RAILPLAN
SOUTH DAKOTA
1980

Department of Transportation

Division of Railroads

SEPTEMBER 1980

prepared by:
SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION
DIVISION OF RAILROADS

with assistance from:
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UNITED RESEARCH & DEVELOPMENT CORPORATION

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FOREWORD

As the State of South Dakota enters the 1980s, it is faced with the prospect of losing much of the its rail system and much of its rail service. The recent increase in crop production indicates an expanded potential for increased rail carloadings. At present, however, the State's rail network is not capable of efficiently serving local shipper needs. Rail service has deteriorated because of years of deferred maintenance over primarily light density lines. This is reflected in the numerous slow orders and weight restrictions applied to much of South Dakota's rail system. Over most of these lines, this prohibits high speed operations using the larger, more efficient car types.

As South Dakota rail service has deteriorated, many shippers have turned to other available modes, particularly motor carriers. These exempt carriers of agricultural commodities provide competitive service to both local and distant overland markets. The trucking industry in South Dakota has benefited from the inability of the regulated rail carriers serving the State to earn sufficient revenues to properly maintain their tracks.

The rail network serving South Dakota and much of the Midwest (primarily light density lines) serves numerous small communities uniformly distributed along the lines. The lines are typically composed of light rail (60-85 pounds per yard) that have insufficient ballast and poor tie conditions. Many of these lines generate insufficient revenues to support required maintenance efforts, let alone rehabilitation efforts. In such cases, the railroad continues to operate the line only until the remaining traffic decreases to a level sufficient to justify abandonment.

The Chicago, Milwaukee, St. Paul and Pacific Railroad's (the Milwaukee Road) problems of deteriorating track, service, and traffic levels resulted in 1977 in the filing of a bankruptcy petition and in 1980 the subsequent embargo of three-quarters of its system. Of these embargoed miles, 852.8 miles are located in South Dakota, representing 27% of the South Dakota rail system as of January 1978. Combining this recent loss of track mileage in South Dakota with other rail line abandonments in the State since July of 1976, produces a total rail system decrease of 1,717.7 miles. This leaves 1,706.6 miles of line still operating in the State; however, 26.0 percent of this is potentially subject to abandonment within 3 years.

Note: The numbers in brackets included with chapter and section headings and exhibit titles refer to the chapter, section, and subsection of the Code of Federal Regulations under Title 49 that require the information.

Despite the current decline of rail mileages and consolidation of rail facilities in the State, rail transportation remains an essential source of accessibility for both shippers and receivers located in South Dakota, particularly for elevator operators, fertilizer distributors, and utility companies. If the State's rail network is allowed to continue to deteriorate and shrink, the effect could be slower future economic growth. This could put South Dakota's industry at a competitive disadvantage with the industry of neighboring states which retain an adequate rail network.

The State of South Dakota, having recognized the possible threat to its economic development potential arising from the further loss of rail services, is working through its Department of Transportation, Division of Railroads, to develop and implement a comprehensive rail assistance program. This program is designed to identify and maintain essential rail services and facilities through the application of available resources, including those of federal, state, and local governments, railroads, and shippers. This report, while updating the 1978 RAILPLAN SOUTH DAKOTA, focuses on the immediate efforts needed to stop the cycle of line deterioration on essential rail lines in the State while alleviating the effects of service abandonment of nonessential rail lines. The action plan called for by this report describes the initial steps that the State should take to assure itself of continued rail service accessibility. The drastic events of the past few years, culminating in the 853-mile rail line embargo by the Milwaukee Road call for decisive responses. The recommended program of projects to be included in this report upon selection by the State, will provide an affirmative response to the current crisis and will place the State in a strong position from which to protect the public interest concerned with the provision of rail service in South Dakota.

This program will continue in the new fiscal year beginning October 1, 1980, because at that time the lines currently being considered for acquisition by South Dakota will be studied as the primary candidates for Federal assistance. It is planned that early in 1981, an outside rail operator will begin service over these lines. At that time, the lines will become eligible for Section 803 project assistance. The 1980 program is aimed at reducing the impacts of line abandonments and eliminating problems affecting the current South Dakota Class I-operated rail lines that are already eligible for Section 803 project assistance.

RAILPLAN SOUTH DAKOTA 1980 addresses the concerns of the Federal Railroad Administration regarding past rail plans produced by the Division of Railroads, as described in its letter of March 21, 1978. Specifically, the RAILPLAN references the appropriate format of the regulations contained in 49 CFR 266.15 (b) and (c); references to the State's Comprehensive Transportation Plan and Multi-Model Planning Process are included in Chapter I; detailed railroad maps illustrating operator and traffic information are contained in Chapter II; a list of current abandonment applications is contained in Chapter II. Information regarding clearance restrictions in South Dakota is no longer required

as part of the state rail plan. Therefore this section no longer appears in the RAILPLAN. Project selection criteria are applied as described in Chapter III. The weighting of project prioritization criteria will be described once the State selects its program of projects for 1980. Further comments are welcome as part of the State's efforts to continually update and improve its RAILPLAN. These comments should be addressed to:

Mr. James R. Myers, Director
Division of Railroads
South Dakota Department of Transportation
Transportation Building
Pierre, South Dakota 57501
Phone (605) 773-3710

EXECUTIVE SUMMARY

BACKGROUND

South Dakota is facing a railroad crisis. Inadequate traffic levels, unsafe track conditions, and carrier bankruptcies have resulted in the abandonment of over 1,700 miles of track since January 1976. The 1,707 miles of rail line still operated in South Dakota represent a 61 percent reduction from the all-time high of 4,420 miles once operated in the State. Although the Milwaukee bankruptcy is responsible for the majority of this reduction, the trend is expected to continue.

Four railroads currently operate in South Dakota. These include the Milwaukee Road (347.2 miles), the Chicago and North Western (C&NW) (826.6 miles - 74.0 miles via trackage rights over the abandoned Milwaukee line from Aberdeen to Wolsey), the Burlington Northern (BN) (466.5 miles - 7.7 miles via track acquired from the Milwaukee between Madison and Wentworth), and the Soo Line (66.3 miles). The Illinois Central Gulf (ICG) is in the process of abandoning its remaining track in South Dakota. Exhibit A shows track that each railroad has designated as either potentially subject to abandonment within 3 years (Category 1), pending abandonment approval (Category 3), and all other rail lines operating in the State (Category 2 and Category 5). Of the rail mileage in South Dakota, 25 percent is Category 1, 2 percent is Category 2, 2 percent is Category 3, and 71 percent is Category 5.

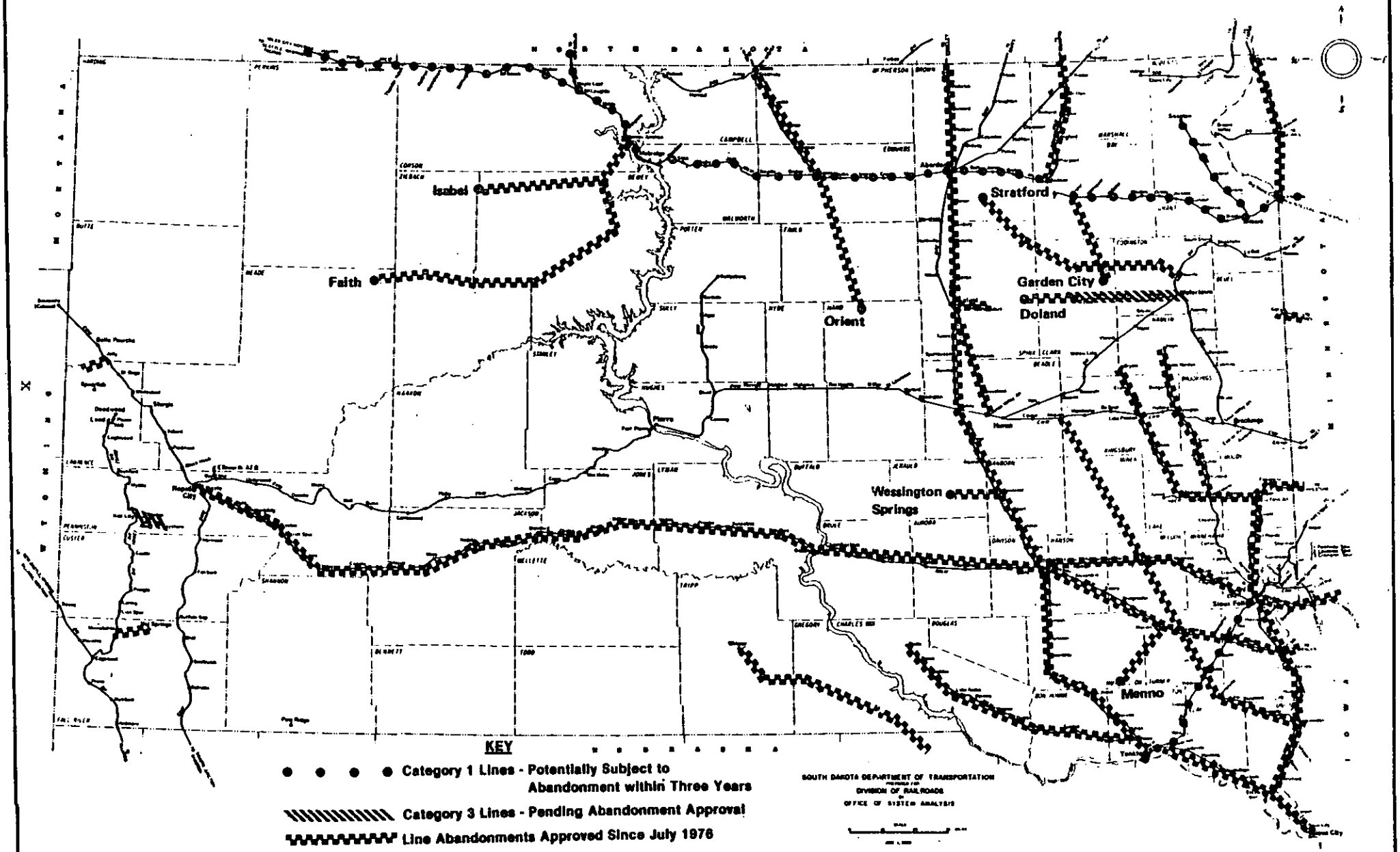
When the Milwaukee Road's bankruptcy petition was filed on December 19, 1977, they operated one half of the State's rail mileage. The Court-appointed Trustee submitted a reorganization plan on April 23, 1979, proposing limiting operations to 1,722 miles of track. None of this system was located in South Dakota, which meant that service would cease on nearly 1,400 miles of railroad in the State.

Governor William J. Janklow met with the Milwaukee's Trustee and recommended that the railroad add the Miles City extension to its proposed system. In consideration for keeping this 681-mile extension in the operating system, the Governor pledged to raise $2.3 million to be applied to the immediate rehabilitation of specified segments of this line. The Milwaukee Trustee accepted the Governor's proposal. Application was made and the FRA approved the use of $1,860,000 of federal monies from the entitlements available to the States of South Dakota, North Dakota and Minnesota. Rail users on the line provided the required match for the project which was completed during the 1979 construction season.

Even though service has been retained on the Miles City extension, nearly 1,000 miles of the remaining Milwaukee Road track in South Dakota was embargoed and service has ceased. Subsequently, the embargoed lines have been approved for abandonment.

EXHIBIT A

SOUTH DAKOTA RAIL LINE ABANDONMENTS AND LINES THREATENED BY ABANDONMENT



The State of South Dakota supports the reorganization effort of the Milwaukee Road and endorses the Milwaukee II structure. The State is currently pursuing methods of restoring service to some former Milwaukee Road lines recently approved for abandonment.

ORGANIZATIONAL STRUCTURE

The South Dakota Divison of Railroads is one of the four divisions reporting to the Secretary of Transportation, as shown on the organizational chart of the following page (Exhibit B).

Three appointed organizational bodies contribute to the institutional objectives of the Railroad Division. The Railroad Advisory Commission provides the initial public participation and input to the planning process. The Railroad Authority is a semi-autonomous publicly-owned enterprise empowered to own and/or maintain railroad facilities. The Railroad Board is the governing authority for the Division in matters of operation, management, finance, marketing, and development of State controlled rail service.

The Division is responsible for performing the actual planning and analysis functions involved in maintaining an up-to-date State rail plan, and supporting the functions of the Rail Authority. This includes the collection, analysis, and evaluation of data pertaining to rail lines and services in South Dakota. The South Dakota Division of Railroads is the state agency designated by the Governor to receive and expend federal funds for rail related planning and projects.

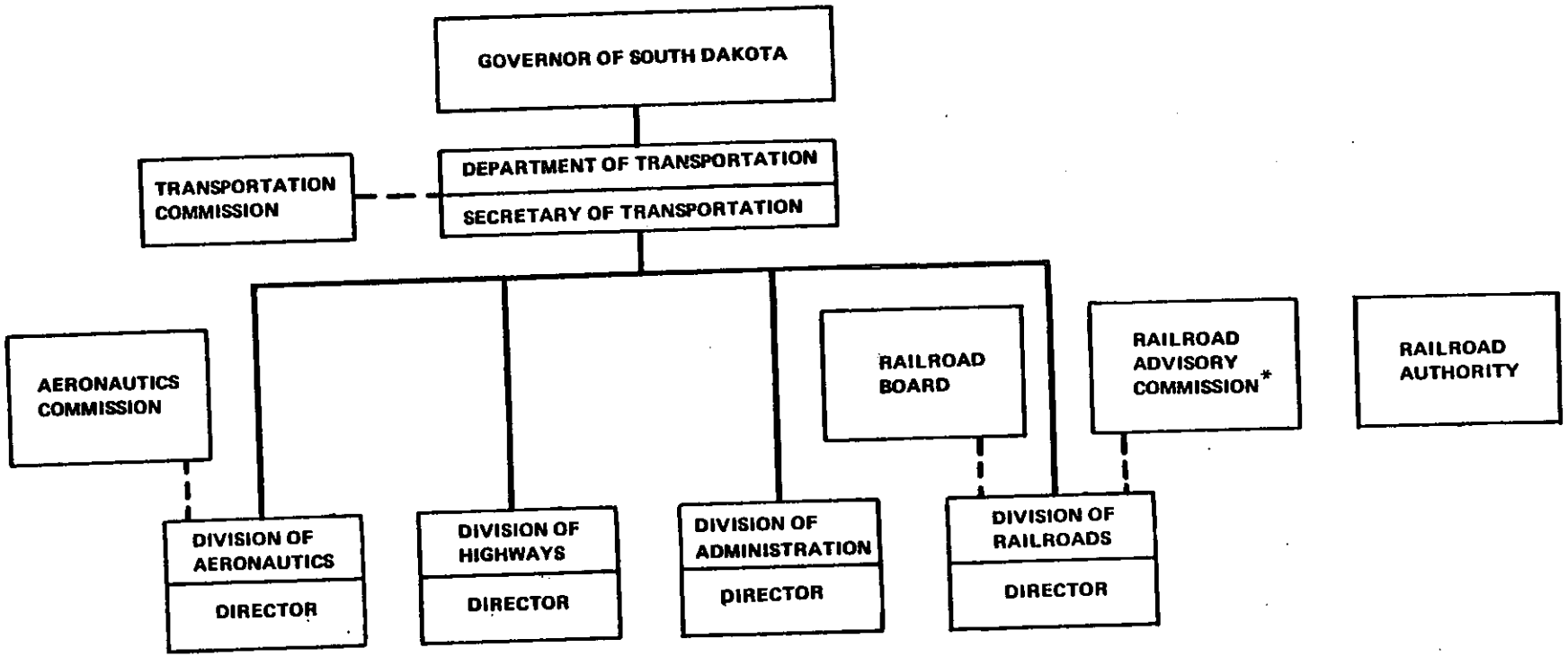
RAIL TRAFFIC VOLUMES

Exhibit C lists the total number of carloads, originating and terminating in South Dakota, by railroad and commodity for 1979. Milwaukee traffic represents 50 percent of the total origins and terminations with 54,277 carloads. Chicago & North Western, Burlington Northern, Soo Line, and Illinois Central Gulf accounted for 31 percent, 15 percent, 2 percent and 2 percent respectively.

The major commodities moving by rail to or from South Dakota shippers include farm products, coal, non-metallic minerals, food and kindred products, lumber and wood products, and stone, clay, and glass products. In 1979, as was the case in 1978, more than 55% of the total commodities were farm products and coal. Coal carloads have expanded markedly since 1973 with the opening of the Big Stone Power Plant at Big Stone City. The volume of farm products reflects the drought period in the mid 1970's decreasing from 49,231 carloads in 1973 to 17,307 in 1976 before rebounding to 30,450 carloads in 1979.

EXHIBIT B

ORGANIZATIONAL CHART
SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION



*Commission members:
Mr. Lawrence Lawrenson–Beresford
Mr. LaVerne Maher–Huron
Mr. William Nash–Rapid City
Mr. George Nikolas–Aberdeen
Mr. Michael Vehle–Mitchell

EXHIBIT C

TOTAL NUMBER OF CARLOADS BY COMMODITY AND RAILROAD ORIGINATING AND TERMINATING IN SOUTH DAKOTA 1979

STCC CODE	COMMODITY DESCRIPTION	MILW RD	C&NW	BN	SOO	ICG	TOTAL	
							CARS	% OF TOTAL
01	Farm Products	13,747	8,577	5,814	2,422	90	30,450	28%
09	Fresh Fish & Marine Products	–	–	6	–	–	6	–
10	Metallic Ores	–	–	1	–	–	1	–
11	Coal	27,523	87	2,088	1	–	29,699	27
14	Non-metallic Minerals except Fuels	3,597	2,875	950	–	69	7,491	7
19	Ordance & Accessories	2	2	1	–	2	7	–
20	Food & Kindred Products	1,224	2,413	1,703	–	–	5,340	5
21	Tobacco Products	3	6	–	–	–	9	–
22	Basic Textiles	9	8	21	19	–	57	–
23	Apparel & Other Textiles	2	–	–	–	–	2	–
24	Lumber & Wood Products	1,435	5,112	897	1	38	7,483	7
25	Furniture & Fixtures	115	144	116	–	3	378	–
26	Pulp, Paper & Allied Products	401	414	602	–	6	1,423	1
27	Printed Matter	–	1	–	–	–	1	–
28	Chemicals & Allied Products	1,630	841	812	107	59	3,449	3
29	Petroleum & Coal Products	379	978	1,016	4	2	2,378	2
30	Rubber & Miscellaneous	38	139	118	–	–	296	–
31	Leather Products	–	1	–	–	–	1	–
32	Stone, Clay & Glass Products	2,179	11,222	449	1	3	13,904	13
33	Primary Metal Products	583	306	435	74	2	1,399	1
34	Fabricated Metal Products	50	22	44	4	–	120	–
35	Machinery Except Electrical	284	281	130	3	–	678	1
36	Electrical Machinery & Supplies	25	93	30	–	14	162	–
37	Transportation Equipment	131	12	247	–	2	392	–
38	Instrument Photo & Optical Goods	–	–	–	–	–	–	–
39	Miscellaneous Manufactering Products	–	30	–	–	–	30	–
40	Waste & Scrap Materials	654	332	75	–	–	1,061	1
41	Miscellaneous Freight Shipments	29	7	3	–	–	39	–
42	Containers	45	18	4	–	7	74	–
44	Freight Forwarder Traffic	–	–	8	–	242	250	–
45	Shipper Association Traffic	46	8	269	–	558	883	1
46	Miscellaneous Mixed Shipments	164	213	196	1	599	1,173	1
	GRAND TOTAL	54,277	34,138	15,885	2,537	1,696	108,633	100%

SOURCE: Annual Reports of the Railroads to the Interstate Commerce Commission.

When comparing originating to terminating carloads by railroad between 1973 and 1979 (Exhibit D), it is apparent that in 1979 the total traffic for all railroad carriers was evenly split. Since 1973, the percent of originating carloads has decreased from a rate of 66 percent of the total traffic to 51 percent in 1979. This is due primarily to the continuing diversion of originating grain movements to motor carriers and the significant increase in terminating coal traffic destined for the Big Stone Power Plant.

RECENT STATE ACTION

Legislative action at the state level has provided significant opportunities for solving the railroad problems affecting South Dakota. The 1978 South Dakota State Legislature passed two important and timely pieces of legislation to aid railroads. The first bill was patterned after the "Iowa Plan." This set the mechanism whereby the state could invest monies in a cooperative rehabilitation program upon which the state, shippers and railroad each share 1/3 of the cost incurred in rehabilitating a line. The second bill made it possible for local units of government to form regional railroad authorities enabling them to share in the "Iowa Plan" or to enter into a project on their own.

The 1979 State Legislature was instrumental in increasing the manpower allocation and budget for the Division of Railroads. Further, the legislature transferred certain railroad regulatory functions involving the statutory authority to intervene in railroad matters from the Public Utilities Commission to the Department of Transportation. This legislation provides the Department of Transportation with the planning, project implementation, and legal authority to address railroad matters in South Dakota.

The 1980 State Legislature created the South Dakota Railroad Authority whose duties are to plan, establish, acquire, develop, construct, purchase, enlarge, maintain, equip, and protect railroad facilities deemed necessary to the State. The appropriation of $25 million being raised by a 1 percent sales tax increment, was authorized for the Authority to implement the purchase plan. This tax will to be rescinded by July 1, 1981, or upon collection of the necessary funds, not to exceed $25 million.

A core system of 429 miles and local option lines of 825 miles were identified as the maximum mileage that could be acquired. The Authority will purchase the lines in the fall of 1980, with service restoration on the core system beginning in the spring of 1981. Legislative approval is required before operations can be restored.

The 1980 legislation empowered the Division of Railroads to provide planning assistance to the Authority and arrange and coordinate rail service on lines acquired, leased or controlled by the State. It also created the South Dakota State Railroad Board, composed of seven members, to manage the purchased system.

EXHIBIT D

NUMBER OF CARLOADS OF COMMODITIES ORIGINATING AND TERMINATING IN SOUTH DAKOTA*

RAILROAD		1973	1974	1975	1976	1977	1978	1979
MILWAUKEE ROAD								
	Originating	29,360	27,360	17,951	13,032	15,459	19,623	20,196
	Terminating	14,174	12,773	26,492	30,861	30,728	36,823	34,081
	Total	43,534	40,133	44,443	43,893	46.187	56,446	54,277
CHICAGO AND NORTH WESTERN								
	Originating	39,203	35,389	25,198	21,316	20,247	22,920	24,717
	Terminating	17,045	15,829	13,352	11,679	11,184	9,654	9,421
	Total	56,248	51,218	38,550	32,995	31,431	32,574	34,138
BURLINGTON NORTHERN								
	Originating	10,834	8,977	6,589	5,781	5,355	7,013	7,458
	Terminating	10,877	10,419	9,095	9,900	8,496	8,506	8,427
	Total	21,711	19,396	15,684	15,681	13,851	15,519	15,885
SOO LINE								
	Originating	3,453	2,528	1,954	1,290	1,235	2,171	2,424
	Terminating	211	95	106	106	107	109	213
	Total	3,664	2,623	2,060	1,396	1,342	2,280	2,637
ILLINOIS CENTRAL GULF								
	Originating	1,816	3,625	2,316	1,891	1,346	74	112
	Terminating	1,803	2,389	1,803	1,374	1,579	1.610	1.584
	Total	3,619	6,014	4,119	3,265	2,925	1,684	1,696
TOTAL ALL COMPANIES								
	Originating	84,666	77,879	54,008	43,310	43,642	51,801	54,907
	Terminating	44,110	41,505	50,848	53,920	52,094	56,702	53,728
	Total	128,776	119,384	104,856	97,230	95,736	108,503	108,633

* Includes Bridge Traffic

SOURCE: Annual Reports of the Railroads to the Interstate Commerce Commission.

RAIL SERVICE AND PLANNING POLICIES, OBJECTIVES, AND GOALS

The direction of SOUTH DAKOTA RAILPLAN 1980 is defined by the plan's policies, objectives, and goals for rail service and planning. These policies, objectives, and goals reflect the rail issues affecting South Dakota and the consensus of the Division of Railroads and the Railroad Advisory Commission. The policies define general statements of direction for rail service and planning for South Dakota.

Rail Service and Planning Policies

- Rail users, railroad companies, local governments, and the State need to coordinate their efforts to solve transportation problems in South Dakota.

- The South Dakota DOT encourages the continuation of financially solvent, privately owned and operated rail services in the State. Therefore, the South Dakota DOT will not openly oppose all railroad abandonment applications, but first will consider the potential viability of the line, the social and economic impacts of line abandonment, the local interest in the line, the potential for substitute service, and other factors which may be unique to the line or its service area.

- The South Dakota DOT will support essential rail services which are threatened by abandonment through the use of available public and private funds, where the public interest justifies such assistance. Possible assistance includes acquisition, service continuation, rehabilitation, rail banking, operations improvement, or substitute service.

- The South Dakota DOT will foster the coordination and consolidation of rail services in the State where opportunities exist for improving the efficiency of rail operations.

- The South Dakota DOT will strive to increase the public awareness of rail service issues as they affect the State and to facilitate public involvement in the on-going State rail planning process.

The objectives define more specific courses of action relating to the operation of the South Dakota DOT and the Division of Railroads.

Rail Service and Planning Objectives

- To foster adequate, safe, efficient, and economic transportation services for the movement of persons and goods in South Dakota.

- To integrate the State's transportation system with that of neighboring states and with the national transportation system in order to facilitate interstate and nationwide travel, while also considering state and local needs, desires, and the inherent social, economic, environmental, and land use impacts.

- To integrate the various carriers and modes of transportation in order that they might safely, efficiently, and economically supplement and complement each other in the movement of persons and goods, recognizing the inherent advantages of each mode.

- To maintain essential rail services and facilities in South Dakota which serve the public interest but which cannot otherwise be profitably continued by private carriers.

- To coordinate the available resources of rail users, railroad carriers, and governments (local, state, and federal) for the purpose of maintaining essential transportation accessibility within South Dakota.

Established, workable goals are necessary for the state rail planning process to outline courses of action and to define the desired future characteristics of the railroad system within the State of South Dakota.

Rail Service and Planning Goals

- To identify the essential rail system for South Dakota which is needed to serve the State's current and potential agricultural, natural resource, industrial and energy-related activities.

- To retain a viable core rail system to serve South Dakota made up of essential lines which serve the primary traffic-producing areas of the State and which provide accessibility to the State and national markets.

- To encourage the elimination of non-profitable rail lines which are non-essential and whose services could be more economically provided by an alternative rail line or transportation mode.

- To develop competitive transportation options for those communities which lose rail service.

- To promote increased use of rail service in those ways in which it is best suited.

- To provide for the transportation needs of communities where the loss of current rail service will cause severe economic or socio-economic hardships.

- To promote financial stability and operational efficiency within the rail system serving South Dakota.

- To develop, maintain, and improve the institutional capability for implementing State railroad policy by legislation, funding, program administration, and project implementation.

ESSENTIAL RAIL SYSTEM DESCRIPTION

The crisis nature of rail issues facing the State of South Dakota makes it imperative that assistance efforts be directed where the greatest benefit to the State can be achieved. This requires the State to identify which rail lines are essential to its transportation and economic development needs, and to direct available resources to those lines. The poor condition of much of South Dakota's rail network makes rehabilitation and maintenance of all lines in the State financially unrealistic. By focusing on a subset of essential rail lines, the State can apply its scarce resources more effectively.

For the purposes of this study, essential rail lines are defined by several characteristics including:

- current and projected traffic volumes;

- access to the major grain producing parts of the State;

- access to the national rail transportation network;

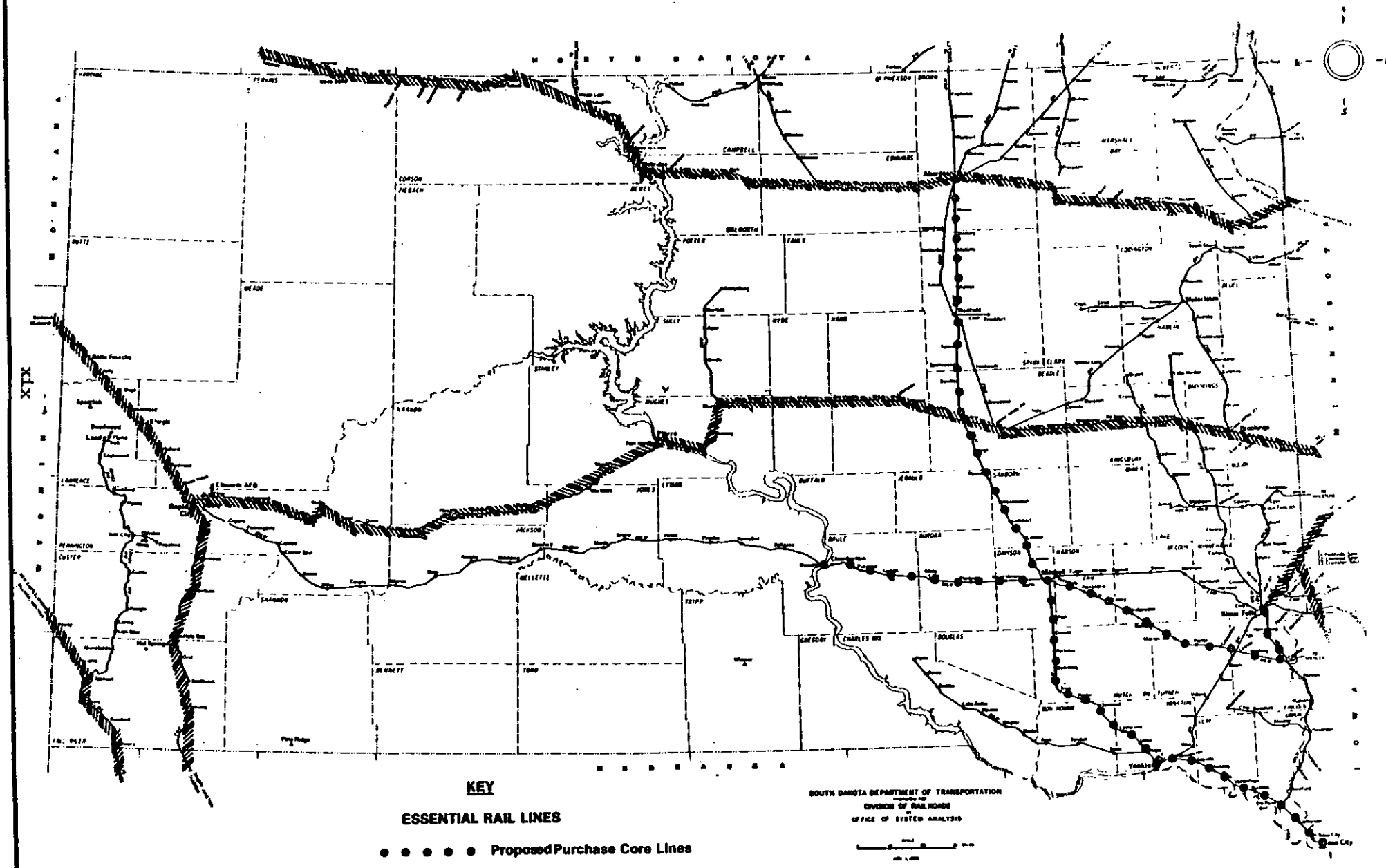
- access to natural resource areas, particularly coal deposits; and

- expected local impacts of service loss, including shipper cost, highway cost, and rehabilitation cost.

Based upon the previous information and study results, the essential rail system for South Dakota is defined as illustrated in Exhibit E. These lines form a basic skeletal rail network of feeder lines serving the agricultural producing areas of the State; main lines linking the shippers in South Dakota with local, national, and international markets; and secondary lines which connect the feeder lines to the main lines. Extensions beyond this essential rail system may be possible where sufficient local interest and commitment exists or where the lines are maintained by a private rail carrier.

EXHIBIT E

ESSENTIAL RAIL SYSTEM OF SOUTH DAKOTA
(CORE SYSTEM CONCEPT)



Defining the essential rail system for South Dakota provides an important basis for the remainder of this plan, particularly the analysis of intensive study lines. Future planning and assistance efforts can now be directed toward ensuring that the essential rail system is maintained.

Considering the lines identified as essential, the Railroad Authority is negotiating with the Milwaukee Road to buy 760 miles of abandoned lines in South Dakota. Also being considered is the leasing of 55 miles of Milwaukee Road lines along the southeastern border of South Dakota between Canton, SD and Sioux City, IA and the purchasing of 19 miles of the Chicago & North Western line between Hawarden, IA and Beresford, SD. This acquisition plan, illustrated in Exhibit F, includes all of the essential rail lines that are abandoned, plus several extensions (such as the Napa to Platte branch line) that might be operated as local option lines. These acquired lines will connect with existing railroads at Sioux City, Sioux Falls, Wolsey, and Aberdeen, and will be operated either by a Class I or Class II railroad.

By identifying an essential rail system and purchasing those portions threatened by abandonment, the Division, through the Railroad Authority, can ensure that the most needed rail transportation services are maintained for the long-term benefit of South Dakota.

RAIL ASSISTANCE PROGRAM

This year's rail assistance program for South Dakota is aimed at alleviating problems on lines eligible for immediate assistance. This excludes the abandoned Milwaukee Road lines that the Railroad Authority is currently negotiating to purchase. Until the disposition of these lines is determined, the State of South Dakota will not apply assistance funds to these lines.

In anticipation of these lines becoming eligible for assistance in early 1981, the Division has decided to focus its current assistance program on rail lines with immediate needs that can be met through defined and specific assistance efforts.

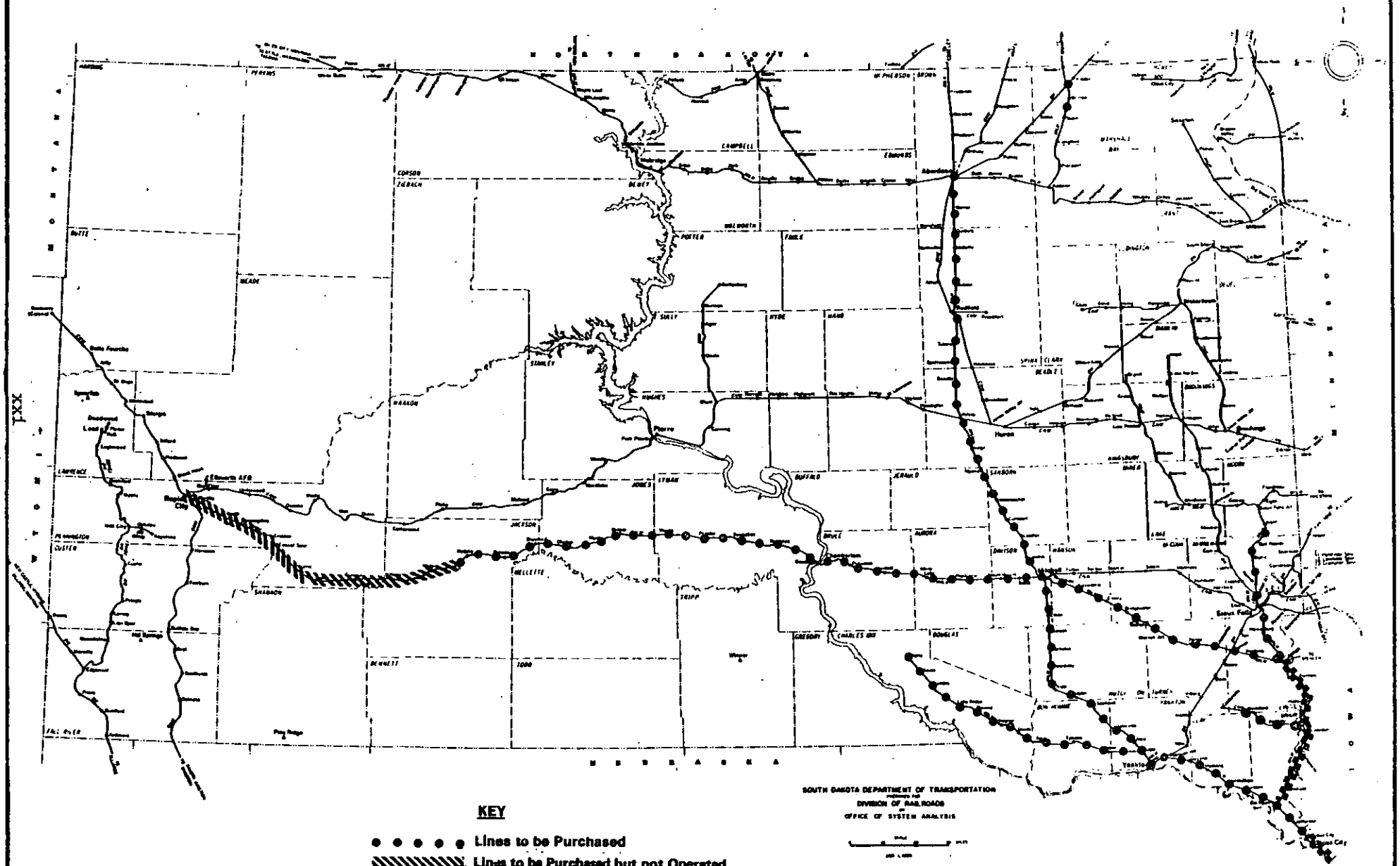
The large number of eligible rail lines in South Dakota and their general state of deterioration provides the Division with many candidates for possible project assistance. Because the assistance program funds are limited, some mechanism is needed to select those rail lines most in need of assistance. In considering which lines to select, the Division adopted the following criteria:

A. non-embargoed Milwaukee Road lines, since assistance for lines to be purchased by the South Dakota Railroad Authority will be sought at a later date;

B. abandoned lines with potentially significant shipper/community impacts of abandonment in South Dakota;

EXHIBIT F

SOUTH DAKOTA PURCHASE PLAN



C. light density lines threatened by physical deterioration, or requiring rehabilitation to permit more efficient operations involving heavier loaded cars or unit trains;

D. abandoned or light density lines which contribute at least moderately to the traffic base of connecting viable lines;

E. abandoned or light density lines providing accessibility to the regional and national railroad network; and

F. project locations where significant railroad and shipper interests are demonstrated in improving local rail operations or accessibility.

These criteria focus the State's efforts on lines that have significant abandonment impacts, and on lines that are part of the essential South Dakota rail system. Application of these criteria to the current rail lines in South Dakota produce the intensive study lines or project sites shown in Exhibit G. Shown in Exhibit H are the criteria used to select the lines and the types of assistance projects being considered for each line or site.

The lines or project sites listed in Exhibit H fall into three general categories: abandoned lines, light density lines, and coordination or operations improvement projects. The two intensive study lines which are currently abandoned are former Milwaukee Road Lines. The remaining light density lines are operated by the Milwaukee Road (2 lines), C&NW (4 lines), and BN (2 lines). The siding installation or expansion projects occur on the Milwaukee Road (1 site) and the BN (2 sites); and the transfer track replacement is on the C&NW Railroad. The line rehabilitation project between Miles City, Montana, and Gascoyne, North Dakota is part of a regional rehabilitation project for Miles City, Montana, to Jonathan, Minnesota. The portion west of Gascoyne, North Dakota was selected for assistance funds because it is the only part of this essential rail line that satisfies the eligibility criteria for project funding of less than 5 million gross tons. The 14 intensive study projects provide a balanced distribution of assistance to each of the major railroads in South Dakota with substantial rail mileage in the State. The projects are also distributed throughout the State to where the major assistance needs exist.

The State of South Dakota is primarily interested in providing one-time assistance which will result in lasting benefits to the railroads, rail users, and the State. Therefore, the types of assistance projects being considered in this plan mainly involve:

- moving major grain elevators from abandoned branch lines to main lines expected to remain in service;

- rehabilitating light density lines which can support current operating expenses but not the full capital costs of returning the line to its proper condition through rehabilitation; and

EXHIBIT G

INTENSIVE STUDY LINES AND PROJECT SITES

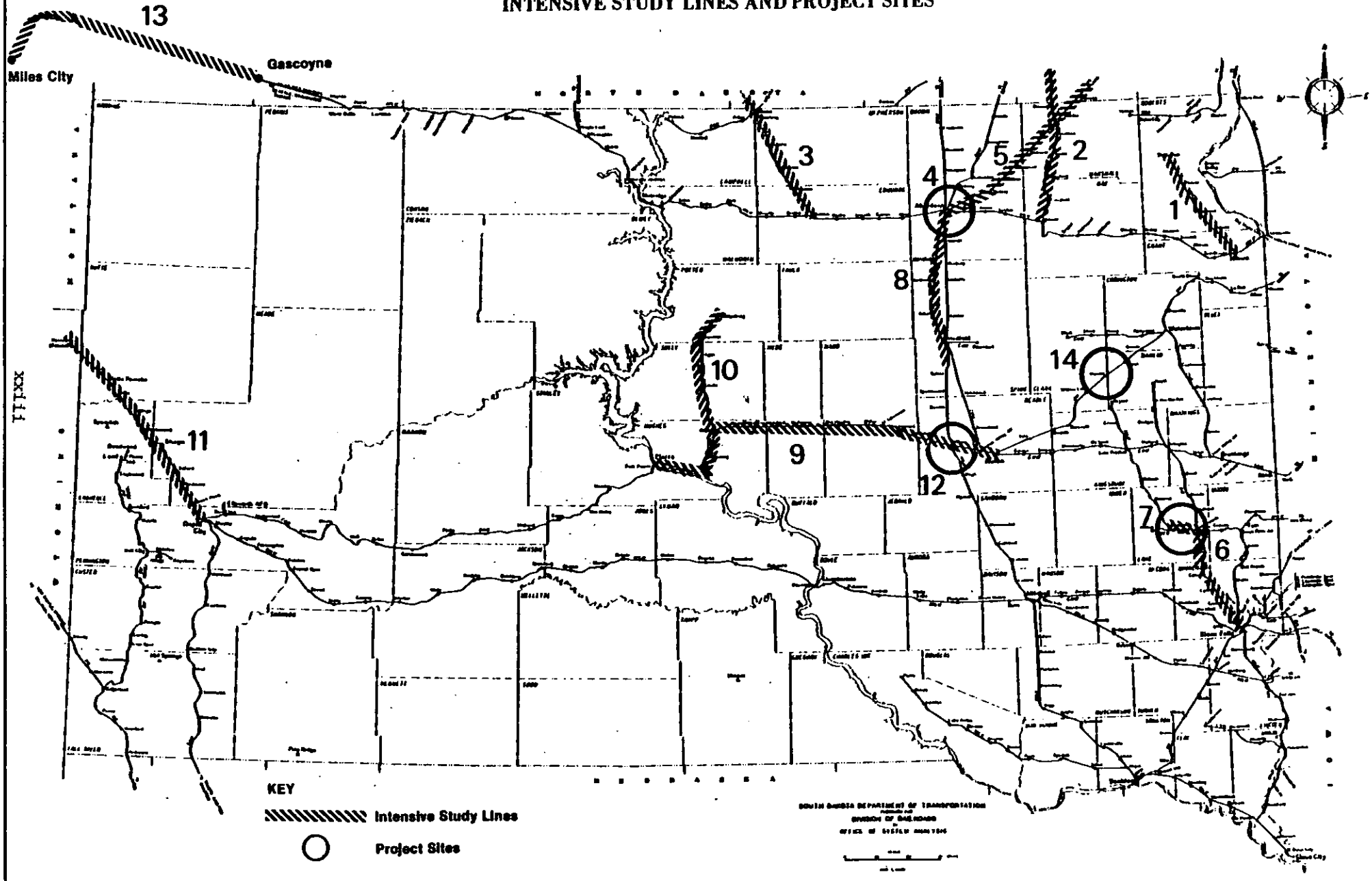


EXHIBIT H

INTENSIVE STUDY LINES AND PROJECT ALTERNATIVES

STUDY NUMBER	STUDY LINES AND PROJECTS	SELECTION CRITERIA **
1.	MILBANK TO SISSETON (MILW)	(A),(D),(E),(F)
	* Continue Rail Service at Class I – Continue Rail Service and Rehabilitate Line to Class II, New Rail – Abandon Rail Service – Abandon Rail Service and Move Elevators to Summit and Construct Public Loading Facility.	
2.	ANDOVER TO BRAMPTON (MILW)	(B),(E),(F)
	– Restore Rail Service and RehabilitateLines to Class I – Restore Rail Service and Rehabilitate Entire Line to Class II, New Rail – Restore Rail Service and Rehabilitate Line to Class II Between Britton and BN Junction, New Rail * Continue Rail Service Abandonment – Continue Rail Service Abandonment and Move Elevator(s) to BN Junction	
3.	ROSCOE TO LINTON (MILW)	(B),(E),(F)
	– Restore Rail Service and Rehabilitate Line to Class I – Restore Rail Service and Rehabilitate Entire Line to Class II – Restore Rail Service and Rehabilitate Line to Class II From Eureka to Linton, ND – Restore Rail Service and Rehabilitate Line to Class II From Roscoe to Eureka * Continue Rail Service Abandonment – Continue Rail Service Abandonment and Move Elevator to Bowdle – Construct Public Loading Facility at Bowdle or Artas	
4.	ABERDEEN SIDING (MILW)	(F)
	– Enlarge Siding for Grain Elevator	
5.	ABERDEEN TO RUTLAND (BN)	(C),(E)
	* Continue Rail Service – Continue Rail Service and Rehabilitate Line	
6.	MADISON TO SIOUX FALLS (BN)	(C),(E),(F)
	* Continue Rail Service – Continue Rail Service and Rehabilitate Line to Accomodate Unit Trains – Abandon Rail Service	

NOTE:
Base cases (existing case) are marked with *
Alternatives studied are marked with —

** See pages xix and xxi.

EXHIBIT H (Continued)

7.	WENTWORTH SIDING (BN) – Install New Siding for Unit Trains	(F)
8.	REDFIELD TO ABERDEEN (CNW) • Continue Rail Service at Class I – Restore Rail Service and Rehabilitate Entire Line to Class II – Continue Rail Service and Rehabilitate Line to Class II from Redfield to Mansfield – Abandon Rail Service – Abandon Rail Service and Move Elevator to Parallel MILW Line	(C), (E),(F)
9.	PIERRE TO HURON (CNW) • Continue Rail Service – Continue Rail Service and Rehabilitate Entire Line to Class II, and Replace Wolsey Transfer Track – Abandon Rail Service (For Study Purposes Only) – Continue Rail Service, Rehabilitate Entire Line, to Class II, Replace Wolsey Transfer Track, and Replace Rail Between Wolsey and James Valley Junction.	(C),(D),(E)
10.	BLUNT TO GETTYSBURG (CNW) • Continue Rail Service – Continue Rail Service and Rehabilitate Entire Line to Class II – Continue Rail Service and Rehabilitate Line to Class II from Blunt to Onida. – Truncate and Rehabilitate Line to Class II to Onida, New Rail – Truncate and Rehabilitate Line to Class II to Onida, Existing Rail – Abandon Rail Service	(C),(E)
11.	BENTONITE TO RAPID CITY (CNW) • Continue Rail Service – Continue Rail Service and Rehabilitate Entire Line to Class II – Abandon Rail Service (For Study Purposes Only)	(C),(D),(E)
12.	WOLSEY TRANSFER TRACK (CNW) – Replace Transfer Track Between CNW and MILW Lines	(E),(F)
13.	MILES CITY, MT TO GASCOYNE, ND (MILW) • Continue Rail Service – Continue Rail Service and Rehabilitate Entire Line to Class II – Abandon Rail Service	(A),(C),(D),(E)
14.	VIENNA SIDING (BN) – Install New Siding for Unit Trains	(F)

NOTE:
Base cases (existing case) are marked with •
Alternatives studied are marked with –

- installing or expanding siding facilities for new or existing elevator or transloading facilities which will serve shippers who have already lost direct rail service through past abandonments.

These types of projects address the specific problems affecting many of the lines in South Dakota without encouraging the continuation of uneconomic rail services that are costly to both the railroad and the user. These problems include poor line conditions, low traffic density and inadequate shipper facilities to take advantage of more efficient jumbo car or unit train operations.

The types of projects being considered are intended to produce maximum long-term benefits to the State, rail users, and the railroads, without committing the State to a long-term obligation. Innovative strategies, such as moving grain elevators and construction of public loading facilities, reflect the variety of solutions being considered by South Dakota for its railroad problems.

The intensive study lines and sites selected for this update deal with lines located on the periphery of the proposed South Dakota purchase. This is intentional because the State wants to be in a position in 1981 to focus its assistance program on the lines that make up the purchased system.

South Dakota's Rail Advisory Commission held a meeting on August 19, and again on August 28, 1980 to consider the results of the benefit-cost analyses and to recommend specific projects for funding under the Rail Service Assistance Program. A final recommendation was made September 3, 1980, and a listing of the projects which were selected, and the priority order in which they were placed by the Commission, appears in Exhibit I. Applications for federal assistance will be filed with the Federal Railroad Administration prior to September 30, 1980, and construction for those projects which are approved is planned for 1981.

EXHIBIT I

RECOMMENDED RAIL ASSISTANCE PROGRAM

PRIORITY RANKING	RAIL SEGMENT	PROJECT DESCRIPTION	STUDY NUMBER
1	Miles City – Gascoyne	Rehabilitation	13
2	Pierre – Huron	Rehabilitation	9,12
3	Madison – Sioux Falls	Rehabilitation	6
4	Milbank – Sisseton	Move Elevators/Public Loading Facility	1
5*	Andover – Brampton	Move Elevator or Truncation	2
6*	Blunt – Gettysburg	Rehabilitation to Onida	10
7*	Roscoe – Linton	Public Loading Facility	3

* Beyond 1980 funding limit.

GLOSSARY OF ABBREVIATIONS

AAR	Association of American Railroads
BHC	Black Hills Central Railroad
BN	Burlington Northern
C & NW	Chicago and North Western Transportation Company
COMMISSION	South Dakota Railroad Advisory Commission
DIVISION	South Dakota Division of Railroads
FRA	Federal Railroad Administration
HDCR	Historic Dakota Central Railroad
ICC	Interstate Commerce Commission
ICG	Illinois Central Gulf Railroad Company
LRSA	Local Rail Service Assistance Act of 1978
MILW	Chicago, Milwaukee, St. Paul, and Pacific Railroad Company (also the Milwaukee Road)
4-R Act	Railraod Revitalization and Regulatory Reform Act of 1976
3-R Act	Regional Rail Reorganization Act of 1973
SOO	Soo Line Railroad Company
SDDOT	South Dakota Department of Transportation
TOFC	Trailer-on-Flat-Car

PART A

RAILROAD SYSTEM OVERVIEW

PART A: RAILROAD SYSTEM OVERVIEW

This portion of RAILPLAN SOUTH DAKOTA 1980 consists of a description of the South Dakota railroad planning process and a description of the railroad system serving the State. It reflects current conditions in addition to certain historical information. Both the railroad planning process and the rail system in South Dakota are constantly changing and evolving. Some of this change results from the interaction between the planning process and the railroad system. As an example, the embargo of much of the Milwaukee Road trackage in South Dakota this year has caused the State to reorient its planning and assistance programs to essential rail lines which connect to or are part of the planned South Dakota core railroad system. Therefore, the following information portrays dynamic processes as they appear at this time. Subsequent updates or addendums to the RAILPLAN will be issued as needed to account for significant changes to these processes.

I. SOUTH DAKOTA RAILROAD PLANNING PROCESS

The railroad planning process in South Dakota has developed in response to a variety of issues and events that have drastically changed the character of rail service to the State. This section reviews the past efforts of the State to address rail-related issues in order to provide a better understanding of the current planning process. It also highlights the public participation process associated with the planning process and presents the major rail-related issues affecting South Dakota. These issues form the basis for the railroad service and planning policies, objectives, and goals, which have guided the development of this RAILPLAN.

PAST ACTIVITIES

The State of South Dakota became actively involved in railroad planning in response to a growing number of line abandonments and the general deterioration of the statewide rail network and service. For years, the State's involvement in railroad matters was limited to the activities of the State Public Utilities Commission, which was responsible for rate regulation and which held the legal power for abandonment proceedings. Recognition of the continuing decline of the Statewide rail network finally resulted in a Railroad Seminar being held in Sioux Falls in September 1973. This seminar attracted representatives from State agencies, railroads, farm organizations, shippers, and citizen groups and permitted the exchange of viewpoints concerning rail issues affecting South Dakota. One of the results of this seminar was the appointment of a Railroad Policy Task Force to study rail-related problems and issues.

The Task Force consisted of 19 members with diversified backgrounds, each of whom was interested in and concerned about South Dakota's railroad service. The Task Force was instrumental in initiating timely studies to explore the effects of rail abandonment on the State and its communities. It also was instrumental in raising public awareness of the rail problems in South Dakota and set the initial direction for the development of the 1978 RAILPLAN.

The Task Force contributed to legislation adopted in 1975 to create a Division of Railroads (Division) within the South Dakota Department of Transportation. The Division was created on July 1, 1975, with the Task Force serving in an advisory capacity.

The Task Force was replaced on July 1, 1977, by a five-member Railroad Advisory Commission with members from different areas of the state being appointed by the Governor to serve in an advisory capacity to the Division. Their responsibilities included providing input to the rail planning process and providing guidance and assistance in rail plan implementation.

The Division originally consisted of three full-time employees. Today, the staff has grown to nine full-time employees, three of which are in the Planning Section. This staff is augmented by summer interns. The Division

conducts research on basic railroad problems, plans and assists in the development of rail transportation, develops and maintains a Federal-State relationship of programs relating to railroads, and assists the Department of Transportation or any public or private agency in coordinating railroad services with those of other transportation modes. The Governor, under the Railroad Revitatization and Regulatory Reform Act of 1976 (4-R Act)[1] designated the Division as the State agency responsible for managing the rail planning process and assistance program.

The aforementioned 4-R Act expanded the rail reform legislation contained in the Regional Rail Reorganization Act of 1973 (3-R Act)[2]. This Act initiated direct federal assistance to states in dealing with rail service losses resulting from line abandonment and railroad restructuring associated with the formation of Conrail out of the remains of seven bankrupt Northeast rail carriers. Title IV of the Act established a Rail Service Continuation Subsidy Program to assist those Northeast and Midwest States (not including South Dakota) which might otherwise face rail service reductions. Under this program, states with an established state rail plan and an agency having authority to develop, promote, supervise, and support rail service could qualify for federal matching funds designed to continue rail service on lines not designated for inclusion in the Conrail system. In 1978, the initiative of the 3-R Act was extended by passage of the 4-R Act.

The 4-R Act is the instrumental force behind unified nationwide rail planning and contains several significant provisions. One section provides for direct loans to railroad companies for line upgrading, purchasing new facilities/equipment, or repairing existing facilities/equipment. Another section extends the local assistance program of the 3-R Act to make matching funds available to all contiguous states for rail planning and for rail service assistance. This assistance could initially be used only for rail lines which had already been approved for abandonment by the ICC and had been endorsed by the designated state rail planning agency. It is further required that the transaction be documented in the state rail plan or its updates. Each state is allocated a specific amount of funds each year by a national formula based on the number of miles in the state which have been approved for abandonment and also now utilizes the number of miles potentially subject to abandonment. The assistance funds may be used to either foster continued rail service or to aid in subsitute service arrangements after rail service discontinuation. Two common ways to provide continuing rail service are either to assist users in the outright purchase of the line or to provide money to rehabilitate the line. Substitute service assistance can take many forms, but all are designed to aid shippers on a line which has been abandoned. The Federal share of the cost for providing

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1 Public Law 94-210, 94th Congress, 5.2718, February 5, 1976.

2 Public Law 93-230 93rd Congress, H.R. 9142, January 2, 1974.

rail service assistance under the Act is curently a maximum of 80% of each specific project, the balance being provided by user, railroad, or state contribution.

One of the first and major charges for the Division under the 4-R Act was the development of RAILPLAN SOUTH DAKOTA, approved by the Federal Railroad Administration (FRA) in March 1978. The RAILPLAN addresses major rail-related issues affecting South Dakota, documents the nature of rail lines and services within the State, identifies the relative importance of rail lines within the Statewide rail network, and establishes eligibility to receive federal assistance under the 4-R Act.

Since the 1978 RAILPLAN submittal, additional rail assistance legislation was passed by Congress. The Local Rail Service Assistance Act of 1978 (LRSA Act)[1] extends rail planning and project assistance and permits the use of federal (Section 803) funds for rehabilitation or new facility construction on light density lines (less than 3 million gross tons average density; up to 5 million gross tons with approval by the FRA Administrator) before abandonment is approved by the Interstate Commerce Commission (ICC). This Act is important to South Dakota, since the majority of its rail lines are light density lines.

South Dakota's initial application for project funding under the LRSA Act came in a 1979 addendum to RAILPLAN SOUTH DAKOTA. Addendum No. 1 to the RAILPLAN provided a benefit and cost analysis in support of a $2.3 million rehabilitation project along the Milwaukee Road line between Jonathan, Minnesota, and Miles City, Montana. The line serves local shippers of agricultural products along the line, as well as the Big Stone Power Plant at Big Stone City. Abandonment of the line would have resulted in severe economic losses due to the closing of the Big Stone Power Plant. The project consisted of replacing ties and adding ballast to the most deteriorated portions of the line using 80 percent federal (Section 803) funds and 20 percent user match from the allocations of South Dakota, North Dakota and Minnesota. The proposed project was approved by the FRA in July 1979 and completed in early November 1979.

Legislative action at the state level has provided significant opportunities for solving the railroad problems affecting South Dakota. The 1978 South Dakota Legislature passed two important and timely pieces of legislation to aid railroads in this state. The first bill was patterned after the "Iowa Plan." This set the mechanism whereby the state could invest its monies in a cooperative rehabilitation program whereby the state, shippers and the railroad each share 1/3 of the cost incurred in rehabilitating a line. The second bill made it legal for local units of government to form bonding districts whereby they could raise money. This would enable them to share in the "Iowa Plan" or to enter into a project on their own to retain rail service or some form of substitute transportation service.

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[1] Public Law 95-607, 95th Congress, S.2981, January 19, 1978.

The 1979 State Legislature was instrumental in increasing the manpower allocation and budget for the Division of Railroads. This was critical to the success of the state's long term railroad program. Further, the legislature chose to transfer certain railroad regulatory functions involving the statutory authority to intervene in railroad matters from the Public Utilities Commission to the Department of Transportation. This legislation was a much needed tool to provide the basic authority needed to solve the state's railroad problems and provided the Department of Transportation with the planning, project implementation, and legal authority to address railroad matters in South Dakota.

The 1980 Legislature passed a series of bills that established the South Dakota Railroad Authority whose duties are to plan, establish, acquire, develop, construct, purchase, enlarge, maintain, equip, and protect railroad facilities deemed necessary to the State. The legislation allows the Authority to purchase up to $8 million worth of rolling stock, if legislative approval is received, up to a $25 million spending limit overall. The $25 million is raised by a 1 percent sales tax increment, to be rescinded by July 1, 1981, or upon collection of the $25 million.

Part of the $25 million budget will be used to purchase abandoned rail lines in South Dakota. Exhibit I-1 lists the line segments by owning railroad which are eligible for purchase by the Authority. A core system of 429 miles and local option lines of 825 miles have been identified as the maximum mileage that could be purchased. It is anticipated that the Authority will purchase the lines in the fall of 1980, with service restoration on the core system beginning in the spring of 1981. Legislative approval is required before operations can begin.

The 1980 legislation gave the Division of Railroads authority to provide planning assistance to the Authority and arrange and coordinate rail service on lines acquired, leased or controlled by the Authority. It also created the South Dakota State Railroad Board, composed of seven members, with governing authority over the Division of Railroads. Funds were also appropriated for other functions associated with the operation of the State core rail system.

Since the submission of Addendum No. 1 to the RAILPLAN, the Division has been concerned with the events associated with the Milwaukee Road's reorganization efforts, including its embargo and subsequent abandonment of 963.9 miles of lines in South Dakota. Ever since the Milwaukee Road filed for bankruptcy on December 19, 1977, the future of significant portions of the rail system of the Upper Midwest has been in doubt. No state has been as significantly affected as South Dakota, where the Milwaukee Road has abandoned over 1,204 miles or over 36 percent of the rail route mileage in South Dakota since 1977. The events leading up to the embargo and abandonment of Milwaukee lines in South Dakota are briefly reviewed below.

Following its bankruptcy filing, the Milwaukee Road was placed under the direction of Mr. Stanley E.G. Hillman, who was named Trustee. Based on the results of an extensive strategic planning study of the railroad, a core railroad

EXHIBIT I-1

SOUTH DAKOTA RAIL LINES AUTHORIZED FOR ACQUISITION BY THE SOUTH DAKOTA RAILROAD AUTHORITY *

MILWAUKEE ROAD RAILROAD FACILITIES

- Roscoe to the North Dakota border
- Andover to the North Dakota border
- Aberdeen to the North Dakota border
- Aberdeen to Wolsey
- Wolsey to Mitchell
- Mitchell to East Wye Switch
- East Wye Switch to the Iowa border
- East Wye Switch to Canton
- Canton to Mitchell
- Canton to the Iowa border
- Canton to Sioux Falls
- Sioux Falls trackage, including yard, side and spur tracks
- Sioux Falls to Dell Rapids
- Dell Rapids to Sioux Falls Junction
- Sioux Falls Junction to the Minnesota border
- Sioux Falls Junction to Madison
- Madison to Bryant
- Napa to Platte
- Mitchell to Chamberlain
- Chamberlain to Kadoka
- Kadoka to Rapid City
- Rapid City trackage, including yard, side and spur tracks
- Minnesota border to North Dakota border through White Rock

CHICAGO & NORTH WESTERN RAILROAD FACILITIES

- Watertown to Clark
- Mitchell to Ellis
- Redfield to Frankfort
- Redfield to James Valley Junction
- Gary to the Minnesota border
- Beresford to the Iowa border

BURLINGTON NORTHERN RAILROAD FACILITIES

- Wentworth to Hayti
- Sioux Falls to Yankton

ILLINOIS CENTRAL GULF RAILROAD FACILITIES

- Sioux Falls to the Minnesota border

* Senate Bill No. 249, March 13, 1980.

system was identified (known as Milwaukee II--See Exhibit I-2) which was perceived to offer the best chances of long-term viability. On April 23, 1979, the Trustee, on behalf of the Milwaukee Road, requested permission from the Federal Court to halt service to parts of the railroad not included in this core. Even though on June 1, 1979, the Milwaukee Road request was initially denied by the Federal Court, it received permission in February 1980 to embargo over 64 percent of its 9,800 mile system. The 852.8 miles of line embargoed in South Dakota were subsequently abandoned on June 28, 1980.

On August 10, 1979, the Trustee filed a reorganization plan for the Milwaukee Road, which called for a pared-down 3,500 mile system. This plan was rejected by the Interstate Commerce Commission (ICC) on March 19, 1980, citing overly optimistic traffic forecasts and financial statements. A subsequent analysis of the line was performed by Milwaukee personnel, who submitted a technical response to the questions raised by the ICC on May 15, 1980.[1] In this report, the Trustee indicated continued interest in retaining the 677.3-mile line between Jonathan, Minnesota, and Miles City, Montana; even though the Trustee considered the line to be marginal and its retention subject to future profitable operations.

At the present time, the Milwaukee II core system is operating as far west as Miles City, Montana, with trackage rights via the Burlington Northern (BN) to Billings, Montana. Service to embargoed and abandoned lines has ceased. Simultaneously, other rail carriers continue to abandon branch lines in the State. In response, the Division has commissioned several studies beginning in 1977 to determine the essential rail lines which should be the focus of future rail assistance. The size of South Dakota's rail service decline (1717.7 miles of railroad abandoned since January 1976) requires the State to take a selective approach, since adequate resources do not exist to support all abandoned or threatened rail lines in the State.

The first study involved a detailed assessment of the impacts of rail service abandonment on 63 branch lines in South Dakota. The report, Railroad Impact Study was prepared by the University of South Dakota and addressed primarily the community impacts of rail service loss.

The second study was a detailed viability analysis of 25 light density branch lines that were threatened by possible abandonment, the result of which could be significant impacts on the area served by the line. The results of these analyses were contained in Volume II of the 1978 RAILPLAN.

In 1979, the South Dakota Rail Line Inventory Study evaluated each rail line in South Dakota according to the following six criteria: current traffic level and composition, future traffic potential, network connectivity, rehabilitation costs, added shipper costs, and added highway costs. Each line was

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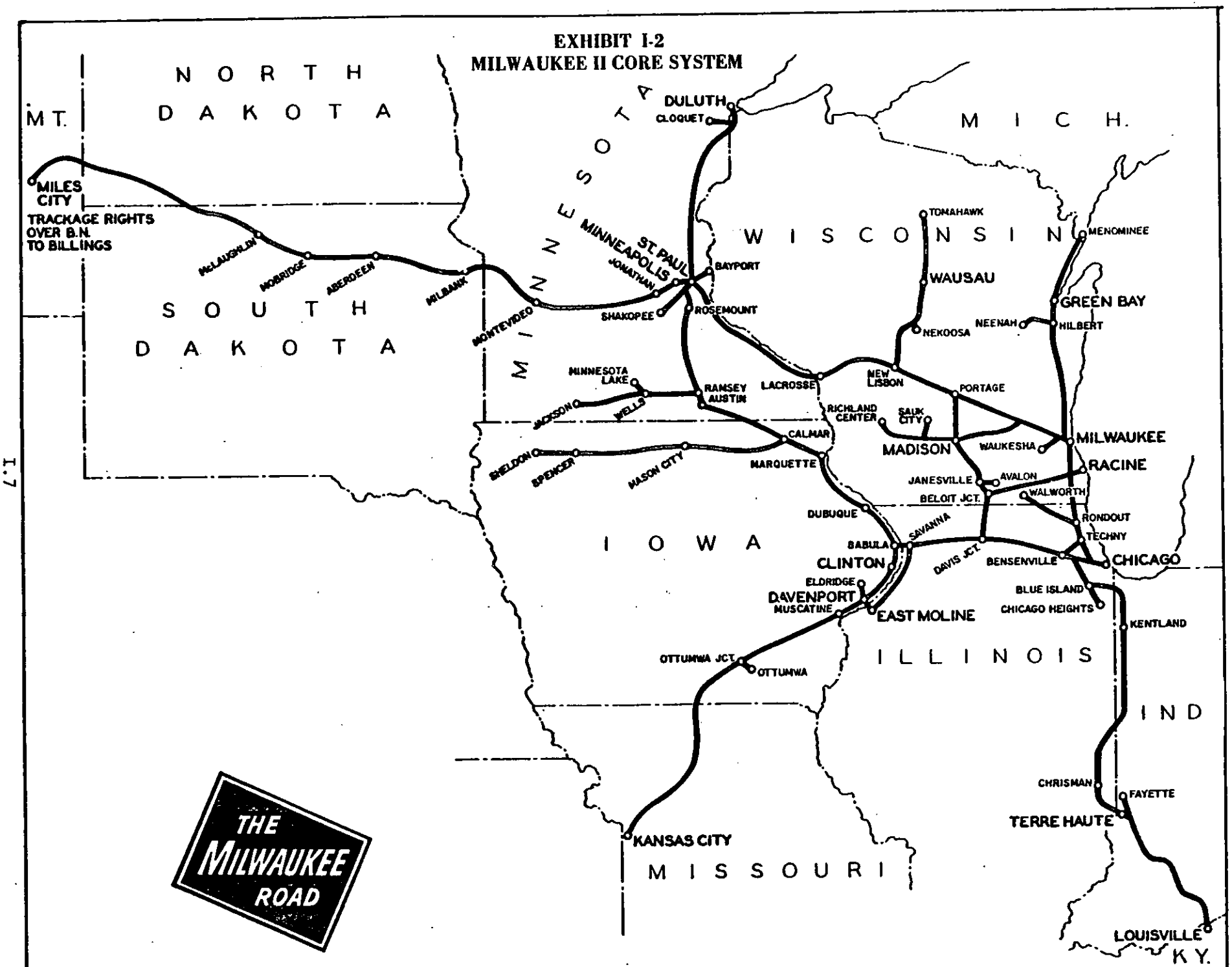
[1] "Report and Recommendations for the Future of the Milwaukee Road," Ogilvie, Richard B., Trustee, May 15, 1980.

EXHIBIT I-2
MILWAUKEE II CORE SYSTEM



prioritized according to these criteria to determine which lines offered the greatest justification for continued service. Waybill data and railroad-supplied data provided the basis for this analysis. The results of this study helped to identify which embargoed Milwaukee Road lines should be included in the South Dakota core system and which lines in the State are essential to the future viability of South Dakota's rail service and economic development potential.

Ongoing efforts by the Division, with assistance from both the University of South Dakota and the South Dakota State University, have been directed at identifying the level of agricultural production in South Dakota and its related transportation demands. Monitoring agricultural production will continue to be an important function of the Division.

A second addendum to the RAILPLAN was prepared by the Division and submitted to the FRA on September 29, 1979. The proposed project was a $3,574,175 rail rehabilitation of the Blunt to Onida portion of the Chicago & North Western's (C&NW) Blunt to Gettysburg branch line. This cost of the project was to be shared equally by the State, using 803 funds, shippers, using FmHA funds, and the C&NW. This project was approved by the FRA, and now awaits approval by the FmHA on the shippers' portion of the funds.

During 1980, several planning efforts have been undertaken. Most of the Milwaukee Road rail network in South Dakota, including the line from Jonathan, Minnesota, to Miles City, Montana, has been inspected and estimates made of the net salvage value, normalized maintenance of way costs, and rehabilitation costs for several conditions of track. Another planning effort is currently underway to assess the viability of the Jonathan, Minnesota, to Miles City, Montana line under several operating and rehabilitation alternatives. A third on-going effort involves investigating the costs of moving several grain elevators from rail lines threatened by abandonment to lines that will continue to be served.

A third addendum to the RAILPLAN was submitted to FRA on August 1, 1980. This consisted of a benefit-cost assessment of a $2.5 million rail line rehabilitation project on the portion of the Jonathan, Minnesota to Miles City, Montana line from Gascoyne, North Dakota to Miles City, Montana. The contents of the third addendum appear as part of this update. However, the early submittal was required to expedite the start of work, considering the brief construction season remaining in 1980. Both North Dakota and South Dakota will provide their federal share funds to the project, with the Milwaukee Road providing the local match. In addition, the Milwaukee Road will expend $1.5 million on rehabilitating the line east of Gascoyne, North Dakota.

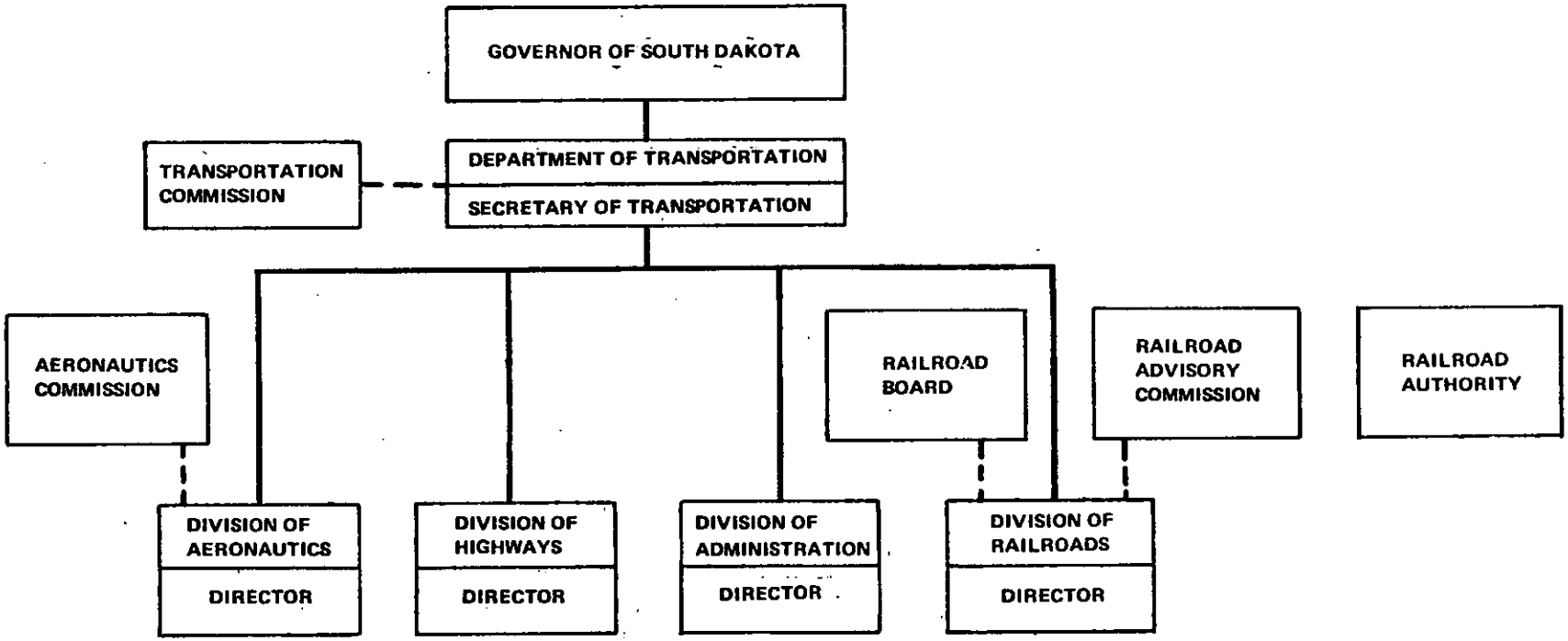
This report represents a culmination of many of these past and on-going studies. Information collected and results analyzed by these studies provide input to both the rail system overview and detailed study line analysis parts.

CURRENT PLANNING PROCESS 266.15(c)(11)

The current rail planning program for the State of South Dakota is the responsibility of the Division of Railroads, within the South Dakota Department of Transportation. Exhibit I-3 illustrates the organization chart for the

EXHIBIT I-3

ORGANIZATIONAL CHART
SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION



South Dakota DOT, in which the Division of Railroads is one of four divisions reporting to the Secretary of Transportation. Exhibit I-3 illustrates the organizational chart for the South Dakota Division of Railroads. The Railroad Advisory Commission, as discussed earlier, provides public input to the planning process.

The recently authorized Railroad Authority is a semi-autonomous publicly-owned enterprise empowered to own or maintain railroad facilities. The Railroad Board, also recently authorized, is the governing authority for the Division in matters of operation, management, finance, marketing, and development of State-controlled rail service.

The Division is responsible for performing the actual planning and analysis functions involved in maintaining an up-to-date State rail plan, and supporting the functions of the Railroad Authority. This includes the collection, analysis, and evaluation of data pertaining to rail lines and services in South Dakota.

Such data includes traffic movement data by rail carrier (cars, tons, and revenues), commodity flow data by railroad, grain production data by county and crop, rail line classifications and densities by railroad, rail line track charts, freight timetables, and shipper-supplied information.

The planning activities of the Division involve more than updating the State rail plan. The recent number of line abandonments and the uncertainty caused by the Milwaukee Road's inability to reorganize have caused the Division to undertake the following types of activities, which include those relating to the rail plan update process:

- monitor rail traffic flows by railroad, station, and line;
- monitor commodity flow data for the State, particularly agricultural products;
- perform detailed line analyses for lines threatened by abandonment;
- provide technical support to South Dakota rail users;
- monitor changes in the status, condition, and service of rail lines serving South Dakota;
- continuously evaluate the importance of rail facilities to the state, in light of the current situation and expected developments; and
- assist railroads and rail users in South Dakota in developing cooperative assistance projects.

In addition, the Division uses outside sources for certain technical analyses requiring special expertise. This includes consulting firms specializing in railroad planning.

EXHIBIT I-4

ORGANIZATIONAL CHART
SOUTH DAKOTA DIVISION OF RAILROADS

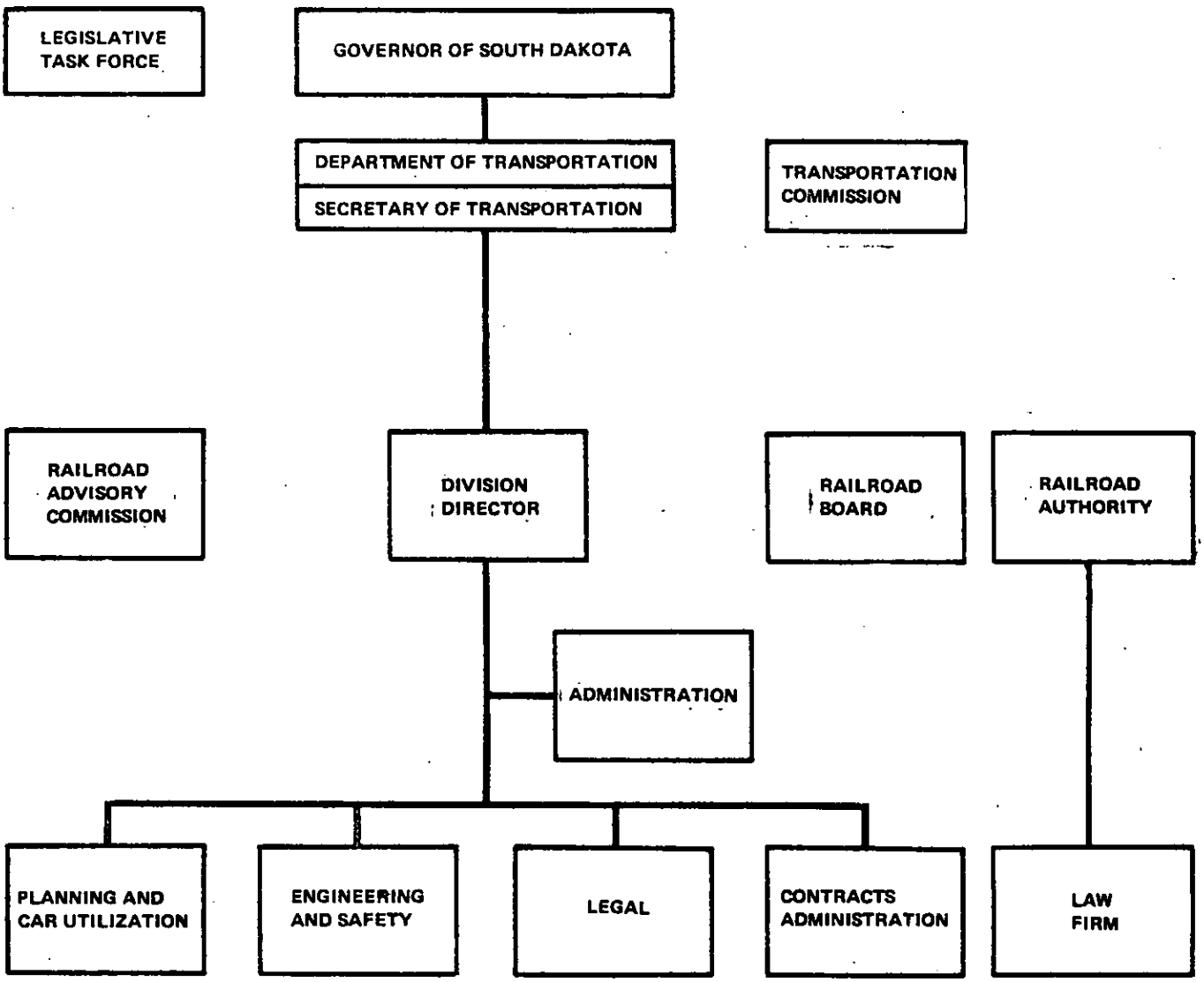


EXHIBIT I-5

RAIL PLANNING PROCESS FOR SOUTH DAKOTA

[266.15(c)(11)]

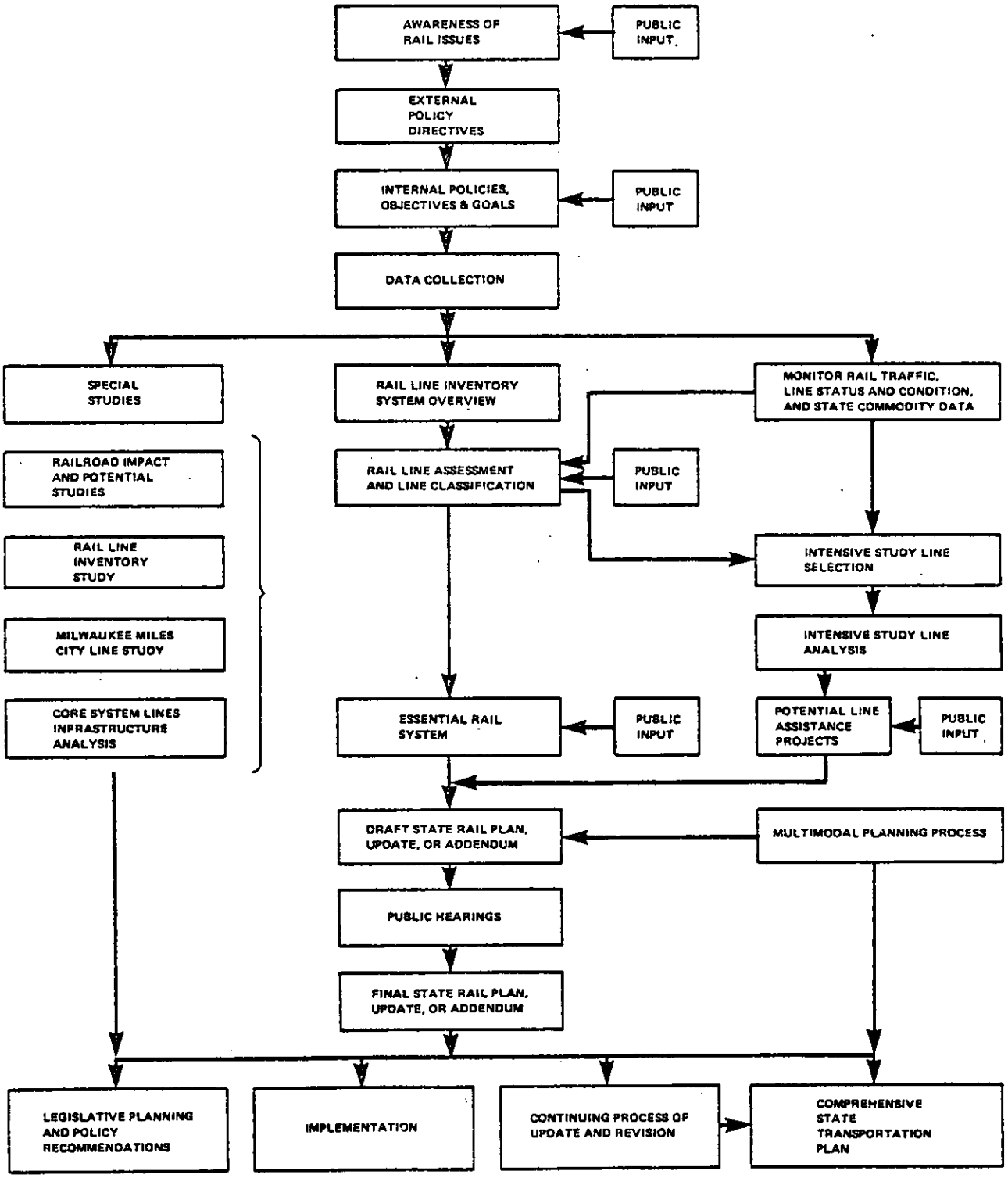


Exhibit I-4 illustrates the flow chart of rail planning activities of the Division. The process involves several parallel activities, many of which support the preparation of the State rail plan. Other impacted areas include the Comprehensive State Transportation Plan, the Multimodal Planning Process, and the railroad-related legislation of the State. The most important elements of this process are the evaluation of the overall State rail system, the analysis of intensive study lines, and the continuous monitoring of rail line services and conditions. The Division, through its planning and project implementation functions, also interacts with the rail planning agencies of neighboring states to address rail-related issues of regional consequence. This has resulted in joint line assistance projects with the states of North Dakota and Minnesota.

PUBLIC PARTICIPATION PROCESS 266.15(c)(10)

Rail planning in South Dakota grew out of public awareness of the rail crisis facing the State and the public's desire to solve the resulting transportation problems. Public participation in the States rail planning process began with the 1973 Railroad Seminar held in Sioux Falls. Public input to the process was formalized with the creation in 1973 of the 19-member Railroad Policy Task Force, which initiated rail planning in South Dakota and sponsored numerous public meetings throughout the State to acquaint local citizens with the rail issues affecting their area and the resources available to them to help maintain essential rail services. The Task Force was instrumental in making people aware of the rail problems in South Dakota, helping shippers become organized, writing and introducing pertinent legislation, helping create the Division of Railroads, hiring consultants to perform work pertinent to rail planning, and generally providing the major means whereby public input was injected into the planning process.

The 5-member Railroad Advisory Commission, successor in 1977 to the Task Force, carries on the public input role to the Division. Further input is also provided by the six Planning and Development Districts of South Dakota. Each district is composed of an area of the State characterized by similar population and physical characteristics. Each district is headed by a Director and serves county government and local municipalities. They are responsive to the citizens of each multi-county area.

A statewide Rail Users Association has been formed in South Dakota. The Association is subdivided into local "Branch Line Chapters". Its purpose is to inform local rail users of current or expected rail issues and coordinate their efforts to achieve their collective rail service goals. This organization has been well informed of the rail planning process and has offered valuable local input into the statewide RAILPLAN and its revisions. It is expected that this organization will continue to provide shipper and citizen input into the continuing planning process, plan update, and project implementation. Further information about the organization can be obtained from:

South Dakota Rail Users Association
P.O. Box 829
Sioux Falls, South Dakota 57102
(805/334-5000)

Various State departments and agencies also provide input into the rail planning process. These include the following:

- Transportation Commission - has final authority over all expenditures of the Department of Transportation, including the Division of Railroads;
- Policy Development and Evaluation Division of the DOT - is working on the multi-modal approach to transportation planning and is involved in the rail plan and planning process as related to the statewide highway network;
- State Agriculture Department - which is involved in the State's largest industry and major user of rail service;
- State Game, Fish, and Parks Department - is concerned with future recreational areas using abandoned or rail banked railroad right-of-way;
- State Public Utilities Commission - is responsible for rate regulation;
- State Departments of Energy and Natural Resources - are concerned with the nature, amount, and development of natural resources in the state; and
- State Planning Bureau - provides input through the A-95 review process of plan updates.

Direct public participation in the rail planning process is provided by the State DOT through the issuance of news releases, agency mailings, and special meetings and seminars. Division of Railroads staff have met with numerous shipper groups and have made several public appearances throughout the State for various groups and organizations to inform the public and solicit public input to the planning process.

The Division staff has also directly contacted shippers and receivers on rail lines selected for intensive study. These interviews have provided information on shipper attitudes toward rail service, shipping patterns by mode and commodity, and the effects of changes in rail service. The interview process provides the shippers with an opportunity to understand the State's rail planning process and provide direct input to the process.

The Division staff maintains close contact with the rail planning staffs of neighboring states. Coordination between these staffs focuses on planning activities, program development, and project implementation relating to projects involving intensive study lines operated between the participating states.

Numerous public hearings are conducted throughout the State whenever a RAILPLAN update, revision, or addendum is issued. These meetings provide the

State with the opportunity to describe the contents of the plan, explain the study rationale and findings (particularly regarding intensive study lines threatened by abandonment), and solicit public comment regarding the recommendations contained in the study. These public hearings also provide both the Division staff and local citizens with the opportunity to exchange ideas and to discuss issues of recent development which might be more readily resolved.

This public participation process incorporates input from many different sources to the overall rail planning process. This type of involvement is essential to a meaningful rail planning process that is responsive to the needs and concerns of local rail users. Rail assistance projects in particular require the active involvement and commitment of those affected by the project. Therefore, public participation will continue to be a major component of the rail planning process for South Dakota.

Public comments received during the preparation of this RAILPLAN are contained in Appendix A.

RAIL SERVICE ISSUES

This section briefly reviews the major rail service issues currently facing South Dakota. These issues focus on the current rail problems affecting the State and the remaining needs which rail services are expected to meet. They help to define the policies, objectives, and goals of South Dakota for rail planning, thereby forming the basis for the 1980 RAILPLAN update.

Rail facilities in South Dakota are primarily light density branch lines, with no major classification yards, shops, or terminals. The light density nature of many of these lines prevents the use of jumbo hopper cars for grain or fertilizer movements. These are more efficient and cost-effective than box cars, which carry smaller loads and are transloaded less efficiently. Without the ability to efficiently serve rail users, many of these lines have lost significant volumes of traffic to the motor carriers.

The loss of traffic to the motor carriers has severely reduced the revenue producing potential of many of South Dakota's branch lines. As a result, maintenance has been deferred for many years while the track has been allowed to deteriorate. This has led to further service declines as track speeds have been reduced by slow orders, which in turn has resulted in further diversion to other transportation modes.

This continuing cycle of track and traffic deterioration has resulted in South Dakota losing 48.9 percent of its operating rail mileage in the past 5 years. This loss of trackage could become worse because an additional 443.6 miles of rail lines in the State are potentially or currently threatened by abandonment.

Much of the rail mileage abandoned in the last few years was owned by the Milwaukee Road. Abandonment of these lines reflects the Milwaukee Road's financial difficulties and its attempts to reorganize into a more compact and concentrated system.

Abandonment of all of these lines, along with the threat of potential abandonment of others will severely impact the State's industrial development, agricultural production, and natural resources potential. Much of the current rail traffic moving in South Dakota consists of high-volume, bulk commodities. This includes grain, coal, fertilizer, gravel, clay, and pulpwood. These commodities, when moving long distance, are typically more cost-effective to move by railroad than by truck. Without rail accessibility, industries for such commodities in the State would either have to ship by truck, relocate to remaining railheads, or close. This is true for the many grain elevators in the State, and the Big Stone Power Plant, which receives its coal from Gascoyne, North Dakota, over the Milwaukee Miles City line. Fewer serviceable rail lines will result in fewer opportunities for businesses which are dependent on rail service.

As will be discussed, several of the recent Milwaukee Road abandonments form part of an essential rail network for the State. Without these lines, the South Dakota rail system is reduced to a handful of stub-ended branch lines. Such a system would severely limit the availability of accessible, competitive rail services within the State. Without a modern rail system connected to the national rail network, South Dakota might not be considered for and realize key future industrial growth, especially by heavy industries.

As traffic has been diverted to the motor carriers, accelerated deterioration of the highways used by these motor carriers has resulted. The increased highway capital and maintenance costs of this diversion can produce a significant annual cost to South Dakota, and to neighboring states.

One of the causes of rail decline in South Dakota has been the fluctuating demand for rail service. Drought-related agricultural production shifts have resulted in inadequate traffic levels for many lines in certain years. However, as irrigation becomes more prevalent in South Dakota and farmers increase their on-farm storage capacity, the variation of grain movements during the year and between years should decline. A more stable grain production rate, coupled with improved yields due to irrigation, may help to significantly improve the attractiveness of grain traffic to the railroads.

The importance of rail accessibility for major bulk commodities moving in South Dakota relates not only to the cost-effectiveness of such movements, particularly over long distances, but also in terms of energy consumption and air pollution. On a per ton-mile basis, rail is far more efficient than trucks for both of these factors. In these days of national fuel crises and pollution, it is appropriate to favor transportation methods that utilize modes that are both energy and pollution efficient.

The loss of much of South Dakota's rail system stems from its lack of centralized manufacturing centers or energy producing sources within its borders, and the generally poor condition of its rail facilities. As a state rail system composed primarily of branch lines, South Dakota will continue to face the prospect of line abandonment. To stop or reverse this process, the State must identify the lines it considers essential to its overall transportation needs. Once identified, these lines should then be the focus of track rehabilitation

programs aimed at reversing the deterioration caused by years of deferred maintenance so that the line can move the more efficient jumbo hopper cars. Such a program should be aimed at lines that offer a reasonable expectation for becoming economically viable or that provide an important link to the national rail transportation network. Non-essential lines should be addressed in terms of reducing the negative impacts of abandonment, such as moving a plant or elevator to the nearest remaining railhead or improving the capacity of parallel highways to handle the diverted traffic. In certain cases, the purchase of an abandoned rail line may be the only way to ensure continued rail service to an essential rail line.

RAIL SERVICE AND PLANNING POLICIES, OBJECTIVES, AND GOALS 266.15(c)(1)

The direction of SOUTH DAKOTA RAILPLAN 1980 is defined by the plan's policies, objectives, and goals for rail service and planning. These policies, objectives, and goals reflect the rail issues affecting South Dakota and the consensus of the Division of Railroads and the Railroad Advisory Commission. The State's policies define general statements of direction for rail service and planning for South Dakota.

Rail Service and Planning Policies

- Rail users, railroad companies, local governments, and the State need to coordinate their efforts to solve transportation problems in South Dakota.

- The South Dakota DOT encourages the continuation of financially solvent, privately owned and operated rail services in the State. Therefore, the South Dakota DOT will not openly oppose all railroad abandonment applications, but first will consider the potential viability of the line, the social and economic impacts of line abandonment, the local interest in the line, the potential for substitute service, and other factors which may be unique to the line or its service area.

- The South Dakota DOT will support essential rail services which are threatened by abandonment through the use of available public and private funds, where the public interest justifies such assistance. Possible assistance includes acquisition, service continuation, rehabilitation, rail banking, operations improvement, or substitute service.

- The South Dakota DOT will foster the coordination and consolidation of rail services in the State where opportunities exist for improving the efficiency of rail operations.

- The South Dakota DOT will strive to increase the public awareness of rail service issues as they affect the State and to facilitate public involvement in the on-going State rail planning process.

The State's objectives define more specific courses of action relating to the operation of the South Dakota DOT and the Division of Railroads.

Rail Service and Planning Objectives

- To foster adequate, safe, efficient, and economical transportation services for the movement of persons and goods in South Dakota.

- To integrate the State's transportation system with that of neighboring states and with the national transportation system in order to facilitate interstate and nationwide travel, while also considering state and local needs, desires, and the inherent social, economic, environmental, and land use impacts.

- To integrate the various carriers and modes of transportation in order that they might safely, efficiently, and economically supplement and complement each other in the movement of persons and goods, recognizing the inherent advantages of each mode.

- To maintain essential rail services and facilities in South Dakota which serve the public interest but which cannot otherwise be profitably continued by private carriers.

- To coordinate the available resources of rail users, railroad carriers, and governments (local, state, and federal) for the purpose of maintaining essential transportation accessibility within South Dakota.

Established, workable goals are necessary for the state rail planning process to outline courses of action and to define the desired future characteristics of the railroad system within the State of South Dakota.

Rail Service and Planning Goals

- To identify the essential rail system for South Dakota which is needed to serve the State's current and potential agricultural, natural resource, industrial and energy-related activities.

- To retain a viable core rail system to serve South Dakota made up of essential lines which serve the primary traffic-producing areas of the State and which provide accessibility to State and national markets.

- To encourage the elimination of non-profitable rail lines which are non-essential and whose services could be more economically provided by an alternative rail line or transportation mode.

- To develop competitive transportation options for those communities which lose rail service.

- To promote increased use of rail service in those ways in which it is best suited.

- To provide for the transportation needs of communities where the loss of current rail service will cause severe economic or socio-economic hardships.

- To promote financial stability and operational efficiency within the rail system serving South Dakota.

- To develop, maintain, and improve the institutional capability for implementing state railroad policy by legislation, funding, program administration, and project implementation.

II. SOUTH DAKOTA RAILROAD SYSTEM
[266.15(c) (2 and 3)]

This chapter presents an overview description of the history of rail service in South Dakota, the rail carriers and network currently serving the State, the various categories of rail lines in the State, and the essential rail lines which should be retained in operation. Where possible and appropriate, historical data are presented which show the recent trends in rail usage and carrier operations.

RAILROAD SERVICE HISTORY

The building of railroads in South Dakota came late in the history of the nation's rail system. The first railroad lines in South Dakota opened in 1872 with the wave of early settlers. This followed 3 years after the first transcontinental rail line in the United States was completed. The years 1880-1890 were the boom period of railroad construction in South Dakota. Rail progressed westward rapidly, but halted at the Missouri River. The Federal Government prohibited the railroads from building in the vast Indian Reservation area of Western South Dakota until 1906.

While the westward race stopped temporarily in South Dakota, other aggressive railroad construction and expansion diverted around the State and main lines were built to the west coast through the States of Nebraska and North Dakota. This proved to be unfortunate for South Dakota. The Milwaukee Road finally crossed the Missouri River at Mobridge to build its transcontinental route, but only many years after others had reached the western country and established their markets. Four years after the Milwaukee Road's transcontinental line opened in 1910, the Panama Canal was completed. As a result, traffic patterns shifted and much of the historic and potential traffic travelled through the Canal to eastern ports, thereby being eliminated from the transcontinental rail movements. Much of South Dakota's track subsequently ended up as branch lines, dependent upon that traffic they could originate and terminate for their self-support. They were not necessary links in the national railroad system for overhead traffic.

Most of the railroad construction in South Dakota was completed by 1911. There were 4,420 miles of railroad built in this State including some narrow gauge lines in the Black Hills area. Today's operating rail mileage is down to about 1,706.6 miles with the prospect that this mileage may decrease to approximately 1,181 miles or less within the next 2 to 3 years.

This decrease in rail mileage is a result of many factors. One factor, although it may not be the most important, is related to progress. The role of the railroads has changed dramatically since 1940. Initially, the railroads helped to build and settle this state by transporting immigrants and their supplies. They served every small town along the way by transporting goods, people, and mail with speed and reliability.

The invention and refinement of the automobile along with the construction of modern roads created less dependency on the railroad for passenger transportation. Consequently, traffic and revenue dropped off. Soon the demand for passenger service decreased to a point where this service was not economically feasible to maintain. Freight and mail could be handled with less frequency of service than passenger demands. Soon the mail contracts were awarded to carriers utilizing cars and trucks and the public highways. Revenues again decreased as did maintenance, service, and speed. It soon became economically unfeasible to serve every small town along the line with less than carload lots of commodities. The trend later shifted from full carload movements of goods to multi-car loadings and, to the detriment of South Dakota's branch lines, movements of large jumbo hopper cars. These cars, when loaded, exceed the maximum weight allowable on many lines in South Dakota.

Many lines in South Dakota have the original lightweight rail or a lightweight replacement rail which is incapable of adequately supporting heavy (263,000 pounds) loads. Rail weights of 80-85 pounds are considered marginal, whereas weights of 100 pounds or greater are recommended by the railroad companies as necessary to safely support these heavy loads. Therefore, commodities transported on many lines in South Dakota must still utilize box cars. Box cars are no longer the standard of the rail freight industry. Those in service in South Dakota are old and generally in deplorable condition. Specialty type cars constitute the majority of cars being purchased by railroads today.

With the decreasing volume of commodities shipped, the shifting of major freight movements, the increased cost of providing service and the increased cost to maintain or upgrade a line have all contributed to the railroad's current tendency to abandon track in South Dakota. Already the railroads have abandoned nearly 62 percent of all of the South Dakota track ever constructed. Many of the lines which are gone are not needed today due to the availability and versatility of modern day truck service. The need no longer exists within the state for a complex and closely knit railroad network.

The railroads do, however, have a necessary and economically justifiable place in the South Dakota transportation network. Rail is needed to haul heavy, bulky commodities long distances. It is needed to haul South Dakota agricultural products to the terminal markets located outside its borders. It is needed to haul timber products to processing plants located in other states. It is needed to haul ores, aggregates and other bulky products to areas for processing or use. But South Dakota's current rail network cannot economically continue to exist in its current configuration and conduct business hampered as they are by outdated equipment, rates, rules, and demands.

This is the current condition of South Dakota's railroads. The concern is not only to identify the causes of these conditions, but more importantly to identify what must be done to maintain a total South Dakota transportation system which the state and its citizens can support and afford. This update is an element in that identification process.

CURRENT RAILROAD SYSTEM AND SERVICE

The rail network in South Dakota is shown by line segment in Exhibit II-1. Exhibit II-2 shows the highway network for the State. Together, these two transportation networks provide the primary corridors for movement of goods and people throughout South Dakota. The massive irrigation control dams along the Missouri River, which divides the State into eastern agriculture and western range areas, prohibits the significant use of waterway transportation in the State.

Four railroads currently operate 1,706.6 miles of rail line in South Dakota. These include the Milwaukee Road (347.2 miles), the Chicago and North Western (C&NW) (826.6 miles - 74.0 miles via trackage rights over the abandoned Milwaukee line from Aberdeen to Wolsey), the Burlington Northern (BN) (466.5 miles - 7.7 miles via track to be acquired from the Milwaukee between Madison and Wentworth), and the Soo Line (66.3 miles). The Illinois Central Gulf (ICG) is in the process of abandoning its track in South Dakota. Exhibit II-3 illustrates the operating rail lines in South Dakota by rail carrier. Exhibit II-4 lists the mileage operated in South Dakota by each rail carrier as of August 1980, as well as the percentange of total system route miles operated in South Dakota by each rail carrier. Also listed are the miles of track that each railroad has designated as either potentially subject to abandonment within 3 years (Category 1), under study by the railroad to determine its economic viability (Category 2), pending abandonment approval (Category 3), and all other rail lines operating in the State (Category 5). Of the rail mileage in South Dakota, 25 percent is Category 1, 2 percent is Category 2, 2 percent is Category 3, and 71 percent is Category 5. Exhibit II-5 illustrates the location of rail lines that are currently classified as Category 1, Category 3, or abandoned.

Much of the rail network shown as Exhibit II-1 is currently abandoned. The 1,706.6 miles of rail lines continuing to be operated in South Dakota represent a 48.9 percent reduction in operating mileage since January 1976, and a 61.4 percent reduction from the all-time high of 4,420 miles once operated in the State.

South Dakota has long been involved in rail line abandonments. The Chicago and North Western has had an active abandonment program for the past 12 years. They have trimmed down their system and have eliminated most of their dead-end branch lines. The Milwaukee Road did not have an active abandonment plan in South Dakota and consequently had many miles of dead-end branch lines still in operation when they filed for bankruptcy in December 1977. The rail line embargo and subsequent abandonment of lines in South Dakota because of the Milwaukee Road restructuring affected nearly 1,000 miles.

South Dakota has followed the actions of the Milwaukee Road very closely. When their bankruptcy petition was filed on December 19, 1977, one half of the State's rail mileage belonged to that carrier. The Court-appointed Trustee for the Milwaukee Road submitted a reorganization plan on April 23, 1979, proposing a core system for operations on 1,722 miles of track. None of the core system was located in South Dakota, which meant that service would cease on nearly 1,400 miles of track in this State.

EXHIBIT II-1

SOUTH DAKOTA RAIL SYSTEM
(BY SOUTH DAKOTA RAILROAD SEGMENT NUMBER)
[266.15(c)(2)]

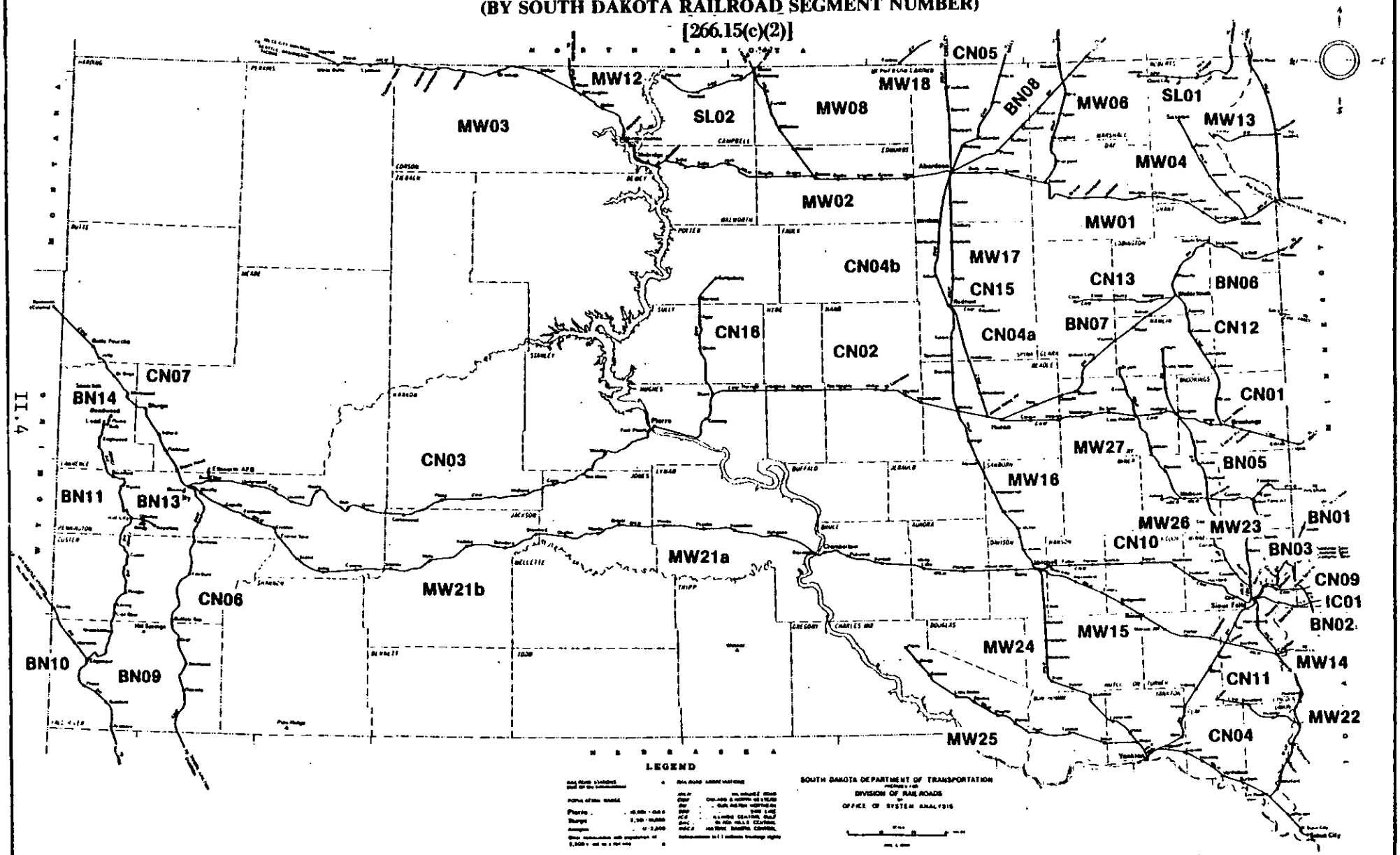


EXHIBIT II-2

SOUTH DAKOTA HIGHWAY SYSTEMS
[266.15(c)(2)]

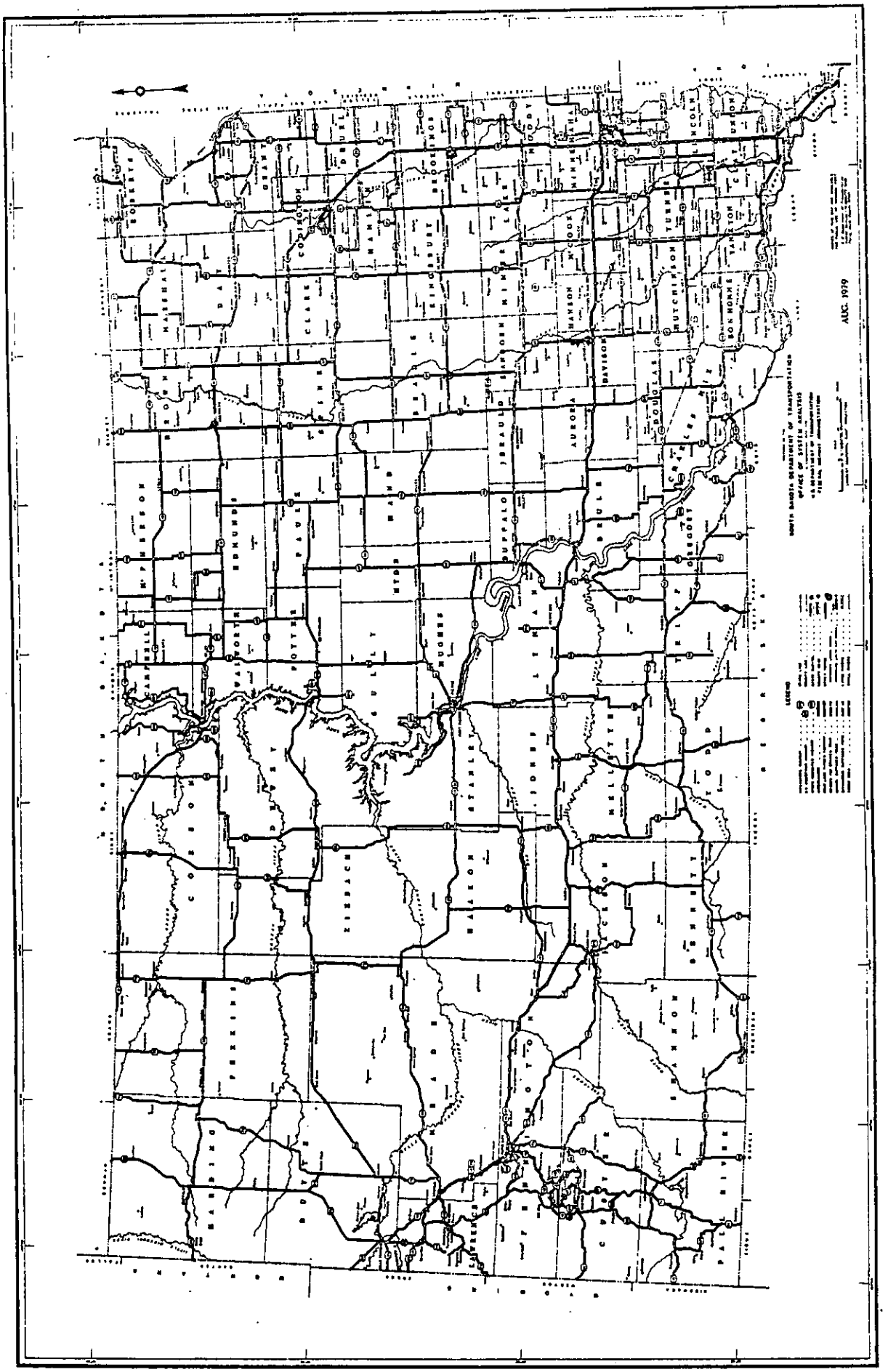


EXHIBIT II-3

CURRENT OPERATING RAIL LINES
BY OPERATING RAILROAD
[266.15(c)(2)(i)]

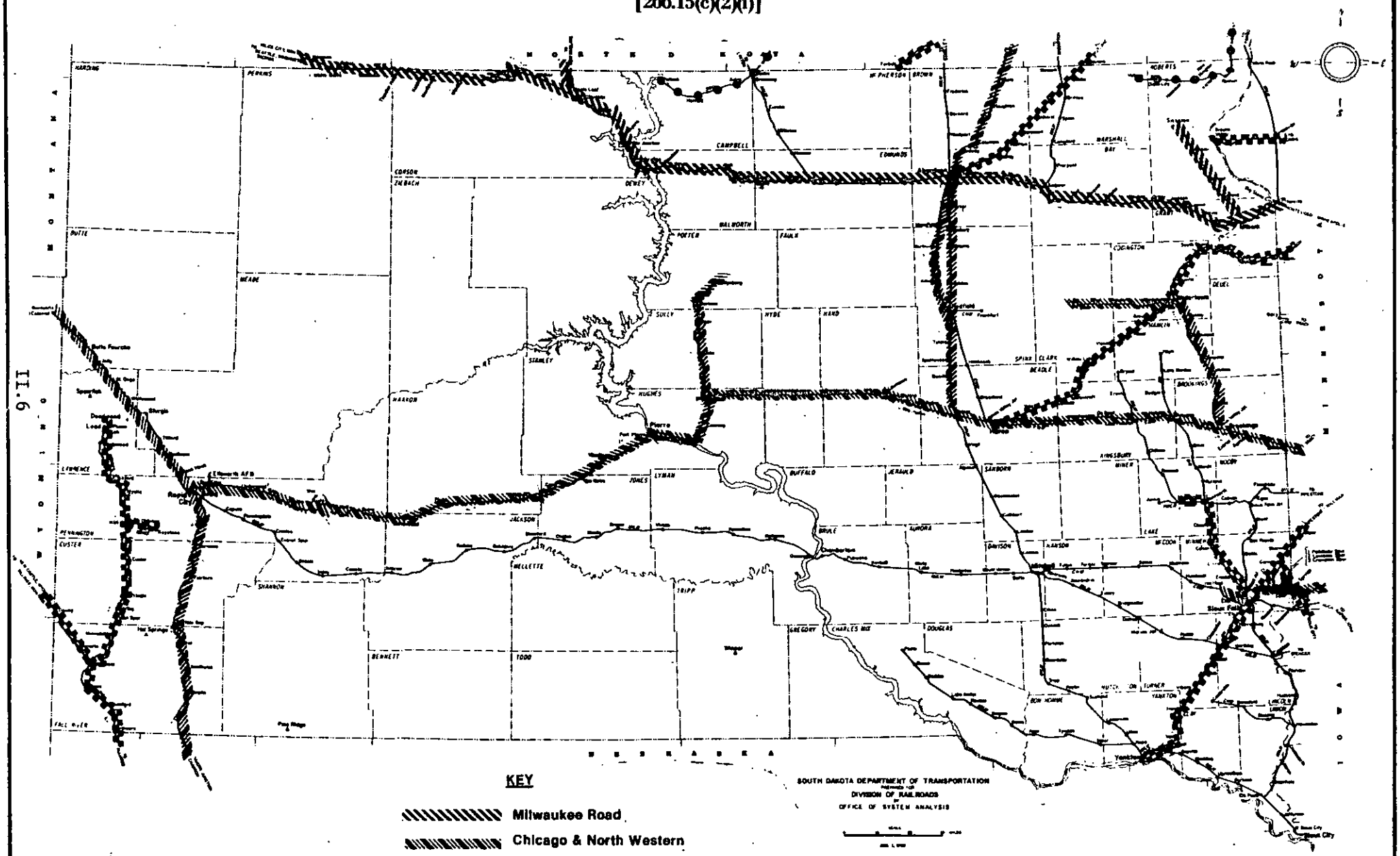


EXHIBIT II-4

RAILROAD MILES BY ICC CATEGORY
SOUTH DAKOTA AND SYSTEM TOTALS
[266.15(c)(3)(ii and iv)]

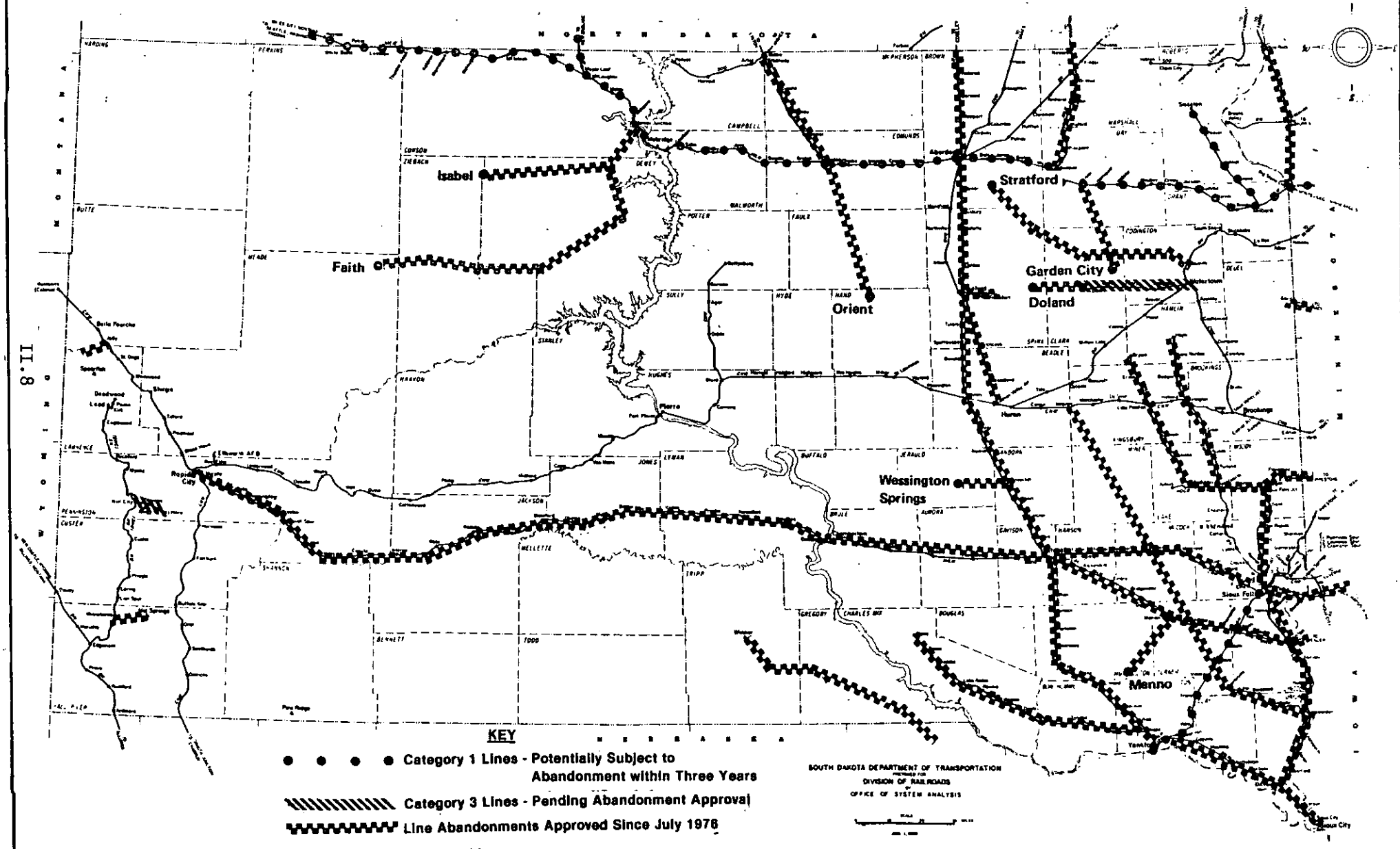
RAILROAD	CATEGORY 1 MILES (%)	CATEGORY 2 MILES (%)	CATEGORY 3 MILES (%)	CATEGORY 5 MILES (%)	TOTAL STATE MILES (%)	TOTAL SYSTEM MILES	% STATE MILES OF SYSTEM
Milwaukee Road	347.2 (100)	– –	– –	– –	347.2 (100)	3,500	10%
Chicago North Western	– –	– –	29.5 (4)	723.1 (96)	752.6 (100)	8,941	8%
Burlington Northern	58.1 (13)	– –	8.8 (2)	391.9 (85)	458.8 (100)	22,798	2%
Soo Line	– –	32.8 (49)	– –	33.5 (51)	66.3 (100)	4,512	1%
Illinois Central Gulf	– –	– –	– –	– –	– –	8,466	0%
Total	405.3 (25)	32.8 (2)	38.3 (2)	1,148.5 (71)	1,624.9 (100)	–	–

NOTE: There is currently service on 1706.6 miles of track because the BN is operating on the Milwaukee Madison to Wentworth Line and the C&NW is operating on the Milwaukee to Aberdeen Line.

