	10	0	10	0
MD	Howard County	6	0	7	0	13	0
MD	Montgomery County	14	0	45	0	59	0

** VL: Very Low*

VH: Very High

AoPE: Area of Potential Effect

State	County	VL to M EJ AoPE *	H to VH EJ AoPE *	VL to M NEJ AoPE *	H to VH NEJ AoPE *	VL to M Total AoPE *	H To VH Total AoPE *
MD	Prince Georges Coun	35	0	64	0	99	0
MD	Washington County	7	0	20	0	27	0
MI	Monroe County	2	0	23	0	25	0
MI	Wayne County	47	0	44	0	91	0
MO	Carroll County	2	0	4	0	6	0
MO	Chariton County	1	0	8	0	9	0
MO	Randolph County	2	0	14	0	16	0
MO	Ray County	0	0	3	0	3	0
NC	Buncombe County	17	0	38	0	55	0
NC	Burke County	5	0	21	0	26	0
NC	Catawba County	9	0	19	0	28	0
NC	Halifax County	2	0	0	0	2	0
NC	Iredell County	11	0	7	0	18	0
NC	Madison County	1	0	6	0	7	0
NC	McDowell County	5	0	14	0	19	0
NC	Northampton County	3	0	0	0	3	0
NC	Rowan County	9	0	11	0	20	0
NJ	Bergen County	8	0	89	0	97	0
NJ	Camden County	13	0	6	0	19	0
NJ	Hudson County	2	0	6	0	8	0
NJ	Mercer County	17	0	27	0	44	0
NJ	Middlesex County	16	0	42	0	58	0
NJ	Union County	41	0	26	0	67	0
NY	Albany County	0	0	11	0	11	0
NY	Allegany County	0	0	2	0	2	0
NY	Broome County	25	0	70	0	95	0
NY	Chautauqua County	5	0	21	0	26	0
NY	Chemung County	20	0	29	0	49	0
NY	Delaware County	2	0	4	0	6	0
NY	Erie County	61	0	134	0	195	0

** VL: Very Low*

VH: Very High

AoPE: Area of Potential Effect

State	County	VL to M EJ AoPE *	H to VH EJ AoPE *	VL to M NEJ AoPE *	H to VH NEJ AoPE *	VL to M Total AoPE *	H To VH Total AoPE *
NY	Genesee County	0	0	18	0	18	0
NY	Herkimer County	3	0	18	0	21	0
NY	Livingston County	0	0	3	0	3	0
NY	Monroe County	0	0	4	0	4	0
NY	Montgomery County	3	0	22	0	25	0
NY	Oneida County	2	0	3	0	5	0
NY	Ontario County	4	0	2	0	6	0
NY	Orange County	9	0	45	0	54	0
NY	Rockland County	3	0	8	0	11	0
NY	Schenectady County	0	0	12	0	12	0
NY	Schuyler County	0	0	5	0	5	0
NY	Steuben County	7	0	39	0	46	0
NY	Sullivan County	1	0	10	0	11	0
NY	Tioga County	4	0	26	0	30	0
NY	Wyoming County	1	0	13	0	14	0
NY	Yates County	0	0	6	0	6	0
OH	Allen County	6	0	26	0	32	0
OH	Ashtabula County	19	5	36	12	55	17
OH	Butler County	21	0	38	0	59	0
OH	Crawford County	6	0	30	0	36	0
OH	Cuyahoga County	129	198	123	108	252	306
OH	Defiance County	0	2	0	20	0	22
OH	Delaware County	1	0	28	0	29	0
OH	Erie County	3	0	21	0	24	0
OH	Franklin County	42	0	79	0	121	0
OH	Hamilton County	35	0	47	0	82	0
OH	Hardin County	2	0	10	0	12	0
OH	Henry County	0	1	2	6	2	7
OH	Huron County	0	5	13	16	13	21
OH	Lake County	6	3	26	41	32	44

** VL: Very Low*

VH: Very High

AoPE: Area of Potential Effect

State	County	VL to M EJ AoPE *	H to VH EJ AoPE *	VL to M NEJ AoPE *	H to VH NEJ AoPE *	VL to M Total AoPE *	H To VH Total AoPE *
OH	Lorain County	17	1	36	20	53	21
OH	Lucas County	35	0	28	0	63	0
OH	Mahoning County	39	0	19	0	58	0
OH	Marion County	16	0	35	0	51	0
OH	Montgomery County	13	0	17	0	30	0
OH	Ottawa County	0	0	12	0	12	0
OH	Pickaway County	2	0	12	0	14	0
OH	Pike County	2	0	4	0	6	0
OH	Portage County	3	0	17	0	20	0
OH	Richland County	1	0	12	0	13	0
OH	Ross County	3	0	9	0	12	0
OH	Sandusky County	5	0	25	0	30	0
OH	Scioto County	2	0	9	0	11	0
OH	Seneca County	7	5	11	22	18	27
OH	Stark County	8	0	5	0	13	0
OH	Summit County	2	0	9	0	11	0
OH	Trumbull County	1	0	15	0	16	0
OH	Van Wert County	1	0	16	0	17	0
OH	Warren County	1	0	5	0	6	0
OH	Wood County	3	0	48	2	51	2
OH	Wyandot County	1	0	18	0	19	0
PA	Allegheny County	56	0	74	0	130	0
PA	Beaver County	24	0	46	0	70	0
PA	Bedford County	0	0	3	0	3	0
PA	Berks County	12	0	35	0	47	0
PA	Bucks County	13	0	53	0	66	0
PA	Cumberland County	3	0	28	0	31	0
PA	Dauphin County	30	0	51	0	81	0
PA	Delaware County	58	0	78	0	136	0
PA	Erie County	29	2	59	1	88	3

** VL: Very Low*

VH: Very High

AoPE: Area of Potential Effect

State	County	VL to M EJ AoPE *	H to VH EJ AoPE *	VL to M NEJ AoPE *	H to VH NEJ AoPE *	VL to M Total AoPE *	H To VH Total AoPE *
PA	Fayette County	1	0	28	0	29	0
PA	Franklin County	5	0	20	0	25	0
PA	Lancaster County	0	0	5	0	5	0
PA	Lawrence County	0	0	32	0	32	0
PA	Lebanon County	6	0	25	0	31	0
PA	Lehigh County	7	0	13	0	20	0
PA	Montgomery County	1	0	3	0	4	0
PA	Northampton County	4	0	2	0	6	0
PA	Perry County	0	0	2	0	2	0
PA	Philadelphia County	343	0	184	0	527	0
PA	Pike County	0	0	8	0	8	0
PA	Somerset County	7	0	26	0	33	0
PA	Susquehanna County	1	0	7	0	8	0
PA	Westmoreland Count	6	0	14	0	20	0
PA	York County	0	0	3	0	3	0
SC	Beaufort County	1	0	0	0	1	0
SC	Charleston County	8	0	12	0	20	0
SC	Colleton County	4	0	0	0	4	0
SC	Hampton County	1	0	0	0	1	0
TN	Cocke County	3	0	11	0	14	0
TN	Davidson County	13	0	22	0	35	0
TN	Hamblen County	1	0	5	0	6	0
TN	Hawkins County	0	0	19	0	19	0
TN	Jefferson County	0	0	4	0	4	0
TN	Sullivan County	6	0	13	0	19	0
VA	Alexandria City	12	0	14	0	26	0
VA	Arlington County	3	0	8	0	11	0
VA	Augusta County	0	0	14	0	14	0
VA	Bctetourt County	2	0	6	0	8	0
VA	Buena Vista City	0	0	3	0	3	0

** VL: Very Low*

VH: Very High

AoPE: Area of Potential Effect

State	County	VL to M EJ AoPE *	H to VH EJ AoPE *	VL to M NEJ AoPE *	H to VH NEJ AoPE *	VL to M Total AoPE *	H To VH Total AoPE *
VA	Caroline County	3	0	5	0	8	0
VA	Chesterfield County	12	0	17	0	29	0
VA	Clarke County	1	0	7	0	8	0
VA	Colonial Heights City	0	0	7	0	7	0
VA	Dinwiddie County	1	0	1	0	2	0
VA	Emporia City	2	0	4	0	6	0
VA	Fairfax County	4	0	48	0	52	0
VA	Fredericksburg City	3	0	4	0	7	0
VA	Greensville County	5	0	0	0	5	0
VA	Hanover County	3	0	6	0	9	0
VA	Henrico County	1	0	11	0	12	0
VA	Manassas City	4	0	5	0	9	0
VA	Page County	2	0	20	0	22	0
VA	Petersburg City	20	0	2	0	22	0
VA	Prince George Count	0	0	1	0	1	0
VA	Prince William County	6	0	9	0	15	0
VA	Richmond City	14	0	16	0	30	0
VA	Roanoke City	5	0	8	0	13	0
VA	Roanoke County	0	0	3	0	3	0
VA	Rockbridge County	1	0	8	0	9	0
VA	Rockingham County	0	0	10	0	10	0
VA	Spotsylvania County	2	0	1	0	3	0
VA	Stafford County	1	0	14	0	15	0
VA	Sussex County	2	0	1	0	3	0
VA	Warren County	3	0	10	0	13	0
VA	Waynesboro City	2	0	8	0	10	0
WV	Fayette County	4	0	8	0	12	0
WV	Jefferson County	2	0	10	0	12	0
WV	Marion County	1	0	6	0	7	0
WV	Nicholas County	2	0	0	0	2	0

** VL: Very Low*

VH: Very High

AoPE: Area of Potential Effect

State	County	VL to M EJ AoPE *	H to VH EJ AoPE *	VL to M NEJ AoPE *	H to VH NEJ AoPE *	VL to M Total AoPE *	H To VH Total AoPE *
WV	Raleigh County	0	0	6	0	6	0
WV	Wyoming County	0	0	5	0	5	0
Totals		2110	278	3623	461	5733	739

** VL: Very Low*

VH: Very High

AoPE: Area of Potential Effect

ATTACHMENT M-13

Premitigation Test Results and Conclusions for SEA's Threshold Segments

[THIS PAGE INTENTIONALLY LEFT BLANK]

Premitigation Test Results and Conclusions for SEA's Threshold Segments

Noise Comparison			
Area of Interest	Chi-Squared	Mean's Ratio	Is EJ AoPE Disproportionality Impacted? [A]
System Wide	0.00	0.96	No
Hazardous Material Transport Comparison			
Area of Interest	Chi-Squared	Mean's Ratio	Is EJ AoPE Disproportionality Impacted? [A]
System Wide	0.49	1.04	Yes
Highway / Rail At-Grade Crossing: Safety & Delay Comparison			
Area of Interest	Chi-Squared	Mean's Ratio	Is EJ AoPE Disproportionality Impacted? [A]
System Wide	0.00	0.52	No

NOTE: *A Chi Squared significance level below 0.50 indicates disproportionality.*

[A] *Before mitigation was considered.*

[B] *N/A means that insufficient distribution of data were present to conduct a valid test.*

[THIS PAGE INTENTIONALLY LEFT BLANK]

ATTACHMENT M-14

Premitigation Test Results and Conclusions for SEA's State Analysis

[THIS PAGE INTENTIONALLY LEFT BLANK]

Premitigation Test Results and Conclusions for SEA's State Analysis

Noise Comparison			
State	Chi-Squared	Mean's Ratio	Is EJ AoPE Disproportionality Impacted? [A]
Indiana	0.07	0.85	No
Illinois	0.71	1.01	No
Ohio	0.10	1.00	No
Pennsylvania	0.78	0.82	No
Hazardous Material Transport Comparison			
State	Chi-Squared	Mean's Ratio	Is EJ AoPE Disproportionality Impacted? [A]
Indiana	0.00	0.67	No
Illinois	0.29	1.21	Yes
Ohio	0.00	1.22	Yes
Pennsylvania	0.06	1.05	No
Highway / Rail At-Grade Crossing: Safety & Delay Comparison			
State	Chi-Squared	Mean's Ratio	Is EJ AoPE Disproportionality Impacted? [A]
Indiana	0.69	0.90	No
Illinois	0.47	0.46	No
Ohio	0.00	0.00	No
Pennsylvania	0.78	1.04	No

NOTE: *A Chi Squared significance level below 0.50 indicates disproportionality.*

[A] Before mitigation was considered.

[D] N/A means that insufficient distribution of data were present to conduct a valid te

[THIS PAGE INTENTIONALLY LEFT BLANK]

ATTACHMENT M-15

Premitigation Test Results and Conclusions for SEA's County Analysis

[THIS PAGE INTENTIONALLY LEFT BLANK]

Premitigation Test Results and Conclusions for SEA's County Analysis

Noise Comparison					
County	State	Chi-Squared		Mean's Ratio	Is EJ AoPE Disproportionality Impacted? [A]
Northwest Indiana and Illinois		0.90		0.00	No
Central Indiana		0.51		0.00	No
Northern Ohio		0.25		0.00	No
Lorain County	OH	0.01		0.73	No
Cuyahoga County	OH	0.02		0.92	No
Allen County	IN	N/A	[B]	0.87	No
Erie County	PA	N/A	[B]	1.00	No
Ashtabula County	OH	0.83		1.01	No
Lake County	OH	0.11		1.12	Yes

Hazardous Material Transport Comparison					
County	State	Chi-Squared		Mean's Ratio	Is EJ AoPE Disproportionality Impacted? [A]
Northwest Indiana and Illinois		0.38		1.13	Yes
Central Indiana		N/A	[B]	1.03	No
Northern Ohio		0.02		1.16	Yes
Lorain County	OH	N/A	[B]	0.95	No
Cuyahoga County	OH	0.00		1.10	Yes
Allen County	IN	0.04		0.76	No
Erie County	PA	N/A	[B]	1.00	No
Ashtabula County	OH	0.74		0.97	No
Lake County	OH	0.11		0.78	No

Highway / Rail At-Grade Crossing: Safety & Delay Comparison					
County	State	Chi-Squared		Mean's Ratio	Is EJ AoPE Disproportionality Impacted? [A]
Northwest Indiana and Illinois		0.00		0.63	No
Central Indiana		0.00		1.50	No
Northern Ohio		0.00		0.00	No
Lorain County	OH	N/A	[B]	N/A	No
Cuyahoga County	OH	N/A	[B]	N/A	No
Allen County	IN	0.07		0.00	No
Erie County	PA	0.07		3.10	Yes
Ashtabula County	OH	N/A	[B]	N/A	No
Lake County	OH	N/A	[B]	N/A	No

NOTE: *A Chi Squared significance level below 0.50 indicates disproportionality.*

[A] Before mitigation was considered.

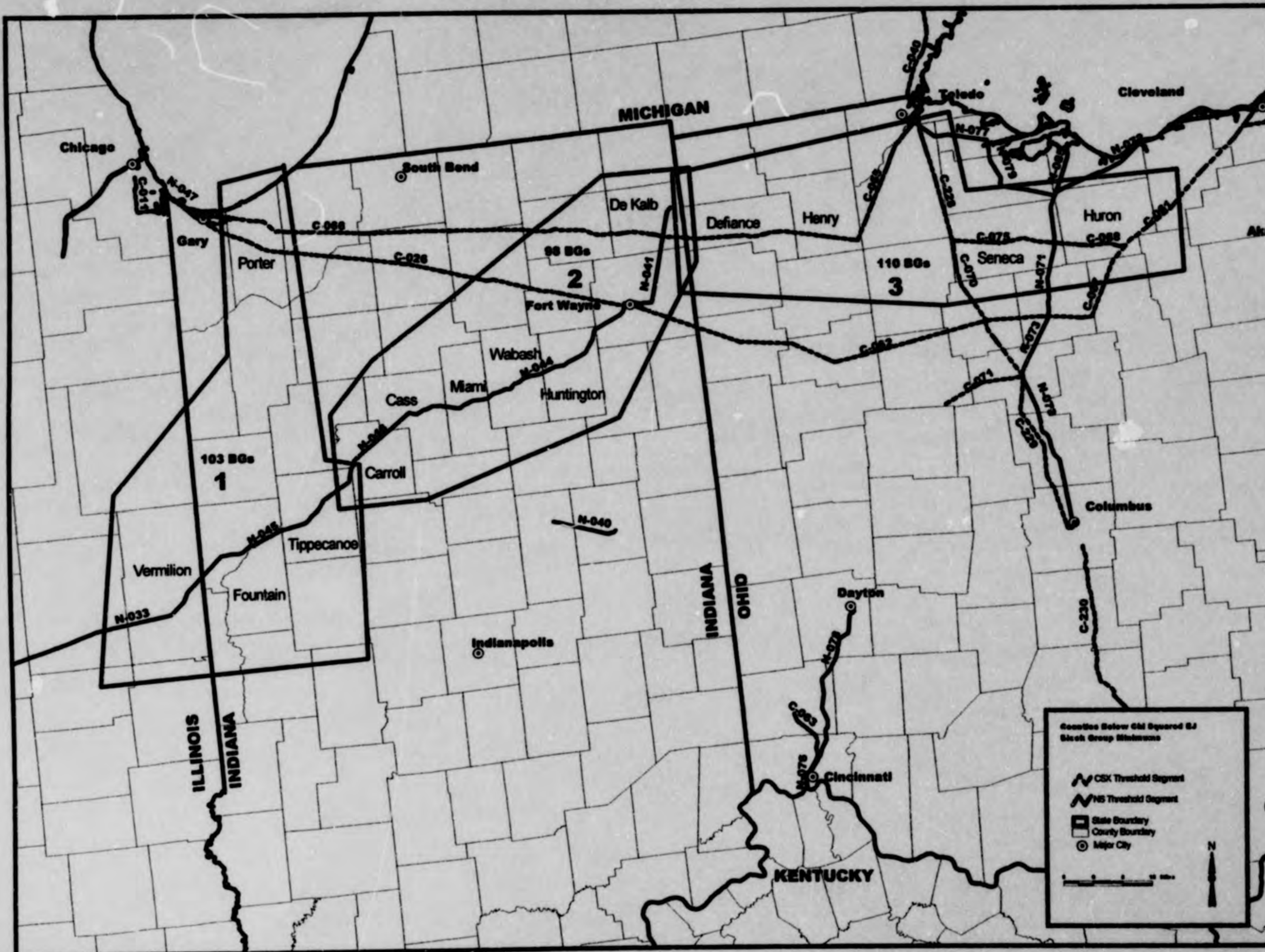
[B] N/A means that insufficient distribution of data were present to conduct a vali

[THIS PAGE INTENTIONALLY LEFT BLANK]

ATTACHMENT M-16

Map of Environmental Justice County Groupings

[THIS PAGE INTENTIONALLY LEFT BLANK]


MICHIGAN
Chicago
Gary
South Bend
Toledo
Cleveland
Porter
De Kalb
Defiance
Henry
Huron
Seneca
98 BGs
2
110 BGs
3
Fort Wayne
Wabash
Cass
Miami
Huntington
Carroll
103 BGs
1
Tippecanoe
Vermilion
Fountain
Indianapolis
Columbus
Dayton
Cincinnati
KENTUCKY
ILLINOIS
INDIANA
OHIO
C-011
N-047
C-066
C-026
N-041
C-082
N-044
N-048
N-045
N-033
N-040
C-069
C-229
N-077
N-079
C-075
C-068
C-070
N-071
C-084
N-073
C-071
N-079
C-229
C-230
N-078
C-063
N-076
CSX Threshold Segment
NS Threshold Segment
State Boundary
County Boundary
Major City
N

[THIS PAGE INTENTIONALLY LEFT BLANK]

ATTACHMENT M-17

Premitigation Test Results and Conclusions for Cleveland, Lafayette, and Erie Alternatives

[THIS PAGE INTENTIONALLY LEFT BLANK]

Premitigation Test Results and Conclusions for Cleveland Alternatives

Noise Comparison

Area of Interest	Alternative	Number	Chi-Squared	Mean's Ratio	Is EJ AoPE Disproportionality Impacted? [A]
Cleveland	Base Alternative	1	0.02	1.02	No
Cleveland	Cloggsville-Cuyahoga County	2	0.04	1.02	No
Cleveland	Cleveland #1	3	0.03	0.98	No
Cleveland	Cleveland #2	4	0.80	0.89	No
Cleveland	Wickliffe	5	0.52	1.21	No
Cleveland	Wickliffe & Erie	6	0.03	1.18	Yes
Cleveland	Reverse Curve	7	0.00	1.37	No

Hazardous Material Transport Comparison

Area of Interest	Alternative	Number	Chi-Squared	Mean's Ratio	Is EJ AoPE Disproportionality Impacted? [A]
Cleveland	Base Alternative	1	0.00	1.10	Yes
Cleveland	Cloggsville-Cuyahoga County	2	0.00	1.06	Yes
Cleveland	Cleveland #1	3	0.00	1.16	Yes
Cleveland	Cleveland #2	4	0.00	0.92	No
Cleveland	Wickliffe	5	0.00	0.97	Yes
Cleveland	Wickliffe & Erie	6	0.67	0.92	No
Cleveland	Reverse Curve	7	0.00	0.93	Yes

Crossing: Safety & Delay Comparison

Area of Interest	Alternative	Number	Chi-Squared	Mean's Ratio	Is EJ AoPE Disproportionality Impacted? [A]
Cleveland	Base Alternative	1	N/A [B]	N/A	No
Cleveland	Cloggsville-Cuyahoga County	2	N/A [B]	N/A	No
Cleveland	Cleveland #1	3	N/A [B]	N/A	No
Cleveland	Cleveland #2	4	N/A [B]	N/A	No
Cleveland	Wickliffe	5	N/A [B]	N/A	No
Cleveland	Wickliffe & Erie	6	N/A [B]	N/A	No
Cleveland	Reverse Curve	7	N/A [B]	N/A	No

NOTE: *A Chi Squared significance level below 0.50 indicates disproportionality.*

[A] *Before mitigation was considered*

[B] *N/A means that insufficient distribution of data were present to conduct a valid test.*

Premitigation Test Results and Conclusions for Lafayette Alternatives

Noise Comparison					
Area of Interest	Alternative	Number	Chi-Squared	Mean's Ratio	Is EJ AoPE Disproportionality Impacted? [A]
Lafayette	Base Alternative	1	0.12	1.04	Yes
Lafayette	Alternative	2	N/A [B]	0.92	No
Hazardous Material Transport Comparison					
Area of Interest	Alternative	Number	Chi-Square	Mean's Ratio	Is EJ AoPE Disproportionality Impacted? [A]
Lafayette	Base Alternative	1	N/A [B]	1.00	No
Lafayette	Alternative	2	N/A [B]	1.00	No
Highway / Rail At-Grade Crossing: Safety & Delay Comparison					
Area of Interest	Alternative	Number	Chi-Squared	Mean's Ratio	Is EJ AoPE Disproportionality Impacted? [A]
Lafayette	Base Alternative	1	0.22	0.08	No
Lafayette	Alternative	2	0.33	0.00	No

NOTE: *A Chi Squared significance level below 0.50 indicates disproportionality.*

[A] *Before mitigation was considered.*

[B] *N/A means that insufficient distribution of data were present to conduct a valid test.*

Premitigation Test Results and Conclusions for Erie, PA Alternatives

Noise Comparison					
Area of Interest	Alternative	Number	Chi-Squared	Mean's Ratio	Is EJ AoPE Disproportionality Impacted? [A]
Erie, PA	Base Alternative	1	N/A [B]	1.00	No
Erie, PA	Alternative	2	N/A [B]	0.51	No
Hazardous Material Transport Comparison					
Area of Interest	Alternative	Number	Chi-Squared	Mean's Ratio	Is EJ AoPE Disproportionality Impacted? [A]
Erie, PA	Base Alternative	1	N/A [B]	1.00	No
Erie, PA	Alternative	2	0.00	1.10	No
Highway / Rail At-Grade Crossing: Safety & Delay Comparison					
Area of Interest	Alternative	Number	Chi-Squared	Mean's Ratio	Is EJ AoPE Disproportionality Impacted? [A]
Erie, PA	Base Alternative	1	0.07	3.10	Yes
Erie, PA	Alternative	2	0.00	21.89	No

NOTE: *A Chi Squared significance level below 0.50 indicates disproportionality.*

[A] *Before mitigation was considered.*

[B] *N/A means that insufficient distribution of data were present to conduct a valid test.*

[THIS PAGE INTENTIONALLY LEFT BLANK]

APPENDIX N
Community Evaluations

[THIS PAGE INTENTIONALLY LEFT BLANK]

CONTENTS

FIGURES

TABLES

ATTACHMENTS

[THIS PAGE INTENTIONALLY LEFT BLANK]

APPENDIX N
COMMUNITY EVALUATIONS

This appendix presents the analysis that the Section of Environmental Analysis (SEA) of the Surface Transportation Board (the Board) conducted after preparation of the Draft Environmental Impact Statement (Draft EIS) to address the concerns of the following four communities: Cleveland, Ohio; the Four City Consortium area, including Whiting, East Chicago, Hammond, and Gary, Indiana, Erie, Pennsylvania; and Lafayette, Indiana. The communities in Cleveland, the Four City Consortium Area, and Erie raised specific concerns regarding the proposed Conrail Acquisition. SEA identified specific concerns in Lafayette through its analysis in the Draft EIS. SEA conducted additional analyses to examine the technical issues and potential environmental impacts associated with each of these communities and to further address each community's specific concerns. This appendix describes the findings and recommendations of SEA's additional evaluations of these communities.

N.1 CLEVELAND, OHIO

On June 23, 1997, CSX, NS, and Conrail[1] (collectively referred to as "the Applicants") applied to the Board for authority for CSX and NS to acquire Conrail. Under the Primary Application[2], CSX and NS would divide most of the Conrail assets, and the CSX and NS systems would expand into two competing railroad systems covering Conrail's territory in the Northeast and Upper Midwest.

CSX and NS anticipate that the proposed Conrail Acquisition would improve competition for rail services in the Greater Cleveland Area, both for rail traffic passing through the region and for rail traffic serving the region itself. CSX and NS have committed to a number of improvements to enhance local rail operations in the Greater Cleveland Area, such as CSX's proposal to expand an intermodal facility at Conrail's Collinwood Yard, double-tracking of a number of rail line segments, and train control upgrades. According to the Applicants, the major Conrail routes that CSX and NS would acquire form an "X," one leg being the Conrail lines from Boston and New York City (via Albany) to St. Louis and the other being the line from New York (via Philadelphia and Pittsburgh) to Chicago. The intersection of the Conrail "X" is in the Greater Cleveland Area, and as a result, it is a major nexus for east-west rail traffic. The two carriers would operate the

---

1 "CSX" refers to CSX Corporation and CSX Transportation, Inc., "NS" refers to Norfolk Southern Corporation and Norfolk Southern Railway Company, and "Conrail" refers to Conrail, Inc. and Consolidated Rail Corporation.

2 "Primary Application" refers to Surface Transportation Board Finance Docket 33388.

two legs of the "X" competitively, rather than by a single dominant carrier as is currently the case. Although the total number of trains through Cleveland would increase only slightly as a result of the proposed Conrail Acquisition, the redistribution of the Applicants' trains would cause traffic levels to either increase or decrease over the various corridors through Cleveland.

Since the Applicants notified the Board of their intent to acquire Conrail, the Greater Cleveland Area has expressed concern to the Board about the potential for significant adverse environmental impacts. During the environmental review process, SEA recognized the unique characteristics of the Greater Cleveland Area and the challenges of analyzing the environmental effects of the proposed Conrail Acquisition. These characteristics include:

- The Greater Cleveland Area's position as a major transportation crossroad and a critical link for east-west rail traffic.
- The relatively high levels of current rail traffic.
- The Applicants' proposed increases in rail traffic.
- The area's existing high-capacity rail corridors, some of which once accommodated much more rail traffic than current railroad activities generate.
- The high density of highway/rail at-grade crossings in the West Shore residential communities. (For example, Lakewood contains 27 crossings in 2.7 miles, which is among the highest crossing densities in the Applicants' rail systems.)
- The high population density of communities along some high-traffic rail corridors through Cleveland and East Cleveland.
- The presence of minority and low-income (environmental justice) populations along some rail line segments.
- The public's strong concern about and interest in the potential environmental effects of the proposed Conrail Acquisition.

During the environmental review process, the Board received extensive comments from the Greater Cleveland Area; of about 260 comments received on the entire Conrail Acquisition Draft EIS, more than 60 comments were from the Greater Cleveland Area alone. Greater Cleveland Area commentors expressed great concern about the impacts of the proposed Conrail Acquisition on their affected communities. One common perception of commentors was that the Applicants and SEA had not adequately considered alternative train routes through the Greater Cleveland Area that would minimize the effects of increased train traffic on their communities. Commentors noted that the region is already burdened with train traffic, and that the proposed Conrail Acquisition would generally increase that burden in many areas. In several cases, commentors stated clear opposition to the proposed Conrail Acquisition. Commentors also identified Draft

EIS analyses that they perceived as not being rigorous enough. Finally, commentors expressed dissatisfaction with some of the mitigation measures proposed in the Draft EIS.

Because of individuals' and local communities' substantial response and opposition to the project, SEA initiated the Cleveland Area Alternatives Mitigation Study. SEA's study, presented in this appendix, identified and analyzed additional routing alternatives throughout the Greater Cleveland Area. SEA intended this study to examine solutions to the potential impacts of the proposed Conrail Acquisition in the Greater Cleveland Area.

SEA considered seven alternatives for this study. Alternative 1 is the Application "Base Case" of the proposed Conrail Acquisition, which SEA evaluated in the Draft EIS. Alternative 2 is the NS Cloggsville Alternative submitted by NS to greatly reduce the increase in train traffic associated with the proposed Conrail Acquisition through the suburbs of Bay Village, Lakewood, and Rocky River. NS presented this alternative as a mitigation proposal in the Draft EIS and, on April 16, 1998, submitted a revised version of this proposal to SEA. SEA presents the revised proposal by NS in the Addendum to this Final EIS.

The City of Cleveland commented that Alternatives 1 and 2 would not reduce impacts of the proposed Conrail Acquisition in residential and cultural areas on the east side of Cleveland that are of concern to the City. Cleveland offered two alternative routings of its own creation for CSX and NS rail traffic through the City. SEA evaluated the City of Cleveland's alternatives as Alternatives 3 and 4 in this study.

In addition, SEA has proposed alternatives of its own because of perceived shortcomings of the City of Cleveland alternatives. SEA identified its alternatives as Alternatives 5 and 6. SEA also considered another alternative (Alternative 7) that the City of Cleveland previously and informally suggested.

SEA conducted the analyses for this study in a manner that is consistent with the analyses SEA performed for the Draft EIS. For selected issues, SEA conducted additional in-depth analyses in response to the Greater Cleveland Area's concerns. In analyzing impacts, SEA looked at site-specific issues and region-wide concerns, and conducted more than 30 field visits to railroad facilities throughout the Greater Cleveland Area with the cooperation of the Applicants. SEA's site visits were often very extensive and included trips along major rail lines.

Throughout the environmental review process, SEA has encouraged the Applicants to consult with communities and to develop Negotiated Agreements to address local environmental concerns. To facilitate this negotiation process in the Greater Cleveland Area, the Board issued Decisions 71, 73, and 75. The Board recognizes the unique circumstances of the Greater Cleveland Area as a major crossing point for the proposed CSX and NS rail systems for traffic moving between the Northeast and Midwest. The Board also recognizes the complex environmental issues that could result from changes in train traffic throughout the intricate system of interrelated rail lines in the Greater Cleveland Area. SEA continues to encourage the

Applicants and communities to develop Negotiated Agreements to address environmental issues. (See Appendix R, "All Relevant Board Decisions," for copies of these Board decisions.)

N.1.1 Definition of Study Area

The study area covered in SEA's analysis is the network of freight rail line segments between Vermilion, Ohio (in eastern Erie County), and Wickliffe, Ohio (in western Lake County). It includes portions of Erie, Lorain, Cuyahoga, and Lake Counties. Figure N-1 illustrates the study area. For Alternatives 1 and 2, SEA designated rail line segments that would belong to CSX after the proposed Conrail Acquisition as beginning with "C," and those segments that would belong to NS as beginning with "N." For Alternatives 3 through 7, SEA retained the same rail line segment designations, even if ownership would differ.

Currently, Conrail and NS operate five rail lines through the Greater Cleveland Area. SEA refined its designation of certain rail line segments into smaller units to take into account train traffic volumes, traffic flow, and rail connections when comparing the routing alternatives. SEA used these refined segments to facilitate its environmental analysis and better identify local impacts. Table N-1 lists the specific rail line segments within the study area. Table N-1 also lists those newly defined rail line segments associated with the various routing alternatives. The newly defined rail line segments are portions of the original rail line segments, existing rail line segments not previously used, or, in two cases, what would be two newly constructed connections. Figure N-1 includes the newly defined rail line segments.

In this analysis, SEA assessed potential impacts of the alternatives on two levels. First, SEA assessed impacts created by changes in rail operations, such as noise impacts and hazardous materials transport impacts, along all rail line segments within the defined study area. Second, for other, more location-specific impacts, such as impacts to natural resources, SEA assessed impacts only where the Applicants would need to construct a new connection.

Figure N-1 shows the primary rail line segments of existing railroads in the Greater Cleveland Area. Descriptions of these rail lines, from east to west, are as follows (note that trains can also operate on these rail lines in the opposite direction):

- One of Conrail's main lines extends from Buffalo through Ashtabula and along the Lakeshore Line (rail line segments C-060a, C-060b, C-691a, and C-691b), paralleling the Lake Erie shoreline, past Collinwood Yard/Quaker to CP Draw and the Cleveland central business district. The Lakeshore Line continues from the Cleveland central business district to the southwest, passing through CP 190 (rail line segments N-293a and N-293b), which is located near Cleveland-Hopkins International Airport, and Berea (rail line segment N-293c), and continues on to Vermilion (rail line segment N-293d) and ultimately to Toledo and Chicago.

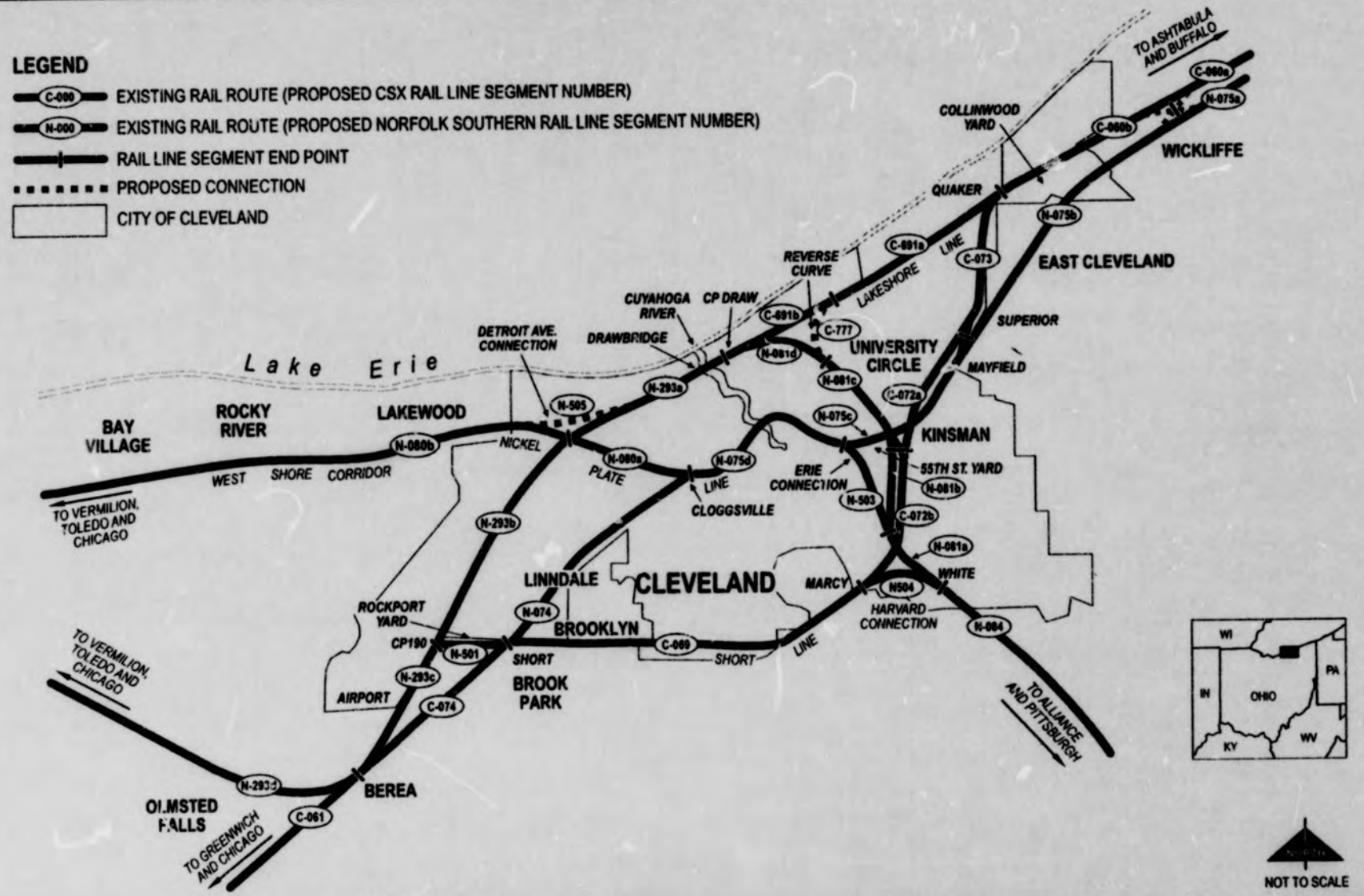


FIGURE N-1

GREATER CLEVELAND AREA EXISTING RAIL ROUTES

TABLE N-1
COMPARISON OF RAIL LINE SEGMENTS STUDIED IN DRAFT EIS WITH RAIL LINE SEGMENTS STUDIED IN THE CLEVELAND-AREA ALTERNATIVES MITIGATION STUDY

Draft EIS Rail Line Segment Number and Endpoints	New Rail Line Segment Number	Endpoints for Rail line Segments in this Study
C-060 Ashtabula-to-Quaker	C-060a	Ashtabula, Wickliffe
	C-060b	Wickliffe, Quaker
C-061 Berea-to-Greenwich	C-061	Berea, Greenwich
C-069 Marcy-to-Short	C-069	Marcy, Short
C-072 Mayfield-to-Marcy	C-072a	Mayfield, Kinsman
	C-072b	Kinsman, Marcy
C-073 Quaker-to-Mayfield	C-073	Quaker, Mayfield
C-074 Short-to-Berea	C-074	Short, Berea
C-213[a] Lester-to-Cleveland	NA	NA
C-691 Quaker-to-Drawbridge	C-691a	Quaker, E. 49th Street Silver Plate
	C-691b	E. 49th Street Silver Plate, CP Draw
NA	C-777	E. 49th St. Silver Plate, E. 40th St. (New construction)
N-074 Cleveland-to-Short Line Jct.	N-074	Cloggsville,[b] Short Line Jct.
N-075 Ashtabula-to-Cleveland	N-075a	Ashtabula, Wickliffe
	N-075b	Wickliffe, Mayfield
	N-075c	Mayfield, E. 37th Street
	N-075d	E. 37th Street, Cloggsville[b]
N-080 Cleveland-to-Vermilion	N-080a	Cloggsville,[b] Detroit Ave.
	N-080b	Detroit Avenue, Vermilion
N-081 White-to-Cleveland	N-081a	White, Erie Crossing
	N-081b	Erie Crossing, Kinsman
	N-081c	Kinsman, E. 40th St.
	N-081d	E. 40th St., CP Draw[b]
N-293 (2) Cleveland-to-Vermilion	N-293a	CP Draw,[b] Detroit Avenue
	N-293b	Detroit Avenue, CP 190
	N-293c	CP 190, Berea
	N-293d	Berea, Vermilion
NA	N-501	Short Line Jct., CP 190

TABLE N-1
COMPARISON OF RAIL LINE SEGMENTS STUDIED IN DRAFT EIS WITH RAIL LINE SEGMENTS STUDIED IN THE CLEVELAND-AREA ALTERNATIVES MITIGATION STUDY

Draft EIS Rail Line Segment Number and Endpoints	New Rail Line Segment Number	Endpoints for Rail line Segments in this Study
NA	N-503	Erie Crossing, E. 37th St.
NA	N-504	White, Marcy (Harvard Connection)
NA	N-505	Lakewood Connection at Detroit Avenue (New construction)

NA Not Applicable

[a] This is a minor-service, secondary single-track line that enters the Greater Cleveland Area near Brooklyn, Ohio. This line is unaffected by any of the proposed alternative routings.

