

**EFFECTS OF RAIL BRANCH LINE
ABANDONMENT ON COUNTRY GRAIN
MARKETING COSTS**

By

**Daniel L. Zink
Dennis R. Ming**

UGPTI Staff Paper No. 80

**EFFECTS OF RAIL BRANCH LINE
ABANDONMENT ON COUNTRY GRAIN
MARKETING COSTS**

BY

**DANIEL L. ZINK
DENNIS R. MING**

**UPPER GREAT PLAINS TRANSPORTATION INSTITUTE
NORTH DAKOTA STATE UNIVERSITY
P. O. BOX 5074
FARGO, NORTH DAKOTA 58105**

**submitted to the
Interstate Commerce Commission
in the application to abandon the
Oakes to Ellendale Branch Line**

PREFACE

This report was prepared by Daniel L. Zink and Dennis R. Ming, Transportation Economists at the Upper Great Plains Transportation Institute, North Dakota State University. The report is submitted to the Interstate Commerce Commission by Mr. Melvin Maier, administrator of the North Dakota State Wheat Commission on behalf of the state's wheat producers. A synopsis of grain production and marketing patterns in North Dakota is presented, as well as how rail line abandonment affects local grain shipments and prices.

BEFORE THE
INTERSTATE COMMERCE COMMISSION

In the Matter of the Application of Burlington
Northern Railroad Company Under Section 10903
of the Interstate Commerce Act for Authority
to Discontinue Trackage Rights Over a Line of
Railroad Owned by the Chicago and Northwestern
Railway Company from Oakes (C&NW M.P. H-135 +
9.27/BN M.P. 149.60) to Ludden Junction M.P.
29.50 and to Abandon its Lines of Railroad
Between M.P. 29.50 near Ludden Junction and
M.P. 49.50 at the End of the Line near Ellendale
in Dickey County, North Dakota.

Docket No. AB-6
(Sub No. 163F)

VERIFIED STATEMENT

OF

MELVIN MAIER

I, Melvin Maier, am the administrator of the North Dakota State Wheat Commission (Wheat Commission). The Wheat Commission is a quasi-state agency charged with the responsibility of foreign and domestic market development for North Dakota wheat. The Commission is financed through a tax on each bushel of wheat sold by the 38,000 wheat producers in the state of North Dakota. These farm managers also produced other agricultural commodities and livestock and represent nearly the entire population of agricultural producers in the state of North Dakota since virtually all farmers in the state produce wheat.

The Wheat Commission has interest in this proceeding on behalf of the farmers located near Ellendale and Guelph, North Dakota, who are patrons of the grain elevators in these communities. Although the Wheat Commission does not use the grain elevator services provided at these two communities, many of the local farmers in the area, represented by the Wheat Commission, do use those services.

INTRODUCTION

North Dakota is an intense rural and agrarian state by almost any measure. Whether you view the state from the perspective of income, geography, or occupation, North Dakota is one of the most agrarian, if not the most agrarian state, among the 50 states. Intertwined among the few and distant cities are 38,000 farms and ranches that dot the landscape between the extremely fertile Red River Valley in the east to the rough terrain of the livestock-producing badlands in the west.

Agriculture provides the majority of income to the state. Between 50 and 55 percent of all income, direct and indirect, is due to the production of crops and livestock. The largest portion of this income is derived from the sale of raw unprocessed commodities and livestock. A very small amount of the commodities and livestock produced in the state are increased in value by in-state processing. Thus, the agriculture of North Dakota is primary in nature.

The population of North Dakota (652,000) is divided almost equally between rural (334,000) and urban (318,000) according to the 1980 census. Only a few major cities exist with the largest being quite small by most standards. The largest city in the state is Fargo with a population of 61,383. In fact, there are only a total of eighteen cities with populations greater than 2,500.