Category 1 - Potentially Subject to Abandonment Within Three Years.
Category 2 - Under Study by Operating Railroad.
Category 3 - Pending Abandonment Approval.
Category 5 - All Other Operating Lines.

EXHIBIT II-5

SOUTH DAKOTA RAIL LINE ABANDONMENTS
AND LINES THREATENED BY ABANDONMENT
[266.15(c)(3)(ii and iv)]



Governor William J. Janklow met with the Trustee and proposed that the railroad add the Miles City extension to their core system. In consideration for keeping this 681 mile extension in their operating system, the Governor pledged to raise $2.3 million to be applied to the immediate rehabilitation of specified segments of this line. The Milwaukee Road accepted the Governor's proposal. Application was made and the FRA approved the use of $1,860,000 in federal monies to be taken from the entitlements available to the States of South Dakota, North Dakota and Minnesota. Rail users on the line provided the required match for the project which was completed during the 1979 construction period.

Even though service has been retained on the Miles City extension, nearly 1,000 miles of other Milwaukee Road track in South Dakota was embargoed and service has ceased. Subsequently, these lines have been approved for abandonment. The Division continues to closely monitor the Milwaukee Road reorganization process because the State is still affected by the actions of this railroad.

The State of South Dakota supports the reorganization effort of the Milwaukee Road and endorses the Milwaukee II structure as currently identified. The State would like to see the Milwaukee II system be given a chance to determine if the traffic and revenue projections are accurate and if the reorganized system will work. Meanwhile, the state is pursuing methods of restoring service on some former Milwaukee Road lines which have recently been approved for abandonment.

Exhibit II-6 lists the rail lines that have been abandoned in South Dakota since 1976. This list includes those Milwaukee lines omitted from the Milwaukee II reorganization plan and subsequently abandoned on June 28, 1980. The rail mileage in South Dakota abandoned since 1976 consists of 72.5 percent Milwaukee trackage, 22.8 percent C&NW trackage, 3.8 percent BN trackage, and 0.9 percent ICG trackage.

Compared to other states, South Dakota's rail mileage in the Category 1, Category 2, Category 3, and abandonment classifications have typically ranked quite high. In the FRA listing of eligible lines as of October 1, 1979, South Dakota was ranked as 5th in the nation for the sum of rail mileage in Categories 1, 2, and 3, and mileage approved for abandonment since the enactment of the 4-R Act. The mileage of South Dakota was exceeded only by the mileage of the States of Illinois, Iowa, Michigan, and Wisconsin.

Part of the reason for the high number of abandonments in South Dakota is the low traffic density generated by local shippers and receivers. Most of the rail lines in South Dakota carry very light traffic densities. Exhibit II-7 illustrates the average traffic density by direction for rail lines in the State. Those lines that carry a significant traffic density (over 5 million gross tons) serve primarily overhead traffic, or traffic that moves through the State. Achievement of higher traffic densities on other local lines will require the consolidation of rail lines which can concentrate the available rail traffic market, unless significant traffic increases develop.

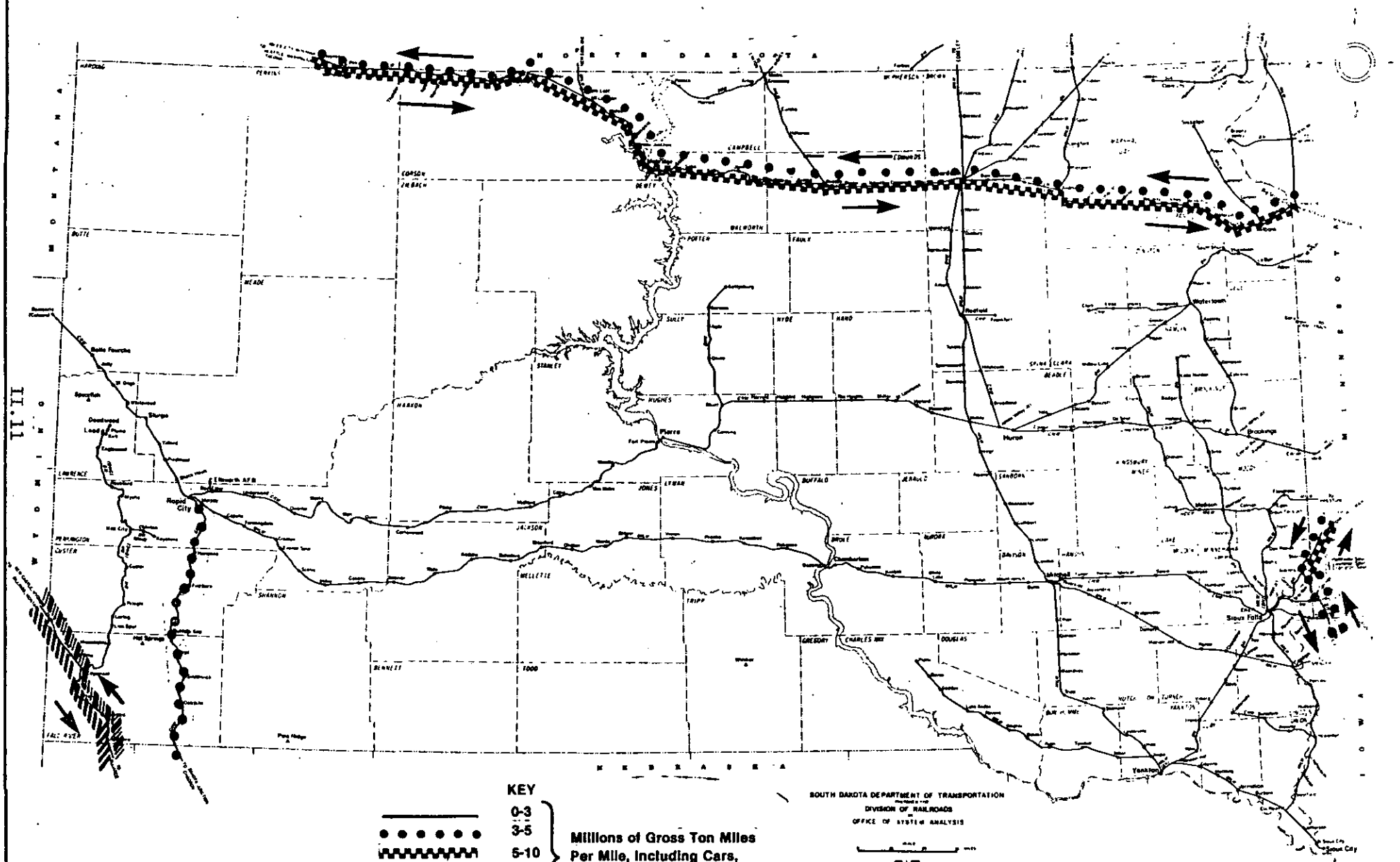
EXHIBIT II-6

SOUTH DAKOTA RAIL LINE ABANDONMENTS APPROVED SINCE 1976

	RAILROAD – LINE DESCRIPTION	YEAR ABANDONED	MILES ABANDONED
MILWAUKEE ROAD			
1.	Roscoe to Orient	1977	41.0
2.	Trail City to Faith	1979	106.5
3.	Woonsocket to Wessington Springs	1979	15.2
4.	Bristol to Garden City	1979	28.8
5.	Moreau Jct. to Isabel	1979	56.5
6.	Marion Jct. to Menno	1978	21.5
7.	Jackson, MN to Egan	1979	12.0
8.	Andover to Brampton, ND	1980	38.6
9.	Roscoe to Linton, ND	1980	40.7
10.	Aberdeen to Edgeley	1980	31.8
11.	Ortonville, MN to Fargo, ND	1980	1.3
12.	Madison to Bryant	1980	47.3
13.	Napa to Platte	1980	82.9
14.	Mitchell to Rapid City	1980	286.0
15.	East Wye Switch to Mitchell	1980	116.5
16.	East Wye Switch to Canton	1980	15.3
17.	Canton to Mitchell	1980	78.1
18.	Sioux Falls to Sioux Falls Jct.	1980	32.3
19.	Egan to Madison	1980	26.0
20.	Mitchell to Wolsey	1980	54.6
21.	Wolsey to Aberdeen	1980	74.0
22.	Mason City, IA to Canton, SD	1980	3.0
23.	Sioux City to East Wye Switch	1980	14.7
24.	Canton to Sioux Falls	1980	20.8
	TOTAL		1,245.4
CHICAGO & NORTH WESTERN			
1.	Winner, SD to Norfolk, NE	1978	63.2
2.	Watertown to Stratford	1977	71.4
3.	Clark to Doland	1977	18.7
4.	Wren, IA to Iroquois, SD	1978	125.5
5.	Jolly to Jolly Dump	1979	3.7
6.	James Valley Jct. to Redfield	1979	33.8
7.	Ellis to Mitchell	1980	65.2
8.	Redfield to Frankfort	1980	9.7
9.	Tracy, MN to Gary, SD	1980	1.0
	TOTAL		392.2
BURLINGTON NORTHERN			
1.	Near Yankton	1976	4.1
2.	Minnekahta to Hot Springs	1977	11.9
3.	Wentworth to Hayti	1980	49.2
	TOTAL		65.2
SOO LINE			
	None	–	–
ILLINOIS CENTRAL GULF			
1.	Cherokee, IA to Sioux Falls	1980	14.9
	GRAND TOTAL		1,717.7

EXHIBIT II-7

SOUTH DAKOTA RAILROAD TRAFFIC DENSITY MAP
[226.15(c)(2)(ii)]



Source: 1979 System Density Maps (MILW, BN, CNW,SOO)

Gross revenues generated by railroad for operations in South Dakota for the years 1974 through 1979 appear in Exhibit II-8. In 1979, the total revenue for all railroad operations in the State exceeded $80 million, most of which was freight charges. Of the five railroads serving South Dakota through 1979, the Burlington Northern demonstrated the greatest increase in revenues (350 percent) due largely to the large increase in coal movements through the southwestern portion of the State. Milwaukee Road revenues remained fairly constant between 1976 and 1979.

State Rail Usage (1973 to 1979)

The volume of traffic originating and terminating in South Dakota has recovered somewhat from the drought years of 1976 and 1977 when total carloadings fell to less than 96,000 per year. (This is shown in Exhibit II-9.) The 1979 total carloads for all railroads in the State totaled to 108,633, excluding all bridge traffic. This recovery however does not approach the traffic levels achieved in the early 1970s, when over 128,000 carloads moved to or from South Dakota in 1973.

Exhibit II-10 lists the total number of carloads, originating and terminating in South Dakota, by railroad and commodity for 1979. Milwaukee traffic represents 50 percent of the total origins and terminations with 54,277 carloads, C&NW traffic represents 31 percent with 34,138 carloads, BN traffic represents 15 percent with 15,885 carloads, and both Soo Line and ICG traffic represent about 2 percent each, with 2,637 carloads and 1,696 carloads respectively.

The major commodities moving by rail to or from South Dakota shippers include farm products, coal, non-metallic minerals, food and kindred products, lumber and wood products, and stone, clay and glass products. In 1973, the predominant commodity generated in South Dakota was farm products, representing 49, 231 carloads or 38 percent of all traffic originating and terminating in the State. Most of this traffic was originating traffic. The number of carloads of farm products decreased to 17,307 in 1976 or 18 percent of the total carloadings, and increased to 30,450 or 28 percent of total carloadings in 1979.

Coal was only 5 percent of all carloadings (6,105 carloads) in 1973. With the opening of Big Stone Power Plant at Big Stone City in 1975, this number increased to 23,162 carloads and was 29,699 in 1979, or 27 percent of the total carloads generated in the State.

In 1973, non-metallic minerals was the second largest commodity generated in the State with 19,147 carloads or 15 percent of the total. Carloadings of this commodity decreased to 7,884 in 1976 and 7,491 in 1979 or 7 percent of the totals, a reduction of more than 60 percent since 1973.

Food and kindred products amounted to 11,761 carloads or 9 percent of the total in 1973. By 1979, this commodity had declined to 5,340 carloads or 5 percent of the total. Lumber and wood products amounted to 7,078 carloads in 1973, or 5 percent of the total. This commodity has remained fairly stable since then, amounting to 7,483 carloads in 1979, or 7 percent of the total.

EXHIBIT II-8

GROSS REVENUE FOR RAILROAD OPERATIONS IN SOUTH DAKOTA BY REVENUE SOURCE *

	1974	1975	1976	1977	1978	1979
MILWAUKEE ROAD						
Freight	$27,574,000	$28,434,000	$31,897,000	$31,289,000	$31,602,000	$29,036,000
Mail Services	51,000	–	–	–	–	–
Switching	37,000	26,000	42,000	46,000	100,000	44,000
Misc.	49,000	47,000	43,000	59,000	76,000	3,223,000
Total	$27,711,000	$28,507,000	$31,982,000	$31,394,000	$31,778,000	$32,303,000
CHICAGO & NORTH WESTERN						
Freight	$12,113,595	$11,665,642	$12,172,000	$11,505,000	$13,096,000	$16,260,000
Switching	203,372	178,201	197,000	203,000	154,000	212,000
Misc.	8,628	(14,328)	64,000	–	233,000	203,000
Total	$12,325,595	$11,829,515	$12,433,000	$11,708,000	$13,482,000	$16,675,000
BURLINGTON NORTHERN						
Freight	$ 8,721,645	$ 9,749,000	$11,643,000	$15,293,000	$21,439,000	$30,795,000
Passengers	232	–	–	–	–	–
Mail Services	1,356	–	–	–	–	–
Switching	81,943	83,000	83,000	86,000	94,000	92,000
Misc.	19,177	18,000	39,000	35,000	60,000	60,000
Total	$ 8,804,353	$ 9,850,000	$11,745,000	$15,414,000	$21,593,000	$30,947,000
SOO LINE						
Freight	$ 73,450	$ 61,354	$ 49,203	$ 51,838	$ 95,373	$ 167,579
Misc.	129	229	160	102	325	225
Total	$ 73,579	$ 61,583	$ 49,363	$ 51,940	$ 95,698	$ 167,804
ILLINOIS CENTRAL GULF						
Freight	$ 58,345	$ 51,157	$ 58,000	$ 62,000	$ 69,000	$ 78,000
Switching	9,507	9,618	13,000	13,000	13,000	14,000
Misc.	25,040	10,721	10,000	3,000	7,000	5,000
Total	$ 92,892	$ 71,496	$ 81,000	$ 78,000	$ 89,000	$ 97,000
STATE TOTAL						
Freight	$48,541,035	$49,961,153	$55,819,203	$58,200,838	$66,300,373	$76,336,579
Passengers	232	–	–	–	–	–
Mail Services	52,356	–	–	–	–	–
Switching	311,822	296,819	315,000	348,000	361,000	362,000
Misc.	101,974	61,622	156,160	97,102	376,325	3,491,225
Total	$49,007,419	$50,319,594	$56,290,363	$58,645,940	$67,037,698	$80,189,804

NOTE: Entries of a contrary character indicated by parentheses.
These figures are mileage pro rata revenue and not station revenue.

SOURCE: Annual Reports of the Railroads to the Interstate Commerce Commission.

* Includes Bridge Traffic

EXHIBIT II-9

TOTAL NUMBER OF CARLOADS OF COMMODITIES ORIGINATING AND TERMINATING IN SOUTH DAKOTA — ALL RAILROADS

STCC CODE	COMMODITY DESCRIPTION	1973	1974	1975	1976	1977	1978	1979
01	Farm Products	49,231	43,110	28,039	17,307	18,780	28,242	30,450
09	Fish & Marine Products	18	9	2	–	4	8	6
10	Metallic Ores	22	12	2	1	2	1	1
11	Coal	6,105	6,400	23,162	26,000	26,798	32,349	29,899
14	Non-metallic Minerals	19,147	14,060	8,750	7,884	9,111	9,173	7,491
19	Ordance & Accessories	76	30	15	16	55	9	7
20	Food & Kindred Products	11,761	13,019	10,043	9,306	7,953	6,049	5,340
21	Tobacco Products	8	8	12	17	13	14	9
22	Basic Textiles	43	64	65	79	64	100	57
23	Other Textiles	3	25	5	10	8	1	2
24	Lumber & Wood Products	7,078	6,934	8,792	7,025	7,018	7,570	7,483
25	Furniture	608	649	480	422	378	421	378
26	Pulp, Paper & Others	1,320	1,435	1,155	1,441	1,434	1,295	1,423
27	Printed Matter	2	2	1	4	–	–	1
28	Chemicals & Allied Products	4,862	4,701	4,041	3,074	3,174	3,330	3,449
29	Petroleum & Coal Products	3,398	2,174	1,601	1,494	1,151	1,558	2,376
30	Rubber & Miscellaneous	412	381	273	342	381	336	295
31	Leather & Related Products	–	–	45	25	1	–	1
32	Stone, Clay & Others	15,251	16,588	14,753	14,458	13,804	11,992	13,904
33	Primary Metal	1,567	1,399	919	818	1,001	1,093	1,399
34	Fabr. Metal Products	1,933	1,343	630	637	266	188	120
35	Machinery	1,348	1,493	1,428	1,110	884	800	678
36	Electrical Machinery	468	564	220	203	238	158	162
37	Transportation Equipment	452	420	264	231	96	138	392
38	Instruments & Others	–	–	4	6	6	–	–
39	Misc. Products	52	49	31	22	44	34	30
40	Waste & Scrap Metal	1,238	1,617	839	1,287	765	913	1,061
41	Misc. Freight Shipments	143	187	76	44	75	30	39
42	Containers & Others	317	292	184	123	164	119	74
44	Freight Forwarder Traffic	145	75	274	111	189	388	250
45	Shipper Assoc.	110	217	205	312	1,294	1,062	883
46	Misc. Mixed Shipments	1,657	2,139	1,576	1,422	817	831	1,173
	GRAND TOTAL	128,775	119,384	104,856	97,230	95,738	108,503	108,633

SOURCE: Annual Reports of the Railroads to the Interstate Commerce Commission.

EXHIBIT II-10

TOTAL NUMBER OF CARLOADS BY COMMODITY AND RAILROAD ORIGINATING AND TERMINATING IN SOUTH DAKOTA
1979

STCC CODE	COMMODITY DESCRIPTION	MILW RD	C&NW	BN	SOO	ICG	TOTAL	
							CARS	% OF TOTAL
01	Farm Products	13,747	8,577	5,614	2,422	90	30,450	28%
09	Fresh Fish & Marine Products	–	–	6	–	–	6	–
10	Metallic Ores	–	–	1	–	–	1	–
11	Coal	27,523	87	2,088	1	–	29,699	27
14	Non-metallic Minerals except Fuels	3,597	2,875	950	–	69	7,491	7
19	Ordance & Accessories	2	2	1	–	2	7	–
20	Food & Kindred Products	1,224	2,413	1,703	–	–	5,340	5
21	Tobacco Products	3	6	–	–	–	9	–
22	Basic Textiles	9	8	21	19	–	57	–
23	Apparel & Other Textiles	2	–	–	–	–	2	–
24	Lumber & Wood Products	1,435	5,112	897	1	38	7,483	7
25	Furniture & Fixtures	115	144	116	–	3	378	–
26	Pulp, Paper & Allied Products	401	414	602	–	6	1,423	1
27	Printed Matter	–	1	–	–	–	1	–
28	Chemicals & Allied Products	1,630	841	812	107	59	3,449	3
29	Petroleum & Coal Products	379	975	1,016	4	2	2,376	2
30	Rubber & Miscellaneous	38	139	118	–	–	295	–
31	Leather Products	–	1	–	–	–	1	–
32	Stone, Clay & Glass Products	2,179	11,222	449	1	3	13,904	13
33	Primary Metal Products	583	305	435	74	2	1,399	1
34	Fabricated Metal Products	50	22	44	4	–	120	–
35	Machinery Except Electrical	264	281	130	3	–	678	1
36	Electrical Machinery & Supplies	26	93	30	–	14	162	–
37	Transportation Equipment	131	12	247	–	2	392	–
38	Instrument Photo & Optical Goods	–	–	–	–	–	–	–
39	Miscellaneous Manufacturing Products	–	30	–	–	–	30	–
40	Waste & Scrap Materials	654	332	75	–	–	1,061	1
41	Miscellaneous Freight Shipments	29	7	3	–	–	39	–
42	Containers	45	18	4	–	7	74	–
44	Freight Forwarder Traffic	–	–	8	–	242	250	–
45	Shipper Association Traffic	48	8	269	–	558	883	1
46	Miscellaneous Mixed Shipments	164	213	196	1	599	1,173	1
	GRAND TOTAL	54,277	34,138	15,885	2,637	1,696	108,633	100%

SOURCE: Annual Reports of the Railroads to the Interstate Commerce Commission.

In 1973, 15,251 carloads of stone, clay, and glass products were generated in the State, amounting to 12 percent of the total. This number has fallen to 13,904 carloads generated in 1979, or 13 percent of the total. In 1979, farm products remains the major commodity originated or terminated in South Dakota, while coal represents a close second.

The number of carloads of traffic originating and terminating on the various lines has changed since 1973 as well as each carrier's proportional share (Exhibit II-11). In 1973, the Milwaukee Road handled 43,534 carloads, or 34 percent out of a total of 128,776 carloads Statewide. Their carloads grew to 54,277 out of a total of 108,633 carloads, or 50 percent of the total carloads generated in the State by 1979. The C&NW generated 56,248 carloads in 1973 for 44 percent of the total, versus 34,138 carloads or 31 percent in 1979. The BN's share in South Dakota decreased from 21,711 carloads or 17 percent to 15,885 carloads or 15 percent in 1979. The Soo Line's share also decreased from 3,664 carloads to 2,637 carloads, or from 3 percent to 2 percent of the carloads generated in the State by 1979. The ICG's share also decreased, from 3,619 carloads or 3 percent in 1973 to 1,696 carloads or 2 percent of the State's total traffic in 1979. These figures include only originating and terminating traffic.

When comparing originating to terminating carloads by railroad for 1973 through 1979 (Exhibit II-11), it is apparent that in 1979 the total traffic for all railroad carriers is evenly split. Since 1973, the percent of originating carloads has decreased from a rate of 66 percent of the total traffic to 51 percent in 1979. This is due primarily to the continuing diversion of originating grain movements to motor carriers and the significant increase in terminating coal traffic destined for the Big Stone Power Plant..

According to the One Percent Waybill Sample for 1973 through 1978, the primary states of origin for South Dakota-bound rail traffic include North Dakota, Illinois, and Minnesota which account for over 68 percent of the total inbound carloads in 1978 (Exhibit II-12). The primary states of destination for South Dakota-bound rail traffic include Minnesota, Wisconsin, and Washington, which account for over 62 percent of the total outbound carloads in 1978. As shown in the exhibit, the distribution of rail traffic by origin-destination pair changes somewhat from year to year as markets and natural resources shift. This exhibit also reveals that the traffic flows are becoming more concentrated, and tend to focus on specific origin-destination pairs. The declines in the percentages of other states for both originating and terminating traffic from 1973 to 1978 demonstrate the concentrating effect. In addition, the states that provide the highest proportion of originating or terminating traffic for South Dakota generally represent higher percentages in 1978 than 1973. This trend is characteristic of the railroad industry today, as it attempts to concentrate efforts on high volume, bulk commodities, such as coal or grain.

Since 1973, the percent of carloads moving intrastate within South Dakota has declined from 14.7 percent of the total carloads moving in the State to

EXHIBIT II-11

NUMBER OF CARLOADS OF COMMODITIES ORIGINATING AND TERMINATING IN SOUTH DAKOTA

RAILROAD		1973	1974	1975	1976	1977	1978	1979
MILWAUKEE ROAD								
	Originating	29,360	27,360	17,951	13,032	15,459	19,623	20,196
	Terminating	14,174	12,773	26,492	30,861	30,728	36,823	34,081
	Total	43,534	40,133	44,443	43,893	46.187	56,446	54,277
CHICAGO AND NORTH WESTERN								
	Originating	39,203	35,389	25,198	21,316	20,247	22,920	24,717
	Terminating	17,045	15,829	13,352	11,679	11,184	9,654	9,421
	Total	56,248	51,218	38,550	32,995	31,431	32,574	34,138
BURLINGTON NORTHERN								
	Originating	10,834	8,977	6,589	5,781	5,355	7,013	7,458
	Terminating	10,877	10,419	9,095	9,900	8,496	8,506	8,427
	Total	21,711	19,396	15,684	15,681	13,851	15,519	15,885
SOO LINE								
	Originating	3,453	2,528	1,954	1,290	1,235	2,171	2,424
	Terminating	211	95	106	106	107	109	213
	Total	3,664	2,623	2,060	1,396	1,342	2,280	2,637
ILLINOIS CENTRAL GULF								
	Originating	1,816	3,625	2,316	1,891	1,346	74	112
	Terminating	1,803	2,389	1,803	1,374	1,579	1.610	1.584
	Total	3,619	6,014	4,119	3,265	2,925	1,684	1,696
TOTAL ALL COMPANIES								
	Originating	84,666	77,879	54,008	43,310	43,642	51,801	54,907
	Terminating	44,110	41,505	50,848	53,920	52,094	56,702	53,728
	Total	128,776	119,384	104,856	97,230	95,736	108,503	108,633

SOURCE: Annual Reports of the Railroads to the Interstate Commerce Commission.

EXHIBIT II-12

SOUTH DAKOTA RAIL FREIGHT ORIGINS AND DESTINATIONS

PERCENT INBOUND CARLOADS BY ORIGIN STATE			
1973		1978	
ORIGIN	%	ORIGIN	%
Wyoming	18.8	North Dakota	49.5
Illinois	12.0	Illinois	10.5
Minnesota	8.0	Minnesota	8.9
Kansas	7.2	Wyoming	6.1
Iowa	6.9	Iowa	3.1
Montana	5.4	Kansas	2.6
Wisconsin	4.7	Nebraska	2.2
Other	37.0	Other	17.1
TOTAL	100.0	TOTAL	100.0

PERCENT OUTBOUND CARLOADS BY DESTINATION STATE			
1973		1978	
DESTINATION	%	DESTINATION	%
Minnesota	31.1	Minnesota	32.3
Iowa	10.1	Wisconsin	16.0
Nebraska	9.6	Washington	13.9
Wisconsin	9.5	Iowa	8.5
Missouri	6.8	Missouri	4.7
Washington	4.0	Nebraska	4.2
Kansas	3.5	Illinois	2.4
Other	25.4	Other	18.0
TOTAL	100.0	TOTAL	100.0

SOURCE: One-Percent Waybill Statistics, Interstate Commerce Commission, 1973 and 1978.

7.1 percent in 1978. This indicates that the use of rail traffic for local, short-haul moves is declining in South Dakota, with most rail shipments being destined for out-of-state markets or originating in out-of-state supply sources (coal, lumber, and machinery). This information is based on the One Percent Waybill Sample, which provides a general picture of rail traffic moving throughout the country based on sampled railroad waybills.

Nonfreight Rail Services

In addition to the four Class I rail carriers which provide freight service in South Dakota, two tourist train operations provide limited passenger service. The Black Hills Central Railroad is a privately owned corporation which operates daily steam excursion trains during the summer between Hill City and Keystone via trackage rights with the BN. Extended service to Custer has been provided in the past. The Black Hills Central Railroad consists of six steam locomotives and numerous vintage passenger cars. The present owner of the Black Hills Central Railroad has expressed an interest in acquiring the BN track in the Black Hills area, from Edgemont to Deadwood and Hill City to Keystone, if the BN would abandon the line.

The Historic Dakota Central Railroad is a privately owned company which owns one steam engine, several passenger cars, and two miles of the former Milwaukee Road line that ran from Madison west to Woonsocket, abandoned in 1972. Summer operations on a limited basis are provided between Madison and Prairie Village. The current plan by BN to acquire and operate the Madison to Wentworth line will require the Historic Dakota Central Railroad to get BN approval for access into Madison.

RAIL LINE CHARACTERISTICS

The rail network serving South Dakota can be characterized in many ways. Exhibit II-3 illustrates the rail lines by operating carrier; Exhibit II-5 illustrates the Category 1 and 3 lines and the lines already abandoned; and Exhibit II-7 illustrates the light density lines in the state.

Exhibit II-13 displays the rail lines in South Dakota eligible for project assistance under the Section 803 Program of the 4-R Act. These include abandoned lines and light density lines in the State, which currently comprise the vast majority of rail lines in South Dakota. Selection of lines for intensive study and project consideration will be addressed in Section IV of Part B, of this report.

Exhibit II-14 shows the rail lines in South Dakota that are currently under transition. These include lines expected to be retained as part of the reorganized Milwaukee II system, consolidation project lines, and lines anticipated to be included in the Railroad Authority's purchase of abandoned Milwaukee rail lines in the State.

EXHIBIT II-13

RAIL LINES ELIGIBLE FOR PROJECT ASSISTANCE

[226.15(c)(3)(i)]

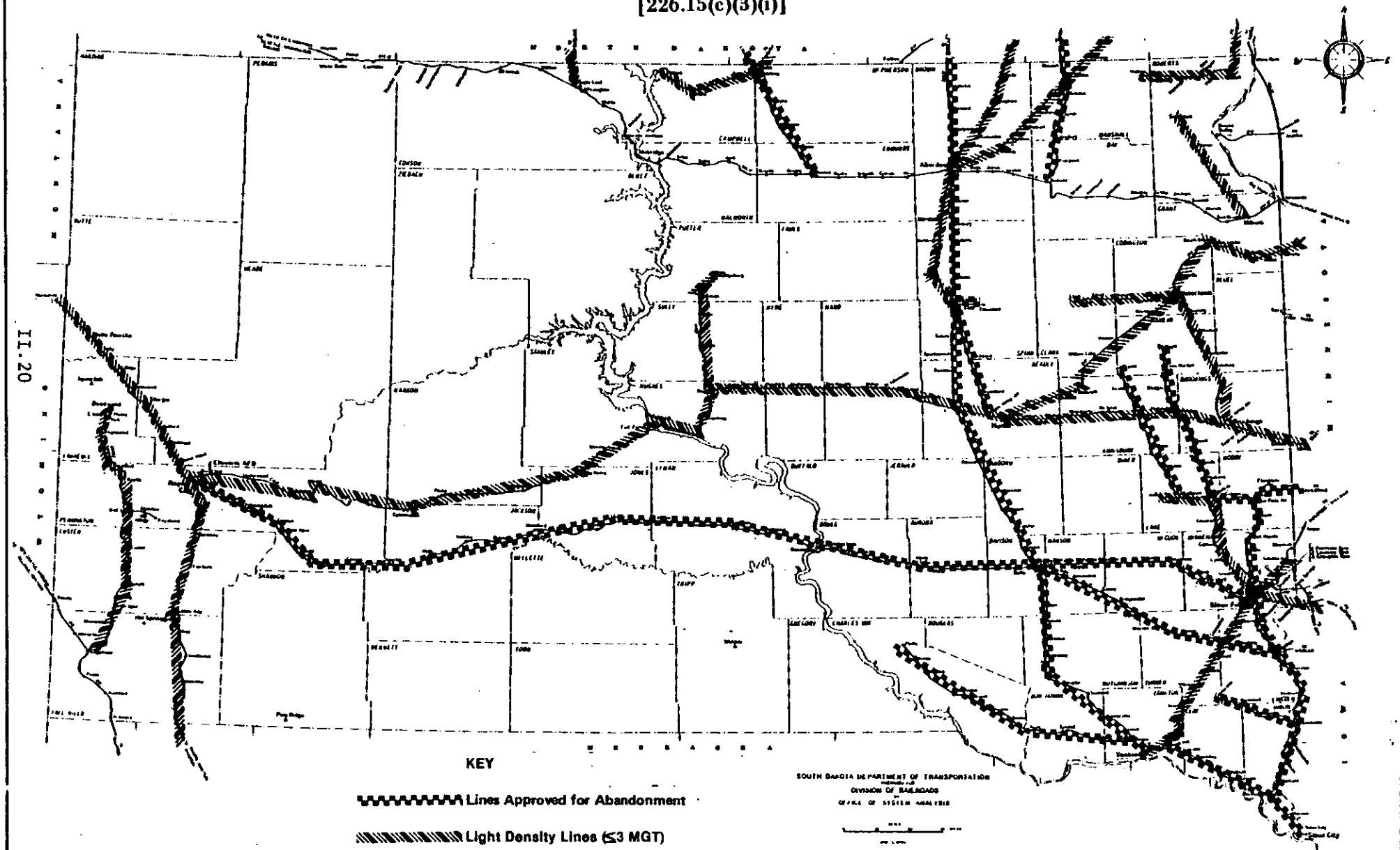


EXHIBIT II-14

TRANSITION RAIL LINES
[226.15(c)(3)(v)]

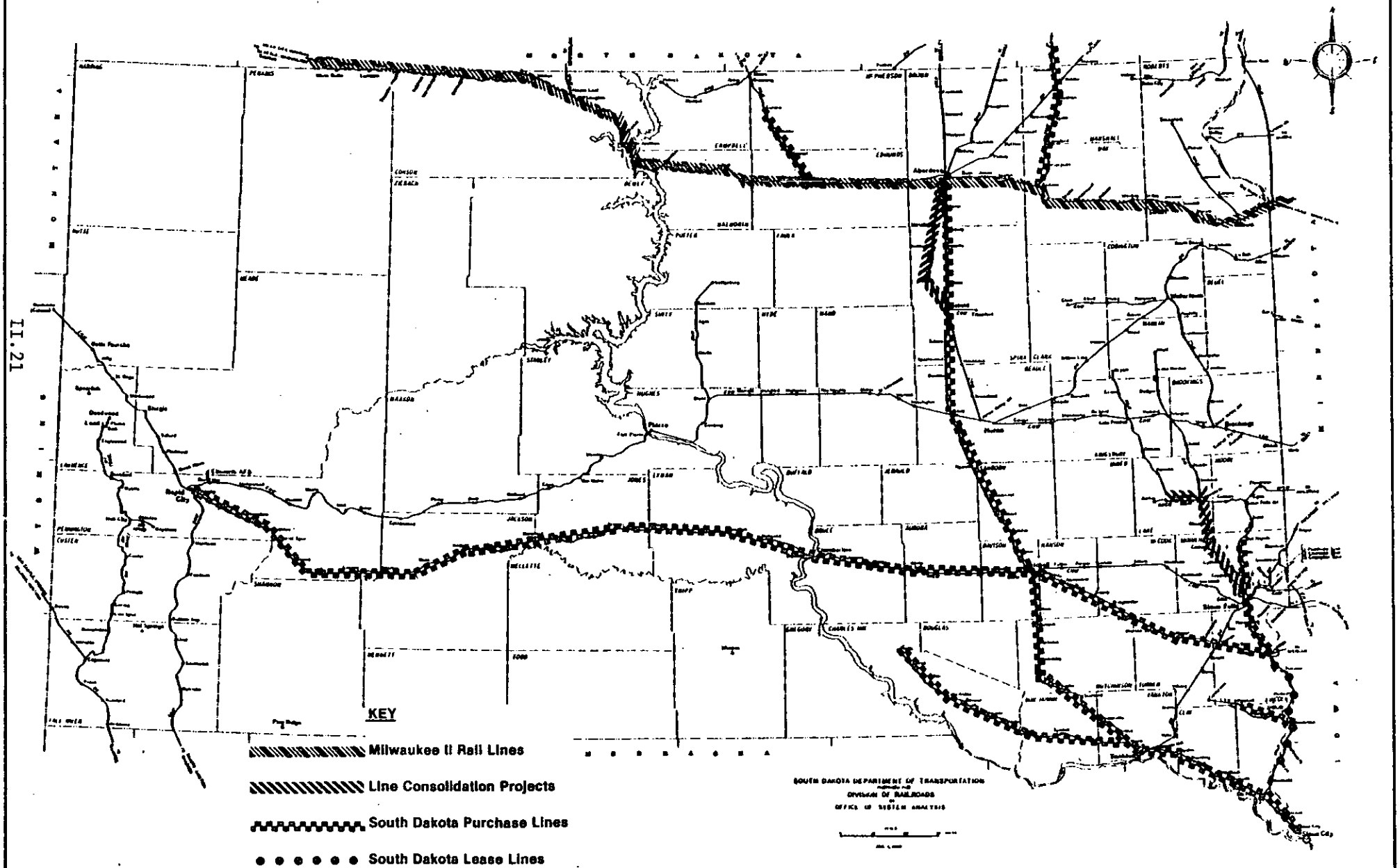


Exhibit II-15 displays the location of rail assistance projects for which federal assistance may be sought, as well as lines whose projects are funded by non-federal sources. The first group of lines or sites will involve application for Section 803 project assistance. The second group of lines are part of the proposed South Dakota core railroad system which are currently being studied in detail using State resources entirely. Also shown as part of this second group is the Milwaukee Miles City line from Jonathan, Minnesota, to Gascoyne, North Dakota. This line is also under special study by the Division to assess its short-term viability using State resources.

Exhibit II-16 lists the remaining trailer-on-flat-car/container-on-flat-car (TOFC/COFC) facilities in South Dakota. Since 1977, the number of TOFC/COFC ramps in the State has decreased from 19 to 4. The remaining ramps are evenly distributed throughout the State, located in the largest cities of the State on railroad main lines.

ESSENTIAL RAIL SYSTEM DESCRIPTION

The crisis nature of rail issues facing the State of South Dakota makes it imperative that assistance efforts be directed where the greatest benefit to the State can be achieved. This requires the State to identify which rail lines are essential to its transportation and economic development needs, and to direct available resources to those lines. The poor condition of much of South Dakota's rail network makes rehabilitation and maintenance of all lines in the state financially unrealistic. By focusing on a subset of essential rail lines, the State can more effectively apply its scarce resources by prioritizing lines that are candidates for assistance.

For the purposes of this study, essential rail lines are defined by several characteristics, including:

- current and projected traffic volumes;
- access to the major grain producing parts of the State;
- access to the national rail transportation network;
- access to natural resource areas, particularly coal deposits; and
- expected local impacts of service loss, including shipper cost, highway cost, and rehabilitation cost.

The major commodity moving by railroad in South Dakota is grain, and the most important industry in South Dakota today is agriculture. South Dakota farmers produced nearly 455 million bushels of grain in 1979 (Exhibit II-17). This production, converted to dollars, represents a value of approximately $1.3 billion. Of this total, estimated off-farm sales amount to over $729 million. Wheat had the largest sales volume representing over $219.

EXHIBIT II-15

PROJECT ASSISTANCE LINES AND SITES
[266.15(c)(3)(vi and vii)]

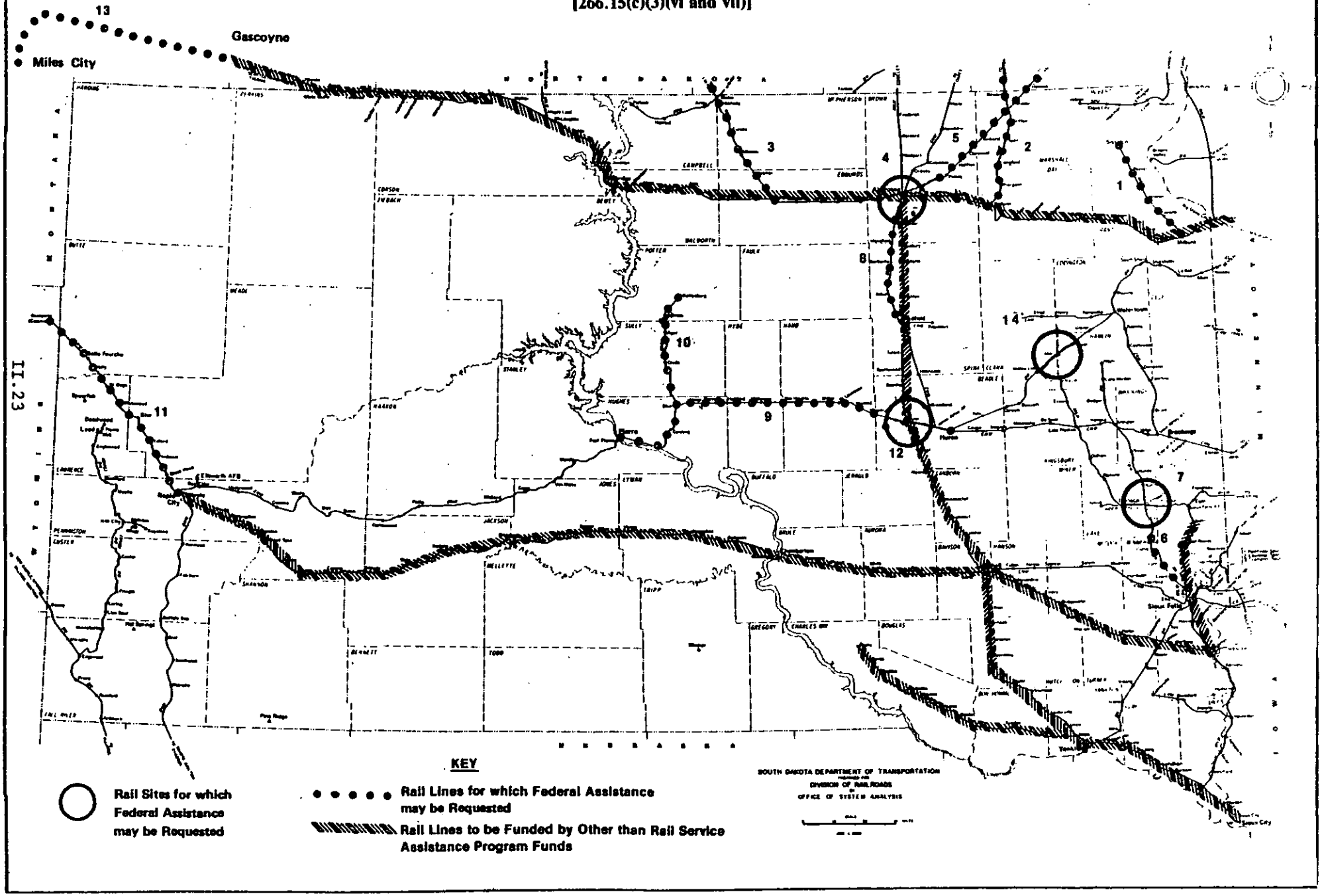


EXHIBIT II-16

TRAILER-ON-FLATCAR (TOFC) FACILITY LOCATIONS WITHIN THE STATE OF SOUTH DAKOTA

LOCATION	OPERATING RAILROAD
Aberdeen	Milwaukee Road
Mobridge	Milwaukee Road
Rapid City	Chicago & North Western
Sioux Falls	Burlington Northern Illinois Central Gulf

SOURCE: Official Railroad Guide, July-August 1980.

EXHIBIT II-17

SOUTH DAKOTA VS UNITED STATES
AGRICULTURE PRODUCTION – 1979
(1,000 BU.)

COMMODITY	SOUTH DAKOTA PRODUCTION	UNITED STATES PRODUCTION	PERCENT SD VS US
Corn	210,900	7,763,771	2.7%
Sorghum	13,590	814,308	1.7%
Oats	98,500	534,386	18.4%
Barley	20,000	378,067	5.3%
Wheat	60,060	2,141,732	2.8%
Rye	6,300	24,549	25.7%
Soybeans	20,955	2,267,647	0.9%
FlaxSeed	4,900	13,539	36.2%
TOTALS	435,205	13,937,999	3.1%
Hay	7,915 Tons	145,878 Tons	5.4%
Sunflowers	378,150 Tons	3,652,795 Tons	10.4%

SOURCE: United States Department of Agriculture.

million or 28 percent of the total grain production, followed by corn with $188 million or 26 percent. Since the drought of 1976, grain production for the State has more than tripled. For 1979, South Dakota ranks first in the United States in the sale of oats and rye, second in the sale of flaxseed, and third in the production of sunflowers. As of April 1, 1980, it is estimated that over 328 million bushels of grain are in storage in South Dakota. This includes both on-farm and commercial storage. This stored grain has an estimated overall value of $702 million.

Grain production totals by county for 1979 are aggregated into three ranges (Exhibit II-18). Note the heavy concentration of high volume grain-producing counties east of the Missouri River. Exhibit II-19 shows the expected production of the grain producing areas by 1990, while Exhibit II-20 shows the total 1978 on-and off-farm grain storage capacity by county. Service to these high volume grain producing and storage areas is considered an important determinant of rail-line significance.

Access to natural resources such as coal provides another basis for making a rail line more essential. Exhibit II-21 shows the location of coal resources in South Dakota and the rail line serving the area.

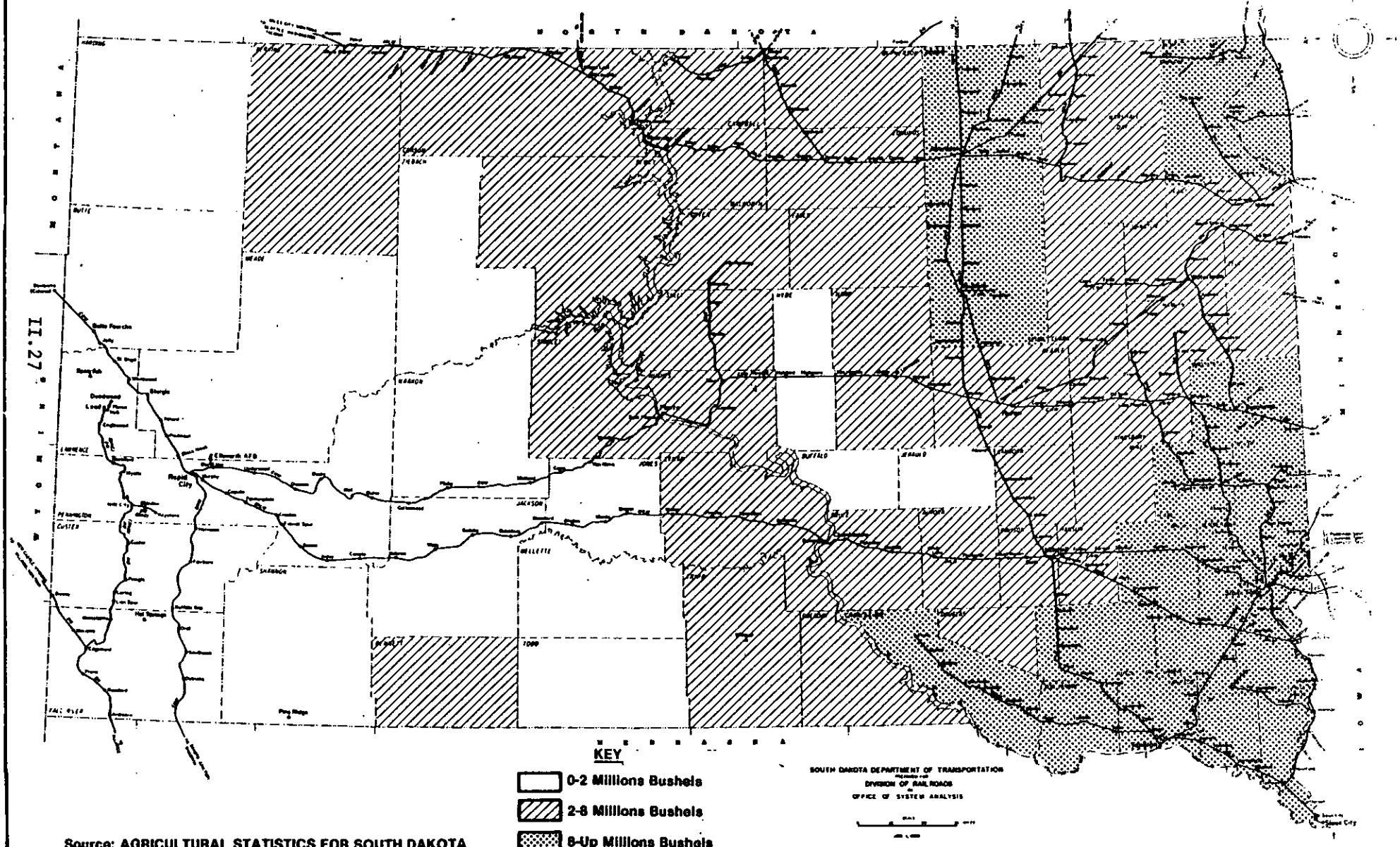
During 1979, a special study called the South Dakota Rail Line Inventory Study was undertaken by the Division and outside consulting firms to prioritize all line segments in the State on the basis of six criteria, including current traffic, future traffic potential, network accessibility, rehabilitation costs, additional shipper costs, and additional highway costs. Although the results of this study are preliminary and do not account for the interrelationships between lines in the same area, they do provide a supporting basis for developing an essential rail system for South Dakota.

Based upon the analyses contained in this study, each segment received a summary evaluation rating. This summary evaluation rating was based upon a weighted average of the ratings given for each criterion by line segment. Exhibit II-22 lists the ratings for each line segment in South Dakota. Ratings are also provided for rail lines abandoned since the release of the study in January 1980. This permits the evaluation of lines recently embargoed and then abandoned by the Milwaukee Road which are currently being considered for acquisition by the Railroad Authority. Exhibit II-23 displays the ratings of each line segment in South Dakota. This exhibit demonstrates which lines would produce the most severe effects due to abandonment of rail service. These lines form the nucleus of the proposed essential rail network for South Dakota.

Based upon the previous information and study results, the essential rail system for South Dakota is defined as illustrated in Exhibit II-24. These lines form a basic skeletal rail network of feeder lines serving the agricultural producing areas of the State; main lines linking the shippers in South Dakota with local, national, and international markets; and secondary main lines which connect the feeder lines to the main lines. Extensions beyond this essential rail system are possible where sufficient revenues are generated to justify service extension or the lines are already being served and maintained by a rail carrier.

EXHIBIT II-18

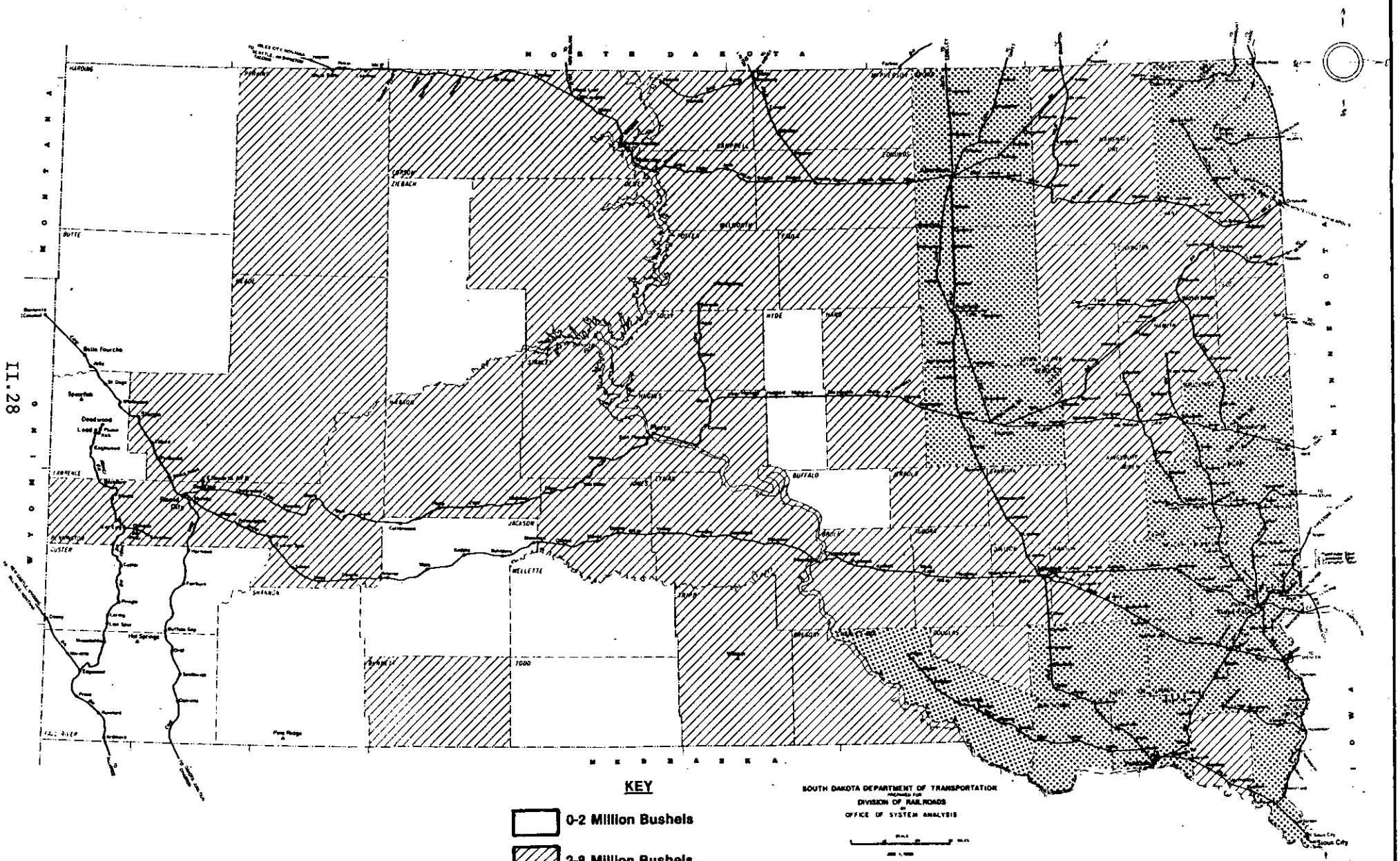
SOUTH DAKOTA GRAIN PRODUCTION
(1976-1979 ANNUAL AVERAGE)



Source: AGRICULTURAL STATISTICS FOR SOUTH DAKOTA
South Dakota Department of Transportation
Division of Railroads, June 1980.

EXHIBIT II-19

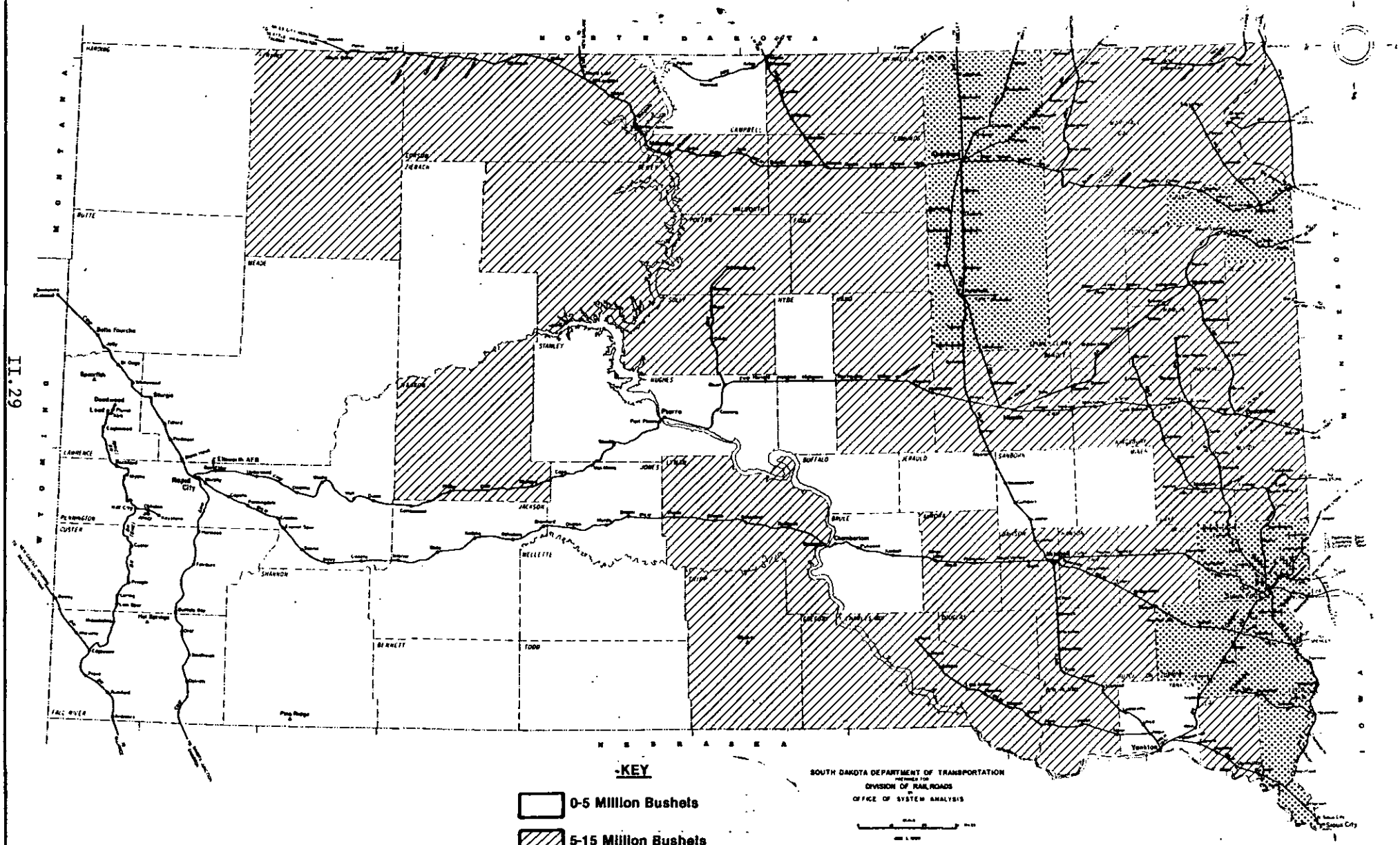
SOUTH DAKOTA GRAIN PRODUCTION
(1990 FORECAST)



Source: South Dakota Rail Network Inventory Study, Reeble Associates

EXHIBIT II-20

SOUTH DAKOTA GRAIN STORAGE CAPACITY
(1978-MILLIONS OF BUSHELS)



KEY

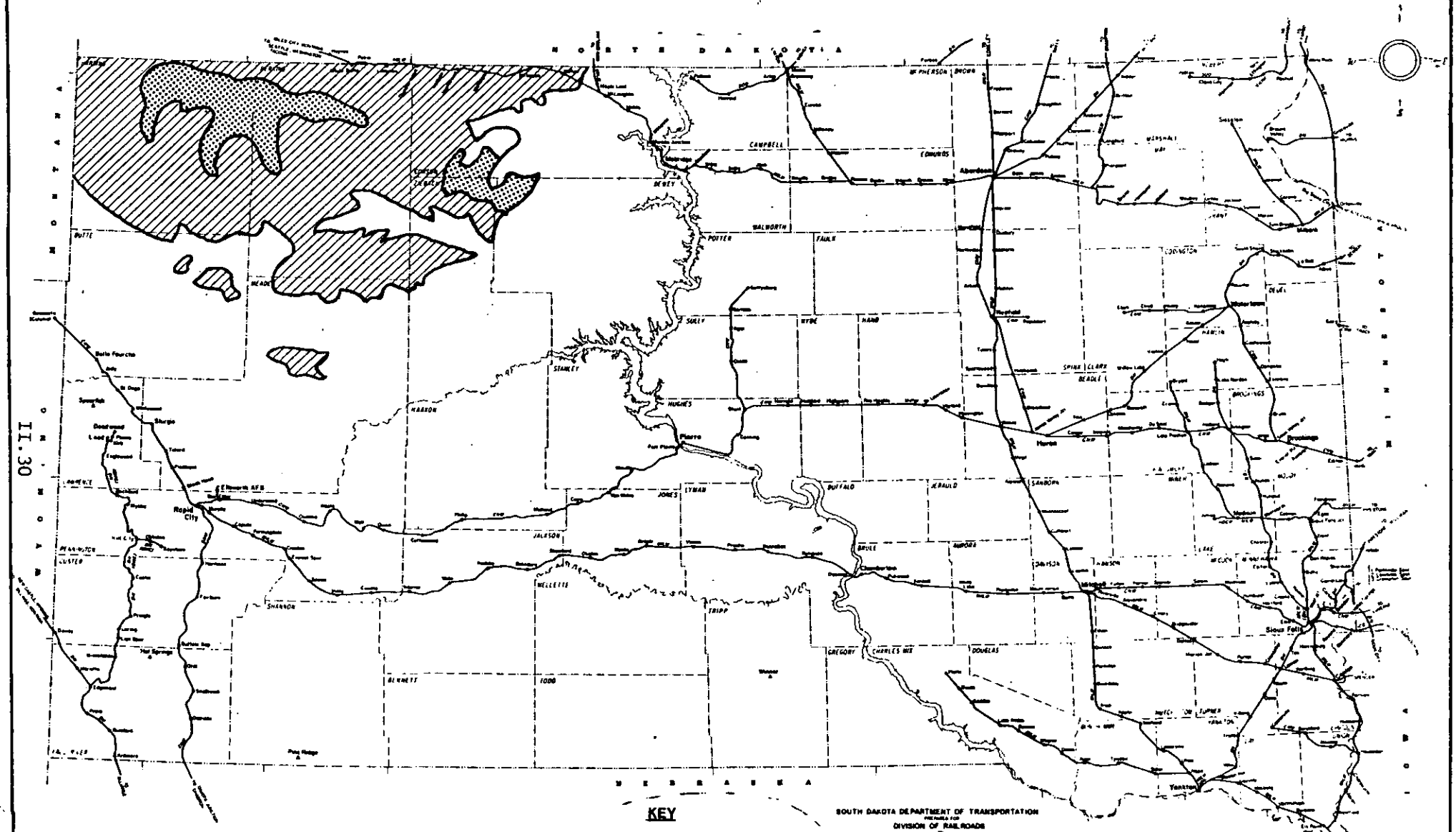
- 0-5 Million Bushels
- 5-15 Million Bushels
- 15 and Up Million Bushels

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION
DIVISION OF RAILROADS
OFFICE OF SYSTEM ANALYSIS

Source: AGRICULTURAL STATISTICS FOR SOUTH DAKOTA
South Dakota Department of Transportation
Division of Railroads, June 1980.

EXHIBIT II-21

SOUTH DAKOTA COAL RESOURCES



Source: South Dakota Geological Survey, Bulletin North, Mineral and Water Resources of South Dakota.

EXHIBIT II-22

SOUTH DAKOTA RAIL SEGMENT EVALUATION RATINGS

Segment Number	Line Description	Summary Rating
Milwaukee Road		
MW01	Montevideo, MN to Aberdeen, SD	A
MW02	Aberdeen to Mobridge	A
MW03	Mobridge, SD to Marmarth, ND	A
MW04	Milbank to Sisseton	C
* MW05	Bristol to Garden City	E
MW06	Andover, SD to Brampton, ND	D
MW08	Roscoe, SD to Linton, ND	D
* MW09	Moreau Jct. to Trail City	E
* MW10	Trail City to Isabel	E
* MW11	Trail City to Faith	E
MW12	McLaughlin, SD to New England, ND	D
* MW13	Ortonville, MN to Fargo, ND	D
MW14	Mason City, IA to Canton, SD	D
MW15	Canton to Mitchell	C
MW16	Mitchell to Wolsey	C
MW17	Wolsey to Aberdeen	C
* MW18	Aberdeen, SD to Edgeley, ND	D
* MW19	Marion, Jct. to Menno	E
* MW20	Woonsocket to Wessington Springs	E
MW21a	Mitchell to Murdo	C
MW21b	Murdo to Rapid City	D
MW22	Sioux City, IA to Sioux Falls, SD	B
MW23	Sioux Falls to Sioux Falls Jct.	B
MW24	East Wye Switch to Mitchell	C
MW25	Napa to Platte	C
MW26	Jackson, MN to Madison, SD	C
MW27	Madison to Bryant	D
Chicago & North Western		
CN01	Tracy, MN to Huron, SD	B
CN02	Huron to Pierre	B
CN03	Pierre to Rapid City	B
* CN04a	James Valley Jct. to Redfield	E
CN04b	Redfield to Aberdeen	C
CN05	Aberdeen, SD to Oakes, ND	C
CN06	Chadron, NB to Rapid City, SD	A
CN07	Rapid City, SD to Bentonite, WY	A
* CN08	Jolly to Jolly Dump	E
CN09	Worthington, MN to Sioux Falls, SD	B
CN10	Sioux Falls to Mitchell	C
CN11	Hawardeen, IA to Beresford, SD	E
CN12	Sioux Valley Jct. to Watertown	C
CN13	Watertown to Clark	D
CN15	Redfield to Frankfort	D
CN16	Blunt to Gettysburg	D
CN17	Tracy, MN to Gary, SD	D
* CN18	Norfolk, NB to Winner, SD	E
CN19	Box Elder to Ellsworth AFB	Not Rated

* Abandoned lines whose descriptive sheets have been omitted from this update due to the unlikelihood of rail service resumption or rail banking.

EXHIBIT II-22

SOUTH DAKOTA RAIL SEGMENT EVALUATION RATINGS (Cont.)

Segment Number	Line Description	Sumary Rating
Burlington Northern		
BN01	Willmar, MN to Garretson, SD	A
BN02	Garretson, SD to Sioux City, IA	A
BN03	Garretson to Sioux Falls	A
BN04	Sioux Falls to Yankton	D
BN05	Sioux Falls - Hayti	D
BN06	Benson, MN to Watertown, SD	C
BN07	Watertown to Huron	C
BN08	Genesco Jct. to Aberdeen	D
BN09	Alliance, NB to Edgemont, SD	A
BN10	Edgemont, SD to Gillette, WY	A
BN11	Edgemont to Deadwood	C
*BN12	Minnekahta to Hot Springs	E
BN13	Hill City to Keystone	D
BN14	Kirk to Lead	D
Soo Line		
SL01	Veblen Jct., ND to Veblen, SD	D
SL02	Wishek, ND to Pollock, SD	D
Illinois Central Gulf		
IC01	Cherokee, IA to Sioux Falls, SD	C

Rating Key

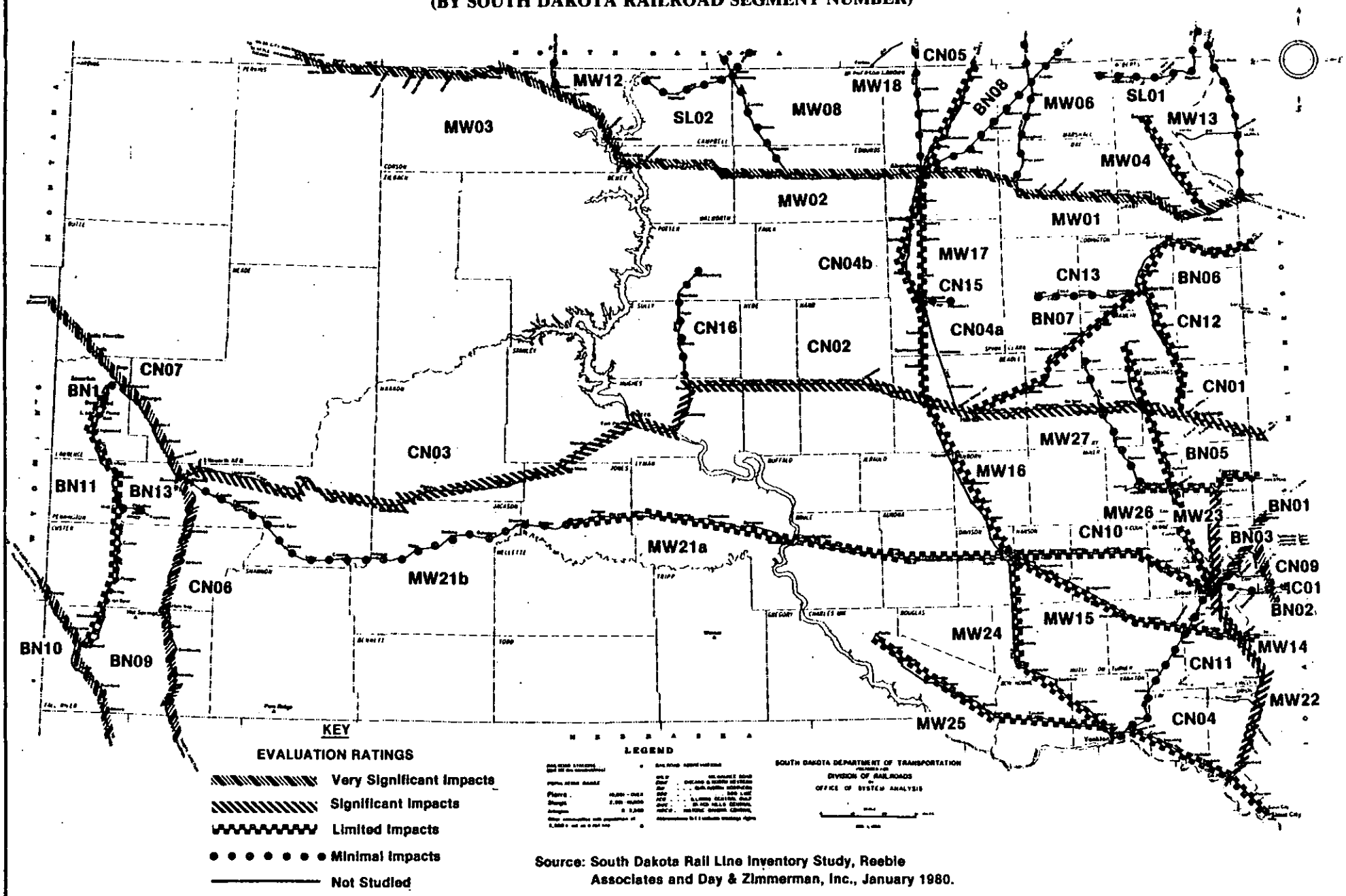
A - Highest Priority
B - Significant Impact
C - Limited Impact
D - Minimal Impact
E - Abandoned

SOURCE: South Dakota Rail Line Inventory Study, Day & Zimmerman, Inc., and Reebie Associates, January 1980, p. 15-17.

* Abandoned lines whose descriptive sheets have been omitted from this update due to the unlikelihood of rail service resumption or rail banking.

EXHIBIT II-23

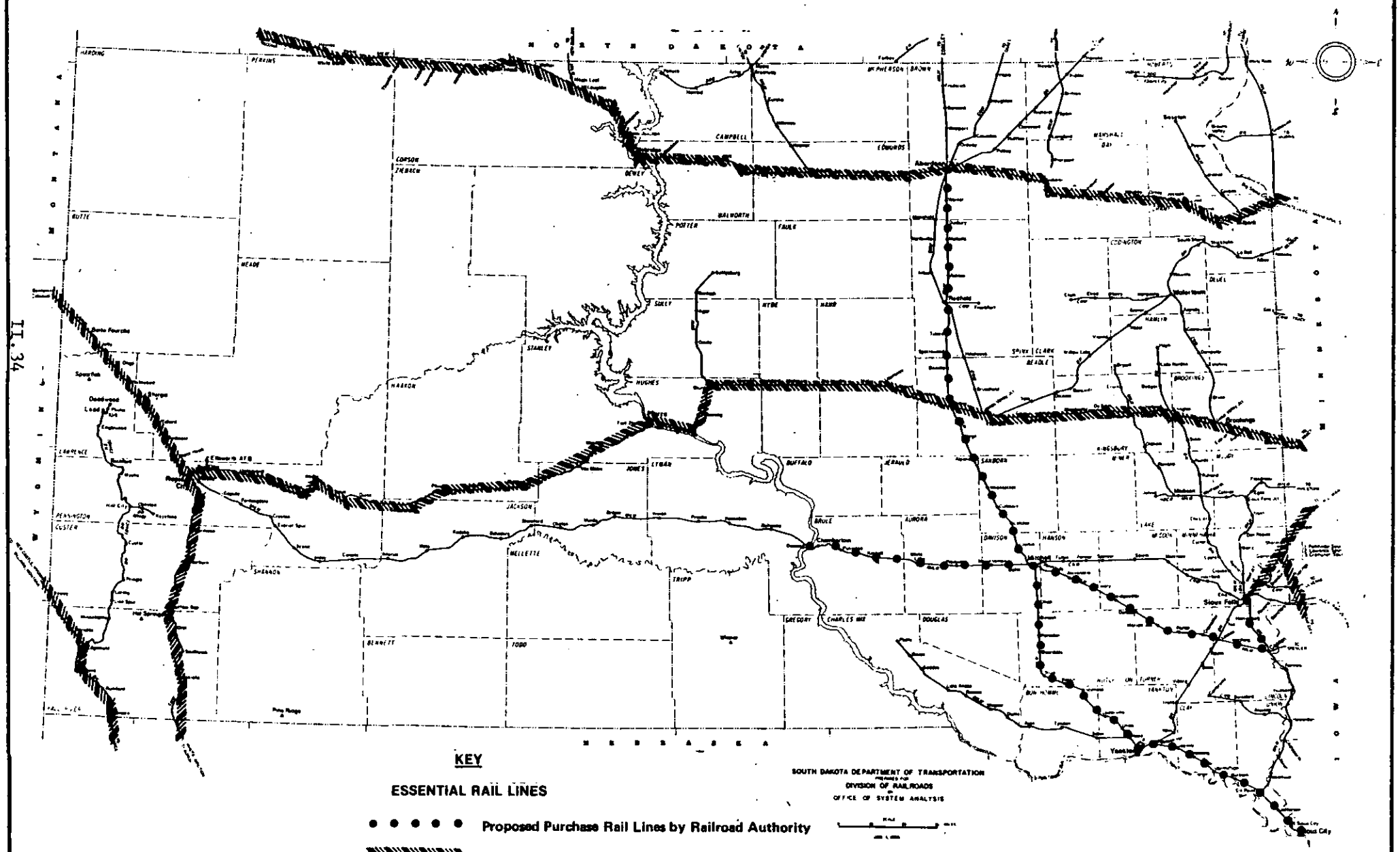
SOUTH DAKOTA RAIL SEGMENT EVALUATION
(BY SOUTH DAKOTA RAILROAD SEGMENT NUMBER)



Source: South Dakota Rail Line Inventory Study, Reebie Associates and Day & Zimmerman, Inc., January 1980.

EXHIBIT II-24

ESSENTIAL RAIL SYSTEM OF SOUTH DAKOTA
(Core System Concept)



Defining the essential rail system for South Dakota provides an important basis for the remainder of this plan, particularly the analysis of intensive study lines in Part B. Future planning and assistance efforts can now be directed toward ensuring that the essential rail system is maintained.

Reflecting on the lines identified as essential, the Railroad Authority is negotiating with the Milwaukee Road to buy a 760-mile portion of the abandoned lines in South Dakota left out of the proposed Milwaukee II system. Also being considered is the leasing of 55 miles of Milwaukee Road lines located in Iowa along the southeastern border of South Dakota between Canton, SD and Sioux City, IA and the purchasing of 19 miles of the Chicago & North Western line between Hawarden, IA and Beresford, SD. This acquisition plan, illustrated in Exhibit II-25, includes all of the essential rail lines that are abandoned, plus several extensions (such as the Napa to Platte branchline) that might become viable under a revised operating plan. These acquired lines will form the basis for a core railroad system for South Dakota. This system will connect with existing railroads at Sioux City, Sioux Falls, Wolsey, and Aberdeen, and be operated either by a Class I or Class II railroad operator.

By identifying an essential rail system and purchasing those portions threatened by abandonment, the Division, through the Railroad Authority, can ensure that the most needed rail transportation services are maintained for the long-term in South Dakota.

RAIL LINE SEGMENT DESCRIPTIONS (266.15 (c) (2))

The following pages provide a capsule description of each rail line segment in South Dakota. Fifty-one segment descriptions are included, with the following breakdown by operating railroad:

- Milwaukee Road 21 segments
- Chicago & North Western 14 segments
- Burlington Northern 13 segments
- Soo Line 2 segments
- Illinois Central Gulf 1 segment

Included in each description is a listing of line and service characteristics, a description of the physical characteristics of the segment, a listing of traffic characteristics of the segment, other information pertaining to service over the line or the expected effects of abandonment, and two maps showing the location of the segment relative to both the State highway and railroad systems. Together, these segment descriptions provide a useful inventory of the rail system serving South Dakota.

EXHIBIT II-25

SOUTH DAKOTA RAIL SYSTEM PURCHASE

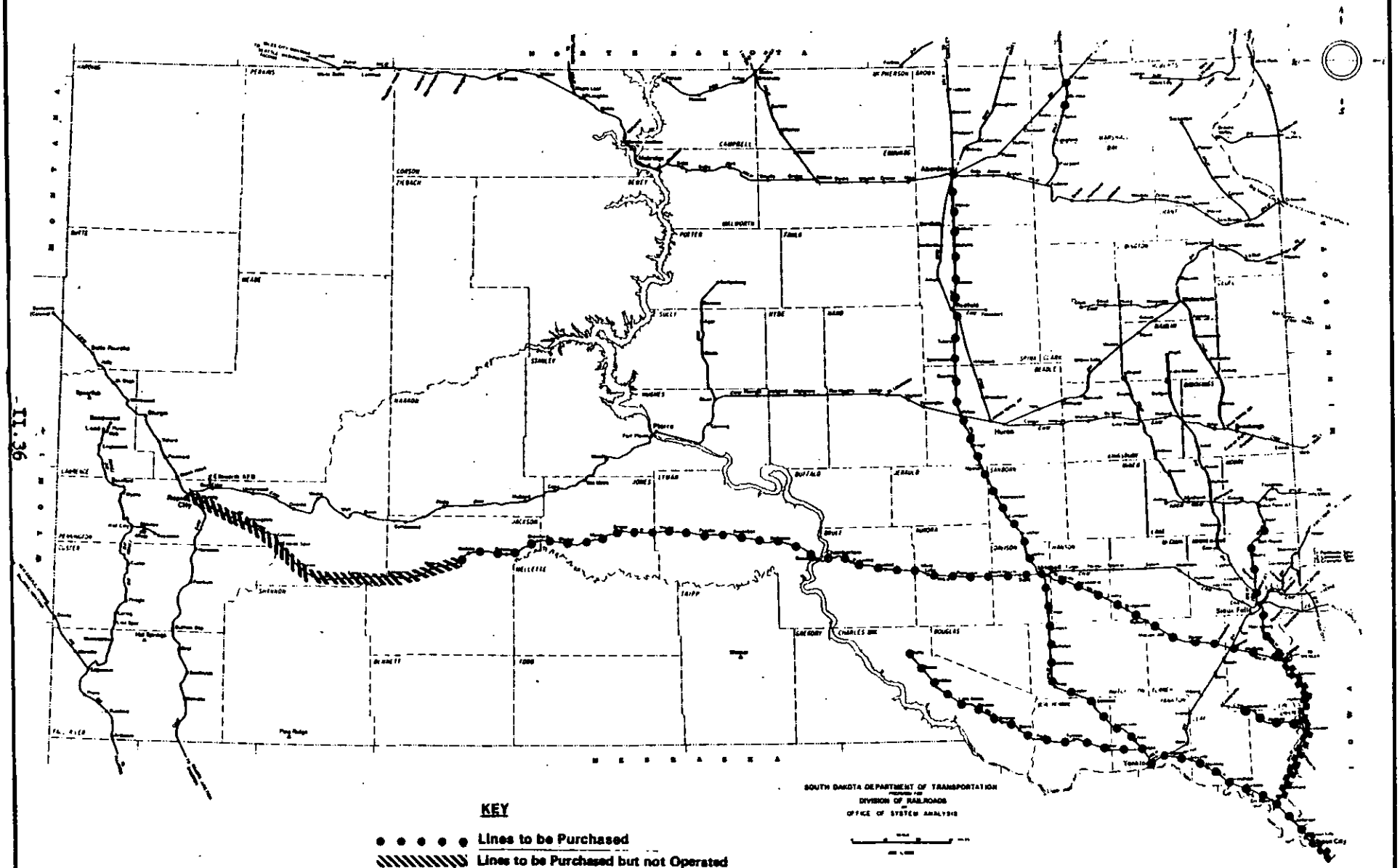


EXHIBIT II-26

SOUTH DAKOTA RAIL SEGMENTS

Segment Number	Line Description	ICC Category
Milwaukee Road		
MW01	Montevideo, MN to Aberdeen, SD	1
MW02	Aberdeen to Mobridge	1
MW03	Mobridge, SD to Marmarth, ND	1
MW04	Milbank to Sisseton	1
*MW05	Bristol to Garden City	Abandoned
MW06	Andover, SD to Brampton, ND	Abandoned
MW08	Roscoe, SD to Linton, ND	Abandoned
*MW09	Moreau Jct. to Trail City	Abandoned
*MW10	Trail City to Isabel	Abandoned
*MW11	Trail City to Faith	Abandoned
MW12	McLaughlin, SD to New England, ND	1
*MW13	Ortonville, MN to Fargo, ND	Abandoned
MW14	Mason City, IA to Canton, SD	Abandoned
MW15	Canton to Mitchell	Abandoned
MW16	Mitchell to Wolsey	Abandoned
MW17	Wolsey to Aberdeen	Abandoned
*MW18	Aberdeen, SD to Edgeley, ND	Abandoned
*MW19	Marion, Jct. to Menno	Abandoned
*MW20	Woonsocket to Wessington Springs	Abandoned
MW21a	Mitchell to Murdo	Abandoned
MW21b	Murdo to Rapid City	Abandoned
MW22	Sioux City, IA to Sioux Falls, SD	Abandoned
MW23	Sioux Falls to Sioux Falls Jct.	Abandoned
MW24	East Wye Switch to Mitchell	Abandoned
MW25	Napa to Platte	Abandoned
MW26	Jackson, MN to Madison, SD	Abandoned
MW27	Madison to Bryant	Abandoned
Chicago & North Western		
CN01	Tracy, MN to Huron, SD	5
CN02	Huron to Pierre	5
CN03	Pierre to Rapid City	5
*CN04a	James Valley Jct. to Redfield	Abandoned
CN04b	Redfield to Aberdeen	5
CN05	Aberdeen, SD to Oakes, ND	5
CN06	Chadron, NB to Rapid City, SD	5
CN07	Rapid City, SD to Bentonite, WY	5
*CN08	Jolly to Jolly Dump	Abandoned
CN09	Worthington, MN to Sioux Falls, SD	5
CN10	Sioux Falls to Mitchell	Abandoned
CN11	Hawarden, IA to Beresford, SD	Abandoned
CN12	Sioux Valley Jct. to Watertown	5
CN13	Watertown to Clark	3
CN15	Redfield to Frankfort	Abandoned
CN16	Blunt to Gettysburg	5
CN17	Tracy, MN to Gary, SD	Abandoned
*CN18	Norfolk, NB to Winner, SD	Abandoned
CN19	Box Elder to Ellsworth AFB	5

* Abandoned lines whose descriptive sheets have been omitted from this update due to the unlikelihood of rail service resumption or rail banking.

EXHIBIT II-26
SOUTH DAKOTA RAIL SEGMENTS (Cont.)

Segment Number	Line Description	ICC Category
Burlington Northern		
BN01	Willmar, MN to Garretson, SD	5
BN02	Garretson, SD to Sioux City, IA	5
BN03	Garretson to Sioux Falls	5
BN04	Sioux Falls to Yankton	1
BN05	Sioux Falls - Hayti	Abandoned
BN06	Benson, MN to Watertown, SD	5
BN07	Watertown to Huron	5
BN08	Genesco Jct. to Aberdeen	5
BN09	Alliance, NB to Edgemont, SD	5
BN10	Edgemont, SD to Gillette, WY	5
BN11	Edgemont to Deadwood	5
*BN12	Minnekahta to Hot Springs	Abandoned
BN13	Hill City to Keystone	3
BN14	Kirk to Lead	5
Soo Line		
SL01	Veblen Jct., ND to Veblen, SD	5
SL02	Wishek, ND to Pollock, SD	2
Illinois Central Gulf		
IC01	Cherokee, IA to Sioux Falls, SD	Abandoned

* Abandoned lines whose descriptive sheets have been omitted from this update due to the unlikelihood of rail service resumption or rail banking.

Data for these segment descriptions were obtained from the railroads operating in South Dakota. Line segment descriptions are not included for lines that have been abandoned and that have no prospects for rail service resumption. Exhibit II-26 lists the line segments whose descriptions are included in the section, as well as those abandoned segments that are not included in this RAILPLAN update.

Following the 51 segment descriptions (page II.145) is a description of the truck substitute service in force in the State, including a map of the truck-rail service locations. General freight motor carriers and specialized motor carriers also serve South Dakota by providing freight transportation services to local shippers. These are listed in Exhibit II-27. The specialized, irregular route truckload carriers compete most actively with the railroads for the type of commodities in which they specialize.

The information contained in the following segment descriptions is continuously monitored and updated. This helps to alert the Division staff to changing conditions in the rail system and therefore facilitates the development of solutions to potential problem areas.

EXHIBIT II-27

GENERAL COMMODITIES AND SPECIALIZED MOTOR CARRIERS OPERATING IN SOUTH DAKOTA

GENERAL COMMODITIES MOTOR CARRIERS
- Abler Transfer, Inc.
- American Freight System, Inc.
- Barber Transportation, Inc.
- Crawford Freight Co., A Corporation
- Duncan Truck Service
- Glendening
- Glodery, Wayne
- Hyman Freightways
- Ipswich Truck Line
- Ken's Transfer
- Lewis Truck Line
- McNeil Truck Line
- Meyer Truck Line
- Midwest Emery Freight System
- Minnesota-Wisconsin Truck Lines, Inc.
- Murphy Motor Freight Lines, Inc.
- Pacific Intermountain Express
- Ringsby Truck Lines
- Ross Transfer Inc.
- Rude Transportation Co.
- Salt Creek Freightways
- Schneider Transport, Inc.
- Sioux Transportation Co., Inc.
- Willers Truck Service

SPECIALIZED MOTOR CARRIERS

AUTO AND/OR TRUCK TRANSPORT
- Kenosha Auto Transport

AGRICULTURAL CHEMICALS
- Altruk Freight Systems
- Dan Dugan, Inc.

AGRICULTURAL COMMODITIES/PRODUCE HAULING
- Altruk Freight Systems
- Daily Express, Inc.
- Dan Dugan, Inc.
- Monkem Company
- Thunderbird Motor Freight Lines

EXEMPT COMMODITIES
- Altruk Freight Systems
- Monkem Company

FOREST PRODUCTS
- Sawyer Transport

HEAVY HAULING
- C&H Transportation Co.
- Colonial Fast Freight Lines
- Daily Express, Inc.
- International Transport, Inc.
- Midwest Specialized Transportation
- E.L. Murphy Trucking
- J.H. Rose Truck Lines, Inc.

LUMBER HAULING
- Ace Lines, Inc.
- International Transport
- Monkem Company
- Salt Creek Freightways
- Sawyer Transport

WOOD PRODUCTS
- Altruk Freight Systems

SOURCES:
- National Motor Freight Classification 100-G
- Chilton's Distribution 'Intermodal Guide - 1981'
- American Motor Carrier Directory Spring 1980
- American Motor Carrier Directory - Specialized Services Edition - 1980

SOUTH DAKOTA RAIL SEGMENTS
[266.15 (C) (2)]

SOUTH DAKOTA SEGMENT - MW01

MONTEVIDEO, MN TO ABERDEEN, SD (PORTION OF MAIN LINE)
MILWAUKEE ROAD MINNESOTA - DAKOTA DIVISION - 3rd SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 1: Potentially subject to abondonment within 3 years.
TYPE OF LINE - Main LINE LENGTH IN MILES - 157.0 Total; 109.3 in SD
MAXIMUM WEIGHT LIMIT - 263,000 lbs. MAXIMUM SPEED LIMIT - 50 mph (87 miles under slow orders)
SERVICE FREQUENCY - Local - 1 round trip daily; Coal - 9 per week
YARDS - Milbank and Aberdeen
CONNECTING LINES - Milwaukee Road main line at Big Stone City and Aberdeen; Milwaukee Road branch line at Milbank; former Milwaukee Road branch lines at Andover and Aberdeen, Burlington Northern at Aberdeen; and Chicago and North Western at Aberdeen.
HIGHWAYS - US 12 parallels this line plus Milbank is served by US 77, Summit by US 81, Webster by SD 25, Groton by SD 37 and Aberdeen by US 281.
RAIL WEIGHT - 112 lbs. and 115 lbs. Webster to Bristol
MAXIMUM GRADE - 1.2% MAXIMUM CURVE - 2° 16'
BALLAST - Stone applied 1979 from James to Bath, stone applied 1977 from Webster to Bristol, gravel from 1955 to 1970 from Big Stone City to near Webster and gravel from 1944-1947 for remainder of segment.
BRIDGES AND TRESTLES - 4 pile trestles ranging in length from 2 to 5 spans and totaling 19 spans plus 5 steel bridges, 10 concrete bridges and 2 combination steel and concrete bridges.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES	STATIONS	MILES
Big Stone City	0.0	Jackson	35.2	Bristol	66.3
Milbank	8.9	Ortley	39.0	Andover	80.0
Twin Brooks	16.1	Waubay	44.4	Groton	89.8
Marvin	23.8	Webster	55.0	James	95.6
Summit	31.0	Holmquist	61.4	Bath	100.9
				Aberdeen	109.3

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -	13.59 MGT	11.44 MGT
TRAFFIC DIRECTION -	66% East/34% West	67% East/33% West

COMMODITIES - Primarily coal traffic moving in unit trains east to Big Stone City, SD and Columbia, WI; also forwarded grain and non-metallic minerals, and received fertilizer, lumber, and stone, glass and clay.

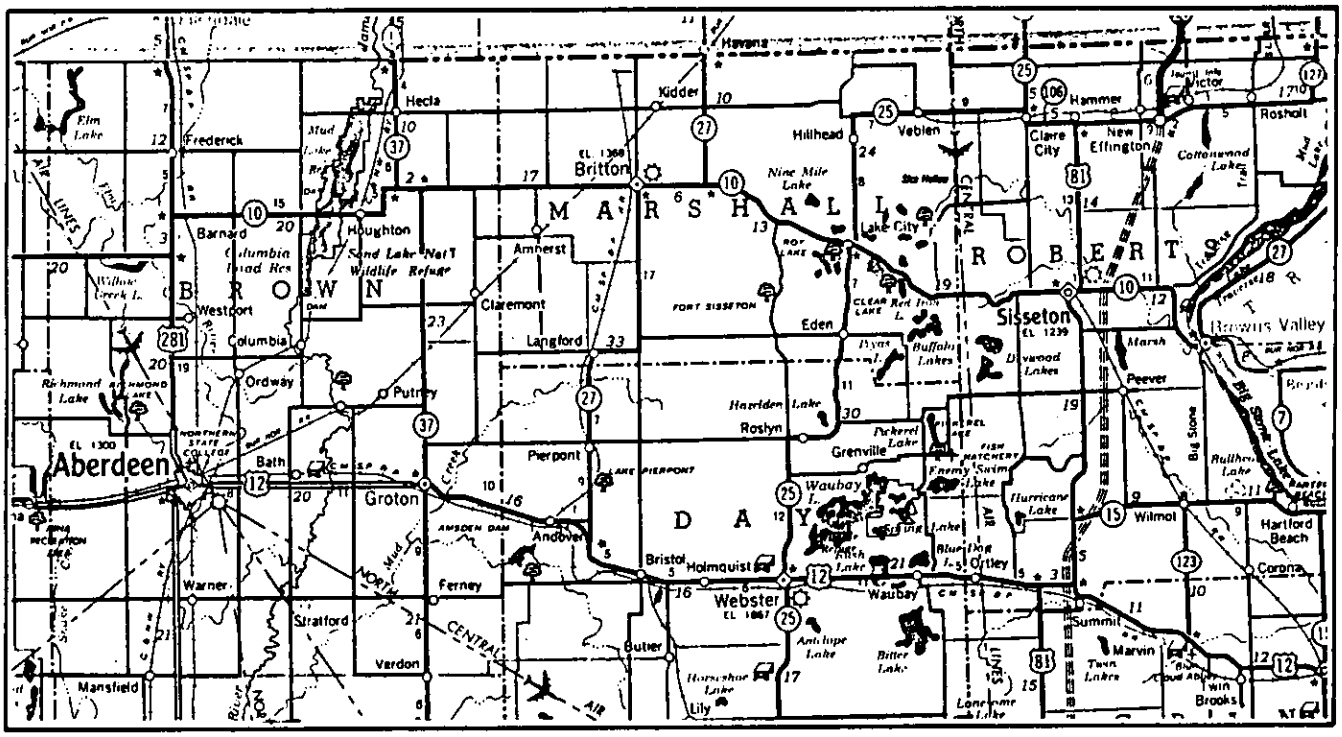
OTHER INFORMATION

This segment is currently undergoing its second short-term rehabilitation effort in two years. Local traffic is uniformly distributed along the segment. Coal traffic is discrete, moving in six unit trains per week from Gascoyne, ND to Big Stone City, SD, and three unit trains per week from Montana and Wyoming mines to Columbia, WI. One local train operates daily round trip service.

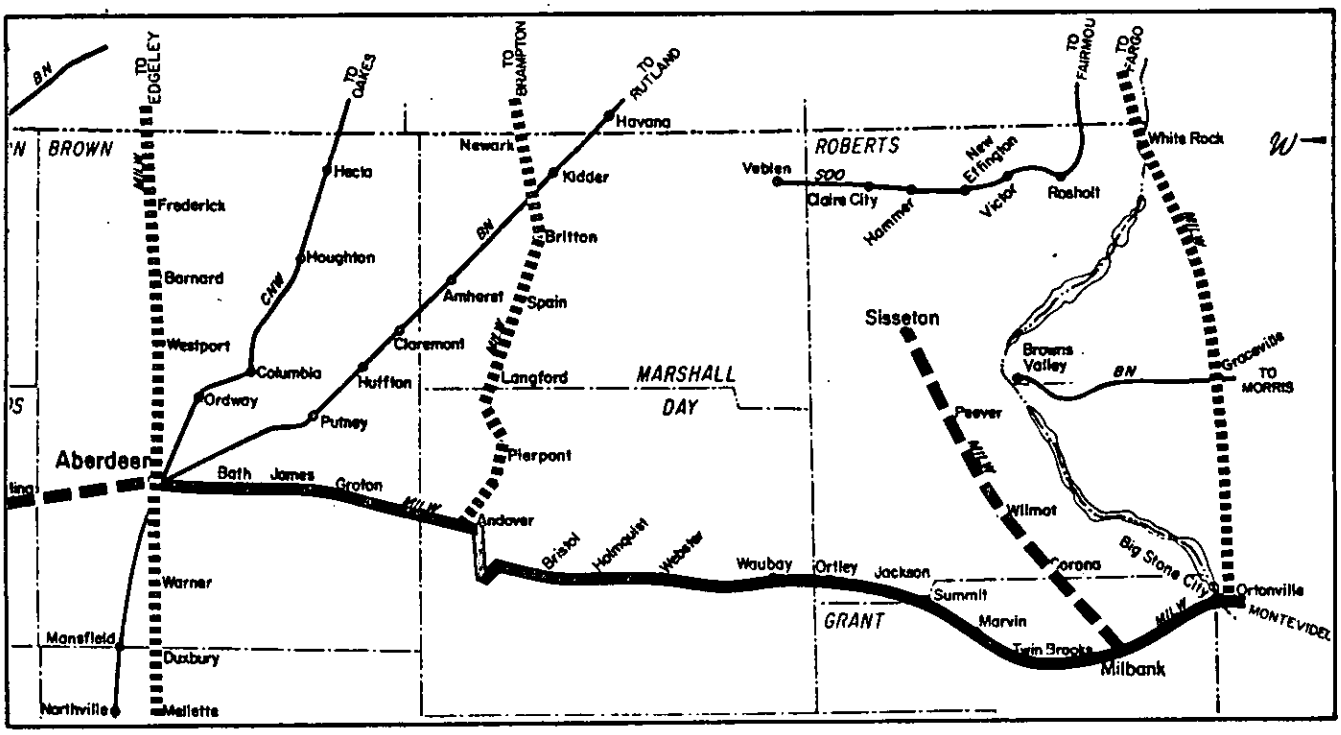
The South Dakota Rail Line Inventory Study found that very significant impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT MW01
MONTEVIDEO, MN TO ABERDEEN, SD

RAILROAD-HIGHWAY LOCATION MAP

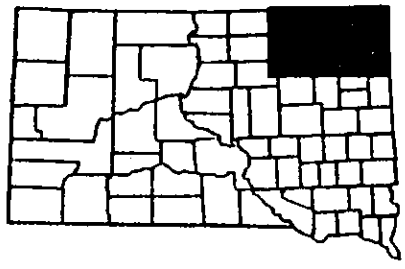


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - MW02

ABERDEEN TO MOBRIDGE (PORTION OF MAIN LINE)
MILWAUKEE ROAD - MINNESOTA-DAKOTA DIVISION - 4th SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 1: Potentially subject to abandonement within 3 years.
TYPE OF LINE - Main LINE LENGTH IN MILES - 98.2
MAXIMUM WEIGHT LIMIT - 263,000 lbs. MAXIMUM SPEED LIMIT - 50 mph (78 miles under slow orders)
SERVICE FREQUENCY - Local - weekly round trip, weekly Mobridge to Aberdeen; Coal - 9 per week
YARDS - Aberdeen and Mobridge
CONNECTING LINES - Milwaukee Road main line at Aberdeen and Mobridge, former Milwaukee Road branch line at Roscoe, Burlington Northern at Aberdeen and Chicago & North Western at Aberdeen.

HIGHWAYS - US 12 parallels line. Aberdeen is also served by US 281, Ipswich and Craven by SD 45, Roscoe by SD 247, Bowdle by SD 47, Jarva by SD 271 and Selby by US 83.

RAIL WEIGHT - 112 lbs. rail except about 5 miles of 115 lbs rail near Mobridge
MAXIMUM GRADE - 1% MAXIMUM CURVE - 2° (at Aberdeen)
BALLAST - Gravel applied in 1946 and 1947 except for about 8 miles of gravel applied in 1959 near Mobridge.

BRIDGES AND TRESTLES - One 2 span pile trestle, one 4 span pile and steel bridge and 11 concrete or steel bridges.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES	STATIONS	MILES
Aberdeen	0.0	Orient Line Jct.	41.1	Java	69.8
Mina	13.1	Roscoe	41.6	Selby	77.1
Craven	21.2	Gretna	50.2	Sitka	85.1
Ipswich	26.5	Bowdle	56.9	Glenham	89.4
Beebe	34.6	Alamo	64.5	Mobridge	98.2

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -	12.53 MGT	10.26 MGT
TRAFFIC DIRECTION -	63% East/37% West	66% East/34% West

COMMODITIES - Primarily overhead unit coal trains operating to Big Stone City, SD and Columbia, WI; also limited forwarded grain and received fertilizer, farm machinery, and pulp and paper products.

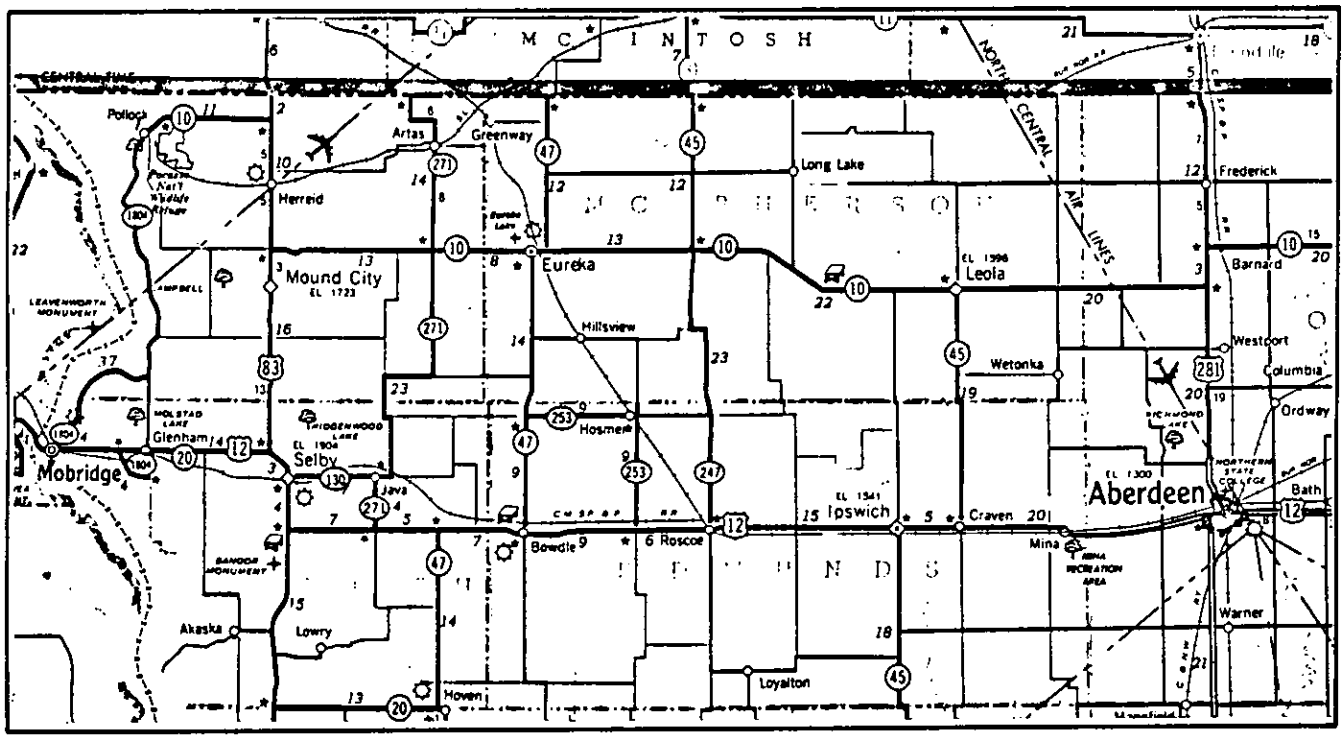
OTHER INFORMATION

This segment is currently undergoing its second short-term rehabilitation effort in two years. Service includes 9 coal trains per week plus one local train per week round trip and one weekly train operating from Mobridge to Aberdeen.

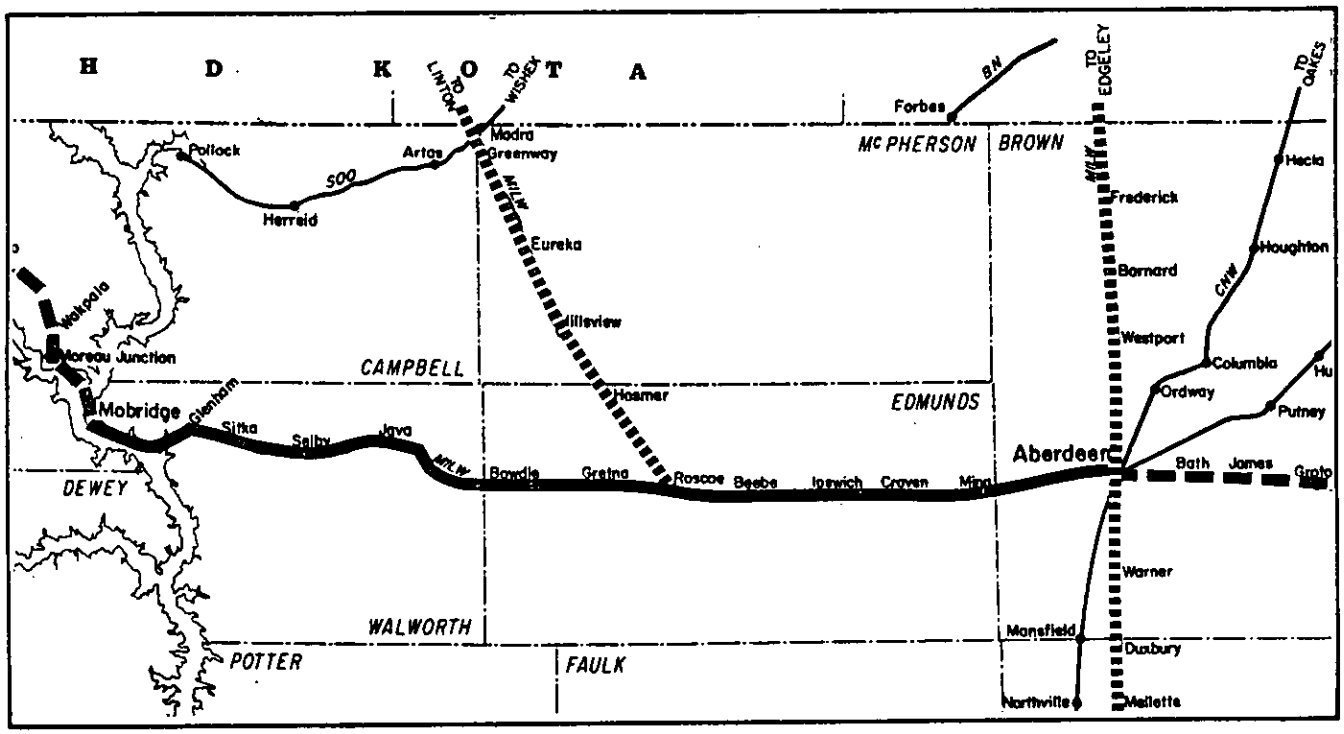
The South Dakota Rail Line Inventory Study found that very significant impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT MW02
ABERDEEN TO MOBRIDGE

RAILROAD-HIGHWAY LOCATION MAP

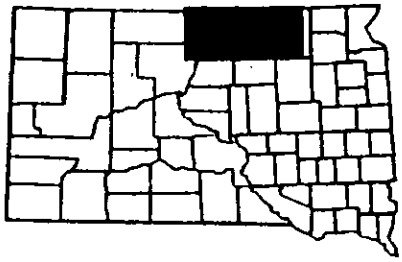


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - MW03

MOBRIDGE, SD TO MARMARTH, ND (PORTION OF MAIN LINE)
MILWAUKEE ROAD - MINNESOTA - DAKOTA DIVISION - 43rd SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 1: Potentially subject to abandonment within 3 years.
TYPE OF LINE - Main LINE LENGTH IN MILES - 189.5 total, 92.0 in SD
MAXIMUM WEIGHT LIMIT - 263,000 lbs. MAXIMUM SPEED LIMIT - 50 mph (82 miles under slow orders)
SERVICE FREQUENCY - Local - weekly round trip, weekly McLaughlin to Mobridge round trip; Coal - 9 per week
YARDS - Mobridge, (S.D. stations only)
CONNECTING LINES - Milwaukee Road main line at Mobridge and Marmarth, and Milwaukee Road branch line at McLaughlin.

HIGHWAYS - Highway US 12 parallels and McLaughlin served by SD 63, McIntosh by SD 65 and Lemmon by SD 73.

RAIL WEIGHT - 115 lbs. rail except about 18 miles of 112 lbs. rail west of Wakpala.
MAXIMUM GRADE - 0.6% MAXIMUM CURVE - 2° 02'
BALLAST - Gravel placed between 1942 and 1949 except about 14 miles of gravel placed in 1961 (west of Mobridge).