[b] This study has renamed the "Cleveland" endpoints for clarity.

- Under current operations, Conrail uses an alternative route, known as the Cleveland Short Line, if there is congestion along the Lakeshore Line (which sometimes occurs at the drawbridge over the Cuyahoga River just west of CP Draw). From Quaker, this alternative route follows the Short Line to the south and west to Short Line Junction (Short) (rail line segments C-073, C-072a, C-072b, and C-069). From Short, Conrail trains can travel southwest to Berea (rail line segment C-074), then on to Greenwich (rail line segment C-061) and ultimately to Chicago. Otherwise, Rockport Yard trains would travel west from Short (rail line segment N-501) through Rockport Yard, and continue on to Berea (rail line segment N-293c), Vermilion (rail line segment N-293d), and ultimately Toledo and Chicago.

- Another Conrail main line extends from Pittsburgh through Alliance (rail line segment N-084) and passes through White. From White, Conrail train traffic can either travel west through Harvard (rail line segment N-504) along a single-track connection to the Short Line (rail line segment C-069) and continue as described above past Short, or head north through Kinsman (rail line segments N-081a, N-081b, N-081c, and N-081d) to the Lakeshore Line, CP Draw, and northwest to Berea, as described above.

- Conrail also uses a rail line for local service between Short and Cloggsville (rail line segment N-074), and between Short and CP 190/Rockport Yard (rail line segment N-501). No main line currently exists through Rockport Yard; this segment is used for yard purposes only

- The NS main line extends from Ashtabula and Buffalo along the Nickel Plate Line (rail line segment N-075a). It passes through Mayfield and Cloggsville (rail line segments N-075b, N-075c, and N-075d), then continues westward through Lakewood, Rocky River,

Bay Village, and Westlake on its way to Vermilion (rail line segments N-080a and N-080b), Toledo, and Chicago.

N.1.2 Alternative Actions Considered[3]

Various parties associated with the proposed Conrail Acquisition have suggested routing alternatives in the Greater Cleveland Area. Routing changes result in relocating trains from one rail line or series of rail line segments to another. The primary motive for relocating train traffic is to mitigate the effects of increased numbers of trains on certain rail line segments resulting from the proposed Conrail Acquisition. This section provides an overview of all the alternatives that SEA considered, including the Application Base Case Alternative, which SEA evaluated in the Draft EIS.

The following sections describe rail routes and rail traffic flow for each of the alternatives from east to west, although in all cases, except where specifically noted, the routes would operate in two directions. The descriptions of rail line segment end points often refer to locations such as "White," "Short," and "Quaker" that are rail locations the Applicants designated. They may or may not represent any other geographical place name or location.

N.1.2.1 Alternative 1: Application Base Case Alternative Examined in Draft EIS

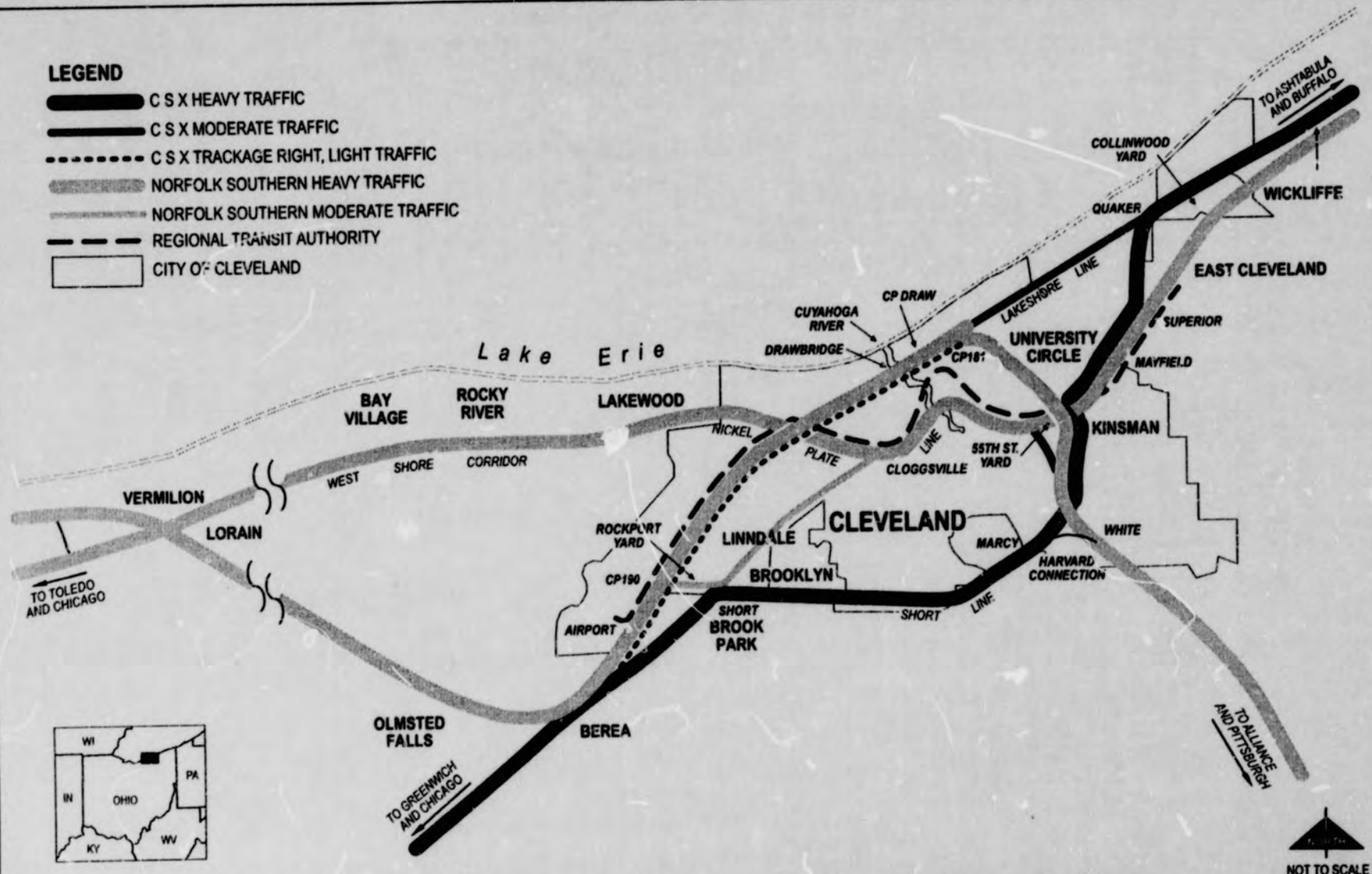
For the Draft EIS, SEA analyzed the No-Action Alternative and the Applicants' proposal from the Primary Application, referred to in this study as Alternative 1, the Application Base Case. Chapter 2, "Proposed Action and Alternatives," of the Draft EIS presents a detailed description of the Primary Application and its related actions. Figure N-2 is a schematic illustration of Alternative 1 and Table N-2 lists the rail line segments included in Alternative 1. The following analysis presents train traffic volumes that include passenger trains in order to give a full representation of traffic volumes on each rail line segment. As such, these train traffic volumes vary slightly from the volumes SEA presented in the Draft EIS.

The following paragraphs describe the routings (from east to west) for Alternative 1.

CSX Traffic. The primary route for CSX traffic would be the Lakeshore Line from Buffalo and Ashtabula through Collinwood Yard to Quaker. From Quaker, most CSX traffic would use the Cleveland Short Line past Harvard to Short. From Short, rail traffic would travel southwest on the Indianapolis Line from Short to Berea. From Berea, rail traffic would continue southwest toward Greenwich, Ohio and, ultimately, Indianapolis or Chicago.

---

[3] In accordance with Board Decision No. 71, SEA developed the alternatives described in this section, and the assessment of operations, construction elements, and train control associated with each, without any input from or discussion with the Applicants. As a result, SEA cannot offer a final determination of the operational feasibility of each alternative at this time.



Proposed Conrail Acquisition — Final Environmental Impact Statement

FIGURE N-2

CLEVELAND AREA ALTERNATIVE 1 - APPLICATION BASE CASE

STB FD 33388 5-22-98 K 29206V6C 11/15

NS Traffic. There also would be two mainline NS routes through the Greater Cleveland Area. These lines would be linked west of Vermilion by a newly constructed connection. NS would have trackage rights over a portion of the CSX Short Line route between Harvard and Short, but is not currently planning to move any traffic over this rail line segment. One primary route for westbound NS traffic would be the West Shore Corridor (Nickel Plate Line) from Buffalo and Ashtabula through Wickliffe and Mayfield and then westward through their 55th Street Yard, across the Cuyahoga River to Cloggsville. From Cloggsville, most of the traffic would continue westward to the Nickel Plate Line, on through Lakewood, Rocky River, and Bay Village, and on to Vermilion, Toledo, and Chicago. A secondary route would send a minor amount of traffic through Cloggsville (as described above) southwest to Short, from Short through the Rockport Yard to CP 190, from CP 190 to Berea, and from Berea to Vermilion, Toledo, and Chicago. This traffic would be destined primarily to the industries along this corridor and to Rockport Yard.

The other primary route for westbound NS traffic would come from Pittsburgh through Alliance to White, north to Kinsman, northwest to CP Draw, along the Conrail Lakeshore main line across the drawbridge to CP 190, then to Berea, Vermilion, Toledo, and Chicago.

The Applicants have identified the following capital improvements for Alternative 1 (Application Base Case). Section N.1.3, "Potential Environmental Impacts of the Alternative Actions and Recommended Mitigation," presents the total cost of each alternative.

- Short Line, Marcy to Short: Redecking the existing bridge for a second main line track crossing at the Cuyahoga River, reconfiguration of the connection at Short (new double-track main, turnouts, and signals) for CSX traffic moving on the east and south legs of this junction, double-tracking of existing single-track rail line segments, upgrading all turnouts and signals along the double-track main, and allowance for miscellaneous railroad utility relocations/improvements.

- Short Line, Quaker (Collinwood) to Marcy: Double-tracking the entire route, except for the portion through the tunnels at Harvard, on upgraded track bed with new turnouts and signals at route connections and sidings, and allowance for miscellaneous railroad utilities relocations/improvements.

These two improvements would be required for each of the other alternatives (Alternatives 2 through 7) evaluated as part of this analysis.

As Table N-2 shows, Alternative 1 would change rail line train volumes throughout much of the Greater Cleveland Area. In Alternative 1, train volumes along portions of the future CSX Short Line between Quaker and Berea would increase by an average of as many as 40.4 trains per day as a result of the proposed Conrail Acquisition. Along the Lakeshore Line between Quaker and CP Draw, volumes would decrease by 40.5 trains per day. Along the NS Nickel Plate Line between Ashtabula and Vermilion via Lakewood, train volumes would increase between an average of 20.6 and 23.6 trains per day compared to existing levels. Train volumes would also increase on the NS line from Pittsburgh; between White and CP Draw, volumes would increase

by an average of 17.2 trains per day. Between CP Draw and Vermilion (Lakeshore Line), however, train volumes would decrease by an average of 15.5 trains per day, not including an average of 12.9 trains per day due to CSX trackage rights.

N.1.2.2 Alternative 2: NS Cloggsville Alternative Offered by NS as Mitigation of Impacts to West Shore Communities

In response to many comments received on the Application Base Case design, NS proposed Alternative 2 (the "NS Cloggsville Alternative") as a mitigative measure to reduce impacts to the communities of Westlake, Bay Village, Rocky River, and Lakewood, Ohio. Figure N-3 is a schematic illustration of Alternative 2. Table N-3 lists the rail line segments included in Alternative 2.

In Alternative 2, NS proposes to route all of the projected increase in freight traffic through Berea to avoid the West Shore communities of Lakewood, Rocky River, Bay Village, and Westlake.[4] NS plans track construction, improvements, and other activities to implement the rerouting proposal. Specifically, in accordance with NS's mitigation plan of April 16, 1998, NS proposes to route an average of 13.8 trains that would have used the Buffalo-to-Cleveland-to-Vermilion Line (Nickel Plate Line, rail line segment N-080) via Lakewood in Alternative 1. If NS implements Alternative 2, NS states that train traffic through the West Shore communities would not increase from existing levels and would not create additional safety risks. Traffic levels through Berea, Olmsted Falls, and other communities along the NS routing between Berea and Vermilion (rail line segment N-293d) would increase by an average of 6.7 trains per day over 1995 traffic levels with Alternative 2.

The following paragraphs describe the routings (from east to west) for Alternative 2.

CSX Traffic. The primary and secondary routes would be identical to those routings described above for Alternative 1, the Application Base Case Alternative.

---

[4] On April 16, 1998, NS provided SEA with revised routing of rail traffic through the Greater Cleveland Area for the NS Cloggsville Alternative. This diversion, compared to the Application Base Case (Alternative 1), results in a shifting of an average of 10.6 trains per day from the Nickel Plate Line between Ashtabula and Cleveland to the Cleveland Line between Alliance and Cleveland. The revised NS mitigation proposal is included in the Addendum.

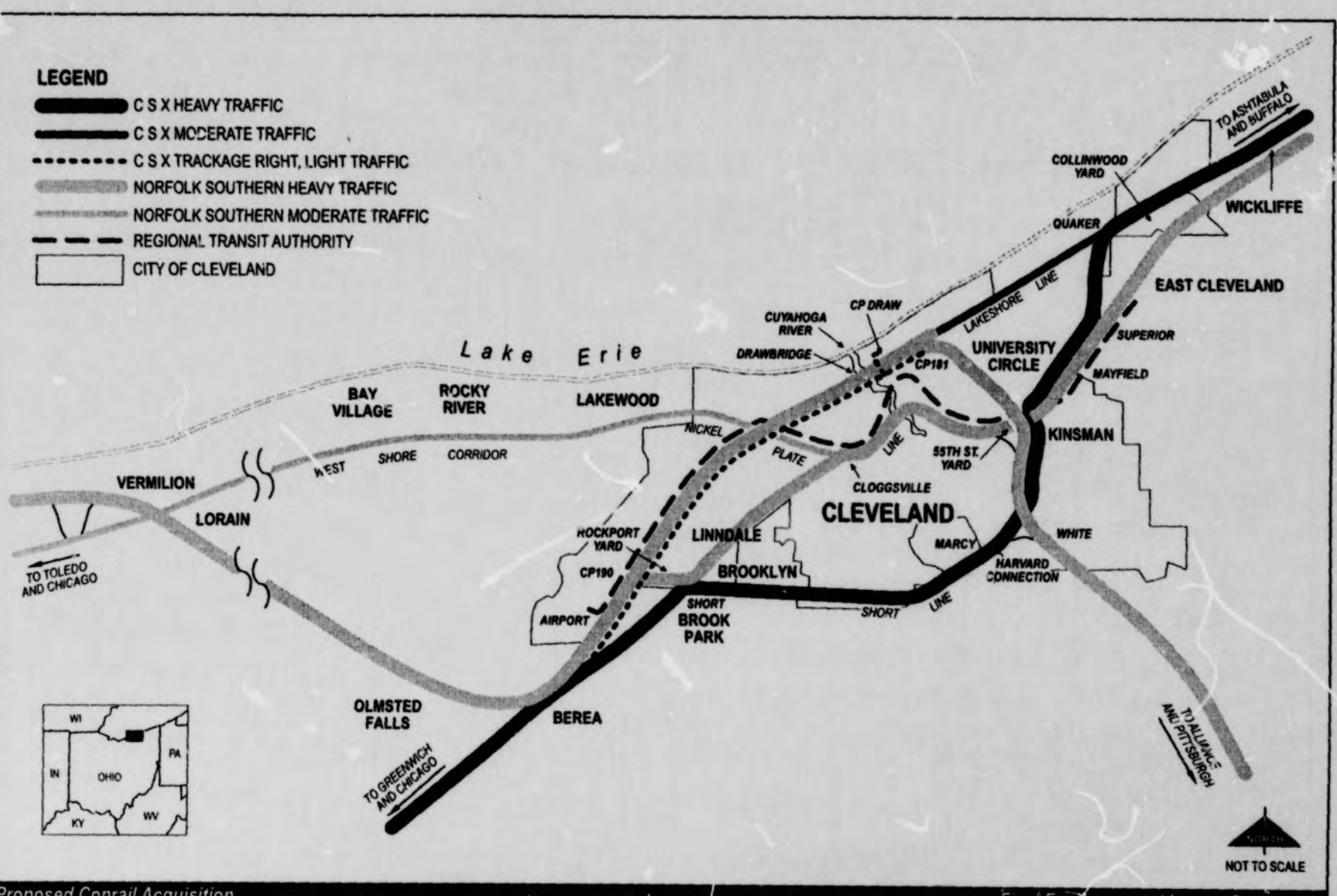


FIGURE N-3

CLEVELAND AREA ALTERNATIVE 2 - NS CLOGGSVILLE

TABLE N-3
RAIL LINE SEGMENTS AFFECTED BY ALTERNATIVE 2 NS CLOGGSVILLE

Site ID	Rail Line Segment Name	Length (mi)	1995 Pre-Acquisition Passenger and Freight Trains Per Day	Post-Acquisition Passenger and Freight Trains Per Day[a]
N-075a	Ashtabula-to-Wickliffe	36	13.0	26.0
N-075b	Wickliffe-to-Mayfield	14	13.0	26.0
N-075c	Mayfield-to-E. 37th St.	6	13.0	26.0
N-075d	E. 37th St.-to-Cloggsville	4	13.0	26.0
N-080a	Cloggsville-to-Detroit Ave.	4	13.5	13.9
N-080b	Detroit Ave.-to-Vermilion	33	13.5	13.9
N-293a	CP Draw-to-Detroit Ave.	4	52.4[b]	57.5[c]
N-293b	Detroit Ave.-to-CP 190	8	52.4[b]	57.5[c]
N-293c	CP 190-to-Berea	5	52.4[b]	67.1[c]
N-293d	Berea-to-Vermilion	26	52.4[b]	59.1
N-074	Cloggsville-to-Short Line Jct.	9	2.0	13.8
N-501	Short Line Jct.-to-CP 190	2	2.0	13.8
N-503	Erie Crossing-to-E. 37th St.	3	0	0
N-504	White-to-Marcy	2	0	0
N-505	Lakewood Conn. @ Detroit Ave	0.5	0	0
N-081a	White-to-Erie Crossing	3	14.5	42.3
N-081b	Erie Crossing-to-Kinsman	1	14.5	42.3
N-081c	Kinsman-to-E. 40th St.	4	14.5	42.3
N-081d	E. 40th St.-to-CP Draw	3	14.5	42.3
C-060a	Ashtabula-to-Wickliffe	37	50.3	55.0
C-060b	Wickliffe-to-Quaker	10	50.3	55.0
C-691a	Quaker-to-E. 49th St. Silver Plate	6	55.4	13.7
C-691b	E. 49th St. Silver Plate-to-CP Draw	4	55.4	13.7
C-073	Quaker-to-Mayfield	6	6.8	43.8
C-072a	Mayfield-to-Kinsman	4	3.4	43.8
C-072b	Kinsman-to-Marcy	3	3.4	43.8
C-069	Marcy-to-Short Line Jct.	9	16.4	43.8
C-074	Short Line Jct-to-Berea	4	13.8	45.3
C-777	E. 49th St. Silver Plate-E. 40th St.	1	0	0

[a] NS forecasted these train traffic volumes in its April 16, 1998, revised mitigation plan.

[b] Includes 12.9 CSX trains per day due to CSX trackage rights.

[c] Includes 10.0 CSX trains per day due to CSX trackage rights.

NS Traffic. One route for westbound NS traffic would extend from Buffalo and Ashtabula through Wickliffe and Mayfield, and then proceed west through 55th Street Yard across the Cuyahoga River to the Cloggsville Connection. Unlike Alternative 1, Alternative 2 would primarily route NS rail traffic from Cloggsville onto the Cloggsville Secondary (Flats Industrial

Track), southwest to Short, from Short to CP 190 bypassing Rockport Yard[5] on new trackage, from CP 190 to Berea, continuing on through Berea to Vermilion, Toledo, and Chicago.

The other primary route for westbound NS traffic would extend from Pittsburgh via Allian e to White on Conrail's Cleveland Line, north to Kinsman, northwest to CP Draw, along the Lakeshore Line across the drawbridge over the Cuyahoga River to CP 190, then to Berea, Vermilion, Toledo, and Chicago. This routing for Pittsburgh rail traffic is identical to Alternative 1.

In Alternative 2, CSX's proposed improvements along the Short Line between Collinwood Yard (Quaker) and Short are identical to those presented for Alternative 1.

The NS proposal listed the following infrastructure needs:

- Improvements from the Cloggsville Connection through CP 190:
  - — Rehabilitation or replacement of bridges over Clark Street and 65th Street and construction of a new double-track bridge over Train Street.
  - — Provision of unrestricted clearance under the Denison Avenue Bridge.
  - — Construction of a new connection at Cloggsville to minimize the gradient.
  - — Construction of a new interchange with Flats Industrial Railroad.
  - — Installation of power switches and crossovers to fully signalize the NS line between Cloggsville and CP 190.
  - — Construction of a new double-track route around Rockport Yard
  - — Reconfiguration of existing trackage to provide unrestricted operation to and from the Conrail Chicago Line at CP 190, at each end of Rockport Yard, and at the Ford Assembly Yard.
- Construction of a two-lane highway/rail grade separation at Front Street in Berea over the NS tracks (in conjunction with the adjacent CSX line). (This is a "stand-alone" project discussed in Section N.1.2.7, "Discretionary Stand-Alone Improvements in the Greater Cleveland Area").

---

5 NS also has a rail yard at 55th Street in Cleveland on the Nickel Plate Line. That yard would be afforded NS access with all alternatives and is thus not discussed further in this analysis.

- Construction of a two-lane highway/rail grade separation at Fitch Street in Olmsted Falls over NS tracks (This is a "stand-alone" project discussed in Section N.1.2.7, "Discretionary Stand-Alone Improvements in the Greater Cleveland Area").

- Construction of a second connection at Vermilion. This would require construction of the proposed single-track connection west of Coen Road and an additional single-track connection east of Coen Road on a new subgrade, turnouts and signals at connecting ends, and allowance for railroad utilities relocations/ improvements.

In addition to routing train traffic as described above, NS also proposed to eliminate several unnecessary highway/rail at-grade crossings in Lakewood and to install automatic gates to supplement the existing flashing lights at the remaining 17 highway/rail at-grade crossings along the West Shore Corridor from west of Cloggsville to Vermilion. NS also proposed to upgrade the Beaver Park Road highway/rail at-grade crossing in Lorain to include both flashing lights and gates.

Compared to Alternative 1, no change in traffic would occur on CSX routes in the Cleveland area. NS traffic along the Nickel Plate Line through the East Cleveland and University Circle areas would total an average of 26.0 trains per day with Alternative 2, in comparison to a total of 36.6 trains per day with Alternative 1. (See Table N-3.)

N.1.2.3 Alternatives Offered by the City of Cleveland

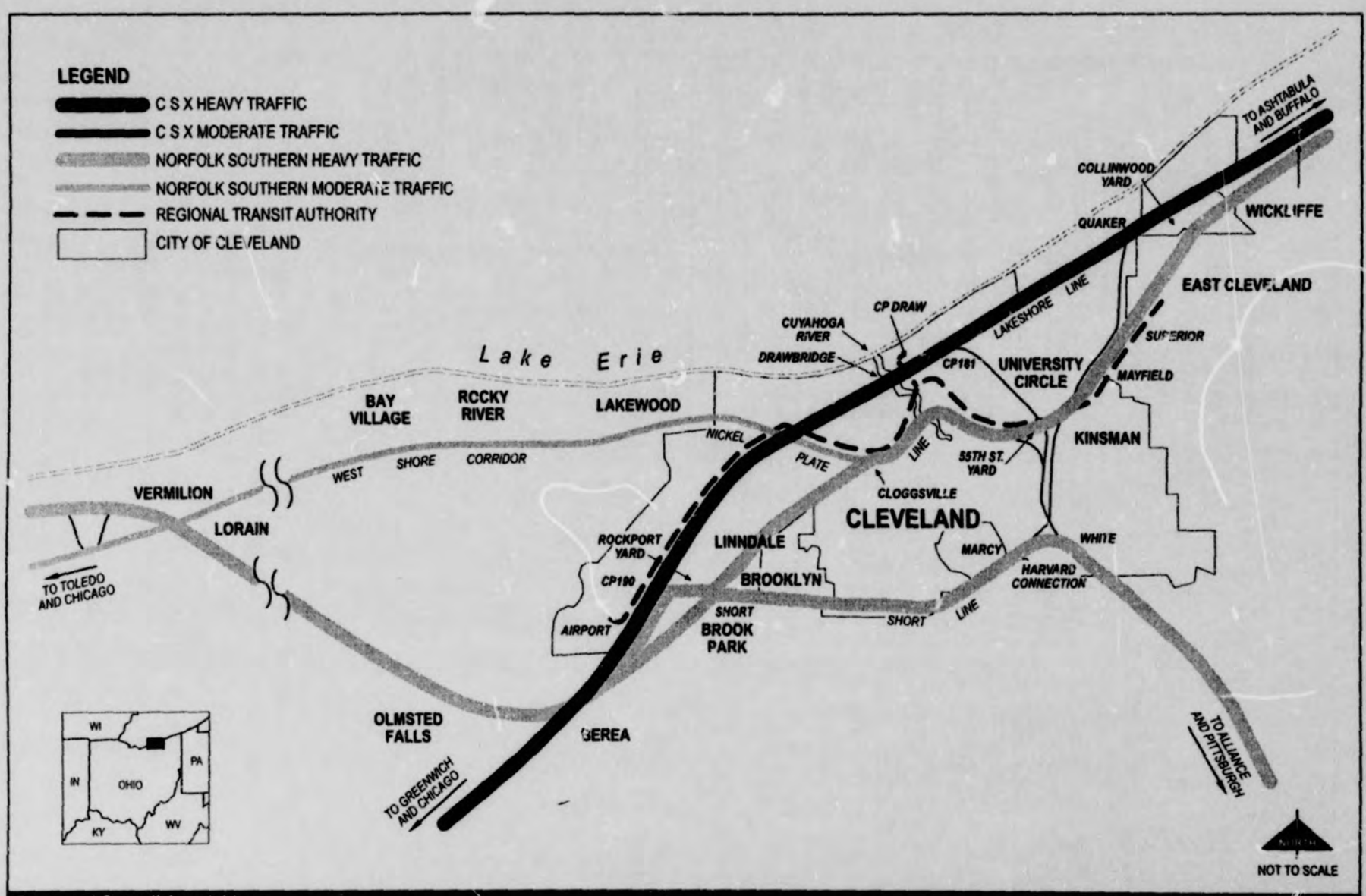
The City of Cleveland retained an independent consultant to evaluate the rail system in the Greater Cleveland Area. In comments on the Draft EIS, the City suggested two alternative designs, herein called Alternatives 3 and 4, that essentially "flip" the CSX and NS main lines from Alternative 1. According to the City, implementation of either Alternative 3 or 4 would greatly reduce train traffic for the east side of the city by routing major CSX train traffic flows along the Lakeshore Line rather than along the Short Line through the east side of Cleveland and the City of East Cleveland.

These routing strategies feature substantial changes in forecasted train traffic levels along rail line segments that pass through the east side of Cleveland. Alternatives 3 and 4, as proposed by the City of Cleveland, offer the opportunity to reduce NS traffic through the West Shore suburbs by using a combination of the Cleveland Short Line and Cloggsville Connection in Alternative 3 or relying solely on the Short Line in Alternative 4.

Alternative 3: Cleveland Flip Plan #1 (Cloggsville to Short)

Figure N-4 is a schematic illustration of Alternative 3. Table N-4 lists the rail line segments included in Alternative 3.

The following paragraphs describe the routings (from east to west) for Alternative 3.



N-17

FIGURE N-4

CLEVELAND AREA ALTERNATIVE 3 - CLEVELAND FLIP PLAN NO. 1

TABLE N-4
RAIL LINE SEGMENTS AFFECTED BY
ALTERNATIVE 3 CLEVELAND FLIP PLAN #1

Site ID	Rail line Segment Name	Length(mi)	1995 Pre-Acquisition Passenger and Freight Trains Per Day	Post-Acquisition Freight and Passenger Trains Per Day
N-075a	Ashtabula-to-Wickliffe	36	13.0	36.6
N-075b	Wickliffe-to-Mayfield	14	13.0	36.6
N-075c	Mayfield-to-E. 37th St.	6	13.0	36.6
N-075d	E. 37th St.-to-Cloggsville	4	13.0	36.6
N-080a	Cloggsville-to-Detroit Ave.	4	13.5	16.4
N-080b	Detroit Ave.-to-Vermilion	33	13.5	16.4
N-293a	CP Draw-to-Detroit Ave.	4	52.4	57.0
N-293b	Detroit Ave.-to-CP 190	8	52.4	57.0
N-293c	CP 190-to-Berea	5	52.4	61.0
N-293d	Berea-to-Vermilion	26	52.4	54.6
N-074	Cloggsville-to-Short Line Jct.	9	2.0	17.7
N-501	Short Line Jct.-to-CP 190	2	2.0	4.0
N-503	Erie Crossing-to-E. 37th St.	3	0	0
N-504	White-to-Marcy	2	0	28.1
N-505	Lakewood Conn. @ Detroit Ave	0.5	0	0
N-081a	White-to-Erie Crossing	3	14.5	4.0
N-081b	Erie Crossing-to-Kinsman	1	14.5	4.0
N-081c	Kinsman-to-E. 40th St.	4	14.5	4.0
N-081d	E. 40th St.-to-CP Draw	3	14.5	4.0
C-060a	Ashtabula-to-Wickliffe	37	50.3	55.0
C-060b	Wickliffe-to-Quaker	10	50.3	55.0
C-691a	Quaker-to-E. 49th St. Silver Plate	6	55.4	55.0
C-691b	E. 49th St. Silver Plate-to-CP Draw	4	55.4	55.0
C-073	Quaker-to-Mayfield	6	6.8	6.8
C-072a	Mayfield-to-Kinsman	4	3.4	3.4
C-072b	Kinsman-to-Marcy	3	3.4	3.4
C-069	Marcy-to-Short Line Jct.	9	16.4	30.1
C-074	Short Line Jct-to-Berea	4	13.4	46.3
C-777	E. 49th St. Silver Plate-E. 40th St.	1	0	0

CSX Traffic. CSX traffic from Buffalo and Ashtabula would use the Lakeshore Line between Collinwood Yard and Berea via CP Draw (over the Cuyahoga River drawbridge) and CP 190. (In contrast, Alternatives 1 and 2 would direct NS trains over this route entering just west of the drawbridge.) At Berea, CSX trains would need to cross the NS line to continue to Greenwich and, ultimately, Indianapolis or Chicago. The City of Cleveland proposes a rail/rail flyover involving the CSX and NS tracks as part of this alternative because of the anticipated volumes

of trains crossing in Berea, approximately 100 trains per day. The description of infrastructure needs below presents a more detailed description of this rail/rail flyover.

NS Traffic. The primary route for westbound NS traffic coming from Buffalo and Ashtabula would pass through Mayfield and westward across the Cuyahoga River to Cloggsville. From Cloggsville, most of the traffic would continue southwest to Short, from Short southwest to Berea, and from Berea to Vermilion, Toledo, and Chicago. As noted previously, this route would require a rail/rail flyover involving the CSX and NS tracks in Berea.
From Cloggsville, a secondary route would continue west to the Nickel Plate Line, through Lakewood, Rocky River, and Bay Village, and ultimately passing through Vermilion to Toledo and Chicago.

The primary route for westbound NS traffic coming from Pittsburgh and Alliance would pass through White through the Harvard Connection to the Short Line and then west to Short. From Short, the majority of traffic would go southwest to Berea, continuing on to Vermilion, Toledo, and Chicago. Some traffic bound for Rockport Yard would be routed towards CP 190. Again, the route would require a rail/rail flyover at Berea.

The existing single-track connection at Harvard would require double-tracking in order to handle the forecasted train traffic volumes.

According to the City of Cleveland and the Applicants, and as revised and analyzed by SEA, the Applicants would require the following operational infrastructure improvements to implement Alternative 3.

- The Applicants would need a grade separation (rail/rail flyover) of the CSX and NS rail lines in Berea. As stated in the City of Cleveland's comments dated February 2, 1997, this would require "an engineering and construction effort on the scope of a major freeway interchange." Along with the need to separate the rail lines, this rail/rail flyover would also have to incorporate a highway/rail grade separation of Front Street with both rail lines. Cleveland proposed two potential schemes for the elevation of rail lines in this area:

  — In the first scheme, the CSX corridor (rail line segments N-293c and C-061) would remain at-grade and the NS corridor (rail line segments C-074 and N-293d) would have a raised elevation to cross the CSX tracks. The total length of the construction would be about 8,000 feet and would result in a rail gradient of 0.6 percent or less. At the south crossing of Front Street, a new highway/rail grade separation would carry Front Street vehicle traffic under the NS rail lines. The new roadway would be about 6 feet below its current elevation. Front Street would continue on a downgrade to pass under the CSX rail lines about 23 feet below the current elevation. Retaining walls and slopes would be substantial.

— The second scheme involves a split-level rail/rail flyover that would lower CSX tracks (rail line segments N-293c and C-061) about 15 feet and raise NS tracks (rail line segments C-074 and N-293d) about 15 feet. This would reduce the length of the construction to 7,500 feet with rail gradients of 0.6 percent or less. At the Front Street highway/rail grade separations, Front Street would pass over the CSX tracks and under the NS tracks. This split-level scheme appears to have greater constructibility challenges if the railroad and Front Street traffic is to continue during construction.

In this study, SEA evaluates only the second scheme, the split-level rail/rail flyover design, because SEA anticipates that the general level of impact from the first scheme would be very large. After careful evaluation and refinement of design concepts, SEA maintains that the flyover could be built as follows:

1. For the CSX corridor, major construction of a split-level flyover would raise CSX tracks approximately 15 feet on a double-track grade separation over the NS railroad and Front Street. Construction would include: railroad overpass structures at NS railroad and Front Street; retaining walls on earth fill approaches; new double-track main line on new ballasted subgrade; single-track inter-route (CSX to NS) connection with turnouts and signals; temporary bypass tracks, turnouts, and signaling (this connection would accommodate Amtrak passenger trains as well as NS trains traveling to Rockport Yard); allowance for railroad utilities relocations/improvements; and Front Street regrading and repaving, and retaining walls under CSX tracks on depressed grade approaches.

2. For the NS corridor, major construction of a depressed NS double-track grade separation under CSX tracks and Front Street would include: reconstruction of double-track NS bridge crossing at Rocky River Drive; retaining walls on excavated earth approaches; new double-track mainline on new depressed subgrade; single-track inter-route (NS to CSX) connection with turnouts and signals; temporary bypass tracks, turnouts, and signaling; allowance for railroad utilities relocations/improvements; and Front Street overpass structure over NS with regrading and paving of Front Street on raised grade approaches.

Alternative 3 also would require the following elements:

- Cloggsville Connection to CP 190 improvements as described for Alternative 2.

- Harvard Connection (between the NS Alliance-to-Cleveland Line and the Short Line), including: new double-track main line connection on existing alignment with a major railroad retaining wall adjacent to Mill Creek with sidehill-fill approaches; connecting double tracks on new or existing subgrade; turnouts, crossing frogs, and signals; allowance for railroad utilities relocations/improvements; and relocation of major power utility transmission line pole on the Short Line. SEA assumes that the City would provide city-owned property at no cost.

NS Traffic. There also would be two mainline NS routes through the Greater Cleveland Area. These lines would be linked west of Vermilion by a newly constructed connection. NS would have trackage rights over a portion of the CSX Short Line route between Harvard and Short, but is not currently planning to move any traffic over this rail line segment. One primary route for westbound NS traffic would be the West Shore Corridor (Nickel Plate Line) from Buffalo and Ashtabula through Wickliffe and Mayfield and then westward through their 55th Street Yard, across the Cuyahoga River to Cloggsville. From Cloggsville, most of the traffic would continue westward to the Nickel Plate Line, on through Lakewood, Rocky River, and Bay Village, and on to Vermilion, Toledo, and Chicago. A secondary route would send a minor amount of traffic through Cloggsville (as described above) southwest to Short, from Short through the Rockport Yard to CP 190, from CP 190 to Berea, and from Berea to Vermilion, Toledo, and Chicago. This traffic would be destined primarily to the industries along this corridor and to Rockport Yard.

The other primary route for westbound NS traffic would come from Pittsburgh through Alliance to White, north to Kinsman, northwest to CP Draw, along the Conrail Lakeshore main line across the drawbridge to CP 190, then to Berea, Vermilion, Toledo, and Chicago.

The Applicants have identified the following capital improvements for Alternative 1 (Application Base Case). Section N.1.3, "Potential Environmental Impacts of the Alternative Actions and Recommended Mitigation," presents the total cost of each alternative.

- Short Line, Marcy to Short: Redecking the existing bridge for a second main line track crossing at the Cuyahoga River, reconfiguration of the connection at Short (new double-track main, turnouts, and signals) for CSX traffic moving on the east and south legs of this junction, double-tracking of existing single-track rail line segments, upgrading all turnouts and signals along the double-track main, and allowance for miscellaneous railroad utility relocations/improvements.

- Short Line, Quaker (Collinwood) to Marcy: Double-tracking the entire route, except for the portion through the tunnels at Harvard, on upgraded track bed with new turnouts and signals at route connections and sidings, and allowance for miscellaneous railroad utilities relocations/improvements.

These two improvements would be required for each of the other alternatives (Alternatives 2 through 7) evaluated as part of this analysis.

As Table N-2 shows, Alternative 1 would change rail line train volumes throughout much of the Greater Cleveland Area. In Alternative 1, train volumes along portions of the future CSX Short Line between Quaker and Berea would increase by an average of as many as 40.4 trains per day as a result of the proposed Conrail Acquisition. Along the Lakeshore Line between Quaker and CP Draw, volumes would decrease by 40.5 trains per day. Along the NS Nickel Plate Line between Ashtabula and Vermilion via Lakewood, train volumes would increase between an average of 20.6 and 23.6 trains per day compared to existing levels. Train volumes would also increase on the NS line from Pittsburgh, between White and CP Draw, volumes would increase

by an average of 17.2 trains per day. Between CP Draw and Vermilion (Lakeshore Line), however, train volumes would decrease by an average of 15.5 trains per day, not including an average of 12.0 trains per day due to CSX [illegible]hts.

N.1.2.2 Alternative 2: NS Cloggsville Alternative Offered by NS as Mitigation of Impacts to West Shore Communities

In response to many comments received on the Application Base Case design, NS proposed Alternative 2 (the "NS Cloggsville Alternative") as a mitigative measure to reduce impacts to the communities of Westlake, Bay Village, Rocky River, and Lakewood, Ohio. Figure N-3 is a schematic illustration of Alternative 2. Table N-3 lists the rail line segments included in Alternative 2.

