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Amendment

to

1985 Iowa Railroad Analysis Update

June 6, 1986

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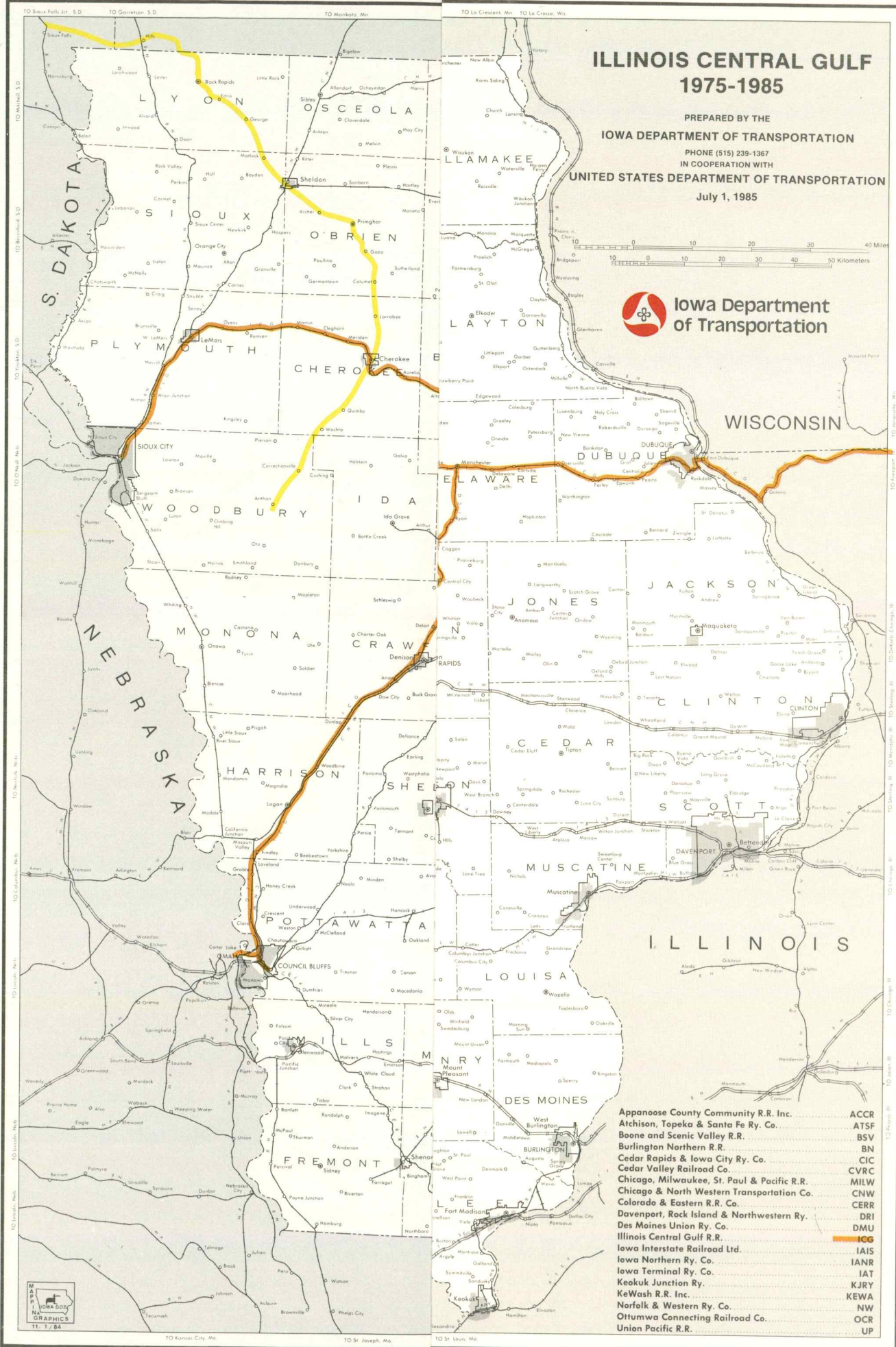
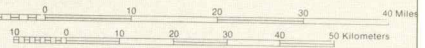
The 1985 Iowa Railroad Analysis Update identified rail rehabilitation projects being considered for state and federal funding. This document was approved by the Transportation Commission on March 4, 1986. Since March, two new projects have developed which necessitate this amendment to that document. This amendment evaluates two rail rehabilitation projects on the Chicago, Central and Pacific Railroad in western Iowa. The Ida Grove Line extending from Sacton to Ida Grove is the first project. Also included in this project is the construction of a connection between the Ida Grove Line and the Chicago, Central and Pacific Railroad main line at Sacton. The second project is the rehabilitation of the line between Tara and Le Mars.

ILLINOIS CENTRAL GULF 1975-1985

PREPARED BY THE
IOWA DEPARTMENT OF TRANSPORTATION
PHONE (515) 239-1367
IN COOPERATION WITH
UNITED STATES DEPARTMENT OF TRANSPORTATION
July 1, 1985



Iowa Department
of Transportation



Appanoose County Community R.R. Inc.	ACCR
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Boone and Scenic Valley R.R.	BSV
Burlington Northern R.R.	BN
Cedar Rapids & Iowa City Ry. Co.	CIC
Cedar Valley Railroad Co.	CVRC
Chicago, Milwaukee, St. Paul & Pacific R.R.	MILW
Chicago & North Western Transportation Co.	CNW
Colorado & Eastern R.R. Co.	CERR
Davenport, Rock Island & Northwestern Ry.	DRI
Des Moines Union Ry. Co.	DMU
Illinois Central Gulf R.R.	ICG
Iowa Interstate Railroad Ltd.	IAIS
Iowa Northern Ry. Co.	IANR
Iowa Terminal Ry. Co.	IAT
Keokuk Junction Ry.	KJRY
KeWash R.R. Inc.	KEWA
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11-1784

June 5, 1986

Tara to Le Mars
Chicago, Central & Pacific Railroad Company

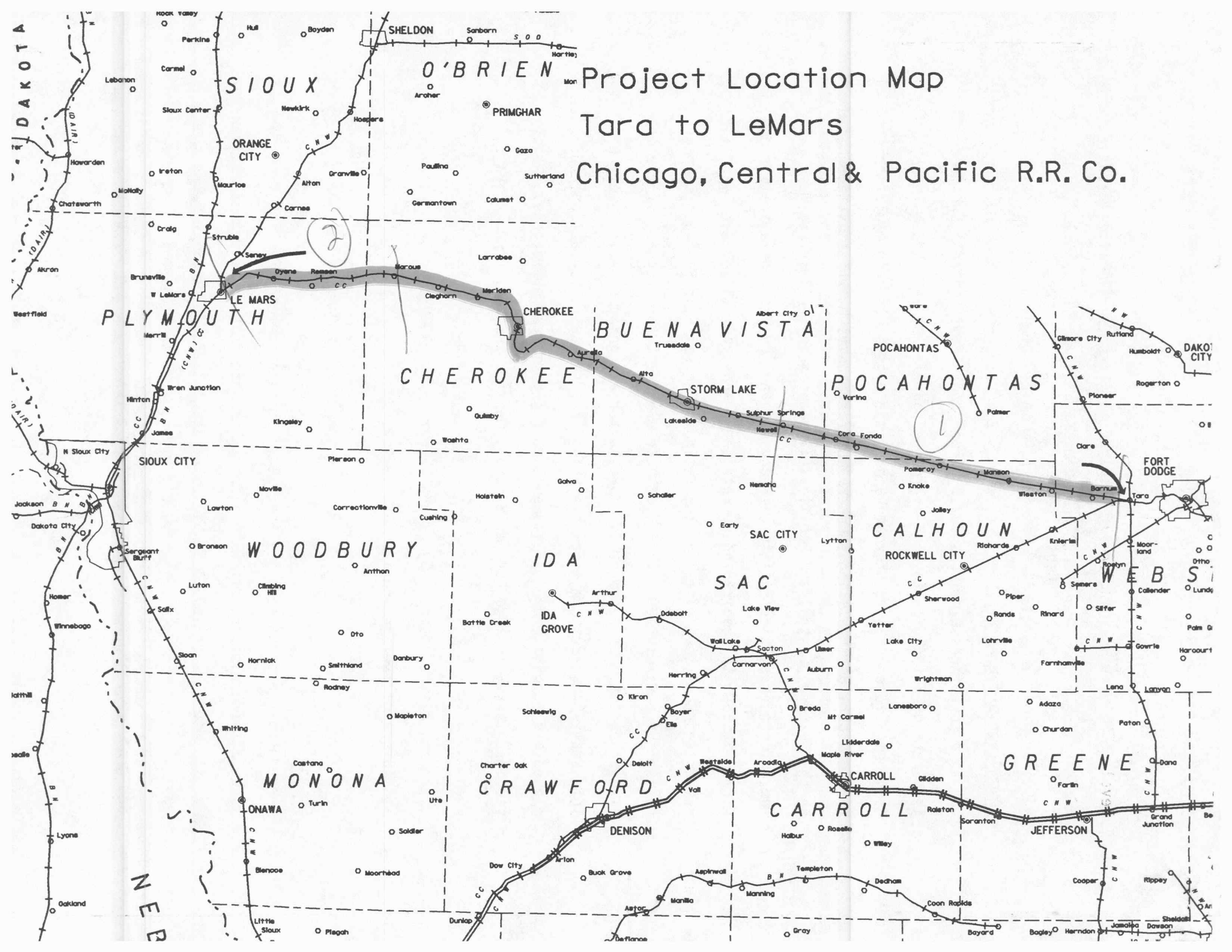
Line Description

The Tara to Le Mars Line runs 103.9 miles across west-central Iowa from just west of Fort Dodge to Le Mars in the counties of Webster, Calhoun, Pocahontas, Buena Vista, Cherokee and Plymouth (see attached map). This line was part of the Illinois Central Gulf system (ICG) which was purchased by the Chicago, Central and Pacific Railroad Company (CC) in December 1985. The Chicago, Central & Pacific Railroad Company (CC) is a Delaware Corporation formed in 1985 to acquire and operate the Omaha-Sioux City-Cedar Rapids-Chicago properties (all Iowa Lines) of the Illinois Central Gulf Railroad Company (ICG). On April 1, 1985, CC executed an agreement for purchase of the Iowa Lines from ICG. On December 24, 1985, after a unanimous decision of the Interstate Commerce Commission exempting CC's purchase transaction, CC closed its acquisition of the Iowa Lines and commenced operations. Major stations served include Barnum, Wieston, Manson, Pomeroy, Fonda, Cora, Newell, Sulphur Springs, Storm Lake, Alta, Aurelia, Cherokee, Meriden, Cleghorn, Marcus, Remsen, Oyens and Le Mars. Total 1980 Incorporated population of these communities is 35,202.