BRIDGES AND TRESTLES - Two 3 span pile trestles, 16 creosoted ballast deck trestles ranging from 3 to 9 spans in length, one 7 trestle and steel combination bridge and the Missouri River steel bridge.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES	STATIONS	MILES
Mobridge	0.0	Walker	45.0	Lemmon	98.2
Moreau Jct.	8.2	McIntosh	58.0	Petrel	104.1
Wakpala	12.0	Watauga	67.7	White Butte	108.1
Mahto	22.2	Morristown	76.5		
McLaughlin	29.8	Thunder Hawk	89.0		

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -	11.48 MGT	10.03 MGT
TRAFFIC DIRECTION -	63% East/37% West	66% East/34% West

COMMODITIES - Primarily overhead unit coal trains operating to Big Stone City, SD and Columbia, WI; also limited forwarded grain and received fertilizer, stone, sand and gravel, and petroleum products.

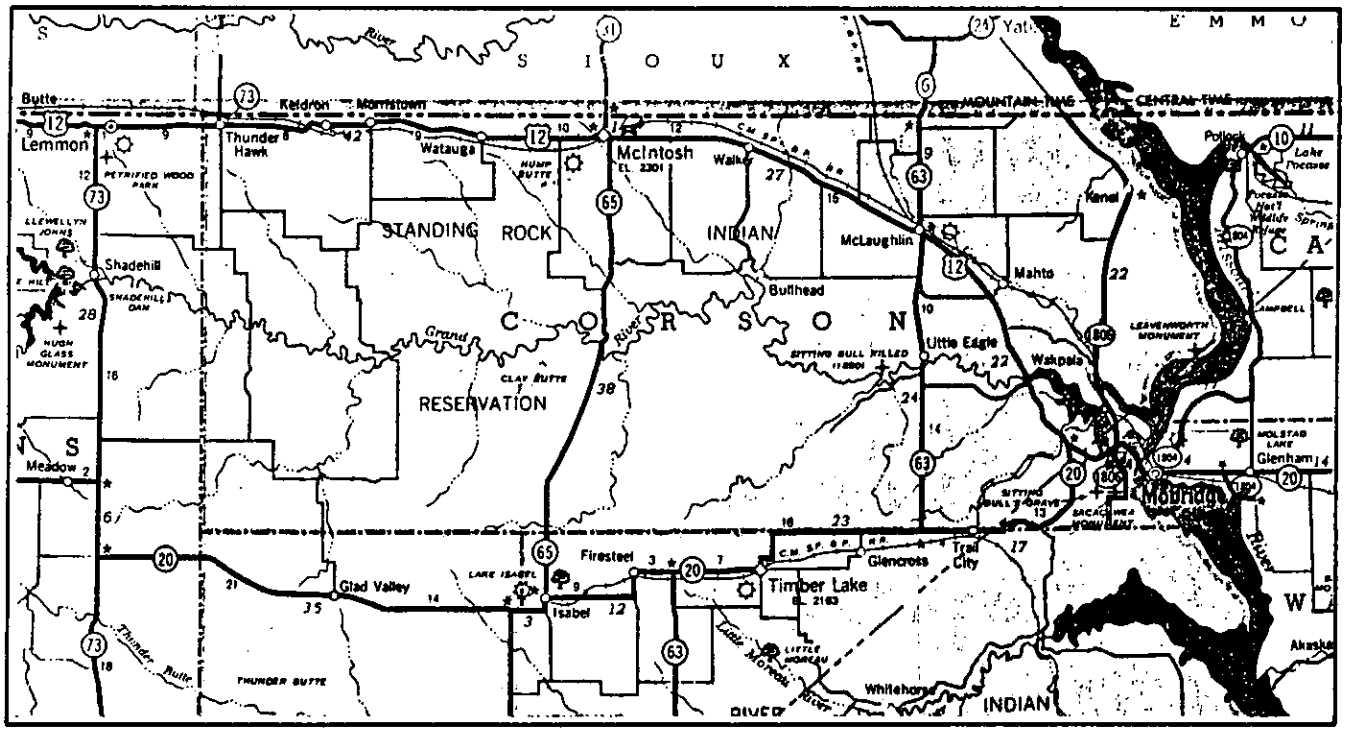
OTHER INFORMATION

This segment is currently undergoing its second short-term rehabilitation effort in two years. Service includes 9 coal trains per week plus two local trains per week.

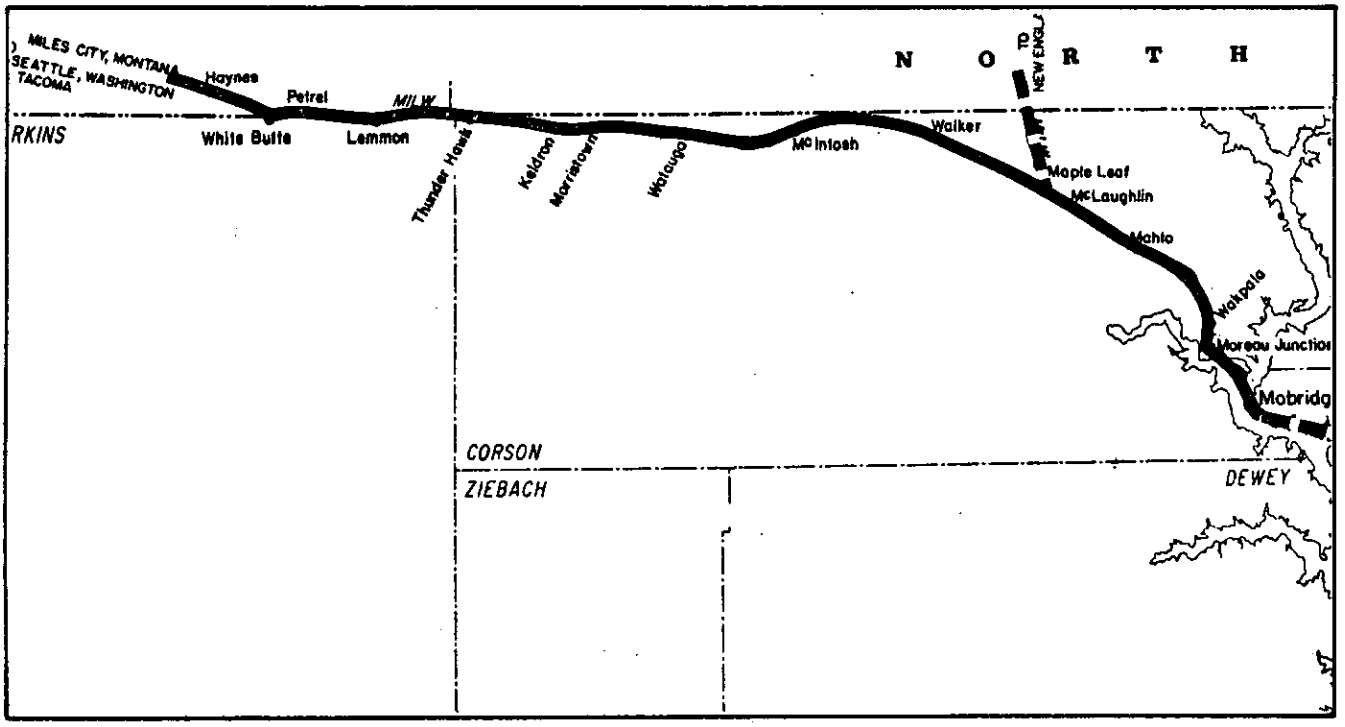
The South Dakota Rail Line Inventory Study found that very significant impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT MW03
MOBRIDGE, SD TO MARMARTH, ND

RAILROAD-HIGHWAY LOCATION MAP

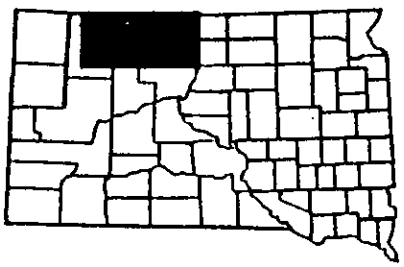


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - MW04

MILBANK TO SISSETON
MILWAUKEE ROAD - MINNESOTA - DAKOTA DIVISION - 26th SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 1: Potentially subject to abandonment within 3 years.
TYPE OF LINE - Branch LINE LENGTH IN MILES - 37.1
MAXIMUM WEIGHT LIMIT - 220,000 lbs. MAXIMUM SPEED LIMIT - 20 mph (entire line under slow orders)
SERVICE FREQUENCY - Two round trips per week, three round trips per week in peak period
YARDS - Milbank and Sisseton
CONNECTING LINES - Milwaukee Road main line at Milbank.

HIGHWAYS - Sisseton is on US 81 and SD 10 and near I-29; Peever is on a hard surfaced road and near I-29; Wilmot and Corona are on hard surfaced roads.

RAIL WEIGHT - About 1.5 miles of 75 lbs., mostly at Milbank, balance is 60 lbs. rail
MAXIMUM GRADE - 0.72% MAXIMUM CURVE - 7° (at Wye joining main line)

BALLAST - Gravel and dirt.

BRIDGES AND TRESTLES - 27 pile trestles ranging in length from 2 to 11 spans and totaling 120 spans.

STATION LOCATIONS

STATIONS	MILES
Milbank	0.0
Corona	10.1
Wilmot	17.0
Peever	27.4
Sisseton	37.1

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -	0.12 MGT	0.21 MGT
TRAFFIC DIRECTION -	88% Orig./12% Term.	97% Orig./3% Term.

COMMODITIES - Primarily forwarded grain (barley) destined for Minneapolis, also received fertilizer, petroleum products, lumber, and stone, clay, and glass.

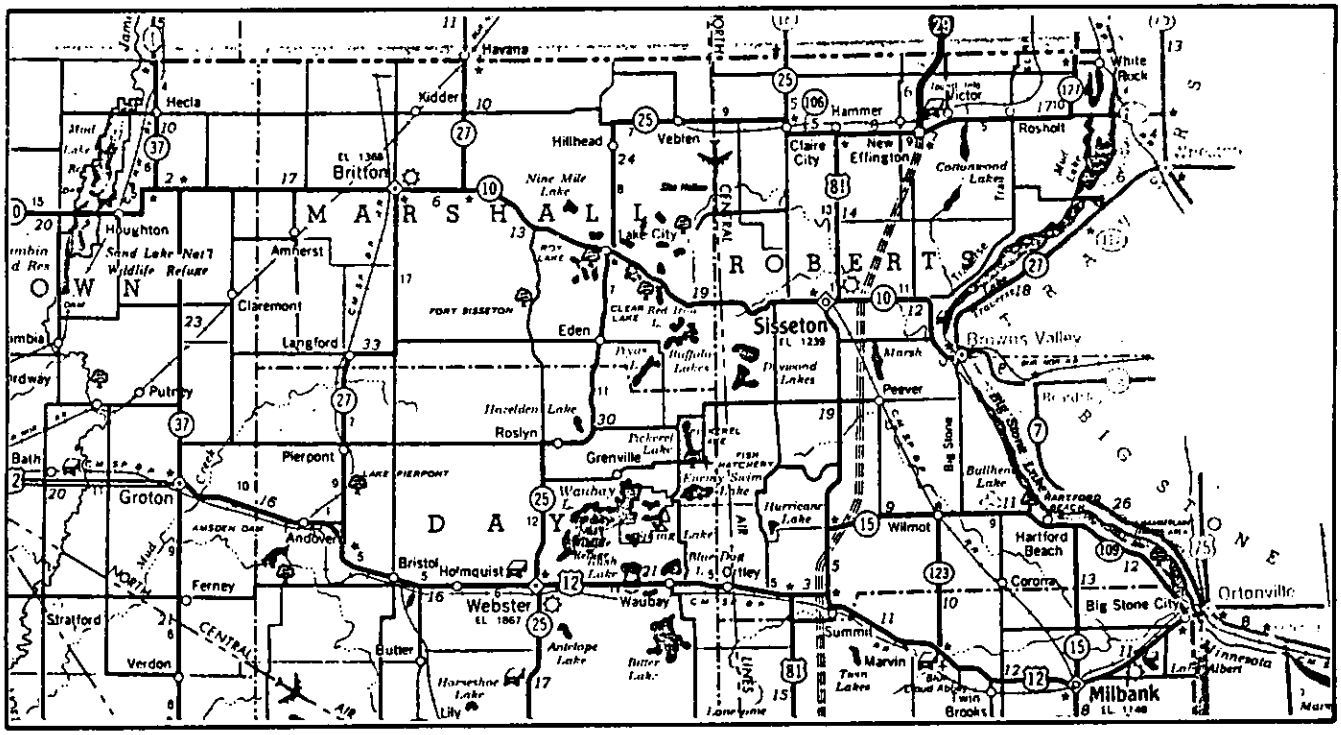
OTHER INFORMATION

Barley is trucked to Sisseton from eastern South Dakota, North Dakota and Minnesota. This traffic enjoys a significant rate advantage over other non-Milwaukee locations or shippers.

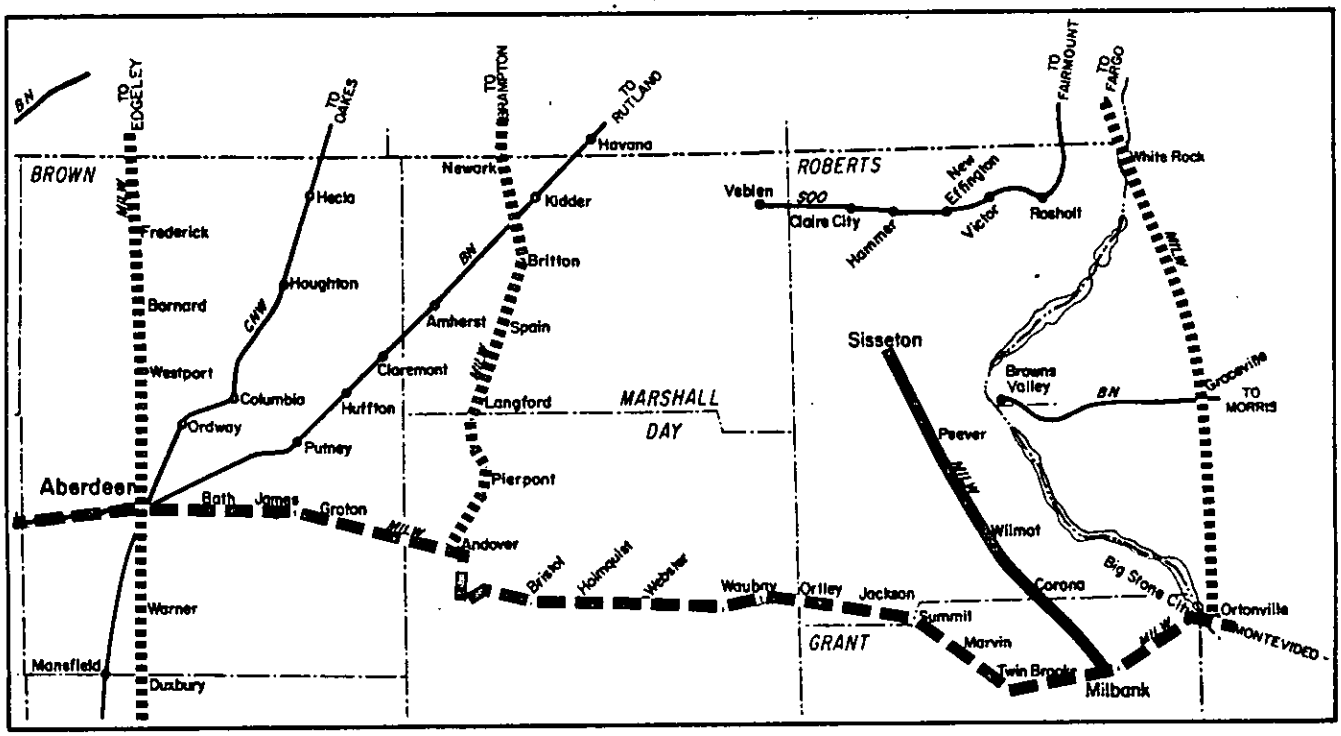
The South Dakota Rail Line Inventory Study found that limited impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT MW04
MILBANK TO SISSETON

RAILROAD-HIGHWAY LOCATION MAP

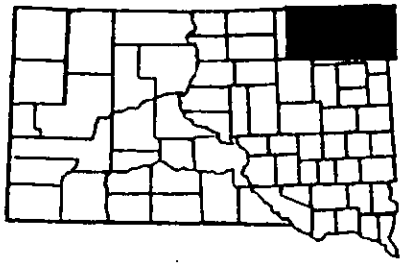


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - MW06

ANDOVER, SD TO BRAMPTON, ND

MILWAUKEE ROAD - MINNESOTA - DAKOTA DIVISION - 28th SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Abandoned

TYPE OF LINE - Branch

LINE LENGTH IN MILES - 42.9

MAXIMUM WEIGHT LIMIT - 220,000 lbs.

MAXIMUM SPEED LIMIT - 20 mph (25 miles under slow orders)

SERVICE FREQUENCY - None

YARDS - Brampton, ND

CONNECTING LINES - Andover, Milwaukee Road main line; Burlington Northern intersects north of Britton.

HIGHWAYS - Andover is on US 12, Langford and Pierpont are on SD 27, Britton is on SD 10 and SD 27, Brampton is on a paved road.

RAIL WEIGHT - First mile 75 lbs., balance is 56 lbs.

MAXIMUM GRADE - 1%

MAXIMUM CURVE - 8° (at Andover, Wye track)

BALLAST - Gravel and dirt.

BRIDGES AND TRESTLES - 14 pile trestles ranging in length from 2 to 11 spans and totaling 63 spans.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES
Andover, SD	0.0	Newark, SD	38.4
Pierpont, SD	7.3	Brampton, ND	42.9
Langford, SD	14.9		
Spain, SD	22.1		
Britton, SD	28.4		

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -	0.09 MGT	0.09 MGT
TRAFFIC DIRECTION -	78% Orig./22% Term.	85% Orig./15% Term.

COMMODITIES - Primarily forwarded grain; also received fertilizer and petroleum products.

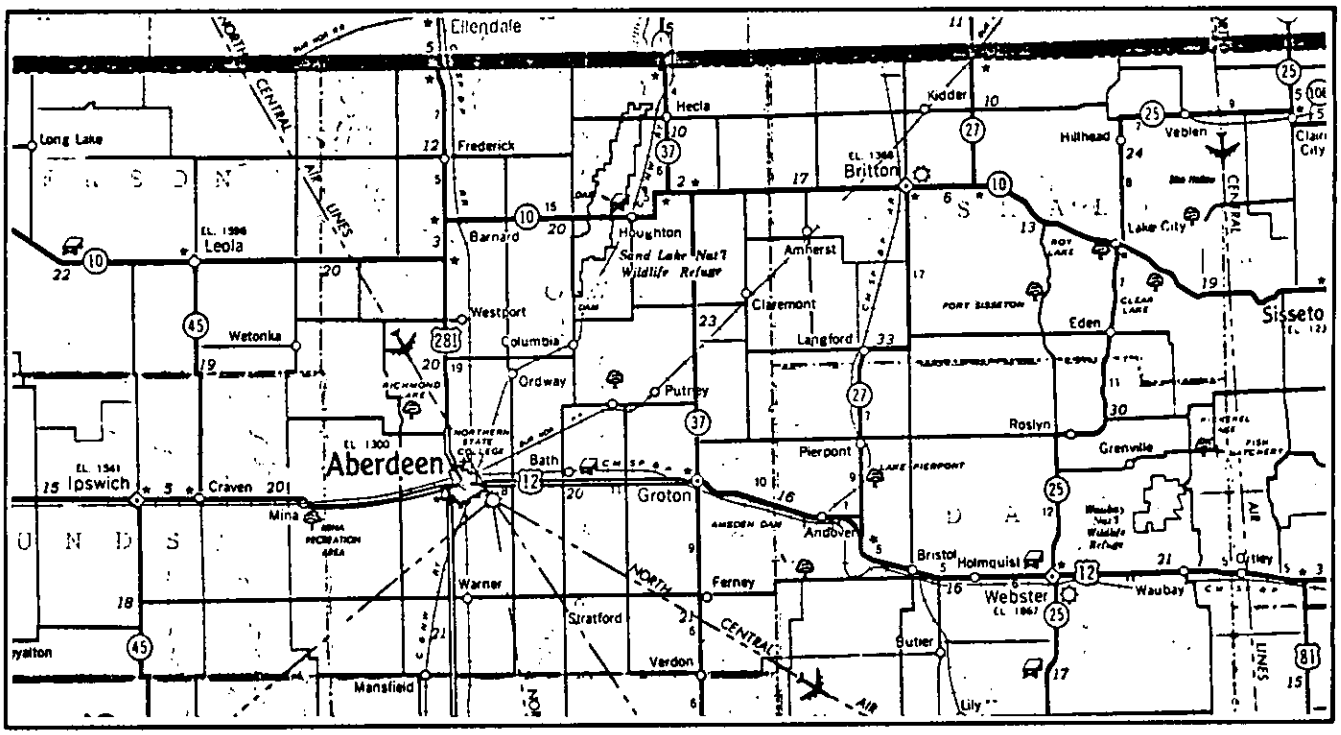
OTHER INFORMATION

This line has been abandoned by the Milwaukee Road. The line is currently under consideration by the State for possible acquisition.

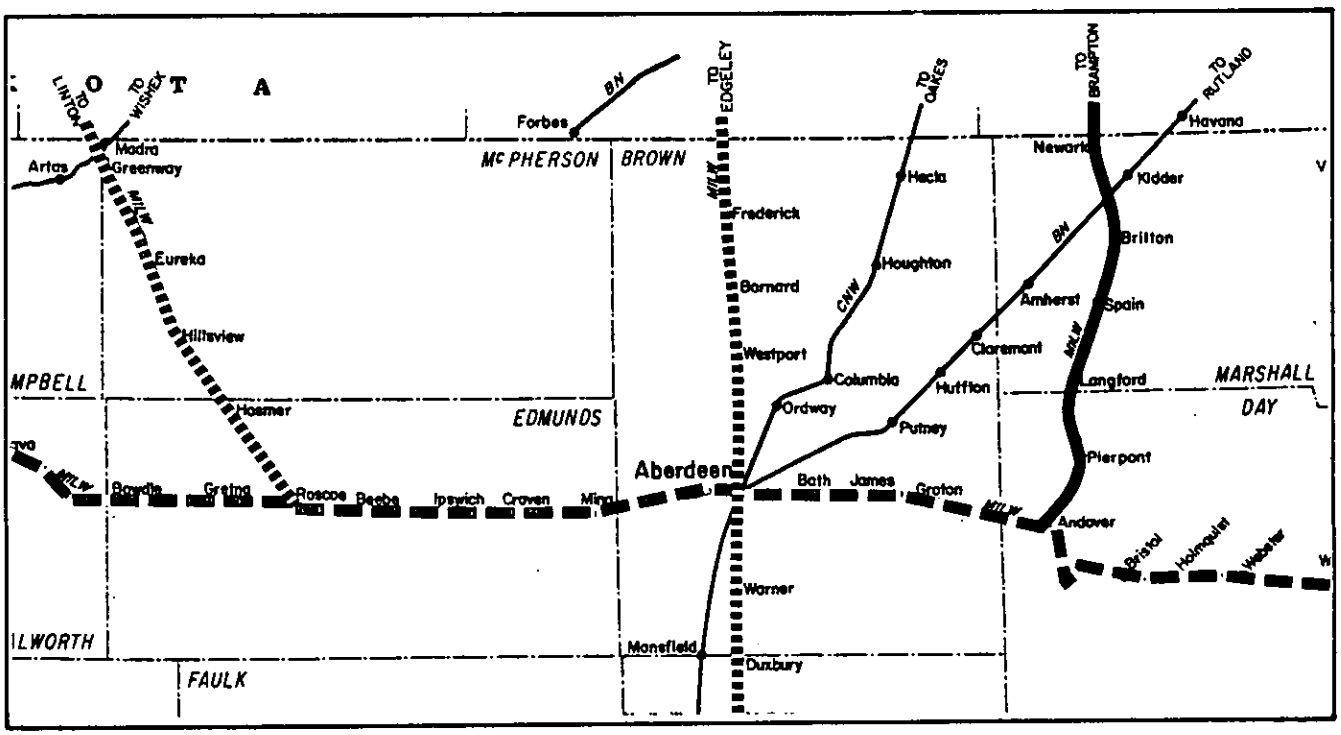
The South Dakota Rail Line Inventory Study found that minimal impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT MW06
ANDOVER, SD TO BRAMPTON, ND

RAILROAD-HIGHWAY LOCATION MAP

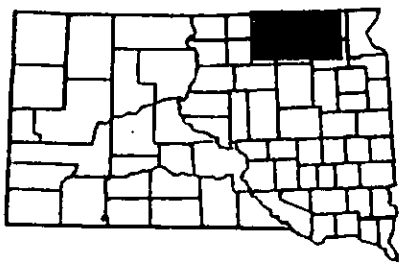


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - MW08

ROSCOE , SD TO LINTON, ND

MILWAUKEE ROAD - MINNESOTA-DAKOTA DIVISION - 31st SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Abandoned

TYPE OF LINE - Branch LINE LENGTH IN MILES - 75.3 total, 40.3 in SD

MAXIMUM WEIGHT LIMIT - 220,000 lbs. MAXIMUM SPEED LIMIT - 25 mph

SERVICE FREQUENCY - None

YARDS - Linton, ND

CONNECTING LINES - Milwaukee Road main line at Roscoe intersects with Soo Line branchline at Madra; connects with Burlington Northern at Linton.

HIGHWAYS - Roscoe is on US 12, Eureka is on SD 10, Hague is on state highway 11, Strasburg and Linton are on US 83, Hosmer and Hillsview are served by hard surfaced local roads.

RAIL WEIGHT - Most is 56 lbs. rail, except about 10 miles of mixed (60 lbs. to 100 lbs.) rail near Roscoe.

MAXIMUM GRADE - 1.14% MAXIMUM CURVE - 3° 30'

BALLAST - Gravel and dirt.

BRIDGES AND TRESTLES - 7 pile trestles ranging in length from 3 to 9 spans and totaling 33 spans.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES
Roscoe, SD	0.0	Madra, SD	38.6
Hosmer, SD	11.1	Zeeland, ND	45.1
Hillsview, SD	18.3	Hague, ND	54.1
Eureka, SD	26.3	Strasburg, ND	65.3
Greenway, SD	37.1	Linton, MD	75.3

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -	0.08 MGT	0.05 MGT
TRAFFIC DIRECTION -	87% Orig./13% Term.	97% Orig./3% Term.

COMMODITIES - Primarily forwarded grain; also received fertilizer, coal, and farm machinery.

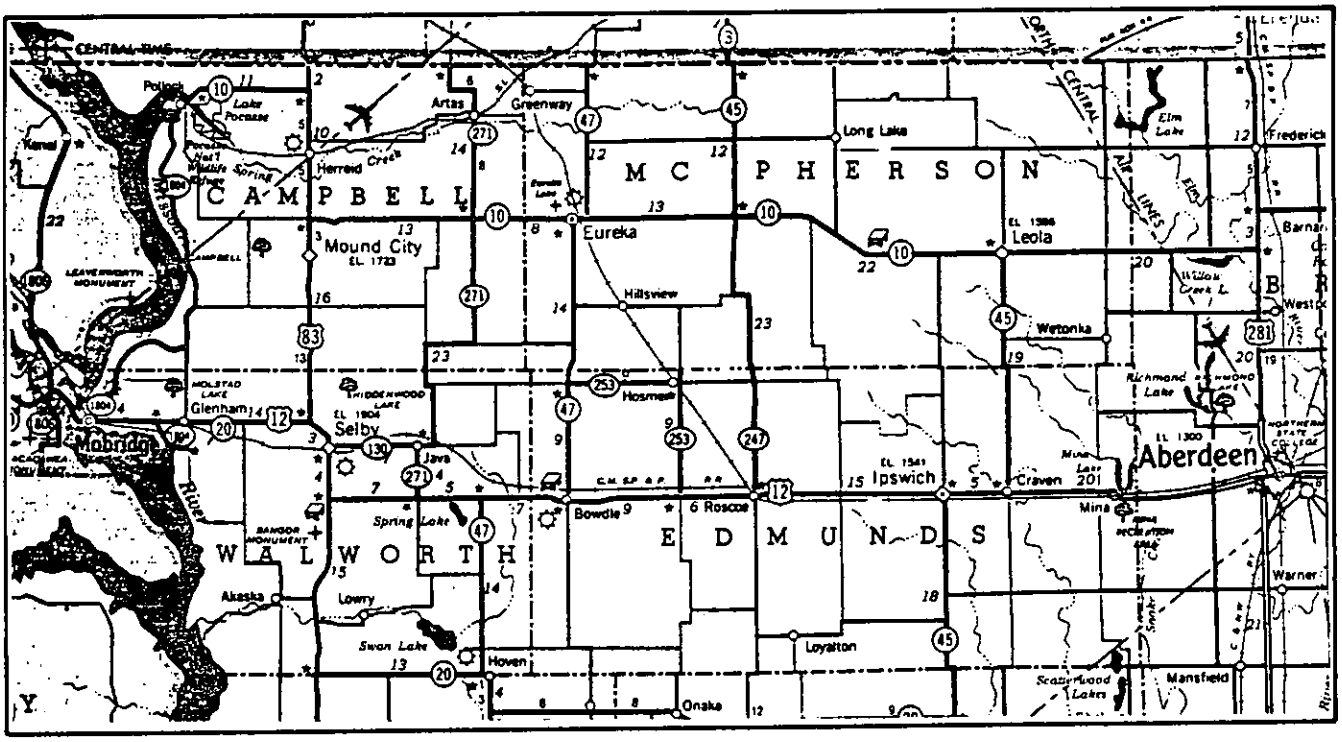
OTHER INFORMATION

This line has been abandoned by the Milwaukee Road. The BN has expressed interest in acquiring and operating the line between Linton, ND and Eureka, SD. South Dakota is currently considering acquiring the portion of the line between Eureka and Roscoe.

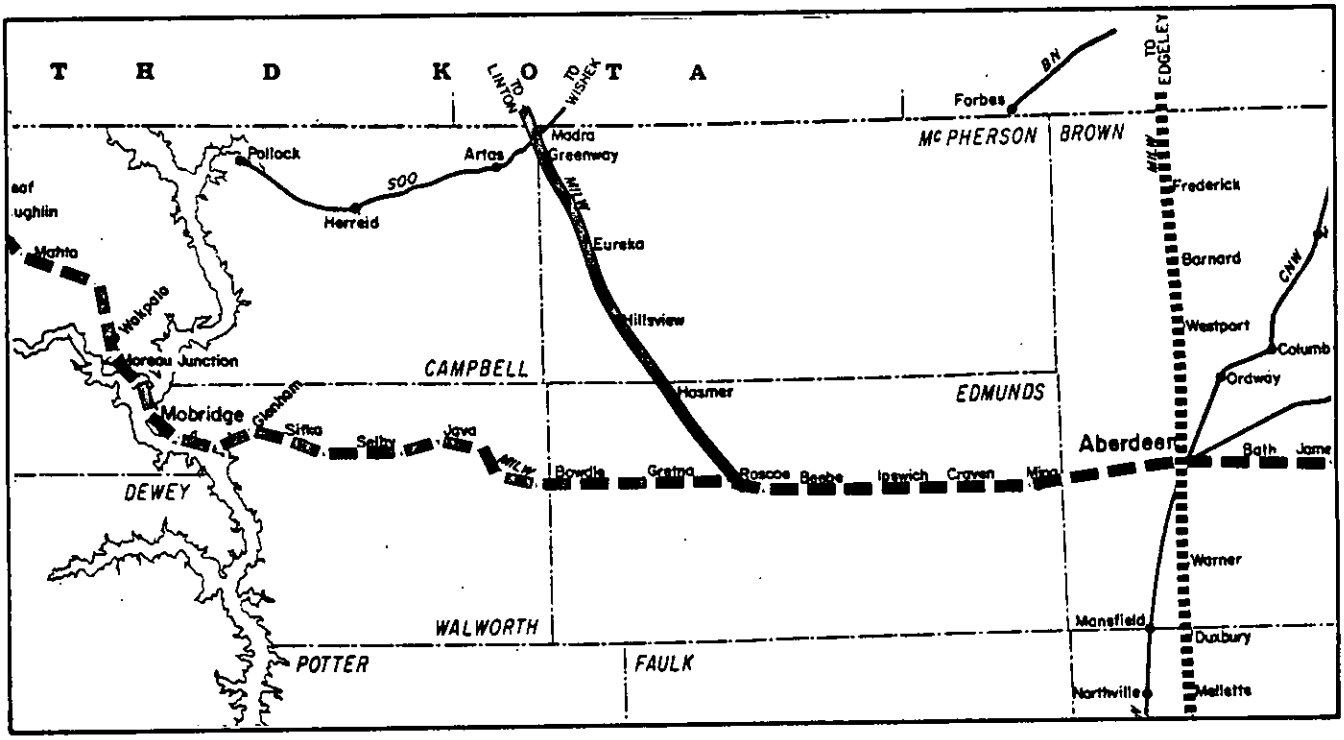
The South Dakota Rail Line Inventory Study found that minimal impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT MW08
ROSCOE, SD TO LINTON, ND

RAILROAD-HIGHWAY LOCATION MAP

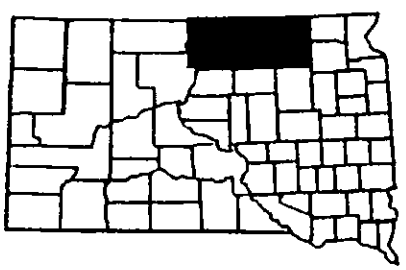


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - MW12

McLAUGHLIN, SD TO NEW ENGLAND, ND
MILWAUKEE ROAD - MINNESOTA - DAKOTA DIVISION 49th SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 1: Potentially subject to abandonment within 3 years.
TYPE OF LINE - Branch LINE LENGTH IN MILES - 133.9 total, 9.7 in SD
MAXIMUM WEIGHT LIMIT - 220,000 lbs. MAXIMUM SPEED LIMIT - 25 mph
SERVICE FREQUENCY - Weekly
YARDS - None in South Dakota
CONNECTING LINES - Milwaukee Road main line at McLaughlin and Burlington Northern at Mott, ND

HIGHWAYS - US 12 parallels the portion of this line in SD

RAIL WEIGHT - 65 lbs. rail placed in 1910 except about 3 miles of 85 lbs. rail outside McLaughlin
MAXIMUM GRADE - N/A MAXIMUM CURVE - N/A
BALLAST - Gravel

BRIDGES AND TRESTLES - N/A

STATION LOCATIONS

STATIONS	MILES
McLaughlin, SD	0.0
Maple Leaf, SD	8.9
New Leipzig, ND	83.9
Mott, ND	104.1
New England, ND	133.9

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -	0.19 MGT	0.07 MGT
TRAFFIC DIRECTION -	N/A	91% Orig./9% Term. (1977)

COMMODITIES - Primarily forwarded grain; also received fertilizer and farm machinery.

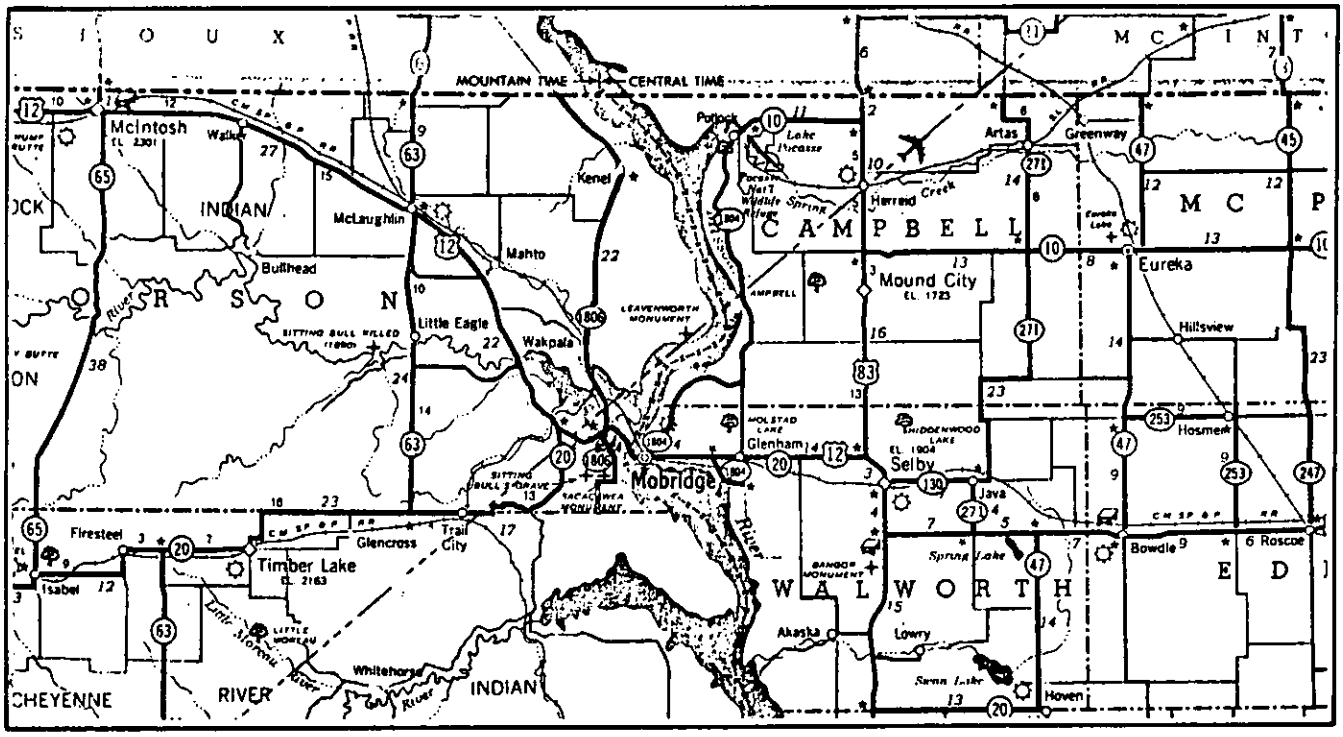
OTHER INFORMATION

All traffic on this line originates or terminates at stations in North Dakota. Therefore, the future of this line will depend on the position taken by North Dakota regarding possible assistance should the line be filed for abandonement. The State's position on this line is neutral in that it is not necessary for the movement of South Dakota products but may be needed for traffic originating or terminating in North Dakota. We will cooperate with North Dakota in their planning effort and their designation of this line.

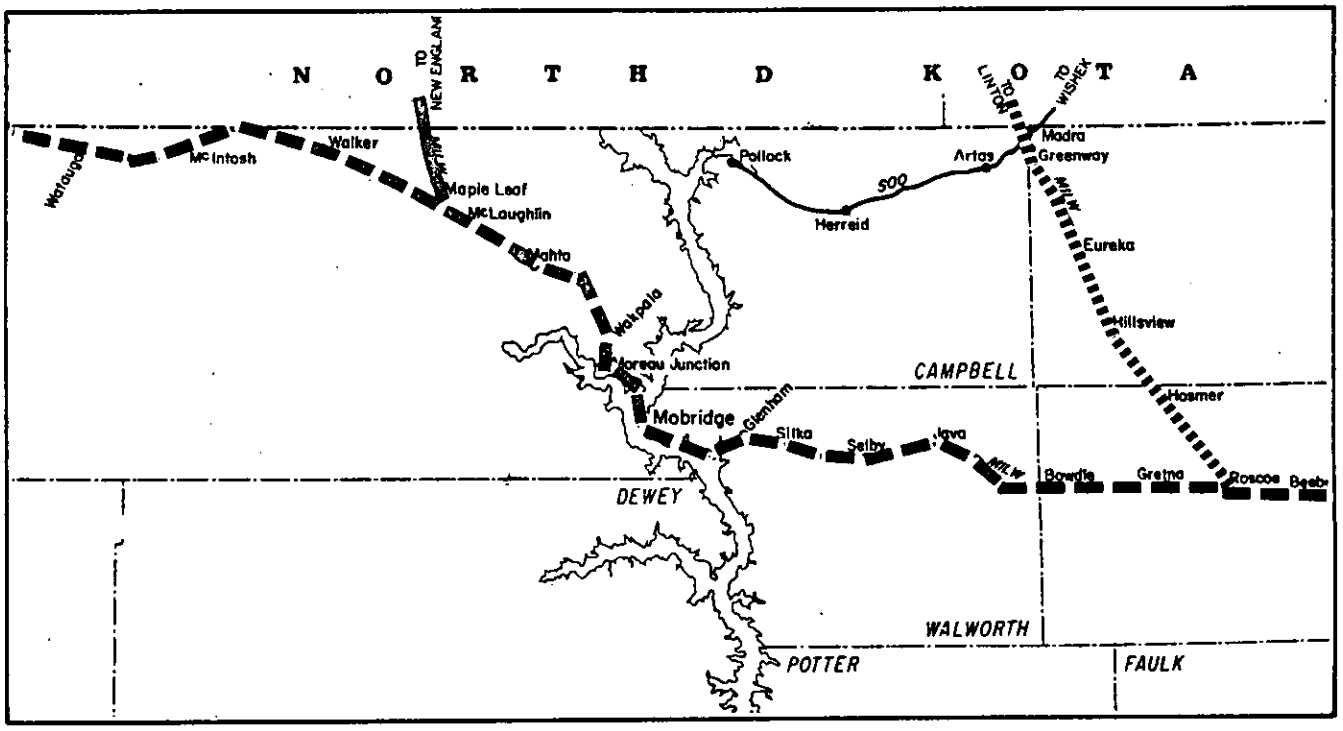
The South Dakota Rail Line Inventory Study found that minimal impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT MW12
MCLAUGHLIN, SD TO NEW ENGLAND, ND

RAILROAD-HIGHWAY LOCATION MAP

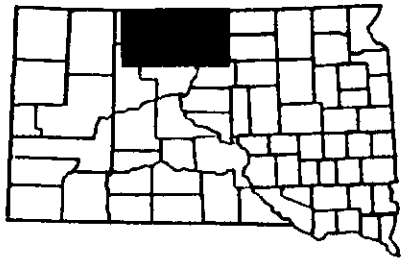


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - MW14

MASON CITY, IA TO CANTON, SD

MILWAUKEE ROAD - MINNESOTA-DAKOTA DIVISION - 24th SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Abandoned
TYPE OF LINE - Branch
LINE LENGTH IN MILES - 178 miles, 3 miles in SD
MAXIMUM WEIGHT LIMIT - 263,000 lbs.
SERVICE FREQUENCY - None
MAXIMUM SPEED LIMIT - 30 mph
YARDS - Canton
CONNECTING LINES - Milwaukee Road connects at Canton with abandoned Milwaukee lines west to Mitchell, south to Elk Point, and north to Sioux Falls.

HIGHWAYS - Canton is served by US 18.

RAIL WEIGHT - South Dakota portion is 90 lbs. rail
MAXIMUM GRADE - N/A
MAXIMUM CURVE - N/A
BALLAST - N/A

BRIDGES AND TRESTLES - N/A

STATION LOCATIONS

STATIONS	MILES
Canton	0.0
State Line	3.0

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -	1.34 MGT	0.39 MGT
TRAFFIC DIRECTION -	N/A	N/A

COMMODITIES - N/A

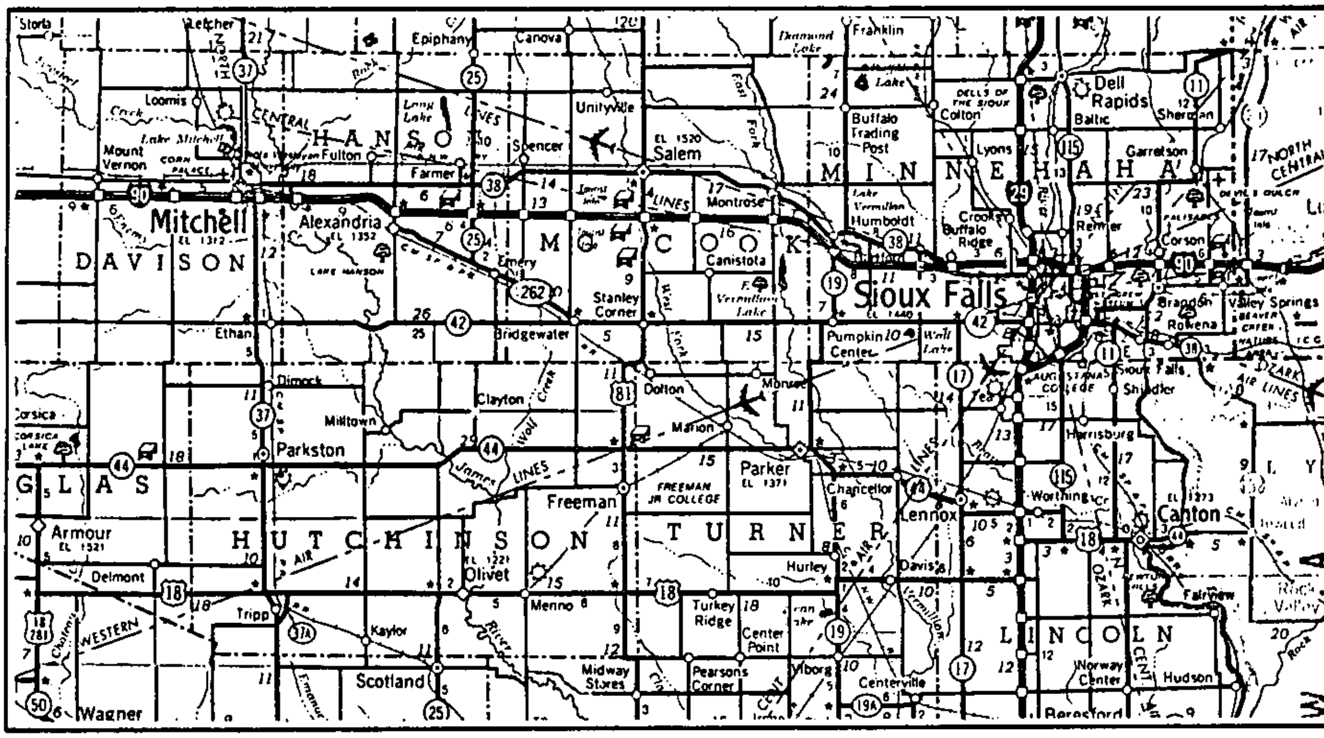
OTHER INFORMATION

This line was embargoed by the Milwaukee Road in March 1980 and approved for abandonement in June 1980.

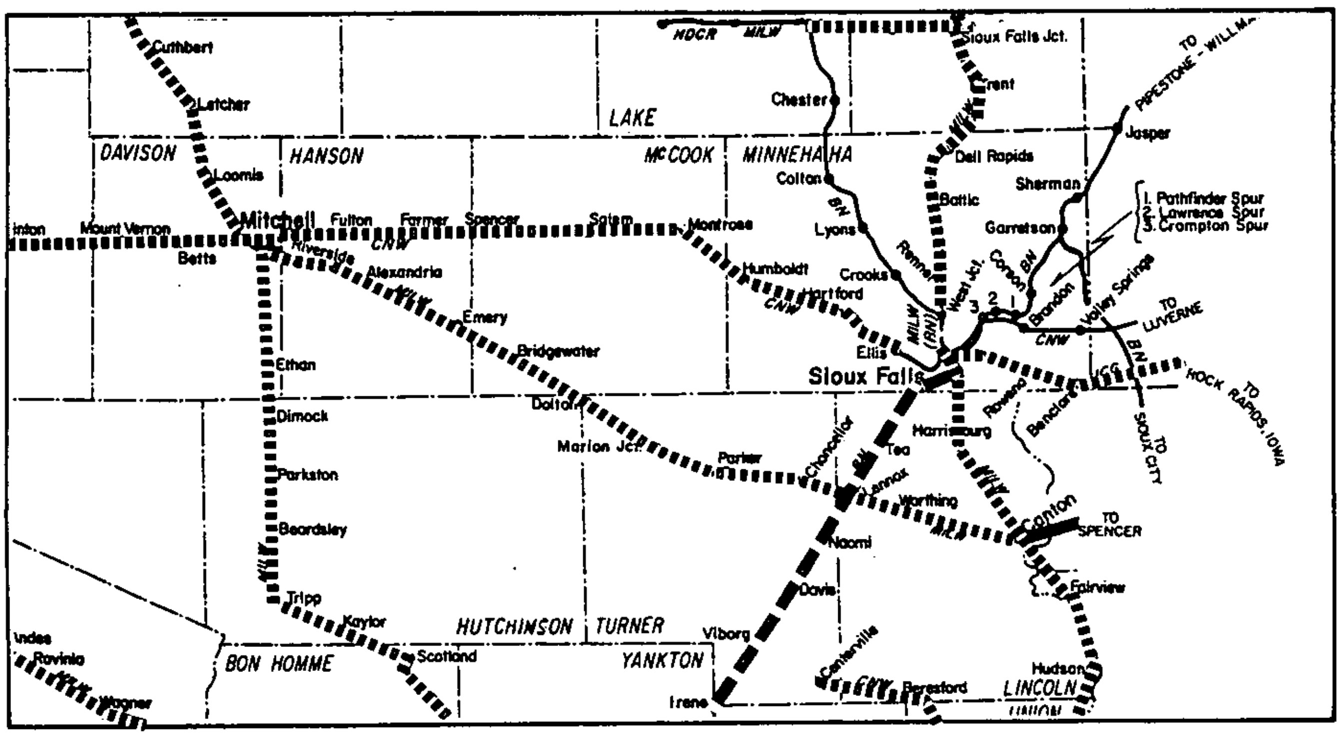
The South Dakota Rail Line Inventory Study found that minimal impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT MW14
MASON CITY, IA TO CANTON, SD

RAILROAD-HIGHWAY LOCATION MAP

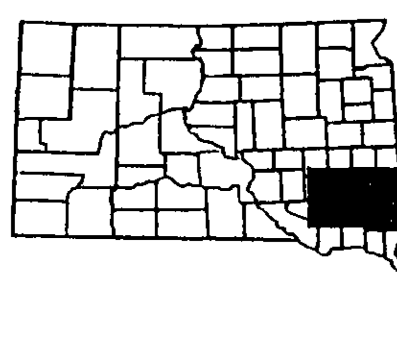


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - MW15

CANTON TO MITCHELL

MILWAUKEE ROAD - MINNESOTA - DAKOTA DIVISION - 38th SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Abandoned

TYPE OF LINE - Branch LINE LENGTH IN MILES - 79.2

MAXIMUM WEIGHT LIMIT - 263,000 lbs. MAXIMUM SPEED LIMIT - 35 mph (62 miles under slow orders)

SERVICE FREQUENCY - None

YARDS - Canton and Mitchell

CONNECTING LINES - Former Milwaukee Road line at Canton and Mitchell; Chicago & North Western at Mitchell; and Burlington Northern at Lennox.

HIGHWAYS - Canton is served by US 18, Worthing, Lennox, Chancellor and Parker served by SD 44; Bridgewater, Emery and Alexandria served by SD 262; Mitchell served by I 90 and SD 37; and Marion Jct. served by a local hard surfaced road.

RAIL WEIGHT - 4 miles of 100 lbs. rail near Canton, about 9 miles of 75 lbs. rail from Lennox to near Worthing, 85 lbs. rail between Lennox and Parker, 90 lbs. rail between Parker and Mitchell.

MAXIMUM GRADE - 1% MAXIMUM CURVE - 2° 47'

BALLAST - Gravel dating from 1942 to 1971.

BRIDGES AND TRESTLES - 26 pile trestles ranging in length from 1 to 20 spans and totaling 155 spans and 6 other types of steel and concrete bridges.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES	STATIONS	MILES
Canton	0.0	Marion Jct.	35.0	Mitchell	79.2
Worthing	9.0	Dolton	42.9		
Lennox	15.8	Bridgewater	49.9		
Chancellor	20.7	Emery	57.0		
Parker	28.5	Alexandria	65.9		

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -	0.62 MGT	0.78 MGT
TRAFFIC DIRECTION -	65% Orig./35% Term.	72% Orig./28% Term.

COMMODITIES - Primarily forwarded grain; also received grain mill products, fertilizer, and farm machinery.

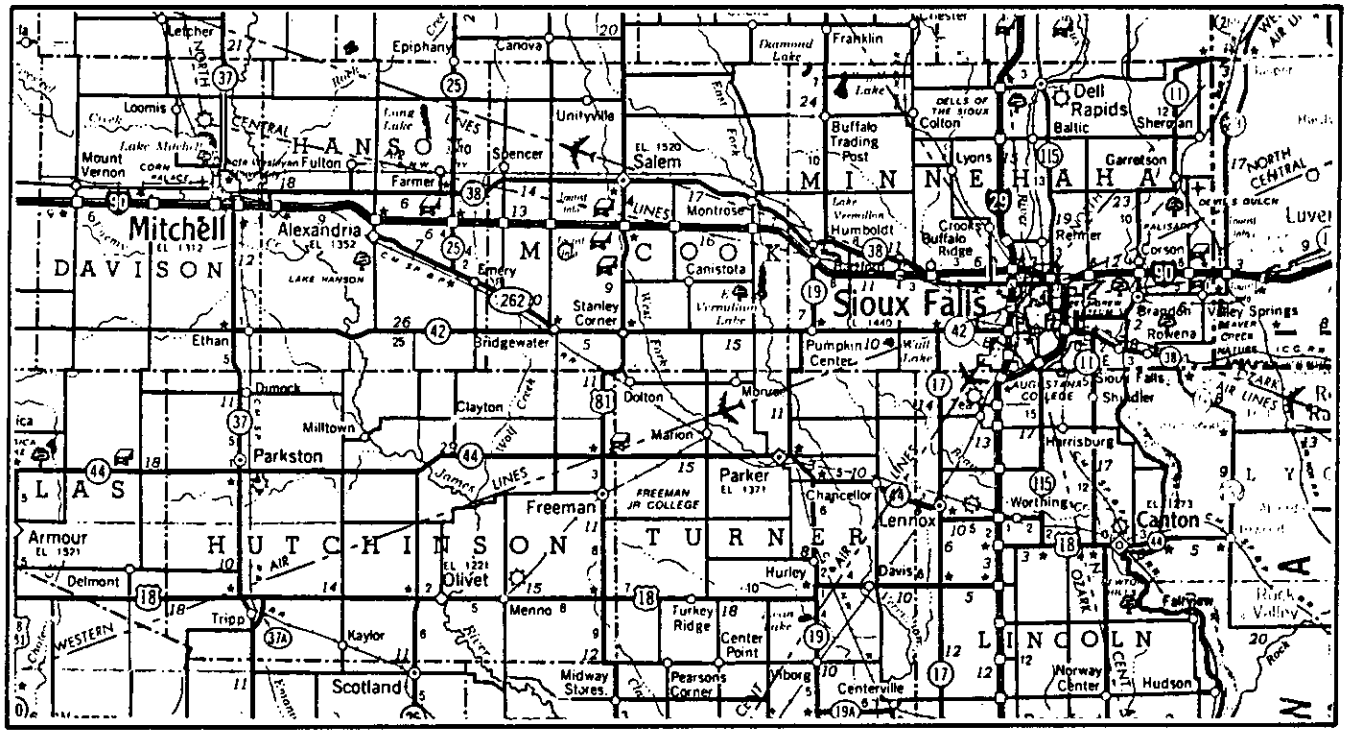
OTHER INFORMATION

This line was embargoed by the Milwaukee Road in March 1980 and approved for abandonment in June 1980. The line is currently under consideration by the State for possible acquisition and resumption of rail service.

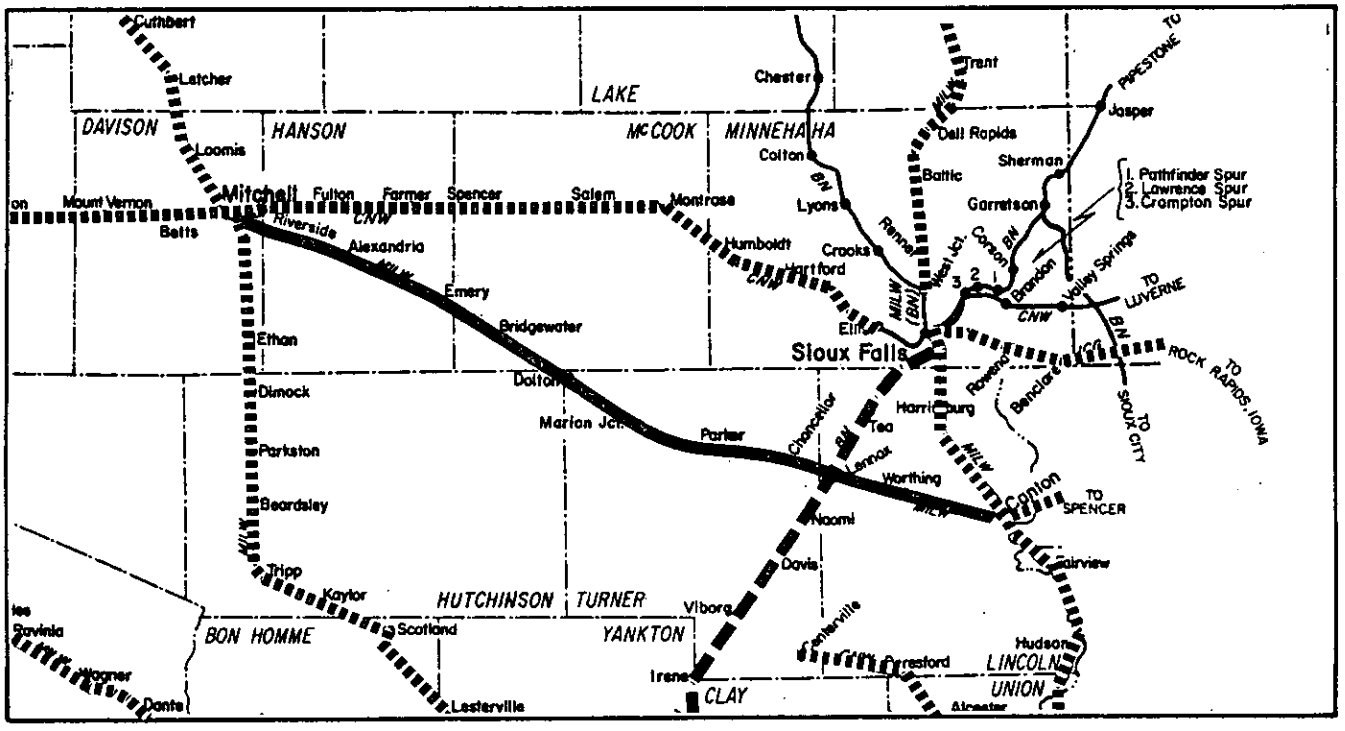
The South Dakota Rail Line Inventory Study found that limited impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT MW15
CANTON TO MITCHELL

RAILROAD-HIGHWAY LOCATION MAP

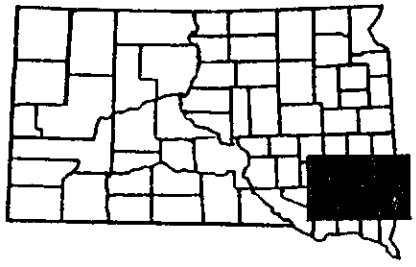


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - MW16

MITCHELL TO WOLSEY
MILWAUKEE ROAD - MINNESOTA -DAKOTA DIVISION, 33rd SUBDIVISION (SOUTH PORTION)

LINE DESCRIPTION

LINE STATUS - Abandoned
TYPE OF LINE - Secondary Main LINE LENGTH IN MILES - 54.6
MAXIMUM WEIGHT LIMIT - 263,000 lbs. MAXIMUM SPEED LIMIT - 40 mph (entire line under slow orders)

SERVICE FREQUENCY - None
YARDS - Mitchell
CONNECTING LINES - Chicago & North Western at Wolsey.

HIGHWAYS - Mitchell is served by I 90 and SD 37, Woonsocket is served by SD 34, Wolsey is served by US 281 and US 14, the other stations are served by hard surfaced local roads.

RAIL WEIGHT - 85 lbs. from Mitchell to Letcher and 90 lbs. on remainder of segment.
MAXIMUM GRADE - 1% MAXIMUM CURVE - 3°
BALLAST - Gravel dating from 1919 to 1929.

BRIDGES AND TRESTLES - 12 pile trestles ranging in length from 2 to 8 spans and totaling 55 spans, and also 3 other bridges of steel or concrete.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES
Mitchell	0.0	Woonsocket	28.2
Loomis	7.5	Alpena	37.9
Letcher	15.0	Virgil	46.1
Cuthbert	21.8	Wolsey	54.6

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -	1.11 MGT	1.34 MGT
TRAFFIC DIRECTION -	59% Orig./41% Term.	75% Orig./25% Term.

COMMODITIES - Forwarded food products, grain, farm machinery and scrap iorn or steel; received coal, lumber products, and petroleum products.

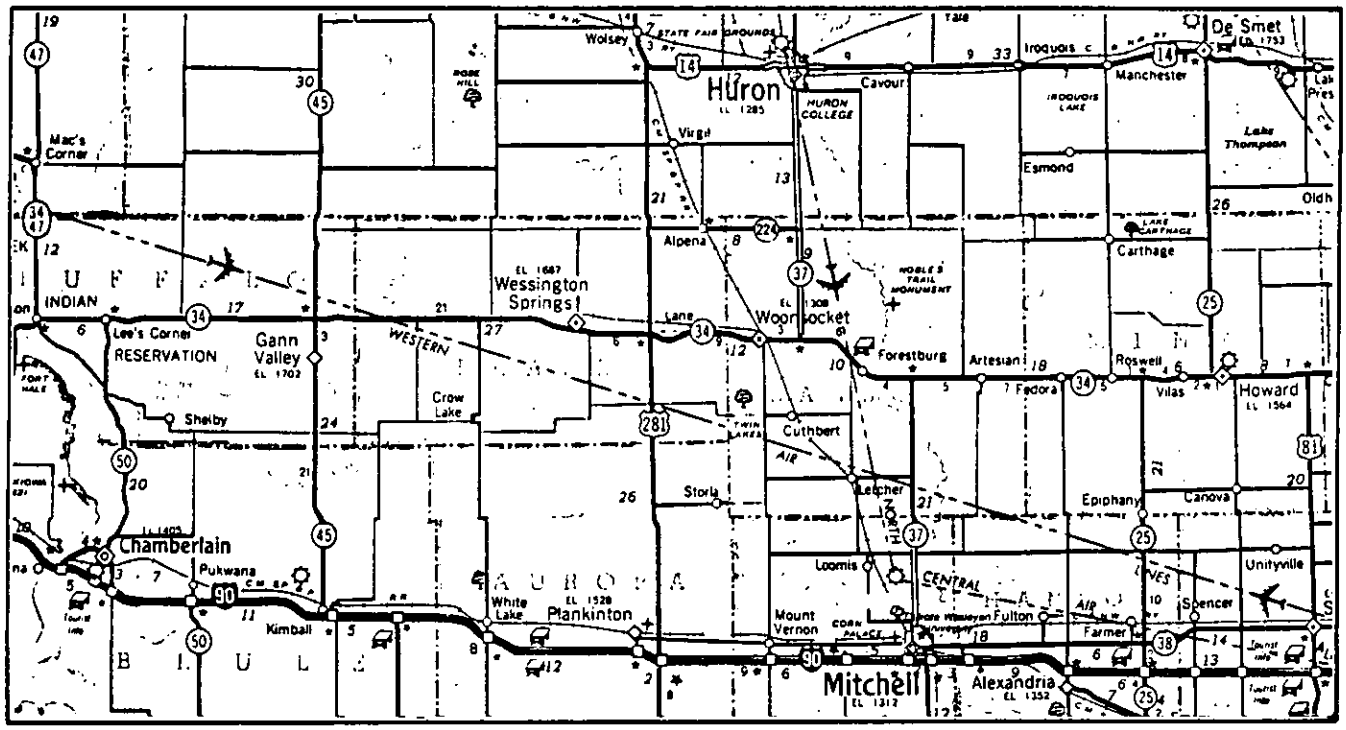
OTHER INFORMATION

This line was embargoed by the Milwaukee Road in March 1980 and approved for abandonment in June 1980. The line is currently under consideration by the State for possible acquisition and resumption of rail service.

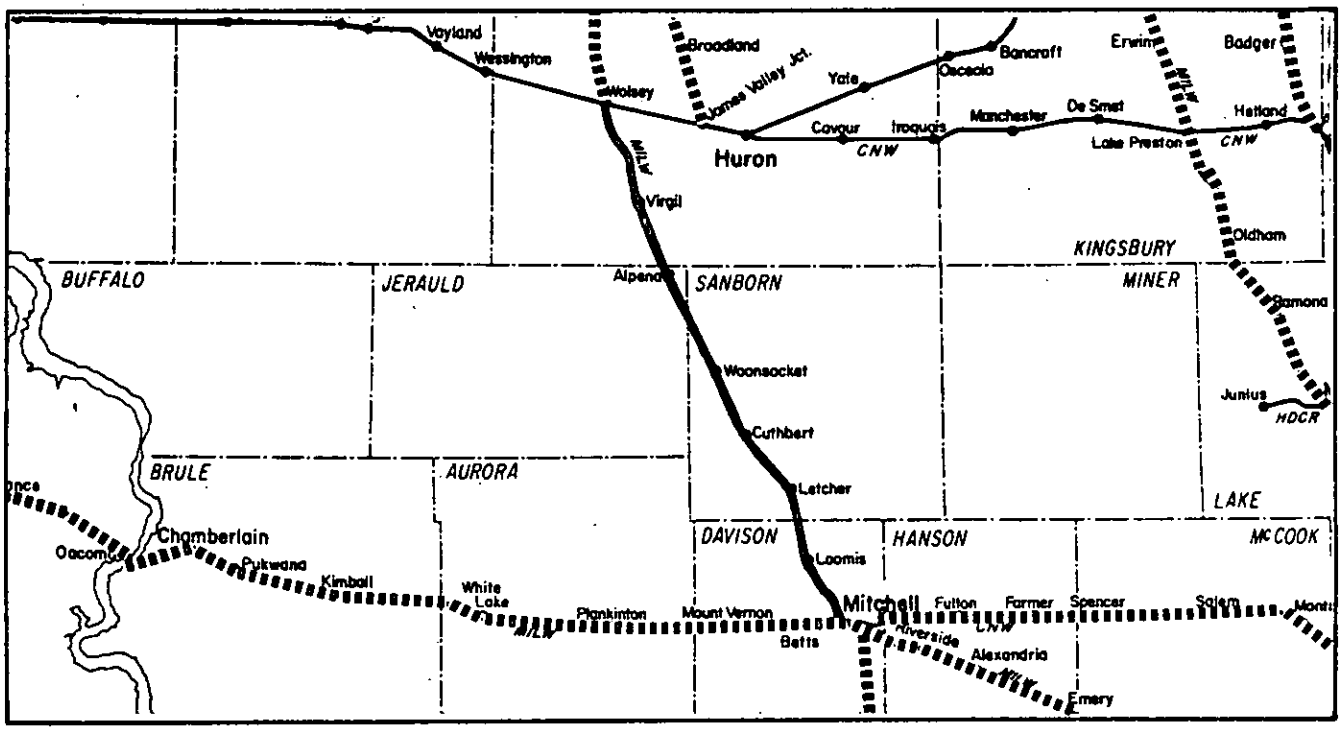
The South Dakota Rail Line Inventory Study found that limited impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT MW16
MITCHELL TO WOLSEY

RAILROAD-HIGHWAY LOCATION MAP

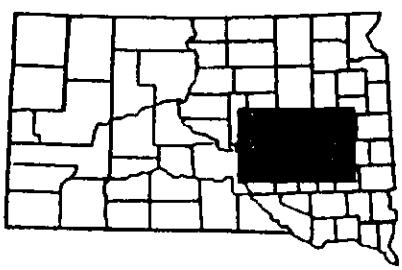


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - MW17

WOLSEY TO ABERDEEN

MILWAUKEE ROAD - MINNESOTA-DAKOTA DIVISION - 33rd SUBDIVISION (NORTH PORTION)

LINE DESCRIPTION

LINE STATUS - Abandoned by Milwaukee, Operated by Chicago & North Western under trackage rights.

TYPE OF LINE - Secondary Main LINE LENGTH IN MILES - 74.0

MAXIMUM WEIGHT LIMIT - 263,000 lbs. MAXIMUM SPEED LIMIT - 40 mph (entire line under slow orders)

SERVICE FREQUENCY - 3 round trips per week

YARDS - Aberdeen

CONNECTING LINES - Chicago & North Western at Wolsey, Redfield and Aberdeen; Milwaukee main line at Aberdeen, former Milwaukee line at Wolsey, Burlington Northern at Aberdeen.

HIGHWAYS - US 281 parallels this line and, in addition, Wolsey is served by US 14, Redfield by US 212, Mellette by SD 20 and Aberdeen by US 12.

RAIL WEIGHT - 90 lbs. rail between Wolsey and Tulare, 85 lbs. rail between Tulare and near Redfield, and 90 lbs. rail for remainder of line.

MAXIMUM GRADE - 1% MAXIMUM CURVE - 3°

BALLAST - Gravel placed in 1919 from Wolsey north about 5 miles, 4" gravel placed in 1945 north to near Bonilla, gravel placed in 1909 to near Redfield, 4" gravel placed in 1942 to Ashton, surfaced and Shiele Process Gravel 1970 north to Warner, and gravel placed in 1929 from here to Aberdeen.

BRIDGES AND TRESTLES - 6 pile trestles ranging in length from 1 to 15 spans and totaling 29 spans and also 4 other steel bridges.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES
Wolsey	0.0	Ashton	41.4
Bonilla	12.4	Mellette	52.4
Tulare	23.1	Duxbury	58.3
Redfield	33.2	Warner	64.1
		Aberdeen	74.0

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -	1.11 MGT	1.58 MGT
TRAFFIC DIRECTION -	59% Orig./41% Term.	97% Orig./3% Term.

COMMODITIES - Primarily grain.

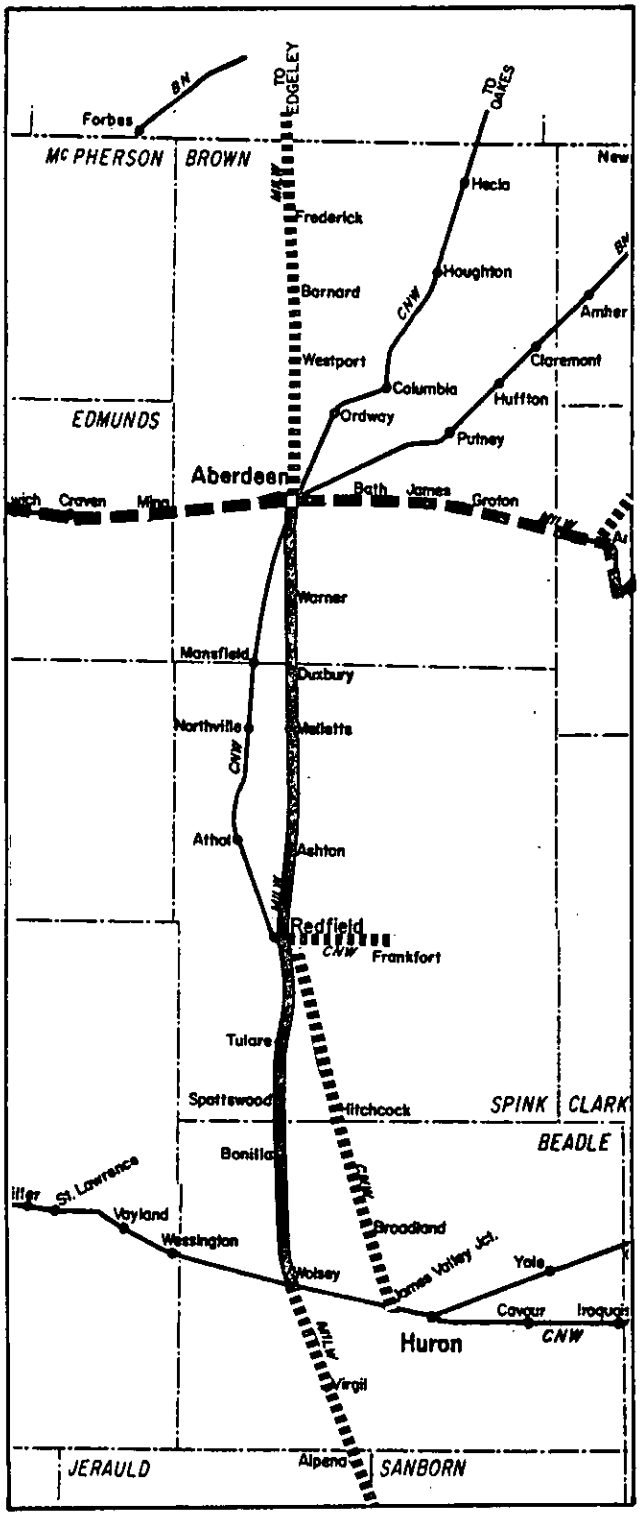
OTHER INFORMATION

This line was embargoed by the Milwaukee Road in March 1980 and approved for abandonment in June 1980. The Chicago & North Western is currently servicing the line under a trackage rights agreement with the Milwaukee Road. The line is currently under consideration by the State for acquisition and resumption of rail service.

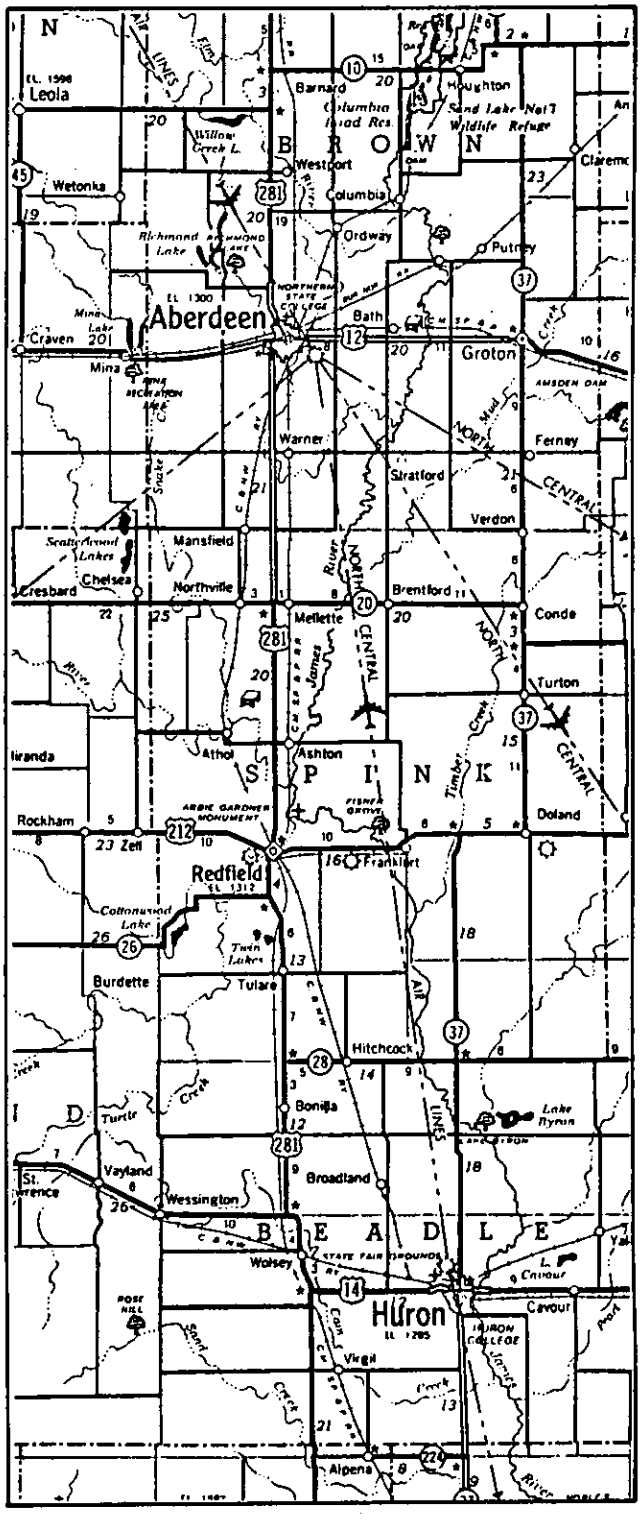
The South Dakota Rail Line Inventory Study found that limited impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT MW17
WOLSEY TO ABERDEEN

RAILROAD SEGMENT MAP

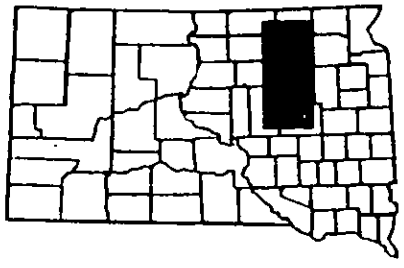


RAILROAD-HIGHWAY LOCATION MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - MW21a

MITCHELL TO MURDO
MILWAUKEE ROAD - MINNESOTA-DAKOTA DIVISION - 41st SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Abandoned
TYPE OF LINE - Branch LINE LENGTH IN MILES - 142.3
MAXIMUM WEIGHT LIMIT - 220,000 lbs. MAXIMUM SPEED LIMIT - 25 mph (entire line under slow orders)

SERVICE FREQUENCY - None
YARDS - Mitchell and Chamberlain
CONNECTING LINES - Former Chicago & North Western at Mitchell, former Milwaukee at Mitchell and Murdo.
HIGHWAYS - I 90 parallels this line. Mitchell is served by SD 37, Plankinton by US 281, Kimball by SD 45, Chamberlain by SD 50, Reliance by SD 47, Vivian and Murdo by US 83 and Presho by US 183.

RAIL WEIGHT - 65 lbs. rail except for 20 miles of 75 lbs. and 11 miles of 85 lbs. from near Chamberlain to Kennebec.
MAXIMUM GRADE - 1% MAXIMUM CURVE - 5°
BALLAST - Gravel laid in 1962 from White Lake to Chamberlain, gravel laid in 1971 from Reliance to Kennebec, about 21 miles of gravel placed in 1971 and 1972.

BRIDGES AND TRESTLES - 68 pile trestles ranging in length from 1 to 15 spans and totaling 434 spans and 4 steel bridges including that crossing the Missouri River.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES	STATIONS	MILES
Mitchell	0.0	Kimball	47.0	Kennebec	97.1
Betts	6.1	Pukwana	58.6	Presho	107.1
Mt. Vernon	11.8	Chamberlain	67.1	Vivian	119.0
Plankinton	23.1	Oacoma	71.0	Draper	131.9
White Lake	34.5	Reliance	83.8	Murdo	142.3

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -	0.52 MGT	0.55 MGT
TRAFFIC DIRECTION -	66% Orig./34% Term.	58% Orig./42% Term.

COMMODITIES - Forwarded grain; received stone, clay, and glass, petroleum products, and sand and gravel.

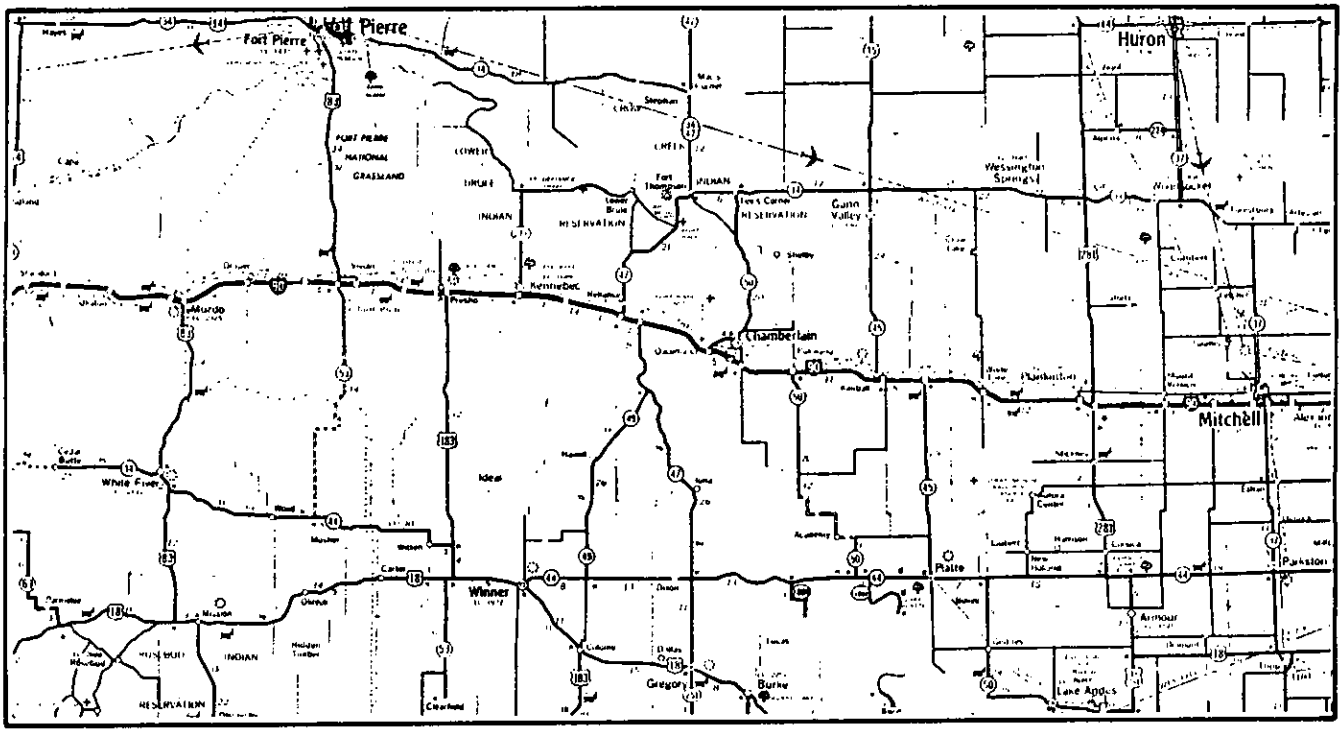
OTHER INFORMATION

This line was embargoed by the Milwaukee Road in March 1980 and abandoned in June 1980. The line is currently under consideration by the State for possible acquisition and partial resumption of rail service.

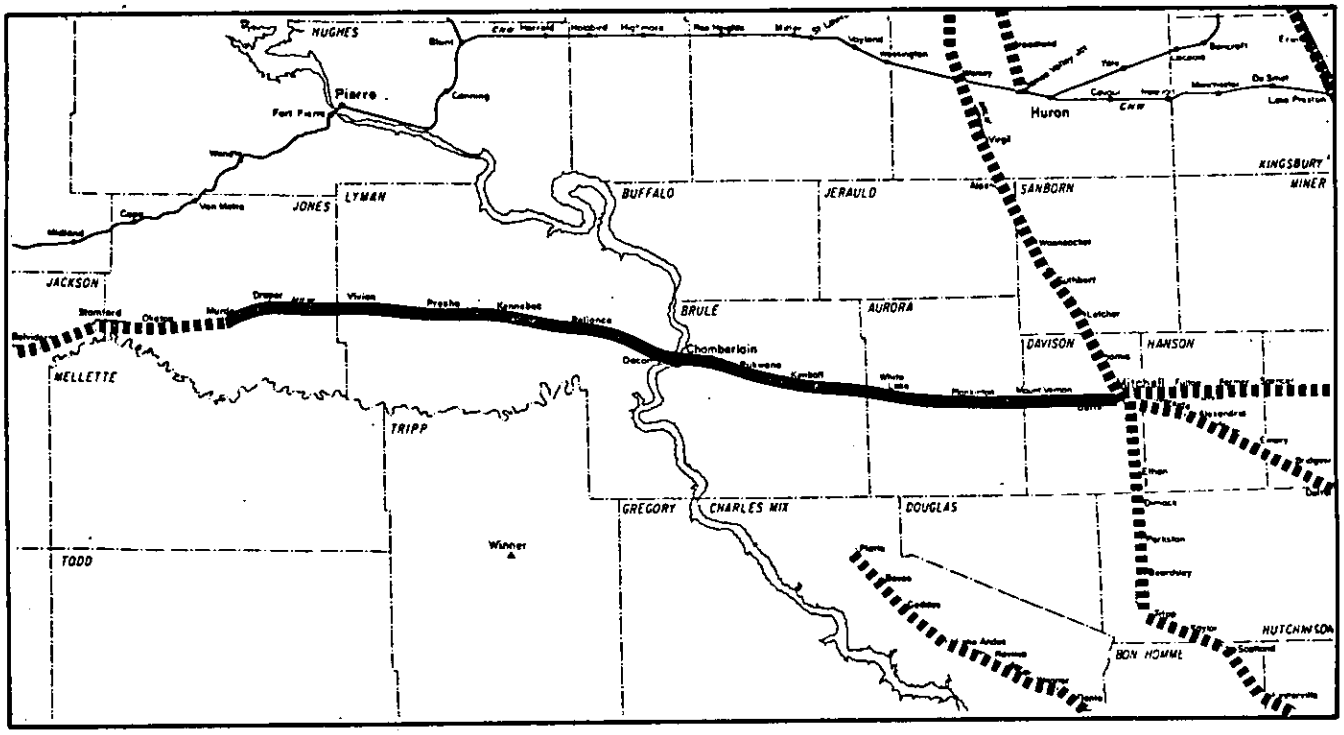
The South Dakota Rail Line Inventory Study found that limited impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT MW21a
MITCHELL TO MURDO

RAILROAD-HIGHWAY LOCATION MAP

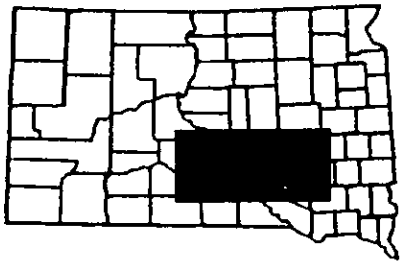


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - MW21b

MURDO TO RAPID CITY
MILWAUKEE ROAD - MINNESOTA-DAKOTA DIVISION - 42nd SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Abandoned
TYPE OF LINE - Branch
LINE LENGTH IN MILES - 144.0
MAXIMUM WEIGHT LIMIT - 220,000 lbs.
MAXIMUM SPEED LIMIT - 25 mph (45 miles under slow orders)

SERVICE FREQUENCY - None
YARDS - Rapid City
CONNECTING LINES - Chicago & North Western to Rapid City and former Milwaukee at Murdo.
HIGHWAYS - I 90 parallels from Murdo to Kadoka, and SD 44 parallels the remaining portion of the line.

RAIL WEIGHT - 65 lbs.
MAXIMUM GRADE - 0.75%
MAXIMUM CURVE - 6° (in Rapid City) and 4° elsewhere on the line

BALLAST - Gravel placed in 1966 and 1971 from Murdo to Kodoka.

BRIDGES AND TRESTLES - 86 pile trestles ranging in length from 1 to 13 spans and totaling 533 spans and also 2 concrete bridges and 5 steel bridges.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES	STATIONS	MILES
Murdo	0.0	Weta	57.2	Creston	114.6
Okaton	10.5	Interior	72.0	Farmingdale	124.8
Stamford	21.3	Conata	82.3	Caputa	130.2
Belvidere	32.5	Imlay	92.8	Murphy	138.3
Kadoka	45.5	Scenic	102.1	Rapid City	144.0

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -	0.52 MGT	0.55 MGT
TRAFFIC DIRECTION -	66% Orig./34% Term.	93% Orig./7% Term.

COMMODITIES - Forwarded grain, grain mill products, lumber, and stone, clay, and glass; received lumber and stone, clay, and glass.

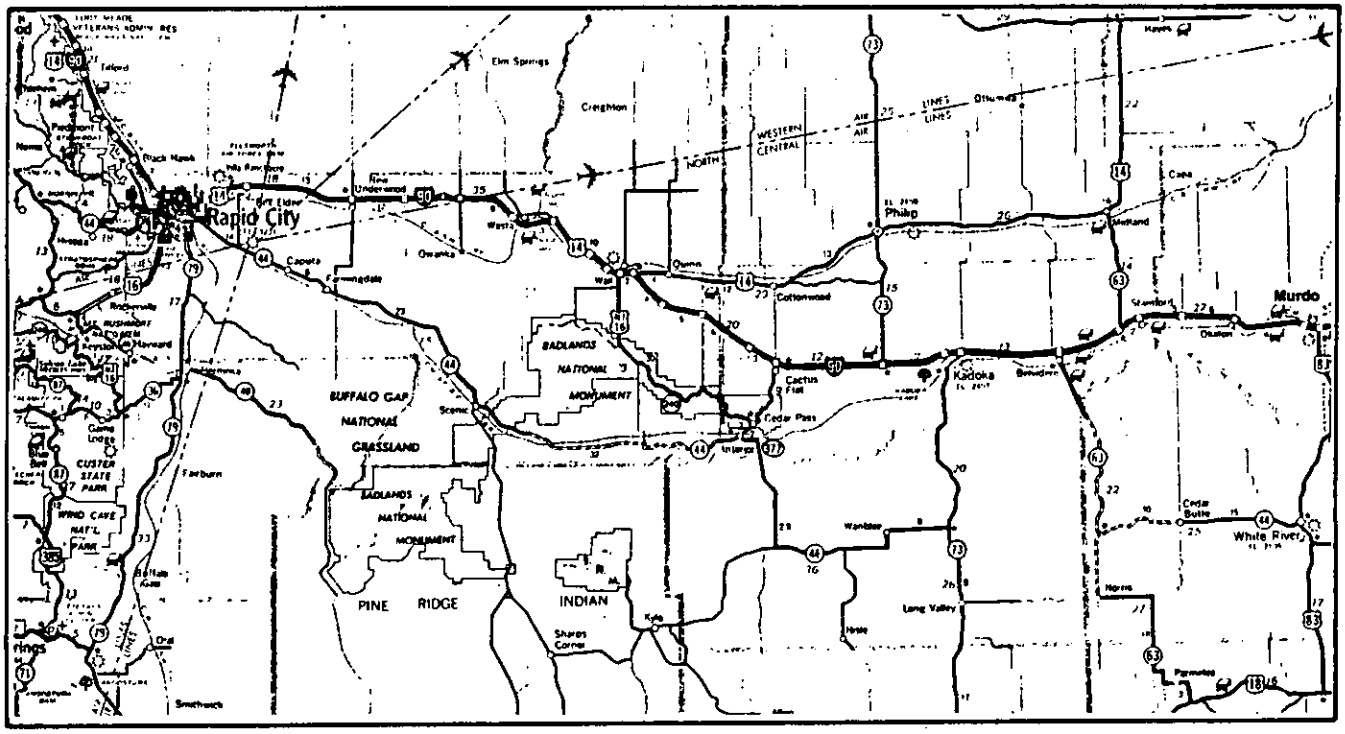
OTHER INFORMATION

This line was embargoed by the Milwaukee Road in March 1980 and abandoned in June 1980. The line is currently under consideration by the State for possible acquisition.

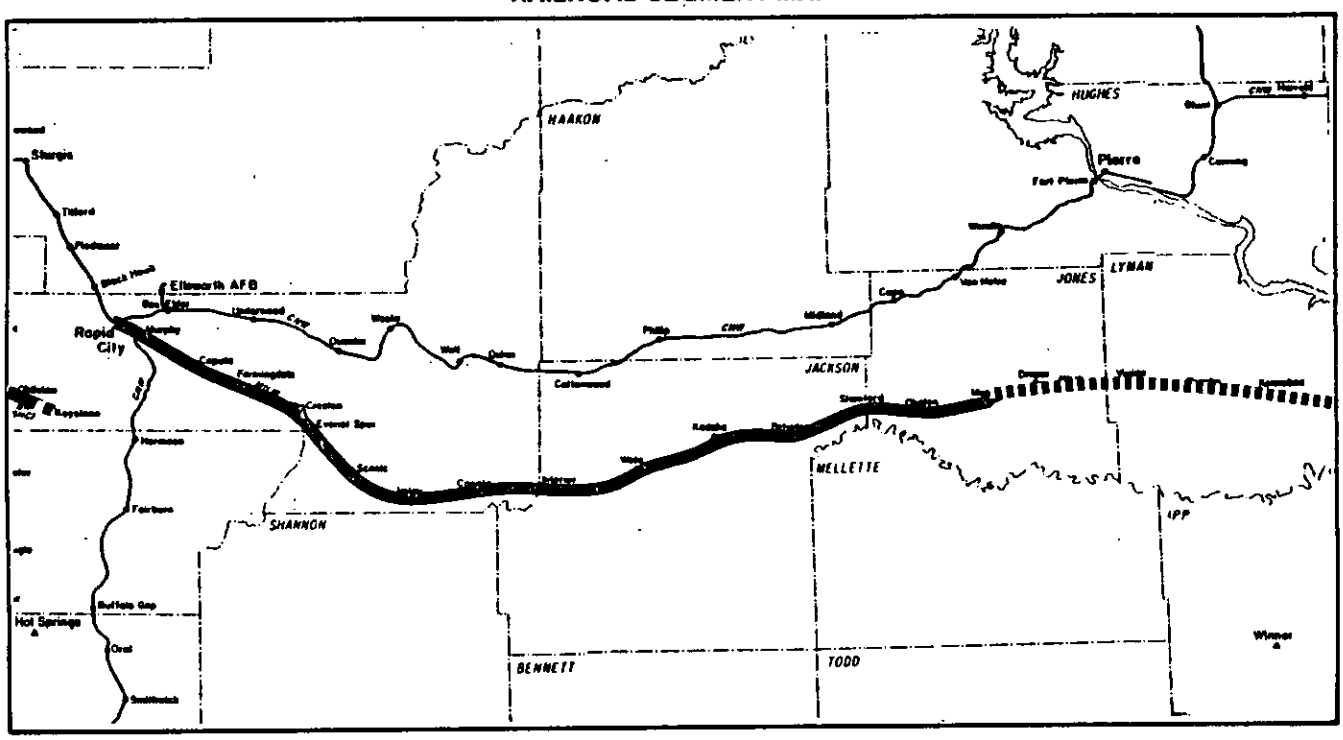
The South Dakota Rail Line Inventory Study found that minimal impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT MW21b
MURDO TO RAPID CITY

RAILROAD-HIGHWAY LOCATION MAP

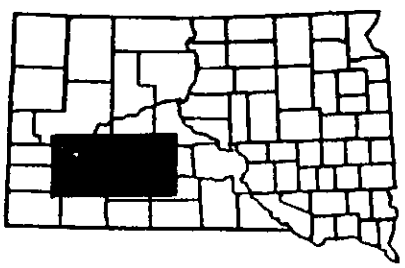


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - MW22

SIOUX CITY, IA TO SIOUX FALLS, SD
MILWAUKEE ROAD - MINNESOTA-DAKOTA DIVISION - 37th SUBDIVISION (portion)

LINE DESCRIPTION

LINE STATUS - Abandoned
TYPE OF LINE - Branch LINE LENGTH IN MILES - 89.7 Total, 48.6 in SD
MAXIMUM WEIGHT LIMIT - 263,000 lbs. MAXIMUM SPEED LIMIT - 30 mph (68 miles of operating under slow orders)
SERVICE FREQUENCY - None
YARDS - Sioux City, West Yard, Canton, South Yard, and Sioux Falls
CONNECTING LINES - Former Milwaukee Road line at East Wye Switch, Canton, and Sioux Falls; Chicago & North Western connects at Sioux Falls; Burlington Northern at Sioux Falls.
HIGHWAYS - I 29 serves West Yard, Jefferson and East Wye Switch; Hudson, Fairview and Harrisburg and served by local hard surfaced roads; Canton is served by US 18 and Sioux Falls is served by I 29, I 90, US 77, SD 42, and SD 38.
RAIL WEIGHT - 90 lbs. rail from Sioux City to Westfield and Hudson to Sioux Falls, 85 lbs. from Westfield to Hudson.
MAXIMUM GRADE - 1.5% MAXIMUM CURVE - 10^{o}X 32^{1}
BALLAST - Gravel placed in the 1930s from Sioux City to Canton and placed in 1942 from Canton to Sioux Falls.
BRIDGES AND TRESTLES - 41 pile trestles ranging in length from 1 to 15 spans and totaling 177 spans and 9 other bridges of pile trestle and steel combination ranging from 2 spans to 46 spans.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES	STATIONS	MILES
Sioux City, IA	0.0	East Wye Switch, SD	19.8	Hudson, SD	53.8
Shore Acres, IA	3.9	Westfield, IA	25.9	Fairview,SD	60.5
Military Rd., IA	5.1	Akron, IA	31.4	Canton, SD	68.9
West Yard, SD	5.6	Chatsworth, IA	38.1	Harrisburg, SD	80.3
Jefferson, SD	12.1	Hawarden, IA	44.2	South Yard, SD	88.5
				Sioux Falls, SD	89.7

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -		
Sioux City to East Wye Switch	2.24 MGT	0.88 MGT
East Wye Switch to Canton	1.16 MGT	1.52 MGT
Canton To Sioux Falls	0.75 MGT	0.70 MGT
TRAFFIC DIRECTION -	70% Orig./30% Term.	57% Orig./43% Term.

COMMODITIES - Forwarded grain, food products, stone, sand, and gravel. and scrap iron or steel; received grain, grain mill products, and stone, sand and gravel.

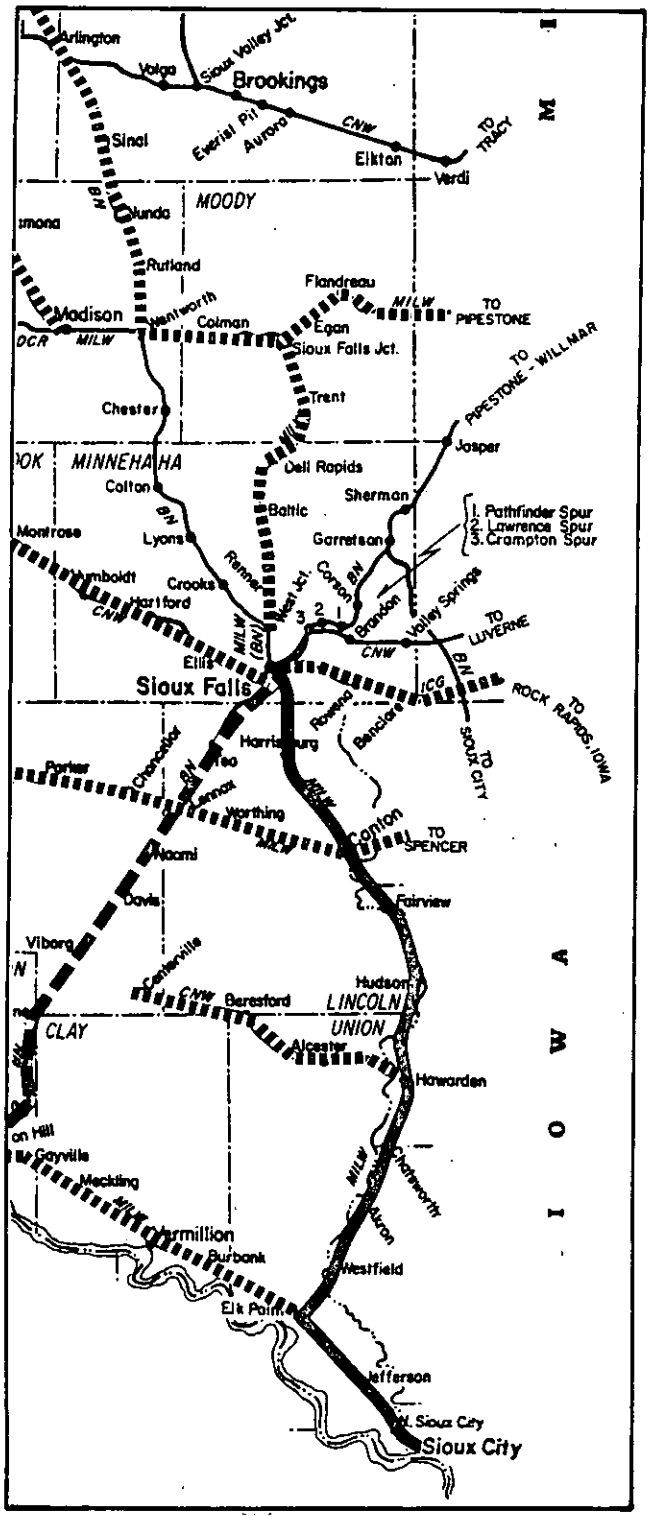
OTHER INFORMATION -

This line was embargoed by the Milwaukee Road in March 1980 and abandoned in June 1980. The line is currently under consideration by the State for possible acquisition of the portion between West Yard and Westfield, IA and between Canton and Sioux Falls in South Dakota, lease of the remaining portions of the line, and resumption of rail service.

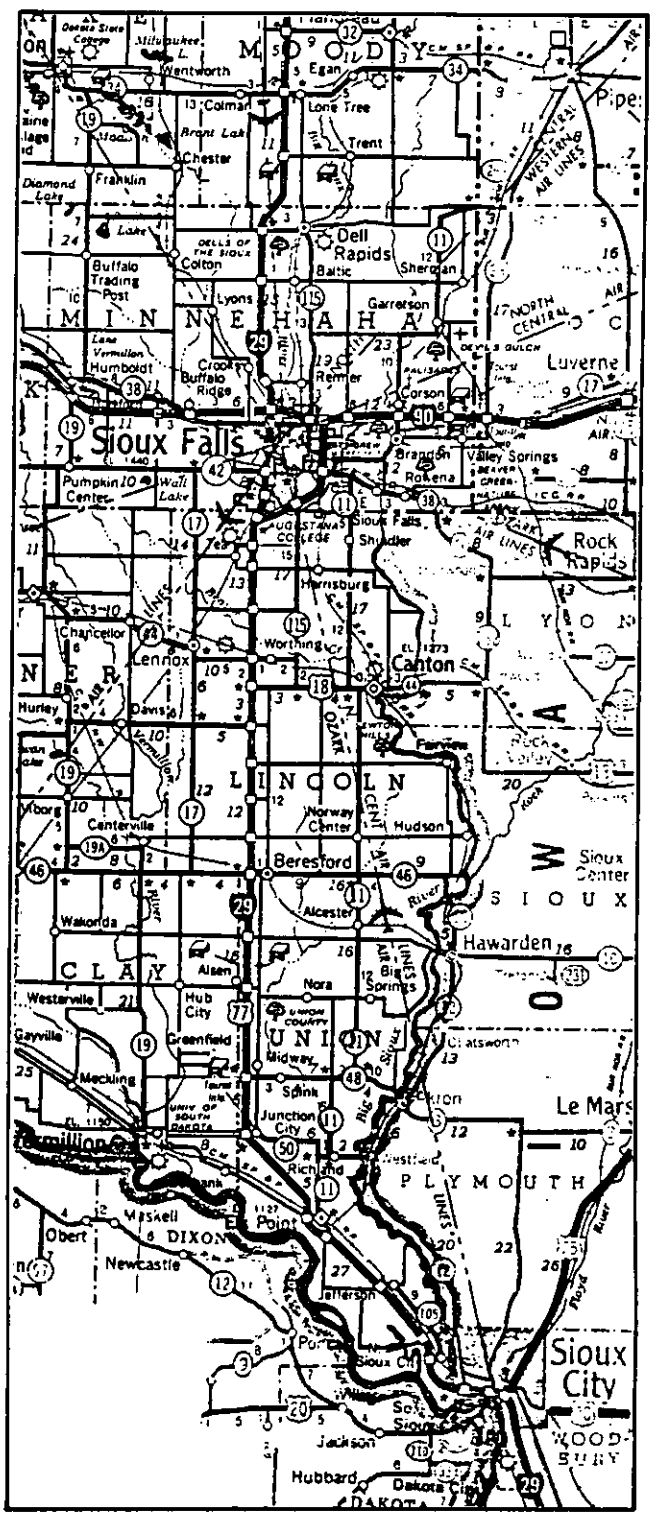
The South Dakota Rail Line Inventory Study found that significant impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT MW22
SIOUX CITY, IA TO SIOUX FALLS

RAILROAD SEGMENT MAP

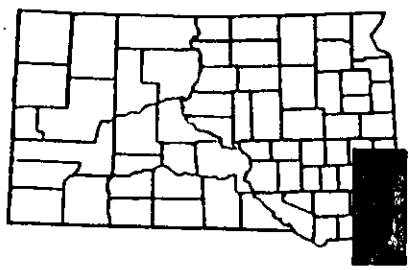


RAILROAD-HIGHWAY LOCATION MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - MW23

SIOUX FALLS TO SIOUX FALLS JCT.
Milwaukee Road - MINNESOTA-DAKOTA DIVISION 37th SUBDIVISION(portion)

LINE DESCRIPTION

LINE STATUS - Abandoned
TYPE OF LINE - Branch
LINE LENGTH IN MILES - 32.3
MAXIMUM WEIGHT LIMIT - 220,000 lbs.
MAXIMUM SPEED LIMIT - 25 mph (entire line under slow orders)

SERVICE FREQUENCY - None
YARDS - Sioux Falls and Dell Rapids
CONNECTING LINES - Former Milwaukee at Sioux Falls and Sioux Falls Junction, Chicago & North Western at Sioux Falls, Burlington Northern at West Jct. and Sioux Falls.

HIGHWAYS - Sioux Falls is served by I 29 and I 90, Renner, Baltic and Dell Rapids are served by US 77 and Trent is served by a hard surfaced local road. I 29 and US 77 both parallel this route.

RAIL WEIGHT - 65 lbs.
MAXIMUM GRADE - 1.05%
MAXIMUM CURVE - 6°40' (near Dell Rapids)

BALLAST - Gravel placed in 1962 from Sioux Falls to near Renner, gravel placed in 1971 from near Renner to near Dell Rapids and data unavailable for remainder of the line.

BRIDGES AND TRESTLES - 14 pile trestles ranging in length from 1 to 8 spans and totaling 54 spans and 3 combination pile and steel bridges totaling 34 spans and 3 steel bridges.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES	STATIONS	MILES
Sioux Falls	0.0	Renner	6.5	Sioux Falls Jct.	32.3
East Jct.	0.8	Baltic	14.4		
Peaks	0.9	Dell Rapids	19.5		
West Jct.	2.7	Trent	26.6		

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -	0.75 MGT	0.70 MGT
TRAFFIC DIRECTION -	70% Orig./30% Term.	81% Orig./19% Term.

COMMODITIES - Primarily forwarded stone; grain, clay, glass, and sand, and non-metallic minerals; received fertilizer, stone, clay, and glass.

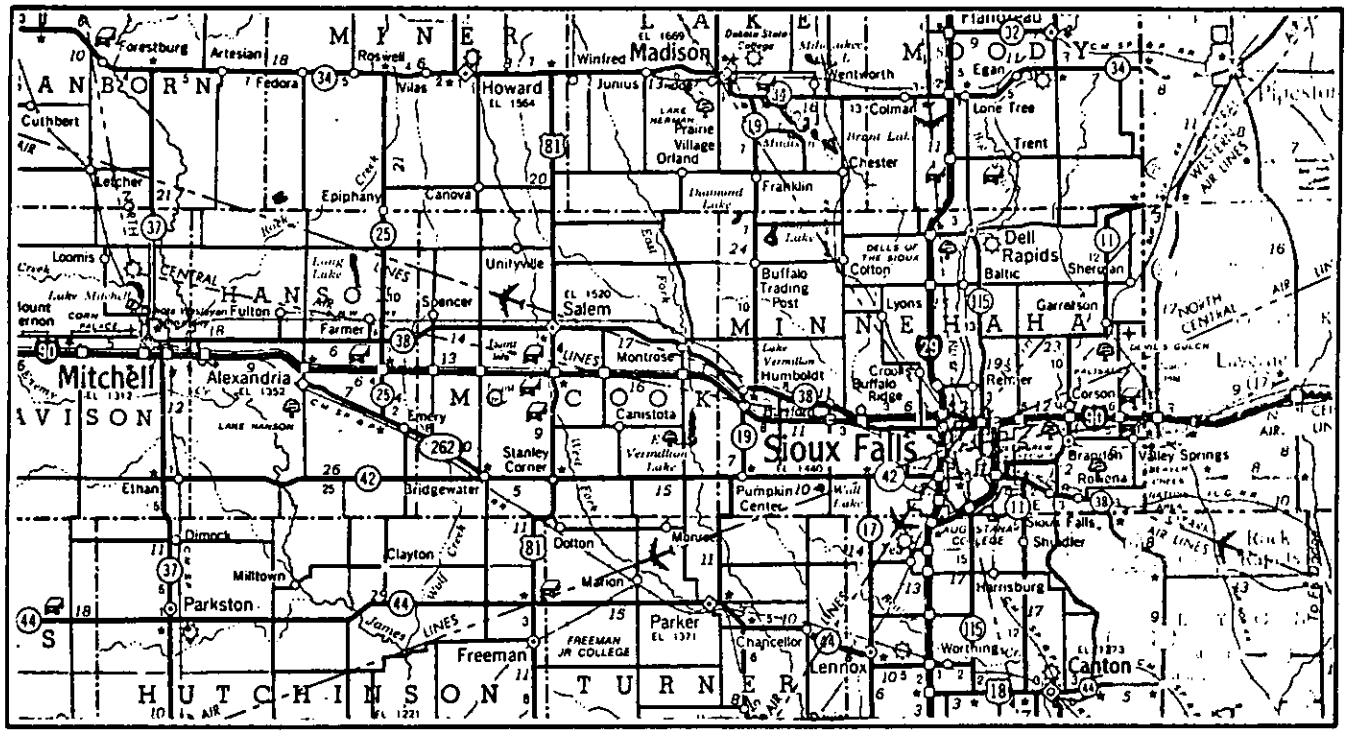
OTHER INFORMATION

This line was embargoed by the Milwaukee Road in March 1980 and abandoned in June 1980. The portion of the line between Sioux Falls and Trent is currently under consideration by the State for possible acquisition and resumption of rail service.

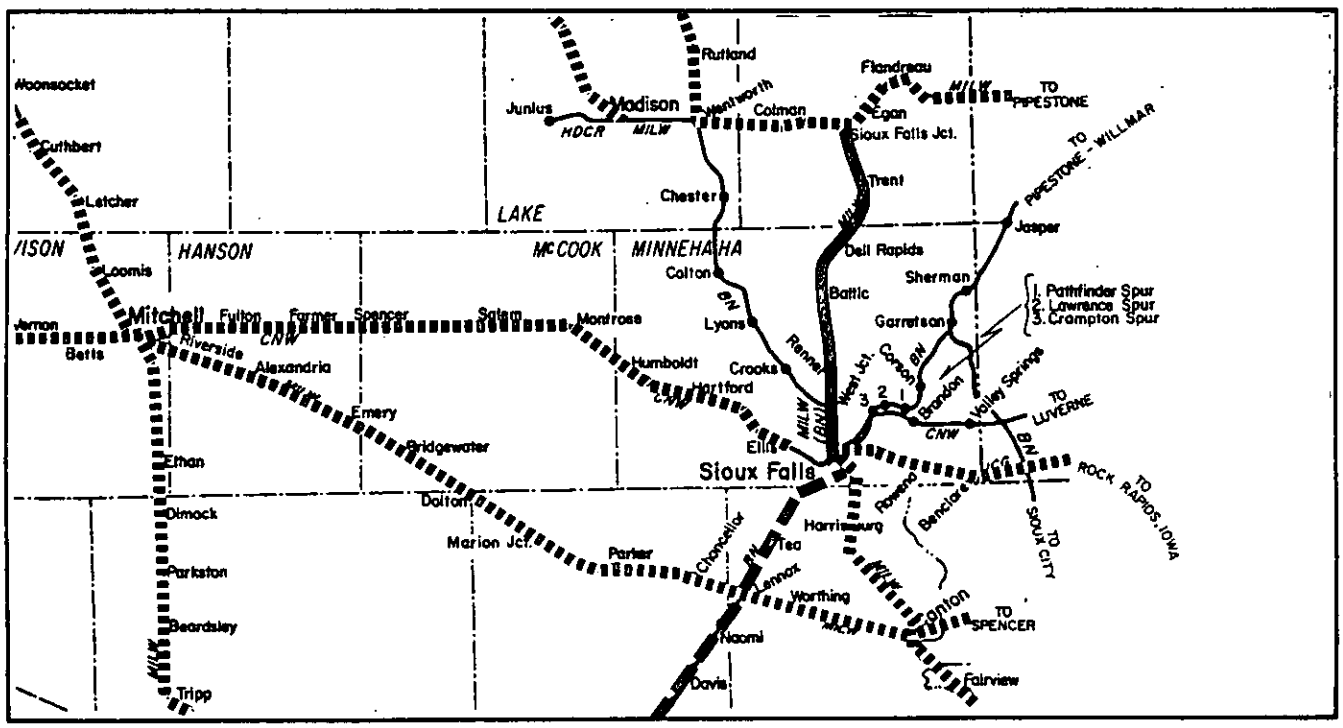
The South Dakota Rail Line Inventory found that significant impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT MW23
SIOUX FALLS TO SIOUX FALLS JCT.