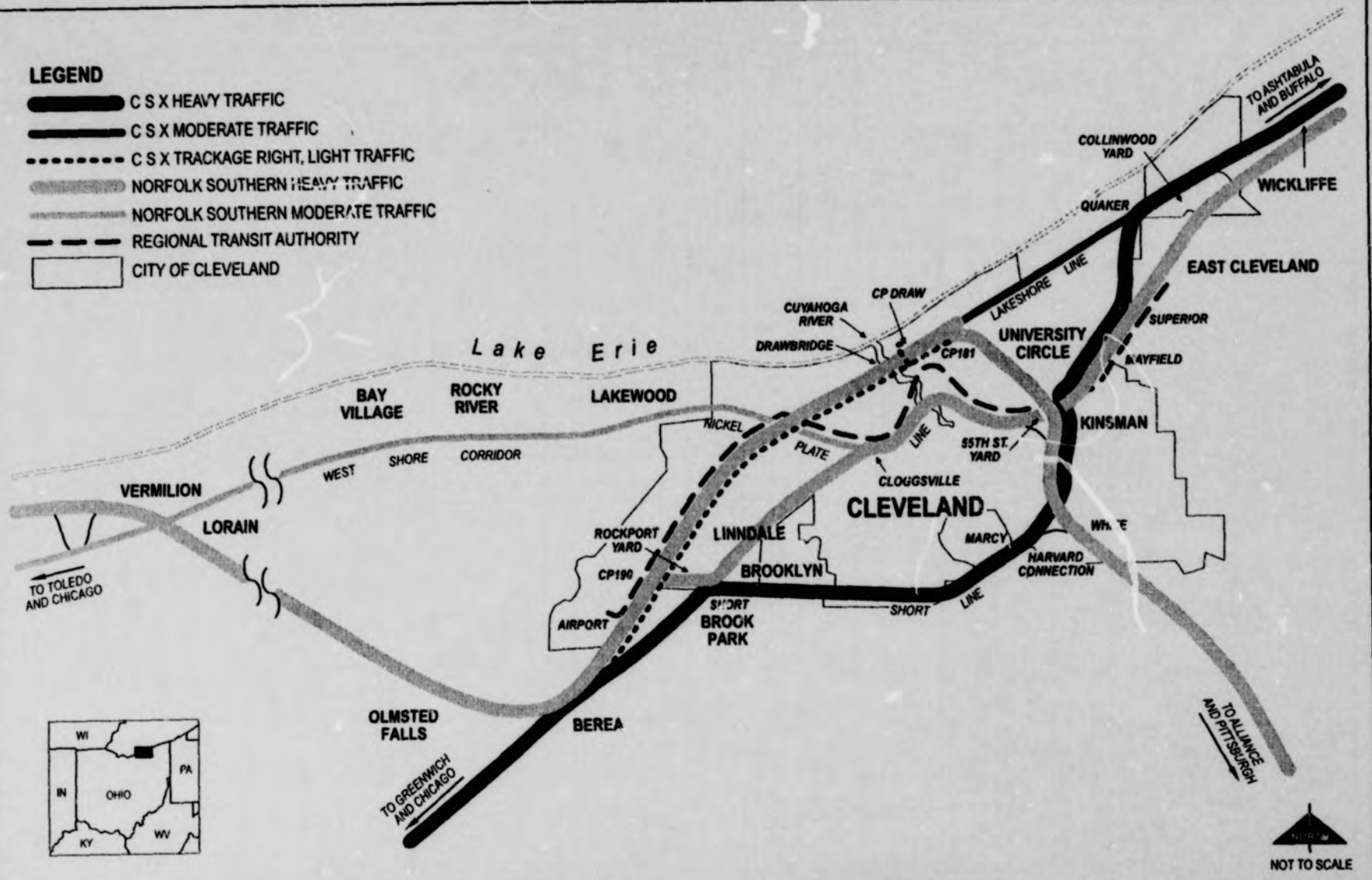
In Alternative 2, NS proposes to route all of the projected increase in freight traffic through Berea to avoid the West Shore communities of Lakewood, Rocky River, Bay Village, and Westlake.[4] NS plans track construction, improvements, and other activities to implement the rerouting proposal. Specifically, in accordance with NS's mitigation plan of April 16, 1998, NS proposes to route an average of 13.8 trains that would have used the Buffalo-to-Cleveland-to-Vermilion Line (Nickel Plate Line, rail line segment N-080) via Lakewood in Alternative 1. If NS implements Alternative 2, NS states that train traffic through the West Shore communities would not increase from existing levels and would not create additional safety risks. Traffic levels through Berea, Olmsted Falls, and other communities along the NS routing between Berea and Vermilion (rail line segment N-293d) would increase by an average of 6.7 trains per day over 1995 traffic levels with Alternative 2.

The following paragraphs describe the routings (from east to west) for Alternative 2.

CSX Traffic. The primary and secondary routes would be identical to those routings described above for Alternative 1, the Application Base Case Alternative.

---

[4] On April 16, 1998, NS provided SEA with revised routing of rail traffic through the Greater Cleveland Area for the NS Cloggsville Alternative. This diversion, compared to the Application Base Case (Alternative 1), results in a shifting of an average of 10.6 trains per day from the Nickel Plate Line between Ashtabula and Cleveland to the Cleveland Line between Alliance and Cleveland. The revised NS mitigation proposal is included in the Addendum.



N-13

FIGURE N-3

CLEVELAND AREA ALTERNATIVE 2 - NS CLOGGSVILLE

TABLE N-3
RAIL LINE SEGMENTS AFFECTED BY ALTERNATIVE 2 NS CLOGGSVILLE

Site ID	Rail Line Segment Name	Length (mi)	1995 Pre-Acquisition Passenger and Freight Trains Per Day	Post-Acquisition Passenger and Freight Trains Per Day[a]
N-075a	Ashtabula-to-Wickliffe	36	13.0	26.0
N-075b	Wickliffe-to-Mayfield	14	13.0	26.0
N-075c	Mayfield-to-E. 37th St.	6	13.0	26.0
N-075d	E. 37th St.-to-Cloggsville	4	13.0	26.0
N-080a	Cloggsville-to-Detroit Ave.	4	13.5	13.9
N-080b	Detroit Ave.-to-Vermilion	33	13.5	13.9
N-293a	CP Draw-to-Detroit Ave.	4	52.4[b]	57.5[c]
N-293b	Detroit Ave.-to-CP 190	8	52.4[b]	57.5[c]
N-293c	CP 190-to-Berea	5	52.4[b]	67.1[c]
N-293d	Berea-to-Vermilion	26	52.4[b]	59.1
N-074	Cloggsville-to-Short Line Jct.	9	2.0	13.8
N-501	Short Line Jct.-to-CP 190	2	2.0	13.8
N-503	Erie Crossing-to-E. 37th St.	3	0	0
N-504	White-to-Marcy	2	0	0
N-505	Lakewood Conn. @ Detroit Ave	0.5	0	0
N-081a	White-to-Erie Crossing	3	14.5	42.3
N-081b	Erie Crossing-to-Kinsman	1	14.5	42.3
N-081c	Kinsman-to-E. 40th St.	4	14.5	42.3
N-081d	E. 40th St.-to-CP Draw	3	14.5	42.3
C-060a	Ashtabula-to-Wickliffe	37	50.3	55.0
C-060b	Wickliffe-to-Quaker	10	50.3	55.0
C-691a	Quaker-to-E. 49th St. Silver Plate	6	55.4	13.7
C-691b	E. 49th St. Silver Plate-to-CP Draw	4	55.4	13.7
C-073	Quaker-to-Mayfield	6	6.8	43.8
C-072a	Mayfield-to-Kinsman	4	3.4	43.8
C-072b	Kinsman-to-Marcy	3	3.4	43.8
C-069	Marcy-to-Short Line Jct.	9	16.4	43.8
C-074	Short Line Jct-to-Berea	4	13.4	45.3
C-777	E. 49th St. Silver Plate-E. 40th St.	1	0	0

[a] NS forecasted these train traffic volumes in its April 16, 1998, revised mitigation plan.

[b] Includes 12.9 CSX trains per day due to CSX trackage rights.

[c] Includes 10.0 CSX trains per day due to CSX trackage rights.

NS Traffic. One route for westbound NS traffic would extend from Buffalo and Ashtabula through Wickliffe and Mayfield, and then proceed west through 55th Street Yard across the Cuyahoga River to the Cloggsville Connection. Unlike Alternative 1, Alternative 2 would primarily route NS rail traffic from Cloggsville onto the Cloggsville Secondary (Flats Industrial

Track), southwest to Short, from Short to CP 190 bypassing Rockport Yard[5] on new trackage, from CP 190 to Berea, continuing on through Berea to Vermilion, Toledo, and Chicago.

The other primary route for westbound NS traffic would extend from Pittsburgh via Alliance to White on Conrail's Cleveland Line, north to Kinsman, northwest to CP Draw, along the Lakeshore Line across the drawbridge over the Cuyahoga River to CP 190, then to Berea, Vermilion, Toledo, and Chicago. This routing for Pittsburgh rail traffic is identical to Alternative 1.

In Alternative 2, CSX's proposed improvements along the Short Line between Collinwood Yard (Quaker) and Short are identical to those presented for Alternative 1.

The NS proposal listed the following infrastructure needs:

- Improvements from the Cloggsville Connection through CP 190:
  - — Rehabilitation or replacement of bridges over Clark Street and 65th Street and construction of a new double-track bridge over Train Street.
  - — Provision of unrestricted clearance under the Denison Avenue Bridge.
  - — Construction of a new connection at Cloggsville to minimize the gradient.
  - — Construction of a new interchange with Flats Industrial Railroad.
  - — Installation of power switches and crossovers to fully signalize the NS line between Cloggsville and CP 190.
  - — Construction of a new double-track route around Rockport Yard.
  - — Reconfiguration of existing trackage to provide unrestricted operation to and from the Conrail Chicago Line at CP 190, at each end of Rockport Yard, and at the Ford Assembly Yard.
- Construction of a two-lane highway/rail grade separation at Front Street in Berea over the NS tracks (in conjunction with the adjacent CSX line). (This is a "stand-alone" project discussed in Section N.1.2.7, "Discretionary Stand-Alone Improvements in the Greater Cleveland Area").

---

5 NS also has a rail yard at 55th Street in Cleveland on the Nickel Plate Line. That yard would be afforded NS access with all alternatives and is thus not discussed further in this analysis.

- Construction of a two-lane highway/rail grade separation at Fitch Street in Olmsted Falls over NS tracks (This is a "stand-alone" project discussed in Section N.1.2.7, "Discretionary Stand-Alone Improvements in the Greater Cleveland Area").

- Construction of a second connection at Vermilion. This would require construction of the proposed single-track connection west of Coen Road and an additional single-track connection east of Coen Road on a new subgrade, turnouts and signals at connecting ends, and allowance for railroad utilities relocations/ improvements.

In addition to routing train traffic as described above, NS also proposed to eliminate several unnecessary highway/rail at-grade crossings in Lakewood and to install automatic gates to supplement the existing flashing lights at the remaining 17 highway/rail at-grade crossings along the West Shore Corridor from west of Cloggsville to Vermilion. NS also proposed to upgrade the Beaver Park Road highway/rail at-grade crossing in Lorain to include both flashing lights and gates.

Compared to Alternative 1, no change in traffic would occur on CSX routes in the Cleveland area. NS traffic along the Nickel Plate Line through the East Cleveland and University Circle areas would total an average of 26.0 trains per day with Alternative 2, in comparison to a total of 36.6 trains per day with Alternative 1. (See Table N-3.)

N.1.2.3 Alternatives Offered by the City of Cleveland

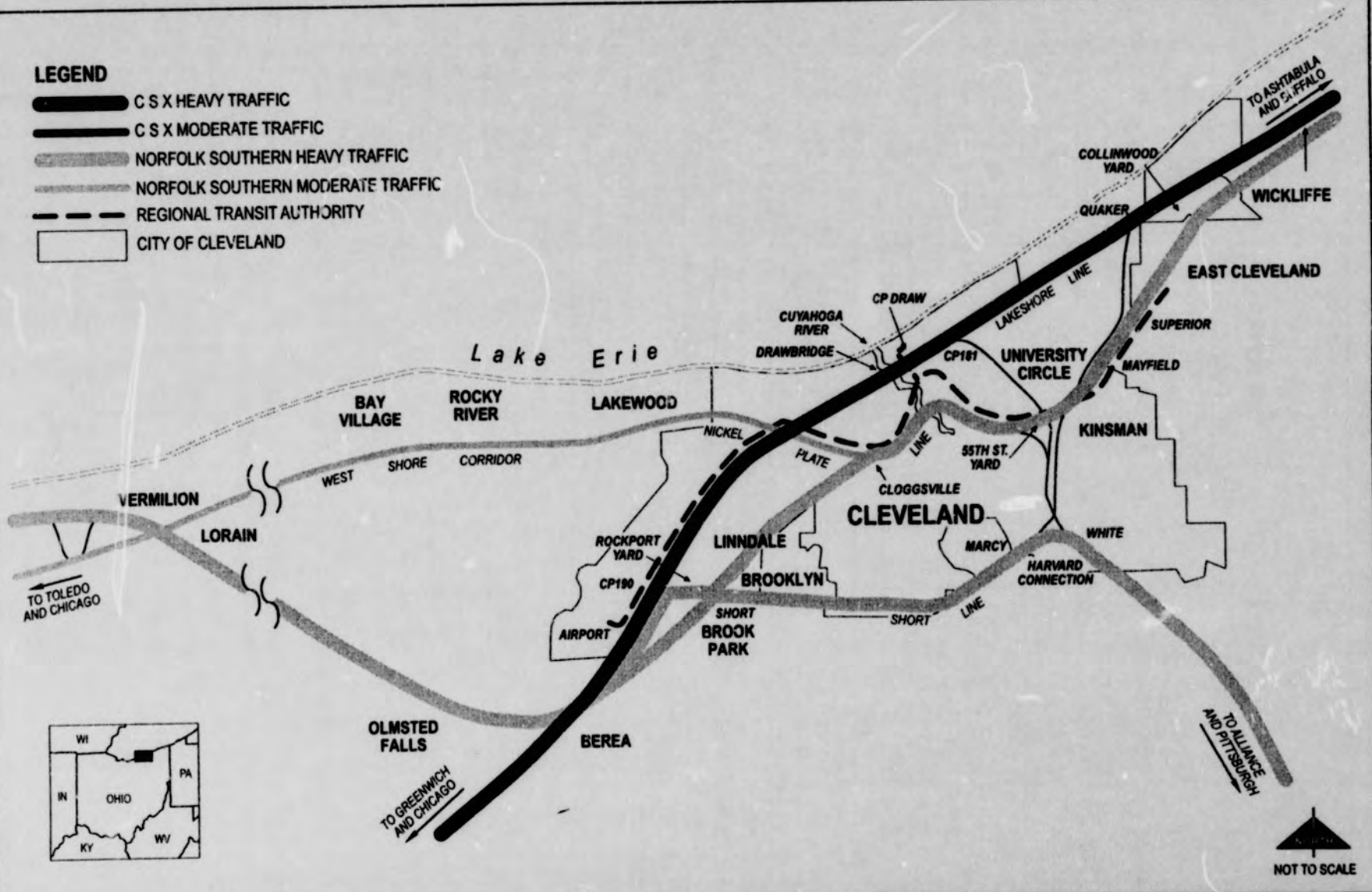
The City of Cleveland retained an independent consultant to evaluate the rail system in the Greater Cleveland Area. In comments on the Draft EIS, the City suggested two alternative designs, herein called Alternatives 3 and 4, that essentially "flip" the CSX and NS main lines from Alternative 1. According to the City, implementation of either Alternative 3 or 4 would greatly reduce train traffic for the east side of the city by routing major CSX train traffic flows along the Lakeshore Line rather than along the Short Line through the east side of Cleveland and the City of East Cleveland.

These routing strategies feature substantial changes in forecasted train traffic levels along rail line segments that pass through the east side of Cleveland. Alternatives 3 and 4, as proposed by the City of Cleveland, offer the opportunity to reduce NS traffic through the West Shore suburbs by using a combination of the Cleveland Short Line and Cloggsville Connection in Alternative 3 or relying solely on the Short Line in Alternative 4.

Alternative 3: Cleveland Flip Plan #1 (Cloggsville to Short)

Figure N-4 is a schematic illustration of Alternative 3. Table N-4 lists the rail line segments included in Alternative 3.

The following paragraphs describe the routings (from east to west) for Alternative 3.



N-17

Proposed Conrail Acquisition

Final Environmental Impact Statement

FIGURE N-4

CLEVELAND AREA ALTERNATIVE 3 - CLEVELAND FLIP PLAN NO. 1

TABLE N-4
RAIL LINE SEGMENTS AFFECTED BY
ALTERNATIVE 3 CLEVELAND FLIP PLAN #1

Site ID	Rail line Segment Name	Length(mi)	1995 Pre-Acquisition Passenger and Freight Trains Per Day	Post-Acquisition Freight and Passenger Trains Per Day
N-075a	Ashtabula-to-Wickliffe	36	13.0	36.6
N-075b	Wickliffe-to-Mayfield	14	13.0	36.6
N-075c	Mayfield-to-E. 37th St.	6	13.0	36.6
N-075d	E. 37th St.-to-Cloggsville	4	13.0	36.6
N-080a	Cloggsville-to-Detroit Ave.	4	13.5	16.4
N-080b	Detroit Ave.-to-Vermilion	33	13.5	16.4
N-293a	CP Draw-to-Detroit Ave.	4	52.4	57.0
N-293b	Detroit Ave.-to-CP 190	8	52.4	57.0
N-293c	CP 190-to-Berea	5	52.4	61.0
N-293d	Berea-to-Vermilion	26	52.4	54.6
N-074	Cloggsville-to-Short Line Jct.	9	2.0	17.7
N-501	Short Line Jct.-to-CP 190	2	2.0	4.0
N-503	Erie Crossing-to-E. 37th St.	3	0	0
N-504	White-to-Marcy	2	0	28.1
N-505	Lakewood Conn. @ Detroit Ave	0.5	0	0
N-081a	White-to-Erie Crossing	3	14.5	4.0
N-081b	Erie Crossing-to-Kinsman	1	14.5	4.0
N-081c	Kinsman-to-E. 40th St.	4	14.5	4.0
N-081d	E. 40th St.-to-CP Draw	3	14.5	4.0
C-060a	Ashtabula-to-Wickliffe	37	50.3	55.0
C-060b	Wickliffe-to-Quaker	10	50.3	55.0
C-691a	Quaker-to-E. 49th St. Silver Plate	6	55.4	55.0
C-691b	E. 49th St. Silver Plate-to-CP Draw	4	55.4	55.0
C-073	Quaker-to-Mayfield	6	6.8	6.8
C-072a	Mayfield-to-Kinsman	4	3.4	3.4
C-072b	Kinsman-to-Marcy	3	3.4	3.4
C-069	Marcy-to-Short Line Jct.	9	16.4	30.1
C-074	Short Line Jct-to-Berea	4	13.4	46.3
C-777	E. 49th St. Silver Plate-E. 40th St.	1	0	0

CSX Traffic. CSX traffic from Buffalo and Ashtabula would use the Lakeshore Line between Collinwood Yard and Berea via CP Draw (over the Cuyahoga River drawbridge) and CP 190. (In contrast, Alternatives 1 and 2 would direct NS trains over this route entering just west of the drawbridge.) At Berea, CSX trains would need to cross the NS line to continue to Greenwich and, ultimately, Indianapolis or Chicago. The City of Cleveland proposes a rail/rail flyover involving the CSX and NS tracks as part of this alternative because of the anticipated volumes

of trains crossing in Berea, approximately 100 trains per day. The description of infrastructure needs below presents a more detailed description of this rail/rail flyover.

NS Traffic. The primary route for westbound NS traffic coming from Buffalo and Ashtabula would pass through Mayfield and westward across the Cuyahoga River to Cloggsville. From Cloggsville, most of the traffic would continue southwest to Short, from Short southwest to Berea, and from Berea to Vermilion, Toledo, and Chicago. As noted previously, this route would require a rail/rail flyover involving the CSX and NS tracks in Berea.
From Cloggsville, a secondary route would continue west to the Nickel Plate Line, through Lakewood, Rocky River, and Bay Village, and ultimately passing through Vermilion to Toledo and Chicago.

The primary route for westbound NS traffic coming from Pittsburgh and Alliance would pass through White through the Harvard Connection to the Short Line and then west to Short. From Short, the majority of traffic would go southwest to Berea, continuing on to Vermilion, Toledo, and Chicago. Some traffic bound for Rockport Yard would be routed towards CP 190. Again, the route would require a rail/rail flyover at Berea.

The existing single-track connection at Harvard would require double-tracking in order to handle the forecasted train traffic volumes.

According to the City of Cleveland and the Applicants, and as revised and analyzed by SEA, the Applicants would require the following operational infrastructure improvements to implement Alternative 3.

- The Applicants would need a grade separation (rail/rail flyover) of the CSX and NS rail lines in Berea. As stated in the City of Cleveland's comments dated February 2, 1997, this would require "an engineering and construction effort on the scope of a major freeway interchange." Along with the need to separate the rail lines, this rail/rail flyover would also have to incorporate a highway/rail grade separation of Front Street with both rail lines. Cleveland proposed two potential schemes for the elevation of rail lines in this area:

  — In the first scheme, the CSX corridor (rail line segments N-293c and C-061) would remain at-grade and the NS corridor (rail line segments C-074 and N-293d) would have a raised elevation to cross the CSX tracks. The total length of the construction would be about 8,000 feet and would result in a rail gradient of 0.6 percent or less. At the south crossing of Front Street, a new highway/rail grade separation would carry Front Street vehicle traffic under the NS rail lines. The new roadway would be about 6 feet below its current elevation. Front Street would continue on a downgrade to pass under the CSX rail lines about 23 feet below the current elevation. Retaining walls and slopes would be substantial.

— The second scheme involves a split-level rail/rail flyover that would lower CSX tracks (rail line segments N-293c and C-061) about 15 feet and raise NS tracks (rail line segments C-074 and N-293d) about 15 feet. This would reduce the length of the construction to 7,500 feet with rail gradients of 0.6 percent or less. At the Front Street highway/rail grade separations, Front Street would pass over the CSX tracks and under the NS tracks. This split-level scheme appears to have greater constructibility challenges if the railroad and Front Street traffic is to continue during construction.

In this study, SEA evaluates only the second scheme, the split-level rail/rail flyover design, because SEA anticipates that the general level of impact from the first scheme would be very large. After careful evaluation and refinement of design concepts, SEA maintains that the flyover could be built as follows:

1. For the CSX corridor, major construction of a split-level flyover would raise CSX tracks approximately 15 feet on a double-track grade separation over the NS railroad and Front Street. Construction would include: railroad overpass structures at NS railroad and Front Street; retaining walls on earth fill approaches; new double-track main line on new ballasted subgrade; single-track inter-route (CSX to NS) connection with turnouts and signals; temporary bypass tracks, turnouts, and signaling (this connection would accommodate Amtrak passenger trains as well as NS trains traveling to Rockport Yard); allowance for railroad utilities relocations/improvements; and Front Street regrading and repaving, and retaining walls under CSX tracks on depressed grade approaches.

2. For the NS corridor, major construction of a depressed NS double-track grade separation under CSX tracks and Front Street would include: reconstruction of double-track NS bridge crossing at Rocky River Drive; retaining walls on excavated earth approaches; new double-track mainline on new depressed subgrade; single-track inter-route (NS to CSX) connection with turnouts and signals; temporary bypass tracks, turnouts, and signaling; allowance for railroad utilities relocations/improvements; and Front Street overpass structure over NS with regrading and paving of Front Street on raised grade approaches.

Alternative 3 also would require the following elements:

- Cloggsville Connection to CP 190 improvements as described for Alternative 2.

- Harvard Connection (between the NS Ailiance-to-Cleveland Line and the Short Line), including: new double-track main line connection on existing alignment with a major railroad retaining wall adjacent to Mill Creek with sidehill-fill approaches; connecting double tracks on new or existing subgrade; turnouts, crossing frogs, and signals; allowance for railroad utilities relocations/improvements; and relocation of major power utility transmission line pole on the Short Line. SEA assumes that the City would provide city-owned property at no cost.

- Track/Signal allowance at the west end of Rockport Yard (rail line segment N-501) to improve track conditions and signalization on the easterly lead track between the west end of the Rockport Yard and the Ford Motor Company yard.

- Construction of a second connection at Vermilion as described for Alternative 2.

The following improvements would not be necessary for rail operations to be feasible, but the City of Cleveland also listed them as items to be included in Alternative 3.

- Nottingham/Dille Road highway/rail grade separation (rail line segment N-075b).

- London Road highway/rail grade separation (rail line segment N-075b).

As proposed by the City of Cleveland, this alternative would result in a decrease in train traffic on the east side of the City and through East Cleveland. The average number of trains per day would be 24.0 trains fewer than in Alternatives 1 and 2. NS trains would constitute the main flow of traffic through this area. The main NS traffic on the Nickel Plate Line would flow through Cloggsville to Berea, where it would cross CSX traffic on the rail/rail flyover discussed above. Alternative 3 would substantially reduce traffic between Harvard and Kinsman, as well as along the Short Line in that same area. This reduction would amount to an average of 68.1 fewer trains per day in the Harvard-Kinsman area than would occur in Alternatives 1 and 2. (See Table N-4.)

Alternative 4: Cleveland Flip Plan #2 (Short Line)

In Alternative 4, which the City of Cleveland suggested as a variant of Alternative 3, the Short Line would be the primary route through Cleveland for NS mainline traffic from both Buffalo and Pittsburgh. Figure N-5 is a schematic illustration of Alternative 4. Table N-5 lists the rail line segments included in Alternative 4.

The following paragraphs describe the routings (from east to west) for Alternative 4.

CSX Traffic. CSX traffic would flow through the Greater Cleveland Area exactly as described for Alternative 3. CSX traffic from Buffalo and Ashtabula would use the Lakeshore Line between Collinwood Yard and Berea via the drawbridge over the Cuyahoga River and through CP 190. At Berea, CSX would cross the NS rail lines via a rail/rail grade separation to continue on to Greenwich, and, ultimately, Indianapolis and Chicago.

NS Traffic. The primary route for westbound NS traffic from Buffalo and Ashtabula would pass through Mayfield and then divert onto the Short Line at Mayfield on route to Short, from Short southwest to Berea, and then from Berea to Vermilion, Toledo, and Chicago. As noted previously, implementation of this alternative would require a rail/rail flyover of the CSX and NS tracks in Berea.

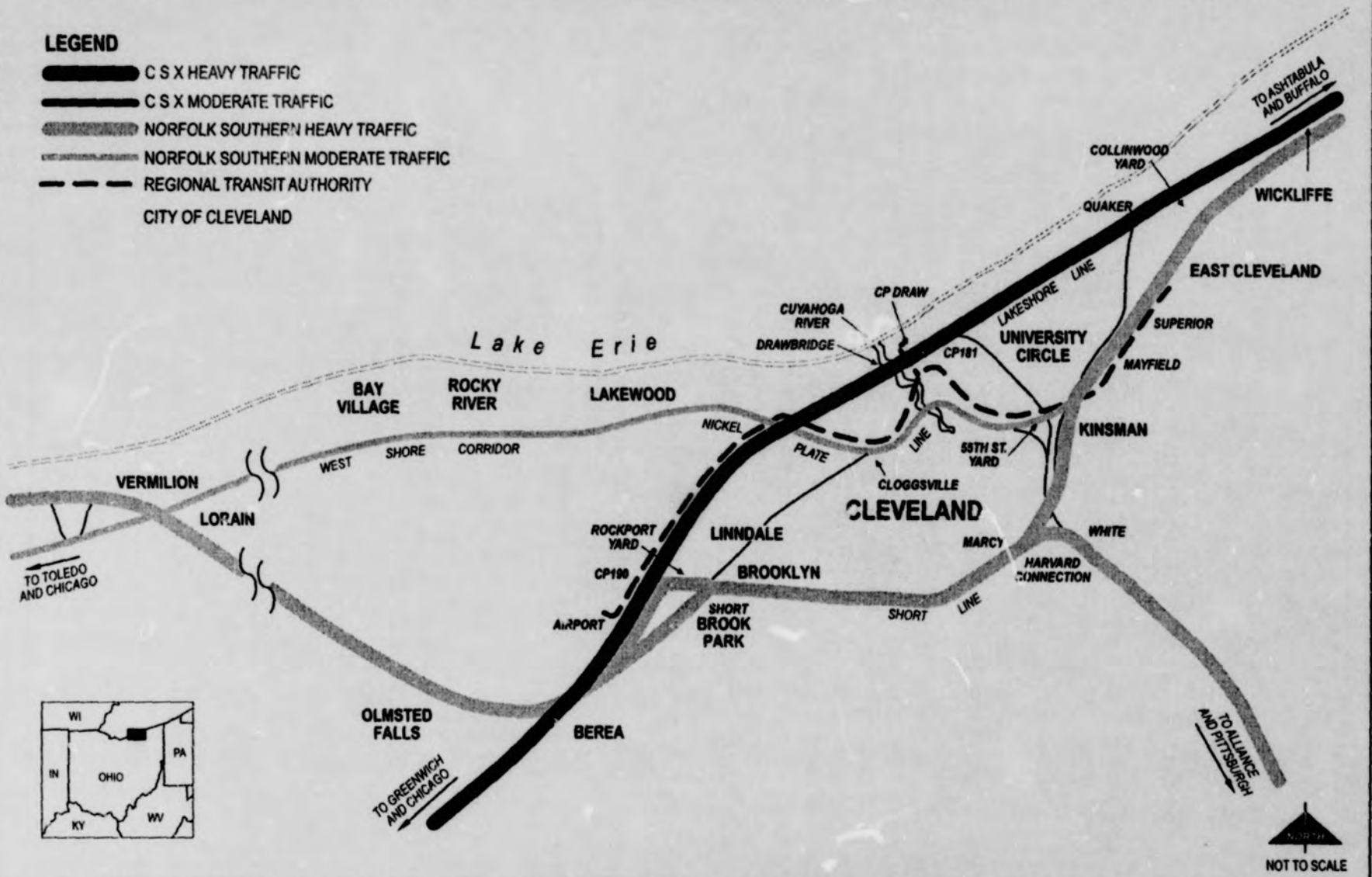


FIGURE N-5

CLEVELAND AREA ALTERNATIVE 4 - CLEVELAND FLIP PLAN NO. 2

- Track/Signal allowance at the west end of Rockport Yard (rail line segment N-501) to improve track conditions and signalization on the easterly lead track between the west end of the Rockport Yard and the Ford Motor Company yard.

- Construction of a second connection at Vermilion as described for Alternative 2.

The following improvements would not be necessary for rail operations to be feasible, but the City of Cleveland also listed them as items to be included in Alternative 3.

- Nottingham/Dille Road highway/rail grade separation (rail line segment N-075b).

- London Road highway/rail grade separation (rail line segment N-075b).

As proposed by the City of Cleveland, this alternative would result in a decrease in train traffic on the east side of the City and through East Cleveland. The average number of trains per day would be 24.0 trains fewer than in Alternatives 1 and 2. NS trains would constitute the main flow of traffic through this area. The main NS traffic on the Nickel Plate Line would flow through Cloggsville to Berea, where it would cross CSX traffic on the rail/rail flyover discussed above. Alternative 3 would substantially reduce traffic between Harvard and Kinsman, as well as along the Short Line in that same area. This reduction would amount to an average of 68.1 fewer trains per day in the Harvard-Kinsman area than would occur in Alternatives 1 and 2. (See Table N-4.)

Alternative 4: Cleveland Flip Plan #2 (Short Line)

In Alternative 4, which the City of Cleveland suggested as a variant of Alternative 3, the Short Line would be the primary route through Cleveland for NS mainline traffic from both Buffalo and Pittsburgh. Figure N-5 is a schematic illustration of Alternative 4. Table N-5 lists the rail line segments included in Alternative 4.

The following paragraphs describe the routings (from east to west) for Alternative 4.

CSX Traffic. CSX traffic would flow through the Greater Cleveland Area exactly as described for Alternative 3. CSX traffic from Buffalo and Ashtabula would use the Lakeshore Line between Collinwood Yard and Berea via the drawbridge over the Cuyahoga River and through CP 190. At Berea, CSX would cross the NS rail lines via a rail/rail grade separation to continue on to Greenwich, and, ultimately, Indianapolis and Chicago.

NS Traffic. The primary route for westbound NS traffic from Buffalo and Ashtabula would pass through Mayfield and then divert onto the Short Line at Mayfield on route to Short, from Short southwest to Berea, and then from Berea to Vermilion, Toledo, and Chicago. As noted previously, implementation of this alternative would require a rail/rail flyover of the CSX and NS tracks in Berea.

TABLE N-5
RAIL LINE SEGMENTS AFFECTED BY
ALTERNATIVE 4 CLEVELAND FLIP PLAN #2

Site ID	Rail line Segment Name	Length (mi)	1995 Pre-Acquisition Passenger and Freight Trains Per Day	Post-Acquisition Freight and Passenger Trains Per Day
N-075a	Ashtabula-to-Wickliffe	36	13.0	36.6
N-075b	Wickliffe-to-Mayfield	14	13.0	36.6
N-075c	Mayfield-to-E. 37th St.	6	13.0	16.4
N-075d	E. 37th St.-to-Cloggsvilie	4	13.0	16.4
N-080a	Cloggsville-to-Detroit Ave.	4	13.5	16.4
N-080b	Detroit Ave.-to-Vermilion	33	13.5	16.4
N-293a	CP Draw-to-Detroit Ave.	4	52.4	57.0
N-293b	Detroit Ave.-to-CP 190	8	52.4	57.0
N-293c	CP 190-to-Berea	5	52.4	61.0
N-293d	Berea-to-Vermilion	26	52.4	54.6
N-074	Cloggsville-to-Short Line Jct.	9	2.0	0
N-501	Short Line Jct.-to-CP 190	2	2.0	4.0
N-503	Erie Crossing-to-E. 37th St.	3	0	0
N-504	White-to-Marcy	2	0	28.1
N-505	Lakewood Conn. @ Detroit Ave	0.5	0	0
N-081a	White-to-Erie Crossing	3	14.5	4.0
N-081b	Erie Crossing-to-Kinsman	1	14.5	4.0
N-081c	Kinsman-to-E. 40th St.	4	14.5	4.0
N-081d	E. 40th St.-to-CP Draw	3	14.5	4.0
C-060a	Ashtabula-to-Wickliffe	37	50.3	55.0
C-060b	Wickliffe-to-Quaker	10	50.3	55.0
C-691a	Quaker-to-E. 49th St. Silver Plate	6	55.4	55.0
C-691b	E. 49th St. Silver Plate-to-CP Draw	4	55.4	55.0
C-073	Quaker-to-Mayfield	6	6.8	6.8
C-072a	Mayfield-to-Kinsman	4	3.4	20.2
C-072b	Kinsman-to-Marcy	3	3.4	20.2
C-069	Marcy-to-Short Line Jct.	9	16.4	48.3
C-074	Short Line Jct-to-Berea	4	13.4	46.3
C-777	E. 49th St. Silver Plate-E. 40th St.	1	0	0

A secondary NS route would head westward from Mayfield to Cloggsville, via the Nickel Plate Line and then through Lakewood, Rocky River, and Bay Village, through Vermilion, and ultimately on to Toledo and Chicago.

The primary route for westbound NS traffic coming from Pittsburgh and Alliance would pass through White and the Harvard Connection to access the Short Line to Short, then towards Berea and Vermilion and then to Toledo and Chicago.

The Applicants would require the following operational infrastructure improvements to implement Alternative 4.

- Rail/rail flyover of the CSX and NS lines in Berea as described for Alternative 3.
- Mayfield Connecting track between rail line segments N-075b and C-073/C-072a at Mayfield. This connection between the Nickel Plate Line and the Short Line would include a new double-track main line connection including trackwork, turnouts, crossing frogs, and signals on rehabilitated trackbed. This includes allowance for railroad utilities relocations/improvements.
- Harvard Connection (NS Alliance-to-Cleveland Line to Short Line) as described for Alternative 3.
- Track/Signal allowance at the west end of Rockport Yard (rail line segment N-501) as described for Alternative 3.
- Construction of a second connection at Vermilion as described for Alternative 2.

The track and signal improvements outlined in Alternatives 2 and 3 for the Cloggsville Connection would not be necessary. The following improvements would not be necessary for rail operations to be feasible, but the City of Cleveland also listed them as items to be included in Alternative 4.

- Nottingham/Dille Road highway/rail grade separation (rail line segment N-075b).
- London Road highway/rail grade separation (rail line segment N-075b).

As with Alternative 3, Alternative 4 would result in an average of 37.0 fewer trains per day in East Cleveland and the east side of the City of Cleveland than Alternatives 1 and 2. All main line CSX traffic would use the Lakeshore Line, while all NS main line traffic, except for approximately 16 trains per day, would use the Short Line across the southern portion of the area. Berea would become the focal and crossing point for CSX and NS mainline traffic. Table N-5 presents train traffic on each rail line segment comprising this alternative.

N.1.2.4 Alternatives Developed by SEA for Consideration

SEA proposed the following alternatives for study in this analysis as a means of reducing train traffic through the east side of Cleveland, while at the same time avoiding the need to construct a rail/rail flyover in the primarily residential suburb of Berea. Alternatives 5 and 6 also would offer opportunities for NS to divert traffic away from the West Shore suburbs.

Alternative 5: SEA Wickliffe Rail/Rail Flyover

SEA identified Alternative 5 to avoid the need to build a rail/rail flyover in Berea by swapping the NS and CSX main lines east of Cleveland. This alternative would instead construct a rail/rail flyover at Wickliffe, at the east end of the study area. The flyover (which would become CSX trackage) would enable CSX trains on the former Conrail main line to access the NS Nickel Plate Line to Cleveland, while NS westbound trains would access the former Conrail Lakeshore Line leading to CP Draw and on to Berea. The benefits of constructing a rail/rail flyover at Wickliffe include avoidance of many constructibility challenges that are present at Berea. In addition, from a land use standpoint, the industrial rail corridor at Wickliffe is more compatible with a rail/rail flyover than Berea, which has more of a residential/commercial land use mix near the railroad tracks, as well as several historic railroad structures (bridges, tower, and station).

Figure N-6 is a schematic illustration of Alternative 5. Table N-6 lists the rail line segments included in Alternative 5.

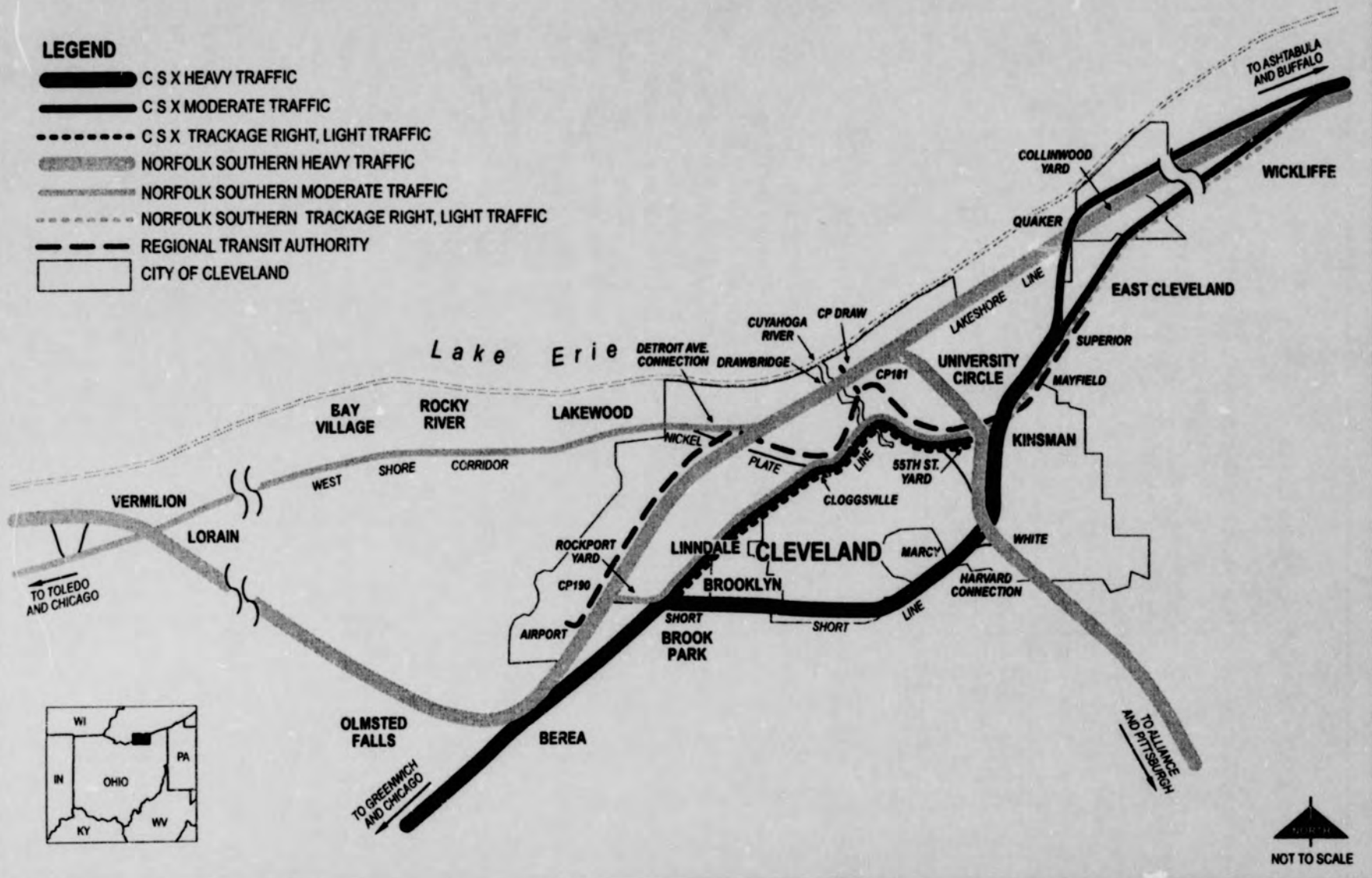
The following paragraphs describe the routings (from east to west) for Alternative 5.