Project Description

The proposed project will involve the rehabilitation of CC's line from Tara to Le Mars, a distance of 103.9 miles. The Tara to Le Mars rehabilitation is estimated to cost \$13.115 million or about \$126,200 per mile. The rehabilitation program calls for the application of rail, ties, surfacing and grade crossing renewal to accomplish a reasonable and adequate service

Project Location Map Tara to LeMars Chicago, Central & Pacific R.R. Co.



level. The work will include 75 miles of rail relay. The rehabilitation of this line will allow the CC to operate the line at 40 mph and eliminate the slow orders that exist. A large portion of the line allows for only 10 mph operation currently.

The rehabilitation work is expected to be phased over four years. The first phase scheduled for 1986 will include tie renewal, ballast and crossing work from Tara to Newell (M.P. 381.1 to M.P. 415) and from Marcus to Le Mars (M.P. 466 to M.P. 485), a distance of 52.9 miles. Phase I rehabilitation work is estimated to cost \$3.748 million. The second phase scheduled for 1987 will include tie renewal, ballast and crossing work from Newell to Marcus (M.P. 415 to M.P. 466), a distance of 51 miles. The second phase is estimated to cost \$3.067 million. Phases III and IV will include rail relay of 75 miles of existing 90-pound rail at a cost of \$6,300,000. Phase III scheduled for 1989 will include one-half of the rail relay and Phase IV scheduled for 1990 will include the remaining one-half. A description of the cost estimate is summarized in the following table:

Rehabilitation Cost Estimate
Tara to Le Mars

103.9 miles

Item	Cost	
Materials:		
Rail Less Salvage	\$6,373,206	
Ties	1,822,865	
Ballast	517,920	
Other Track Materials	<u>516,365</u>	\$ 9,230,356
Tax, Handling, Freight		1,154,129
Labor:		
Wages	\$ 650,170	
Equipment	30,758	
Rental	1,422,735	
Subsistence	218,680	
Additives	305,580	
Supervision	<u>133,631</u>	<u>2,761,554</u>
Total Gross Cost		\$13,146,039
Less Salvage Materials Without Rail		<u>31,251</u>
Total Net Cost		\$13,114,788

Current Track Conditions

The Tara to Le Mars Line is classified as Class II by FRA standards. Maximum timetable speed for the line is 25 mph for both freight and TOFC trains. However, slow orders existing throughout the line make the effective speed about 10 mph. About 79 miles consist of 90-pound rail laid around 1920 with the remaining 25 miles laid with 112/115-pound rail in the late 1960s. The maximum gross weight on the line is 263,000 pounds per car.

Current Service Patterns

The Tara to Le Mars Line forms CC's main line from Ft. Dodge to Sioux City and is located in the CC's Cherokee District. Service is provided daily by CC headquartered in Waterloo. Two- or three-man operating crews, instead of four- or five-man crews used by the ICG, are stationed in Ft. Dodge and Sioux City. This line connects with the CC's Chicago to Omaha Line at Fort Dodge where the two lines' traffic is consolidated. Freight connections and junction points exist at Sioux City with the Burlington Northern Railroad and the Chicago and North Western Transportation Company (CNW). The CNW has trackage rights over the line from Le Mars to Sioux City.

Freight Traffic

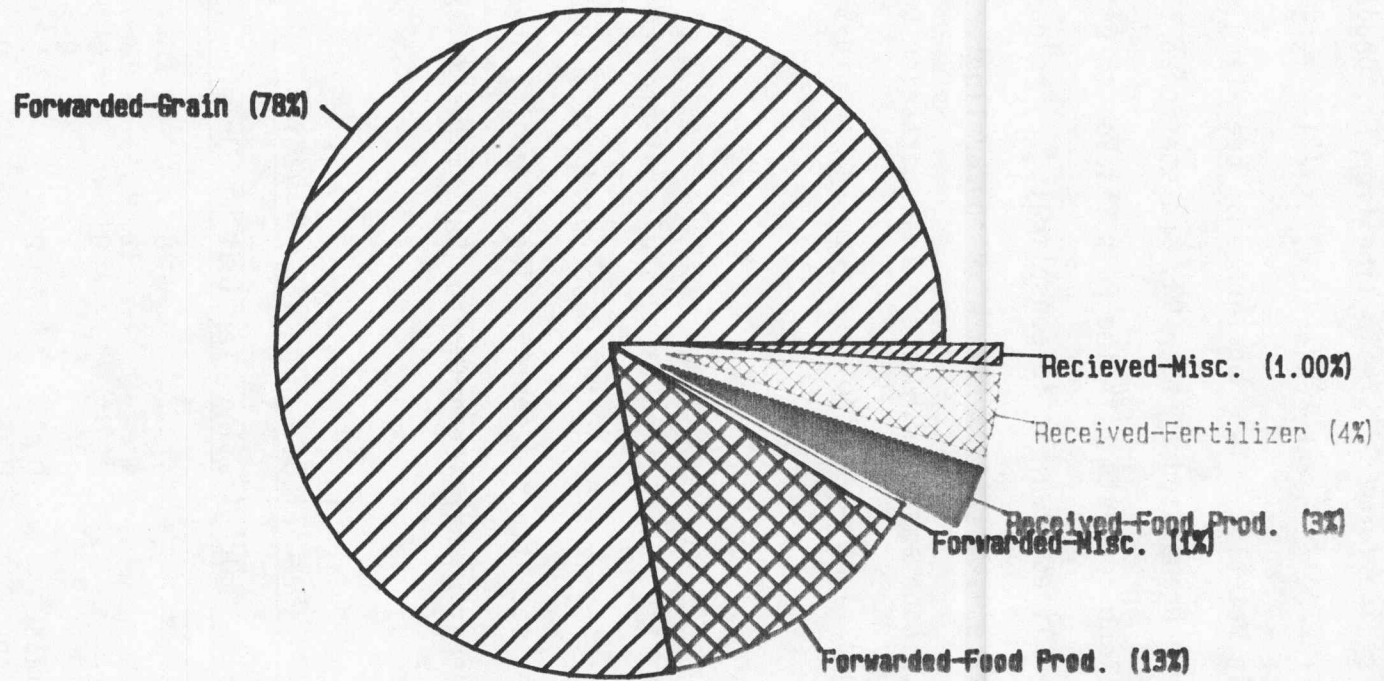
The majority of traffic on the line is agricultural products with grain, food products and fertilizer being the major products shipped based on the ICC waybill sample (see attached chart). The commodity breakdown shipped by the ICG, the operating carrier prior to 1986, is as follows:

ICG Tara to Le Mars Traffic
Percent of Carloads by Commodity

Commodity	1982		1984	
	Originating	Terminating	Originating	Terminating
Farm Products	94%	0%	86%	0%
Food Products	4	12	13	37
Lumber	0	0	0	11
Fertilizer	0	61	0	47
Clay, Concrete, Glass	0	0	0	5
Transportation Equip.	0	27	0	0
Misc. Frt. Shipments	2	0	1	0
Total	100%	100%	100%	100%

Source: ICC Waybill Sample.

Type of Commodities Shipped LeMars to Barnum 1984



Source: ICC Waybill Sample

From 1980 to 1984, the total originated and terminated traffic handled by the ICG from Barnum to Le Mars averaged 10,007 carloads. This represents 1.7 percent of the total rail traffic that was originated and terminated in the state during 1984. Barnum is the first station west of Tara with shipments. Yearly traffic ranged from a high of 13,820 carloads in 1980 to a low of 7,369 in 1982 (see attached chart). Nearly 90 percent of the traffic handled by the ICG was originated or forwarded while the remaining 10 percent was terminated or received (see attached chart). This historic traffic shows the importance of the outbound grain movement to the viability of this line.