RAILROAD-HIGHWAY LOCATION MAP

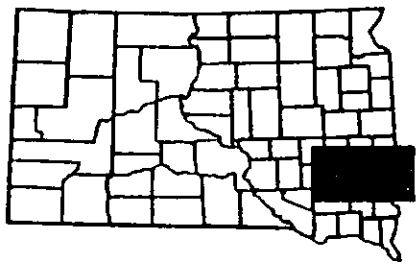


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - MW24

EAST WYE SWITCH TO MITCHELL
MILWAUKEE ROAD - MINNESOTA-DAKOTA DIVISION 35th SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Abandoned
TYPE OF LINE - Secondary Main LINE LENGTH IN MILES - 116.7
MAXIMUM WEIGHT LIMIT - 263,000 lbs. MAXIMUM SPEED LIMIT - 30 mph (12 miles under slow orders)
SERVICE FREQUENCY - None
YARDS - Yankton and Mitchell
CONNECTING LINES - Former Milwaukee Road at East Wye Switch, Napa and Mitchell; Burlington Northern branch at Yankton; and Chicago & North Western at Mitchell.

HIGHWAYS - Elk Point is on I 29; Vermillion, Meckling and Yankton on SD 50; Tripp, Parkston and Dimock on SD 37; Mitchell on I 90 and SD 37; all other stations except Napa and Beardsley are on hard surfaced local roads.
RAIL WEIGHT - 85 lbs. from East Wye Switch to Burbank and from Beardsley to Ethan; 90 lbs.from Burbank to Beardsley and 100 lbs. - 112 lbs. from Ethan to Mitchell.
MAXIMUM GRADE - 1% MAXIMUM CURVE - 8° & 6° at Mitchell

BALLAST - Mostly gravel dating from 1918 to 1928.

BRIDGES AND TRESTLES - 25 pile trestles ranging in length from 1 to 11 spans and totaling 99 spans and 7 other bridges of steel or concrete.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES	STATIONS	MILES
East Wye Switch	0.0	Yankton	41.7	Tripp	82.5
Elk Point	0.7	Napa	47.3	Beardsley	88.1
Burbank	9.3	Utica	50.9	Parkston	94.6
Vermillion	15.2	Lesterville	57.6	Dimock	100.0
Meckling	23.4	Scotland	68.9	Ethan	105.1
Gayville	29.6	Kaylor	75.5	Mitchell	116.7

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -		
East Wye Switch to Napa	0.94 MGT	0.56 MGT
Napa to Mitchell	0.80 MGT	0.41 MGT
TRAFFIC DIRECTION -	58% Orig./42% Term.	59% Orig./41% Term.

COMMODITIES - Forwarded grain and grain mill products; received food products, fertilizer, and iron and steel.

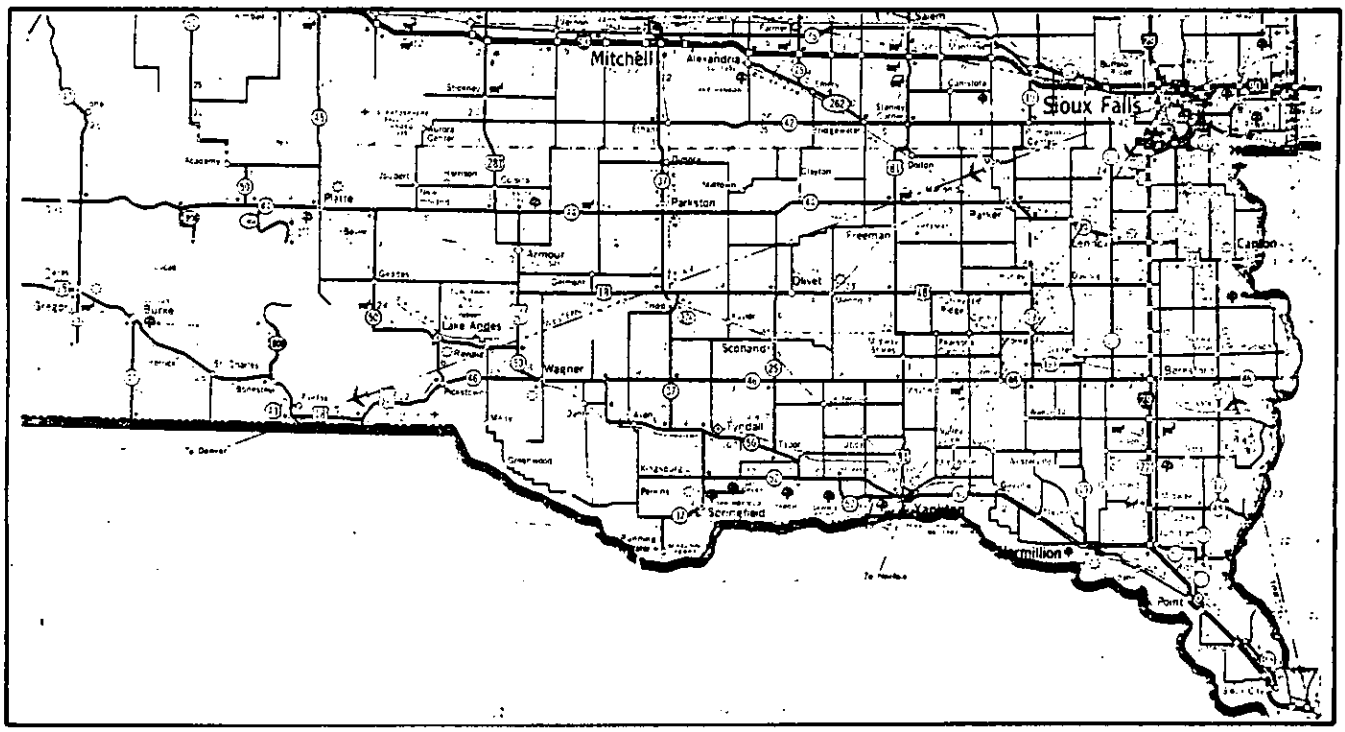
OTHER INFORMATION

This line was embargoed by the Milwaukee Road in March 1980 and abandoned in June 1980. The line is currently under consideration by the State for possible acquisition and resumption of rail service.

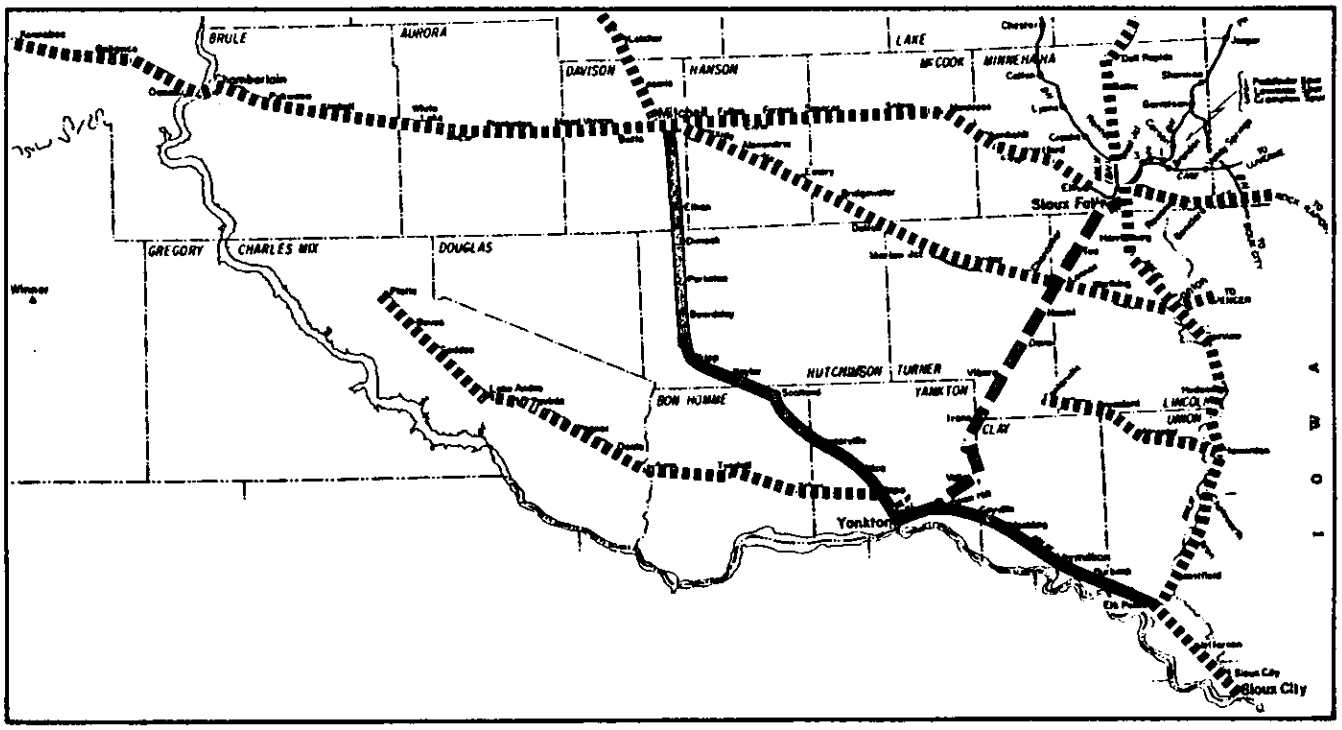
The South Dakota Rail Line Inventory Study found that limited impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT MW24
EAST WYE SWITCH TO MITCHELL

RAILROAD-HIGHWAY LOCATION MAP

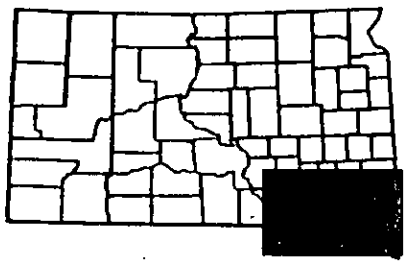


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - MW 25

NAPA TO PLATTE
MILWAUKEE ROAD - MINNESOTA-DAKOTA DIVISION - 36th SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Abandoned
TYPE OF LINE - Branch
LINE LENGTH IN MILES - 82.4
MAXIMUM WEIGHT LIMIT - 220,000 lbs
MAXIMUM SPEED LIMIT - 25 mph (entire line under slow orders)

SERVICE FREQUENCY - None
YARDS - None
CONNECTING LINES - Former Milwaukee Road at Napa.

HIGHWAYS - SD 50 parallels, Platte also served by SD Highway 44; Wagner also served by SD Highway 46.

RAIL WEIGHT - About 8 miles of mixed 75 lbs., 85 lbs. and 95 lbs. rail near Napa; balance is 60 lbs.
MAXIMUM GRADE - 1%
MAXIMUM CURVE - 7° 30' (at Tyndall)
BALLAST - Gravel and dirt.

BRIDGES AND TRESTLES - 38 pile trestles ranging in length from 1 to 19 spans and totaling 249 spans, and one steel girder bridge with one span.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES	STATIONS	MILES
Napa	0.0	Wagner	46.1	Platte	82.4
Tabor	10.5	Ravinia	54.0		
Tyndall	21.4	Lake Andes	60.0		
Avon	32.5	Geddes	70.5		
Dante	39.5	Bovee	76.5		

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -	0.09 MGT	0.09 MGT
TRAFFIC DIRECTION -	80% Orig./20% Term.	67% Orig. 33% Term.

COMMODITIES - Forwarded grain; received fertilizer, lumber products, stone, clay, and glass and farm machinery.

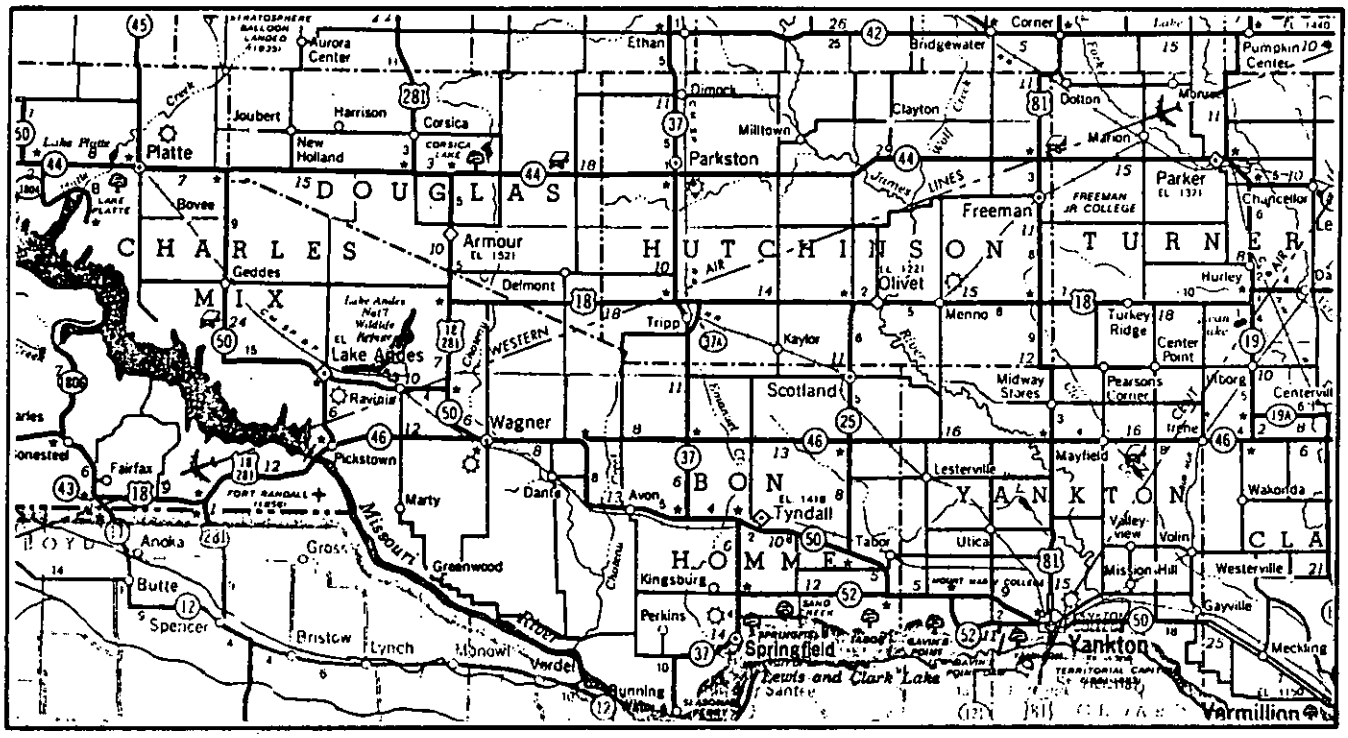
OTHER INFORMATION

This line was embargoed by the Milwaukee Road in March 1980 and abandoned in June 1980. The line is currently under consideration by the State for possible acquisition and resumption of rail service.

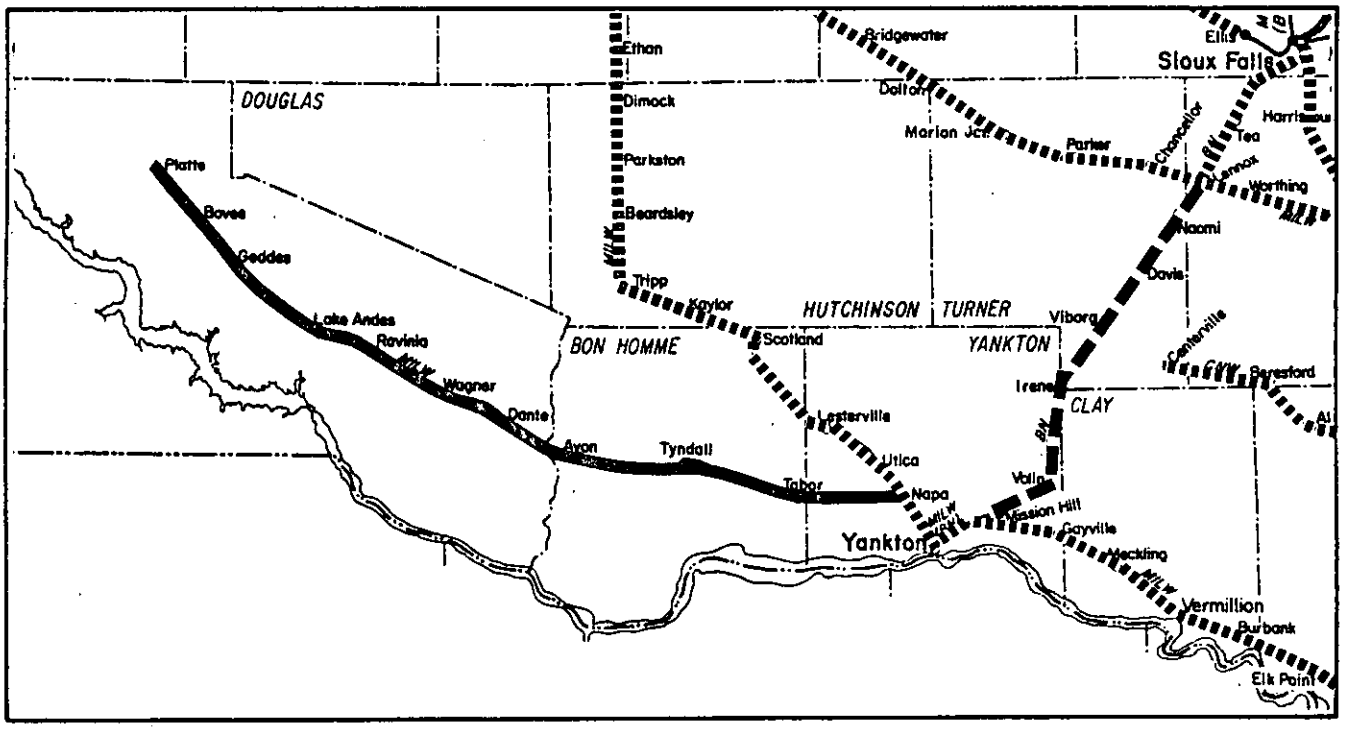
The South Dakota Rail Line Inventory Study found that limited impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT MW25
NAPA TO PLATTE

RAILROAD-HIGHWAY LOCATION MAP

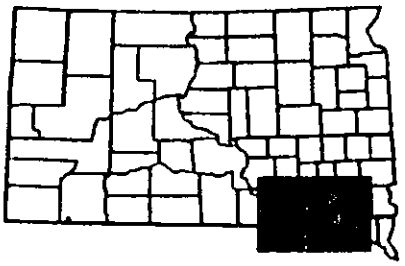


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - MW26

JACKSON, MN TO MADISON, SD
MILWAUKEE ROAD - MINNESOTA-DAKOTA DIVISION - 19th SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Abandoned
TYPE OF LINE - Branch
LINE LENGTH IN MILES - 124.0 Total; 37.5 in SD

MAXIMUM WEIGHT LIMIT - 220,000 lbs. MAXIMUM SPEED LIMIT - 25 mph
SERVICE FREQUENCY - None
YARDS - Madison
CONNECTING LINES - Former Milwaukee Road at Madison and Sioux Falls Junction, Burlington Northern at Wentworth, and Historic Dakota Central at Madison.
HIGHWAYS - Flandreau is served by SD 32, and the other stations are served by SD 34.

RAIL WEIGHT - 65 lbs. with some 75 lbs., 90 lbs., and 100 lbs. rail.
MAXIMUM GRADE - 1.07%
MAXIMUM CURVE - 3° 50'
BALLAST - Gravel dating from 1942-1944.

BRIDGES AND TRESTLES - 9 pile trestles ranging in length from 1 to 7 spans and totaling 38 spans and also 3 steel bridges.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES
Madison	0.0	Flandreau	29.5
Wentworth	7.7	Minnesota	
Colman	15.5	Border	37.5
Sioux Falls Jct.	23.2		
Egan	25.1		

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -		
Egan to Sioux Falls Jct.	0.19 MGT	0.07 MGT
Sioux Falls Jct to Madison	0.11 MGT	0.09 MGT
TRAFFIC DIRECTION -	45% Orig./55% Term.	39% Orig./61% Term.

COMMODITIES - Forwarded grain; received fertilizer, stone, clay, and glass, and lumber products.

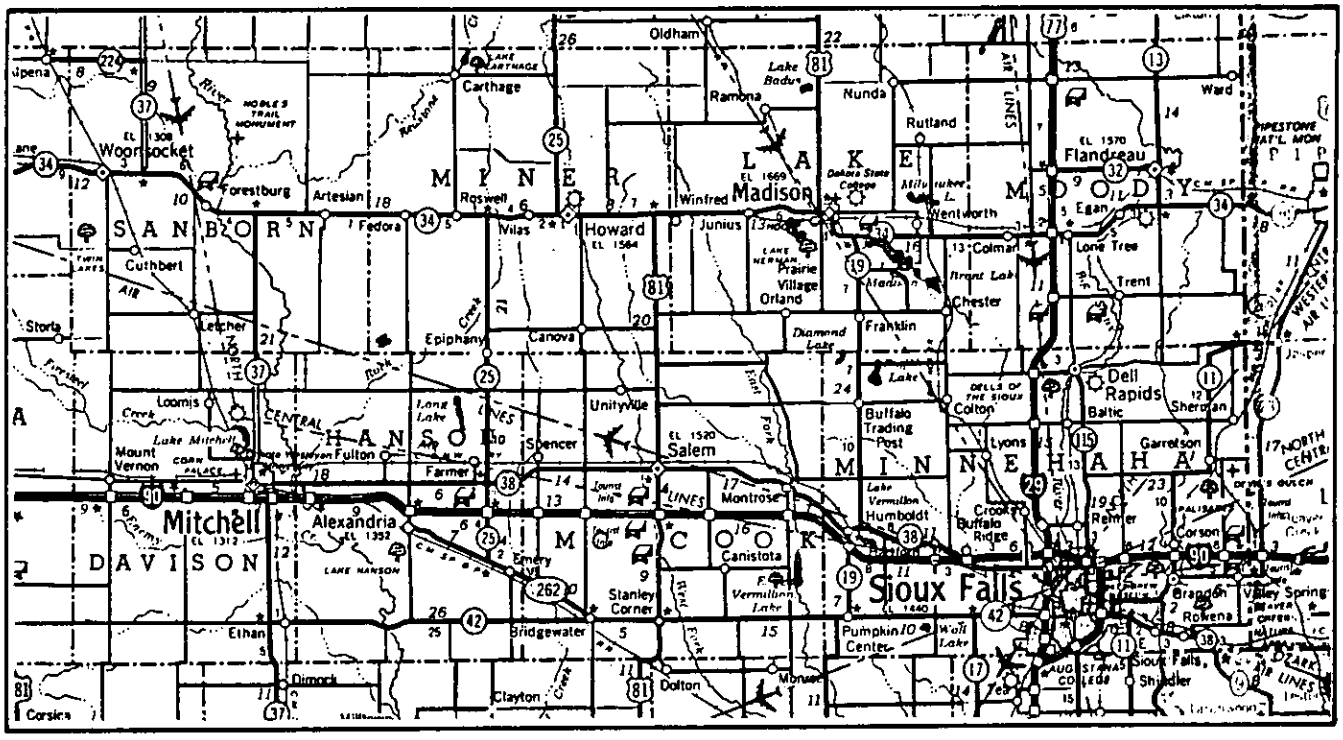
OTHER INFORMATION

This line was embargoed by the Milwaukee Road in March 1980 and abandoned in June 1980. The portion from Madison to Wentworth is currently operated by the Burlington Northern as part of its purchase plan for portions of abandoned Milwaukee Road lines.

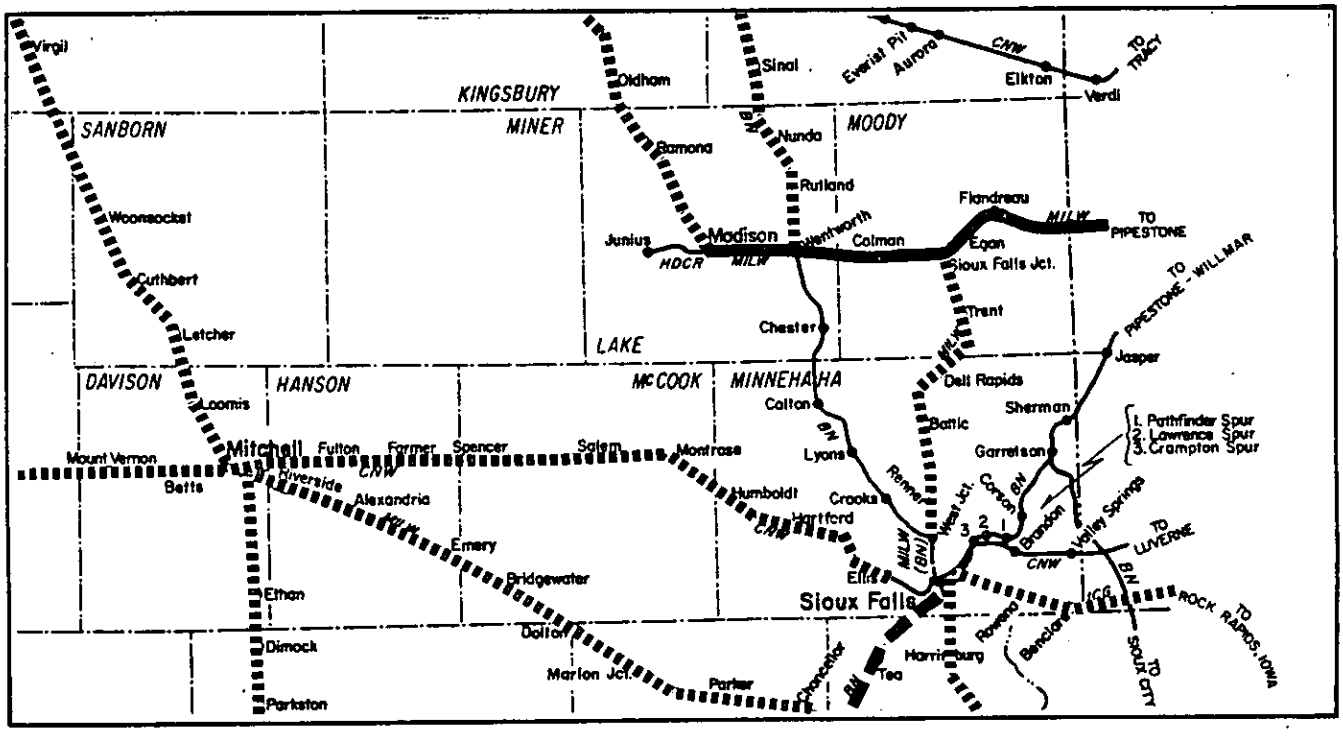
The South Dakota Rail Line Inventory Study found that limited impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT MW26
JACKSON, MN TO MADISON, SD

RAILROAD-HIGHWAY LOCATION MAP

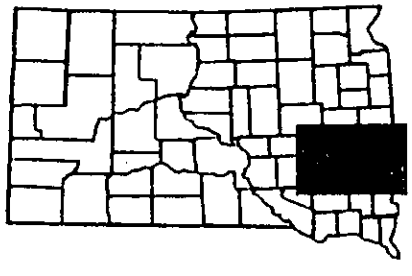


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - MW27

MADISON TO BRYANT
MILWAUKEE ROAD - MINNESOTA-DAKOTA DIVISION - 21st SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Abandoned
TYPE OF LINE - Branch LINE LENGTH IN MILES - 47.5
MAXIMUM WEIGHT LIMIT - 220,000 lbs. MAXIMUM SPEED LIMIT - 25 mph
SERVICE FREQUENCY - None
YARDS - Madison
CONNECTING LINES - Former Milwaukee Road and Historic Dakota Central at Madison; Chicago & North Western at Lake Preston.

HIGHWAYS - Madison is on US 81 and SD 34, Lake Preston is on US 14, Bryant is on SD 28 and the other towns are served by local hard surfaced roads.

RAIL WEIGHT - 65 lbs. for entire line except between Lake Preston and Erwin at 56 lbs.
MAXIMUM GRADE - 1% MAXIMUM CURVE - 4°
BALLAST - Gravel and dirt.

BRIDGES AND TRESTLES - None

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES
Madison	0.0	Erwin	40.0
Ramona	10.3	Bryant	47.5
Oldham	19.9		
Lake Preston	30.3		

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -	.02 MGT	.01 MGT
TRAFFIC DIRECTION -	N/A	84% Orig./16% Term.

COMMODITIES - Primarily forwarded grain; also received fertilizer.

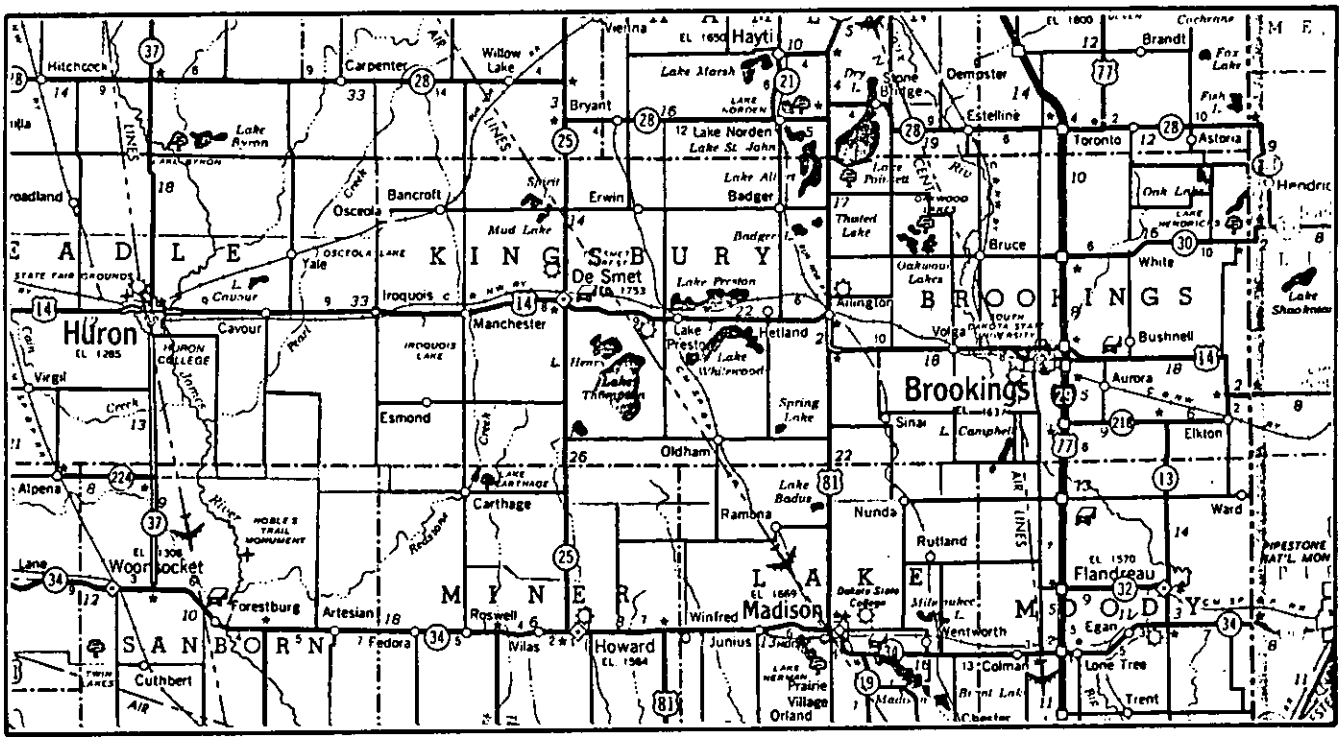
OTHER INFORMATION

This line was abandoned by the Milwaukee Road in 1980. Milwaukee Road Line from Madison to Wentworth is currently operated by Burlington Northern as part of its purchase plan for portions of abandoned Milwaukee Road lines.

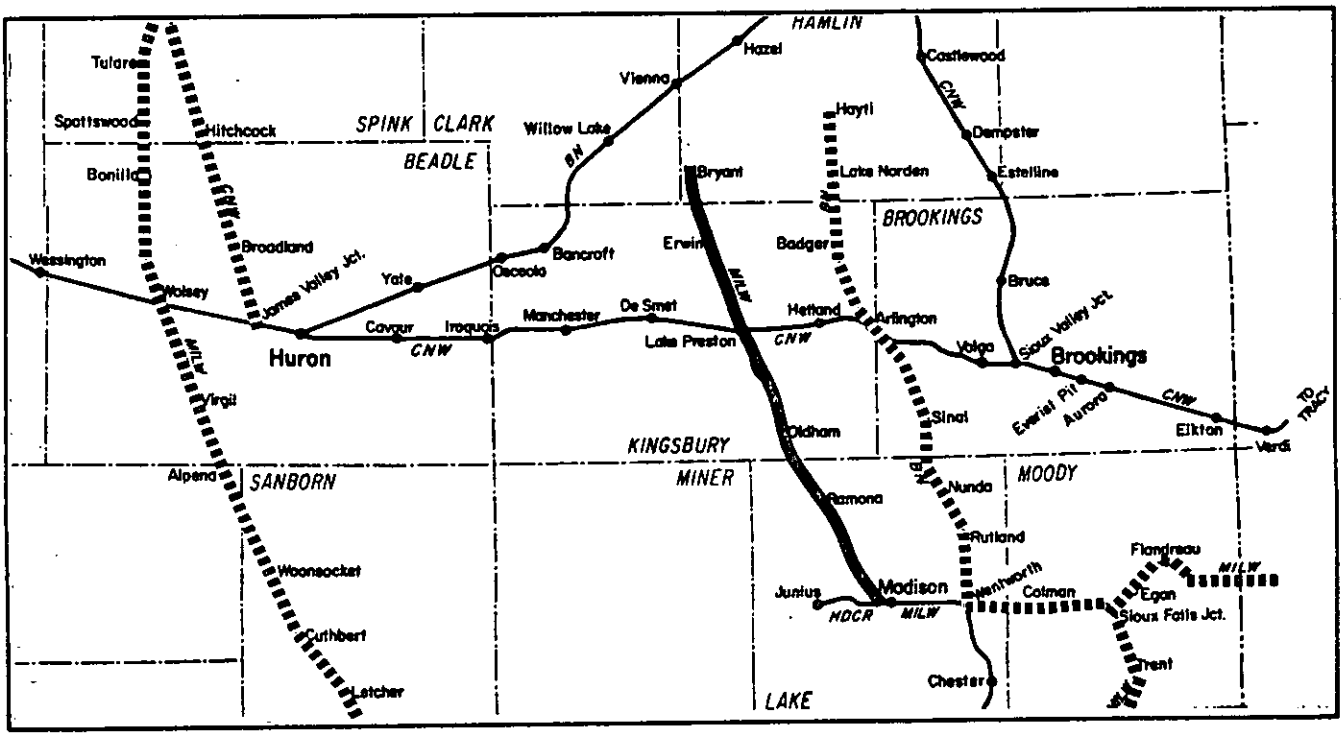
The South Dakota Rail Line Inventory Study found that minimal impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT MW27
MADISON TO BRYANT

RAILROAD-HIGHWAY LOCATION MAP

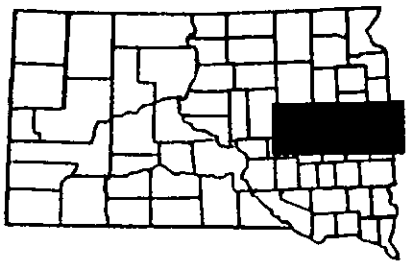


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - CN01

TRACY, MN TO HURON, SD
CHICAGO & NORTH WESTERN - CENTRAL DIVISION - HURON SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Main LINE LENGTH IN MILES - 136.4 total, 90.2 in SD
MAXIMUM WEIGHT LIMIT - 263,000 lbs. MAXIMUM SPEED LIMIT - 35 mph
SERVICE FREQUENCY - N/A
YARDS - Tracy, Brookings, Arlington, Iroquois, Huron.
CONNECTING LINES - Chicago & North Western at Tracy, Sioux Valley Jct. and Huron, and Burlington Northern at Huron, and near Burchard.
HIGHWAYS - US 14 serves all stations in Minnesota except Garvin, which is served by US 59 and Verdi which is served by a local road and in addition, Lake Benton is served by US 75. Elkton is served by SD 218, Aurora by a local hard surfaced road and the remainder of the stations are served by US 14, plus I 29 serves Brookings, US 81 serves Arlington, SD 25 serves DeSmet, and SD 37 serves Huron.
RAIL WEIGHT - 100 lbs. from the Minnesota border to Iroquois and 90 lbs. from Iroquois to Huron.
MAXIMUM GRADE - 1.2% MAXIMUM CURVE - 4° (near Arlington)
BALLAST - Gravel dating to around 1940 from the Minnesota border to Sioux Valley Jct., rock dating to 1960-1970 from Sioux Valley Jct. to Iroquois and gravel dating from 1926 to 1954 for remainder of this segment.
BRIDGES AND TRESTLES-46 pile trestles ranging in length from 2 to 19 spans and totaling 306 spans plus one combination steel and pile trestle.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES	STATIONS	MILES
Tracy, Minn.	0.0	Elkton, SD	47.8	Lake Preston, SD	94.4
Garvin, Minn.	7.2	Aurora, SD	58.5	DeSmet, SD	103.0
Balaton, Minn.	13.0	Brookings, SD	64.3	Manchester, AD	111.8
Burchard, Minn.	19.5	Sioux Valley Jct. SD	67.7	Iroquois, SD	118.1
Tyler, Minn.	27.1	Volga, SD	70.8	Cavour, SD	127.4
Lake Benton, Minn.	34.9	(BN Crossing)	80.7	Huron, SD	136.4
Verdi, Minn.	41.2	Arlington, SD	81.7		
		Hetland, SD	87.2		

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -		
Minn. border to Sioux Valley Jct.	2.81 MGT	2.71 MGT
Sioux Valley Jct. to Iroquois	2.65 MGT	2.66 MGT
Iroquois to Huron	2.71 MGT	2.54 MGT
TRAFFIC DIRECTION -	N/A	47% Orig./53% Term (1977)

COMMODITIES - Forwarded grain, food products, and stone, sand, and gravel; received grain mill products, coal, lumber products, and stone, sand, and gravel.

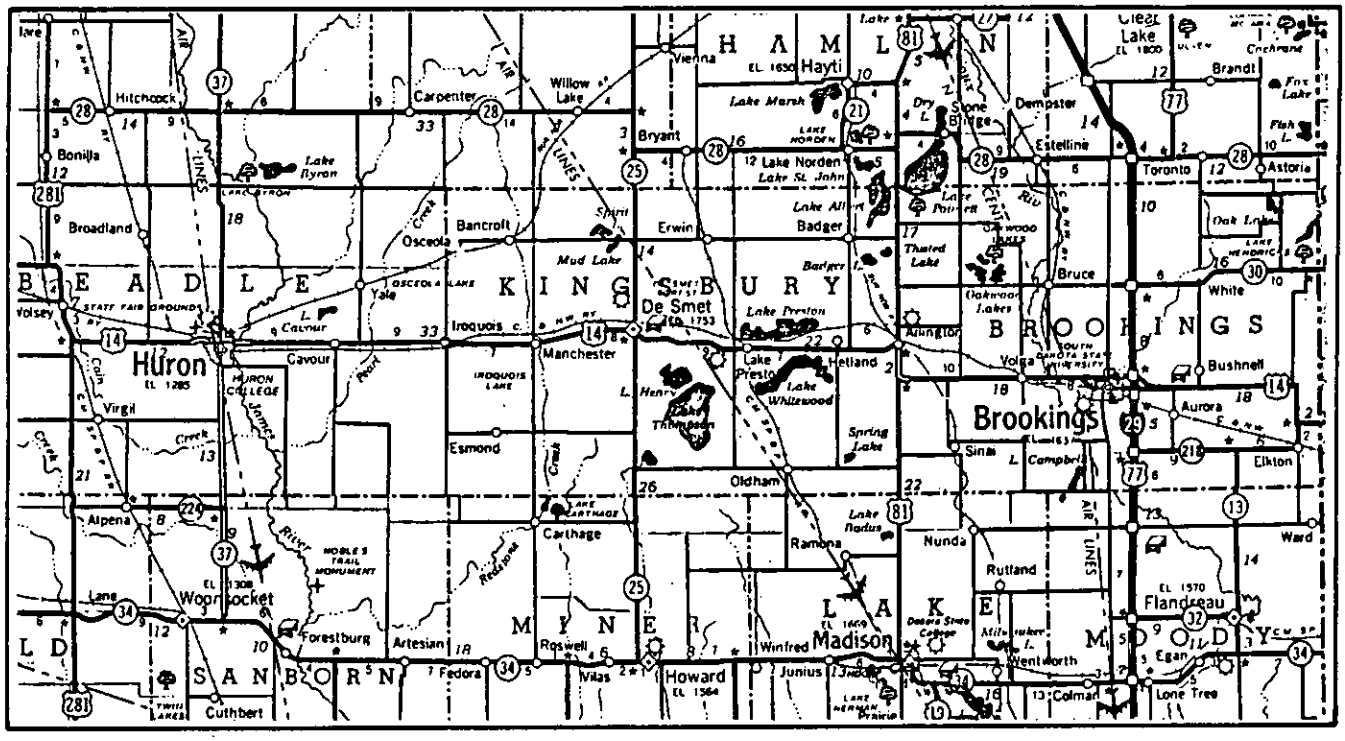
OTHER INFORMATION

This line serves both Chicago & North Western local and overhead traffic from points west and north. Locomotive and car repair shops are located at Huron. The abandonment of the parallel Milwaukee line to Rapid City makes this line even more important to the State of South Dakota.

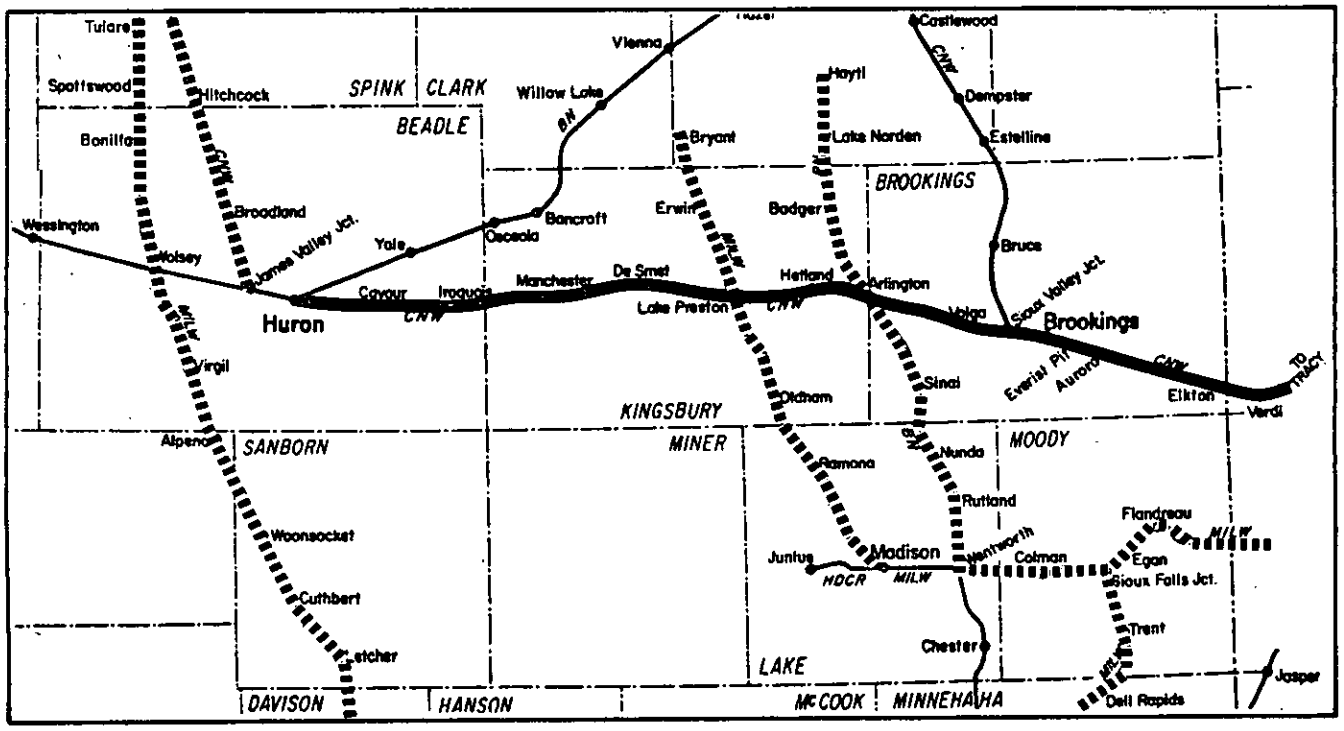
The South Dakota Rail Line Inventory Study found that significant impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT CN01
TRACY, MN TO HURON, SD

RAILROAD-HIGHWAY LOCATION MAP

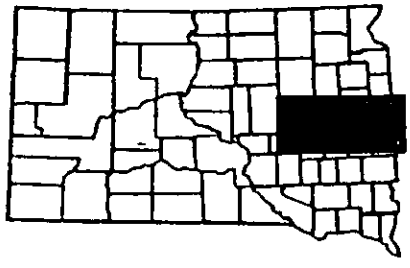


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - CN02

HURON TO PIERRE
CHICAGO & NORTH WESTERN - WESTERN DIVISION - PIERRE SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Main LINE LENGTH IN MILES - 117.7
MAXIMUM WEIGHT LIMIT - 251,000 lbs. MAXIMUM SPEED LIMIT - 35 mph-w/slow order
SERVICE FREQUENCY - Daily, 3 to 7 round trips per week depending on traffic.
YARDS - Huron, Wolsey, Blunt and Pierre
CONNECTING LINES - Chicago & North Western at Huron, Blunt, and Pierre. Burlington Northern at Huron. Former Milwaukee Road line at Wolsey.

HIGHWAYS - US 14 serves all stations except James Valley Jct. and Canning which are served by local roads. Additionally Huron is served by SD 37, Wolsey by US 281, Miller by SD 45, Highmore by SD 47 and Pierre by US 83 and SD 34.

RAIL WEIGHT - 110 lbs. and 112 lbs. from Huron to James Valley Jct and the remainder 72 lbs.
MAXIMUM GRADE - 1% MAXIMUM CURVE - 4° 30'
BALLAST - Majority is rock, stone, and gravel dating from around 1960.

BRIDGES AND TRESTLES - 50 pile trestles ranging in length from 1 to 9 spans and totaling 213 spans in addition to 2 steel and pile trestle combination bridges.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES
Huron	0.0	Ree Heights	50.6
James Valley Jct	4.2	Highmore	62.4
Wolsey	13.3	Holabird	70.2
Wessington	24.7	Harrold	77.2
Vayland	30.4	Blunt	90.0
St. Lawrence	37.6	Canning	98.2
Miller	40.1	Pierre	117.7

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -		
Huron to James Valley Jct.	2.53 MGT	2.54 MGT
James Valley Jct to Blunt	1.54 MGT	1.82 MGT
Blunt to Pierre	1.20 MGT	1.49 MGT
TRAFFIC DIRECTION -	N/A	45% Orig./55% Term. (1977)

COMMODITIES - Forwarded grain; received fertilizer, stone, sand, gravel, clay, and glass.

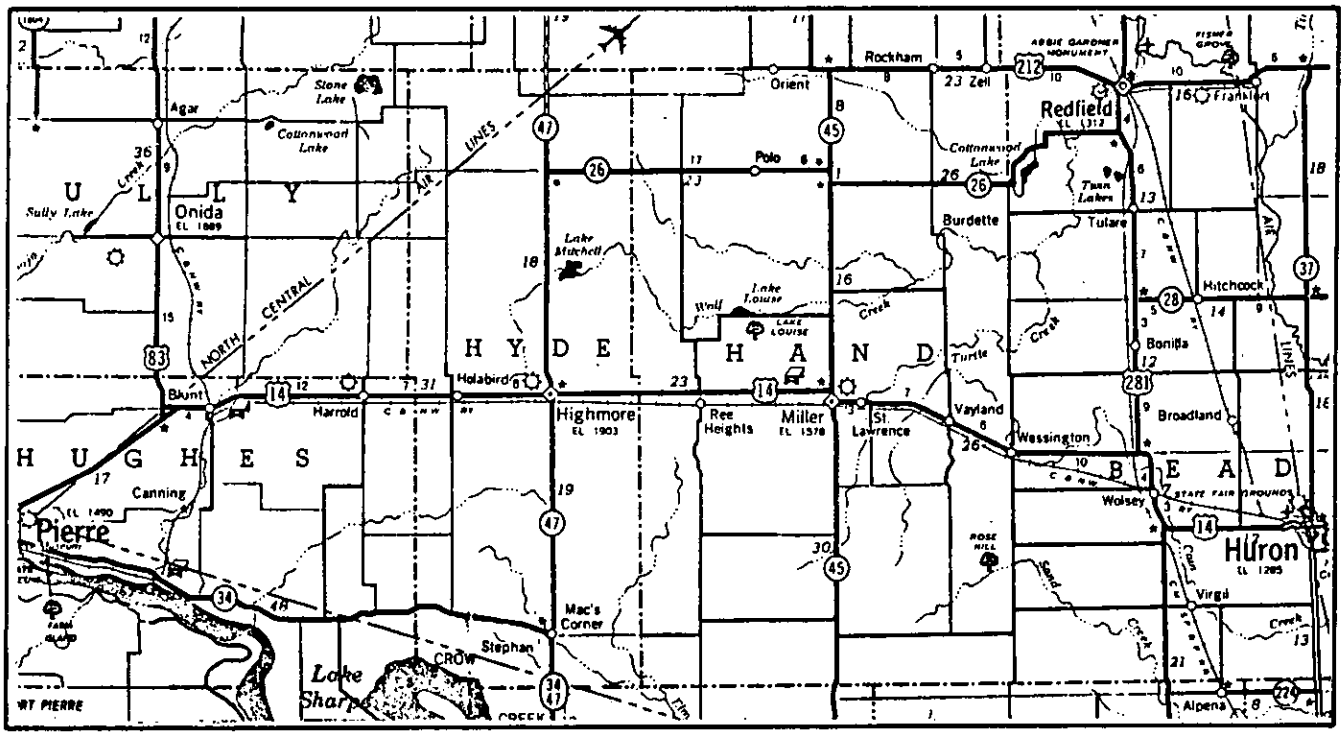
OTHER INFORMATION

This line serves both Chicago & North Western local and overhead traffic from points west and north. Locomotive and car repair shops are located at Huron. The abandonment of the parallel Milwaukee line to Rapid City makes this line even more important to the State of South Dakota.

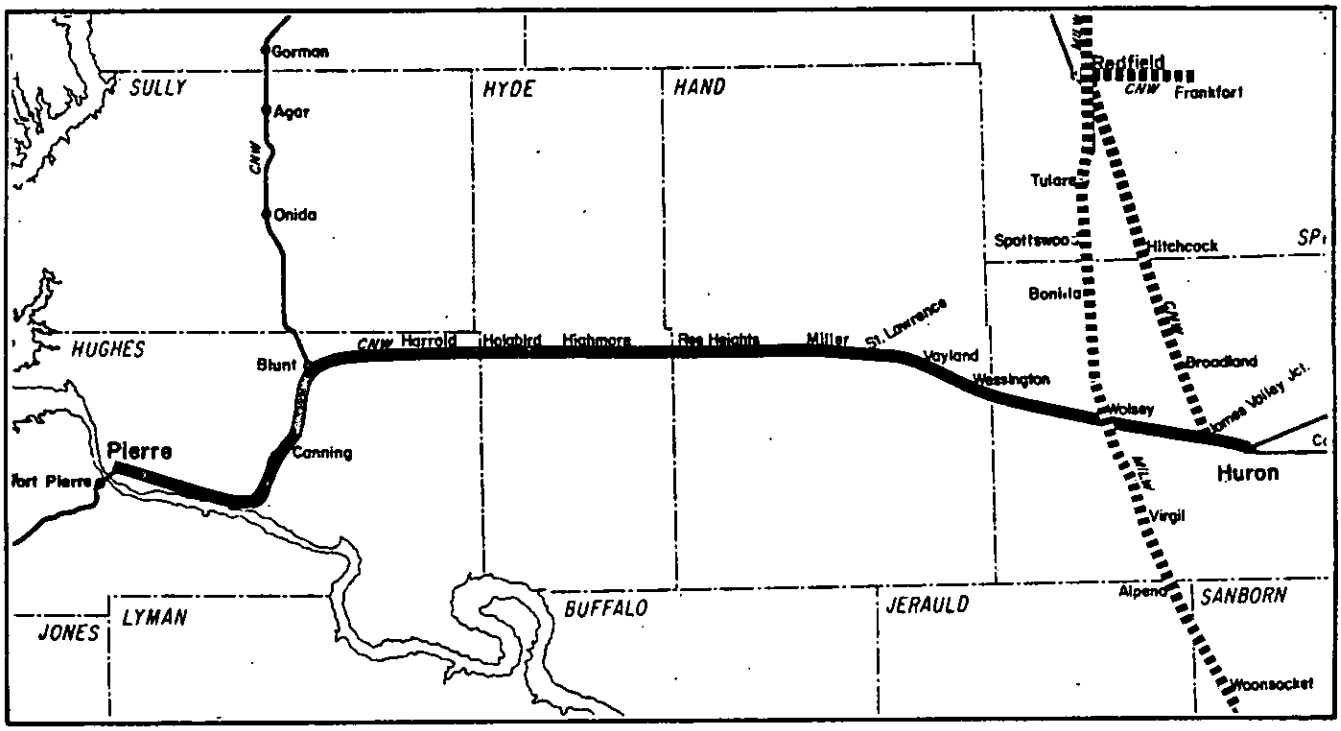
The South Dakota Rail Line Inventory Study found that significant impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT CN02
HURON TO PIERRE

RAILROAD-HIGHWAY LOCATION MAP

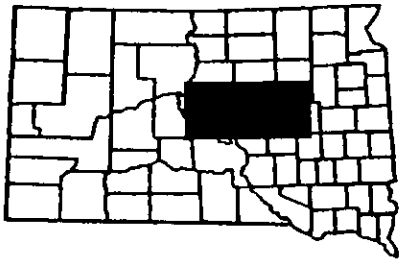


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - CN03

PIERRE TO RAPID CITY
CHICAGO & NORTH WESTERN - WESTERN DIVISION - PRC SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Main LINE LENGTH IN MILES - 170.8
MAXIMUM WEIGHT LIMIT - 210,000 lbs. MAXIMUM SPEED LIMIT - 25 mph
SERVICE FREQUENCY - 3 to 7 trips per week depending on traffic.
YARDS - Pierre, Wall, Box Elder, and Rapid City.
CONNECTING LINES - Chicago & North Western at Pierre and Rapid City. Former Milwaukee Road line at Rapid City.

HIGHWAYS - US 14 serves Pierre, Ft. Pierre, Midland, Philip, Cottonwood, and Quinn, local gravel roads serve Wendt, Van Meter and Capa, I 90 serves Wall, Wasta, Underwood, Box Elder, and Rapid City; Owanka is served by a local hard surfaced road. Additionally, Pierre is served by US 83 and SD 34, Philip by SD 73, Rapid City by SD 44, SD 79 and US 16.

RAIL WEIGHT - 85 lbs. of CWR, 90 lbs., 100 lbs., and 112 lbs.
MAXIMUM GRADE - 1.5% MAXIMUM CURVE - 11° at Rapid City, elsewhere 6°

BALLAST - Mostly gravel placed in 1958-1960 from Pierre to Quinn and the remainder is mostly gravel dating back to the 1920's.

BRIDGES AND TRESTLES - 164 pile trestles ranging in length from 1 to 35 spans and totaling 1,370 spans. In addition there are 47 pile trestle and other type construction combination bridges.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES	STATIONS	MILES
Pierre	0.0	Midland	52.7	Wasta	124.5
Ft. Pierre	3.9	Philip	79.2	Owanka	134.8
Wendte	22.8	Cottonwood	92.9	Underwood	148.5
Van Metre	32.4	Quinn	104.1	Box Elder	160.1
Capa	42.9	Wall	110.5	Rapid City	170.8

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -	1.20 MGT	1.49 MGT
TRAFFIC DIRECTION -	N/A	81% Orig./19% Term. (1977)

COMMODITIES - Forwarded grain, grain mill products, pulp wood and woodchips, stone, sand, gravel, clay, and glass; received grain, food products, and stone, sand and gravel.

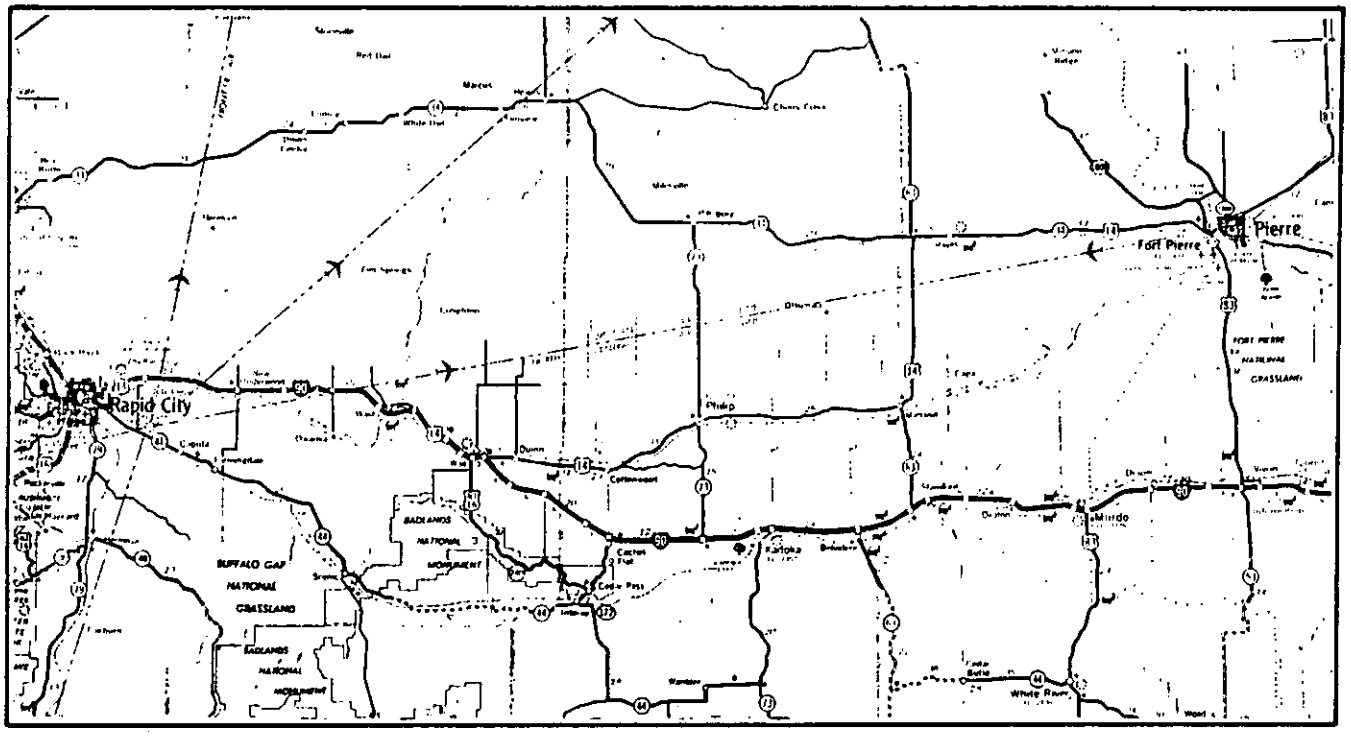
OTHER INFORMATION

This line serves both Chicago & North Western local and overhead traffic from points west. The abandonment of the parallel Milwaukee line to Rapid City makes this line even more important to the State of South Dakota.

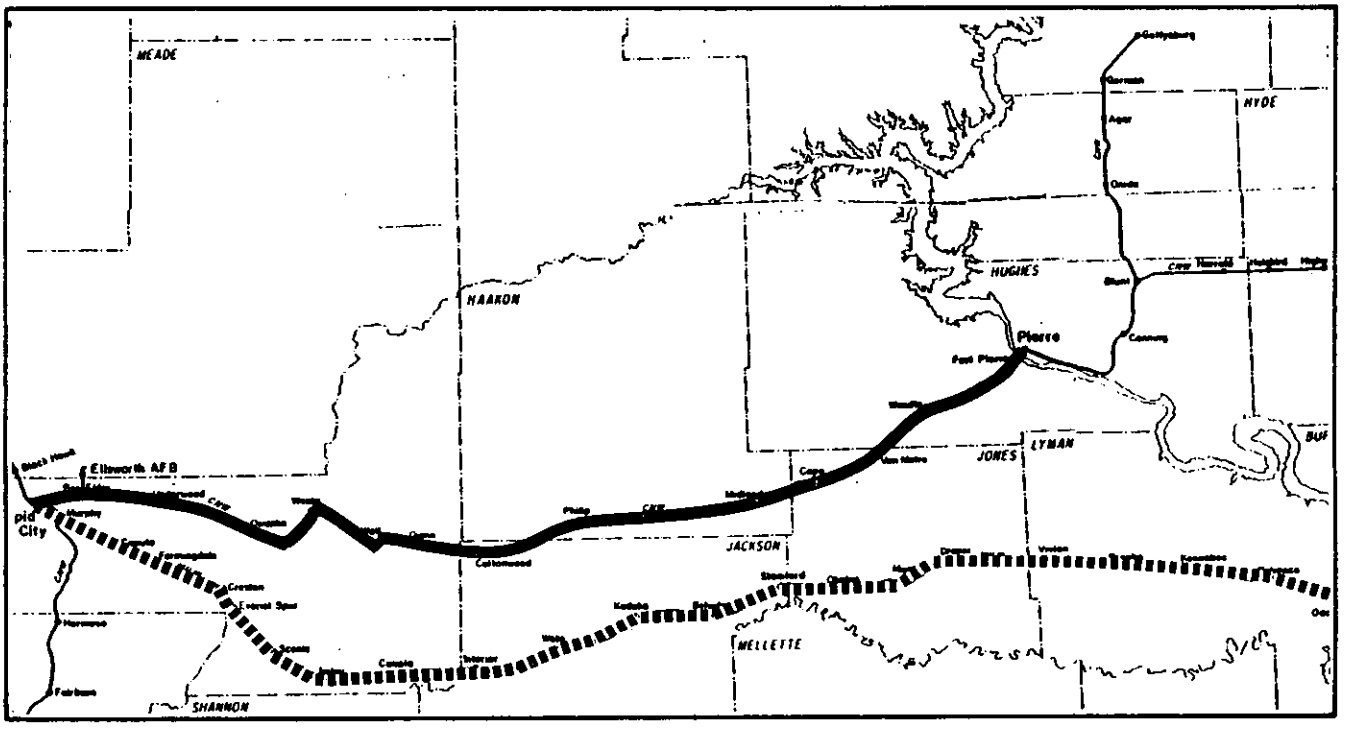
The South Dakota Rail Line Inventory Study found that significant impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT CN03
PIERRE TO RAPID CITY

RAILROAD-HIGHWAY LOCATION MAP

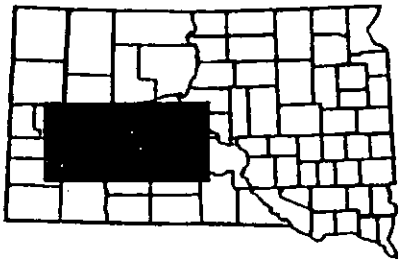


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - CN04b

REDFIELD TO ABERDEEN
CHICAGO & NORTH WESTERN - WESTERN DIVISION - OAKES SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation to Mansfield
TYPE OF LINE - Branch LINE LENGTH IN MILES - 42.2
MAXIMUM WEIGHT LIMIT - 210,000 lbs. MAXIMUM SPEED LIMIT - 10 mph

SERVICE FREQUENCY - Two round trips per week.
YARDS - Redfield and Aberdeen.
CONNECTING LINES - Former Chicago & North Western branchline at Redfield, former Milwaukee Road line at Redfield, and Chicago & North Western, Milwaukee Road and Burlington Northern at Aberdeen.

HIGHWAYS - Athol and Mansfield are served by local hard surfaced roads, Redfield by US 281 and US 212, Northville by SD 20 and Aberdeen By US 12 and US 281.

RAIL WEIGHT - About 22 miles of 90 lbs., 8 miles of 72 lbs., 7 miles of 80 lbs. and 5 miles of 100 lbs. rail.
MAXIMUM GRADE - .8% MAXIMUM CURVE - 2°
BALLAST - Largely gravel dating from 1935 to 1937 from Redfield to Northville and mainly stone and rock placed in the 1960's for the remainder of the line with one 6 mile segment of dirt.
BRIDGES AND TRESTLES - 8 pile trestles ranging in length from 1 to 10 spans and totaling 44 spans and one bridge at Redfield which is a trestle and steel combination with a total of 13 spans.

STATION LOCATIONS

STATIONS	MILES
Redfield	0
Athol	10.0
Northville	20.3
Mansfield	26.3
Aberdeen	42.2

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -	0.84 MGT	0.44 MGT
TRAFFIC DIRECTION -	mostly north to south	76% Orig./24% Term. (1977)

COMMODITIES - Forwarded grain, and scrap iron and steel; received grain mill products, rubber and plastics, and stone, clay, and glass.

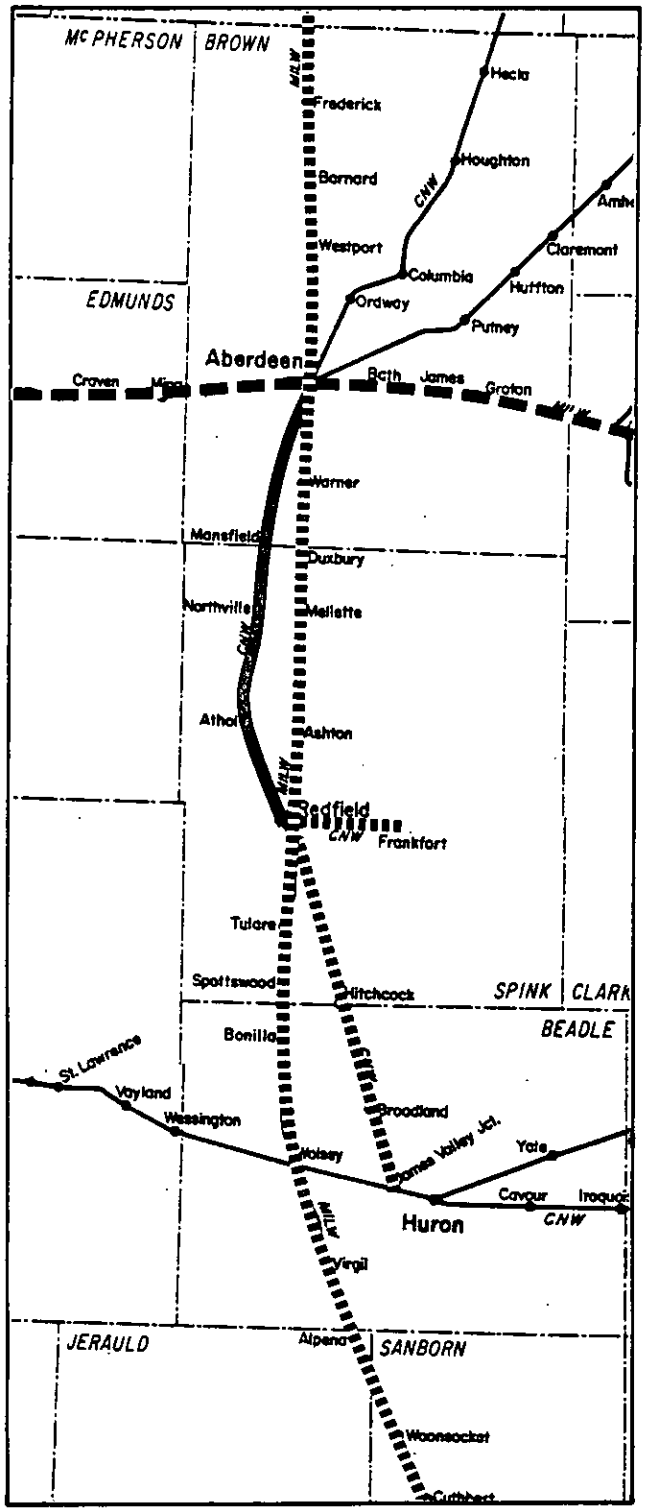
OTHER INFORMATION

The Chicago & North Western operates over the former Milwaukee Road branch between Wolsey and Aberdeen through an operating rights agreement; rail service to the C&NW line is limited to the portion between Redfield and Mansfield due to poor track conditions above Mansfield.

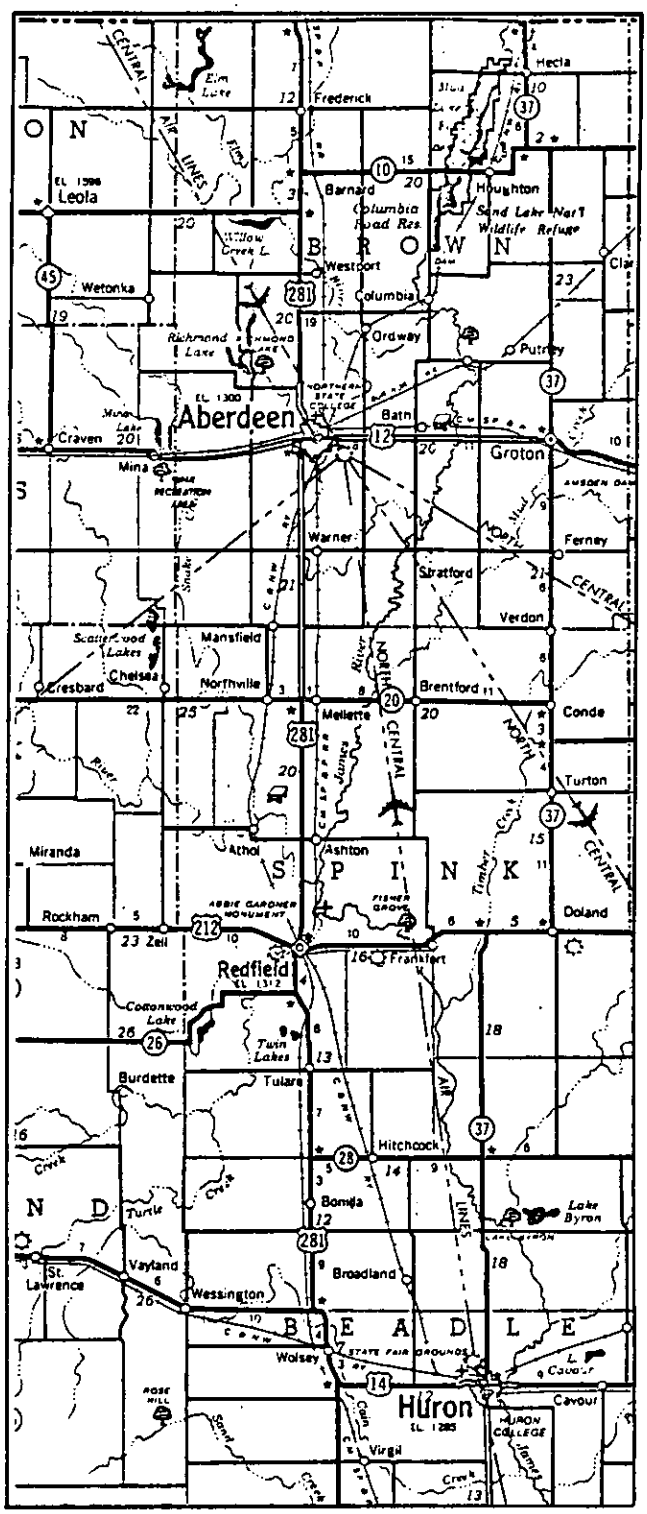
The South Dakota Rail Line Inventory study found that limited impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT CN04b
REDFIELD TO ABERDEEN

RAILROAD SEGMENT MAP

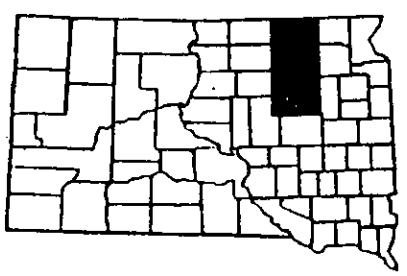


RAILROAD-HIGHWAY LOCATION MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - CN05

ABERDEEN, SD TO OAKES, ND
CHICAGO & NORTH WESTERN - WESTERN DIVISION - OAKES SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Branch LINE LENGTH IN MILES - 52.7 total; 38.6 in SD
MAXIMUM WEIGHT LIMIT - 210,000 lbs. MAXIMUM SPEED LIMIT - 10 mph
SERVICE FREQUENCY - 2 round trips per week.
YARDS - Aberdeen and Ludden Jct. - Oakes
CONNECTING LINES - Burlington Northern, Milwaukee Road and Chicago & North Western at Aberdeen; Soo Line and Burlington Northern at Oakes; and Burlington Northern crosses this line near Ludden.

HIGHWAYS - Aberdeen is served by US 281 and US 12, Ordway and Columbia by local hard surfaced roads, Houghton by SD 10, Hecla by SD 37, Ludden by ND 1 and 11, and Oakes by ND 1.

RAIL WEIGHT - 65 lbs. from Aberdeen to Columbia, 60 lbs. from Columbia to Oakes with 5 miles of 85 lbs. of CWR.
MAXIMUM GRADE - .8% MAXIMUM CURVE - 5° (at Columbia)
BALLAST - Mostly gravel and rock applied since 1954.

BRIDGES AND TRESTLES - 17 pile trestles ranging in length from 1 to 24 spans and totaling 75 spans and also one pile trestle and steel combination bridge with 7 spans.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES
Aberdeen, SD	0.0	Hecla, SD	34.7
Ordway, SD	8.4	Ludden, ND	43.6
Columbia, SD	14.2	Ludden Jct. ND	45.0
Houghton, SD	26.0	Oakes, ND	52.7

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -	0.56 MGT	0.51 MGT
TRAFFIC DIRECTION -	N/A	79% Orig./21% Term. (1977)

COMMODITIES - Forwarded grain; received fertilizer and lumber products through the Oakes, ND gateway.

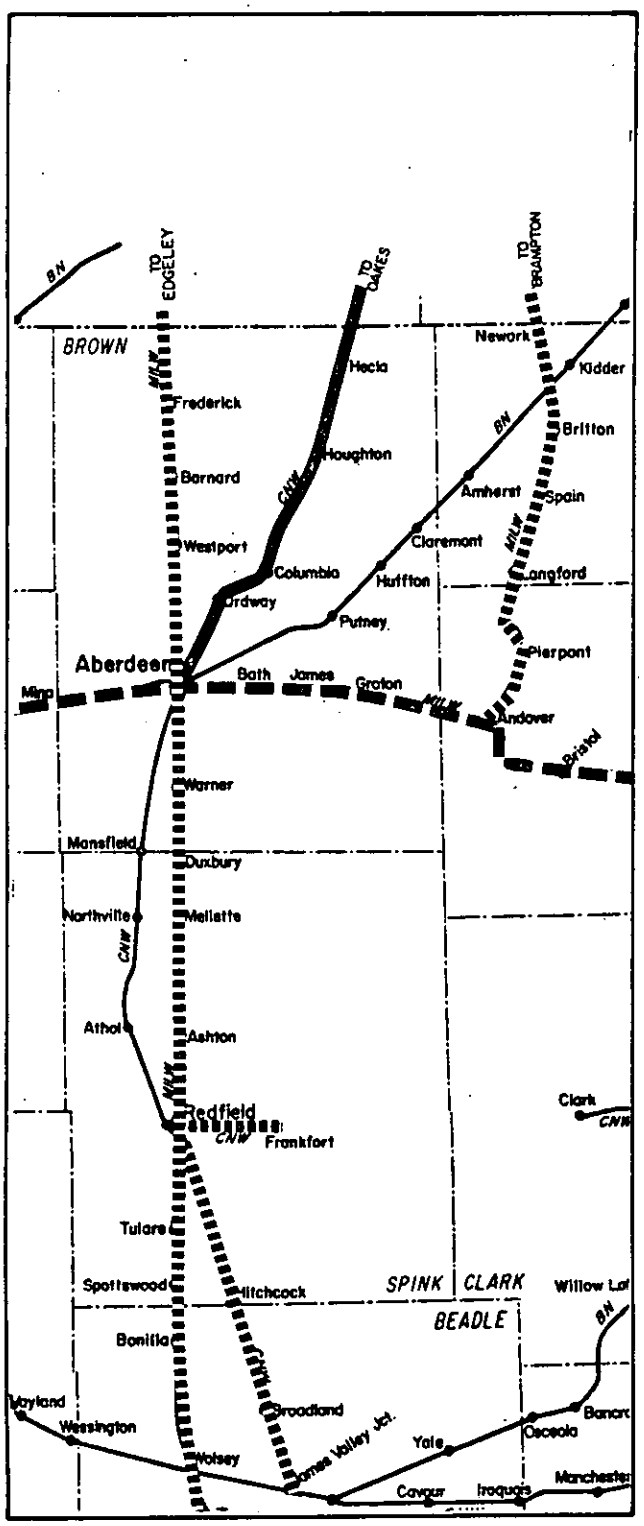
OTHER INFORMATION

This line provides an important connection between the South Dakota rail system and the east-west BN main line paralleling the state border in North Dakota.

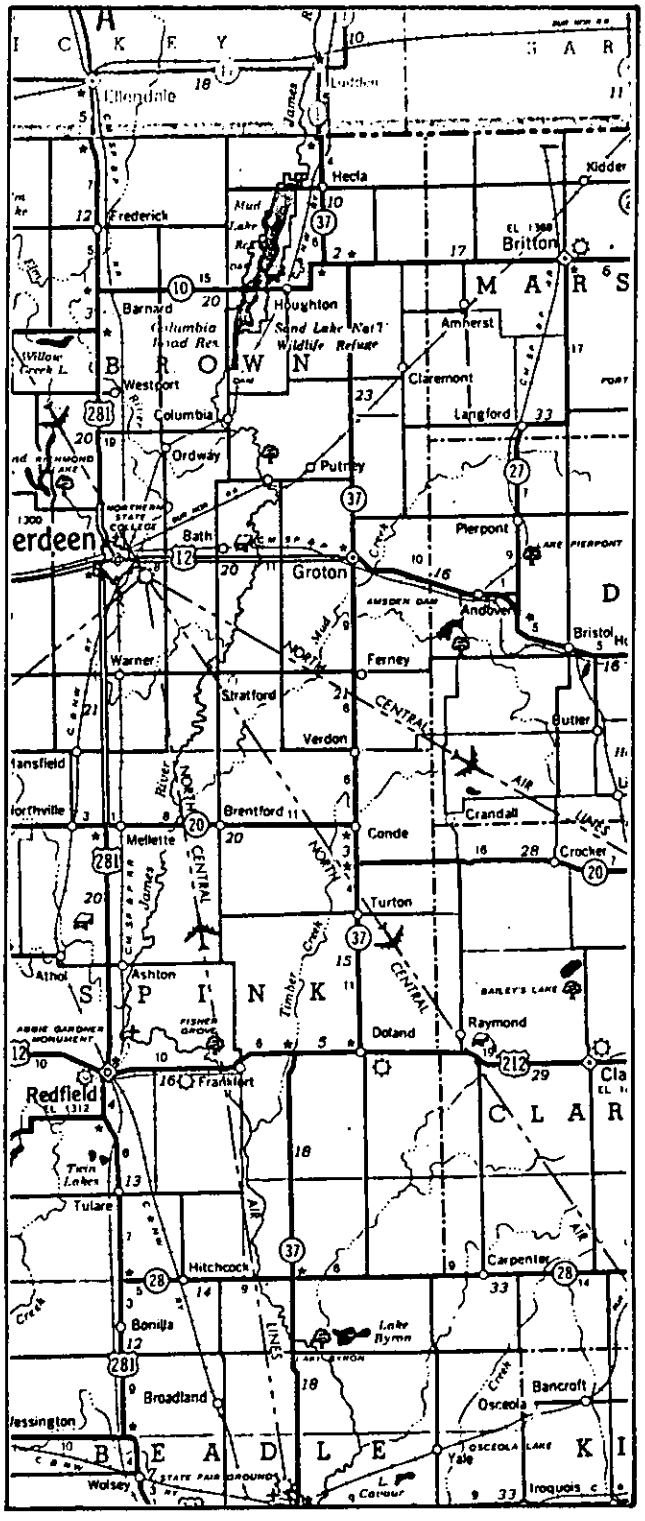
The South Dakota Rail Line Inventory Study found that limited impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT CN05
ABERDEEN, SD TO OAKES, ND

RAILROAD SEGMENT MAP

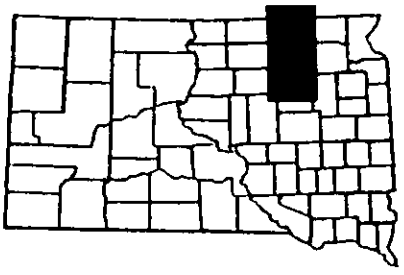


RAILROAD-HIGHWAY LOCATION MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - CN06

CHADRON, NE TO RAPID CITY, SD
CHICAGO & NORTH WESTERN - WESTERN DIVISION - RAPID CITY SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Branch LINE LENGTH IN MILES - 102.2 total, 84.0 in SD
MAXIMUM WEIGHT LIMIT - 251,000 lbs. MAXIMUM SPEED LIMIT - 30 mph
SERVICE FREQUENCY - Daily
YARDS - Chadron, Oral, and Rapid City
CONNECTING LINES - Chicago & North Western at Rapid City, Dakota Jct. and Chadron; former Milwaukee Road line at Rapid City.

HIGHWAYS - US 20 and US 385 serve Chadron; US 385 serves Dakota Jct., Wayside and Oelrichs; SD 79 serves Buffalo Gap, Fairburn, Hermosa and Rapid City; local roads serve Smithwick and Oral and in addition Rapid City is served by I 90, US 16 and SD 44.

RAIL WEIGHT - 72 lbs., 12 miles of 112 lbs. of CWR at Rapid City.
MAXIMUM GRADE - 1.52% MAXIMUM CURVE - 4°
BALLAST - Rock and stone dating from 1964-1972 from Chadron to Hermosa and gravel dating from 1904-1935 for the remainder of this line with rock placed in 1978 and 1979 near Rapid City.

BRIDGES AND TRESTLES - 71 pile trestles ranging in length from 3 to 27 spans and totaling 571 spans and in addition there are 6 pile trestle and steel combination type bridges.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES
Chadron, NE	0.0	Oral, SD	48.7
Dakota Jct., NE	5.1	Buffalo Gap, SD	55.7
Wayside, NE	17.1	Fairburn, SD	72.1
Oelrichs, SD	31.9	Hermosa, SD	83.8
Smithwick, SD	41.5	Rapid City, SD	102.2

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	2.71 MGT	3.02 MGT
TRAFFIC DIRECTION -	N/A	98% Orig./2% Term (1977)

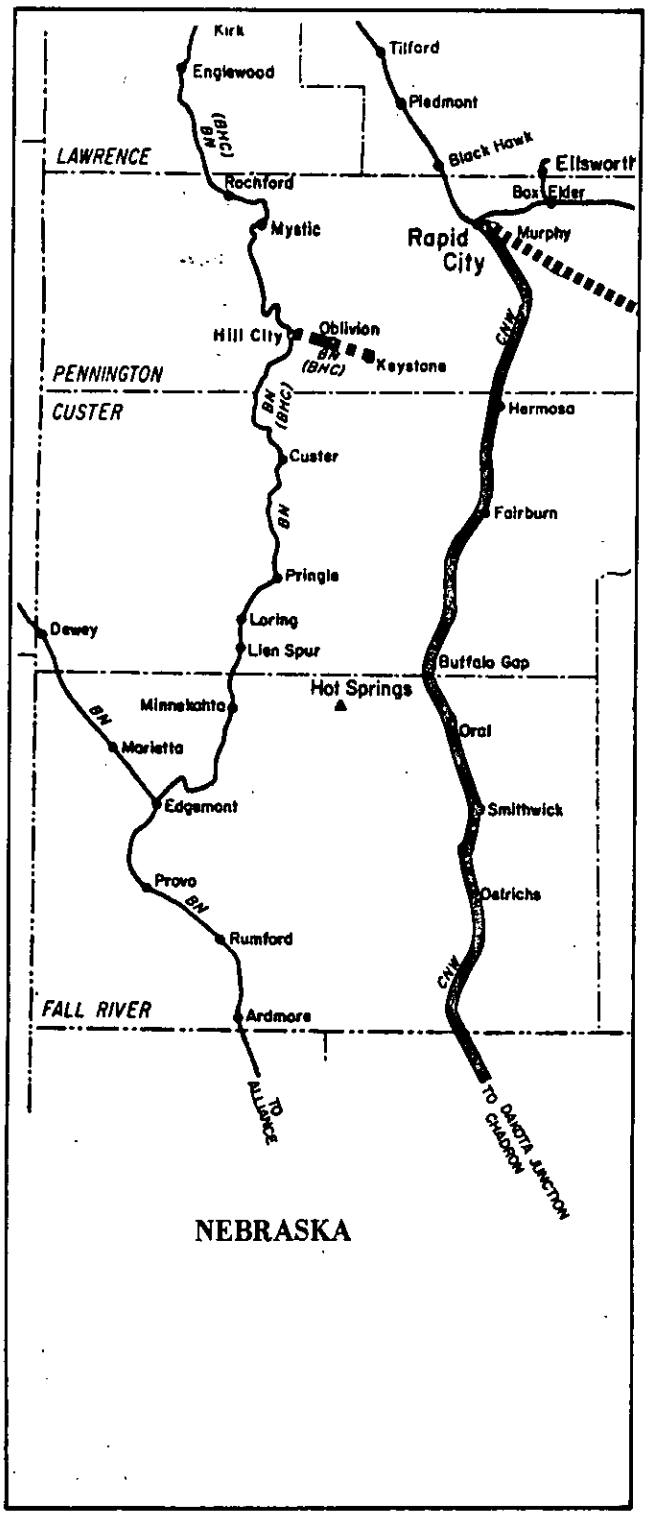
COMMODITIES - Primarily forwarded grain, pulpwood and woodchips, and stone, sand, and gravel. This is the primary route for overhead bentonite traffic.

OTHER INFORMATION

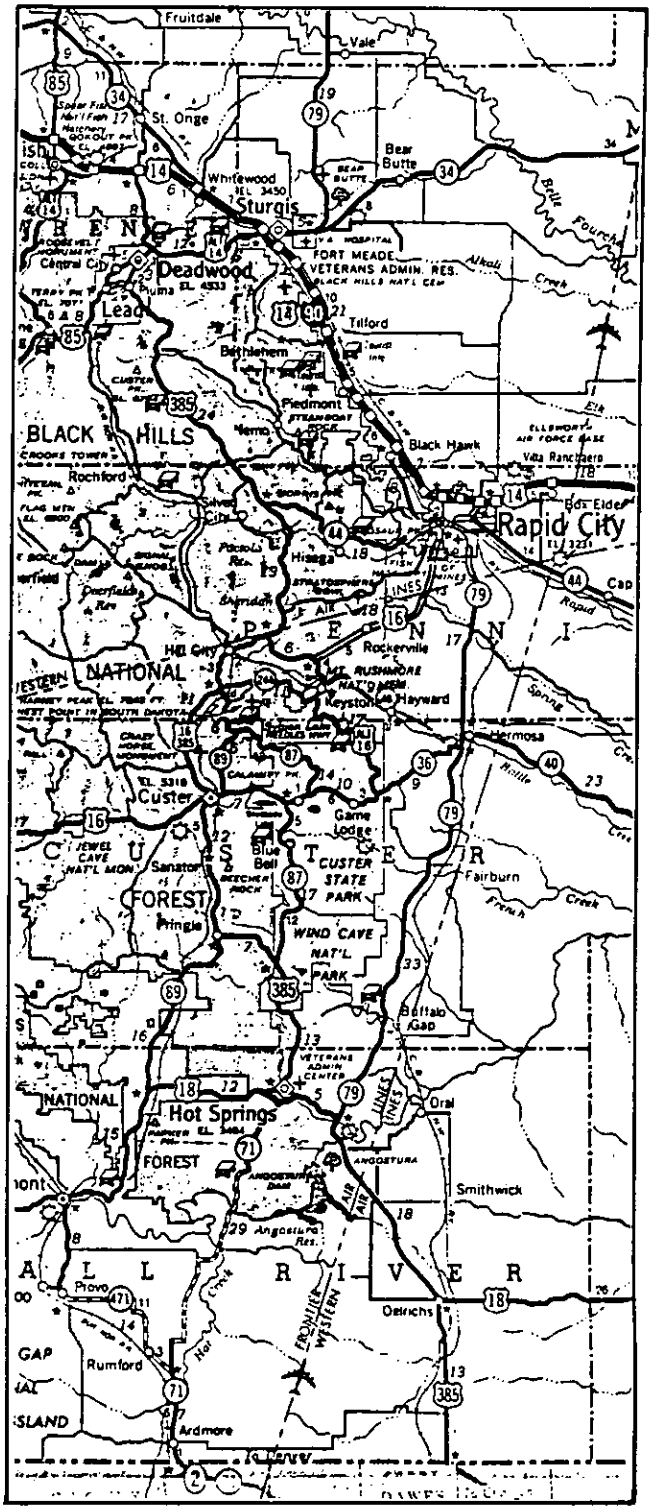
The South Dakota Rail Line Inventory study found that very significant impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT CN06
CHADRON, NE TO RAPID CITY, SD

RAILROAD SEGMENT MAP



RAILROAD-HIGHWAY LOCATION MAP



KEY

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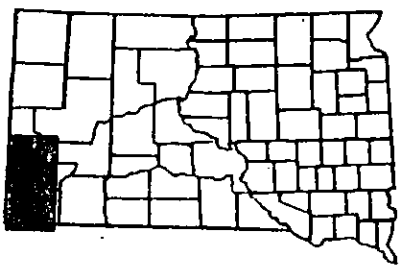
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - CN07

RAPID CITY, SD TO BENTONITE, WY

CHICAGO & NORTH WESTERN - WESTERN DIVISION - RAPID CITY SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation

TYPE OF LINE - Branch LINE LENGTH IN MILES - 77.6 total, 71.0 in SD

MAXIMUM WEIGHT LIMIT - 251,000 lbs. MAXIMUM SPEED LIMIT - 20 mph (Rapid City to Jolly), 30 mph (Jolly to Bentonite)

SERVICE FREQUENCY - 6 times a week

YARDS - Rapid City, Whitewood, Sturgis, Belle Fourche and Bentonite

CONNECTING LINES - Chicago & North Western at Rapid City, and former Milwaukee Road line at Rapid City.

HIGHWAYS - I 90 serves Rapid City, Black Hawk, Piedmont, Tilford, Sturgis, and Whitewood, SD 34 serves St. Onge and Jolly, US 212 and US 85 serve Belle Fourche, State Highway 24 serves Bentonite. In addition SD 44, SD 79 and US 16 serves Rapid City.

RAIL WEIGHT - 112 lbs. from Rapid City to Black Hawk, 72 lbs. from Black Hawk to Black Hills National Cemetery, 112 lbs. - 100 lbs. from Black Hills National Cemetery to Sturgis, 90 lbs. from Sturgis to Belle Fourche, 80 lbs. from Belle Fourche to Wyoming border and 72 lbs. in Wyoming.

MAXIMUM GRADE - 1.5% MAXIMUM CURVE - 7° at Bentonite, elsewhere 4°.

BALLAST Stone and rock placed since 1966.

BRIDGES AND TRESTLES - 45 pile trestles ranging in length from 1 to 17 spans and totaling 332 spans and three other bridges of steel and pile trestle combination.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES
Rapid City	0.0	Whitewood	38.2
Black Hawk	9.5	St. Onge	45.6
Piedmont	16.6	Jolly	53.3
Tilford	21.8	Belle Fourche	57.0
Sturgis	31.5	Bentonite, WY	77.6

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -		
Rapid City to Jolly	2.71 MGT	2.97 MGT
Jolly to Bentonite	1.65 MGT	1.61 MGT
TRAFFIC DIRECTION -	N/A	99% Orig./1% Term.(1977)

COMMODITIES - Forwarded pulpwood and woodchips, stone, clay, and glass, and non-metallic minerals; received pulp and paper products, lumber products, and farm machinery.

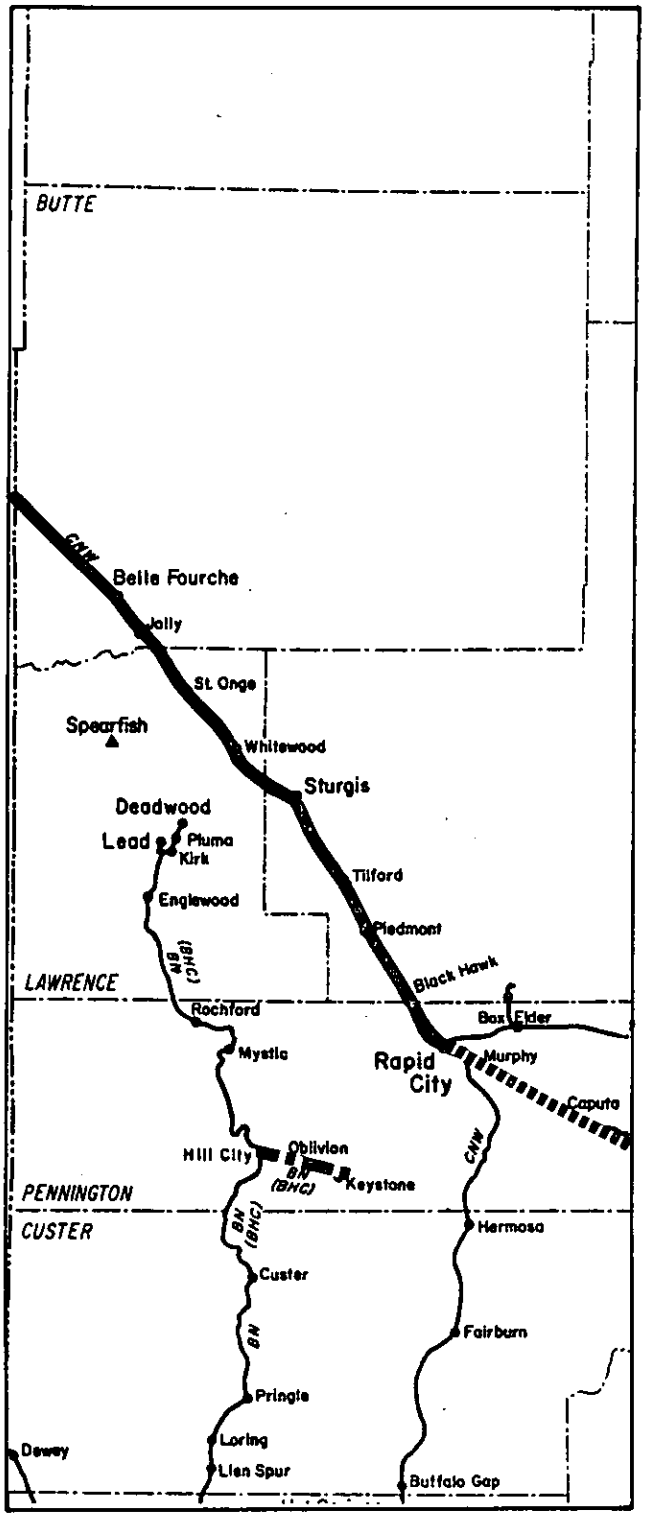
OTHER INFORMATION

This line provides an important gateway for Bentonite and wood products which move either southbound or eastbound from this line.

The South Dakota Rail Line Inventory Study found that very significant impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT CN07
RAPID CITY, SD TO BENTONITE, WY

RAILROAD SEGMENT MAP



RAILROAD-HIGHWAY LOCATION MAP

KEY

- Study Segment
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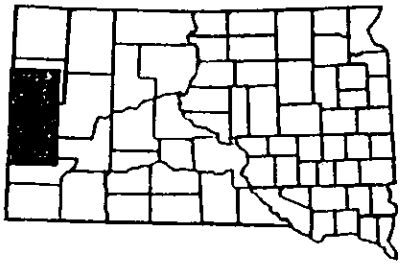
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - CN09

WORTHINGTON, MN TO SIOUX FALLS, SD
CHICAGO & NORTH WESTERN - TWIN CITIES DIVISION - SIOUX FALLS SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Branch LINE LENGTH IN MILES - 61.9 total; 15.8 in SD
MAXIMUM WEIGHT LIMIT - 210,000 lbs. MAXIMUM SPEED LIMIT - 40 mph
SERVICE FREQUENCY - Daily except Saturday
YARDS - Sioux Falls
CONNECTING LINES - Burlington Northern, former Illinois Central Gulf, former Milwaukee Road line and Chicago & North Western at Sioux Falls

HIGHWAYS - A local hard surfaced highway serves Valley Springs, SD 11 serves Brandon, and Interstate 90 and 29 plus other state and local roads serve Sioux Falls.

RAIL WEIGHT - 90 and 100 lbs.
MAXIMUM GRADE - 1% MAXIMUM CURVE - 3° 01'
BALLAST - Gravel dating to 1936.

BRIDGES AND TRESTLES - 7 pile trestles ranging in length from 2 to 25 spans and totaling 51 spans, one I beam and 2 span pile trestle combination, one deck plate girder and 9 span pile trestle, one through riveted truss and 16 span pile trestle, and one through riveted truss and 25 span pile trestle.

STATION LOCATIONS

STATIONS	MILES
MN Border	0.0
Valley Springs	0.7
Brandon	7.2
Sioux Falls	15.8

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	0.39 MGT	1.25 MGT
TRAFFIC DIRECTION -	N/A	67% Orig./33% Term. (1977)

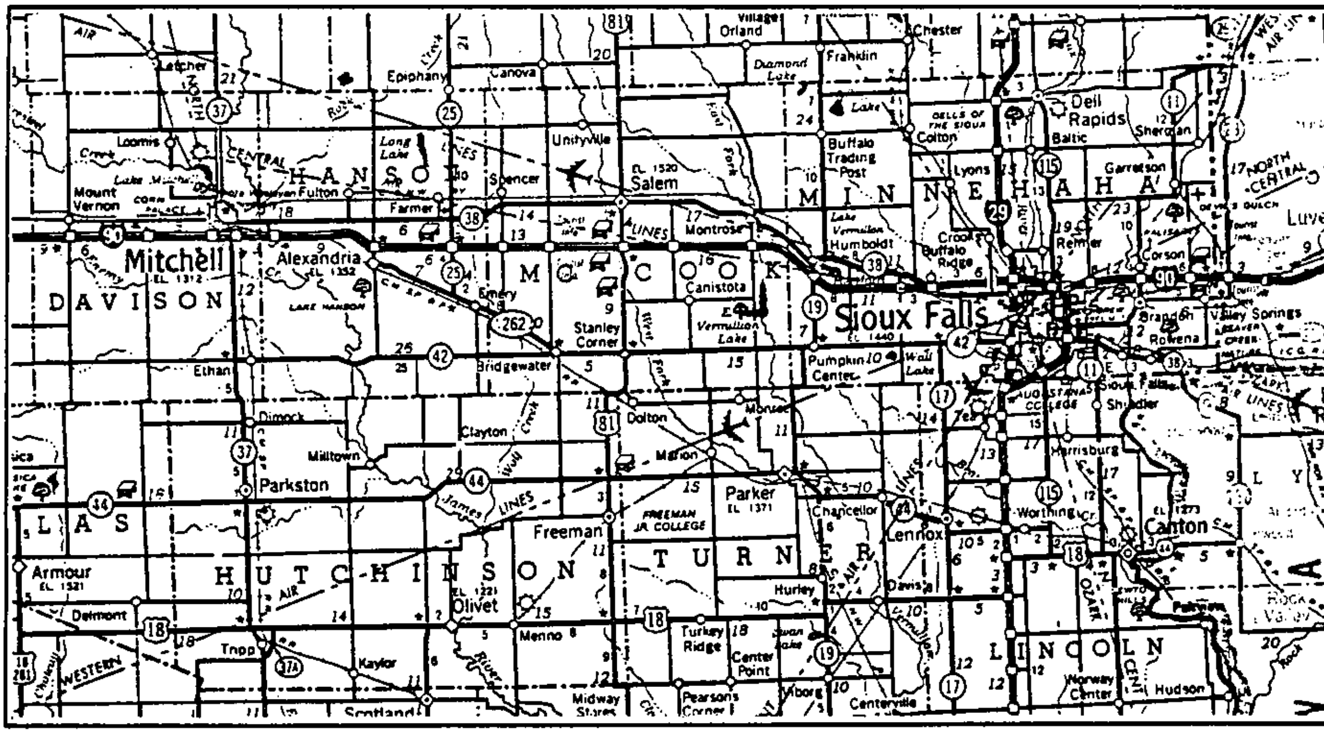
COMMODITIES - Forwarded grain; received lumber products.

OTHER INFORMATION

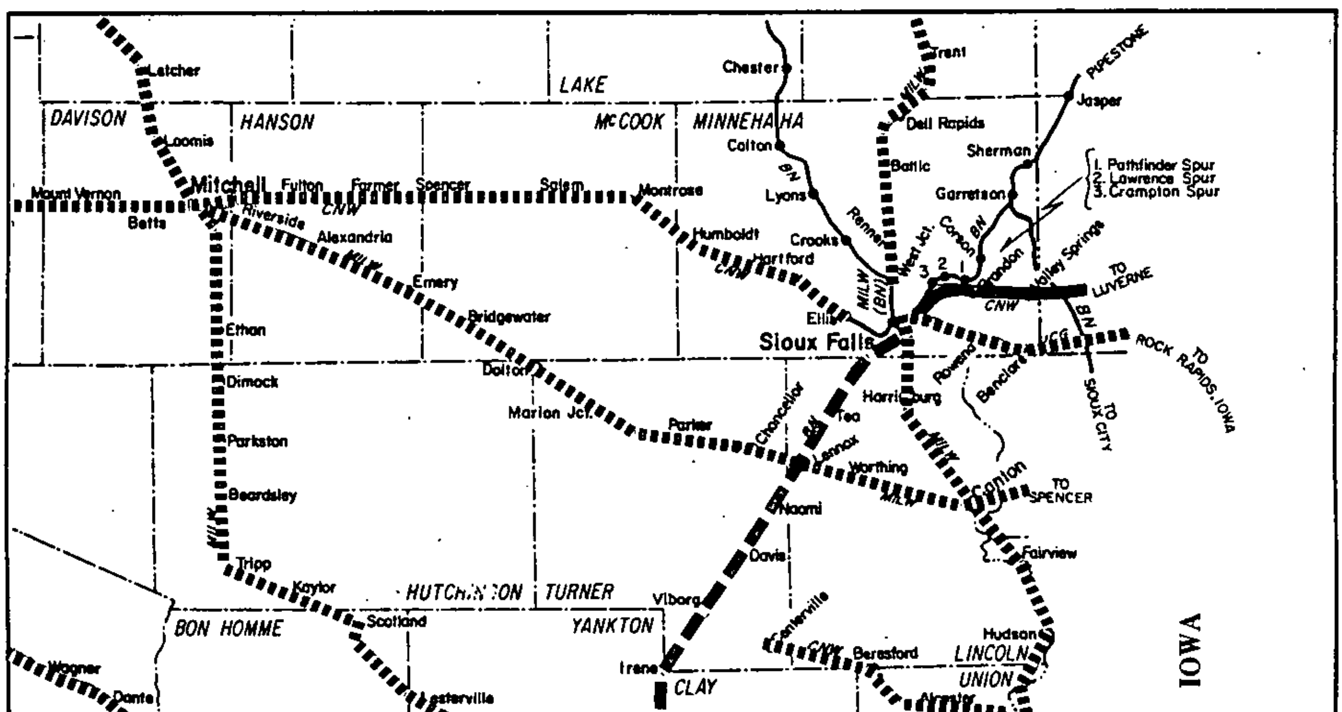
The South Dakota Rail Line Inventory Study found that significant impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT CN09
WORTHINGTON, MN TO SIOUX FALLS, SD

RAILROAD-HIGHWAY LOCATION MAP

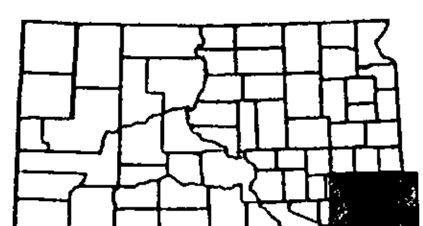


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - CN10

SIOUX FALLS TO MITCHELL
CHICAGO & NORTH WESTERN - TWIN CITIES DIVISION - SIOUX FALLS SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Abandoned between Ellis and Mitchell, Continued operation between Ellis and Sioux Falls.
TYPE OF LINE - Branch LINE LENGTH IN MILES - 72.0, 6.7 still in service.
MAXIMUM WEIGHT LIMIT - 210,000 lbs. MAXIMUM SPEED LIMIT - 10 mph
SERVICE FREQUENCY - Daily except Saturday.
YARDS - Sioux Falls, Salem - Spencer, and Mitchell
CONNECTING LINES - Chicago & North Western, Burlington Northern, former Milwaukee Road line and former Illinois Central Gulf at Sioux Falls, and former Milwaukee Road line at Mitchell.

HIGHWAYS - Sioux Falls is served by I 90, I 29, SD 38, US 77 and SD 42, while SD 38 serves Hartford, Humbolt, Montrose, Salem and Spencer; Mitchell is served by SD 38, SD 37 and I 90; Fulton, Ellis, and Farmer are served by local hard surfaced roads. I 90 also parallels this line and all stations have easy access to this highway.

RAIL WEIGHT - 80 lbs. except about 10 miles of 90 lbs. E of Salem.
MAXIMUM GRADE - 1.26% MAXIMUM CURVE - 3° 40'
BALLAST - Early 1900's gravel.

BRIDGES AND TRESTLES - 16 pile trestles ranging in length from 2 to 18 spans and totaling 121 spans, a bridge consisting of 6 spans of pile trestles, and I beam construction and two pile trestle and steel combination bridges totaling 64 spans.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES
Sioux Falls	0.0	Spencer	49.7
Ellis	6.7	Farmer	54.5
Hartford	14.3	Fulton	61.2
Humbolt	21.1	Riverside	67.4
Montrose	28.1	Mitchell	72.0
Salem	39.6		

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	0.14 MGT	0.06 MGT
TRAFFIC DIRECTION -	N/A	29% Orig./71% Term. (1977)

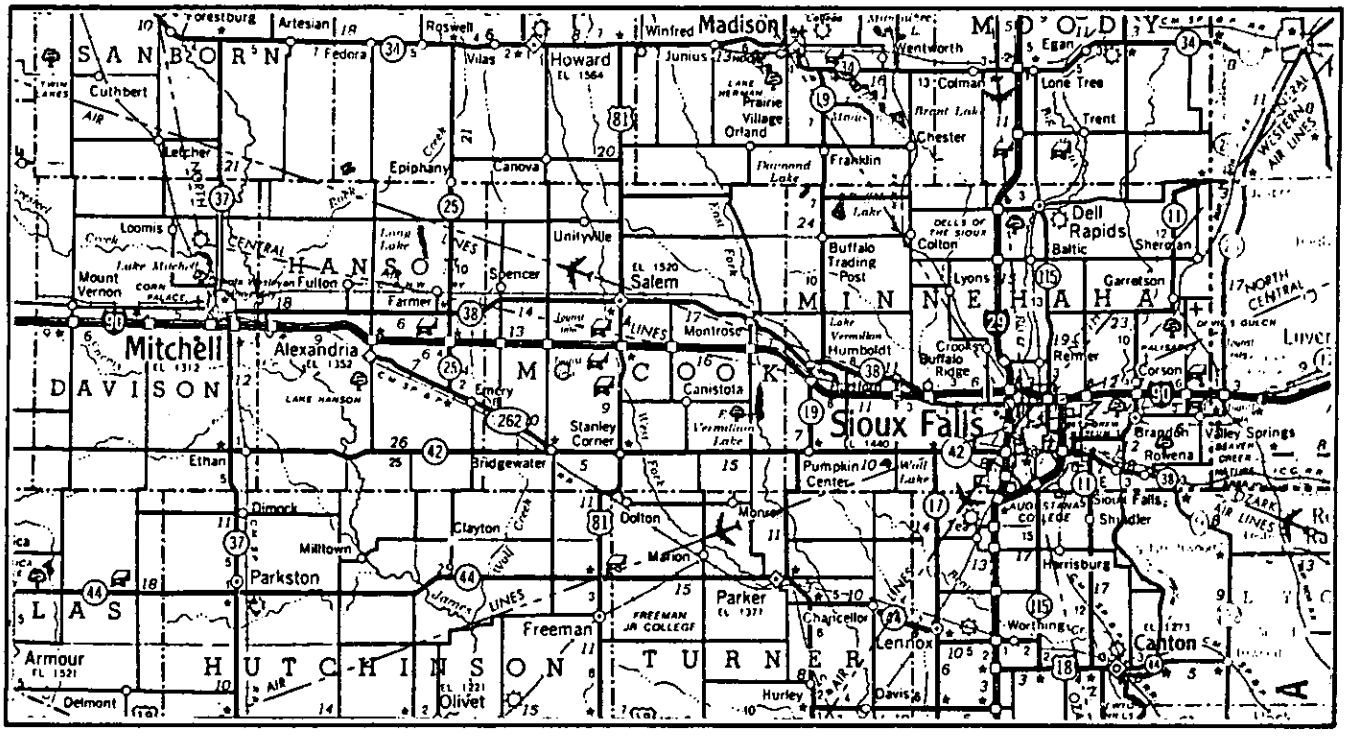
COMMODITIES - Forwarded grain, food products, and stone, sand, and gravel; received lumber products, stone, clay, glass, sand, and gravel.

OTHER INFORMATION

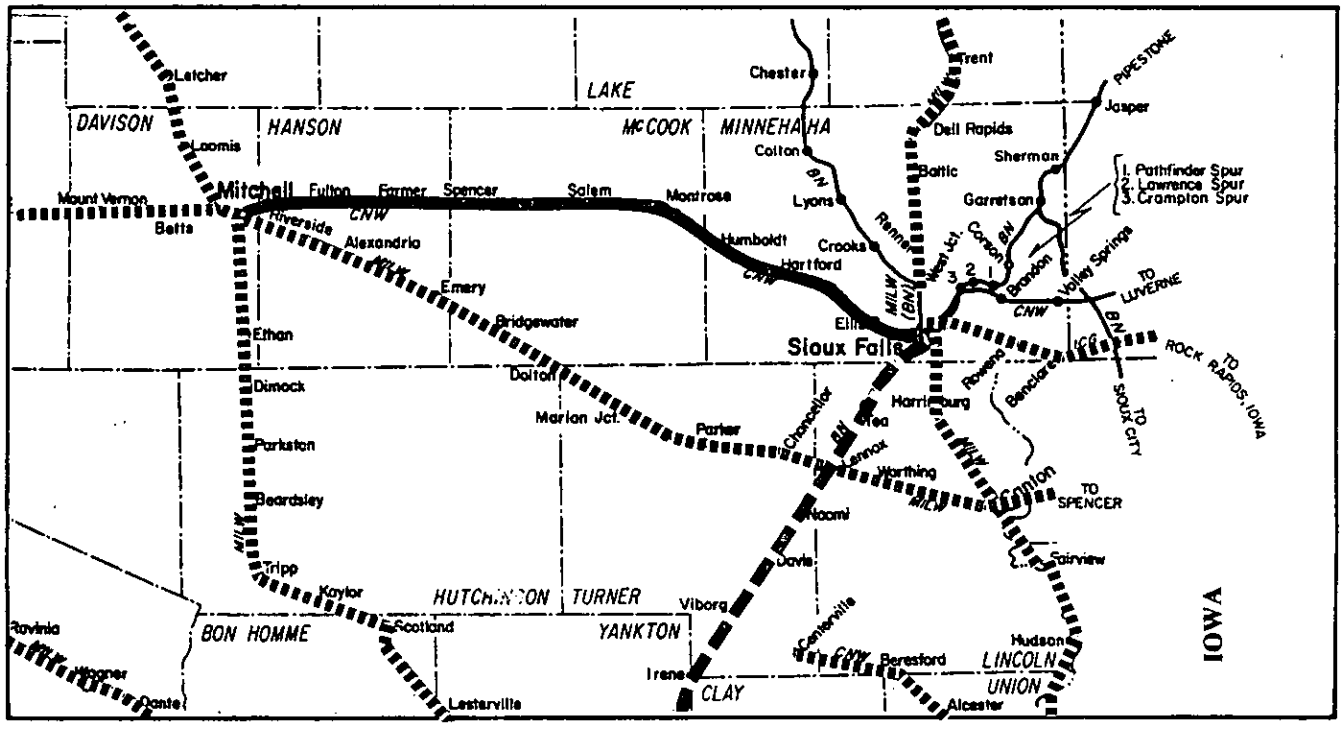
The South Dakota Rail Line Inventory Study found that limited impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT CN10
SIOUX FALLS TO MITCHELL

RAILROAD-HIGHWAY LOCATION MAP

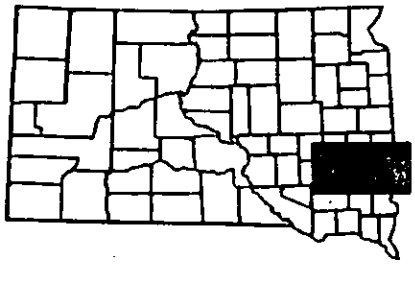


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - CN11

HAWARDEN, IA TO BERESFORD, SD
CHICAGO & NORTH WESTERN - CENTRAL DIVISION - HAWARDEN SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Abandoned
TYPE OF LINE - Branch
LINE LENGTH IN MILES - 17.4 total, 16.7 in SD
MAXIMUM WEIGHT LIMIT - 251,000 lbs.
SERVICE FREQUENCY - None
MAXIMUM SPEED LIMIT- 30 mph
YARDS - Hawarden
CONNECTING LINES - Former Milwaukee Road line at Hawarden.