CSX Traffic. The primary route for CSX traffic from Buffalo and Ashtabula would split on the eastern end of the Greater Cleveland Area. One CSX line would cross over the NS main line at Wickliffe on the rail/rail flyover, onto the Nickel Plate Line corridor (rail line segment N-075b). This alignment is currently owned by NS but would become CSX's main line with NS trackage rights (for approximately four trains per day) under this alternative. The other CSX line would parallel the north side of the Conrail Lakeshore Line corridor (rail line segment C-060b) on a double-track main line affording access to Collinwood Yard. Ultimately, the CSX traffic passing through Collinwood Yard would cross back over the NS main line at an existing rail/rail flyover at Quaker en route to Mayfield. The CSX lines would rejoin each other at Mayfield.

From Mayfield, the primary route for CSX traffic would be along the Short Line through Kinsman and Marcy to Short. From Short, the CSX traffic would head southwest to Berea, where it would approach, but not cross, the NS line. From Berea, the CSX traffic would continue southwest towards Greenwich, and on to Indianapolis and Chicago.

A secondary CSX route from Mayfield, using NS trackage rights, would head west to Cloggsville and would use rail line segment N-074 to Short, where it would continue southwest towards Berea as described above. This secondary route would relieve CSX congestion that may occur at the single-track tunnels at Harvard on the Short Line.

NS Traffic: The primary route for NS traffic from Buffalo and Ashtabula would use the Lakeshore Line from Wickliffe to Quaker, sharing a separated corridor with CSX, then on to CP Draw and the drawbridge over the Cuyahoga River, to the Lakeshore Line to CP 190, and on to Berea, Vermilion, and points west. The NS line from Buffalo would cross under the CSX main line at Wickliffe, with a connecting track to CSX to allow up to 4 trains per day to be routed through to Cloggsville.



N-26

FIGURE N-6

CLEVELAND AREA ALTERNATIVE 5 - WICKLIFFE FLYOVER

TABLE N-6
RAIL LINE SEGMENTS AFFECTED BY
ALTERNATIVE 5 WICKLIFFE RAIL/RAIL FLYOVER

Site ID	Rail Line Segment Name	Length (mi)	1995 Pre-Acquisition Passenger and Freight Trains Per Day	Post-Acquisition Freight and Passenger Trains Per Day
N-075a	Ashtabula-to-Wickliffe	36	13.0	36.6
N-075b	Wickliffe-to-Mayfield	14	13.0	33.0
N-075c	Mayfield-to-E. 37th St.	6	13.0	13.2
N-075d	E. 37th St.-to-Cloggsville	4	13.0	13.2
N-080a	Cloggsville-to-Detroit Ave.	4	13.5	0
N-080b	Detroit Ave.-to-Vermilion	33	13.5	16.4
N-293a	CP Draw-to-Detroit Ave.	4	52.4	66.3
N-293b	Detroit Ave.-to-CP 190	8	52.4	49.9
N-293c	CP 190-to-Berea	5	52.4	54.6
N-293d	Berea-to-Vermilion	26	52.4	54.6
N-074	Cloggsville-to-Short Line Jct.	9	2.0	13.2
N-501	Short Line Jct.-to-CP 190	2	2.0	4.0
N-503	Erie Crossing-to-E. 37th St.	3	0	0
N-504	White-to-Marcy	2	0	0
N-505	Lakewood Conn. @ Detroit Ave	0.5	0	16.4
N-081a	White-to-Erie Crossing	3	14.5	31.7
N-081b	Erie Crossing-to-Kinsman	1	14.5	31.7
N-081c	Kinsman-to-E. 40th St	4	14.5	31.7
N-081d	E. 40th St.-to-CP Draw	3	14.5	31.7
C-060a	Ashtabula-to-Wickliffe	37	50.3	55.0
C-060b	Wickliffe-to-Quaker	10	50.3	58.6
C-691a	Quaker-to-E. 49th St. Silver Plate	6	55.4	34.6
C-691b	E. 49th St. Silver Plate-to-CP Draw	4	55.4	34.6
C-073	Quaker-to-Mayfield	6	6.8	24.0
C-072a	Mayfield-to-Kinsman	4	3.4	43.8
C-072b	Kinsman-to-Marcy	3	3.4	43.8
C-069	Marcy-to-Short Line Jct.	9	16.4	43.8
C-074	Short Line Jct-to-Berea	4	13.4	53.0
C-777	E. 49th St. Silver Plate-E. 40th St.	1	0	0

As in Alternative 1, the other primary route for westbound NS traffic would extend from Pittsburgh through Alliance to Harvard on the Cleveland Line, north to Kinsman, northwest to CP Draw, along the old Conrail Lakeshore Line across the drawbridge to CP 190, and on to Berea, Vermilion, Toledo, and Chicago.

The Lakeshore Line would connect with the Nickel Plate Line to provide a secondary NS route via a restored connection near Detroit Avenue, where the two lines now cross at a grade-

separated location on Cleveland's west side. From there, trains would use the Nickel Plate Line (rail line segment N-080b) through the West Shore communities of Lakewood, Rocky River, and Bay Village to reach Vermilion and points west.

Alternative 5 would require the following operational infrastructure improvements.

- Wickliffe rail/rail flyover:

  — For the CSX corridor, major construction of a raised CSX double-track grade separation over NS tracks and 305th Street to include: double-track railroad overpass structures at NS line and 305th Street, retaining walls on earth-filled approaches, new double-track main line on new subgrade, single-track connection to double-track CSX main line heading to Collinwood Yard, turnouts and signals for inter-route connection/connection to Collinwood Yard, and allowance for railroad utilities relocations/improvements.

  — For the NS corridor: construction of double-track alignment under CSX flyover to connect to former double-track on the Conrail Lakeshore alignment, which continues east by Collinwood Yard; construction of drainage culvert under NS at crossing; new single-track inter-route (CSX to NS) connection (east end); turnouts and signaling for inter-route connection; and allowance for railroad utilities relocations/improvements; and power utility line transmission poles relocation.

- Mayfield Connection between rail line segments N-075b and C-073/C-072a as described for Alternative 4.

- Cloggsville Connection to CP 190 improvements as proposed for Alternative 2.

- Detroit Avenue Connection (Lakeshore Line to NS Nickel Plate Line): restoration of an old, single-track connection with trackwork on new subgrade; turnouts and signals at both the Lakeshore Line and the Nickel Plate Line connections; restoration of rail deck on bridge superstructure over West Boulevard (Lakeshore Line); allowance for railroad utilities relocations/ improvements.

- Construction of a second connection at Vermilion as described for Alternative 2.

This alternative would result in an average of 37.2 fewer trains per day through East Cleveland and the University Circle area of Cleveland than Alternative 1 by diverting NS Nickel Plate Line traffic onto the Lakeshore Line. It is a compromise between the Applicants' Alternatives 1 and 2 and the City of Cleveland's Alternatives 3 and 4, which were offered by the City to reduce traffic in East Cleveland and on the east side of the City of Cleveland. This alternative would limit NS traffic through the University Circle area to 4 NS trains per day traveling to and from Rockport Yard. This alternative would force NS to route all mainline traffic over the Cuyahoga

River drawbridge at CP Draw, presenting potential delay and congestion problems for NS at this location.

As with Alternatives 1 and 2, CSX traffic would continue to use the Short Line as its mainline route through Cleveland. There would be a splitting of eastbound and westbound traffic, however, in the vicinity of Collinwood Yard between the former Conrail Lakeshore Line and the Nickel Plate Line, over which CSX would assume control. This splitting of traffic would complicate use of Collinwood Yard by CSX because the presence of the NS main line through the southern portion of the yard would restrict access to the present location of the fueling facility for CSX further complicate CSX use of the yard.

Alternative 6: SEA Wickliffe Rail/Rail Flyover with Erie Line Rehabilitation

SEA identified Alternative 6 as a way to reduce train traffic along the former Conrail (previously Pennsylvania Railroad) segment between Erie Crossing (near Kinsman) and CP Draw and along the Lakeshore Line west of CP Draw to Berea. This alternative would route trains in a manner similar to Alternative 5 with a rail/rail flyover at Wickliffe. Most NS train traffic originating from Pittsburgh would use a rehabilitated Erie-Lackawanna Railroad rail line segment on the east side of Cleveland (Erie Connection, rail line segment N-503) and the Cloggsville connection to access Berea and points west.

Figure N-7 is a schematic illustration of Alternative 6. Table N-7 lists the rail line segments included in Alternative 6.

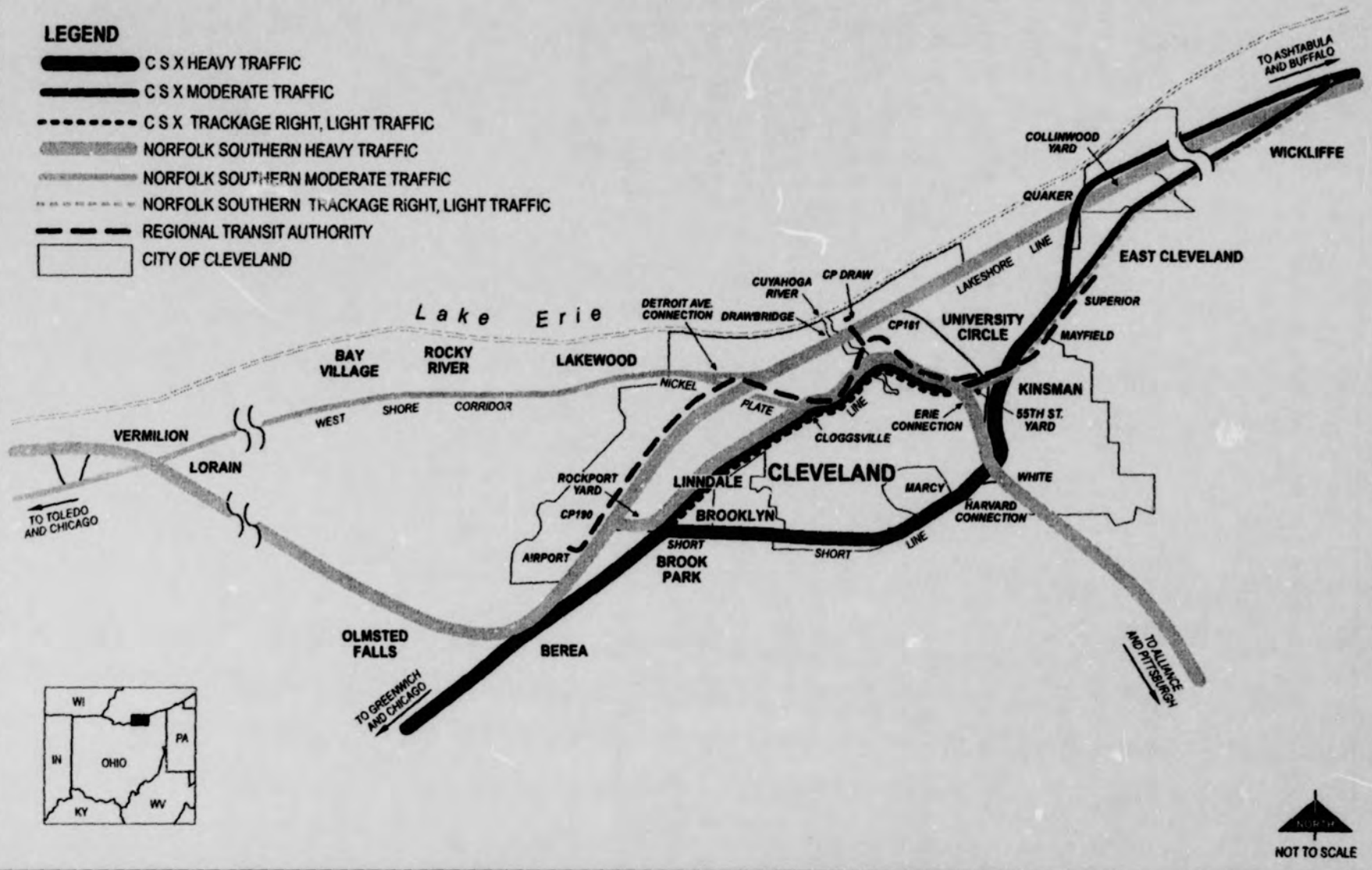
The following paragraphs describe the routings (from east to west) for Alternative 6.

CSX Traffic. The primary route for CSX traffic would be identical to the route described for Alternative 5.

A secondary CSX route would include trackage rights on NS track from Mayfield west to Cloggsville. Trains would use the Cloggsville connecting track (rail line segment N-074) to Short. From Short, CSX would continue southwest toward Berea along the primary CSX route to Indianapolis and Chicago.

NS Traffic. Trains from Buffalo and Ashtabula would use the Wickliffe rail/rail flyover and the Lakeshore Line as described for Alternative 5.

NS train traffic from Pittsburgh via White would go from White northwest to the Erie Connection (rail line segment N-503) to East 37th Street, and then connect with rail line segment N-075d along a new connection just to the west of the NS 55th Street Yard. The Erie Connection currently is a local Conrail line that NS would rehabilitate as the NS main line for this purpose.



N-30

Proposed Conrail Acquisition — Final Environmental Impact Statement

FIGURE N-7

CLEVELAND AREA ALTERNATIVE 6 - WICKLIFFE FLYOVER WITH ERIE CONNECTION

TABLE N-7
RAIL LINE SEGMENTS AFFECTED BY ALTERNATIVE 6
WICKLIFFE RAIL/RAIL FLYOVER WITH ERIE LINE REHABILITATION

Site ID	Rail Line Segment Name	Length (mi)	1995 Pre-Acquisition Passenger and Freight Trains Per Day	Post-Acquisition Freight and Passenger Trains Per Day
N-075a	Ashtabula-to-Wickliffe	36	13.0	36.6
N-075b	Wickliffe-to-Mayfield	14	13.0	33.0
N-075c	Mayfield-to-E. 37th St.	6	13.0	13.2
N-075d	E. 37th St.-to-Cloggsville	4	13.0	42.9
N-080a	Cloggsville-to-Detroit Ave.	4	13.5	12.4
N-080b	Detroit Ave.-to-Vermilion	33	13.5	16.4
N-293a	CP Draw-to-Detroit Ave.	4	52.4	38.6
N-293b	Detroit Ave.-to-CP 190	8	52.4	34.6
N-293c	CP 190-to-Berea	5	52.4	55.9
N-293d	Berea-to-Vermilion	26	52.4	54.6
N-074	Cloggsville-to-Short Line Jct.	9	2.0	30.5
N-501	Short Line Jct.-to-CP 190	2	2.0	21.3
N-503	Erie Crossing-to-E. 37th St.	3	0	0
N-504	White-to-Marcy	2	0	0
N-505	Lakewood Conn. @ Detroit Ave	0.5	0	4.0
N-081a	White-to-Erie Crossing	3	14.5	31.7
N-081b	Erie Crossing-to-Kinsman	1	14.5	4.0
N-081c	Kinsman-to-E. 40th St.	4	14.5	4.0
N-081d	E. 40th St.-to-CP Draw	3	14.5	4.0
C-060a	Ashtabula-to-Wickliffe	37	50.3	55.0
C-060b	Wickliffe-to-Quaker	10	50.3	58.6
C-691a	Quaker-to-E. 49th St. Silver Plate	6	55.4	34.6
C-691b	E. 49th St. Silver Plate-to-CP Draw	4	55.4	34.6
C-073	Quaker-to-Mayfield	6	6.8	24.0
C-072a	Mayfield-to-Kinsman	4	3.4	43.8
C-072b	Kinsman-to-Marcy	3	3.4	43.8
C-069	Marcy-to-Short Line Jct.	9	16.4	43.8
C-074	Short Line Jct-to-Berea	4	13.4	53.0
C-777	E. 49th St. Silver Plate-E. 40th St.	1	0	0

From 37th Street, NS traffic would continue toward the Cloggsville Connection and use the Flats Industrial Track (rail line segment N-074) to Short, around Rockport Yard to CP 190, Berea, and points west.

A second NS corridor would route some traffic along the Alternative 5 primary NS route from Pittsburgh, through White, north to Kinsman, northwest to CP Draw, and along the Lakeshore

Line as described above. The train volumes on this rail line segment would be much lower than those in Alternative 5 (an average of 2.0 trains per day versus an average of 29.7 trains per day).

As described for Alternative 5, another NS corridor would route NS trains from the Lakeshore Line to the Nickel Plate Line via a restored Detroit Avenue Connection. From there, NS trains would use the Nickel Plate Line (rail line segment N-080b) through the West Shore communities of Lakewood, Rocky River, and Bay Village westward to Vermilion and on to Toledo and Chicago.

Alternative 6 would require the following capital improvements.

- Wickliffe rail/rail flyover as described for Alternative 5.
- Cloggsville Connection to CP 190 improvements as proposed for Alternative 2.
- Mayfield Connection between rail line segments N-075b and C-073/C-072a as described for Alternatives 4 and 5.
- Erie Connection (former Pennsylvania Railroad Line to NS main line via former Erie Line) would consist of:
  - — Upgrading existing single-track former Pennsylvania Railroad Line (Conrail's Cleveland Line) to Erie Connection to double-track main line connection with connecting tracks, turnouts, crossing frogs, and signals on new subgrade.
  - — Upgrading existing single-track Erie Connection to double-track main line from Erie Crossing to East 37th Street with new trackage, turnouts, and signals for sidings, on rehabilitated or new track bed; removal of existing substandard trackage; rehabilitation of existing railroad bridge over the NS main line; widening of the existing railroad bridge over East 37th Street with retaining walls on sidehill-fill approaches; and allowance for railroad utilities relocations/improvements.
  - — New double-track main line connection of Erie Connection to NS main line north of East 37th Street, including trackwork, turnouts, crossing frogs, and signals on new or existing track bed.
- Detroit Avenue Connection (Westbound Lakeshore Line to NS Nickel Plate Line) as described for Alternative 5.
- Construction of a second connection at Vermilion as described for Alternative 2.

CSX and NS train traffic volumes for Alternative 6 in Wickliffe, Collinwood Yard, East Cleveland and the University Circle area would be identical to those of Alternative 5. Alternative 6 would result in an average of 34.6 trains per day (not including four passenger trains) running

through the Cleveland central business district, however, while Alternative 5 would produce an average of 62.3 trains per day through that area. NS train traffic through the Cloggsville connection to Short and then to CP 190 would be higher in Alternative 6 than in Alternative 5. The main advantage of Alternative 6 is that it would give NS an alternative to routing all of its mainline traffic over the drawbridge at the Cuyahoga River (CP Draw). Table N-7 presents the traffic volumes for each rail line segment affected by Alternative 6.

Alternative 7 - Revision of Cleveland Reverse Curve Alternative and Analysis by SEA as it was Initially Suggested by the City of Cleveland

Alternative 7 would lower train traffic levels through East Cleveland and the University Circle area and avoid the need to construct a rail/rail flyover at Berea or Wickliffe as in Alternatives 3, 4, 5, and 6. CSX and NS could separate their main lines by constructing a new reverse curve track connection (new rail line segment C-777) between the Lakeshore Line (rail line segment C-691a) and the former Conrail Cleveland Line (rail line segment N-081d). This reverse curve would include highway/rail grade separations and would require a radius that would allow CSX to operate through the curve at an acceptable speed. It could also require closing 49th Street, 46th Street, and other local streets because, although the tracks would be on an incline, they might not be high enough to clear these roadways. Construction of this connection would require substantial acquisition of right-of-way, including approximately 10 to 12 industrial buildings.

Figure N-8 is a schematic illustration of Alternative 7. Table N-8 lists the rail line segments included in Alternative 7.

The following paragraphs describe the routings (from east to west) for Alternative 7.

CSX Traffic. The CSX route would enter the area at Wickliffe and continue along the Lakeshore Line to East 49th Street. At this point, the route would use the new connecting reverse curve (new rail line segment C-777) and continue south along rail line segment N-081c to Kinsman. From Kinsman, CSX trains would travel on a new double-track connection to the Short Line, allowing access to Marcy and then to Short. From Short, CSX trains would travel southwest to Berea and then to Greenwich, Toledo, and Chicago.

NS Traffic. The primary NS route for traffic from Buffalo and Ashtabula would pass through Wickliffe, then use the NS Nickel Plate Line to Mayfield and on to East 37th Street. From East 37th Street, NS traffic would continue towards the Cloggsville Connection and use the Flats Industrial Track (rail line segment N-074) to Short, CP 190, Berea, Vermilion, and points west.

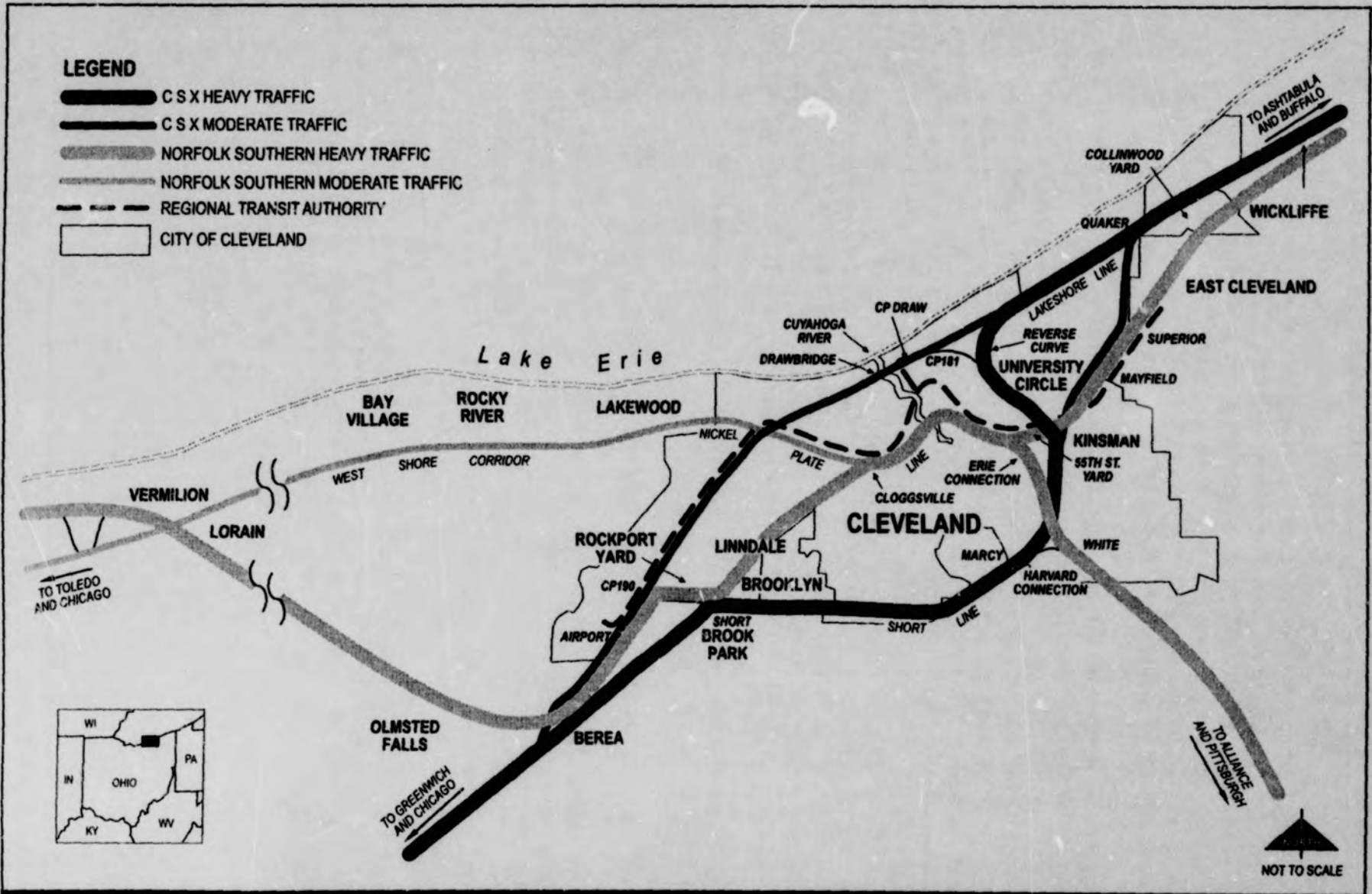


FIGURE N-8

CLEVELAND AREA ALTERNATIVE 7 - CLEVELAND REVERSE CURVE

TABLE N-8
AFFECTED RAIL LINE SEGMENTS IN ALTERNATIVE 7
SEA REVISION OF CLEVELAND REVERSE CURVE ALTERNATIVE

Site ID	Rail Line Segment Name	Length (mi)	1995 Pre-Acquisition Passenger and Freight Trains Per Day	Post-Acquisition Freight and Passenger Trains Per Day
N-075a	Ashtabula-to-Wickliffe	36	13.0	36.6
N-075b	Wickliffe-to-Mayfield	14	13.0	36.6
N-075c	Mayfield-to-E. 37th St.	6	13.0	36.6
N-075d	E. 37th St.-to-Cloggsville	4	13.0	66.3
N-080a	Cloggsville-to-Detroit Ave.	4	13.5	16.4
N-080b	Detroit Ave.-to-Vermilion	33	13.5	16.4
N-293a	CP Draw-to-Detroit Ave.	4	52.4	15.7
N-293b	Detroit Ave.-to-CP 190	8	52.4	15.7
N-293c	CP 190-to-Berea	5	52.4	65.6
N-293d	Berea-to-Vermilion	26	52.4	54.6
N-074	Cloggsville-to-Short Line Jct.	9	2.0	49.9
N-501	Short Line Jct.-to-CP 190	2	2.0	49.9
N-503	Erie Crossing-to-E. 37th St.	3	0	29.7
N-504	White-to-Marcy	2	0	0
N-505	Lakewood Conn. @ Detroit Ave	0.5	0	0
N-081a	White-to-Erie Crossing	3	14.5	31.7
N-081b	Erie Crossing-to-Kinsman	1	14.5	2.0
N-081c	Kinsman-to-E. 40th St.	4	14.5	36.5
N-081d	E. 40th St.-to-CP Draw	3	14.5	2.0
C-060a	Ashtabula-to-Wickliffe	37	50.3	55.0
C-060b	Wickliffe-to-Quaker	10	50.3	55.0
C-691a	Quaker-to-E. 49th St. Silver Plate	6	55.4	48.2
C-691b	E. 49th St. Silver Plate-to-CP Draw	4	55.4	13.7
C-073	Quaker-to-Mayfield	6	6.8	6.8
C-072a	Mayfield-to-Kinsman	4	3.4	6.8
C-072b	Kinsman-to-Marcy	3	3.4	41.3
C-069	Marcy-to-Short Line Jct.	9	16.4	41.3
C-074	Short Line Jct-to-Berea	4	13.4	41.3
C-777	E. 49th St. Silver Plate-E. 40th St.	1	0	34.5

The NS train traffic coming from Pittsburgh would use the primary NS route from White to the Erie Crossing. At this point, trains would be routed northwest along the Erie Connection (rail line segment N-503) to East 37th Street as described in Alternative 6. From there, the route would connect with rail line segment N-075d along a new connection and continue from East 37th Street to Cloggsville, Short, CP 190, Berea, Vermilion, and points west. As noted in the description for Alternative 6, the Erie Connection between Erie Crossing and East 37th Street is a local service line that would be rehabilitated as the NS main line for this purpose.

A secondary NS corridor would route NS trains from Cloggsville along the Nickel Plate Line through Lakewood, Rocky River, and Bay Village towards Vermilion, as described for Alternative 2.

Alternative 7 would require the following capital improvements.

- Cloggsville Connection to CP 190 improvements as proposed for Alternative 2.

- Kinsman Connection (connecting Conrail's former Pennsylvania Railroad Line to the Short Line) including: new double-track main line connection with trackwork, turnouts, crossing frogs, and signals on new trackbed with minor excavation; and allowance for railroad utilities relocations/improvements.

- Erie Connection (connecting Conrail's former Pennsylvania Railroad Line to the NS Nickel Plate Line near East 37th Street via the former Erie Line) as described for Alternative 6.

- Cleveland Reverse Curve Connection between the Lakeshore Line and the Pittsburgh Line (Conrail's Lakeshore Line to Conrail's former Pennsylvania Railroad Line) including: new double-track main connection on new grade-separated alignment, which includes construction of a new connection at Silver Plate Branch (railroad industrial track) and highway/rail grade separation structures at 40th Street-Lakeside Avenue (viaduct), Hamilton Avenue, and St.Clair Avenue; retaining walls on earth-filled approaches over the entire route (except at grade separation structures); new double-track alignment on new trackbed; new interlockings (turnouts, crossing frogs, signals) at Superior on the Pittsburgh Line and at 40th Street on Lakeshore Line; allowance for railroad utilities relocations/improvements; and major property acquisition (primarily industrial, warehouse, and vacant buildings), owner relocation, and demolition along entire route. This would also include allowance for local street utilities relocations along entire route and road closure of 49th Street at new railroad alignment.

- Construction of a second crossover at Vermilion as described for Alternative 2.

Alternative 7 requires NS to route all of its traffic along the Nickel Plate Line through central Cleveland. Routing of main line CSX traffic via the Reverse Curve Connection between the Lakeshore Line and the Short Line would result in fewer trains in the East Cleveland and University Circle areas than Alternatives 1 and 2. This reduction, an average of 37 trains per day, would be identical to that of Alternatives 3 and 4. Alternative 7 also would create a substantial reduction in train traffic through the Cleveland central business district at CP Draw. Reductions in train traffic in Lakewood, Rocky River and Bay Village would be identical to those of Alternative 2, 3, 4, 5, and 6. (See Table N-8.)

N.1.2.5 Overview Comparison of Train Traffic in the Seven Alternatives

Tables N-2 through N-8 present the train traffic volumes for each rail line segment that each alternative would use. Table N-9 offers an overview of each rail line segment's train traffic that this study anticipated in each alternative.

TABLE N-9
COMPARISON OF TRAIN TRAFFIC FOR
THE SEVEN CLEVELAND-AREA ALTERNATIVES

Site ID	Rail Line Segment Name	Length (mi)	1995 Pre-Acquisition Passenger and Freight Trains Per Day	Post-Acquisition Freight and Passenger Trains Per Day						
				Alternatives						
				1	2	3	4	5	6	7
				Base Case	NS Clogg	Clev. #1	Clev. #2	Wickliffe	Wickliffe &Erie	Rev. Curve
N-075a	Ashtabula-to-Wickliffe	36	13	36.6	26.0	36.6	36.6	36.6	36.6	36.6
N-075b	Wickliffe-to-Mayfield	14	13	36.6	26.0	36.6	36.6	33.0	33.0	36.6
N-075c	Mayfield-to-E. 37th St.	6	13	36.6	26.0	36.6	16.4	13.2	13.2	36.6
N-075d	E. 37th St.-to-Cloggsville	4	13	36.6	26.0	36.6	16.4	13.2	42.9	66.3
N-080a	Cloggsville-to-Detroit Ave.	4	13.5	34.1	13.9	16.4	16.4	0	12.4	16.4
N-080b	Detroit Ave.-to-Vermilion	33	13.5	34.1	13.9	16.4	16.4	16.4	16.4	16.4
N-293a	CP Draw-to-Detroit Ave.	4	52.4	48.6	57.5	57.0	57.0	66.3	38.6	15.7
N-293b	Detroit Ave.-to-CP 190	8	52.4	48.6	57.5	57.0	57.0	49.9	34.6	15.7
N-293c	CP 190-to-Berea	5	52.4	48.6	67.1	61.0	61.0	54.6	55.9	65.6
N-293d	Berea-to-Vermilion	26	52.4	36.9	59.1	54.6	54.6	54.6	54.6	54.6
N-074	Cloggsville-to-Short Line Jct.	9	2.0	4.2	13.8	17.7	0	13.2	30.5	49.9
N-501	Short Line Jct.-to-CP 190	2	2.0	4.2	13.8	4.0	4.0	4.0	21.3	49.9
N-503	Erie Crossing-to-E. 37th St.	3	0	0	0	0	0	0	29.7	29.7
N-504	White-to-Marcy	2	0	0	0	28.1	28.1	0	0	0
N-505	Lakewood Conn. @ Detroit Ave	0.5	0	0	0	0	0	16.4	4.0	0
N-081a	White-to-Erie Crossing	3	14.5	31.7	42.3	4.0	4.0	31.7	31.7	31.7
N-081b	Erie Crossing-to-Kinsman	1	14.5	31.7	42.3	4.0	4.0	31.7	4.0	2.0
N-081c	Kinsman-to-E. 40th St.	4	14.5	31.7	42.3	4.0	4.0	31.7	4.0	36.5
N-081d	E. 40th St.-to-CP Draw	3	14.5	31.7	42.3	4.0	4.0	31.7	4.0	2.0
C-060a	Ashtabula-to-Wickliffe	37	50.3	55.0	55.0	55.0	55.0	55.0	55.0	55.0
C-060b	Wickliffe-to-Quaker	10	50.3	55.0	55.0	55.0	55.0	58.6	58.6	55.0
C-691a	Quaker-to-E. 49th St. Silver Plate	6	55.4	13.7	13.7	55.0	55.0	34.6	34.6	48.2
C-691b	E. 49th St. Silver Plate-to-CP Draw	4	55.4	13.7	13.7	55.0	55.0	34.6	34.6	13.7
C-073	Quaker-to-Mayfield	6	6.8	43.8	43.8	6.8	6.8	24.0	24.0	6.8

TABLE N-9
COMPARISON OF TRAIN TRAFFIC FOR
THE SEVEN CLEVELAND-AREA ALTERNATIVES

Site ID	Rail Line Segment Name	Length (mi)	1995 Pre-Acquisition Passenger and Freight Trains Per Day	Post-Acquisition Freight and Passenger Trains Per Day						
				Alternatives						
				1	2	3	4	5	6	7
				Base Case	NS Clogg	Clev. #1	Clev. #2	Wickliffe	Wickliffe &Erie	Rev. Curve
C-072a	Mayfield-to-Kinsman	4	3.4	43.8	43.8	3.4	20.2	43.8	43.8	6.8
C-072b	Kinsman-to-Marcy	3	3.4	43.8	43.8	3.4	20.2	43.8	43.8	41.3
C-069	Marcy-to-Short Line Jct.	9	16.4	43.8	43.8	30.1	48.3	43.8	43.8	41.3
C-074	Short Line Jct-to-Berea	4	13.4	45.3	45.3	46.3	46.3	53.0	53.0	41.3
C-777	E. 49th St. Silver Plate-E. 40th St.	1	0	0	0	0	0	0	0	34.5

N.1.2.6 Additional Improvements

In addition to the seven routing alternatives described above, SEA identified a number of improvements that would address other potential effects of the proposed Conrail Acquisition while at the same time accommodating the Applicants' needs. The Applicants could implement these measures with any of the seven routing alternatives, enabling them to be good neighbors. Some of these improvements, such as landscaping with berms, would directly mitigate other environmental impacts (for example, noise) of the proposed Conrail Acquisition. Other improvements may mitigate the effects the proposed Conrail Acquisition could have on issues such as pedestrian safety in the area by improving conditions that exist at present and, without direct action on the part of the Applicants, would continue and worsen following approval of the proposed Conrail Acquisition and the start of increased trains operations.

As a part of enhancements under consideration, SEA examined the following enhancements. SEA notes that the Applicants have already volunteered several of these actions in their negotiations with the affected communities.

- The Applicants would furnish additional low-maintenance landscaping such as evergreen trees, shrubs, ground cover, etc., within railroad right-of-way to provide visual interest and create a visual buffer.

- The Applicants would reface or repaint bridges to be more neighborhood-friendly, and would commit to maintaining the appearance of bridges to keep them attractive. In addition, they would extend the offer to neighborhood representatives to allow them to work with the Applicants to make bridges and other railroad appurtenances neighborhood amenities that would complement the neighborhood.

- The Applicants would improve the appearance of all rail/neighborhood interfaces through regular maintenance and improved landscaping. The Applicants would cooperate with

neighborhoods to provide signage or otherwise create neighborhood gateways in places where the tracks mark a boundary between municipalities or neighborhoods.

- The Applicants would offer periodic public outreach meetings to address community concerns.

- Subject to the limitations of existing union agreements, the Applicants would consider offering newly created permanent or temporary employment for residents of neighborhoods affected by the project.

- The Applicants would design fences, landscaping, and noise barriers (if used) to deter children and others from trespassing on railroad property.

N.1.2.7 Discretionary Stand-Alone Improvements in the Greater Cleveland Area

Various commentors recommended a number of stand-alone improvements that SEA considered in this analysis. In addition, in certain locations, CSX and NS offered to construct improvements that would be considered stand-alone. These improvements are not necessarily associated with any particular alternative, and are not obligatory from the perspective of CSX and NS because rail operations would be satisfactory without the improvements. Commentors have claimed the need, however, for these various improvements to mitigate impacts to local areas. These improvements are:

- Berea Front Street Highway/Rail Grade Separation (rail line segments N-293c, N-293d, C-074, and C-061). This improvement would provide a highway/rail grade separation at Front Street in Berea, and is part of Alternatives 3 and 4, which incorporate the rail/rail flyover involving the Conrail (future CSX) and NS lines. The highway/rail grade separation would not be necessary for rail operations to function under other alternatives, however, and for that reason, this improvement is a stand-alone improvement for Alternatives 2, 5, 6, and 7.

- Nottingham/Dille Road highway/rail grade separation (rail line segment N-075b). This improvement in the Collinwood area is included as a stand-alone element of Alternatives 2 through 7.

- London Road highway/rail grade separation (rail line segment N-075b). This improvement in the Collinwood area is included as a stand-alone element of Alternatives 2 through 7.

- Bagley Road highway/rail grade separation (rail line segment C-061). This improvement in Berea is included as a stand-alone element of Alternatives 2 through 7.

N.1.2.8 Alternatives Considered and Rejected from Further Study

In addition to the seven routing alternatives SEA considered in this study, SEA formulated three more alternatives, but later determined that these alternatives have serious shortcomings that render them not feasible for construction. Therefore, SEA rejected these three alternatives from further study. The following paragraphs describe the three rejected alternatives.

Wickliffe Rail/Rail At-Grade Crossing

SEA considered and rejected a rail/rail at-grade crossing of the CSX and NS rail lines at Wickliffe as a viable alternative due to operational problems, primarily congestion and potential backups, caused by conflicts between CSX and NS traffic at this crossover.

Berea Rail/Rail At-grade Crossing

SEA considered and rejected using the complex junction of the CSX and NS rail lines at Berea as a viable alternative due to operational problems caused by conflicts between CSX and NS traffic at this location. Use of this crossing of the two systems at this location could cause significant delays and backups on both systems.

Cleveland Erie/Cloggsville

This alternative would entail CSX using the Lakeshore Line in a manner identical to Alternatives 3 and 4. NS traffic from Buffalo and Pittsburgh would pass through Cloggsville; most traffic would pass through Short and Berea, and the remainder would pass through the West Shore Corridor of the Nickel Plate Line. SEA rejected this alternative because it would have no tangible advantage over the other Cleveland alternatives. In fact, this alternative is less advantageous because it would not use the Short Line (rail line segment C-069), a high-quality rail line that passes through mostly industrial areas and is fully grade-separated from roadways.

N.1.2.9 Proposal to Establish a Neutral Independent Railroad Operating Entity to Serve Northeastern Ohio

Congressman Dennis Kucinich, who represents Ohio's 10th Congressional District, presented an Inconsistent and Responsive (IR) Application to the Board that proposed the formation of a new railroad entity in the Greater Cleveland Area and northeastern Ohio. Because this proposal had the potential to result in a change in the routing of train traffic through the Greater Cleveland Area and northeastern Ohio, SEA examined it to determine whether the operations of the proposed entity would have any environmental benefits or adverse effects. The discussion that follows presents SEA's analysis and the conclusion that the independent railroad operating company that Congressman Kucinich proposes would not produce any identifiable environmental benefits and would, on the other hand, result in additional operational complexity that could worsen safety. For these reasons, SEA determined that implementation of the proposed operating entity is not warranted.

