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December 1998

STRATEGIC RAIL CORRIDOR NETWORK (STRACNET) and DEFENSE CONNECTOR LINES



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***STRATEGIC RAIL CORRIDOR NETWORK
(STRACNET)***

and

DEFENSE CONNECTOR LINES

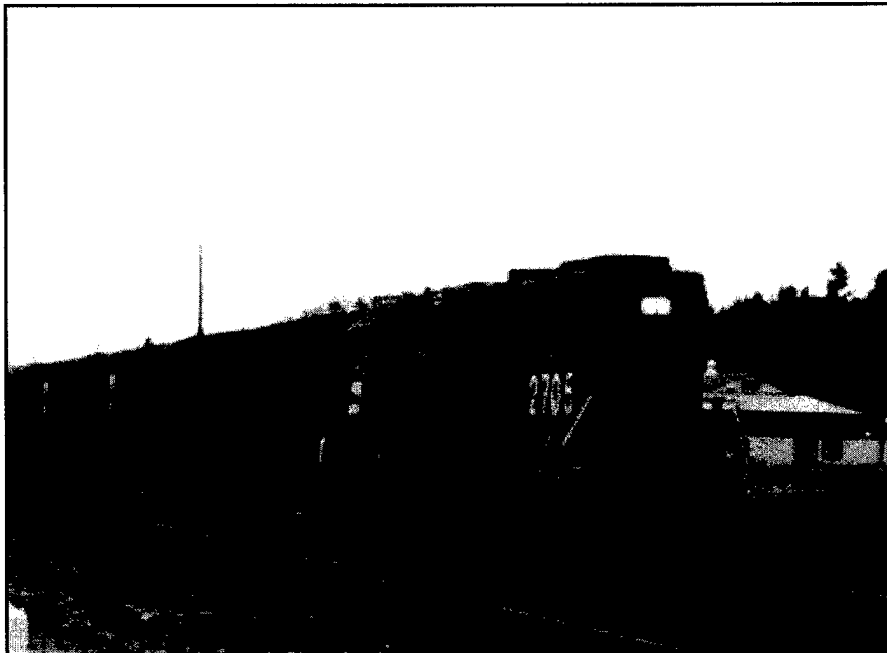
***Military Traffic Management Command
Transportation Engineering Agency
Newport News, Virginia 23606***

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I. EXECUTIVE SUMMARY

SCOPE

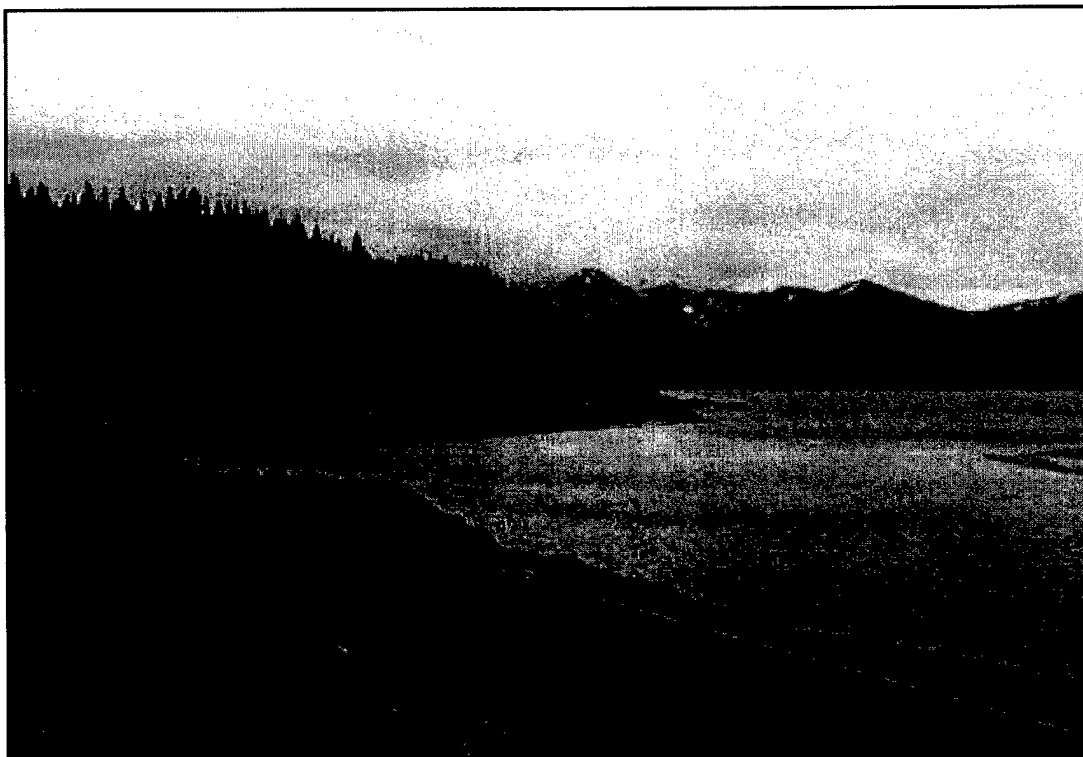
This study was undertaken to update the designation of the Strategic Rail Corridor Network (STRACNET) and its associated connector lines. Together, STRACNET and its connectors are the civil rail lines most important to national defense. The study also verifies their defense readiness condition, and documents defense rail line requirements.

CONCLUSIONS

The Military Traffic Management Command Transportation Engineering Agency and the Federal Railroad Administration reviewed and updated the designation of civil rail lines important to national defense. The lines designated for STRACNET meet defense readiness requirements for maintenance condition, clearance, and gross weight capability. State maps in appendix A show these lines. Department of Defense installations and activities requiring rail service to accomplish their assigned mission are listed in appendix B.

Inquiries about installations, requirements, and designations should be addressed to:	
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Inquiries about State rail maps or the rail database should be addressed to:	
<i>Mail Address:</i>	Federal Railroad Administration ATTN: RRP 20 1120 Vermont Ave NW Stop 15 Washington, DC 20590
<i>Telephone:</i>	Commercial: (202) 493-6396
<i>Fax:</i>	Commercial: (202) 493-6401



II. PURPOSE AND METHODOLOGY

PURPOSE

This publication updates the designation of civil rail lines that form the Strategic Rail Corridor Network (STRACNET)¹ and connector lines between STRACNET and installations and activities requiring rail service.² It confirms that the civil rail lines designated to satisfy defense requirements meet minimum defense readiness conditions. STRACNET and connector lines are the civil railroad lines most important to national defense. However, STRACNET is not a routing guide, and actual shipments may not necessarily travel over STRACNET lines. Rail lines that are not designated as STRACNET or connector lines may also be beneficial to national defense if they could be used as a detour route if a service interruption occurred on STRACNET. This publication also presents the current list of Department of Defense (DOD) installations and activities requiring rail service to accomplish their assigned mission.

METHODOLOGY

The Military Traffic Management Command Transportation Engineering Agency (MTMC-TEA) and the Federal Railroad Administration (FRA) jointly reviewed the lines for the STRACNET and connectors between STRACNET and defense installations and activities requiring rail service. Based on MTMC-TEA's request, DOD Components (Army, Navy, Air Force, Marine Corps, and Defense Logistics Agency) updated the list of military installations and activities requiring rail service. MTMC-TEA screened the final list for DOD.

Traffic density is a good indicator of rail line viability. The designated defense lines and others were analyzed to determine if alternate lines with higher traffic densities were available. Where appropriate, an alternate line was recommended by FRA for MTMC-TEA's consideration. MTMC-TEA then designated the line as important to national defense.

The analysis also included a review to ensure that the designated lines meet defense readiness requirements for maintenance condition, clearance for oversize shipments, and weight-bearing capacity. The FRA continuously monitors carrier's safety maintenance inspection compliance so as to generally achieve coverage of most of STRACNET and defense connector lines every 3 years as part of its overall inspection program.

¹ *STRACNET Condition Report, A Study of Rail Lines Important to National Defense for the Armed Services Committees of Congress*, MTMC, June 1981.

² Designated defense lines were identified in MTMC reports *Rail Lines Important to National Defense*, MTMC, July 1983, and updated in *Civil Rail Lines Important to National Defense*, MTMC, July 1986, October 1990, and December 1993.

The DOD clearance profile used to analyze rail line clearances was developed and presented in the MTMC "STRACNET Condition Report," dated June 1981. In the current update, proposed alternate lines were evaluated for their capability to accommodate the DOD clearance profile.

Finally, the analysis evaluated the weight-bearing capacity of defense lines to support military traffic. A representative DOD railcar-loading configuration (developed in the 1983 report) and its gross weight were compared to the published gross weight of defense lines or coordinated with the carrier to assure that the configuration has an acceptable allowable gross weight limitations.

III. INTRODUCTION AND BACKGROUND

During the 1970's, the railroads experienced a period of economic instability. Ten railroads declared bankruptcy and deferred maintenance was commonplace. DOD experienced excessive shipping times, and concern increased over the civil railroad industry's capability to support a defense emergency. Therefore, in June 1975, the Deputy Secretary of Defense requested the Commander, MTMC, establish and develop the Railroads for National Defense (RND) Program in coordination with the Department of Transportation's Federal Railroad Administration.³

The purpose of the RND Program is to identify defense rail requirements; assure consideration for national defense in civil railroad policy, plans, standards, and programs; and gain support and responsiveness for defense rail line requirements. The United States Transportation Command is the DOD Executive Agent for the RND Program.

MTMC initiated the RND Program with the development of STRACNET in 1976.⁴ STRACNET is a 30,000-mile interconnected network (135 nodes, 180 links) of rail corridors (not actual rail lines) important to national defense (fig 1). It was developed from analyses of mobilization/deployment needs, peacetime traffic, and combat tank shipments as an indicator of oversize/overweight movements. FRA designated a main line to satisfy each STRACNET corridor.⁵

In 1977, a list of DOD installations and activities requiring rail service was published.⁶ The list was updated in the MTMC reports published in 1981, 1983, 1986, 1990, and 1993. As DOD downsizes, fewer installations require rail service. In some instances STRACNET corridors are no longer required. The rail corridor to Bangor, Maine, was originally part of STRACNET; it was removed from STRACNET following the closure of Loring AFB in northern Maine.

MTMC developed a DOD clearance profile to reflect rail line clearance needs for oversized equipment. MTMC uses the DOD profile to analyze rail line clearances and validate the clearance of lines designated for national defense.

³ Letter, Deputy Secretary of Defense to the Secretary of Transportation, 25 June 1975.

⁴ Report, RND 76-1, *An Analysis of a Strategic Rail Corridor Network (STRACNET) for National Defense*, MTMC, November 1976.

⁵ *Final Standards, Classifications, and Designation of Lines of Class 1 Railroads in the United States*, Secretary of Transportation's report to Congress, dated 30 June 1977, submitted in accordance with Section 503(e) of the "Railroad Revitalization and Regulatory Reform Act of 1976" (Public Law 94-210).

⁶ *List of Department of Defense Installations and Activities Requiring Rail Service*, MTMC, 1977.

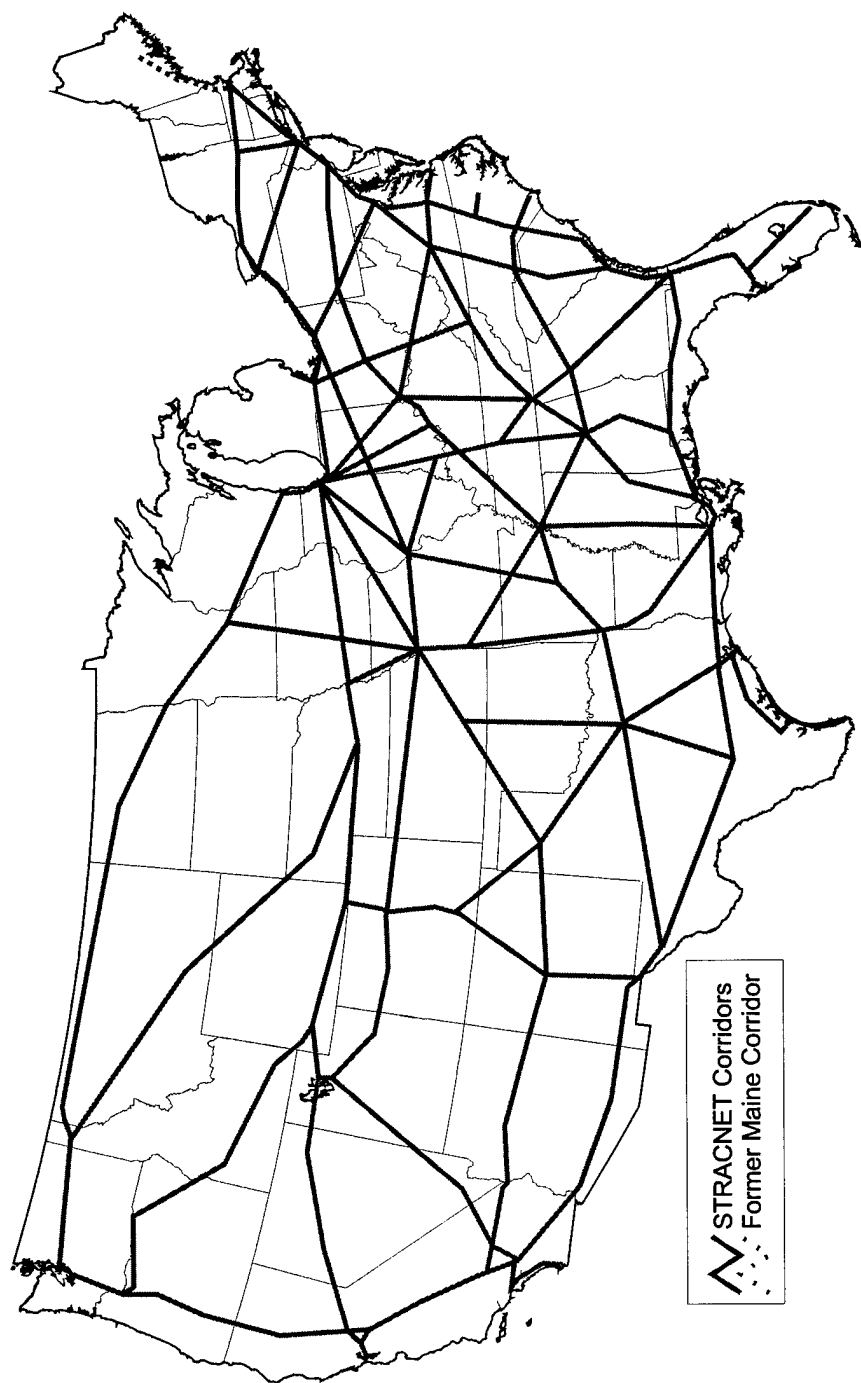


Figure 1. Strategic Rail Corridor Network (STRACNET)

By congressional mandate, the condition of defense lines was reported in the STRACNET Condition Report (1981). Connector lines from STRACNET to defense installations and activities requiring rail service were identified. The maintenance condition of defense lines was found to be satisfactory. Also, defense shipments are not restricted to designated lines because of clearance requirements, and in most cases can move by alternate routes. Thus, rail lines in addition to STRACNET and the connector lines are beneficial to national defense.

In 1982, the Department of Transportation's (DOT) FRA and MTMC agreed to review rail lines important to national defense.⁷ These reviews resulted in the MTMC publications, Rail Lines Important to National Defense, 1983, and Civil Rail Lines Important to National Defense, 1986, 1990, and 1993.

This report designates STRACNET and connector lines that are the railroad lines most important to national defense. The principal importance of STRACNET lines relative to other lines is priority restoration of service in the event of any emergency that causes large-scale loss of rail lines. STRACNET also allows defense and civil rail planning to be more easily coordinated. By using high-density lines to satisfy most of STRACNET, the risk of a civil rail line abandonment affecting national defense is minimized. The RND Program focuses most of its efforts on protecting STRACNET and connector lines from being abandoned or downgraded.

This report is not intended to be a routing guide for traffic managers. Rail carriers will route traffic using many different parameters relative to profit, distance, clearance, and time. In many instances defense rail shipments will move on other rail lines not designated as part of STRACNET.

The capability of rail carriers to perform this type of routing is an example of the built-in redundancy of rail lines, which form a very robust network. During times of floods, hurricanes, or earthquakes, this capability is very useful, but over time it can be very expensive.

The railroad industry must operate enough track to move traffic efficiently, but not so much that the revenue generated is inadequate to support good maintenance. In the past, too many miles of track were chasing too few revenue dollars. This situation resulted in several railroad bankruptcies and many miles of deteriorated railroad track. Deregulation of the railroad industry in 1980 enabled the railroads to more easily abandon unprofitable lines. Railroad mergers sometimes resulted in most traffic on a corridor being concentrated on a single line, with parallel lines either being abandoned or downgraded to serve only local traffic. These reductions in trackage permitted the railroads to focus their maintenance dollars where they were needed most, with the result that most track is now well-maintained.

⁷ Letters, Cdr, MTMC, to Federal Railroad Administrator, 2 April 1982, and Mr. James C. Rooney, Associate Administrator for Policy to the Special Assistant for Transportation Engineering, MTMC, 5 October 1982.

With improved efficiencies from mergers and a greater demand for intermodal service, carriers have now seen a dramatic increase in traffic levels. In some instances, carriers have placed abandoned lines back into service or upgraded previously downgraded routes to respond to these increases in traffic. The rail industry understands if network improvements will help transport more cargo, line upgrades may be a worthwhile investment.

The RND Program monitors the rail network for abandonments affecting STRACNET or connectors and track improvements to downgraded or abandoned lines. These improvements provide for a robust rail network that earns the capital required to provide good track maintenance and supports national defense.

IV. ANALYSIS

1. DESIGNATION OF DEFENSE RAIL LINES

Traffic volume is a good indicator of rail line viability. Higher traffic densities also correlate well with good maintenance conditions. If traffic volumes have changed within defense rail corridors, civil rail lines with higher densities may exist that could replace lines previously designated for those corridors. Therefore, MTMC and FRA conducted a review and analysis of defense rail corridors based on updated traffic densities.

The FRA obtained the latest available (1996) traffic densities from rail carriers. Those lines that had a significant decrease in traffic density, particularly those which, on an annual basis, had dropped below 20 million gross tons (MGT) since the last DOD-FRA analysis (1993), were reviewed by FRA to determine if alternate routes were available with higher traffic density. MTMCTEA accepted proposed changes if network integrity or clearance capability was not compromised. Also, MTMCTEA confirmed that each new line met the DOD clearance profile requirements. MTMCTEA and FRA agreed upon the final designation of STRACNET lines (32,421 miles) and connector lines (5,378 miles), which are shown in figure 2 and identified in detail on the State maps in appendix A. Military installations and activities requiring rail service are listed in appendix B. The State maps in this book are from the FRA rail database. FRA continuously updates this database with rail line abandonments, carrier changes, and other data. MTMCTEA used TransCAD and ARCVIEW to access the FRA database and produce a map of each State. *

* No map is included for Hawaii since it has no freight railroads.

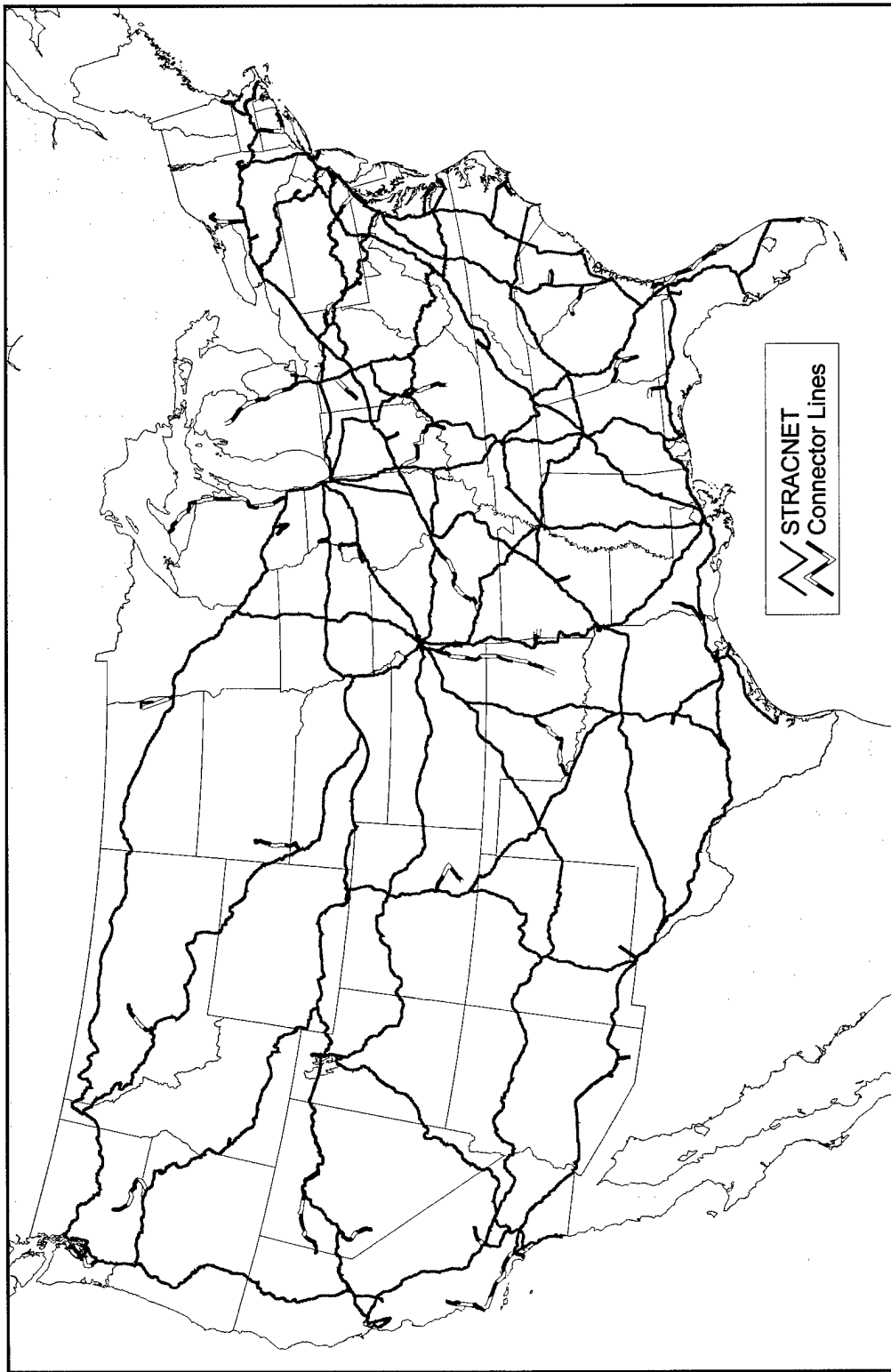


Figure 2. Civil Rail Lines Most Important to National Defense

2. MAINTENANCE CONDITION AND OPERATING SPEED

Maintenance condition of STRACNET is very important to national defense. The allowable operating speed limit over a rail line is directly related to the maintenance condition of the line; that is, the higher the FRA track safety-maintenance classification then the higher the allowable operating speed.⁸ Defense planners use an average speed of 22 miles per hour (mph)⁹ to calculate travel times for military equipment transported by unit trains. Allowing for expected delays, speeds of 40 mph for most of the journey are desirable to assure an average speed of at least 22 mph.

Table 1 shows measures of civil rail line defense readiness condition. Lower speeds are more acceptable on connector lines than on STRACNET lines because the former lines are used for only a small portion of the total trip length. Also, many railroads maintain their main lines and operate their trains at higher standards and speeds than shown in table 1. High maintenance standards result in increased reliability and safety.

The FRA monitors carrier's inspection compliance so as to achieve periodic coverage of all STRACNET and connector rail lines.¹⁰ Review of the FRA track inspection results indicates broad compliance with the measures of acceptable defense readiness conditions.

The railroads have significantly increased capital expenditures on the nation's railroad track and structures since the mid-1970's. These expenditures, combined with the passage of the Staggers Act in 1980, resulted in track conditions improving significantly. The decrease in track-related accidents is impressive. As shown by FRA data in figure 3, over 4,000 accidents were attributable to track defects in 1977, 1978 and 1979. This has declined to about 1,000 accidents attributable to track defects per year since 1986. The decline in track-related accidents is another indicator confirming defense readiness conditions.

⁸ *Federal Railroad Administration Track Safety Standards*, 49 CFR 213.9 *Class of Track: Operating Speed Limits*.

⁹ MTMCTEA Reference 97-700-2, *Logistics Handbook for Strategic Mobility Planning*, August 1997, page 39.

¹⁰ FRA Technical Bulletin, TB 83-04, 26 January 1983, Inspection of STRACNET, and FRA Technical Bulletin, TB B3-03, Source Codes to be Used on Track Inspection Form, FRA F61980-58.