HIGHWAYS - Hawarden is served by SD 10 and SD 12; Alcester is served by SD 11; and Beresford by SD 46 and I 29.
RAIL WEIGHT - about 20 miles of 110-112 lbs. from Hawarden to near Beresford.
MAXIMUM GRADE - 1.8% (in SD)
MAXIMUM CURVE - 4° (in SD)
BALLAST - Rock and gravel dating from 1954-1965 from the SD border to Beresford.
BRIDGES AND TRESTLES - 10 pile trestles ranging in length from 2 to 24 spans and totaling 78 spans and 2 other bridges of steel construction in the South Dakota portion with a total of 17 spans.

STATION LOCATIONS

STATIONS	MILES
Hawarden, IA	0.0
SD Border	0.7
Alcester, SD	8.7
Beresford, SD	17.4

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	0.08 MGT	0.00MGT
TRAFFIC DIRECTOR -	91% Orig./9% Term.(1974)	64% Orig./36% Term.(1977)

COMMODITIES - Primarily forwarded grain; received fertilizer, lumber products, and petroleum products.

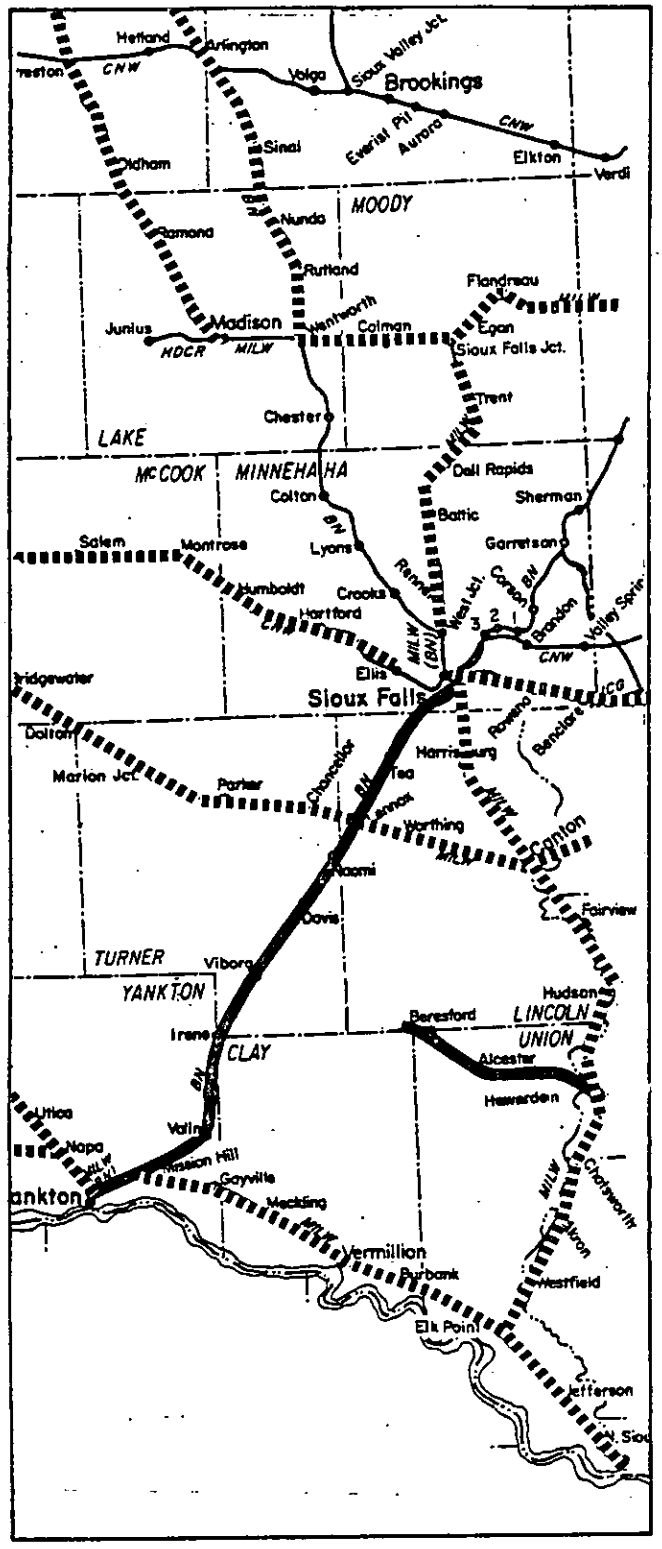
OTHER INFORMATION

This line was abandoned in 1978 by the Chicago & North Western. A project consisting of 90% Federal and 10% local funds was approved in March 1978 for the purpose of purchasing the line from Parker to Hawarden. The funds were not expended since the asking price of the railroad exceeded the total sum available ($1,579,000).

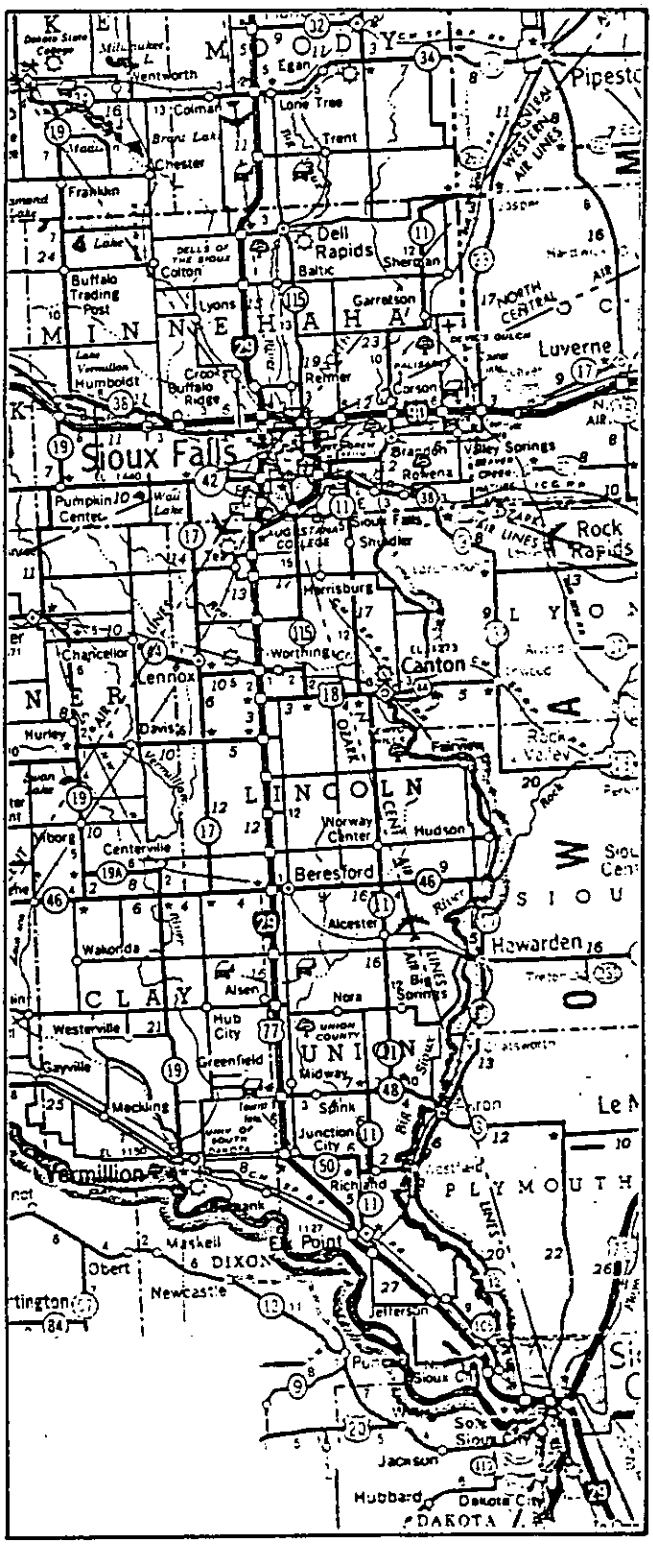
Shipper interest in continued service remains and because of this, the line between Hawarden, IA and Beresford, SD will be purchased by the State for possible resumption of rail service.

SOUTH DAKOTA SEGMENT CN11
HAWDARDEN, IA TO ERESFORD, SD

RAILROAD SEGMENT MAP

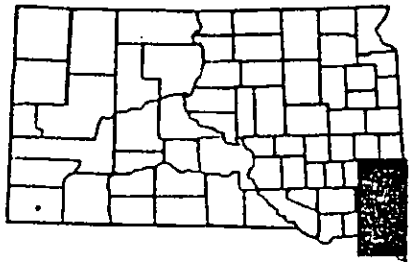


RAILROAD-HIGHWAY LOCATION MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - CN12

SIOUX VALLEY JCT. TO WATERTOWN
CHICAGO & NORTH WESTERN - CENTRAL DIVISION - WATERTOWN SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Branch LINE LENGTH IN MILES - 44.2
MAXIMUM WEIGHT LIMIT - 210,000 lbs. MAXIMUM SPEED LIMIT - 30 mph
SERVICE FREQUENCY - Daily except Sunday
YARDS - Sioux Valley Jct. and Watertown
CONNECTING LINES - Chicago & North Western at Sioux Valley Jct., Chicago & North Western branch at Watertown and Burlington Northern at Watertown.
HIGHWAYS - US 14 serves Sioux Valley Jct.; SD 30 serves Bruce; SD 28 serves Estelline; SD 22 serves Castlewood; a local hard surfaced road serves Dempster; a local road serves Appleby; and Watertown is served by US 212, I 29, and US 81.
RAIL WEIGHT - 72 lbs.
MAXIMUM GRADE - .77% (at Watertown) MAXIMUM CURVE - 4° at Watertown and
BALLAST - Consists of old gravel and cinders with some segments being dirt.
BRIDGES AND TRESTLES - 50 pile trestles ranging in length from 1 to 22 spans and totaling 233 spans.

STATION LOCATIONS

STATIONS	MILES
Sioux Valley Jct.	0.0
Bruce	8.2
Estelline	18.3
Dempster	23.1
Castlewood	30.5
Appleby	37.0
Watertown	44.2

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	0.39 MGT	0.27 MGT
TRAFFIC DIRECTION -	N/A	24% Orig./76% Term. (1977)

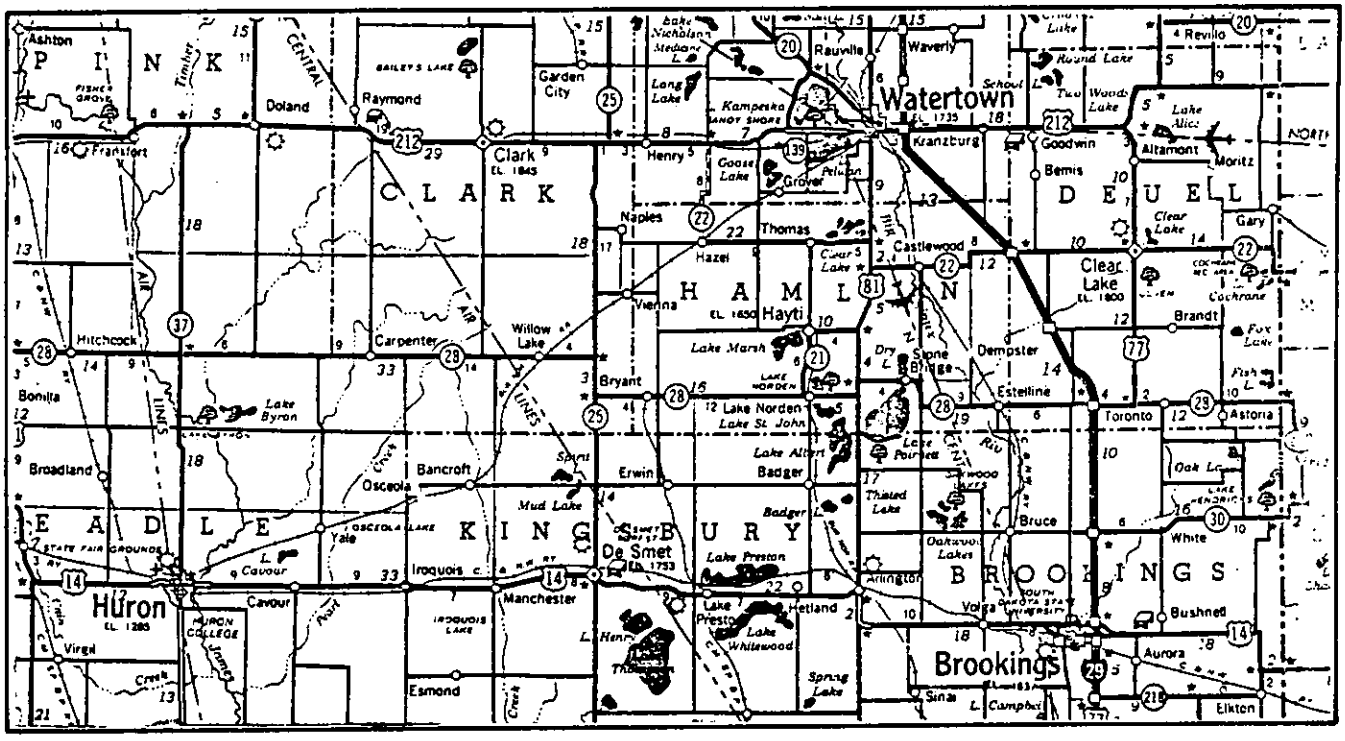
COMMODITIES - Forwarded grain and farm products; received grain mill products, lumber products, stone, clay, and glass.

OTHER INFORMATION

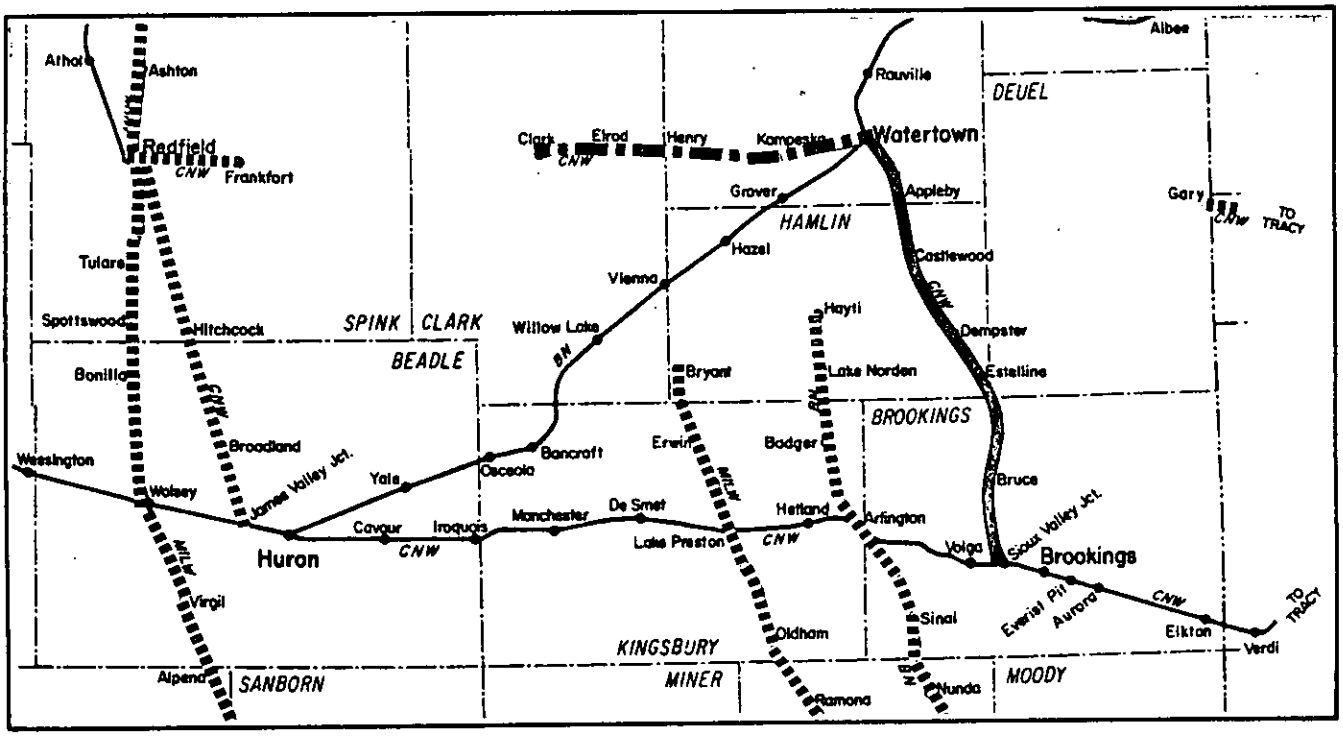
The South Dakota Rail Line Inventory Study found that limited impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT CN12
SIOUX VALLEY JCT. TO WATERTOWN

RAILROAD-HIGHWAY LOCATION MAP

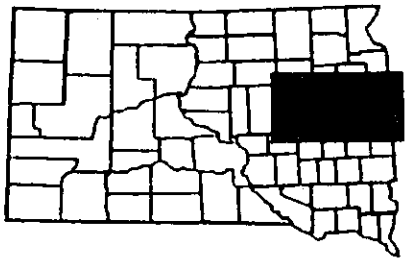


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - CN13

WATERTOWN TO CLARK
CHICAGO & NORTH WESTERN - CENTRAL DIVISION - WATERTOWN SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 3: Pending Abandonment Approval
TYPE OF LINE - Branch LINE LENGTH IN MILES - 31.1
MAXIMUM WEIGHT LIMIT - 210,000 lbs. MAXIMUM SPEED LIMIT - 10 mph
SERVICE FREQUENCY - Irregular
YARDS - Watertown
CONNECTING LINES - Chicago & North Western and Burlington Northern at Watertown.
HIGHWAYS - US 212 parallels and serves the stations.
RAIL WEIGHT - 72 lbs.
MAXIMUM GRADE - 1% MAXIMUM CURVE - 3°
BALLAST - About 12 miles dirt and the remainder gravel which was placed in 1916 and 1917.
BRIDGES AND TRESTLES - 3 pile trestles which are 4 or 6 spans each and one bridge which is a combination I Beam and 4 spans of pile trestles.

STATION LOCATIONS

STATIONS	MILES
Watertown	0.0
Kampeska	8.1
Henry	18.0
Elrod	23.5
Clark	31.1

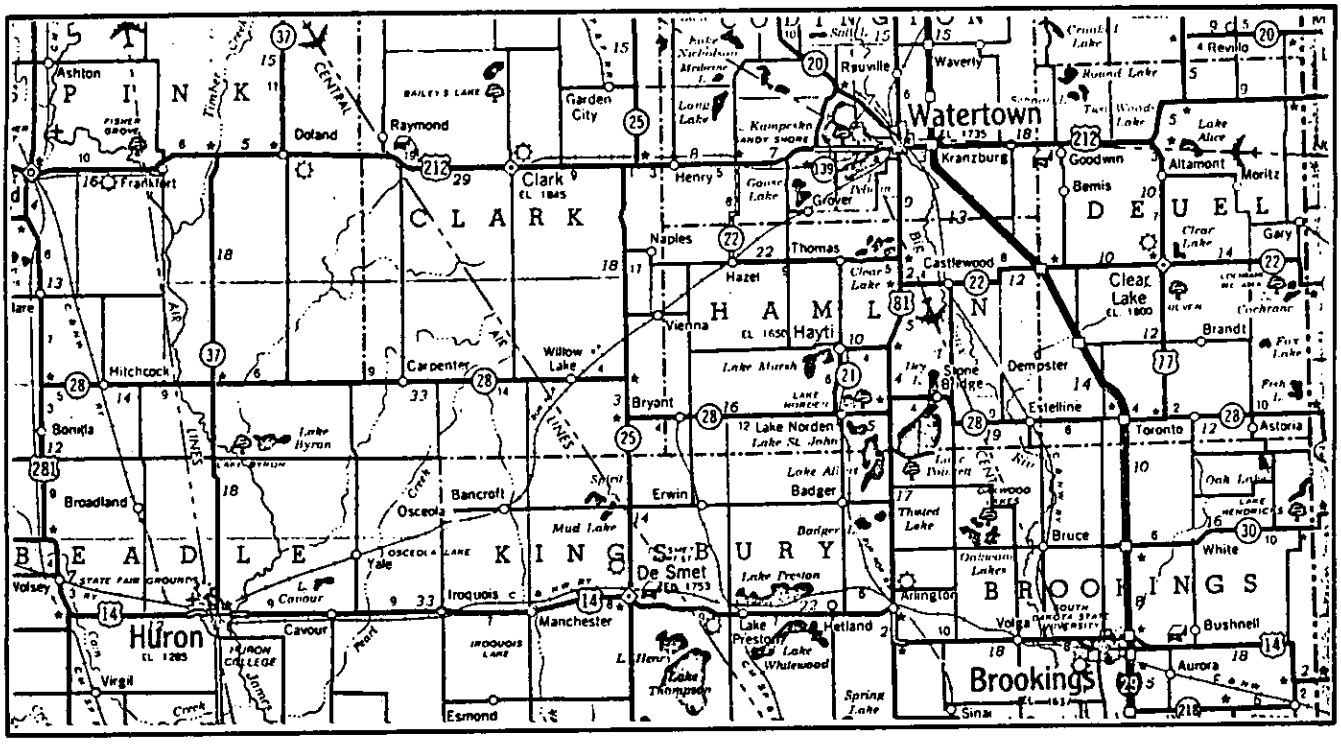
TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	0.02 MGT	0.01 MGT
TRAFFIC DIRECTION -	81% Orig./19% Term.	79% Orig./21% Term. (1977)
COMMODITIES - Forwarded grain; received fertilizer.		

OTHER INFORMATION

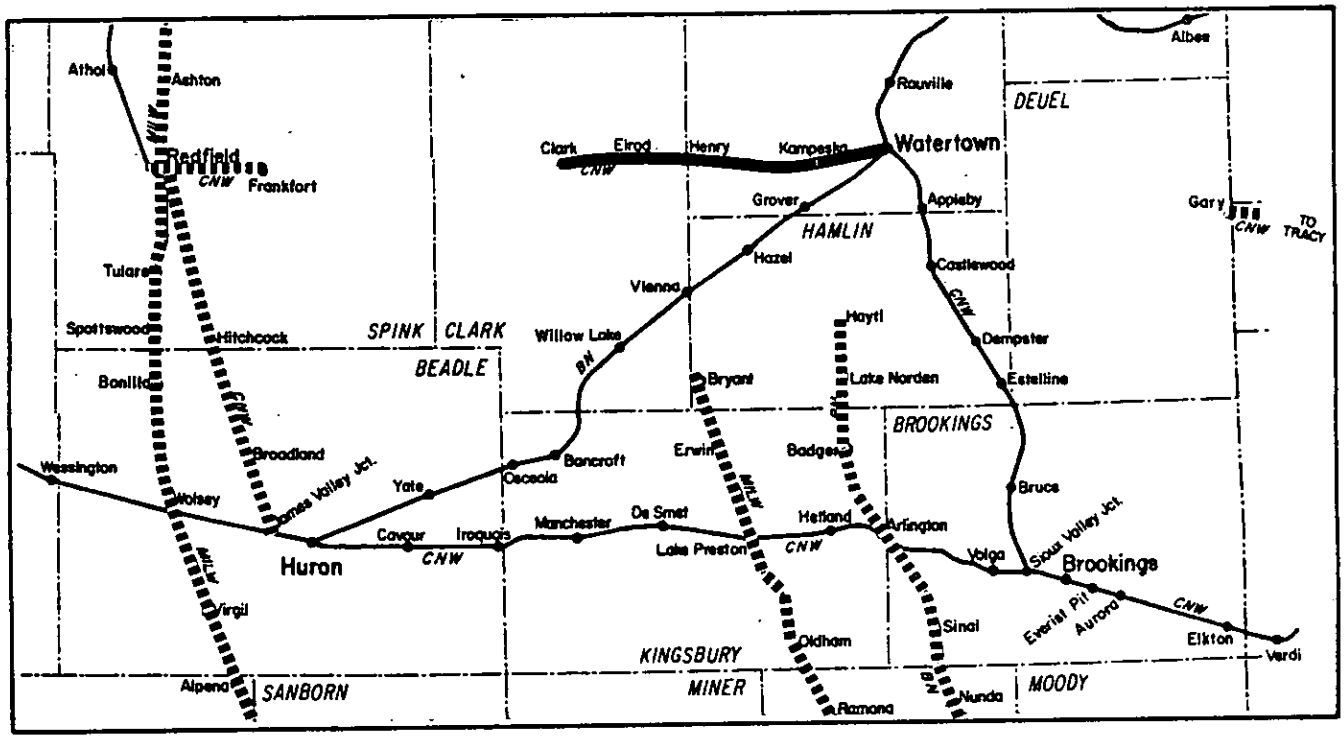
The ICC issued an abandonment certificate for the Clark to Doland portion of this line, but denied the petition for abandonment of the Clark to Watertown portion. The South Dakota Rail Line Inventory Study found that minimal impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT CN13
WATERTOWN TO CLARK

RAILROAD-HIGHWAY LOCATION MAP

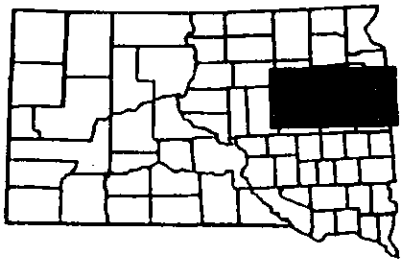


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - CN15

REDFIELD TO FRANKFORT
CHICAGO & NORTH WESTERN - WESTERN DIVISION - OAKES SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Abandoned
TYPE OF LINE - Branch LINE LENGTH IN MILES - 10.7
MAXIMUM WEIGHT LIMIT - 210,000 lbs. MAXIMUM SPEED LIMIT - 10 mph
SERVICE FREQUENCY - None
YARDS - Redfield
CONNECTING LINES - Chicago & North Western and former Milwaukee Road line at Redfield.
HIGHWAYS - US 212 serves Frankfort and US 212 and US 281 serve Redfield.
RAIL WEIGHT - About 3.5 miles 90 lbs., and 7.2 miles 72 lbs. rail
MAXIMUM GRADE - 1% MAXIMUM CURVE - 2°
BALLAST - Gravel
BRIDGES AND TRESTLES - One bridge across the James River which is a 20 span pile bridge and a 148' truss.

STATION LOCATIONS

STATIONS	MILES
Redfield	0.0
Frankfort	10.7

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	0.02 MGT	0.01 MGT
TRAFFIC DIRECTION -	97% Orig./3% Term.	100% Orig./0% Term. (1977)

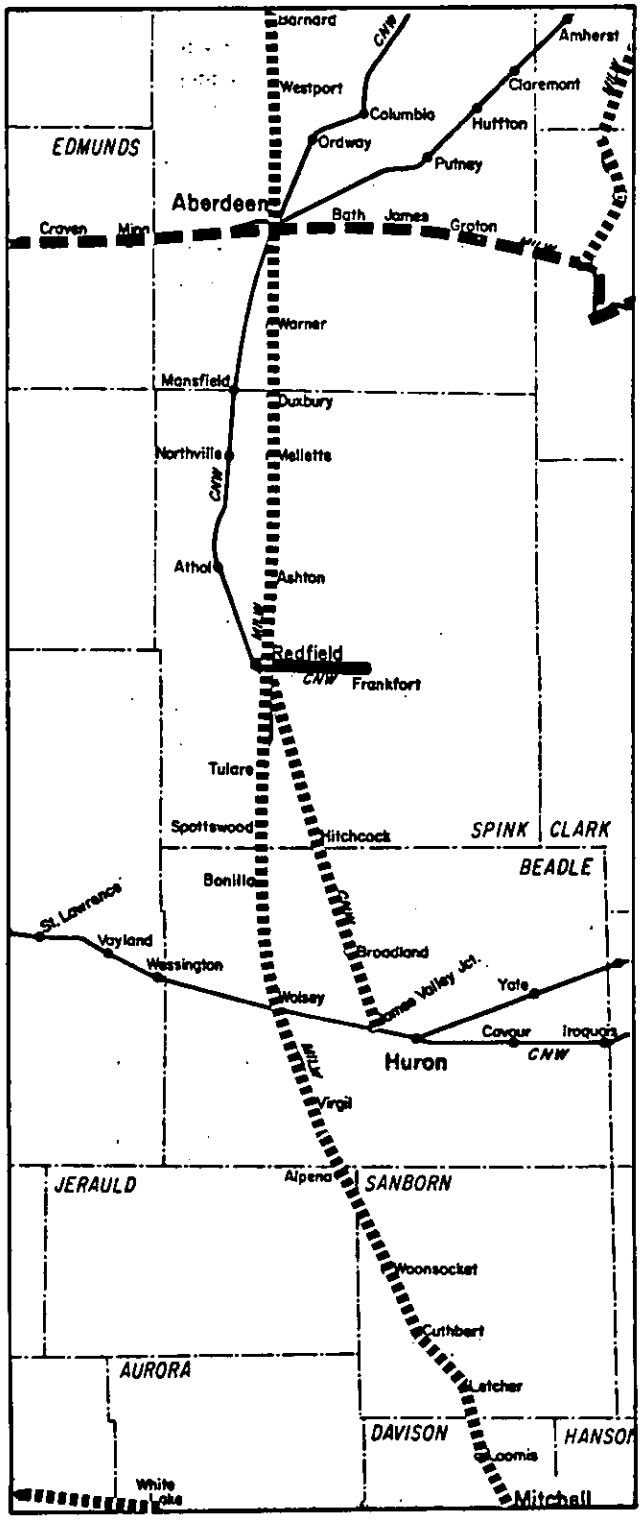
COMMODITIES - Forwarded grain.

OTHER INFORMATION

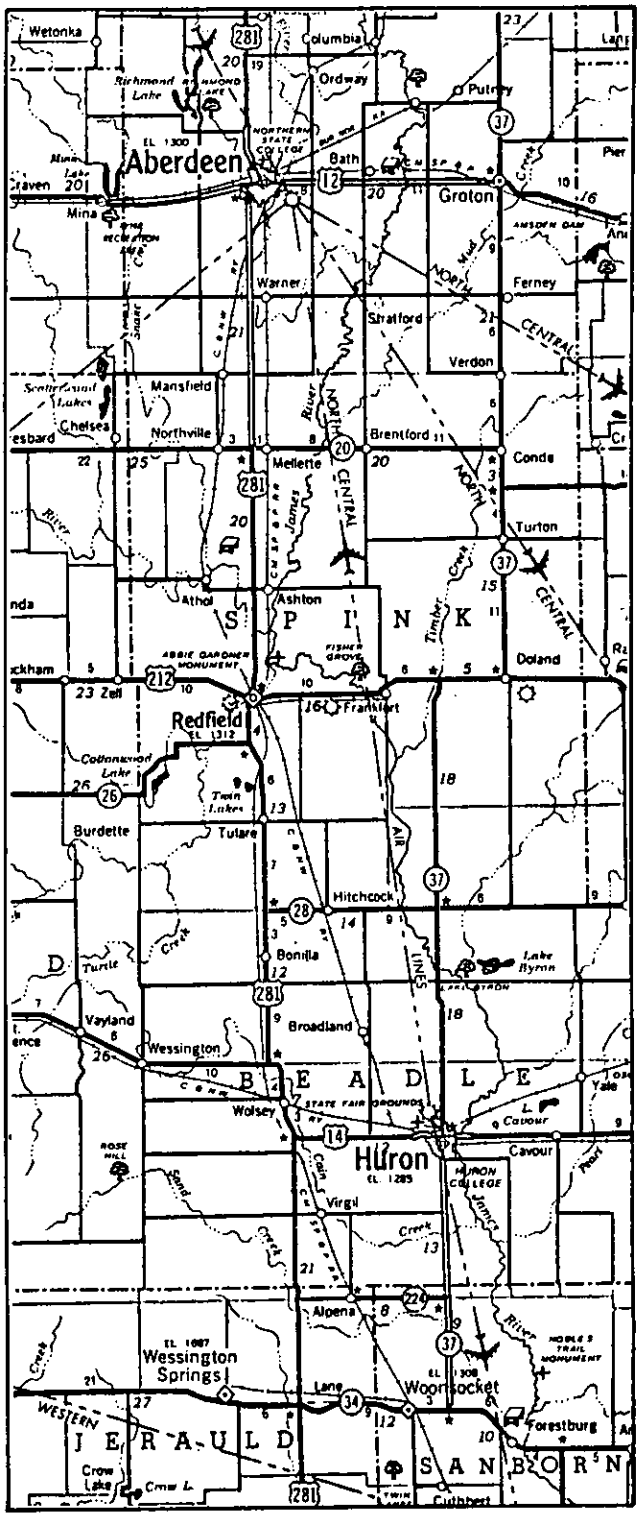
This line was abandoned in 1980 by the Chicago & North Western. The South Dakota Rail Line Inventory Study found that minimal impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT CN15
REDFIELD TO FRANKFORT

RAILROAD SEGMENT MAP



RAILROAD-HIGHWAY LOCATION MAP



KEY

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- Abandoned Line
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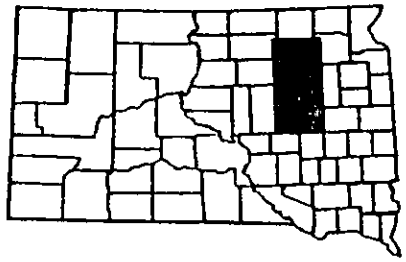
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - CN16

BLUNT TO GETTYSBURG
CHICAGO & NORTH WESTERN - WESTERN DIVISION - GETTYSBURG SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Branch LINE LENGTH IN MILES - 40.3
MAXIMUM WEIGHT LIMIT - 178,000 lbs. MAXIMUM SPEED LIMIT - 10 mph
SERVICE FREQUENCY - As needed, 0 to 6 round trips per week.
YARDS - Blunt and Gettysburg
CONNECTING LINES - Chicago & North Western at Blunt.
HIGHWAYS - Blunt is served by US 14, Onida, Agar and Gorman by US 83 and Gettysburg by US 212.
RAIL WEIGHT - 60 lbs.
MAXIMUM GRADE - 1% MAXIMUM CURVE - 9° at Blunt and 4° elsewhere on the line.
BALLAST - Mostly 1910 gravel or dirt.
BRIDGES AND TRESTLES - 26 pile trestles ranging in length from 1-17 spans and totaling 167 spans.

STATION LOCATIONS

STATIONS	MILES
Blunt	0.0
Onida	15.6
Agar	25.3
Gorman	31.5
Gettysburg	40.3

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	0.11 MGT	0.08 MGT
TRAFFIC DIRECTION -	N/A	73% Orig./27% Term. (1977)

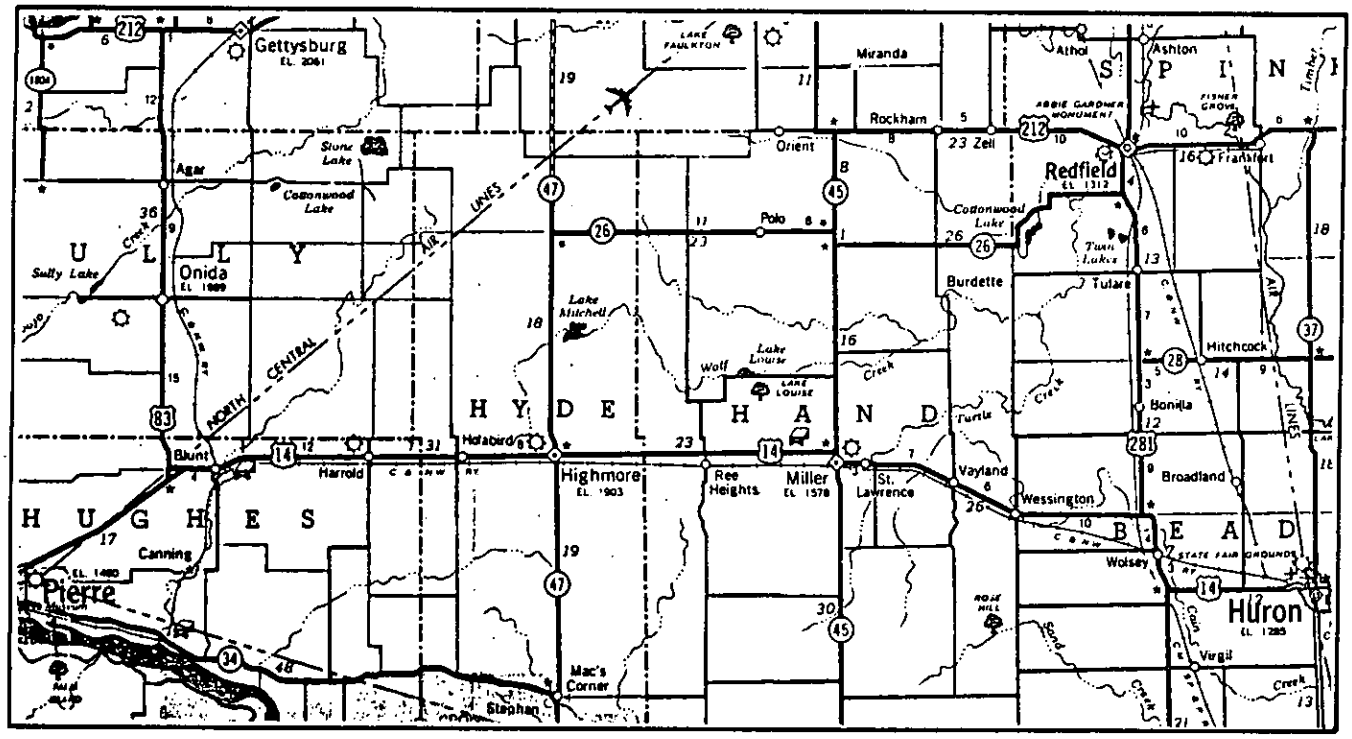
COMMODITIES - Forwarded grain; received fertilizer and farm machinery.

OTHER INFORMATION

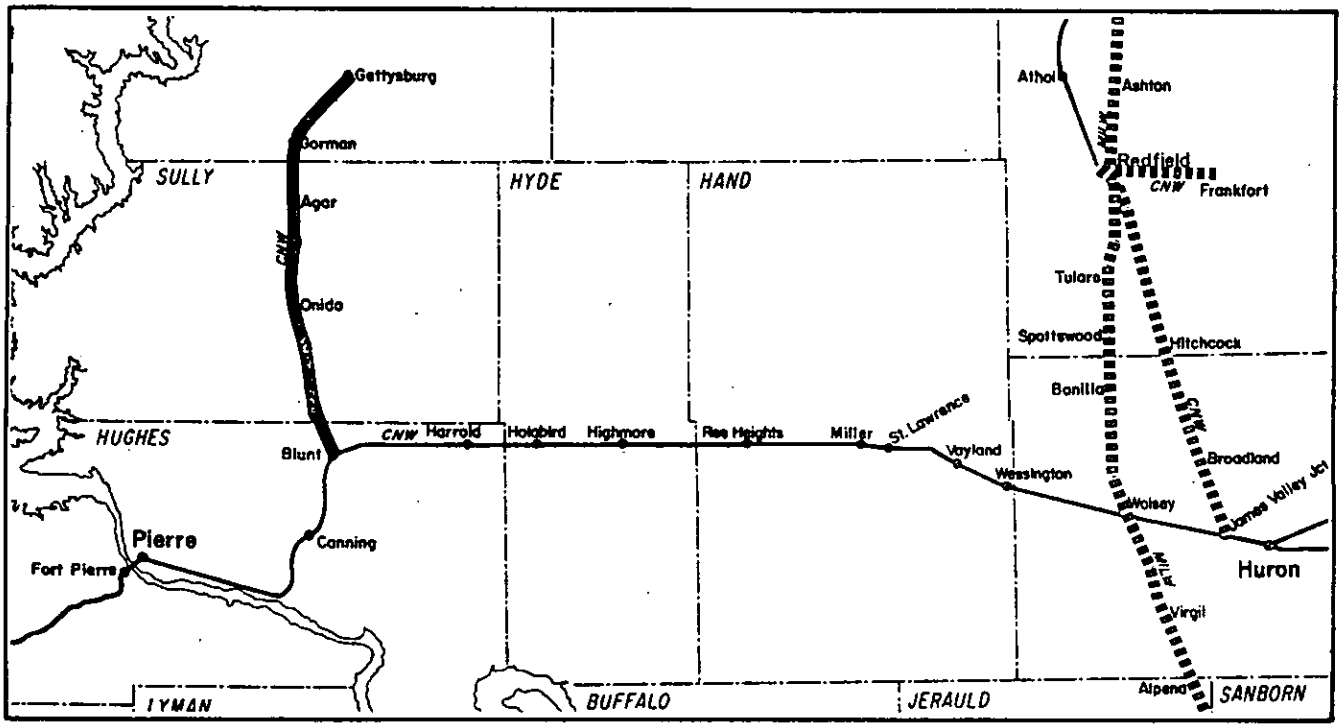
The South Dakota Rail Line Inventory Study found that minimal impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT CN16
BLUNT TO GETTYSBURG

RAILROAD-HIGHWAY LOCATION MAP



RAILROAD SEGMENT MAP



KEY

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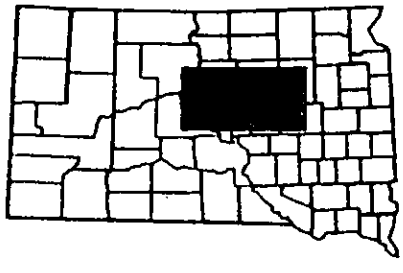
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - CN17

TRACY, MN TO GARY, SD
CHICAGO & NORTH WESTERN - CENTRAL DIVISION - MARSHALL SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Abandoned
TYPE OF LINE - Branch
LINE LENGTH IN MILES - 58.0 total, approx. 1 in SD.
MAXIMUM WEIGHT LIMIT - 210,000 lbs.
SERVICE FREQUENCY - None
MAXIMUM SPEED LIMIT - 5 mph
YARDS - Entire Subdivision
CONNECTING LINES - Burlington Northern at Marshall, Chicago & North Western at Marshall and Tracy.
HIGHWAYS - Gary is served by a local hard surfaced road; State Highway 68 parallels this line from Canby to Marshall; and Tracy is served by US 14.
RAIL WEIGHT - 72 lbs. from Canby to Burr and 60 lbs. rail from Burr to Gary.
MAXIMUM GRADE - 1%
MAXIMUM CURVE - 1°
BALLAST - Gravel placed in 1916 from Canby to near Burr and dirt the last 4 miles of line.
BRIDGES AND TRESTLES - 17 pile trestles ranging in length from 2 to 12 spans and totaling 84 spans.

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES
Tracy, MN	0.0	Taunton, MN	34.4
Amiret, MN	7.0	Porter, MN	40.2
Marshall Jct., MN	15.5	Canby, MN	47.4
Marshall, MN	17.3	Burr, MN	52.3
Ghent, MN	24.2	Gary, SD	58.0
Minneota, MN	29.9		

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	0.06 MGT	0.04 MGT
TRAFFIC DIRECTION -	N/A	58% Orig./42% Term. (1977)

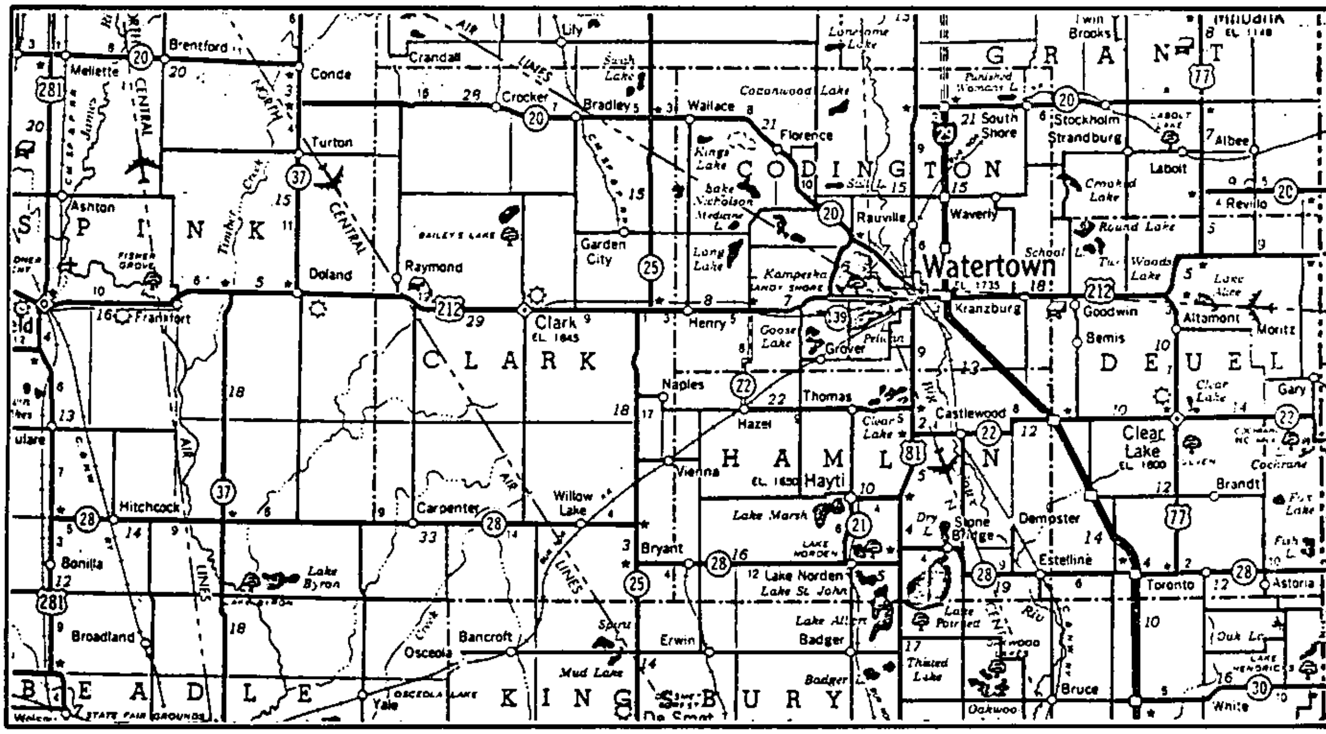
COMMODITIES - Forwarded grain; received fertilizer.

OTHER INFORMATION

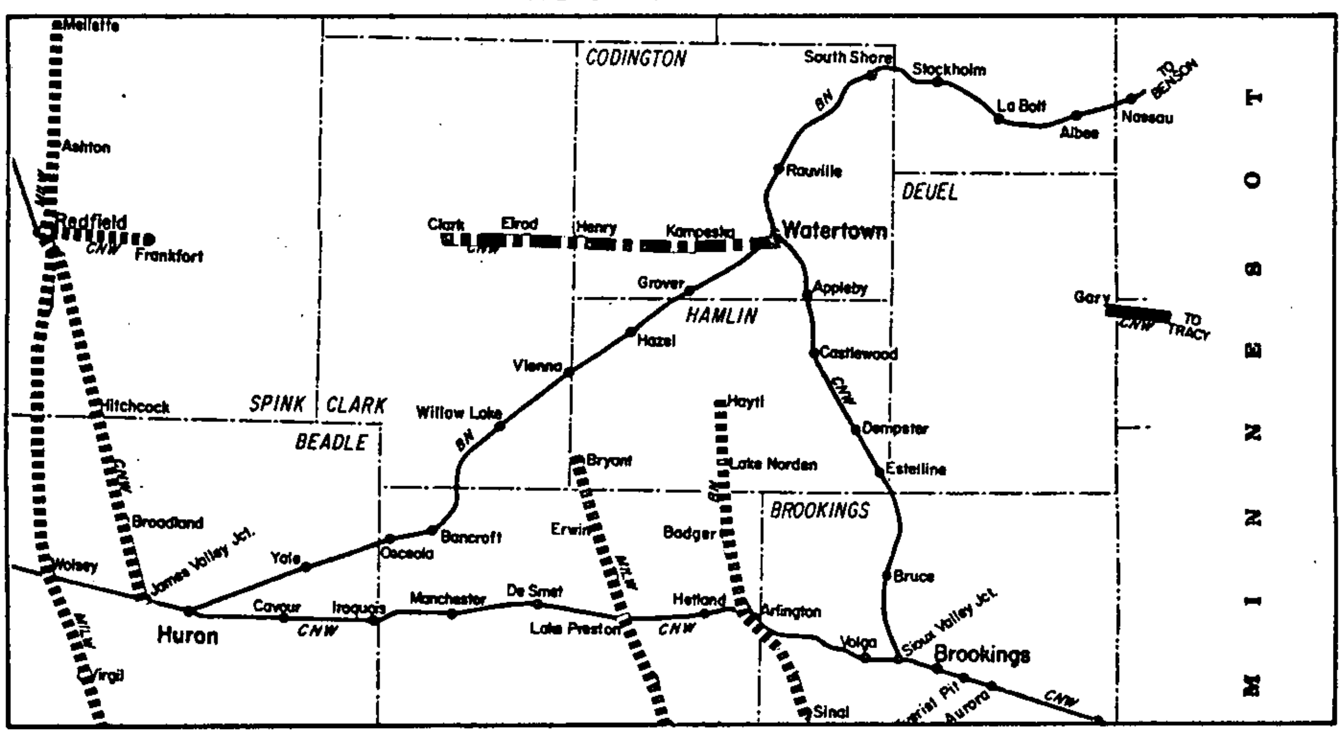
This line was abandoned in 1980 by the Chicago & North Western.
The South Dakota Rail Line Inventory Study found that minimal impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT CN17
TRACY, MN TO GARY, SD

RAILROAD-HIGHWAY LOCATION MAP



RAILROAD SEGMENT MAP



KEY

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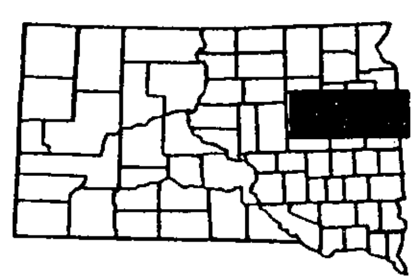
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - CN19

BOX ELDER TO ELLSWORTH AIR FORCE BASE
CHICAGO & NORTH WESTERN - WESTERN DIVISION - PART OF THE PRC SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Branch
LINE LENGTH IN MILES - 3.0
MAXIMUM WEIGHT LIMIT - N/A
MAXIMUM SPEED LIMIT - N/A
SERVICE FREQUENCY - As needed
YARDS - N/A
CONNECTING LINES - Chicago & North Western at Box Elder.
HIGHWAYS - Box Elder is served by I 90.
RAIL WEIGHT - 90-100 lbs.
MAXIMUM GRADE - N/A
MAXIMUM CURVE - N/A
BALLAST - N/A
BRIDGES AND TRESTLES N/A

STATION LOCATIONS

STATIONS	MILES
Box Elder	0.0
Ellsworth AFB	3.0

TRAFFIC CHARACTERISTICS — 1977

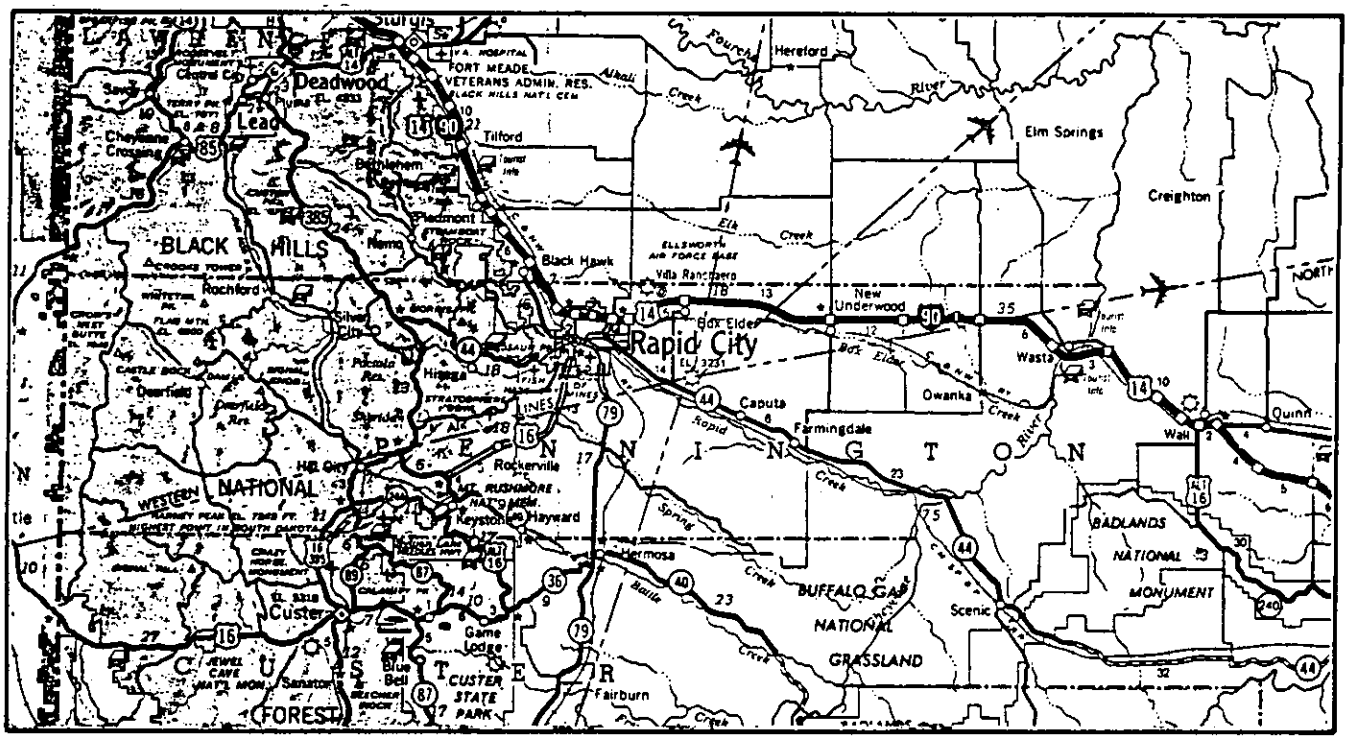
TRAFFIC DENSITY - 0.03 MGT
TRAFFIC DIRECTION - 25% Orig./75% Term.
COMMODITIES - Primarily received ordinance and petroleum products.

OTHER INFORMATION

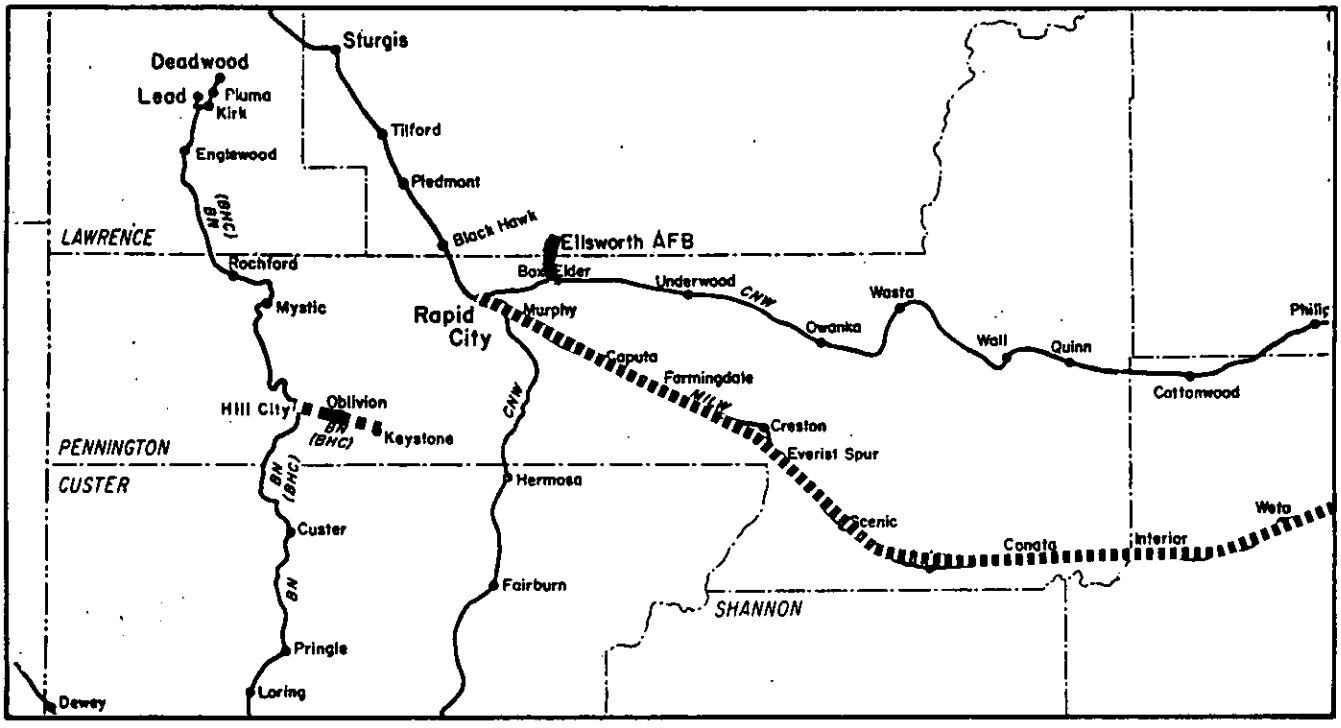
This line serves the Ellsworth Air Force Base and is federally owned for that portion located on the base. Though the line is not included in the Department of Defense Strategic Rail Corridor Network, it is the State's position that the line should connect with and be part of the National Defense System.

SOUTH DAKOTA SEGMENT CN19
BOX ELDER TO ELLSWORTH AIR FORCE BASE

RAILROAD-HIGHWAY LOCATION MAP

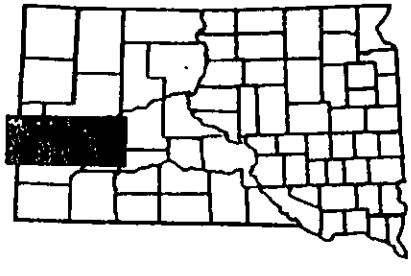


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - BN01

WILLMAR, MN TO GARRETSON, SD
BURLINGTON NORTHERN - MINNESOTA DIVISION - 3rd SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Main LINE LENGTH IN MILES - 127.9 total; 4.6 in S. Dakota
MAXIMUM WEIGHT LIMIT - 263,000 lbs. MAXIMUM SPEED LIMIT - 49 mph
SERVICE FREQUENCY - 7 to 10 trains daily.
YARDS - N/A
CONNECTING LINES - Burlington Northern at Garretson.
HIGHWAYS - SD 11 serves Garretson and a local hard surfaced road serves Sherman.
RAIL WEIGHT - 110 lbs. and 112 lbs.
MAXIMUM GRADE - .67% MAXIMUM CURVE - 3° 33'
BALLAST - N/A
BRIDGES AND TRESTLES - N/A

STATION LOCATIONS

STATIONS	MILES
SD Border	0.0
Sherman	1.3
Garretson	3.3

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	5.85 MGT	10.64 MGT
TRAFFIC DIRECTION -	N/A	55% East/45% West

COMMODITIES - Primarily overhead traffic, including grain and fertilizer.

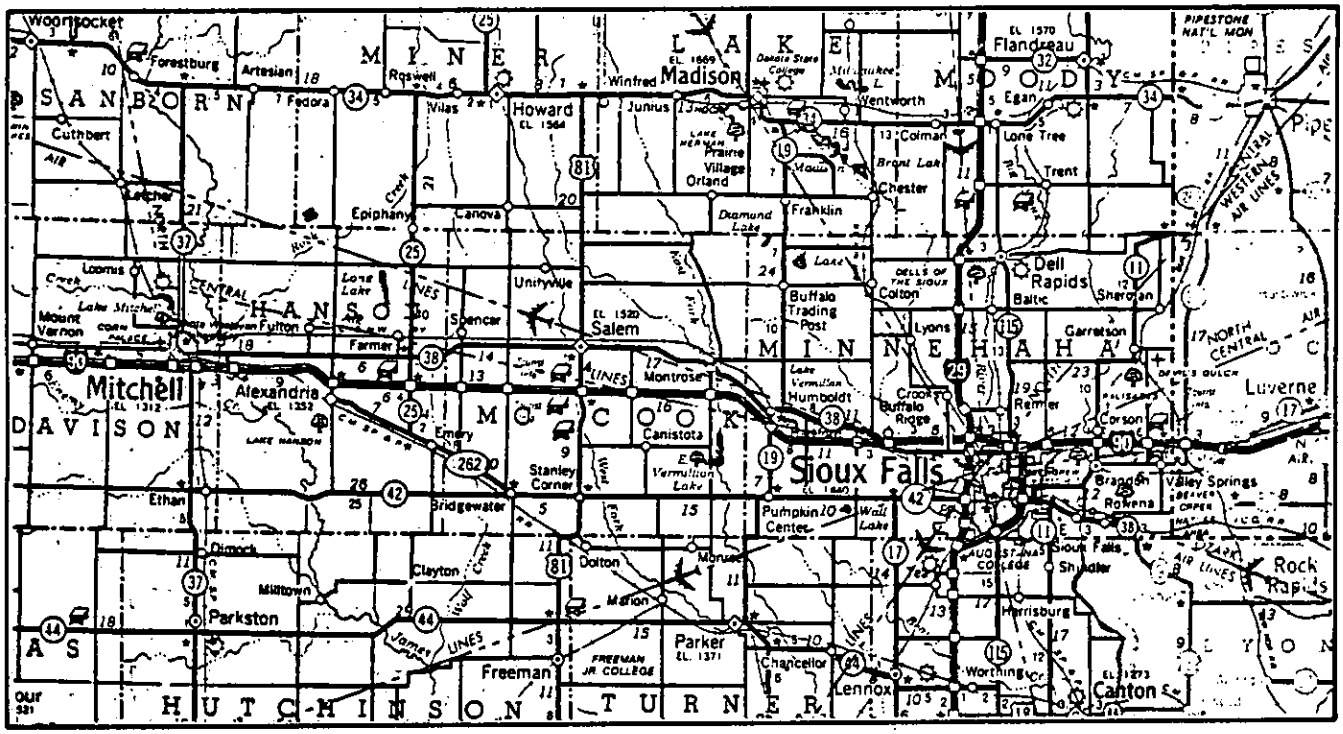
OTHER INFORMATION

This line, along with BN02, serves as the connecting line for Burlington Northern originating and terminating traffic in southeastern South Dakota and the corridor for West Coast connections to the Sioux Falls area.

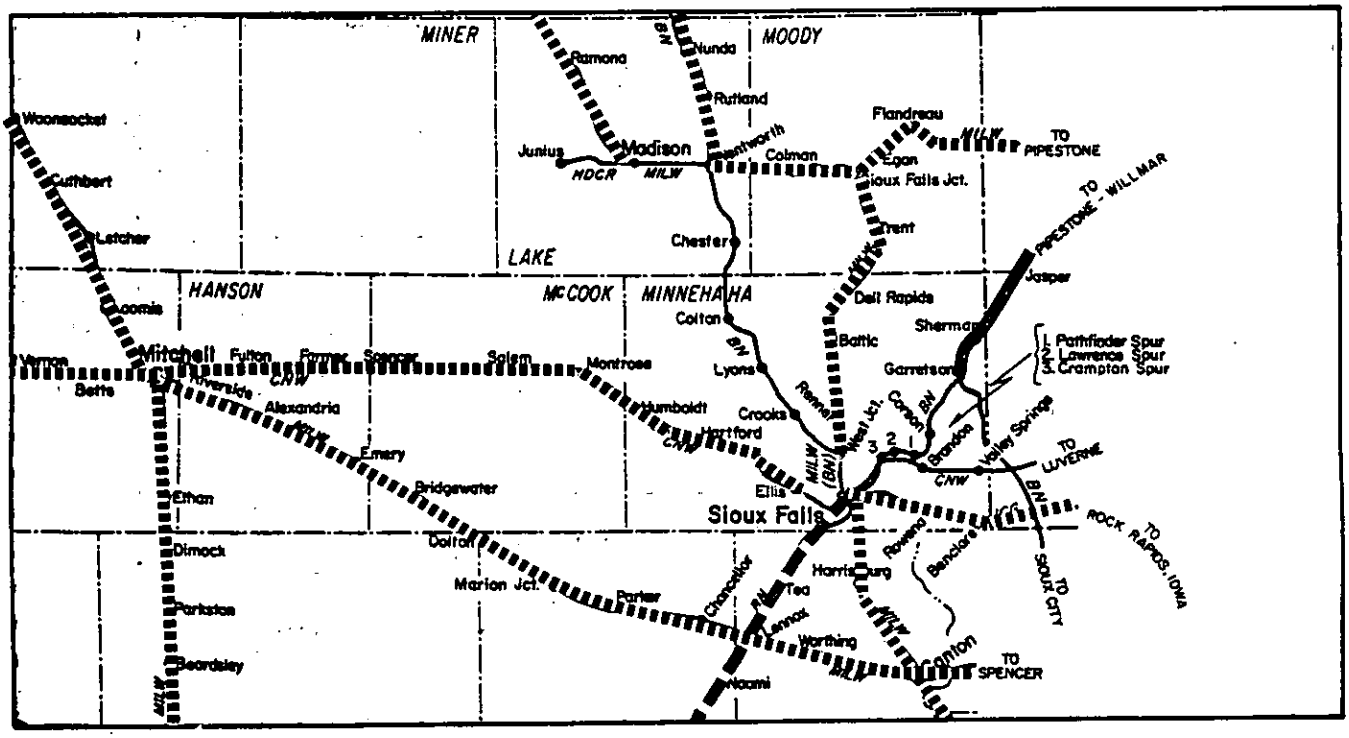
The South Dakota Rail Line Inventory Study found that very significant impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT BN01
WILLMAR, MN TO GARRETSON, SD

RAILROAD-HIGHWAY LOCATION MAP

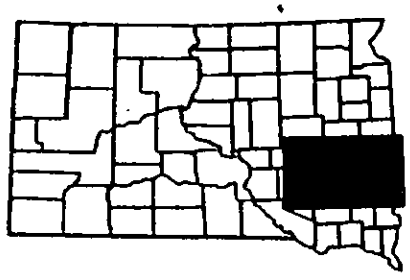


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - BN02

GARRETSON, SD TO SIOUX CITY, IA
BURLINGTON NORTHERN - MINNESOTA DIVISION - 3rd SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Main
LINE LENGTH IN MILES - 94.6 total; 8.1 in SD
MAXIMUM WEIGHT LIMIT - 220,000 lbs. (40 ft. or less in length)
263,000 lbs. (Over 40 ft. in length)
MAXIMUM SPEED LIMIT - 49 mph
SERVICE FREQUENCY - 7 to 10 trains daily.
YARDS - N/A
CONNECTING LINES - Burlington Northern at Garretson.
HIGHWAYS - SD Highway 11 serves Garretson.
RAIL WEIGHT - 110 lbs.
MAXIMUM GRADE - .60%
MAXIMUM CURVE - 3° 36'
BALLAST - N/A
BRIDGES AND TRESTLES - N/A

STATION LOCATIONS

STATIONS	MILES
Garretson	0.0
SD Border	8.1

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	5.05 MGT	9.13 MGT
TRAFFIC DIRECTION -	N/A	46% South/54% North

COMMODITIES - Primarily overhead traffic, including grain and fertilizer.

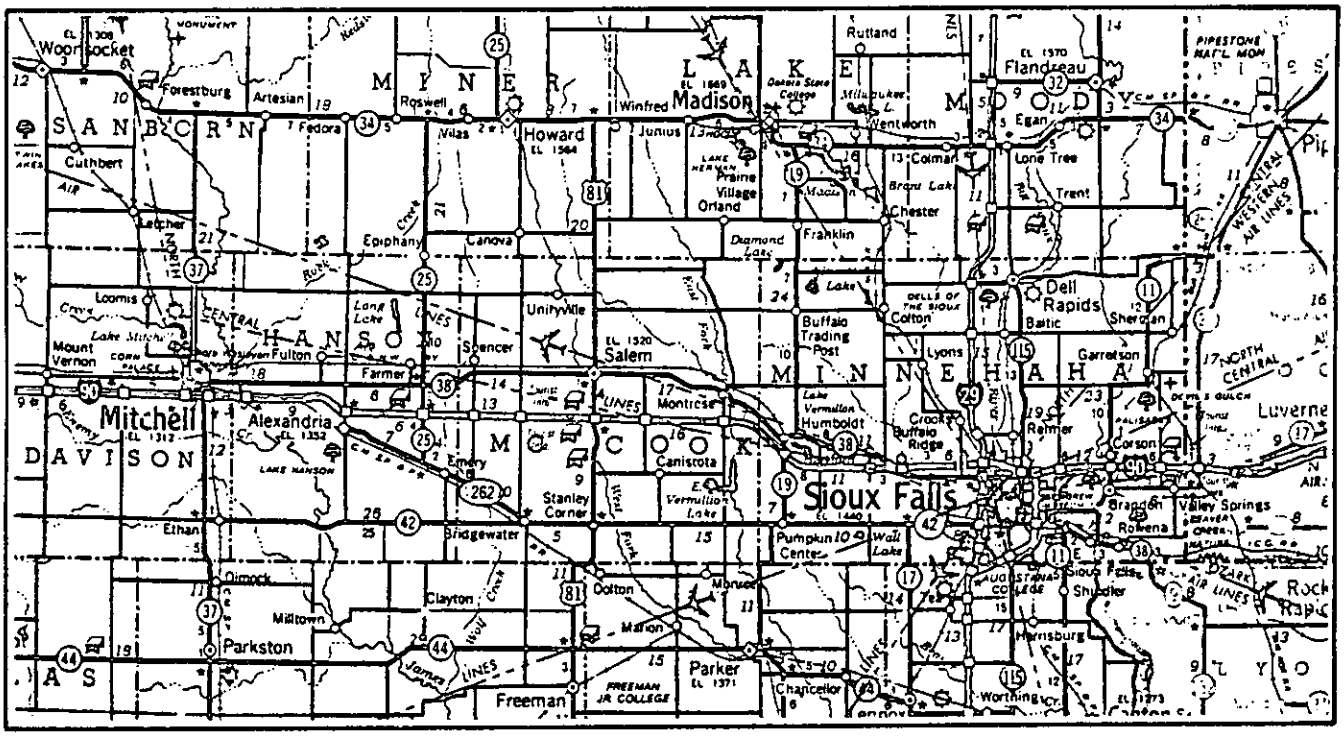
OTHER INFORMATION

This line, along with BN01, serves as the connecting line for Burlington Northern originating and terminating traffic in southeastern South Dakota and the corridor for West Coast connections to the Sioux Falls area.

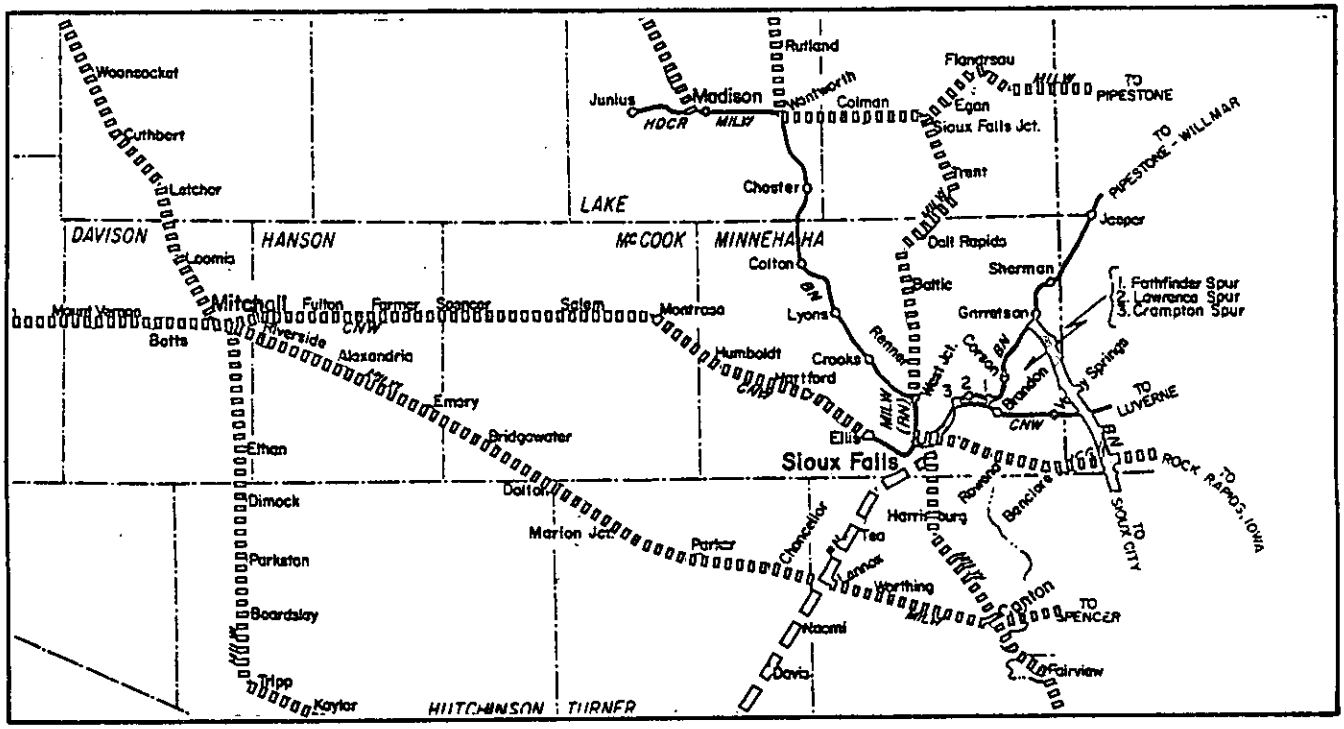
The South Dakota Rail Line inventory Study found that very significant impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT BN02
GARRETSON, SD TO SIOUX CITY, IA

RAILROAD-HIGHWAY LOCATION MAP

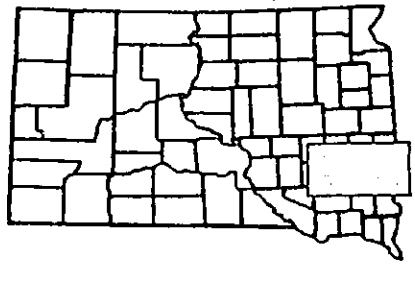


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - BN03

GARRETSON TO SIOUX FALLS
BURLINGTON NORTHERN - MINNESOTA DIVISION - 15th SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Branch
LINE LENGTH IN MILES - 18.5
MAXIMUM WEIGHT LIMIT - 220,000 lbs. (40 ft. or less in length)
263,000 lbs. (Over 40 ft. in length)
MAXIMUM SPEED LIMIT - 30 mph
SERVICE FREQUENCY - Twice daily
YARDS - Sioux Falls
CONNECTING LINES - Burlington Northern at Garretson and Sioux Falls; Chicago & North Western, and former Milwaukee Road and Illinois Central Gulf lines at Sioux Falls.
HIGHWAYS - SD 11 serves Garretson and Corson; I 90, I 29, SD 38, and SD 42 serve Sioux Falls.
RAIL WEIGHT - 90 lbs. except for 2 miles of 112 lbs. near Garretson.
MAXIMUM GRADE - .64%
MAXIMUM CURVE - 3°30' (7°30' at Sioux Falls)
BALLAST - N/A
BRIDGES AND TRESTLES - N/A

STATION LOCATIONS

STATIONS	MILES
Garretson	0.0
Corson	8.2
Pathfinder Spur	12.3
Lawrence Spur	13.7
Crampton Spur	15.2
Sioux Falls	18.5

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	1.01 MGT	1.19 MGT
TRAFFIC DIRECTION -	N/A	21% Orig./79% Term. (1977)

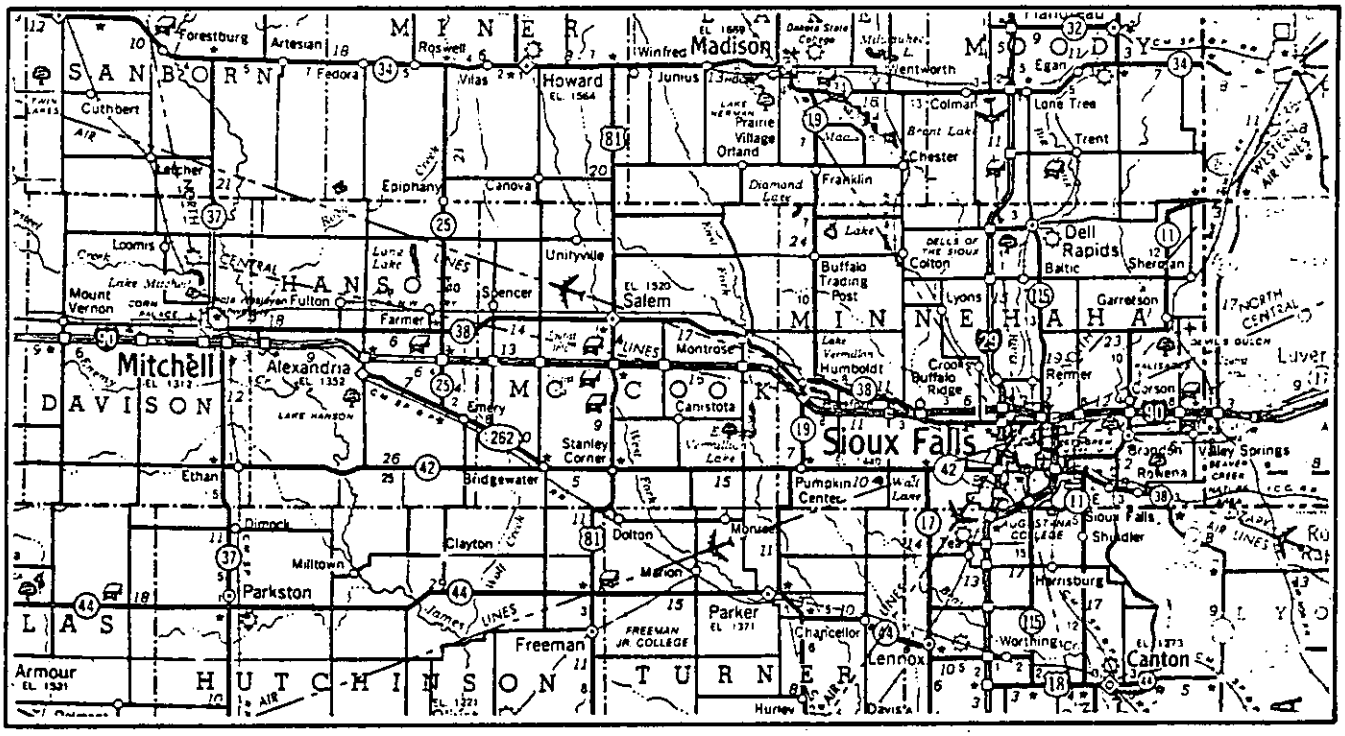
COMMODITIES - Forwarded food products; received food products, lumber products, petroleum products, and stone, clay, and glass. This segment also serves as an overhead route for agricultural products originating in South Dakota.

OTHER INFORMATION

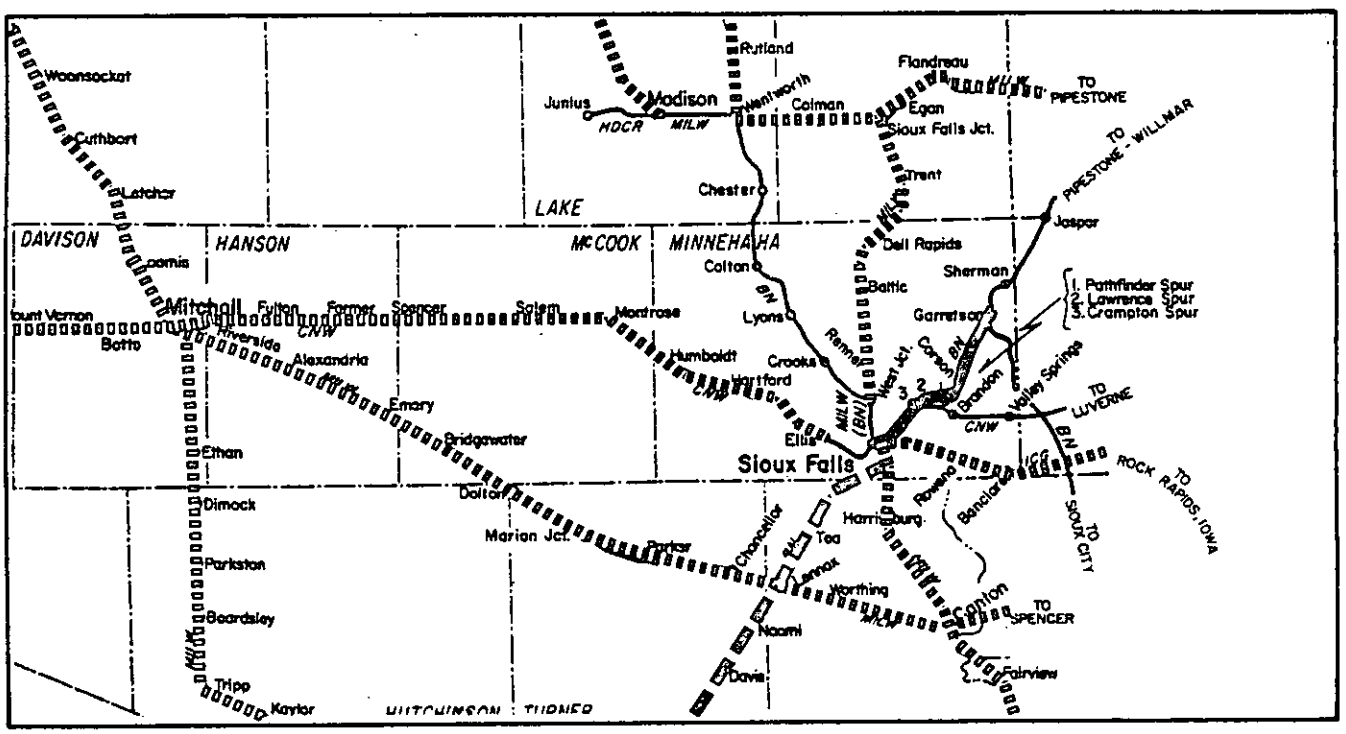
The South Dakota Rail Line Inventory Study found that very significant impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT BN03
GARRETSON TO SIOUX FALLS

RAILROAD-HIGHWAY LOCATION MAP

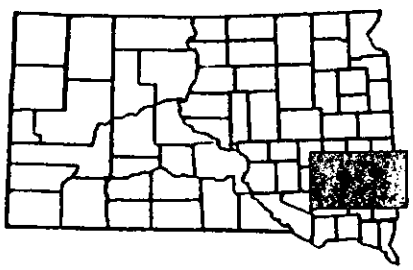


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - BN04

SIOUX FALLS TO YANKTON
BURLINGTON NORTHERN - MINNESOTA DIVISION - 15th SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 1: Potentially Subject to Abandonment Within 3 Years.
TYPE OF LINE - Branch LINE LENGTH IN MILES - 63.1
MAXIMUM WEIGHT LIMIT - 220,000 lbs. MAXIMUM SPEED LIMIT - 25 mph
SERVICE FREQUENCY - Weekly
YARDS - Sioux Falls
CONNECTING LINES - Former Milwaukee Road lines at Sioux Falls, Lennox and Yankton, Burlington Northern at Sioux Falls, Chicago & North Western at Sioux Falls, and former Illinois Central Gulf line at Sioux Falls.
HIGHWAYS - Sioux Falls is served by I 90 and I 29, Lennox by SD 44 and SD 17, Davis by US 18, Viborg by SD 19, Irene by SD 46, Yankton by US 81 and SD 50 and the other stations are served by hard surfaced local roads.
RAIL WEIGHT - 56 lbs., except for 1 mile of 75 lbs. and 3 1/2 miles of 77 1/2 lbs., near Sioux Falls.
MAXIMUM GRADE - .8% MAXIMUM CURVE - 4°
BALLAST - N/A
BRIDGES AND TRESTLES - N/A

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES
Sioux Falls	0.0	Viborg	33.6
Tea	10.9	Irene	41.0
Lennox	17.6	Volin	50.1
Naomi	20.1	Mission Hill	56.3
Davis	26.2	Yankton	63.1

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	0.10 MGT	0.07 MGT
TRAFFIC DIRECTION -	N/A	79% Orig./21% Term. (1977)

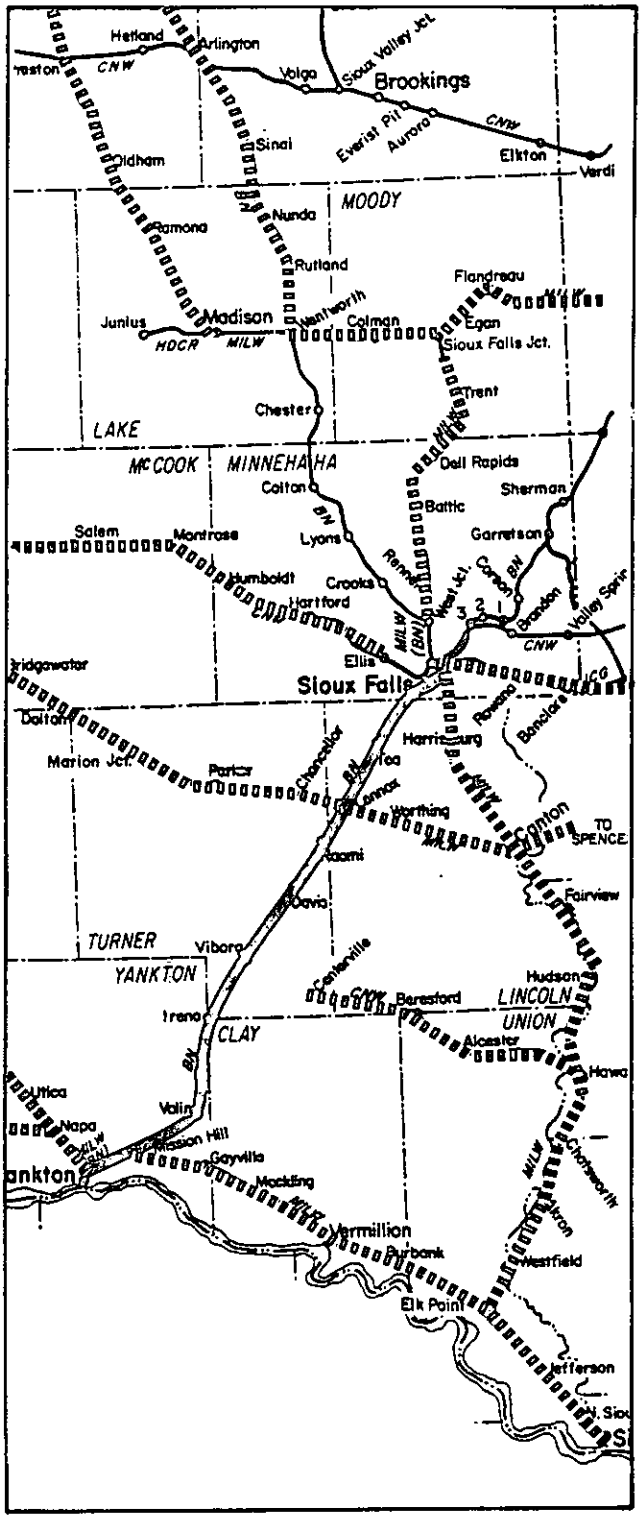
COMMODITIES - Forwarded grain and waste and scrap; received fertilizer and lumber products.

OTHER INFORMATION

The South Dakota Rail Line Inventory Study found that minimal impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT BN04
SIOUX FALLS TO YANKTON

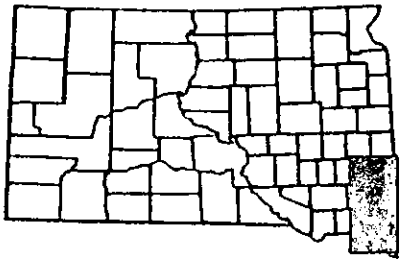
RAILROAD SEGMENT MAP



RAILROAD-HIGHWAY LOCATION MAP

KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - BN05

SIOUX FALLS TO WENTWORTH
BURLINGTON NORTHERN - MINNESOTA DIVISION - 16th SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Branch
LINE LENGTH IN MILES - 36.4; 1.7 miles between East Jct. and West Jct. is Milwaukee Road owned
MAXIMUM WEIGHT LIMIT - 220,000 lbs.
MAXIMUM SPEED LIMIT - 25 mph
SERVICE FREQUENCY - Weekly
YARDS - Sioux Falls
CONNECTING LINES - Burlington Northern at Sioux Falls, Chicago & North Western at Sioux Falls, former Milwaukee Road lines at Sioux Falls, Wentworth and West Jct., and former Illinois Central Gulf line at Sioux Falls.
HIGHWAYS - Sioux Falls is served by I 29 and I 90, and the remaining stations by local hard surfaced roads.
RAIL WEIGHT - 60 lbs. except for 3 miles of 90 lbs. near Sioux Falls.
MAXIMUM GRADE - 2%
MAXIMUM CURVE - 5°
BALLAST - N/A
BRIDGES AND TRESTLES - N/A

STATION LOCATIONS

STATIONS	MILES
Sioux Falls	0.0
East Jct.	1.4
West Jct.	3.1
Crooks	9.8
Lyons	15.4
Colton	24.8
Chester	28.8
Wentworth	36.4

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	0.08 MGT	0.06 MGT
TRAFFIC DIRECTION -	N/A	78% Orig./22% Term. (1977)

COMMODITIES - Forwarded grain and food products; received fertilizer.

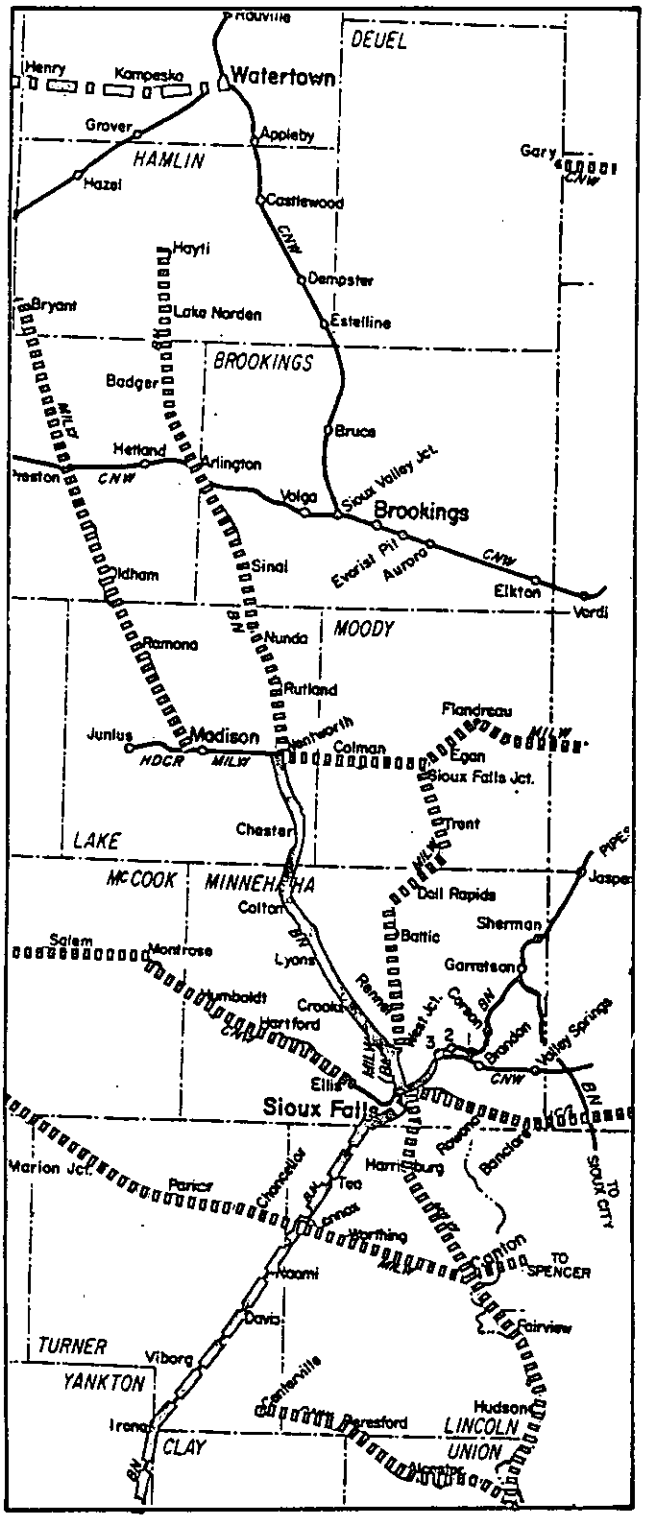
OTHER INFORMATION

The Burlington Northern operates between Wentworth and Madison on the former Milwaukee Road line as part of its purchase plan for portions of abandoned Milwaukee Road lines.

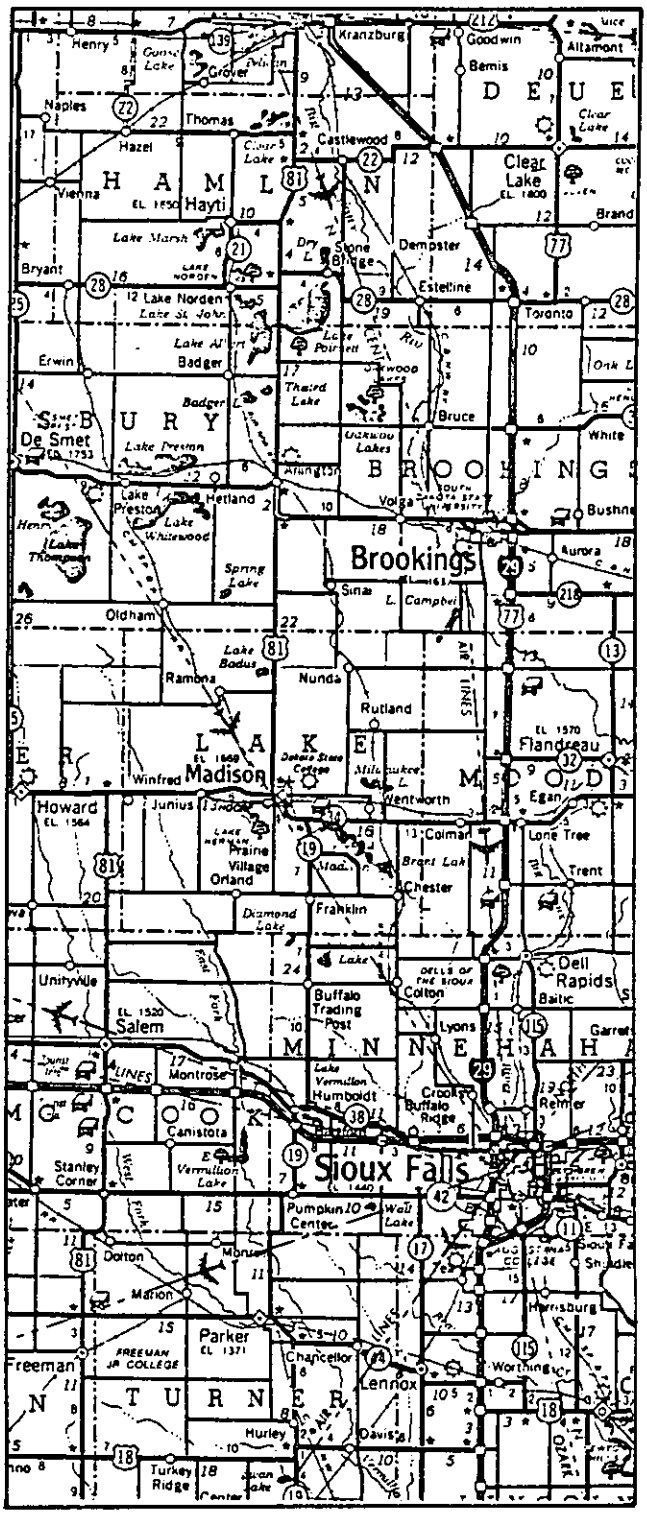
The South Dakota Rail Line Inventory Study found that minimal impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT BN05
SIOUX FALLS TO WENTWORTH

RAILROAD SEGMENT MAP

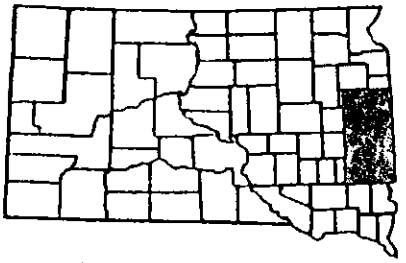


RAILROAD-HIGHWAY LOCATION MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - BN06

BENSON, MN TO WATERTOWN, SD
BURLINGTON NORTHERN-MINNESOTA DIVISION-12TH SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Branch LINE LENGTH IN MILES - 92.0 total; 45.1 in SD
MAXIMUM WEIGHT LIMIT - 220,000 lbs.(40 ft or less in length)
263,000 lbs.(Over 40 ft in length)

SERVICE FREQUENCY-Three trips per week. MAXIMUM SPEED LIMIT - 35 mph
YARDS - Watertown
CONNECTING LINES - Chicago & North Western at Watertown, Burlington Northern continues on to Huron.

HIGHWAYS - Stockholm and South Shore are served by SD 20, Watertown is served by I 29, US 212 and US 81 and the other stations are served by local hard surfaced roads.

RAIL WEIGHT - 75 lbs.
MAXIMUM GRADE - .81% MAXIMUM CURVE - 3° 06'
BALLAST - N/A

BRIDGES AND TRESTLES - N/A

STATION LOCATIONS

STATIONS	MILES
Benson, MN	0.0
SD Border	46.9
Albee	51.7
LaBolt	58.0
Stockholm	65.5
South Shore	72.8
Rauville	86.0
Watertown	92.0

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	0.57 MGT	0.74 MGT
TRAFFIC DIRECTION -	N/A	86% Orig./14% Term.(1977)

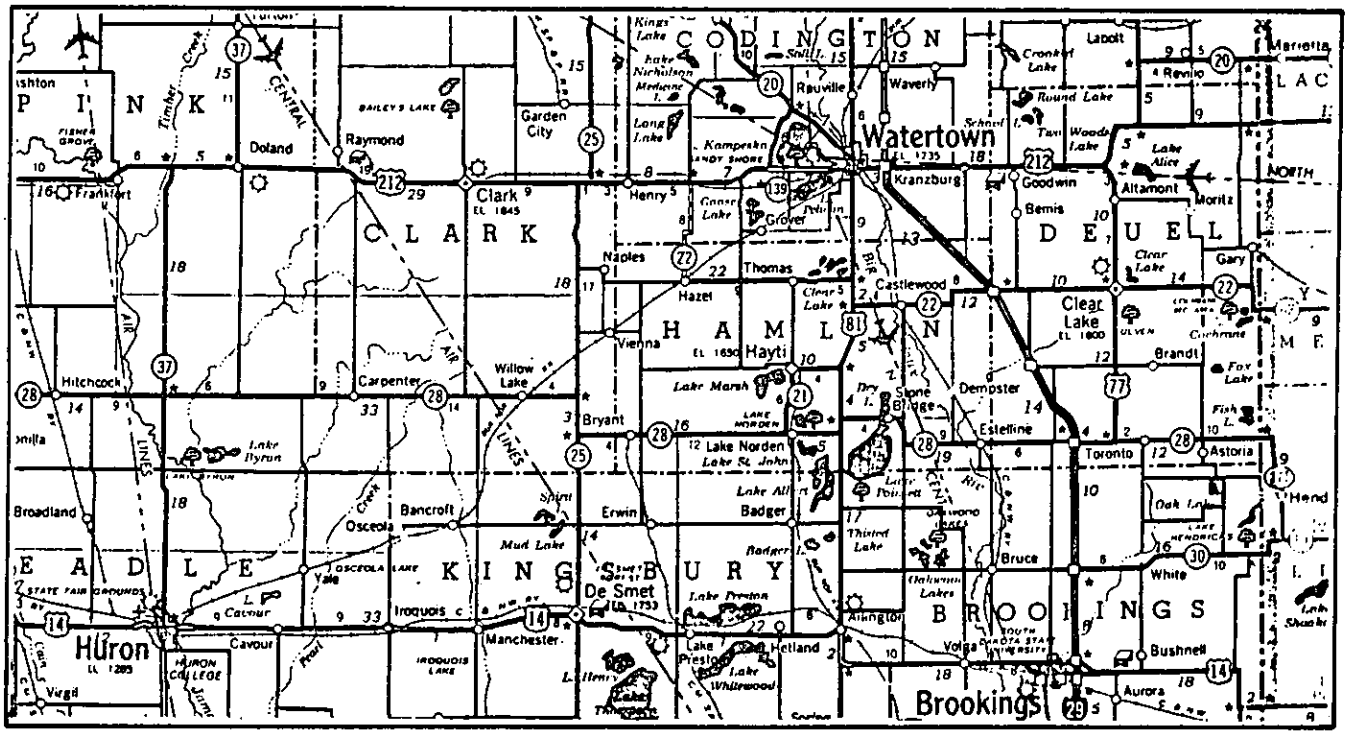
COMMODITIES - Forwarded grain, food products, and non-metallic minerals; received fertilizer, lumber products, and farm machinery.

OTHER INFORMATION

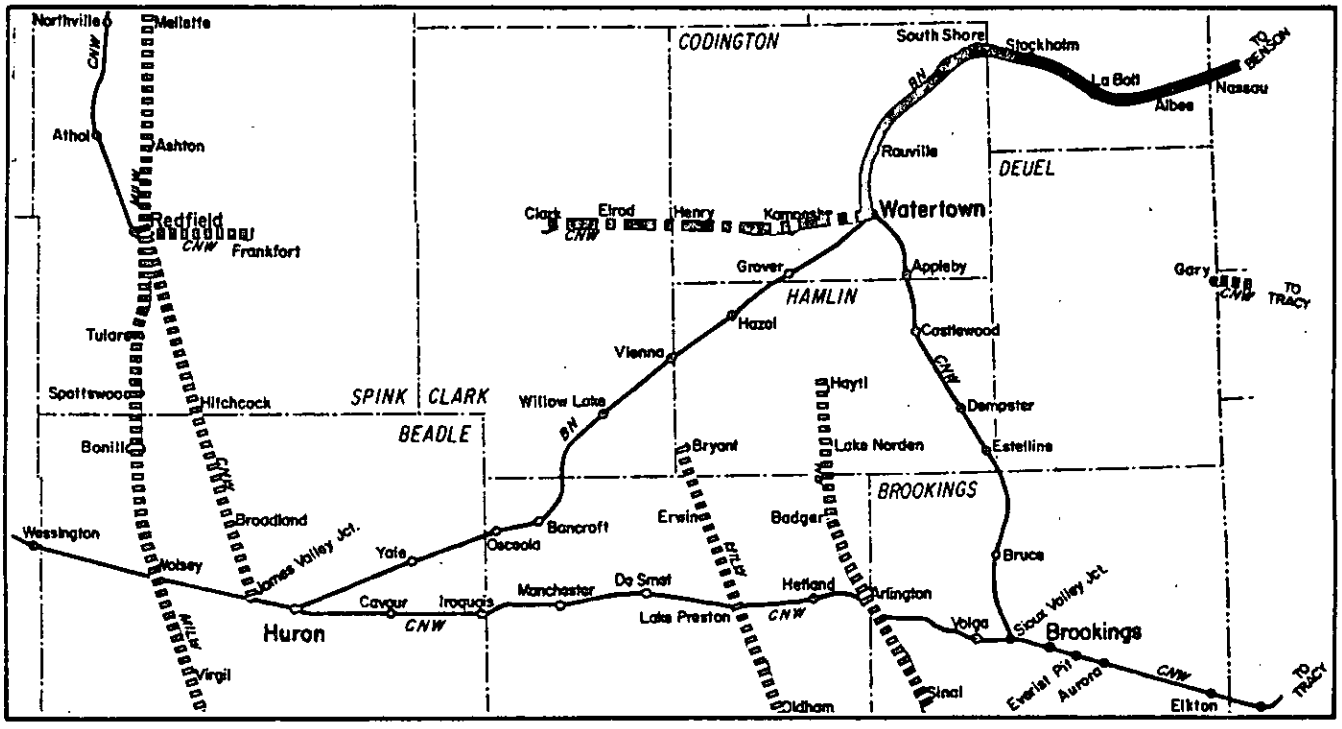
The South Dakota Rail Line Inventory Study found that limited impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT BN06
BENSON, MN TO WATERTOWN, SD

RAILROAD-HIGHWAY LOCATION MAP

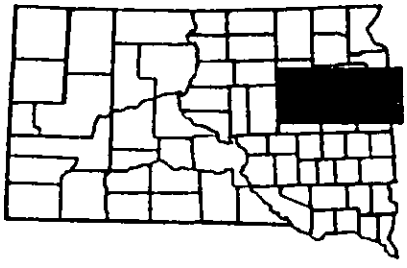


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - BN07

WATERTOWN TO HURON
BURLINGTON NORTHERN-MINNESOTA DIVISION-12TH SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Branch LINE LENGTH IN MILES - 69.8
MAXIMUM WEIGHT LIMIT - 220,000 lbs. (40 ft or less in length)
263,00 lbs. (over 40 ft in length)

SERVICE FREQUENCY - Two trips per week. MAXIMUM SPEED LIMIT - 35 mph

YARDS - N/A
CONNECTING LINES - The Chicago & North Western connects at Huron and Watertown and the Burlington Northern at Watertown.

HIGHWAYS - Watertown is served by I 29, US 212 and US 81, Hazel is served by SD 22, Willow Lake by SD 28, Huron by US 14 and SD 37, and the other stations are served by hard surfaced local roads.

RAIL WEIGHT - 75 lbs.
MAXIMUM GRADE - .60% MAXIMUM CURVE - 3°
BALLAST - N/A

BRIDGES AND TRESTLES - N/A

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES
Watertown	0.0	Bancroft	44.1
Grover	9.9	Osceola	48.5
Hazel	16.2	Yale	56.6
Vienna	23.1	Huron	69.8
Willow Lake	32.0		

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	0.23 MGT	0.19 MGT
TRAFFIC DIRECTION -	N/A	47% Orig./53% Term.(1977)

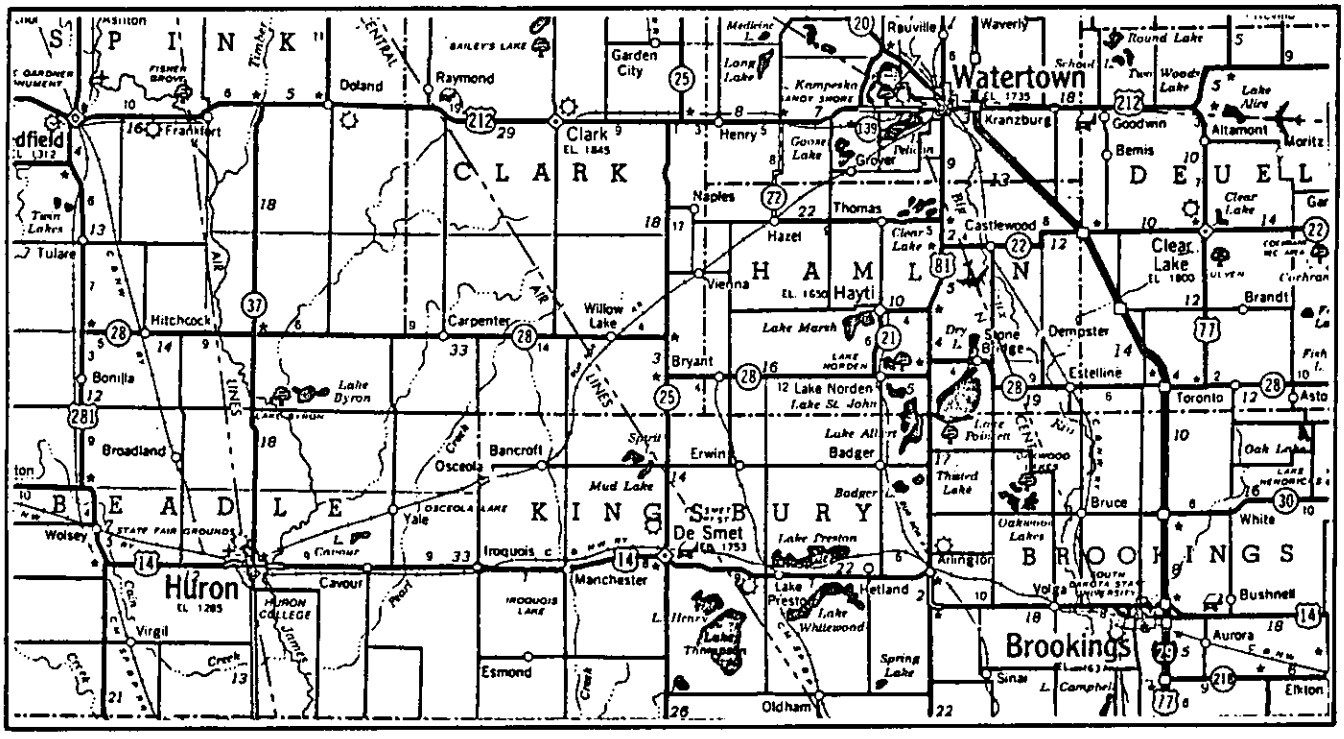
COMMODITIES - Forwarded grain and food products; received food products and non-metallic materials, lumber products, petroleum and coal products, and fertilizer.