Description of the Proposal

Congressman Kucinich proposed establishment of a neutral, independent, third-party entity in the Greater Cleveland Area to avoid, resolve, and mitigate potential problems that he believes would result from the proposed Conrail Acquisition. Congressman Kucinich's plan proposes that certain freight lines with heavy traffic be jointly owned and accessed by CSX and NS, with other freight lines placed into a separate railroad operating company apart from CSX and NS. On the latter lines, the new entity would have all existing and future rights to freight contracts with shippers. The new entity would control all dispatching, switching, and signaling in the Greater Cleveland Area. CSX, NS, and other carriers would be able to operate their trains along any track currently owned by CSX, NS, Conrail, or other railroad companies in the Greater Cleveland Area, subject to availability and necessity as determined by the independent entity. The new entity could also operate or contract to operate commuter trains on some lines. Congressman Kucinich proposes that the public rail development agency (Ohio Rail Development Commission), the local transit agency (Greater Cleveland Regional Transit Authority (GCRTA)), and the interested railroads (CSX, NS, and Amtrak) would develop and implement the management and priorities of the new rail entity. The goals of this new entity would be equitable and improved freight rail competition and fair resolution of potential environmental problems.

The Board determined that the IR Application submitted by Congressman Kucinich was in effect a comment, and not an IR Application. Thus, the Board and SEA treated the proposal as a Request for Conditions.

Background

Jointly and privately owned and managed regional and local railroad companies, which provide access for local rail freight customers to multiple railroad companies, have existed in the railroad industry for many years. These companies generally were jointly owned by the major railroads providing service in a local market area. In a few cases, manufacturers with a strong interest in railroad freight service owned these companies to ensure that rail service focused on their core business needs. In those cases where manufacturers were the railroad owners, they provided similar services for non-owners. Examples are the Elgin, Joliet and Eastern Railroad, formerly owned by US Steel, and now privately controlled; Terminal Railroad Association of St. Louis (TRRA), owned by most, but not all, of the major railroads in the St. Louis area; and Alton & Southern, owned initially by Alcoa, subsequently by Chicago & Northwestern and Southern Pacific, and now by Union Pacific (UP). Major railroads absorbed these companies, either formally or in fact, through mergers and resultant consolidations of ownership, mainly to reduce overhead employment and maintain better control over car movement reporting, accounting, and operations.

A more recent trend is the establishment of short-line and regional railroad companies that perform local freight and switching services, typically in rural or modestly urban areas. These companies, which have a strong local interest and greater operating flexibility, have been able to provide improved service profitably in many venues. The Flats Industrial Railroad in Cleveland

is a local example of this trend. It takes delivery of cars from Conrail and performs local switching on trackage once operated by Conrail and its predecessors.

Jointly owned terminal station companies providing passenger facilities at a common location once were found in many major cities such as Washington, D.C., Chicago, and Cleveland. The Cleveland Union Terminal Company once performed this function. Occasionally, companies such as the TRRA and the Chicago & Western Indiana, which operated Dearborn Station in Chicago, also provided neutral freight service to customers on their lines. Both of these companies outlived the passenger function, and the TRRA continues to perform the freight service function.

The proposal by Congressman Kucinich carries this independent carrier concept beyond the traditional models by proposing to take control of the main line through traffic of two Class 1 railroads at the center of both systems, transfer it through the independent carrier area, and then relay it back to each system. There is no historical precedent for this action. In general, existing neutral freight services are the result of joint railroad ownership where two or more railroads terminate. No parallel operating railroads share neutral freight service. Terminal railroads were created before the modern era of rail mergers to connect different railroads at a point where they came together and where each terminated. This was the case in St. Louis when the TRRA was created, as a need to improve local coordination of the transfer of numerous freight cars between multiple railroads in order to continue their journeys expeditiously. Current rail activity and rail activity associated with the proposed Conrail Acquisition do not involve a terminating point for NS or CSX or most other railroads in the Greater Cleveland Area.

In the Primary Application, both CSX and NS identified relatively direct routes that present no apparent need for any intervention in the control of those routes, from an operating standpoint. As stated by CSX and NS, a prime objective of the proposed Conrail Acquisition is the ability to maximize single-line service. This would enable complete control of train movements by a single carrier, and would result in simplified record keeping and reduced time loss in the interchange of cars. Single-line service permits greater flexibility to freely change train priorities in reaction to market demands without the need to coordinate with other railroads, such as a terminal operator located in the middle of the route. The terminal operator might have commitments to other railroads, such as the Wheeling and Lake Erie Railroad that also operates in Cleveland, and might not be able to accommodate short-term schedule and routing changes.

Another potential loss in operating efficiency could arise in the management of through-train crews. The distance between terminals and the hours-of-service regulation are the bases for crew districts. A terminal railroad entity in the midst of these long-haul, Class 1 crew districts could disrupt through-train crew management plans on a scale much beyond the Greater Cleveland Area.

Another issue to consider is the concept of public agency ownership, direction, and goals. Past examples of public ownership of railroad facilities have usually evolved into long-term rental or lease arrangements, with no day-to-day participation by the owner. Examples are the former City of St. Louis ownership of the MacArthur Bridge, now owned by TRRA; the City of Cincinnati

ownership of a rail line to Chattanooga, operated by NS; and the Cities of Dallas and Fort Worth ownership of the RailTran line, now operated by BNSF. Herzog, a private contractor, operates Trinity Railway Express commuter train service over this line for the two area transit agencies. Freight service on the Cincinnati line and RailTran lines is exclusive to one carrier in each case.

Achieving multiple public goals (for example, neutral railroad freight access to multiple major railroads, commuter service) through public ownership is difficult and may easily conflict with or constrain the goals of the freight railroads and the nations freight shippers. One of the significant benefits to the proposed Conrail Acquisition is the possibility of providing better service through longer uninterrupted hauls. The need to have full control of all types of movements, and the ability to redirect them as traffic levels demand, is basic to the optimal movement of the different types of trains.

The possibility of an intermediate terminal operator raises concern regarding safety in the movement of trains. The careful integration of operating rules and practices has been a critical issue in the proposed Conrail Acquisition. CSX and NS assured SEA that they understand the need to develop a set of integrated rules and procedures for each acquiring railroad. An independent operating agency in Cleveland would implement its own set of operating rules and procedures. This additional set of rules and procedures could increase misunderstanding with its related potential increase in accident risk.

Conclusion

It is SEA's view that the principal objective of Congressman Kucinich's plan is to provide open access to rail shippers in the Greater Cleveland Area. SEA finds that open access is a merits issue and therefore is not addressed in this Final EIS. However, from the environmental standpoint, SEA finds that the establishment of a neutral, independent railroad operating company in the Greater Cleveland Area could introduce adverse safety effects because of additional operational complexity. In addition, the proposal by Congressman Kucinich does not reduce the overall environmental impacts in the Greater Cleveland Area resulting from the proposed Conrail Acquisition. The Congressman's proposal offers no concrete action or measures that would effectively mitigate the environmental effects of the Applicants' Operating Plan. Under this proposal, the overall number of trains, freight tonnage, and quantity of hazardous materials transport remain the same as with the original Operating Plan submitted by the Applicants. In fact, the heavy freight lines identified in Congressman Kucinich's plan for joint ownership by CSX and NS include the routes that are subject to controversy by the City of Cleveland. Further, the Congressman's proposal would not eliminate the need for connecting lines on the east and west side of the Greater Cleveland Area.

The proposal submitted by Congressman Kucinich does not provide specifics as to which routes would be utilized most heavily through the Greater Cleveland Area by an independent operator. Also, the proposal offers no documentation or specifics regarding possible environmental impacts, whether beneficial or adverse. Accordingly, SEA can not identify the local environmental impacts, including impacts on residential, minority, and low-income populations. However, SEA

concludes that the proposal could result in adverse safety impacts from the increased operational complexity through the Greater Cleveland Area. SEA therefore finds that the implementation of this proposal by Congressman Kucinich is not warranted.

N.1.3 Potential Environmental Impacts of the Alternative Actions and Recommended Mitigation

The purpose of this section is to describe and characterize the existing conditions (affected environment) within the study area and the anticipated impacts of the alternatives, along with any mitigation that might be warranted. The impact assessment focuses on the additional environmental impacts of the alternatives, beyond existing conditions, and the need for mitigation, where warranted.

N.1.3.1 Safety: Highway/Rail At-grade Crossings

Analysis Methods and Criteria of Significance

SEA used the same method of analysis for highway/rail at-grade crossing safety in the Cleveland Area Mitigation Alternatives Study as described in the Draft EIS, Chapter 3, "Analysis Methods and Potential Mitigation Strategies." In the Draft EIS and Final EIS, SEA calculated the accident frequency for highway/rail at-grade crossings on rail line segments where the number of trains would increase by eight or more trains per day as a result of the proposed Conrail Acquisition. As part of this alternatives analysis, however, SEA evaluated almost every crossing in the Greater Cleveland Area irrespective of the number of trains per day.

As more fully described in the Draft EIS, Chapter 3, "Analysis Methods and Potential Mitigation Strategies," SEA established two levels of increases in accident frequency likely to result in a significant environmental impact to identify possible candidates for site-specific mitigation measures. First, based on historic Federal Railroad Administration (FRA) accident data, SEA considered mitigation for those highway/rail at-grade crossings that SEA estimated would have a potential increase in accident frequency of five additional accidents every 100 years. Second, for highway/rail at-grade crossings that SEA considers to already have a high accident frequency[6] based on vehicle traffic and railroad operations after the proposed Conrail Acquisition, SEA considered mitigation if the accident frequency would increase by one additional accident every 100 years.

---

[6] SEA considered in the Draft EIS a highway/rail at-grade crossing to have high predicted accident frequency if the crossing had an accident rate after the proposed Conrail Acquisition at or above the 50th highest rate of all highway/rail at-grade crossings in the state, or would experience one accident every 7 years as a result of the proposed Conrail Acquisition, whichever was the lower rate. These criteria of significance have not been revised for this Final EIS.

SEA's criteria for determining significant impact warranting mitigation were the same for this study as in the Draft EIS and Final EIS, as described above. SEA determined that Cook Avenue in Lakewood, along the Nickel Plate Line (rail line segment N-080b), was the only highway/rail at-grade crossing that would meet the criteria for significance. This location met the criteria for significance only in Alternatives 1 and 7. At this location, the predicted accident frequency would be 0.2150 accidents per year in Alternative 1 and 0.1889 accidents per year in Alternative 7. After mitigation, the predicted accident rate would be 0.0421 accidents per year in both alternatives.

The bases for these results for Cook Avenue were 1991 through 1995 FRA data. After these data were collected, NS installed an improved warning device and flashing lights at the Cook Avenue highway/rail at-grade crossing.

Mitigation

Only one highway/rail at-grade crossing location, Cook Avenue, warranted mitigation for Alternatives 1 and 7 based upon this analysis. Because NS upgraded the warning device at Cook Avenue since the collection of the FRA data used for this analysis, NS has already performed the necessary mitigation and no additional mitigation is warranted.

N.1.3.2 Safety: Hazardous Materials Transport

Analysis Methods and Criteria of Significance

SEA applied the same methodology for the analysis of the Erie relocation corridor for transport of hazardous materials by freight rail as detailed in Appendix B of the Draft EIS, and summarized in Chapter 4, "Summary of Environmental Review," of this Final EIS.

SEA applied two different criteria of significance for transport of hazardous materials. The first was whether a rail line segment would become a "key route," (i.e., handling in excess of 10,000 car loads of hazardous material each year). The second was whether the projected increase in volume would double the number of hazardous material carloads traveling on a key route and have 20,000 car loads or more per year.

Public Comments on the Draft EIS

A large number of commentors showed concern about hazardous materials transport. Commentors were concerned that rail line segments in the Greater Cleveland Area would have the largest increase in hazardous materials transport across the entire system, and criticized the lack of a proactive effort to reduce the likelihood of a spill. Commentors requested that hazardous materials be routed through less populated and more industrial corridors to minimize potential exposure to people and land uses such as residential subdivisions and schools. The City of Cleveland specifically proposed a spill containment system to run alongside railroad tracks.

Public Comments on the Draft EIS

Many commentors stated their concerns about safety at highway/rail at-grade crossings. Some requested improvements to existing highway/rail at-grade crossings, either by constructing grade separations or by improving a crossing's warning devices by installing flashing lights on gates. Several commentors questioned the methods used for calculating accident rates in the Draft EIS, criticizing the way SEA calculated train speed, and pointing out that actual accident data are not consistent with calculated rates. Commentors also cited the unique conditions along the densely populated Nickel Plate Line (N-080b), which has many highway/rail at-grade crossings in the suburbs west of Cleveland.

Analysis Results and Impacts

As noted above, for this study, SEA evaluated the safety of most of the Greater Cleveland Area highway/rail at-grade crossings listed in the FRA database, irrespective of the increase in the number of trains per day. SEA performed the analysis for all highway/rail at-grade crossings on rail line segments west of Wickliffe (305th Street), north of White, and east of Sunnyside Road (on rail line segment N-293d in western Lorain County). For rail line segment N-080b, between Rocky River and Vermilion, SEA evaluated only those highway/rail at-grade crossings that have roadway average daily traffic (ADT) volumes greater than 5,000 vehicles and greater than three trains per day. SEA evaluated a total of 86 highway/rail at-grade crossings in the Greater Cleveland Area for this analysis.

Table N-10 shows the total predicted number of accidents per year across all 86 highway/rail at-grade crossings. All alternatives would result in an aggregate increase in accident frequency at the 86 highway/rail at-grade crossings as a result of the proposed Conrail Acquisition. Alternative 1, the Application Base Case, would have the highest predicted accident frequency overall, 5.44 accidents per year. The accident frequency in other alternatives would be similar and the differences are not significant. However, Alternatives 2 through 7 would result in a 7 to 9 percent decrease in accident rates, depending upon which one would be selected, compared to Alternative 1.

TABLE N-10
PREDICTED AGGREGATE RATE OF ACCIDENTS PER YEAR AT 86 INTERSECTIONS IN THE GREATER CLEVELAND AREA

	Pre-Acquisition	Post-Acquisition						
		Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7
Predicted Total Number Accidents per Year	4.61	5.44	4.95	4.99	4.97	5.07	4.98	4.98

CSX and NS, on the other hand, generally noted that the risk of a release is low, and said they would address impacts through existing programs and SEA's recommended mitigation measures.

Analysis Results and Impacts

A number of rail lines cross the Greater Cleveland Area, as discussed in Section N.1.2, and these lines carry varying quantities of hazardous materials. The alternatives SEA considered would have little net effect on the overall quantity of hazardous materials transported through the Greater Cleveland Area. The alternatives would, however, cause changes in the routing of hazardous materials through the region. Table N-11 shows the estimated number of carloads of hazardous materials passing through selected residential areas within the study area annually. These numbers were prorated from the numbers furnished by the Applicants.

TABLE N-11
ANNUAL HAZARDOUS MATERIALS CARLOADS
TRANSPORTED THROUGH SELECTED RESIDENTIAL AREAS

Residential Area Studied	Component Rail Line Segments	1995 Pre-Acquisition	Alternative 1 Base Case	2 NS Clogg	3 Clev. #1	4 Clev. #2	5 Wickliffe	6 Wickliffe & Erie	7 Reverse Curve
Kinsman	C-072a, N-075c, N-081c	19,000	112,000	112,000	39,000	40,000	85,000	53,000	72,000
Brook Park	C-074	4,000	39,000	40,000	52,000	50,000	45,000	45,000	35,000
Berea (West Side)	N-293d, C-061	100,000	86,000	112,000	104,000	99,000	103,000	103,000	103,000
University Circle & East Cleveland	C-073, N-075b	7,000	78,000	68,000	37,000	37,000	51,000	51,000	43,000
Lakewood & Rocky River	N-080b	9,000	32,000	6,000	15,000	15,000	15,000	15,000	15,000
Cleveland CBD	N-293a	84,000	46,000	56,000	46,000	46,000	65,000	31,000	10,000
Olmsted Falls	N-293d	84,000	40,000	66,000	58,000	53,000	57,000	57,000	57,000
Linndale	N-074	0	6,000	22,000	25,000	5,000	14,000	37,000	56,000

Although the total number of hazardous material carloads transported through Cleveland would increase only slightly because of the proposed Conrail Acquisition, the amount transported over certain line segments within Cleveland would increase dramatically. SEA notes that there are no Federal regulations that restrict the routing or limit the movement of trains carrying hazardous materials. This includes hazardous materials transport by rail through cities and other highly populated areas.

SEA made a qualitative estimate of potential exposure of transported hazardous materials on populations by type of land use, numbers of carloads of hazardous materials, and length of exposure for humans. SEA estimated the length of exposure based on land use. Residential areas would be potentially occupied 24 hours per day, whereas commercial areas may be occupied only 12 to 14 hours per day and industrial areas may be occupied as little as 8 to 10 hours per day.

SEA used these combined factors to establish an exposure index. Table N-12 presents the results of this estimate.

TABLE N-12
HAZARDOUS MATERIALS TRANSPORT "EXPOSURE EFFECT"

	Comparison of Alternatives						
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7
Potential Exposure Effect[a]	High	Moderate	Low	Low	Moderate	Moderate	Moderate

[a] Based on a qualitative assessment of land use, numbers of carloads of hazardous materials, and total estimated time of exposure.

Mitigation

SEA recommends mitigation for rail line segments that would become key routes or major key routes under each alternative. SEA also identified another accident avoidance strategy. Nearly all of the major railroad corridors that enter the Greater Cleveland Area are currently equipped with defect detectors. These defect detectors automatically monitor the condition of rail car wheel bearings and whether anything is dragging from the train. Table N-13 lists the existing defect detector locations and proposed improvements in the Greater Cleveland Area.

SEA understands that, although the total number of hazardous material carloads transported through Cleveland increases only slightly because of the proposed Conrail Acquisition, the amount transported over certain line segments increases substantially.

In response to concerns raised by many communities in the Greater Cleveland Area, SEA notes that the risk of accidents involving hazardous material carloads is extremely low.

Additionally, nearly all of the major rail corridors that enter the Greater Cleveland Area are currently equipped with train defect detectors. These defect detectors automatically monitor the condition of rail car wheel bearings and whether anything is dragging from the train.

Because of the unique circumstances surrounding the City of Cleveland associated with the impacts initiated by the proposed Conrail Acquisition, SEA recommends that the Applicants provide the Greater Cleveland Area with enhanced train defect detection capability by:

- Placing additional train defect detection devices at approximately 15-mile intervals throughout the Greater Cleveland Area
- Improving the functional capability of the existing detectors that surround the city.

TABLE N–13
SUPPLEMENTAL TRAIN DEFECT DETECTION

Proposed Owner	Nearest Community	Rail Line Segment	Approx. Railroad Milepost (MP)	Proposed Improvements at Existing Defect Detector Locations		Proposed New Defect Defector Locations and Improvements
				Existing Detection	Proposed Detection	
CSX	Wickliffe	C-060A	165	HBD, DED	HWI, WILD	-
CSX	Collinwood	C-060B	179	HBD, DED	-	-
CSX	Olmsted Falls	C-061	19	HBD, DED	HWI, WILD	-
CSX	Kinsman Area	C-072A	5	-	-	HBD, DED
CSX	Brooklyn Area	C-069	16	-	-	HBD, DED
NS	Wickliffe	N-075A	169	HBD, DED	HWI, WILD	-
NS	Cloggsville	N-075D	185	See Note	-	HBD, DED
NS	Avon Lake	N-080B	201	HBD, DED	HWI, WILD	-
NS	Cleveland Airport	N-293B	186	-	-	HBD, DED
NS	Olmsted Falls	N-293D	200	HBD, DED	HWI, WILD	-
NS	White	N-081A	113	Track 1: HBD, DED	Track 1: HWI, WILD	Track 2: HBD, HWI, DED, WILD

HBD = Hot Bearing Detector
DED = Dragging Equipment Detector
HWI = Shifted Load/High-Wide Indicator
WILD = Wheel Impact Load Detector
Note: Detector @ MP185 is re-located from existing location at MP186. Relocation is necessary to monitor trains en-route Cloggsville. HBD and DED are required on double track installations.

The existing defect detectors are now equipped with hot bearing detection and dragging equipment. SEA recommends adding capabilities at these sites to also detect abnormally high wheel impact loads and cars that exceed high and wide dimensional criteria (that is, have protruding loads). (See Table N-13.) These two items (impact detectors and shifted-load detectors) would minimize the possibility of introducing potentially defective cars or cars that could cause an accident into the Greater Cleveland Area. The impact detection has the added benefit of reducing the number of cars that have "flat spots" on their wheels and thereby reducing significantly the wayside noise generated by these cars.

Due to the unique circumstances associated with hazardous materials transport in close proximity to heavily populated urban communities in the Greater Cleveland Area, SEA recommends that the Applicants surround the City of Cleveland with a "safety cordon" of improved defect detection capability. These improvements can be characterized as follows: 10 placements of additional train detection devices on rail lines at approximately 15-mile intervals along the

Applicants' main lines in the Greater Cleveland Area and 20 improvements of the functional capability of the detectors that now ring the city.

SEA recommends that these enhancements include improvement of the existing defect detectors, which are now equipped with hot bearing detection and dragging equipment detection, with the addition of the ability to detect abnormally high impact loads (for example, flat wheels) and cars that are carrying freight that may have shifted.

N.1.3.3 Safety: Passenger Rail Operations

Analysis Methods and Criteria of Significance

In the Draft EIS, SEA evaluated 108 rail line segments over the entire Acquisition area (four in the Greater Cleveland Area) that have passenger rail operations and would experience an increase of one or more freight trains per day as a result of the proposed Conrail Acquisition. SEA first calculated the historic accident rate on these rail line segments and estimated the annual passenger train accident rate on a train-mile basis. SEA then calculated the change in accident rate based on the anticipated change in the number of freight trains that would operate on the rail line segment if the Board approves the proposed Conrail Acquisition.

SEA considered mitigation for rail line segments serving passengers if there was a likelihood of an accident occurring more frequently than once every 150 years and the change in accident rate was greater than 25 percent. There are no rail line segments in the Greater Cleveland Area that met these criteria for mitigation.

Public Comments on the Draft EIS

SEA received no comments specifically pertaining to the safety of passenger rail operations. Several comments referred to the capacity of tracks for passenger rail service, which is discussed below.

Analysis Results and Impacts

Amtrak operates through the Cleveland region between New York City and Chicago on the Conrail Lakeshore Line and on the Conrail Cleveland Line between Pittsburgh and Cleveland. Both corridors are high-capacity, double-track main lines that are dispatched through a CTC system.

There are no formal adopted plans or funding in place to introduce commuter service on rail lines in the Cleveland region, although various public agencies are currently conducting studies on the feasibility of such service.

The Draft EIS did not identify any rail line segments that would meet the criteria for mitigation. SEA concludes that all alternatives under consideration in the Greater Cleveland Area would

cause no impacts on the safety of rail passenger operations because the routings of passenger rail and the signals systems would remain unchanged.

Mitigation

SEA recommends no mitigation in the Greater Cleveland Area because SEA did not identify impacts to passenger rail operations in the area. In the Draft EIS, SEA recommended that rail line segments that would exceed the thresholds for mitigation in other states should have a 30-minute temporal separation between passenger rail and freight rail operations. SEA has noted unanimous opposition to this passenger rail safety mitigation by both freight and passenger railroads and recognizes that the arguments presented by the comments to the Draft EIS are sufficiently compelling to exclude this mitigation from the Final EIS.

N.1.3.4 Safety: Freight Rail Operations

Analysis Methods and Criteria of Significance

SEA applied the same methodology for the analysis of the Cleveland alternatives for freight rail safety as detailed in Appendix B of the Draft EIS and summarized in Chapter 4, "Summary of Environmental Review," of this Final EIS.

SEA's criteria of significance for accidents related to the proposed Conrail Acquisition requires mitigation for an increase in derailment risk greater than 10 percent when the interval between accidents occurring after the proposed Conrail Acquisition is expected to be less than 100 years.

Key Public Comments on Draft EIS

A few commentors voiced general concern about freight rail safety, noting that increased rail traffic raises concerns about safety. Most comments on safety focused on hazardous materials transport or highway/rail at-grade crossings, which are discussed above. One commentor did note concern about reduced numbers of workers per train and the implications of layoffs of mechanical personnel who maintain the cars and maintenance of way personnel who maintain the tracks.

Analysis of Results and Impacts

SEA evaluated the potential freight rail safety impact of each alternative routing of trains through the Greater Cleveland Area, using the same analytic methods as it used in the Draft EIS. For the rail line segments that were not described in the Draft EIS, SEA assumed physical characteristics (length, number of main tracks, method of control, and class of track) that are consistent with the proposed usage. SEA estimated the number of main line reportable accidents (derailments) that would be expected per year under each alternative. SEA's estimate was developed for the 30 rail line segments that collectively comprise the 295.5 miles of railroad routes. On this basis, the range of expected accidents per year would be from 2.39 for Alternative 1 (Application Base

Plan) to 2.32 for Alternative 5 (SEA Wickliffe Flyover). Since Alternatives 2 through 7 would have a decrease in predicted accident risk of 1 to 4 percent, SEA determined that any of the Alternatives considered would improve the predicted accident rate over that of the Application Base Plan (Alternative 1).

SEA concluded that the 3.74 percent difference between the highest and lowest accident rates is not significant.

Mitigation

Because none of the predicted accident rates for the alternatives under study exceeded the SEA threshold for mi[illegible]tion of one accident per 100 years per mile, SEA concluded that no freight rail safety mitigation is warranted.

N.1.3.5 Transportation: Passenger Rail Service

Analysis Methods and Criteria of Significance

SEA studied shared passenger/freight rail line segments in the Greater Cleveland Area that would experience increases in freight traffic as a result of the proposed Conrail Acquisition. SEA assumed that freight and passenger rail traffic currently sharing the same rail line segments operate in accordance with existing agreements between freight railroads and the passenger service operators. SEA considered a number of factors that can affect rail operations:

- Number of main tracks.
- Train control system.
- Passing siding spacing and capacity.
- Crossover tracks.
- Times and frequency of freight service.
- Times and frequency of passenger service.

SEA examined the capacity of each affected rail line segment and added the anticipated increases in freight train traffic to determine the ability of the rail line segments to accommodate higher freight volumes.

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

Public Comments on the Draft EIS

Commentors suggested that the Board should consider commuter rail implementation issues, and that NS should remove freight traffic from the West Shore Line to free the line for commuter rail.

Analysis Results and Impacts

Under all seven routing alternatives, Amtrak intercity and GCRTA transit rail operations would continue unchanged from their current levels. Therefore, none of the alternatives would have any effect on Amtrak or local passenger rail operations.

Mitigation

SEA does not propose any mitigation in the Greater Cleveland Area because SEA has not identified impacts to passenger rail operations in the area.

N.1.3.6 Transportation: Highway/Rail At-grade Crossing Delay

Analysis Methods and Criteria of Significance

For the Draft EIS and Final EIS, SEA performed analyses in accordance with 49 CFR Part 1105.7(e)(2) and the Board's thresholds for environmental analysis. Draft EIS Appendix C, "Traffic and Transportation," and the Supplemental Errata describe in detail the analysis methods used for highway/rail at-grade crossing traffic delay. After reviewing and verifying available data, SEA identified rail line segments that meet or exceed the Board's thresholds for environmental analysis of air quality impacts. On these highway/rail at-grade crossings, SEA evaluated potential changes in vehicle delay at crossings where daily traffic volumes are at least 5,000 vehicles. SEA also evaluated potential changes in vehicle delay at highway/rail at-grade crossings on all proposed new constructions and abandoned rail line segments.

The group of highway/rail at-grade crossings evaluated for this study of the Greater Cleveland Area was more inclusive than the group studied during preparation of the Draft EIS and Final EIS. For this study, SEA evaluated all of the crossings that were evaluated for highway/rail at-grade crossing safety.

SEA developed five measures to compare roadway traffic delays before and after the proposed Conrail Acquisition:

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

SEA used two measures for determining impacts: delays due to a single-train event and the average delay. SEA considered the following vehicular traffic delay effects at highway/rail at-grade crossings to be significant:

- An increase of 30 seconds or more in average delay per stopped vehicle.
- An increase in average delay for all vehicles that (1) would reduce the level of service from C or better to D or (2) regardless of the condition before the proposed Conrail Acquisition, would result in a level of service E or F.

Public Comments on the Draft EIS

Numerous commentors expressed concern about delays at highway/rail at-grade crossings, both for ordinary traffic and for emergency vehicles. For non-emergency vehicles, commentors raised concern about traffic diversions to avoid rail crossings, the incremental increase in delay per vehicle, and existing levels of delay. Commentors said they found calculations of vehicle delay presented in the Draft EIS to be suspect because SEA overestimated train speed in making its calculations. Commentors also criticized Draft EIS findings that the proposed Conrail Acquisition would have only "minimal effects" on delay when delays would increase by about 150 percent in some locations. Some of the comments cited specific highway/rail at-grade crossings where commentors would like additional analysis or consideration of a grade separation. CSX and NS generally concluded that there would be some minimal impacts of delay at highway/rail at-grade crossings, and that mitigation would address these impacts.

Regarding delays to emergency services, commentors had numerous concerns. Again, commentors criticized train speed calculations. Commentors also questioned Draft EIS conclusions that emergency vehicle delay could not be calculated, and provided statistics on current impacts that trains have on emergency vehicle delay. Several commentors independently raised concerns about emergency vehicles having to divert to different hospitals because of train delays; one commentor even requested a new fire/EMS station to serve residents that are "cut off" from existing emergency services by train traffic. One commentor also noted environmental justice concerns about slower emergency service for minority and low-income populations.

Analysis Results and Impacts

Table N-14 illustrates two measures for comparing the overall aggregate delay at highway/rail at-grade crossings for all of the routing alternatives studied in this report. The intersections that were evaluated were the same intersections evaluated for highway/rail at-grade crossing safety.

As Table N-14 shows that all alternatives would increase delay from current levels. Across the 86 highway/rail at-grade crossings studied, Alternative 2 would delay the fewest vehicles per day, while Alternative 4 would have the shortest average delay per vehicle. Alternative 1 would delay the most vehicles and have the longest average delay per vehicle.

TABLE N-14
PREDICTED AGGREGATE MEASURES OF HIGHWAY/RAIL AT-GRADE CROSSING DELAY AT 86 INTERSECTIONS IN THE GREATER CLEVELAND AREA

Measurement	Pre-Acquisition	Post-Acquisition						
		Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7
Predicted Total Number Vehicles Delayed Per Day	9,289	17,720	16,301	17,078	16,326	16,720	16,633	16,523
Predicted Average Delay per Vehicle for All Vehicles Passing Through Highway/Rail At-Grade Crossing (sec./day[a])	4.46	8.56	7.99	8.33	7.90	8.20	8.25	8.14

[a] This measurement has been weighted for each highway/rail at-grade crossing by its average daily traffic. The measurement also takes into account all vehicles passing through the highway/rail at-grade crossing, not only the ones that are stopped at the crossing. Therefore, this average includes vehicles that do not experience delay.

SEA determined the need for mitigation of highway/rail at-grade crossing delay by using the same criteria for significance in both the Draft EIS and Final EIS. SEA's analyses indicated that none of the highway/rail at-grade crossings in the analysis would meet the criteria for significance for any of the routing alternatives.

SEA also analyzed the effects of the proposed Conrail Acquisition on emergency response in the communities in the Greater Cleveland Area that commented on the issue. SEA contacted the emergency service providers in the communities to determine the locations of their facilities and additional details. The communities are the Collinwood-Nottingham, Edgewater, and Aetna Road areas in the City of Cleveland and the cities of Berea, Lakewood, Rocky River, Bay Village, Olmsted Falls, and Vermilion. SEA calculated the change in the time that trains would block highway/rail at-grade crossings as a result of the proposed Conrail Acquisition. Appendix G, "Transportation: Highway/Rail At-grade Crossing Traffic Delay Analysis," Section G.2.1, "Emergency Response Vehicle Delay," of this Final EIS describes the methodology for analysis in greater detail. Chapter 5, "Summary of Comments and Responses," provides additional details regarding blockage of highway/rail at-grade crossings in each community as a result of the proposed Conrail Acquisition.

In the Collinwood-Nottingham area, SEA determined that the existing grade-separated crossing on Ivanhoe Road provides adequate access to the small section of the City of Cleveland located south of the NS Ashtabula-to-Cleveland rail line segment (N-075b). Emergency service facilities are near Ivanhoe Road and St. Clair Avenue.

In the Aetna Road area, existing grade-separated crossings of the NS White-to-Cleveland rail line segment (N-081a) are approximately one mile apart at Booth Avenue and Union Avenue.

Emergency service responses from facilities west of the tracks can use either of these grade-separated crossings to reach the area east of the tracks.

In the Edgewater area, emergency service facilities are near the W. 117th Street and West Boulevard grade-separated crossings of the NS Cleveland-to-Vermilion rail line segment (N-080) and CP Draw-to-CP 191 rail line segment (N-293a), respectively, allowing access for emergency vehicles to the area north of the tracks.

The NS Cleveland-to-Vermilion rail line segment (N-080) also affects the communities of Lakewood, Rocky River, and Bay Village. There are few grade-separated crossings in this area, concentrated primarily in Rocky River. Trains are relatively slow through Lakewood and eastern Rocky River, but speed up in western Rocky River and Bay Village, blocking highway/rail at-grade crossings for less time. Emergency service facilities are generally south of the tracks in Rocky River and Lakewood, and north of the tracks in Bay Village. The city of Westlake is across the tracks, south of Bay Village, and provides its own emergency services.

In Berea, the CSX Berea-to-Greenwich rail line segment (C-061), the CSX Short-to-Berea rail line segment (C-074), and the NS CP 190-to-Berea rail line segment (N-293c) affect emergency service response. Emergency service facilities are south of these rail line segments. Rocky River Drive is grade-separated where it crosses both tracks. Several areas in the community are difficult to reach when trains block the highway/rail at-grade crossings. Of particular concern is the area on Front Street that is located between what would be the CSX and NS main lines. This area potentially can be totally cut off from emergency vehicle access if trains are stopped on both tracks (rail line segments C-074 and N-293c).

In Olmsted Falls, the CSX Berea-to-Greenwich rail line segment (C-061) affects emergency response. Emergency service facilities are north of the tracks, and there is no grade-separated crossing in the community. Train speeds are relatively high, so that each passing train would block the community's crossings for less than two minutes.

In Vermilion, the NS Vermilion-to-Cleveland rail line segment (N-080b), the NS Vermilion-to-Berea rail line segment (N-293d), and the NS Vermilion-to-Bellevue rail line segment (N-072) affect emergency service response. Emergency service facilities are generally between the Vermilion-to-Cleveland rail line segment and the Vermilion-to-Berea rail line segment. There are a number of grade-separated crossings, but they are primarily in the eastern portion of the community.

Mitigation

SEA does not propose any mitigation for general traffic delay issues in the Greater Cleveland Area because none of the intersections affected by the seven routing alternatives would meet the criteria for significance.

STB FD 33388 5-22-98 K 29206V6C 12/15

SEA determined impacts to emergency services in some communities warrant mitigation. SEA determined that the effects of Alternative 1 on highway/rail at-grade crossing traffic delay and emergency services would warrant the installation of a real-time train location monitoring systems as mitigation in Berea, Lakewood, and Vermilion for this alternative. SEA also determined that the effects of Alternative 2 would warrant the installation of a real-time train location monitoring system only in Berea, assuming that there would be no highway/rail grade separation at Front Street to provide non-restricted access to the area between the CSX and NS tracks. Alternatives 3 and 4 incorporate a highway/rail grade separation at Front Street into the rail/rail flyover, which would make the area between the tracks accessible; therefore, emergency vehicle access mitigation would not be warranted for Alternatives 3 and 4. For Alternatives 5, 6 and 7, train traffic levels in Berea would be similar to Alternative 2 and the between-tracks area of Front Street would remain vulnerable to isolation by trains on both the CSX and NS tracks. For those reasons, SEA has determined that Alternatives 5, 6, and 7 would warrant the installation of a real-time train location monitoring system in Berea.

N.1.3.7 Transportation: Roadway Systems

SEA performed analyses in accordance with the Board's rules at 49 CFR 1105.7 (e)(2), which required CSX and NS to describe the effects of the proposed Conrail Acquisition on the local, regional, and national transportation systems. SEA determined that all local shippers would retain access to rail service although some shippers who are currently on mainline routes would, under certain alternative routing options, be located on secondary routes. Because there would be no loss of rail access, SEA has determined that there would be no diversion of traffic (passenger or freight) to other modes and thus no impact on local, regional or national transportation systems. As a result, no mitigation is warranted.

SEA also determined that operations at the proposed new Collinwood intermodal facility would increase the number of trucks by 49 per day to a new total of 71 per day in the Greater Cleveland Area, no matter which alternative is selected. Because the expected increase is less than the Board's threshold for environmental analysis (50 or more trucks per day), SEA reaffirms its conclusion in the Draft EIS that the effects of this new facility on area roadways would be insignificant.

N.1.3.8 Transportation: Navigation

Analysis Methods and Criteria of Significance

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

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

Public Comments on the Draft EIS

SEA received no comments on the issue of river navigation.

Analysis Results and Impacts

NS owns the movable bridge on rail line segment N-075d that carries rail traffic over the Cuyahoga River in the vicinity of Railroad Avenue and Interstate 90 in the Flats area of central Cleveland. This rail line segment currently carries an average of 13.0 trains per day. This movable bridge is located high above the river and would only need to be moved to clear the highest ore boats or other large ships.

As part of the Application, NS also proposes to acquire the movable bridge just west of CP Draw on rail line segment N-293a. This bridge currently carries an average of 48.4 freight trains per day and 4 Amtrak trains per day across the Cuyahoga River. The Draft EIS did not examine this bridge in detail because the analysis determined that expected train levels on this bridge would decrease under the proposed Conrail Acquisition (Alternative 1, Application Base Case). SEA received from NS on April 16, 1998, a revised mitigation proposal that would affect the number of trains on rail line segments N-080 and N-293a. According to this proposal, NS would operate 13.9 trains per day on rail line segment N-080, whereas 53.5 trains per day plus 4.0 passenger trains would operate through Conrail's CP Draw and onto rail line segment N-293a. (See Table N-3.) SEA noted that this movable bridge experiences frequent activity as a result of the passage of pleasure craft during the warmer months of April through October.

No data exist on the numbers of watercraft that pass under these bridges. During much of the year (especially the summer), Conrail leaves the bridge just west of CP Draw in the "up" position unless a train is approaching. This is primarily a cost-saving measure to minimize the wear and tear on bridge components. Therefore, uncounted numbers of watercraft pass under the bridges at these times. The only documentation of navigational conflicts is the number of times per year the bridges actually need to be raised to accommodate waiting watercraft. The bridge just west of Conrail's CP Draw was raised 5,836 times in 1994, 6,248 times in 1995, and 5,420 times in 1996. The NS bridge located approximately 2.4 miles upstream of the bridge just west of CP Draw raises only infrequently when a large ship crosses beneath.

The U.S. Coast Guard has jurisdiction over specific actions affecting navigable waters of the United States. In all instances, waterborne navigation has the right-of-way. Therefore, any operating constraints due to the proposed Conrail Acquisition would be placed upon CSX and NS and not on the waterborne users at movable bridges extending across navigable waterways. The Applicants operate bridges under conditions established by the U.S. Coast Guard for the convenience of navigation.

As indicated in Table N-15, the train volumes on rail line segment N-293a (through Conrail's CP Draw) and N-075d (NS movable bridge) will change under the different alternatives.

