VERIFIED STATEMENT NO._____

AFFIANT R.D. BERKLAND

BEFORE THE

INTERSTATE COMMERCE COMMISSION

EX PARTE 270 (SUB. NO. 9)
INVESTIGATION OF RAILROAD
FREIGHT RATE STRUCTURE --
GRAIN AND GRAIN PRODUCTS

VERIFIED STATEMENT OF

R.D. BERKLAND - CHIEF
RATE ANALYSIS SECTION
TRANSPORTATION REGULATION BOARD
IOWA DEPARTMENT OF TRANSPORTATION

DUE: MARCH 1, 1976

DEPARTMENT OF TRANSPORTATION
IOWA

Department of Transportation

TRANSPORTATION REGULATION BOARD
300-4TH STREET DES MOINES, IOWA 50319

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Robert S. Steiner

REF. NO. 940

February 23, 1976

Mr. Robert L. Oswald
Secretary
Interstate Commerce Commission
12th and Constitution Avenue, N. W.
Washington, D. C. 20423

RE: Ex Parte No. 270 (Sub 9)

Dear Sir:

Enclosed please find 20 copies of the initial statement of the Transportation Regulation Board, Iowa Department of Transportation.

Communications with respect to this proceeding should be sent to the undersigned counsel of record.

Sincerely,

Robert S. Steiner

Robert S. Steiner, Counsel
Transportation Regulation Board

RSS:rlr

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FORWARD

My name is Ronald D. Berkland. My business address is at the Valley Bank Building, Fourth and Walnut, Des Moines, Iowa. I am employed by the Iowa Department of Transportation as Chief of the Rate Analysis Section of the Transportation Regulation Board.

Before assuming my present position with the Iowa Department of Transportation I was associated for three years with the Iowa State Commerce Commission as Chief of its Rate Division after having previously acquired thirteen years experience in transportation as an Industrial Traffic Manager and as a participant in the development of a computerized freight rating system. I also worked for approximately ten years on a part time consulting basis with several small motor carriers.

I hold a B.A. in Political Science and Economics (transportation) from the University of Illinois. I have attended a number of seminars and short courses in regulatory pricing and practices, including the N.A.R.U.C. Short Course, and have appeared as a witness in rate proceedings before the Iowa State Commerce Commission, the Transportation Regulation Board of the Iowa Department of Transportation and the Interstate Commerce Commission.

My responsibilities include evaluating intrastate rate filings and interstate rate filings to the extent that the Code of Iowa, 1975 requires in Chapter

474.31. "... The department shall exercise constant diligence to ascertain the rates, charges, rules and practices of common carriers operating in this state, in relation to the transportation of freight in interstate business. When it shall ascertain from any source or have reasonable grounds to believe that the rates charged on such interstate business or the rules or practices in relation thereto discriminate unjustly against any of the citizens, industries, interests, or localities of the state, or place any of them at an unreasonable disadvantage as compared with those of other states, or are in violation of the laws of the United States regulating commerce, or in conflict with the rulings, orders, or regulations of the interstate commerce commission, the department shall take the necessary steps to prevent the continuance of such rates, rules, or practices."

The Transportation Regulation Board is the duly authorized agency under Chapter 307 Code of Iowa, 1975, through its Counsel, to represent the interests of Iowa as they may appear in proceedings before your agency. Ex Parte 270 Sub 9 is such a proceeding and represents an opportunity for this agency to express its views with respect to rates and rate design on those articles of commerce which are most vital to the state's economic well being.

The following statement addresses itself to issues of a general nature rather than specific issues. This is necessary because specific issues require supplying information and fact to which we are not privy. It is not unlikely that instances

of prejudice or preference do exist. For us to attempt to identify those situations would imply perfect knowledge on our part of the conditions that either justify or condemn those situations. Unfortunately we are bereft of that perfect knowledge and therefore assume that those interests more closely aware of the conditions will make them known.

Our principal aim is to preserve the general interests of the Iowa grain producer.

The attached statement and exhibits were prepared by me or under my supervision and I am familiar with their content. Certain of the exhibits were taken directly from other studies that have been conducted in connection with grain and its transportation. These studies provide data which are pertinent to the issues under consideration herein. Time and space limitations make it impractical to incorporate the complete text of the reports. Moreover, they deal extensively with other matters not directly germaine to this proceeding. However, the publications are cited in the bibliography herein and provide the complete documentation for some of the figures that are used herein.

STATEMENT OF FACTS AND ARGUMENT

Summary of Position

The rapid rise in the operating expenses of the nations railroads have created problems the carriers have attempted to overcome through rate increases implemented by flat percentage adjustments. These adjustments have created distortions that are not cost justified and may well inhibit the movement of grain by rail.

Exhibits 10 and 11 show both graphically and geographically the results of percentage increases in freight rates and their impact on the markets. Exhibits 12 and 13, showing increased average carloadings and variations in revenue contributions, will attest to the non-uniform character of both cost generated by recent rate increases.

Evidence of the results of rate increases can be seen in the declining proportions of available grain moving by rail. Between 1966 and 1971, the railroads had experienced declines, not only in the proportion of the product hauled, but in actual tonnage as well. Exhibits 1, 6 and 7 will show that this trend appears now to have reversed itself. The reversal corresponds with, and is very likely attributable in larger part to, the implementation of new and innovative rate designs including multiple-car and unit-train rates.

Exhibits 2, Seasons Average Corn Prices; 4, Cattle Placed on Feed; 5, Livestock on Farms; and 8, Movements of Commodities by Truck and Barge; will help to show the real presence of

alternatives for the disposition of grain; Alternatives that includes conversion to another form or diversion to other modes.

We are persuaded that for the railroads to effectively compete with the various alternatives and for the grain producer to earn his just reward, rates must reflect as closely as possible the cost of service associated with the movement of grain. Rates that are designed to improve utilization of equipment and reward efficiency should be the aim of this proceeding.

Significance of Grain to Iowa

The Iowa Department of Agriculture1/ reports that in 1974, approximately 45% of Iowa's total land was used in corn and soybean production; The average Iowa farmer operated over 250 acres and had a $207,000 investment in land, machinery, crops, buildings and livestock;

Sale of Iowa farm products contributed more than $7 billion to the state economy in 1974 with crops accounting for 43% of that figure.

An estimated eight out of every ten workers in Iowa depend directly or indirectly upon agriculture for their jobs.

The above figures attest, in part, to the significance of grain and its important contribution to the economy of Iowa. It goes without saying, that the results of this investigation and any orders that are issued pursuant thereto are of a vital concern to Iowans and demand our participation in the proceeding.

The emergence of foreign markets provide new potentials for Iowa producers and offer opportunity for developing to full advantage the resources inherent to the area.

Rates that are designed to promote a free flow to the markets are essential to this development.

1/ See "Iowa, where the tall corn grows."

PRODUCTION & MARKETING

Grain and the Railroads

The role that grain plays in generating revenue to the railroads must not be minimized. The Association of American Railroads1/ reports that grain and grain products accounted for approximately 9.4 percent of all railroad revenue carloadings in 1974. The only other commodity category accounting for a larger percentage of all carloadings was coal (17.2 percent). Total carloadings of all commodities declined by 9 percent from 29,027,186 in 1964 to 26,423,929 in 1974. Grain carloadings, in contrast, increased from 9 percent in 1964 to 10.1 percent in 1973 and 914 percent in 1974.

Within Iowa the increase was even more dramatic. The number of carloads of farm products2/ originating within Iowa increased from 122,017 carloads in 1964 to 178,658 in 1974; or 46 percent during that ten-year period. Tonnage has more than doubled.

The Significance of Grain to U.S. Agriculture

Not only are grain production and sales important to Iowa, and to the railroad, they are also a large and important

1/ Statistics of Railroads Class I 1964-1974 AAR 1975

2/ This category consists of more than just grain but historically has been comprised mainly of grain. See Appendix C for details.

sector of agriculture in the whole United States. The quantities of grain sold from farms has increased consistently during the past decade. Estimates of the magnitude of the increases are shown in Exhibit 1 in Appendix A. Annual grain sales have increased from 151 million tons in 1966 to 192 million tons in 1974. It has been estimated that a large part of the increase in sales was because of the rise in the percentage of production sold from farms.1/ Evidence of this fact on a national scale was not readily available. However, within Iowa, that fact is apparent. In 1966, Iowa producers sold only 49.1 percent of their production. In 1974, 64 percent of the grain production was sold.2/ It is not unreasonable to expect that similar results would be reflected nationally. Factors contributing to the increased percentage in sales include an increased degree of specialization among grain producing and livestock feeding farms, a substantial rise in grain exports, and a rapid increase in soybean production. Unlike feed grains, essentially all soybeans are sold from farms. They must be manufactured into meal and oil before they can effectively be fed to livestock.

The increase in grain sales is shown to be greater for tons than bushels because there has been an apparent shift from the less dense grains (oats and barley) to the more dense grains (corn, grain sorghum, and soybeans). The

1/ See the Interregional Analysis of U.S. Domestic Grain Transportation.

2/ See Appendix B for complete analysis.

number of bushels of these grains sold from farms increased from 5,913 million in 1966 to 7,261 million in 1974, an increase of 23 percent. The increase in the weight of the grain sales was 27 percent for the same period.

The trend of the aggregate data in Exhibit 1 is very clear, although for individual grains the data may slightly understate or overstate the trends. Grain production, farm sales, and domestic disappearance have increased at steady rates with only year-to-year fluctuations.

The expectations for continued increases in sale and production appear certain. The basis for— and the extent of— these expectations will be dealt with subsequently. However, whether or not that increased production will render itself up as grain requiring rail transportation is the relevant matter at this juncture.

Present Rates

Although the importance of adequate service to shippers and to the public is not to be minimized, it is an unalterable truism that the first interest of the public lies in getting transportation service at the lowest possible cost. If transportation costs can be reduced, society is the gainer.

It is not our contention that sweeping revisions in existing rates should be implemented nor across-the-board reductions be effected. The needs of the carriers are manifest and their costs have been rising at an almost

unprecedented rate. Neither this agency nor our sister agency, and predecessor in interest, the Iowa State Commerce Commission has been calloused to the plight of the carriers nor unresponsive to the revenue needs of the Iowa railroads. To the contrary, Iowa has been a pioneer in developing programs and dialog intended to aid the railroads in their dilemma in recent years. A co-operative assistance program is presently being administered by the Iowa D.O.T.1/ Besides assistance, general intrastate increases in rates have been implemented with an absolute minimum of delay. Intrastate rates within Iowa presently stand at the Ex Parte 313 level and remain on a parity with interstate levels. Acquiesence to this rate level stands as an obvious recognition of the revenue needs of the carriers. However, it is not necessarily an acknowledgement of the absolute propriety of the rate structures which have been implemented. Expediency may have overshadowed propriety.

We have become particularly concerned with the effects of the flat percentage increases applied to freight rates and more importantly their impact with respect to the price the producer receives for his grain.

Percentage increases place the greatest aggregate increase on the shippers who already pay the highest rates. Unless those increases are proportionate to the increased expenses they are intended to offset, the more distant shipper (or market as the case may be) bears a burden not

1/ Appendix F outlines the program in detail.

otherwise justified and may very well destroy the natural advantages inherent to any given location.

It is a fact that geographical divisions of labor exist which permit territorial specialization in production of various commodities. Iowa is particularly suited to produce corn and soybeans. Any rate policy that inhibits or restricts the full benefits of this division of labor will result in a wasting of economic resources by inducing production of goods of lesser economic value.

The Grain Producer and the Market

The grain producer participates in a market that typifies the purest form of competition in modern society. He faces a market where, as a single producer, he is unable to influence the price that will be paid for his product and he competes in that market against thousands of similarly situated producers.

As a result of his situation, the grain producer is not in a position to arbitrarily "pass through" the costs incurred for freight. On the contrary, his position is one where the freight rates are generally his burden to bear. In simplest terms his reward for production of grain is the market price less transportation, storage and dealer's margins.

In effect, freight rates, and their changes, affect most directly the interests that are least prepared to communicate those interests and effects to your Commission; the unorganized producer who is unorganized to the extent

that as a single producer he has neither the means nor the capacity to prepare meaningful data upon which the Commission can rely in this proceeding. Therefore our primary concern is to express views on matters affecting principally the producer and the price he receives for his product.

Production Trends

Despite a history of comparatively low prices, production of grain has consistently increased in Iowa and is expected to continue to grow in years to come.

Recent years have also witnessed notable changes in demands for grain and in the transportation facilities needed for moving the large quantities of grain available for transportation. These changing conditions led to a study by the Iowa State University Center for Agriculture and Rural Development. The principal purpose of the report was to project the quantities of grain and fertilizer that will require transportation in Iowa in the future. The report also summarizes past production figures. Exhibit 3 of Appendix A reflects a summary of the projections contained in that report.

The figures give ample evidence of the substantial increases in corn and soybean production occurring within Iowa in the past few years. But of more importance are the projections.

Corn production increased 48 percent from 1959 to 1971 and another 6 percent from 1971 to 1973. Projected increases range from 26 to 34 percent by 1984. Soybean production increased 187 percent from 1959 to 1971; another 54 percent

from 1971 to 1973 and is projected to increase an additional 35 to 48 percent by 1984.

These projections were based on an estimate of Iowa's share of recent U.S.D.A. projections of national grain and livestock production. The procedure used Iowa's percentage of national production on the basis of past trends and applied those factors to the U.S.D.A. projections.

The fact that export markets have gained significantly in just the past three years raised questions with respect to the prospects of continued participation in this market. Actual export levels will depend on grain and livestock production trends in the rest of the world. Consequently, two alternatives are shown in the projections: 1. projections based on sales including export levels at historically lower levels, and 2. projections based on sales including higher export levels corresponding to more recent history. The domestic portion of sales was assumed to remain constant under the two alternatives.

These estimates imply that there should be ample opportunity for railroad participation in the transportation of this grain provided appropriate ratemaking policies are maintained with respect to grain movement. The extent to which the railroads share in the transport of the grain in the future is, to a large extent, dependent on their ability to offer rates that will foster the movement of the grain from the point of production.

The emergence of viable alternative modes for transporting grain give good reason to question any assurance that this increase will move rail.

Production and Disposition

It must also be recognized that increased production of grain and increased quantities available for transportation are not synonymous.

The production of grain and its disposition are vastly different considerations. The producer, as a businessman, will commit himself to a program that, potentially at least, will generate the greatest benefit to himself. In pursuit of this objective, his principal options consist of: 1. selling grain in the open market or, 2. converting the grain into another marketable form; primarily livestock.

If the producer exercises the latter of the two options, the net result is simply a reduction in the quantity of grain available for sale and, correspondingly, a reduction in the amount of grain available for transport.

Iowa cattle feeding operations typically are family farm units that can drop out of livestock feeding and rely on cash grain income when profit opportunities so dictate. Likewise, unfavorable grain (or cattle) prices can reverse that action: Historically, this appears to have occurred in many instances. The season average price for corn received by the Iowa farmer in 1966 was $1.17 per bushel.1/ The number of cattle placed on feed for the same year was

1/ See Appendix A Exhibit 2

3,829,000.1/ In 1973, the season average corn price had increased to $2.35 per bushel and the number of cattle placed on feed had declined to 3,182,000.

The correlation that exists can be seen by comparing Exhibits 2 and 4 of Appendix A.

Exhibit 2 shows the season average prices received by farmers in the principal corn producing states2/ for corn between 1966 and 1973. The prices shown do not represent the prices realized at any specific point in time but merely the season average. Nevertheless, the figures do point up the fact that significant revenue increases to the farmer were not derived through price until the year 1972. It has been mainly technological improvements which generated increased production that provided the greatest benefits in general. Corn yields averaging 60-70 bushels per acre in the early sixties now often average in excess of 100 bushels per acre. Exhibit 4 reflects the year-to-year variations within Iowa in the number of cattle placed on feed during the year. A comparison of the figures in Exhibit 4 with the prices shown in Exhibit 2 suggests a decision making process that looks to grain pricing. Despite infirmities, the comparison leaves little doubt that when the producer derives greater benefit in selling his grain, local cattle feeding will decline with net result being a greater quantity of grain available for transportation.

1/ See Appendix A Exhibit 2

2/ For this analysis, the group consists of Illinois, Indiana, Iowa, Minnesota and Nebraska.

The point is emphasized further by comparing the quantities of livestock on farms from year-to-year between different geographical locations. Exhibit 5, in Appendix A shows that Iowa has consistently maintained approximately twice the number of head of livestock on farms that Illinois farmers do in spite of their comparatively equal production of feed grains and comparable geographic size. Exhibit 2 shows Illinois farmers consistently receive a more favorable price for their grain.