Additionally, some overhead traffic moves over the line between Sioux City and Fort Dodge. Therefore, density measured in gross ton-miles per mile is an indicator of the total freight moving over the line. Density on the Tara to Le Mars segment has ranged from a high of 2.31 million in 1980 to a low of 1.27 in 1982. In comparison, the statewide average density for all rail lines was 10.5 million. ICG traffic density by segment is presented in the following table and attached chart:

ICG Tara to Le Mars Density

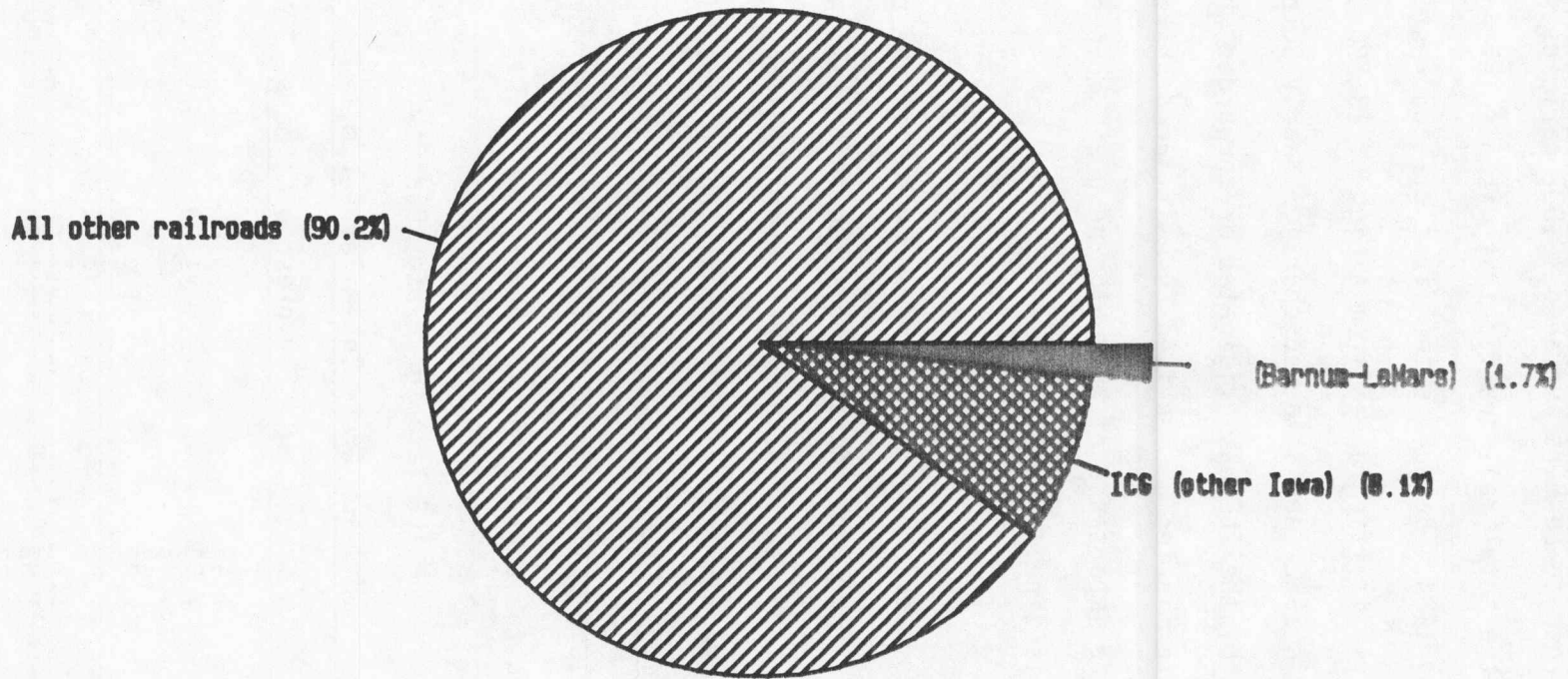
Million Gross Ton-Miles Per Mile

Year	Tara to Cherokee	Cherokee to Le Mars	Weighted Average Tara to Le Mars
1977	1.49	1.26	1.41
1978	1.74	1.59	1.69
1979	2.12	1.89	2.04
1980	2.37	2.18	2.31
1981	1.89	1.84	1.87
1982	1.27	1.27	1.27
1983	1.59	1.59	1.59
1984	1.77	1.77	1.77
8-yr. Avg.	1.78	1.67	1.74

Source: ICG Density Maps.

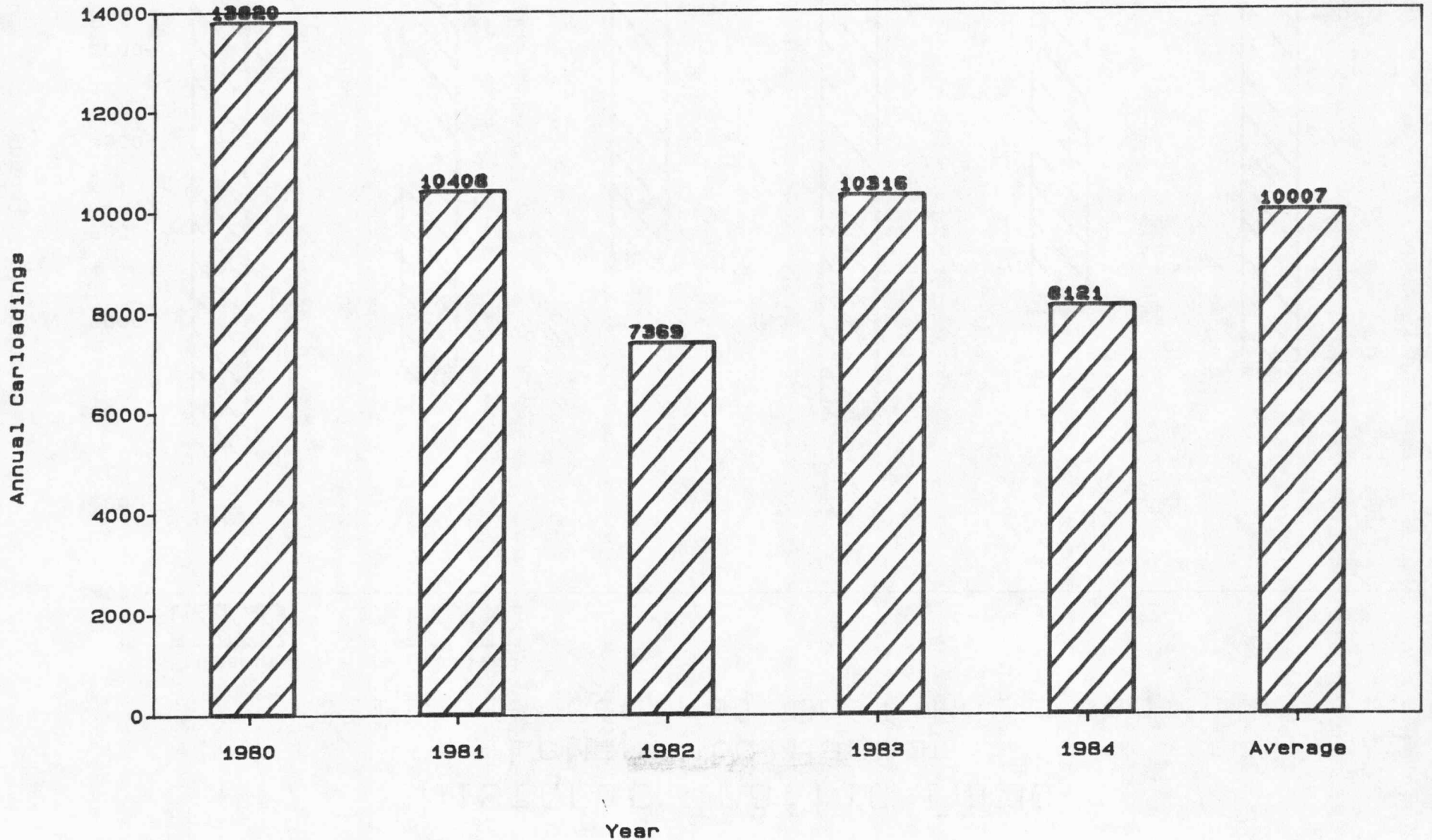
Total Iowa Rail Traffic

592,940 Carloads*



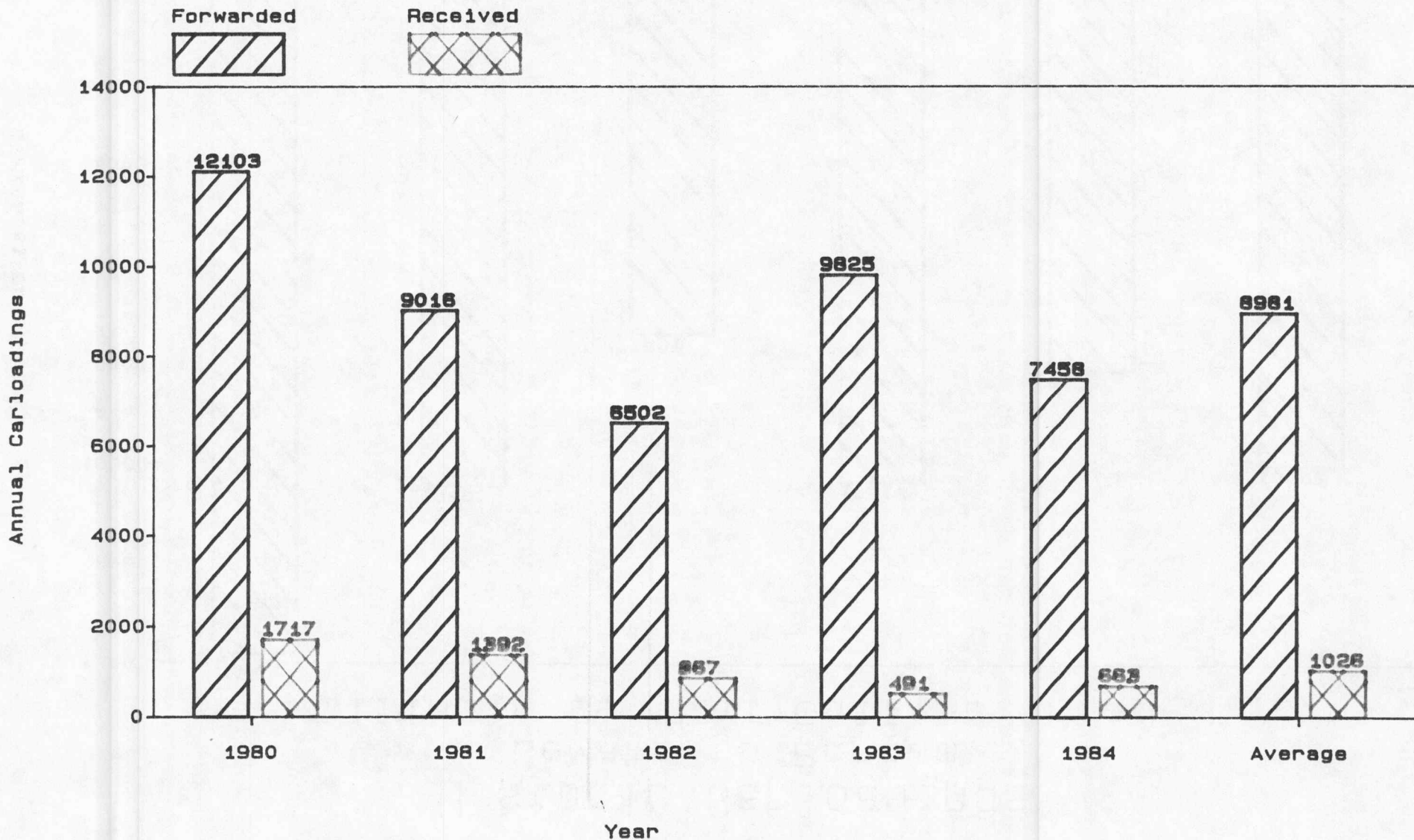
*1980 to 1984 average.