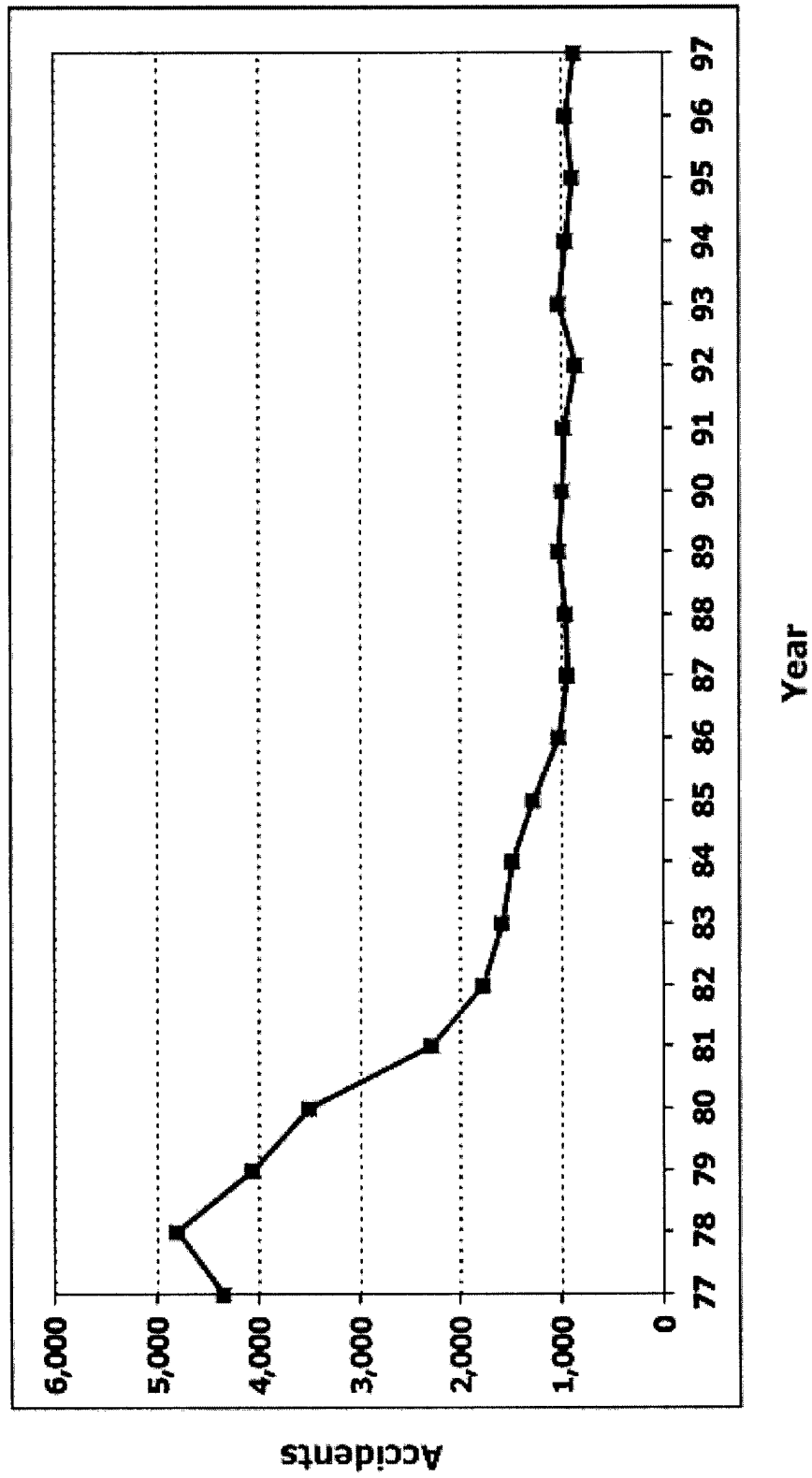


Figure 3. Accidents Due to Track Defects

TABLE 1
MEASURES OF CIVIL RAIL LINE DEFENSE READINESS CONDITION

	Acceptable	Desirable
STRACNET		
FRA Track Class	2	≥ 3
Freight Train Speed (Maximum)	25 mph	≥ 40 mph
CONNECTORS		
FRA Track Class	1	≥ 2
Freight Train Speed (Maximum)	10 mph	≥ 25 mph

3. LOW TRAFFIC DENSITY CONNECTOR LINES

Low traffic density branch line connectors are those where the total civil and defense rail traffic is less than 3 MGT per year. The Services and the Defense Logistics Agency have identified 171 installations and activities that require rail service to complete their assigned mission (app B). Of the 171 installations and activities requiring rail service, 53 are on STRACNET main lines, 49 are on connectors with traffic densities greater than or equal to 3 MGT per year, and 70 are on low traffic density branch lines. One of these installations (DFSP, Air Force Pipeline, Inc., NC) is on a STRACNET line with less than 3 MGT per year and the other 69 are on low traffic connectors (table 2). The 70 installations and activities served by these low traffic density branch lines are identified by Service in appendix C.

The FRA inspection of designated defense rail lines reveals that, at the time of FRA's inspection, the carrier maintained those lines in defense readiness condition.

TABLE 2
DOD INSTALLATIONS AND ACTIVITIES REQUIRING RAIL SERVICE

Served by:	Army	Navy	Marines	Air Force	DLA	Total
STRACNET	33	3	6	4	6 (b)	52 (b)
CONNECTORS:						
Traffic Volumes Greater than or Equal to 3 MGT/YR (a)	37	2	0	5	5	49
Less than 3 MGT/YR	30	18	4	8	10 (c)	70 (c)
TOTAL	100	23	10	17	21	171
(a) MGT/YR – Million gross tons per year						
(b) Does not include one installation on a STRACNET line with < 3 MGT/YR						
(c) Includes one installation on a STRACNET line with < 3 MGT/YR						

4. CLEARANCES

Trackside obstructions and structural limitations (for example, bridges (fig 4), tunnels, high-level station platforms) determine the size of shipments that can be moved. The STRACNET Condition Report, June 1981, explained how MTMC developed the DOD clearance profile (fig 5) to analyze rail line clearances and determined that almost all STRACNET lines passed the profile.

In some cases, published clearance information¹¹ indicates that a STRACNET line meets the DOD profile requirements. In other cases, the commercial railroads indicated that the DOD profile would clear a line, subject to special handling, even though the DOD profile exceeded the published clearances for the route. Several commercial railroads have expanded clearances on their routes since 1981.



Figure 4. Plate Girder Bridges

¹¹ Railway Line Clearances, Volume 202, 1992/93 Annual Issue, National Railroad Publication Company and Railway Line Clearances, Volume 207, 1997/98 Annual Issue, K-III Directory Corporation.

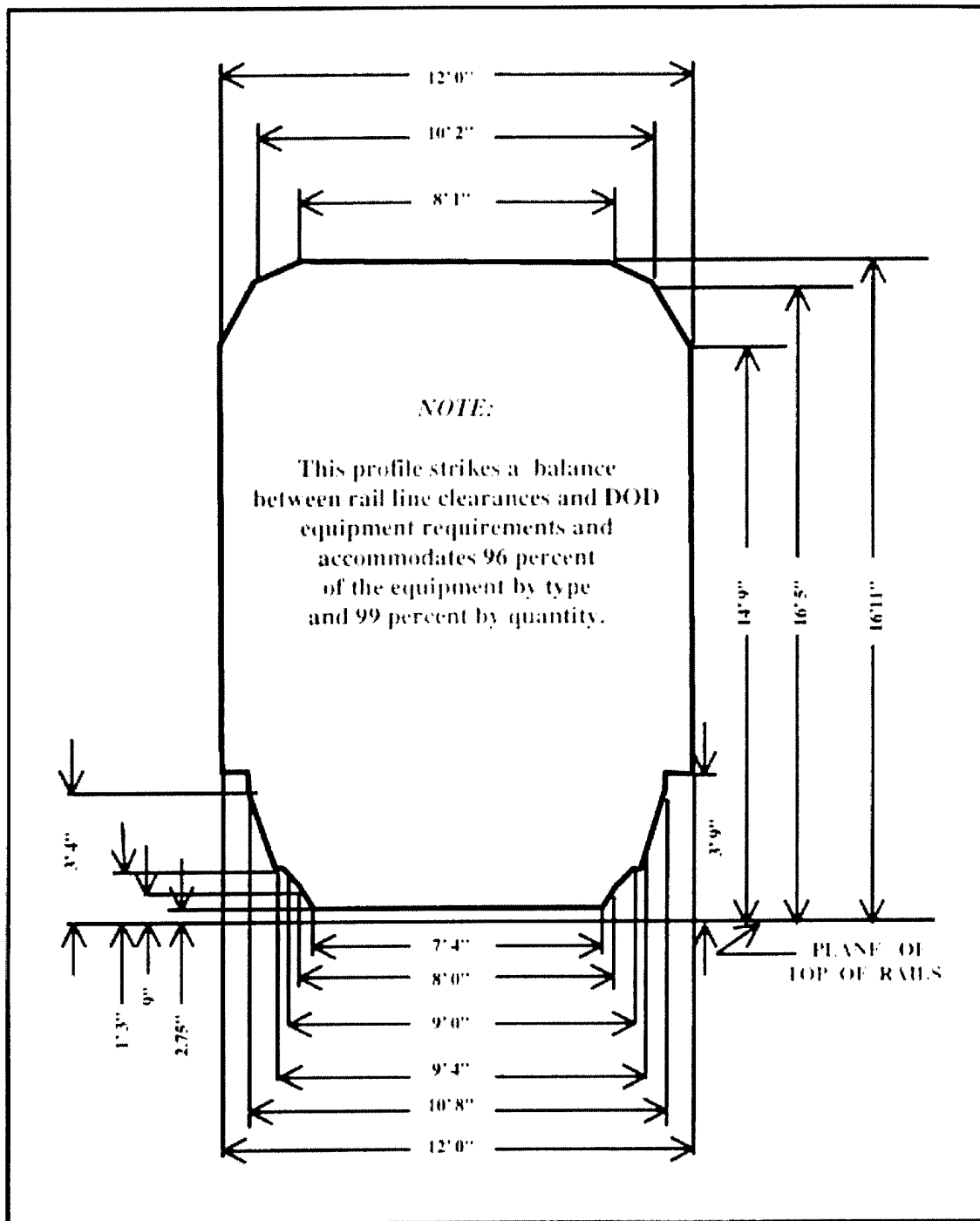


Figure 5. Clearance Profile - Department of Defense

Because of clearance restrictions on the designated STRACNET line between Washington, DC, and the New York/Newark area, a supplemental clearance route has been designated for the central portion of the east coast STRACNET corridor between Florida and New England. The designated route is the Norfolk Southern line between Roanoke, Virginia, and the New York/Newark area via Harrisburg and Allentown, Pennsylvania. This designation is illustrated in the maps in appendix A.

For the current update, MTMCTEA evaluated all FRA-proposed line changes for their capability to accommodate the DOD profile. The analysis revealed that most of the lines proposed by FRA could clear the DOD profile and, therefore, were acceptable. In the case of the connector line from Springfield, Massachusetts, to the New London, Naval Submarine Base, Groton, Connecticut, the requirement to accommodate extra large shipments became the dominant DOD evaluation criteria. We designated this route because it can accommodate the large Navy shipments into the base.

With increasing emphasis being placed on mass transit, passenger travel by rail is becoming more commonplace. To support this, work is being done on the Northeast Corridor to decrease travel time by electrifying the rail line between Boston and New Haven. The RND program's concern with this project was to preserve existing clearances and ensure continued access for oversized defense shipments to the Naval Submarine Base, Groton, Connecticut. This capability was preserved through RND participation in the environmental impact process for the Northeast Corridor.

Another concern that could impact DOD required rail clearances is the construction of high-level platforms. A few stations have had high-level platforms for many years. One of these platforms at Mansfield, Massachusetts,¹² impedes overwidth vehicle transport to Camp Edwards. To solve this problem, when an occasional shipment is made, the military vehicle is blocked and braced and raised above the railcar deck. This is a labor-intensive and time-consuming process, which works only for occasional shipments. This procedure would cause difficulties for a lot of shipments at one time. High-level platforms are one method for providing wheelchair access to passenger trains; the number of stations with high-level platforms may increase dramatically in response to the *Americans with Disabilities Act of 1990*, potentially impeding clearances on many other routes.

The construction of high-level platforms is a concern of the rail industry and the RND Program. Our check with clearance engineers and participation in the American Railway Engineering and Maintenance Association (AREMA) Committee 28 (clearances) has not yet

¹² Mansfield station had high-level platforms before the Northeast Corridor electrification project. Therefore, RND was unable to have the clearance at Mansfield improved as part of the environmental impact process.

resulted in a proven notification process of high-level platform construction. Our intent is to participate in the environmental impact process when we become aware of such a construction, the same as we did for the Northeast Corridor electrification process.

Fortunately, a well-designed station can have high-level platforms and be compatible with wide military loads. On a multiple track line only certain tracks may need to be adjacent to platforms. Freight trains with wide loads can pass through these stations on tracks that are not next to the high-level platforms. Another possibility is the construction of gauntlet tracks by the high-level platforms.* The track nearer the platform is used by passenger trains; the farther track is for freight trains with overwidth loads. The Amtrak station at New Carrollton (fig 6) provides a good example of how gauntlet tracks allow freight and passenger trains to co-exist by high-level platforms.

It is also possible to construct stations with short high-level platforms offset from the tracks to allow passage of military cargo and other wide loads (fig 7). In these stations, most passengers will use low-level platforms and steps in the coaches to board trains. A bridge-plate is extended from the door of the coach to the offset high-level platform to allow wheelchair access to the train when necessary.

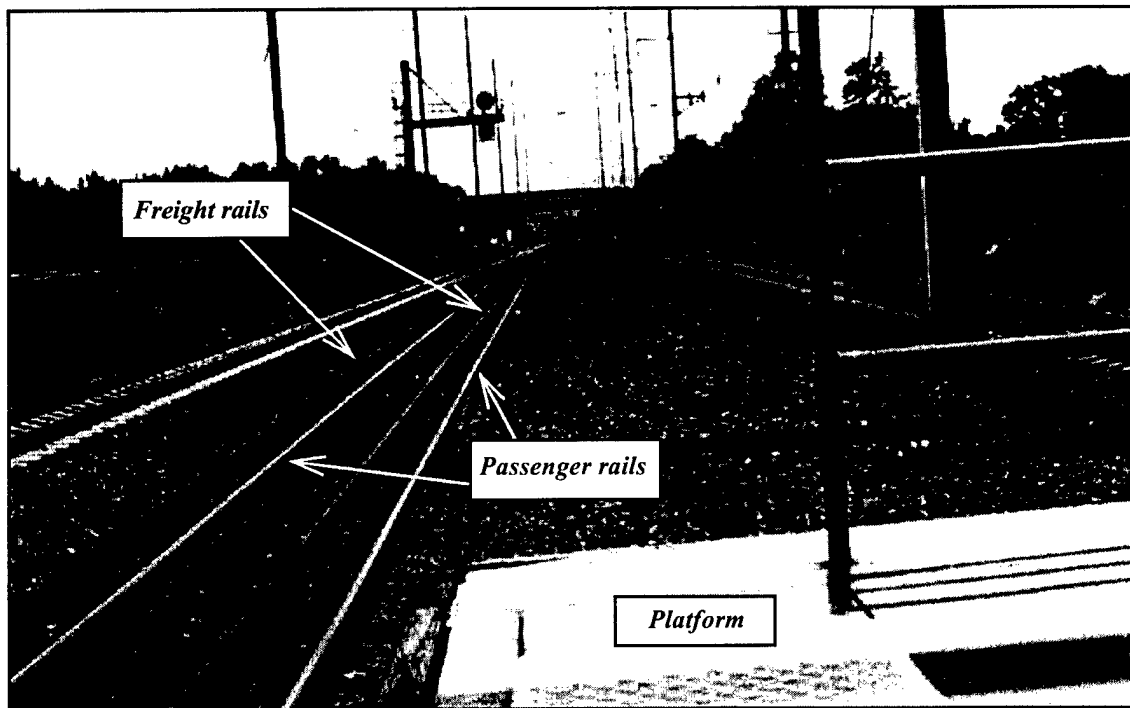


Figure 6. Gauntlet tracks by high-level platform

* Gauntlet tracks consist of two pairs of running rails that overlap.

MTMCTEA reviews rail clearances for STRACNET defense lines because clearance line dimensions are constantly changing. As an example, reballasting, constructing, or removing structures along tracks can change clearance capabilities. Our primary points of contact regarding rail line clearances are railroad clearance engineers, AREMA, and the Railway Industrial Clearance Association (RICA). We work closely with them to ensure that defense lines can accommodate the DOD profile.



Figure 7. Offset Wheelchair Access Platform

5. WEIGHT CAPABILITIES

The gross weight limitations of the railroad track and structures are high relative to highways. Locomotives can weigh in excess of 350,000 pounds. MTMCTEA analyzed the weight capabilities of defense rail lines and found no deficiencies.

The industry standard for gross weight is 263,000 pounds for 4-axle cars or 394,500 pounds for 6-axle cars. Specific gross weight limitations for rail lines are identified in the previously mentioned publication, Railway Line Clearances. Loads that exceed the published weights can be permitted by railroads under special agreements. The maximum allowable load is usually significantly higher than the published load, providing the carriers with a substantial safety factor. The trend is toward even heavier weight capabilities. Many railroad mainlines have been upgraded to handle 286,000 pounds on 4-axle cars.

Our analysis developed a representative DOD gross weight configuration and compared it to the published gross weight limitations of STRACNET lines. The first step established a typical heavy shipment for comparison. The most common heavy defense shipments are battle tanks. The gross weight of two M-1 tanks on a 6-axle DOD 140-ton flatcar can approach 365,000 pounds. The M-1 weight configuration was used for our analysis.

We then identified the published weight limitations for all defense lines. The results revealed that the published limitations for the entire 32,000-mile STRACNET system equaled or exceeded 394,500 pounds (for 6-axle). Also, most of the 5,400 miles of connector lines had published limitations at or in excess of 394,500 pounds for 6-axle cars.

Therefore, since the 394,500-pound limitation exceeds the M-1 weight configuration, STRACNET and most of the connector lines can accommodate defense shipments. A case-by-case review was performed to ensure that connector lines with published limitations less than 263,000 pounds were adequate. The review revealed that the reduced published load limitations for the connectors exceeded the M-1 weight limitations for installations that could expect tank shipments. The few remaining connectors with reduced published limitations were also found to accept expected defense loads.

The gross weight study of defense rail lines revealed that they have acceptable allowable gross weight limitations. As is the case with oversize loads, overweight loads can often be routed on non-STRACNET lines, since most railroad main lines can accommodate 6-axle cars weighing 394,500 pounds.

V. CONCLUSIONS

MTMCTEA and FRA reviewed civil rail lines important to national defense. The State maps in appendix A identify STRACNET and its connector lines. The maps are supplemented by a list of DOD installations and activities requiring rail service in appendix B.

Most designated lines meet defense readiness requirements for maintenance condition, clearance, and gross weight capabilities.

Defense rail lines designated in appendix A, and the installations and activities identified as requiring rail service in appendix B, document defense rail requirements and supersede previous reports.

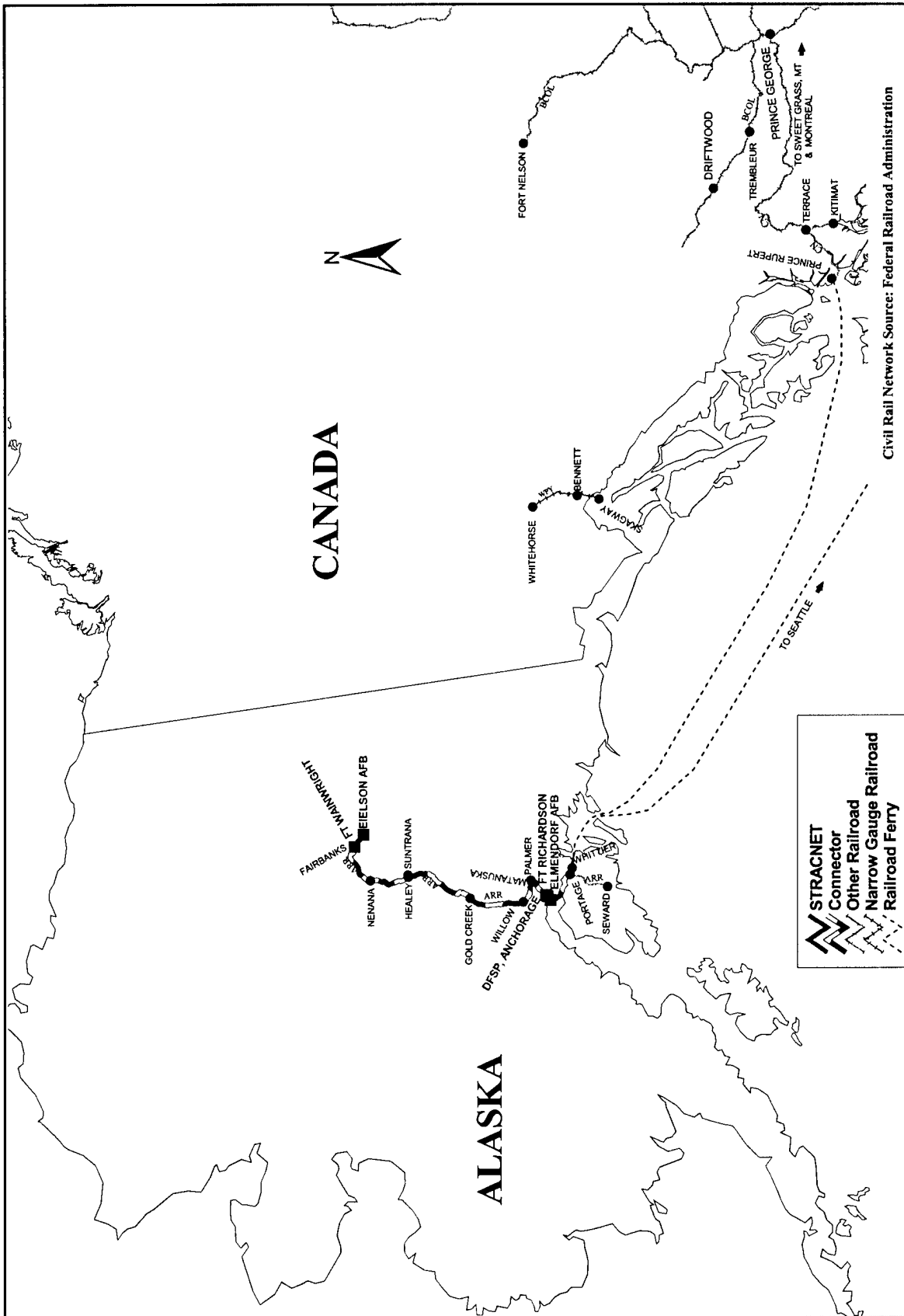
MTMCTEA will periodically review track inspection data provided by FRA for defense lines. It is anticipated that future detailed reviews of defense rail requirements will be periodically conducted by MTMCTEA and FRA.