These exhibits imply that the more favorable price the Illinois farmer receives for his grain accounts to a large extent for the lower production of livestock even though the grain price differential is seemingly small.

As a corollary to this circumstance, it must logically follow that freight rates, and rate changes as well, can prompt the grain producer to shift from a position of selling, to one of feeding. Any change in rates that the market is unwilling to bear will manifest itself in lower market bids resulting in lower prices to the farmer. The amount of change necessary to induce such a transfer is open to speculation. Nevertheless, in the Interregional Grain Analysis cited herein it was estimated that a $3.00 per acre (approximately 3 cents per bushel of corn) change in price may cause significant responses in production patterns.

It is therefore reasonable to conclude that diversion of grain traffic can manifest itself in some form other than a shift among modes of transportation.

Trends in Grain Transport by Mode

Although, as we suggested earlier, grain is of considerable importance to the nation's railroads, there are definite indications that railroad participation in handling the grain available for transport has not kept pace with the increased sales of grain.

Nationally it is unlikely that the small increase in the rail transportation of grain as compared to the recent increases in grain production and sales can be attributed to changes in the structure of the grain industry. Consequently, the small increase in grain rail shipments corresponds to either higher prices for rail vis-a-vis water and, especially, truck; a shortage of rail equipment, or both. It is likely that more grain may be carried by truck because motor carriers have gained a larger share of the general commodities traffic market, especially since 1950.1/ Grain has regularly been carried by motor carriers as backhaul traffic which is often very competitively priced. This may have resulted in more competitive bidding by motor carriers for grain hauls and a shift away from rail. There are definite indications that transportation of grain by rail has not increased as rapidly as the other modes. The extent of the changes cannot be documented with absolute precision. The absence of reported data by virtue of the exempt status of motor carriers of grain prohibits precise calculation. But, sufficient data is available to permit some assessment of the situation.

1/ ICC Annual Reports to Congress show that in 1950 motor carriage accounted for approximately 16 percent of all ton miles. By 1973 that figure had increased to almost 23 percent.

Exhibits 6 and 7 of Appendix A were derived from data contained in reports of the Interstate Commerce Commission and the U.S. Corps of Engineers. With these data and the figures shown in Exhibit 1, estimates of the quantities of grain moving by truck may be calculated. Those estimates are shown in Table I.

TABLE I

Ratio of Grain Hauled by Rail and Water Carriers to Grain Sold From Farms

	1966	1971	1972	1973
Farm Sales (1000 Tons)	151,332	199,000	201,000	223,901
Estimated Grain Hauled by Rail (1000 Tons)	111,714	97,023	105,635	131,968
Estimated Grain Hauled by Water (1000 Tons)	23,430	27,555	35,254	34,592
Total Rail & Water (1000 Tons)	135,144	124,578	140,889	166,560
Ratio of Grain Hauled by Rail and Water to Ratio of Farm Sales	85%	63%	70%	74%

These estimates would be affected by changes in the quantities of grain hauled more than once and any portion hauled intermodally, However, they do offer evidence of the inroads that appear to have been made by motor carriers in the transport of grain.

In 1966, 15 percent more grain was sold than was hauled by rail and water; moving most likely by truck. By 1971 that figure had increased to 37 percent; declining to 30 percent in 1972 and 26 percent in 1973.

The reversal of this trend between 1971 and 1972 we believe is significant. The change corresponds with the availability of lower multi-car and unit train rates offered by the Iowa railroads.

The Iowa Study

The extent to which the different modes participate in the transport of Iowa grain in particular was examined by the Iowa D.O.T. in 1975. Reasonably accurate estimates of the quantities of grain moving rail are available through the reports filed by the railroads. The quantities moving truck and barge were unknown.

In order to gain an understanding of the movement of freight through barge terminals, the Iowa Department of Transportation conducted a survey at each barge terminal in Iowa. The objective of the survey was to collect data pertaining to the movement of freight through only those terminals located in Iowa. Data considered most important related to volume shipped by commodity, origin and destination of freight through the terminal, and the mode used to transport freight to and from each terminal.

Since no study of this nature had been conducted previously, a preliminary sampling was made to determine the

types of data available and the amount of time involved in the collection of the data. Once the preliminary field study was complete, instructions, interview forms, and schedules were developed for the field survey. Field work began during the later part of May, 1975, and was completed in July. All data were obtained at the barge terminals through personal interviews with the owners or operators.

The following is a summary of the survey.

To its advantage, Iowa is bordered on two sides by navigable waterways; the Mississippi River on the east, and the Missouri River on the west. Locks and dams, levees, and wing dams used to control the navigation channels on both rivers are maintained and operated by the U.S. Army Corps of Engineers. Barge terminals with facilities to store goods and load and unload barges are scattered along the shores of both rivers. There are approximately 65 terminals operating in Iowa. Approximately 9,000,000 tons of freight were handled at these terminals during 1974.

This freight must be transported to or from these barge terminals by motor truck, rail, or pipeline. Some terminals handle as many as 150 to 200 trucks per day.

Principal commodities handled at the Iowa terminals are grain, petroleum and coal.

In most cases, grain is trucked to the terminals from areas within a 100-150 mile radius of the terminal, loaded on barges, and transported down the river to the gulf

Listed below are the summaries of field data collected

throughout the course of the survey. Section 1 presents the data collected at locations along the Mississippi River; Section 2 presents the data gathered at all Iowa locations along the Missouri River.

Section 1

Approximately 47 percent of the total tonnage moving through the Iowa barge terminals on the Mississippi is composed of grain or grain products. Nineteen of the 58 terminals handle primarily grain or grain products.

Table 2 below sets out the total tonnage by commodity and volumes originating and terminating at terminals along the Mississippi River during 1974.

1974 Tonnage Through All Iowa Barge Terminals Located Along the Mississippi River

COMMODITIES (TONS)				ORIGINATE	TERMINATE	TOTAL
GRAIN	COAL	PETROLEUM	OTHER	(TONS)	(TONS)	(TONS)
4,214,900	1,113,900	1,146,000	2,550,800	4,446,200	4,579,400	9,025,600

Table 2

Commodities shipped and received by barge are mainly carried to and from the barge terminals by truck and rail. Thirty-three of the 58 Iowa terminals along the Mississippi River have rail connections and distribute or receive commodities at least in part by rail. Other terminals rely totally on trucks for commodity collection and distribution. The majority of trucks are dispersed to locations within a 150 mile radius of the terminal, while the rail dispersion of some commodities may extend to many areas in the Midwest.

Table 3 illustrates the percentage of each of the commodity groups gathered and/or distributed by truck and rail. It also illustrates the percentage of each commodity that is handled at the terminal sites.

DISTRIBUTION OF COMMODITIES TO AND FROM
IOWA BARGE TERMINALS ALONG
THE MISSISSIPPI RIVER

COMMODITY	VOLUME (TONS)	Percent Distributed by Truck	Percent Distributed by Rail	Percent Utilized on Site
GRAIN	4,214,900	80	20	-
COAL	1,113,900	3	-	97
PETROLEUM	1,146,000	100	-	-
OTHER	2,550,800	65	29	6
TOTAL	9,025,600	69	17	14

Table 3

It can be seen from the above, the greater percentage of the total volume shipped by barge is transported to or from the Iowa barge terminals by truck. Commodities are transported to or from almost all counties in the eastern one-half of Iowa. Reference to Exhibit 8 of Appendix A reflects the extent of the movements by truck.

Section 2

On the Missouri River from Rulo, Nebraska, north to Sioux City, Iowa, there are seven operating Iowa barge terminals, all of which are located within the U.S. Army Corps of Engineers Omaha District.

Grain is also the principal commodity handled at these barge

terminals. Over 50 percent of the total volume shipped and received is composed of grain or grain products. Table 4 illustrates the total tonnage by commodity and total volumes originating and terminating at Iowa barge terminals along the Missouri River for the year 1974.

1974 TONNAGE THROUGH ALL IOWA BARGE TERMINALS LOCATED ALONG THE MISSOURI RIVER

COMMODITIES (TONS)				ORIGINATE	TERMINATE	TOTAL
GRAIN	COAL	PETROLEUM	OTHER	(TONS)	(TONS)	(TONS)
207,800	0	8000	172,300	226,100	162,000	388,100

Table 4

All commodities shipped and received by barge are distributed to and from the barge terminals by truck and rail. Four of the terminals operating along the Missouri River have rail connections and distribute commodities at least in part by rail. Trucks carry commodities between the barge terminals and locations in Iowa, Nebraska, and South Dakota within a radius of approximately 150 miles. Table 5 lists the total volume by commodity and illustrates the percentage of distribution by truck and rail.

DISTRIBUTION OF COMMODITIES TO AND FROM IOWA BARGE TERMINALS ALONG THE MISSOURI RIVER

COMMODITY	TOTAL VOLUME (TONS)	PERCENT DISTRIBUTED BY TRUCK	PERCENT DISTRIBUTED BY RAIL
GRAIN	207,800	98	2
PETROLEUM	8,000	96	4
OTHER	172,300	75	25
TOTAL	388,100	88	12

Table 5

As is indicated by the above, the greatest percentage of the total traffic is distributed to or from the terminals by truck.

In total, Iowa barge terminals located along the Mississippi and Missouri Rivers handled 9.4 million tons of freight in 1974. It is evident that over 70 percent of the total was distributed by truck to or from locations within the State of Iowa. Exhibit 8 to Appendix A shows the distribution of freight by truck between the terminals and Iowa counties. The estimated annual volumes shown in Sheet 1 for each county were based on the number of truck trips that were experienced on a normal weekday of the 1974 navigational season.

The significance of the survey lies not only in its revelation of the volume of movements which occurred but also in its showing of the geographic potential for movement by rail or truck/water combination.

Unfortunately, sufficient information is not readily available to measure or compare the 1974 data with an earlier period to determine what changes, if any, have occurred. However, it is sufficient to say that virtually all of Iowa has reasonably direct access to water transportation. This is particularly so with respect to export grain via the Gulf Ports.

Recent Trends in Rail Share of Quantities Shipped

Earlier we pointed out that there appeared to have been a definite trend toward greater motor carrier participation in hauling grain. (See Table I). The increase from 15 percent

to 37 and 30 percent of the grain moving apparently by truck was cited as evidence of that fact. However, from the data available to us, we are persuaded that new and innovative rate policies may have stemmed that trend.

Between 1966 and 1970 there was a marked decline in the quantities of farm product (which within Iowa is comprised mainly of the grains being considered herein) that moved rail. See Exhibit 9 to Appendix A. In 1966 farm products carried by Iowa railroads constituted 62 percent of the total quantities of corn, oats and soybeans considered as being available for transport. In 1968 that figure dropped to 35.6 percent. Thereafter, and especially after 1970 with the exception of 1972, which appears to be an unaccountable aberration, the Iowa railroads have shown a decided upward trend both in absolute terms and in the relative portion of the market they appear to have recaptured.1/

This reversal appears to be more than a matter of coincidence. The beginning of the upward trend corresponds closely to the implementation by the railroads, of reduced rates on multiple car movements; unit-train and similar concepts. These rates reflect lower costs and more efficient utilization of capital.

1/ We do acknowledge the fact that this analysis must be viewed with some degree of caution. The number of tons of farm products shipped rail could conceivably have increased as a result of increases in other commodities which had historically accounted for a comparatively small proportion of the generic group identified as farm products. However, we do not believe that to be the case.

DISTORTIONS RESULTING FROM GENERAL INCREASES

Results of Application of Percentage Increases

The implementation of general increases in rates is obviously an essential tool to the railroads in their efforts to continue to maintain reasonable levels of service. This is especially so in periods of rapid inflation such as we have seen in the past few years. Attempts to maintain adequate revenue levels by separate rate adjustments to isolated traffic segments or to geographic location would create disruptions of intolerable proportions. However, the frequency and character of the recent increases has, we believe, caused distortions that may have had the effect of either depriving the producer of a fair price on grain or of forcing the market to offer an inordinately higher price.

To illustrate this contention, we will illustrate the effects of the recent general increase. For simplicity we will restrict our analysis, at this point at least, to an evaluation of the effects of the general increases in rates to the larger so-called "primary markets."1/ It will be obvious that the same results would inure to similar studies of other markets.

A review of the individual carrier tariffs as well as agency tariffs naming rates to these primary markets was undertaken. The rates were reviewed at the Ex Parte 256 level and were charted. The charted results showed that at a point near North English, Iowa, the rates to the seven markets under consideration were equal. A shipper located at this point— if the

1/ Chicago, Milwaukee, Minneapolis/St. Paul, Sioux City, Omaha, Kansas City and St. Louis.

market prices were identical and other charges were equal— could select any of the seven markets for shipment (or as a basis for pricing as the case may be) without penalty or preference due to freight rates.

North English, Iowa, for ratemaking purposes is 251 miles from Chicago; 284 miles from St. Louis; 240 miles from Kansas City; 241 miles from Omaha; 278 miles from Sioux City; and 293 miles from Minneapolis/St Paul.1/

Exhibit 10 to Appendix A shows the relationship of that point to the markets. If isotims (lines of equal price) were drawn on the map, it would give the appearance of being somewhat oval shaped with the elongated dimensions pointing north and south: In other words, a very slight preference north and south. This, however, is not the essential point to be made here.

The corresponding rates were also reviewed at the Ex Parte 310 level and were again charted as in the previous instance. As one would expect, there was essentially no change in the results. North English maintained its position as the central-most point with respect to the rate structure.

A study of this type would lead to the conclusion that the application of the flat percentage general increases, having been uniform, appears to have maintained the geographic integrity of the relationships which existed at the Ex Parte 256 rate level.2/

1/ Based on Docket 28300 mileages.

2/ There were certain distortions of a limited nature caused by the application of minimum and flat increases but for purposes of the analysis being made here they are considered as being unimportant.

Adjustments to any of these rates separately, either by carrier or geographically, would obviously have shifted the pattern. The central point would have moved further from or closer to the favored market.

When rate increases of a general nature are shown to be needed, it is desirable that the objectives of the increase should be achieved with as little disruption of existing relationships as possible.

The shortcoming in the analysis above, however, lies in the fact that it does not give recognition to distortions and inequities that arise from disproportionate increases produced by the application of flat percentages. An analysis of the effects of that type of increase requires a different approach.

To examine the effects of percentage increases we have used the same tariffs and rate levels cited in the previous situation. In this case, however, the results, Exhibit 11 in Appendix A, reflect the charted configuration of the rates from or to only two of the markets. The difficulty in depicting third dimensions without confusion in this type of presentation dictates this approach. Nevertheless, the same results would be achieved if scales were included for all of the markets.

For the sake of clarity, markets of directly opposite directions were chosen for examination. In Exhibit 11, Chicago and Omaha are the markets under consideration. The vertical axis represents rates in cents per one hundred pounds,

and the horizontal axis represents distance in miles. Chicago is shown as the market on the right with the curve rising to the left depicting the progression of rates as distance from Chicago increases. Omaha appears as the market on the left with the curve rising to the right being the progression of rates as distance increases. The upper frame reflects the levels and relationships of the rates applicable at the Ex Parte 256 level; the lower frame, the same rates at the Ex Parte 310 level.

The intersection of the curves in both the upper and lower frame will always occur at the same distance from the markets as long as both curves are subjected to the same increases at the same time. In other words, the intersection corresponds to North English in Exhibit 10. In this instance, however, we can see the effects more clearly of the percentage increase and its impact on other geographic locations. The curves show very clearly their increased slope, rather than overall rise, that results from the application of flat percentage increases. The net result of this process is one of either restricting the market or of disproportionate price increases (or reductions to the seller as the case may be).

The impact is easiest to evaluate by example. If, as in the first analysis, the two markets are willing to pay the same price for grain, the shipper at the intersection of the curves could choose either market without penalty. Any shipper either to the left or right of the intersection would obviously derive less revenue if he were to ship to the market

opposite the intersection. The shipper to the right of the intersection would be unwise to ship to Omaha and pay the higher rate when he can ship to Chicago at the rate represented on the opposite curve directly below the curve representing rates to Omaha i.e. the shipper located 200 miles west of Chicago and 400 miles east of Omaha will be better off shipping to Chicago and incurring a rate of 56 cents rather than shipping to Omaha and paying 82 cents.

If the demands of the market are greater than the supply which is available on the market side of the intersection, the market must either offer a price that is sufficiently higher to induce movement for the supply source opposite the intersection or, in the alternative, must forego the supply.

In the instant example, the principle is apparent in the following way. At the Ex Parte 256 rate level, if the Chicago market is to be successful in attracting the available supply at a distance, say, of 400 miles, it must offer a price at least 22 cents1/ higher than the Omaha market in order to satisfy its requirements.