Our state has long been referred to as "hinterland" because of its geographic location and economic dependency on distant grain markets. North Dakota is centrally located in the North American continent. Unfortunately, the state's closest major grain markets of Minneapolis/St. Paul and Duluth/Superior are located more than 200 miles from the nearest North Dakota point. The state's other major markets are the ports located along the Pacific Northwest coast. This market is over 1,250 miles from the western border of North Dakota. North Dakota is more disadvantaged locationally than other agricultural producing states because of the long distances which commodities must be shipped to reach final domestic or international destinations. Because of long distances, transportation becomes a very significant portion of total marketing costs.

PRODUCTION OF NORTH DAKOTA GRAINS AND OILSEEDS

Farmers in North Dakota are significant producers of several types of agricultural crops. The state traditionally leads the nation in the production of hard red spring (HRS) wheat, durum

wheat, barley, flaxseed and sunflower. Additionally, the state normally ranks in the top five in the production of rye, oats, sugarbeets and dry edible beans.

As depicted in Table 1, farmers in North Dakota often produce over half of the nation's output of various crops. For instance, over 70 percent of the nation's durum and sunflower crops were produced in North Dakota in 1982. In addition 57 percent of the flaxseed, 39 percent of HRS wheat and 21 percent of all barley produced in the U.S. in 1982 were raised in North Dakota.

TABLE 1. NORTH DAKOTA PRODUCTION OF VARIOUS CROPS, 1982.

Crop	Production		North Dakota	State Rank
	N.D.	U.S.	vs. U.S. Production	
	(thousand bushels)		(percent)	
Hard Red				
Spring Wheat	213,900	552,988	39	1
Durum	112,125	147,503	76	1
Barley	108,120	522,387	21	1
Flaxseed	6,650	11,635	57	1
Sunflower				
(all) ^a	4,061,440	5,690,660	71	1
Rye	3,400	20,817	16	2
Oats	62,100	616,981	10	3
Sugarbeets ^b	2,436	21,272	11	4
Dry Edible Beans ^c	2,520	24,284	10	5

^aThousand pounds.

^bThousand tons.

^cThousand hundredweight

Source: USDA, North Dakota Agricultural Statistics, Ag Statistics No. 52, North Dakota Crop and Livestock Reporting Service and North Dakota State University, Cooperating, Fargo, North Dakota, June, 1983.

North Dakota's livelihood is obviously quite dependent on agricultural production. And, correspondingly, many sectors of the nation's economy are largely dependent on agricultural commodities produced in the state. Baking companies, for example, rely heavily on high protein HRS wheat produced in North Dakota to blend with lower protein hard red winter wheat in order to produce a high quality flour essential for bread-making. Durum wheat is used to make pasta and noodle products. Barley is sold for use as livestock feed or, if quality is high, used for brewing purposes. Oil extracted from the sunflower-crushing process enters the vegetable oil market to compete with soybean, cottonseed, and other high quality vegetable oils.

These illustrations signify the importance of North Dakota's agricultural production to the nation's economy and vice versa. If the state's vast production is not marketed in a timely and efficient manner, both the people of North Dakota and the nation are affected. North Dakota producers are affected by lower prices at the farm gate while consumers may realize higher prices at the retail level.

MARKETING GRAINS AND OILSEEDS PRODUCED IN NORTH DAKOTA

A. Farm Marketing of Grains and Oilseeds

The grain marketing process ultimately begins with the harvest. As the crops are taken from the fields, farmers transport their produce either to farm storage or to country markets (country elevators). Farmers usually transport their

grains in single-axle or tandem-axle farm trucks. A typical single-axle truck will hold about 300 bushels of wheat while a typical tandem-axle truck can handle about 550 bushels. These two types of trucks are well suited to the short distance hauls of grains normally performed by farmers from fields to farm and/or local elevators. They are generally not considered economical for transporting grain long distances to terminal markets such as Minneapolis or Duluth.