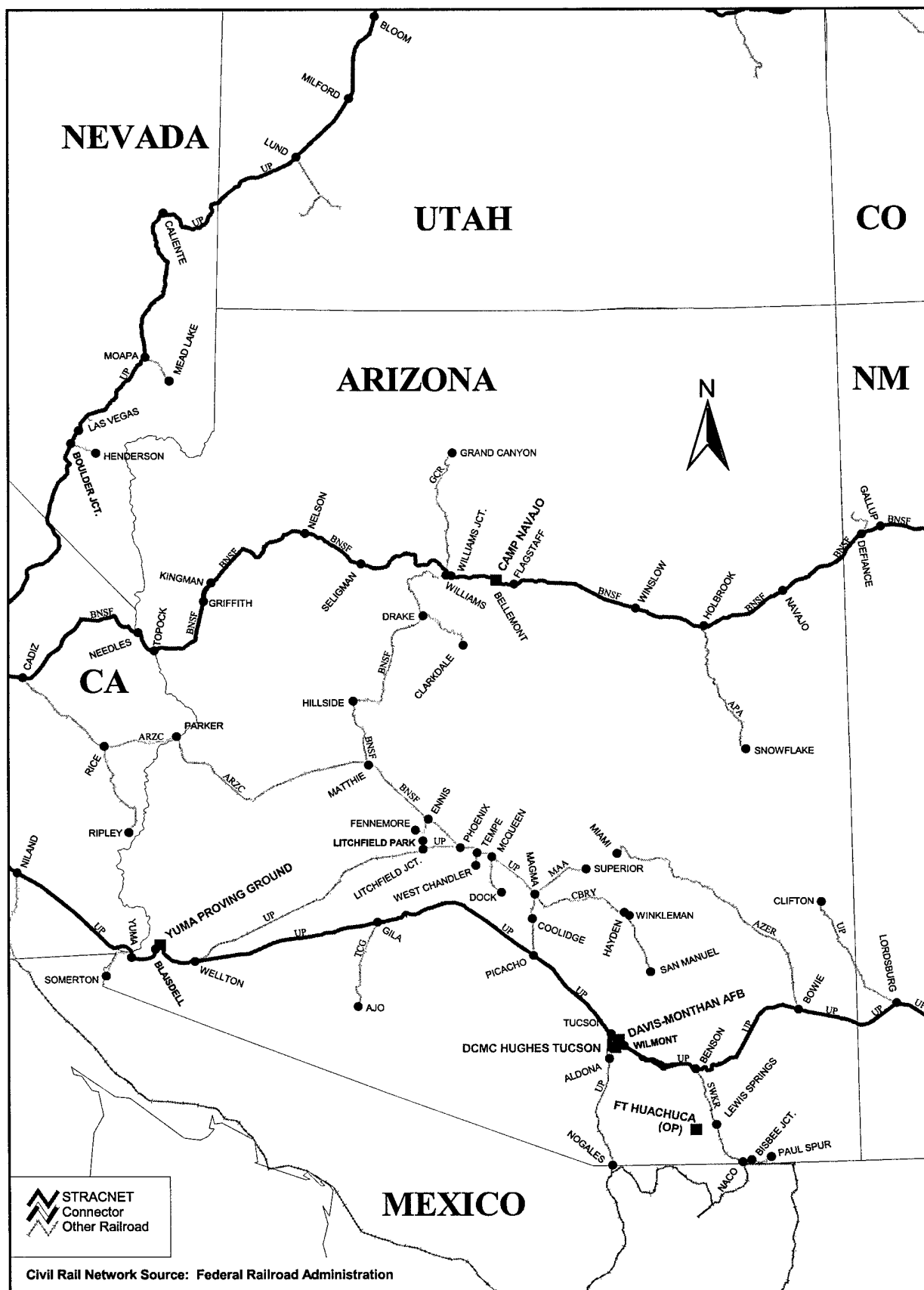


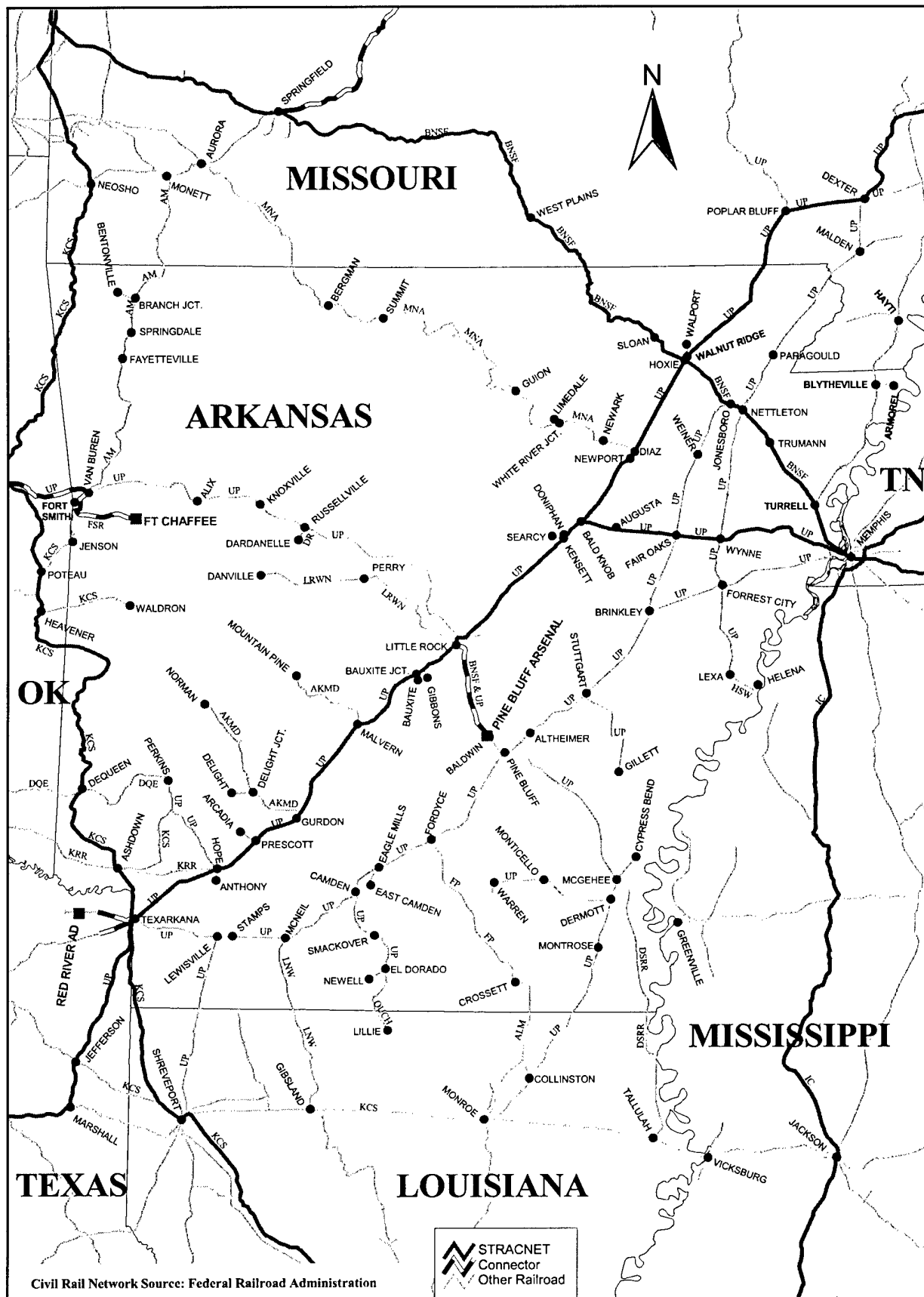
APPENDIX A

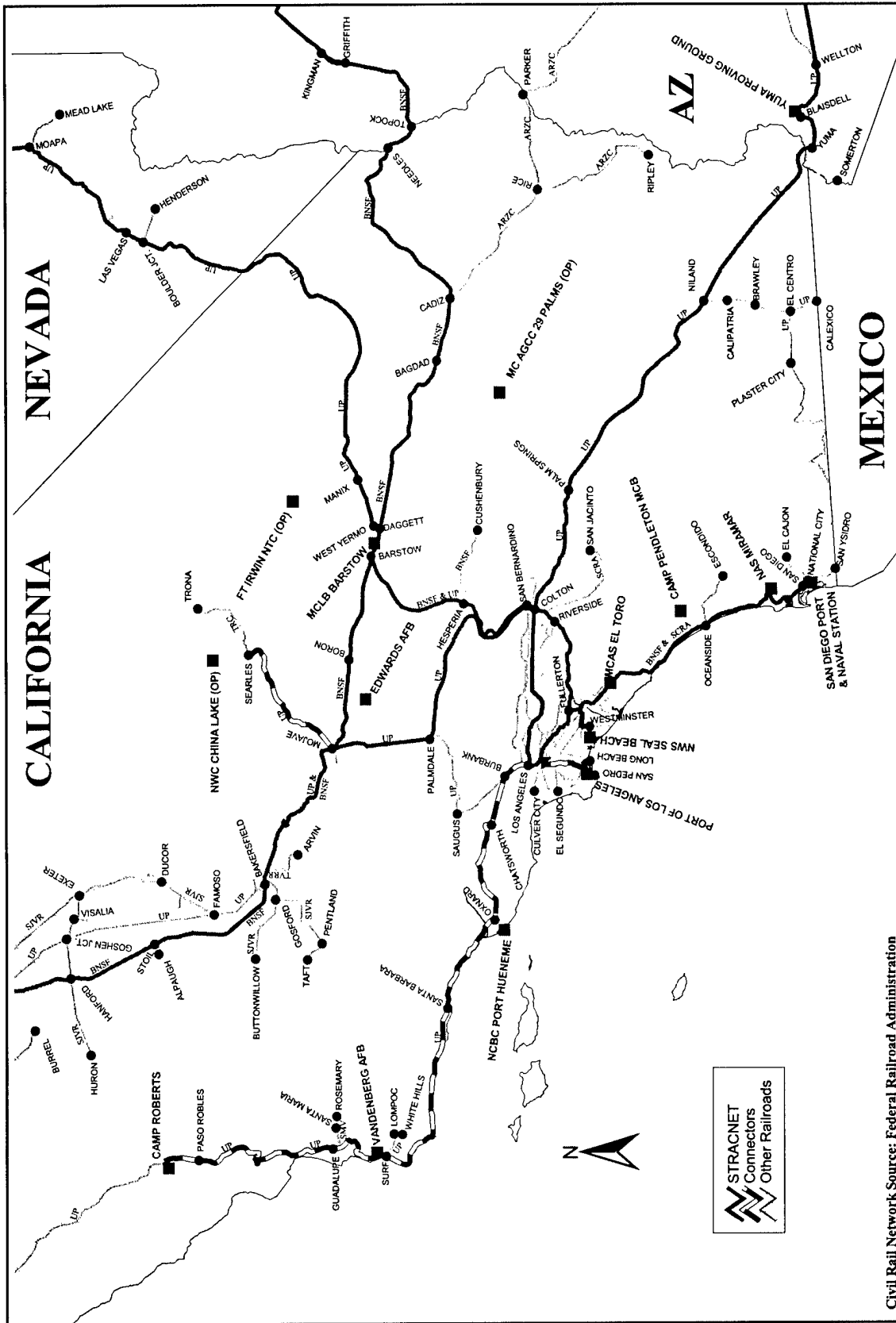
STATE MAPS

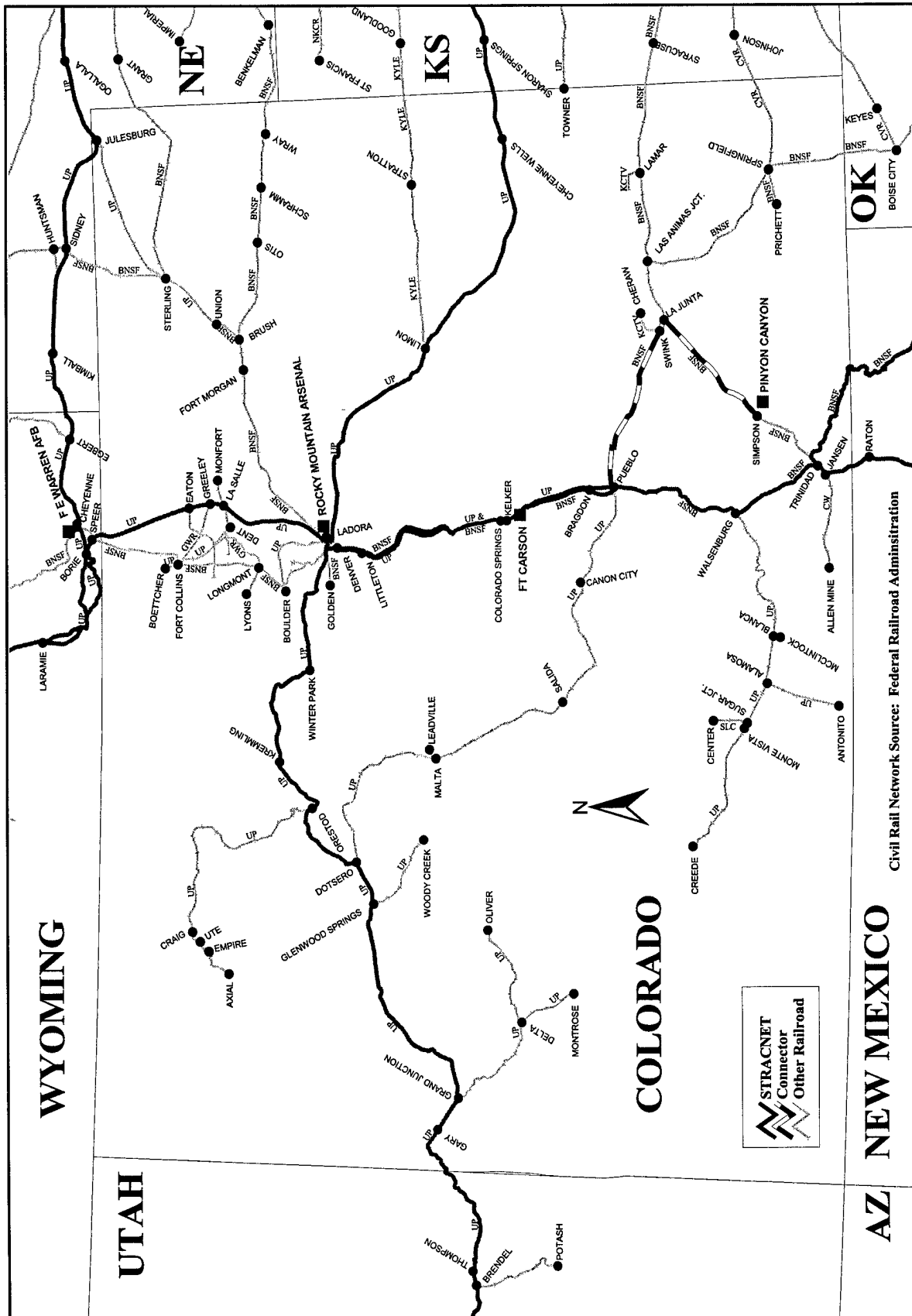


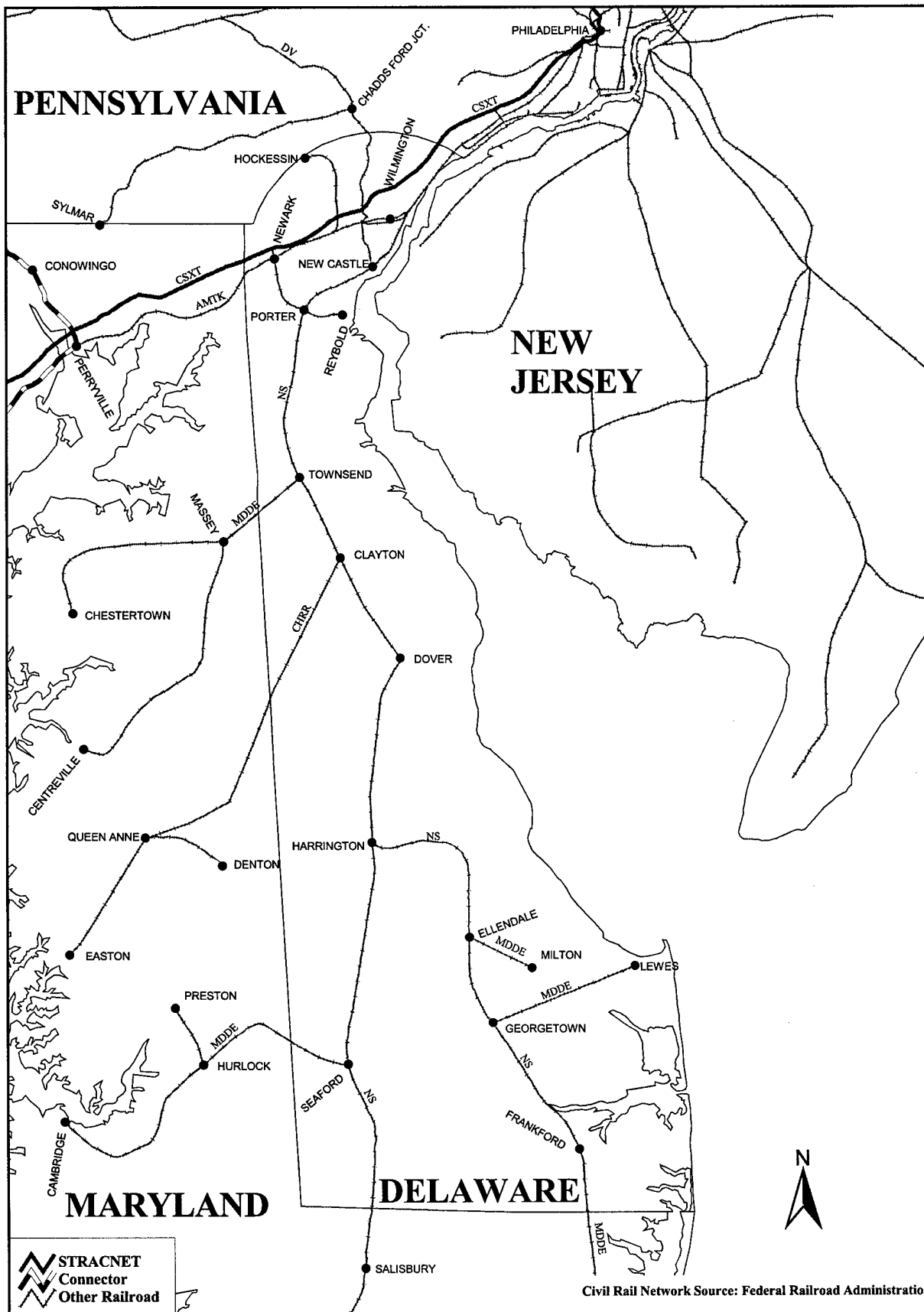


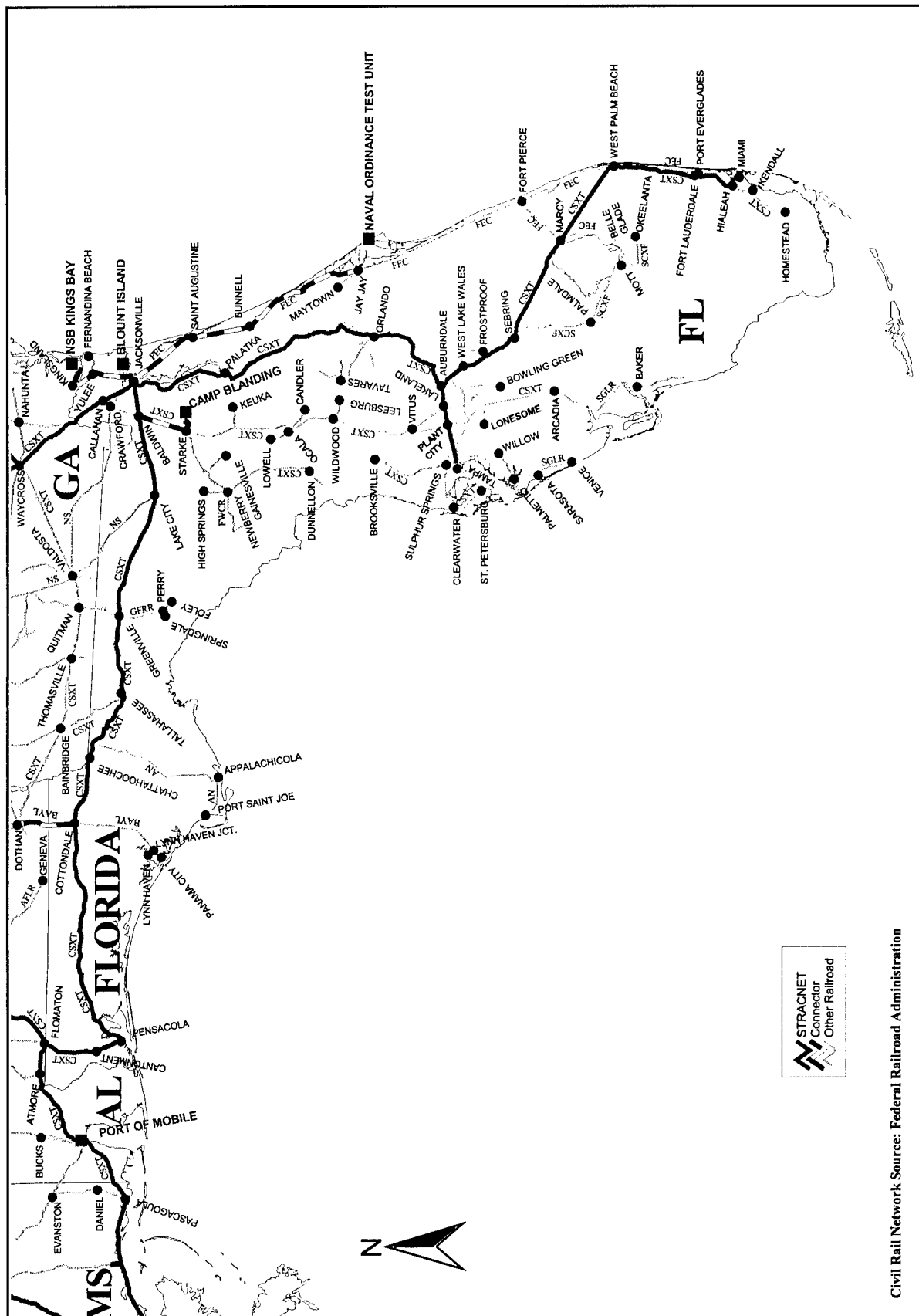




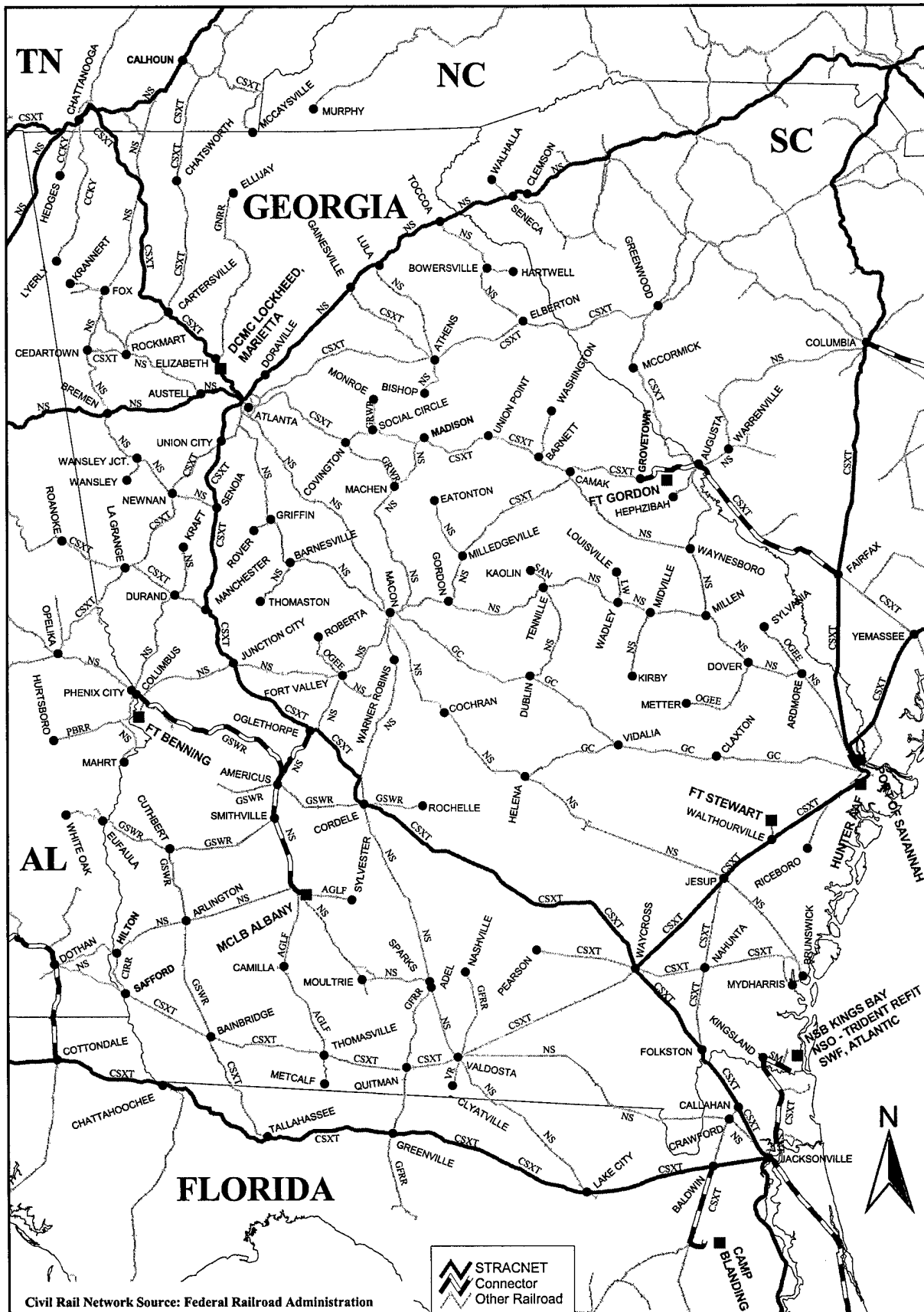