At the Ex Parte 310 rate level, the Chicago market must be willing to pay approximately 36 cents more— almost 65 percent more than the previous premium— to satisfy its needs or the producer must accept less, otherwise the supply source will be reduced to the distance where the differential in rates in the lower frame is equal to the differential in the upper frame; in this instance reduced from 400 miles to 350 miles. If that reduction occurs, the Chicago based market

1/ In this case, no allowance is included for other marketing service costs.

experiences a dirth in supply while the Omaha based market faces a glut.

Percentage increases, if continued infinitely, will ultimately create rate progressions so steep that all markets will be localized.

This is not to imply that percentage rate increases are never appropriate. However, the only reasonable basis for their application is one in which the costs intended to be offset by the rate increase do in fact change in direct proportions to the rates derived by the percentage application.

There are situations where this has not been the case. The rapid rise and attendant rate relief afforded in fuel costs is an example. Two carloads of different commodities, each bearing different rates, each of equal weight moving equal distances incurring identical expense increases will each contribute disproportionate shares in offsetting the expense increase because of a percentage application to the different rates.

Exhibit 12 to Appendix A demonstrates the results. An average carload of grain (71.2 tons nationally in 1974) moving approximately 800 miles at the Ex Parte 299 rate level will generate an additional $57.80 of revenue per car under the fuel surcharge. A similar shipment of salt, on the other hand, would generate only $20.42 additional revenue. Nevertheless, the increased expense per carload would have been essentially the same. Either grain is carrying more than its share of the added expense or salt is falling far short.

Whatever the case, it is clear that the application of the flat percentage rate increase does create a disparity that in many instances contradicts the expressed purpose for the increase; namely, the recovery of identifiable expenses.

General rate increases implemented for specific purposes should be designed to accomplish their purpose in a way that distributes the increase in a direct relationship to the expense whether it be in the form of a flat charge per hundred pounds, ton, car or some other unit.

The only apparent justification for continuance of percentage rate increases lies in the value of service concept; a concept which in the 1970s, if it has not already done so, is quickly losing its credibility as a ratemaking principal. Rates that exceed cost rarely serve any purpose in today's transportation market, with its alternative modes, other than to create a ripe market vulnerable to exploitation by the so-called "specialists" in transportation.

Rate increases must be evaluated on the basis of which costs the increases are intended to cover and thereafter, an evaluation of how those costs are distributed over the traffic.

Changes in Costs

The Commission's undertaking in this entire Ex Parte 270 proceeding is significant for at least two reasons: 1. it can look at relationships of rates on specific commodities; 2. it can easily look at relationships in rates among the different commodities.

Political, social and technological changes in the past few years have contributed substantially to changes in grain marketing and the costs attendant to its movement. The apparent shift from the lighter to the denser grains; the opening of foreign markets; availability of larger cars and improved shipper facilities have all contributed to a grain marketing environment in 1976 that is considerably different from the one that existed only ten or twelve years ago.

These changes have undoubtedly given rise to changes in costs associated with the movement of the various commodities hauled by the nation's railroad. In 1964, the average carload of farm products originating in Iowa weighed 53 tons. In 1974 the average was up to 78.9 tons.1/ The single most important factor contributing to that increase is most likely the increase in size of the cars available for loading. During that period, the number of cars loaded increased from 122,017 to 178,658 while the number of tons increased from 6,469,108 to 10,089,768. The increase in the tonnage that was shipped was 118 percent while the increase in the number of cars required to move that quantity was only 46 percent. These changes would have obviously changed the nature of the costs associated with the movements of grain.

Exhibit 13 in Appendix A reflects the trended increases in average loadings originating in Iowa on each of the various commodity groups moving by rail since 1964. Farm products (principally grain) consisted of 14,089,768 tons or almost 47 percent of the total tonnage originating in Iowa in 1974. This group alone boasts of an increase of over

1/ See Appendix C.

45 percent in the average load. Some of the other products' average loadings have increased as much or more, but none contributes to the total traffic in the proportions that farm products do. The average increase in tonnage per car for all other commodities has been approximately 27 percent.

Our analysis leads us to the conclusion that the heavier average loadings for grain have been induced by the implementation of the various incentive rates.

We encourage experimentation in rates that lead to efficient utilization.

SUMMARY & CONCLUSION

The salient facts are these. The grain producer— the farmer— functions in the most competitive of all markets. The price that he derives for his product is the best the market will offer less transportation and other charges. His single decision to sell, or not to sell, is unlikely to have any significant influence on the price the market will pay. If, in his judgement, the price is inadequate, his only hope for improvement lies in withholding the grain and in the hope that other producers will do likewise.

The nature of the pricing mechanism leaves the farmer particularly vulnerable to the effects of freight rate increases. He does not enjoy the luxury of an automatic cost pass through. He can hold out to recover the effects of the increase only if his thousands of competitors do likewise and if they all experience relatively equal increases. Consequently, economic justice dictates that rates, and in particular the increases applied to those rates, should bear a close relationship to costs incurred in the performance of the transportation service. Artificially high rates deprive the producer of the natural advantages that are his by virtue of location, or otherwise, and will either divert the traffic to other modes or will cause the producer to convert his own grain into another form.

The existence of viable alternatives renders value-of-service ratemaking a limited workable concept in today's

transportation system. Rates that are in excess of costs have, and will continue, to offer an attraction for the specialist or marginal cost carrier.

The barge terminal survey shows that virtually all of Iowa has access to water transportation. The expansion of foreign markets makes this even more significant.

The nature of the costs attendant to any given segment of traffic has changed. The consist of total traffic has changed. The average loadings have changed. The consist of grain itself has changed. The rates that were assessed in 1966 were rates on a totally different traffic base than are the rates for 1976.

We think it is appropriate to urge that any further revisions or increases, either as a result of this proceeding or any future proposal, should examine costs and the relationships of those costs specifically to the several factors influencing the makeup of a rate.

Costs, in our view, must play a more vital role in matters of both rate level and rate design. The right to recover costs must be acknowledged.

That right, however, also infers an obligation: an obligation to limit that recovery to no more than the costs incurred plus some reasonable margin of profit.

The rapid succession of percentage increases in rates has resulted in a levered effect on rates for greater distances. The added revenues generated by the increases in given instances appear to bear no relationship to the costs intended to be offset.

The percentage rate adjustment should be utilized only when the changes in costs are reasonably uniform in proportion to existing rates. In the alternative, a more pronounced taper to the rates would modify the effects of percentage increases.

The implementation and continuance of innovative rates must be permitted.

The reversal of the trend away from rail movement within Iowa coincides with the implementation of multiple car and grain-train rates. Rates thus established, that cover the costs associated with the traffic, should be continued and expanded. The efficiency of increased utilization should be encouraged with the benefits of that efficiency accruing to the public.

The interests that lie intermediate to the producer and the consumer will, by virtue of their different interests, express varying positions with respect to what constitutes an appropriate rate policy.

We simply urge that in your deliberations you give consideration to the producing interests and the effects that rates have with respect to their well being.

VERIFICATION

COUNTY OF POLK)
) SS
STATE OF IOWA)

Comes now Ronald D. Berkland, who, being duly sworn did on his oath depose and say: That he has read and signed the foregoing statement and knows the content thereof and that the matters set forth in this statement are, of his own personal knowledge and belief, true and correct as stated.

Ronald D. Berkland
Ronald D. Berkland

Sworn to and subscribed before me this 24th day of February, 1976.

Kathleen D Johnson
Notary Public

(SEAL)

My Commission Expires September 30, 1976

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon all parties of record in this proceeding, by mailing by first class United States mail, a copy thereof, properly addressed, to each of them.

Dated at Des Moines, Iowa, this 27th day of

Robert S. Steiner

Robert S. Steiner - Counsel

BEFORE THE

INTERSTATE COMMERCE COMMISSION

DOCKET EX PARTE 270 SUB 9

APPENDIX A

EXHIBITS 1-13 TO STATEMENT
OF FACTS AND ARGUMENTS

PRESENTED ON BEHALF OF
RATE ANALYSIS SECTION
IOWA DEPARTMENT OF TRANSPORTATION

UNITED STATES - QUANTITIES OF GRAIN SOLD (In Bushels)

1966 - 1974

COMMODITY bu.(000)	1966	1967	1968	1969	1970	1971	1972	1973	1974
CORN	2,105,253	2,597,715	2,354,863	2,557,467	2,263,678	3,197,439	3,247,798	3,440,005	2,924,026
OATS	276,548	268,423	359,041	380,144	354,597	340,545	263,849	259,779	220,829
RYE	23,214	20,030	19,226	25,610	31,144	42,774	24,828	21,226	14,949
SORGHUM (GRAIN)	581,552	603,231	591,696	572,767	544,009	629,211	642,365	747,775	464,208
SOYBEANS	904,210	952,426	1,084,784	1,111,975	1,106,615	1,154,085	1,246,686	1,523,076	1,208,646
WHEAT	1,232,701	1,419,175	1,457,783	1,350,803	1,256,216	1,508,717	1,406,209	1,624,974	1,707,499
BARLEY	288,292	269,591	315,790	310,418	301,271	337,872	313,466	310,433	223,141

SOURCE: U.S. Department of Agriculture

DOCKET EX PARTE 270 SUB 9
EXHIBIT I
Sheet 1

TONS OF GRAIN SOLD

COMMODITY	1966	1967	1968	1969	1970	1971	1972	1973	1974
CORN	58,947,084	72,736,020	65,936,164	71,609,076	63,382,304	89,528,292	90,938,344	96,320,140	81,872,728
OATS	4,424,768	4,294,768	5,744,656	6,082,304	5,673,552	5,448,720	4,221,584	4,156,464	3,533,264
RYE	649,992	560,840	538,328	717,080	872,032	1,197,672	695,184	594,328	418,572
SORGHUM	16,283,456	16,890,468	16,567,488	16,037,476	15,234,772	17,617,908	17,986,220	20,937,700	12,997,824
SOYBEANS	27,126,300	28,572,780	32,543,520	33,359,230	33,198,450	34,622,550	37,400,580	45,692,280	36,259,380
WHEAT	36,981,030	42,575,250	43,733,490	40,524,090	37,686,480	45,261,510	43,806,270	48,749,220	51,224,970
BARLEY	6,919,008	6,470,184	7,578,960	7,450,032	7,230,504	8,108,928	7,523,184	7,450,392	5,355,384
TOTAL TONS	151,331,638	172,100,310	172,642,606	175,779,308	163,278,774	201,785,580	202,571,366	223,900,524	191,662,122

SOURCE: U.S. Department of Agriculture

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EXHIBIT I
Sheet 2

DOCKET EX PARTE 270 SUB 9

EXHIBIT 2

SEASON AVERAGE CORN PRICES PER BUSHEL*

Year	Iowa	Illinois	Minnesota	Nebraska	Indiana
1966	$1.17	$1.25	$1.16	$1.19	$1.23
1967	1.01	1.02	.98	1.05	.99
1968	1.07	1.10	1.02	1.09	1.05
1969**	1.10	1.14	1.10	.99	1.10
1970	1.25	1.37	1.18	1.25	1.36
1971	1.04	1.09	1.01	1.11	1.01
1972	1.65	1.59	1.50	1.53	1.56
1973	2.35	2.45	2.20	2.25	2.35

*SOURCE: U.S. Department of Commerce Statistical Abstracts 1966-1974
Season Average Price Received by Farmers

** Taken from U.S. Statistical Abstract as a preliminary figure.

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EXHIBIT 3

ESTIMATED GRAIN PRODUCTION IN 1959, 1971, AND 1973, AND PROJECTED GRAIN PRODUCTION TO 1979 AND 1984, AND PROJECTED GRAIN SALES TO 1980 AND 1985 FOR LOW AND HIGH EXPORT ASSUMPTIONS IN IOWA

	Estimated			Low Export Projected		High Export Projected	
GRAIN PRODUCTION (millions of bushels)	1959	1971	1973	1979	1984	1979	1984
Corn Production	772	1,141	1,204	1,401	1,521	1,512	1,616
Soybean Production	61	175	269	306	364	326	398
Oat Production	184	86	64	78	77	78	77
Grain Production	1,017	1,402	1,537	1,785	1,962	1,916	2,091

GRAIN SALES (millions of bushels)	1960	1972	1980	1985	1980	1985
Corn Sales	339	590	845	934	955	1,029
Soybean Sales	58	170	298	355	318	389
Oat Sales	58	31	29	29	29	29
Grain Sales	455	791	1,172	1,318	1,302	1,447

SEE APPENDIX D FOR DETAILED ANALYSIS.

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EXHIBIT 4

NUMBER OF CATTLE IN IOWA PLACED ON FEED 1/
INCLUDING SHORT FEDS

YEAR	NUMBER OF HEAD	ANNUAL AVERAGE PRICE 2/ PER 100 POUNDS RECEIVED BY FARMERS
1966	3,829,000	N/A
1967	3,980,000	$22.30
1968	4,965,000	23.40
1969	4,549,000	26.20
1970	4,301,000	27.10
1971	4,104,000	29.00
1972	3,816,000	33.50
1973	3,182,000	42.80

1/ SOURCE: Iowa Department of Agriculture

2/ SOURCE: U.S. Statistical Abstracts.

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EXHIBIT 5

LIVESTOCK ON FARMS
BY NUMBER

CATTLE

YEAR*	IOWA	ILLINOIS
1967	7,479,000	3,593,000
1968	7,183,000	3,413,000
1969	7,021,000	3,194,000
1970	7,478,000	3,278,000
1971	N/A	N/A
1972	7,773,000	3,400,000
1973	7,770,000	3,240,000
1974	7,660,000	3,250,000

HOGS & PIGS

1967	13,118,000	6,651,000
1968	13,740,000	6,772,000
1969	13,950,000	6,551,000
1970	N/A	N/A
1971	14,853,000	6,600,000
1972	14,200,000	6,650,000
1973	14,700,000	7,350,000
1974	N/A	N/A

*Census date varies between earlier and later years. However, the comparison between Iowa and Illinois for any given year are based on identical dates.

SOURCE: U.S. Statistical Abstracts.

TONS OF GRAIN & GRAIN PRODUCTS SHIPPED—RAIL

1966-1973

STCC	1966	1967	1968	1969	1970	1971	1972	1973
01131	5,166,596	4,817,617	4,515,241	5,605,814	6,385,319	5,896,779	5,345,331	5,811,979
01132	32,407,382	26,644,665	26,199,695	27,109,213	32,379,174	28,616,974	33,372,550	47,057,854
01133	2,515,892	2,343,264	2,078,012	2,459,840	2,803,398	2,944,410	2,664,854	3,070,623
01135	531,644	506,282	404,955	476,738	444,150	612,700	429,947	1,070,725
01136	14,784,768	11,631,434	7,728,541	7,115,172	8,940,448	10,449,760	7,479,196	8,259,321
01137	45,443,677	34,907,656	34,344,087	34,784,563	40,413,316	35,208,867	44,775,959	55,287,680
01144	10,863,906	11,157,147	10,192,484	11,040,898	14,000,414	12,451,245	10,595,630	11,409,293
TOTAL	111,713,865	92,007,065	85,463,015	88,592,238	105,366,219	96,180,735	104,663,467	131,967,475

SOURCE: Freight Commodity Statistics Class I Railroad
1966-1973 Interstate Commerce Commission

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EXHIBIT 6

DOMESTIC GRAIN MOVEMENTS BY WATER
TONS (2000 lbs.)
1966-1973

Commodity Code	1966	1967	1968	1969	1970	1971	1972	1973
0102 Barley & Rye	408,528	447,037	417,415	347,070	459,975	580,190		238,946
0103 Corn	11,730,320	11,357,797	11,953,775	12,646,734	11,700,490	11,297,007	Complete	19,476,466
0104 Oats	431,734	446,664	411,294	366,298	722,575	696,814	Breakdown	373,952
0106 Sorghum	303,811	397,333	352,866	206,536	79,263	256,661	Not	74,461
0107 Wheat	6,498,530	7,304,332	5,983,977	5,420,952	5,778,169	6,076,571	Available	5,868,020
0111 Soybeans	4,057,275	4,723,237	5,692,019	6,236,170	8,262,767	8,637,715		8,560,306
TOTAL	23,430,208	24,676,400	24,811,346	25,223,760	27,003,239	27,544,958	35,254,000	34,592,131

SOURCE: Water-Borne Commerce of the United States 1966-1973 U.S. Corps of Engineers.