TABLE N-15
TRAIN LEVELS ON RAIL LINE SEGMENTS WITH MOVABLE BRIDGES BEFORE AND AFTER THE PROPOSED CONRAIL ACQUISITION

Site ID	Rail Line Segment Name	Length (miles)	1995 Pre-Acquisition Passenger and Freight Trains Per Day	Post-Acquisition Freight and Passenger Trains Per Day						
				Alternatives						
				1	2	3	4	5	6	7
				Base Case	NS Clogg.	Clev. #1	Clev. #2	Wickif.	Wickif. &Erie	Rev. Curve
N-075d	E. 37th St.-to-Cloggsville	4	13	36.6	36.6	36.6	16.4	12.4	42.1	66
N-293a	CP Draw-to-Detroit Ave.	4	52.4	36.9	49.8	58.2	58.2	66.3	38.6	13

At the movable bridge on rail line segment N-075d, the changes in train traffic would range from a decrease of 0.2 trains per day in Alternative 5 to an increase of 53.3 trains per day in Alternative 7. At the moveable bridge just west of CP Draw on rail line segments N-293a, four of the alternatives would decrease the number of trains. Alternatives 3 and 4 would increase the train traffic by 4.6 trains per day, and Alternative 5 would increase train traffic by 13.9 trains per day.

Because the Applicants must give full preference to river navigation, none of the proposed alternatives would affect river navigation unless a higher frequency of trains result in more watercraft approaching bridges while railroad crossings are underway and the bridges are already down. Higher levels of train traffic on these river-crossing rail line segments could create operational problems for the railroad if the river crossing becomes a "bottleneck" for rail traffic. SEA determined, however, that the maximum number of increased trains for any of the alternatives under study would be an average of only 13.9 trains per day (Alternative 5) at CP Draw (rail line segment N-293a). This approximates one additional opening every two hours and would not lead additional constraints of river traffic. Because of the high clearance at the rail line segment N-075d bridge, additional train traffic on that rail line segment would have little or no potential impact on the limited number of openings at that location.

Mitigation

No mitigation is warranted for watercraft regardless of routing alternative because river navigation already gets full right-of-way over rail traffic.

No practicable strategy exists to mitigate operational impacts on the Applicants of raising or lowering bridges other than selecting an alternative that minimizes increases in the numbers of trains making these river crossings. Reconstruction of track approaches and bridges at a higher elevation would not be practicable.

N.1.3.9 Energy

Analysis Methods and Criteria of Significance

SEA evaluated the energy effects of the proposed Conrail Acquisition on a system-wide basis. Changes in overall fuel consumption are predominantly attributable to anticipated truck-to-rail diversions. Appendix D, "Energy Methods," of the Draft EIS further describes the assumptions, methods, and formulas for estimating anticipated system-wide fuel consumption changes that would result from the proposed Conrail Acquisition.

SEA considered the following energy resource impacts to be significant:

- An increase in system-wide fuel consumption.
- An operational change that would reduce the quantities of energy resources and/or recyclable commodities transported by rail.
- Vehicular traffic delays at highway/rail at-grade crossings that would result in an average increase in fuel consumption of 500 gallons of gasoline per day or more per highway/rail at-grade crossing studied.

Public Comments on the Draft EIS

SEA received no comments specific to the issue of energy.

Analysis Results and Impacts

In the Draft EIS, SEA evaluated the potential impacts of Alternative 1 on the consumption of energy resources, primarily diesel fuel. SEA analyzed the truck-to-rail diversions and increased train traffic resulting from the proposed Conrail Acquisition and determined that the proposed Conrail Acquisition would result in a net annual system-wide reduction in fuel consumption of approximately 80 million gallons of diesel fuel. SEA does not anticipate substantial changes in the quantities of energy resources or recyclable commodities transported. SEA also determined

that overall, there would be no significant system-wide changes in energy use from traffic delays at highway/rail at-grade crossings.

SEA expects all Greater Cleveland Area alternatives to have comparable energy benefits, especially in the greater context of the entire proposed Conrail Acquisition. Alternatives that include grade-separations of highway/rail at-grade crossings would have additional benefits in reducing energy consumption of passenger vehicles. This reduction in the Cleveland area would be insignificant, however, in the context of the entire Conrail Acquisition.

Mitigation

Because all routing alternatives in the Cleveland area would result in little change in the number of trains through the Greater Cleveland Area resulting in little change in energy savings or use over the entire proposed Conrail Acquisition study area, SEA does not recommend any additional mitigation.

N.1.3.10 Air Quality

Analysis Methods and Criteria of Significance

The Board's environmental rules at 49 CFR 1105.7(e)(5) specify that air quality impacts must be studied where rail traffic would meet or exceed the Board's thresholds for environmental analysis.

SEA looked at the following to estimate regional air pollutant emissions effects within the area studied in this report:

- Projected changes in operations on rail line segments that meet or exceed the Board's thresholds for environmental analysis. SEA calculated the anticipated net emissions changes from rail line segments as the difference between increased emissions attributable to projected increased train traffic and decreased emissions attributable to projected decreased train traffic and truck-to-rail diversions. Estimates of the net diversion were derived from projected system-wide fuel use changes for locomotives (fuel use increases) and trucks (fuel use decreases).

- Potential changes in truck or rail activities at intermodal facilities and rail yards.

SEA evaluated the increases and decreases in emissions and developed an overall estimated net change for the entire system.

SEA also evaluated potential county-wide emissions following a five-step process:

- Determine which rail line segments, intermodal facilities, and/or rail yards would meet or exceed the Board's thresholds for air quality analysis if the Board approves the proposed Conrail Acquisition.

- Identify counties or independent jurisdictions that include portions of rail line segments, intermodal facilities, and rail yards that would meet or exceed the Board's thresholds for air quality analysis.

- Total the estimated emissions increases on the portions of rail line segments, intermodal facilities, and/or rail yards in the identified counties/jurisdictions.

- Compare total estimated emissions increases for the affected counties/jurisdictions with the emissions screening levels that SEA developed based on U.S. Environmental Protection Agency (EPA) emissions levels for stationary source permitting.

- Conduct a detailed emissions analysis for the counties in which the estimated emissions increases would exceed the appropriate emissions screening level. The detailed analysis considers all potential emissions increases and decreases from the proposed Conrail Acquisition and related activities.

In assessing the significance of projected emissions increases SEA considered the following for the counties covered in this study:

- The amount of any potential emissions increases in the county resulting from the proposed Conrail Acquisition, measured in tons per year, in comparison to EPA emissions levels that require a permit for stationary sources.

- The calculated percentage increase in emissions relative to EPA's total county-wide emissions inventory for 1995.

- The attainment or nonattainment status of the county.

If the percentage increase in emissions of a pollutant resulting from the proposed Conrail Acquisition would be less than 1 percent of the total emission inventory of a county, SEA considered it insignificant in all cases. If the percentage increase in emissions of a given pollutant would be greater than 1 percent, and if the county is designated by the EPA as a nonattainment area for the pollutant, SEA considered the increase to be potentially significant. For counties EPA designated as attainment areas for a pollutant, SEA considered the net emissions increase related to the proposed Conrail Acquisition and the level of existing emissions in the county in its determination of whether the potential increase in emissions would be significant.

Public Comments on the Draft EIS

SEA received comments on air quality issues from a number of sources in the Greater Cleveland Area. Commentors mostly accepted the conclusions of the Draft EIS that the proposed Conrail Acquisition would have a general net air quality benefit over the entire system, but they raised concerns about localized air quality impacts. Commentors raised concerns about air quality

impacts to residents close to the tracks, about the project's impact on nitrogen oxides (NO_x) and ozone (O_3) attainment in the Cleveland maintenance area, and about carbon monoxide (CO) impacts on residents near idling motor vehicles waiting at highway/rail at-grade crossings. Several commentors stated that microscale modeling should be performed for various pollutants in selected locations. Commentors criticized the way SEA calculated train speeds and also noted that the Draft EIS did not consider the impacts of trains idling on sidings.

Analysis Results and Impacts

EPA has designated Cuyahoga County, in which Cleveland is located, as a moderate nonattainment area for particulate matter (PM_{10}) and part of the county a nonattainment area for sulfur dioxide (SO_2). EPA has designated the entire county as a maintenance area for ozone (O_3), meaning the county was formerly a nonattainment area for O_3. The County meets air quality standards for other pollutants. EPA has also designated Lake County and Lorain County as nonattainment areas for SO_2 and as maintenance areas for O_3. Both Lake County and Lorain County meet air quality standards for other pollutants. EPA has designated Erie County, in which Vermilion is located, as an attainment area for all pollutants.

In the Draft EIS, SEA evaluated potential increased air pollutant emissions in Cuyahoga, Erie, Lake, and Lorain Counties, which encompass the study area for this report. SEA's evaluation found potential emissions increases to be negligible in all counties for SO_2, volatile organic compounds (VOC), PM_{10}, and lead. Therefore, SEA did not perform a detailed emissions netting analysis for these pollutants. The Draft EIS provided a detailed NO_x emissions netting analysis in all four counties and a CO netting analysis in Cuyahoga and Lorain Counties. Emissions of NO_x are a concern because they can enhance formation of O_3.

The detailed emissions analysis in the Draft EIS found that the proposed Conrail Acquisition would increase CO emissions in Cuyahoga County by less than 0.1 percent of current (1995) emissions, a negligible change. In Lorain County, the increase in CO would be lower than the screening level and therefore was not quantified as a percentage increase.

SEA found that NO_x emissions would increase with the proposed Conrail Acquisition for Cuyahoga, Lorain, and Lake Counties by 1.29 percent, 2.23 percent, and 2.08 percent respectively. NO_x in Erie County would decrease. SEA judged these increases to be insignificant for reasons described below.

Recent studies by the Ozone Transport Assessment Group have found that NO_x emissions enhance ozone formation primarily on a large-scale area basis, rather than locally. Because the proposed Conrail Acquisition would result in system-wide decreases in NO_x emissions, SEA has concluded that the relatively small, local NO_x increases noted above would not adversely affect local ozone levels. Furthermore, the cumulative effect of NO_x emission changes due to the proposed Conrail Acquisition and the EPA's new locomotive emissions standards would be a decrease in NO_x in all these counties within a few years. (See Appendix I, "Air Quality Analysis.")

None of the alternatives considered for routing rail traffic through the four counties would significantly affect air pollutant emissions on a county-wide basis because all the routing alternatives considered would simply shift rail traffic from one segment to another along a generally east-west axis across each county. As a result, freight transport distances within each county would not change very much. Therefore, air pollutant emissions, which are directly related to the gross ton miles of freight hauled, would not be expected to change significantly from the estimates provided in the Draft EIS.

Mitigation

SEA has proposed no mitigation of air quality impacts of the proposed Conrail Acquisition apart from fugitive dust control on construction or abandonment demolition projects, because SEA has determined that air quality impacts would be insignificant

N.1.3.11 Noise

Analysis Methods and Criteria of Mitigation

SEA performed noise analyses for the seven alternatives proposed for the Greater Cleveland Area. SEA's noise analysis methodology is consistent with the methods used for the Application Base Case. These methods are described in Appendix J, "Noise Analysis." SEA's noise mitigation criteria are as follows: where wayside noise would exceed 70 dBA L_{dn} and increase by 5 dBA L_{dn} or more, SEA considers noise mitigation.

Public Comments on the Draft EIS

SEA received a substantial number of comments from the Greater Cleveland Area concerning noise. Commentors criticized the Draft EIS noise analysis, stating that it was oversimplified and did not consider the nature and number of individual receptors. Commentors also expressed concern that the effectiveness of mitigation was not quantified, and cited thresholds for noise mitigation from other Federal agencies that are lower. Commentors questioned the validity of train speed calculations in the Draft EIS.

SEA also received numerous comments requesting noise mitigation in specific locations, either through noise barriers or by grade-separating roadways (and eliminating the associated horn noise). Commentors also requested additional analysis of noise impacts in specific neighborhoods. Other commentors also expressed concern about noise impacts from idling locomotives on sidings.

CSX and NS noted that mitigation will address noise impacts, and that low noise barriers would be adequate to shield most noise (from wheels/rails) because locomotive noise is of much shorter duration.

Analysis Results and Impacts

SEA performed noise analyses where the rail line segments exceeded the Board's thresholds for noise analysis and the increase in train operations would increase the noise level by 2 dBA or more. Table N-16 displays the results of this analysis in terms of sensitive receptors that are expected to exceed 65 dBA L_{dn}. From a noise standpoint, Alternative 4 affects the least number of sensitive receptors (2,652 receptors), while Alternative 1, which involves major train traffic increases in the densely developed West Shore suburbs, results in the greatest number of affected receptors (8,199 receptors).

TABLE N-16
SENSITIVE RECEPTORS COUNTS FOR ALTERNATIVES

Project Issue	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7
Noise receptors that would experience ≥ 65 dBA L_{dn}	8,199	3,453	3,030	2,652	3,724	3,680	3,033

Mitigation

SEA did not identify noise sensitive receptors that meet the noise mitigation criteria for each alternative. SEA determined, however, that Alternatives 3 and 4 would not warrant mitigation along rail line segment C-073 (Quaker-to-Mayfield) because of the diversion of increased CSX train traffic from this rail line segment to the Lakeshore Line (rail line segment C-691).

To address any increases in noise along any segments where increases in train traffic would increase noise beyond SEA's mitigation criteria, SEA recommends that the Board require CSX and NS to:

- Provide noise barriers or sound insulation that would reduce wayside noise by 10 dBA.
- Install continuous welded rail in all new rail construction or replacement programs, and implement a program to replace existing jointed rail in residential areas. Continuous welded rail could reduce wayside noise by 5 dBA.
- Install rail lubrication systems at curves, to reduce wheel squeal, where effective noise abatement would be possible.

N.1.3.12 Cultural Resources

Analysis Methods and Criteria of Significance

SEA reviewed each construction proposal in accordance with Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, and its implementing regulations. SEA

determined whether those activities could adversely affect historic properties and, if so, whether, and what, mitigation would be warranted.

SEA identified an Area of Potential Effect as a geographically defined zone that varies according to the nature of each site-specific activity, and determined whether historic properties might be affected. SEA also conducted archival searches and site visits to determine the presence of historic properties. SEA presented a preliminary eligibility and determination of effects (no effect, no adverse effect, or adverse effect) to the Ohio State Historic Preservation Officer (SHPO). Potential effects on historic properties require review under Section 106 of the NHPA. After issuing the Draft EIS, SEA continued to consult with the SHPO on outstanding Section 106 issues.

SEA used the Criteria of Effect and Adverse Effect (36 CFR Part 800.9) developed by the Advisory Council on Historic Preservation as the criteria for determining whether there would be an adverse impact on historic properties from the proposed Conrail Acquisition. These criteria address the potentially adverse effects of various actions that could alter the significance of a historic property's characteristics. These actions include physical destruction, damage, or alteration; isolation; introduction of elements that are out of character; neglect; and transfer, lease, or sale.

Public Comments on the Draft EIS

The only comment SEA received from the Greater Cleveland Area regarding cultural resources was from the City of Cleveland, which questioned the Draft EIS method for assessing impacts on cultural resources. Cleveland stated that the presence or absence of construction in an area does not solely determine the likelihood of impact on cultural resources.

Analysis Results and Impacts

SEA employed a team of qualified archaeologists, historic archaeologists, and a railroad/architectural historian to visit all of the sites in the Greater Cleveland Area that would be affected by construction of the alternatives under study in this appendix. Table N-17 provides a summary of sites affected by the project alternatives.

The following are sites potentially affected by new construction:

- Double Connection in Vermilion (Alternatives 2 through 7). SEA identified one archaeological site not considered NRHP-eligible at this location. In a December 24, 1997 letter, the Ohio SHPO concurred with this finding. SEA completed a field survey at this location in early May 1998 and determined that the Double Connection in Vermilion would not affect any cultural resources qualified for the NRHP.

TABLE N-17
SITES EVALUATED FOR CULTURAL RESOURCES AND ALTERNATIVES ASSOCIATED WITH THOSE SITES

Sites	Alternatives						
	1	2	3	4	5	6	7
Vermilion Connection (Double Connection for Alternative 2 through 7)	*	*	*	*	*	*	*
Berea rail/rail flyover			*	*			
Detroit Avenue Connection					*	*	
Cloggsville Connection		*	*			*	*
Wickliffe rail/rail flyover					*	*	
Harvard Connection Double Track			*	*			
Erie Connection Rehabilitation						*	*
Rockport Yard Diversion		*	*				
Reverse Curve Connection							*
Kinsman Connection							*
Potential Noise Barriers on Rail line segment C-073	*	*	*	*	*	*	*
Berea Front Street/Bagley Rd. separations	Stand-alone						

- Berea Rail/Rail Flyover (Alternatives 3 and 4) and Front Street/Bagley Road Highway/Rail Grade Separations (potential add-on to Alternatives 2, 5, 6, and 7): SEA conducted a records search and site visit of a potential highway/rail grade separation at Bagley Road associated with Alternatives 2 through 7. SEA determined that the highway/rail grade separation of Bagley Road would not affect any cultural resources qualified for the NRHP.

  Plans for Alternatives 3 and 4 would include a rail/rail flyover of the NS mainline over the CSX at Berea. At the rail/rail flyover location, SEA identified a historic district that appears eligible for inclusion in the NRHP, the potential Berea Railroad Historic District. The district appears to meet NRHP Criterion A for its association with early railroad development in Ohio, and NRHP Criterion C as an assemblage of railroad buildings and structures that constitute an identifiable entity whose components retain a high degree of integrity, location, design, materials, and setting.

  The rail junction at Berea brought together two pioneer Ohio railroads, the Cleveland, Columbus & Cincinnati (CC&C) and the Cleveland & Toledo (C&T). The CC&C was

built between 1846 and 1851 and later became part of the Cleveland, Cincinnati, Chicago & St. Louis, known as the Big Four. The C&T was built between 1853 and 1856 and was consolidated into the Lake Shore & Michigan Southern (LS&MS) in 1869. Both lines later became part of the New York Central system, later Penn Central, and ultimately Conrail.

The potential Berea Railroad Historic District includes five railroad bridges, the Berea Union Depot, the Berea interlocking tower, remnants of a dam and pumping facility for steam locomotive service, several railroad signal bridges and masts of varying types, signal junction and relay boxes, and a track layout that has functioned much the same way since its original construction in the 1850s.

The southernmost of the three river bridges over the East Branch of the Rocky River was built of Berea sandstone by the CC&C in 1849. In 1918, it was strengthened and widened by encasing the stone arches in concrete. To its north is the former C&T bridge, which dates from 1853 and is similar in construction design and material. It consists of independent paired stone arches springing from common piers and abutments; their only physical connection is at deck level where corbeled Berea sandstone courses support two rows of large flat capstones that form the bridge deck. The former C&T bridge has not been used since 1909, when it was replaced by the third and northernmost river bridge, an open-spandrel concrete arch bridge built by LS&MS to accommodate four tracks. Between the middle and northernmost bridges are a dam and remnant pumphouse that probably functioned to raise water from the river to be used in steam locomotives. Two bridges of early 20th Century conventional girder and post construction that span Rocky River Drive are located east of the three bridges over the East Branch of the Rocky River.

The two major buildings in the historic district are the Berea interlocking tower and the Berea Union Depot. Berea Tower, also known as "BE," was closed on February 1, 1998 when its functions were replaced by Conrail's centralized control in Dearborn, Michigan. Its historic function had been to control the switches and signals at the junction in Berea. Berea Tower retains a high degree of integrity, having had only minor alterations such as replacement of the windows. The track model board and pistol-grip interlocking machine both remain intact on the interior. The tower is located along the south side of the Lakeshore Line. The Berea Union Depot was listed on the NRHP on November 21, 1980. The passenger depot was built of Berea sandstone with a central tower on the track side and it has retained considerable integrity of interior features although the exterior has received several additions as a result of its conversion to a restaurant.

The rail/rail flyover of the NS mainline over the CSX line proposed at Berea would result in an adverse effect on at least three of the major contributing features of the potential Berea Railroad Historic District. Alongside the NRHP-listed Berea Union Depot, the NS mainline would be elevated about 30 feet above grade on an earthen berm or columns. This change in elevation would alter the former railroad depot's setting that included an

at-grade passenger platform. Furthermore, it would introduce a massive visual element that would obscure key views to the railroad elevation of the Berea Union Depot.

Because of its location between two sets of tracks, the Berea Tower would have to be demolished or moved to make way for construction of the rail/rail flyover.

The LS/MS bridge over the East Branch of the Rocky River may have to be modified or fully replaced to accommodate the new grade of the railroad crossing necessitated by the Berea rail/rail flyover. The exact grade of the NS line in this location would be contingent upon the ultimate design of the rail/rail flyover, because varying combinations of heights are possible. Additional adverse effects may result on the C&T bridge over the East Branch of the Rocky River as well as the pump house remnant, the dam, and the signal bridges and other district appurtenances if they must be demolished or altered to accommodate construction of the rail/rail flyover. If the Board selects Alternative 3 or 4, the appropriate cultural resources documentation and Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) consultation process would be completed prior to the Applicants undertaking any activity involving these resources.

A highway/rail grade separation of Front Street is a potential stand-alone item that is not integral to Alternatives 1, 2, 5, 6, and 7; however, it could be implemented independently of these alternatives. The level of impact on the Berea Railroad Historic District by such a grade separation would be substantially less than that of the rail/rail flyover. The highway/rail grade separation likely would not require alterations to the bridges over the Rocky River, nor would it require demolition or relocation of the Berea Tower. The only anticipated impact from the highway/rail grade separation alone would be a change of the visual context of the area beyond the limits of the historic district. Therefore, the highway/rail grade separation by itself would not have an effect on the historic district.

- Detroit Avenue Connection (Alternatives 5 and 6): At the Detroit Avenue Connection (associated with Alternatives 5 and 6), Conrail's Lakeshore Line crosses over West Broadway on a massive and ornate stone and steel bridge. The West Boulevard Bridge was built in 1897-1898 as part of the City of Cleveland's development of parks and boulevards undertaken during the "City Beautiful" Movement of the late 19th and early 20th centuries. Edgewater Park was a major city park developed in the late 1890s and the West Boulevard bridge was a major component of the design. The bridge allowed access to the park's western area through the high Lakeshore Line railway embankment. The bridge has an unusual design, with ornamental, nonstructural steel facing on the north and south sides that conceals the load-carrying girders beneath the tracks. The castle-like stonework is reminiscent of other NRHP-listed rail and highway bridges located along boulevards on Cleveland's east side. SEA found the West Boulevard Bridge to meet NRHP Criterion C.

Although plans for the Detroit Avenue Connection are not complete, an existing unused railroad right-of-way would be used to connect the north side of the Lakeshore Line with

the north side of the NS Nickel Plate Line; this connection would be in the northwest quadrant of the existing overpass where the Conrail line crosses over the NS line. The connection might begin west of the historic bridge, in which case there would be no effect. If the connection begins east of the bridge and must cross West Boulevard, the bridge would probably be affected. This would not be an adverse effect, however, because the West Boulevard Bridge abutments can accommodate an additional span without disturbing the character-defining elements of the bridge. If the Board selects Alternatives 5 or 6, the appropriate cultural resources documentation and Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) consultation process would be completed prior to the Applicants undertaking any activity involving these resources.

- Cloggsville Connection (Alternatives 2 and 3): SEA conducted a records search and site visit of the Cloggsville Connection, associated with Alternatives 2 and 3. SEA found that due to ongoing and past urban and/or industrial development, there are no NRHP-eligible archaeological sites within or near the proposed project area. SEA determined that there are no affected NRHP-eligible historic structures in or near the construction area. Consequently, construction at the Cloggsville Connection would have no effect on historic properties and would not require mitigation. SEA will submit support documentation to the Ohio SHPO, and request concurrence with these findings as part of the ongoing Section 106 process.

- Wickliffe Rail/Rail Flyover (Alternatives 5 and 6): SEA conducted a records search and site visit of the Wickliffe rail/rail flyover associated with Alternatives 5 and 6. SEA found that, due to ongoing and past urban and/or industrial development, there are no NRHP-eligible archaeological sites within or near the proposed project area. SEA determined that there are no affected NRHP-eligible historic structures in the construction area. Consequently, construction at Wickliffe would have no effect on historic properties and would not require mitigation. SEA will submit support documentation to the Ohio SHPO, and request concurrence with these findings as part of the ongoing Section 106 process.

- Harvard Connection (Alternatives 3 and 4): At the Harvard Connection site associated with Alternatives 3 and 4, southbound Broadway Avenue crosses over Conrail's Cleveland and Pittsburgh (C&P) Line and, immediately to the south, a stream called Mill Creek. The portion of the bridge over the C&P is of recent date, but the portion over Mill Creek is a skewed stone-arch span that SEA found appears to be eligible for the NRHP.

  Although detailed construction plans were not available at the time of the February 26, 1998 site visit by SEA, it appear that the Harvard Connection work would take place in a way that is unlikely to affect the Broadway Avenue Stone Bridge. If the Board selects Alternative 3 or 4, the appropriate cultural resources documentation and Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) consultation process would be completed prior to the Applicants undertaking any activity involving these resources.

- Erie Connection (Alternatives 6 and 7): SEA conducted a literature review of the Erie Connection area associated with Alternatives 6 and 7. Because of the high degree of historic disturbance at the site due to past and present industrial development, SEA determined that there are no NRHP-eligible archaeological sites within or near the proposed infrastructure improvement areas. SEA also determined that no potential NRHP-eligible historic structures would be affected. Therefore, improvements of the Erie Connection would have no effect on historic properties. SEA will submit support documentation to the Ohio SHPO, and request concurrence with these findings as part of the ongoing Section 106 process.

- Rockport Yard and Short Line Junction (Alternatives 2 and 3): SEA conducted a records search and site visit of the Rockport Yard construction area associated with Alternatives 2 and 3. SEA found that, due to ongoing and past urban and/or industrial development, there are no NRHP-eligible archaeological sites within or near the proposed project area. SEA also determined that there are no affected NRHP-eligible historic structures in or near the construction area. Consequently, construction at Rockport Yard would have no effect on historic properties and would not require mitigation. SEA will submit support documentation to the Ohio SHPO, and request concurrence with these findings as part of the ongoing Section 106 process.

- Reverse Curve Connection (Alternative 7): SEA conducted a literature review and field review of the proposed improvements at the Reverse Curve Connection. Based on the archaeological literature and field reviews, SEA determined that NRHP-eligible archaeological remains likely do not exist in the area because of the high degree of disturbance associated with modern urbanization. SEA determined that NRHP-eligible historic structures likely exist in the area. SEA located 19 buildings over 50 years of age in the area, and determined that four buildings could be potentially eligible for National Register inclusion. Three of these buildings may be eligible under Criterion A, showing a broad pattern of history and the movement and development of industry in Cleveland, and under Criterion C for architectural merit. A fourth building may be eligible under Criterion B because of its association with Andrew Carnegie, a significant person in the City's past. If the Board selects Alternative 7, the appropriate cultural resources documentation and Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) consultation process would be completed prior to the Applicants undertaking any activity involving these resources.

- Kinsman Connection (Alternative 7): SEA conducted a literature review and field review of the proposed improvements at the Kinsman Connection. The research indicated that no previously identified archaeological sites were present within or adjacent to the project area. The field review confirmed SEA's findings. Based on these reviews, SEA determined that potential NRHP-eligible archaeological sites likely do not exist within the project area. SEA also determined that there are no NRHP-eligible historic structures in the construction area. SEA will submit support documentation to the Ohio SHPO, and request concurrence with these findings as part of the ongoing Section 106 process.

- SEA also evaluated the effects of each of the various alternatives and found that if noise barriers are to be used as mitigation and are constructed along the Quaker-to-Mayfield rail line segment (C-073), they would be located in the vicinity of the potential E. 131st Street and E. 133rd Street Historic Districts and the potentially historic General Book Binding Company Building located near Hayden Street and Eddy Road.

  The boundaries of the potential historic districts closely parallel the Quaker-to-Mayfield rail line segment (C-073) from Shaw Avenue on the north to Eddy Road on the south. These districts could be visually affected by any noise barriers that would be built on the above-grade railroad embankment. Such barriers also could potentially affect the General Book Binding Company Building. The potential historic districts are comprised, in part, of Bungalow and Bungalow-inspired houses from about 1910 to 1920 that have survived with few demolitions and potentially a high level of the original fabric. The appropriate cultural resources documentation and Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) consultation process would be completed prior to the Applicants undertaking any noise barrier construction that could affect any of these resources.

Historic properties within the Areas of Potential Effect of project alternatives include the proposed Berea Railroad Historic District, the Broadway Avenue Stone Bridge, and the West Boulevard Bridge. The alternatives under study would necessitate construction within the Areas of Potential Effect of these properties as follows:

Alternative 1: Potential E. 131st Street and E. 133rd Street Historic Districts and the General Book Binding Company Building, if noise barriers are constructed along rail line segment C-073.

Alternative 2: Potential E. 131st Street and E. 133rd Street Historic Districts and the General Book Binding Company Building, if noise barriers are constructed along rail line segment C-073.

Alternative 3: Potential Berea Railroad Historic District, Broadway Avenue Stone Bridge; potential E. 131st Street and E. 133rd Street Historic Districts and the General Book Binding Company Building, if noise barriers are constructed along rail line segment C-073.

Alternative 4: Potential Berea Railroad Historic District, Broadway Avenue Stone Bridge; potential E. 131st Street and E. 133rd Street Historic Districts and the General Book Binding Company Building, if noise barriers are constructed along rail line segment C-073.

Alternative 5: West Boulevard Bridge; potential E. 131st Street and E. 133rd Street Historic Districts and the General Book Binding Company Building, if noise barriers are constructed along rail line segment C-073.

Alternative 6: West Boulevard Bridge; potential E. 131st Street and E. 133rd Street Historic Districts and the General Book Binding Company Building, if noise barriers are constructed along rail line segment C-073.

Alternative 7: E. 40th Street/St. Clair Avenue Historic Structures; potential E. 131st Street and E. 133rd Street Historic Districts and the General Book Binding Company Building, if noise barriers are constructed along rail line segment C-073.

Mitigation

If the Board selects any of the seven alternatives, the appropriate cultural resources documentation and Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) consultation process would be completed prior to the Applicants undertaking any activity involving these resources.

N.1.3.13 Hazardous Waste Sites

Analysis Methods and Criteria of Significance

SEA identified the hazardous waste sites within 500 feet of construction or abandonment activities related to the proposed Conrail Acquisition. SEA did not consider sites located more than 500 feet from the railroad right-of-way, as they are unlikely to be disturbed. SEA eliminated operational changes on rail line segments or at intermodal facilities and rail yards from its analysis because operational changes typically do not have any effects on hazardous waste sites and related environmental concerns. Also, because there are no rail line abandonments associated with the alternative routing options in Cleveland, SEA did not consider such actions further in this study.

SEA used site visits and a variety of data sources to identify the locations of reported releases, spill incidents, or other waste sites on or adjacent to the proposed rail line constructions. SEA's data sources included U.S. Geological Survey (USGS) topographic maps; Environmental Data Resources, Inc.'s (EDR's) reports of Federal and state databases searches; and the Applicants' Environmental Report.

SEA made site visits to verify information obtained from the data sources and to search for any evidence of possible unrecorded hazardous material releases or remedial activities.

SEA considered impacts to be potentially significant if there was reason to believe disturbances or releases of hazardous materials could occur in an uncontrolled manner as a result of construction of connection activities related to the proposed Conrail Acquisition.

Public Comments on the Draft EIS

SEA received no comments about specific concerns relating to hazardous waste sites in the Greater Cleveland Area.

Analysis Results and Impacts

The seven alternatives under consideration in this report would require construction of new railroad connection locations in and around the Greater Cleveland Area. SEA visited these sites to evaluate the potential for hazardous waste sites to be near new railroad connections. The Collinwood Intermodal Facility site was examined in the Draft EIS for the Application Base Case (Alternative 1). The Collinwood facility would be constructed for all seven routing alternatives and so was not analyzed further.

SEA used databases searched by EDR that identified all the types of properties listed on the databases in Table N-18. The Applicants provided SEA with the EDR report for the Vermilion site; SEA obtained the EDR report for the other studied sites directly from EDR and reviewed the USGS topographic maps.

TABLE N-18
ACRONYMS, ABBREVIATIONS, AND NAMES OF RESOURCES IN EDR DATABASE

Acronym or Abbreviation	Name of Database or Type of Pollution
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CORRACTS	Corrective Action Report
ERNS	Emergency Response Notification System
FINDS	Facility Index System
LUST	Leaking Underground Storage Tank
LQG	Large Quantity Generator (of hazardous waste)
MLTS	MaterialsLicensing Tracking System (maintained by Nuclear Regulatory Commission; contains sites which possess or use radioactive materials and which are subject to NRC licensing requirements)
NPL	National Priorities List
RCRIS	Resource Conservation and Recovery Information System
TRIS	Toxic Release Inventory Sites
TSDF	Treatment, Storage, Disposal Facility (of hazardous waste)
SQG	Small Quantity Generator (of hazardous waste)
SWF/LF	Licensed Solid Waste Facility
UST	Underground Storage Tank

Table N-19 identifies the 11 sites (including the Collinwood Intermodal Facility) that SEA evaluated and notes which alternatives would require construction on those sites.

TABLE N-19
SITES EVALUATED FOR HAZARDOUS MATERIALS AND ALTERNATIVES ASSOCIATED WITH THOSE SITES

Sites	Alternatives						
	1	2	3	4	5	6	7
Vermilion Connection (Double Connection Alternatives 2 through 7)	*	*	*	*	*	*	*
Berea rail/rail flyover			*	*			
Detroit Avenue Connection					*	*	
Cloggsville Connection		*	*		*	*	*
Wickliffe rail/rail flyover					*	*	
Harvard Connection Double Track			*	*			
Erie Connection Rehabilitation						*	*
Rockport Yard Diversion		*	*		*	*	*
Reverse Curve Connection							*
Berea Front Street/Bagley Rd. separations	Stand-alone						

The following sites are potentially affected by new construction:

- Vermilion Double Connection (Alternatives 2 through 7): The original NS proposal for Vermilion included a single connection west of Coen Road. After SEA's original evaluation in the Draft EIS, NS provided additional information on a second connection east of Coen Road for Alternatives 2 through 7. This area is rural, and the connectors between parallel tracks would cross an agricultural field and a small stream. SEA did not observe hazardous waste sites for the easternmost connection during its site visit on February 25, 1998. The original connection was not re-evaluated.

  SEA re-evaluated the original (1997) EDR report of hazardous waste sites and related environmental concerns within 500 feet of the original connection, which also had enough information to evaluate the second connection. The EDR report for the first connection (west of Coen Road) identified one orphan site, which could not be mapped due to an incomplete address.

  SEA identified no known hazardous waste sites or related environmental concerns within 500 feet of the second proposed connection. The location of the one site that could not

be mapped is unknown and could be within 500 feet of the site. SEA does not anticipate that the proposed connection would disturb known hazardous waste sites or related environmental concerns in this area.

- Berea Rail/Rail Flyover (Alternatives 3 and 4) and Front Street/Bagley Road Highway/Rail Grade Separations (Alternatives 2 though 7): This area is a mix of commercial and residential land uses. SEA did not observe hazardous waste or other waste concerns within 500 feet of these areas during a February 27, 1998 site visit. The EDR report (1998) for this area identified 26 hazardous waste sites within 500 feet of the construction area. These sites were listed on the FINDS, RCRIS, and LUST databases. Table N-20 lists the sites, reported databases, and any violations recorded in the EDR database. In addition, the EDR report identified seven sites that could not be mapped due to inadequate address information. SEA could not locate these sites.

TABLE N-20
SITES REPORTED BY EDR FOR THE BEREA AREA

Site	Databases	Reported Comments
Geo-Sci Laboratory, Inc.	MLTS	None Reported
Greenhouse Vegetable Packing	LUST	No Further Action
Hirri Mart	UST	20,000 gasoline
Citgo	LUST	No Further Action
Industrial Power Piping	LUST	No Further Action
Spider Staging Corporation	SQG	No Violations
Telefast Industries, Inc.	FINDS	None Reported
Hoover Group, Inc.	FINDS SQG	None Reported One Violation
Taylor Rental Company	LUST	No Further Action
Penton Press Division	FINDS SQG	Air Emissions Monitored under Clean Air Act No Violations
Dearborn, Inc.	UST	FINDS
Price & James Heat'g./ Refrig.	UST	None Reported
Estabrook Corporation	FINDS LUST	None Reported No Violation
Cleveland Builders Supply	FINDS LUST	Active Water Discharge Permit No Further Violation

TABLE N-20
SITES REPORTED BY EDR FOR THE BEREA AREA

Site	Databases	Reported Comments
Max-Vac, Inc.	FINDS SQC	None Reported No Violations
American International Construction, Inc.	SQG	No Violations
Mallett Auto Body	FINDS SQG	None Reported No Violations
Jaco Manufacturing Company	FINDS SQG	None Reported No Violations
A & F Machine Products Co.	FINDS	None Reported
Normandy Metals, Inc.	FINDS SQG	None Reported No Violations
Berea Econo Wash	FINDS SQG	None Reported No Violations
Kilbane's Auto Service	UST LUST	8,000-diesel; 8,000-gasoline, 12,000-gasoline No Further Action
Williams Ford	FINDS SQG LUST	None Reported No Violations No Further Action
Berea Automotive Parts Co.	FINDS	None Reported
Cook Loren Company	FINDS	None Reported
Parts for Industry, Inc.	FINDS SQG	None Reported No Violations

- Detroit Avenue Connection (Alternatives 5 and 6): Alternatives 5 and 6 would involve construction of a connection at Detroit Avenue, linking two existing tracks. This general area is mixed commercial with residential, and areas primarily residential immediately adjacent (north) of the proposed construction site. GCRTA has a rapid transit station south of the proposed construction. SEA did not observe hazardous waste sites in this area during a site visit on February 26, 1998. The EDR report identified no known hazardous waste sites within 500 feet of the site. The EDR report identified six sites that could not be located due to inadequate address information. These could be within 500 feet of the site.

- Cloggsville Connection (Alternatives 2 and 3): SEA conducted a site visit of this area on February 26, 1998. SEA observed that the area surrounding the connection is mixed residential and commercial, with the AM Towing/junkyard operation (including

abandoned vehicles and tires) south of the proposed connection. The vehicles are outside the limits of the connection and off the railroad right-of-way, and any vehicle fluids probably would not migrate to the area of the proposed connection. Other concerns (for example drums and tanks) may have been present in the past.

The EDR report identified three hazardous waste sites within 500 feet of the construction area. Table N-21 lists the sites, reported databases, and any violations recorded in the EDR database report. In addition, the EDR report identified 11 sites that could not be mapped due to inadequate address information. SEA could not locate those sites during the site visit.

TABLE N-21
SITES REPORTED BY EDR FOR THE CLOGGSVILLE AREA

Site	Databases	Reported Comments
Vacant Lot	LUST	Unknown source and responsible party
Voss Industries, Inc.	SQG FINDS	No Violations Information not provided on EDR Report
Laidlaw Environmental Services	CORRACTS CERCLIS-NFRAP RCRIS LQG, TSD, and Hazardous Waste Transporter	RCRA Facility Assessment Completed Discovery and Preliminary Assessments Eight Violations Reported (four compliance violations and four financial record reviews)

- Wickliffe Rail/Rail Flyover (Alternatives 5 and 6): The area of the Wickliffe rail/rail flyover stretches from SOM Center Road (Route 91) on the east to Worden (also called Bailey) Road on the west. The area consists of mostly commercial and industrial establishments. Alternatives 5 or 6 would require a temporary shoefly track during construction. SEA observed the following during a site visit on February 26, 1998:

  — Scrap Yard. SEA observed drums, old tanks, junk, and equipment of the edge of the railroad right-of-way in the northwest quadrant of the highway/rail grade separation of SOM Center Road.

  — Trust Technologies. SEA observed a Safety Kleen truck at Trust Technologies. SEA assumes that Trust Technologies was a hazardous waste generator.

  — East 305th Street. Development along this street is mixed commercial, industrial, and residential. Businesses close to the highway/rail at-grade crossing include service stations, automotive body repair shops, and restaurants. A trailer park abuts the west side of 305th Street. Some trailers had above ground heating oil tanks.

The EDR report (1998) identified seven hazardous waste sites within 500 feet of the proposed construction area. In addition, the EDR report identified 14 sites that could not be mapped due to inadequate address information. SEA could not locate these sites during the site visit. Table N-22 lists the sites, reported databases and any violations recorded in the EDR report.