Historic Carloadings
LeMars to Barnum
Illinois Central Gulf Railroad



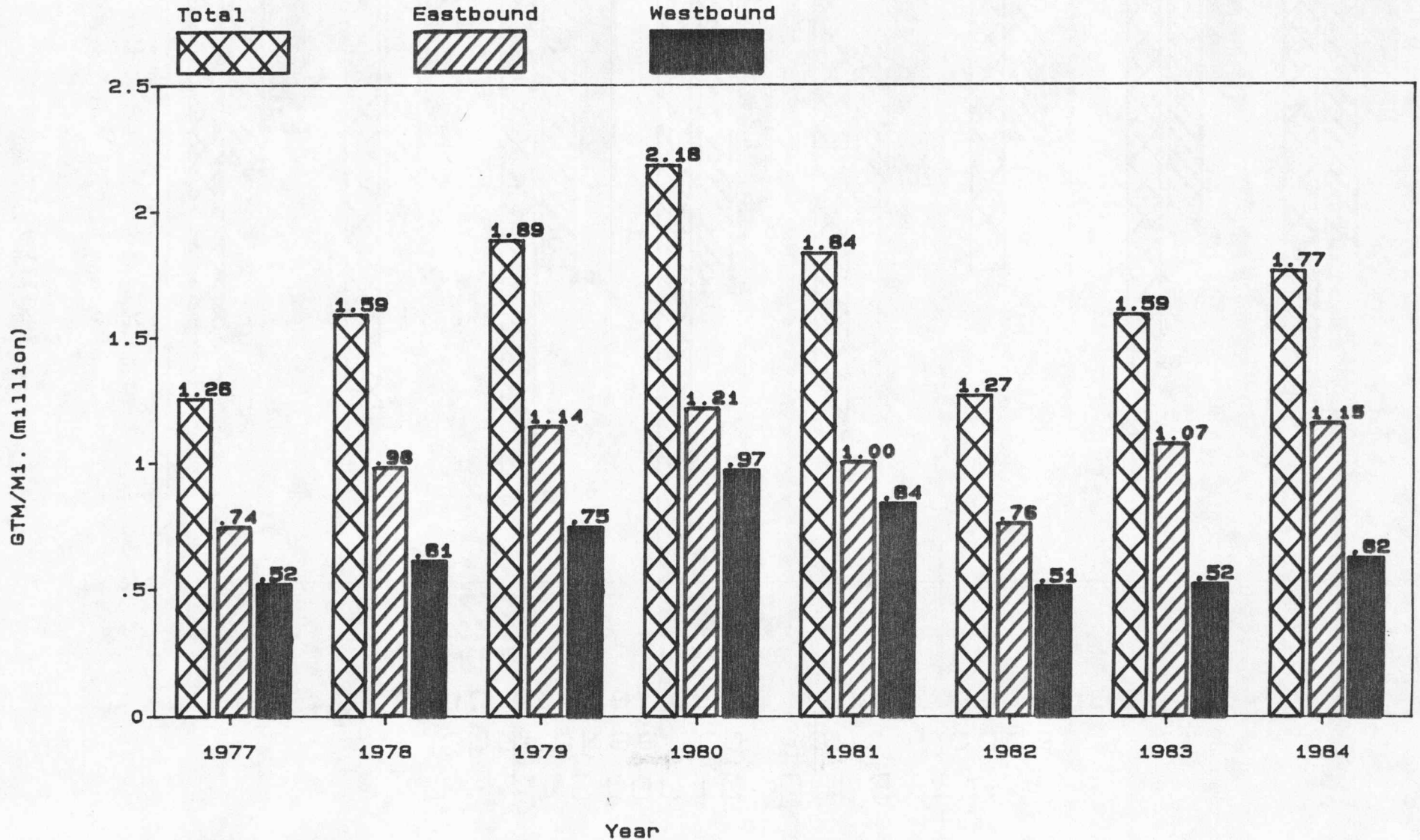
Source: Chicago, Central&Pacific

Historic Traffic Flow LeMars to Barnum Illinois Central Gulf Railroad



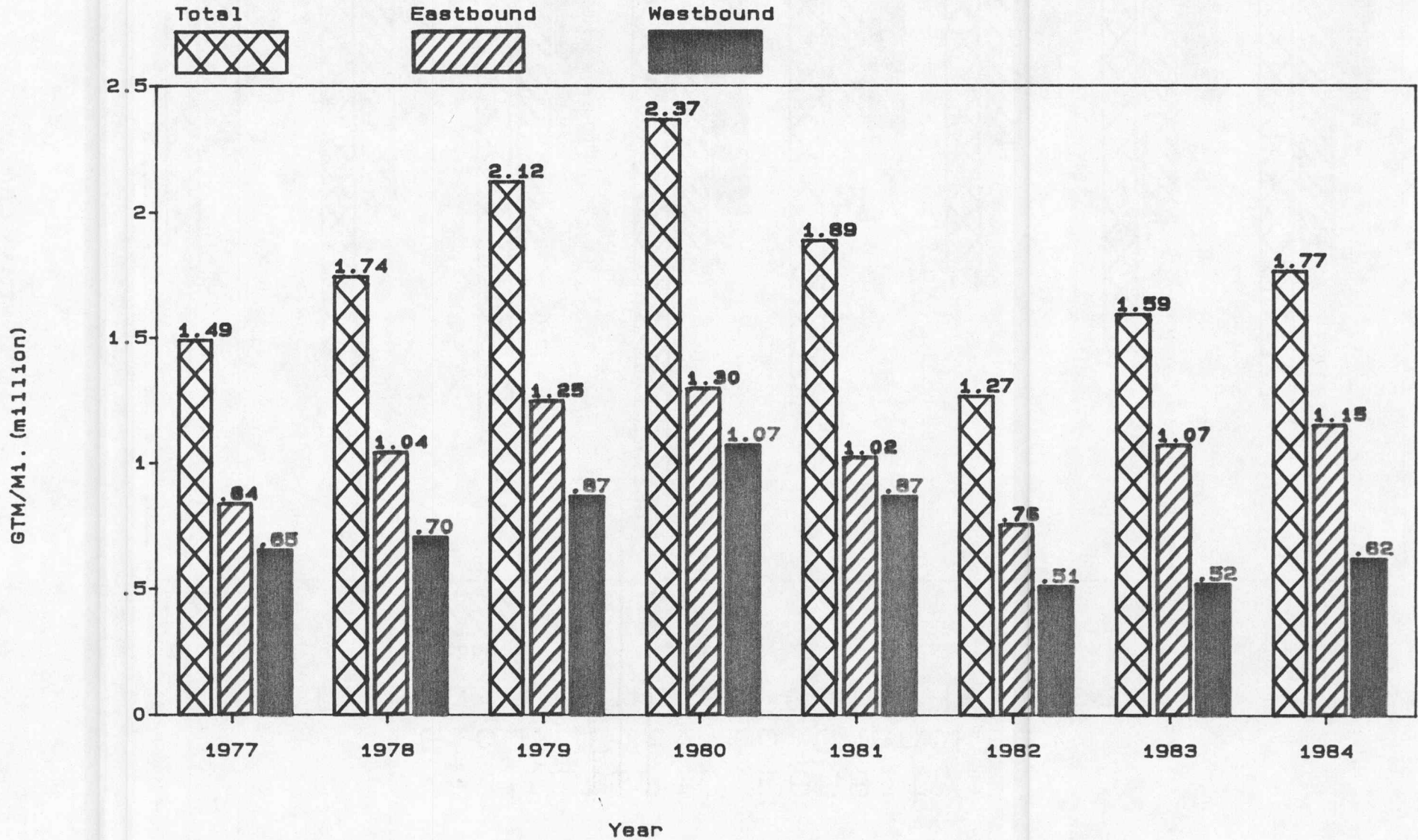
Source: Chicago, Central & Pacific

Historic Density Sioux City to Cherokee Illinois Central Gulf Railroad



Source: ICG Annual Density Maps

Historic Density Cherokee to Fort Dodge Illinois Central Gulf Railroad



Source: ICG Annual Density Maps

Alternative Transportation

The Tara to Le Mars Line connects at Tara with the CC's line from Chicago to Omaha and interchanges with both the BN and CNW at Sioux City (see attached map). This region is also served by a well-developed highway system. The volume of grain moved on the line has been large enough to justify the establishment of 11 grain subterminals. These subterminals are located at Manson, Pomeroy, Fonda, Newell, Sulphur Springs, Alta (2), Aurelia, Marcus (2), and Remsen with total annual storage capacity of 20 million bushels. Additionally, barge facilities are located at Sioux City and grain processors are located at Sioux City, Sheldon and Fort Dodge.