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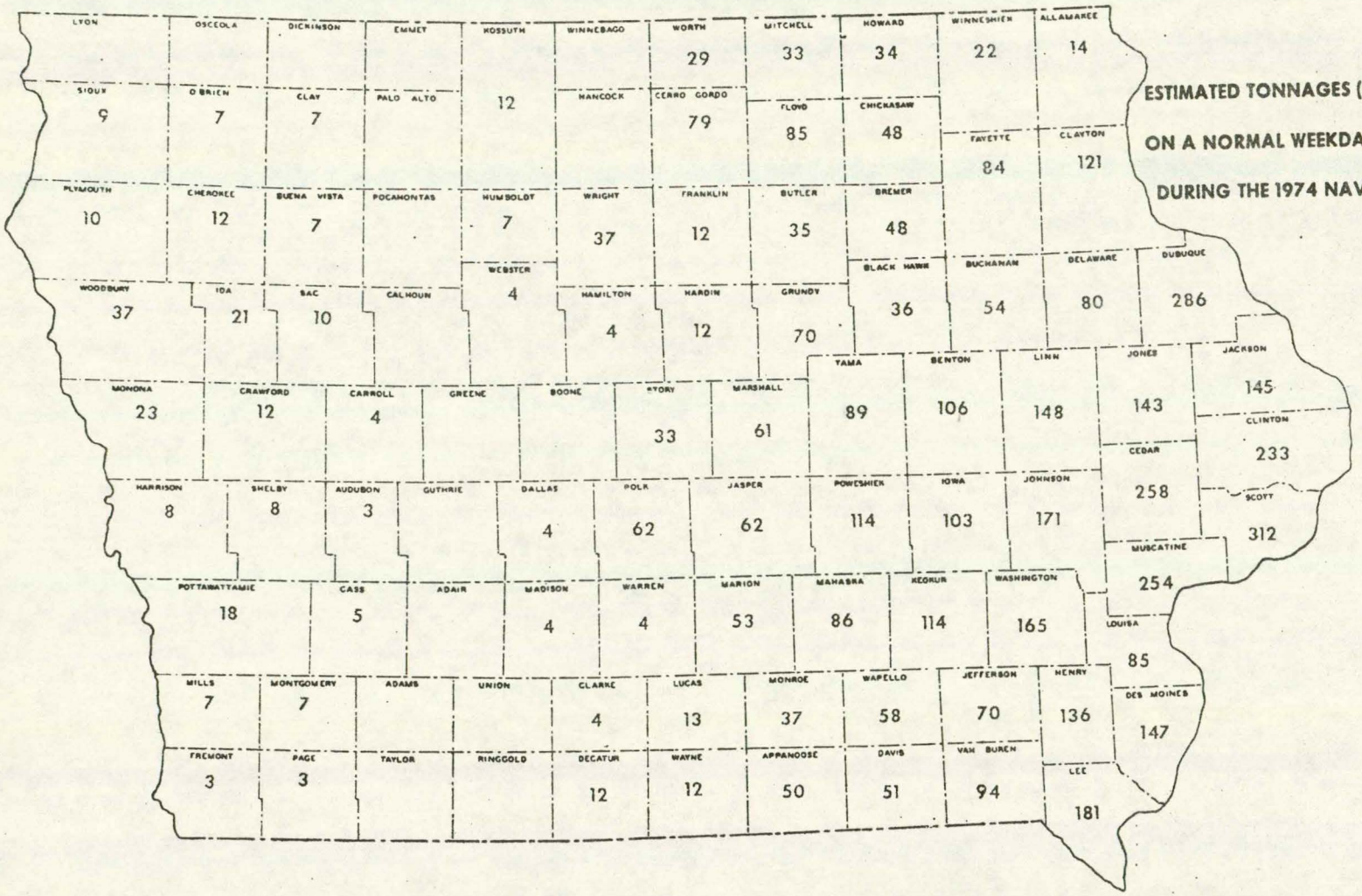
EXHIBIT 7

ESTIMATED 1974 ANNUAL TONNAGE DISTRIBUTION OF COMMODITIES TRANSPORTED BY TRUCK BETWEEN COUNTIES AND BARGE TERMINALS IN IOWA.



ESTIMATED TONNAGES (1,000's) BASED ON A NORMAL WEEKDAY'S OPERATION DURING THE 1974 NAVIGATION SEASON.

1974 TOTAL TONNAGE (1,000) MISSOURI RIVER BARGE TERMINALS

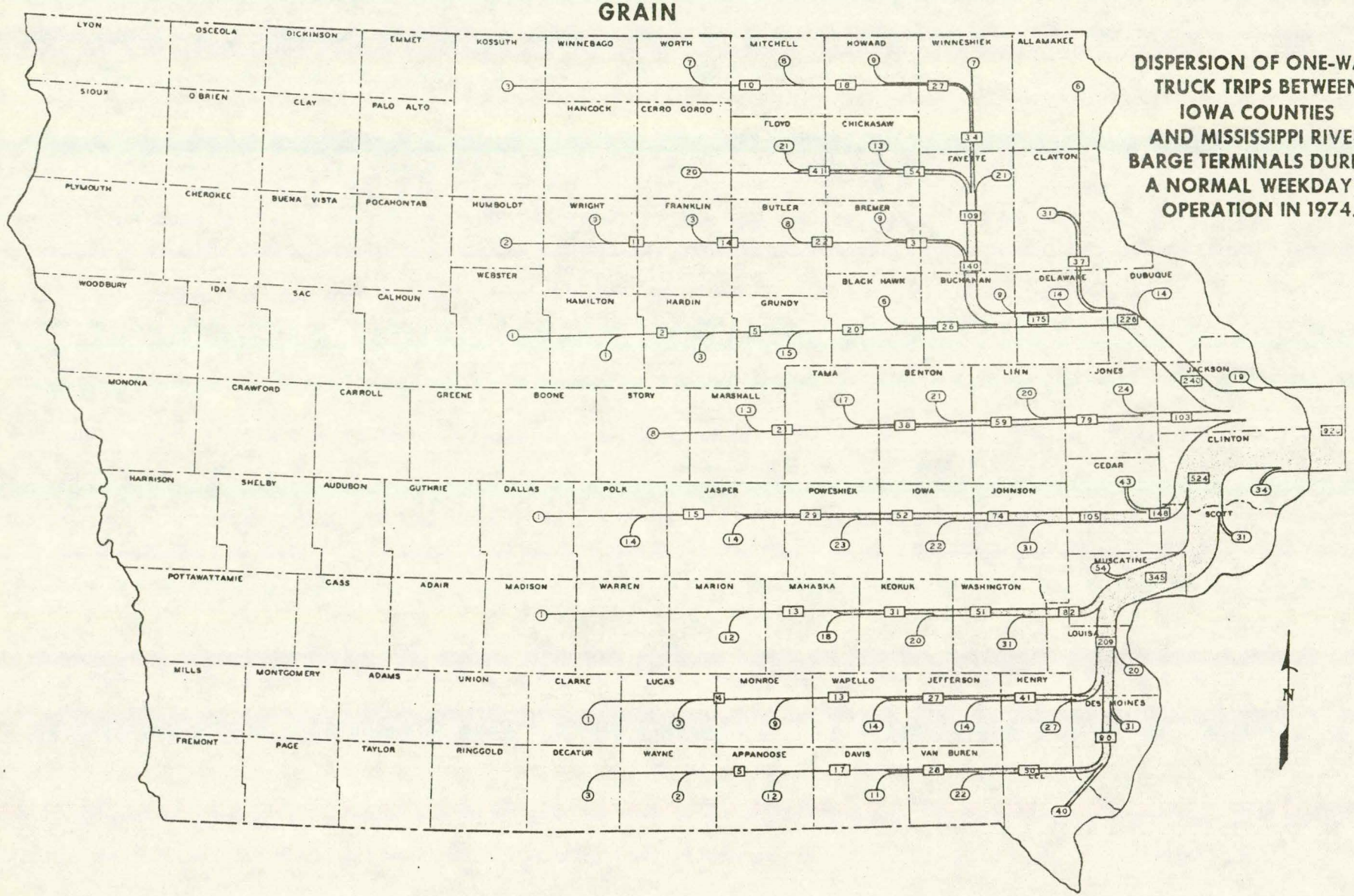
IOWA - TRUCK	-221
OUTSIDE IOWA - TRUCK	- 120
TOTAL TRUCK	- 341
TOTAL RAIL	- 47
TOTAL TONS	- 388

1974 TOTAL TONNAGE (1,000) MISSISSIPPI RIVER BARGE TERMINALS

IOWA - TRUCK	- 4,920
OUTSIDE IOWA - TRUCK	- 1,256
TOTAL TRUCK	- 6,176
TOTAL RAIL	- 1,616
USED ON SITE	- 1,234
TOTAL TONS	- 9,026

DOCKET EX PARTE 270 SUB 9
EXHIBIT 8
SHEET 1

GRAIN



DISPERSION OF ONE-WAY TRUCK TRIPS BETWEEN IOWA COUNTIES AND MISSISSIPPI RIVER BARGE TERMINALS DURING A NORMAL WEEKDAY'S OPERATION IN 1974.

DOCKET EX PARTE 270 SUB 9

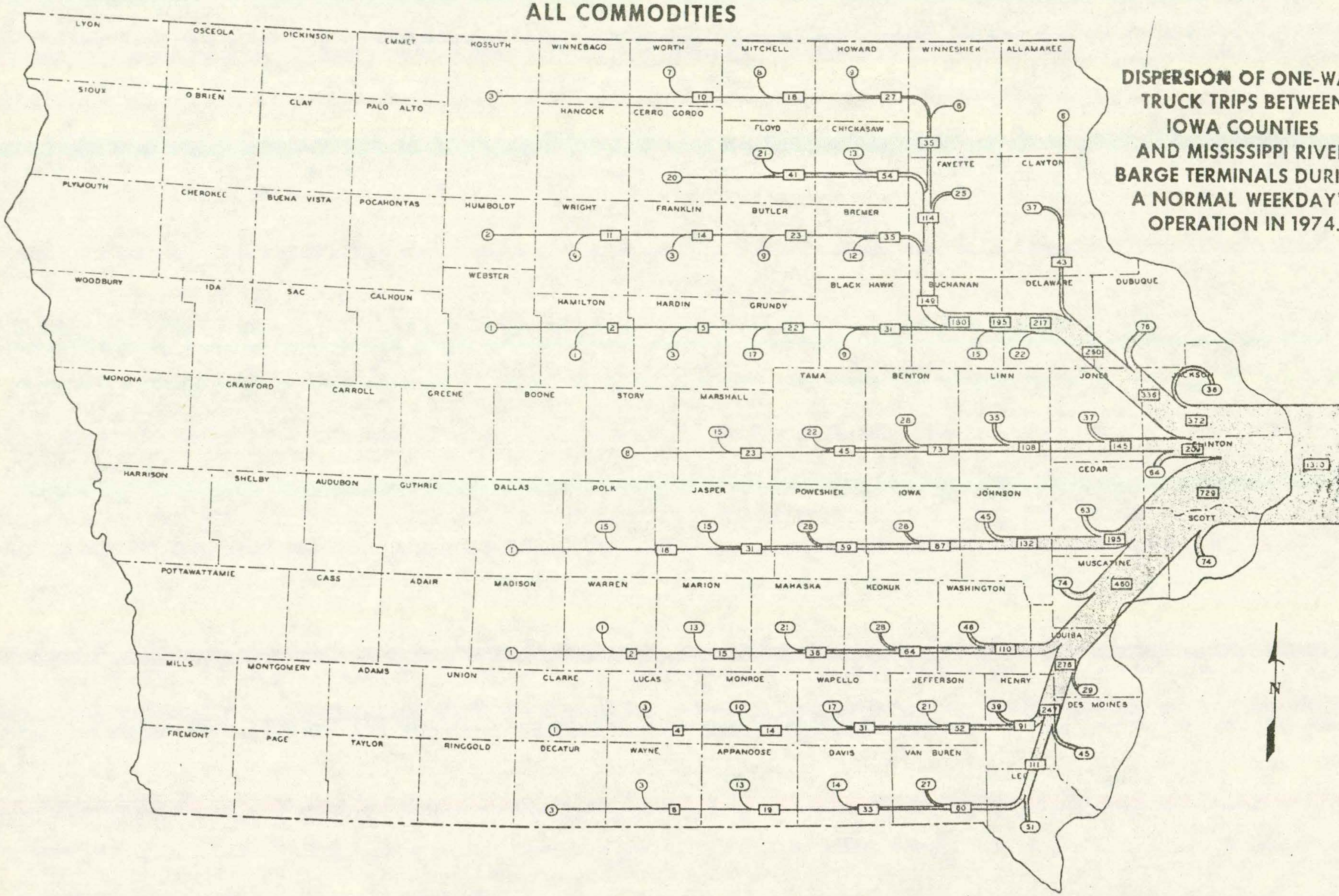
EXHIBIT 8

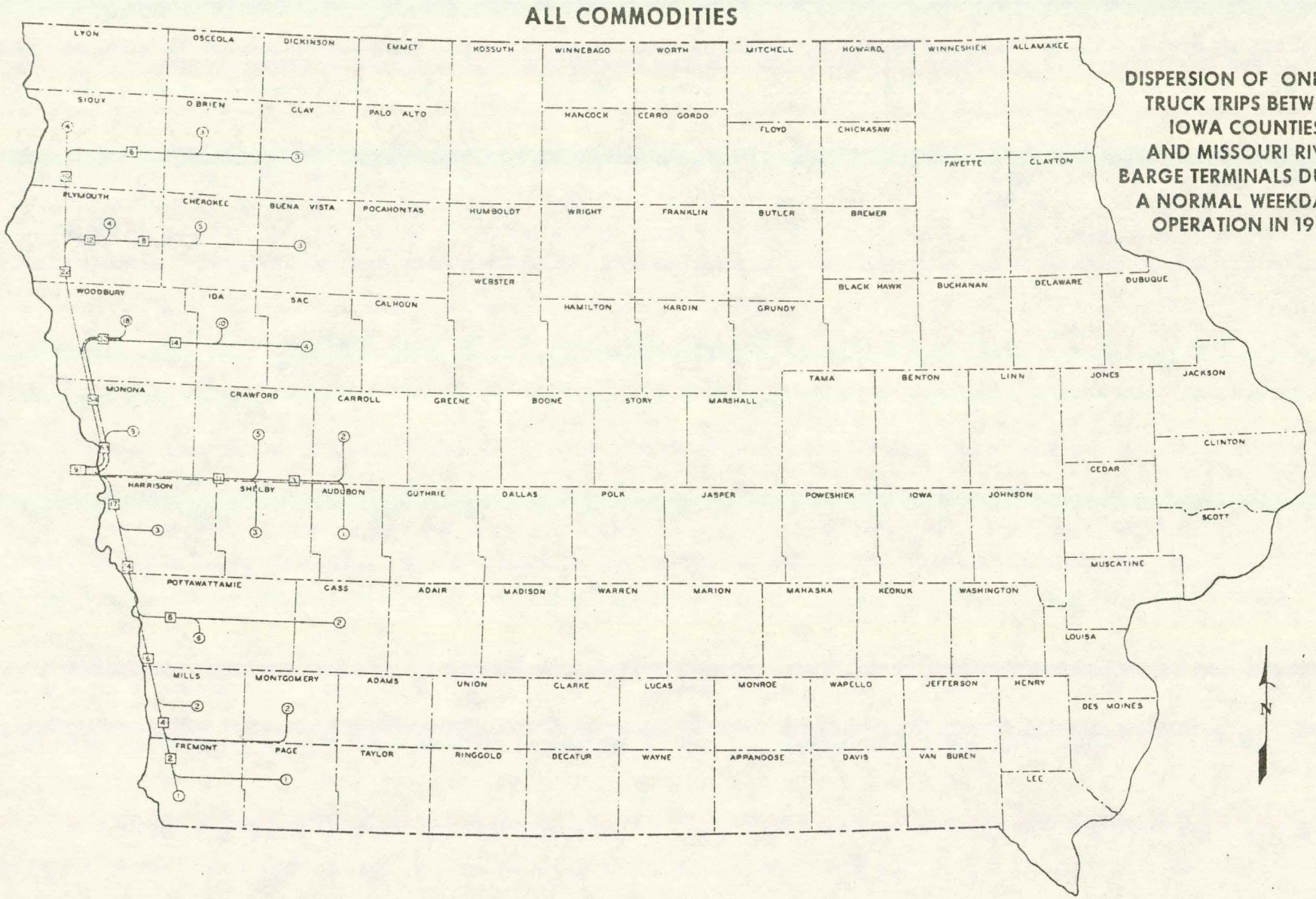
SHEET 2

DOCKET EX PARTE 270 SUB 9
EXHIBIT 8
SHEET 3

ALL COMMODITIES

DISPERSION OF ONE-WAY TRUCK TRIPS BETWEEN IOWA COUNTIES AND MISSISSIPPI RIVER BARGE TERMINALS DURING A NORMAL WEEKDAY'S OPERATION IN 1974.