OTHER INFORMATION

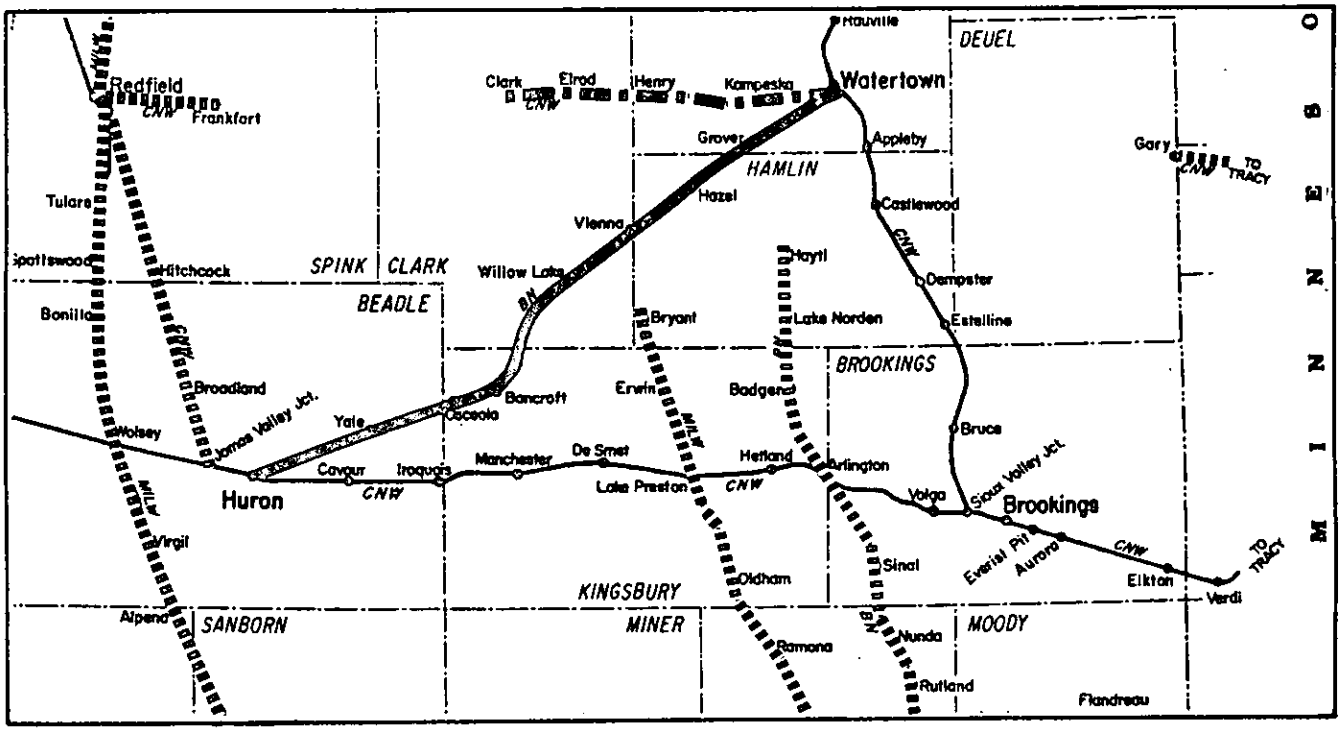
The South Dakota Rail Line Inventory Study found that limited impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT BN07
WATERTOWN TO HURON

RAILROAD-HIGHWAY LOCATION MAP

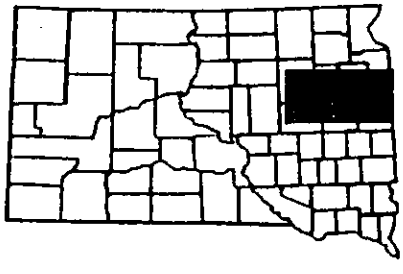


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - BN08

GENESEO JCT., ND TO ABERDEEN, SD
BURLINGTON NORTHERN-MINNESOTA DIVISION-14TH SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Branch
LINE LENGTH IN MILES - 76.5 total; 53.6 in SD
MAXIMUM WEIGHT LIMIT - 220,000 lbs. (40 ft or less in length)
263,000 lbs. (over 40 ft)
SERVICE FREQUENCY - Twice weekly
MAXIMUM SPEED LIMIT - 35 mph
YARDS - N/A
CONNECTING LINES - Milwaukee Road in Aberdeen intersects with former Milwaukee Road near Britton, and Chicago & North Western in Aberdeen.
HIGHWAYS - Aberdeen is served by US 12 and US 281 and the other stations are served by hard surfaced local roads.

RAIL WEIGHT - 77-1/2 lbs., 90 lbs. and 110 lbs.
MAXIMUM GRADE - .60%
MAXIMUM CURVE - 3°
BALLAST - Gravel

BRIDGES AND TRESTLES - N/A

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES
Geneseo Jct, ND	0.0	Amherst, SD	42.4
Geneseo, ND	0.9	Claremont, SD	46.8
Cayuga, ND	6.1	Huffton, SD	54.1
Rutland, ND	12.2	Putney, SD	59.6
Havana, ND	21.6	Aberdeen, SD	76.5
Kidder, SD	28.1		

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	0.19 MGT	0.23 MGT
TRAFFIC DIRECTION -	N/A	26% Orig./74% Term.(1977)

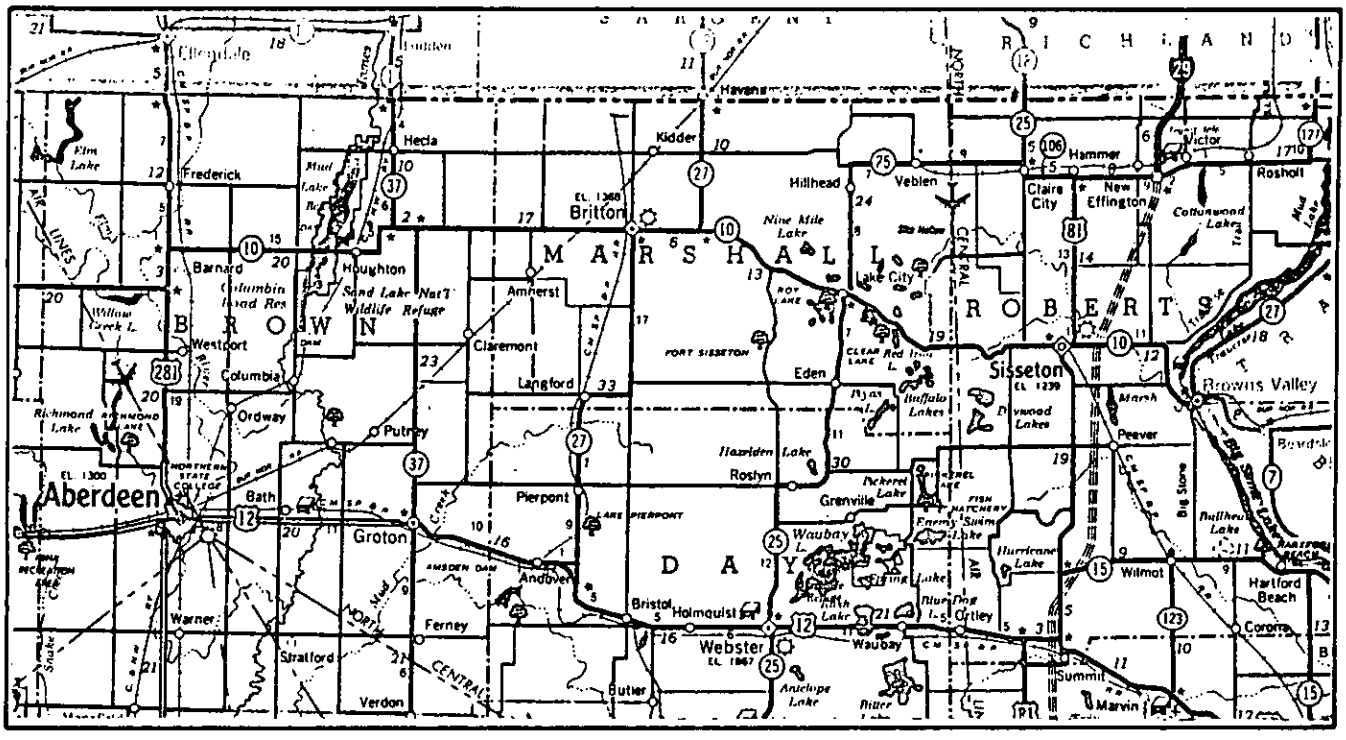
COMMODITIES - Forwarded grain and lumber products; received coal, lumber products, and petroleum products.

OTHER INFORMATION

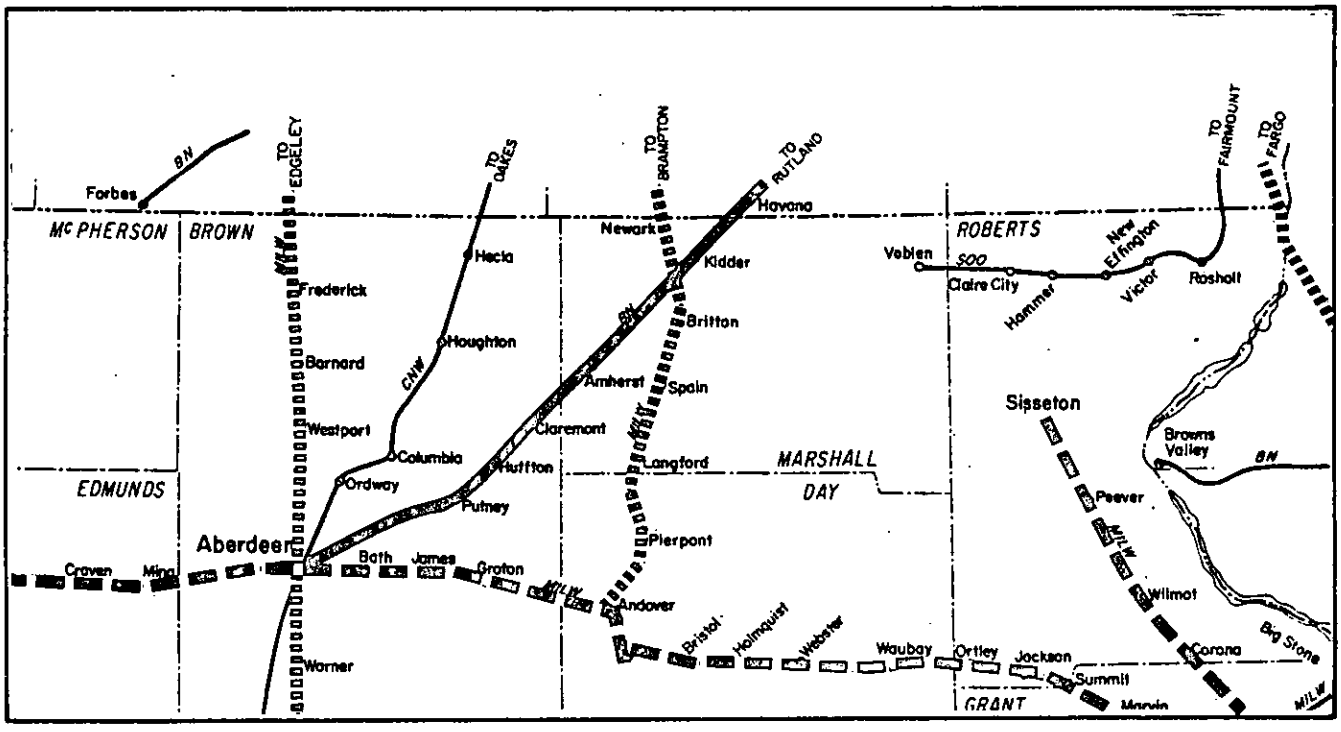
The South Dakota Rail Line Inventory Study found that minimal impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT BN08
GENESEO JCT., ND TO ABERDEEN, SD

RAILROAD-HIGHWAY LOCATION MAP

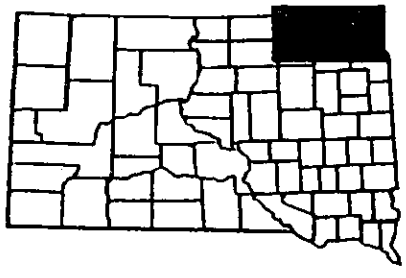


RAILROAD SEGMENT MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - BN09

ALLIANCE, NE TO EDGEMONT, SD
BURLINGTON NORTHERN-ALLIANCE DIVISION-2ND SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Main
LINE LENGTH IN MILES - 110.6 total; 27.4 in SD
MAXIMUM WEIGHT LIMIT - 315,000 lbs.
MAXIMUM SPEED LIMIT - Centralized Traffic Control at 49 mph
SERVICE FREQUENCY - 42 times daily
YARDS - N/A
CONNECTING LINES - Burlington Northern at Edgemont.

HIGHWAYS - SD 71 serves Ardmore, SD 471 serves Rumford and Provo and US 18 serves Edgemont.

RAIL WEIGHT - 112 lbs. with some 132 lbs.
MAXIMUM GRADE - N/A
MAXIMUM CURVE - N/A
BALLAST - Rock

BRIDGES AND TRESTLES - N/A

STATION LOCATIONS

STATIONS	MILES
SD Border	0.0
Ardmore	1.6
Rumford	9.9
Provo	18.2
Edgemont	27.4

TRAFFIC CHARACTERISTICS

	1975	1979
TRAFFIC DENSITY -	28.98 MGT	84.46 MGT
TRAFFIC DIRECTION -	N/A	23% North/77% South
		Local Traffic Only - 79% Orig./ 21% Term.(1977)

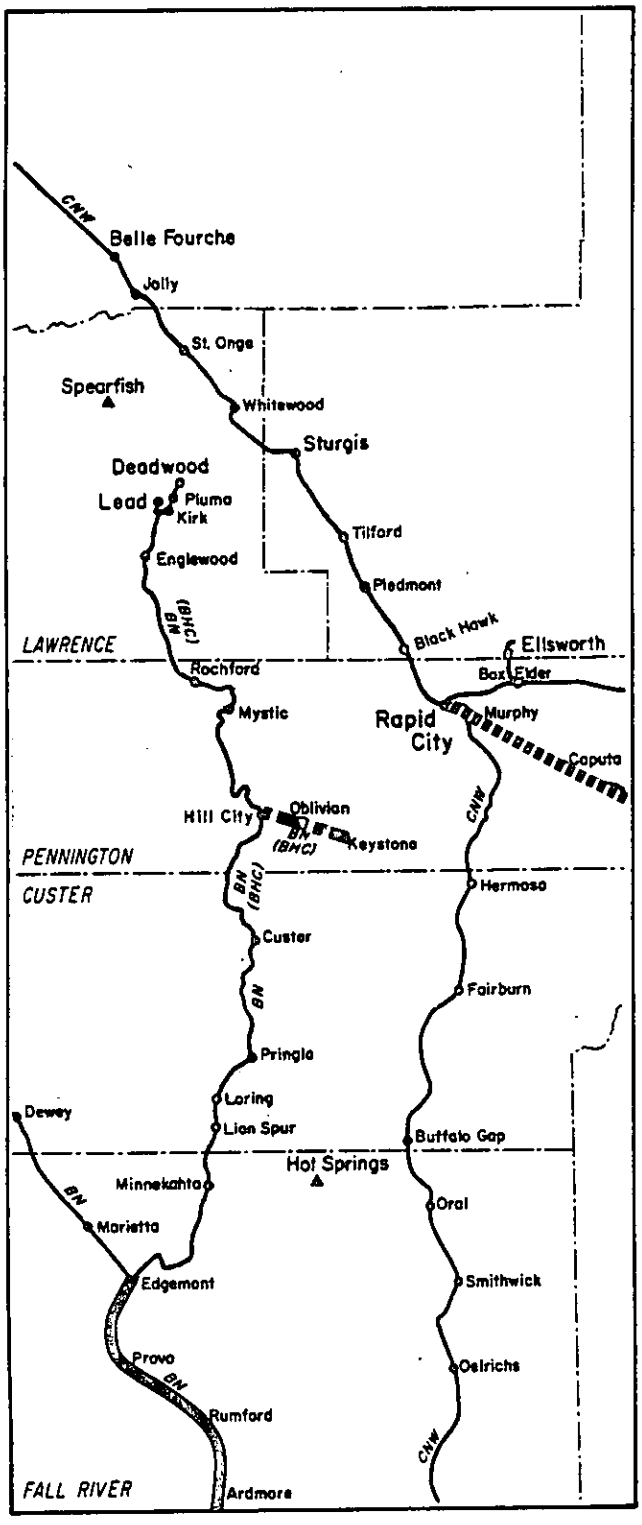
COMMODITIES - Primarily overhead coal moving in unit trains from the Gillette, Wyoming area to points east. Local traffic consists of forwarded non-metallic minerals and stone, clay and glass; received coal and miscellaneous freight.

OTHER INFORMATION

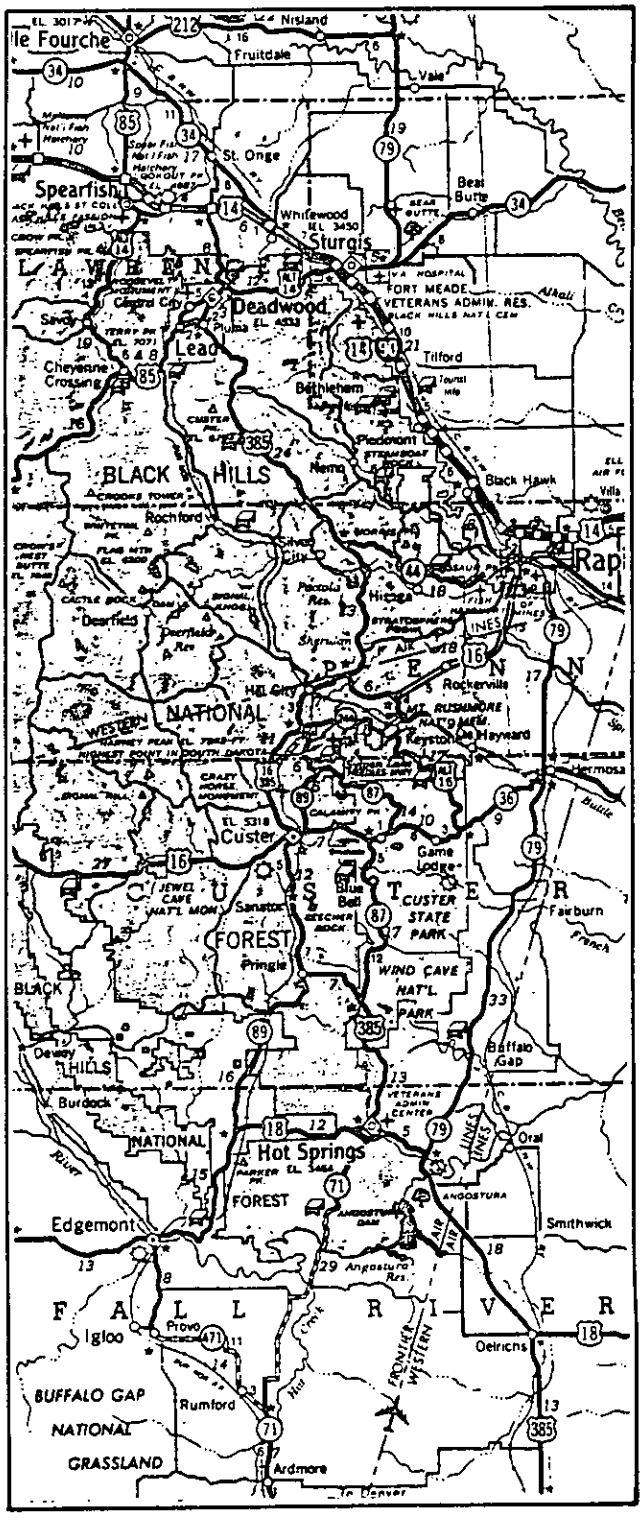
The South Dakota Rail Line Inventory Study found that very significant impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT BN09
ALLIANCE, NB TO EDGEMONT, SD

RAILROAD SEGMENT MAP

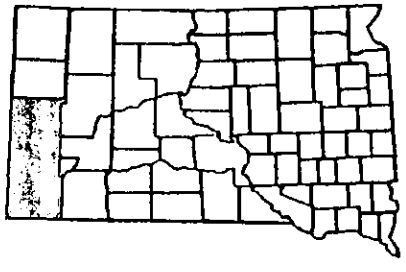


RAILROAD-HIGHWAY LOCATION MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - BN10

EDGEMONT, SD TO GILLETTE, WY
BURLINGTON NORTHERN-ALLIANCE DIVISION-3RD SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Main
LINE LENGTH IN MILES - 121.1 total; 21.4 in SD
MAXIMUM WEIGHT LIMIT - 315,000 lbs.
SERVICE FREQUENCY - 42 times daily
MAXIMUM SPEED LIMIT - Centralized Traffic Control at 49 mph
YARDS - N/A
CONNECTING LINES - Burlington Northern at Edgemont.

HIGHWAYS - Edgemont is served by US 18 and the other stations are served by local roads.

RAIL WEIGHT - 112 lbs. and 132 lbs.
MAXIMUM GRADE - .80%
MAXIMUM CURVE - 2°03'
BALLAST - Rock

BRIDGES AND TRESTLES - 10 bridges

STATION LOCATIONS

STATIONS	MILES
Edgemont	0.0
Marietta	8.2
Dewey	19.6
SD Border	21.4

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	28.68 MGT	79.64 MGT
TRAFFIC DIRECTION -	N/A	23% North/77% South

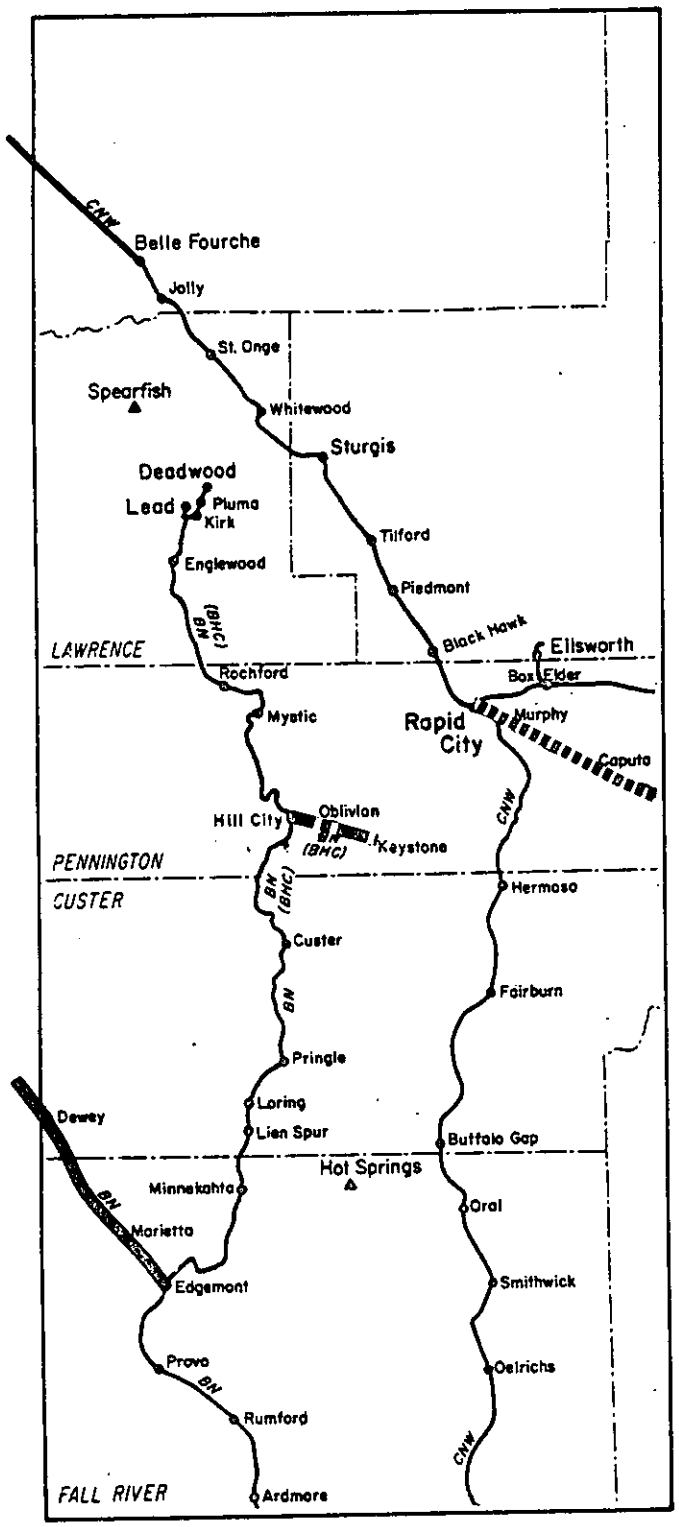
COMMODITIES - Primarily overhead coal moving in unit trains from the Gillette, Wyoming area to points east.

OTHER INFORMATION

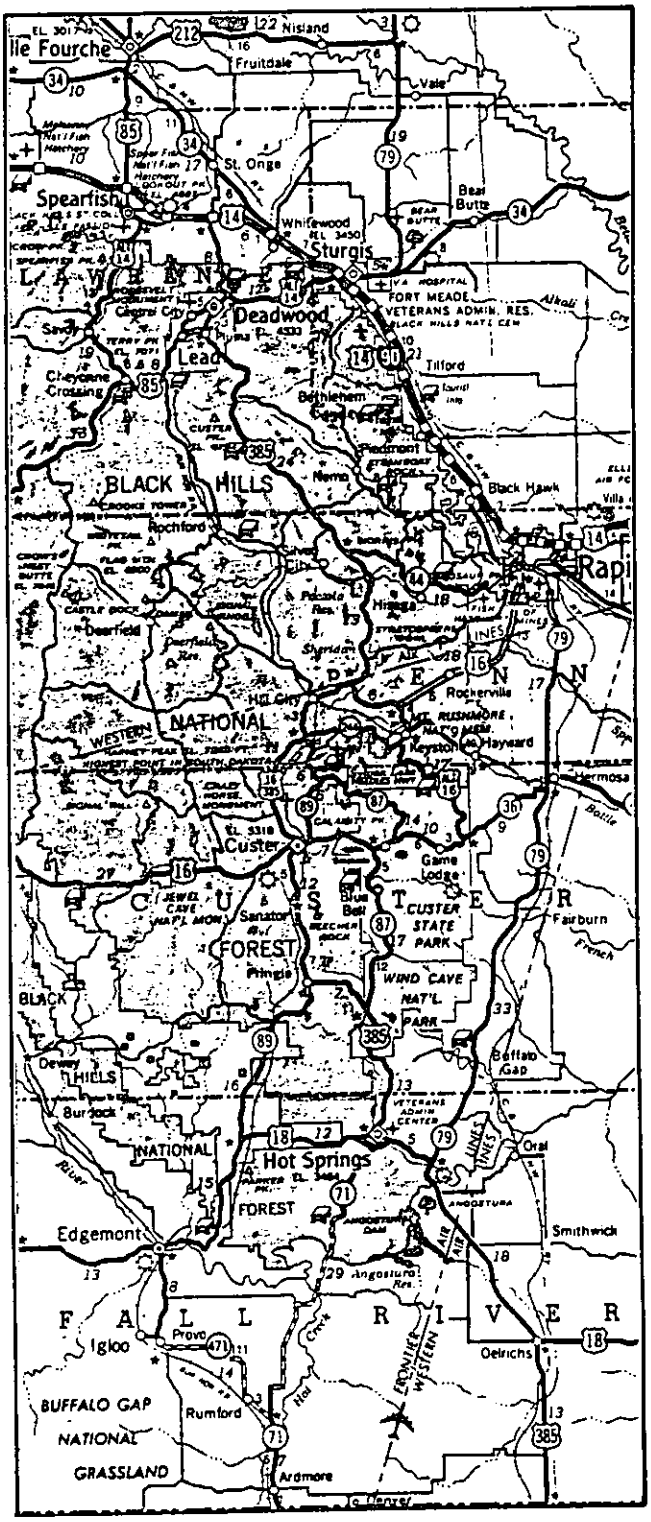
The South Dakota Rail Line Inventory Study found that very significant impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT BN10
EDGEMONT, SD TO GILLETTE, WY

RAILROAD SEGMENT MAP

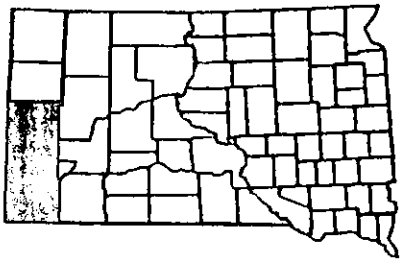


RAILROAD-HIGHWAY LOCATION MAP



KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - BN11

EDGEMONT TO DEADWOOD
BURLINGTON NORTHERN-ALLIANCE DIVISION-4TH SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Branch LINE LENGTH IN MILES - 106.9
MAXIMUM WEIGHT LIMIT - 263,000 lbs. MAXIMUM SPEED LIMIT - 25 mph
SERVICE FREQUENCY - Three times per week.
YARDS - N/A
CONNECTING LINES - Burlington Northern main line at Edgemont and Burlington Northern branch lines at Hill City and Kirk.

HIGHWAYS - Edgemont is served by US 18 and SD 89, SD 89 serves stations from Edgemont to Custer, US 385 serves Hill City, Pluma and Deadwood are served by US 85 and US 385, and Rochford is served by a local hard surfaced road.

RAIL WEIGHT - 85 lbs. and 90 lbs.
MAXIMUM GRADE - 3% MAXIMUM CURVE - 16°08'
BALLAST - N/A

BRIDGES AND TRESTLES - N/A

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES
Edgemont	0.0	Hill City	60.4
Deadwood Jct.	0.6	Mystic	74.8
Minnekahta	16.0	Rochford	82.1
Lien Spur	22.1	Englewood	98.6
Loring	27.5	Kirk	102.9
Pringle	32.3	Pluma	105.1
Custer	44.5	Deadwood	106.9

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	0.55 MGT	0.84 MGT
TRAFFIC DIRECTION -	N/A	14% Orig./86% Term.(1977)

COMMODITIES - Forwarded lumber products, non-metallic minerals, and stone, clay, and glass; received coal.

OTHER INFORMATION

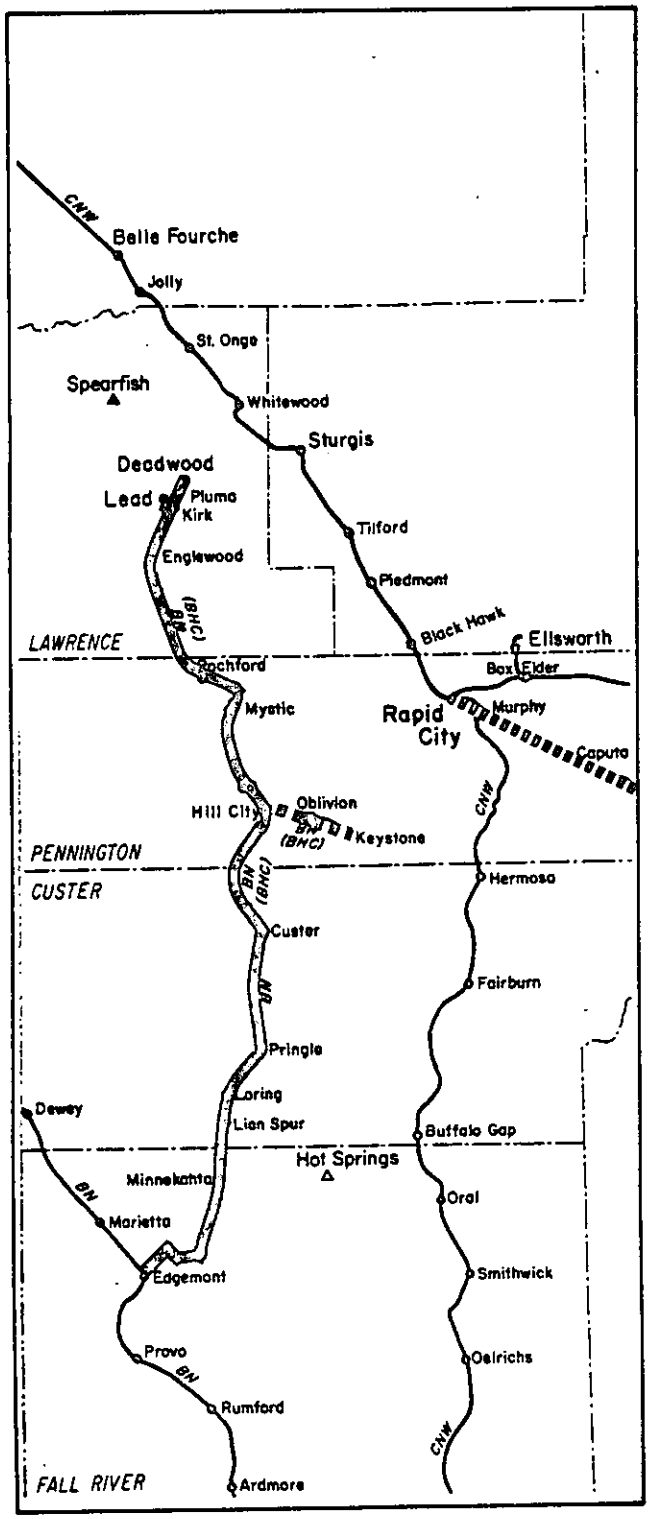
The Black Hills Central Railroad operates a steam excursion train over the Hill City to Keystone portion of this line through a trackage rights agreement with the Burlington Northern.

Received coal to the Kirk power plant is the predominant commodity moved on this line.

The South Dakota Rail Line Inventory Study found that limited impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT BN11
EDGEMONT TO DEADWOOD

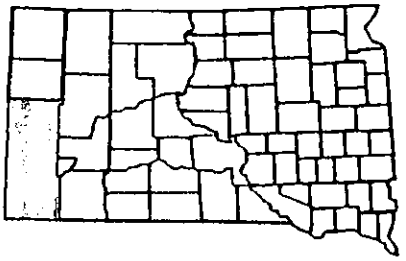
RAILROAD SEGMENT MAP



RAILROAD-HIGHWAY LOCATION MAP

KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - BN13

HILL CITY TO KEYSTONE
BURLINGTON NORTHERN-ALLIANCE DIVISION-5TH SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 3: Pending Abandonment Approval
TYPE OF LINE - Branch LINE LENGTH IN MILES - 8.8
MAXIMUM WEIGHT LIMIT - 220,000 lbs. (263,000 if cars are over 40 ft long)
SERVICE FREQUENCY - Irregular MAXIMUM SPEED LIMIT - 15 mph
YARDS - N/A
CONNECTING LINES - Burlington Northern at Hill City.

HIGHWAYS - Hill City is served by US 385 and Keystone served by Alt. US 16.

RAIL WEIGHT - 90 lbs.
MAXIMUM GRADE - 5% MAXIMUM CURVE - 16°08'
BALLAST - N/A

BRIDGES AND TRESTLES - N/A

STATION LOCATIONS

STATIONS	MILES
Hill City	0.0
Oblivion	4.3
Keystone	8.8

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	less than 0.01 MGT	less than 0.01 MGT
TRAFFIC DIRECTION -	N/A	100% Orig./0% Term.(1977)

COMMODITIES - Forwarded non-metallic minerals represents the only traffic on the line, amounting to a very small traffic volume.

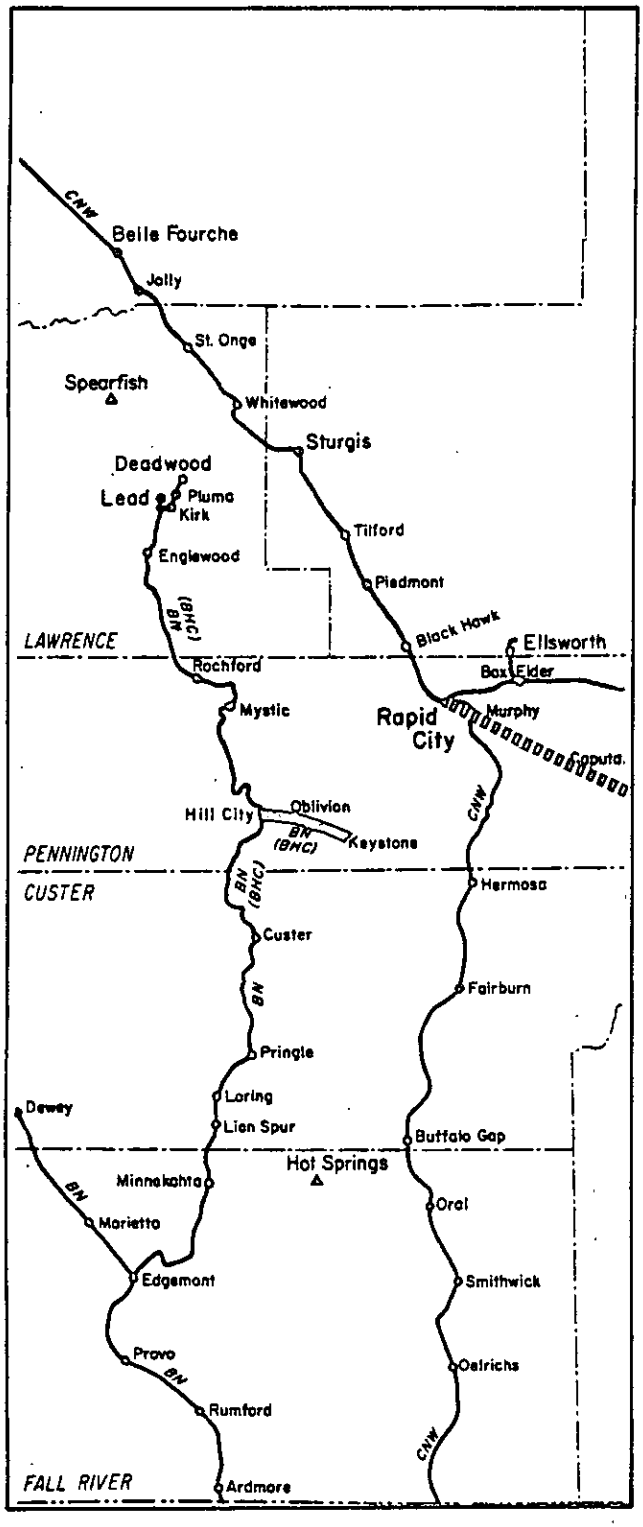
OTHER INFORMATION

There has been expressed interest by a local steam tourist railroad operator in acquisition if the line was abandoned, therefore service would be retained. The Black Hills Central operates several daily passenger trains over this route in the summer. The portion of this line from Hill City to Oblivion is dual guage and can accommodate narrow guage (3 ft) trains. The Black Hills Central operated narrow guage trains for several years beginning in the mid 1950s.

The South Dakota Rail Line Inventory Study found that minimal impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT BN13
HILL CITY TO KEYSTONE

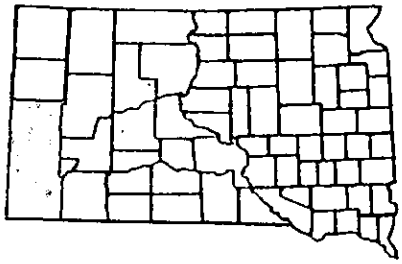
RAILROAD SEGMENT MAP



RAILROAD-HIGHWAY LOCATION MAP

KEY

- Study Segment
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - BN14

KIRK TO LEAD
BURLINGTON NORTHERN-ALLIANCE DIVISION-4TH SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Branch LINE LENGTH IN MILES - 3.2
MAXIMUM WEIGHT LIMIT - 220,000 lbs. MAXIMUM SPEED LIMIT - 15 mph
SERVICE FREQUENCY - Irregular
YARDS - N/A
CONNECTING LINES - Burlington Northern at Kirk.

HIGHWAYS - US 85 serves both stations.

RAIL WEIGHT - N/A
MAXIMUM GRADE - 4.6% MAXIMUM CURVE - 16°
BALLAST - N/A

BRIDGES AND TRESTLES - N/A

STATION LOCATIONS

STATIONS	MILES
Kirk	0.0
Lead	3.2

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	0.02 MGT	0.02 MGT
TRAFFIC DIRECTION -	N/A	2% Orig./98% Term.(1977)

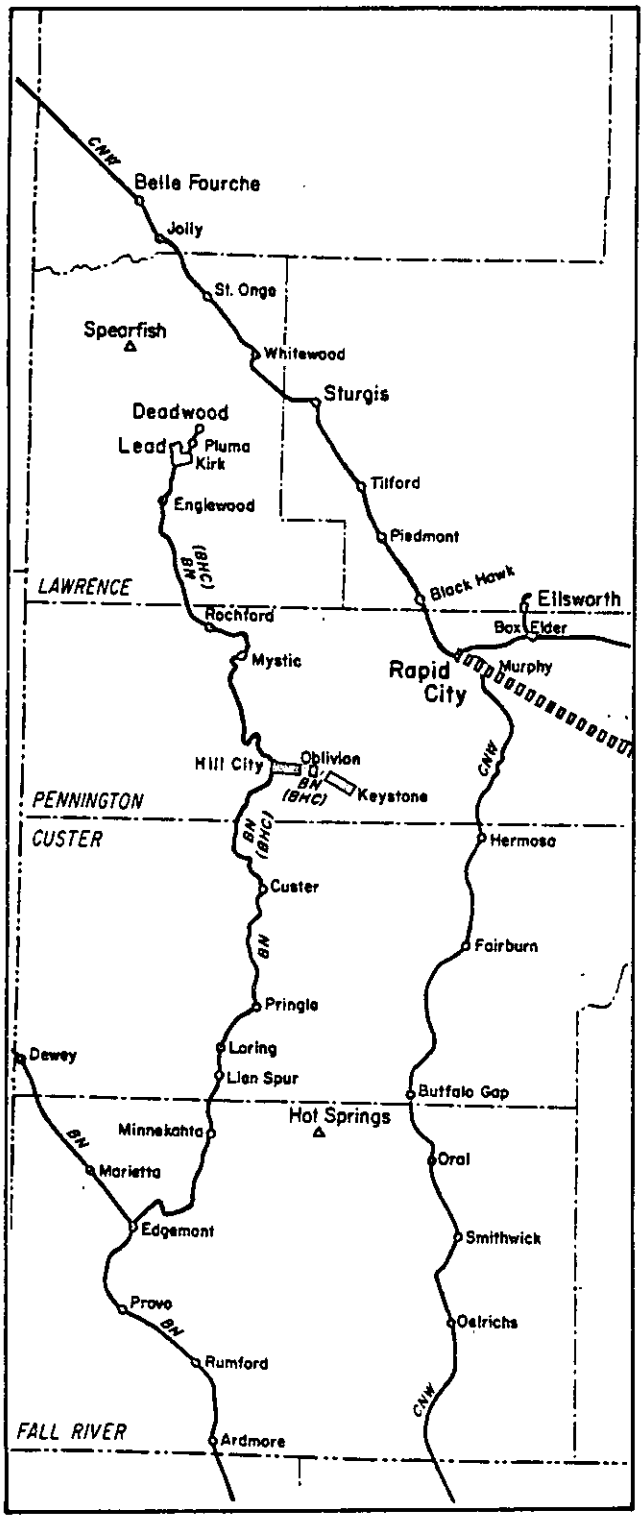
COMMODITIES - Primarily received non-metallic minerals, primary metals, and chemicals.

OTHER INFORMATION

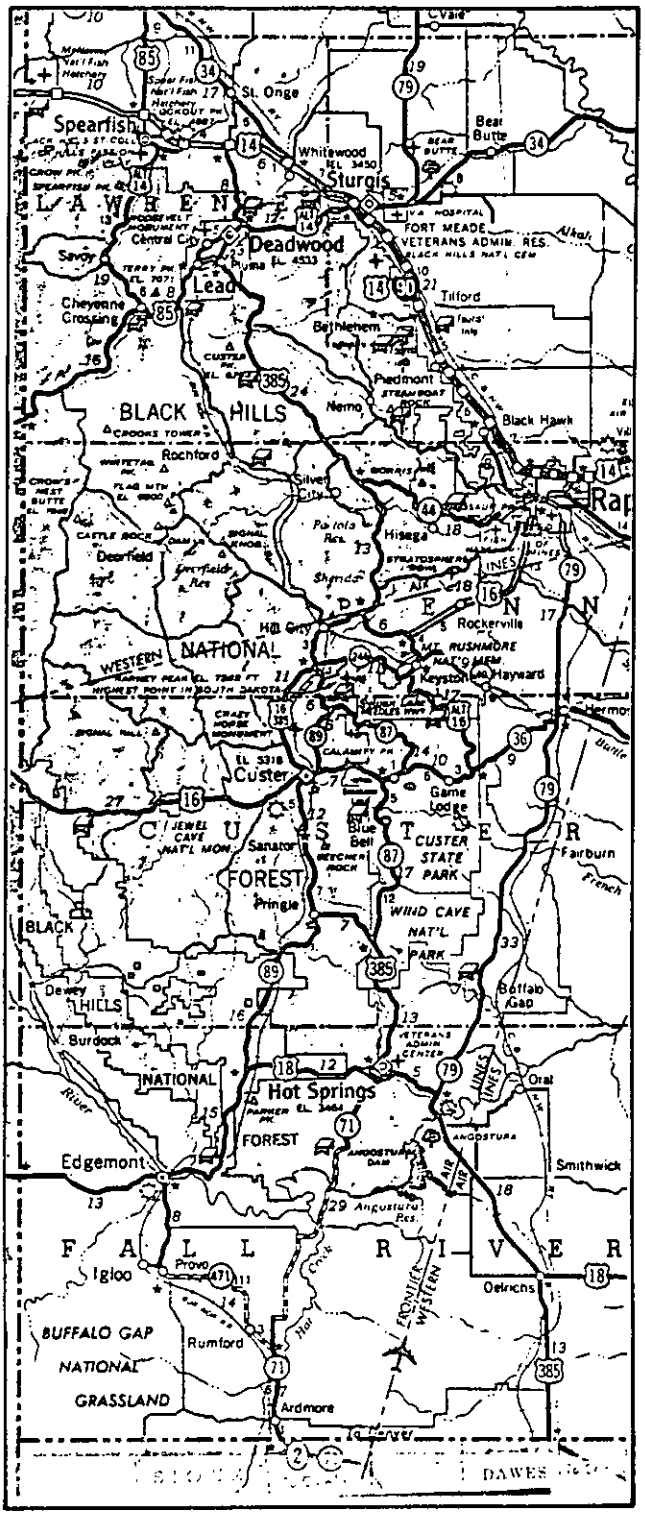
The South Dakota Rail Line Inventory Study found that minimal impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT BN14
KIRK TO LEAD

RAILROAD SEGMENT MAP



RAILROAD-HIGHWAY LOCATION MAP



KEY

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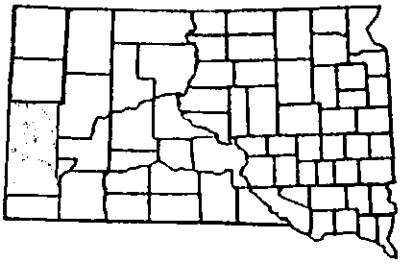
- All Other Lines



SOUTH DAKOTA SEGMENT - SL01

VEBLEN JCT., ND TO VEBLEN, SD
SOO LINE-WESTERN DIVISION-1ST SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 5: Continued Operation
TYPE OF LINE - Branch
LINE LENGTH IN MILES - 42.2 total; 33.5 in SD
MAXIMUM WEIGHT LIMIT - 263,000 lbs.
MAXIMUM SPEED LIMIT - 20 mph
SERVICE FREQUENCY - Weekly to Veblen, twice per week to Rosholt.
YARDS - None
CONNECTING LINES - Soo Line at Veblen Jct., ND.

HIGHWAYS - US 81 serves Rosholt, Victor, New Effington and Hammer, Claire City and Veblen are served by SD 25, ND 11 serves Veblen Jct., ND, and no major roads serve LaMars, ND

RAIL WEIGHT - 85 lbs. to Rosholt, remainder is 60 lbs.
MAXIMUM GRADE - .38%
MAXIMUM CURVE - 9° in North Dakota
BALLAST - Rock in 1978 and 1979.
4°30' in South Dakota

BRIDGES AND TRESTLES - N/A

STATION LOCATIONS

STATIONS	MILES
Veblen Jct., ND	0.0
LaMars, ND	6.8
Rosholt, SD	14.5
Victor, SD	19.5
New Effington, SD	24.0
Hammer, SD	29.2
Claire City, SD	33.1
Veblen, SD	42.2

TRAFFIC CHARACTERISTICS

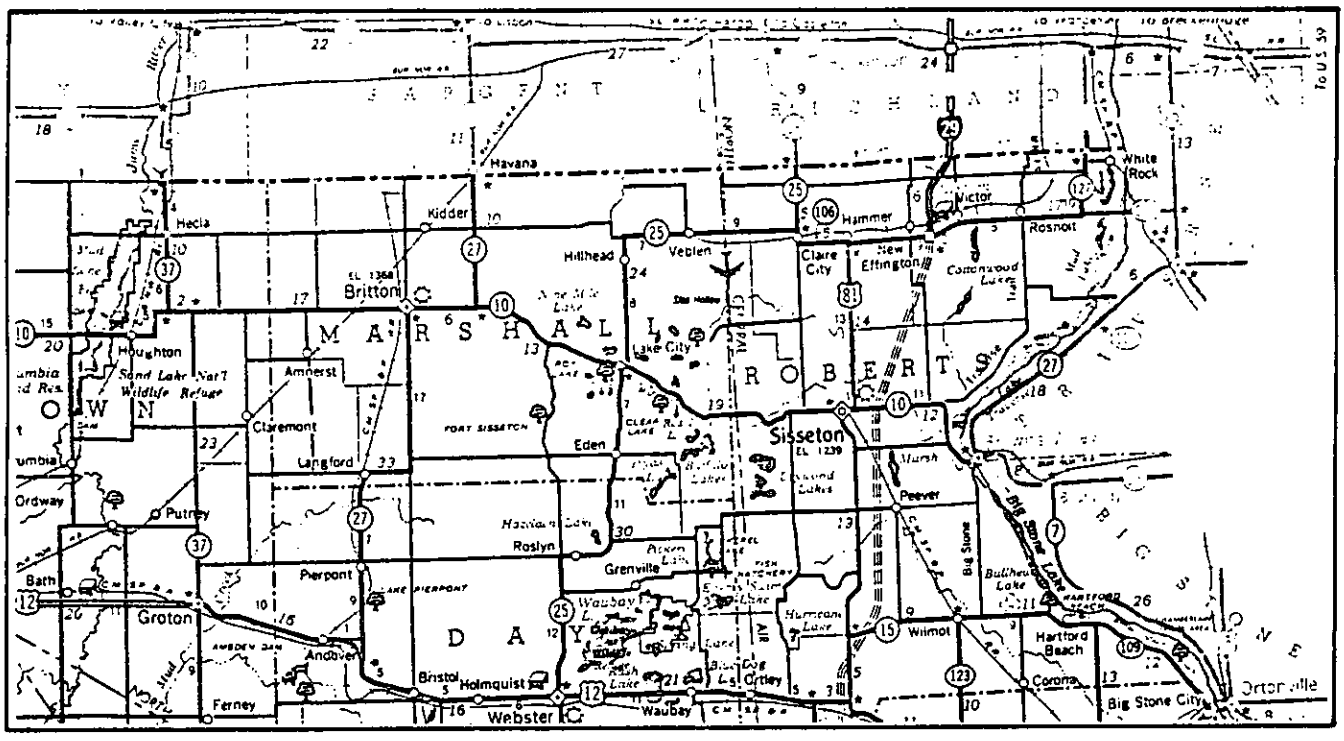
	1975	1979
TRAFFIC DENSITY -	0.15 MGT	0.20 MGT
TRAFFIC DIRECTION -	74% Orig./26% Term. (1974)	84% Orig./16% Term.(1977)
COMMODITIES - Forwarded grain; received fertilizer.		

OTHER INFORMATION

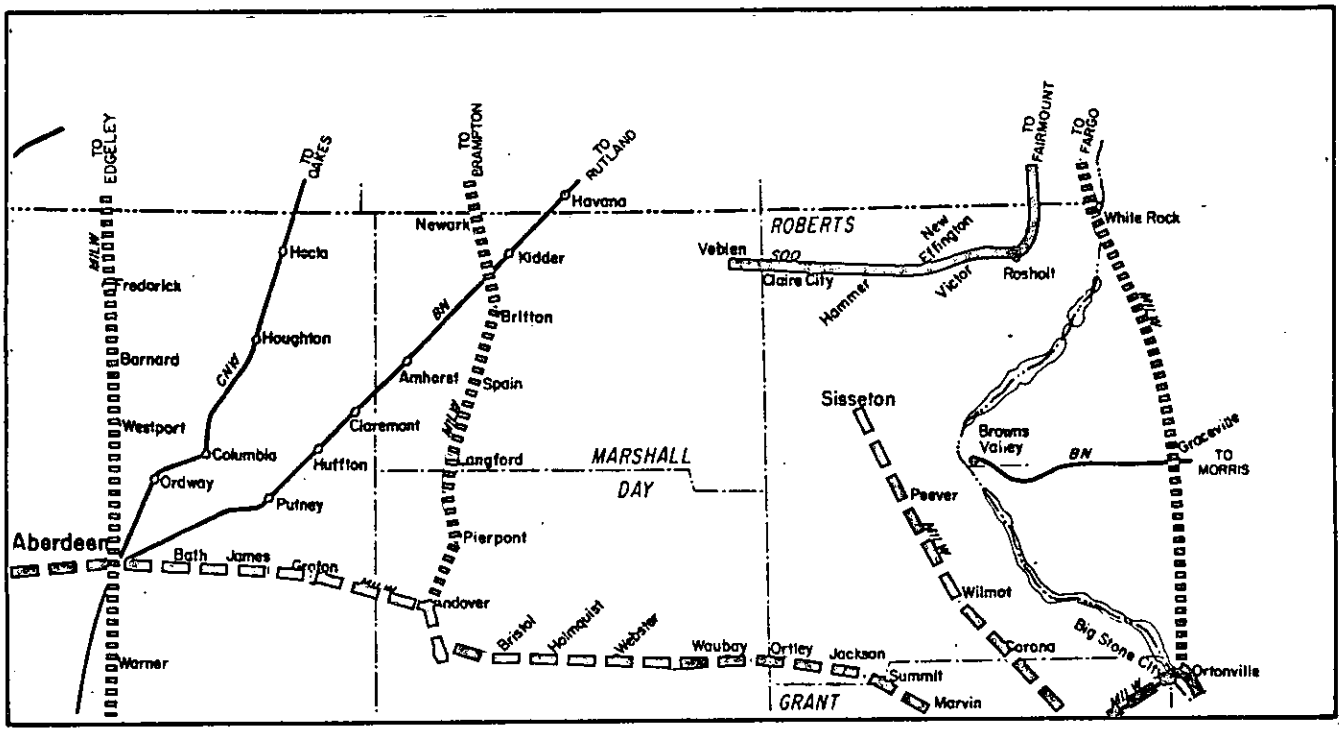
The South Dakota Rail Line Inventory Study found that minimal impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT SL01
VEBLEN JCT., ND TO VEBLEN, SD

RAILROAD-HIGHWAY LOCATION MAP



RAILROAD SEGMENT MAP



KEY

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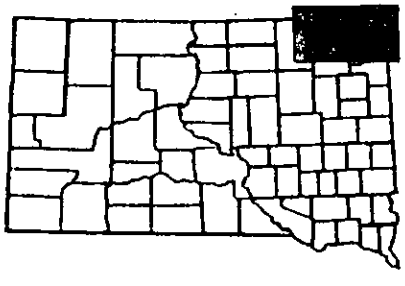
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - SL02

WISHEK, ND TO POLLOCK, SD
SOO LINE-WESTERN DIVISION-7TH SUBDIVISION

LINE DESCRIPTION

LINE STATUS - Category 2: Under Study by the Soo Line
TYPE OF LINE - Branch LINE LENGTH IN MILES - 69.9 total; 32.8 in SD
MAXIMUM WEIGHT LIMIT - 263,000 lbs.
SERVICE FREQUENCY - Weekly and more often if needed.
YARDS - Wishek, ND and Pollock, SD MAXIMUM SPEED LIMIT - 20 mph
CONNECTING LINES - Soo Line at Wishek, ND

HIGHWAYS - SD 10 serves Pollock, US 83 serves Herreid, SD 271 serves Artas, SD 11 serves Ashley, SD 13 serves Wishek, and local roads serve Danzig, Venturia and Madra.

RAIL WEIGHT - 60 lbs. with 2 miles at 80 lbs. at Pollock.
MAXIMUM GRADE - 0.46% MAXIMUM CURVE - 4° in North Dakota
BALLAST - Gravel 3° in South Dakota

BRIDGES AND TRESTLES - 5

STATION LOCATIONS

STATIONS	MILES	STATIONS	MILES
Wishek, ND	0.0	Madra, SD	37.7
Danzig, ND	10.5	Artas, SD	43.7
Ashley, ND	20.2	Herreid, SD	57.0
Venturia, ND	28.1	Pollock, SD	69.9

TRAFFIC CHARACTERISTICS 1975 1979

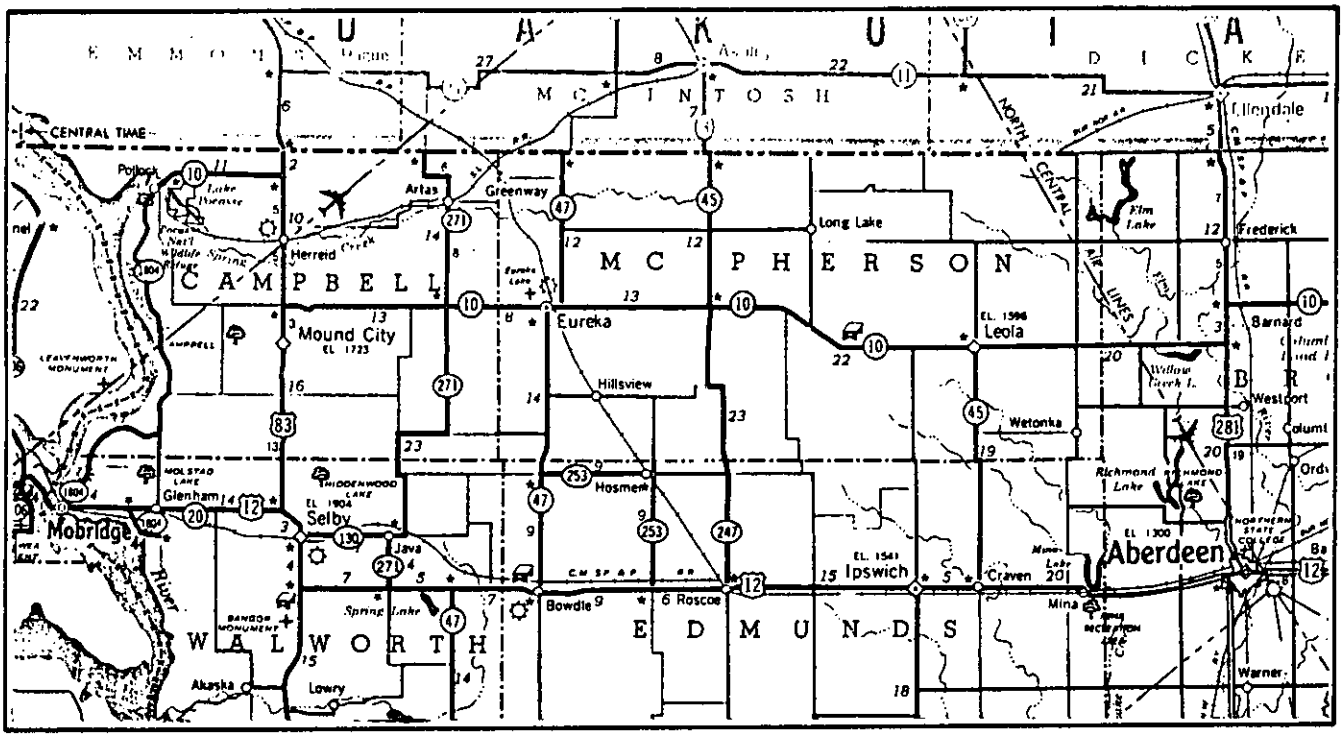
TRAFFIC DENSITY - .05 MGT 0.07 MGT
TRAFFIC DIRECTION - 64% Orig./36% Term.(1974) 87% Orig./13% Term.(1977)
COMMODITIES - Forwarded grain; received fertilizer.

OTHER INFORMATION

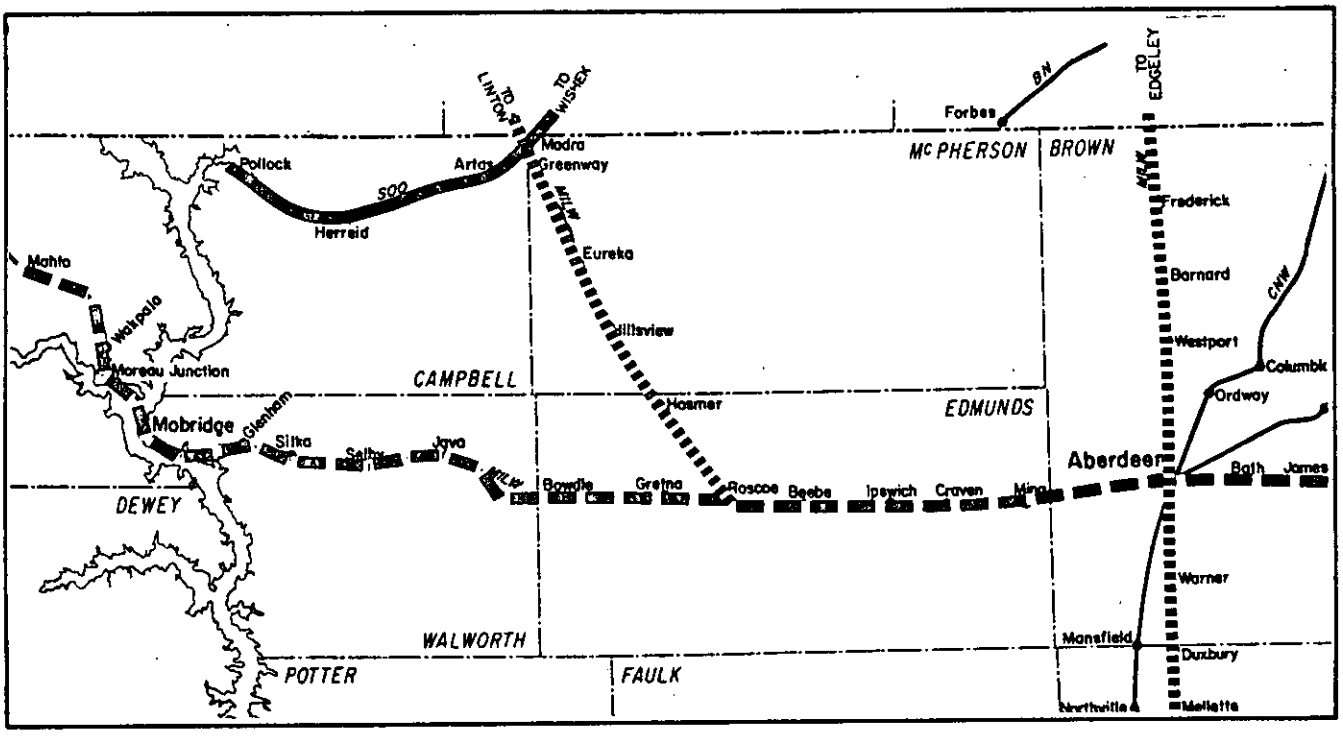
The South Dakota Rail Line Inventory Study found that minimal impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT SL02
WISHEK, ND TO POLLOCK, SD

RAILROAD-HIGHWAY LOCATION MAP



RAILROAD SEGMENT MAP



KEY

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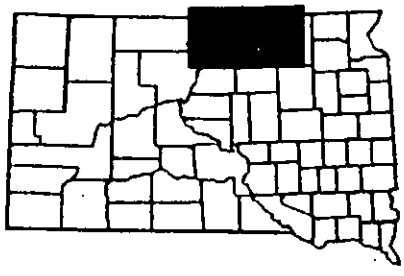
- Abandoned Line
- Potentially Subject to Abandonment Within 3 Years
- Pending Abandonment Approval
- All Other Lines



SOUTH DAKOTA SEGMENT - IC01

CHEROKEE, IA TO SIOUX FALLS, SD
ILLINOIS CENTRAL GULF-SIOUX FALLS DIVISION

LINE DESCRIPTION

LINE STATUS - Abandoned, pending the result of a local appeal before the 8th Circuit Court.
TYPE OF LINE - Branch
LINE LENGTH IN MILES - 96.4 total; 14.9 in SD
MAXIMUM WEIGHT LIMIT - 177,000 lbs. (due to condition of bridges)
MAXIMUM SPEED LIMIT - 40 mph
SERVICE FREQUENCY - Daily except Saturday and Sunday
YARDS - Sioux Falls

CONNECTING LINES - Former Milwaukee Road, Chicago and North Western, and Burlington Northern at Sioux Falls.
HIGHWAYS - SD 38 parallels this route plus Sioux Falls is served by I 29 and I 90 plus other state and local roads.

RAIL WEIGHT - 90 lbs.
MAXIMUM GRADE - .53%
MAXIMUM CURVE - 3°
BALLAST - Gravel and rock

BRIDGES AND TRESTLES - Three steel structures for nine spans.

STATION LOCATIONS

STATIONS	MILES
SD Border	0.0
Benclare	1.3
Rowena	5.5
Sioux Falls	14.9

TRAFFIC CHARACTERISTICS	1975	1979
TRAFFIC DENSITY -	0.41 MGT	0.24 MGT
TRAFFIC DIRECTION -	61% Orig./39% Term.	56% Orig./44% Term.(1977)

COMMODITIES - Forwarded food products and miscellaneous mixed shipments; received TOFC and miscellaneous mixed shipments.

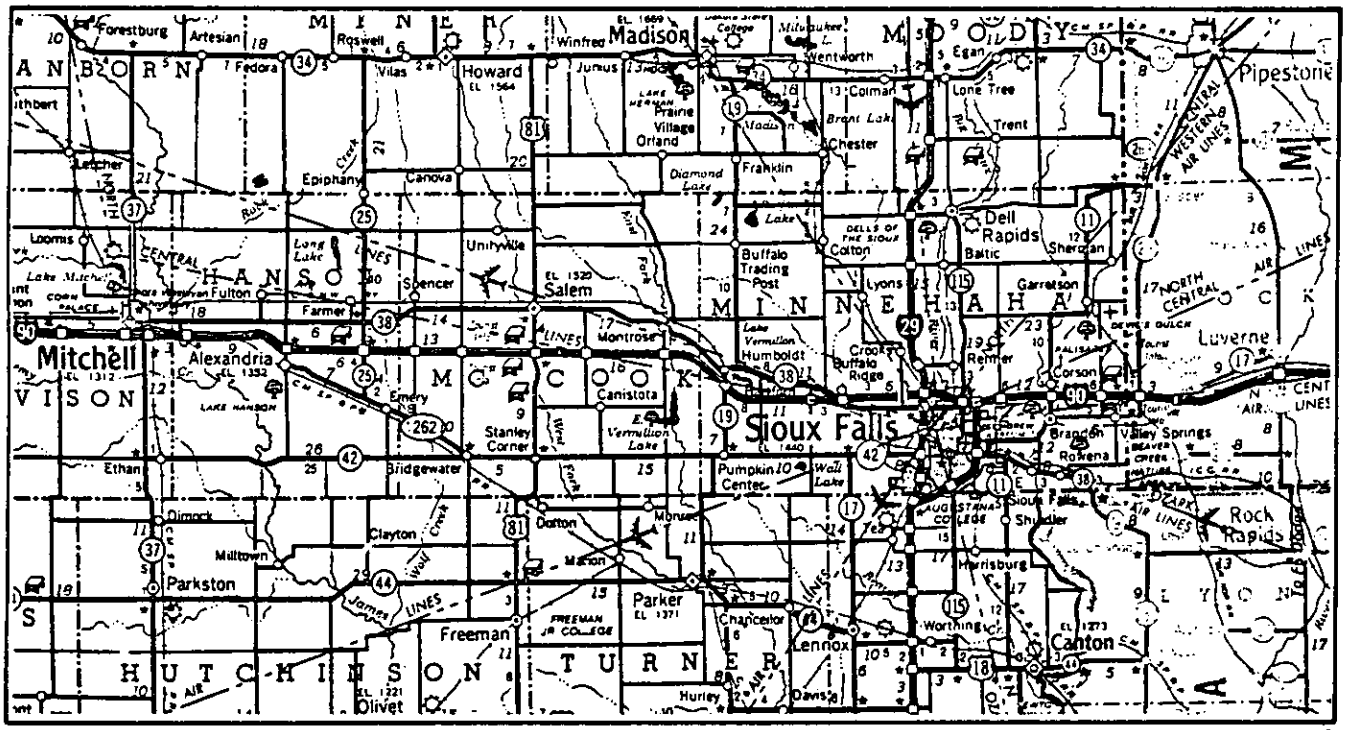
OTHER INFORMATION

This line was abandoned by the Illinois Central Gulf in 1980. However, implementation of the abandonment certificate is delayed pending an appeal before the 8th Circuit Court.

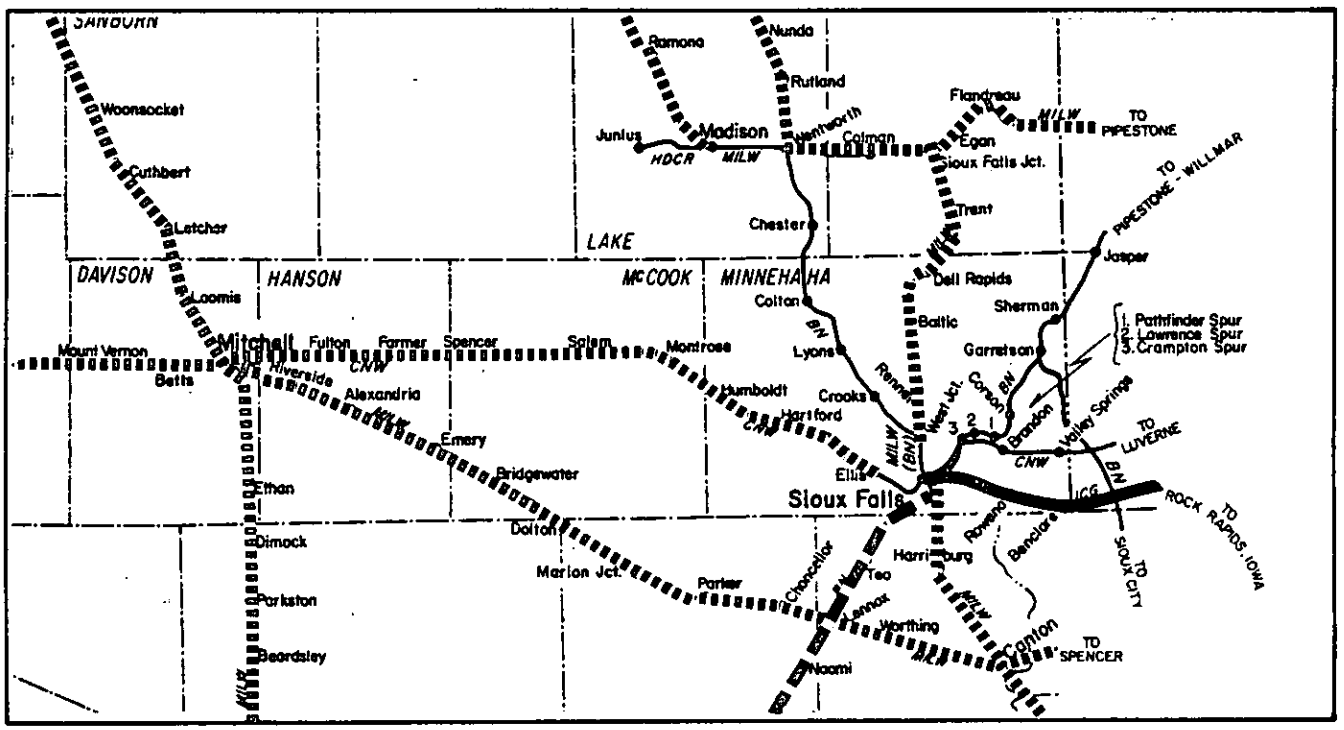
The South Dakota Rail Line Inventory Study found that limited impacts would result from abandonment of this line, based on 1977 traffic data.

SOUTH DAKOTA SEGMENT IC01
CHEROKEE, IA TO SIOUX FALLS, SD

RAILROAD-HIGHWAY LOCATION MAP



RAILROAD SEGMENT MAP



KEY

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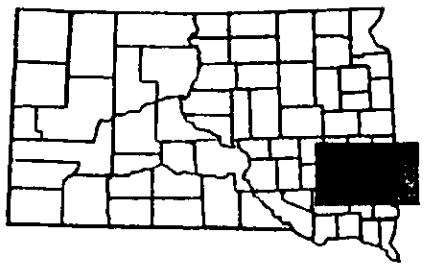
- All Other Lines



TRUCK-RAIL SERVICE (AT RAIL RATES) FOR OUTBOUND GRAIN SHIPMENTS

SEGMENT	FORMER RAIL ROUTE	SERVICE PROVIDED BY	RAILROAD	TRANSFER POINT
TR-1	GRENVILLE - VEBLEN (1)	DAKOTA TRANSFER	SOO LINE	VEBLEN
TR-2	LONG LAKE - ABERDEEN	DAKOTA TRANSFER	C&NW	ABERDEEN
TR-3	DOLAND - GROTON	DAKOTA TRANSFER	C&NW	ABERDEEN
TR-4	AKASKA - CONDE (2)	DAKOTA TRANSFER	C&NW	ABERDEEN
TR-5	GETTYSBURG - REDFIELD	DAKOTA TRANSFER	C&NW	ABERDEEN
TR-6	SPECIAL (BISON) (3)	DAKOTA TRANSFER	C&NW	ABERDEEN

(1) The Soo Line route from Grenville to Veblen was the only one ordered by the ICC.

(2) The first, and still the most successful, truck substitute service is on the route from Akaska to Conde. It was initiated by the Minneapolis and St. Louis Railway in the late 1930s. The rail line was abandoned in 1940.

(3) There has never been rail service to Bison, but the C&NW subsidizes connecting truck service.

SOUTH DAKOTA SEGMENT TR-1
FORMER SOO LINE GRENVILLE BRANCH

DAKOTA TRANSFER COMPANY - GRENVILLE TO VEBLEN

STATIONS (1)	STA. NO. (1)
Lake City	DAKT 5
Eden	DAKT 10
Roslyn	DAKT 15
Grenville	DAKT 20

This truck service replaces rail service abandoned by the Soo Line in 1971. Grain is transferred to rail cars at Veblen.

SOUTH DAKOTA SEGMENT TR-2
FORMER MINNEAPOLIS & ST. LOUIS LONG LAKE BRANCH

DAKOTA TRANSFER COMPANY - LONG LAKE TO ABERDEEN

STATIONS (1)	STA. NO. (1)
Richmond	DAKT 25
Wetonka	DAKT 30
Leola	DAKT 35
Long Lake	DAKT 40

On this route, the truck service replaces rail service between Leola and Long Lake abandoned by the Minneapolis & St. Louis Rly. in 1940 and rail service between Aberdeen and Leola abandoned by the Chicago & North Western in 1968. Grain is transferred to rail cars at Aberdeen.

SOUTH DAKOTA SEGMENT TR-3
FORMER CHICAGO & NORTH WESTERN GROTON BRANCH

DAKOTA TRANSFER COMPANY - DOLAND TO GROTON

STATIONS (1)	STA. NO. (1)
Groton	DAKT 45
Ferney	DAKT 50
Turton	DAKT 55

Truck service to these three stations replaces rail service abandoned by the Chicago & North Western in 1970. Grain is transferred to rail cars at Aberdeen. Groton is the only station with substitute truck service which also has rail service. (It is on the Milwaukee Road Miles City Main Line.)

(1) Official List of Open and Prepay Stations #91, Station List Publishing Co., St. Louis, MO, 1976.

SOUTH DAKOTA SEGMENT TR-4
FORMER MINNEAPOLIS & ST. LOUIS AKASKA BRANCH

DAKOTA TRANSFER COMPANY - AKASKA TO CONDE

STATIONS (1)	STA. NO. (1)
Adelaide	DAKT 60
Brentford	DAKT 65
Chelsea	DAKT 70
Cresbard	DAKT 75
Wecota	DAKT 80
Onaka	DAKT 85
Tolstoy	DAKT 90
Hoven	DAKT 95
Lowry	DAKT 100
Akaska	DAKT 105

Initiated in December 1937, this route is the oldest continuing substitute truck service in the nation. It was started by the Minneapolis & St. Louis Rly. in preparation for their 1940 abandonment of the rail line between Conde and Akaska - the longest single abandonment ever granted in South Dakota (102.8 miles), prior to 1977.

Dakota Transfer has operated the substitute truck service since its inception.

Originally the grain was hauled to the nearest rail shipping point during harvest. At other times it was loaded into M & St. L box cars at Conde. During the 1940s seven to eight truck loads were needed to fill a box car.

In 1960, the Chicago & North Western purchased the Minneapolis & St. Louis and has continued the substitute truck service agreement.

As rail service at Conde deteriorated rapidly in the 1970s, Dakota Transfer shifted the truck/rail transfer operations for this route to its Aberdeen facilities.

Prior to C & NW acquisition of "The Louie", grain elevators on the line used the truck/rail service exclusively. In 1975, with heavy competition from unregulated truckers, and the drought, Dakota Transfer still hauled 295 rail boxcar loads of grain from elevators on the route. Adelaide, which no longer has a grain elevator, was the only station which failed to use the service that year. (2)

(1) Official List of Open and Prepay Stations #91, Station List Publishing Co., St. Louis, MO, 1976.

(2) Stoebe, Kurt, Study of the Effects of Substitute Rail/Truck Service Upon South Dakota Communities, South Dakota Department of Transportation, Pierre, SD, 1976 (based on information supplied in part by Dakota Transfer Co., Aberdeen, SD).

SOUTH DAKOTA SEGMENT TR-5
FORMER CHICAGO & NORTH WESTERN REDFIELD - GETTYSBURG LINE

DAKOTA TRANSFER COMPANY - GETTYSBURG TO REDFIELD

STATIONS (1)	STA. NO. (1)
Zell	DAKT 110
Rockham	DAKT 115
Miranda	DAKT 120
Faulkton	DAKT 125
Burkmere	DAKT 130
Seneca	DAKT 135
Lebanon	DAKT 140

This substitute truck service replaces rail service abandoned by the Chicago & North Western in 1970. This route was initially operated for the C&NW by another trucking firm. Besides outbound grain shipments, inbound loads of fertilizer and lumber were handled. Loading and unloading were done at Redfield.

The original truck firm ran into financial difficulties, and Dakota Transfer took over the route in its third year. The inbound shipments ceased at that time and grain is now loaded into rail cars at Aberdeen.

During 1975, only 18 rail carloads of grain were hauled from stations on this route.(2)

SOUTH DAKOTA SEGMENT TR-6
BISON SERVICE

DAKOTA TRANSFER COMPANY - BISON TO ABERDEEN

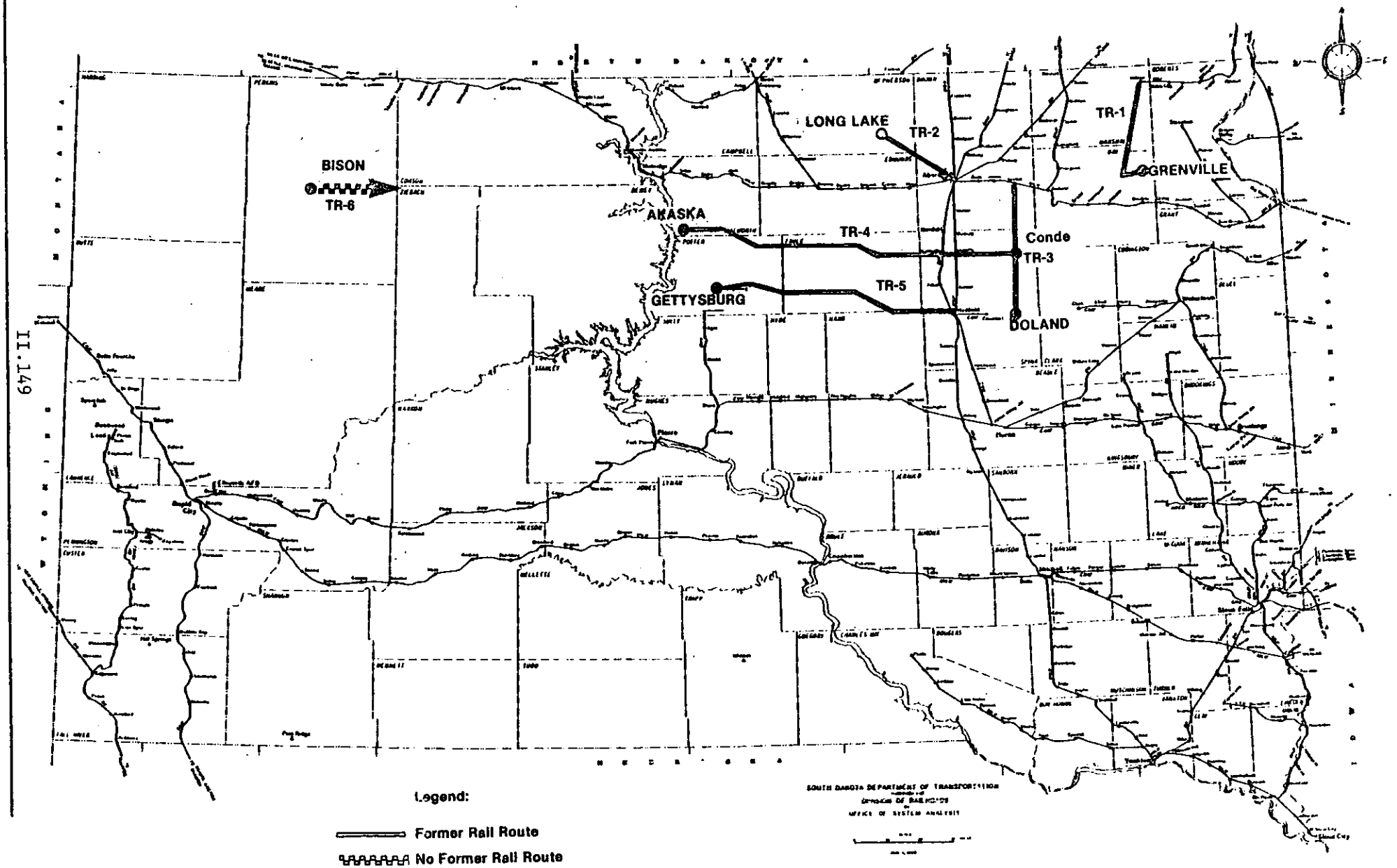
STATION (1)	STA. NO. (1)
Bison	DAKT 145

This route is unusual in that it is operated under an agreement with the Chicago & North Western, even though it does not replace an abandoned rail service. There has never been rail service to Bison.

(1) Official List of Open and Prepay Stations #91, Station List Publishing Co., St. Louis, MO, 1976.

(2) Stoebe, Kurt, Study of the Effects of Substitute Rail/Truck Service Upon South Dakota Communities, South Dakota Department of Transportation, Pierre, SD, 1976 (based on information supplied in part by Dakota Transfer Co., Aberdeen, SD).

LOCATIONS OF TRUCK-RAIL SERVICE OPERATIONS



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PART B

RAILROAD ASSISTANCE PROGRAM

PART B. RAILROAD ASSISTANCE PROGRAM

This second part of SOUTH DAKOTA RAILPLAN 1980 addresses the lines and improvement projects selected for intensive study. These lines and projects are the basis for the rail assistance program for South Dakota for 1980-1981. Funding of this program will be sought from the Section 803 program of the 4-R Act, with the local share being provided by the affected railroads, rail users, and/or the State. Included in this part of the RAILPLAN is a description of the intensive study line selection process; an overview description of the benefit-cost methodology used to analyze and evaluate each alternative project; individual project descriptions, including the results of the benefits and costs analysis and impacts assessment of project alternatives. A prioritized ranking of projects by line and location will be included once the State has selected which projects will be included in the 1980 rail assistance program for South Dakota. It concludes with projections of the direction the South Dakota rail planning program may take, and the rail issues the Division may face in the next few years.

III. PROJECT SELECTION PROCESS
266.15(c)(4)

This year's rail assistance program for South Dakota is aimed at alleviating rail problems on lines eligible for immediate assistance. This excludes the abandoned Milwaukee Road lines that were omitted from the Milwaukee II system because the Railroad Authority is currently negotiating for purchase of these lines. Until the results of this negotiation is completed and the disposition of these lines is determined, the State of South Dakota will not propose to apply Section 803 funds to assist these lines.

In anticipation of these negotiations being completed in the fall of 1980 and the lines becoming eligible for Section 803 assistance in early 1981, the Division has decided to focus its current assistance program on other rail lines with immediate needs that can be met through a defined and specific assistance effort.

The large number of eligible rail lines in South Dakota and their general state of deterioration provides the Division with many candidates for possible project assistance. Because the assistance program funds are limited, some mechanism is needed to select those rail lines most in need of assistance. In considering which lines to select, the Division adopted the following criteria:

A. non-embargoed Milwaukee Road lines, since assistance for lines to be purchased by the South Dakota Railroad Authority will be sought at a later date;

B. abandoned lines with potentially significant shipper/community impacts of abandonment in South Dakota;

C. light density lines threatened by physical deterioration, or requiring rehabilitation to permit more efficient operations involving heavier loaded cars or unit trains,

D. abandoned or light density lines which contribute at least moderately to the traffic base of connecting viable lines;

E. abandoned or light density lines providing accessibility to the regional and national railroad network; and

F. project locations where significant railroad and shipper interests are demonstrated in improving local rail operations or accessibility.

These criteria focus the State's assistance efforts on lines that are eligible for Section 803 assistance, on lines that have significant abandonment impacts, and on lines that are part of the essential South Dakota rail

system. Application of these criteria to the current rail lines in South Dakota produce the intensive study lines or project sites shown on Exhibit III-1 and listed on Exhibit III-2. Also shown on Exhibit III-2 are the criteria used to select the lines and the types of assistance projects being considered for each line or site.

The lines or project sites listed in Exhibit III-2 fall into three general categories: abandoned lines, light density lines, and coordination or operations improvement projects. The two intensive study lines which are currently abandoned are former Milwaukee Road Lines. The remaining light density lines are operated by the Milwaukee Road (2 lines), C&NW (4 lines), and BN (2 lines). The siding installation or expansion projects occur on the Milwaukee Road (1 site) and the BN (2 sites); and the transfer track replacement is on the C&NW Railroad. The line rehabilitation project between Miles City, Montana, and Gascoyne, North Dakota is part of a larger rehabilitation project for the entire Miles City Line from Miles City, Montana, to Jonathan, Minnesota. The portion west of Gascoyne, North Dakota was selected for assistance using South Dakota Section 803 funds because it is the only part of this essential rail line that satisfies the eligibility criteria for project funding of less than 5 million gross tons of traffic density. The 14 intensive study projects provide a balanced distribution of assistance to each of the major railroads in South Dakota with substantial rail mileage in the State. The projects are also distributed throughout the State to where the major assistance needs are.

The State of South Dakota is primarily interested in providing one-time assistance to these lines and project sites, which will result in lasting benefits to the railroads, rail users, and the State. Therefore, the types of assistance projects being considered in this plan mainly involve:

- moving major grain elevators from abandoned branch lines to main lines expected to remain in service;

- rehabilitating light density lines which can support current operating expenses but not the full capital costs of returning the line to its proper condition through rehabilitation; and

- installing or expanding siding facilities for new or existing elevator or transloading facilities which will serve shippers who have already lost direct rail service through past abandonments.

These types of projects address the specific problems affecting many of the lines in South Dakota without encouraging the continuation of uneconomic rail services that is costly to both the railroad and the subsidizing agency. These problems include poor line conditions, low traffic density due to excessive rail facilities, and inadequate shipper facilities to take advantage of more efficient jumbo car or unit train operations.

EXHIBIT III-1

INTENSIVE STUDY LINES AND PROJECT SITES

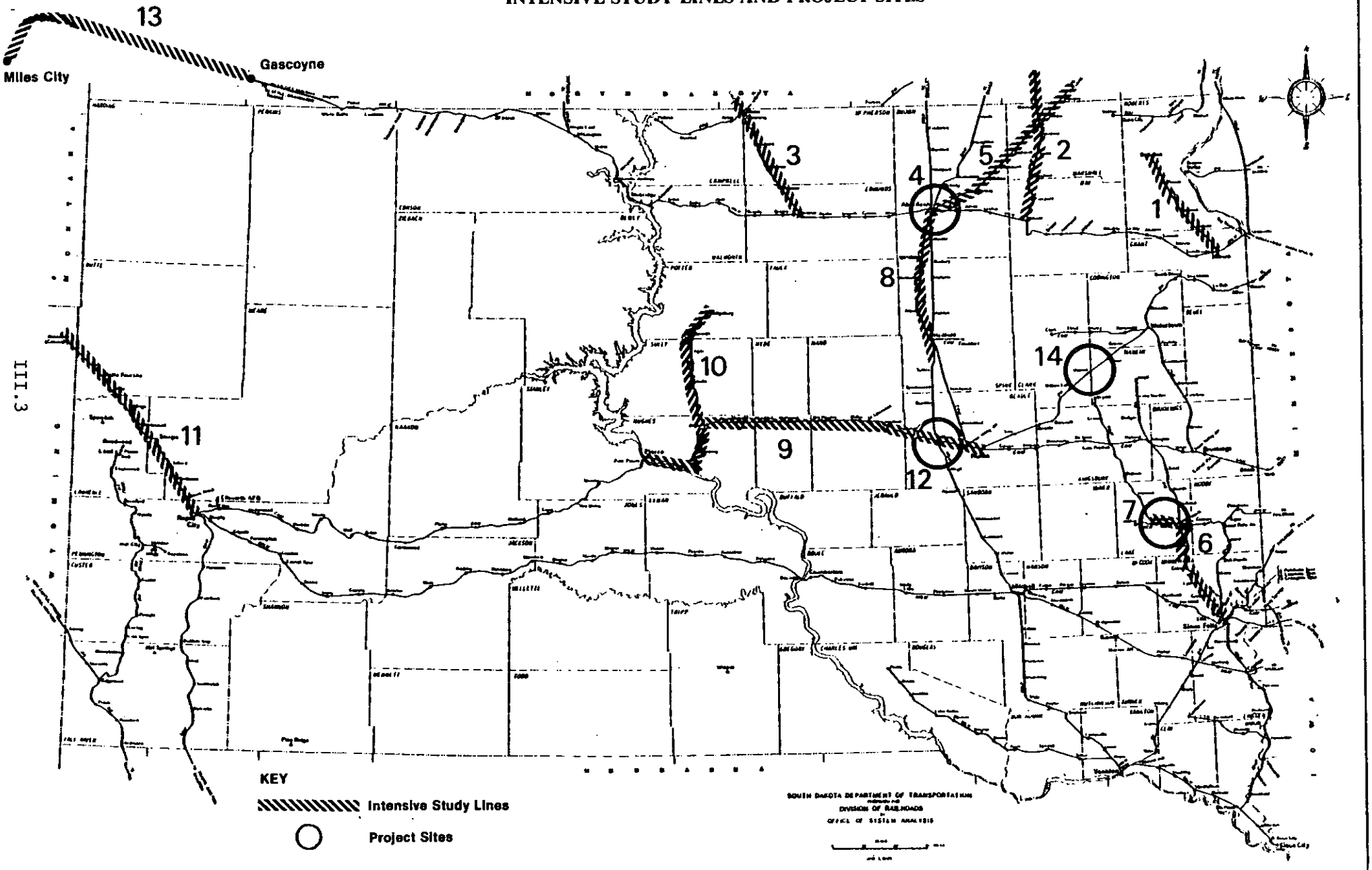


EXHIBIT III-2

INTENSIVE STUDY LINES AND PROJECT ALTERNATIVES

STUDY NUMBER	INTENSIVE STUDY LINE	SELECTION** CRITERIA
1.	MILBANK TO SISSETON (MILW)	(A),(D),(E),(F)
	• Continue Rail Service at Class I	
	– Continue Rail Service and Rehabilitate Line to Class II, New Rail	
	– Abandon Rail Service	
	– Abandon Rail Service and Move Elevators to Summit and Construct Public Loading Facility.	
2.	ANDOVER TO BRAMPTON (MILW)	(B),(E),(F)
	– Restore Rail Service and RehabilitateLines to Class I	
	– Restore Rail Service and Rehabilitate Entire Line to Class II, New Rail	
	– Restore Rail Service and Rehabilitate Line to Class II Between Britton and BN Junction, New Rail	
	• Continue Rail Service Abandonment	
	– Continue Rail Service Abandonment and Move Elevator(s) to BN Junction	
3.	ROSCOE TO LINTON (MILW)	(B),(E),(F)
	– Restore Rail Service and Rehabilitate Line to Class I	
	– Restore Rail Service and Rehabilitate Entire Line to Class II	
	– Restore Rail Service and Rehabilitate Line to Class II From Eureka to Linton, ND	
	– Restore Rail Service and Rehabilitate Line to Class II From Roscoe to Eureka	
	• Continue Rail Service Abandonment	
	– Continue Rail Service Abandonment and Move Elevator to Bowdle	
	– Construct Public Loading Facility at Bowdle or Artas	
4.	ABERDEEN SIDING (MILW)	(F)
	– Enlarge Siding for Grain Elevator	
5.	ABERDEEN TO RUTLAND (BN)	(C),(E)
	• Continue Rail Service	
	– Continue Rail Service and Rehabilitate Line	
6.	MADISON TO SIOUX FALLS (BN)	(C),(E),(F)
	• Continue Rail Service	
	– Continue Rail Service and Rehabilitate Line to Accomodate Unit Trains	
	– Abandon Rail Service	

** See listing of criteria on p. III.1

NOTE:
Base cases (Existing cases) are indicated by a asterisk (*) and
Project alternatives are indicated by a dash –

EXHIBIT III-2 (Continued)

7.	**WENTWORTH SIDING (BN)** – Install New Siding for Unit Trains	(A),(F)
8.	**REDFIELD TO ABERDEEN (CNW)** • Continue Present Rail Service – Restore Rail Service to entire line and Rehabilitate to Class II – Continue Rail Service and Rehabilitate Line to Class II from Redfield to Mansfield – Abandon Rail Service – Abandon Rail Service and Move Elevator to Parallel MILW Line	(C), (E),(F)
9.	**PIERRE TO HURON (CNW)** • Continue Rail Service – Continue Rail Service and Rehabilitate Entire Line to Class II, and Replace Wolsey Transfer Track – Abandon Rail Service (For Study Purposes Only) – Continue Rail Service, Rehabilitate Entire Line, to Class II, Replace Wolsey Transfer Track, and Replace Rail Between Wolsey and James Valley Junction.	(C),(D),(E)
10.	**BLUNT TO GETTYSBURG (CNW)** • Continue Rail Service – Continue Rail Service and Rehabilitate Entire Line to Class II – Continue Rail Service and Rehabilitate Line to Class II from Blunt to Onida, and Continue Service – Truncate and Rehabilitate Line to Class II to Onida, New Rail – Truncate and Rehabilitate Line to Class II to Onida, Existing Rail – Abandon Rail Service	(C),(E)
11.	**BENTONITE TO RAPID CITY (CNW)** • Continue Rail Service – Continue Rail Service and Rehabilitate Entire Line to Class II – Abandon Rail Service (For Study Purposes Only)	(C),(D),(E)
12.	**WOLSEY TRANSFER TRACK (CNW)** – Replace Transfer Track Between CNW and MILW Lines	(E),(F)
13.	**MILES CITY, MT TO GASCOYNE, ND (MILW)** • Continue Rail Service – Continue Rail Service and Rehabilitate Entire Line to Class II – Abandon Rail Service	(C),(D),(E)
14.	**VIENNA SIDING (BN)** – Install New Siding for Unit Trains	(F)

* Base case
– Project Alternatives

Other alternatives that are considered for certain lines include truncating the line and operating over upgraded track, abandoning the line entirely, and, in two cases, operating the lines as short lines based on the results of special studies that assessed the costs and implications of short-line. The base case is also considered, whether the base case consists of line abandonment or continued rail service. In several cases, the abandonment alternative is discussed to demonstrate the possible impacts that may result from not assisting a line, even though the line is not being considered for abandonment.

The base case condition assumes a minimum Class 1 track condition for continuing rail service, while the rehabilitation alternatives result in either Class 1 or Class 2 track conditions, depending on the current status of the line. Line truncation is considered only where significant numbers of shippers on a line are located before the end of a line. The movement of an elevator is considered only for threatened rail lines where the elevator represents the primary shipper who would be most severely affected by rail service abandonment but who could not solely support continued rail service. When an alternative involves the elimination of rail service to shippers, it is assumed that the affected traffic will move by truck instead, either all the way to its final destination or to the nearest railhead. Therefore, the abandonment alternative implies substitute truck service. Siding expansions or installations are proposed for rail lines with continuing rail service to serve shippers who have lost rail service on nearby abandoned lines. These projects promote rail service coordination by concentrating traffic on selected rail lines which become more viable as a result, while alleviating the effects of line abandonment. The sidings at Aberdeen, Wentworth and Vienna are also designed for unit train service, which further encourages the concentration of rail traffic for loading purposes. The transfer track at Wolsey is designed to improve the operations of trains moving between the connecting Milwaukee Road and C&NW lines. Since the abandonment of the connecting Milwaukee Road line, the C&NW has taken over the line for operating to Aberdeen and thus requires the improved transfer track to more efficiently access the line.

These projects comprise a wide variety of assistance efforts which are tailored to the unique conditions of each intensive study line. The types of projects being considered are intended to produce maximum long-term benefits to the State, rail users, and the railroads, without committing the State to a long-term obligation to continuously subsidize the line. Innovative strategies, such as moving grain elevators, reflect the variety of solutions being considered by South Dakota for its railroad problems.

The intensive study lines and sites selected for this update deal with lines located on the periphery of the proposed South Dakota core system. This is intentional because the State wants to be in a position in 1981 to focus its assistance program on the lines that make up the core system. By addressing the lines listed in Exhibit III-2 this year, the State begins to reduce the major rail problems affecting rail lines in South Dakota that are outside this core system, and that are eligible for immediate assistance.

IV. BENEFIT-COST ANALYSIS OF INTENSIVE STUDY LINES [266.15(c)(5)]

Each intensive study line was subjected to special study of its physical condition, service characteristics, level and nature of usage, and the possible impacts of service changes on the local community, rail users, railroad, and State. The purpose of the studies was to support the benefit and cost analysis of transportation service alternatives identified in Section III for each intensive study line. These results could then assist the State of South Dakota in selecting the most advantageous rail assistance program for 1980.

A general description of information sources and analysis procedures used for the intensive study lines appears in this section. A more detailed documentation of these sources and procedures is included in the appendices.

The accompanying benefit-cost analysis projections for intensive study line alternatives have been prepared on the basis of information and assumptions set forth in the text and exhibits of this section. Appendix D describes in detail the impact analysis methodologies used for this study, as well as the benefit-cost evaluation methodology. We have relied upon information and assumptions from the sources indicated in the text and exhibits without verifying such data. Although we believe the information and assumptions used constitute reasonable bases for preparation of the benefit-cost projections, the achievement of any financial projection may be affected by fluctuating conditions and is dependent upon the occurrence of other future events which cannot be assured. Therefore, the actual results achieved may vary from the projections and such variations could be material.

The results of the benefit-cost analysis of intensive study line alternatives will be followed by a prioritization of the recommended alternatives for each line or site improvement, based on the impacts associated with each recommended alternative. This prioritization will be presented in Chapter V once the state has selected its recommended program of projects for 1980.

DATA COLLECTION

The analysis of intensive study lines was based upon the existing data files maintained by the Division of Railroads and information collected during this update. Shipper and railroad data were collected for each intensive study line through a shipper survey and a railroad survey. The condition of each intensive study line was independently evaluated based on an on-site track inspection. These efforts are described below.

Shipper Survey

Shipper information was developed by surveying in person, each rail user on each intensive study line. Appendix B contains the shipper survey interview form which was used for this purpose. The type of information requested of each shipper included the following:

- rail user identification, employment, sales, taxes, and principal business activity;

- rail user attitudes towards existing carrier performance and serivce;

- rail operations and service description;

- volume and nature of current rail usage, and the use of alternative transportation modes; and

- projected impacts on employment, production, rail and truck usage, and transportation costs of improving rail service, continuing existing rail service, and abandoning rail service.

Additional shipper data concerning employee income was developed from past surveys conducted in the state. The shipper survey effort reached all known rail users on each of the intensive study lines in South Dakota. The information provided by the shipper surveys should be viewed in most cases as upper estimates of the effects of rail service changes on shippers' business operations. Even so, this information is considered to be the best data on which to base the community impact analysis of intensive study lines. The major concern as to the validity and accuracy of shipper-supplied information involves future actions and responses to changes in rail service. Thus, care must be exercised in interpreting the community-impact analysis results, especially where shippers were asked to make projections regarding the impact of service abandonment.

Rail Carrier Survey

Shortly after the initiation of the RAILPLAN updating process, each Class I rail carrier serving South Dakota was requested to provide information not already available concerning its operations in South Dakota and its operation of intensive study lines, where applicable. A copy of one of the data request letters is contained in Appendix C. The types of information sought from the rail carriers included the following:

- Data Requested for Preparation of Statewide Overview:

  - 1979 freight system density map;
  - current railroad system map;
  - division timetables for South Dakota; and
  - list of current open stations in South Dakota.

- Data Requested for Intensive Study Lines:

  - revenues and costs of providing rail service;
  - traffic data by type and quantity;
  - operating characteristics and service frequency;
  - list of line facilities (yards, servicing facilities);
  - five year history of line maintenance efforts; and
  - property taxes paid on the line.

Additional information regarding each line and railroad was also available at the Division. This included the railroad annual reports (R-I reports) to the Interestate Commerce Commission (ICC), statewide railroad statistics filed with the South Dakota Public Utilities Commission, a State annual report for each railroad filed with the South Dakota Department of Revenue, commodity flow statistics for each railroad as compiled by the Division, line abandonment summaries compiled by the Division, line abandonment applications filed by the operating railroads with the ICC, detailed line segment data maintained by the Division, and past shipper survey data also maintained by the Division.

Track Inspections

During June and July of 1980, the study team made detailed on-site inspections of the intensive study lines or project sites. Most inspections were made in the company of railroad officials and used a combination rail/highway vehicle provided by the railroads. Several segments were inspected by automobile and on foot, including spot inspections at grade crossings and other points along the lines.

During the inspections, detailed observations were made of the condition of the rails, ties, rail-joints and tie plates, ballast, and right-of-way. Bridge facilities and grade crossings were inspected for major defects. Weed, grass, and bush growth in the right-of-way was also noted.

Most of the railroads furnished additional materials to the study team, including operating timetables, track charts, and the number and type of bridges, culverts, and grade crossings on special study lines. Together with the results of the on-site inspections, this information enabled the study team to prepare cost estimates to rehabilitate the track to certain operating standards and the estimated cost to maintain the track at a normalized level. The net salvage value of the line, without consideration of the land value, was also estimated. These estimates reflect net salvage values as of July 1980.

PROJECT ANALYSIS METHODOLOGY

The analysis of each intensive study line involved the determination of the quantitiative and qualitative impacts associated with each project alternative, as they affect the rail carriers, rail users, State, and Nation. This section describes the types of impacts considered for each alternative and the method of calculating the results as part of a benefit-cost analysis for each line.

Benefit-Cost Analysis Methodology

Federal regulations [CFR 266.15(c)(5) and (c)(8)] require project applications for federal funding under the Section 803 Program of the 4-R Act to be accompanied by a benefit-cost analysis of the projects quantitative impacts.

This section describes South Dakota's benefit-cost analysis methodology as it is applied to the assessment of intensive study lines for the 1980 RAILPLAN update.

The South Dakota benefit-cost analysis methodology is based upon the suggested guidelines of the Federal Railroad Administration (FRA) for benefit-cost analysis of rail assistance projects. Briefly, the methodology consists of developing the primary and secondary efficiency benefits and cost factors which result from a particular line alternative and allocating the impacts by affected party. The benefit-cost ratio consists of summing the total monetary benefits and dividing by the total project costs, discounted to an annualized value, assuming a 10-year time frame and a 10 percent discount rate (except where noted otherwise). The resulting ratio provides a measure of the projects' variability, whereby a ratio in excess of 1.0 means that the project produces more benefits than costs. Non-monetary and non-quantitative impacts of each alternative are then added to the line analysis results to complete the assessment. A second way to evaluate the benefits and costs of each alternative relative to the base case is to calculate the difference in the annualized benefits and costs. This is necessary in these cases where the project costs are zero.

The primary efficiency benefits measure the change in consumer and producer surplus for shippers and railroads due to changes in the availability of transportation service. These benefits result from changes to the quantity, price, and cost of moving commodities to and from each line, by station, due to a change in rail service. The primary efficiency benefits are defined by the following equation:

$$(B_n-B_o)_p = Q_o\ (C_o-C_n) + 1/2\ (P_o-P_n)\ (Q_n-Q_o) + (P_n-C_n)\ (Q_n-Q_o)$$

where

$(B_n-B_o)_p$ = Primary Efficiency Benefit ($), Alternative "n" versus Base Case

Q_o = Quantity Shipped, Base Case (Tons)

Q_n = Quantity Shipped, Alternative n (Tons)

P_o = Transportation Revenue, Base Case ($/Ton)

P_n = Transportation Revenue, Alternative n ($/Ton)

C_o = Transportation Costs, Base Case ($/Ton)

C_n = Transportation Costs, Alternative n ($/Ton)

This equation defines the net gain in benefits from charged transportation rates and costs of Alternative "n" over Alternative "o". The first set of terms specify the cost charge in existing traffic, the second set of terms specify the consumer surplus and new or lost traffic, and the third set of terms specify the producers surplus and new or lost traffic.

The revenues and costs reflect the composite rates and costs of the alternative being considered. They are based on published rail and truck rates for South Dakota origins and terminations, and estimated rail and truck costs. The rail costs are based on estimated on-branch costs, using system average costs, and normalized maintenance-of-way costs and net salvage values for each line. Off-branch rail costs are developed from the individual railroads' Rail Form A costs. Truck costs are estimated on a truck-mile and trip basis, using average owner-operator driver costs. The quantity information is based on the shipper survey responses, calibrated to the 1979 actual railroad volumes by station. It is assumed that all commodities moving under the base case or during the last full year of operation will continue to move under each rail service alternative, with differing amounts moving by truck to the nearest railroad or all the way to the final destination. The length of the truck haul depends on whether or not the elevator closes, in which case it is assumed that the farmer will move his commodities to the nearest available elevator served by a railroad. If the elevator stays open but loses rail service, the traffic is typically trucked to the final destination from the elevator. Rail service improvements resulting from line rehabilitation produce traffic increases in certain cases.

A separate primary efficiency calculation was made for each station, commodity, and destination/origin combination, by alternatives relative to the base case.

Secondary efficiency benefits considered by the intensive study line analyses included the following impacts:

- jobs - the jobs lost or created due to the rail service change, including rail user, railroad, and truck jobs;
- income - the income of additional jobs which are filled by previously unemployed persons less the income of persons who lose their jobs due to the rail service change, adjusted for the amount of unemployment compensation. This affects not only rail service but also railroad and truck employees.
- highway capital/maintenance costs - the increase in highway capital or maintenance costs which result from the diversion of traffic from rail to truck;
- taxes - change in tax revenues due to line abandonment, plant shut-down, or truck diversion;
- net salvage value - the value of the material in the railroad right-of-way, less removal costs. This is considered a benefit of abandonment.
- other benefits - other monetary benefits which are unique to a line, such as the value of a highway overpass whose construction could be avoided if an intensive study line is abandoned,

or the additional profit to be made by elevators on lines whose rehabilitation would result in higher grain volumes.

These monetary benefits are calculated and assembled according to affected party, including the railroad carrier, motor carrier, rail user, state, and Nation, and discounted to an annualized value.

Project costs are defined as the actual program outlays associated with each project, including both federal and local matching funds. These involved outlays for land, labor, and capital inputs employed. The costs that have been associated with the projects considered by the update include the following:

- rehabilitation costs to Class I track standards;
- rehabilitation costs to Class II track standards;
- moving costs of relocating an elevator;
- new construction costs for installing or expanding rail sidings; and
- new construction costs for installing a transfer track.

Project costs are considered as an annualized value.

Non-monetary impacts are also assessed in analyzing each project alternative. These include the following impacts of rail service changes:

- changes in fuel consumption - due to diversion of traffic between rail and truck;
- changes in air pollution emissions - due to diversion of traffic between rail and truck;
- changes in accessibility to regional and national markets;
- changes in the availability of competitive transportation services within the State; and
- changes in the economic development potential of the State.

The final benefit-cost ratio for each alternative is tempered by the non-monetary impacts which are projected. In certain cases, the primary justification for a project is based on the non-monetary impacts. Therefore, the assessment of non-monetary impacts is made an important part of South Dakota's benefit-cost analysis and project evaluation methdology.

PROJECT EVALUATION METHODOLOGY

Individual project alternatives were evaluated on the basis of the benefit-cost ratio and the assessment of non-monetary impacts. The alternatives with the best composite incremental benefit-cost ratio and non-monetary benefit were selected as the recommended project for each intensive study line. Because of the qualitative nature of many of the impacts being considered, this process required the application of judgement on the part of the evaluators.

Recommended projects for each intensive study line were further evaluated to determine their priority ranking. As before, this evaluation required the consideration of both the incremental benefit-cost ratios and the non-monetary impact assessments for each line. The result was a priority listing of recommended assistance projects by line or project site. Where the analysis indicated that no assistance project could be justified, the line or project site was eliminated from further consideration and dropped out of the project evaluation and prioritization process.

The results of the detailed benefit-cost analyses of each intensive study line and project site are presented in the following section. Included in the discussion is a description of the line or project site as it is in the base case, a description of each project alternative and its benefits and costs as compared to the base case, and a summary of the benefit-cost ratio and non-monetary impacts by alternative. Chapter V contains the final prioritization of recommended projects by intensive study line or project site.

INTENSIVE STUDY LINE ANALYSIS
[266.15(c)(6,7,8, and 9)]

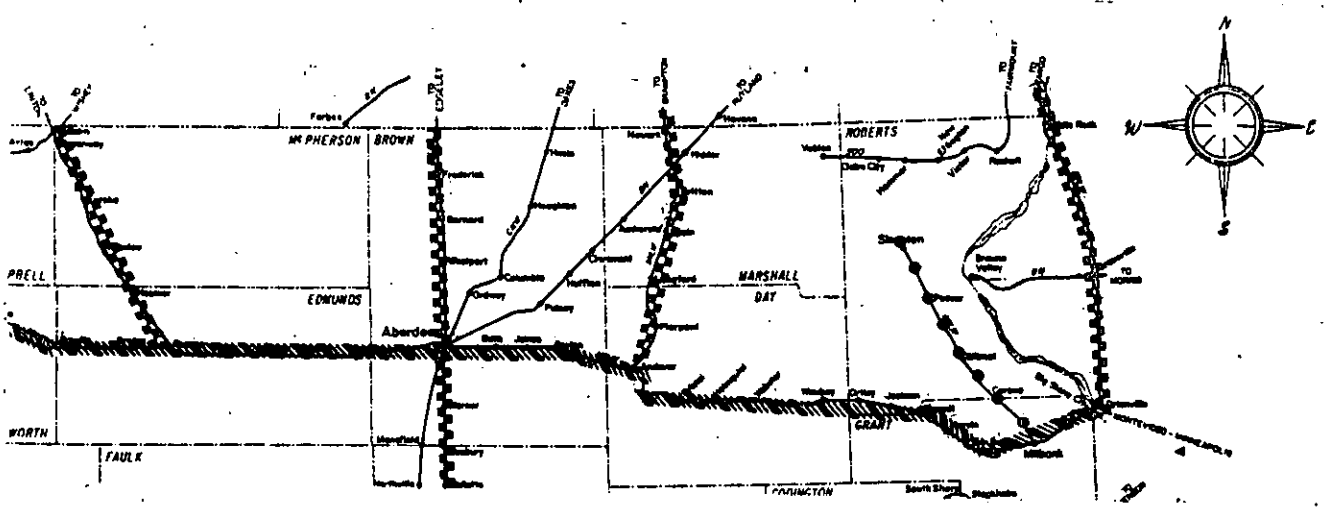
Study Project #1

MW04 MILBANK TO SISSETON

BACKGROUND

The Milbank to Sisseton line is one of two branch lines currently operated in South Dakota by the Milwaukee Road as part of the Milwaukee II system. It lies to the north of the Miles City mainline and is a link between a productive agricultural area and the grain markets of Minneapolis, Duluth, and the west coast. Primarily because of track conditions, the Milwaukee has expressed a desire to abandon the line unless rehabilitation to allow a more efficient level of operations and a 263,000 lb. weight limit is accomplished. This rehabilitation has been considered as a project alternative.

This line was selected for intensive study because it is a non-embargoed Milwaukee line, it is a light density line which contributes to the traffic base of a connecting line, and it is a light density line that provides access for shippers to the regional and national railroad network. In addition, it is a project location where significant railroad and shipper interest in improving local rail operations or accessibility is demonstrated.



KEY

- Intensive Study Line
- Pending Abandonment
- Potentially Subject to Abandonment within 3 years
- Abandoned Lines
- Other Lines

Study Project #1

LINE CHARACTERISTICS - BASE CASE

Line Description

The 38-mile Milbank to Sisseton line has open stations at the towns of Corona, Wilmot, Peever, and Sisseton. The line crosses agricultural land for virtually its entire length and serves five grain elevators and a lumber yard, employing a total of 25 persons.

Operations and Service

Normal operations consist of two round trips weekly, although in times of high demand service frequency increases to three times weekly. During the summer of 1980, traffic volume averaged between 50 and 60 cars per week. Because of rail weight and track conditions, only box cars can be used on this line.