Project Alternatives Considered

Because Iowa's railroad assistance policy stresses the rehabilitation of lines which can become economically viable, the use of Local Rail Assistance Funding for operating subsidy is not considered as an option for any project. Since Iowa's policy also supports the continued operation of essential rail services by the private sector, use of assistance funding for acquisition was not considered as an option.

If this line is rehabilitated, it would be a more efficient connector to Sioux City and the Chicago-Omaha Line. In addition, rail service to existing shippers would be saved. Also, the 1978 Iowa Rail Plan indicated that rehabilitation rather than a future discontinuance of service on the Tara to Le Mars Line would lead to economic benefits in excess of the cost to rehabilitate the line. Therefore, this analysis will assess whether funding for rehabilitation should be provided. For study purposes, it is



Project Location Map
Tara to LeMars
Chicago, Central & Pacific R.R. Co.
Interstate and Primary Highways
shown

assumed that failure to rehabilitate the line will result in abandonment and force existing rail users to find other transportation modes for shipping and receiving their commodities.

Benefit-Cost Analysis

The benefit-cost ratio used by the Iowa DOT in analyzing railroad upgrading projects is as follows:

$$\text{Benefit/Costs} = \frac{\text{Present Worth of Shipper Benefits} + \text{Present Worth of Carrier Benefits} + \text{Present Worth of Highway Cost Savings} + \text{Present Worth of Net Project Salvage Value}}{\text{Present Worth of Total Project Cost}}$$

The benefit-cost analysis compares the benefits of a proposed improvement to the estimated cost of that improvement. Because costs and benefits occur throughout the life of the project, it is necessary to discount them so that the values occurring in different years are comparable. For analytical purposes, a 10-year project life and a rate of seven percent was used to calculate the present worth of future benefits and costs.

Shipper Benefits

Shipper benefits are defined as the transportation and handling costs saved by grain shippers, fertilizer receivers, and shippers and receivers of other products, if the line is upgraded rather than abandoned. Shipper benefits are the additional transportation and handling costs to or from a nearby rail station. The benefits were calculated using the 1980 to 1984 average of 10,007 carloads.

Carrier Benefits

Carrier benefits are defined as the net contribution a rail line would make to a railroad's viability if the line was rehabilitated rather than abandoned. The carrier benefits include the net income minus depreciation and opportunity cost.

Highway Cost Savings

Highway cost savings are defined as the added highway construction and maintenance costs that state and county governments would be required to bear due to increased truck trips over a given route if rail service is abandoned. Highway cost savings are calculated by multiplying the quantity shipped by rail expressed in truckload trip equivalents, by highway construction and maintenance cost factors. These cost factors were developed by the Iowa DOT and are based on one vehicle-pass over one mile of each type of road, for the axle weights of various types of trucks.

Project Salvage Value

Project salvage value is defined as the residual value, at the end of a project's life, of the materials placed in a project. The residual value includes the value of ties, rail and other track materials less the cost of removal and transportation to the consumer.

Project Cost

Project cost depends on the level to which the line is upgraded, as well as the present condition of the track. The assumed level of upgrading is a 263,000-pound carrying capacity, to handle a fully loaded hopper car, with a minimum 25 mile-per-hour speed limit. Upgrading cost estimates are

obtained from the railroad and verified by the DOT. Because the rehabilitation work is scheduled over four years, the costs were discounted to give a present worth cost of \$11.589 million. The calculation of the present worth cost is shown in the following table:

Project Cost
Tara to Le Mars

<u>Phase</u>	<u>Construction Year</u>	<u>Cost</u>	<u>Present Worth Factor</u>	<u>Present Worth Cost</u>
I	1986	\$ 3,748,133	1.0000	\$ 3,748,133
II	1987	3,066,655	0.9346	2,866,096
III	1989	3,150,000	0.8163	2,571,345
IV	1990	3,150,000	0.7629	2,403,135
Total		<u>\$13,114,788</u>		<u>\$11,588,709</u>

Based on the preceding assumptions, the economic analysis resulted in a benefit-cost ratio of 3.81 to 1.00.

Benefit-Cost Analysis Summary
Tara to Le Mars

	<u>Present Worth</u>
Shipper Benefits	\$45,229,257
Carrier Benefits	(6,824,554)
Public Benefits	3,340,108
Net Salvage at End of Project	2,384,425
Total Project Benefits	<u>\$44,129,236</u>
Total Project Costs	\$11,588,710
Benefit-Cost Ratio	3.81
Net Project Benefits	\$32,540,526

Recommendation

The rehabilitation between Tara and Le Mars would yield a ratio of benefits to costs of 3.81 to 1.00. Benefits totaled \$44.1 million while costs totaled \$11.6 million yielding net benefits of \$32.5 million.

Recommendation: The proposed rehabilitation of this line should be eligible for Local Rail Service Assistance funds.

June 5, 1986

Ida Grove to Sacton
Chicago, Central & Pacific Railroad Company

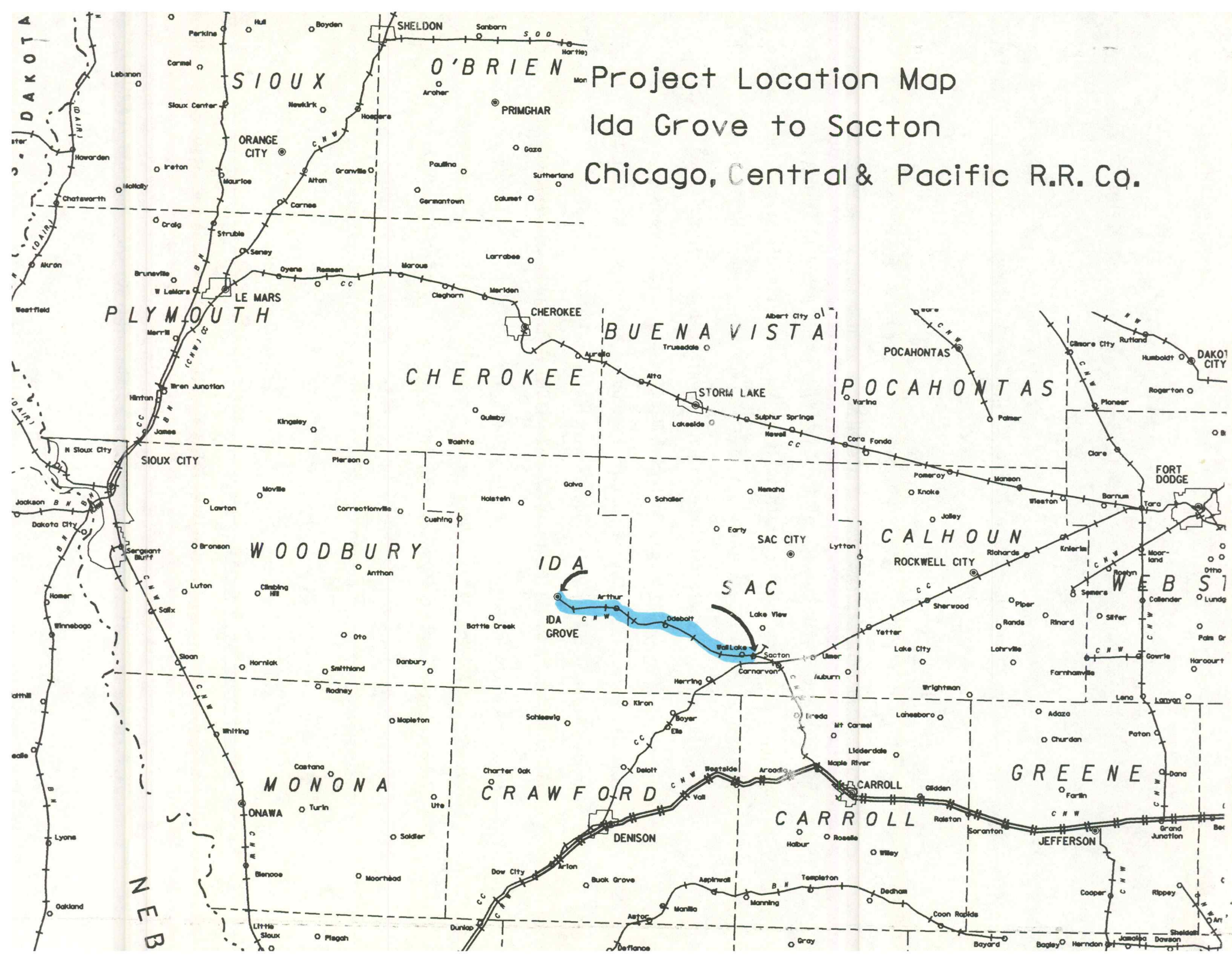
Line Description

The branchline from Sacton near Wall Lake to Ida Grove runs from milepost 13.6 to milepost 38.1 a distance of 24.9 miles. The line includes a .41 mile portion of the Lake View Line from Wall Lake to Sacton. The line is part of the Chicago & North Western's branchline from Maple River to Ida Grove. At the present time, the Line is under negotiation for purchase by the Chicago, Central & Pacific Railroad Company (CC). The Chicago, Central & Pacific Railroad Company is a Delaware Corporation formed in 1985 to acquire and operate the Omaha-Sioux City-Cedar Rapids-Chicago properties (all Iowa Lines) of the Illinois Central Gulf Railroad Company (ICG). On April 1, 1985, CC executed an agreement for purchase of the Iowa Lines from ICG. On December 24, 1985, after a unanimous decision of the Interstate Commerce Commission exempting CC's purchase transaction, CC closed its acquisition of the Iowa Lines and commenced operations. The line serves the communities of Ida Grove, Odeboldt, Arthur, Wall Lake, and Sacton. Total 1980 incorporated population of these communities is 4,764.