DISPERSION OF ONE-WAY TRUCK TRIPS BETWEEN IOWA COUNTIES AND MISSOURI RIVER BARGE TERMINALS DURING A NORMAL WEEKDAY'S OPERATION IN 1974.

DOCKET EX PARTE 270 SUB 9

EXHIBIT 8

SHEET 4

DOCKET EX PARTE 270 SUB 9

Exhibit 9

QUANTITIES OF FARM PRODUCTS
SHIPPED RAIL IN RELATION TO
THE QUANTITIES OF GRAIN SALES (SHIPPED)
WITHIN IOWA

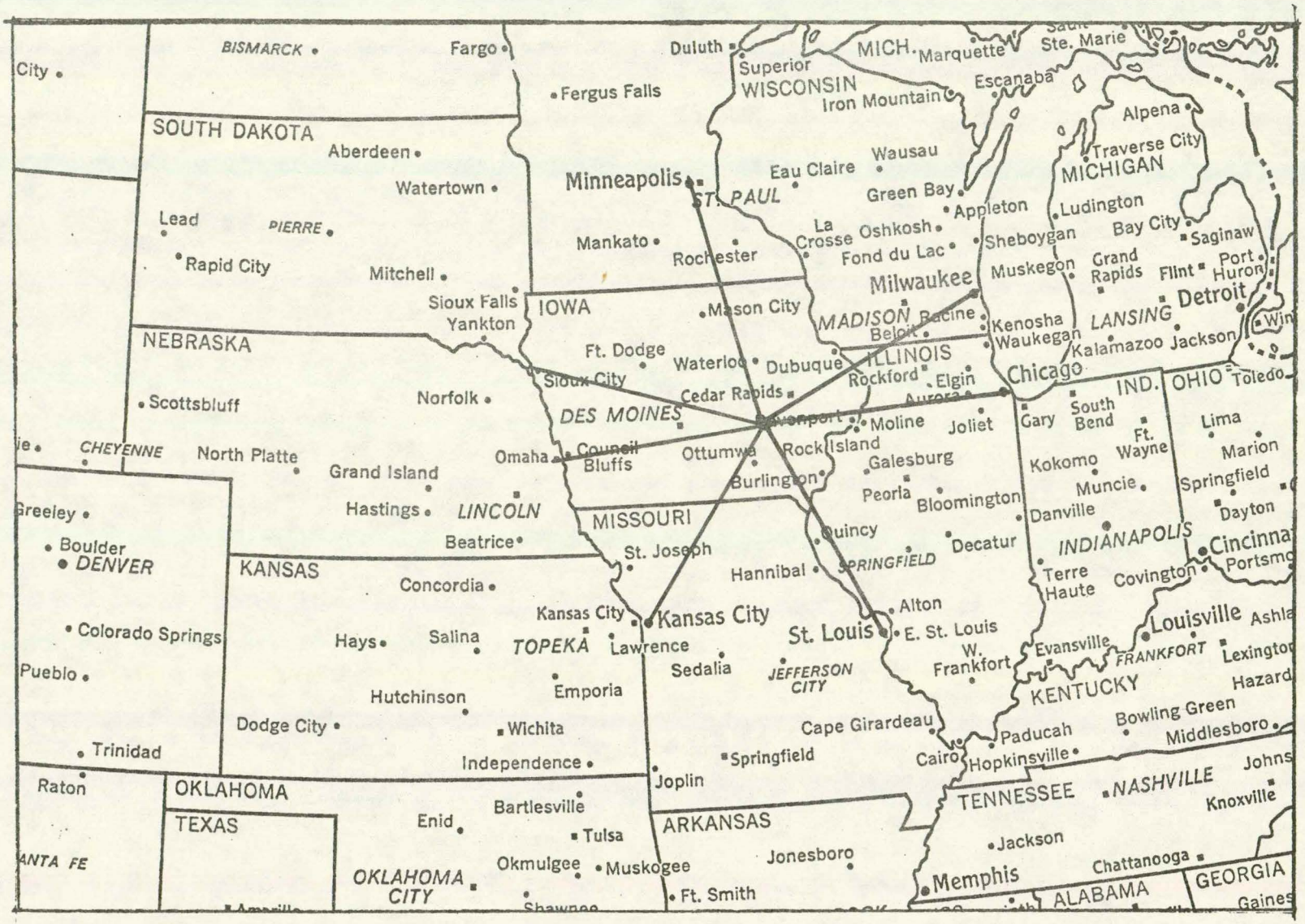
YEAR	QUANTITY OF CORN 1/ OATS & SOYBEANS SOLD (IN TONS)	QUANTITY SOLD AS A % OF PRODUCTION	TONS OF FARM 2/ PRODUCTS SHIPPED BY RAIL	FARM PRODUCTS SHIPPED RAIL AS A % OF CORN, OATS AND SOYBEANS SOLD
1964	13,797,000	45.1	6,469,108	46.9
1965	13,049,800	46.6	7,798,510	59.8
1966	13,403,052	46.1	8,314,192	62.0
1967	15,813,154	49.1	6,594,827	41.7
1968	16,740,712	48.7	5,964,408	35.6
1969	17,190,690	51.5	7,391,942	43.0
1970	17,800,762	52.7	10,950,353	61.5
1971	17,354,508	54.5	9,882,912	56.9
1972	22,740,318	56.	8,771,611	38.6
1973	24,811,864	58.	14,451,471	58.2
1974	26,952,580	62.0	14,089,768	52.5
1975	22,158,520	(Est.)64.		

1/ From Appendix B
Sales are based on previous year's production because harvest occurs toward the end of the year with delivery at a future date and it is therefore believed that it is largely the previous year's grain that will be shipped (sold) in the current year.

Commercial sales as used here are the residual after subtracting on-farm usage of the various grains and the difference is assumed to be sold through commercial channels and thereby requiring transportation. Consequently, these estimates have a slight upward bias because they include farm-to-farm and farm-to-elevator-to-farm sales.

2/ See Appendix C
These figures include more than the grains under consideration. However, historically they have accounted for the preponderance of the tonnage included under this grouping.

GEOGRAPHIC LOCATION CENTRAL RATE APPLICATION SINGLE CAR
RATES TO SEVEN PRIMARY MARKETS

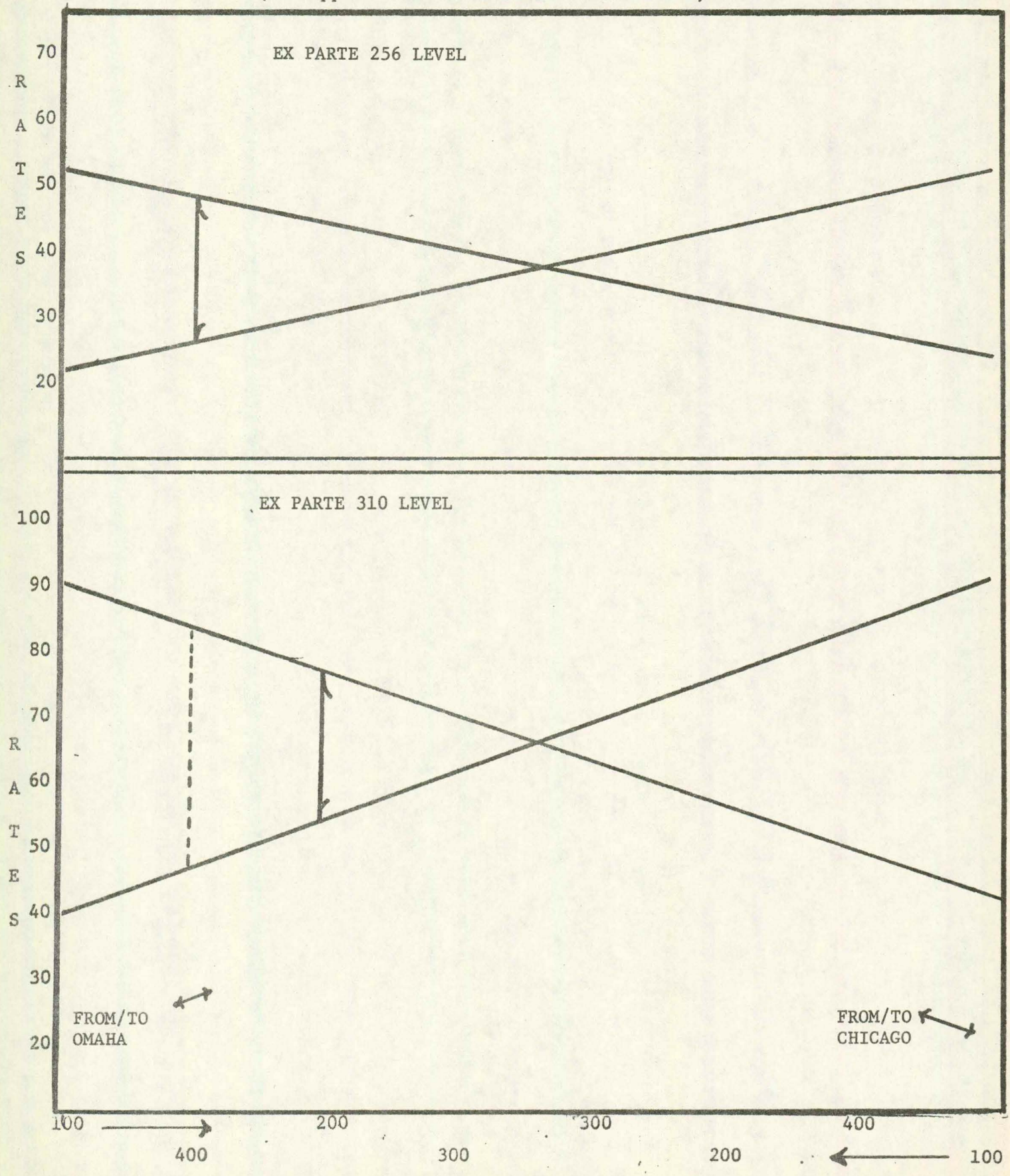


DOCKET EX PARTE 270 SUB 9

EXHIBIT 10

DOCKET EXPARTE 270 SUB 9
EXHIBIT 11

PROGRESSION OF GRAIN RATES X-256 vs X-310
RATES IN CENTS PER 100 POUNDS
(See Appendix G For Basis of Construction)



COMPARISON OF ADDED REVENUE GENERATED BY FUEL SURCHARGE ON DIFFERENT COMMODITIES FOR SHIPMENT 800 MILES

Exhibit 13

COMMODITY	ESTIMATED AVERAGE TONS PER CARLOAD	X-299 RATE	CHARGES	SURCHARGE	CHARGES1/ ON 71.2 TONS	SURCHARGE	TARIFF AUTHORITY
CORN	71.2	$ 1.23 CWT	$1751.52	$57.80	$1751.52	$57.80	WTL 332 ICC A-4864 Item 6188
LUMBER	56	1.07	1198.40	39.55	1523.68	50.28	WTL 490 ICC A-4928 Item 3000
COAL	72.5	13.88 NT	1006.30	33.21	988.26	32.61	WTL 53-O ICC A-4496 Item 548
GASOLINE	44.5	1.33 CWT	1183.70	39.06	1893.92	62.50	WTL 266-F ICC A-4672Item1810C
PAPER & PRODUCTS	34.1	.99 CWT	675.13	22.28	1409.76	45.52	WTL 169Q ICC A-4754 Item 8190
FOOD & KINDRED PROD. (MEATS)	46.6	1.88 CWT	1752.16	57.82	2677.12	88.34	WTL 480A ICC A-4881 Item 1420
SILICA SAND	65.3	11.40 NT	744.42	24.57	811.68	26.79	WTL 237R ICC A-4977 Item 1930
STEEL	51.4	19.31 NT	992.34	32.57	1374.87	45.37	WTL 130N ICC A-4977 Item 3105
SALT	67.9	8.69 NT	590.05	19.47	618.73	20.42	WTL 182 ICC A-4369 Item 345

1/ It is understood that not all commodities could be loaded to this level However, the charges are computed as though such weight would be possible.

DOCKET EX PARTE 270 SUB 9
EXHIBIT 12

TRENDED INCREASE IN AVERAGE TONS PER CAR 1964-1974 BY S.I.C. GROUP*

PRODUCT	NUMBER OF TONS ORIGINATED IN IOWA 1974	PERCENTAGE INCREASES IN AVERAGE TONS PER CAR 1974 over 1964
Farm Products	14,089,768	45.4
Forest Products	56	**
Fresh Fish & Marine Products	284	**
Metallic Ores	320	30.5
Coal	169,118	19.9
Crude Petroleum, etc.	89	**
Non-Metallic Minerals	2,297,515	4.8
Ordnance and Acessories	96,603	56.2
Food & Kindred Products	7,821,159	59.2
Tobacco Products	36	decline
Basic Textiles	861	decline
Apparel & Finished Textile Products	255	decline
Lumber & Wood Products (Except Furniture)	116,447	12.1
Furniture & Fixtures	39,840	8.3
Pulp, Paper & Allied Products	101,177	31.1
Printed Matter	28,865	1.9
Chemical & Allied Products	1,760,795	73.6
Petroleum & Coal Products	100,164	118.7
Rubber & Miscellaneous Products	98,089	25.6
Leather & Leather Products	298	decline
Stone, Clay & Glass Products	1,597,264	17.5
Primary Metal Products	338,606	35.8
Fabricated Metal Products	81,069	1.8
Machinery Except Electric	216,583	6.5
Electrical Machinery	168,942	39.6
Transportation Equipment	38,381	1.4
Instrument, Photo & Optical, Watches & Clocks	18	decline
Miscellaneous Products of Manufacture	4,103	22.7
Waste & Scrap Materials	808,422	13.2
Miscellaneous Freight Shipments	14,617	decline
Containers-Shipping	20,965	18.7
Freight Forwarder Traffic	552	40.2
Shippers Association	17,081	79.4
Miscellaneous	129,283	10.2

*See Appendix C for Source: Appendix E for method of computation.
**Not calculated: The quantity shipped is minimal. For several years there was no movement at all.

BEFORE THE

INTERSTATE COMMERCE COMMISSION

DOCKET EX PARTE 270 SUB 9

APPENDIX B

YEAR BY YEAR ANALYSIS OF FEED GRAINS
PRODUCED WITHIN IOWA AND ITS DISPOSITION

SOURCE: IOWA DEPARTMENT OF AGRICULTURE STATISTICAL SECTION IN COOPERATING WITH U.S. DEPARTMENT OF AGRICULTURE

PRESENTED ON BEHALF OF
RATE ANALYSIS SECTION
IOWA DEPARTMENT OF TRANSPORTATION

YEAR	COMMODITY	QUANTITY PRODUCED FOR GRAIN (In Bushels) (000)	QUANTITY USED FOR FEED & SEED (In Bushels) (000)	QUANTITY SOLD (In Bushels) (000)	QUANTITY SOLD (In Tons)
1974	Corn	948,000	379,200	568,800	15,926,400
	Oats	88,000	58,080	29,920	478,720
	Soybeans	199,080	7,300	191,780	5,753,400
		1,235,080			22,158,520
1973	Corn	1,206,960	536,063	675,897	18,925,116
	Soybeans	68,238	47,084	21,154	338,464
	Oats	263,500	7,200	256,300	7,689,000
		1,538,698			26,952,580
1972	Corn	1,229,600	577,912	651,688	18,247,264
	Oats	71,250	49,875	21,375	342,000
	Soybeans	216,000	8,580	207,420	6,222,600
		1,516,850			24,811,864
1971	Corn	1,178,100	565,488	612,612	17,153,136
	Oats	91,450	64,929	26,521	424,332
	Soybeans	178,750	6,655	172,095	5,162,850
		1,448,300			22,740,318
1970	Corn	859,140	446,753	412,387	11,546,836
	Oats	94,105	65,873	28,232	451,712
	Soybeans	184,600	6,068	178,532	5,355,960
		1,137,845			17,354,508
1969	Corn	932,372	494,157	438,215	12,270,020
	Oats	93,840	68,503	25,337	405,392
	Soybeans	177,125	6,280	170,845	5,125,350
		1,203,337			17,800,762
1968	Corn	912,144	501,679	410,465	11,493,020
	Oats	106,436	72,376	34,060	544,960
	Soybeans	177,952	6,195	171,757	5,152,710
		1,196,532			17,190,690
1967	Corn	986,332	552,346	433,986	12,151,608
	Oats	101,370	72,986	28,384	454,144
	Soybeans	144,265	6,433	137,832	4,134,960
		1,231,967			16,740,712