The purchase price of these farm trucks can constitute a significant portion of the farmer's equipment fleet. A new single-axle truck costs approximately \$20,000 while a tandem-axle farm truck costs about 30,000 dollars. Utilization of these trucks on an annual basis is not high; however, these vehicles are used very intensively during the harvest season and when grain is being moved from farm storage to the local grain elevator. It is critical that grain be moved quickly and efficiently from the fields when grains are ready for harvest, as quality deterioration can become substantial if the harvest is not completed in a timely fashion. Farmers are highly dependent on the farm truck for effective completion of the grain harvest. Not only can the cost of farm truck operation be high, but the harvest can be delayed if farmers are faced with long hauls to local grain elevators or equipment failure.

The cost per mile of farm truck operation is approximately \$1.00 per mile and \$1.25 per mile for single-axle and tandem-axle

trucks, respectively.¹ However, due to the higher payload of the tandem truck, the cost per bushel-mile can actually be lower for the larger truck, depending on utilization and age of the vehicles.

B. First Handlers of North Dakota Grain and Oilseeds
(Country Elevators)

Grains which are not used for feed or seed on the farms where grown are marketed almost exclusively through country grain elevators. The role of the local grain elevator is critical to the efficient movement of grains and oilseeds through the marketing system. Individually, farmers cannot effectively merchandise their grains at the centralized terminal markets -- this role is performed by the management of the commercial grain elevator. The key function of the grain elevator is to consolidate smaller shipments from farms and merchandise them in larger consignments generally at the major terminal markets in Minneapolis, Portland, etc.

Agricultural producers are highly dependent on the local country elevator as a market outlet. Without these outlets, farmers would be faced with long distance hauls to other markets, effectively raising the farm trucking cost as well as forcing

¹Griffin, Gene; Wesley Wilson; Ken Casavant, "Characteristics and Costs of Operation of North Dakota's Farm Trucks," Upper Great Plains Transportation Institute, North Dakota State University, Fargo, Report No. 51.

them to lengthen the harvest period and suffer resultant quality losses caused by a delayed harvest season.

About 580 country elevators serve farmers in North Dakota. Some of these facilities handle only about 100,000 bushels of grain annually while others will market over 10 million bushels in a given year. Most elevators in North Dakota have approximately 200,000-400,000 bushels of storage capacity and merchandise 600,000 to 1.2 million bushels of grain each year.²

In addition to providing a market outlet for the farmer's grain, they provide many ancillary services. The handling of livestock feed, fertilizers, seed grains and other farm inputs are only a few of the services they provide to agricultural producers.

The primary role of the country elevator is to consolidate small shipments of grain from immediate outlying rural areas for further merchandising into terminal markets. Quite obviously, farmers are not prepared to ship their grains long distances to terminal markets due to the smaller, short-haul nature of their trucks. In addition, farmers need local markets close to their farms in order to expedite the critical harvest period. Also, terminal markets are not equipped to handle an influx of small farm trucks. These larger terminal market elevators are designed to handle rail cars and large, over-the-road, semi-trucks and

²Casavant, Ken and Gene Griffin, "Structure and Operating Characteristics of the North Dakota Grain Elevator Industry," Upper Great Plains Transportation Institute, Report No. 47 and Agricultural Economics Report No. 166, North Dakota State University, Fargo.

will not accept delivery of grains by individual producers. Thus, country elevators perform a crucial role by connecting these two links of the grain marketing chain via their consolidation and reshipment function.

Country elevators in North Dakota rely on two transportation modes for marketing the grain they purchase from farmers -- rail and semi-truck. These trucks normally carry a payload of about 850 bushels while a typical hopper car holds about 3,300 bushels of wheat or the equivalent of about ten single-axle farm trucks. Since railroads are well suited for transporting dry bulk commodities, most country elevators are located beside a rail line. In fact, access to rail service may be a necessity for economic survival of a grain elevator, as evidenced by the few North Dakota elevators in operation without rail service.