Past Improvement Projects

On September 23, 1974, the Iowa DOT's first branchline rehabilitation contract on this line was signed under the newly established rail assistance program. The other parties to the contract were Chicago and

Project Location Map Ida Grove to Sacton Chicago, Central & Pacific R.R. Co.



North Western Transportation Company, Ida Grove Coop. and Arthur Elevator.

The purpose of the contract was to repair and upgrade the line to FRA Class 2 safety standards at 25 mph with the capability of handling 100-ton freight cars. The cost of the project was \$176,000. The tie, rail, and rehabilitation work was completed in 1976.

The C&NW filed a Notice of Intent to abandon the line on May 25, 1984. On June 25, 1984, C&NW filed an application to abandon the Maple River-Ida Grove Line, a distance of 38.4 miles in Carroll, Sac and Ida Counties, Iowa. After consideration of protests and comments by interested persons, an investigation was instituted on August 3, 1984 and an oral hearing was scheduled initially for October 2 in Ida Grove, Iowa. The hearing was postponed several times to give the parties ample opportunity for settlement. On the eve of the hearing scheduled for October 24 the major shippers and the C&NW entered into a contract which provided for continuation of rail service over the line. C&NW withdrew its application. Efforts to serve the line by entering into two separate contractual arrangements failed. The failure was due to insufficient shipment caused by a fire at the largest shipper's location.

On September 13, 1985 the C&NW filed for exemption pursuant to 49 U.S.C. 10505. The Interstate Commerce Commission (ICC) decision of January 24, 1986 asked for additional comments and information. The C&NW had until March 18, 1986 to comment. A final decision is pending by the ICC. The line has been under embargo since January 1985.

Project Description

The Ida Grove Line intersects the CC's Fort Dodge to Omaha Line at Sacton (Carnarvon), Iowa with an overhead separation (See Project Map). There is currently no connection between the two lines at this location.

Rehabilitation and connection work is necessary before operations by CC can start. CC has developed preliminary estimates for rehabilitation of the Ida Grove Line and construction of the connection between the CC Line and the Ida Grove Line of \$3,019,493 and \$250,000, respectively. CC is requesting financial assistance for these projects with the Iowa Department of Transportation pursuant to the Local Rail Service Assistance program.

Additionally, the CC seeks Iowa Railway Finance Authority (IRFA) financing for the acquisition of all right, title and interest of the Chicago & North Western Transportation Company (C&NW) in and to the rail line between Sacton (Carnarvon), Iowa and Ida Grove, Iowa, a distance of approximately 24.9 miles (Ida Grove Line) and the acquisition of 10 to 15 acres of property in the vicinity of Sacton (Carnarvon) for the purpose of constructing a rail connection between the Ida Grove Line and CC's existing Fort Dodge-Council Bluffs rail line. C&NW has quoted CC a net liquidation value price of \$429,402 for the Ida Grove Line. CC's preliminary inquiries indicate a price of approximately \$25,000 for the Connection Property. CC's application to IRFA is for \$363,500, or approximately 80 percent of the total acquisition cost for the Ida Grove Line and the Connection Property.

The proposed project will involve the rehabilitation of CC's line from Ida Grove to the Sacton connection, a distance of 23.5 miles (not including the 1.0 connection and the 0.4 Lake View spur). The Ida Grove to Sacton rehabilitation is estimated to cost \$3.019 million or about \$128,470 per mile. An additional \$250,000 is needed to construct a connection to CC main line between Sacton and Carnarvon. The rehabilitation program calls for the application of rail, ties, surfacing and grade crossing renewal to accomplish a reasonable and adequate service level. The work will include 22.5 miles of rail renewal. The rehabilitation of this line will allow the CC to operate the line at 30 mph and eliminate the slow orders that exist. A portion of the line allows for only 5 mph operation currently.

The rehabilitation work is expected to be phased over five years. The first phase scheduled for 1986 will include tie renewal, ballast and rail replacement. The rail replacement at milepost 16.5 to 17.5 will use the rail removed from milepost 13.5 to 14.5. Phase I rehabilitation work is estimated to cost \$1,379,493. The second phase scheduled for 1989 includes eight miles of rail relay at a cost of \$672,000. Phases III, IV, and V will include rail relay only. Phases III and IV, consisting of five miles each, will be completed in 1994 and 1995 at a cost of \$420,000 per year. Phase V will include 4.5 miles of rail relay in 1996 at a cost of \$378,000.

A description of the cost estimate is summarized in the following table:

Preliminary Rehabilitation Estimate
Ida Grove to Sacton
23.5 Miles

Item	Cost	Subtotal
Materials:		
Rail Less Salvage	\$1,890,000	
Ties	362,193	
Tie Plates	10,769	
Track Spikes	33,749	
Ballast	114,840	
Rail Anchors	38,564	
Switch Ties	23,760	
Crossing Timber	11,505	
Drive Spikes	1,776	
Filter Fabric	3,000	
Subtotal		\$2,490,156
Labor Per Tie	\$ 169,937	
Equipment	156,624	
Subtotal		\$ 326,561
Labor Surfacing	\$ 89,338	
Equipment	113,438	
Subtotal		\$ 202,776
Total Rehabilitation		\$3,019,493*
Acquisition Cost of Line		\$ 429,402**
Additional Costs New Connection		\$ 250,000*
Additional Costs of Right- of-Way for Connection		\$ 25,000**
	Total Project Costs	\$3,723,895

*For Local Rail Service Assistance Funding, total = \$3,269,493.

**For IRFA Funding, total = \$454,402.

Current Track Condition

The current condition of the Sacton to Ida Grove Line is fair to poor, with a timetable speed of 10 mph. There were, however, areas slow ordered to 5 mph. The Line is classified as Class I by FRA standards. Approximately 22.5 miles of the line are laid with 90-pound rail, and

two miles are 80-pound rail. The maximum allowable gross weight of car and lading is 263,000 pounds. Due to several washouts, the line has been embargoed and not operated since January 1985.

Service Patterns

The CC proposes to operate the Ida Grove Line as part of its rail system, with an average of three round trips per week. These local trains will originate and terminate at CC's existing terminal at Fort Dodge, Iowa. It is anticipated that these trains will spend approximately five hours per trip on the Ida Grove Line. Two locomotive units per train are projected. Three-man operating crews, instead of four- or five-man crews used by the C&NW, will be stationed in Fort Dodge.

Freight Traffic

Farm products (largely corn and soybeans), and fertilizer have accounted for over 98 percent of the total cars originated and terminated by the C&NW. The commodity breakdown is as follows:

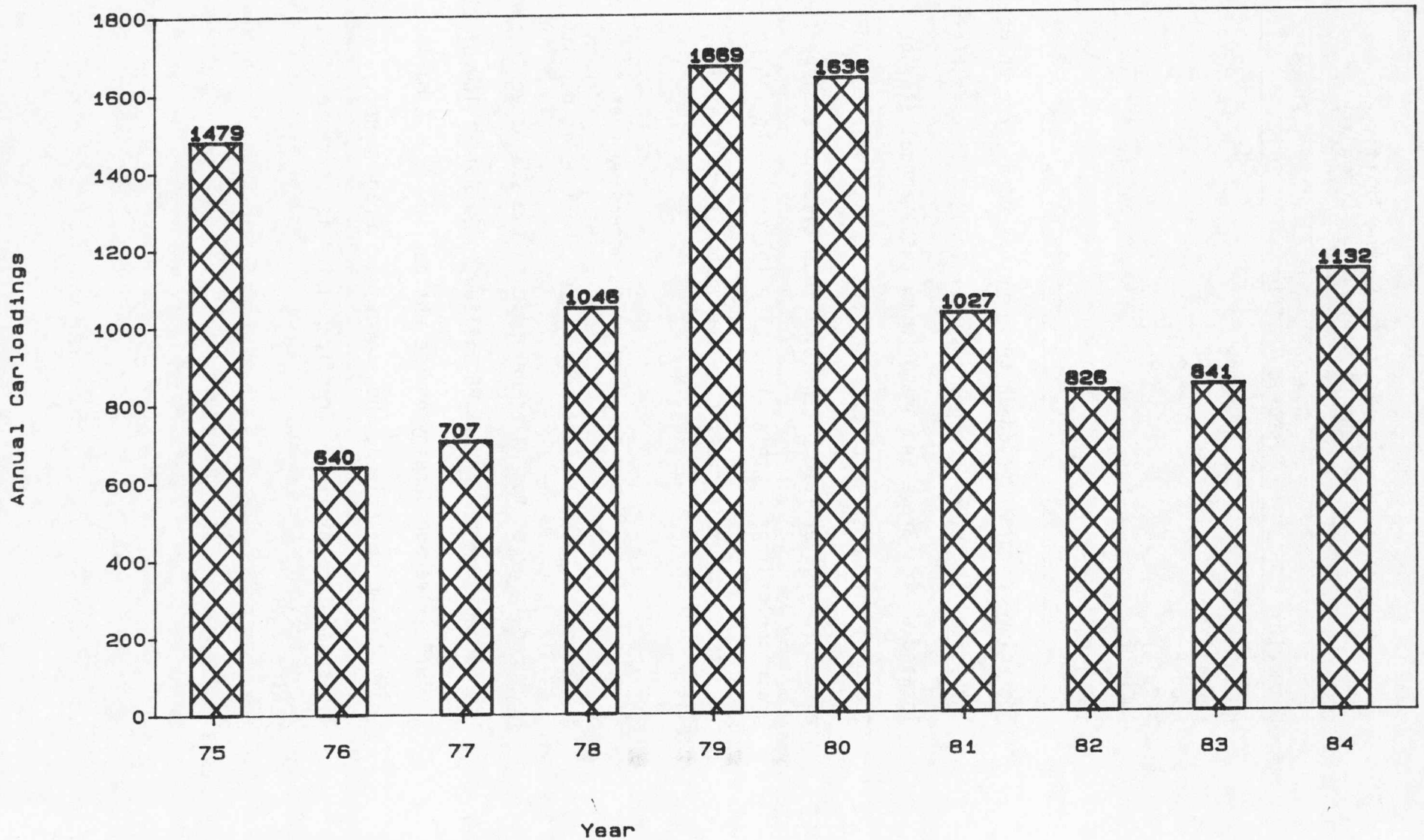
Carload Traffic by Commodity Type
Ida Grove to Maple River