Those who responded to the shipper survey reported that they found overall service provided by the railroad to be adequate. Rankings were based on specific service characteristics, using a scale of one to five with one being excellent, two being good, three being adequate, four being poor, and five being unsatisfactory. The results of this rating are as follows:

Service Characteristic	Rating	Service Characteristics	Rating
Local Service Frequency	2.4	Car Supply	3.2
Total Transit Time	2.8	Loss or Damage Frequency	4.0
Service Reliability	3.0	Customer Service	3.2

Overall Rating	3.1

Shippers reported that the line is essential to their transportation needs, and some indicated that a drop in the number of bushels handled annually would be the result of abandonment. An elevator also reported that the termination of rail service would make continued operation impossible.

Study Project #1

Rail Traffic Volume - 1979

Originating		Amount		Terminating		Amount	
Commodity	Destination	Tons	Cars	Commodity	Origination	Tons	Cars
Grain	Minneapolis	80,376	1,338	Fertilizer	Misc.	1,379	27
Grain	Duluth	3,532	59	Lumber		1,136	23
Grain	West Coast	998	17	Other		97	2
Grain	Other	7,292	121				
	TOTAL	92,198	1,535	TOTAL		2,612	52
				Grand Total for Line		94,810	1,587

Revenues and Costs of Rail Service

The rail costs are based on estimated on-branch costs, using system average costs, and normalized maintenance-of-way costs and net salvage values for each line. Off-branch rail costs are developed from the individual railroads' Rail Form A costs.

Revenues:	$1,933,100	Car Day Cost	$ 64,701
Expenses: (on-branch):		Car Mile Cost	14,991
Transportation	1,175	Locomotive Ownership	4,802
Fuel	33,413	Return on Investment	519
Maintenance of Way	219,783	Total on-branch Expenses	645,875
Train Supplies & Expenses	12,002	Total off-branch Expenses	967,222
Train Labor	87,736	Total Expenses	1,613,097
Miscellaneous	199,911	Profit (Loss)	320,003
Maintenance of Equipment	6,842		

Track Conditions

Many years of deferred maintenance have made this line a candidate for abandonment despite the fact that the traffic volume has been increasing. The 60-pound rail is incapable of supporting loaded covered hopper cars, and causes a weight limit of 220,000 lbs. The entire line is operated under slow orders. Crosstie conditions are also poor, and inadequate ballast and the absence of rail anchors causes significant tie shifting, particularly at the southern end of the line. Tie plates are installed only sporadically, which has caused tie cutting and frequent variations in gauge. Even short-term operation of this line will be impractical unless these conditions are improved.

Project Alternatives

The following project alternatives are presented as studied. Final selection is based on consideration of both quantitative and qualitative criteria

and may result in the choice of an alternative which does not have the highest ratio of benefits to costs. In such cases, qualitative considerations form the primary basis for selecting the recommended alternative.

Study Project #1

PROJECT ALTERNATIVE I - ABANDONMENT

Description

The ultimate effect of taking no affirmative action to allow continued rail service will be the abandonment of the Milbank to Sisseton branch line due to unsafe operating conditions. Alternative I, therefore, is the result of choosing a "do nothing" course of action. The line is currently in Category 1, meaning that it is anticipated to be the subject of an abandonment application within the next 3 years. The imminent construction of Interstate Highway 29 across the path of the line necessitates that an early decision be made regarding its future so that necessary provisions can be made regarding the possible need for a highway bridge. The first alternative considered is the abandonment of the line with no action taken to ease the effect of this action on shippers.

Rail Service Level

None.

Rail Traffic Volume

None.

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$ -8,559	$-8,559	$ -8,559
Secondary Efficiency Benefits					
Income ($)	$-2,457	$+4,343	$ -2,695	$ -809	$ -809
Highway Costs ($)	-	-	-	$-8,615	$ -8,615
Taxes ($)	-	-	-	$+3,823	$ +3,823
Net Salvage Value ($)	$+740	-	-	-	$ +740
Other: Highway Bridge	-	-	-	$+192,335	$ +192,335
Total Benefits ($)	$-1,717	$ +4,343	$ -11,251	$+178,175	$ +178,915
Costs ($)	-	-	-	-	-
Other:					
Jobs	-4	+5	-12	-11	-11
Energy (Gallons)	-	-	-	+51,600	$+51,600
Air Pollution (lbs.)	-	-	-	+34,600	$+34,600
Benefits minus costs					$ +178,915*
Benefit/Cost Ratio					-

* Annual Benefit

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Study Project #1

PROJECT ALTERNATIVE II - REHABILITATION TO CLASS II NEW RAIL

Description

The alternative of rehabilitating the line (with new rail), to meet FRA Track Class II standards, is considered in order to illustrate the traffic potential of the line and the benefits which would accrue to the railroad of operating at a more efficient level. Rehabilitation to Class II would be required to provide sufficient incentive for the Milwaukee Road to continue service. Because of existing conditions, rehabilitation costs are very high, ($4,814,300) as is the expense incurred by building the interstate highway bridge over the railroad ($1,500,000). Consideration of the rehabilitation alternative assumes that the railroad will be willing to operate the line after operating efficiencies are regained. Successful operations are predicated on a level of traffic which is sufficient to support both the costs of providing service and of performing annual maintenance at a normalized level.

Rail Service Level

Twice weekly, increasing with seasonal demand in late Summer and Fall.

Rail Traffic Volume - 1979

Originated - 134,466 tons
Terminated - 4,652 tons
Total - 139,118 tons

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$ +358,184	$ +358,184	$ +358,184
Secondary Efficiency Benefits					
Income ($)	-	-	$ +2,520	$ +2,520	$ +2,520
Highway Costs ($)	-	-	-	-	-
Taxes ($)	-	-	-	-	-
Net Salvage Value ($)	-	-	-	-	-
Other:					
Total Benefits ($)	-	-	$ +360,704	$ +360,704	$ +360,704
Costs ($)(Rehabilitation)	-	-	-	-	$ +712,276
Other:					
Jobs	-	-	+5	+5	+5
Energy (Gallons)	-	-	-	+18,458	+18,458
Air Pollution (lbs.)	-	-	-	+12,500	+12,500
Benefits minus costs					$-351,572
Benefit/Cost Ratio					+0.50

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PROJECT ALTERNATIVE III - MOVE ELEVATORS AND CONSTRUCT PUBLIC LOADING FACILITY

Study Project #1

Description

The alternative of relocating the two grain elevators currently located at Sisseton to Summit on the Milwaukee main line has been proposed by the State as an option available to ease the impact of abandonment on the line's two largest shippers. The alternative is particularly attractive as it allows a large share of the traffic volume to remain while incurring none of the on-branch operating costs or rehabilition expenses. It has been assumed that the relocated elevators will utilize rail service at Summit to the same degree that they would utilize service at Sisseton if the line were rehabilitated to Class II. The cost of moving the elevators is estimated at approximately $1,200,000. A public loading facility is also proposed for this Milbank area and would cost approximately $375,000. This would be used primarily by elevators which would be abandoned but not moved to the Milwaukee main line.

Rail Service Level

None.

Rail Traffic Volume

None.

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)			$+548,795	$+548,795	$+548,795
Secondary Efficiency Benefits					
Income ($)	$-2,457	+968		-1,489	-1,489
Highway Costs ($)				-1,995	-1,995
Taxes ($)				+1,089	+1,089
Net Salvage Value ($)	+740				+740
Other: Highway					
Bridge				+192,335	+192,335
Total Benefits ($)	$-1,717	$+968	$+548,795	$+738,735	$+739,475
Costs ($)					
Move elevators and build loading facility					$+233,021
Other:					
Jobs	-4	+1		-3	-3
Energy (Gallons)	-	-	-	+20,800	+20,800
Air Pollution (lbs.)	-	-	-	+13,940	+13,940
Benefits minus costs					$+506,454
Benefit/Cost Ratio					+3.17

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Study Project #1

BENEFIT COST SUMMARY

TYPE OF IMPACT	ABANDON	REHABILITATE	Move Elevators & Construct Facility	TRUNCATE LINE	OTHER
Primary Efficiency Benefits ($)	$-8,559	$+358,184	$548,795		
Secondary Efficiency Benefits					
Income ($)	-809	+2,520	-1489		
Highway Costs ($)	-8,615	-	-1995		
Taxes ($)	+3,823	-	+1089		
Net Salvage Value ($)	+740	-	+740		
Other: Highway Bridge	+192,335	-	+192,335		
Total Benefits ($)	$+178,915	$+360,704	$+739,475		
Costs ($) Rehabilitation II	-	$+712,276	-		
Move Elevator	-	-	$+233,021		
Other:					
Jobs	-11	+5	-3		
Energy (Gallons)	+51,600	+18,458	+20,800		
Air Pollution (lbs.)	+34,600	+12,500	+13,940		
Benefits minus Costs	$+178,915*	$+351,572	$+506,454		
Benefit/Cost Ratio	-	+0.50	+3.17		

*Annual Benefit

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IMPACTS ASSESSMENT

The primary factors to be considered in relation to the Milbank to Sisseton line are the exceedingly poor track conditions, the need for determining the most efficient method of handling existing rail traffic should service be discontinued, and the importance of rail service to on-line shippers. The line is supported primarily by the traffic that originates at Sisseton, although rail service plays an important role in meeting each of the elevators' needs and is heavily utilized. Nevertheless, the fact that maintenance has been deferred for many years, combined with the benefit of abandonment and not building an interstate highway bridge, makes other alternatives such as moving elevators more attractive. In addition, the option of trucking grain to the nearest railhead is an economically attractive option that would greatly ease the impact of abandonment on shippers which would not relocate on the main line.

The move elevator alternative has the highest ratio of benefits to costs, primarily because of the ability the largest shippers would have to utilize rail service and enjoy the rail rate advantages, while absorbing none of the costs of operating the branch line. The cost of moving the elevator is greatly exceeded by the cost of the rehabilitation. The benefit of abandonment exists because the cost avoidance of constructing the highway bridge exceeds the increased cost of shipping which results from a conversion from rail to truck transportation.

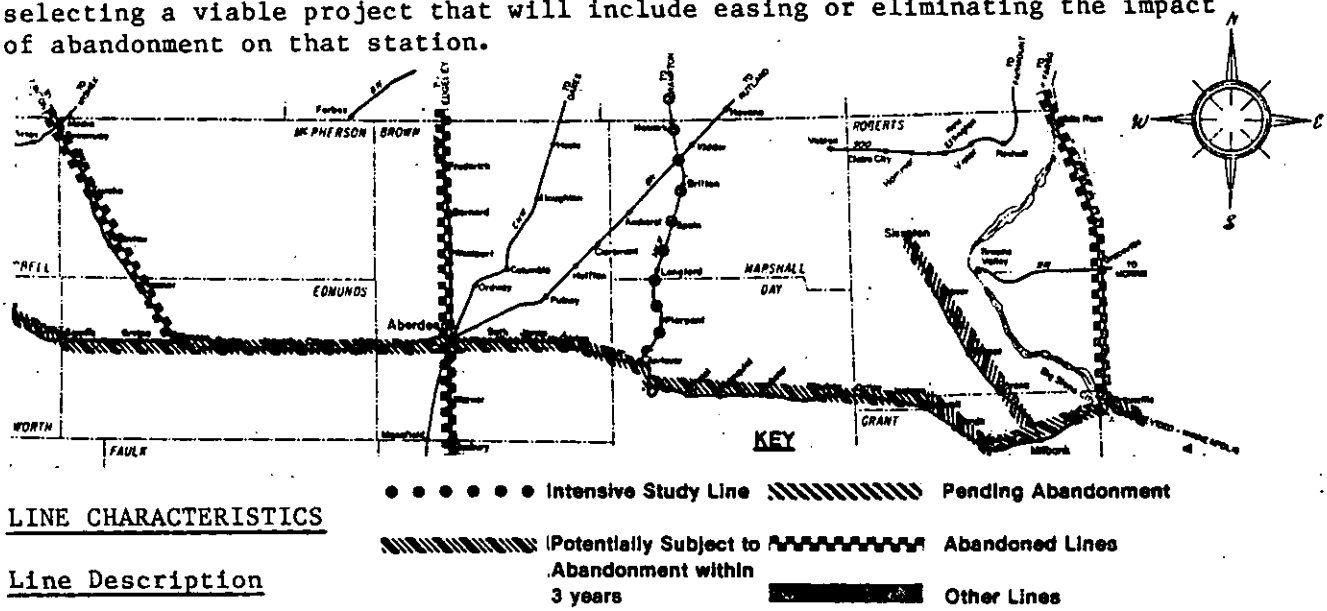
Study Project #2

MW06 - ANDOVER - BRAMPTON

BACKGROUND

The Milwaukee Road line from Andover to Brampton is currently abandoned, and on-line shippers have developed alternative strategies for transporting their commodities. Some are using motor carriers for the entire length of haul, and others are using trucks to take grain to a railhead at Andover.

The line was selected for intensive study because it is an abandoned line with significant shipper and commodity impacts in South Dakota, it is an abandoned light density line which provides accessibility to the regional and national railroad network, and it is a light density line for which consolidation or operational improvement projects are considered. Like most rail lines in the State, it lies in a productive agricultural area; however, it is close to an operating BN line (Aberdeen-Rutland) which is in better condition. The primary on-line shipper is located at Britton, and efforts are concentrated on selecting a viable project that will include easing or eliminating the impact of abandonment on that station.



LINE CHARACTERISTICS

Line Description

The Andover to Brampton branch line is approximately 43 miles in length, including about 4 miles in North Dakota. Grain is the primary commodity which is originated on the line, with small amounts of fertilizer brought in by rail. The line crosses the BN's Aberdeen to Rutland line at a point just north of Britton, but no interchange track between the lines exists. Stations open at the time of abandonment were located at Pierpont, Langford, Britton, and Newark, South Dakota, and Brampton, North Dakota. A total of four elevators and agricultural firms and one lumber yard were served by the South Dakota portion of the line. These firms employ a total of 29 persons at the present time, and there is no indication that any jobs have been lost as a result of the abandonment.

Study Project #2

Operation and Service

This line is currently abandoned; and consequently shippers were not asked to rate the quality of the rail service which they last received.

Rail Traffic Volume (1979) (South Dakota Stations only)

Originating Commodity	Destination	Amount Tons	Cars	Terminating Commodity	Origin	Amount Tons	Cars
Grain	Minneapolis	34,050	528	Fertilizer	Miscellaneous	7,969	113
	Duluth	6,842	106				
	West Coast	4,486	70				
	Other	1,542	23				
Total		46,920	727	Total		7,969	113
				Grand Total For Line		54,889	840

Revenues and Costs of Rail Service

The rail costs are based on estimated on-branch costs, using system average costs, and normalized maintenance-of-way costs and net salvage values for each line. Off-branch rail costs are developed from the individual railroads' Rail Form A costs.

Revenues:	$1,068,379	Car Day Cost	$ 49,873
Expenses: (on-branch):		Car Mile Cost	3,124
Transportation	473	Locomotive Ownership	3,242
Fuel	22,553	Return on Investment	0
Maintenance-of-Way	229,733	Total On-branch Expenses	486,284
Maintenance of Equipment	2,661	Total Off-branch Expenses	449,407
Train supplies & Expenses	11,574	Total Expenses	935,691
Train labor	84,603	Profit (Loss)	132,688
Miscellaneous	78,448		

Track Conditions

This line consists primarily of 56 pound rail with varying ballast conditions, including sod, gravel, and cinders. Crossties are in better overall condition here than on other lines, although the road crossings are extremely poor. Heavier rail has been installed through some of the crossings, but gravel from the roads often completely covers the rail. Extensive rehabilitation would be required to operate at Class II speeds, but a Class I operation would be possible with a moderate effort.

Shortline Alternative

Operation of the Andover to Brampton line as a shortline was analyzed by Rail Management Services, Inc. under several line alternatives. Their analysis concluded that insufficient traffic exists on the line to allow shortline operations to break even without significant surcharges per carload.

Of the alternatives considered, operation of the line from Britton to Brampton with a connection at the BN offers the greatest potential for shortline viability, although this segment would still cover only a portion of its operating expenses.

Project Alternatives

The following project alternatives are presented as studied. Final selection is based on consideration of both quantitative and qualitative criteria, and may result in the choice of an alternative which does not have the highest ratio of benefits to costs. In such cases, qualitative considerations form the primary basis for selecting the recommended alternative. Since the line is currently abandoned, this line status was used as the base case for the purpose of the analysis. Consequently, no study was made of the impact of abandonment relative to the rail service which previously existed.

Study Project #2

PROJECT ALTERNATIVE I - SERVICE RESTORATION AND REHABILITATION TO CLASS I

Description

This alternative includes rehabilitation of the line to Class I track standards and resumption of train service. This option provides a minimum amount of service for a minimum expenditure of funds, and does not allow for sufficient operating improvements or efficiencies to be realized. Calculation of primary efficiency benefits yields a negative result due to the rise in the cost of providing rail service over truck service. This, in turn, is a function of a branch line operation over poor track and at restricted speeds. In short, the inherent advantages of rail in relation to truck for the movement of bulk commodities over long distances are not realized by undertaking this project. Start up and rehabilitation expenses are estimated at approximately $107,000.

Rail Service Level

Twice weekly.

Rail Traffic Volume

Originated - 46,920 tons
Terminated - 7,969 tons
Total - 54,889 tons

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$ -97,951	$ -97,951	$-97,951
Secondary Efficiency Benefits					
Income ($)	+2,000	-	-	+2,000	+2,000
Highway Costs ($)	-	-	-	+10,400	+10,400
Taxes ($)	-	-	-	-5,745	-5,745
Net Salvage Value ($)	-	-	-		
Other:					
Total Benefits ($)	+2,000	-	$ -97,951	$ -91,296	$-91,296
Costs ($)	-				$+15,816
Other:					
Jobs	+2	-	-	+2	+2
Energy (Gallons)	-	-	-	-37,200	-37,200
Air Pollution (lbs.)	-	-	-	-25,000	-25,000
Benefits minus costs					$-107,112
Benefit/Cost Ratio					-5.77

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PROJECT ALTERNATIVE II - SERVICE RESTORATION AND REHABILITATION TO CLASS II

Description

This alternative involves track rehabilitation to allow Class II operating speeds and the resumption of service. The differences between this alternative and Project Alternative I include the achievement of operating efficiencies due to higher train speeds and the potential growth of the traffic base as a result of providing better service. Service, however, is not a simple function of speed as it is also variable based on trip frequency, equipment availability, and the time required to complete the entire trip cycle, from pick up to actual delivery. Based on the shipper survey, there is no basis to forecast an increase in the 1979 traffic base. There is a large difference in the project cost between the two levels of rehabilitation, and this effects the increased cost of providing service through a return on investment requirement. Based on past experience, the traffic base does not seem substantial enough to justify more than twice per week service. Start-up and rehabilitation costs are estimated at approximately $4,637,000.

Rail Service Level

Twice weekly.

Rail Traffic Volume (1979) (South Dakota only)

Originated - 46,920 tons
Terminated - 7,969 tons
Total - 54,889 tons

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$-310,851	$-310,851	$-310,851
Secondary Efficiency Benefits					
Income ($)	+2,000	-	-	+2,000	+2,000
Highway Costs ($)	-	-	-	+10,400	+10,400
Taxes ($)	-	-	-	-5,745	-5,745
Net Salvage Value ($)	-	-	-	-	-
Other:					
Total Benefits ($)	+2,000	-	$-310,851	$-304,196	$-304,196
Costs ($)	-	-	-	-	-
Rehabilitation II	-	-	-	-	$+686,029
Other:					
Jobs	+2	-	-	+2	+2
Energy (Gallons)	-	-	-	-37,200	-37,200
Air Pollution (lbs.)	-	-	-	-25,000	-25,000
Benefits minus costs					$-990,225
Benefit/Cost Ratio					-.44

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Study Project #2

PROJECT ALTERNATIVE III - TRUNCATE AND REHABILITATE LINE TO CLASS II (BRITTON-BN JUNCTION

This project concerns the segment between Britton and the junction with the Burlington Northern's Aberdeen to Rutland line. It would involve restoring service on approximately four miles of track, and rehabilitating it to a Class II level with rail renewal to allow track conditions to be consistent with the BN's line. Britton is the largest station on the line, and this project would allow the rail option to be preserved for these shippers. It is estimated that rehabilitation would cost approximately $586,000 due to the expense of installing new rail and replacing a large number of crossties. This expense results in a large return on investment expense requirement, but it is more than compensated for by the benefits which accrue to the shipper for returning to rail transportation.

Rail Service Level

Twice weekly.

Rail Traffic Volume (1979)

Originated - 18,274 tons
Terminated - 6,335 tons
Total - 24,609 tons

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$+168,634	$+168,634	$+168,634
Secondary Efficiency Benefits					
Income ($)	-	-	-	-	-
Highway Costs ($)	-	-	-	$ +8,582	$+ 8,582
Taxes ($)	-	$ +4,654	-	$ +4,654	$+ 4,654
Net Salvage Value ($)	-	-	-	-	-
Other:					
Total Benefits ($)	-	$ +4,654	$+168,634	$+181,870	$+181,870
Costs ($)	-	-	-	-	$+ 86,708
Other:					
Jobs	-	-	-	-	-
Energy (Gallons)				-29,700	-29,700
Air Pollution (lbs.)	-	-	-	-19,900	-19,900
Benefits minus costs					$+ 95,162
Benefit/Cost Ratio					+2.10

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Study Project #2

PROJECT ALTERNATIVE IV - MOVE ELEVATOR

This alternative involves moving the elevator at Britton to the BN junction, where rail shipping would continue on the Aberdeen to Rutland line. Abandonment of the Andover to Brampton line would be allowed to continue and the abandoned stations would use the other transportation options of all truck and truck-rail moves. The primary advantage of this alternative is that the traffic would be able to utilize the rail option while absorbing none of the required rehabilitation costs on the Andover to Brampton line. This enables the full efficiencies of rail transportation to be realized and reflected in the primary efficiency benefits. Moving the elevator is expected to have an approximate cost of $600,000.

Rail Service Level

None

Rail Traffic Volume

None

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$+244,190	$+244,190	$+244,190
Secondary Efficiency Benefits					
Income ($)	-	-	-	-	-
Highway Costs ($)	-	-	-	+8,582	+8,582
Taxes ($)	-	-	-	-4,654	-4,654
Net Salvage Value ($)	-	-	-	-	-
Other:					
Total Benefits ($)	-	-	$+244,190	$+248,118	$+248,118
Costs ($)	-	-	-	-	-
Move elevator	-	-	-	-	88,770
Other:					
Jobs	-	-	-	-	-
Energy (Gallons)	-	-	-	-29,700	-29,700
Air Pollution (lbs.)	-	-	-	-19,900	-19,900
Benefits minus costs					$+159,348
Benefit/Cost Ratio					+2.80

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Study Project #2

BENEFIT-COST SUMMARY

TYPE OF IMPACT	REHABILITATE Class I	REHABILITATE Class II	MOVE ELEVATOR(S)	TRUNCATE LINE Britton-BN	
Primary Efficiency Benefits ($)	$-97,951	$-310,851	$+244,190	$+168,634	
Secondary Efficiency Benefits					
Income ($)	+2,000	+2,000	-		
Highway Costs ($)	+10,400	+10,400	+8,582	$+8,582	
Taxes ($)	-5,745	-5,745	-4,654	$+4,654	
Net Salvage Value ($)	-	-	-		
Other:					
Total Benefits ($)	$-91,296	$-304,196	$+248 118	$+181,870	
Costs ($) Rehabilitation	-	$+686,029	-	$+86,708	
Move Elevator	$+15,816	-	$+88,770		
Other:					
Jobs	+2	+2	-		
Energy (Gallons)	-37,200	-37,200	-29,700	-29,700	
Air Pollution (lbs.)	-25,000	-25,000	-19,900	-19,900	
Benefits minus costs	$-107,112	$-990,225	$+159,348	$+95,162	
Benefit/Cost Ratio	-5.77	-.44	+2.80	+2.10	

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IMPACTS ASSESSMENT

The most attractive option, considering only the ratio of benefits to costs, is the move elevator alternative. This is followed by the line truncation project, which would involve operation by the BN of the four miles of track between Britton and BN's Aberdeen to Rutland line. The need to perform substantial track rehabilitation work and the operations cost of the line represent the difference between the move elevator and truncation cases. Both cases result in positive ratios of benefits to costs, and a choice between the two should be based on qualitative criteria.

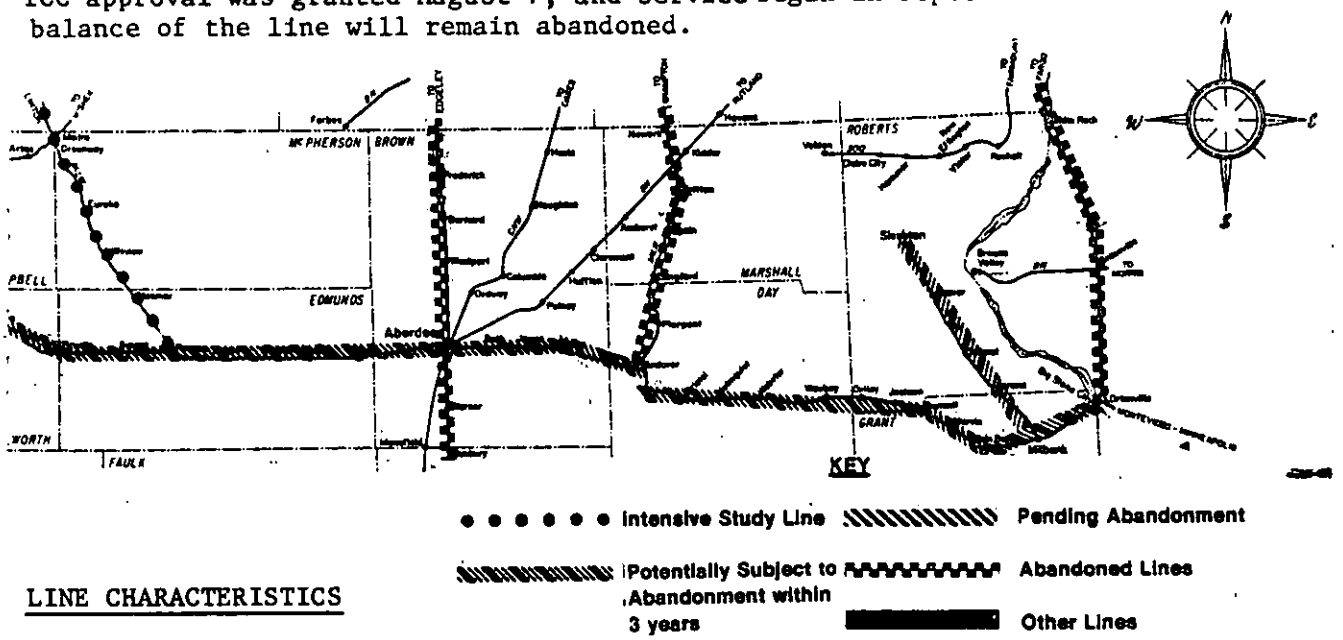
The rehabilitation cases for the line result in negative ratios due to the high return on investment requirement resulting from track repairs. The difference between the benefits and costs of the rehabilitation to Class II case is significantly larger than the rehabilitation to Class I alternative because of the need to renew the rail on the entire line. In short, the large amount of deferred maintenance prevents the line from realizing a positive benefit-cost ratio unless other options designed to minimize operating and repair requirements are implemented.

Study Project #3

MW08 ROSCOE-LINTON

BACKGROUND

The line from Roscoe to Linton is currently abandoned and commodities formerly transported by rail are now transported by truck. The line was selected for intensive study because it is an abandoned line with significant shipper and community impacts; it is an abandoned line that provides accessibility to regional and national rail networks; and it is a line for which light density line consolidation and operational improvement projects are considered. The Burlington Northern announced plans in July 1980 to acquire the northern portion of the line to Eureka and to operate south to that point. ICC approval was granted August 7, and service began in September 1980. The balance of the line will remain abandoned.



LINE CHARACTERISTICS

Line Description

The Roscoe to Linton line is 75 miles in length with South Dakota stations at Hosmer and Eureka. Four elevators employing a total of 73 persons operate at these locations. The purpose of studying this line is to assess various alternatives and to provide a basis for a recommendation of the course of action which best eases the effects of abandonment. The line exists in an agricultural area of the State, and, in fact, Eureka was known as the wheat capital of the world during the 19th century. Traffic originating at South Dakota points on the line terminates at Minneapolis and Duluth, and terminating traffic consists primarily of fertilizer from the Southeastern United States.

Operations and Services

This line is currently abandoned, and consequently shippers were not asked to rate the quality of the rail service which they last received.

Study Project #3

Rail Traffic Volume (1979)

Originating Commodity	Destination	Amount Tons	Cars	Terminating Commodity	Origination	Amount Tons	Cars
Grain	Minneapolis	28,838	473	Fertilizer	Miscellaneous	344	12
Grain	Duluth	548	9	Other	Minneapolis	431	16
	TOTAL	29,386	481	TOTAL		775	28
				Grand Total for Line		30,161	509

Revenues and Costs of Rail Service

The rail costs are based on estimated on-branch costs, using system average costs, and normalized maintenance-of-way costs and net salvage values for each line. Off-branch rail costs are developed from the individual railroads' Rail Form A costs.

Revenues:	$762,316
Expenses:	
Transportation	599
Fuel	22,673
Maintenance of Way	454,573
Maintenance of Equipment	3,302
Train Supplies and Expenses	16,289
Train Labor	119,070
Miscellaneous	43,486

Car Day Cost	$ 28,626
Car Mile Cost	3,378
Locomotive Ownership	3,259
Return on Investment	1,870
Total On-branch Expenses	697,125
Total Off-branch Expenses	251,419
Total Expenses	948,544
Profit (Loss)	(186,228)

Track Conditions

This line is currently abandoned and consists primarily of 56-pound rail. Some farmers are allowing their cattle to graze in the right-of-way, and the line is quickly becoming overgrown because of the lack of weed control. The ballast is a combination of sod and badly fouled gravel, creating an overall condition that would require a significant amount of attention to meet Class I track standards. Rehabilitation of the line to Class II would require an expenditure of approximately $120,000 per mile, or a total of approximately $9,013,000. This is primarily due to a need to renew the rail to operate at higher speeds.

Shortline Alternative

Operation of the Roscoe to Linton line as a shortline was analyzed by Rail Management Services, Inc. under several line alternatives. Their analysis concluded that insufficient traffic exists on the line to justify shortline operations without significant surcharges per carload. No segment of the line appears to be viable as a shortline.

Study Project #3

Project Alternatives

The following project alternatives are presented as studied. Final selection is based on consideration of both quantitative and qualitative criteria, and may result in the choice of an alternative which does not have the highest ratio of benefits to costs. In such cases, qualitative considerations form the primary basis for selecting the recommended alternative. Since the line is currently abandoned, this line status was used as the base case for the purpose of this analysis. Consequently, no study was made of the impact of abandonment relative to the rail service which previously existed.

Study Project #3

PROJECT ALTERNATIVE I - SERVICE RESTORATION AND REHABILITATION TO CLASS I

Description

This alternative involves restoring service and rehabilitating the line to allow operation at Class I speeds (10 miles per hour or less). A primary efficiency disbenefit results when analyzing this project, despite generally lower rates available through rail service. This is because the rise in the cost of providing service is greater than the decline in the price of using the service. In other words, although in most cases it would cost the shipper less to use rail transportation, it would cost the community more to provide the service. When this benefit and disbenefit are compared, a net disbenefit results. The total cost of this project is estimated at approximately $111,625.

Rail Service Level

Twice weekly.

Rail Traffic Volume

Originated - 29,386 tons
Terminated - 775 tons
Total - 30,161 tons

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$ -268,192	$ -268,192	$ -268,192
Secondary Efficiency Benefits					
Income ($)	$ +1,350	-	+648	+1,998	+1,998
Highway Costs ($)	-	-	-	+14,331	+14,331
Taxes ($)	-	-	-	-8,404	-8,404
Net Salvage Value ($)	-	-	-	-	-
Other:					
Total Benefits ($)	$ +1,350	-	$ -267,544	$ -260,267	$ -260,267
Costs ($)	-	-	-	-	$ -15,683
Other:					
Jobs	+2		+2	+4	+4
Energy (Gallons)				-54,400	-54,400
Air Pollution (lbs.)				-36,500	-36,500
Benefits minus costs					$ -275,950
Benefit/Cost Ratio					-16.60

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Study Project #3

PROJECT ALTERNATIVE II - SERVICE RESTORATION AND REHABILITATION TO CLASS II

Description

This alternative is identical to Project Alternative I with two exceptions. First, rehabilitation would occur to Class II track standards to allow operations at higher speeds (25 miles per hour) and at a more efficient level. This would require complete rail renewal. Second, this service improvement would attract a slightly greater amount of traffic. Because of the high rehabilitation costs and resulting return on investment requirement of this project, the primary efficiency disbenefits are much greater than under the first option. The total cost of this project is estimated at $9,018,625.

Rail Service Level

Twice weekly.

Rail Traffic Volume

Originated - 32,557 tons
Terminated - 775 tons
Total - 33,332 tons

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$ -649,543	$ -649,543	$ -649,543
Secondary Efficiency Benefits					
Income ($)	$ +1,350		+1,944	+3,294	+3,294
Highway Costs ($)	-	-	-	+14,331	+14,331
Taxes ($)	-	-	-	-8,404	-8,404
Net Salvage Value ($)	-	-	-	-	-
Other:					
Total Benefits ($)	$ +1,350	-	$ -647,599	$ -640,322	$ -640,322
Costs ($)	-	-	-	-	-
Rehabilitate II	-	-	-	-	$ 1,333,473
Other:					
Jobs	+2	-	+6	+8	+8
Energy (Gallons)	-	-	-	-54,400	-54,400
Air Pollution (lbs.)	-	-	-	-36,500	-36,500
Benefits minus costs					$-1,973,795
Benefit/Cost Ratio					-0.48

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Study Project #3

PROJECT ALTERNATIVE III - MOVE ELEVATOR

This project would involve moving the line's largest shipper located at Eureka to Bowdle on the Milwaukee main line. Primary efficiency benefits are substantial for this alternative because the abandonment could continue and the majority of traffic would have the advantage of moving back to the lower rail rates. Rail rates are lower on the mainline and no branchline operating costs would have to be borne. Movement of the elevator would not affect the current transportation pattern which exists at any other stations on the line, unless these elevators elect to use the re-located elevator as transfer point. Cost of this project is estimated at approximately $600,000.

Rail Service Level

None.

Rail Traffic Volume

None.

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$ +248,419	$ +248,419	$ +248,419
Secondary Efficiency Benefits					
Income ($)	-	-	+1,944	+1,944	+1,944
Highway Costs ($)	-	-	-	+13,179	+13,179
Taxes ($)				-7,771	-7,771
Net Salvage Value ($)	$ +2,663	-	-	-	+2,663
Other:					
Total Benefits ($)	$ +2,663	-	$ +250,363	$+255,771	$+ 258,434
Costs ($)	-	-	-	-	-
Move Elevator	-	-	-	-	$+ 88,770
Other:					
Jobs	-	-	+6	+6	+6
Energy (Gallons)	-	-	-	-48,200	-48,200
Air Pollution (lbs.)	-	-	-	-32,400	-32,400
Benefits minus costs					$+169,664
Benefit/Cost Ratio					+ 2.91

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PROJECT ALTERNATIVE IV - TRUNCATION AND REHABILITATION OF LINTON TO EUREKA

Description

This alternative involves truncation of the line and operation by the BN from Linton south. These operations have been begun by the railroad, which requests that a cooperative 803 program be executed by North and South Dakota to rehabilitate the line. For the purpose of this analysis, it has been assumed that this rehabilitation would be to the Class II track level to permit a more efficient operation. Primary efficiency benefits are negative due to the high costs of the rail operation. The cost of this project has been estimated at approximately $3,121,500.

Service Level

To be determined.

Traffic Volume (South Dakota Stations only)

Originated - 21,212 tons
Terminated - 715 tons
Total - 21,927 tons

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$-385,516	$-385,516	$-385,516
Secondary Efficiency Benefits					
Income ($)	$ +1,350	-	+1,944	+3,294	+3,294
Highway Costs ($)	-	-	-	$+14,265	$+14,265
Taxes ($)	-	-	-	-7,924	-7,924
Net Salvage Value ($)	+2,663	-	-	-	+2,663
Other:					
Total Benefits ($)	$ +4,013	-	$-383,572	$-375,881	$-373,218
Costs ($)	-	-	-	-	$+461,826
Other:					
Jobs	+2	-	+6	+8	+8
Energy (Gallons)	-	-	-	-66,600	-66,600
Air Pollution (lbs.)	-	-	-	-44,700	-44,700
Benefits minus costs					$-835,044
Benefit/Cost Ratio					-.81

* Annual Benefit

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Study Project #3

PROJECT ALTERNATIVE V - TRUNCATION AND REHABILITATION OF ROSCOE TO EUREKA

Description

This alternative provides for the restoration of service from Roscoe to Eureka and the rehabilitation of the 26 miles of track to Class II standards. The cost of this project is estimated at approximately $3,123,450, due primarily to a need for complete rail renewal. Implementation of this option would allow the two stations in South Dakota to return to using rail service, although only 35 percent of the line would have to be rehabilitated, maintained, and operated. The primary efficiency benefits are positive because of the ability to ship by rail rather than truck. However, due to the large investment needed to rehabilitate the line to Class II standards, the ratio of benefits to costs is less than one. In other words, the investment will not be recovered within the ten-year period. The cost of this project has been estimated at approximately $3,123,450.

Rail Service Level

Twice weekly.

Rail Traffic Level

Originated - 26,303 tons
Terminated - 775 tons
Total - 27,078 tons

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$+12,716	$+12,716	$+12,716
Secondary Efficiency Benefits					
Income ($)	$+1,350	-	$+1,944	$+3,294	$+ 3,294
Highway Costs ($)	-	-	-	$+14,331	$+14,331
Taxes ($)	-	-	-	$-6,269	$-6,269
Net Salvage Value ($)	-	-	-	-	-
Other:					
Total Benefits ($)	$+1,350	-	$+14,600	$+24,072	$+24,072
Costs ($)	-	-	-	-	$+462,114
Other:					
Jobs	+2	-	+6	+8	+8
Energy (Gallons)	-	-	-	-54,400	-54,400
Air Pollution (lbs.)	-	-	-	-36,300	-36,300
Benefits minus costs					$-438,042
Benefit/Cost Ratio					+.05

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Study Project #3

PROJECT ALTERNATIVE VI - CONSTRUCT PUBLIC LOADING FACILITY AT ARTAS OR BOWDLE

Description

This project involves the construction of a public loading facility at either Bowdle (on the Milwaukee main line) or Artas (on the Soo Line). The facility would be available for use by the general public for a nominal fee to cover expenses. This alternative would allow all elevators on the line to utilize rail service and benefit from not absorbing high branch line costs. The facility is proposed for either location and is anticipated to cost approximately $375,000, which includes the cost of siding construction. The benefits and costs of constructing the facility at Artas are shown below. The primary efficiency benefits of locating the project at Bowdle increase to $310,621, making the benefit cost ratio +5.77.

Service Level

None

Traffic Volume (South Dakota Stations Only)

Originated - 23,132 tons
Terminated - 0 tons
Total - 23,132 tons

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$+268,125	$+268,125	$+268,125
Secondary Efficiency Benefits					
Income ($)	-	-	+648	-	+648
Highway Costs ($)	-	-	-	+12,922	+12,922
Taxes ($)	-	-	-	-7,623	-7,623
Net Salvage Value ($)	$+2,663	-	-	-	$+2,663
Other:					
Total Benefits ($)	$+2,663	-	$+268,773	$+273,424	$+276,735
Costs ($)	-	-	-	-	55,481
Other:					
Jobs	-	-	+2	+2	+2
Energy (Gallons)	-	-	-	-63,526	-63,526
Air Pollution (lbs.)	-	-	-	-42,680	-42,680
Benefits minus Costs					$+221,254
Benefit/Cost Ratio					+4.99

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Study Project #3

BENEFIT - COST SUMMARY

TYPE OF IMPACT	REHABILITATE CLASS I	REHABILITATE CLASS II	MOVE ELEVATOR(S)	TRUNCATE LINE Linton-Eureka	TRUNCATE LINE Roscoe-Eureka	CONSTRUCT PUBLIC LOADING FACILITY (ARTAS)**
Primary Efficiency Benefits ($)	$-268,192	$-649,543	$+248,419	$-385,516	$+12,716	$+268,125
Secondary Efficiency Benefits						
Income ($)	+1,998	+3,294	+1,944	+3,294	+3,294	+648
Highway Costs ($)	+14,331	+14,331	+13,179	+14,265	+14,331	+12,922
Taxes ($)	-8,404	-8,404	-7,771	-7,924	-6,269	-7,623
Net Salvage Value ($)	-	-	+2,663	+2,663	-	+2,663
Other:						
Total Benefits ($)	$-260,267	$-640,322	$+258,434	$-373,218	$+24,072	$+276,735
Costs ($) Rehabilitation	$ 15,683	$ 1,333,473	-	$+461,826	$+462,114	$+55,481
Move Elevator	-	-	$ 88,770	-	-	
Other:						
Jobs	+4	+8	+6	+8	+8	+4
Energy (Gallons)	-54,400	-54,400	-48,200	-66,600	-54,400	-63,526
Air Pollution (lbs.)	-36,500	-36,500	-32,400	-44,700	-36,500	-42,680
Benefits minus Costs	$-275,950	$-1,973,795	$+169,664	$-835,044	$-438,042	$+221,254
Benefit/Cost Ratio	-16.60	-0.48	+2.91	-.81	+.05	+4.99

* Annual Benefit
** Benefit/cost ratio for Bowdle facility is +5.77

IMPACTS ASSESSMENT

Of the projects studied, only the move elevator and public loading facility options have ratios of benefits to costs which are greater than one. The Roscoe to Eureka truncation alternative has a positive ratio, but the cost of rehabilitation is not covered during the ten-year period. Other cases result in negative ratios of varying magnitude. The primary reason for these results is the high return on investment requirement incurred by the large rehabilitation cost of the rail alternatives. If there were not a need to renew the existing rail, the ROI requirement would be significantly reduced. However, an independent assessment has determined that the light rail currently in place cannot support a Class II operation.

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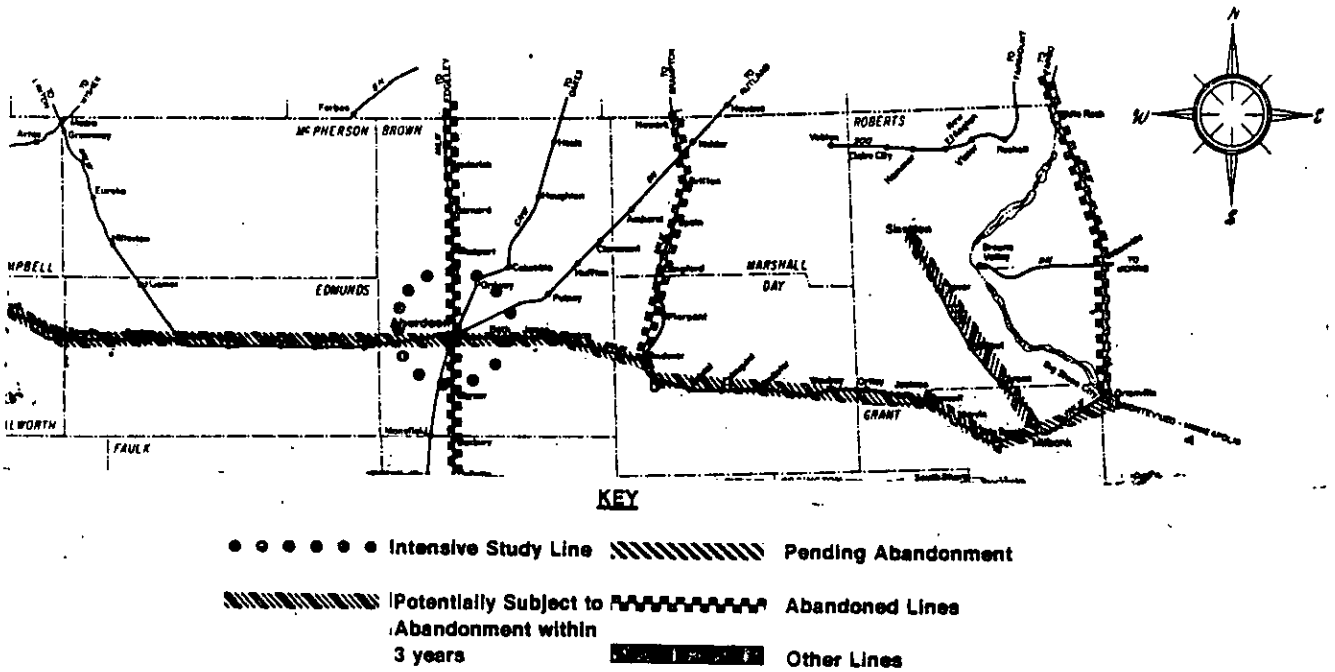
Study Project #4

ABERDEEN SIDING

BACKGROUND

This project involves the construction and upgrading of a rail siding of the South Dakota Wheat Growers Association elevator at Aberdeen. The facility is one of the largest in the State and is currently served by the Milwaukee Road, but siding capacity limits the number of cars that can be loaded to only about 12 at a time. The desire is to be able to ship in 50 car units. This project was selected for study because several other elevators owned by South Dakota Wheat Growers located at Frankfort, Stratford, Cresbard, and Brentford, and Chamberlain have lost rail service through line abandonments.



PROJECT DESCRIPTION

This project includes sufficient track capacity to load 50-car units and thereby allow the more efficient marketing of commodities. It is hoped that as a result of this increased capacity the impact of rail abandonment on other elevators owned by the Association will be eased. Total shipments are expected to increase to over 1 million bushels annually due to increased railcar loading capacity.

The benefits and costs of this project are summarized in the table below. Primary efficiency benefits accrue from the lower relative costs and prices of rail to truck transportation, and secondary benefits result from increased elevator employment, decreased highway maintenance costs, and less energy consumption and air pollution. A disbenefit occurs from the loss of motor carrier tax revenues, but the final result is a benefit to cost ratio of 4.2 to 1. The siding is estimated to cost approximately $227,000.

Study Project #4

Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$ +136,483	$+136,483	$ +136,483
Secondary Efficiency Benefits					
Income ($)	-	-	+900	+900	+900
Highway Costs ($)	-	-	-	+3,300	-3,300
Taxes ($)	-	-	-	-1,793	-1,793
Net Salvage Value ($)	-	-	-	-	-
Other:					
Total Benefits ($)	-	-	$+137,383	$+138,890	$+138,890
Costs ($)	-	-	-	-	-
Construction Cost	-	-	-	-	$ 33,585
Other:					
Jobs	-	-	+2	-	+2
Energy (Gallons)	-	-	-	+11,607	+11,607
Air Pollution (lbs.)	-	-	-	+6,948	+6,948
Benefits minus costs					$+105,305
Benefit/Cost Ratio					+4.14

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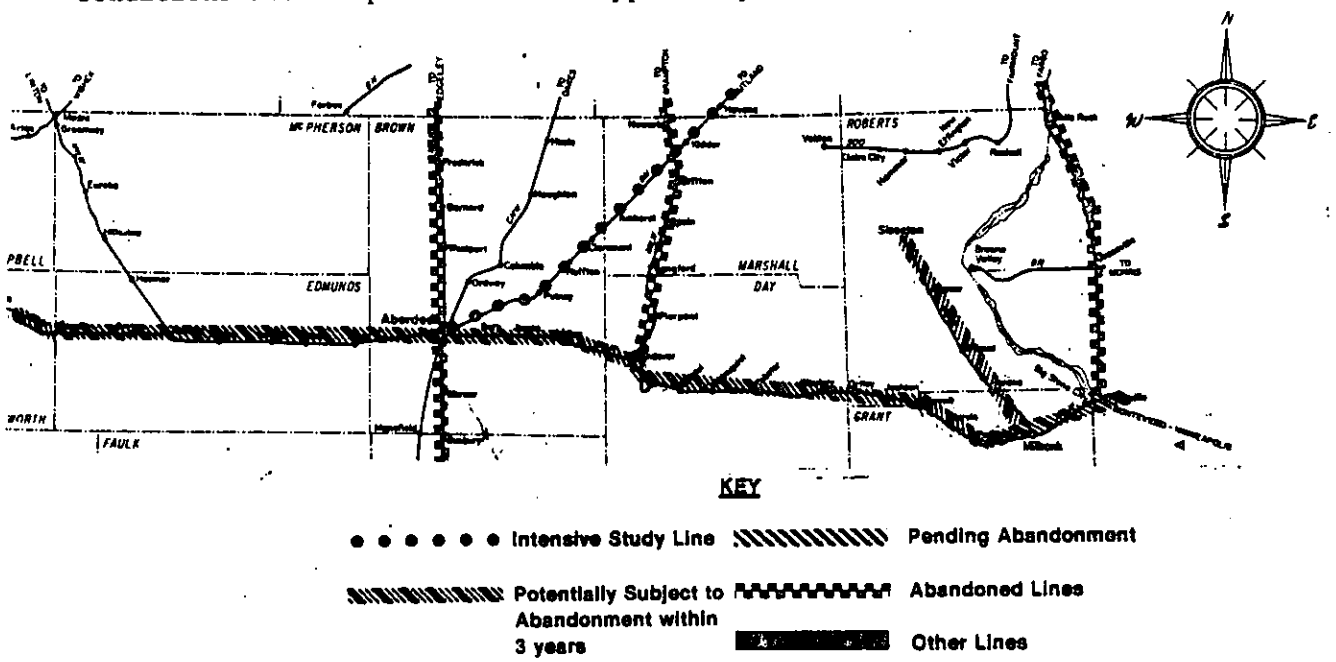
Study Project #5

BNO8 ABERDEEN TO RUTLAND, NORTH DAKOTA

BACKGROUND

This line was selected for study because it is a light density line which was perceived to be threatened by physical deterioration, and it is a light density line that provides accessibility to the regional and national railroad network. The most important reason for its selection is that, should the Milwaukee's Miles City line be abandoned, the Aberdeen to Rutland line would become a primary gateway for the movement of grain to the west coast. With the objective in mind of preserving this option, the line was selected for possible rehabilitation assistance to strengthen its long-term viabilty. Although preliminary indications were that some work was needed to maintain Class II track standards, an independent assessment concluded that current conditions are adequate for this type of operation.



IMPACTS ASSESSMENT

Despite the fact that rehabilitation is not currently required, the State wishes to preserve the option of proposing that assistance be granted at some future time. The future of the Miles City line is still uncertain, and action may be required to maintain the Aberdeen to Rutland line as an operating part of South Dakota's rail system. With its connection at Aberdeen, the line could serve as the natural route for west coast traffic flowing from the South Dakota core system since it has access to the BN main line in North Dakota.

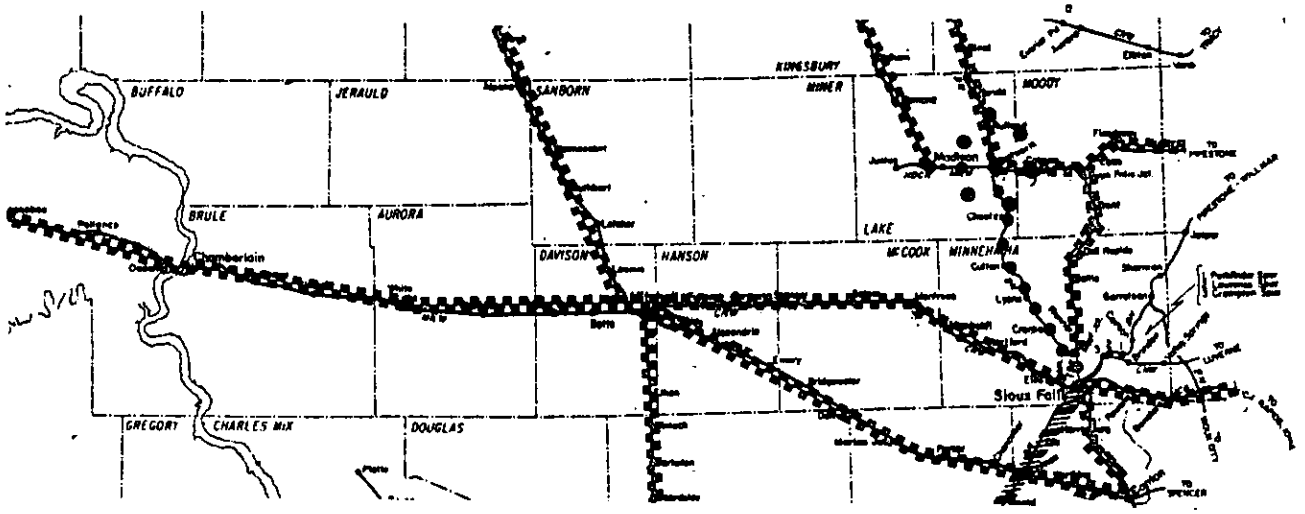
Because no further analysis was conducted, no table of benefits and costs is included.

Study Project #6

MW26/BN05 SIOUX FALLS TO MADISON

BACKGROUND

The line from Sioux Falls to Madison is operated by the Burlington Northern and now includes the Madison to Wentworth portion of a former Milwuakee line which is now abandoned. When the Milwaukee embargoed this line in the spring of 1980, BN proposed to purchase the Wentworth to Madison segment and to incorporate it into their system. Since that time, a regional facility has been proposed by the State for the Wentworth area which would serve as a transloading point for grain. This would be used by area elevators located on abandoned lines. The proposed project includes construction of the facility's rail siding which would have sufficient capacity to load 54-car unit trains and utilize the BN unit train rate for grain destined to the west coast. This project also includes improvement of the rail line to a level sufficient to attain both the 263,000-pound weight limit which is needed to operate fully loaded covered hopper unit trains, and Class II operating speeds (25 mph). The line exists in an extremely productive part of the State's agricultural area and provides a vital link with the regional and national rail network. This line was selected for intensive study because it is a light density line which provides this accessibility, it involves a light density line consolidation or operational improvement project, and the Wentworth to Madison portion is a light density line threatened by phsical deterioration.



KEY

- Intensive Study Line
- Potentially Subject to Abandonment within 3 years
- Pending Abandonment
- Abandoned Lines
- Other Lines

Study Project #6

LINE CHARACTERISTICS

Line Description

This line is approximately 44 miles in length, and services six open stations and seven grain elevators which employ 50 persons. The stations are located at Crooks, Lyons, Colton, Chester, Wentworth, and Madison. Outbound shipments are agricultural commodities, and inbound shipments include fertilizer, feed, coal, lumber, and stone, clay and glass products. The location of the line enables it to have significant potential to attract large amounts of outbound grain shipments which formally moved over now abandoned lines. The most important stations on these lines include Oldham, Ramona, Sinai, Nunda, Rutland, and Colman, and some area elevator operators have formed an association to investigate the possibility of a cooperative venture to construct the regional facility.

Operating and Service

Current operations consist of twice weekly service which originates from Sioux Falls. Future service levels will be determined by demand, with the heaviest period occurring in late summer and fall. Grain shipments are generally becoming less seasonal as on-farm storage and marketing potential increase. It is expected that unless total shippment volume is in the vicinity of 3,000 cars annually, that the BN will seriously consider abandoning the line or minimizing its financial support for a line improvement project. It is hoped that the regional loading facility will allow this goal to be reached and surpassed.

Shippers on the line were surveyed and asked to rate their rail service based on various service characteristics, using a scale of one to five with one being excellent and five being unsatisfactory. The results of this rating are as follows:

Service Characteristic	Rating	Service Characteristic	Rating
Local Service Frequency	2.7	Car Supply	2.7
Total Transit Time	3.0	Loss or Damage Frequency	3.0
Service Reliability	2.9	Customer Service	3.0

Overall Rating 2.9

Study Project #6

Rail Traffic Volume - 1979

Originating Commodity	Destination	Amount Tons	Cars
Grain	Minneapolis	6,508	240
	Duluth	-	127
	West coast	11,351	18
	Sioux City	6,005	127
	Other	876	18
Total		24,740	523

Terminating Commodity	Origin	Amount Tons	Cars
Fertilizer	Miscellaneous	10,419	172
Lumber	Miscellaneous	883	15
Coal	Miscellaneous	200	3
Other	Miscellaneous	10,750	178
Total		22,252	368
Grand Total for Line		46,992	891

Revenues and Costs of Rail Service

The rail costs are based on estimated on-branch costs, using system average costs, and normalized maintenance-of-way costs and net salvage values for each line. Off-branch rail costs are developed from the individual railroads' Rail Form A costs.

Revenues:	$782,064
Expenses: (on-branch):	
Transportation	3,759
Fuel	81,685
Maintenance of Way	284,748
Maintenance of Equipment	7,676
Train Supplies & Expenses	42,308
Train Labor	199,969
Miscellaneous	64,545

Car Day Cost	$ 23,065
Car Mile Cost	3,020
Locomotive Ownership	29,575
Return on Investment	4,052
Total on-branch Expenses	744,402
Total off-branch Expenses	787,894
Total Expenses	$1,532,296
Profit (Loss)	(750,232)

Track Conditions

Track conditions on this line are fair, with only occasional surfacing required to continue the present type of operations, with the exception of the Wentworth to Madison segment which needs work to meet both Class I and Class II track standards. To provide the type of service required by the regional facility, however, (unit trains of covered hopper cars moved at Class II speeds) significant work such as complete rail renewal is required. Most of the rail currently in place is only 60-pound rail, and the BN proposes that 112-pound be installed to meet these operating requirements.

Project Alternatives

The following project alternatives are presented as studied. Final selection is based on consideration of both quantitative and qualitative criteria, and may result in the choice of an alternative which does not have the highest ratio of benefits to costs. In such cases, qualitative considerations form the primary basis for selecting the recommended alternative.

Study Project #6

PROJECT ALTERNATIVE I - ABANDONMENT

Description

The impacts caused by abandoning the entire line are addressed in the benefits and costs table shown below. This option is based on diverting present rail shipments to the truck alternative. Large disbenefits occur when long distance hauls are performed by truck, and if either a truck to railhead alternative is employed, or if the commodity is trucked to a closer final destination such as Sioux City, Duluth, or Minneapolis, the effect of abandonment becomes a net benefit. A positive primary efficiency benefit usually results from a diversion to truck of a short haul such as to Minneapolis because the decrease in the cost of producing the service is greater than the increased price which is charged to the customer. In essence, the on-branch rail costs exceed the price which a trucker would charge to provide service to a railhead on the main line by more than the savings which would be realized by using the lower rail rate and shipping from the branch line. For the purpose of this project alternative, it was assumed that existing rail volumes and destinations would be diverted to truck, except in the case of west coast corn shipments which were assumed to be sent by truck to Sioux City and transferred to the railroad.

Rail Service Level

None

Rail Traffic Level

None

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)			$ +108,786	$ +108,786	$ +108,786
Secondary Efficiency Benefits					
Income ($)	$ -2,457	$ +2,686	-4,716	-8,834	-8,834
Highway Costs ($)				-460	-460
Taxes ($)				+9,339	+9,339
Net Salvage Value ($)	+5,770				+5,770
Other:					
Total Benefits ($)	$ +3,313	$ +2,686	$ +104,070	$ +108,831	$ +114,601
Costs ($)					
Other:					
Jobs	-4	+3	-21	-22	-22
Energy (Gallons)				+54,800	+54,800
Air Pollution (Tons)				+36,700	+36,700
Benefits minus costs					$ +114,601 *
Benefit/Cost Ratio					

*Annual Benefit

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PROJECT ALTERNATIVE II - REHABILITATION TO CLASS II WITH AND WITHOUT REGIONAL FACILITY SIDING

Study Project #6

Description

This alternative incorporates rehabilitation of the line to a level sufficient to support a 263,000-pound weight limit and a speed limit of 25 miles per hour. Primary efficiency benefits are slightly negative due to the fact that on a variable cost basis the railroad was found to move virtually all its traffic at less than cost.

This project would allow abandoned elevators to transfer their commodities to the railroad at a minimal cost and to reduce the impact of rail abandonment on their operations. In addition, it would provide access to the attractive west coast market and enable shippers to utilize the recently published unit train rate for west coast grain. The BN had indicated that it will not participate in this project until a contract is signed with an area shipper's association regarding the project itself, the volume to be shipped, etc. This association has been formed and is exploring various alternatives which are available. The cost of line rehabilitation has been estimated at approximately $6,027,000 and the siding cost has been estimated at $364,000. For the purpose of the analysis, it has been assumed that the same amount of traffic will move over the line regardless of whether the regional facility is built. This is because of current sidetrack capacity on the line. The regional siding would have the advantage of common access and potentially lower user charges.

Rail Service Level

Twice weekly with special unit train service.

Rail Traffic Volume

Originated - 45,187 tons
Terminated - 22,252 tons
Total - 67,439 tons

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$-403,291	$-403,291	$-403,291
Secondary Efficiency Benefits					
Income ($)	-	-	+ 5,904	+ 5,904	+ 5,904
Highway Costs ($)	-	-	-	-	-
Taxes ($)	-	-	-	-	-
Net Salvage Value ($)	-	-	-	-	-
Other:					
Total Benefits ($)	-	-	$-397,387	$-397,387	$-397,387
Costs ($) Rehabilitation II -		-	-	-	+891,695
54 Car Siding	-	-	-	-	$ +53.854
Other: Total Costs	-	-	-	-	$945,549
Jobs	-	-	+12	+12	+12
Energy (Gallons)	-	-	-	+10,800	+10,800
Air Pollution (lbs.)	-	-	-	+ 7,300	+7,300
Benefits minus costs (with siding)	-	-	-	-	$-1,342,936
Benefits minus costs (without siding)					$-1,289,082
Benefit/Cost Ratio (without siding)	-	-	-	-	-.45
Benefit/Cost Ratio (with siding)	-	-	-	-	-.42

The statements and projections presented above have been prepared on the basis of the information and assumptions set forth in this section. The achievement of any economic, financial, or usage forecast may be affected by fluctuating economic conditions and is dependent upon the occurrence of other future events which cannot be assured. Therefore, the actual results achieved may vary from the projections, and such variation could be material.

Study Project #6

BENEFIT - COST SUMMARY

TYPE OF IMPACT	ABANDON	REHABILITATE with siding	MOVE ELEVATOR(S)	TRUNCATE LINE	OTHER
Primary Efficiency Benefits ($)	$ +108,786	$-403,291	-	-	
Secondary Efficiency Benefits					
Income ($)	$ -8,834	$+5,904	-	-	
Highway Costs ($)	-460	-	-	-	
Taxes ($)	+9,339	-	-	-	
Net Salvage Value ($)	+5,770	-	-	-	
Other:					
Total Benefits ($)	$+114,601	$-397,387	-	-	
Costs ($) Rehabilitation II	-	$+891,695	-	-	
54-car siding	-	$+53,854	-	-	
Other:					
Jobs	-22	+12	-	-	
Energy (Gallons)	+54,000	+10,800	-	-	
Air Pollution (lbs.)	+36,700	+7,300	-	-	
Benefits minus cost	$+114,601*	$-1,342,936			
Benefit/Cost Ratio	-	** -.42 (with siding)			

* Annual Benefit

**Benefit/Cost Ratio is -.45 without siding

The statements and projections presented above have been prepared on the basis of the information and assumptions set forth in this section. The achievement of any economic, financial, or usage forecast may be affected by fluctuating economic conditions and is dependent upon the occurrence of other future events which cannot be assured. Therefore, the actual results achieved may vary from the projections, and such variation could be material.

IMPACTS ASSESSMENT

The benefit cost analysis is predicated on the fact that the siding is not a major cost when it is annualized over ten years and, more importantly, on the assumption that there is no difference in the volume regardless of whether the siding is built. This assumption is based on the belief that there is a certain amount of grain that will be shipped by rail regardless of whether a regional facility is available, or an existing elevator with rail service is used. This grain is primarily corn destined for the west coast. The BN's recently published unit train rate for west coast grain is encouraging this traffic, especially on a line such as this, which is located in a major corn producing area of the state. The benefit/cost ratio is negative because it is indicated that the BN is not covering its costs on the traffic moved. Thus, the more traffic that is moved, the greater the deficit becomes. It is also the reason why the abandonment alternative results in an annual benefit.

Study Project #7

WENTWORTH SIDING

Project Description

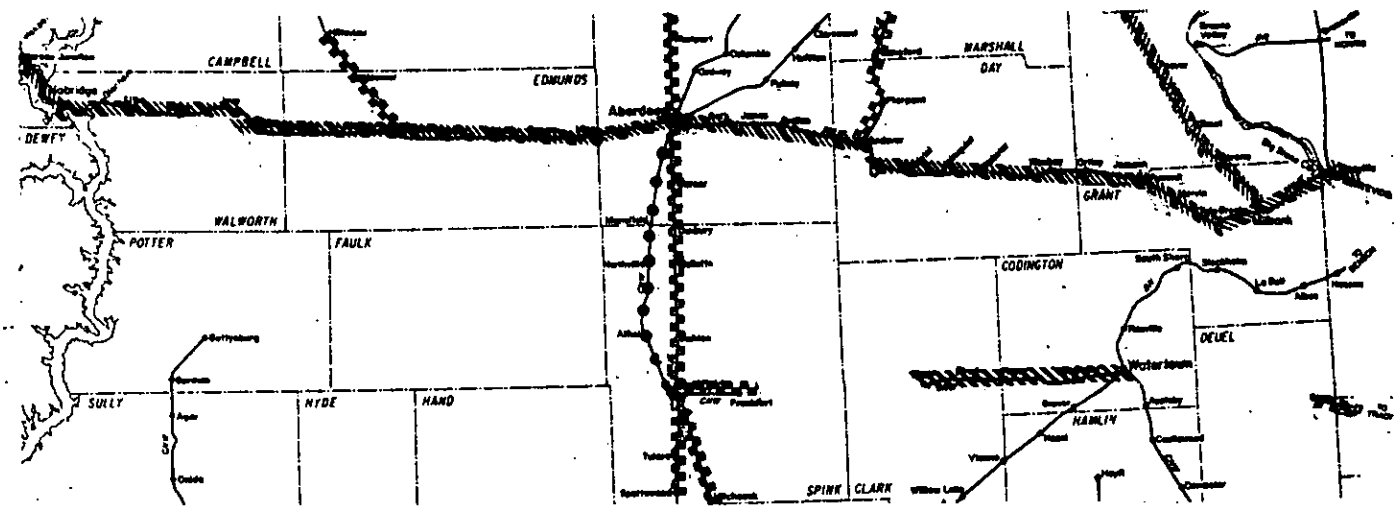
This project would consist of constructing a rail siding for a public loading facility in the Wentworth area. The facility would be built to serve elevators located on abandoned lines, and the siding would cost approximately $364,000. Since the facility would be served by the Burlington Northern's line between Sioux Falls and Madison, and the benefits of the siding would accrue to that line, the benefit cost analysis is included as part of Study Project 6.

Study Project #8

CN 04(b) REDFIELD TO ABERDEEN

Background

The C&NW rail line between Redfield and Aberdeen has been selected for intensive study in order to explore the options available to minimize the impact of abandonment should it occur. The line is currently in Category 5, indicating that no plans for abandonment currently exist. Serving as a link between an agricultural area and the regional rail network, the line plays an important role in enabling local farmers and grain elevators to market their commodities to full advantage. A study of alternatives at this time allows the most appropriate course of action to be selected and instituted prior to actual abandonment so that the effects of service termination can be minimized.



KEY

- Intensive Study Line
- Potentially Subject to Abandonment within 3 years
- Pending Abandonment
- Abandoned Lines
- Other Lines

B. LINE CHARACTERISTICS

Line Description

The Redfield to Aberdeen line is 42 miles in length and serves three stations and grain elevators at Athol, Northville, and Mansfield. These elevators employ a total of 7 persons and represent the heavily agricultural nature of the local economy. The line formerly continued south to James Valley Junction, but this portion was abandoned in 1979 and removed during the summer of 1980.

Study Project #8

Operations and Service

Service is currently provided twice weekly by a train originating at Huron and terminating at Oakes, North Dakota. The Redfield to Aberdeen portion of the line is out of service due to track conditions, necessitating operations to Aberdeen to be completed on abandoned Milwaukee tracks through a 1979 trackage rights agreement.

Shippers were requested to rate their rail service based on several criteria, using a scale of one to five with one being excellent and 5 being unsatisfactory. The aggregated results are as follows:

Service Characteristic	Rating	Service Characteristic	Rating
Local Service Frequency	no response	Car Supply	2.3
Total Transit Time	2.5	Loss or Damage Frequency	2.5
Service Reliability	2.0	Customer Service	2.3

Overall Rating 2.4

Rail Traffic Volume* - 1979

Commodity	Originating Destination	Amount Tons	Cars
Grain	Minneapolis	19,608	332
Grain	Duluth	6,927	117
Grain	Other	7,803	133
Total	--	34,338	582

Revenues and Costs of Rail Service

The rail costs are based on estimated on-branch costs, using system average costs, and normalized maintenance of way costs and net salvage values for each line. Off-branch rail costs are developed from the individual railroads' Rail Form A costs.

Revenues:	$685,871		
Expenses (on-branch):		Car Day Cost	$ 15,991
Transportation	3,705	Car Mile Cost	2,110
Fuel	75,751	Locomotive Ownership	33,440
Maintenance of Way	229,760	Return on Investment	21,403
Maintenance of Equip.	8,250	Total on - Branch Expenses	558,981
Train Supplies & Expenses	23,012	Total off - Branch Expenses	265,967
Train Labor	112,934	Total Expenses	824,948
Miscellaneous	32,625	Profit (loss)	(139,077)

*There is no terminating traffic on this line.

Track Conditions

Track conditions are very poor, as maintenance has been deferred for several years. A 210,000 lb. weight limit exists due to bridge conditions, and speeds are restricted to 10 mph. Poor tie and ballast conditions and a general lack of tie plates and rail anchors have allowed the rail to lose guage rather drastically in some areas, and this problem is a primary reason for the termination of service north of Mansfield. No work is planned by the railroad to alleviate these conditions.

Project Alternatives

The following project alternatives are presented as studied. Final selection is based on consideration of both quantitative and qualitative criteria and may result in the choice of an alternative which does not have the highest ratio of benefits to costs. In such cases, qualitative considerations form the primary basis for selecting the recommended alternative.

Study Project #8

PROJECT ALTERNATIVE I - ABANDONMENT

The first alternative, abandonment, will occur within a short period of time unless extensive rehabilitation is performed. The benefits and costs of abandonment were developed to illustrate the effect of taking no action to either continue service or ease the impacts on shippers of terminating service.

Rail Service Level

None.

Rail Traffic Volume

None.

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$+75,166	$ +75,166	$+75,166
Secondary Efficiency Benefits					-
Income ($)	-	$+1498	-674	+319	+319
Highway Costs ($)	-	-	-	-17,910	-17,910
Taxes ($)	-	-	-	+9,768	+9,768
Net Salvage Value ($)	$+30,478	-	-	-	+30,478
Other:					
Total Benefits ($)	+30,478	+1,498	$+74,492	$+67,343	$+ 97,821
Costs ($)	-	-	-	-	-
Other:					
Jobs	-	+8	-3	+5	+5
Energy (Gallons)	-	-	-	+68,100	+68,100
Air Pollution (lbs.)	-	-	-	+45,700	+45,700
Benefits minus costs					$+97,821*
Benefit/Cost Ratio					-

*Annual Benefit

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Study Project #8

PROJECT ALTERNATIVE II - REHABILITATION TO CLASS II

The costs and benefits of rehabilitation were calculated to determine if anticipated traffic levels and any modal advantages of rail transportation would justify the rehabilitation of the rail line to track class II. Some shippers indicated through the survey that improved service such as could be provided after this level of rehabilitation was performed would allow them to increase the volumes which they ship by rail. The cost of this project is estimated to be approximately $965,600.

Rail Service Level

Twice weekly.

Rail Traffic Volume - 1979

Originated - 37,772 tons.

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$+112,355	$+112,355	$+112,355
Secondary Efficiency Benefits					
Income ($)	-	-	-	-	-
Highway Costs ($)	-	-	-	-	-
Taxes ($)	-	-	-	-	-
Net Salvage Value ($)	-	-	-	-	-
Other:					
Total Benefits ($)	-	-	$+112,355	$+112,355	$+112,355
Costs ($)	-	-	-	-	$+142,417
Other:					
Jobs	-	-	-		
Energy (Gallons)	-	-	-	+1,900	+1,900
Air Pollution (lbs.)	-	-	-	+1,300	+1,300
Benefits minus costs					$-30,062
Benefit/Cost Ratio					+.79

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Study Project #8

PROJECT ALTERNATIVE III - MOVE ELEVATOR

The alternative of moving the elevator of the largest rail shipper, located at Northville, to Mellette on the parallel Milwaukee line currently being operated by the C&NW, was also investigated. This would allow the railroad the benefits of abandoning the Redfield to Aberdeen line, while at the same time continuing rail service to the largest rail shipper and providing the carrier with the benefit of that traffic. It was assumed that moving the elevator would have the same effect on this elevator's rail shipping volumes as would rehabilitating the Redfield to Aberdeen line. Rail traffic of abandoned elevators was routed via other transportation modes for the purpose of calculating the benefits and costs of the alternative. The cost of this project is estimated to be approximately $600,000.

Rail Service Level

None

Rail Traffic Volume

None

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$ +284,452	$ +284,452	$ +284,452
Secondary Efficiency Benefits					
Income ($)	-	$ +427	-	+427	+427
Highway Costs ($)	-	-	-	-11,980	-11,980
Taxes ($)	-	-	-	+6,456	+6,456
Net Salvage Value ($)	$+30,478	-	-	-	+30,478
Other:					
Total Benefits ($)	$+30,478	$+427	$+284,452	$ +279,355	$+309,833
Costs ($)	-				$+88,770
Other:					
Jobs	-	+2	-	+2	+2
Energy (Gallons)	-	-	-	+46,600	+46,600
Air Pollution (lbs.)	-	-	-	+31,300	+31,300
Benefits minus costs					$+221,063
Benefit/Cost Ratio					+3.49

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PROJECT ALTERNATIVE IV - LINE TRUNCATION AND REHABILITATION FROM REDFIELD TO MANSFIELD

The final alternative considered is the truncation of the line between Mansfield and Aberdeen and the rehabilitation of the portion between Redfield and Mansfield. This would allow the continuation of service to all stations on the line and the improvement of track conditions. The improvement of these conditions would lower the carrier's cost of providing service, retain all current rail traffic, and allow the possibility of providing better service and attracting an additional increment of traffic. The cost of this project is estimated to be approximately $602,771.

Rail Service level

Twice weekly

Rail Traffic Volume - 1979

Originated - 37,772 tons.

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$ +209,118	$+209,118	$+209,118
Secondary Efficiency Benefits					
Income ($)	-	-	-	-	-
Highway Costs ($)	-	-	-	-	-
Taxes ($)	-	-	-	-	-
Net Salvage Value ($)	$+11,483-	-	-	-	$+11,483
Other:					
Total Benefits ($)	$+11,483-		$+209,118	$+209,118	$+220,601
Costs ($)	-				$ 89,180.
Other:					
Jobs	-	-	-	-	-
Energy (Gallons)	-	-	-	-	-
Air Pollution (lbs.)	-	-	-	-	-
Benefits minus costs					$+131,421
Benefit/Cost Ratio *					+ 2.47

*Annual Benefit

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Study Project #8

BENEFIT - COST SUMMARY

TYPE OF IMPACT	ABANDON	REHABILITATE	MOVE ELEVATOR(S)	TRUNCATE LINE	OTHER
Primary Efficiency Benefits ($)	$+75,166	$+112,355	$+284,452	+209,118	
Secondary Efficiency Benefits					
Income ($)	+319	-	+427	-	
Highway Costs ($)	-17,910	-	-11,980	-	
Taxes ($)	+9,768	-	+6,456	-	
Net Salvage Value ($)	+30,478	-	+30,478	+11,483	
Other:					
Total Benefits ($)	$+ 97,821*	$+112,355	$+309,833	$+220,601	
Costs ($) Rehabilitation II	-	$+142,417	-	$+89,180	
Move Elevator	-	-	$+88,770		
Other:					
Jobs	+5	-	+2	-	
Energy (Gallons)	+68,100	+1,900	+46,600	-	
Air Pollution (lbs.)	+45,700	+1,300	+31,300	-	
Benefits minus costs	$+ 97,821*	$-30,062	$+221,063	$+131,421	
Benefit/Cost Ratio	-	+.79	+3.49	+2.47	

* Annual Benefit

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IMPACTS ASSESSMENT

The project alternatives studied for this line offer two options where the ratio of benefits to costs exceeds one. These are line truncation and moving the elevator, with the latter enjoying the higher ratio. This is primarily due to the fact that the largest shipper would be able to ship by rail and incur a smaller portion of the line's operations costs. The move elevator alternative also has the greatest difference between project benefits and costs, due both to the low project cost and the greater primary efficiency benefits. In the rehabilitation case, the project cost exceeds the benefits, making the ratio less than one. The benefit of abandonment is exceeded by the net benefits of both the move elevator and truncate line alternatives. Since the latter cases are fairly close in their respective results, qualitative factors are a key in making final project selection.

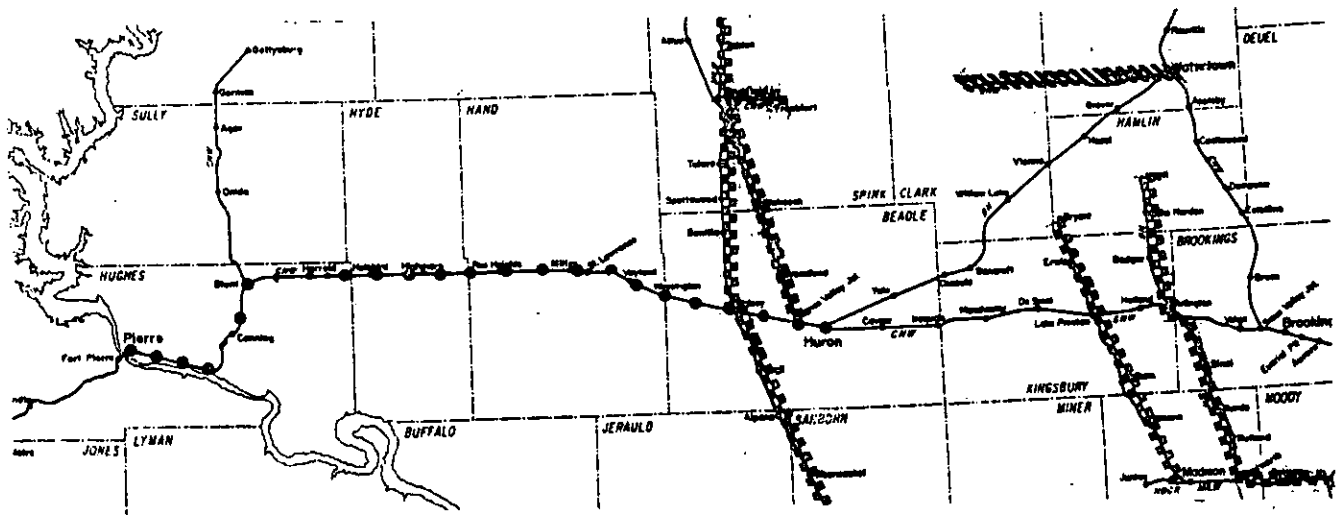
Study Project #9

CNO2 HURON - PIERRE

BACKGROUND

The Huron to Pierre segment of the C&NW secondary main line which crosses the State from east to west is one of South Dakota's most essential rail segments. Serving Pierre, the State capitol, it links a productive agricultural region with the regional and national rail network and its existence allows stations west of Pierre to also have rail service. Without this line, the major population center of Rapid City would lack direct rail access to the east and the Blunt to Gettysburg branch line would be abandoned. In addition, with the embargo and subsequent abandonment of most Milwaukee lines in the State, including the line from Mitchell to Rapid City, this has become the only operating rail line in its service area.

The Huron to Pierre segment is in Category 5, meaning that no plans currently exist for its abandonment. It was selected for study because of the belief that its physical condition threatened its future viability, its abandonment would have an adverse impact on shippers and communities, and because of its vital role as a link to agricultural markets. The line was also selected because it contributes to the traffic base of connecting, viable lines. It is the goal of the State for this line to be retained and profitably operated by a Class I railroad.



KEY

- Intensive Study Line
- Potentially Subject to Abandonment within 3 years
- Pending Abandonment
- Abandoned Lines
- Other Lines

Study Project #9

LINE CHARACTERISTICS-BASE CASE

Line Description

The Huron to Pierre segment is 118 miles in length, and serves fourteen grain elevators and agriculturally oriented businesses, as well as one user of manufactured goods. These firms are located at nine open stations and employ a total of 82 persons. The stations are; Pierre, Harrold, Highmore, Holabird, Ree Heights, Miller, St. Lawrence, Wessington, and Wolsey. With the growth in the numbers of acres being irrigated, crop production has been increasing and this trend should be expected to continue. Therefore, demand for transportation of farm products should generally rise and increase the demand for transportation.

Operations and Service

Service is now provided by three round trips weekly, with the train originating at Huron and continuing to Rapid City. During periods of high transportation demand, this level of service is increased as needed. The vast majority of traffic over the segment is overhead traffic originating at or beyond Rapid City.

Shippers were requested to rate the quality of their rail service based on several criteria using a scale of one to five, with one being excellent and five being unsatisfactory. The aggregated results are as follows:

Service Characteristic	Rating	Service Characteristic	Rating
Local Service Frequency	2.7	Car Supply	3.0
Total Transit Time	2.6	Loss or Damage	3.5
Service Reliability	3.1	Customer Service	3.3

Overall Rating 3.0

Rail Traffic Volume - 1979

Originating		Amount		Terminating		Amount	
Commodity	Destination	Tons	Cars	Commodity	Origination	Tons	Cars
Grain	Minneapolis	72,099	890	Fertilizer	Minneapolis	13,837	232
	Duluth	30,249	373	Other		29,765	508
	Sioux City	2,744	34				
	Nebraska	650	8				
	Other	9,359	116				
	TOTAL	115,101	1,421	TOTAL		43,602	740

Grand Total for Line 158,703 2,161

Study Project #9

Revenues and Costs

The rail costs are based on estimated on-branch costs, using system average costs, and normalized maintenance-of-way costs and net salvage values for each line. Off-branch rail costs are developed from the individual railroads' Rail Form A costs.

Revenues:	$2,345,665		
Expenses (on-branch):			
Transportation	24,803	Car Day Cost	$ 39,693
Fuel	333,302	Car Mile Cost	21,912
Maintenance of Way	764,285	Locomotive Ownership	147,135
Maintenance of Equipment	55,223	Return on Investment	32,415
Train Supplies & Expenses	63,282	Total on-Branch Expenses	1,942,919
Train Labor	310,571	Total off-Branch Expenses	1,456,806
Miscellaneous	150,298	Total Expenses	3,399,725
		Profit (loss)	(1,054,060)

Track Conditions

This line segment consists almost entirely of 72 pound rail. Primary physical deficiencies consist of poor ties and ballast in the Pierre to Wolsey section, as the effects of deferred maintenance are extremely evident. The line is 118 miles long, of which 97 miles are currently being operated at 20 mph or less. 13,000 ties are planned for installation during the summer and fall of 1980, but this work will primarily eliminate existing deficiencies and do little to improve the overall operating condition of the line. Present conditions do not appear to threaten operation of the line, but unless substantial work is undertaken in the near future it is possible that service will need to be reduced. Heavier tonnage is expected due to the abandonment of the parallel Milwaukee line, and this both increases the overall importance of the line and speeds its deterioration. The section east of Wolsey is in much better condition, but it is felt that the 251,000 pound weight restriction results in the loss of traffic which would normally flow north on the Wolsey to Redfield line. This problem could be eliminated by installing heavier rail in some sections in order to bring them into conformity with the rest of the segment, which is 112 pound.

Project Alternatives

The following project alternatives are presented as studied. Final selection is based on consideration of both quantitative and qualitative criteria, and may result in the choice of an alternative which does not have the highest ratio of benefits to costs. In such cases, qualitative considerations form the primary basis for selecting the recommended alternative.

Study Project #9

PROJECT ALTERNATIVE I - ABANDONMENT

Description

The purpose of designating this line for intensive study is to prevent its abandonment, not to propose it. The option is examined in order to assess the overall impact and thereby better understand the importance of the line's role in the State's rail system. It is felt that unless action is taken shortly, the physical condition of the line will necessitate consideration of the abandonment option by the C&NW. If abandonment were to occur, (and it would probably include the segment to Rapid City) the essential nature of the line would require that the state consider it for acquisition and inclusion in the South Dakota core system.

Rail Service Level

None.

Rail Traffic Volume

None.

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$-617,807	$-617,807	$-617,807
Secondary Efficiency Benefits					
Income ($)	$-2,457	+7,581	-3,144	-1,188	-1,188
Highway Costs ($)	-	-	-	-53,707	-53,707
Taxes ($)	-	-	-	-3,311	-3,311
Net Salvage Value ($)	+46,160	-	-	-	+46,160
Other:					
Total Benefits ($)	$+43,703	$+7,581	$-620,951	$-676,013	$-629,853
Costs ($)	-	-	-	-	-
Other:					
Jobs	-4	+18	-14	-	-
Energy (Gallons)	-	-	-	+187,300	+187,300
Air Pollution (lbs.)	-	-	-	+124,200	+124,200
Benefits minus costs					$-629,853 *
Benefit/Cost Ratio					-

*Annual Benefit

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Study Project #9

PROJECT ALTERNATIVE II - REHABILITATION TO CLASS II

Rehabilitation to Class II standards is considered in order to eliminate slow orders, improve the efficiency of operations, and improve the long term viability of the line itself and the lines with which it connects. Its importance to the State has increased with the recent abandonment of the Milwaukee line that it parallels, and since it appears that the C&NW is currently unable to independently finance the necessary improvements, the State decided to explore the options of providing outside assistance. The amount of traffic which will be diverted to the C&NW from the abandoned Milwaukee line is still unclear, but preliminary indications are that this diversion is currently taking place. This will hasten deterioration, but provide a greater and more stable traffic base. The cost of this alternative is estimated at approximately $3,456,500, which includes the Wolsey transfer track. This latter project is discussed separately later in the Plan.

Rail Service Level

Three round trips weekly.

Rail Traffic Volume

Originated - 137,250 tons
Terminated - 43,601 tons
Total - 180,851 tons

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$+535,626	$+535,626	$+535,626
Secondary Efficiency Benefits					
Income ($)	-	-	+1,728	+1,728	+1,728
Highway Costs ($)					
Taxes ($)					
Net Salvage Value ($)					
Other:					
Total Benefits ($)	-	-	$ +537,354	$+537,354	$ +537,354
Costs ($) Rehabilitation II					$ +511,389
Other:					
Jobs	-	-	+6	+6	+6
Energy (Gallons)	-	-	-	+22,100	+22,100
Air Pollution (lbs.)	-	-	-	+15,000	+15,000
Benefits minus costs - Rehab II					$ +25,965
Benefit/Cost Ratio	-				+1.05

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Study Project #9

PROJECT ALTERNATIVE III - REHABILITATION TO CLASS II WITH PARTIAL RAIL RENEWAL

This project is identical to alternative II with the exception of nine miles of rail renewal between Wolsey and James Valley Junction. The cost of the rail has been added to the costs of rehabilitating the line to Class II and replacing the Wolsey interchange. The benefits of rail replacement would accrue primarily to the Huron to Oakes train since according to C&NW there is potential business that requires the higher weight capacity. This traffic was served by the C&NW until the James Valley Junction to Redfield line was abandoned, but since the heavier rail was never installed between James Valley Junction and Wolsey, (which is the current route of the train) the traffic was lost. Rail replacement would allow the recapturing of this traffic. This project will result in operations improvements and increases in traffic volumes which are not quantified since neither the Huron to Oakes train nor the lines over which it travels are designated as intensive study lines in this RAILPLAN. It is expected that the Wolsey to Aberdeen and Aberdeen to Oakes lines will be studied in detail in the 1981 plan update. The Wolsey to Aberdeen line is not currently eligible for consideration as an intensive study line.

Rail Service Level

Three round trips weekly.

Rail Traffic Volume

Originated - 137,250 tons
Terminated - 43,601 tons
Total - 180,851 tons

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$+535,626	$+535,626	$+535,626
Secondary Efficiency Benefits					
Income ($)	-	-	+1,728	+1,728	+1,728
Highway Costs ($)					
Taxes ($)					
Net Salvage Value ($)					
Other:					
Total Benefits ($)	-	-	$+537,354	$+537,354	$+537,354
Costs ($)					
Rehabilitation II with partial rail renewal					$+644,544
Other:					
Jobs	-	-	+6	+6	+6
Energy (Gallons)	-	-	-	+22,100	+22,100
Air Pollution (lbs.)	-	-	-	+15,000	+15,000
Benefits minus costs					$-107,190 *
Benefit/Cost Ratio					+.83

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Study Project #9

BENEFIT - COST SUMMARY

TYPE OF IMPACT	ABANDON	REHABILITATE	REHABILITATE WITH PARTIAL RAIL RENEWAL	TRUNCATE LINE	OTHER
Primary Efficiency Benefits ($)	$-617,807	$+535,626	$+535,626		
Secondary Efficiency Benefits					
Income ($)	-1,188	+1,728	+1,728		
Highway Costs ($)	-53,707	-	-		
Taxes ($)	-3,311	-	-		
Net Salvage Value ($)	+46,160	-	-		
Other:					
Total Benefits ($)	$-629,853	$+537,354	$+537,354		
Costs ($)	-	-	-		
Rehabilitation II	-	$+511,389	$+644,544		
Other:					
Jobs	-	+6	+6		
Energy (Gallons)	+187,300	+22,100	+22,100		
Air Pollution (lbs.)	+124,200	+15,000	+15,000		
Benefits minus Costs	$-629,853 *	$+25,965	$-107,190		
Benefit/Cost Ratio	-	+1.05	+.83		

*Annual Benefit

The statements and projections presented above have been prepared on the basis of the information and assumptions set forth in this section. The achievement of any economic, financial, or usage forecast may be affected by fluctuating economic conditions and is dependent upon the occurrence of other future events which cannot be assured. Therefore, the actual results achieved may vary from the projections, and such variation could be material.

IMPACTS ASSESSMENT

The impact of failing to rehabilitate the Pierre to Huron segment is to perpetuate operating inefficiencies, endanger the traffic base due to deteriorated service levels, and eventually force the abandonment of the entire Huron to Pierre line and the Blunt to Gettysburg branch line. This would leave a significant part of the State with no rail transportation alternative and have an adverse impact on the economic development of the area. The loss of this segment would leave Rapid City, South Dakota with no direct rail connnection to the east and impose economic hardship on the state-owned cement manufacturing plant which is located there and ships large quantities of cement by rail to points in eastern South Dakota and Minnesota. The highly productive East River agricultural area would also be completely cut off from service. Traffic from the Rapid City to Bentonite line also flows to the east, and the loss of this routing could well cause dislocations at shipper's plants on that line as well.

In the belief that the true options available regarding this line are to either rehabilitate the segment to Class II standards or to abandon the line as discussed above, a special case was constructed to determine the primary efficiency benefits of abandoning the line instead of rehabilitating it. An annual disbenefit of $1,247,048 was discovered as the effect of choosing not to rehabilitate the line. Thus, a reason for selecting the rehabilitation alternative may not be the ratio of benefits to costs, but rather the large disbenefits of abandonment.

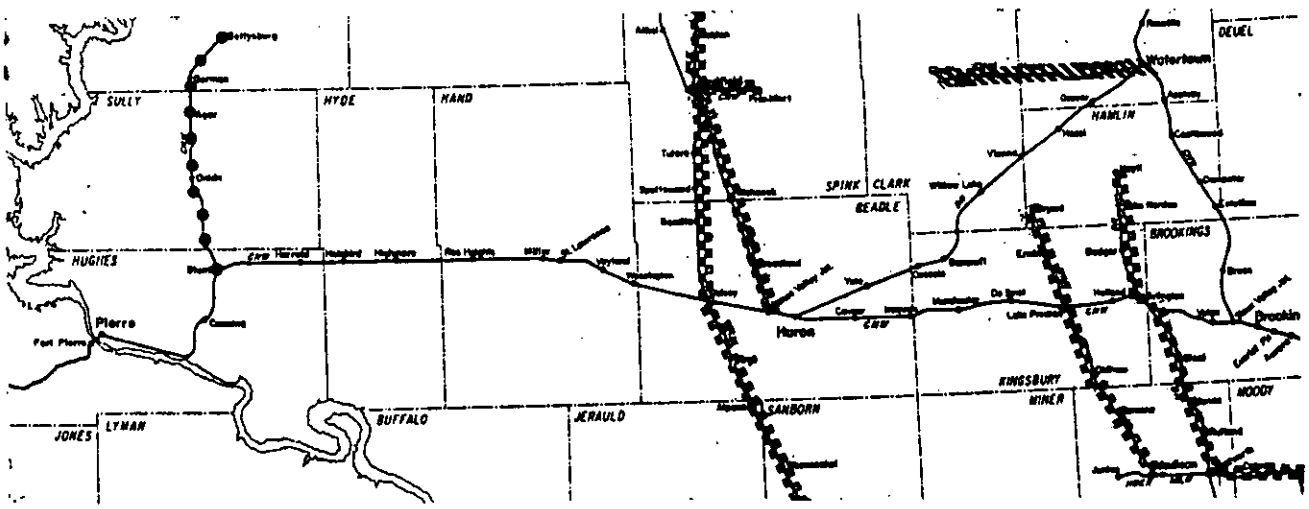
Study Project #10

CN 16 BLUNT TO GETTYSBURG

BACKGROUND

The C&NW branch line from Blunt to Gettysburg was selected for intensive study because it is a light density line which is threatened by physical deterioration and provides shippers with accessibility to the regional and national rail network.

A rehabilitation project for the Blunt to Onida portion of the line with the State, railroad, and shippers sharing the cost has been delayed since an application of on-line shippers to the FmHA has not yet been acted upon. The State's share, however, has been approved by the FRA. The line is being studied again to update existing information and to re-assess the alternatives available for action. The State is considering applying these funds to an alternate project while awaiting the FmHA decision, an action which would require a subsequent re-application for Federal funds by the State from its fiscal year 1981 allocation. The number of irrigated acres of farm land is increasing in this area, which creates the potential for increased demand for the transportation of agricultural commodities by rail. The line is currently in Category 5, meaning that no plans for abandonment currently exist.



KEY

- Intensive Study Line
- Pending Abandonment
- Potentially Subject to Abandonment within 3 years
- Abandoned Lines
- Other Lines

Study Project #10

LINE CHARACTERISTICS

Line Description

The Blunt to Gettysburg line is 40 miles in length and serves a total of eight grain elevators located at the stations of Onida, Agar, and Gettysburg. These elevators employ a total of 45 people and serve a heavily agricultural area of the State. The Oahe Grain elevator at Onida is one of the State's largest. The line formerly extended from Gettysburg east to Redfield and on to Watertown, but intermediate segments have been abandoned over the past several years.

Operations and Service

Service is currently provided only on an as-needed basis, and the time between train trips can be as much as 30 days. This is due to track conditions and the associated problems of operations. Traffic consists solely of originated grain products and terminated fertilizer. Minneapolis is the primary destination for outbound commodities.

Shippers were requested to rate their rail service based on several criteria, using a scale at one to five with one being excellent and five being unsatisfactory. The aggregated results are as follows:

Service Characteristic	Rating	Service Characteristic	Rating
Local Service Frequency	3.9	Car Supply	4.1
Total Transit Time	3.1	Loss or Damage Frequency	3.3
Service Reliability	4.5	Customer Service	2.8

Overall Rating 3.6

Rail Traffic Volume - 1979

Originating		Amount		Terminating		Amount	
Commodity	Destination	Tons	Cars	Commodity	Origination	Tons	Cars
Grain	Minneapolis	55,700	928	Fertilizer	Miscellaneous	1,147	31
	Duluth	3,787	63				
Grain	Other	813	14				
	TOTAL	60,300	1005	TOTAL		1,147	31
				Grand Total for Line		61,447	1,036

Revenues and Costs

The rail costs are based on estimated on-branch costs, using system average costs and normalized maintenance-of-way costs, and net salvage values for each line. Off-branch rail costs are developed from the individual railroad's Rail Form A costs.

Study Project #10

Revenues:	$923,312		
Expenses (on-branch):			
Transportation	2,124	Car Day Cost	$ 37,953
Fuel	41,663	Car Mile Cost	3,586
Maintenance of Way	244,734	Locomotive Ownership	18,392
Maintenance of Equipment	4,727	Return on Investment	208
Train Supplies & Expenses	16,096	Total on-branch Expenses	505,199
Train Labor	77,642	Total off-branch Expenses	552,291
Miscellaneous	58,074	Total Expenses	1,057,490
		Profit (Loss)	(134,178)

Track Conditions

The overall condition of the rail line itself is extremely poor, due to an apparent long history of deferred maintenance. The last significant maintenance-of-way work was undertaken in 1974 or 1975. These conditions make regularly scheduled service inadvisable and threaten the safety of train operations over these tracks. Ties originally installed in 1907 are still in place, but have become ineffective. Conditions are particularly poor on the section north of Onida. Ties are buried in either badly fouled ballast or sod, and great numbers are either broken or have rotted away. Tie plates are installed in the curves and on the bridges only, and this results in frequent variations in guage. The line has a 178,000 lb. loading restriction due to bridges and a 10 mph speed restriction due to track conditions.

Project Alternative

The following project alternatives are presented as studied. Final selection is based on consideration of both qualitative and quantitative criteria and may result in the choice of an alterative which does not have the highest ratio of benefits to costs. In such cases, qualitative considerations from the primary basis for selecting the recommended alternative.

Study Project #10

PROJECT ALTERNATIVE I - ABANDONMENT

Descriptions

Prompt action to correct physical deficiencies in track conditions is required if abandonment is to be averted. This alternative would divert approximately 60,000 tons of freight from the rail to the highway system and also affect the traffic level on the Pierre to Huron line with which it interchanges. The latter is an essential line in the State's rail system, and diversion of traffic from its traffic base could influence its future viability.

Rail Service Level.

None.

Rail Traffic Volume.

None.

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$-729,135	$-729,135	$-729,135
Secondary Efficiency Benefits					
Income ($)	-	+3,123	-1,123	+1,158	+1,158
Highway Costs ($)	-	-	-	-43,409	-43,409
Taxes ($)	-	-	-	+24,100	+24,100
Net Salvage Value ($)	+296	-	-	-	+296
Other:					
Total Benefits ($)	$+296	$+3,123	$-1,123	$-747,286	$-746,990
Costs ($)	-	-	-	-	-
Other:					
Jobs	-	+13	-5	+8	+8
Energy (Gallons)	-	-	-	+151,000	+151,000
Air Pollution (lbs.)	-	-	-	+103,300	+103,300
Benefits minus costs					$-746,990*
Benefit/Cost Ratio					-

* Annual Benefit

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Study Project #10

PROJECT ALTERNATIVE II - REHABILITATION TO CLASS II (NO RAIL RENEWAL)

Description

Under this alternative, the physical condition of the line would be improved to allow continued operation at Class II speeds. This would involve performing deferred maintenance and restoring the line to a condition that would allow a normalized annual maintenance expenditure to keep the line in a safe operating condition. It would also remove the threat of abandonment as long as an adequate traffic level is maintained. No rail renewal would be performed under this project, and the total cost is estimated at approximately $1,164,000.

Rail Service Level

One or two trips weekly.

Rail Traffic Level

Originated - 66,331 tons
Terminated - 1,147 tons
Total - 67,478 tons

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$ +98,028	$ +98,028	$+98,028
Secondary Efficiency Benefits					
Income ($)	-	-	+6,480	+6,480	+6,480
Highway Costs ($)	-	-	-	-	-
Taxes ($)	-	-	-	-	-
Net Salvage Value ($)	-	-	-	-	-
Other:					
Total Benefits ($)	-	-	$+104,508	$+104,508	$+104,508
Costs ($)	-	-	-	-	-
Rehabilitation II					$+172,214
Other:					
Jobs	-	-	+20	+20	+20
Energy (Gallons)	-	-	-	+10,200	+10,200
Air Pollution (lbs.)	-	-	-	+6,900	+6,900
Benefits minus costs					$-67,706
Benefit/Cost Ratio					+0.61

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Study Project #10

PROJECT ALTERNATIVE III - TRUNCATION TO ONIDA AND REHABILITATION TO CLASS II (WITH AND WITHOUT RAIL RENEWAL)

Description

This alternative examines the feasibility of operating only the portion of the line between Blunt and Onida. This would enable 47% of the traffic to be retained while operating only 39% of the mileage. Within this project alternative there are two options: rehabilitation with rail renewal, and rehabilitation replacing only defective crossties and performing other track work as needed. This would not allow the weight limit of the line to be raised. The cost of rehabilitation without replacing rail is estimated at $393,500, while the cost with rail renewal is estimated at $1,954,000.

Rail Service Level

One or two trips weekly.

Rail Traffic Level

Originated - 31,746 tons
Terminated - 592 tons
Total - 32,338 tons

Annual Benefits and Cost - Without Rail Renewal

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$-384,747	$-384,747	$-384,747
Secondary Efficiency Benefits					
Income ($)	-	$ +3,123	-449	+2,337	+2,337
Highway Costs ($)	-	-	-	-20,846	-20,846
Taxes ($)	-	-	-	+11,789	+11,789
Net Salvage Value ($)	+148	-	-	-	+148
Other:					
Total Benefits ($)	$ +148	$ +3,123	$-385,196	$-391,467	$-391,319
Costs ($)	-	-	-	-	$+58,218
Other:					
Jobs	-	+7	-2	+5	+5
Energy (Gallons)	-	-	-	+75,900	+75,900
Air Pollution (lbs.)	-	-	-	+50,900	+50,900
Benefits minus costs					$-449,537
Benefit/Cost Ratio					-6.72

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Study Project #10

Annual Benefits and Cost - With Rail Renewal

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$-368,863	$-368,863	$-368,863
Secondary Efficiency Benefits					
Income ($)	-	$+3,123	-449	+2,337	+2,337
Highway Costs ($)	-	-	-	-20,846	-20,846
Taxes ($)				+11,789	+11,789
Net Salvage Value ($)	+148	-	-	-	+148
Other:					
Total Benefits ($)	$+148	$+3,123	$-369,312	$-375,583	$-375,435
Costs ($)					$+289,094
Other:					
Jobs	-	+7	-2	+5	+5
Energy (Gallons)	-	-	-	75,900	75,900
Air Pollution (lbs.)	-	-	-	50,900	50,900
Benefits minus costs					$-664,529
Benefit/Cost Ratio					-1.30

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Study Project #10

PROJECT ALTERNATIVE IV - REHABILITATION TO CLASS II TO ONIDA AND CONTINUE SERVICE TO GETTYSBURG

This alternative would provide for rehabilitation of the Blunt to Onida segment with continued service on the Onida to Gettysburg segment. This would provide the best quality railroad for the portion of the line with the most traffic, and spread the cost burden over the entire traffic base. The purpose of considering this alternative is to investigate the effect of providing a degree of track quality that would match the traffic conditions of the line.

Rail Service Level

One or two trips weekly.

Rail Traffic Volume

Originated - 63,186 tons
Terminated - 1,147 tons
Total - 64,333 tons

Annual Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)			$+14,449	$+14,449	$+14,449
Secondary Efficiency Benefits					
Income ($)			+648	+648	+648
Highway Costs ($)	-	-	-	-	-
Taxes ($)	-	-	-	-	-
Net Salvage Value ($)	-	-	-	-	-
Other:					
Total Benefits ($)			$+15,097	$+15,097	$+15,097
Costs ($)	-	-	-	-	$+58,218
Other:					
Jobs	-	-	+2	-	+2
Energy(gallons)	-	-	+2,200	-	+2,200
Air Pollution (lbs.)	-	-	+1,500	-	+1,500
Benefits minus Costs					$-43,121
Benefit/Cost Ratio					+.26

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Study Project #10

BENEFIT - COST SUMMARY

TYPE OF IMPACT	ABANDON	REHABILITATE Class II	Partial Rehabilitation	TRUNCATE LINE without rail	Truncate line with rail
Primary Efficiency Benefits ($)	$-729,135	$+98,028	$+14,449	$-384,747	-368,863
Secondary Efficiency Benefits					
Income ($)	+1,158	+6,480	+648	+2,337	+2,337
Highway Costs ($)	-43,409	-	-	-20,846	-20,846
Taxes ($)	+24,100	-	-	+11,789	+11,789
Net Salvage Value ($)	+296	-	-	+148	+148
Other:					
Total Benefits ($)	$ - 747,286	$104,508	$+15,097	$-391,319	$-375,435
Costs ($)	-	-	-	-	-
Rehabilitation II	-	$172,214	$+58,218	$+58,218	$+289,094
Other:					
Jobs	+8	+20	+2	+5	+5
Energy (Gallons)	+151,000	+10,200	+2,200	+75,900	+75,900
Air Pollution (lbs.)	+103,300	+6,900	+1,500	+50,900	+50,900
Benefits minus costs	$-746,990*	$-67,706	$-43,121	$-449,537	$ -664,529
Benefit/Cost Ratio		+0.61	+.26	-6.72	-1.30

* Annual Benefit

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IMPACTS ASSESSMENT

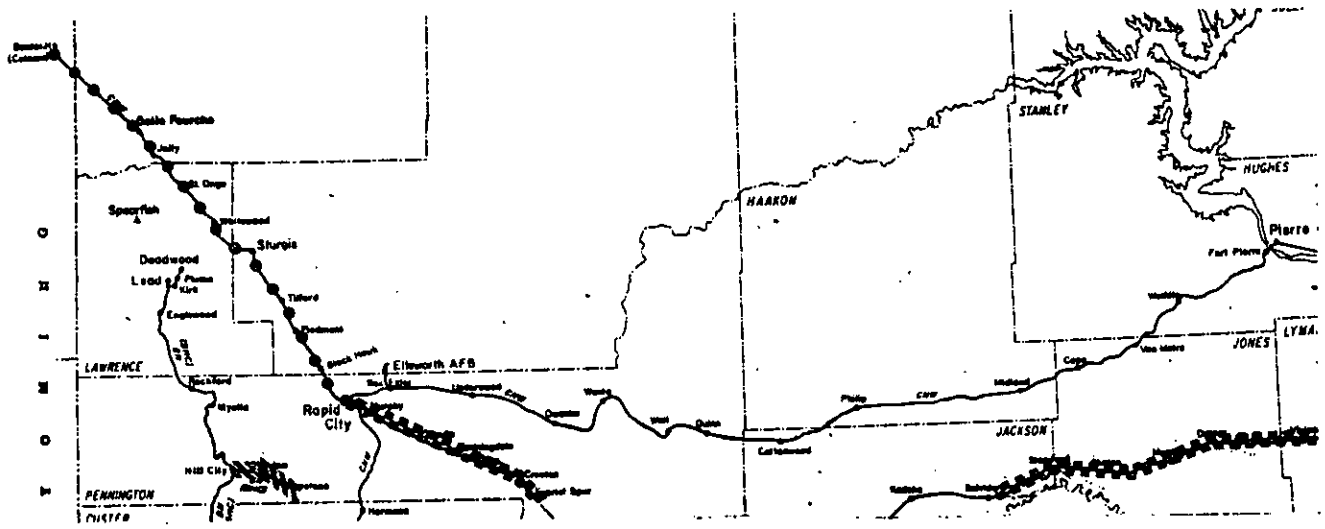
In the range of projects studied, none achieved a ratio of benefits to costs of one or better. This means that each alternative results in an annual disbenefit over the ten year period. The reason for these results lies in the return on investment requirement, which is shared by all traffic moving over the line. The poor condition of the line at the present time requires that substantial rehabilitation work be done, regardless of whether new rail is installed. Despite the disbenefits to some type of rail project, there is also a substantial annual penalty for abandonment. Thus, the most important criteria for selecting a project for this line may be qualitative.

Study Project #11

CN 07 RAPID CITY TO BENTONITE

BACKGROUND

The Chicago and North Western Railroad branch line from Rapid City, South Dakota, to Bentonite, Wyoming, has been designated as an intensive study line because of its role as a vital link between on-line shippers and the regional and national rail network, and because it is a light density line which contributes to a connecting viable line. It is also a light density line requiring rehabilitation to permit more efficient operations. The line is currently in Category 5, which signifies that no plans for abandonment currently exist. The line's principal importance lies in the transportation of bentonite clay to markets in oil drilling areas, at steel manufacturing plants, and at export markets. The principal purpose of studying this line is to facilitate, through rehabilitation assistance, the long-term operation of the branch line by a Class I railroad.



KEY

- Intensive Study Line
- Potentially Subject to Abandonment within 3 years
- Pending Abandonment
- Abandoned Lines
- Other Lines

LINE CHARACTERISTICS - BASE CASE

Line Description

The C&NW has invested significant amounts of money in maintenance of way programs in recent years in an effort to reduce a large backlog of deferred maintenance. There are three open stations along its 78 mile length, located at Sturgis, Whitewood, and Belle Fourche. These stations serve four grain elevators, four lumber and wood products firms, four bentonite plants, and one wool company, with a combined employment of 607 persons.

Study Project #11

Operations and Service

Normal operations consist of daily service from Rapid City to Belle Fourche, where a permanently stationed switch engine assembles a train of loaded cars from both local traffic and the Bentonite plants in Wyoming. The majority of traffic is not seasonal, and thus few variations in the service level occur. Unit train shipments of bentonite for export will occasionally require dedicated train service.

Shippers were requested to rate their rail service based on several criteria, using a scale of one to five with one being excellent and 5 being unsatisfactory. The aggregated results are as follows:

Service Characteristic	Rating	Service Characteristic	Rating
Local Service Frequency	2.0	Car Supply	2.5
Total Transit Time	2.9	Loss or Damage Frequency	3.5
Service Reliability	2.8	Customer Service	3.1

Overall Rating 2.75

Shippers reported varying degrees of dependence on the railroad to serve their transportation needs. Service is most essential to the bentonite plants, followed by lumber and wood products firms and grain elevators. The bentonite clay product is shipped both in bulk and bagged form, and the railroad seems ideally suited to providing transportation services for this usually long-hauled commodity.

Traffic Volume - 1979

Originating		Amount		Terminating		Amount	
Commodity	Destination	Tons	Cars	Commodity	Origin	Tons	Cars
Grain	Minneapolis	6,114	104			7,140	238
Woodchips	Wisconsin	61,055	1,034	Commodity and origin are shipper specific and are therefore assumed to be confidential.			
Pulpwood	Wisconsin	140,865	2,388				
Bentonite	Miscella-neous	258,185	4,376				
Total		466,219	7,902	Total		7,140	238
				Grand Total for Line		473,359	8,140

Revenues and Costs

The rail costs are based on estimated on-branch costs, using system average costs, and normalized maintenance-of-way costs and net salvage values for each line. Off-branch rail costs are developed from the individual railroads' Rail Form A costs.

Study Project #11

Revenues:	$19,134,150	Car Day Cost	$ 129,092
Expenses (on-branch):		Car Mile Cost	72,554
Transportation	31,839	Locomotive Ownership	133,759
Fuel	303,001	Return on Investment	43,140
Maintenance of Way	464,532	Total on-branch Expenses	2,200,310
Maintenance of Equipment	70,885	Total off-branch Expenses	8,318,771
Train Supplies & Expenses	50,337	Total Expenses	10,519,081
Train Labor	247,044	Profit (Loss)	8,615,069
Miscellaneous	654,127		

Track Conditions

Track conditions are improved from a few years ago, as much tie, ballast, and surfacing work has been completed. Some 72 lb. rail has also been replaced with 90 lb. welded rail, and more rail work is planned for the fall of 1980. Crossties are generally old but in relatively good condition, although the absence of an annual replacement program will result in track violations, slow orders, and jeopardized service within the next several years.

The line itself is located in the foothills of the Black Hills and suffers from problems such as having a subgrade with low sheer strength and the persistent erosion of surrounding terrain back into the shoulder ballast. Replacement of the remaining 72 lb. rail would result in operational and safety improvements, as well as operations cost savings.

PROJECT ALTERNATIVE

The following project alternative are presented as studied. Final selection is based on consideration of both quantitative and qualitative criteria and may result in the choice of an alternative which does not have the highest ratio of benefits to costs. In such cases, qualitative considerations form the primary basis for selecting the recommended alternative.

Study Project #11

PROJECT ALTERNATIVE I - ABANDONMENT

Although abandonment of this line is not currently contemplated, the effects of this course of action are calculated to determine the benefits of continuing service. They are also calculated to illustrate the ultimate effect of deferring maintenance on the line, assuming that the resulting deterioration in service would encourage a diversion of traffic to other modes and eventually render the line uneconomical to operate. Therefore, this alternative illustrates the consolidated effect of a process which could occur slowly as service quality declines. It should be noted that some bentonite plants reported in the shipper survey that they believe it would be impossible for them to continue operations without rail service. Some of these plants are located in the state of Wyoming, and the impact of employee dislocation was not calculated for their employees.