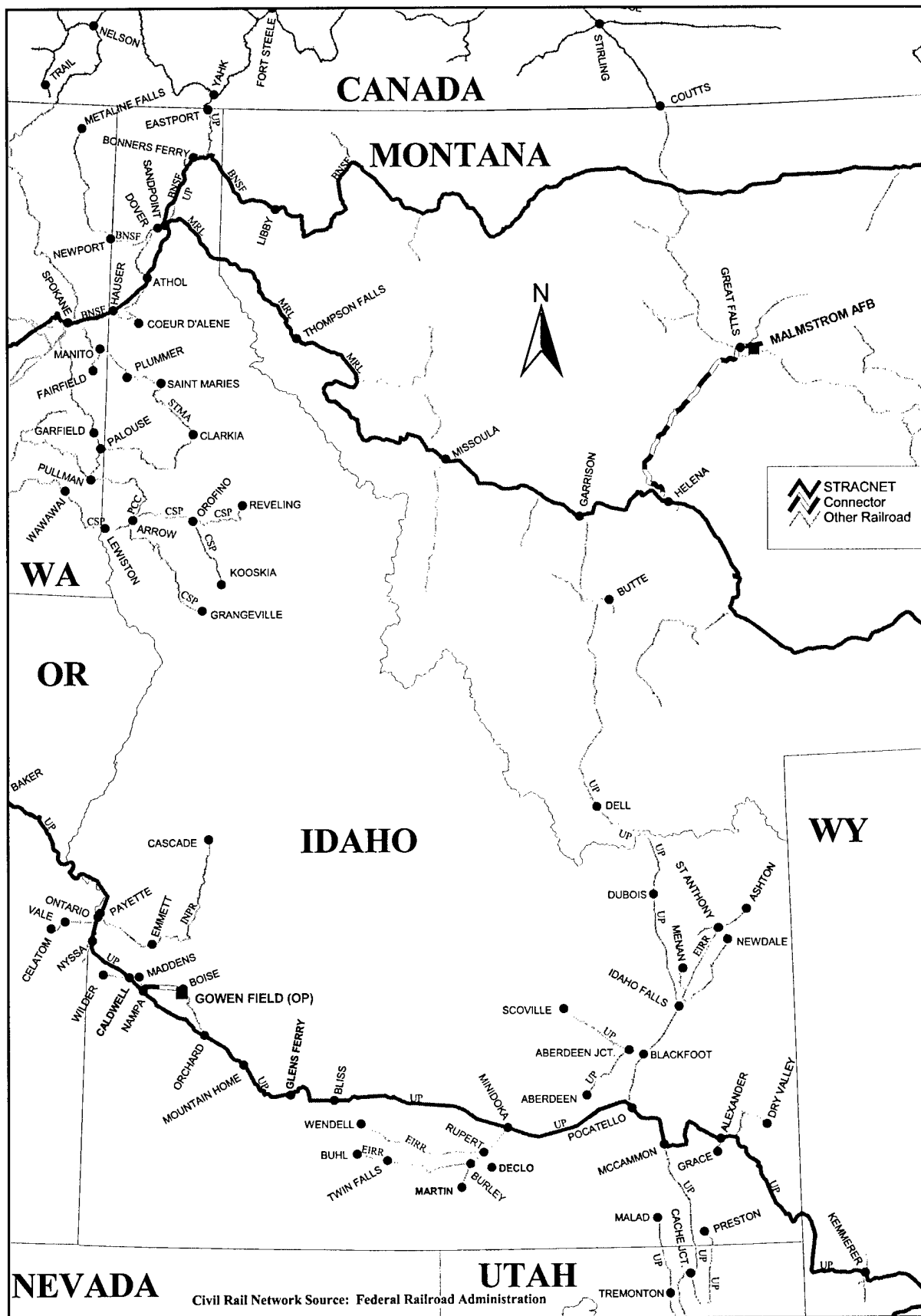


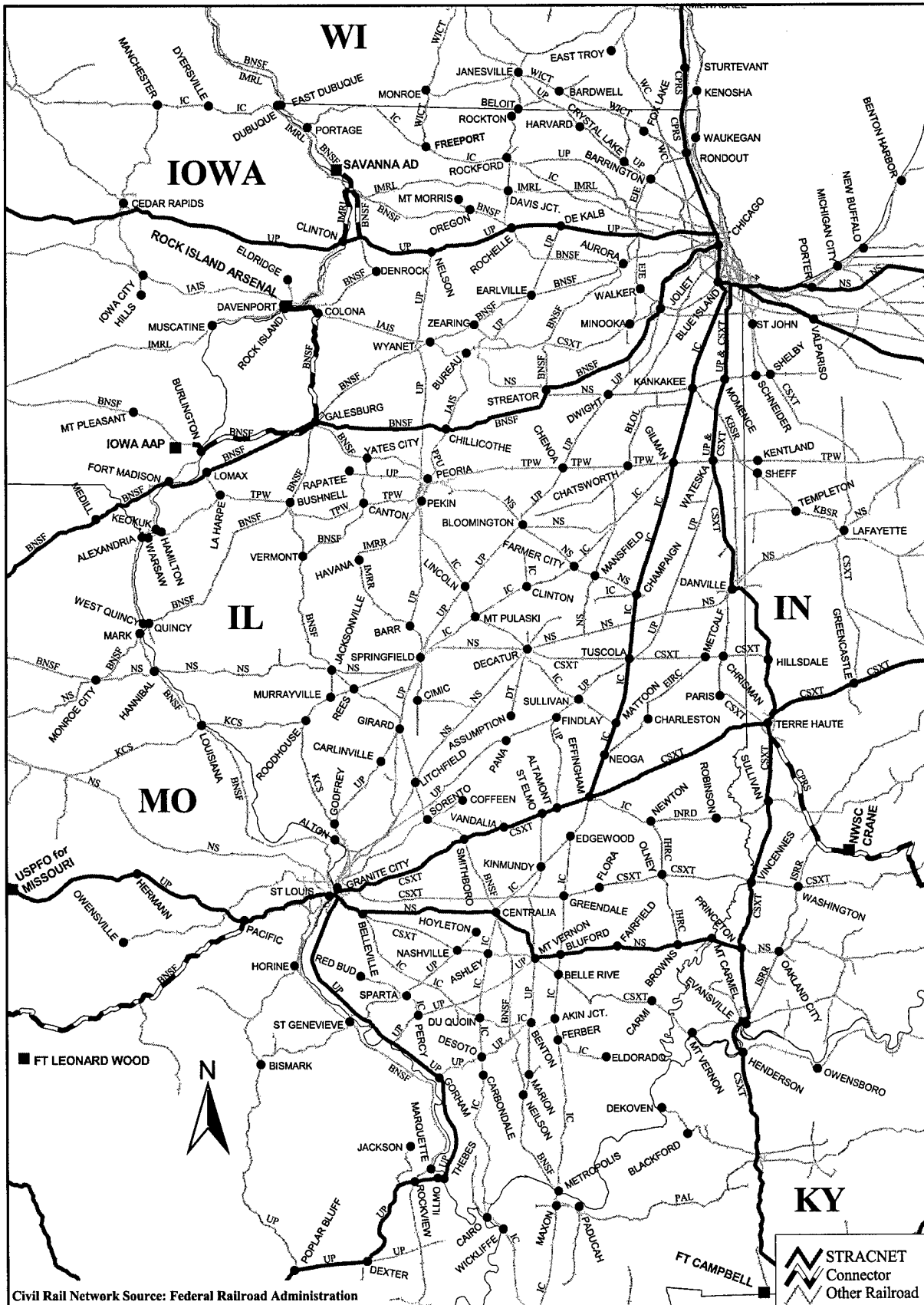


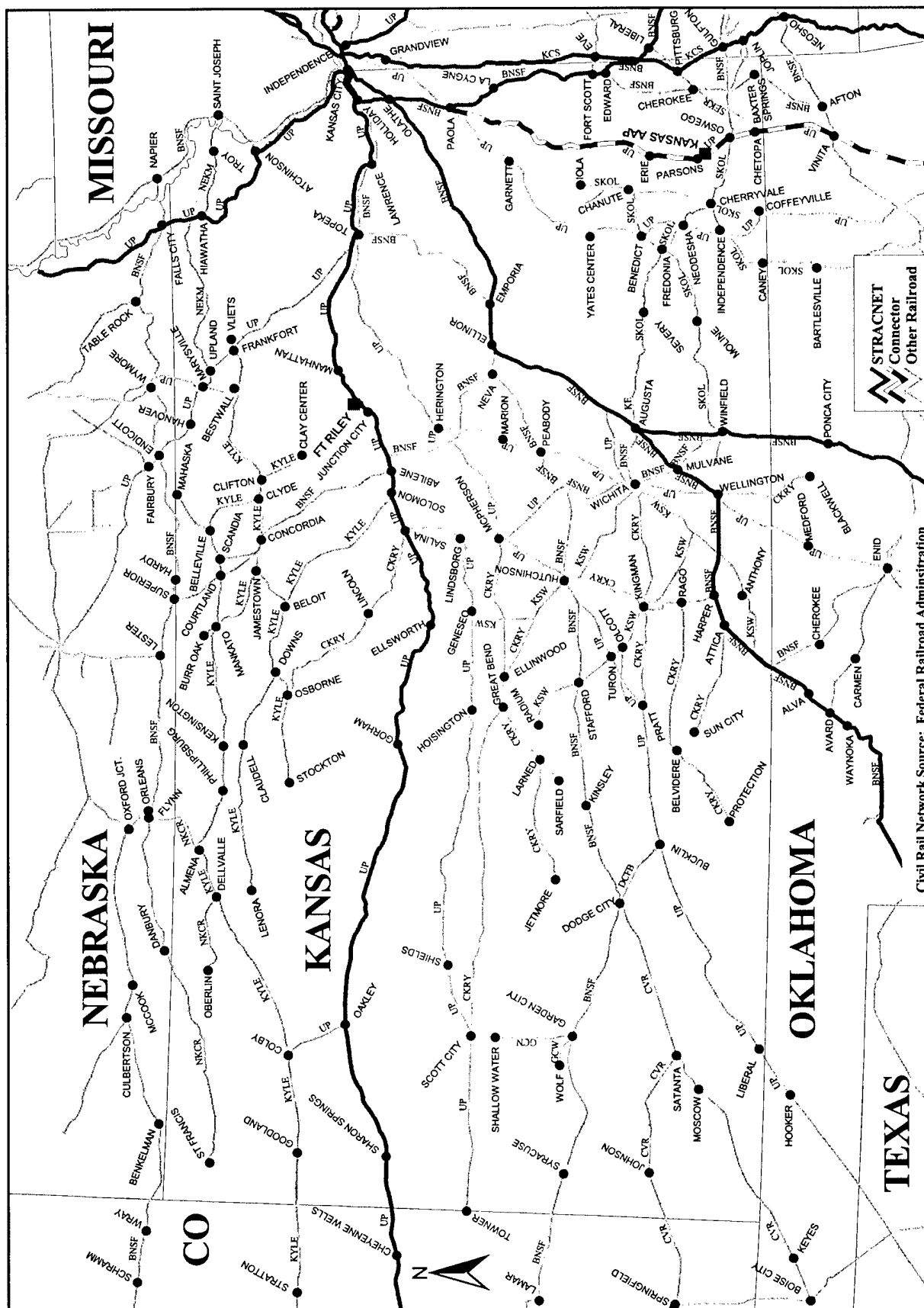
Civil Rail Network Source: Federal Railroad Administration

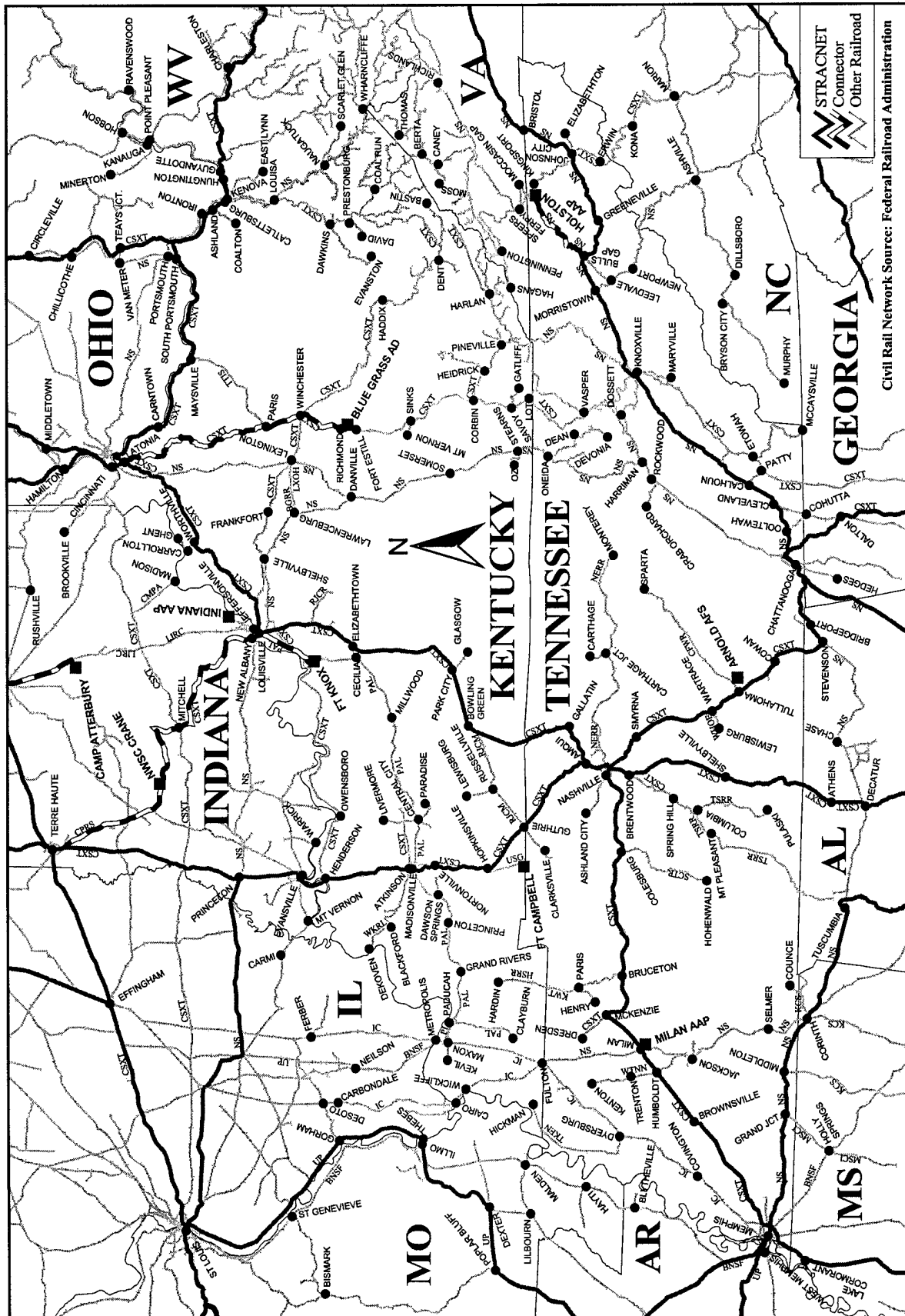


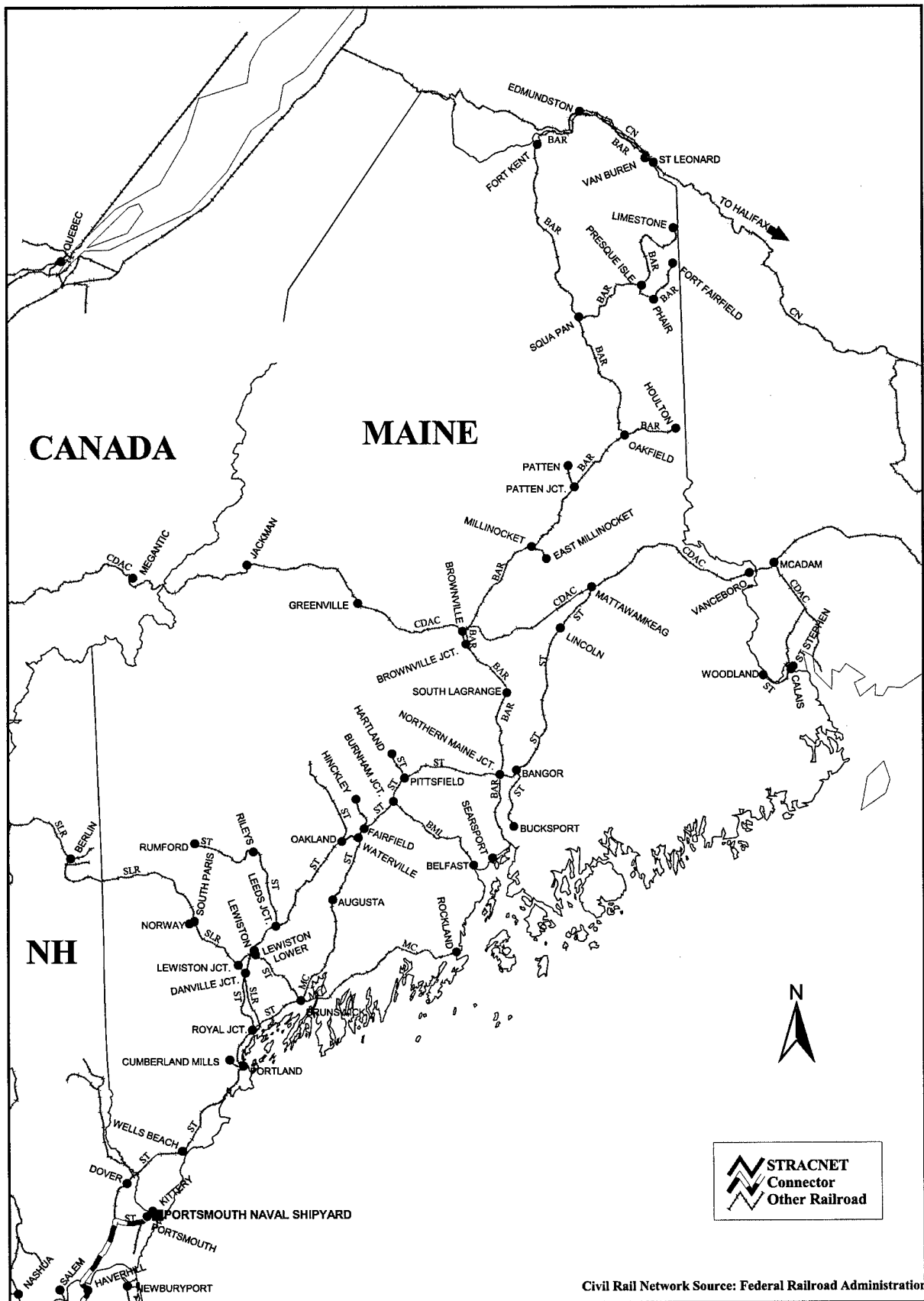
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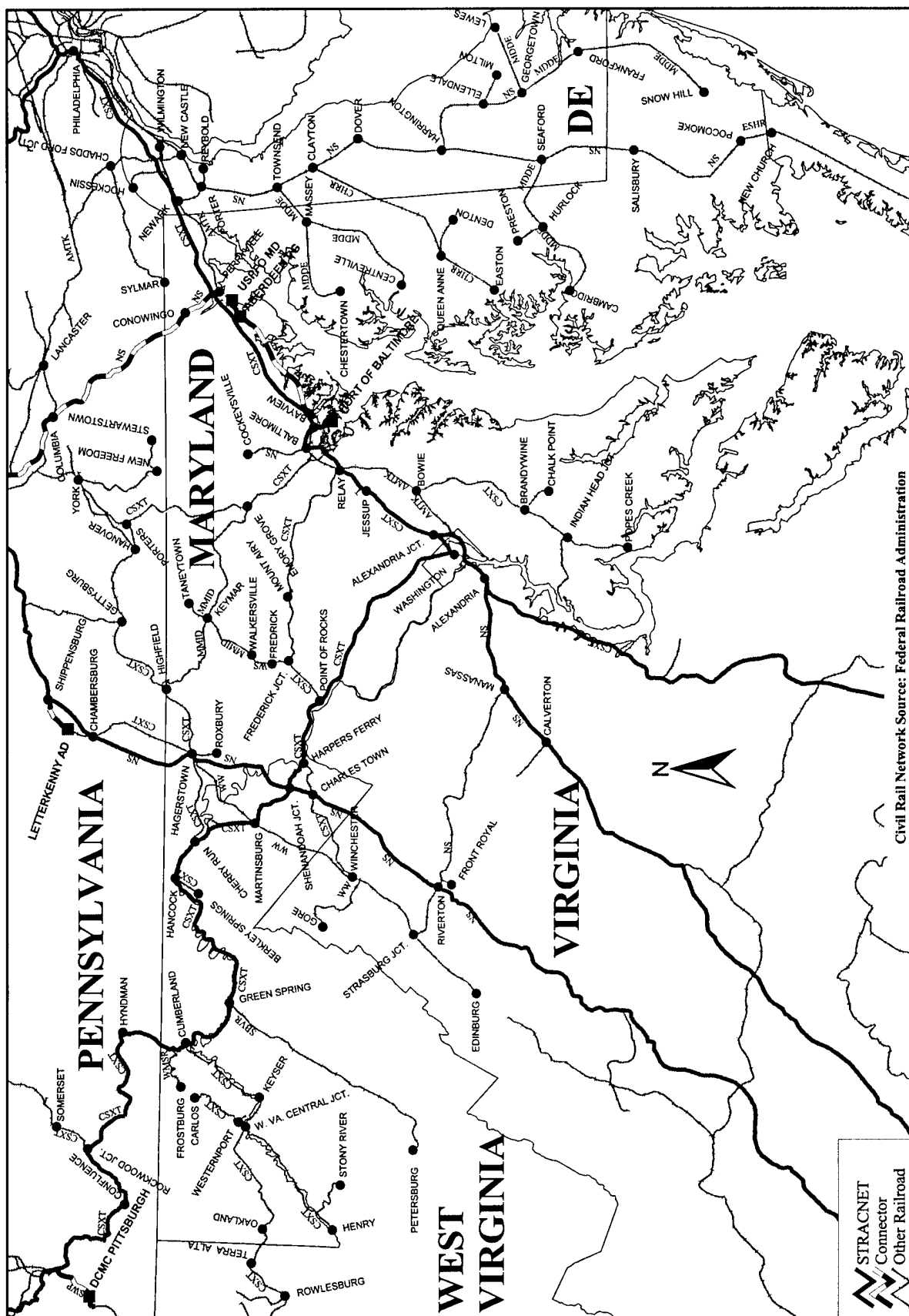