<u>Commodity</u>	<u>Cars</u>			
	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
Farm Products	794	672	693	907
Food Products (Popcorn)	30	45	10	0
Fertilizer	199	105	133	225
Lumber	4	1	1	0
Petroleum	0	1	3	0
Other	0	2	1	0
Total	1,027	826	841	1,132

Over the last 10 years of operations, the total originated and terminated traffic handled by the C&NW from Maple River to Ida Grove averaged 1,100 carloads. Yearly traffic ranged from a high of 1669 carloads in 1979 to a low of 640 in 1976 (See attached chart). Less than 50 carloads of this traffic originating or terminating on the line from Maple River to Sacton will not be served by CC.

The CC marketing plan, which provides multiple-car grain gathering rates to each shipper and three-man operating crews, enables the CC to provide competitive transportation service to their shippers. The CC feels their marketing and operating plans will attract up to 3,800 cars per year on this line. After Iowa DOT discussions with the shippers, this traffic level was adjusted to 3,487 carloads. Type of commodity for these two traffic levels is illustrated in the following table:

Historic Carloadings
Ida Grove to Maple River
Chicago and North Western Railroad



Source: C&NW Abandonment Application

Ida Grove to Sacton Traffic
Percent of Carloads by Commodity

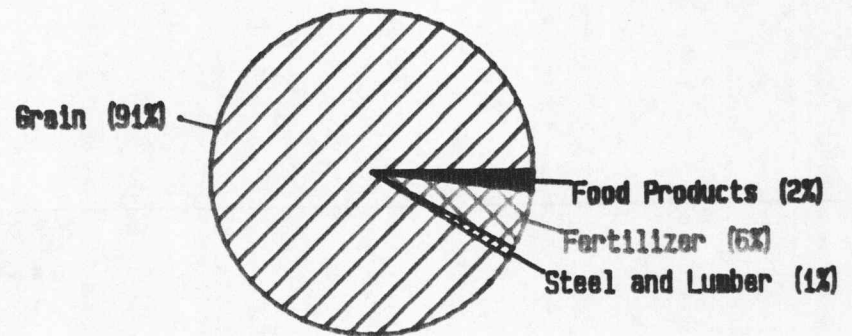
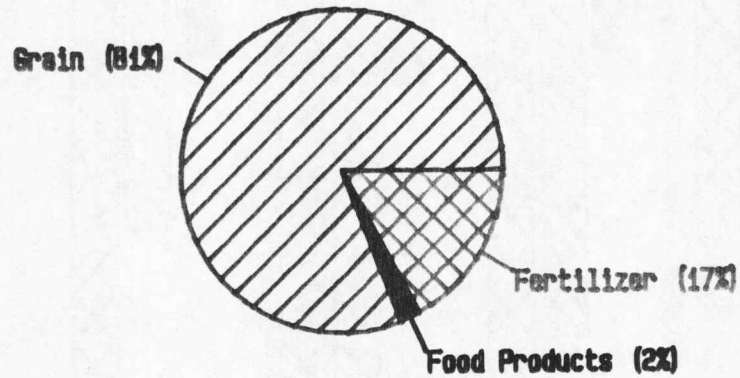
Commodity	Average Historic Traffic	Adjusted Projected Traffic
Grain	888	3,157
Fertilizer	192	197
Food Products	20	88
Steel	--	35
Lumber	--	10
Total Carloads	1,100	3,487

The volume of grain moved on the line has been large enough to justify the establishment of two grain subterminals. These subterminals are located at Ida Grove and Arthur with total annual storage capacity of 2.810 million bushels or 827 carloads. This indicates an annual elevator turnover rate of three or four times to achieve the projected grain carloadings on this line. The following chart highlights the importance of grain traffic to the viability of this line.

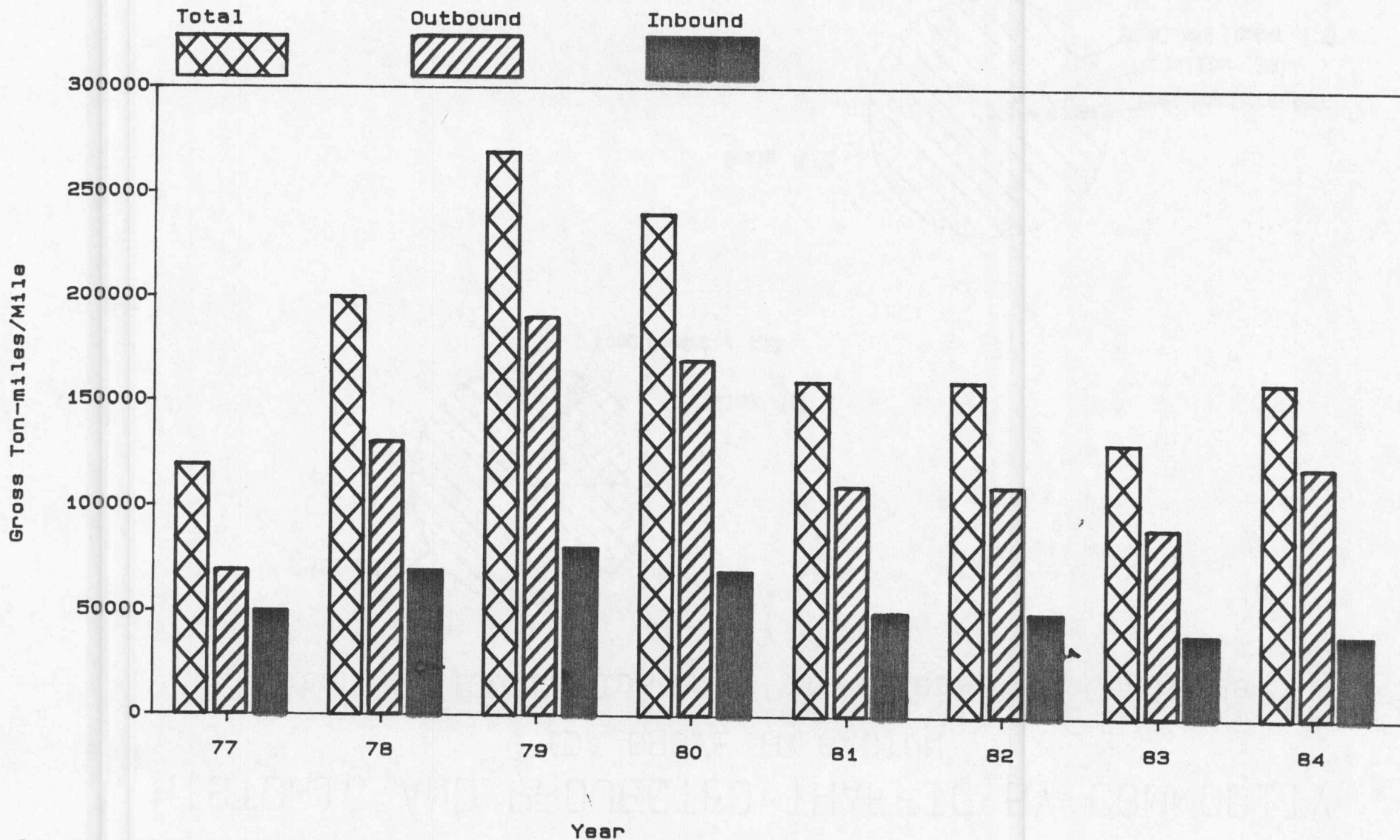
Since tons carried per car have been increasing over time, another indicator of total freight moving over the line is density. Density measured in gross ton-miles per mile on the Ida Grove to Sacton Line has ranged from a high of .26 million in 1979 to a low of .12 million in 1977. Average density on the entire line is .18 million from 1977 to 1984. In comparison, the statewide average density for all rail lines was 10.5 million. Traffic density is presented in the following table:

HISTORIC AND PROJECTED TRAFFIC BY COMMODITY IDA GROVE TO SACTON

Historic=1100 Carloads Projected=3487 Carloads



Historic Density Ida Grove to Sacton Chicago and North Western Railroad



Source: C&NW Annual Density Maps

Ida Grove - Sacton Line Density

Million Gross Ton-Miles Per Mile								
<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
.12	.20	.26	.24	.16	.16	.13	.16	.01