Service Level

None.

Traffic Volume

None.

Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$ -9,376,027	$ -9,376,027	$ -9,376,027
Secondary Efficiency Benefits					
Income ($)	$ -7,985	$ +6,129	-63,558	-115,715	-115,715
Highway Costs ($)	-	-	-	-23,619	-23,619
Taxes ($)	-	-	-	+21,618	+21,618
Net Salvage Value ($)	+45,125	-	-	-	+45,125
Other:					
Total Benefits ($)	$ +37,140	$ +6,129	$ -9,439,585	$ -9,493,743	$ -9,448,618
Costs ($)					
Other:					
Jobs	-13	+10	-283	-286	-286
Energy (Gallons)	-	-	-	-469,600	-469,600**
Air Pollution (lbs.)	-	-	-	-318,300	-318,300**
Benefits minus costs					$ -9,448,618*
Benefit/Cost Ratio					-

* Annual Benefit

** Decrease due to plant closings, terminations of traffic

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Study Project #11

PROJECT ALTERNATIVE II - REHABILITATION TO CLASS II

This alternative assesses the benefits of performing line rehabilitation work, including some rail renewal. It is assumed that service improvements will result from this rehabilitation, and that this will attract the additional shipping demand that some shippers indicated accrues from improved rail service. This alternative also would result in the benefit of allowing infrastructure improvements which the railroad, by itself, could not finance in the near term and confirm its long term operating commitment. The cost of this project is estimated to be approximately $2,860,000, of which $2,260,000 is rail.

Rail Service Level

Daily

Rail Traffic Volume

Originated - 466,219 tons
Terminated - 7,140 tons
Total - 473,359 tons

Benefits and Costs

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$ -69,286	$ -69,286	$ -69,286
Secondary Efficiency Benefits					
Income ($)	-	-	+21,384	+21,384	+21,384
Highway Costs ($)					
Taxes ($)					
Net Salvage Value ($)					
Other:					
Total Benefits ($)	-	-	$ -47,902	$ -47,902	$ -47,902
Costs ($)					$+423,122
Other:					
Jobs	-	-	+54	+54	+54
Energy (Gallons)	-	-	-	+7,700	+7,700
Air Pollution (lbs.)	-	-	-	+5,200	+5,200
Benefits minus costs					$ -471,024
Benefit/Cost Ratio					-0.11

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Study Project #11

SUMMARY OF BENEFITS AND COSTS

TYPE OF IMPACT	ABANDON	REHABILITATE	MOVE ELEVATOR(S)	TRUNCATE LINE	OTHER
Primary Efficiency Benefits ($)	$-9,376,027	$+69,286			
Secondary Efficiency Benefits					
Income ($)	-115,715	+21,384			
Highway Costs ($)	-23,619				
Taxes ($)	+21,618				
Net Salvage Value ($)	+45,125				
Other:					
Total Benefits ($)	$-9,448,618	$-47,902			
Costs ($)					
Rehabilitation II	$	+423,122			
Other:					
Jobs	-286	+54			
Energy (Gallons)	-469,600**	+7,700			
Air Pollution (lbs.)	-318,300**	+5,200			
Benefits minus costs	$-9,448,618*	$-471,024			
Benefit/Cost Ratio	-	-0.11			

* Annual Benefit

** Decrease due to plant closings, termination of traffic.

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IMPACTS ASSESSMENT

A goal of South Dakota is to maximize and facilitate the involvement of Class I railroads in its rail transportation system. By assisting a line such as this which is not presently an abandonment candidate, it is hoped that the long term potential for the line's economic viability will be maximized. The line is also a source of traffic for C&NW's Rapid City to Huron line which is judged to be vital to South Dakota's rail system. The Bentonite line, by serving as a feeder, therefore serves as an important source of overhead traffic and plays a key role in the Huron to Rapid City line's economic viability.

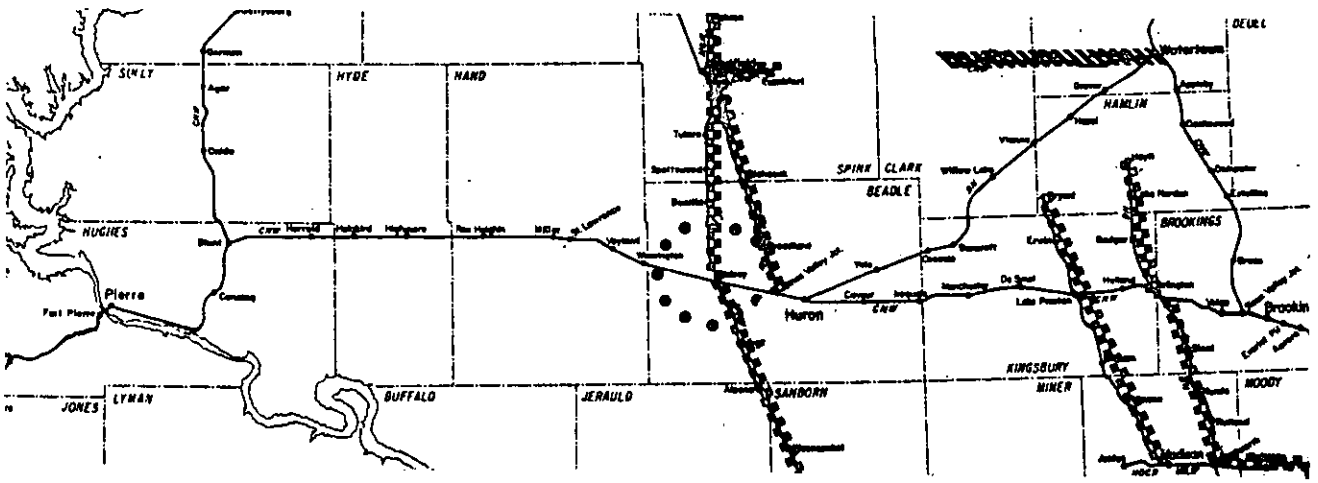
Despite the large disbenefits associated with abandonment, the ratio of benefits to costs is negative. This is because of the high return on investment requirement resulting from the rail renewal. The rehabilitation project was selected because of the desire to eliminate slow orders on the line and to improve operating safety and efficiency. In view of the line's value to the state and the fact that estimated rail life will greatly exceed the ten year time frame used in the analysis (thus spreading the cost over a longer period), qualitative factors play an important role in selecting a project alternative.

Study Project #12

WOLSEY TRANSFER TRACK

BACKGROUND

This project is for the purpose of replacing the transfer track between the C & NW line from Huron to Pierre, and the Milwaukee line from Mitchell to Aberdeen. The Milwaukee line is currently being operated by the C & NW. The existing facility, at the Wolsey crossing, has a curve of approximately 12°, which is too sharp to handle the length of train currently operated. In addition, the track has reached the end of its normal useful life. Current traffic consists of two round trips weekly which originate at Huron and terminate at Oakes, North Dakota.



KEY

- Intensive Study Line
- Potentially Subject to Abandonment within 3 years
- Pending Abandonment
- Abandoned Lines
- Other Lines

Study Project #12

IMPACTS ASSESSMENT

With the abandonment of C & NW's line from James Valley Junction to Redfield, the Milwaukee line and the Wolsey transfer have become the only routing available for traffic moving between the C & NW's east-west secondary main line and the north-south line formerly operated by the Milwaukee. This Milwaukee line has been designated for possible inclusion in a state core rail system and thus there is a long-term requirement for the ability to continue to interchange traffic at the Wolsey interchange.

If the current facility were to become unserviceable, the result would be either the loss of the Huron to Oakes train or its re-routing from Aberdeen, with the segment to Redfield operating as a dead-end branch line. It is reasonable to assume that this change could affect the service level provided, the traffic base of the line, and eventually the long-term viability of the operation. Although these events are not expected in the near term, their occurence should be considered as a possible effect of an inability to execute the transfer of traffic at Wolsey.

In the near term, advantages of undertaking this project include primarily safety and time-saving improvements. The estimated cost of the project is $95,000, or $17,053 when annualized over ten years. No quantifiable benefits are achieved, however the eventual impact on operations of not completing the project, and potential service and operations improvements resulting from a higher capacity interchange should be considered. Since the transfer is an integral part of the Pierre to Huron line, its cost has been included in the project cost of rehabilitating that line.

Study Project #13

MILES CITY, MONTANA TO GASCOYNE, NORTH DAKOTA

BACKGROUND

The Miles City, Montana to Gascoyne, North Dakota Project Segment is the 169-mile western end of the 677.3 mile Miles City Line which runs from Miles City, Montana to Jonathan, Minnesota. This line serves local shippers in Montana, North Dakota, South Dakota, and Minnesota, as well as overhead coal traffic destined for Wisconsin. It is claimed by the Milwaukee Road to be a marginally viable line, which should be maintained in operation in the public interest.[1] The Project Segment is the only portion of the line eligible for Section 803 funding, since its traffic density is below 5 million gross tons. Although the Project Segment lies in Montana and North Dakota, its proposed rehabilitation to Class II track standards is part of a larger rehabilitation effort aimed at the entire Miles City Line, which passes through northern South Dakota. Improvement of this line will help to keep the line in operation until a more thorough rehabilitation effort is undertaken. This will ensure continued service in South Dakota via the Miles City Line over the short term, thus justifying South Dakota's participation in the project with North Dakota.

LINE CHARACTERISTICS - BASE CASE

Line Description

The Project Segment is 169 miles long with primary stations at Bowman, Rhame, Marmarth, Baker, Terry and Miles City. The track is composed of 115 pound rail, with a ruling grade of 1.0 percent eastbound and 0.6 percent westbound. The weight limit of 263,000 pounds is adequate for unit coal and grain trains consisting of 100-ton hopper cars. The Project Segment serves 5 shippers in North Dakota and 8 shippers in Montana weekly, besides unit coal trains destined for Wisconsin 3 days a week.

Operations and Service

Normal operations consist of coal unit train service east to Wisconsin three times weekly and a local freight, as required. Maximum operating speeds vary between 30 and 50 miles per hour in various portions of this line, with significant 10 miles per hour speed restrictions due to local track conditions. The Project Segment has automatic block signals, and remotely controlled signals are located between Rhame and Marmarth.

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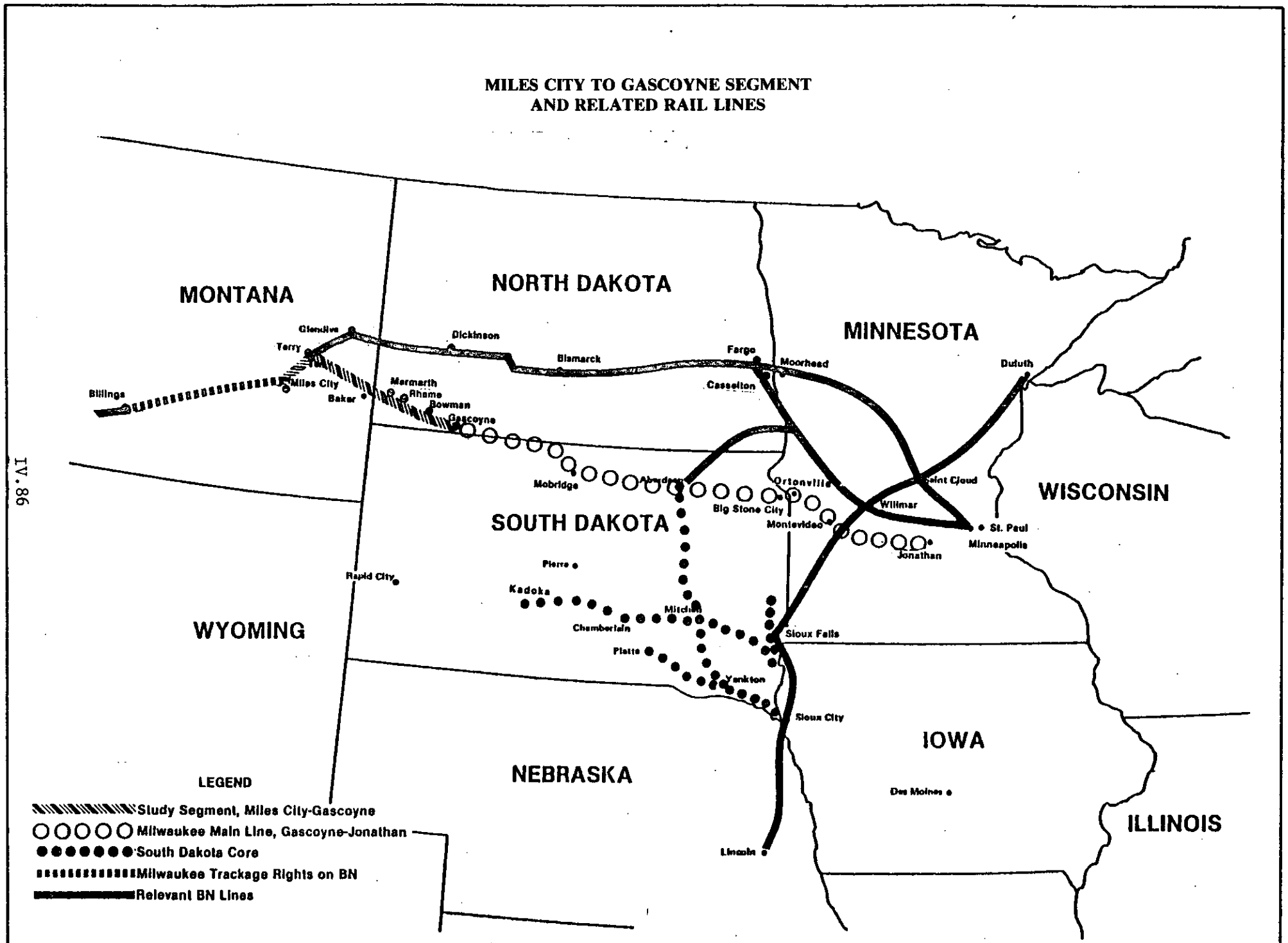
[1] Report and Recommendations for the Future of the Milwaukee Road, Docket No. 77B899, Richard B. Ogilvie, Trustee, May 15, 1980, p.72.

MILES CITY TO GASCOYNE SEGMENT
AND RELATED RAIL LINES



Traffic Volume - 1979

Diverted traffic volumes for the Project Segment result in a traffic density of about 3.32 million gross tons for 1979. Most of this is overhead coal traffic. Traffic volumes which are local to the Project Segment are listed as follows for 1979 (excluding Gascoyne, North Dakota, and Billings, Montana):

	Originating		Terminating	
COMMODITY	Tons	Cars	Tons	Cars
Grain	60,248	851	--	--
Lumber and Wood Products	48	1	517	35
Fertilizer	--	--	10,935	116
Farm Machinery	--	--	838	58
Transportation Equipment	1,787	95	2,065	116
Other	178	7	3,277	89
TOTAL	62,261	954	17,632	414

Shippers local to the Project Segment make extensive use of both rail and truck modes and are not captive to the line. Traffic overhead to the Project Segment is primarily coal moving east, fertilizer moving west, and grain moving predominately west. Without this line, the local traffic would use substitute truck service to the nearest railhead while overhead traffic would move via the parallel Burlington Northern mainline through North Dakota.

Revenues and Costs

Detailed revenue and cost data for the Project Segment were not available for this analysis. However, the analysis relied on the incremental costs of each alternative relative to the current situation, using Rail Form A costing of the traffic moving via the segment. This provided a more complete basis for judging the cost impacts of each alternative. This is because the analysis considers the cost differences of the entire routing changes which result from line abandonment, or operating changes and maintenance cost savings which result from line rehabilitation.

Track Conditions

The general condition of the Project Segment ranges from good to poor. The poor track is caused primarily by poor cross-tie conditions, augmented by clays in the subgrade pumping up through the gravel ballast and causing poor support. The rail condition is fair to good, due to the use of 115 pound rail and large tie plates. The track geometry has remained relatively satisfactory for the speed operated despite the tie and ballast deterioration. This segment needs emergency rehabilitation to sustain unit coal operations until rehabilitated to a normalized condition.

Study Project #13

The 5-year history of maintenance efforts by the Milwaukee Road in the Project Segment is listed below:

YEAR	MAINTENANCE EFFORT	ANNUAL COST (Current $)
1975	Not Available	
1976	Install 3,000 Crossties	$138,254.00
1977	Install 16,000 Crossties	800,000.00
1978	Install 13,000 Crossties	750,000.00
1979	Install 10,000 Crossties 6,000 Yards Rip-Rap	500,000.00

Source: Milwaukee Road

Study Project #13

PROJECT ALTERNATIVE I - ABANDON LINE, NO REHABILITATION

Description

According to this alternative, the Project Segment is allowed to continue to deteriorate until service is halted. The result is that local traffic moves by truck to and from the nearest railhead, while overhead traffic moves by rail over the BN main line through North Dakota. The primary result of this traffic shift is an annual primary efficiency disbenefit of over $3.8 million, arising from the increased costs of moving the traffic via the longer, more expensive BN route. Other impacts result from the loss of railroad jobs and the use of substitute truck service.

Compared to the base case of continued rail service with no rehabilitation, this alternative produces the following annualized benefits and costs. A 3-year time frame and 10 percent discount rate is assumed for this alternative because of the short-term nature of the project.

Service Level None

Traffic Volume None

Annual Benefits and Costs None

BENEFITS AND COSTS

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)			-3,816,945	-3,816,945	-3,816,945
Secondary Efficiency Benefits					
Income ($)		+6,917	-91,509	+120,863	-113,946
Highway Costs ($)				-119,200	-119,200
Taxes ($)					
Net Salvage Value ($)	+2,120,242				+2,120,242
Other					
Total Benefits ($)	+2,120,242	+6,917	-3,908,454	-4,057,008	-1,929,849
Costs ($)					
Other					
Jobs		+10	-55	-45	-45
Energy (Gallons)				+100,200	+100,200
Air Pollution (lbs.)				+67,100	+67,100
Benefits minus costs					$-1,929,849
Benefit/Cost Ratio *					-

* Annual Disbenefit

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Study Project #13

PROJECT ALTERNATIVE II - CONTINUE SERVICE, REHABILITATE LINE

Description

The proposed rehabilitation project is intended to eliminate slow orders and track safety violations on the Project Segment. The purpose of this effort is to maintain competitive rail service over the Project Segment, to ensure the continued accessibility of North Dakota and South Dakota rail network, and to provide for the expected capacity requirements of future coal and grain movements.

The proposed rehabilitation project will reduce the annual maintenance of way expenses required on a normalized basis which would be required in absence of the project. These annual cost savings amount to approximately $2,256,800 for the Project Segment under study. This reflects a cost of $1,615,000 if the line is rehabilitated and $3,871,800 if the segment is not rehabilitated.

As of May 25, 1980, the Project Segment had a slow order of 10 miles per hour between Gascoyne (M.P. 951) and Ives (M.P. 987). Rehabilitation of this slow-ordered track will permit shorter cycle times per train set and improved equipment utilization. This results in an annual savings of $173,900, which is included in the primary efficiency benefit. Of this amount, $83,289 per year results from improved equipment utilization, which is credited to the shippers. The remainder is credited to the railroad. No other impacts on the local rail users are assumed resulting from this alternative. The benefits and costs of this alternative are listed below. A three year time frame and 10 percent discount rate is assumed for this alternative because of the short-term nature of the project.

Service Level

Three unit coal trains weekly; weekly local train.

Traffic Volume

3.32 MGT density; Originating - 62,261 tons, Terminating - 17,632 tons

Study Project #13

BENEFITS AND COSTS

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	+2,347,363		+83,289	+2,430,652	+2,430,652
Secondary Efficiency Benefits					
Income ($)					
Highway Costs ($)					
Taxes ($)					
Net Salvage Value ($)					
Other:					
Total Benefits ($)	+2,347,363		+83,289	+2,430,652	+2,430,652
Costs ($)					$+ 913,897
Other:					
Jobs					
Energy (Gallons				-19,500	-19,500
Air Pollution (lbs.)				-13,200	-13,200
Benefits minus costs					$+1,516,755
Benefit/Cost Ratio					+2.66

* Annual Disbenefit

Note: The benefit-cost ratio of the Rehabilitation Case versus the Abandonment Case becomes $4,360,501/$913,897 = +4.77, for a payback period of 0.63 years or 7.5 months.

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Study Project #13

BENEFIT COST SUMMARY

TYPE OF IMPACT	ABANDON	REHABILITATE	MOVE ELEVATOR(S)	TRUNCATE LINE	OTHER
Primary Efficiency Benefits ($)	$ -3,816,945	$ +2,430,652			
Secondary Efficiency Benefits					
Income ($)	-113,946				
Highway Costs ($)	-119,200				
Taxes ($)					
Net Salvage Value ($)	+2,120,242				
Other:					
Total Benefits ($)	$-1,929,849	$-2,430,652			
Costs ($)		$+ 913,897			
Other:					
Jobs	-45				
Energy (Gallons)	+100,200	-19,500			
Air Pollution (lbs.)	+67,100	-13,200			
Benefits minus costs	$-1,929,849*	$+1,516,755			
Benefit/Cost Ratio	-	+2.66**			

* Annual Disbenefit

**Note: The benefit-cost ratio of the Rehabilitation Case versus the Abandonment Case becomes $4,360,501/$913,897 = +4.77, for a payback period of 0.63 years or 7.5 months.

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Study Project #13

IMPACTS ASSESSMENT

The primary justification for rehabilitating the Project Segment is the operating cost savings which result from not rerouting the segment's overhead traffic to the more expensive parallel BN main line through North Dakota. Other factors that support the rehabilitation project include the continued accessibility provided by the segment to both North Dakota and South Dakota for eastbound coal and lumber and westbound grain destined for export; access for the proposed South Dakota core system to the west coast export markets for grain; and continued viability of the line east of Gascoyne, North Dakota which serves the coal transportation needs of the Big Stone Power Plant. Without the overhead traffic moving on this segment, the line east of Gascoyne, North Dakota, would be much less viable and possibly shut down. This could result in huge economic losses due to the closing of the Big Stone Power Plant. Rehabilitation of the segment reduces the annual maintenance costs for the line and helps to ensure continued rail capacity for future movements of western coal destined for eastern markets or export. This is consistent with the national energy policy, which has emphasized coal as a major energy source for the United States.

Rehabilitation of the line essentially keeps the Project Segment open, since to do nothing would lead to quick abandonment of the line by shippers, if not the railroad, due to the deterioration of service. By rehabilitating the project segment, a second route for western coal is maintained. Without this route there is some doubt regarding the BN's ability to carry the potential traffic diversion that would result without incurring significant traffic delays or capital expenditures for line capacity improvements. The diverted traffic potential plus BN's expected traffic growth would exceed the BN main line's capacity within the next several years. A rehabilitated Milwaukee Main Line could absorb all the projected growth in coal traffic for a number of years. Since it is already a shorter and potentially faster route to Minneapolis, considerable long-term benefit can be gained by retaining and rehabilitating the line. Less community impacts would also result, since the Milwaukee main line passes through fewer population centers on the way to Minneapolis than the parallel BN main line the parallel BN main line through North Dakota.

Study Project #13

CONCLUSIONS AND RECOMMENDATIONS

Project Recommendations

The results of the analysis of the project segment clearly supports the need for immediate rehabilitation efforts to begin to eliminate existing track defects and slow orders. The proposed project will accomplish these objectives for the short-term (3 years), as part of a similar ($1.5 million additional) effort to be undertaken by the Milwaukee Road this fall. A payback period of 7.5 months results from rehabilitating the segment, with a benefit-cost ratio of 4.77.

This project is consistent with the rail plan policies, goals, and objectives for both North Dakota and South Dakota in that it:

- improves the viability and safety of rail services to the states;
- involves both states and the railroads in coordinating rail assistance efforts and pooling their resources;
- involves the continuation of service by a privately-owned carrier;
- supports essential rail services which could be lost without the project;
- facilitates the continuation of interstate rail services through a joint state program; and
- promotes the most efficient route and mode for handling the bulk coal and grain commodities moving over the project segment.

The project is also consistent with national transportation and energy policy since it is directed at maintaining a rail line which serves coal producing areas and provides an efficient routing for such traffic.

Project Schedule

The project is proposed to begin in August of 1980 and be completed this fall. This will permit satisfactory operation over the Project Segment beginning this winter.

Study Project #13

Project Funding

Project funding will be divided as follows:

Source	Amount	
Milwaukee Road	$ 500,000	(Local Match)
North Dakota	$ 900,000	(803 Funds)
South Dakota	$1,100,000	(803 Funds)
Total Project Cost	$2,500,000	

This allocation reflects the emphasis placed by each of the participants on the benefits (both quantitative and qualitative) to be received from the project.

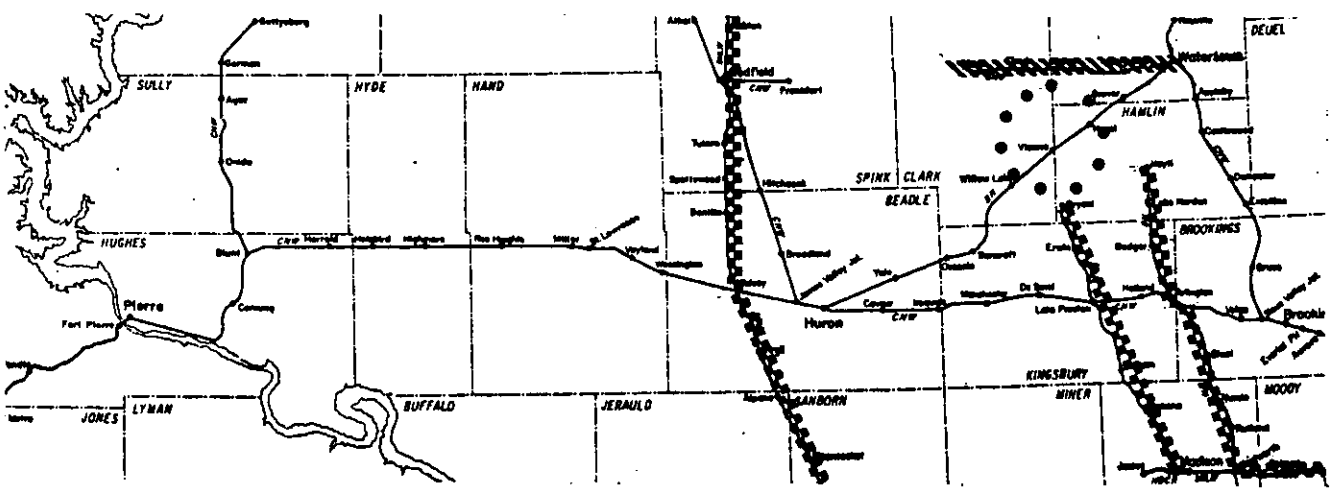
The proposed project must be considered an interim component of a longer range solution for the entire Miles City Line. Such a solution, alluded to in the previous 1979 Railplan Addendum to the North Dakota and South Dakota rail plans, entails a substantial rehabilitation effort utilizing Secton 505 funds, amounting to $15-45 million, plus an aggessive marketing effort to attract potential traffic (particularly coal) to this line. The long-term future of the line depends on these efforts taking place, as well as the success of the Milwaukee Road's efforts to reorganize and the contribution made by the proposed South Dakota Railroad Core System.

Study Project #14

VIENNA ELEVATOR SIDING

BACKGROUND

This project concerns a possible unit train siding and is proposed as a result of the construction in 1980 of a major new grain elevator at Vienna on the Burlington Northern's Watertown to Huron line. It is a privately owned facility which will initially ship only corn to the west coast and later expand to other commodities and destinations. Even though it is the policy of the Department of Transportation not to provide assistance to private business, it is decided that because primary customers of the facility would be elevators on recently abandoned lines, assistance should be considered. Thus, this project is consistent with the detailed study line selection criteria in the following respects: it is a light density line consolidation or operational improvement project, and it addresses the effect of abandonment on shippers.



KEY

- Intensive Study Line
- Potentially Subject to Abandonment within 3 years
- Pending Abandonment
- Abandoned Lines
- Other Lines

Study Project #14

ANNUAL BENEFITS AND COSTS

TYPE OF IMPACT	RAILROAD	TRUCK	COMMUNITY SHIPPER	STATE	TOTAL
Primary Efficiency Benefits ($)	-	-	$+6,209,302	$+6,209,302	$+6,209,302
Secondary Efficiency Benefits					
Income ($)	-	-	+3,865	$+3,865	+3,865
Highway Costs ($)	-	-	-	+158,771	+158,771
Taxes ($)	-	-	-	-86,000	-86,000
Net Salvage Value ($)					
Other:					
Total Benefits ($)	-	-	$+6,213,167	$+6,285,938	$+6,285,938
Costs ($)					
Construction Cost					$ 59,180
Other:					
Jobs	-	-	+37	-	+37
Energy (Gallons)	-	-	-	+504,400	+504,400
Air Pollution (lbs.)	-	-	-	+302,400	+302,400
Benefits minus costs					$+6,226,758
Benefit/Cost Ratio					+106

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IMPACTS ANALYSIS

A 700,000-bushel capacity elevator is planned to open at Vienna, South Dakota in the fall of 1980 to ship unit trainloads of corn to the west coast. The Burlington Northern railroad recently instituted a 54-car unit train rate for this type of movement, and the facility is planned to take full advantage of it by moving unit trainloads almost exclusively. For this reason, a 6,400 foot siding is desired. The BN is prepared to construct the siding in the fall of 1980 at a cost of $500,000, consisting of 4,300 feet of new track and 2,100 feet of upgraded existing track. The upgrading will include track presently in a highway crossing, and the construction will result in one or two residential streets becoming dead ends.

The primary marketing strategy for the elevator has been to try to attract business from other elevators on abandoned lines. These include facilities located in the towns of Hayti, Lake Norden, Bryant, and Erwin. A terminal handlng fee is assessed on a per bushel basis for the service of transloading grain in rail cars, and other elevators on the BN line are also being contacted as potential customers. Shipping is expected to begin in late 1980, and in 1981 it is forcasted that the facility will handle a total of 5 million bushels. Plans include increasing this to 10 million bushels in 1985.

The table above summarizes the benefits and costs of the proposed project, annualized over 10 years. An extremely high ratio is achieved because of the large increase in the cost of moving grain to the west coast by truck over rail. In addition, benefits are realized because of the jobs created by the elevator, and reduced highway maintenance costs. A tax disbenefit is created because of the decline in fuel consumed by not trucking to the west coast, since railroads are exempt from this type of taxation and trucks are not. Non-monetary benefits accrue in the areas of energy consumption and pollution, resulting in a ratio of benefits to costs of 103 to 1.

V. RECOMMENDED RAIL ASSISTANCE PROGRAM
[266.15 (c) (9 and 12)]

PROJECT DESCRIPTIONS AND PRIORITIZATION

South Dakota's rail assistance program for 1980 consists of a variety of improvement projects designed to strengthen viable rail lines while alleviating the negative impacts of rail service loss to non-viable rail lines. The recommended projects for each intensive study line or project site are listed in Exhibit V-1, arranged in order of priority. The order of priority reflects the benefit-cost ratio and the non-monetary impacts for each line.

FUTURE RAIL PLANNING ISSUES

Implementation of this year's rail assistance program will enable the State to concentrate future efforts on improving the proposed South Dakota core system. This depends on the success of the South Dakota Railroad Authority, which is attempting to purchase over 800 miles of former Milwaukee Road and Chicago & North Western trackage in the State. Once these lines are acquired, an operating carrier will be required to establish and implement an operating plan for those portins of the core system that will be returned to service.

In the meantime the Division is working with the Milwaukee Road to coordinate 30 days of directed service over the abandoned Milwaukee Road lines left out of the Milwaukee II system. This 30-day period of directed service was authorized by Congress on May 30, 1980 as part of the Rock Island Railroad Transition and Employee Assistance Act, Public Law 96-254. Section 116 of this act amends Section 18 of the Milwaukee Railroad Restructuring Act (49 U.S.C. 916), which authorized directed service for a period of 30 days prior to acquisition of lines which cannot be continued under the Emergency Rail Services Act of 1970. Eligible states for this assistance include those that have initiated steps to acquire portions of the former Milwaukee Road system no longer included in the Milwaukee II system, prior to May 30, 1980. The Division will utilize the directed service to move this year's harvest and accumulated grain stored in elevators and on farms formerly served by the abandoned Milwaukee lines. The objective is to release some of the grain storage capacity in the State which can then be used by farmers until rail services can be resumed over portions of the abandoned Milwaukee Road lines.

The outcome of the Milwaukee Road's efforts to reorganize will directly impact the future of the Miles City Line. This line is essential to South Dakota because it provides a western gateway for South Dakota grain destined for export, and provides the sole rail facility which connects the Knife River Coal Mine at Gascoyne, North Dakota, to the Big Stone Power Plant at Big Stone City, South Dakota. It is expected that as the decade ends,

EXHIBIT V-1

RECOMMENDED RAIL ASSISTANCE PROGRAM

PRIORITY RANKING	RAIL SEGMENT	PROJECT DESCRIPTION	STUDY NUMBER
1	Miles City – Gascoyne	Rehabilitation	13
2	Pierre – Huron	Rehabilitation	9,12
3	Madison – Sioux Falls	Rehabilitation	6
4	Milbank – Sisseton	Move Elevators/Public Loading Facility	1
5*	Andover – Brampton	Move Elevator or Truncation	2
6*	Blunt – Gettysburg	Rehabilitation to Onida	10
7*	Roscoe – Linton	Public Loading Facility	3

* Beyond 1980 funding limit.

this line will become much more important as a major coal carrying line for western coal moving east. If the Milwaukee Road fails to reorganize or eliminates the Miles City Line from its system, South Dakota will have to reassess its entire rail assistance program and decide which steps should be taken to ensure continued rail operations over this line. Otherwise, the viability of the proposed South Dakota core system could be jeopardized, since this system is expected to connect to the line at Aberdeen.

The light traffic density of much of South Dakota's rail system, combined with its poor physical condition, argue for the consolidation of current local grain storage facilities into major subterminals capable of supporting frequent unit train operations. Such facilities should be located on main lines that can carry jumbo hopper cars arranged in unit trains. Through such efforts the State will be able to eliminate non-viable rail lines while improving the viability of the remaining rail lines. This approach incorporates the best advantage of both truck and rail modes, by using the truck to perform the local pick up and delivery and the railroad to provide the long-haul move. It also recognizes the fact that available resources are insufficient to support all the lines in South Dakota even if they were rehabilitated.

The current merger activity in the railroad industry can be little impacted by the State of South Dakota, but may have a significant impact on the viability of its rail system. As the number of Class I railroads decreases, the opportunities for competitive rail services decrease. However, a rail merger could help South Dakota if it brought another strong railroad into the State. These influences make rail mergers an important consideration for the State in planning which lines are essential and which should be assisted.

The effects of truck and rail deregulation, whether formally or informally achieved, could affect the nature of transportation services in the State and the modal competition which exists between rail and motor carriers. Historically, railroads have been losing market share to the motor carriers. Now, as fuel prices continue to rise, the competitive balance between the modes is shifting, favoring the more fuel-efficient railroads. This trend should be monitored closely to determine the effects on rail usage in South Dakota.

The rail system in South Dakota is currently in a state of rapid change, with much of the change involving the termination of rail services. This RAILPLAN update, through its recommended program of assistance projects, attempts to alleviate certain of the causes and impacts associated with this change through the rehabilitation of viable lines and the moving of elevators from non-viable lines--the first step toward reducing the size of the rail problems facing South Dakota to a manageable level. Without this first effort, rail service together with much of the economic development potential in the State will continue to decrease. Future planning and assistance efforts by the Division will address the need for continued rail service over the proposed South Dakota Core System. Additional planning efforts will continue the rail service monitoring programs already underway and will begin to further assess the issues raised in this section.

APPENDICES

APPENDIX A
PUBLIC PARTICIPATION COMMENTS

APPENDIX A

PUBLIC PARTICIPATION COMMENTS

Public information and interaction meetings on rail issues and rail planning in South Dakota is a continuing, on-going process with the Division of Railroads. Numerous meetings have been held throughout the State during the past year with various groups, organizations and special interest groups. The general public became deeply aware of and involved in current rail issues during the 1980 State Legislative Session. Several bills were introduced and discussions centered around a "core system concept" (identifying rail lines most essential to South Dakota's transportation needs), preservation of lines through State purchase of those core lines which were threatened with abandonment, future operations on the State owned rail lines and rolling stock needs. The debates and issues were extensive and well publicized.

The South Dakota Railroad Advisory Commission, the first formal level of public input to RAILPLAN, SOUTH DAKOTA, 1980, held meetings in Pierre on July 19, August 19 and August 28, 1980, to set the scope of the plan and to take actions and make recommendations on the plan including the program of projects. In addition to the meetings in Pierre, conference calls were conducted with the Advisory Commission members on September 3 and 15, 1980. The climax of the Advisory Commission actions occurred on September 25, 1980, when that body met with the South Dakota Transportation Commission at which time the Transportation Commission approved RAILPLAN, SOUTH DAKOTA, 1980, and the projects selected for funding and implementation. The A-95 review process was conducted prior to public hearings and sign-offs were received from the appropriate agencies.

Notices for public hearings on RAILPLAN, SOUTH DAKOTA, 1980, were sent to and printed in all of South Dakota's daily newspapers plus those weekly newspapers which are designated by counties as the official newspaper for county actions and notices. Notices were printed twice in each of the papers prior to the public hearings. Public hearings were held at:

Aberdeen, S.D.	Holiday Inn	9-22-80	2 P.M.
Watertown, S.D.	Holiday Inn	9-22-80	7 P.M.
Mitchell, S.D.	Oscar Howe Center	9-23-80	2 P.M.
Sioux Falls, S.D.	Holiday Inn	9-23-80	7 P.M.
Rapid City, S.D.	Holiday Inn	9-24-80	2 P.M.
Pierre, S.D.	State Capitol	9-24-80	7 P.M.

In addition to the notices of public hearings in the State's newspapers, special invitations to attend the public hearings were sent to or made available to the following:

State Legislators
U.S. Legislators
State Department Heads
Planning & Developing Districts
Railroad related Boards and Commissions
DOT Commission Members
District Highway Engineers
County Commissioners
Indian Tribal Councils
Agriculture leaders and related groups and organizations
Railroad companies serving S.D.
FRA Regional and Washington, D.C. Offices
FWHA Local Office
Railroad contact persons in surrounding states
Rail Labor
State Public Utilities Commission
Known interested citizens in S.D.

Public attendance at the hearings was about 20 people per meeting except for Mitchell and Sioux Falls at which slightly over 40 people attended each. Each meeting was attended by various state and county officials, and the majority of the meetings were covered by the press as well as representatives from the local Planning and Development Districts.

Attendance sheets were provided at each hearing location which recorded those in attendance. A Court Reporter attended and recorded proceedings at each of the hearings and transcripts were made. These transcripts, along with the attendance sheets, are on file at the Division of Railroads Office in Pierre.

Overall public comments received on RAILPLAN, SOUTH DAKOTA, 1980, were favorable and supportive of the plan. There were no outright objections to the projects selected for funding utilizing Section 803 funds as documented in the plan with the exception of that one area documented below. That adverse comment and the suggested changes in the railplan update expressed at the public hearings and those received through written comments are as follows:

CITIZEN(S) COMMENT

There was concern by several citizens that the State should not support financially the relocation of grain storage facilities. There was expressed the concern of not being able to control future projects of this nature even though the project line drew support for some form of assistance. It was expressed that possibly a loan concept for this type project may be better than a grant.

STATE RESPONSE AND/OR POSITION

The grain marketing in the area served by the project line (Milbank to Sisseton line) is unique to that line. It is largely a barley collection and distribution line and a large part of the barley is trucked long distances to this line from well outside the normal trade area for elevators. The major barley handling elevators could relocate to the Milwaukee Mainline to the South and still maintain the barley business. The simple fact is that we cannot find a way of addressing the rail needs of this line without an economic impact that would cost us the barley business at Sisseton. Therefore, it is important that we consider saving the business instead of saving the line. With respect to control of future projects, the Division has drafted a list of criteria that provides adequate control. The loan concept is being given consideration by the Division, however, other projects where saving the rail is possible are grants, and the question is, should this be an exception.

CITIZEN(S) COMMENT

The entire rail line from Mitchell to Rapid City should be a local option line or a core system line, but the line should not be divided into three separate categories and service not resumed all the way to Rapid City.

STATE RESPONSE AND/OR POSITION

The State has studied and analyzed this entire rail line in detail including truncation at different points and different operating scenarios. It would be unthinkable to use public money to compete with the Chicago and North Western at Rapid City so that we could all go down in history as being the cause for their exit from the Pierre-Rapid City segment. However, it is vitally important that the segment from Kadoka to Rapid City be purchased and maintained so that a future alternative would exist in case some day the Chicago and North Western does abandon its east/west line. With respect to making the entire line a core system line, traffic levels do not justify such an action. It is felt that the advantages of the core system, extended west to at least the Missouri River, make possible the development of a local option segment beyond that point.

CITIZEN(S) COMMENT

The Napa to Platte rail line should be a part of the State core system and all costs for upgrading and operations should be borne by the State.

STATE RESPONSE AND/OR POSITION

The Napa to Platte rail line has long been an area of concern and frustration. the trade area can be served by the core line from Mitchell to Yankton. State Highways 44, 46 and 50 plus U.S. Highway 18 all connect the Napa to Platte line to the core line. The distances between these two lines range from 0 miles at Napa to a maximum of 43 miles at Platte. Conceivably, grain could be trucked from stations on the Napa to Platte line to existing or future facilities at highway intersection points with the core system line. Shippers on the line must be fully committed to use the line or use a terminal concept or neither solution can be viable. Without a unified local

financial commitment, the line could not survive because in the near years there would be far too many temptations to ship through a terminal facility on another rail line.

Other questions and comments expressed by citizens at the public hearings were related to issues outside of the scope of RAILPLAN, SOUTH DAKOTA, 1980. These comments were related to such topics as:

How is the State proceeding with the purchase of the Milwaukee Road Lines?

The purchase plan has been agreed upon by the State and the Milwaukee Road and the U.S. District Court in Chicago on October 27, 1980, approved the purchase agreement and the agreement for options to lease and/or purchase lines. The transaction closed in escrow November 15, 1980. The total purchase price was $18,750,000.

How much money has been raised to date for this purchase?

The purchase plan is being funded by a 1 cent sales tax. The sales tax collection and reporting process is on a quarterly basis, therefore, creating a large time span between actual collection and payment and reporting. The 1 cent sales tax collections began in May of 1980 and are raising approximately $2.5 million per month.

Who will operate the core system and when will operations begin?

The State is in the process of developing a request for proposal to seek interest and input from prospective rail operators. There will be an operations package before the 1981 Legislative Assembly. Conceivably, operations could commence on the core system in the Spring of 1981.

What is the status of the 30 day directed service proposal?

The State prepared and submitted all of the necessary documentation for directed service to the Federal Railroad Administration (FRA). The FRA has taken the position not to fund directed service in South Dakota this fall, but funding may be made available for track repairs and start up costs next spring when actual service will be implemented on the State core system.

The Division will strive to keep the public informed and involved in this continuing rail planning process.

APPENDIX B
SHIPPER SURVEY

SOUTH DAKOTA STATE RAIL PLANNING SURVEY
SHIPPER SURVEY

Person Conducting Survey:_____

Part A: GENERAL INFORMATION

1. Name and address of firm:

   _____
   _____
   _____
   _____
   Telephone:_____

2. Name and address of parent company (if different from above):

   _____
   _____
   _____
   _____
   Telephone:_____

3. Name of person reporting information, title:

   _____

NOTE: In all of the following questions, please record only local facility information - not information concerning parent company.

4. Principal type of business activity at firm (grain elevator, chemical plant, etc.):

   _____

5. How many people are currently employed at your firm: _____

   How many people do you estimate will be employed at your firm in 5 years: _____

6. What is the current annual payroll of your firm: $_____

   What do you estimate will be the annual payroll of your firm in 5 years: $_____

7. What is the current annual sales of your firm: $_____

   What do you estimate will be the annual sales of your firm in 5 years: $_____

8. How much property taxes have been paid by your firm in the last fiscal year: $_____

IF YOUR FIRM PRESENTLY DOES NOT USE RAIL SERVICE, PLEASE SKIP TO PART E.

PART B: USER ATTITUDES

1. How would you rate the rail service presently being provided to your firm? (Check one box for each characteristic):

Rail Service Characteristic	Excellent	Good	Adequate	Poor	Unsatisfactory
Local Service Frequency					
Total Transit Time					
Service Reliability					
Car Supply					
Loss or Damage Frequency					
Customer Service					
Other (Specify)					

2. If your firm has reduced or is planning to reduce its use of rail service, please indicate why. (Check as may responses as apply). Indicate the most significant reason:

_____ inadequate service frequency
_____ long transit times
_____ terminal delays
_____ low reliability
_____ poor car supply
_____ excess freight damage
_____ poor customer service
_____ business or market changes
_____ shipment size too small
_____ cheaper to ship by truck
_____ loss of rail service
_____ Other (Specify) _____

3. What characteristics of rail service cause you to use it? (check as many responses as apply). Indicate most significant reason:

_____ only method of transportation available or appropriate
_____ high volume capacity
_____ traditional mode used
_____ lower overall transportation cost
_____ good service
_____ Other (specify) _____

PART C: IMPACTS OF RAIL SERVICE CHANGES

1. If rail service to your firm has recently been discontinued or may be discontinued in the near future, which action(s) did your firm take or is anticipating taking? (Check as many responses as apply):

   _____ Maintain present level of operations

   _____ Reduce operations by _____%

   _____ Close plant

   _____ Relocate plant to active rail line within South Dakota

   _____ Relocate plant to location outside South Dakota

   _____ Convert to truck transportation for entire haul

   _____ Truck to nearest rail line loading facility

   _____ Other (Specify) _____

   Answer the following questions Yes or No.

2. If direct rail service was discontinued to your firm, would you be willing to ship by truck to the nearest railhead, piggy-back facility or subterminal facility? _____

3. Would you be willing to pay a surcharge per carload of received or shipped goods to retain rail service on the line serving your firm? _____

4. If your firm was threatened with the loss of direct rail service, would it be willing to participate with others in any of the following?

   (Indicate Yes or No)

   Purchase the line from the railroad and operate it: _____

   Assist the railroad company in supporting the annual maintenance costs of the line: _____

   Assist the railroad company in supporting the operating costs of the line: _____

   Guarantee a minimum annual shipment level: _____

5. Should rail service to my facility be continued unchanged (status quo),

   a. Employment at the facility over the next five years would (pick one) increase/decrease by _____ percent or _____ number of jobs, or not change?

b. Annual production at the facility over the next five years would (pick one) increase/decrease by _____ percent or $_____dollars, or not change?

c. Annual rail usage at the facility over the next five years would (pick one) increase/decrease by _____ percent or _____ number of tons, or not change?

d. Annual truck usage at the facility over the next five years would (pick one) increase/decrease by _____ percent or _____ number of tons, or not change?

e. Annual transportation costs to the facility over the next five years would (pick one) increase/decrease by _____ percent or $_____dollars, or not change?

6. Should rail service on the line to my facility be restored or improved, such as by reducing transit time and increasing service frequency,

a. Employment at the facility over the next five years would (pick one) increase/decrease by _____ percent or _____ number of jobs, or not change?

b. Annual production at the facility over the next five years would (pick one) increase/decrease by _____ percent or $_____ dollars, or not change?

c. Annual rail usage at the facility over the next five years would (pick one) increase/decrease by _____ percent or _____ number of tons, or not change?

d. Annual truck usage at the facility over the next five years would (pick one) increase/decrease by _____ percent or _____ number of tons, or not change?

e. Annual transportation costs to the facility over the next five years would (pick one) increase/decrease by _____ percent or $_____ dollars, or not change?

7. Should rail service available to my facility be discontinued, either directly or indirectly,

a. Employment at the facility over the next five years would (pick one) increase/decrease by _____ percent or _____ number of jobs, or not change?

b. Annual production at the facility over the next five years would (pick one) increase/decrease by _____ percent or $_____ dollars, or not change?

c. Annual truck usage at the facility over the next five years would (pick one) increase/decrease by _____ percent or _____ number of tons, or not change?

e. Annual transportation costs to the facility over the next five years would (pick one) increase/decrease by _____ percent or $_____dollars, or not change?

PART D: RAIL SERVICE USAGE INFORMATION

1. Does your firm presently use rail service during the year to receive or ship goods? (Please check) Yes _____
   If No, skip to Part E. No _____

2. Name of railroad(s) serving your firm _____

   _____

3. Please check either (a) or (b):

   _____(a) My firm has its own private rail siding.

   _____(b) My firm ships and/or receives at a rail freight station or team track.

4. Indicate the location of the rail siding, team track, or station used by your firm:
   (street name, mile post, or FSAC): _____

5. How often does your firm use rail service:

   _____ times per ( ) week, ( ) month, or ( ) year.

6. Indicate the type of rail equipment used by your firm (e.g. boxcar, covered hopper, etc.):

   _____

7. Please indicate below if your firm uses any of the following:

	Type *	Number
leased cars -		
company owned cars -		
assigned cars -		
private fleet cars -		

* (e.g. boxcar, hopper car, flat car, etc.)

PART D, CONTINUED

8. Rank the importance of rail service to your firm by checking the appropriate box:

Essential	Somewhat Important	Not Important
_____	_____	_____

9. If there are any products which cannot be moved either to or from your firm by any other mode of transportation but rail, please specify:

Product

_____

_____

_____

10. Please complete the two tables on the following page, specifying the volume and nature of shipping and receiving performed during the latest 12-month period by your firm, using the modes of transportation listed. Your cooperation in completing these tables is essential to the successful completion of this survey.

GOODS SHIPPED
MOST RECENT AVAILABLE YEAR

From _____ to _____
(month, yr) (month, yr)

PRODUCT SHIPPED			DESTINATION	MODE OF TRANSPORTATION									SEASONALITY
				RAIL		TRUCK							
						Reg. Carrier		Private Fl.		Own/Oper/Cont		Type Used	
Products or Commodities	Annual Volume Tons/Bu.	Est. Shipment Value		Tons Bu. or Cars	Rate	Tons Bu.	Rate	Tons Bu.	Rate	Tons Bu.	Rate	Capacity (Bushels)	During which months is service used

B.8

GOODS RECEIVED
MOST RECENT AVAILABLE YEAR

From _____ to _____
(month, yr) (month, yr)

PRODUCT SHIPPED			DESTINATION	MODE OF TRANSPORTATION									SEASONALITY
				RAIL		TRUCK							
						Reg. Carrier		Private Fl.		Own/Oper/Cont		Type Used	
Products or Commodities	Annual Volume Tons/Bu.	Est. Shipment Value		Tons Bu. or Cars	Rate	Tons Bu.	Rate	Tons Bu.	Rate	Tons Bu.	Rate	Capacity (Bushels)	During which months is service used

PART E: NON-RAIL USERS

1. If rail service to your firm has recently been discontinued or may be discontinued in the near future, which action(s) did your firm take or is anticipating taking? (Check as many responses as apply):

   _____ Maintain present level of operations

   _____ Reduce operations by _____%

   _____ Close plant

   _____ Relocate plant to active rail line within South Dakota

   _____ Relocate plant to location outside South Dakota

   _____ Convert to truck transportation for entire haul

   _____ Truck to nearest rail line loading facility

   _____ Other (Specify) _____

2. When did your firm stop using rail service? (Month and Year) _____

3. Why did your firm stop using rail service? (check as many responses as apply). Place a "1" in the box which represents the most significant reason):

   _____ rail line abandoned by railroad

   _____ deterioration of rail service

   _____ poor customer service

   _____ changing business or market conditions

   _____ cheaper to ship by truck

   _____ shipment size too small

   _____ other (specify) _____

4. How many rail carloads did your firm ship and/or receive during your last full year of rail usage?

   carloads shipped: _____; carloads received: _____

5. Would your firm consider using rail service in the future? _____

   annual usage: _____ carloads; _____ tons

   types of commodities: _____

   frequency of rail service: _____ per week

6. What would cause your firm to use rail service again?

   _____

   _____

PART F: ADDITIONAL COMMENTS

Thank you for assisting in the completion of this shipper survey. Your cooperation will help the Division to fully assess the importance of the rail line serving your facility, as it affects your firm and South Dakota as a whole. Do you have any additional comments, questions, or suggestions? If you have any further comments, please contact the Division of Railroads at:

Department of Transportation
Division of Railroads
Transportation Building
Pierre, South Dakota 57501
Telephone: 605-773-3710

APPENDIX C
RAILROAD DATA REQUEST LETTER

Peat, Marwick, Mitchell & Co.

1990 K Street, N.W.
Washington, D.C. 20006

July 8, 1980

Mr. Alan R. Boyce
Assistant Vice President-
Executive Department
Burlington Northern
BN Building
176 East 5th Street
St. Paul, Minnesota 55101

Dear Mr. Boyce:

The firm of Peat, Marwick, Mitchell & Co. (PMM&Co.) has been retained by the State of South Dakota to complete the 1980 update to the State RAILPLAN. Part of this responsibility entails the detailed analysis of branchlines which have been selected as the subjects of possible applications to the Federal Railroad Administration for assistance under Section 803 of the 4R Act.

In order to conduct the line specific analyses required by the FRA's rail planning regulations, and to provide the necessary overview information for the update, certain information will be necessary which can only be obtained directly from the railroads serving the State. Attached to this letter is a list of the data which we are hereby requesting from your railroad company.

As a principal factor in the timely completion of South Dakota's RAILPLAN update is availability of railroad data; we would greatly appreciate expeditious handling of this request. If you have any questions concerning the attached material, please contact Mr. Dan Dornan (202-223-9525) in Washington, D.C., or myself in Pierre, South Dakota (605-773-4177).

Very truly yours,

PEAT, MARWICK, MITCHELL & CO.

Chris Randall

CR:JB

Data Requested for Lines Considered for Section 803 Assistance

1. Revenues and costs of providing rail service.
2. Annual tons and carloads by 2-digit STCC (indicate seasonality where appropriate).
3. Crew size.
4. Locomotive consist - number and type used.
5. Round trip service time.
6. Service frequency.
7. Property taxes (1979).
8. Five year history of type and cost of line maintenance.
9. Facilities on line - yards, servicing facilities, if any.

Section 803 Study Lines

Aberdeen - Rutland
Sioux Falls - Wentworth

Data Requested for Preparation of Statewide Overview

1. System freight density map.
2. System map.
3. Division timetables.
4. List of open stations.

APPENDIX D
BENEFIT – COST ANALYSIS METHODOLOGIES

APPENDIX D

BENEFIT-COST ANALYSIS METHODOLOGIES

BACKGROUND

As part of its effort to prevent further decline of railroad services and to reduce the effects of deterioration that has already occurred, the State of South Dakota is seeking to initiate local branch line assistance projects with Federal funding authorized by the Local Rail Service Assistance Act of 1978. To become eligible for assistance under this Act, the State must develop and implement a methodology to conduct a benefit-cost analysis of alternative courses of action for each project under consideration. This analysis then becomes a part of the overall evaluation to determine appropriate strategy for the implementation of rail projects.

OBJECTIVE AND SCOPE

The objective of this appendix is to provide the State of South Dakota with a practical and meaningful benefit-cost methodology which is acceptable to the FRA, and which will enable the State to determine if proposed branch line project expenditures are in the public interest. A system for evaluating courses of action is incorporated in the methodology. Also included are descriptions of the analysis procedures used to develop the impacts incorporated in the project evaluation methodologies.

Procedures and equations used for the benefit-cost analysis are simplified so that they are suitable not only for use by experienced practitioners, but for application by those who have minimal formal training in economic analysis, and for presentation to public forums. The methodology is also programmable.

BENEFIT - COST ANALYSIS MODEL

The model for the benefit-cost analysis is a series of equations defining primary and secondary efficiency benefits and cost factors in terms of a specified set of readily available data. These benefits and costs result from the implementation of rail service changes involving intensive study lines under consideration for assistance. This section defines the types of assistance projects which can receive Federal funds under the Section 803 program of the 4-R Act and Local Rail Service Assistance Act, the types of benefits and costs being considered in the model and their derivation and the methodological considerations associated with the analysis of project benefits and costs. The data sources for the benefit-cost analysis are listed as part of the description of benefit and cost impacts.

Classes of Alternatives

As defined under Section 5 of the Department of Transportation Act, federal funds for local branch line projects are limited to the following uses by the states:

Lines Abandoned Since February 5, 1976

- Subsidy - Payments to the operator of the rail service to cover the negative difference between revenues attributable to the line and cost of line operation.

- Acquisition - The cost of acquiring, by purchase, lease, or other manner appropriate to the state, a line of railroad or other rail properties, or any interest therein, to maintain existing or provide for future rail service.

- Substitute Service - The cost of reducing the effects of lost rail service in a manner less expensive than continuing rail service, including (but not limited to) the acquisition, construction or improvement of facilities (such as highway or highway bridges) for the provision of substitute freight transportation services.

Light Density Lines With Traffic Density Less Than or Equal to Three Million Gross Tons[1]

- Rehabilitation - The cost of rehabilitation and improving rail properties on a line of railroad to the extent necessary to permit adequate and efficient rail freight service on such line.

- New Construction - The cost of constructing rail related facilities (including connections between two or more existing lines of railroad), intermodal freight terminals, sidings, and relocation of existing lines.

A schedule showing the purposes or outcomes possible from the five alternatives plus a null option is included as Exhibit D-1. To facilitate evaluation of the potential combinations, the purposes have been sub-divided into those directed toward maintaining rail service and those aimed at abandonment of rail service.

Of the 48 possible combinations, only 22 prove to be appropriate for adoption. The remaining 26 are not feasible and can be eliminated from further consideration. As examples, it would not be practicable to provide subsidies for activities directed toward the abandonment of rail service.

---

[1] Or less than or equal to five million gross tons with approval by the Administrator of the FRA.

Reference to Exhibit D-1 provides a ready tabulation of the appropriate uses of federal funds given the specific project objectives of the state. Only those uses that apply need be included as part of the analysis.

Project Benefits

Project benefits relate to the impacts which result from the implementation of a proposed alternative. Such benefits are measured as the incremental differences in primary and secondary efficiency benefits between the proposed alternative and the base case. The base case is always the current status of the line being studied, whether it is operating or already abandoned. The scope of the impacts being measured extends to the area directly impacted by each proposed alternative.

Primary Efficiency Benefits

The primary efficiency benefits of rail service changes consist of the consumers' and producers' surpluses produced by these changes. These surpluses result from the differences in transportation rates and costs and the associated quantities involved in converting from the base case to the proposed alternative.

The primary efficiency benefits are calculated by the following equation:

$$(Bn-Bo)p = Qo\ (Co-Cn) + 1/2\ (Po-Pn)\ (Qn-Qo) + (Pn-Cn)\ (Qn-Qo)$$

where

- $(Bn-Bo)p$ = Primary Efficiency Benefit, Alternative n Versus Base Case ($)
- Qo = Quantity Shipped, Base Case (Tons)
- Qn = Quantity Shipped, Alternative n (Tons)
- Po = Transportation Revenue, Base Case ($/Ton)
- Pn = Transportation Revenue, Alternative n ($/Ton)
- Co = Transportation Costs, Base Case ($/Ton)
- Cn = Transportation Costs, Alternative n ($/Ton)

The data for determining the primary efficiency benefits are obtained from a transportation demand curve of the shipper for each commodity. (See Exhibit D-2). This curve is a composite which includes components for each mode involved. In this case, railroad and truck transportation are considered. The areas defined by the curve for each commodity and origin-destination pair, corresponding to the difference between the consumers' (shipper) surplus and producers' (transportation carrier) surplus for the alternative being analyzed and the base case make up the primary efficiency benefit. This may be positive or negative, depending on the relative values of the rates, costs, and quantities transported according to each alternative. These are determined as follows:

Quantities Shipped by Alternative - The responses from the shipper surveys provide estimates of the relative quantities to be shipped by rail or

EXHIBIT D-1

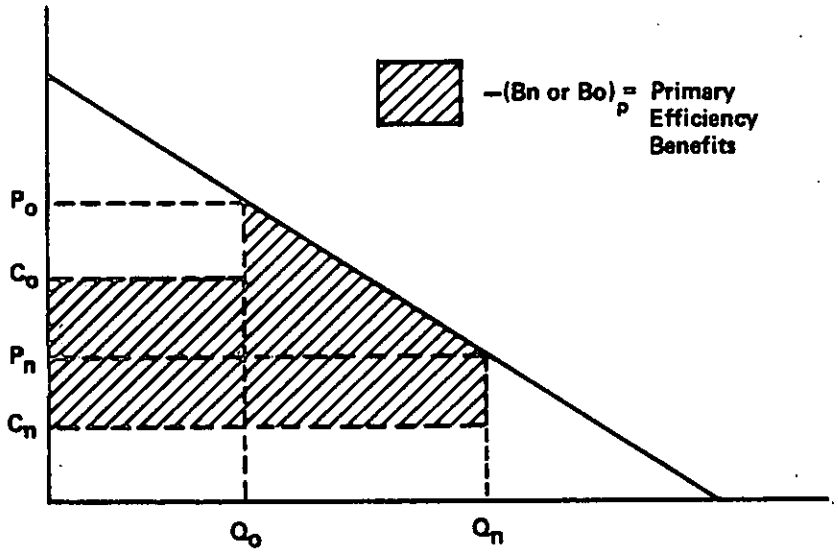
ALTERNATIVE ASSISTANCE PROJECTS

PURPOSE OR OUTCOME

	MAINTAIN RAIL SERVICE				ABANDON RAIL SERVICE			
	MAINTAIN CURRENT FREQUENCY		INCREASE FREQUENCY		RAIL BANKING		NO RAIL BANKING	
USE OF FEDERAL FUNDS	MAINTAIN CURRENT LOAD	INCREASE LOAD	MAINTAIN CURRENT LOAD	INCREASE LOAD	NO ALTERNATE SERVICE	ALTERNATE SERVICE	NO ALTERNATE SERVICE	ALTERNATE SERVICE
ACQUISITION							N/A	N/A
SUBSIDY					N/A	N/A	N/A	N/A
REHABILITATION					N/A	N/A	N/A	N/A
SUBSTITUTE SERVICE	N/A	N/A	N/A	N/A	N/A		N/A	
NEW CONSTRUCTION					N/A	N/A	N/A	N/A
NO ACTION		N/A	N/A	N/A	N/A	N/A		N/A

EXHIBIT D-2

TRANSPORTATION DEMAND CURVE OF SHIPPER



truck according to each alternative. Shipment quantities are determined for each station on the line, by commodity and origin-destination pair. Both inbound and outbound shipments are included. Total quantities by station are calibrated to the actual 1979 traffic level reported by the operating railroad.

It is assumed that the total volume shipped under the base case or during the last full year of operation will continue to move under each alternative. The amount moving by truck versus rail distinguishes between the alternatives, with differing amounts moving by truck to the nearest railhead or all the way to the final destination. This depends on whether the facility closes or continues to operate. If the facility is an elevator and closes, it is assumed that the farmer will move his/her commodities to the nearest available elevator served by a railroad. If the elevator stays open despite the loss of rail service, the traffic is trucked to the final destination. In certain cases where a line is rehabilitated and rail service consequently improved, increased shipments result.

Transportation Rates By Alternative - Transportation rates for both rail and truck modes are developed for each alternative by commodity and origin-destination pair. These are determined on a per-ton basis.

Rail Rates - Rail rates are based on the actual per-ton revenue collected by the operating carrier in 1979. These rates are inflated to 1980 levels using a 1.20 rate index, based on the Price Index for Total Railroad Freight for the period June 1979 to June 1980, as issued by the Department of Labor, Bureau of Labor Statistics.

Truck Rates - The primary commodity transported on the special study 803 Project rail lines is grain. In alternatives where this traffic would be diverted to motor carrier, the goods will primarily be hauled by owner-operators owning a single tractor-trailer. For intrastate traffic, the rates charged are regulated under the authority of the South Dakota Public Utilities Commission. The applicable tariff is the South Dakota Class B Motor Carriers Tariff No. 60, Naming Rates on Livestock and Other Commodities. The portion of the tariff used for this study is for grain shipments weighing 40,000 pounds or more. The effective date of this tariff is September, 1979. Since an application to increase these rates has been submitted to the Public Utilities Commission to compensate for increased costs, the rates are increased by 10 percent to reflect this increase.

With regards to interstate motor carrier movements of grain, this commodity is exempt from Interstate Commerce regulation. Therefore, rates charged are subject to market demand and fluctuate during the year. Since it is difficult to secure precise data on these rates because set rates are not published, this analysis uses the South Dakota rate tariff. This situation is only applicable to the truck-all-the-way alternative. In cases where the trip mileage is greater than that available from the tariff, the price and mileage is extended to cover these incidences using the rate differences between 500 and 600 miles. An example of this is a mileage of 700 miles. The rate for 500 miles is $1.58 and the rate for 600 miles is $1.86, with a difference of $.28.

Therefore we assumed an applicable rate for 700 miles to be $2.14 with an additional 10% increase. Although these rates are not necessarily what each shipper may pay for motor carrier transportation services, they do appear to be reflective of actual rates currently charged to shippers in South Dakota.

Commodities other than grain are also involved in this study. The rates used in this portion of the study are from other applicable rates published by the South Dakota Public Utilities Commission. Rates for feed, fertilizer and seed use the livestock rates from Tariff No. 60. Bentonite clay rates are charged at 150 percent of the livestock rates, which is the rate used for building materials. The South Dakota Public Utilities Commission Official Lumber Tariff is used for lumber commodities, including pulpwood and other applicable items. The commodities which would be classified under heavy hauling, such as farm machinery, use rates from the South Dakota Public Utilities Commission Official Heavy Hauling Tariff.

The rates in these tariffs are in hundredweights, and have been changed into tonnage. For the truck-to-the-nearest-railhead and truck-all-the-way scenarios, the truck rates were taken directly from these tariffs. In scenarios where some of the movements were split between part being truck-all-the-way, and truck-to-the-nearest-railhead, a weighted average by tonnage is used of the total price charged, including the off-branch rail rates to determine an average rate charged to the shipper.

Transportation Costs By Alternative - Transportation costs for both rail, truck, and rail-truck combinations are developed on a per-ton basis by commodity and origin-destination pair.

Rail Costs - Rail service costs are determined for each line and alternative by calculating the on-branch costs of service and the off-branch costs of service.

On-Branch Rail Costs - On-branch costs are those avoidable (variable) costs which are incurred by a railroad operating over a particular branch line. Most of these costs were determined by applying the standards and formulae developed by the Rail Services Planning Office[1] (RSPO) and Rail Form A[2] variable cost percentages and cost of capital rates.

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[1] Standards for Determining Rail Service Continuation Subsidies in the Northeast - Midwest Region of the United States, Ex Parte No. 293, Sub-No.2, as amended through February 10, 1977; Rail Services Planning Office, Interstate Commerce Commission, Washington, D.C.

[2] Formula for Use in Determining Rail Freight Service Costs, Statement 1F1-73; for the Chicago and North Western Transportation Company and Subsidiaries, the Burlington Northern Inc., and the Chicago, Milwaukee, St. Paul and Pacific Railroad Company, Debtor; Interstate Commerce Commission, Washington, D.C., 1977.

RSPO standards sometimes required that the costs assigned to a branch line be the actual direct branch costs. Since these actual direct costs were not available, almost all branch line costs were determined by first taking the R-1[1] system cost and dividing by an appropriate system operating statistic, e.g., car miles, for each carrier operating the branch lines analyzed in detail by this study. This system unit cost was then multiplied by the actual branch line operating statistic to yield an estimate of branch line cost. PMM&Co. believes the system unit costs calculated are not significantly different from the actual branch unit cost. Therefore, the total branch cost should be a reliable estimate of actual branch cost.

A computer program is used to take the inputs of system unit costs, actual branch line operating statistics, and inflation factors[2] to arrive at 1980 branch line costs.

Exhibit D-3 displays the process used to generate the on-branch costs by line alternative. The individual costs elements included in this derivation are described below.

- Maintenance of Way and Structures - Normalized maintenance of way and structures (MOW) costs are based on estimates developed by T. K. Dyer, Inc. for each branch line analyzed in detail by this study. The normalized maintenance of way estimates are typically in the range of $5,400 to $6,400 per mile of line and are used for both Class I and Class II track rehabilitation alternatives.

- Locomotive Repair - Road locomotive repair costs are allocated to each branch line on the basis of locomotive gross ton miles on the branch as a percentage of the system total.

- Locomotive Ownership - The cost of capital and replacement cost for road locomotives is apportioned to each branch line according to the ratio of branch locomotive unit hours to system locomotive unit hours.

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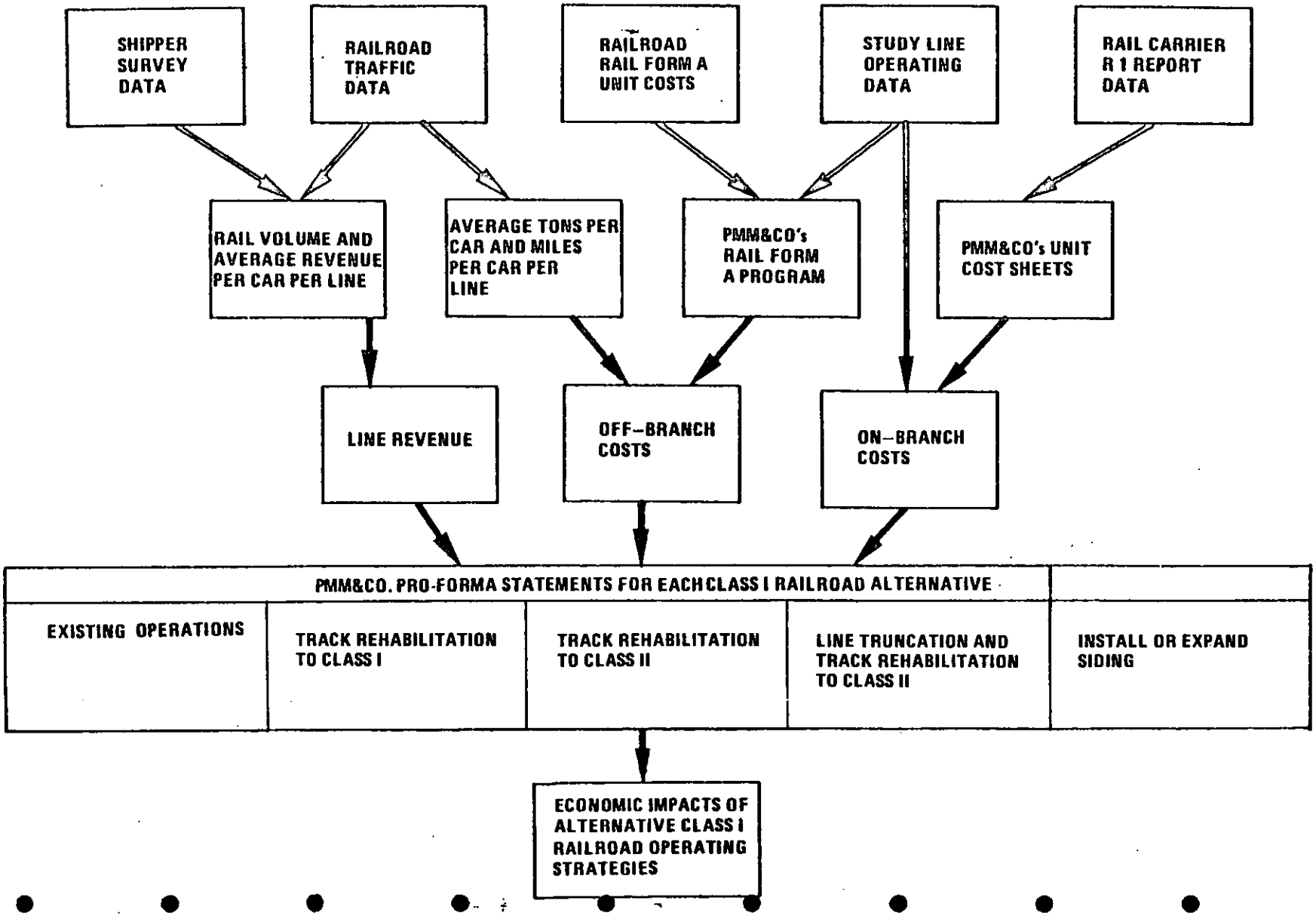
[1] Annual Report to the Interstate Commerce Commission for the year ended December 31, 1977; for the Chicago and North Western Transportation Company and Subsidiaries, the Burlington Northern Inc., and the Chicago Milwaukee, St. Paul and Pacific Railroad Company, Debtor. Interstate Commerce Commission, Washington, D.C. 1978.

[2] Based on "Indexes of Railroad Charge-Out Prices and Wage Rates", Association of American Railroads (AAR), Economics and Finance Department, Washington, D.C., June 1980. An estimated cost index of 1.21 is used to inflate 1979 railroad costs to 1980 cost levels.

EXHIBIT D-3

FLOW DIAGRAM FOR PMM&CO's COST-REVENUE ANALYSIS OF SPECIAL-STUDY LINE OPERATING ALTERNATIVES



The cost of capital is determined by applying the 1977 Rail Form A (system) historical cost of capital rate to the system net investment in locomotives.

The use of replacement costs for 803 eligible projects has been approved by the ICC for determining railroad branch line costs. Total replacement cost is determined by applying the cost which would be incurred to rebuild one locomotive unit out of the locomotive fleet owned by each carrier. Annual replacement cost is computed by assuming a 10 year life, i.e., dividing total replacement cost by 10.

- Locomotive Servicing, Fuel, Labor, and Train Supplies and Expenses - Train fuel and the servicing of train locomotives are allocated to each branch line on the basis of system locomotive unit hours and system locomotive unit miles, respectively. Crew costs (salary and fringes) and train supply expenses are developed using system averages per train hour and actual branch line train hours.

- Taxes and Rents - Property taxes paid in South Dakota by railroads vary widely, depending on the level of maintenance efforts expended on a line. Since railroads can deduct portions of their maintenance costs from the property tax liability of each line operated in South Dakota, no consistency in railroad property taxes is evident between lines. Therefore this cost element is omitted from the analysis. Revenue taxes and rents are also not considered significant to the economic analysis of branch line avoidable costs.

- Miscellaneous Expenses - Miscellaneous expenses are allocated on the basis of system net tons of revenue freight.

- Car Day and Car Mile Costs - System freight train car costs are classified as functions of both time and mileage. Components of freight car cost include repair expense, cost of capital, car hire, and replacement cost.

The cost of capital is determined by applying the 1977 Rail Form A (system) historical cost of capital rate to the system net investment in freight cars.

Total replacement cost is arrived at by applying a weighted average cost for new equipment to the freight car fleet held by each carrier. Annual replacement cost is computed by a 15 year life, i.e, dividing total replacement cost by 15.

System car days and car miles are calculated according to RSPO standards. These system totals are divided into the relevant time and mileage system freight car costs to arrive at the unit freight car costs for each carrier. These system unit costs are multiplied by branch line car days and car miles to obtain branch line costs.

- Return On Investment - The return on rail properties is determined according to RSPO standards by applying the current yield to maturity in Treasury bonds issued in August 1980 and maturing in August 1990 to the net liquidation value of rail properties, considering their highest and best use. Estimates of net liquidation value exclude land values, but do reflect the value of materials added to line upon rehabilitation. These estimates are based on information supplied by T.K. Dyer, Inc.

The unit operating statistics for each line and alternative are based on information supplied by each operating railroad. This includes the length of the line average round-trip travel time, service frequency, maximum operating speed, locomotive and crew consists, and traffic volume. All other operating statistics used in the line analysis are derived from these operating statistics.

Rail Costs - Off-branch costs refer to the variable costs of moving the traffic to or from the branch line under study from or to its ultimate origin or destination. The off-branch costs are developed using PMM&Co's Rail Form A program. The primary purpose of Rail Form A is to provide the foundation for, and inputs to, a standard, uniformly applied, costing procedure for purpose of protecting the public against unlawful charges as defined in Part I of the Interstate Commerce Act (Title 49, Chapter 1, of the U.S. Code).

Rail Form A is a formula procedure for developing functional unit costs from accounting and other data. Applications of unit costs are technically not a part of Rail Form A. The development of unit costs in Rail Form A is based on the assignment of functional costs incurred by a railroad in performing a given service over each functional unit of that service. The historical number of service units incurred in a specific movement is part of the basis for determining historical unit costs, which in turn become the basis for calculating unit costs for the future.

Rail Form A provides methods for allocating expenses (shown in railroad annual reports) among the various components of rail operations, i.e., yard switching, train switching, road haul, station, special services, and general overhead. The formula uses related revenue units of service, such as car-miles, gross ton-miles, net ton-miles, tons originated and terminated, etc., in the construction of unit variable and constant costs. The formula also provides for developing unit costs for each type of train service (local,

way, and through train) and the combining of such, to produce cost scales for various weight shipments moving in different types of cars, by various lengths of haul. The costs include allowances for capital and federal income taxes, and are developed on a variable and fully allocated basis.

Long-term variable costs are based on average traffic density experienced during the year in which costs were developed. For 1980 costs, the 1977 expenses are indexed to reflect the effects of inflation. Costing information for each line is developed for a mixture of car types most frequently using the line. For most of the lines under study, this includes some combinations of open top hoppers, covered hoppers, and box cars.

The Rail Form A program is run for each line using the actual Form A data for the railroad operating the line. The output of the Rail Form A program lists the cost per ton and hundredweight for the off-branch movement at various lengths of haul and load weights. These variable costs involve terminal (single for all rail service and dual for truck-to-nearest railhead service alternative), line-haul, and interchange costs, in accordance with the RSPO methodology. For the purposes of this study, the cost per ton is applied to the number of tons moved over each line by alternative and added to the average on-branch cost to determine the total rail variable costs per ton. This is based on the average length of haul by origin-destination pair and traffic volume per rail line as provided by the railroad supplied data.

The products of the economic analysis of Class I operating alternatives are inserted in a pro-forma income statement which arranges revenues, on-branch costs, and off-branch costs, and produces an indication of the amount of contribution to profit and overhead which is projected for each line. Both unit revenues and costs were incorporated in the Pro-Forma Income Statement and applied to the specific operating statistics for each line and alternative. The Pro-Forma Income Statement is illustrated in Exhibit D-4.

EXHIBIT D-4

PRO–FORMA INCOME STATEMENT
CLASS I RAILROAD OPERATIONS

REVENUE

1979 carloads x revenue per car x inflation factor.

EXPENSES

On Branch

- Maintenance of Way and Structures - Branch cost for annual normalized maintenance of way per mile x branch miles of line.
- Locomotive Repair - System locomotive repair cost per locomotive gross ton mile x annual branch gross ton miles x inflation factor.
- Locomotive Ownership - System road locomotive capital and replacement cost per locomotive unit hour x annual branch locomotive unit hours x inflation factor.
- Locomotive Servicing - System train locomotive servicing cost per locomotive unit mile x annual branch locomotive unit miles x inflation factor
- Fuel - System cost per locomotive unit hour x annual branch locomotive unit hours x inflation factor.
- Train Supplies and Expenses - System cost per train hour x annual branch train hours x inflation factor.
- Train Labor - System cost per train hour x annual branch train hours x inflation factor.
- Taxes and Rents - Not applicable.
- Miscellaneous Expenses - System cost per net ton of revenue freight x annual branch net tons of revenue freight x inflation factor.
- Car Day Cost - System cost per car day x annual branch car days x inflation factor.
- Car Mile Cost - System cost per car mile x annual branch car miles x inflation factor.
- Return on Investment - Net liquidation value of branch rail property x annual yield on ten year Treasury bond.

Subtotal

Off Branch

Rail Form A system cost per net ton of revenue freight (prorated by miles of line) x annual branch net tons of revenue freight x inflation factor.

TOTAL COST

Total on-branch expenses + total off-branch expenses.

PROFIT (LOSS)

Revenue - Total Cost.

Truck Costs - To develop costs of moving freight which would be diverted to truck if a rail line were abandoned, a truck cost model is utilized. The traffic which would be diverted to truck is truckload freight, and primarily carried by individual owner-operators. These costs relate primarily to linehaul costs but additional factors are included to allow for the cost of pickup and delivery.

Both the fixed and variable elements of the annual cost of a single driver operated truck are considered. The vehicle used in the model is a five-axle tractor-semi-trailer suitable for carrying grain. It is assumed that approximately 100,000 miles would be driven per year. This is based on an average truck speed of 50 m.p.h. and an average of 2,000 hours driven per year. The variable costs are strictly a function of mileage with driver cost including a fixed component (minimum base salary). Pick-up and delivery costs are a function of the number of trips. The cost of traveling twenty-five miles is added to each round trip to account for the expense of moving the vehicle to the point of freight origination from the drivers domicile. Also included in fixed costs are return on investment, insurance, licenses and/or permits, and overhead costs. These costs account for $16,600 per year or a fixed cost per mile of 16.6¢.

Variable costs include cost of capital or equipment, depreciation of the vehicle, current fuel costs, tires and maintenance. These variable costs are directly related to mileage and were developed using cost estimates from the U.S.D.A., the Association of American Railroads, the American Trucking Association, the Interstate Commerce Commission and current literature and discussions with manufacturers. Also included in variable costs are driver costs as a function of miles driven, drivers' benefits and social security. Miscellaneous costs were also estimated, such as out-of-town layover. These costs amount to an approximate total of $68,400 or 68.40¢ per mile.

The total costs, which are a function of mileage, amount to approximately $85,000 for 100,000 miles driven or 85¢ per mile. The costs which are a function of the number of trips amount to $29.08 per trip. If more than one trip can be made in one day from the same point of origin and destination, these costs decrease to $15.00 per trip and include the hour layover for pickup and delivery and the apportioned expense of traveling to and from the driver's domicile. See Exhibit D-5 for truck cost breakdown with further explanation of each cost item following.

In utilization these costs, a 100 percent empty backhaul for trips under 200 miles was assumed. Based on the Interstate Commerce Commissions, "Energy/ Loaded Truck Miles on Interstate Highways During 1976" study, the ratio of empty backhaul varied. Using percents for exempt carriers in appropriate geographical regions, the empty backhaul for 201 to 1,000 miles was approximated to be 53 percent and over 1000 miles to be 42 percent.

EXHIBIT D-5

TRUCK COST BREAKDOWN

TRUCK COSTS - assuming annual mileage of 100,000 miles

Fixed Costs	
Insurance	$ 6,000.00
Licenses and Permits	1,400.00
Management and Overhead	3,305.00
Return on Investment	5,907.00
Total Fixed Cost	$16,612.00
Variable Costs	
Cost of Capital	2,029.00
Depreciation	6,148.00
Fuel	24,000.00
Tires	3,700.00
Maintenance	8,800.00
Driver Cost	22,744.00
Miscellaneous	1,000.00
Total Variable Cost	$68,421.00
Total Fixed and Variable Cost	$85,033.00
Fixed Cost per Mile	.166
Variable Cost per Mile	.684
Fixed and Variable Costs per Mile	.850

Per Trip Costs

Lost Driver Time - Pickup and Delivery $7.83 per hour

Travel mileage to and from freight origination point 25 miles x .85 = $21.25

Total Per Trip Cost $29.08

Truck Costs--Fixed - Truck Cost Breakdown, Exhibit D-5, item descriptions and footnotes on fixed costs are as follows:

- Insurance - Insurance on all items approximate $6,000. This figure includes liability, collision and cargo insurance on the tractor and trailer. Insurance rates on the tractors and trailers for a specific owner-operator may be higher or lower depending on the safety and cargo loss claims record of the owner. The figure is derived using the USDA, Office of Transportation's April 1980 "Owner-Operator Truck Cost Guide" and allowing for a lower capital equipment cost and lower cargo loss.

- Licenses and Permits - The total cost for licenses and permits is estimated to be $1,400. This cost includes state license fees and trip permits. This cost varies as to annual mileage driven and the states in which the driver operates. An average cost is estimated using fees charged in South Dakota, the USDA's "Owner-Operator's Truck Cost Guide," and White Motor Trucks "Cost per Mile Handbook."

- Management and Overhead - The cost for management and overhead includes various items not readily associated with road trips. The office rental allowance is for a portion of the owner-operator's home that is used for an office. It includes part of the utilities used for that purpose. Telephone is for the standard monthly charge but does not include long distance calls. Travel is for business-related trips that don't involve the owner-operator's vehicle.[1]

- Return on Investment - The return on investment is determined by computing the opportunity cost of the net investment in the tractor and trailer (purchase price less available investment tax credit). An alternative investment of comparable risk appears to be triple A rated utility bonds. The yield on risk bonds averages 11.00% annually as of June 30, 1980.[2]

Truck Cost--Variable - Truck Cost Breakdown, Exhibit D-5, item descriptions and footnotes on variable costs are as follows:

- Cost of Capital - The cost of capital is based on the cost of a new tractor and trailer suitable for grain movements.

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[1]USDA's Office of Transportation, "Owner-Operator Truck Cost Guide", April 1980.

[2]Business Week, July 14, 1980, pg. 83.

The cost of this equipment is determined from surveys of manufacturers selling the appropriate equipment. The capital cost is the effective annual interest charge incurred on the loan obtained to finance the tractor/trailer. The effective annual interest was calculated by dividing the total amount of interest paid over the life of the loan for the tractor and the trailer by their respective useful lives. The total amount of interest paid was determined by applying an annual 10% "add-on" interest rate to the loan over a three year period. The add-on method, interest rate, and maturity term were arrived at by reference to an article on truck financing.[1]

- Depreciation - Depreciation is computed separately for the trailer and tractor because of different useful lives. A tractor and trailer are assumed to have a maximum life of 650,000 and 850,000 miles, respectively[2]. The basis for depreciation is the purchase price less 20 percent for salvage and less the available investment tax credit. It is assumed the salvage value would be reinvested as the downpayment for the next tractor/trailer.

- Fuel - Fuel is costed at $1.14 per gallon[3]. Since no backhaul is assumed, fuel efficiency is computed by averaging 4.4 miles/gallon for a loaded truck and 5.1 miles/gallon for an unloaded one[4]. This yields an average cost of 24¢ per mile.

- Tires - The cost of maintaining and replacing a set of 18 truck tires is determined to be $0.037 per mile for an owner-operator.[5]

- Maintenance - Maintenance expense for the tractor/trailer of an owner-operator varies with the age of the equipment. This cost is determined to average $0.088 per mile.[6]

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[1]"Truck Financing" Owner Operator, Volume 10, Number 2, March/April 1980, Radnor, Pa.

[2]USDA's Office of Transportation, "Owner-Operator Truck Cost Guide", April, 1980.

[3]Federal Register, Vol. 45, No. 128, July 1, 1980, Appendix - Fuel Surcharge.

[4]Rose, Energy Intercity, - Op. Cit.; p.6-11.

[5]Fruit and Vegetable Truck Cost Report, June 30, 1980, USDA, Volume 2, No. 6.

[6]Ibid.

- Driver Cost - Driver cost consists of salary, fringes, payroll, taxes and subsistence costs. A base salary of $13,000 is set based on available cost reports and average earnings of people engaged in the transportation industry in South Dakota.[1] A charge of 16¢ per mile driven in excess of 81,250 miles (the equivalent of the base salary) is used.[2] Payroll taxes include the self employment tax, while fringes include health and worker's compensation insurance.

- Miscellaneous - Miscellaneous costs per mile can vary by both the length of the haul and its destination. It was assumed however, that 1¢ per mile would adequately reflect any such costs.[3]

Truck Costs--Per Trip - Truck Cost Breakdown Exhibit D-5, item descriptions and footnotes on per trip costs are as follows:

- Pickup and Delivery - The costs associated with pickup and delivery (P&D) were quantified as the opportunity cost of the time spent in a queue to pickup or deliver shipments. This opportunity cost was defined to be only driver cost, since the time would otherwise be spent in line haul and there are no other significant costs, e.g., equipment. It was assumed that the P&D time associated with each trip would be one hour. Therefore, driver cost was computed on an hourly basis and multiplied by the number of round trips to determine P&D cost.

- Travel Mileage - The additional travel mileage to and from the freight origination point was estimated to be 25 miles at a cost of $.85 per mile.

Secondary Efficiency Benefits

The primary efficiency benefits measure the change in consumers' and producers' surplus associated with changing the level of rail service to shippers along a branch line. The measured surpluses relate to the transportation services provided to shippers located on intensive study lines. Secondary efficiency benefits measure other economic impacts which result from the proposed

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[1] "MVMA Motor Vehicle Facts 2 Figures '79", Motor Vehicle Manufacturers Association of the United States, Inc.

[2] "Current Cost of Operating Refrigerated Trucks for Hauling Fresh Fruits and Vegetables by Multi-Truck Lines." USDA, Economics, Statistics, and Cooperatives Service, National Economics Division, December 1979.

[3] "Cost per Mile Handbook", White Motor Trucks, 1980.

changes in rail services. This study considered the following types of secondary efficiency benefits:

- changes to local (community) income due to job losses or gains;
- changes to highway, capital or maintenance costs due to potential traffic diversion to trucks;
- changes in taxes resulting from the closing of shipper facilities and the diversion of traffic to trucks, whose fuel is taxed by the state;
- net salvage value of the intensive study line which is realized under the abandonment or truncation alternatives; and
- other economic impacts resulting from unique conditions associated with an intensive study line.

These changes can result in either positive or negative benefits depending on the volume of the base case and line alternatives. The secondary efficiency benefits are described more fully below.

Income Impacts

Rail service changes can result in the loss of shipper jobs due to plant closings, the loss of railroad jobs due to line abandonment, or the loss of truck driver jobs due to truck traffic being diverted to the railroad. Job gains can also result from the establishment or improvement of rail service, potentially affecting both railroad and shipper employees. Increased truck driver jobs can result from the loss of rail service and the diversion of rail traffic to trucks.

In this study, the income effect on local communities of job losses is measured as the on-time loss of salary for a period equal to the average period of unemployment for South Dakota (11.5 weeks) [1], less the average amount of unemployment compensation per week ($99 per week for all employees except railroad employees, whose higher average salary justifies the use of the maximum unemployment compensation rate of $119 per week). The income effect on the State from job losses is measured as the one time loss of salary for the average period of unemployment, without adjustment for unemployment compensation. At the state level, unemployment compensation is an economic transfer and so is not included in the income loss calculation.

[1]South Dakota Department of Labor, July 1980.

The diversion of traffic to rail from truck in the case of line service restoration or line rehabilitation is assumed to result in negligible income loss to the trucking sector due to the relative mobility of truck drivers. The annual income impact of job gains is measured by the average salary of the affected groups ($12,000 - elevator employees, $16,000 - truck drivers, and $25,000 - railroad employees) times the average percentage of unemployment in the counties served by the line.[1]

The equations used to calculate the income impacts of rail service changes are listed below:

Income Impact of Job Losses:

$$Bil = J\ Tuc\ (Ruc - R)$$

where

Bil = Secondary Employee Income Loss, One-Time
J = Lost Jobs
Tuc = Average Term of Unemployment (weeks)
R = Average Wage Rate ($/week)
Ruc = Average Unemployment Compensation Rate ($/week);
Ruc = 0 under the state allocation of benefits

Income Impacts of Job Gains

$$Big = Jg\ R\ U \times 52$$

where

Big = Secondary Employee Income Gain, Annual
Jg = Gained Jobs
R = Average Wage Rate ($/week)
U = Average Local Unemployment Rate (%)

Highway Costs

The diversion of traffic from the railroads to the motor carriers produces increased deterioration of the highways over which the traffic moves. This results in either higher highway capital costs, where the existing highway is currently inadequate to carry the expected traffic diversion and must be upgraded; or added maintenance costs, where the existing highway is adequate to carry the expected traffic diversion but the traffic increase causes some additional highway deterioration. The methodology used to obtain a rough estimate of these costs was developed with the assistance of the South Dakota Department of Transportation.

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[1]Based on South Dakota Department of Labor Unemployment Statistics, April 1980.

Increased capital costs are computed using the highway rehabilitation costs which would be incurred if the highway is rebuilt before substantial damage to the existing road takes place using average strength and 18-KIP axle weight equivalencies. In practice, the additional number of trucks on the highway generated by this abandonment would shorten the life of the pavement, with the next overlay of a suitable design to carry the increased traffic based on the new volumes. Since the increase in daily traffic is minimal in comparison to the current traffic volume, the study focuses only on the increased cost involved with additional overlay thickness necessary to meet design standards. Current road deficiencies and other structural changes such as bridge and shoulder repair are not included.

The following process was used to compute the upgrading costs to accomodate the diverted truck traffic for each of the intensive study lines:

1. Diverted truck traffic based upon an estimate of average cargo weight of 20 tons and 100% empty backhauls.

2. Adjust for seasonal patterns of traffic movements,[1] to obtain a maximum truck volume estimate per day.

3. Convert the diverted truck traffic to 18-KIP axle weight equivalents on flexible pavements using 5-axle vehicles weighing 14.5 tons empty and 34.5 tons loaded.[2] For loaded vehicles, the 18-KIP axle weight equivalency is 5.3, and for empty vehicles .7.

4. Determine the average strength figure for each highway under consideration for truck traffic diversion. Relate this figure to the dynaflect measure, which relates to a 18-KIP equivalent axle weight load.[1]

5. For the calculated number of 18-KIP equivalencies added to the existing volume of traffic for each affected highway, determine the required dynaflect measurement using the graph mentioned in step 4. (This does not take into account current design deficiencies.)

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[1]South Dakota Highway Traffic Report: 1979, State of South Dakota Department of Transportation.

[2]Truck Weight Study: 1979, South Dakota D.O.T., Pierre, S.D.

[3]Derived from Traffic vs. Maximum Recommended Dynaflect Deflections graph supplied by South Dakota's Department of Transportation - Research and Special Assignments.

6. Using the Average Strength Overlay Design Curve, determine the required pavement thickness for the resulting dynaflect measurement and compare to current pavement thickness.

Where the required pavement thickness exceeds the current pavement thickness, an overlay would have to be added. For a 24 foot wide road, the additional overlay for the 138 mile segment would cost in 1980 approximately $1,670,000 (at 86¢ per sq. yd. of asphalt). Road surfaces in South Dakota are planned to last 18 years, so the yearly added cost would approximate $93,000.[1]

Applying these methodologies to each of the intensive study lines fails to result in the need to add additional pavement to roadways in South Dakota. The additional traffic created by abandonment to the various highways, dependent on freight destination, is a low percentage in comparison to the current traffic volume. This is due to the low volume of traffic which is typically diverted from these rail lines and the presence of nearby interstate highways to several of the affected rail lines.

The estimated added maintenance cost incurred before upgrading the affected highways has been calculated using an equation developed by the South Dakota Transportation Systems Planning Division. This equation was formulated in 1978 dollars. This cost has been inflated to 1980 dollars using a 10% inflation factor for 1979 and a 16% inflation factor for 1980.[2] The equation follows on page D.26:

# of additional trucks/yr. in each direction	x	# of tons per round trip	[365] x [0.551963] x	# of miles in South Dakota affected	=	total added maintenance cost by highway segment per year in South Dakota.

Highway cost impacts are considered only for the roadways located in South Dakota and are calculated on an annualized basis. Impacts beyond the state border result from the estimated truck diversions, however this is not quantified as part of South Dakota's RAILPLAN. Traffic diverted to an interstate is assumed to result in negligible cost impacts due to the high design standards to which such roads are constructed.

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[1]Based on an analysis of the Added Cost of Maintenance and Construction if the Coal to Supply the Big Stone Power Plant were Hauled from Gascoyne, North Dakota over U.S. 12. prepared by S.D.D.O.T., Div. of Policy Development and Evaluation, Office of Transportation Planning, 1979, Appendix C.

[2]Formulated from current South Dakota experiences by South Dakota Transportation Systems Planning Program.

EXHIBIT D-5

TRUCK FREIGHT ENERGY INTENSITIES BY COMMODITY CLASS

Commodity	Average truckload (tons)	Energy Intensity		
		mpg	Btu route-TM[b]	Btu GC-TM[b]
Farm products	19.45	4.42	2330	2680
Forest products	18.59	4.47	2410	2770
Fresh fish, other marine products	13.56	4.79	3080	3540
Metallic ores	19.87	4.39	2290	2630
Coal	20.30	4.37	2260	2590
Crude petroleum and natural gas	26.81	4.02	1860	2130
Nonmetallic minerals, except fuels	20.05	4.38	2280	2620
Ordinance and accessories	16.62	4.59	2620	3012
Food and kindred products	17.36	4.54	2540	2914
Tobacco products	16.29	4.61	2670	3060
Basic textiles	13.13	4.82	3160	3630
Apparel and other finished textiles	10.11	5.04	3530	4506
Lumber and wood, except furniture	19.13	4.43	2360	2710
Furniture and fixtures	9.56	5.09	4120	4730
Pulp, paper, and allied products	15.55	4.66	2760	3170
Printed matter	14.45	4.73	2930	3361
Chemicals and allied products	18.02	4.50	2470	2830
Petroleum and coal products	24.45	4.14	1980	2270
Rubber and miscellaneous plastics	12.13	4.89	3370	3870
Leather and leather products	10.66	5.00	3750	4310
Stone, clay, and glass	19.91	4.39	2290	2630
Primary metal products	18.98	4.44	2370	2720
Fabricated metal products	13.53	4.79	3090	3540
Machiney, except electrical	13.39	4.80	3110	3570
Electrical machinery	11.21	4.96	3600	4130
Transportation equipment	11.77	4.92	3460	3970
Instruments, photo, optical, etc.	14.00	4.76	3000	3450
Miscellaneous manufactured products	12.04	4.90	3390	3900
Waste and scrap material	17.28	4.55	2550	2920
Miscellaneous freight shipments	13.16	4.82	3160	3620
Containers, shipping, empty return	9.65	5.08	4080	4690
Mail and express				
Freight forwarder traffic	12.19	4.90	3560	3860
Shipper association	22.73	4.23	2080	2389
Miscellaneous mixed shipments	13.95	4.76	3010	3460
Total	18.04	4.50	2470	2830

[a]The values in this table are not intended for intermodal comparisons, as they do not include route structures and are not at a sufficient level of disaggregation.

[b]TM – Ton-mile.
GC – Great-circle.

SOURCE:
A.B. Rose. Energy Intensity and Related Parameters of Selected Transportation Modes: Freight Movements. Prepared for Department of Energy by Oak Ridge National Laboratory Oak Ridge, Tennessee, June 1979; p. 6-11.

EXHIBIT D-6

RAIL FREIGHT ENERGY INTENSITY BY COMMODITY CLASSES, 1976

Commodity	1976 Ton-miles[b] (10^9)	1976 Average carload weight (tons)	1976 Average length of haul[b] (miles)	1972 Mean empty car weight (tons)	1972 Mean empty over loaded car miles	Energy intensity in Btu/ton-mile	
						By route-miles[b]	By great-circle miles
Coal	1,005.1	86.2	320	28.1	0.91	340	450
Food and kindred products	644.0	49.8	721	36.3	0.84	750	990
Chemicals and allied products	620.2	73.4	699	33.9	0.95	470	620
Farm products	582.6	66.9	489	35.5	0.87	520	680
Lumber and wood, except furniture[c]	454.6	46.8	512	34.3	0.74	720	960
Pulp, paper and allied products	339.0	43.1	771	33.3	0.95	920	1220
Nonmetallic minerals, except fuels	251.1	76.1	194	31.0	0.91	410	540
Stone, clay and glass	242.5	56.8	451	33.5	0.82	580	770
Primary metal products	239.8	63.1	500	33.9	0.78	500	670
Transportation equipment	210.5	23.3	782	36.8	0.69	2070	2740
Metallic ores	200.3	81.5	153	30.9	0.93	390	510
Petroleum and coal products	194.8	59.4	466	34.6	1.02	650	860
Miscellaneous mixed shipments[d]	162.8	22.6	1,018	32.7	0.70	1940	2560
Freight and forwarding traffic[d]	45.4	22.2	1,592	32.7	0.70	2000	2640
Fabricated metal products	42.5	34.2	659	34.1	0.76	1130	1500
Machinery, except electrical	25.1	24.8	944	38.1	0.69	1950	2570
Electrical machinery	23.5	17.2	902	34.3	0.70	3200	4220
Rubber and miscellaneous plastic products	22.4	18.8	773	33.5	0.70	2680	3540
Basic textiles	8.9	19.6	875	34.2	0.69	2530	3350

[a] The values in this table are not designed for intermodal comparisons, as they do not include route structures and are not at a sufficient level of disaggregation.

[b] All mileage-related data from the source are based on short-line distances rather than the actual routings.

[c] Furniture accounts for only a small portion of the ton-miles for the combined category of lumber and furniture in Table 5.8. Therefore the car-mile-weighted values are left unchanged.

[d] All movements are assumed to occur in box cars.

SOURCE: Rose. Energy Intensity - Ibid.; p. 5-16

Taxes

Changes in rail service also result in changes to the tax base of the state. The tax impacts of rail service abandonment or truncation are quantified by the property taxes paid by shippers who indicated they would close operations if they lost rail service. Railroad property taxes are not considered by this study since they are not consistently applied, due to the fact that the property tax liability of a railroad operating a line in South Dakota can be adjusted to reflect track maintenance and rehabilitation efforts conducted by the operating railroad.

The only other tax impact of rail service changes results from the diversion of traffic to the truck mode, which, unlike the railroads, pays a state tax of 12 cents per gallon of fuel consumed. Therefore the annual effect of traffic diversion to trucks is a tax revenue increase of 12 cents per gallon of fuel required to move the affected traffic in South Dakota.

Net Salvage Value

When a line is abandoned, a net benefit to the railroad is the net salvage value of the railroad materials (rail, ties, etc.) which can be salvaged from the line. The current net salvage value for each intensive study line is provided by T. K. Dyer, Inc., based on their inspection of the lines. The estimates exclude the value of the land contained in the track right-of-way.

Other

Other monetary secondary efficiency benefits considered by this study included the following:

- deferred highway construction costs - the costs associated with a highway project, such as a bridge overpass, whose construction could be avoided if a rail line is abandoned or terminated.

- producers' and consumers' surpluses resulting from new traffic growth. These effects cannot be quantified as part of this study. However, their qualitative impacts are noted.

Non-Monetary Benefits

Besides the primary and secondary efficiency benefits or disbenefits of rail service changes, non-monetary impacts also result. These include both quantifiable and non-quantifiable impacts and may in certain instances represent the primary justification for implementing a rail assistance project. The non-monetary impacts addressed by this study are discussed below.

Jobs

The number of jobs either lost or gained due to a proposed rail service change are listed in the descriptions of project benefits and costs. The affected job categories include railroad, truck, and shipper employees. This impact category relates directly to the monetary income impacts already discussed.

Environmental Impacts

The environmental impacts resulting from rail service loss consist of energy usage and the air and noise pollution impacts associated with alternative transportation modes. For this analysis, the noise pollution impacts are assumed to be negligible since the commodities will be transported, for the most part, through rural low-density populated communities. Two types of transportation modes are logical alternatives should rail service be reduced. The first alternative involves long distance hauling solely by truck to replace the long distance rail hauling. The second alternative involves truck hauling to the nearest railhead and thence transport by rail. Thus, the energy and air pollution impacts are estimated for the truck and the truck/rail alternatives. The impacts of these alternatives are compared to the impacts of the existing all-rail condition to assess the incremental impacts. The estimation methodology employed is similar to that endorsed by the ICC[1] and is described briefly below for each impact.

Energy Impacts

The energy impacts are evaluated in terms of the diesel fuel consumption per year for the truck and truck/rail alternatives. The fuel consumption of trucks and rail depends on several factors: shipment weight, volume, and length of haul; idling time and speed; physical condition and characteristics of road, track and terrain; age and condition of truck and locomotive; and various other factors.[2]

The concept of energy intensity of transportation modes has generated numerous intermodal fuel consumption comparison studies. Widely divergent estimates of modal variations in energy intensities have been made. For

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[1]ICC, Rail Service Planning Office. Guide for Evaluating the Community Impact of Rail Service Discontinuance. Washington, D.C., January 1975; pp. 26-34.

[2]L. A. Poth and J. Sward. Railroad Impact Study: Doland-Watertown, South Dakota-Chicago & North Western Transportation Company Railroad Line. University of South Dakota, Business Research Bureau, Pierre, South Dakota, October 1975; p. 36.

example, truck energy intensity estimates vary between 1,000 - 3,500 Btu/route-ton-miles, while those for rail vary between 300 - 1,450 Btu/route-ton-miles.[1] It is generally agreed however, that a ratio of 4/1 seems to be a reasonable estimate of the fuel efficiency of rail over trucks.[2]

The most widely used, and perhaps the best data for energy intensity by commodity class for truck and rail have been prepared by Rose.[3] The energy intensities (Btu/ton-miles) by commodity class are shown in Exhibit D-5 for truck and Exhibit D-6 for rail. It should be noted that these data have also been utilized in other studies involving the impact analysis of rail line discontinuance.[4,5]

For each line and alternative, the quantity of diesel fuel is estimated, based on the net volume, haul length within South Dakota only, and modal composition of each traffic movement. Once an energy consumption estimate is made in Btus, it is converted to gallons of diesel fuel using the conversion factor of 138,700 Btu/gallon of diesel fuel. The energy consumption estimates are then summed for all traffic movements for each line alternative for all modes. The totals are then compared to the base case to arrive at an estimate of the incremental energy consumption by line alternative. Energy consumption impacts are considered only for the movements in South Dakota, although further impacts beyond the State borders will occur.

Air Pollution

The air pollution impacts are evaluated in terms of pounds of pollutants per year for the truck and truck/rail alternatives. The three major pollutants emitted by trucks and rail locomotives are carbon monoxide (CO), hydrocarbons (HC), and oxides of nitrogen (as NO_2). Supplemental emissions

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[1]A. B. Rose. "The Role of Air Freight in View of Energy Intensity and Related Parameters - An Intermodal Comparison." A paper presented to the 1978 SAE International Air Transportation Meeting. Boston, Massachusetts, May 1978.

[2]Poth. Railroad Impact Study: Doland-Watertown, Op. Cit., p. 36.

[3]A. B. Rose. Energy Intensity and Related Parameters of Selected Transportation Modes: Freight Movements. Prepared for Department of Energy by Oak Ridge National Laboratory, Oak Ridge, Tennessee, June 1979; p. 5-16, 6-11.

[4]Minnesota DOT. Potential Impacts and Alternatives to the Proposed Abandonment of the Milwaukee Road Mainline: From Chanhassen to Ortonville, Minnesota. Minneapolis, Minnesota, July 1979; pp. 19-22.

[5]Minnesota DOT. 1979 State Rail Plan. Minneapolis, Minnesota, December 1979; pp. E-11 - E-13.

include oxides of sulfur (as SO_2), particulates, aldehydes, and organic acids. For this analysis, the last two pollutants were assumed to be negligible. The air pollutants emitted by truck and rail depend on several factors: type of fuel and fuel consumption rate; vehicle type, age, condition, and weight; vehicle operating speed; ambient air temperature; altitude; and various other factors.[1]

Air pollution and emission analysis is highly technical and complex. As with energy intensity measures, pollutant emission rates vary widely and have been developed per quantity of fuel consumed or per mile travelled. In general, however, it appears that the total truck-to-rail pollutant ratio is about 4:1 under average conditions.[2]

The emission factors used for the analysis herein were developed by the EPA.[3] Exhibit D-7 presents these emission factors (lbs. of pollutants/ 100 gallons of diesel) for heavy-duty truck and locomotive diesel engines.

The calculation of air pollution impacts involves multiplying the estimated rail and truck fuel consumption by the appropriate air pollution factors. Summing the results for each movement by alternative and comparing to the base case produces an estimate of the incremental air pollution emissions of each rail service alternative. The emissions by type of air pollution are summed for each line and alternative for ease of presentation. Only the impacts which occur in South Dakota are quantified by this study, although further impacts beyond the state borders will occur.

Other

Other non-monetary impacts of rail service changes addressed by this study include the following:

- the competitive nature of transportation services to the State;
- the connectivity of the South Dakota rail system to that of the midwest and national rail system;
- the economic development potential of the State; and

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[1]U.S. EPA. MOBILE1: Mobile Source Emission Model. Washington, D.C. August 1978; pp. 3-5.

[2]Poth. Railroad Impact: Doland. op. cit.; p. 46.

[3]U.S. EPA. Complication of Air Pollution Emission Factors. Washington, D.C., March 1975; pp. 3.1, 3.2.

EXHIBIT D-7

EMISSION FACTORS FOR HEAVY-DUTY TRUCK AND LOCOMOTIVE DIESEL ENGINES (1)

POLLUTANT	HEAVY-DUTY TRUCK lbs./10^3 gal.	LOCOMOTIVE lbs./10^3 gal.
Carbon Monoxide (CO)	225	130
Hydrocarbons (HC)	37	94
Oxides of Nitrogen (NO_2^-)	370	370
Oxides of Sulfur (SO_2)	27	57
Particulates	13	25
Aldehydes	3	4
Organic Acids	3	7

(1) Data are based on weighting factors applied to actual tests conducted at various load and idle conditions with an average gross vehicle weight of 30 tons and fuel consumption of 5 miles/gal.

SOURCE: U.S. EPA Completion of Air Pollution Emishon Factors. Washington, D.C., March 1975; pp.3.1, 3.2.

- the accessibility of natural and energy resources of South Dakota to the State's freight transportation systems.

Each of these issues is an important area of concern to the State. The effect of each line alternative on these issues is noted as part of the discussion of project impacts.

Project Costs

Project costs include the actual program outlays associated with implementing the proposed rail project alternative. This can include the following items:

- acquisition costs;
- subsidy costs;
- rehabilitation costs;
- alternative mode costs; and
- new construction costs.

For the purposes of this study, the only costs considered are the following, due to the nature of project alternatives being proposed:

- rehabilitation costs to attain Class I or Class II traffic conditions;[1]
- relocation costs to move a grain elevator from a line losing or without rail service to an operating line;[2]
- construction costs for installing or expanding a rail siding, or for installing a transfer track.[1]

Distributional Considerations

The distributional analysis determines by how much different groups gain or lose as a result of the project. The distributional considerations may have critical implications for policy decisions. It is very likely that a project which has a net positive result will have significant negative effects on some groups. In certain instances, the effect on individual groups will cause a re-evaluation of available alternatives.

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[1] Based on estimates provided by T.K. Dyer, Inc.

[2] Based on estimates provided by Banner, and Associates.

To account for the distributional impacts of proposed project alternatives, the benefits are allocated to affected groups, including the

- railroads;
- truck drivers;
- community, including shippers; and
- state.

The sum of the maximum benefits (whether positive or negative) equal the total efficiency benefits for each project. Project costs are not allocated to the affected parties listed above.

Benefit-Cost Evaluation Criteria

The benefits and costs for each line alternative define the incremental changes relative to a consistent base case, which reflects the current status of each line. The impacts are listed in terms of annualized benefits and costs by using a 10-year time frame (except where noted) and a 10 percent discount rate. This permits consistent application of all monetary impacts to the evaluation criteria.

The project alternatives are evaluated by comparing the difference between the annualized benefits and costs for each alternative, and the ratio of annualized benefits and costs. The decision rules associated with each evaluation criteria are as follows:

Criteria	General Decision Rule
Benefit - Cost Difference	Accept if $B_n - C_n \geq 0$ Reject if $B_n - C_n < 0$
Benefit - Cost Ratio	Accept if $\frac{B_n}{C_n} \geq 1$ Reject if $\frac{B_n}{C_n} < 1$

where

B = Annualized value of benefits
C = Annualized value of costs
n = Number of benefits and costs

These decision rules are modified to reflect consideration for the non-monetary impacts associated with each line.

CONCLUSIONS

The benefit-cost impact and evaluation methodology described in this appendix attempts to address the intent of the Local Rail Service Assistance Act which first called for the benefit-cost assessment of local rail assistance projects. The methodology employed for this RAILPLAN incorporates many of the guidelines suggested by the Federal Railroad Administration for conducting benefit-cost analyses. It also reflects the nature of the data available to perform such an analysis. The quality of supporting information is the most critical variable in determining the type of benefit-cost methodology which can be used. The Study Team was greatly aided by the quality of data maintained by the Division of Railroads and provided by the railroads and shippers associated with each of the intensive study lines.

The benefit-cost methodology is intended to be both meaningful and workable, and yet conform to the requirements of the Federal Railroad Administration. Significant judgement is involved in applying the available data to the methodology. The statements and projections contained in this study result from the analysis methodologies, information, and assumptions set forth in this appendix. The achievement of any economic, financial, or usage forecast may be affected by fluctuating economic conditions and is dependent upon the occurrence of other future events which cannot be assured. Therefore, the actual results achieved may vary from the projections, and such variation could be material. However, the enclosed results reflect the best estimates of the consequences of rail service alternatives considered in this study, thereby providing a useful basis for selecting rail assistance projects for implementation.