C. Terminal Markets for North Dakota Grains and Oilseeds

Three primary markets exist for country elevators located in North Dakota: (1) Duluth/Superior, (2) Minneapolis/St. Paul, and (3) Pacific Northwest. Table 2 contains grain shipments from North Dakota to these destinations. From 1980-81 to 1982-83 Duluth/Superior received almost half of all grain shipments from the state. Minneapolis/St. Paul was the second largest first-market destination and received about 20 percent of the state's grain shipments. Destinations located in the Pacific Northwest normally receive about 10 percent of the state's grain shipments.

TABLE 2. NORTH DAKOTA GRAIN AND OILSEED SHIPMENTS FROM COUNTRY ELEVATORS, BY DESTINATION, CROP YEARS 1980-81 TO 1982-83.

Year	Destination				Total
	Duluth/Superior	Mpls/St. Paul	Pacific NW	Misc. Mkts.	
	(thousand bushels)				
1980/ 1981	184,825 (46%)	81,487 (20%)	39,975 (10%)	94,798 (24%)	401,085 (100%)
1981/ 1982	230,899 (50%)	92,099 (20%)	37,006 (8%)	101,859 (22%)	461,862 (100%)
1982/ 1983	195,189 (42%)	112,874 (25%)	40,491 (9%)	111,141 (24%)	459,695 (100%)
3 year average	203,638 (46%)	95,487 (22%)	39,157 (9%)	102,599 (23%)	440,881 (100%)

Source: Zink, Daniel L. and Randy D. Dick, "North Dakota Grain and Oilseed Transportation Statistics, 1982-83," Upper Great Plains Transportation Institute, North Dakota State University, Fargo, Report No. 54.

North Dakota grain elevators depend heavily on both rail and truck transportation for getting grains to their final destinations. Railroads have traditionally been the primary shippers of North Dakota grains and oilseeds, hauling between 60 and 80 percent of all grains and oilseeds to final destinations. Rail modal share reached a low of 59 percent in the 1978-79 crop year, but has since risen to over two-thirds of all shipments. In the 1982-83 crop year, 69 percent of all grains and oilseeds were shipped by rail from North Dakota country elevators (Table 3).

TABLE 3. MODAL SHARE OF ALL COMMODITIES SHIPPED FROM NORTH DAKOTA, CROP YEARS 1974-75 TO 1982-83.

Year	Mode	
	Rail	Truck
	(percent)	
1974-75	79	21
1975-76	74	26
1976-77	67	33
1977-78	66	34
1978-79	59	41
1979-80	62	38
1980-81	63	37
1981-82	69	31
1982-83	69	31

Source: Zink, Dick, Ibid.

Railroads do not ship North Dakota commodities to predominantly any one market, but do maintain a substantial share of shipments into all major markets. For the three year period 1980-81 to 1982-83, railroad shipments comprised 79 percent of all North Dakota commodities shipped to Duluth/Superior, 66 percent of shipments to Minneapolis/St. Paul, and 65 percent of all North Dakota shipments to the Pacific Northwest (Table 4).

TABLE 4. MODAL SHARE OF ALL COMMODITIES SHIPPED FROM NORTH DAKOTA, BY DESTINATION, CROP YEARS 1980-81 TO 1982-83.

Year	Destination									
	Duluth/Superior		Minneapolis/ St. Paul		Pacific Northwest		Misc.		Total	
	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck
1980/ 1981	117,168 (63%)	67,657 (37%)	54,815 (67%)	26,672 (33%)	25,549 (64%)	14,426 (36%)	54,406 (57%)	40,392 (43%)	251,938 (63%)	149,147 (37%)
1981/ 1982	170,762 (74%)	60,136 (26%)	60,345 (66%)	31,753 (34%)	24,165 (65%)	12,841 (35%)	62,032 (61%)	39,827 (39%)	317,304 (69%)	144,558 (31%)
1982/ 1983	153,686 (79%)	41,503 (21%)	74,476 (66%)	38,398 (34%)	26,405 (65%)	14,086 (35%)	63,847 (57%)	47,294 (43%)	318,414 (69%)	141,281 (31%)
3 year average	147,205 (79%)	56,432 (21%)	63,212 (66%)	32,274 (34%)	25,373 (65%)	13,784 (35%)	60,095 (57%)	42,504 (43%)	295,885 (69%)	144,995 (31%)

Source: Zink, Dick, Ibid.