TABLE N-22
SITES REPORTED BY EDR FOR THE WICKLIFFE RAIL/RAIL FLYOVER AREA

Site	Databases	Reported Comments
Gastown	LUST	
Ekohwerks, Co.	SQG Water Discharge Permit	No violations
Trust Technologies Corp.	SQG	No violations
Fusion, Inc.	SQG	No violations
NUPRO Co.	SQG	No violations
Norfolk Southern	LUST	
Precious Metal Plating Co.	SQG	One Compliance Violation; Date of Compliance 8/26/93

- Harvard Connection (alternatives 3 and 4): This area has mixed residential and commercial land uses. A waterfall on Mill Creek is present on the south side of the proposed railroad construction. The steep hillside between Mill Creek and the railroad right-of-way is very eroded. SEA did not observe hazardous waste sites in this area during its site visit on February 26, 1998.

  The EDR report (1998) identified one hazardous waste site or related environmental concern within 500 feet of the proposed abandonment. This site was listed on the FINDS, RCRIS, and LUST databases. The site in question, the Southeast Chevrolet car dealership, is listed as a small-quantity generator with no violations. The site has had a petroleum release from an UST and the site is in the process of corrective action. In addition, the EDR report identified six sites that could not be mapped due to inadequate address information. SEA was unable to identify these sites during its field visit.

- Erie Connection (Alternatives 6 and 7): Alternatives 6 and 7 would rehabilitate this rail line segment, which is approximately 3 miles long. During a site visit conducted on February 26, 1998, SEA evaluated the railroad construction corridor where it crossed three streets: East 77th Street, East 65th Street, and East 37th Street. The 77th and 37th Street locations are highway/rail grade separations; 65th Street crosses the Erie Connection at-grade. Land uses along the corridor are generally industrial/commercial with scattered residential areas and, in some cases, businesses appeared to be very close

to (within 20 feet of) the railroad tracks. Some commercial/industrial establishments appeared to be vacant.

The EDR report (1998) identified 30 hazardous waste sites or related environmental concerns within 500 feet of the corridor, which are identified in Table N-23. In addition, the EDR report identified 14 sites that could not be mapped due to inadequate address information.

TABLE N-23
SITES REPORTED BY EDR FOR THE ERIE CONNECTION AREA

Site	Databases	Reported Comments
AAA Pipe Cleaning Corp.	UST	12,000-gasoline
Mary Fisco, Inc.	LUST	Initial Corrective Action Report
Arrow Fabricating	FINDS	None Reported
US Metalsource	FINDS SQG	None Reported No Violations
Pettibone Ohio Corporation	FINDS LQG LUST	None Reported No Violations Closure Report Received
Preston Trucking Company	FINDS SQG UST	None Reported No Violations 12,000-diesel (2), 1,000-used oil, 2,000-motor oil (2), 5,000-antifreeze
Cleveland Track	FINDS SQG	None Reported No Violations
3319 E. 80th Street	Spill 3/94 Spill 3/94 Spill 3/94	Small Sewage Spill 30.0 Transformer Oil 1.0 Sulfur Dioxide
Standard Signs, Inc.	FINDS SQG	None Reported No Violations
I-40 and Broadway	ERNS	None Reported
Chem Freight, Inc.	FINDS SQG	None Reported No Violations
GHL Electrical Mechanical, Inc.	FINDS SQG	None Reported No Violations
Finger Metal Finishing	FINDS LQG	None Reported No Violations
Vitex Chemical Inc.	FINDS	None Reported

TABLE N-23
SITES REPORTED BY EDR FOR THE ERIE CONNECTION AREA

Site	Databases	Reported Comments
Food Warehouse, Inc.	LUST UST	Initial Corrective Action Program Report 12,000-diesel
Republic A-1 Auto Parts, Inc.	FINDS SQG	None Reported No Violations
Aetna Plating Corporation	FINDS SQG LUST	None Reported No Violations No Further Action
Harold Jones	LUST LUST	UST Closure No Further Action
AAA Machinery and Equipment Company	FINDS LUST	None Reported No Further Action - UST Closure
Tyroler Scrap	LUST	UST Closure
Mineral Met, Inc.	FINDS LUST TRIS	None Reported No Further Action - USR Closure None Reported
G&S Metal Products Company, Inc.	FINDS TRIS	Facility is monitored or permitted for air emissions under the Clean Air Act
Edmar Chemical Company	FINDS	None Reported
Broadway Supply Company	FINDS	None Reported
Fertile Acres Corporation	FINDS	None Reported
Precision Coatings, Inc.	FINDS SQG	None Reported No Violations
National Plating Company	FINDS LQG TRIS	None Reported No Violations None Reported
Laidlaw Environmental	LUST ERNS	No Further Action None Reported
Alchem-Tron, Inc.	SQG	No Violations

TABLE N-23
SITES REPORTED BY EDR FOR THE ERIE CONNECTION AREA

Site	Databases	Reported Comments
GSX Chemical Services of Ohio, Inc.	CORRACTS	RCRA Facility Assessment completed
	CERCLIS-NFRAP	Preliminary Assessment, Discovery, Alias-Alchem-Tron Inc.
	FINDS	Air emissions monitored under Clean Air Act. Civil judicial and administrative enforcement case against facility.
	LQG	16 Violations
	TSDF	Burning/blending of hazardous waste, hazardous waste fuel marketing, accepts off-site waste.

- Rockport Yard (Alternatives 2 and 3): NS would need to divert through traffic around the north side of Rockport Yard in Alternatives 2 and 3. Additionally, NS may need to construct a connection of the Short Line to the new line around Rockport. During a site visit on February 27, 1998, SEA observed the following:

  — One above-ground storage tank (AST) is located approximately 15 feet from the north side of the tracks (just west of the control tower). The tank appeared to be approximately 2,000 gallons in volume and had built-in secondary containment. NS would need to move this AST if they constructed the new track to serve through train traffic. SEA observed some staining around the tank. The tank is approximately 10 feet from a steep slope that leads down to a creek. SEA has no information on whether the AST is in compliance with Federal and state regulations.

  — An industrial site abuts the tracks on the northwest quadrant of the highway-rail grade separation of West 150th Street and the tracks. This industrial site (name unknown) has a drum storage area for empty drums, drums of hazardous waste, and drums of nonhazardous waste. SEA has no information on whether the drums were full, whether the industrial site is in compliance with Federal and state regulations, or whether the drums were leaking. SEA observed from the railroad right-of-way that the storage area appeared to be in good condition and on pavement.

  — A pile of old railroad ties is located east of the proposed connection. These may not need to be disturbed during construction of the connection.

The EDR report (1998) identified two hazardous waste sites within 500 feet of the proposed construction area. Table N-24 lists the sites, reported databases, and any violations recorded in the EDR report. In addition, the EDR report identified eight sites

that could not be mapped due to inadequate address information. SEA could not locate these sites.

TABLE N-24
SITES REPORTED BY EDR FOR THE ROCKPORT YARD AREA

Site	Databases	Reported Comments
Scott & Fetxer Co. Adalet - PLM	FINDS SQG	Information not reported on EDR database No Violations
Voss Industries, Inc.	FINDS SQG	Information not reported on EDR database No Violations

- Reverse Curve (Alternative 7): This alternative would create impacts on a number of industrial properties by constructing a new reverse curve through an existing area of industrial buildings. The site of the proposed connection is located between Superior Avenue and the existing Conrail Lakeshore Line (C-691) and is bordered by East 38th Street on the west and East 53rd Street on the east. Land use in the area surrounding the site is industrial with some residential and commercial on the periphery.

  SEA has not prepared an engineering survey to determine the exact location of the proposed connection. However, SEA provides its best estimate of potential hazardous waste sites or related environmental concerns in the conceptual boundaries of the required connection for Alternative 7.

  The EDR report identified 39 hazardous waste sites or related environmental concerns in the study area. These sites were listed on the FINDS, RCRIS, LUST, TRIS, CERCLIS, OH Spills, and UST databases. Table N-25 lists the sites, their addresses, reported databases, and any violations recorded in the EDR report. In addition, the EDR report identified 13 orphan sites that could not be mapped due to inadequate address information. SEA identified nine of these to be outside the study area, but SEA could not locate the remaining four sites. SEA supplemented this information with a site visit on March 24, 1998.

TABLE N-25
KNOWN HAZARDOUS WASTE SITES OR
RELATED ENVIRONMENTAL CONCERNS

Site	Address	Databases	Summary of Reported Comments
Former US Refining Co.	1235 Marquette Street	LUST	No further action — UST closure
United States Refining Co.	1235 Marquette Street	FINDS RCRIS-SQG	Information not provided on EDR report No violations

TABLE N-25
KNOWN HAZARDOUS WASTE SITES OR RELATED ENVIRONMENTAL CONCERNS

Site	Address	Databases	Summary of Reported Comments
Abar Manufacturing Corporation	1270 East 53rd Street	FINDS	Information not provided on EDR report
		RCRIS-SQG	No violations
Osborn Manufacturing Corporation	5401 Hamilton Avenue	FINDS	Information not provided on EDR report
		RCRIS-SQG	No violations
Cleveland Twist Drill Co.	4212 East 49th Street	FINDS	Monitored or permitted for air emissions under the Clean Air Act. Civil, judicial, and administrative enforcement case against facility (under Docket)
		RCRIS-LQG TRIS	1 violation, information not provided in EDR report
		LUST UST	UST Closure 550 -gallon Used Oil UST
State Chemical	5100 Hamilton Avenue	LUST	No further action - UST closure
Prestolite Electric, Inc.	5109 Hamilton Avenue	FINDS	Information not provided on EDR report
		RCRIS-SQG	2 violations
Horsburg & Scott Company	5114 Hamilton Avenue	TRIS	Information not provided on EDR report
		FINDS	Information not provided on EDR report
		RCRIS-SQG	1 violation
		LUST	Site Assessment submitted
Reliance Mechanical	4975 Hamilton Avenue	RCRIS-SQG	No violations
		FINDS	Monitored or permitted for air emissions under the Clean Air Act
		LUST	No further action - UST closure
Horsburg & Scott	1285 E. 49th Street	LUST	No further action - UST closure
Specialized Environmental Services, Inc.	1310 E. 49th Street	RCRIS-SQG	No violations
		FINDS	Information not provided on EDR report

TABLE N-25
KNOWN HAZARDOUS WASTE SITES OR RELATED ENVIRONMENTAL CONCERNS

Site	Address	Databases	Summary of Reported Comments
Heat Treat	4629 Hamilton Avenue	LUST	Site Assessment submitted
Leece Neville	49th Street and St. Clair Avenue	LUST	Information not provided on EDR report
Cleveland Commercial Plating, Co.	4814 St. Clair Avenue	CERCLIS	Removal action, discovery, administrative record. Site currently under investigation by the government to assess the extent of further action
		RCRIS-SQG FINDS	No violations Information not provided on EDR report
Day Glo Color, Inc.	4518 Hamilton Avenue	LUST	Initial Corrective Action Program Report
Bands Waste Material Co., Inc.	4608 St. Clair Avenue	RCRIS-SQG FINDS	No violations Information not provided on EDR report
Day Glo Color, Inc.	4515 St. Clair Avenue	UST	13 USTs containing HAZ6472-89-8, HAZ6472-47-8, kerosene, HAZ-plasticizer, HAZ-polyether, mixture resins, HAZ-aromatic HC, HAZ67-56-1, and HAZ08052-41-3
		RCRIS-LQG	1 violation Monitored or permitted for air emissions under the Clean Air Act
		LUST	Petroleum release
Tecmetal, Inc. Nettleton Div.	1371 E. 45th Street	RCRIS-SQG	No violations Information not provided on EDR report
Shaver Mfg.	1523 E. 45th Street	RCRIS-SQG FINDS	No violations Information not provided on EDR report
Dependable Painting Co., Inc.	4403 Superior Avenue	RCRIS-SQG FINDS	No violations Information not provided on EDR report
Former Shell	3991 Superior Avenue	LUST	Site Assessment completed
Brown and Gage, Inc.	1538 E. 41st Street	RCRIS-SQG FINDS	No violations Information not provided on EDR Report

TABLE N-25
KNOWN HAZARDOUS WASTE SITES OR RELATED ENVIRONMENTAL CONCERNS

Site	Address	Databases	Summary of Reported Comments
Advance Plating, Co.	1530 E. 40th Street	FINDS RCRIS-LQG TRIS Other	Information not provided on EDR report 2 violations Information not provided on EDR report Generator land-ban requirements
Consolidated Graphics Group	1614 E. 40th Street	RCRIS-SQG	No violations
Offset Color & Printing	1614 E. 40th Street	RCRIS - SQG	No violations
Offset Color & Printing	1614 E. 40th Street	LUST	UST Closure
May Department Store Warehouse	Payne Avenue and E. 43rd Street	LUST	Corrective action in progress, Corrective Action Plan submitted
Former Gas Station	Southwest Corner of Payne Avenue and E. 43rd Street	LUST	Petroleum related incident, but not from any spill, overfill, or release (i.e., improper vapor recovery)
Midtown Express Bus Line	1717 E. 45th Street	UST	Diesel
Buschman Corporation	4100 Payne Avenue	FINDS	Information not provided on EDR Report
Rosemar Ind. Inc. of Ohio	4133 Payne Avenue	RCRIS-SQG FINDS	No violations Information not provided on EDR Report
Colejon Corporation	1775 E. 45th Street	LUST	No further action - UST closure
General Electric Co. Euclid Lamp Plant	1814 E. 45th Street	FINDS RCRIS-LQC OH Spills	Information not provided on EDR Report No violations Non-specific air contaminants to land (4/94); diesel to land surface (4/94); chemical air stack release 3/95); diesel to air (3/95)
ABCD, Inc.	4699 Commerce Avenue	RCRIS-SQC FINDS	No violations Information not provided on EDR Report
Conrail - Overpass	Commerce Avenue & E. 43rd Street	RCRIS-LQC	1 violation

TABLE N-25
KNOWN HAZARDOUS WASTE SITES OR RELATED ENVIRONMENTAL CONCERNS

Site	Address	Databases	Summary of Reported Comments
Dunbar Amor Express	4110 Commerce Avenue	LUST	No further action - UST closure
Kinco, Inc.	4701 Perkins Avenue	RCRIS-SQC FINDS	No violations Information not provided on EDR Report
U Haul Corporation	1945 E. 55th Street	LUST	Site Assessment submitted
Sunoco	5498 Chester Avenue	LUST	No further action - UST closure

SEA expects that potential impacts resulting from constructing a connection through this area could be great. There would be a great deal of construction debris generated during demolition of approximately 10 to 12 buildings used now or formerly for industrial or warehousing purposes. Some of the buildings, several of which date to the turn of the century, may contain asbestos that would require special handling and disposal. If the Applicants encounter hazardous waste sites during proposed construction activities, the Applicants or other responsible party, would have to comply with Federal, State and local statutes for assessment or remediation.

Mitigation

At no location visited did SEA identify any hazardous materials or waste sites that would warrant SEA to recommend that the Board require specific mitigation. However, given the extensive potential for encountering hazardous materials at the Reverse Curve Connection (Alternative 7), it is likely that this would be a concern at the location. If the Applicants encounter hazardous materials during construction of any facility, the Applicants should follow appropriate regulations and procedures described in Chapter 3, "Analysis Methods and Potential Mitigation Strategies," and Appendix H, "Hazardous Materials and Waste Sites," of the Draft EIS. SEA recommends that the Board require no additional mitigation because existing regulations (Federal, state, and local) and standard construction practices of CSX and NS adequately address assessment and remediation of contaminated areas.

N.1.3.14 Natural Resources

Analysis Methods and Criteria of Significance

The natural resources analysis focused on any proposed physical alteration of habitats and water resources. SEA determined that the potential for impacts on water resources, wetlands, and biological resources probably would be associated with site-specific projects related to the proposed construction of new rail line segments. SEA determined that operational changes such

as increases or decreases in the number of trains on a rail line segment, and changes in the activities in the rail yards and intermodal facilities, typically do not affect natural resources directly. Therefore, SEA did not attempt to identify natural resources on existing rail line segments, rail yards, and intermodal facilities that would experience only operational changes related to the proposed Conrail Acquisition.

SEA based its analysis on information received from the Applicants, USGS topographic maps, Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps, USFWS National Wetlands Inventory (NWI) maps, and site visits. SEA also consulted with USFWS, USACE, and other appropriate Federal and state agencies.

SEA conducted site visits of proposed constructions in Erie, Cuyahoga, and Lake Counties to gather information on existing conditions and to evaluate the potential for impacts on natural resources. SEA also assessed the potential need for Federal permits, including USACE permits for impacts on jurisdictional wetlands, as defined in Section 404 of the Clean Water Act. As part of the impact assessment, SEA also assessed the potential need for additional coordination and permitting by other appropriate regulatory and review agencies.

SEA's impact analysis included a detailed review of the standard specifications for construction activities for CSX and NS and their internal requirements for best management practices (BMPs) in determining the need for mitigation of potential impacts.

SEA considered impacts on natural resources to be potentially significant if there would be any:

- Alteration of stream embankments with rip-rap, concrete, and/or other stabilization measures.
- Temporary or permanent loss of surface water area associated with the incidental deposition of fill.
- Downstream sediment deposit or water turbidity due to fill activities, dredging, and/or soil erosion from upland construction sites.
- Direct or indirect destruction and/or degradation of aquatic, wetland, and riparian vegetation and/or habitat.
- Degradation of water quality through sediment loading or resulting from chemical and/or petroleum spills.
- Alteration of water flow that could increase bank erosion or flooding, uproot or destroy vegetation, or affect fish and wildlife habitats.
- Any removal, alteration, or filling of a wetland without the issuance of a Section 404 permit by USACE. Any alteration of wetlands or waters of the United States requires the

issuance of a permit. Based on the number of acres affected, USACE will require mitigation to compensate for the filling activities.

- Alteration of wetlands that could impact their function to serve as habitats for endangered species.
- Impacts to water resources that are identified drinking water sources.
- Impacts to floodplains that significantly alter the flooding patterns within and adjacent to the impact area.
- Existence of a clear record of the presence of a protected species or habitat within or immediately adjacent to the proposed construction site.
- Location of a site within a protected species' regional geographic distribution and habitat.
- Loss or degradation of Federally protected plant or wildlife communities.
- Disturbance of nesting, breeding, or foraging areas of Federally protected wildlife.
- Loss or degradation of areas designated by regulatory or review agencies as critical habitat.
- Loss or degradation of wildlife sanctuaries, refuges, or national, state, or local parks and/or forest.
- Alteration of movement or migration corridors for wildlife.

Public Comments on the Draft EIS

SEA received several comments about natural resources. Vermilion Township raised concerns about seasonal drainage problems near the proposed Vermilion Connection. CSX and NS expressed concerns about the City of Cleveland's proposed alternatives (Alternatives 3 and 4), noting that the Harvard Connection would require construction of a bulkhead in the Mill Creek basin and could adversely affect a nearby waterfall.

Analysis Results and Impacts

The seven routing alternatives under consideration in this report would require construction of new railroad connections or other improvements at nine locations in and around the Greater Cleveland Area. Table N-26 presents the sites affected by each alternative.

As for the Draft EIS, SEA visited only sites where CSX and NS would construct connections.

TABLE N-26
SITES EVALUATED FOR NATURAL RESOURCES AND ALTERNATIVES ASSOCIATED WITH THOSE SITES

Sites	Alternatives						
	1	2	3	4	5	6	7
Vermilion Crossover (Double Connection in Alternatives 2 through 7)	*	*	*	*	*	*	*
Berea rail/rail Flyover			*	*			
Detroit Avenue Connection					*	*	
Cloggsville Connection		*	*			*	*
Wickliffe rail/rail Flyover					*	*	
Harvard Connection Double Track			*	*			
Erie Connection Rehabilitation						*	*
Rockport Yard Diversion		*	*				
Reverse Curve Connection							*

SEA visited the following sites:

- Vermilion Double Connection (Alternatives 2 through 7): This area is rural, and the connectors between parallel tracks would cross an agricultural field and a small stream. Soybeans and corn were planted in rotation at the agricultural fields, with ruderal weeds and early successional shrubby species near the edge of track ballast. A small, perennial stream crosses the agricultural field perpendicularly from track to track. Shrubs and small tree species border the reaches of the stream. Shrubs and small tree species also form a fence row angling northeast from midpoint of the stream toward the northern tracks. No wetlands were present and there was no evidence of protected species or their habitats.

  At Vermilion in Alternatives 2 through 7, potential impacts to natural resources would include loss of farmland acreage. No wetlands would be impacted. The stream crossing probably would require a culvert, which might produce temporary, minor siltation during installation.

  There are no records of Federally listed species located within the potential project area. However, this area potentially contains habitat for the Federally listed endangered Indiana Bat. Due to potential habitat, NS would need to coordinate with USFWS and the Ohio Department of Natural Resources. NS's coordination should include the submittal of a habitat report with a description of cavity trees and exfoliated bark, tree species, and site photo documentation.

- Berea Rail/Rail Flyover (Alternatives 3 and 4), including the Berea Front Street and Bagley Road highway/rail grade separations, Alternatives 2 through 7: This area contains ballasted and graveled surfaces bordered by a fringe of early successional weedy herbaceous and shrubby species. In the vicinity of the rail/rail flyover and highway/rail grade separations, no wetlands or waters of the U. S. are present within the potential construction area, although temporary impacts during construction may occur on nearby Rocky River. There is no evidence of protected species or their habitats in this area.

  At Berea in Alternatives 2 through 7, the project construction would not affect wetlands or waters of the U.S., nor affect protected species or their habitats.

- Detroit Avenue Connection (Alternatives 5 and 6): This area contains ballasted and graveled surfaces bordered by a fringe of young, upland trees. No observed wetlands or waters of the United States were within the potential construction area. No observed Federally-protected species or their habitats were within the potential construction area.

  At Detroit Avenue in Alternatives 5 and 6, there would be no impacts to protected species or their habitats resultant from this potential construction activity. This construction would not affect wetlands or waters of the U.S. within the potential construction area.

- Cloggsville Connection (Alternatives 2, 3, 6, and 7): The area surrounding the connection is ballasted and graveled surfaces bordered by a fringe of early successional weedy herbaceous and shrubby species. No wetlands, streams, water bodies protected species or their habitats were present within the potential construction area. None of these resources would be affected by Alternatives 2, 3, 6, or 7.

- Wickliffe rail/rail flyover (Alternatives 5 and 6): The surface area of the rail/rail flyover between the northern and southern sets of tracks is mostly ballast and gravel. The lowest area, approximately midway between the northern and southern sets of tracks, is a wetland strip of cattails and *Phragmites* that ranges from a few feet wide to over 20 feet across. Cattails and *Phragmites* are also present along portions of the southern edge of the southern set of tracks. There were no protected species or their habitats within the potential construction area.

  At the Wickliffe rail/rail flyover area in Alternatives 5 and 6, the area between the tracks could possibly be filled, which might result in impacts to approximately 2 acres of low-quality wetlands. This potential construction activity would not impact protected species or their habitats.

- Harvard Connection (Alternatives 3 and 4): This area contains ballasted and graveled surfaces bordered by a fringe of early successional weedy herbaceous and shrubby species. The potential construction area is near a high, steep bank leading to a waterfalls/stream area. Slope erosion is already occurring (not necessarily due to the presence of the

existing tracks). SEA observed no protected species or their habitats within the potential construction area.

At the Harvard Connection in Alternatives 3 and 4, the construction would not affect protected species or their habitats. Harvard Connection would cause a potential increase of erosion and consequent effects on water quality of a stream and construction might require a high retaining wall adjacent to or encroaching into the Mill Creek waterfall area (a potential significant adverse environmental impact).

- Erie Connection (Alternatives 6 and 7): This rail line segment is approximately 3 miles long. Ballasted and graveled surfaces are bordered by a fringe of early successional weedy herbaceous and shrubby species. No wetlands or waters of the U.S. were observed within the potential construction area.

  At the Erie Connection in Alternatives 6 and 7, construction would not impact protected species or their habitats, nor would it affect wetlands or waters of the U.S.

- Rockport Yard (Alternatives 2, 3, 6, and 7): Ballasted and graveled surfaces are bordered by a fringe of early successional weedy herbaceous and shrubby species. A confluence of streams is near the Short Line Connection (where a new connector would be constructed), with the main channel bordered by mature cottonwoods and adjoined by a cattail marsh in a portion of the floodplain area. Near the Rockport Yard, the main stream channel is approximately 15 feet wide and 12 inches deep, with 20-foot banks. The stream reach near the bridge over the main channel is already very disturbed, and the soil appears polluted by diesel fuel and other spills. There was no observed evidence of protected species or their habitats.

  In Alternatives 2, 3, 6, and 7, the footprint of the Rockport Yard connector probably would not intrude upon the wetlands area. Construction of these alternatives would widen bridges over both the tributary and main channel streams; bridgework over the main channel would have greater potential for sedimentation impacts on the stream due to the taller, steeper banks. There would be no impacts on protected species or their habitats.

- Reverse Curve Connection (Alternative 7): This alternative would affect a number of industrial properties by constructing a new connector through an area of existing industrial buildings, streets, parking lots, and vacant parcels.

  At the reverse curve connection in Alternative 7, the potential construction would not affect protected species or their habitats. This construction would not affect wetlands or waters of the U.S.

Mitigation

Mitigation measures for natural resource impacts would include any measures called for as a part of permitting or approvals by Federal, state, and local resource protection agencies (e.g., Section 404 wetland permits, Section 401 water quality permits, Ohio Department of Natural Resources permits/approvals, watershed district approvals, etc.). In concert with any such mitigation, SEA recommends the following mitigation measures for the following projects:

- Vermilion Double Connection (Alternatives 2 through 7): Best Management Practices (BMPs) during construction to minimize disturbance to the agricultural field and keep potential erosion and sedimentation problems under control. Coordination with USFWS and Ohio Department of Natural Resources to determine impacts to the Federally listed endangered Indiana Bat. Coordination includes a habitat report which will include discussion of tree cavities and bark exfoliation, tree species, and site photo documentation. Tree clearing activities at the proposed site scheduled between September 15 and April 15 would eliminate potential impacts to the Indiana Bat by not disturbing trees used for summer roosting.

- Berea Rail/Rail Flyover (Alternatives 3 and 4): BMPs to minimize erosion and sedimentation.

- Berea Front Street and Bagley Road highway/rail grade separations (if adopted as part of Alternatives 2 through 7): BMPs to minimize erosion and sedimentation.

- Detroit Avenue Connection (Alternatives 5 and 6): BMPs to minimize erosion and sedimentation.

- Cloggsville Connection (Alternatives 2, 3, 6, and 7): BMPs to minimize erosion and sedimentation.

- Wickliffe rail/rail flyover (Alternatives 5 and 6): General cleanup of the area, and landscape/wetland planting of borders. Other mitigation as called for by local, state or Federal regulatory agencies.

- Harvard Connection (Alternatives 3 and 4): Slope stabilization and general cleanup of the adjacent stream area, BMPs to minimize erosion and sedimentation.

- Erie Connection (Alternatives 6 and 7): BMPs to minimize erosion and sedimentation.

- Rockport Yard and Short Line Junction (Alternatives 2, 3, 6, and 7): Avoidance of wetlands; BMPs to avoid sedimentation impacts to streams at bridge crossings; cleanup of soil, banks and streambed at main channel crossing.

- Reverse Curve Connection (Alternative 7): BMPs to minimize erosion and sedimentation.

N.1.3.15 Land Use and Socioeconomics

Analysis Methods and Criteria of Significance

Pursuant to the Board's rules at 49 CFR Part 1105.7(e)(3), SEA assessed each proposed construction location for effect on prime farmland and consistency with existing Coastal Zone Management Plans. SEA was unable to contact local jurisdictions within sufficient time to allow for review and analysis within the schedule for the preparation of the alternatives analysis. Therefore, land use analysis was limited to site visits, observation of existing land uses, and data contained in the revised NS mitigation proposal (April 16, 1998) for the Greater Cleveland Area.

SEA also evaluated whether any alternatives project was located within Native American lands, and whether any rail line segment that would meet or exceed the Board's thresholds for environmental analysis traversed any Native American reservations.

SEA identified Coastal Zone Management state planning agency jurisdiction over the location of each proposed construction project. SEA also reviewed the Department of the Interior Bureau of Indian Affairs (BIA) information on Native American Reservations. SEA developed data on existing land uses using information from the NS mitigation proposal, site visits, aerial photographs, USGS maps, GIS base maps, and consultation with state planning agencies. SEA also used information gathered from consultations with appropriate agencies regarding prime farmland, Coastal Zone Management, and Native American reservations.

SEA considered a potential impact on land use or socioeconomic conditions to be significant if any of the following conditions would likely result from proposed new construction:

- Land Use Plan: The proposed new construction would be inconsistent with local land use plans in such a way that proceeding with the activity would substantially alter the character and planned use of the adjoining area. SEA was unable to verify land use consistency of the proposed activities with local land use plans, since it developed the analysis without discussion with local land use officials. Therefore, any determinations of consistency are merely preliminary.

- Prime Farmland: The impact on prime farmland would be such that a substantial portion of farmland in the county would be removed from actual or potential production.

- Coastal Zone: The proposed new construction occurring in a coastal zone would be inconsistent with the requirements of the state Coastal Zone Management Agency.

- Socioeconomics: Proposed construction would result in the direct elimination of jobs as a result of or related to changes to the physical environment.

Public Comments on the Draft EIS

SEA received few comments on this issue. Previous to the alternatives analysis, commentors raised concerns about economic impacts from property value declines associated with the noise impact of increased train traffic. A commentor noted concerns about decreased tax revenues from these perceived property value declines.

CSX commented that impacts to areas surrounding the Short Line would be no different in nature or greater in magnitude than impacts currently experienced on the Lakeshore Line, as land uses surrounding both lines are similar and similar numbers of people reside in proximity to both lines.

Analysis Results and Impacts

Vermilion Connection. Section 5-OH.17.1 of the Draft EIS describes NS's plans at Vermilion. To summarize, one connection (Alternative 1) or two connections (Alternatives 2 through 7) would be constructed between the NS and Conrail tracks in an agricultural area near the City of Vermilion. Approximately 12.4 acres of cropland would be converted to railroad right-of-way in Alternative 1 with twice this acreage needed for Alternatives 2 through 7. A highway/rail at-grade crossing would be constructed at Coen Road in all cases. The area of proposed construction is currently zoned light industrial and rural residential. NRCS has classified soils at the site as prime farmland. The proposed activity is not located within a designated coastal zone. The area of proposed construction potentially contains habitat for the Federally listed endangered Indiana Bat. "Time of year" construction constraints could eliminate any potential impacts. No Federally protected species have been recorded at the proposed site.

SEA preliminarily determined that there would be no significant impacts to land use associated with the proposed connection(s) at Vermilion and, therefore, at this time does not recommend mitigation.

Cloggsville Connection. The Cloggsville Connection realignment would diverge from the existing east/west oriented Nickel Plate Line, curve toward the southwest and connect with the existing northeast/southwest oriented Flats Industrial Track. This realignment would be southwest of the existing connection between the Nickel Plate Line and the Flats Industrial Track. The realignment would require the acquisition of approximately 2.7 acres for new railroad right-of-way and for the construction of a new Train Avenue railroad bridge. There would be a new double-track bridge constructed over Train Avenue with a new double track approach ramp constructed as well.

Berea Rail/Rail Flyover. The Berea rail/rail flyover would require construction of a rail/rail grade separation between CSX and NS in Berea. The Berea rail/rail flyover is integral to Alternatives 3 and 4. Construction of the Berea rail/rail flyover would require approximately 0.9 acre of nonrailroad right-of-way.

The rail/rail flyover area is located in a rail transportation corridor that is bordered by residential, commercial, and industrial land uses. The City of Berea has indicated that the flyover would constitute a major visual barrier for the city. NRCS has classified soils at this site as prime farmland. It is unknown whether the Berea rail/rail flyover area is located within a designated coastal zone.

Berea Bagley Road Separations. The Bagley Road highway/rail grade separation on rail line segment C-061 would consist of construction of a highway/rail grade separation at this location. This stand-alone project is not an integral part of any of the alternatives. These grade separation projects may convert a small amount of commercial, residential, or industrial land into railroad or roadway use depending upon the exact design.

Berea Front Street Highway/Rail Grade Separation (rail line segments N-293c, N-293d, C-074, and C-061). This improvement would provide a highway/rail grade separation at Front Street in Berea, and is incorporated into the rail/rail flyover as part of Alternatives 3 and 4. However, the highway/rail grade separation would not need to be built for rail operations to function under other alternatives, and for that reason, this improvement is a stand-alone improvement for Alternatives 1, 2, 5, 6, and 7.

Reverse Curve Connection. This alternative would require demolition of approximately 10 to 12 structures in an industrial area of Cleveland and would require acquisition of approximately 30 acres of land. An unknown number of jobs would be displaced or lost by this action. Several local streets would also be closed. SEA has not determined whether this impact would be consistent with the future land use plans for the City of Cleveland and its older inner-city industrial neighborhoods.

The Detroit Avenue Connection, the Cloggsville Connection, the Wickliffe Flyover, the Harvard Connection, the Erie Connection Rehabilitation, and the Rockport Yard Diversion would all be constructed on existing railroad property, within existing railroad corridors. SEA has not determined whether these constructions are consistent with local land use plans in effect. These constructions would serve to enhance transportation activity along existing corridors.

Mitigation

SEA encourages CSX and NS to contact and consult with the respective cities regarding land use consistency, to coordinate all planning and construction activities, and to ensure a minimization of impacts on surrounding land uses.

N.1.3.16 Environmental Justice

Executive Order No. 12898, "Federal Actions to Address Environmental Justice in Minority and Low-Income Populations," directs each Federal agency to develop a strategy to address environmental justice concerns in its programs, policies, and procedures. The purpose of the Executive Order is to avoid disproportionately high and adverse impacts to minority and low-

income populations with respect to human health and the environment. Appendix M, "Environmental Justice Analysis," of this Final EIS provides additional environmental justice information.

Analysis Methods and Criteria of Significance

As more fully described in Chapter 3, "Analysis, Methods, and Potential Mitigation Strategies" in the Draft EIS, SEA observed the guidance provided by the Executive Order, the draft Council on Environmental Quality (CEQ) Guidance, the draft EPA guidance, and the DOT Order in developing the methodology for examination of the environmental justice effects of the proposed Conrail Acquisition on minority and low-income populations.

The analysis methodology followed six basic steps:

- SEA identified the potential health and environmental effects of the proposed Conrail Acquisition.
- SEA determined whether these environmental effects would occur in minority or low-income populations.
- SEA assessed whether these environmental effects on minority or low-income populations would be "high and adverse."
- SEA determined whether potentially high and adverse effects would "disproportionately affect" minority or low-income populations. For the Final EIS, SEA defined effects to be disproportionate if the effects are predominantly borne, or more severely borne, by a minority or low-income population than by other populations.
- If SEA identified an impact on a minority or low-income community resulting from the proposed Conrail Acquisition, it conducted outreach to the affected community to determine issues important to them. This action was carried out as part of the Draft EIS review by the public.
- Finally, SEA identified potential mitigation measures to avoid or minimize the disproportionate effects resulting from the proposed alternative routing options that would become part of the Conrail Acquisition. SEA recommended mitigation measures if the disproportionate effects are not effectively mitigated by the proposed mitigation measures recommended for other environmental issue categories such as noise, hazardous materials transport, or high/rail at-grade crossing safety.

Appendix M, "Environmental Justice Analysis" provides more details on SEA's environmental justice methodology on disproportionate impacts, analysis, and site visits.

SEA used the criteria of significance for each of the environmental impact categories described in this section as a beginning point to determine environmental justice impacts. If SEA determined an environmental impact to be significant based on its criteria of significance, SEA equated those effects to be high and adverse impacts within minority and/or low-income populations. SEA then requested comments from the public on the Draft EIS to assist SEA in determining whether the high and adverse impacts would generate disproportionate impacts to minority and/or low-income populations.

Public Comments on the Draft EIS

SEA received a number of comments from the Greater Cleveland Area raising concerns about environmental justice issues. Commentors noted that the length of some rail line segments tended to "dilute" the percentage of minority or low-income persons affected in some areas. Commentors criticized SEA's recommended outreach as a measure that would not mitigate impacts to environmental justice communities. Commentors generally stated that the project would affect low-income and minority populations by increasing train traffic in these neighborhoods and creating noise, hazardous materials transport, and safety concerns.

Analysis Results and Impacts

The City of Cleveland, both prior to and following issuance of the Draft EIS, had raised the issue of environmental justice in responding to the proposed routing of train traffic through the City by CSX and NS. The City indicated that, in its opinion, CSX and NS had not taken into account the impacts of division of Conrail lines and the routing of train traffic upon minority and low-income populations. The City further stated that the routing proposed by the Applicants would have disproportionate impacts on these disadvantaged populations.

As a result of these concerns raised by the City, and consistent with the analysis of environmental justice impacts conducted at the system-wide level, SEA conducted an analysis of environmental justice on all seven alternatives studied in the Greater Cleveland Area. SEA used the refined methodology described in Appendix M, "Environmental Justice Analysis," of this Final EIS to determine disproportionately high and adverse effects on minority and low-income communities for each of the alternatives. SEA conducted extensive site visits to verify existing conditions and public comments, observe train activities, identify cohesive communities within segments, and qualitatively assess the practicality of mitigation given existing circumstances within communities. Through site visits and additional assessments, SEA also identified other adverse effects in Cuyahoga County related to emergency response capabilities in the event of a hazardous material spill in the vicinity of environmental justice populations, the conditions of bridges and other crossings of rail lines, and protective measures to guard against potential dangers to children.

SEA identified Cuyahoga County as one of the greatest areas of concern due to the various changes occurring in rail activities in the region. SEA determined that noise and hazardous materials transport effects, when considered without the application of any mitigation, are of greatest concern due to their potentially significant (high) impacts. The hazardous materials

transport impacts, in particular, can affect a considerable number of the minority and low-income populations in Cuyahoga County.

SEA concluded that, without implementation of any mitigation measures, Alternatives 1, 2, 3, 5, and 7 would result in disproportionately high and adverse hazardous materials transport impacts on environmental justice populations residing in the areas of potential effect adjacent to the rail line segments in Cuyahoga County. SEA determined that the affected minority and low-income populations reside predominately in Cleveland, East Cleveland, Cleveland Heights, Berea, and Euclid. These populations are located in the Areas of Potential Effect surrounding the proposed alternative alignment.

SEA determined that the Wickliffe Flyover (Alternative 6), in the absence of any mitigation, would have disproportionately high and adverse noise effects on minority and low-income populations residing in Areas of Potential Effect of Cleveland and East Cleveland.

Only Alternative 4, the Cleveland Flip Plan No. 2, would result in no disproportionately high and adverse impacts on minority and low-income populations in Cuyahoga County.

Attachment 17 of Appendix M presents a summary of the results of the environmental justice analysis by alternative. The disproportionate effects noted in this analysis are those occurring prior to implementation of any mitigation. (See Table N-27.)

Of the seven alternatives, SEA determined that, although disproportionate for hazardous materials transport only, the Application Base Case alternative (Alternative 1) would have the greatest impact on environmental justice populations in Cuyahoga County. This is primarily a result of the routing of all major lines of CSX (Lakeshore Line) and NS (Nickel Plate and Pittsburgh lines) through the east side of Cleveland and the City of East Cleveland, localities with large minority and low-income populations.

The NS Cloggsville Alternative (Alternative 2) routes CSX and NS traffic through the east side of Cleveland; thus, the environmental justice populations affected remain relatively high compared to Alternative 1. The Cleveland Flip Plan No. 1 (Alternative 3) designed to avoid or reduce train traffic through the east side of the city, would affect the lowest number of minority and low-income persons while Cleveland Flip Plan No. 2 (Alternative 4) would not result in any environmental justice impacts. Alternatives 5, 6, and 7 present varying degrees of train traffic reductions on the east side of the city that result in moderate reductions in environmental justice populations affected compared to Alternative 1.

TABLE N-27
CLEVELAND-AREA MITIGATION ALTERNATIVES
ENVIRONMENTAL JUSTICE IMPACTS
(Cuyahoga County, Pre-mitigation)

Alternative	Disproportionate for:		Total Disproportionately Affected Minority/Low-Income Population in Block Group Areas of Potential Effect
	Hazardous Materials Transport	Noise	
1	Yes	No	98,800
2	Yes	No	95,000
3	Yes	No	50,800
4	No	No	0
5	Yes	No	56,000
6	No	Yes	56,000
7	Yes	No	68,300

Mitigation

SEA recommends that the Applicants take measures to reduce the disproportionately high and adverse effects on the minority and low-income populations within the areas of potential impact in the Greater Cleveland Area. The main focus on the reduction or elimination of environmental justice impacts is through the elimination of significant (high) impacts that result in a disproportionate effects on minority and low-income populations. Thus, SEA recommends to the Board that the Applicants, as a condition of approval of the proposed Conrail Acquisition:

- Implement all mitigative measures, as presented in Chapter 7, "Recommended Environmental Conditions," and Section N.1.3 of this Final EIS, for the safe transport of hazardous materials through the Greater Cleveland Area.