YEAR	COMMODITY	QUANTITY PRODUCED FOR GRAIN (In Bushels) (000)	QUANTITY USED FOR FEED & SEED (In Bushels) (000)	QUANTITY SOLD (In Bushels) (000)	QUANTITY SOLD (In Tons)
1966	Corn	901,748	504,979	396,769	11,109,532
	Oats	106,866	76,944	29,922	478,752
	Soybeans	147,382	6,553	140,829	4,224,870
		1,155,996			15,813,154
1965	Corn	814,506	480,559	333,947	9,350,516
	Oats	104,948	76,612	28,336	453,376
	Soybeans	126,100	6,128	119,972	3,599,160
		1,045,554			13,403,052
1964	Corn	774,516	449,219	325,297	9,108,316
	Oats	115,248	85,284	29,964	479,424
	Soybeans	121,239	5,837	115,402	3,462,060
		1,011,003			13,049,800
1963	Corn	868,464	503,709	364,755	10,213,140
	Oats	126,000	97,020	28,980	463,680
	Soybeans	109,038	5,077	104,006	3,120,180
		1,103,502			13,797,000

BEFORE THE

INTERSTATE COMMERCE COMMISSION

DOCKET EX PARTE 270 SUB 9

APPENDIX C

YEAR BY YEAR NUMBER OF CARS AND TONS
BY PRODUCTS DESCRIBED BY STANDARD COMMODITY CODE
ORIGINATING IN IOWA

SOURCE: IOWA STATE COMMERCE COMMISSION ANNUAL
REPORTS TO THE GOVERNOR

STATISTICS OF RAILROADS OF CLASS I - 1964-1974
AAR ECONOMICS & FINANCE DEPARTMENT

PRESENTED ON BEHALF OF
RATE ANALYSIS SECTION
IOWA DEPARTMENT OF TRANSPORTATION

No. 01 - FARM PRODUCTS

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	142,159,005	14,089,768	178,658	78.9
1973	156,097,484	14,451,471	194,903	74.2
1972	129,768,613	8,771,611	132,398	66.3
1971	121,601,383	9,882,912	153,825	64.3
1970	134,185,354	10,950,353	174,199	62.9
1969	119,290,675	7,391,942	123,461	59.9
1968	115,965,441	5,964,408	103,898	57.4
1967	123,008,115	6,594,827	117,686	56.0
1966	144,585,597	8,314,192	147,620	56.3
1965	130,476,338	7,798,510	141,674	55.0
1964	131,432,292	6,469,108	122,017	53.0

No. 08 - FOREST PRODUCTS

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	709,822	56	1	56
1973	744,471	-	-	69
1972	712,140	69	1	-
1971	695,968	-	-	-
1970	652,446	-	-	-
1969	759,073	-	-	-
1968	774,736	43	1	43
1967	731,252	50	2	25
1966	752,262	62	3	21
1965	681,651	42	2	21
1964	638,304	38	2	19

No. 09 - FRESH FISH AND OTHER MARINE PRODUCTS

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	180,019	284	7	40.6
1973	227,642	18	1	18
1972	277,131	-	-	-
1971	276,703	-	-	-
1970	274,751	592	8	74
1969	306,708	112	6	18.7
1968	358,362	195	7	27.9
1967	404,282	474	16	29.6
1966	434,584	1,846	64	28.8
1965	402,456	1,034	41	25.2
1964	420,580	1,646	48	34.3

No. 10 - METALLIC ORES

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	126,514,878	320	7	45.7
1973	125,082,258	2,195	39	56.3
1972	110,033,983	535	9	59.4
1971	110,403,521	566	10	56.6
1970	126,658,087	1,597	29	55.1
1969	126,436,268	290	7	41.4
1968	111,671,127	444	9	49.3
1967	108,973,449	623	19	32.8
1966	129,045,981	840	13	64.6
1965	118,597,117	929	19	48.9
1964	116,228,982	880	29	30.3

No. 11 - COAL

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	390,870,787	169,118	2,332	72.5
1973	376,078,279	158,296	2,282	69.4
1972	374,969,768	419,248	5,890	71.2
1971	360,554,431	522,134	7,416	70.4
1970	404,622,077	548,202	8,010	68.4
1969	383,291,942	604,910	9,223	65.6
1968	379,125,094	653,720	10,436	62.6
1967	384,583,120	608,077	9,474	64.2
1966	376,320,424	653,863	10,425	62.7
1965	363,020,071	613,262	10,034	61.1
1964	357,685,058	666,325	10,845	61.4

No. 13 - CRUDE PETROLEUM, NATURAL GAS AND NATURAL GASOLINE

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	2,746,306	89	2	44.5
1973	2,117,168	-	2	-
1972	1,471,570	-	-	-
1971	875,772	-	-	-
1970	910,321	2,013	35	57.5
1969	963,611	-	-	-
1968	1,066,820	146	3	48.7
1967	1,125,854	336	11	30.5
1966	1,120,491	151	5	30.2
1965	1,060,564	308	6	51.3
1964	1,252,786	402	4	100.5*

No. 14 - NON-METALLIC MINERALS, EXCEPT FUELS

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	171,021,320	2,297,515	35,180	65.3
1973	170,472,171	2,336,245	35,496	65.8
1972	164,694,719	2,116,568	32,956	64.2
1971	157,834,316	2,060,525	32,784	62.9
1970	163,348,651	2,084,640	33,458	62.3
1969	171,390,978	2,597,498	41,902	62.0
1968	170,656,497	2,377,162	37,386	63.6
1967	170,452,677	2,278,296	35,196	64.7
1966	173,205,846	2,396,076	37,201	64.1
1965	179,118,270	2,172,480	35,112	61.9
1964	182,810,401	2,630,985	42,304	62.2

No. 19 - ORDNANCE AND ACCESSORIES

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	1,397,492	96,603	1,184	81.6*
1973	2,106,490	72,858	1,625	44.8
1972	2,593,216	65,630	1,509	43.5
1971	2,340,798	67,443	1,553	43.4
1970	3,479,430	115,309	2,819	40.9
1969	4,649,430	166,804	4,367	38.2
1968	4,564,075	156,480	3,911	40.0
1967	3,761,540	112,806	2,581	43.7
1966	2,334,692	38,677	867	44.6
1965	1,400,909	25,054	612	40.9
1964	1,054,539	35,475	898	39.5

No. 20 - FOOD AND KINDRED PRODUCTS

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	107,287,501	7,821,159	167,935	46.6
1973	106,o11,o14	7,558,235	169,088	44.7
1972	106,055,667	6,339,957	147,947	42.9
1971	106,392,393	7,505,550	191,378	39.2
1970	110,067,033	7,737,795	199,584	38.8
1969	107,703,550	7,254,377	200,619	36.2
1968	105,173,305	7,063,922	209,478	33.7
1967	103,245,352	7,431,136	222,162	33.4
1966	99,818,936	7,014,013	216,389	32.4
1965	94,831,361	6,334,996	202,971	31.2
1964	94,988,874	6,348,685	209,167	30.4

No. 21 - TOBACCO PRODUCTS

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	722,304	36	2	18
1973	750,576	254	10	25.4
1972	690,631	122	2	61
1971	739,732	50	1	50
1970	750,606	54	2	27
1969	818,534	79	4	19.8
1968	609,502	47	1	47
1967	588,279	269	8	33.6
1966	580,286	553	16	34.6
1965	632,362	346	10	31.0

No. 22 - BASIC TEXTILES

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	1,307,861	861	52	16.6
1973	1,430,425	813	48	16.9
1972	1,376,024	387	17	22.8
1971	1,241,022	1,223	61	20.0
1970	1,181,519	1,018	84	12.1
1969	1,295,150	676	36	18.8
1968	1,294,584	1,253	53	23.6
1967	1,255,556	1,182	45	26.3
1966	1,273,398	1,717	83	20.7
1965	1,215,355	1,764	98	18.0
1964	1,156,088	2,397	106	22.6

No. 23 - APPAREL AND FINISHED TEXTILE PRODUCTS, INCLUDING KNITS

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	328,875	255	8	31.9
1973	382,092	72	5	14.4
1972	277,905	127	9	14.1
1971	207,581	124	2	62.
1970	174,406	444	11	40.4
1969	158,190	332	11	30.2
1968	193,050	268	10	26.8
1967	254,855	3,690	68	54.3
1966	190,546	345	8	43.1
1965	153,800	424	9	47.1
1964	160,593	341	11	31.0

No. 24 - LUMBER AND WOOD PRODUCTS, EXCEPT FURNITURE

YEAR	ORIGINATED NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	105,310,976	116,447	4,728	24.6
1973	108,896,517	123,378	4,972	24.8
1972	109,986,358	116,207	4,439	26.2
1971	104,687,400	126,285	4,493	28.1
1970	101,900,587	165,503	5,513	30.0
1969	99,872,070	177,876	6,280	28.3
1968	98,101,958	174,391	6,355	27.4
1967	91,907,190	172,484	6,043	28.5
1966	93,502,823	161,041	6,059	26.6
1965	87,915,309	144,695	5,678	25.5
1964	85,433,189	106,497	5,945	17.9

No. 25 - FURNITURE AND FIXTURES

YEAR	ORIGINATED NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	2,050,647	39,840	3,673	10.8
1973	2,323,897	38,271	3,627	10.6
1972	2,001,780	33,486	3,345	10.0
1971	1,730,344	29,709	3,028	9.8
1970	1,669,803	31,973	3,109	10.3
1969	1,776,583	36,455	3,719	9.8
1968	1,762,353	27,441	2,830	9.7
1967	1,678,117	22,188	2,350	9.4
1966	1,764,771	20,685	2,158	9.6
1965	1,546,192	18,928	1,859	10.2
1964	1,448,705	15,944	1,625	9.8

No. 26 - PULP, PAPER AND ALLIED PRODUCTS

YEAR	ORIGINATED NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	48,125,418	101,177	2,971	34.1
1973	46,488,228	111,114	3,294	33.7
1972	44,299,170	99,110	3,072	32.3
1971	42,165,932	108,109	3,470	31.2
1970	42,497,614	114,831	3,883	29.6
1969	42,529,357	112,572	3,959	28.4
1968	40,272,255	97,001	3,421	28.4
1967	37,193,253	102,117	3,671	27.8
1966	36,868,275	98,162	3,553	27.6
1965	33,996,646	91,322	3,324	27.5
1964	32,971,829	94,816	3,630	26.1

No. 27 - PRINTED MATTER

YEAR	ORIGINATED NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	448,533	28,865	977	29.5
1973	508,386	29,382	952	30.9
1972	567,987	32,550	901	36.1
1971	595,303	35,500	999	35.5
1970	726,601	40,719	1,246	32.7
1969	729,114	41,972	1,343	31.3
1968	786,357	43,684	1,439	30.4
1967	783,691	42,357	1,392	30.4
1966	747,376	37,505	1,185	31.6
1965	711,689	32,317	987	32.7
1964	712,798	27,343	858	31.9

No. 28 - CHEMICALS AND ALLIED PRODUCTS

YEAR	ORIGINATED NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	101,437,808	1,760,795	25,928	67.9
1973	99,690,846	1,889,531	28,727	65.8
1972	95,162,609	1,887,593	30,313	62.3
1971	90,820,709	1,935,744	31,885	60.7
1970	91,645,042	1,929,577	33,353	57.9
1969	92,124,593	1,717,978	32,351	53.1
1968	87,088,964	1,503,679	30,463	49.4
1967	81,851,937	1,393,263	29,308	47.5
1966	78,082,718	1,176,268	25,835	45.5
1965	69,798,947	897,398	21,217	42.3
1964	65,866,987	768,232	18,849	40.8

No. 29 - PETROLEUM AND COAL PRODUCTS

YEAR	ORIGINATED NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	53,023,540	100,164	1,730	57.9
1973	52,605,899	89,213	1,546	57.7
1972	47,956,678	113,251	1,993	56.8
1971	34,185,230	133,536	2,564	52.1
1970	36,269,731	227,352	4,438	51.2
1969	34,579,089	248,691	5,279	47.1
1968	28,895,803	195,307	5,348	36.5
1967	28,005,035	177,477	5,365	33.1
1966	28,086,754	177,170	5,536	32.0
1965	28,278,708	156,429	5,007	31.2
1964	30,029,756	195,366	6,190	31.6

No. 30 - RUBBER AND MISCELLANEOUS PLASTIC PRODUCTS

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	3,767,237	98,089	6,672	14.7
1973	3,922,358	116,978	8,840	13.2
1972	4,037,265	112,869	8,153	13.8
1971	3,839,183	107,031	7,326	14.6
1970	3,805,805	110,663	8,066	13.7
1969	3,601,063	111,393	8,120	13.7
1968	3,271,056	64,884	4,978	13.0
1967	2,870,170	35,605	2,860	12.4
1966	2,739,828	54,299	4,489	12.1
1965	2,429,900	36,128	2,982	12.1
1964	2,138,210	33,614	2,889	11.6

No. 31 - LEATHER AND LEATHER PRODUCTS

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	65,203	298	10	29.8
1973	52,114	103	2	51.5
1972	54,612	354	9	39.3
1971	62,056	126	3	42.0
1970	74,961	2,161	45	70.2
1969	90,658	405	7	57.9
1968	111,931	200	4	50.
1967	118,225	355	8	44.4
1966	94,876	361	6	60.2
1965	88,537	847	15	56.5
1964	87,538	737	11	67.0

No. 32 - STONE, CLAY AND GLASS PRODUCTS

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER YEAR
1974	67,970,697	1,597,264	23,519	67.9
1973	72,624,259	1,788,637	26,667	67.1
1972	73,456,694	1,602,937	23,221	69.0
1971	69,912,213	1,785,544	27,126	65.8
1970	71,086,294	2,629,946	31,679	51.5
1969	77,864,130	2,619,260	41,894	62.5
1968	77,324,000	2,706,774	43,288	62.5
1967	77,032,818	2,925,747	47,429	61.7
1966	78,454,508	3,355,231	55,455	60.5
1965	77,026,021	3,142,747	53,037	59.3
1964	70,964,986	2,549,537	44,358	57.5

No. 33 - PRIMARY METAL PRODUCTS

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	70,319,074	338,606	6,592	51.4
1973	71,426,643	354,122	6,526	54.3
1972	60,882,788	212,695	4,343	49.0
1971	72,087,690	206,039	4,034	51.1
1970	82,196,751	229,061	4,905	46.7
1969	87,104,979	250,232	5,439	46.0
1968	91,007,989	194,357	4,386	44.3
1967	83,722,143	214,707	5,066	42.4
1966	91,845,338	266,985	6,324	42.2
1965	90,011,388	224,759	5,486	41.0
1964	83,184,770	186,376	4,860	38.3

No. 34 - FABRICATED METAL PRODUCTS, EXCEPT ORDNANCE MACHINERY AND TRANSPORTATION

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	11,285,785	81,069	3,600	22.5
1973	10,650,183	66,186	3,077	21.5
1972	9,379,995	66,838	3,030	22.1
1971	10,109,049	80,986	3,467	23.4
1970	11,284,362	80,117	3,203	25.0
1969	11,606,103	72,539	3,166	22.9
1968	12,526,208	75,786	3,428	22.1
1967	13,321,307	82,960	3,393	24.5
1966	11,657,603	73,947	3,229	22.9
1965	10,906,743	51,224	2,308	22.2
1964	9,291,556	64,137	3,104	20.7

No. 35 - MACHINERY, EXCEPT ELECTRICAL

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	4,241,355	216,583	13,049	16.6
1973	4,075,211	200,322	12,329	16.2
1972	3,748,378	182,745	11,277	16.2
1971	3,821,264	157,745	9,907	15.9
1970	4,626,733	173,756	10,722	16.2
1969	6,487,608	195,000	12,635	15.4
1968	6,649,659	214,215	13,702	15.6
1967	6,498,290	213,547	13,654	15.6
1966	6,851,830	214,015	13,725	15.6
1965	6,612,454	191,792	12,160	15.8
1964	6,814,590	201,314	12,930	15.6

No. 39 - MISCELLANEOUS PRODUCTS OF MANUFACTURING

YEAR	ORIGINATED NATIONAL TONS	ORIGINATED IOWA TONS	ORIGINATED IOWA CARS	ORIGINATED IOWA AVERAGE TONS PER CAR
1974	494,706	4,103	222	18.5
1973	541,163	3,553	191	18.6
1972	567,397	1,890	151	12.5
1971	555,867	2,281	163	14.0
1970	602,170	1,938	139	13.9
1969	571,233	1,337	107	12.5
1968	562,464	1,967	133	14.8
1967	526,749	1,239	87	14.2
1966	564,492	1,214	88	13.8
1965	574,004	568	47	12.1
1964	529,088	504	31	16.3