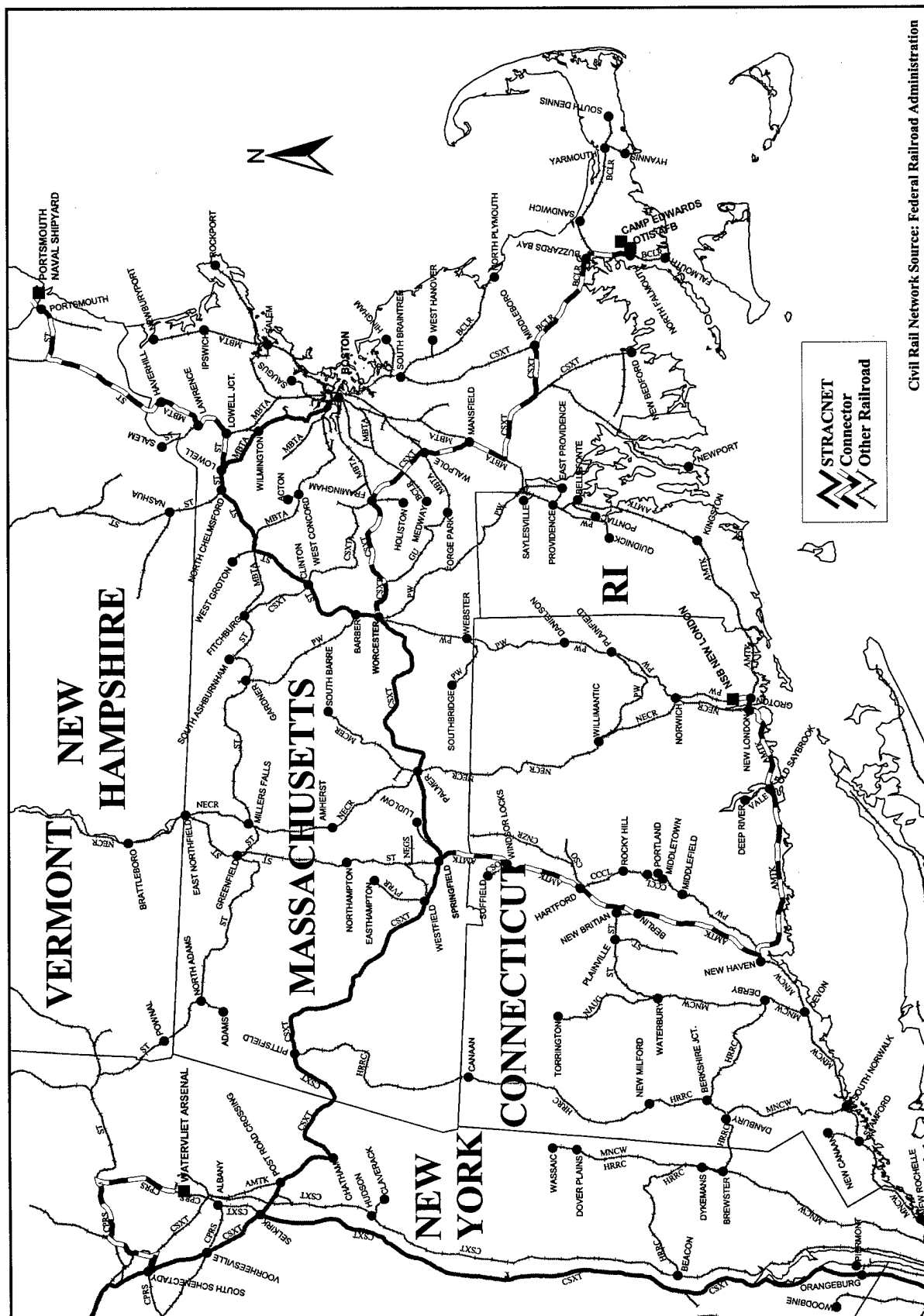


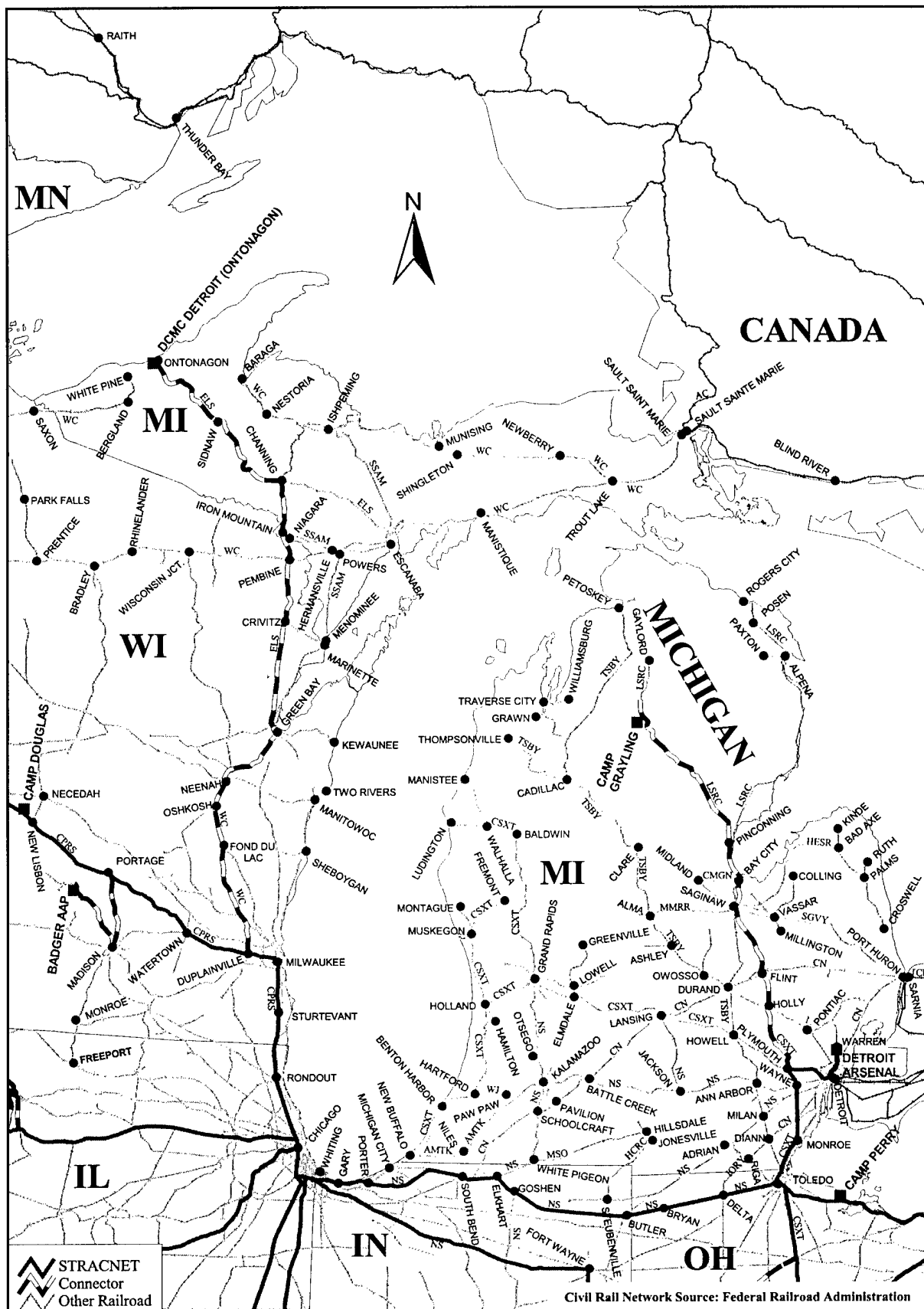


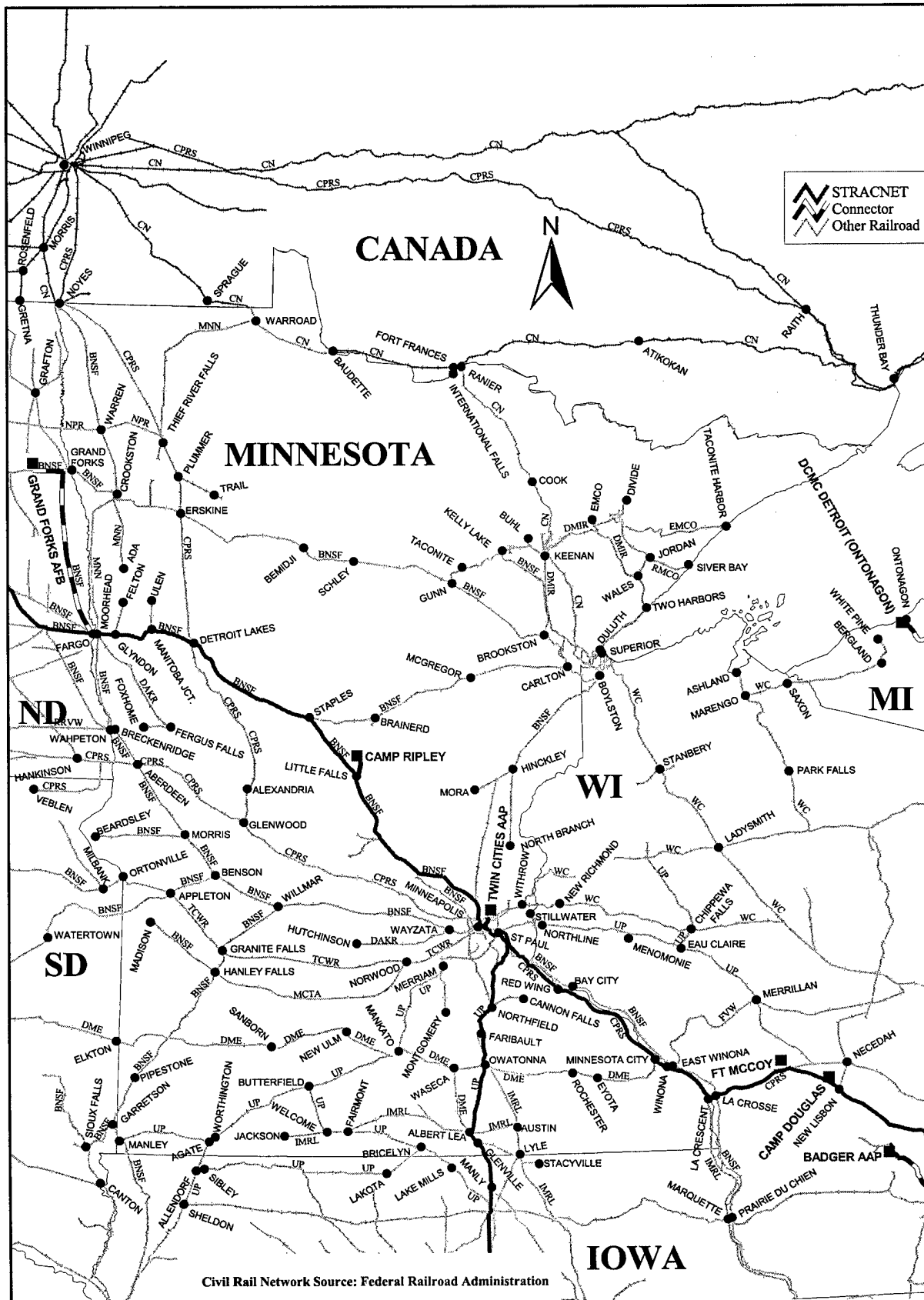


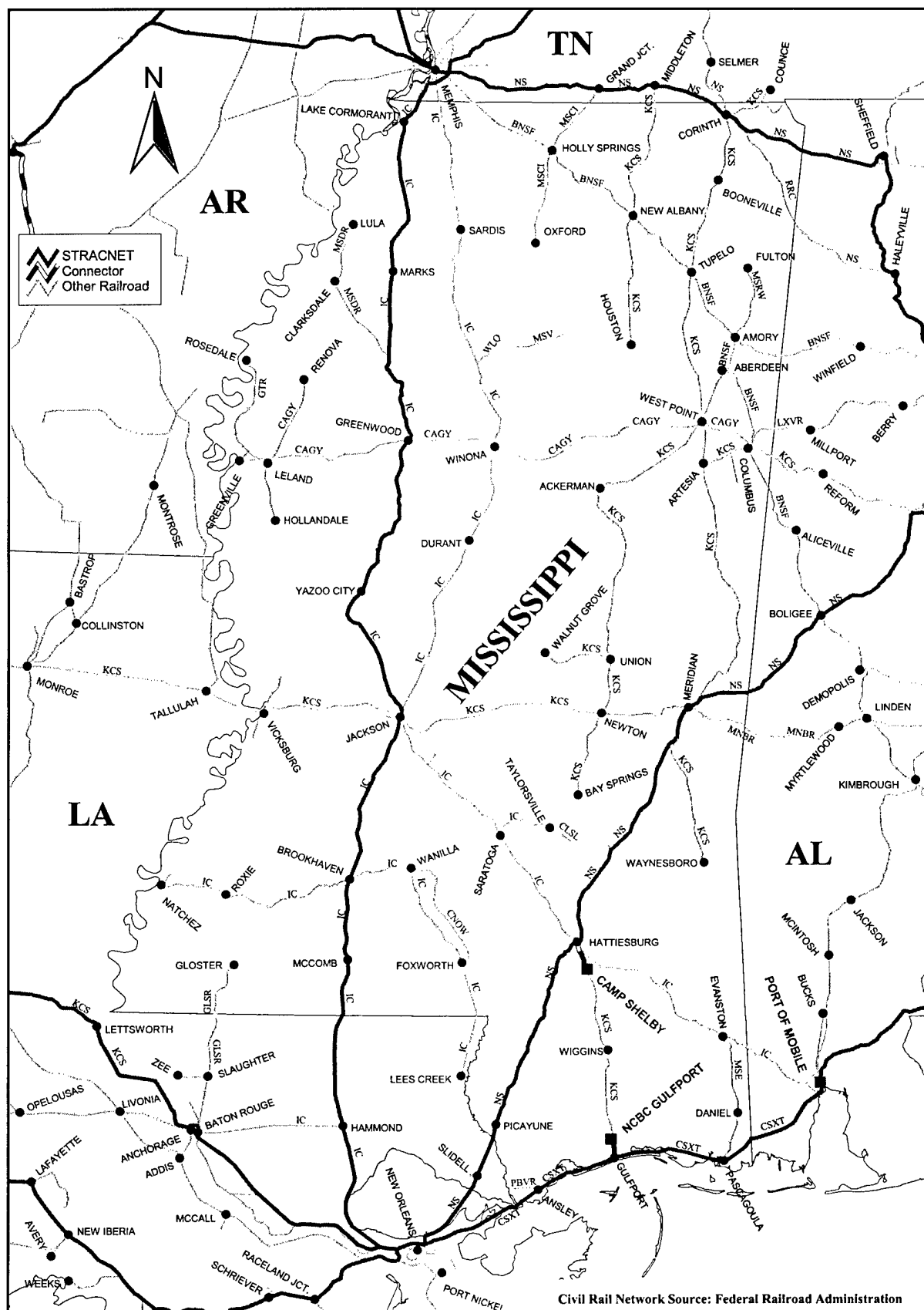


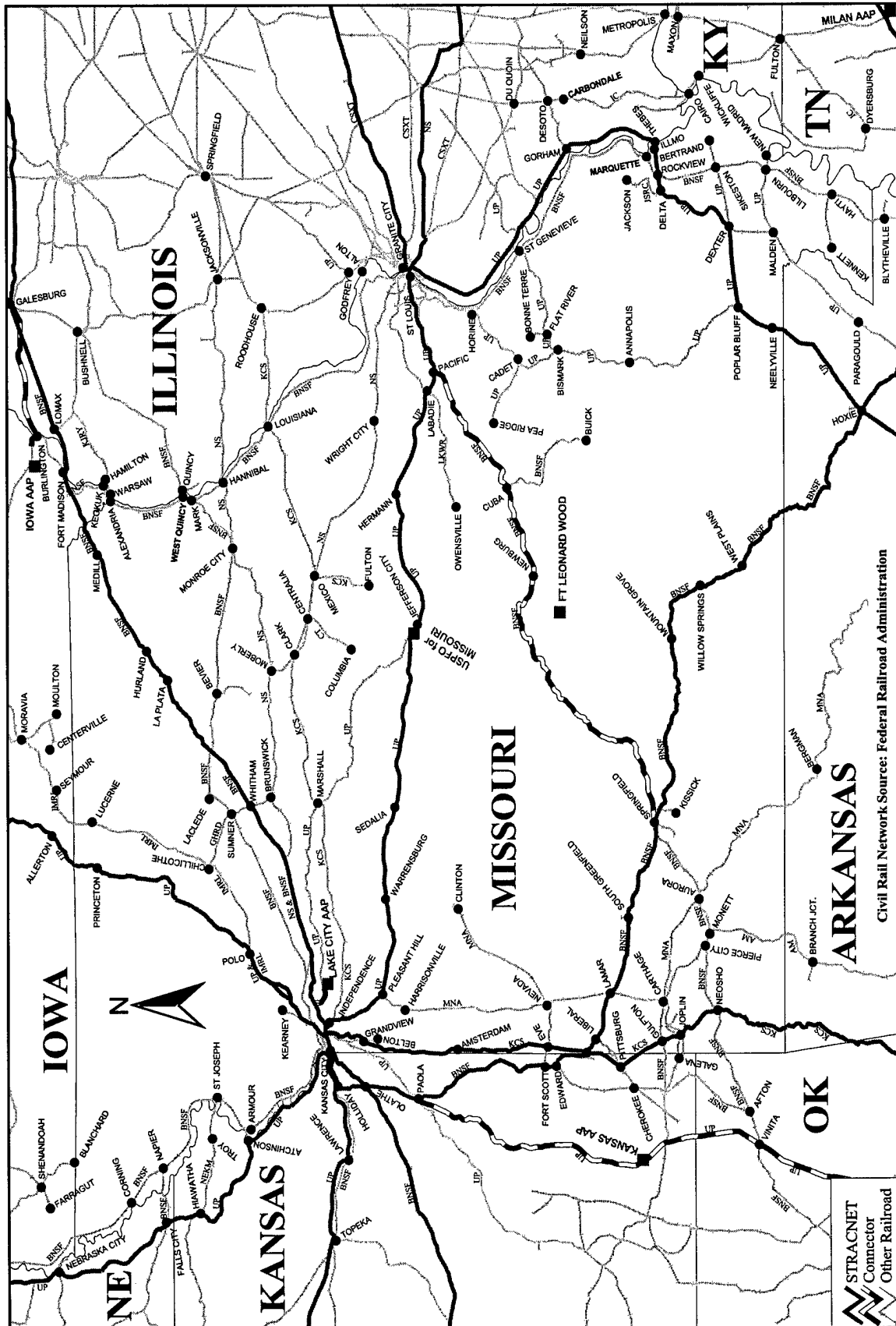


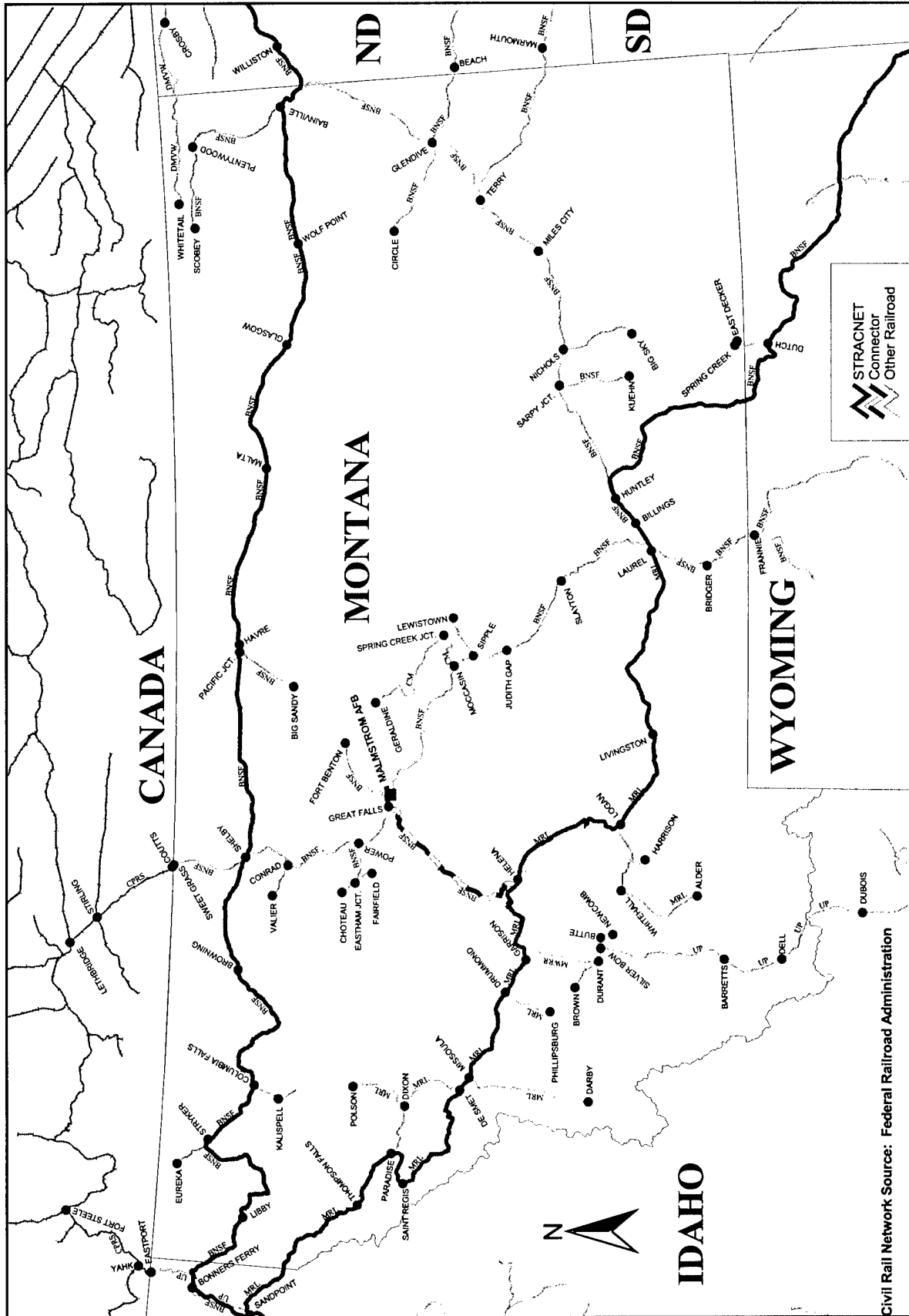


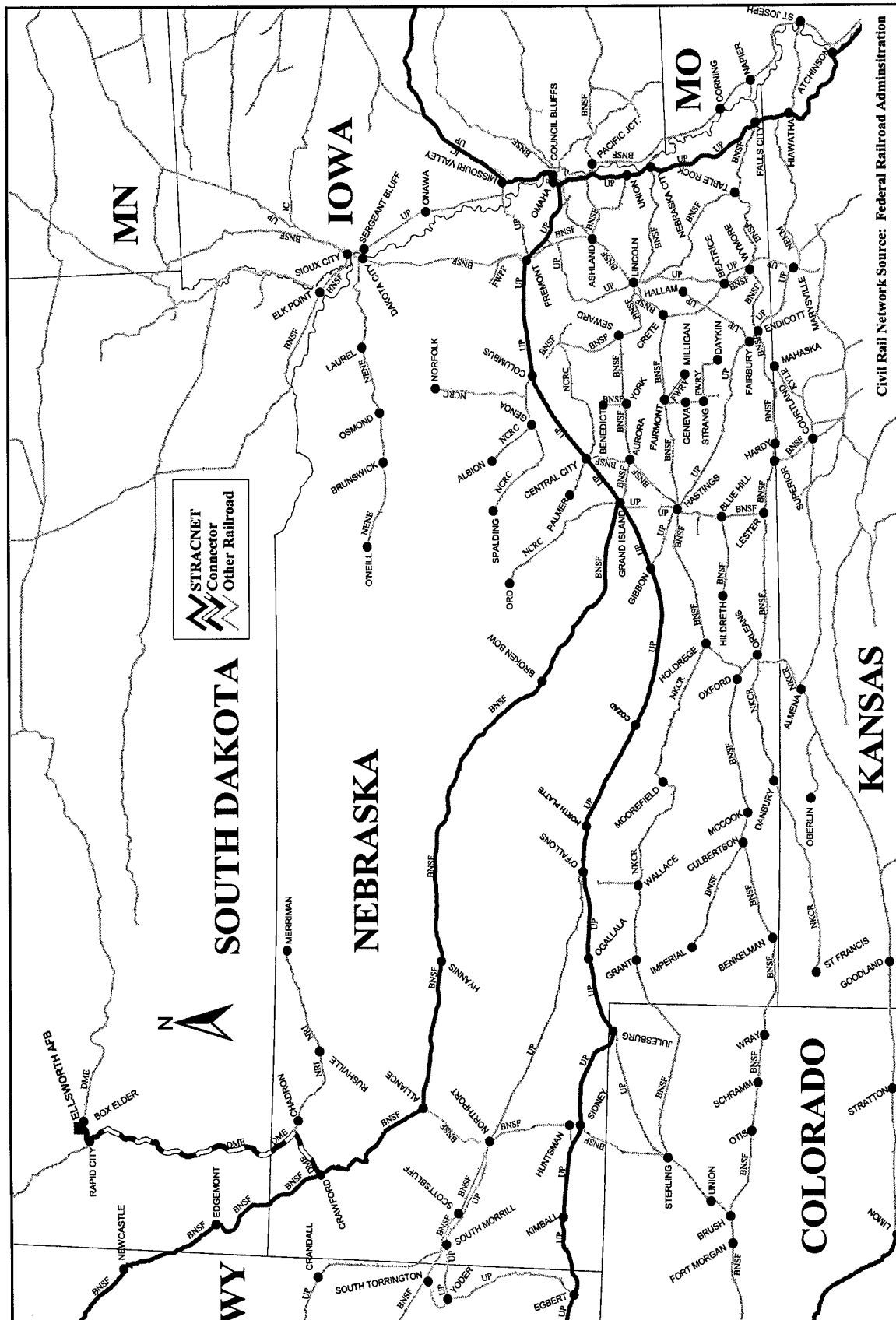


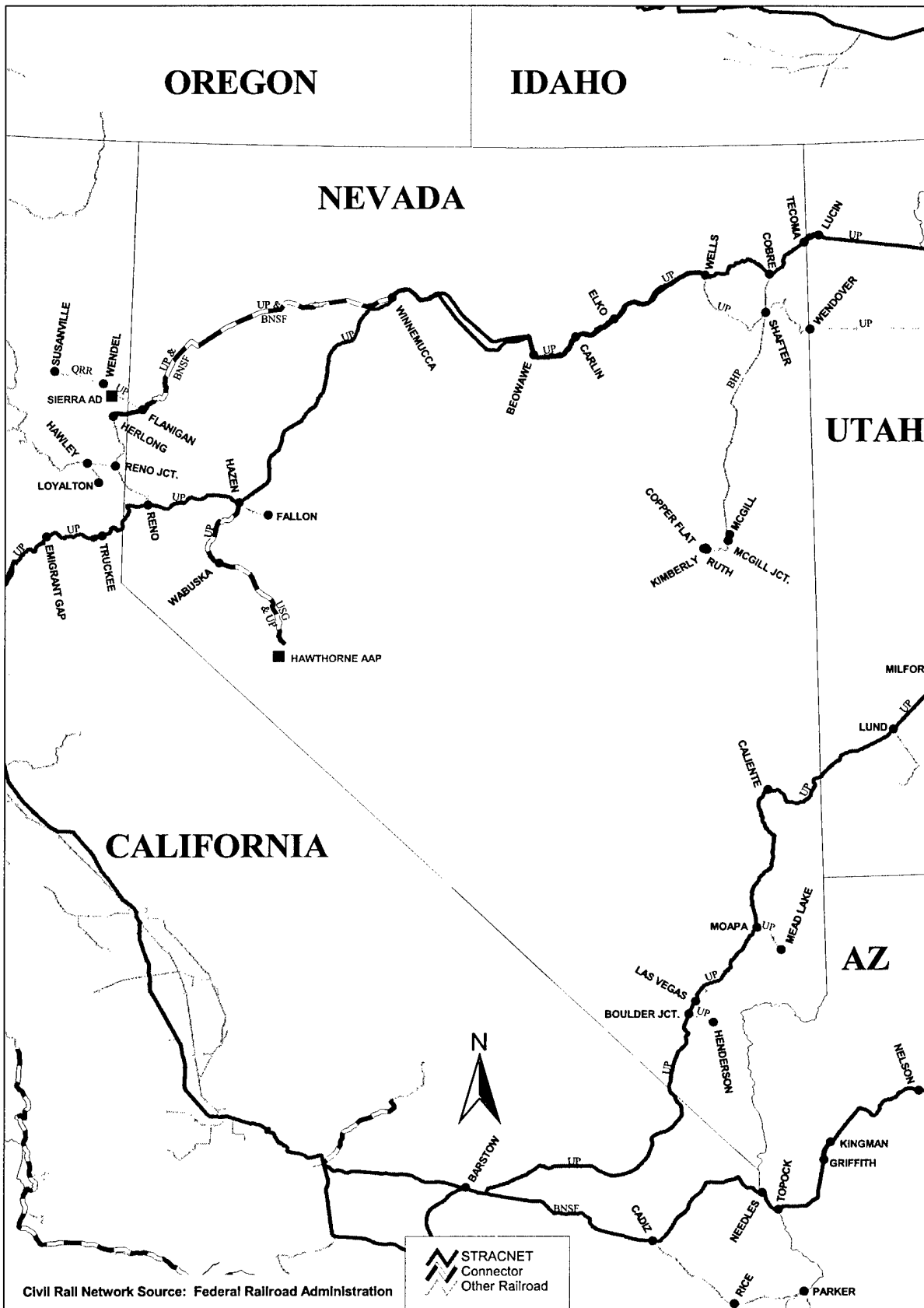