PRICING OF AGRICULTURAL PRODUCTS

Agricultural commodities are priced in a manner which is peculiar to many manufactured and other products in the United States. In general, prices for commodities such as wheat, corn and soybeans are determined at major terminal markets, such as Minneapolis, Kansas City and Chicago. Overall commodity prices are discovered in public markets, whereby buyers and sellers analyze supply and demand information and make buy/sell decisions based on market conditions in the United States and world-wide.

Commodity prices, then, are discovered at the terminal markets, and prices in outlying areas are a function primarily of the distance from these major terminal markets, in that all costs of getting the grains to the terminal markets reduce the eventual price to the country seller. Those factors which will reduce the price at the North Dakota country elevator when selling into terminal markets such as Minneapolis are:

1. Margins charged by brokers or commission firms at the terminal markets;
2. Transportation costs (truck or rail) to the terminal market; and
3. Elevator margins at the country elevator.

An approximate "country elevator board price," or the price offered to farmers at the elevator, can be computed by subtracting all the above costs from the terminal market price. A hypothetical example is presented on the following page.

Minneapolis Terminal Market Cash Price for Hard Red Spring Wheat (12/16/83)	\$4.20/bushel
Minneapolis Commission Firm Margin	.05/bushel
Rail Rate from Ellendale, ND to Minneapolis (Three Car Rate)	.41/bushel
Country Elevator Margin	<u>.15/bushel</u>
Country Elevator "Board" Price	\$3.59/bushel

In this example, the net price offered to the farmer at the local country elevator is the terminal market price less transportation costs and margins charged by the commission firm and local country elevator. The actual price offered to the farmer who does business with the Ellendale elevator (\$3.59 per bushel) is considerably less than the price at the terminal market in Minneapolis (\$4.20 per bushel). Because of this large price differential, returns to producers are highly sensitive to changes in these respective marketing costs.

The farmer must also bear marketing costs other than those beyond the local country elevator. He bears the cost of storing grain on the farm and transporting it by farm truck to the country elevator, further reducing his net realized price. Using the previous example, his "net farm price" now becomes:

Terminal Market Price	\$4.20/bushel
Minneapolis Commission Firm Margin	.05/bushel
Rail Rate--Ellendale to Minneapolis	.41/bushel
Country Elevator Margin	<u>.15/bushel</u>
Country Elevator "Board" Price	\$3.59/bushel
Farm Truck Transportation Cost (@\$.0033/bu. mi. x 15 miles)	<u>.05/bushel</u>
NET FARM PRICE	\$3.54/bushel

This data indicates the cost sensitive nature of farm prices and the extent to which marketing costs affect the net price received by producers. Any increases in marketing costs often directly affect the prices received by farmers.

FARMERS' COSTS OF PRODUCTION AND OPERATING MARGIN

The farmers' costs of producing North Dakota crops will vary by the individual commodity and by area of the state. For example, the cost of producing one bushel of HRS wheat in the east-central portion of North Dakota is \$3.46 (Table 5). Alternatively, the cost of producing HRS wheat is \$3.77 per bushel in the eastern portion of the state (Red River Valley) and \$3.47 per bushel in the western part of the state. These costs of production will vary depending on land costs and prices of inputs such as labor, fertilizer, and machinery.

TABLE 5. HARD RED SPRING WHEAT, PRODUCTION COSTS, NORTH DAKOTA, 1983.