No. 40 - WASTE AND SCRAP MATERIALS

YEAR	ORIGINATED NATIONAL TONS	ORIGINATED IOWA TONS	ORIGINATED IOWA CARS	ORIGINATED IOWA AVERAGE TONS PER CAR
1974	48,128,861	808,422	15,871	50.9
1973	44,657,546	585,434	11,562	50.6
1972	39,794,825	430,741	8,392	51.3
1971	37,483,160	415,939	8,374	49.7
1970	39,811,211	504,531	10,097	50.0
1969	41,847,794	431,050	8,987	48.0
1968	38,486,448	372,614	7,810	47.7
1967	36,510,770	379,301	7,743	49.0
1966	37,993,809	437,219	9,120	47.9
1965	37,818,117	387,437	8,676	44.7
1964	35,248,016	371,980	8,306	44.8

No. 41 MISCELLANEOUS FREIGHT SHIPMENTS

YEAR	ORIGINATED NATIONAL TONS	ORIGINATED IOWA TONS	ORIGINATED IOWA CARS	ORIGINATED IOWA AVERAGE TONS PER CAR
1974	685,840	14,617	427	34.2
1973	663,780	5,324	417	12.8
1972	615,261	8,223	612	13.4
1971	722,959	5,131	366	14.0
1970	693,584	9,312	338	27.6
1969	697,766	6,895	303	22.8
1968	811,578	10,712	548	19.5
1967	767,104	8,827	453	19.5
1966	805,912	5,124	222	23.1
1965	867,154	4,947	231	21.4
1964	1,045,381	7,796	311	25.1

No. 36 - ELECTRICAL MACHINERY, EQUIPMENT AND SUPPLIES

YEAR	ORIGINATED NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	4,408,606	168,942	11,069	15.3
1973	4,806,896	189,990	13,675	13.9
1972	4,550,394	143,908	10,567	13.6
1971	4,155,826	133,085	11,550	11.5
1970	4,050,671	166,603	14,323	11.6
1969	4,099,767	147,184	13,134	11.2
1968	3,955,152	122,762	11,251	10.9
1967	3,671,200	113,961	10,325	11.0
1966	3,678,345	108,157	9,234	11.7
1965	3,311,102	85,580	7,620	11.2
1964	3,122,804	75,100	6,687	11.2

No. 37 - TRANSPORTATION EQUIPMENT

YEAR	ORIGINATED NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	29,818,152	38,381	2,808	13.7
1973	34,275,964	56,447	3,985	14.2
1972	31,372,525	61,315	4,222	14.5
1971	29,452,905	54,389	3,259	16.7
1970	24,172,153	28,674	2,367	12.1
1969	28,847,632	47,083	3,970	11.9
1968	27,340,892	39,583	3,240	12.2
1967	23,764,747	25,078	1,613	15.5
1966	25,993,868	12,662	835	15.2
1965	25,716,152	11,925	809	14.7
1964	20,331,517	12,681	986	12.9

No. 38 - INSTRUMENTS, PHOTOGRAPHIC & OPTICAL GOODS, WATCHES AND CLOCKS

YEAR	ORIGINATED NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	100,497	18	1	18.
1973	109,601	78	1	18.
1972	98,320	-	-	-
1971	100,404	17	1	17.
1970	94,550	301	5	60.2
1969	93,256	157	4	39.3
1968	83,673	155	4	38.9
1967	88,767	156	3	52.0
1966	76,181	219	9	24.3
1965	60,419	360	8	45.0
1964	67,112	217	5	43.0

No. 42 - CONTAINERS, SHIPPING RETURNED EMPTY

YEAR	ORIGINATED NATIONAL TONS	ORIGINATED IOWA TONS	ORIGINATED IOWA CARS	ORIGINATED IOWA AVERAGE TONS PER CAR
1974	1,299,184	20,965	1,714	12.2
1973	1,110,404	24,498	2,089	11.7
1972	944,774	23,865	2,097	11.4
1971	953,812	27,459	2,424	11.3
1970	998,125	32,756	2,218	14.8
1969	1,099,247	29,336	2,257	13.0
1968	1,113,561	30,563	2,512	12.2
1967	1,166,577	30,093	2,494	12.1
1966	1,152,435	33,390	3,266	10.2
1965	1,033,995	29,811	2,838	10.5
1964	973,294	33,029	3,439	9.6

No. 44 - FREIGHT FORWARDERS TRAFFIC

YEAR	ORIGINATED NATIONAL TONS	ORIGINATED IOWA TONS	ORIGINATED IOWA CARS	ORIGINATED IOWA AVERAGE TONS PER CAR
1974	3,999,898	552	21	26.3
1973	4,313,746	797	29	27.5
1972	3,977,334	6,744	361	18.7
1971	3,827,715	1,170	57	20.5
1970	4,706,604	3,078	207	14.9
1969	4,846,093	1,374	75	18.3
1968	4,678,617	2,402	102	23.5
1967	4,820,202	844	33	25.6
1966	5,247,678	525	19	27.6
1965	4,785,587	563	37	15.2
1964	4,753,768	336	29	11.6

No. 45 - SHIPPER ASSOCIATION OR SIMILAR TRAFFIC

YEAR	ORIGINATED NATIONAL TONS	ORIGINATED IOWA TONS	ORIGINATED IOWA CARS	ORIGINATED IOWA AVERAGE TONS PER CAR
1974	6,805,600	17,081	731	23.4
1973	6,417,905	11,532	604	19.1
1972	5,659,383	10,514	561	18.7
1971	4,765,002	4,654	291	16.0
1970	4,288,804	1,438	56	25.7
1969	4,031,252	1,270	93	13.7
1968	3,602,308	612	24	25.5
1967	3,102,308	397	29	13.7
1966	2,834,757	271	16	16.9
1965	2,520,110	409	35	11.7
1964	2,413,474	953	96	9.9

No. 46 - MISCELLANEOUS MIXED SHIPMENTS EXCEPT FORWARDER & SHIPPER ASSOCIATION

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974	21,114,627	129,383	5,942	21.8
1973	19,999,666	121,342	6,043	20.1
1972	15,167,204	91,218	4,784	19.1
1971	11,035,308	41,188	2,102	19.6
1970	10,603,499	41,408	1,488	27.8
1969	11,055,775	27,215	1,254	21.7
1968	10,554,979	21,540	1,083	19.9
1967	8,883,463	26,237	1,290	20.3
1966	9,144,625	29,228	1,473	19.8
1965	8,490,707	28,638	1,524	18.8
1964	7,278,129	33,518	1,791	18.7

GRAND TOTAL ALL COMMODITIES

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974		30,158,890	518,323	58.2
1973		30,386,689	542,654	56.
1972		22,953,307	446,581	51.4
1971		25,432,194	513,919	49.5
1970		27,400,765	559,639	49.
1969		24,299,551	534,008	45.5
1968		22,118,717	511,542	43.2
1967		23,000,716	531,868	43.3
1966		24,685,943	564,530	44.
1965		22,487,973	526,473	43.
1964		20,963,681	512,373	41.

TOTAL ALL COMMODITIES LESS FARM PRODUCTS

ORIGINATED

YEAR	NATIONAL TONS	IOWA TONS	IOWA CARS	IOWA AVERAGE TONS PER CAR
1974		16,069,122	339,665	47.3
1973		15,935,218	347,751	45.8
1972		14,181,696	314,183	45.1
1971		15,549,282	360,094	43.2
1970		16,450,412	385,440	42.7
1969		16,907,609	410,547	41.2
1968		16,154,309	407,644	39.6
1967		16,405,889	414,182	39.6
1966		16,371,751	416,910	39.3
1965		14,689,463	384,799	38.2
1964		14,494,573	390,356	37.1

BEFORE THE

INTERSTATE COMMERCE COMMISSION

DOCKET EXPARTE 270 SUB 9

APPENDIX D

ESTIMATES OF CORN, SOYBEANS AND OATS THAT REQUIRED TRANSPORTATION SERVICES IN 1960 AND 1972 AND PROJECTED QUANTITIES OF THESE GRAINS REQUIRING TRANSPORTATION IN 1980 AND 1985

SOURCE: PROJECTED QUANTITIES OF GRAIN AND FERTILIZER REQUIRING TRANSPORTATION SERVICES IN IOWA IN 1979-80 AND 1984-85 BY COUNTIES

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Thomas E. Fenton
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CENTER FOR AGRICULTURE AND RURAL DEVELOPMENT
IOWA STATE UNIVERSITY 1974

PRESENTED ON BEHALF OF
RATE ANALYSIS SECTION
IOWA DEPARTMENT OF TRANSPORTATION

Estimated quantities of corn sold through commercial channels in 1960 and 1972 and projections for 1980 and 1985 under average and high productivity growth rates and maximum soil conservation assumptions, in thousands of bushels, by counties, Iowa.

County	Estimated		Average Prod. Growth Rate		High Prod. Growth Rate	
	1960	1972	1980	1985	1980	1985
Adair	2,060	4,030	5,584	6,119	5,580	6,077
Adams	1,250	3,241	4,262	4,735	4,259	4,706
Allamakee	- 735	1,407	2,748	3,234	2,743	3,198
Appanoose	659	1,701	2,645	2,889	2,644	2,874
Audubon	2,059	3,275	4,065	4,540	4,060	4,498
Benton	6,109	9,422	14,411	15,937	14,404	15,850
Black Hawk	4,619	7,726	11,821	13,140	11,816	13,080
Boone	6,485	9,241	13,861	15,537	13,856	15,466
Bremer	2,008	4,851	7,743	8,713	7,738	8,667
Buchanan	3,887	7,052	11,888	13,476	11,883	13,408
Buena Vista	5,295	7,825	10,065	10,988	10,060	11,021
Butler	5,121	8,069	11,182	12,367	11,176	12,301
Calhoun	6,904	6,745	11,014	12,007	11,010	11,948
Carroll	3,644	1,017	5,100	5,484	5,095	5,421
Cass	2,501	5,262	7,362	8,328	7,357	8,276
Cedar	2,513	7,887	10,917	12,233	10,910	12,155
Cerro Gordo	6,611	10,220	13,080	14,379	13,075	14,314
Cherokee	2,656	4,830	6,104	6,905	6,099	6,852
Chickasaw	2,426	4,230	6,953	7,767	6,949	7,722
Clarke	630	1,690	2,006	2,152	2,005	2,137
Clay	5,456	8,457	9,900	10,972	9,896	10,917
Clayton	- 802	3,218	8,405	10,013	8,397	9,941
Clinton	3,909	7,213	11,904	13,528	11,896	13,438
Crawford	3,835	4,008	5,353	5,753	5,346	5,692
Dallas	5,493	10,169	13,175	14,731	13,171	14,667
Davis	580	2,528	3,073	3,472	3,071	3,451
Decatur	206	1,699	2,711	3,013	2,709	2,996
Delaware	115	1,875	7,383	8,458	7,375	8,383
Des Moines	2,860	5,648	8,523	9,495	8,521	9,455
Dickinson	1,814	5,468	6,591	7,225	6,589	7,190
Dubuque	-1,038	1,279	4,362	5,130	4,354	5,072
Emmet	3,726	7,608	9,302	9,692	9,299	10,113
Fayette	2,544	6,844	11,273	12,870	11,265	12,796
Floyd	5,357	7,922	10,569	11,620	10,565	11,568
Franklin	7,148	9,802	13,655	14,959	13,649	14,884
Fremont	5,930	9,164	9,878	10,721	9,876	10,676
Greene	6,839	8,923	14,078	15,388	14,073	15,321
Grundy	6,307	9,328	14,061	15,722	14,055	15,646
Guthrie	3,640	4,431	6,350	6,830	6,347	6,789
Hamilton	6,730	10,193	15,094	16,187	15,088	16,645
Hancock	5,815	10,523	15,197	16,055	15,192	16,742
Hardin	6,663	8,007	11,455	12,810	11,450	12,737
Harrison	7,222	10,966	13,584	14,873	13,579	14,810
Henry	1,852	5,433	8,514	9,731	8,511	9,683
Howard	2,350	2,936	5,512	6,268	5,508	6,230
Humboldt	5,660	9,293	12,237	13,011	12,233	13,456
Ida	2,337	4,420	4,060	4,672	4,055	4,626
Iowa	1,612	4,768	5,906	6,495	5,901	6,442
Jackson	930	1,660	4,484	5,139	4,478	5,089

County	Estimated		Average Prod. Growth Rate		High Prod. Growth Rate	
	1960	1972	1980	1985	1980	1985
Jasper	3,939	9,862	13,014	14,494	13,008	14,415
Jefferson	1,586	3,609	5,273	5,911	5,271	5,879
Johnson	1,474	4,978	7,756	8,591	7,751	8,531
Jones	1,086	3,983	7,581	8,615	7,574	8,552
Keokuk	2,062	4,638	7,166	7,918	7,161	7,863
Kossuth	10,613	18,955	26,679	27,754	26,670	28,934
Lee	2,057	5,692	10,035	11,805	10,032	11,753
Linn	4,057	10,268	14,648	16,311	14,642	16,236
Louisa	2,200	4,943	9,111	10,240	9,108	10,197
Lucas	216	1,310	2,088	2,274	2,086	2,256
Lyon	1,925	3,608	4,943	5,508	4,937	5,451
Madison	2,428	4,256	5,131	5,500	5,129	5,467
Mahaska	1,891	3,813	6,412	7,147	6,407	7,090
Marion	7,718	3,236	4,404	4,822	4,400	4,784
Marshall	5,668	9,925	14,154	15,878	14,148	15,804
Mills	4,394	4,473	5,808	6,288	5,806	6,254
Mitchell	4,004	4,378	7,256	8,009	7,241	7,961
Monona	6,070	11,110	13,153	14,582	13,148	14,519
Monroe	239	1,310	1,580	1,692	1,579	1,680
Montgomery	1,762	3,753	4,449	4,858	4,446	4,824
Muscatine	2,514	4,180	6,757	7,480	6,754	7,439
O'Brien	3,788	6,036	7,850	8,750	7,844	8,688
Osceola	2,586	4,967	6,717	7,541	6,713	7,498
Page	1,678	4,300	4,959	5,470	4,956	5,431
Palo Alto	6,452	10,504	12,881	13,610	12,877	14,220
Plymouth	3,872	5,093	8,604	9,917	8,594	9,824
Pocahontas	6,713	9,585	12,153	13,203	12,148	13,404
Polk	5,127	8,903	12,298	13,641	12,294	13,588
Pottawattamie	5,986	9,095	12,183	14,107	12,174	14,012
Poweshiek	2,787	5,657	7,250	7,780	7,245	7,731
Ringgold	924	2,461	3,154	3,484	3,152	3,461
Sac	3,552	3,033	4,923	5,487	4,917	5,430
Scott	2,569	6,501	9,521	10,586	9,515	10,528
Shelby	4,865	5,630	6,902	7,478	6,944	7,434
Sioux	2,560	- 371	996	1,167	988	1,085
Story	8,640	9,962	14,087	15,495	14,082	15,428
Tama	4,805	9,994	14,073	15,715	14,065	15,633
Taylor	732	1,956	2,906	3,192	2,903	3,164
Union	1,057	1,786	2,970	3,234	2,968	3,213
Van Buren	1,202	2,623	4,185	4,671	4,182	4,646
Wapello	1,824	3,604	5,143	5,796	5,141	5,769
Warren	1,832	4,582	5,975	6,542	5,973	6,508
Washington	1,046	4,621	8,609	9,707	8,603	9,642
Wayne	916	3,116	3,809	4,219	3,807	4,194
Webster	9,790	12,537	16,576	18,303	16,571	18,225
Winnebago	4,847	7,700	9,981	10,988	9,977	10,941
Winneshiek	- 545	1,905	4,977	5,780	4,969	5,722
Woodbury	4,987	7,682	7,721	8,464	7,715	8,398
Worth	4,214	7,518	9,404	10,499	9,401	10,454
Wright	7,571	13,356	17,164	17,371	17,605	18,051
Total	339,072	590,120	844,789	933,637	844,789	933,637

Estimated quantities of soybeans sold through commercial channels in 1960 and 1972 and projections for 1980 and 1985 under average and high productivity growth rates and maximum soil conservation assumptions, in thousands of bushels, by counties, Iowa.