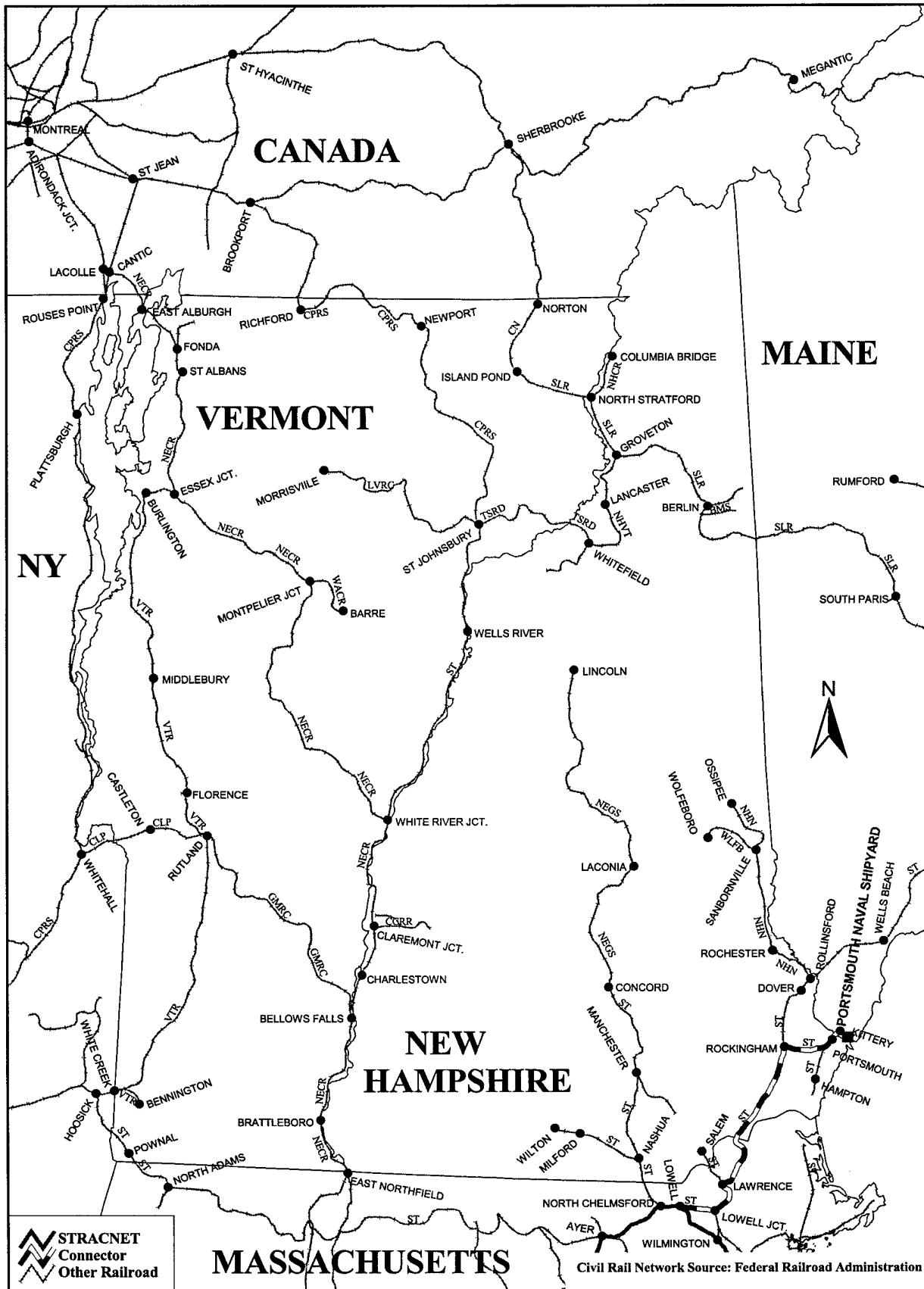


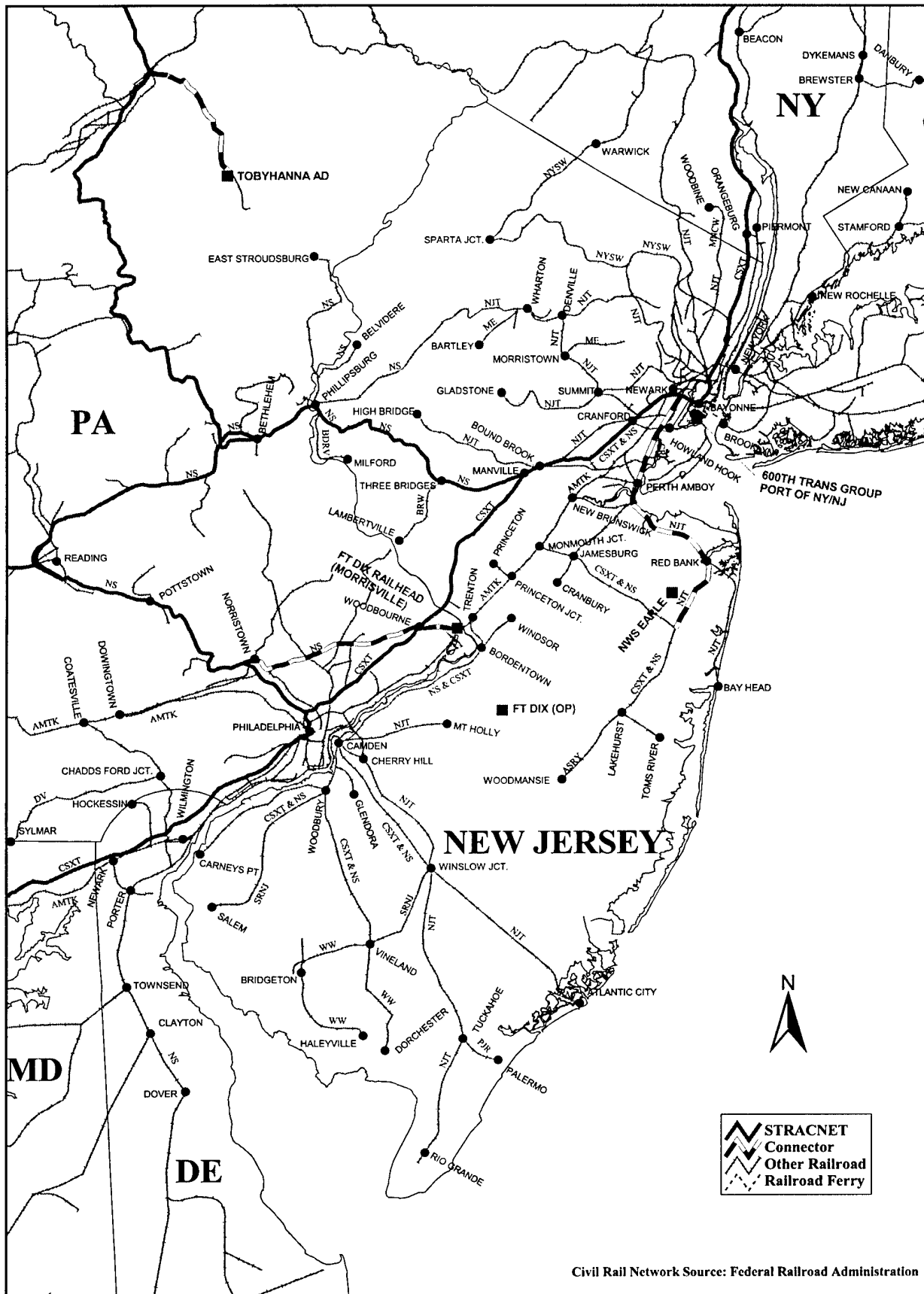




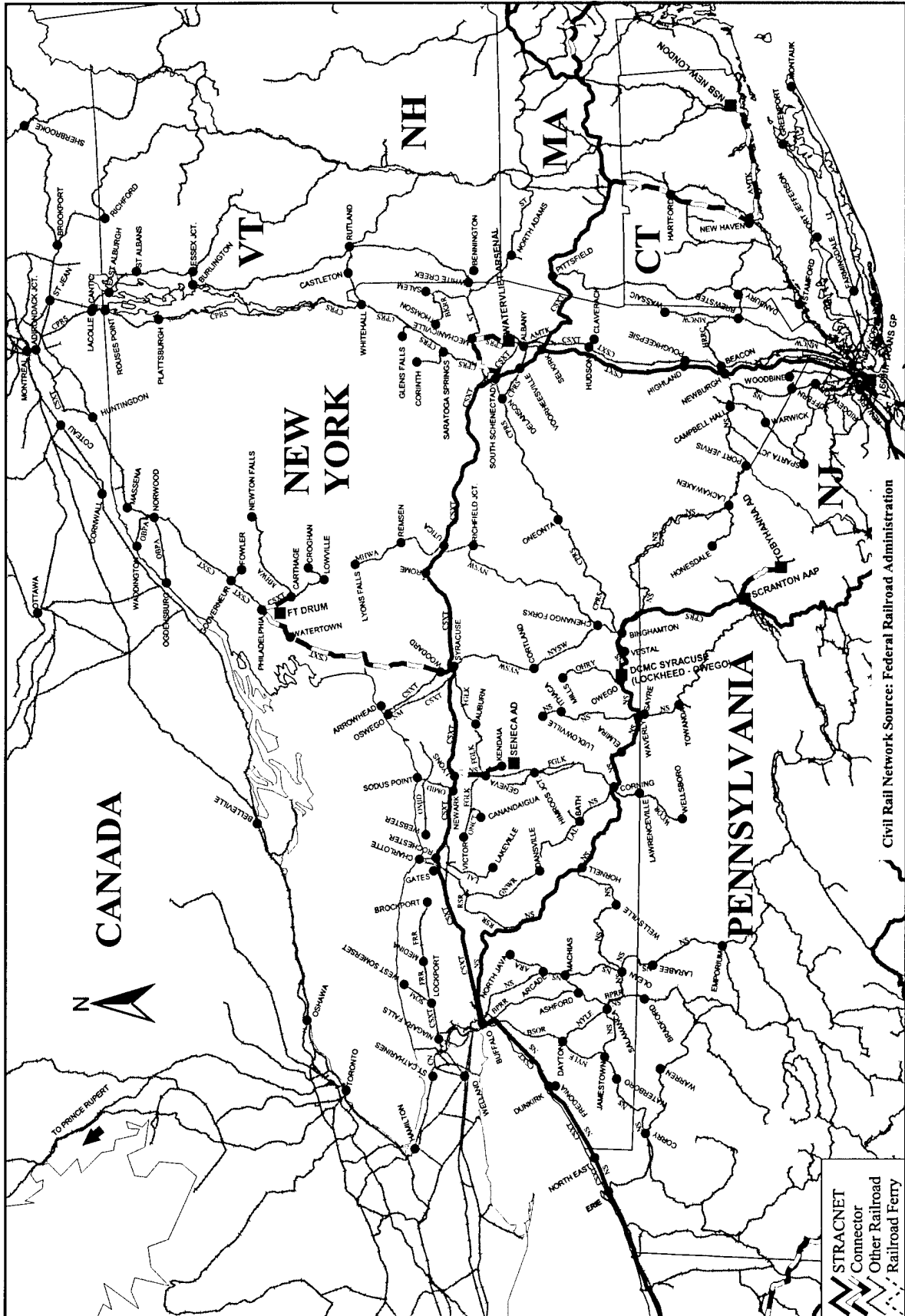


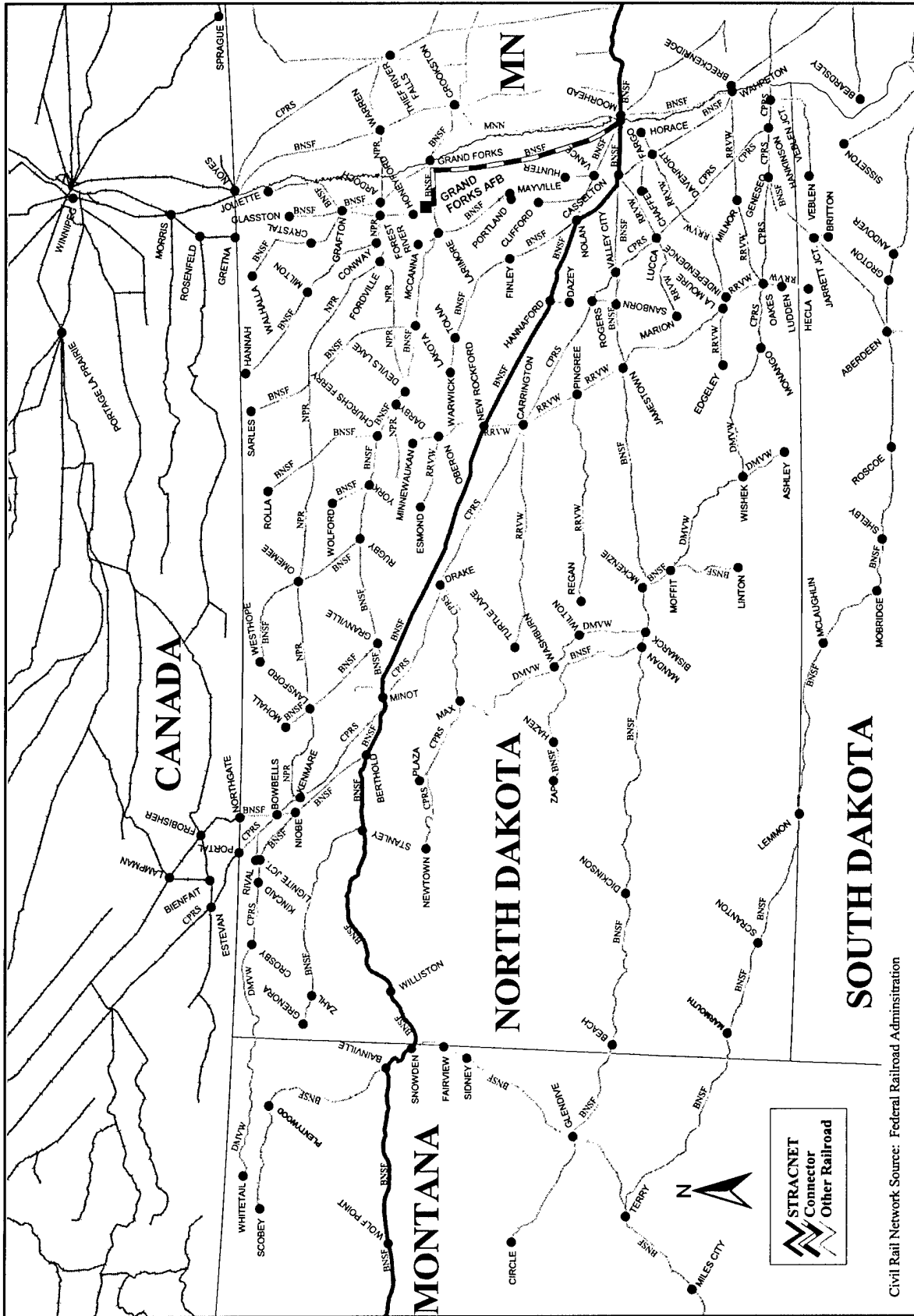




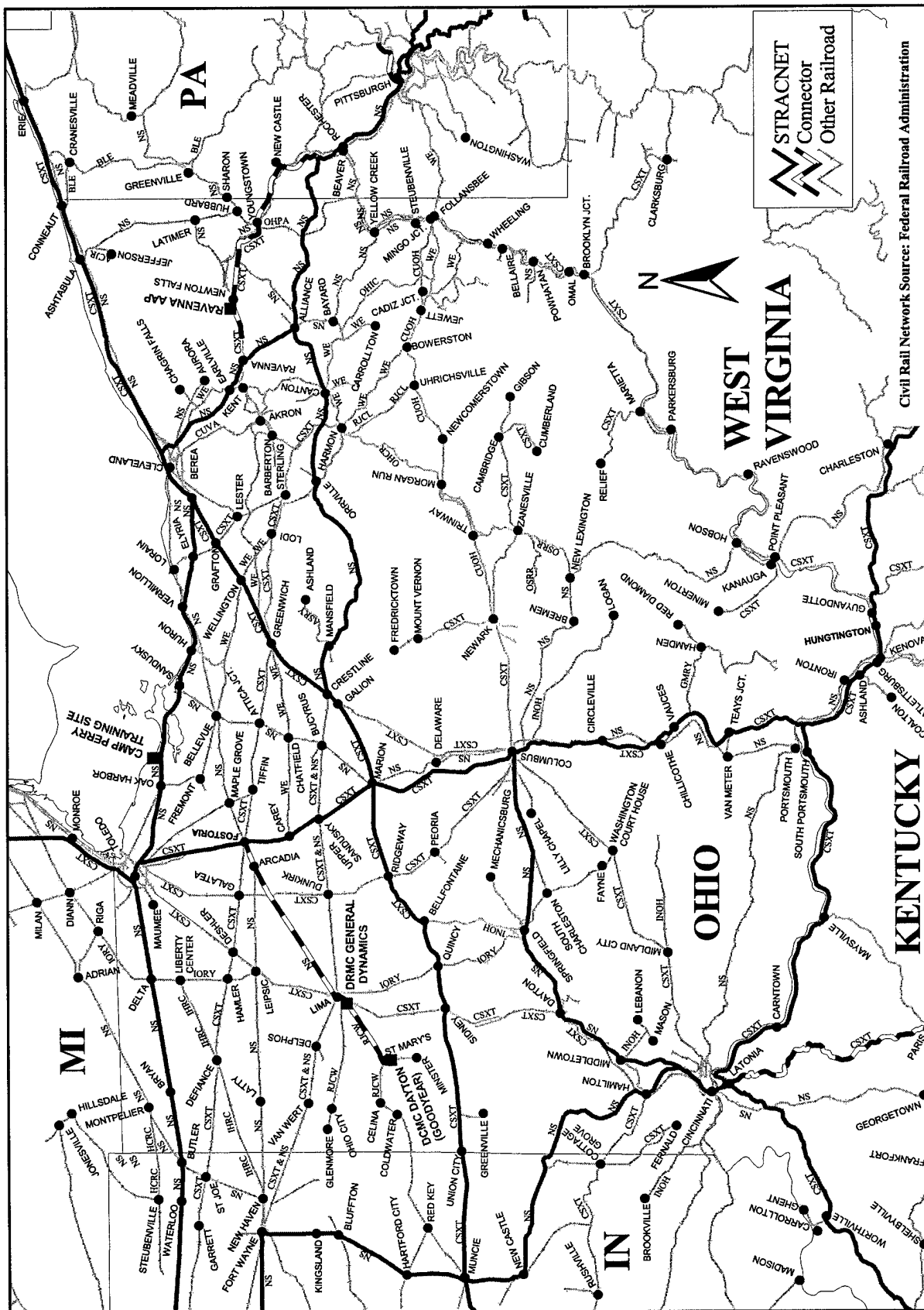


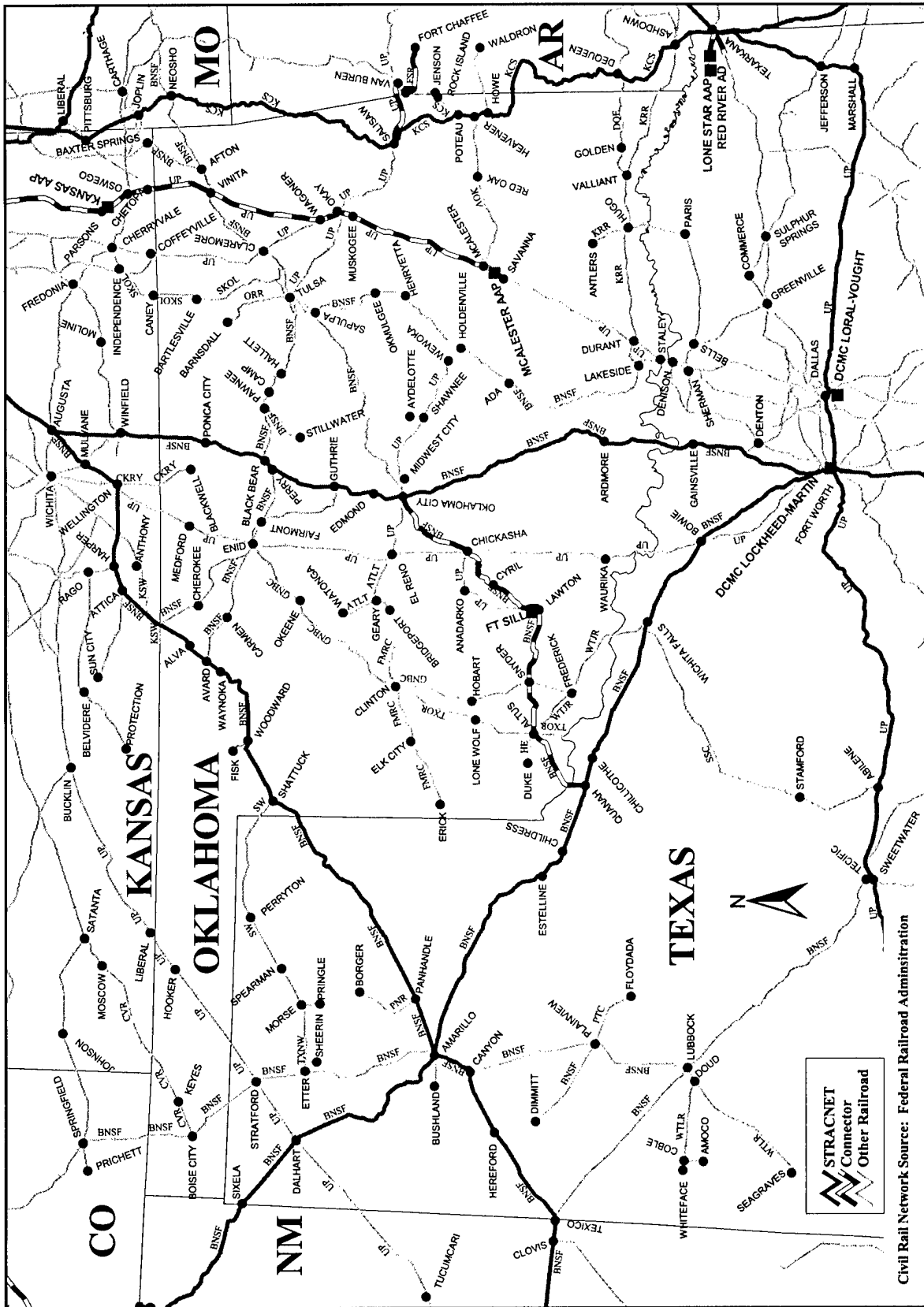
Civil Rail Network Source: Federal Railroad Administration