Crop Production Area	Variable Cost	Total Cost	Expected Yield	Cost Per Bushel
	-----dollars-----		(bu./ac.)	dollars
Red River Valley	68.50	177.21	47.0	3.77
East Central	62.99	138.20	40.0	3.46
West Central	39.76	97.26	28.0	3.47
West	39.08	92.71	26.7	3.47

Source: Reff, T. and L. Schaffner, 1983 Crop Production Costs, Farm Management Planning Guide, Section VI, No. 3, Cooperative Extension Service, North Dakota State University, Fargo, North Dakota, Revised January, 1983.

A comparison of the cost of production, as demonstrated above and the net "farm price" is extremely revealing. For each bushel of hard red spring wheat grown in the Ellendale area and marketed through the Ellendale elevator, the average farmers had a net operating margin of 8¢ on December 16:

Net Farm Price	\$3.54
Cost of Production	<u>3.46</u>
NET OPERATING MARGIN	\$.08 per bushel

This narrow margin is extremely sensitive to any increases in marketing costs. For example, if a producer must haul his grain 30 miles to the nearest country elevator rather than 15 miles as indicated previously, his total farm truck transport costs would increase to \$.10 per bushel, and his net operating margin would decrease to \$.03 per bushel. Thus, a seemingly small increase in marketing costs has a dramatic effect on the farmers' net operating margin, indicating the sensitivity of producers' incomes to changes in marketing costs.

RAIL ABANDONMENT

Rail abandonment is often the death knell of local country elevators. There are a number of reasons for this, not the least of which are an inability to provide necessary and timely service and an inability to compete with elevators which have rail service.

The immediate effect of the closing of the local elevator on the farm is that the farmer has to incur the additional farm truck

costs of moving his grain a further distance to another elevator. As pointed out, despite the seemingly small increase in marketing costs for this additional transportation, because of a farmers' low net operating margin, it has a very serious and adverse affect on the farmers' pocketbook.

A longer range effect, perhaps even more serious, is the effect on the farmers' local community. With the closing of the elevator, the hub of most small communities in North Dakota, one can expect that it is only a matter of time until the bank moves out, the implement dealer closes its door, and the lumber yard is liquidated. In other words, the community, which the farmer for his entire life has relied on to provide him with necessary day-to-day services and goods, will cease to exist.

This bleak prospect is a very real concern of every farmer in North Dakota who fears the eventual loss of rail service to his local elevator.

SUMMARY

North Dakota's economy is based in agriculture, providing over one-half of the new wealth to the state. Agricultural producers are highly dependent on an efficient marketing system to move the huge net surplus of raw agricultural commodities produced in the state. Due to a locational disadvantage relative to primary markets, these producers must rely on a low cost transportation network to add value to an otherwise valueless surplus of raw product.

The agricultural producer in North Dakota relies primarily on the local country elevator as a first handler of his grains to perform that crucial first function in the grain marketing chain -- consolidation of small lots of grain for reshipment via rail or truck. In order to perform this function, a reliable and capable transportation network must be at the disposal of the country elevator manager to move the grains in an orderly fashion. Without this reliable market outlet, the producer would be forced to transport his crops to alternate stations, thereby further increasing his marketing costs and reducing his net price received for his commodities.

Additional costs, which are the inevitable result of rail abandonment, are one thing farmers are in no position to take. While the rest of the economy seems to be rapidly recovering, the plight of this nation's farmers remains exceedingly bleak.

The North Dakota Wheat Commission respectfully requests that the Interstate Commerce Commission carefully weigh the impact on farmers of the Oakes to Ellendale rail abandonment proposal. The Wheat Commission believes that the adverse impact on local farmers outweighs the Burlington Northern's desire to abandon this line.

Dated this 23rd day of December, 1983.

Melvin Maier, Administrator
North Dakota State Wheat Commission