- Implement the noise abatement plan as presented in Chapter 7, "Recommended Environmental Conditions," of this Final EIS, with particular attention to the abatement of noise on the east side of the City of Cleveland that are exposed to the greatest degree of disproportionate impacts.

In those cases where agreements are reached with affected communities, the agreed upon measures to address any impacts associated with noise or the transport of hazardous materials shall take precedent over the above mitigative measures. However, the Applicants are urged to implement the greatest degree of mitigation practicable in environmental justice communities.

Additional mitigative measures that can be implemented are discussed in Section N.1.3 of this appendix. Each of those measures, whether as a stipulated condition of the approval of the proposed Conrail Acquisition or as a voluntary action by the Applicants, can contribute to the reduction in adverse effects on minority and low-income populations and further reduce the potential for disproportionate impacts.

N.1.3.17 Cumulative Effects

For the Draft EIS, SEA evaluated cumulative effects of the proposed Conrail Acquisition from both the system-wide and the site-specific viewpoints. Many issues discussed in that evaluation are similar and relevant to the proposed constructions.

Analysis Methods for Greater Cleveland Area

For the Draft EIS, SEA examined each of the technical areas of analysis and determined that cumulative effects having regional or system-wide ramifications are primarily confined to effects on air quality, energy, and transportation. SEA also evaluated cumulative effects of other projects or activities such as major infrastructure projects, community development improvements, or private developments that are geographically related to the proposed Conrail Acquisition. SEA also reviewed its agency consultation interview notes and written correspondence from various state, regional, local agencies, and planning officials to determine planned community actions or projects that may contribute to cumulative effects.

Public Comments on Draft EIS, Analysis Results, and Mitigation

Commentors on the Draft EIS suggested that SEA should have considered aggregated multiple resource effects in its cumulative effects analysis. SEA did not consider aggregated multiple resource effects in its cumulative effects analysis on a system-wide, regional, or local basis. SEA determined that multiple resource effects are best addressed by the analysis and recommended mitigation, if appropriate, of individual resource categories.

City officials in Olmsted Falls, Ohio, cited airport noise and an announced plan by the airport to extend a major runway as factors that should be considered in the analysis of cumulative effects. SEA responded that the expansion at Hopkins International Airport is not sufficiently advanced to be considered in the EIS since capital improvements are not planned, approved, and funded.

The Cities of Bay Village, Rocky River and Lakewood (BRL) collectively commented that all highway/rail at-grade crossings should be analyzed together as a corridor, rather than on a crossing-by-crossing basis. They also asserted that it is the total impact to BRL that must determine whether a mitigation proposal meets the Board's criteria, and that, considered in aggregate, the individual environmental impacts amount to nothing less than an assault on the quality of life. SEA's analysis of alternatives in Cleveland is an analysis of the whole Cleveland area and all of the potential effects. Alternatives 2 through 7, in fact, reduce these effects to the BRL cities.

The City of Cleveland expressed concern regarding the cumulative effects that may result from exposure to numerous carcinogens in University Circle. Studies performed by SEA modeled conservative-case concentrations of air emissions, which were found to be well below applicable standards.

N.1.3.18 Project Construction Cost

The costs for implementation of the seven routing alternatives under consideration for the Cleveland, Ohio area are varied and are based on the inclusion of various alternative-specific items. Table N-28 provides SEA's estimates of the cost of implementation of each of these alternatives.

TABLE N-28
ESTIMATED COST TO IMPLEMENT STUDY ALTERNATIVES ($ MILLIONS)

Measurement	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7
Total Cost (Not including Stand-Alone Projects)	$41.6	$68.8	$202.6	$184.5	$151.2	$176.4	$174.4
Incremental Cost over Base (Not including Stand Alone Projects)	$0	$27.2	$161.0	$142.9	$109.6	$134.8	$132.8

The costs for these alternatives are associated with different combinations of the following items:

- New Berea rail/rail flyover.
- Wickliffe rail flyover with an intermodal connection to Collinwood Yard (does not include relocation of CSX shops from south side to north side of Collinwood Yard).
- Cloggsville connection, including Flats Industrial track through Rockport Yard to CP190.
- CP190/Ford Track Signals.
- Upgrades to the Short Line from Short to Marcy.
- Upgrades to the Short Line from Marcy to Collinwood Yard.
- New connection at Mayfield (University Circle).
- Improvements to existing connection at Mayfield.
- New Kinsman Connection.
- Harvard Connection double-track upgrade.

- Renovation of the Erie Connection from Union Avenue to 37th Street.
- New Reverse Curve Connection infrastructure costs.
- New reverse curve Connection property relocation and demolition costs.
- New Detroit Avenue Connection.
- New Vermilion Connection.

The costs for the alternatives do not include the following elements, which are stand-alone items that are not essential for railroad operations:

- New Berea/Front Street grade separation (except in Alternatives 3 and 4).
- New Dille Road underpass.
- New London Road underpass.
- New Bagley Road underpass.

N.1.3.19 Inconsistent and Responsive Applications and Comments and Requests for Conditions

Congressman Dennis Kucinich, representing the 10th Congressional District of Ohio, requests the establishment of a neutral, independent railroad company operating in the Greater Cleveland Area that would own and operate most or all of the railroad lines in the region. The new company would maintain the tracks and other ancillary facilities, dispatch through and local trains, and provide switching service to railroad service customers. SEA evaluated Congressman Kucinich's request and determined that establishing a neutral, independent railroad operating company in the Greater Cleveland Area could result in reduced operational safety with no identifiable environmental benefits. Therefore, SEA finds that the implementation of the request is not warranted. This topic is discussed further in Chapter 4,Summary of Environmental Review, Section 4.19.1, Cleveland, Ohio.

N.1.4 Summary of Differences Among Alternatives

This section provides a summary of the estimated costs, implementation issues, and environmental impacts of the seven routing alternatives under discussion. Table N-29 offers a brief comparison of the alternatives as well.

Table N-29
COMPARISON OF ALTERNATIVE ROUTES IN THE GREATER CLEVELAND AREA

Project Issue [1]	Alt. 1: Application Base Case	Alt. 2: NS Cloggsville	Alt. 3: Cleveland Flip No. 1	Alt. 4: Cleveland Flip No. 2	Alt. 5: Wickliffe Flyover	Alt. 6: Wick. Flyover with Erie Conn. Reheb.	Alt. 7: Cleveland Reverse Curve
Constructibility (Major elements)	Easiest-- No new construction Upgrades to existing lines only	Second easiest-- Rockport Yard Improvements Cloggsville Connection and Improvements Double Vermilion Connection	Most difficult-- Berea Flyover Harvard Connection Rockport Yard Improvements Cloggsville Connection and Improvements Double Vermilion Connection	Most difficult-- Berea Flyover Harvard Connection Rockport Yard Improvements Mayfield Connection Double Vermilion Connection	Third most difficult-- Wickliffe Flyover Cloggsville Connection and Improvements Detroit Avenue Connection Mayfield Connection Double Vermilion Connection	Second most difficult-- Wickliffe Flyover Rockport Yard Improvements Cloggsville Connection and Improvements Erie Connection Detroit Avenue Connection Mayfield Connection Double Vermilion Connection	Second most difficult-- Rockport Yard Improvements Cloggsville Connection and Improvements Erie Connection Reverse Curve Construction Kinsman Connection Double Vermilion Connection
Near-Term Consequences (As of "Day One")	None	Temporary use of Application Base Case	Temporary use of Application Base Case; potential major congestion during construction	Temporary use of Application Base Case; potential major congestion during construction	Temporary use of Application Base Case	Temporary use of Application Base Case	Temporary use of Application Base Case
Long-Term Consequences (Future operations)	None	NS main line bypass at Rockport Yard could still interfere with yard operations	CSX has delays at drawbridge with no alternative route; CSX/ NS could have operational constraints at CP 190; NS loses direct access to Whiskey Island shippers	CSX has delays at drawbridge with no alternative route; CSX/ NS could have operational constraints at CP 190; NS loses direct access to Whiskey Island shippers	NS needs trackage rights for alternate route; CSX/NS could have operational conflicts at Collinwood Yard; Cloggsville Connection bypass offers both CSX & NS overflow capabilities for main lines; NS loses direct mainline access to 55th Street Yard	Traffic is reduced at CP Draw (compared to Alternative 5), CSX/NS could have operational conflicts at Collinwood Yard; NS access to 55th Street Yard is restricted	Results in lowest traffic at CP Draw; all NS traffic passes through Cloggsville Connection; NS access to 55th Street Yard is restricted; NS loses direct access to Whiskey Island shippers
Hazardous Materials Transport Exposure [2]	High	Moderate	Low	Low	Moderate	Moderate	Moderate
Highway/Rail At-grade Crossing Accidents [3,4]	5.44/year	4.95/year	4.99/year	4.97/year	5.07/year	4.98/year	4.98/year
Freight Rail Accidents [5]	2.39/year	2.37/year	2.36/year	2.34/year	2.32/year	2.33/year	2.38/year

(Continued on next page)

Alternative 1: Application Base Case

Advantages. CSX and NS proposed Alternative 1 because they felt that it best served their operational requirements through the Greater Cleveland Area. An advantage of Alternative 1 over other alternatives is that it does not incur any additional construction costs for implementation, the proposed major capital improvements for the Short Line (Quaker-to-Short) are to effect improvements in the overall efficiency of the system. All other alternatives would require additional capital improvements. In addition, CSX and NS could immediately implement Alternative 1, while all other alternatives would require the use of the upgraded Short Line (Quaker-to-Short) during construction periods of various length. Alternative 1 would provide good access to all rail yards and would not require construction of a rail/rail flyover, major structures, or other track improvements as in Alternatives 2 through 7. Alternative 1 has obtained the support of a number of Cleveland's suburbs (as of this writing: East Cleveland, Brook Park, and Olmsted Falls). Finally, Alternative 1 would result in an average 15.5 train per day decrease in train traffic on the Berea to Vermilion rail line segment N-293d from 1995 base levels.

Disadvantages. Shortcomings of Alternative 1 include substantial train traffic increases in minority and low-income areas such as East Cleveland (rail line segments C-073, N-075b), which would experience total average increases of 60.6 trains per day over pre-Acquisition (1995) levels,[7] and the Kinsman area (rail line segments C-072a, N-075c, and N-081c), which would experience a total average increase of 81.2 trains per day. Other areas that would experience substantial increases in train traffic include Brook Park (rail line segment C-074) at an average of 31.9 trains per day, Berea (rail line segments N-293d and C-061) at an average of 23.0 trains per day, and Lakewood/Rocky River/Bay Village (rail line segment N-080b) at an average of 20.6 trains per day. The City of Cleveland and the West Shore communities of Bay Village, Rocky River, and Lakewood have all expressed opposition to this alternative because of the impacts from increased train traffic levels on densely developed residential areas with numerous highway/rail at-grade crossings. Table N-30 presents the total average trains per day through various selected residential areas. The changes (increases and decreases) in trains per day noted in this analysis are the differences between the 1995 traffic levels and what would be the train traffic level under each alternative.

[7] All changes in train traffic levels discussed in this section are comparison to 1995 levels unless otherwise noted.

TABLE N-30
TRAIN TRAFFIC THROUGH SELECTED CLEVELAND RESIDENTIAL AREAS[a]

Residential Area Studied	Rail Line Segments	Traffic (Trains per Day)							
		1995 Pre-Acquisition	Alt. 1 Application Base Case	Alt. 2 NS Cloggsville	Alt. 3[b] Cleveland No. 1	Alt. 4[b] Cleveland No. 2	Alt. 5[b] Wickliffe Flyover	Alt. 6 Wickliffe +Erie Con.	Alt. 7 Reverse Curve
Univ. Circle & East Cleveland	C-073 N-075b	19.8	80.4	69.8	43.4	43.4	57.0	57.0	43.4
Kinsman Area	C-072a, N-075c, N-081c	30.9	112.1	112.1	44.0	40.6	88.7	61.0	79.9
Cleveland Central Business District	N-293a	52.4	48.6[c]	57.5[d]	57.0	57.0	66.3	38.6	15.7
Linndale	N-074	2.0	4.2	13.8	17.7	4.0	13.2	30.5	41.3
Brook Park	C-074	13.4	45.3	45.3	46.3	46.3	53.0	53.0	40.1
Berea (West Side)	N-293d, C-061	66.9	89.9	112.1	107.6	107.6	107.6	107.6	107.6
Olmsted Falls	N-293d	52.4	36.9	59.1	54.6	54.6	54.6	54.6	54.6
Lakewood, Rocky River, and Bay Village	N-080b	13.5	34.1	13.9	16.4	16.4	16.4	16.4	16.4

a Numbers are average number of trains per day and reflect traffic data updated on April 16, 1998, after SEA received revised operational data from the Applicants. Totals include passenger trains as follows:
2.0 trains per day on C-060 and C-691.
2.0 trains per day on N-081.
4.0 trains per day on N-293.

b Totals assume 4.0 NS trains per day through Rockport Yard.

c Totals include 11.7 CSX trains per day because of CSX trackage rights over the NS Lakeshore Line only.

d Totals assume 10.0 CSX trains per day because of CSX trackage rights on the NS Lakeshore Line.

Alternative 2: NS Cloggsville

Advantages. NS proposed Alternative 2 as an operational variation to Alternative 1. Alternative 2 largely meets the expressed desire of the West Shore communities of Bay Village, Rocky River, and Lakewood because it would keep train traffic through these communities at essentially the same level as before the proposed Conrail Acquisition: an average of 13.5 trains per day in 1995 compared to an average of 13.9 trains per day with Alternative 2[g]. This proposal would also reduce the number of trains that NS intends to run through East Cleveland and the east side of Cleveland from the Application Base Case (Alternative 1) level of 36.6 trains per day to 26.0 trains per day. This is accomplished by upgrading the Cloggsville Connection (N-074) and

g Train traffic levels are based on NS's revised operations data for Alternative 2 submitted NS on April 16, 1998. The Addendum presents the revised data.

diverting NS traffic from the Nickel Plate Line through Berea to Vermilion. Alternative 2 would not require construction of a flyover or major structure as in Alternatives 3 through 7. Alternative 2 would provide good access to all rail yards.

Disadvantage. Shortcomings of Alternative 2 include a 12- to 18-month implementation period (although most elements would be available immediately upon implementation) and an estimated cost that would be $27.2 million more than the $41.6 million for the Application Base Case (Alternative 1). (These construction costs, as estimated by SEA, do not include additional highway/rail grade separations or other elements that would not be essential for train operations.) This alternative would create increases in train traffic in minority and low-income areas such as the University Circle and East Cleveland area (rail line segments C-073, N-075b), which would experience total average increases of 50.0 trains per day over 1995 levels, and the Kinsman area (rail line segments C-072a, N-075c, and N-081c), which would experience total average increases of 81.2 trains per day. Other areas that would experience substantial increases in train traffic include Brook Park (rail line segment C-074) at an average of 31.9 trains per day, and Berea (rail line segments N-293d and C-061) at an average of 41.2 trains per day. The City of Cleveland expressed opposition to this alternative because of the impacts from increased train traffic focused primarily on the east side of the city.

Alternative 3: Cleveland Flip Plan #1

Advantages. The City of Cleveland formulated and proposed Alternative 3 as a way to reduce proposed increases in train traffic in sensitive, primarily eastern, parts of the city. As a result, this alternative would reduce impacts in minority and low-income areas such as University Circle/East Cleveland and Kinsman compared to Alternative 1. (However, this alternative would not eliminate all increases in train traffic on the east side of Cleveland.) It also reduces potential train traffic increases through the West Shore suburbs by incorporating the Cloggsville connection for diversion of NS traffic to and from Vermilion via the Short Line and Berea. Alternative 3 provides CSX with a high speed corridor and NS with two corridors through Cleveland.

Disadvantages. Shortcomings of Alternative 3 include the need for a major rail/rail flyover in Berea, which would be about 1.5 miles long and greatly change the visual character of the area. Other substantial construction would be required at the Harvard Connection and Rockport Yard, as well as improvements along the Cloggsville Branch. This alternative would require a 36-month implementation period, and would cost $161.0 million more than the $41.6 million for Alternative 1. SEA-estimated costs for Alternative 3 include a highway/rail grade separation at Front Street in Berea, but do not include additional highway/rail grade separations or other elements that would not be essential for train operations. This alternative would still create some increases in train traffic in minority and low-income areas such as University Circle and East Cleveland (rail line segments C-073, N-075b), which would experience total average increases of 23.6 trains per day over 1995 levels, and the Kinsman area (rail line segments C-072a, N-075c, and N-081c), which would experience total average increases of 13.1 trains per day. These increases in train traffic through these residential areas would, along with Alternative 4 be the lowest of all alternative routing options. Other areas that would experience increases in train

traffic include Brook Park (rail line segment C-074) at 30.4 trains per day, and Berea (rail line segments N-293d and C-061) at 40.7 trains per day. The Cleveland central business district (rail line segment N-293a) would experience an average increase of 2.6 trains per day. CSX and NS could have operational constraints at CP 190 due to operations at Rockport Yard.

Operational shortcomings of Alternative 3 include NS's loss of direct access to bulk shippers at Whiskey Island and poor access to Rockport Yard. CSX would have less operational flexibility because all traffic would be on one route and subjected to delays at the Cuyahoga River drawbridge during navigation season. CSX and NS oppose this alternative, and the City of Berea expressed serious reservations as well. CSX and NS indicated that the impact of construction activities on train movements through Berea during the 3-year construction period would severely impact east-west train traffic in this part of the county. CSX and NS stated that congestion in Berea during the construction period could adversely affect traffic as distant as Chicago. The City of Cleveland continues to aggressively develop the lakefront area with entertainment, sports, and tourist attractions. This development is separated from the remainder of downtown Cleveland by the rail lines (N-081d, C-691b). SEA has not determined whether the increased rail traffic would be inconsistent with local land use plans in effect in this area. This alternative also would affect a sensitive waterfall and ravine in the Harvard Connection area (rail line segment N-504) that the City has expressed a desire to preserve and develop into a park. This alternative also appears to disproportionately favor NS over CSX in terms of railroad operations.

Alternative 4: Cleveland Flip Plan #2

Advantages. Cleveland proposed Alternative 4, which is a variation of Alternative 3, as a way to reduce proposed increases in train traffic in the sensitive, primarily eastern, parts of the city. As a result, this alternative would reduce impacts in minority and low-income areas such as University Circle/East Cleveland and Kinsman compared to Alternative 1. It also reduces potential train traffic increases through the West Shore suburbs by diverting NS traffic on the Nickel Plate Line to and from Vermilion via the Short Line and Berea. Alternative 4 provides CSX with one high speed corridor and NS with two corridors through Cleveland.

Disadvantages. Shortcomings of Alternative 4 include the need for a major rail/rail flyover in Berea, which would be about 1.5 miles long and greatly change the visual character of the area. Other substantial construction would be required at the Harvard and Mayfield Connections and Rockport Yard. SEA estimated that this alternative would require a 3-year implementation period and would cost $142.9 million more than the $41.6 million cost of Alternative 1. These costs for Alternative 4 include a highway/rail grade separation at Front Street in Berea, but do not include additional highway/rail grade separations or other elements that would not be essential for train operations. This alternative would still create some increases in train traffic in minority and low-income areas such as University Circle and East Cleveland (rail line segments C-073, N-075b), which would experience total average increases of 23.6 trains per day over 1995 base levels, and the Kinsman area (rail line segments C-072a, N-075c, and N-081c), which would experience total average increases of 13.1 trains per day. (These increased train levels are identical to those of Alternative 3.) Other areas that would experience increases in train traffic

include Brook Park (rail line segment C-074) at an average of 32.9 trains per day and Berea (rail line segments N-293d and C-061) at an average of 40.7 trains per day. The Cleveland central business district (rail line segment N-293a) would experience an average increase of 2.6 trains per day. CSX and NS could have operational constraints at CP 190 due to operations at Rockport Yard.

Operational shortcomings of Alternative 4 include NS's loss of direct access to bulk shippers at Whiskey Island and poor access to Rockport Yard. CSX would have less operational flexibility because all traffic would be on one route and potentially subjected to delays at the Cuyahoga River drawbridge during navigation season. CSX and NS oppose this alternative, and the City of Berea expressed serious reservations as well. CSX and NS indicated that the impact of construction activities on train movements through Berea during the 3-year construction period would severely impact east-west train traffic in this part of the country. CSX and NS stated that congestion in Berea during the construction period could adversely affect traffic as distant as Chicago. The City of Cleveland continues to aggressively develop the lakefront area with entertainment, sports, and tourist attraction. This development is separated from the remainder of downtown Cleveland by the rail lines (N-081d, C-691b). SEA has not determined whether the increased rail traffic would be inconsistent with local land use plans in effect for this area. This alternative also would affect a sensitive waterfall and ravine in the Harvard Connection (N-504) area. As with Alternative 3, rail improvements that would be required as part of this alternative could affect the City's plan for park development at this location. This alternative also appears to disproportionately favor NS over CSX in terms of railroad operations.

Alternative 5: Wickliffe Flyover

Advantages. SEA formulated Alternative 5 as an alternative to Alternatives 3 and 4, which, although addressing the City of Cleveland's desire to reduce impacts on the east side of the city, would have extensive impacts to the suburb of Berea. In contrast to the mixed residential/light industrial Berea area, the Wickliffe flyover would be contained within an almost completely industrial area and easier to construct. Alternative 5 would reduce impacts in minority and low-income areas such as University Circle/East Cleveland and Kinsman to a greater degree than Alternative 1, although not to the extent of Alternatives 3 and 4. It also would reduce train traffic levels in the West Shore suburbs through the use of the Cloggsville connection (N-074) as discussed in Alternative 2. Alternative 5 would allow CSX and NS operational flexibility by providing two routes for each through most of the area. One of the NS routes would be a high speed route, although it is potentially subjected to delays at the Cuyahoga River drawbridge during navigation season. The Cloggsville Connection could be used by both CSX and NS as a bypass of their main line routes.

Disadvantages. Shortcomings of Alternative 5 include the need for a major flyover in Wickliffe, and construction of the Detroit Avenue Connection which would require over 2 years for implementation and would cost $85.2 million more than the $41.6 million for Alternative 1. (These costs do not include additional highway/rail grade separations or other elements that would not be essential for train operations.) The flyover would be constructed in Lake County,

essentially moving the resolution of the effect of increased train traffic in Cleveland and Cuyahoga County to another county jurisdiction. This alternative would create increases in train traffic in minority and low-income areas such as the University Circle and East Cleveland areas (rail line segments C-073, N-075b), which would experience total average increases of 37.2 trains per day over 1995 base levels, and the Kinsman area (rail line segments C-072a, N-075c, and N-081c), which would experience total average increases of 47.8 trains per day. Other areas that would experience increases in train traffic include Brook Park (rail line segment C-074) at an average of 39.6 trains per day, and Berea (rail line segments N-293d and C-061) at an average of 40.7 trains per day. The Cleveland central business district (rail line segment N-293a) would experience an average increase of 13.9 trains per day.

Operational shortcomings of Alternative 5 include operational complexity and shared corridors involving both CSX and NS. This alternative would create severe operational conflicts in and around Collinwood Yard by requiring CSX to access its diesel shop and fueling facility across what would be the double-track NS main line. The only resolution of their problem would be the costly relocation of these facilities to the north side of the yard. The cost for this relocation is not included in the estimated total cost of this alternative. NS would lose direct mainline access to its existing 55th Street Yard.

Alternative 6: Wickliffe Flyover With Erie Line Rehabilitation

Advantages. SEA proposed Alternative 6 as an alternative to Alternatives 3 and 4, which would have extensive impacts to Berea. This alternative would incorporate a rail/rail flyover at the same industrial location as included in Alternative 5. Alternative 6 would allow CSX and NS operational flexibility by providing two routes for each through most of the area. One of the NS routes would be a high speed route, although it potentially would be subject to delays at the Cuyahoga River drawbridge during navigation season. The Cloggsville Connection could be used by both CSX and NS as a bypass of their main line routes. Alternative 6 would reduce impacts in minority and low-income areas such as the University Circle/East Cleveland and Kinsman to a greater degree than would Alternative 1. It also would reduce NS train traffic levels in the West Shore suburbs, by incorporating the Cloggsville Connection (N-074) for diverting NS traffic through Berea, and in the Cleveland central business district where traffic levels would decrease by an average of 15.8 trains per day compared to Alternative 1.

Disadvantages. Shortcomings of Alternative 6 include the need for a major flyover in Wickliffe, the construction of the Detroit Avenue Connection, improvements from the Cloggsville Connection to CP 190, and rehabilitation of the Erie Connection, which would require over 2 years for implementation, and would cost $134.8 million more than the $41.6 million for Alternative 1. (These costs do not include additional highway/rail grade separations or other elements that would not be essential for train operations.) The flyover would be constructed in Lake County, and, as with Alternative 5, would essentially move the resolution of the effect of increased train traffic in Cleveland and Cuyahoga County to another county jurisdiction. This alternative would result in increases in traffic in minority and low-income areas such as the University Circle/East Cleveland (rail line segments C-073, N-075b), which would experience

total average increases of 37.4 trains per day over 1995 base levels, and Kinsman (rail line segments C-072a, N-075c, and N-081c), which would experience total average increases of 26.1 trains per day. Other areas that would experience increases in train traffic include Brook Park (rail line segment C-074) at an average of 39.6 trains per day and Berea (rail line segments N-293d and C-061) at an average of 40.7 trains per day.

Operational shortcomings of Alternative 6 include operational complexity and shared corridors. Like Alternative 5, this alternative would create severe operational conflicts in and around Collinwood Yard, potentially constrain NS train movements at its 55th Street Yard, and constrain heavy rail operations at the Erie Connection.

Alternative 7: Cleveland Reverse Curve

Advantages. SEA proposed Alternative 7 as an alternative to Alternatives 3 through 6, which contain rail/rail flyovers in Berea or Wickliffe. Alternative 7, which was originally formulated by the City of Cleveland, would avoid the need for a new rail/rail flyover at either Berea or Wickliffe. It would route the fewest trains through the Cleveland central business district and also have a lesser impact in minority and low-income areas such as University Circle/East Cleveland and Kinsman than would Alternative 1. It also would reduce NS train traffic levels in the West Shore suburbs by using the Cloggsville connection to CP 190 and on to Berea and Vermilion.

Disadvantages. Shortcomings of Alternative 7 include the need to construct the new reverse curve connection, which would require acquisition of industrial and other properties. Alternative 7 would require at least 3 years for implementation and would cost $132.8 million more than the $41.6 million for Alternative 1. (These costs do not include additional highway/rail grade separations or other elements that would not be essential for train operations.) This alternative would create increases in train traffic in the minority and low-income neighborhoods in the Kinsman area (rail line segments C-072a, N-075c, and N-081c), which would experience total average increase of 47.8 trains per day. Other areas that would experience increases in train traffic include Brook Park (rail line segment C-074) at an average of 26.7 trains per day and Berea (rail line segments N-293d and C-061) at an average of 40.7 trains per day.

Operational shortcomings of Alternative 7 include the fact that all NS traffic would be on one main line that crosses the Cuyahoga River drawbridge just west of CP Draw. Alternative 7 also would create heavy traffic at Rockport Yard and, with it, NS would lose access to bulk shippers at Whiskey Island. This alternative presents the following serious railroad operating problems: the NS route would not be equal to the Lakeshore Line high-speed route, and the NS main line would be blocked by slow trains entering and leaving the 55th Street Yard. There would be severe implementation constraints associated with property acquisition, building demolition, potential hazardous waste sites, permit acquisition, and potential historic resource impacts. This alternative also appears to disproportionately favor CSX over NS in terms of railroad operations.

N.1.5 Comparisons and SEA Recommendations

SEA compared the seven alternative routes for the Greater Cleveland Area in three categories of issues:

- Feasibility (implementation).
- Operational considerations (near and long-term consequences).
- Environmental effects.

SEA analysis of feasibility issues showed that total cost for each ranged from $41.6 for Alternative 1 (Application Base Plan) to $202.6 million for Alternative 3 (Cleveland Flip No. 1). The second least expensive alternative would be Alternative 2, (NS Cloggsville) at $68.8 million and the third least would Alternative 5 (SEA Wickliffe Flyover) at $151.2 Alternatives 6 (SEA Wickliffe/Erie Rehabilitation) and Alternative 7 (Cleveland Reverse Curve) were similar in cost (approximately $175 million). Alternative 4 (Cleveland Flip No. 2) would cost $184.5.

SEA's analysis of operational issues shows that Alternative 1 would have no near term or long term operational consequences. Once several additional improvements are constructed, Alternative 2 would provide NS with a high degree of operational flexibility. Alternatives 3 and 4 would provide CSX a high-speed route through Cleveland, but it could also restrict traffic and result in congestion and delays at the Cuyahoga River Drawbridge. Alternatives 5 and 6 would provide both railroads with individual high speed routes plus a shared corridor through Cleveland, but could cause operational complexities at Collinwood Yard and the 55th Street Yard, as well as potential delays for both railroads on the Cuyahoga River Drawbridge. Alternative 7 offers a high speed route through Cleveland, but it could cause operational complexities because it routes all NS mainline trains over the 37th Street-to-Cloggsville rail line segment (N-075d) of the Nickel Plate Line.

SEA's analysis of environmental issues showed that there was not an Alternative that substantially avoided all significant environmental impacts. The Base Case, Alternative 1 would result in the greatest number of potential significant adverse effects, compared to the other alternatives. The alternatives that the City of Cleveland proposed showed advantages in that it avoided environmental impacts to the east side of the city. These advantages were offset by substantial impacts in other locations, particularly in the Berea area. Alternative 2, the Cloggsville Alternative would not adversely impact any particular area, as the Cleveland alternatives would. The Cloggsville Alternative would provide a substantial environmental benefit to the West Shore suburbs of Cleveland, while at the same time providing notable benefits to the east side of the City. As with all of the Alternatives, Alternative 2 would have several potential adverse impacts. Alternatives 5, 6, and 7 would not offer any clear or distinct environmental benefits, but do have several significant adverse effects. In particular, Alterative 7 would require the taking of substantial land and structures.

Because the alternate routes would also involve commercial issues such as service, competition, and shipper access, the consideration of these seven alternatives appropriately is part of the

Board's overall review of both the economic and environmental issues for the proposed Conrail Acquisition. SEA presents, for the Board's consideration, this information regarding the alternate routes and potential environmental impacts.

Since November 1997, NS has proposed the Cloggsville Alternative to address certain environmental impacts in the Greater Cleveland Area. NS has stated its willingness to implement this alternative as part of its Operating Plan, which includes service, competition, and shipper access issues, among others. SEA believes that it is appropriate to recommend that the Board require NS to implement the physical and operational improvements associated with the NS Cloggsville Alternative, if the Board approves the Applicants' Operating Plans for the Greater Cleveland Area. SEA believes that implementing the NS Cloggsville Alternative, in combination with Negotiated Agreements executed with local communities, would substantially mitigate the potential environmental impacts in much of the Greater Cleveland Area, including the West Shore suburbs and East Cleveland.

N.1.5.1 SEA's Conclusion Regarding Greater Cleveland Area Alternatives

SEA recommends that the Board require (as NS has agreed) NS to implement the physical and operational improvements associated with Alternative 2 if the Board approves the proposed Conrail Acquisition. SEA's environmental review indicates that this alternative would mitigate some of the potential adverse environmental impacts of Alternative 1 by, among other things, reducing the levels of increased train traffic in East Cleveland and the West Shore suburbs. Moreover, NS has volunteered to implement Alternative 2, which would be constructible and operationally feasible; further, Alternative 2 is supported in principle by East Cleveland and the West Shore suburbs. SEA is presenting Alternatives 3 through 7 so the Board can make an informed decision as to whether one of the other alternatives would be a preferable train routing alternative in the Greater Cleveland Area. Each of these alternatives, including Alternative 2, raises complex issues related to service and rail operations that are outside of the scope of SEA's environmental review. In presenting all of these alternatives, SEA is providing the Board with information to balance the economic, transportation, and environmental effects of these train traffic routing alternatives for the Greater Cleveland Area.

N.1.5.2 SEA's Recommended Environmental Conditions for the Greater Cleveland Area

Based on its environmental analysis, public comments, and the information available to date, SEA has developed a comprehensive and balanced set of environmental mitigation measures to address the potential significant adverse environmental effects of the base case in the Greater Cleveland Area. In developing reasonable mitigation measures to address those environmental impacts that would directly result from the proposed Conrail Acquisition, SEA had to consider the various perspectives and concerns the public raised and the range of environmental impacts and issues.

In addition, the Applicants offered to participate in the construction of certain improvements that would be considered as "stand-alone" (independent of most other construction activities). The

Applicants proposed these improvements in response to community concerns. These improvements are:

- Highway/rail at-grade separations at Front Street and at Bagley Road in Berea.
- Highway/rail at-grade separations at Nottingham/Dille Road (in Cleveland and Euclid) and London Road.

SEA encourages the Applicants and communities to continue to discuss these improvements, which would address safety and delay concerns in these areas.

SEA's recommended environmental mitigation measures for the Greater Cleveland Area include conditions that would directly benefit the communities where increases in train traffic related to the proposed Conrail Acquisition could cause significant adverse environmental impacts. These measures would address safety, traffic delay, noise, cultural resources, environmental justice, and other community environmental concerns. The following section summarizes these measures; Chapter 7, "Recommended Environmental Conditions," contains a complete description of SEA's recommended environmental conditions.

- For segments where hazardous materials transport would significantly increase, SEA recommends that the Board require the railroads to:
  - Comply with additional safety procedures (as described by Association of American Railroads recommendations).
  - Distribute the railroads' current Hazardous Materials Emergency Response Plans.
  - Prepare and distribute local Hazardous Materials Emergency Response Plans.
  - Implement a real-time or desktop simulation emergency response drill.
  - Assign fully trained local supervisory personnel, available 24 hours a day, 7 days a week, to mobilize additional emergency response personnel and equipment and to coordinate with local authorities in the event of a hazardous materials release.
  - Install and maintain supplemental train defect detectors that would detect potential causes of accidents.
  - Notify USFWS and the appropriate state departments of natural resources in the event of a reportable hazardous materials release with the potential to affect wetlands or wildlife habitat(s).
- To address increases in predicted accident risk for freight rail operations, SEA recommends that the Board require CSX and NS to:

- Conduct track inspections based on FRA's proposed rules.

- Install and maintain supplemental train defect detectors that would detect potential causes of accidents.

- Assign fully trained local supervisory personnel, available 24 hours a day, 7 days a week, to mobilize additional emergency response personnel and equipment and to coordinate with local authorities in the event of a rail accident.

- To address potential safety effects of increased train traffic on bridges, SEA recommends that the Board require CSX and NS to inspect all railroad bridges and overpasses and take necessary action to ensure that the bridges are structurally sound and well maintained.

- To address potential delays for emergency response vehicles, SEA recommends that the Board require NS to provide, install, and maintain a real-time train location monitoring system to improve local emergency vehicle dispatching at Berea, unless either Alternative 3 or 4 were implemented.

- To address increases in noise along segments where increases in train traffic would increase noise beyond SEA's mitigation criteria, SEA recommends that the Board require CSX and NS to:

  - Provide noise barriers or sound insulation that would reduce wayside noise by 10 dBA.

  - Install continuous welded rail in all new rail construction or replacement programs, and implement a program to replace existing jointed rail in residential areas. Continuous welded rail could reduce wayside noise by 5 dBA.

  - Install rail lubrication systems at curves, to reduce wheel squeal, where effective noise abatement would be possible.

- To address disproportionately high and adverse effects in environmental justice populations, SEA recommends the Board require CSX and NS to:

  - Provide and install "Operation Respond" software and computers, if necessary, at the local emergency response centers serving environmental justice populations to assist emergency responders in identifying hazardous materials characteristics.

  - Adapt and modify the local component of its required Hazardous Materials Emergency Response Plan to account for the special needs of environmental justice populations in Cleveland, Cleveland Heights, Berea, and Euclid.

- To facilitate communication among the Greater Cleveland Area communities and the railroads, SEA recommends that the Board require the CSX and NS to establish a communication liaison for environmental concerns, develop cooperative solutions, and offer periodic public outreach meetings.

- To address safety at highway/rail at-grade crossings, SEA recommends that the Board require CSX and NS to:

  - Upgrade highway/rail at-grade crossing warning devices.

  - At public highway/rail at-grade crossings wherever trains increase by 8 or more trains per day, conduct prompt maintenance to comply with all applicable regulations.

  - At public highway/rail at-grade crossings wherever trains increase by 8 or more trains per day, provide and maintain permanent signs with a toll-free telephone number and a unique crossing identification number, install notification of the impending increase in train traffic and a crossing safety advisory message.

  - At public highway/rail at-grade crossings wherever trains increase by 8 or more trains per day, make Operation Lifesaver programs available to communities, schools, and other organizations.

- To address environmental concerns in the Greater Cleveland Area, SEA recommends that the Board require NS to construct Alternative 2, the Cloggsville Alternative.

- With the advice and consent of the City of Cleveland, construct and maintain fencing and landscaping to prevent, reduce or discourage pedestrian access to rail lines and facilities.

- To address local environmental concerns, SEA recommends the Board require CSX and NS to comply with the terms and conditions of the following Negotiated Agreements:

  - East Cleveland Agreement.
  - Brook Park Agreement.
  - Olmsted Falls Agreement.

Chapter 7, "Recommended Environmental Conditions," of this Final EIS presents all recommended conditions for each applicable community in the Greater Cleveland Area, as well as those conditions that would affect the region.

N.2 FOUR CITY CONSORTIUM AREA, INDIANA

The Four City Consortium is an association of the four northwestern Indiana cities of East Chicago, Hammond, Gary, and Whiting. These four cities are located in Lake County on the southern tip of Lake Michigan in northwestern Indiana. CSX, NS, and Conrail have major rail lines through the region and several of these rail line segments would experience increases in train traffic as a result of the proposed Conrail Acquisition.

Chicago is a major rail freight hub and much of the hub traffic to and from the east flows through the Four City Consortium region. If the Board approves the proposed Conrail Acquisition, CSX will expand its operation in the Chicago area and increase traffic on CSX rail lines in the Four City area. NS, on the other hand, intends to de-emphasize Chicago as its major east-west interchange point and, consequently, traffic levels on most NS lines in the Four City area will either decrease or remain the same.

N.2.1 Background

Various CSX and NS rail line segments in the Four City area would experience changes in train traffic as a result of the proposed Conrail Acquisition. (See Draft EIS, Chapter 5, "State Settings, Impacts and Proposed Mitigation.") Figures N-9A and N-9B show the locations of these various rail line segments. Table N-31 lists the rail line segments and the proposed changes in traffic levels. Should the Board approve the proposed Conrail Acquisition, CSX would have the following three separate routes through the Four City area.

Route No. 1: The first route is for CSX trains between Barr Yard and Willow Creek. These trains would use rail line segment C-023 (the Barr Subdivision) between Barr Yard and Pine Junction and rail line segment C-027 (the Garrett Subdivision) between Pine Junction and Willow Creek. These rail line segments are currently CSX's primary route for all traffic moving through the Four City area. East of Willow Creek, CSX trains use rail line segment C-066 (the Garrett Subdivision) to Deshler and other points east.

Route No. 2: The second route is for CSX trains between Barr Yard and Willow Creek along a corridor of two other railroads located south of the Barr Subdivision described above. These trains would depart Barr Yard on rail line segment C-023 and use the proposed new CSX/Indiana Harbor Belt Railroad (IHB) connection at Lincoln Avenue to connect to the Indiana Harbor Belt Railroad. These trains would use IHB rail line segment C-776 between Lincoln Avenue and Ivanhoe. Between Ivanhoe and Willow Creek, these trains would use rail line segment C-693, also known as the Conrail Porter Branch. CSX would own this rail line segment C-693 under the proposed Conrail Acquisition. A proposed new connection at Willow Creek would allow CSX trains from the Porter Branch to connect to rail line segment C-066 and continue east to Deshler and other points east.