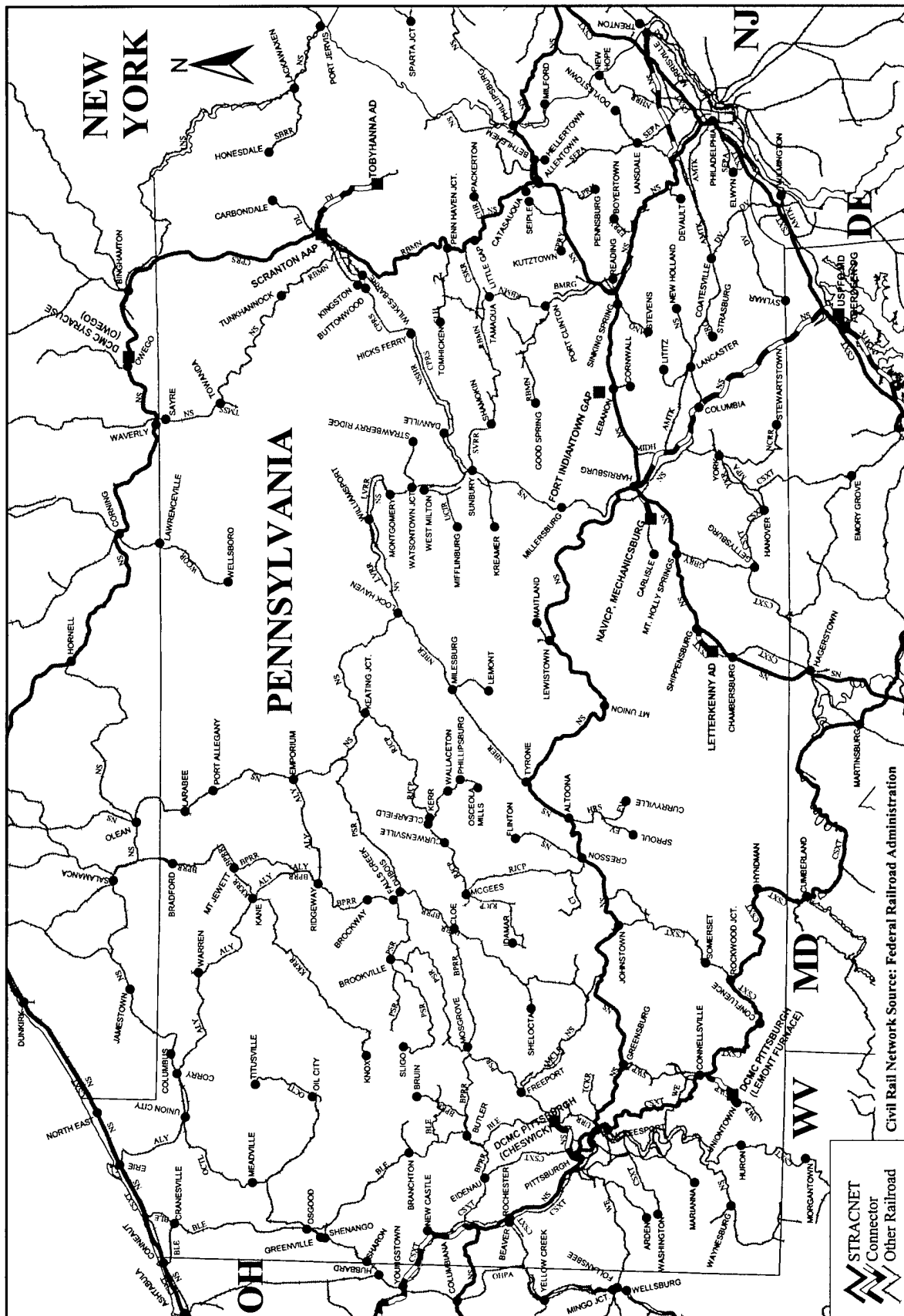


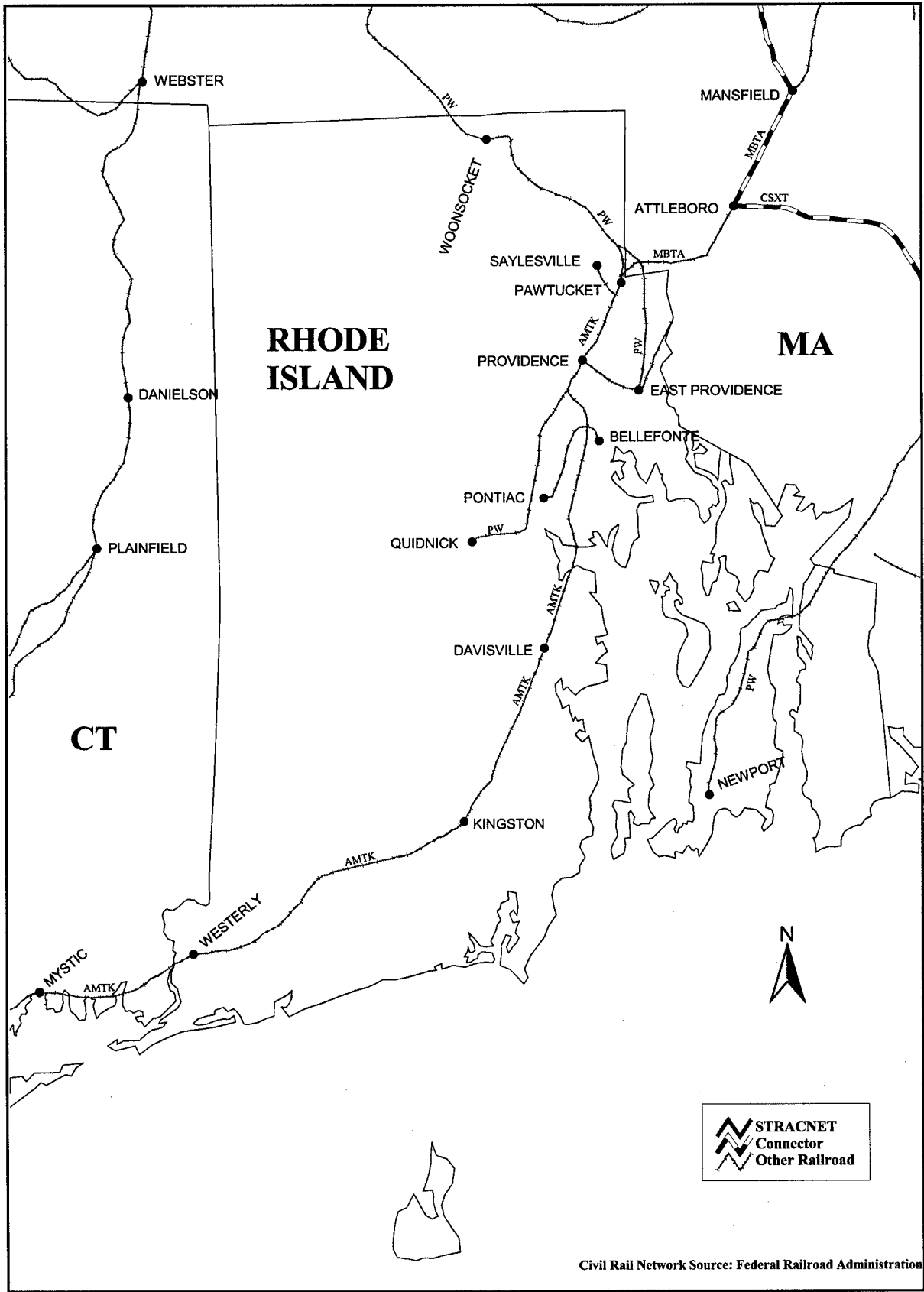
Civil Rail Network Source: Federal Railroad Administration



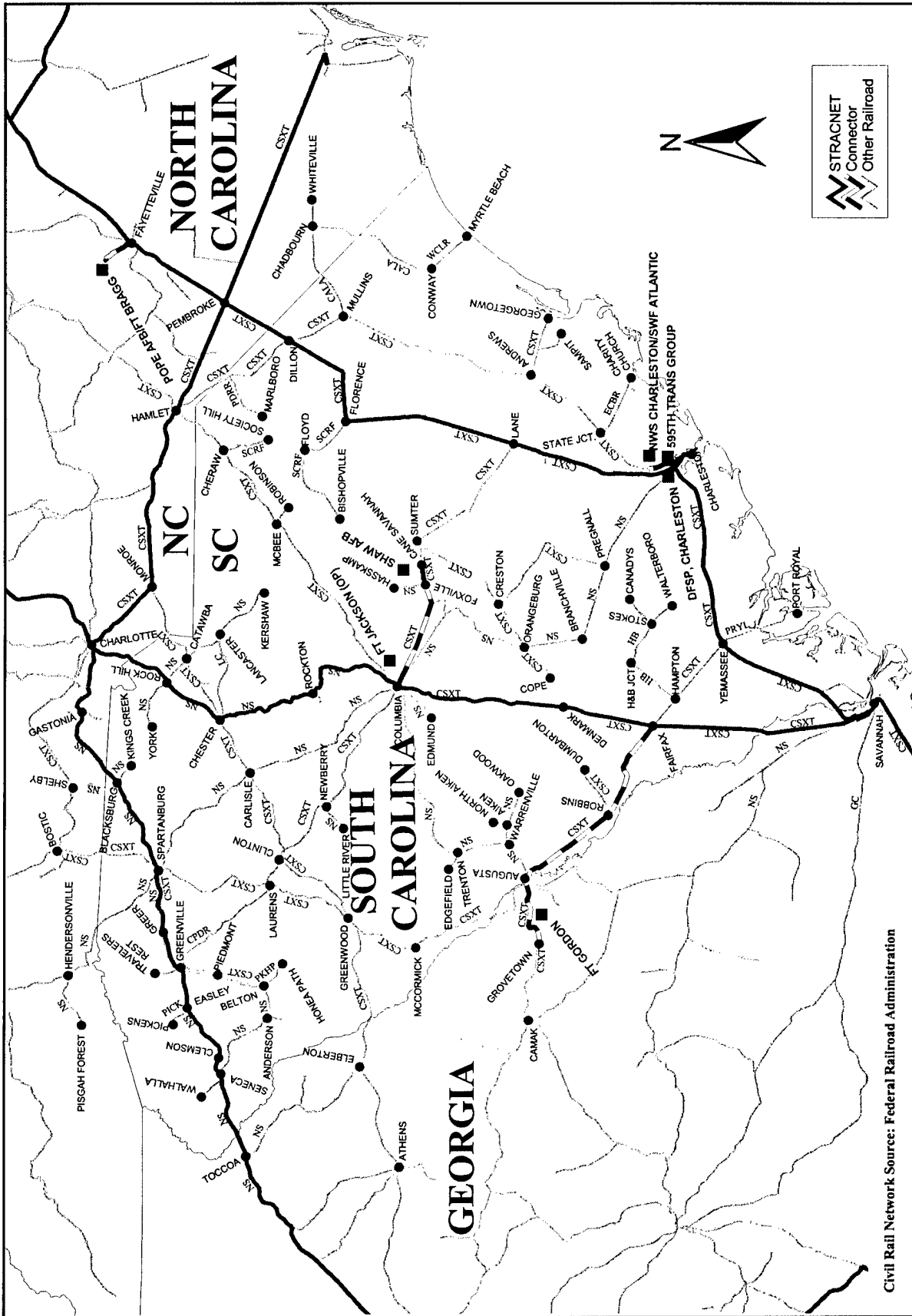


Civil Rail Network Source: Federal Railroad Administration

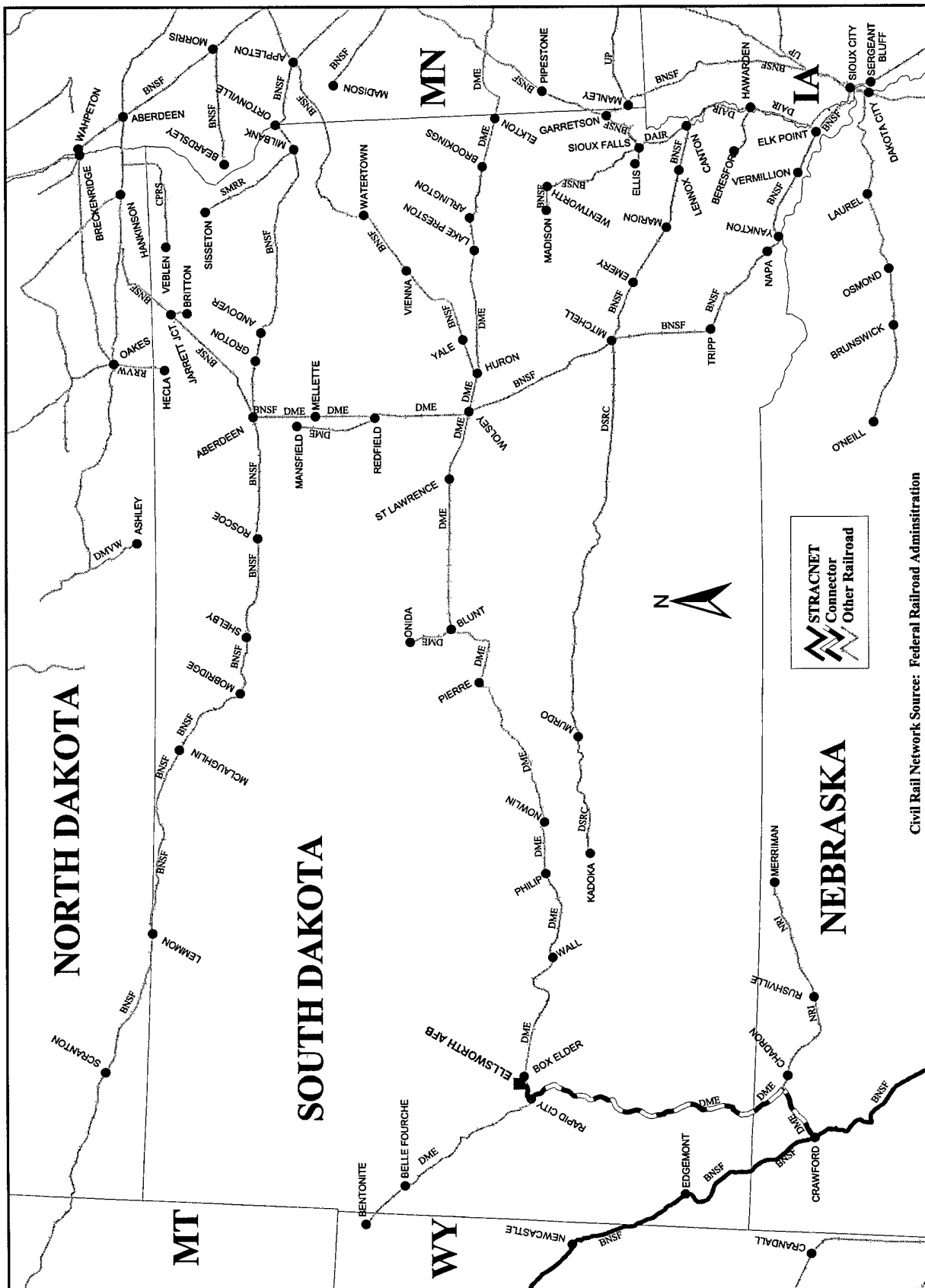




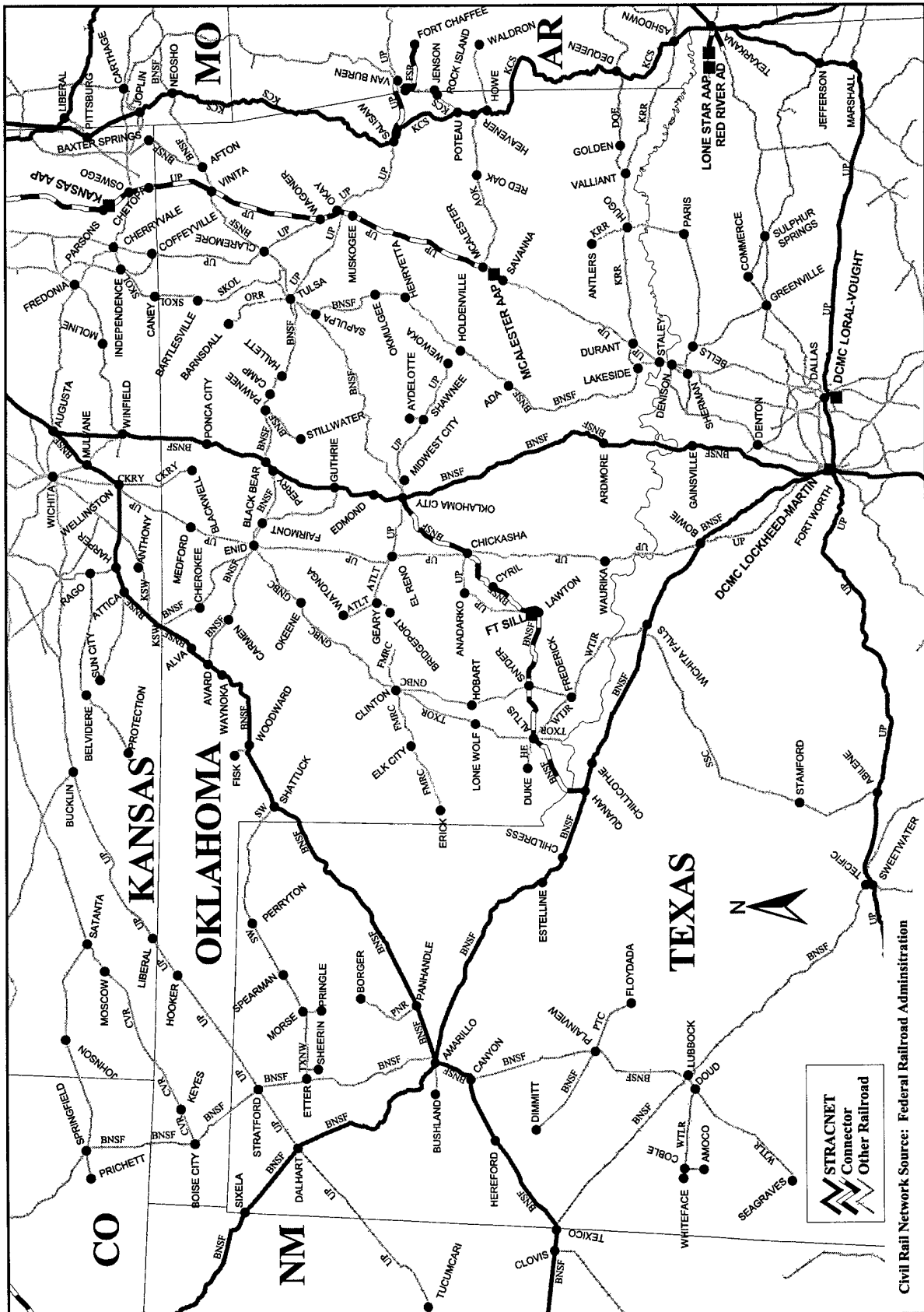
Civil Rail Network Source: Federal Railroad Administration

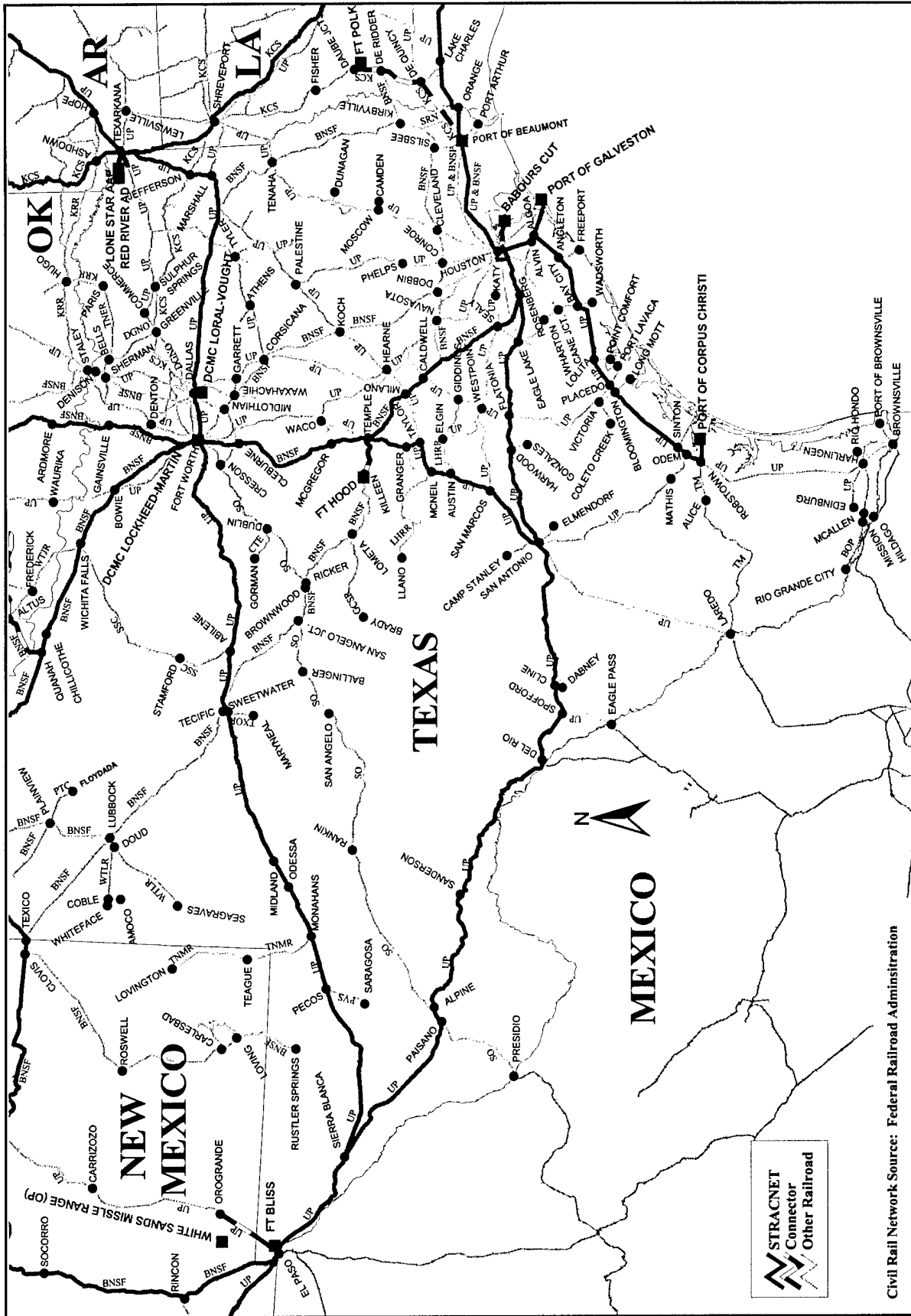


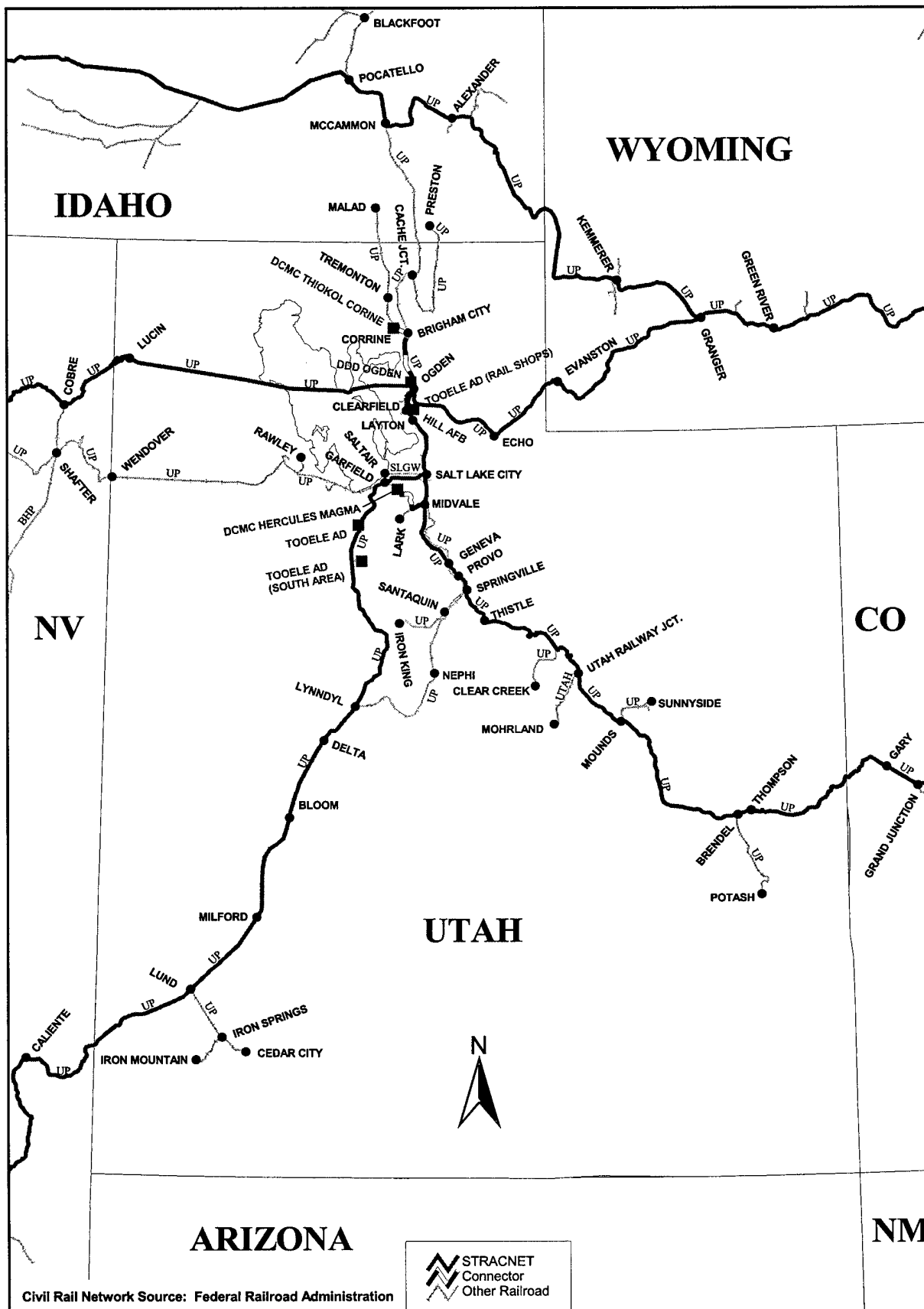
Civil Rail Network Source: Federal Railroad Administration