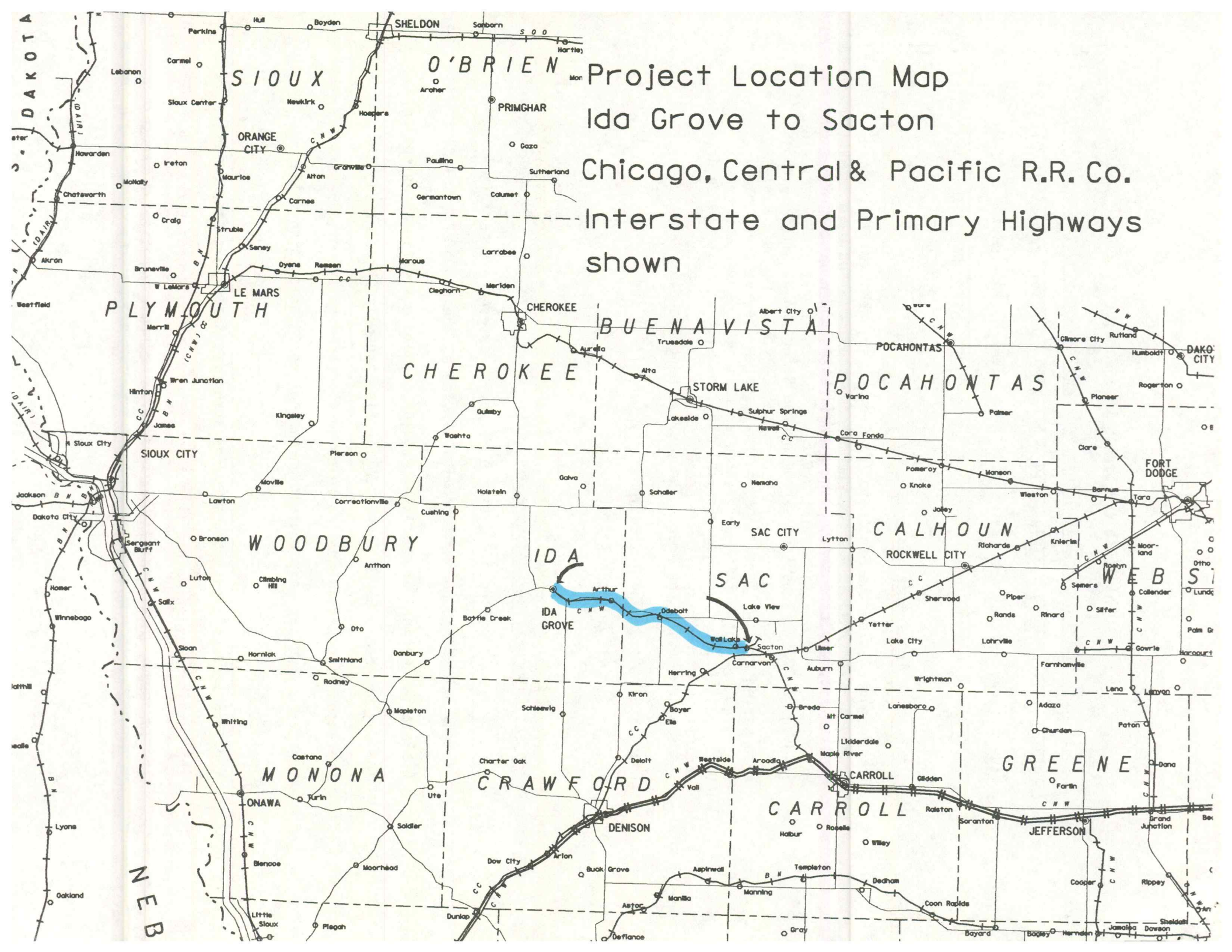
Alternative Transportation

For communities on the Sacton to Ida Grove Line, their closest rail availability would be the CC line at Wall Lake, and a large grain loading facility at Denison served by the CC and C&NW. The region is also served by a well developed highway system (See attached map). US 71 and IA 175 generally parallel the line with adequate secondary roads also serving the area. The nearest barge loading facilities are Council Bluffs (100 miles), Sioux City (54 miles) and Blencoe (60 miles) all on the Missouri River.

Project Alternatives Considered

Because Iowa's railroad assistance policy stresses the rehabilitation of lines which can become economically viable, the use of Local Rail Assistance Funding for operating subsidy is not considered as an option for any project. Since Iowa's policy also supports the continued operation of essential rail services by the private sector, use of assistance funding for acquisition was not considered as an option.

The 1978 Iowa Rail Plan and the 1984 abandonment analysis indicated that rehabilitation rather than a future discontinuance of service on the Ida Grove to Sacton Line would lead to economic benefits in excess



Project Location Map
Ida Grove to Sacton
Chicago, Central & Pacific R.R. Co.
Interstate and Primary Highways
shown

of the cost to rehabilitate the line. Therefore, this analysis will assess whether funding for the connection and rehabilitation should be provided or not. If assistance is not provided, it is assumed that the line will result in abandonment and force existing rail users to find other transportation modes for shipping and receiving their products.

Benefit-Cost Analysis

Two benefit-cost analyses were completed. The first analysis was based on a 10-year historical carload average of 1,100 carloads. The second analysis was completed using the Chicago, Central & Pacific Railroad Company's projected traffic levels with some adjustments. After discussion with shippers, the projected level was lowered to 3,487 carloads.

Benefit/Costs =

$$\frac{\begin{array}{cccc} \text{Present Worth} & & \text{Present Worth} & & \text{Present Worth} & & \text{Present Worth} \\ \text{of Shipper} & + & \text{of Carrier} & + & \text{of Highway Cost} & + & \text{of Net Project} \\ \text{Benefits} & & \text{Benefits} & & \text{Savings} & & \text{Salvage Value} \end{array}}{\text{Present Worth of Total Project Cost}}$$

A benefit-cost analysis is used to compare these quantified benefits of the proposed improvement to the estimated costs of this improvement. The improvement is to acquire and rehabilitate the rail line between Ida Grove and Sacton at present worth cost of \$3.047 million which includes \$250,000 for the connection. According to FRA guidelines, the benefits would include the reduction in operating costs on the rehabilitated line, additional railroad profit from newly generated traffic and the salvage value of the rehabilitation materials at the end of the planning horizon. For analytical purposes, a ten-year project life was

used to analyze the benefits and costs. This corresponds to the normal contract term for projects financed through the Iowa Rail Assistance Program. Additionally, a rate of seven percent was used to discount future benefits and costs.

Shipper Benefits

Shipper benefits are defined as the transportation and handling costs saved by grain shippers, fertilizer receivers, and shippers and receivers of other products, if the line is upgraded rather than abandoned. Shipper benefits are the additional transportation and handling costs to or from a nearby rail station (Denison). The benefits were calculated using the 10-year historical average of 1,100 carloads and 3,487 carloads for projected future traffic.

Carrier Benefits

Carrier benefits are defined as the net contribution a rail line would make to a railroad's viability if the line was rehabilitated rather than abandoned. The carrier benefits include the net income minus depreciation and opportunity cost.

Highway Cost Savings

Highway cost savings are defined as the added highway construction and maintenance costs that state and county governments would be required to bear due to increased truck trips over a given route if rail service is abandoned. Highway cost savings are calculated by multiplying the quantity shipped by rail expressed in truckload trip equivalents, by highway construction and maintenance cost factors. These cost factors

were developed by the Iowa DOT and are based on one vehicle-pass over one mile of each type of road, for the axle weights of various types of trucks.

Project Salvage Value

Project salvage value is defined as the residual value, at the end of a project's life, of the materials placed in a project. The residual value includes the value of ties, rail and other track materials less the cost of removal and transportation to the consumer.

Project Cost

Project cost depends on the level to which the line is upgraded, as well as the present condition of the track. The assumed level of upgrading is a 263,000-pound carrying capacity, to handle a fully loaded hopper car, with a minimum 25 mile-per-hour speed limit.

Upgrading cost estimates are obtained from the railroad and verified by the DOT. Because the rehabilitation work is scheduled over five years, the costs were discounted to give a present worth cost of \$3.047 million. The calculation of the present worth cost is shown in the following table:

Project Cost
Ida Grove to Sacton

Phase	Construction Year	Cost	Present Worth Factor	Present Worth Cost
I	1986	\$1,379,493	1.0000	\$1,379,493
II	1989	672,000	0.8163	548,554
III	1994	420,000	0.5820	244,440
IV	1995	420,000	0.5439	228,438
V	1996	378,000	0.5083	192,137
Total Rehabilitation		\$3,269,493		\$2,593,062
IRFA Acquisition	1986	\$ 454,402	1.0000	\$ 454,402
Total		\$3,723,895		\$3,047,464

Benefit-Cost Analysis Summary
Ida Grove to Sacton

	1,100 car ¹ Historical Carloads Present Worth	3,487 car ² CC Projected Carloads Present Worth
Shipper Benefits	\$3,440,712	\$10,592,906
Carrier Benefits	(2,097,854)	(236,599)
Public Benefits	153,270	432,226
Net Salvage at End of Project	856,735	856,735
Total Project Benefits	\$2,352,863	\$11,645,268
Total Project Costs	\$3,047,464	\$ 3,047,464
Benefit-Cost Ratio	0.77	3.82
Net Project Benefits	\$ (694,601)	\$ 8,597,804

¹Based on 10-year historical average.

²Based on future projected traffic levels furnished by the CC and adjusted after shipper contact and staff analysis.

Recommendation

Rehabilitation of the line from Ida Grove to Sacton would yield a ratio of benefits to costs of .77 using historic data. Benefits totaled

\$2.353 million while costs totaled \$3.047 million yielding net benefits of a negative \$.695 million. The projected traffic levels yield a benefit to cost ratio of 3.82. Benefits totaled \$11.645 million while costs totaled \$3.047 million yielding net benefits of a positive \$8.597 million.

Recommendation: The proposed rehabilitation and connection construction on this line should be eligible for Local Rail Service Assistance and Iowa Railway Finance Authority funds only if traffic levels can be guaranteed above historical traffic levels. This is because the benefit-cost ratio was 0.77 for the historic travel level. As traffic approaches the level projected by CC, the benefit-cost ratio increases to 3.82 which would indicate the line should be eligible for Local Rail Service Assistance and Iowa Railway Finance Authority funds.

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