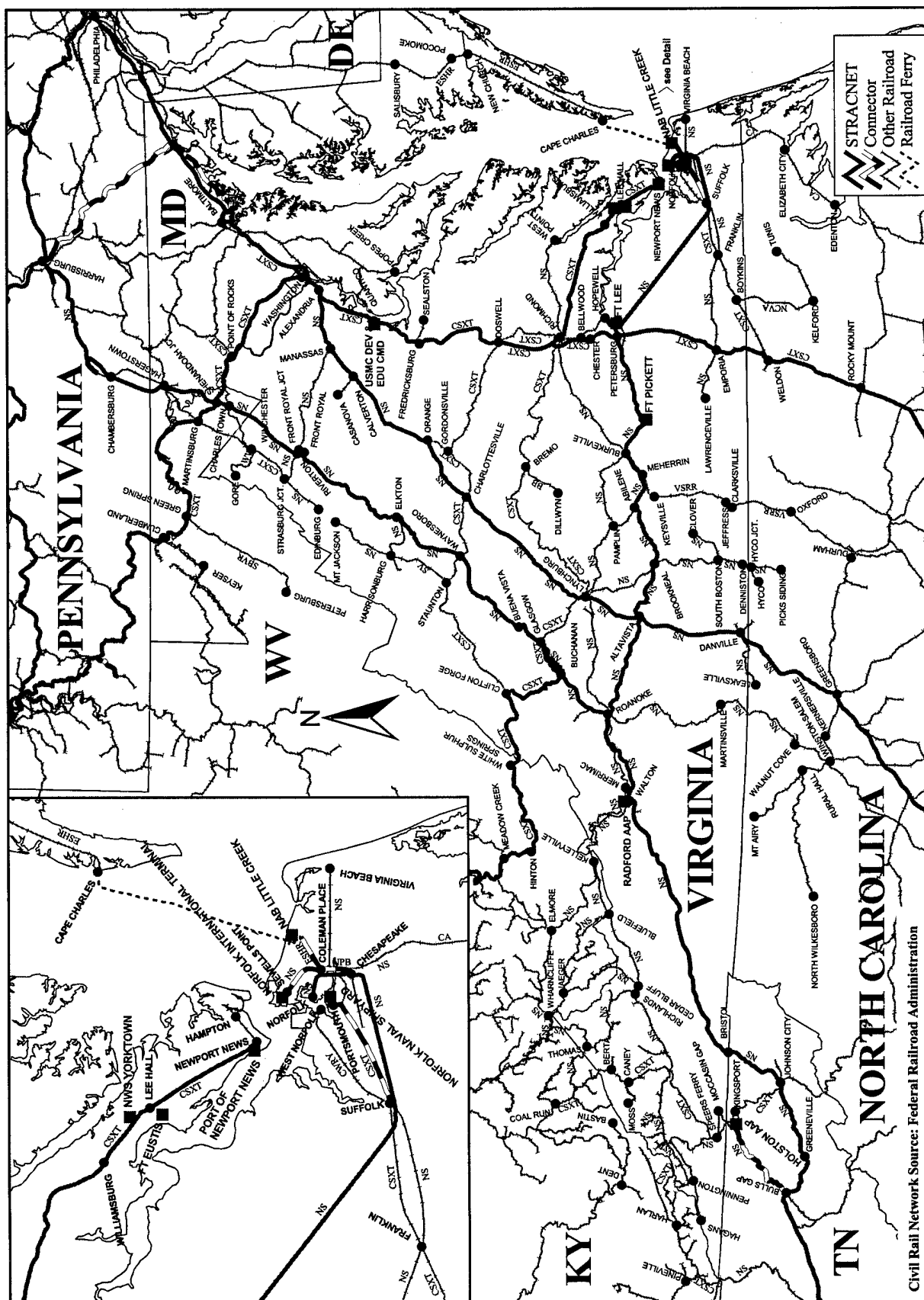


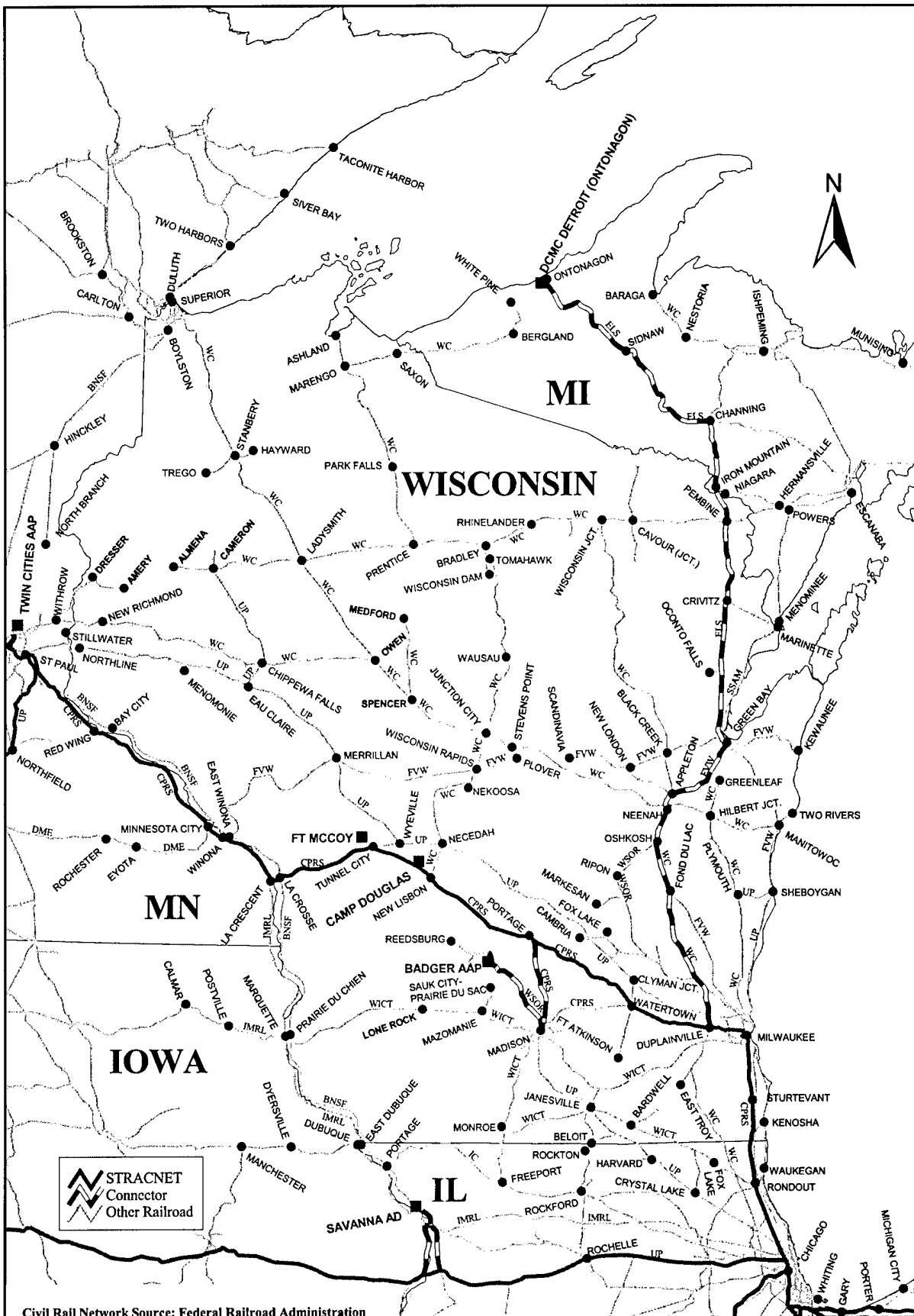
Civil Rail Network Source: Federal Railroad Administration

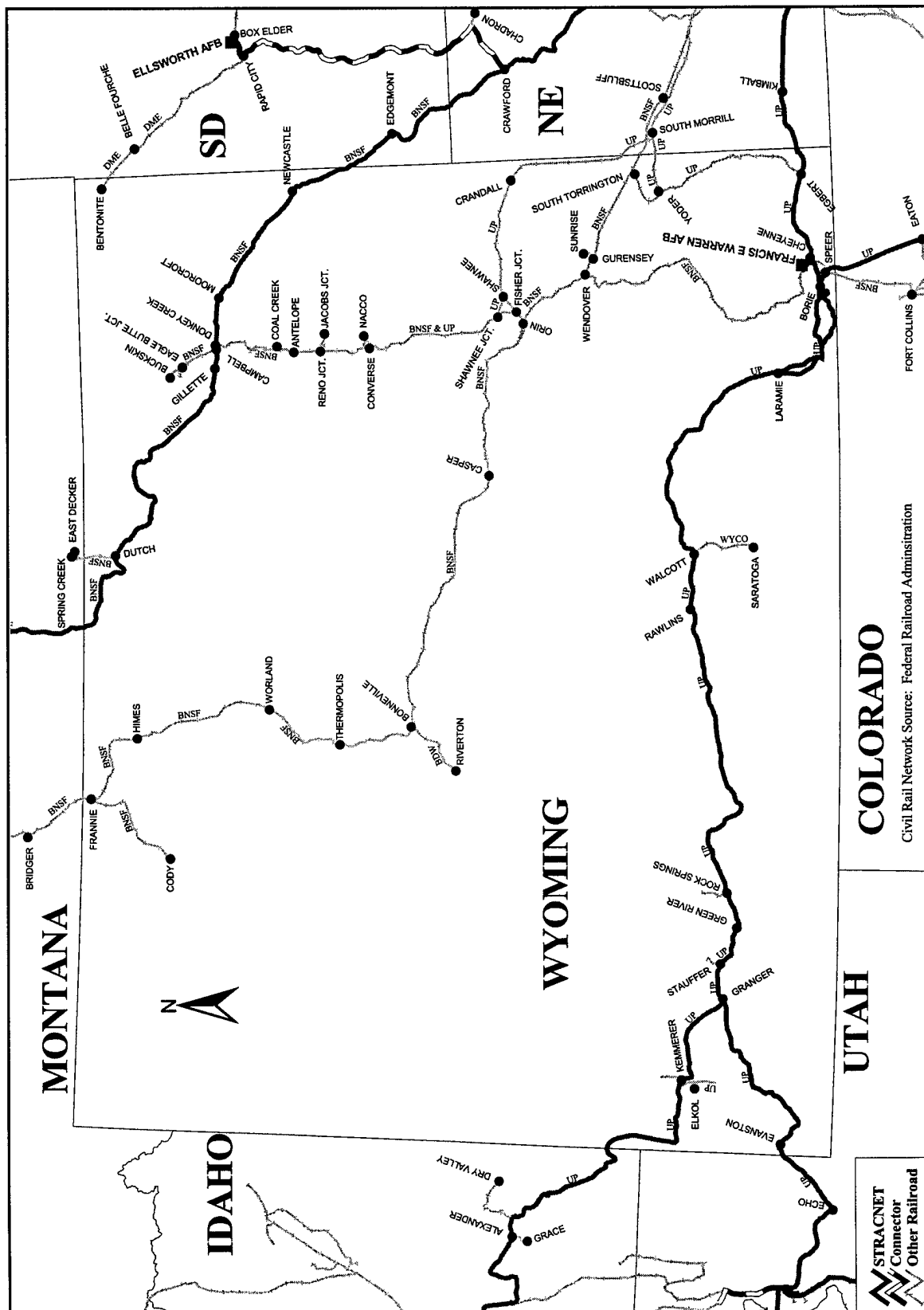












Civil Rail Network Source: Federal Railroad Administration

COLORADO

UTAH

STRACNET
Connector
Other Railroad

APPENDIX B

DEPARTMENT OF DEFENSE INSTALLATIONS AND ACTIVITIES REQUIRING RAIL SERVICE

Appendix B supports Appendix A by identifying the railhead(s) used by each installation. Each of the four Services, as well as the Defense Logistics Agency (DLA), operates installations and activities where rail service is important to mission accomplishment either in peacetime or mobilization, or both. The Services and DLA have identified 171 installations and activities where rail service is important. These installations and activities are listed in the following table, by State. This list includes some installations in the transition of base realignment and closure. In some cases rail service is important to the realignment and closure process. A key to the installation abbreviations is shown at the end of this appendix. Questions on installation status may be referred to MTMCTEA.

Some installations, where rail service is required, are actually served by offpost railheads rather than tracks on the installations themselves. These installations are identified by the symbol "OP" for offpost railhead. However, most installations, where rail service is important, are served by tracks on the installation proper.



ACTIVITY	RAILHEAD
<i>ALABAMA</i>	
Anniston AD	Bynum
Fort McClellan	Fort McClellan
Fort Rucker	Daleville
Port of Mobile	Mobile
<i>ALASKA</i>	
DFSP, Anchorage	Anchorage
Eielson AFB	Eielson AFB
Elmendorf AFB	Anchorage
Fort Richardson	Fort Richardson
Fort Wainwright	Fort Wainwright
<i>ARIZONA</i>	
Camp Navajo	Bellemont
Davis-Monthan AFB	Wilmot
DCMC Hughes Tucson	Aldona
Fort Huachuca (OP)	Davis-Monthan
Yuma Proving Grounds	Blaisdell
<i>ARKANSAS</i>	
Fort Chaffee	Fort Chaffee
Pine Bluff Arsenal	Baldwin
<i>CALIFORNIA</i>	
596th Transportation Group	NWS, Concord
1312th Med Port Cmd	Long Beach
Beale AFB	Erle
Camp Roberts	McKay
DDD San Joaquin, Sharpe	Lathrop
DDD San Joaquin, Tracy	Lyoth
Edwards AFB	Edwards
Fort Irwin (OP)	Yermo/Barstow/Manix
Marine Corp Air Ground Combat Center, 29 Palms	Bagdad
Marine Corp Logistics Base, Barstow	Nebo/Yermo
MCAS Miramar	Miramar
MCAS, El Toro	Irvine

ACTIVITY	RAILHEAD
<i>CALIFORNIA (continued)</i>	
MCB, Camp Pendleton	Oceanside
NCBC, Port Hueneme	Port Hueneme
Naval Station and Port of San Diego	San Diego
NWC, China Lake (OP)	Spangler
NWS, Concord	Port Chicago
NWS, Seal Beach	Westminster
Port of Los Angeles	Los Angeles/Long Beach
Riverbank AAP	Riverbank
Sierra AD	Herlong
Vandenberg AFB	Tangair
<i>COLORADO</i>	
Fort Carson	Kelker
Pinion Canyon	Simpson
Rocky Mountain Arsenal	Ladora
<i>CONNECTICUT</i>	
NSB, New London	New London
<i>DELAWARE</i>	
None	
<i>FLORIDA</i>	
Blount Island	Blount Island, Jacksonville
Camp Blanding	Starke
Naval Ordnance Test Unit	Jay Jay
<i>GEORGIA</i>	
DCMC Lockheed, Marietta	Lockair/Sears
Fort Benning	Sand Hill
Fort Gordon	Fort Gordon
Fort Stewart	Walthourville
Hunter AAF	Savannah
Marine Corps Logistics Base, Albany	Dosaga
NSB, Kings Bay	Kings Bay
NSO, (Trident Refit Fac)	Kings Bay
Port of Savannah	Savannah
SWF, Atlantic	Kings Bay

ACTIVITY	RAILHEAD
<i>HAWAII</i>	
None	
<i>IDAHO</i>	
Gowen Field (OP)	Gowen Field
<i>ILLINOIS</i>	
Rock Island Arsenal	Rock Island Arsenal
Savanna Army Depot Activity	Proving Ground
<i>INDIANA</i>	
Crane AAA	Crane
Indiana AAP	Charlestown
Naval Weapons Support Center, Crane	Crane
USPFO IN, Camp Atterbury	Edinburg
<i>IOWA</i>	
Iowa AAP	Middletown
<i>KANSAS</i>	
Fort Riley	Fort Riley
Kansas AAP	Parsons
<i>KENTUCKY</i>	
Blue Grass Army Depot	Fort Estill
Fort Campbell	Hopkinsville
Fort Knox	Fort Knox
<i>LOUISIANA</i>	
Fort Polk	Daube Jct
USPFO LA, Camp Beauregard	Pineville
<i>MAINE</i>	
Naval Shipyard, Portsmouth	Kittery
<i>MARYLAND</i>	
Aberdeen Proving Grounds	Aberdeen
Port of Baltimore	Baltimore
USPFO MD	Havre De Grace
<i>MASSACHUSETTS</i>	
Camp Edwards	North Falmouth
Otis AFB	North Falmouth

ACTIVITY	RAILHEAD
<i>MICHIGAN</i>	
Camp Grayling	Grayling
DCMC Detroit, Lake Shore Inc	Ontonagon
Detroit Arsenal Tank Plant	Warren
<i>MINNESOTA</i>	
Camp Ripley	Camp Ripley
Twin Cities AAP	New Brighton
<i>MISSISSIPPI</i>	
Camp Shelby	Camp Shelby
NCBC, Gulfport	NCBC, Gulfport
<i>MISSOURI</i>	
Fort Leonard Wood	Bundy Jct
Lake City AAP	Independence
USPFO MO	Jefferson City
<i>MONTANA</i>	
Malmstrom AFB	Falls Yard
<i>NEBRASKA</i>	
None	
<i>NEVADA</i>	
Hawthorne AD	Churchill/Thorne
<i>NEW HAMPSHIRE</i>	
Naval Shipyard, Portsmouth	Kittery, Me
<i>NEW JERSEY</i>	
600th Transportation Group	Bayonne
Fort Dix (OP)	Morrisville, PA
NWS, Earle	Earle
Port of New York/New Jersey	Elizabethport, NJ
<i>NEW MEXICO</i>	
Kirtland AFB	Albuquerque
White Sands Missile Range	Las Cruces
<i>NEW YORK</i>	
DCMC Syracuse, Lockheed Federal Systems	Owego
Fort Drum	Calcium
Seneca AD	Kendaia
Watervliet Arsenal	Watervliet

ACTIVITY	RAILHEAD
<i>NORTH CAROLINA</i>	
597th Transportation Group	Leland/Southport
DFSP, Selma	Selma
DFSP, Air Force Pipeline, Inc.	Goldsboro
Fort Bragg	Fort Junction, Fayetteville
MCAS, Cherry Point	Havelock
MCB, Camp Lejeune	Havelock
Pope AFB	Fort Junction, Fayetteville
Port of Morehead City	Morehead City
Port of Wilmington	Wilmington
<i>NORTH DAKOTA</i>	
Grand Forks AFB	Emerado
<i>OHIO</i>	
Camp Perry	Port Clinton
DCMC Dayton, Goodyear Tire/Rubber Co	St Mary's
DRMC General Dynamics, Lima, Ohio	Lima
Ravenna AAP	Atlas
<i>OKLAHOMA</i>	
Fort Sill	Fort Sill
McAlester AAP	Savanna
<i>PENNSYLVANIA</i>	
DCMC Pittsburgh, United Defense	Lemont Furnance
DCMC Pittsburgh, Westinghouse	Cheswick
Fort Indiantown Gap (OP)	Harrisburg
Letterkenny AD	Culbertson
NAVICP, Mechanicsburg	Mechanicsburg
Scranton AAP	Scranton
Tobyhanna Army Depot	West Tobyhanna
<i>RHODE ISLAND</i>	
None	
<i>SOUTH CAROLINA</i>	
595th Transportation Group	Charbulk
DFSP, Charleston	Charbulk
Fort Jackson (OP)	Reed

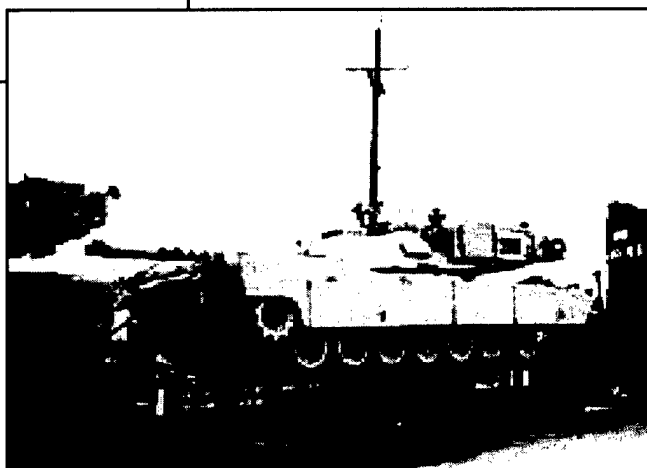
ACTIVITY	RAILHEAD
<i>SOUTH CAROLINA (continued)</i>	
NWS, Charleston	Inness
Shaw AFB	Cane Savannah
SWF, Atlantic Det Charleston	Inness
<i>SOUTH DAKOTA</i>	
Ellsworth AFB	Box Elder
<i>TENNESSEE</i>	
Arnold Air Force Station	Tullahoma
Holston AAP	Holston
Milan AAP	Milan
<i>TEXAS</i>	
Barbours Cut	Houston
Port of Beaumont	Beaumont
DCMC, Lockheed Martin Tactical Aircraft Sytems, Fort Worth	Benbrook
DCMC, Loral Vought, Dallas, Texas	Grand Prairie
Fort Bliss	El Paso
Fort Hood	Killeen
Lone Star AAP	Defense
Port of Corpus Christi	Corpus Christi
Port of Galveston	Galveston
Red River AD	Defense
<i>UTAH</i>	
DCMC, Hercules, Magna, UT	Bacchus
DCMC, Thiokol Corine	Corinne
Def Dist Depot Ogden	Ogden
Hill AFB	Hill AFB
Tooele AD	Warner
Tooele AD (Rail Shops)	Arsenal
Tooele AD (South Area)	Clover
<i>VERMONT</i>	
None	

ACTIVITY	RAILHEAD
<i>VIRGINIA</i>	
Fort Eustis	Lee Hall
Fort Lee	Petersburg
Fort Pickett	Blackstone
Marine Corps Development And Education Command	Quantico
Naval Amphibious Base, Little Creek	Little Creek
Naval Shipyard, Norfolk	Portsmouth
NWS, Yorktown	Lee Hall
Port of Newport News	Newport News
Port of Norfolk	Sewell's Point, Norfolk
Radford AAP	Cowan
<i>WASHINGTON</i>	
833rd Transportation Battalion	Seattle
DCMC Boeing, Seattle	Seattle
Fort Lewis	Fort Lewis
McChord AFB (OP)	Mobase
Naval Shipyard, Puget Sound	Shelton
NSB, Bangor	Shelton
Port of Tacoma	Tacoma
SWF, Pacific	Shelton
Yakima Firing Center	Pomona
<i>WEST VIRGINIA</i>	
None	
<i>WISCONSIN</i>	
Badger AAP	Baraboo
Fort McCoy	Fort McCoy
USPFO WI (Camp Douglas)	Camp Douglas
<i>WYOMING</i>	
F E Warren AFB	Warren AFB

ABBREVIATION KEY	
AAA	Army Ammunition Activity
AAP	Army Ammunition Plant
AD	Army Depot
AFB	Air Force Base
AFS	Air Force Station
DCMC	Defense Contract Management Command
DDD	Defense Distribution Depot
DFSP	Defense Fuel Supply Point
MCAS	Marine Corps Air Station
MCB	Marine Corp Base
NAB	Naval Amphibious Base
NAS	Naval Air Station
NAVICP	Naval Inventory Control Point
NCBC	Naval Construction Battalion Center
NSB	Naval Submarine Base
NSC	Naval Supply Center
NWC	Naval Weapons Center
NWS	Naval Weapons Station
OP	Offpost Railhead
SWF	Surface Warfare Facility
USPFO	United States Property and Fiscal Office

APPENDIX C

DEPARTMENT OF DEFENSE INSTALLATIONS AND ACTIVITIES REQUIRING RAIL SERVICE AND SERVED BY LOW DENSITY BRANCH LINES



ARMY	
Fort McClellan	AL
Fort Rucker	AL
Fort Wainwright	AK
Fort Chaffee	AR
Camp Blanding	FL
Gowen Field	ID
Rock Island Arsenal	IL
Crane AAA	IN
Indiana AAP	IN
USPFO LA, Camp Beauregard	LA
Camp Edwards	MA
Camp Grayling	MI
Detroit Arsenal Tank Plant	MI
Camp Ripley	MN
Twin Cities AAP	MN
Camp Shelby	MS
Hawthorne AD (OP)	NV
600th Transportation Group	NJ
Fort Drum	NY
Seneca AD	NY
Watervliet Arsenal	NY
597th Transportation Group	NC
Fort Bragg	NC
Port of Morehead City	NC
Scranton AAP	PA
595th Transportation Group	SC
Tooele AD (Rail Shops)	UT
Fort Lewis	WA
Yakima Firing Center	WA
Badger AAP	WI
Total 30	

NAVY	
NCBC, Port Hueneme	CA
NWC, China Lake (OP)	CA
NWS, Seal Beach	CA
NSB, New London	CT
NSB, Kings Bay	GA
NSO, (Trident Refit Facility)	GA
SWF, Atlantic	GA
Naval Weapons Support Center, Crane	IN
Naval Shipyard, Portsmouth	ME/NH
NCBC, Gulfport	MS
NWS, Earle	NJ
NAVICP, Mechanicsburg	PA
NWS, Charleston	SC
SWF, Atlantic Det Charleston	SC
Naval Amphibious Base, Little Creek	VA
Naval Shipyard, Puget Sound	WA
NSB, Bangor	WA
SWF, Pacific	WA
TOTAL 18	

AIR FORCE	
Eielson AFB	AK
Otis AFB	MA
Malmstrom AFB	MT
Pope AFB	NC
Ellsworth AFB	SD
Arnold Air Force Station	TN
Hill AFB	UT
McChord AFB (OP)	WA
TOTAL 8	

MARINE CORPS	
Blount Island	FL
Marine Corps Logistics Base, Albany	GA
MCAS, Cherry Point	NC
MCB, Camp Lejeune	NC
TOTAL 4	

DEFENSE LOGISTICS AGENCY	
DCMC Detroit, Lake Shore Inc.	MI
DFSP, Air Force Pipeline, Inc	NC
DCMC Dayton, Goodyear Tire/Rubber Co	OH
DRMC General Dynamics, Lima	OH
DCMC Pittsburgh, United Defense	PA
Tobyhanna Army Depot*	PA
DFSP, Charleston	SC
DCMC Hercules, Magna	UT
DCMC Thiokol, Corine	UT
DCMC Boeing, Seattle	WA
*Army installation; rail service is important to DLA tenant	
TOTAL 10	

ABBREVIATION KEY	
AAA	Army Ammunition Activity
AAP	Army Ammunition Plant
AD	Army Depot
AFB	Air Force Base
AFS	Air Force Station
DCMC	Defense Contract Management Command
DDD	Defense Distribution Depot
DFSP	Defense Fuel Supply Point
MCAS	Marine Corps Air Station
MCB	Marine Corp Base
NAB	Naval Amphibious Base
NAS	Naval Air Station
NAVICP	Naval Inventory Control Point
NCBC	Naval Construction Battalion Center
NSB	Naval Submarine Base
NSC	Naval Supply Center
NWC	Naval Weapons Center
NWS	Naval Weapons Station
OP	Offpost Railhead
SWF	Surface Warfare Facility
USPFO	United States Property and Fiscal Office