County	Estimated		Average Prod. Growth Rate		High Prod. Growth Rate	
	1960	1972	1980	1985	1980	1985
Adair	223	1,393	2,624	3,268	2,625	3,251
Adams	182	847	1,614	1,939	1,614	1,929
Allamakee	7	89	230	322	230	320
Appanoose	491	819	1,317	1,497	1,318	1,489
Audubon	51	775	2,181	2,970	2,182	2,954
Benton	321	2,608	5,278	6,804	5,278	6,770
Black Hawk	393	1,546	3,329	4,080	3,329	4,059
Boone	1,117	2,849	4,670	5,442	4,671	5,414
Bremer	227	1,159	2,065	2,519	2,066	2,506
Buchanan	255	1,512	2,879	3,545	2,880	3,527
Buena Vista	1,103	2,711	4,588	5,328	4,590	5,302
Butler	405	1,771	3,091	3,766	3,092	3,746
Calhoun	2,000	3,255	5,539	6,253	5,538	6,222
Carroll	545	1,687	3,499	4,178	3,500	4,157
Cass	106	1,199	2,596	3,414	2,597	3,397
Cedar	161	2,087	3,851	5,166	3,851	5,140
Cerro Gordo	631	2,093	3,956	4,752	3,957	4,728
Cherokee	809	1,703	2,953	3,399	2,955	3,381
Chickasaw	327	1,043	1,921	2,264	1,922	2,252
Clarke	245	617	1,029	1,196	1,030	1,191
Clay	1,086	2,806	4,372	5,100	4,373	5,074
Clayton	7	82	226	315	226	313
Clinton	167	1,488	3,043	4,016	3,044	3,995
Crawford	81	1,001	3,434	4,770	3,435	4,746
Dallas	1,188	2,588	3,941	4,509	3,942	4,485
Davis	470	880	1,192	1,375	1,192	1,368
Decatur	227	621	1,008	1,151	1,009	1,146
Delaware	55	556	1,402	1,892	1,402	1,882
Des Moines	581	1,419	2,008	2,360	2,009	2,348
Dickinson	479	1,570	2,530	3,002	2,531	2,986
Dubuque	1	60	249	421	249	419
Emmet	914	2,168	3,268	3,575	3,270	3,689
Fayette	426	1,252	2,126	2,512	2,126	2,500
Floyd	424	1,852	3,450	4,194	3,451	4,173
Franklin	661	2,782	4,937	6,079	4,938	6,049
Fremont	460	1,719	2,970	3,462	2,971	3,445
Greene	1,525	2,850	4,952	5,617	4,953	5,588
Grundy	663	2,422	4,321	5,230	4,321	5,203
Guthrie	472	1,559	2,779	3,303	2,780	3,285
Hamilton	1,503	3,608	5,817	6,567	5,817	6,727
Hancock	1,098	3,053	5,273	6,041	5,274	6,234
Hardin	711	2,936	5,049	6,142	5,049	6,110
Harrison	551	1,426	2,919	3,419	2,921	3,401
Henry	482	1,819	2,575	3,098	2,576	3,083
Howard	343	681	1,675	1,983	1,676	1,973
Humboldt	1,174	2,783	4,310	4,838	4,311	4,984
Ida	245	1,027	2,256	2,774	2,257	2,761
Iowa	185	1,204	2,179	2,792	2,179	2,778
Jackson	15	192	447	604	447	601

(cont. on next page)

County	Estimated		Average Prod. Growth Rate		High Prod. Growth Rate	
	1960	1972	1980	1985	1980	1985
Jasper	511	2,276	4,000	4,958	4,000	4,934
Jefferson	620	1,504	2,225	2,611	2,226	2,597
Johnson	280	1,536	2,394	2,965	2,394	2,949
Jones	57	806	2,080	2,871	2,081	2,856
Keokuk	679	1,695	2,391	2,786	2,392	2,773
Kossuth	2,522	5,589	9,123	9,989	9,125	10,308
Lee	599	1,270	1,842	2,178	1,843	2,167
Linn	277	1,939	3,560	4,512	3,561	4,488
Louisa	580	1,632	2,332	2,757	2,333	2,744
Lucas	287	585	1,111	1,294	1,111	1,288
Lyon	514	1,312	2,278	2,651	2,279	2,638
Madison	545	1,499	2,386	2,803	2,387	2,789
Mahaska	633	2,089	3,234	3,853	3,235	3,833
Marion	423	1,587	2,200	2,600	2,201	2,587
Marshall	516	2,249	3,947	4,833	3,947	4,808
Mills	173	1,383	2,861	3,501	2,862	3,484
Mitchell	371	1,124	2,442	2,948	2,442	2,932
Monona	1,098	1,575	2,433	2,752	2,434	2,738
Monroe	265	545	792	907	792	903
Montgomery	161	1,300	2,596	3,270	2,596	3,253
Muscatine	441	1,303	1,957	2,320	1,957	2,309
O'Brien	1,399	2,979	4,288	4,912	4,289	4,887
Osceola	786	1,747	2,643	3,056	2,644	3,040
Page	281	1,781	3,113	3,771	3,114	3,752
Palo Alto	1,336	3,350	5,342	5,987	5,342	6,208
Plymouth	470	1,386	3,300	4,011	3,302	3,991
Pocahontas	1,806	3,997	6,207	7,054	6,207	7,148
Polk	1,113	2,246	3,708	4,272	3,709	4,249
Pottawattamie	281	2,300	5,441	7,030	5,442	6,996
Poweshiek	349	1,839	3,417	4,277	3,417	4,254
Ringgold	402	803	1,325	1,527	1,325	1,520
Sac	748	1,843	3,669	4,299	3,669	4,277
Scott	202	1,247	2,259	2,837	2,259	2,822
Shelby	43	1,097	3,974	4,089	4,112	4,425
Sioux	719	1,457	2,605	3,005	2,606	2,990
Story	1,008	3,126	5,006	5,887	5,007	5,857
Tama	478	2,517	4,669	5,859	4,670	5,828
Taylor	402	1,006	1,867	2,184	1,867	2,174
Union	208	629	1,124	1,314	1,125	1,307
Van Buren	661	1,069	1,213	1,376	1,214	1,369
Wapello	673	1,218	1,897	2,200	1,897	2,189
Warren	633	1,298	2,025	2,293	2,026	2,282
Washington	566	2,206	3,367	4,063	3,368	4,042
Wayne	461	947	1,501	1,720	1,502	1,713
Webster	2,405	4,478	7,209	8,197	7,210	8,156
Winnebago	683	1,966	3,599	4,338	3,600	4,315
Winneshiek	56	263	631	802	631	798
Woodbury	715	1,199	2,289	2,639	2,290	2,627
Worth	671	1,271	2,548	2,962	2,549	2,946
Wright	1,494	3,819	6,135	6,624	6,253	6,836
Total	58,394	170,049	298,473	355,188	298,798	355,457

Estimated quantities of oats sold through commercial channels in 1960 and 1972 and projections for 1980 and 1985 under average and high productivity growth rates and maximum soil conservation assumptions, in thousands of bushels, by counties, Iowa.

County	Estimated		Average Prod. Growth Rate		High Prod. Growth Rate	
	1960	1972	1980	1985	1980	1985
Adair	424	348	331	351	328	343
Adams	241	206	185	196	184	192
Allamakee	135	122	149	162	148	158
Appanoose	46	96	102	109	100	107
Audubon	365	285	245	256	242	249
Benton	1,298	729	757	779	751	762
Black Hawk	755	363	358	364	355	356
Boone	1,089	423	380	378	377	371
Bremer	467	307	323	342	320	334
Buchanan	734	441	468	496	465	484
Buena Vista	1,089	409	340	135	337	327
Butler	660	465	437	459	433	449
Calhoun	1,303	414	351	343	348	336
Carroll	768	432	375	379	372	371
Cass	431	272	245	253	243	247
Cedar	815	433	497	513	493	501
Cerro Gordo	771	276	279	277	276	271
Cherokee	710	328	292	295	289	288
Chickasaw	346	230	289	314	287	306
Clarke	153	221	217	239	215	235
Clay	959	315	258	249	254	244
Clayton	220	206	249	271	246	263
Clinton	688	440	486	505	483	494
Crawford	759	545	470	491	466	480
Dallas	883	305	269	265	267	259
Davis	47	137	129	143	129	140
Decatur	83	116	122	131	122	128
Delaware	348	297	355	384	352	375
Des Moines	266	115	128	130	128	127
Dickinson	498	231	188	188	187	184
Dubuque	319	340	386	421	383	410
Emmet	675	154	141	134	141	131
Fayette	474	349	423	458	420	447
Floyd	629	264	268	271	266	265
Franklin	894	391	322	318	319	311
Fremont	87	16	7	6	7	6
Greene	1,024	257	206	199	205	195
Grundy	883	373	365	367	362	359
Guthrie	516	317	291	300	288	293
Hamilton	1,354	348	261	125	259	244
Hancock	888	385	340	158	337	167
Hardin	856	256	215	209	214	205
Harrison	443	270	191	194	190	191
Henry	270	156	165	171	165	167
Howard	322	178	269	294	267	286
Humboldt	793	217	184	52	183	150
Ida	517	329	260	265	256	258
Iowa	457	420	425	454	422	443
Jackson	265	291	319	344	316	336

(cont. on next page)

County	Estimated		Average Prod. Growth Rate		High Prod. Growth Rate	
	1960	1972	1980	1985	1980	1985
Jasper	879	595	608	633	603	619
Jefferson	218	258	249	268	246	263
Johnson	493	364	351	367	348	359
Jones	392	277	312	327	309	319
Keokuk	377	257	287	306	284	298
Kossuth	1,765	576	509	260	505	266
Lee	47	78	65	65	64	64
Linn	977	591	621	640	615	626
Louisa	351	159	142	142	141	139
Lucas	93	147	152	166	151	162
Lyon	771	783	621	648	615	633
Madison	436	304	277	288	275	282
Mahaska	471	327	340	362	338	354
Marion	326	293	264	280	262	273
Marshall	885	350	353	352	350	345
Mills	278	63	42	39	42	39
Mitchell	384	210	254	264	252	258
Monona	319	263	208	218	207	214
Monroe	54	68	63	67	62	66
Montgomery	224	92	66	65	66	64
Muscatine	375	223	218	224	217	219
O'Brien	803	455	401	410	398	400
Osceola	509	422	382	399	379	389
Page	150	76	62	63	62	62
Palo Alto	1,182	405	293	244	291	278
Plymouth	1,150	891	798	830	791	811
Pocahontas	1,242	362	262	104	259	244
Polk	631	286	234	237	233	232
Pottawattamie	889	379	322	324	319	316
Poweshiek	608	525	493	519	489	508
Ringgold	90	152	161	177	160	173
Sac	1,003	429	380	376	376	368
Scott	470	291	302	311	300	304
Shelby	941	717	578	621	655	636
Sioux	940	611	490	500	487	489
Story	1,124	230	193	183	192	179
Tama	883	559	544	559	540	547
Taylor	148	163	161	172	160	169
Union	192	203	193	213	195	209
Van Buren	51	109	124	134	122	131
Wapello	223	190	253	281	251	275
Warren	371	293	267	280	264	274
Washington	474	260	265	275	263	268
Wayne	130	260	245	271	243	265
Webster	1,617	399	308	295	306	288
Winnebago	527	197	217	218	216	214
Winneshiek	240	214	283	310	280	302
Woodbury	666	595	459	478	456	468
Worth	523	230	261	267	259	261
Wright	1,262	299	129	139	279	142
Total	58,171	31,298	29,374	29,308	29,374	29,308

Estimated quantities of corn sold through commercial channels in 1960 and 1972 and projections for 1980 and 1985 under high productivity growth rate and maximum soil conservation assumptions, in thousands of bushels, by counties, Iowa.

County	Estimated		High Prod. Growth Rate	
	1960	1972	1980	1985
Adair	2,060	4,030	6,414	6,920
Adams	1,250	3,241	4,850	5,310
Allamakee	- 735	1,407	3,330	3,806
Appanoose	659	1,701	2,951	3,184
Audubon	2,059	3,275	4,902	5,341
Benton	6,109	9,422	16,210	17,671
Black Hawk	4,619	7,726	13,089	14,366
Boone	6,485	9,241	15,360	17,002
Bremer	2,008	4,851	8,651	9,600
Buchanan	3,887	7,052	13,271	14,842
Buena Vista	5,295	7,825	11,474	11,419
Butler	5,121	8,069	12,554	13,704
Calhoun	6,904	6,745	12,321	13,263
Carroll	3,644	1,017	6,435	6,763
Cass	2,501	5,262	8,455	9,390
Cedar	2,513	7,887	12,523	13,785
Cerro Gordo	6,611	10,220	14,480	15,740
Cherokee	2,656	4,830	7,247	7,996
Chickasaw	2,426	4,230	7,798	8,590
Clarke	630	1,690	2,305	2,440
Clay	5,456	8,457	11,106	12,133
Clayton	- 802	3,218	9,669	11,286
Clinton	3,909	7,213	13,739	14,948
Crawford	3,835	4,008	6,601	6,943
Dallas	5,493	10,169	14,576	16,103
Davis	580	2,528	3,494	3,892
Decatur	206	1,699	3,067	3,364
Delaware	115	1,875	8,785	9,845
Des Moines	2,860	5,648	9,394	10,345
Dickinson	1,814	5,468	7,341	7,950
Dubuque	-1,038	1,279	5,384	6,130
Emmet	3,726	7,608	10,139	9,907
Fayette	2,544	6,844	12,692	14,274
Floyd	5,357	7,922	11,668	12,683
Franklin	7,148	9,802	15,262	16,458
Fremont	5,930	9,164	10,883	11,683
Greene	6,839	8,923	15,559	16,816
Grundy	6,307	9,328	15,678	17,298
Guthrie	3,640	4,431	7,221	7,669
Hamilton	6,730	10,193	16,767	16,542
Hancock	5,815	10,523	16,801	16,404
Hardin	6,663	8,007	13,034	14,341
Harrison	7,222	10,966	14,974	16,091
Henry	1,852	5,433	9,528	10,739
Howard	2,350	2,936	6,180	6,926
Humboldt	5,660	9,293	13,426	13,260
Ida	2,337	4,420	4,995	5,115
Iowa	1,612	4,768	6,961	7,510
Jackson	930	1,660	5,417	6,049

County	Estimated		High Prod. Growth Rate	
	1960	1972	1980	1985
Jasper	3,939	9,862	14,658	16,093
Jefferson	1,586	3,609	5,937	6,566
Johnson	1,474	4,978	8,984	9,790
Jones	1,086	3,983	8,852	9,851
Keokuk	2,062	4,638	8,298	9,033
Kossuth	10,613	18,955	29,037	28,366
Lee	2,057	5,692	11,111	12,906
Linn	4,057	10,268	16,211	17,835
Louisa	2,200	4,943	10,043	11,156
Lucas	216	1,310	2,443	2,624
Lyon	1,925	3,608	6,077	6,593
Madison	2,428	4,256	5,817	6,158
Mahaska	1,891	3,813	7,582	8,286
Marion	718	3,236	5,177	5,569
Marshall	5,668	9,925	15,731	17,416
Mills	4,394	4,473	6,586	7,023
Mitchell	4,004	4,378	8,169	8,900
Monona	6,070	11,110	14,523	15,924
Monroe	239	1,310	1,820	1,924
Montgomery	1,762	3,753	5,205	5,580
Muscatine	2,514	4,180	7,642	8,336
O'Brien	3,788	6,036	9,150	9,999
Osceola	2,586	4,967	7,615	8,409
Page	1,678	4,300	5,801	6,276
Palo Alto	6,452	10,504	14,280	13,890
Plymouth	3,872	5,093	10,446	11,706
Pocahontas	6,713	9,585	13,583	13,472
Polk	5,127	8,903	13,441	14,759
Pottawattamie	5,986	9,095	14,224	15,091
Poweshiek	2,787	5,657	8,264	8,745
Ringgold	924	2,461	3,610	3,934
Sac	3,552	3,033	6,164	6,669
Scott	2,569	6,501	10,743	11,774
Shelby	4,865	5,630	8,167	8,678
Sioux	2,560	- 371	2,646	2,730
Story	8,640	9,962	15,573	16,931
Tama	4,805	9,994	15,774	17,368
Taylor	732	1,956	3,447	3,720
Union	1,057	1,786	3,388	3,637
Van Buren	1,202	2,623	4,676	5,158
Wapello	1,824	3,604	5,711	6,360
Warren	1,832	4,582	6,689	7,235
Washington	1,046	4,621	9,968	11,044
Wayne	916	3,116	4,304	4,706
Webster	9,790	12,537	18,302	19,827
Winnebago	4,847	7,700	10,996	11,741
Winneshiek	- 545	1,905	5,908	6,695
Woodbury	4,987	7,682	9,123	9,799
Worth	4,214	7,518	10,343	11,421
Wright	7,571	13,356	18,187	17,704
Total	339,072	590,120	955,387	1,029,243

Estimated quantities of soybeans sold through commercial channels in 1960 and 1972 and projections for 1980 and 1985 under high productivity growth rate and maximum soil conservation assumptions, in thousands of bushels, by counties, Iowa.

County	Estimated		High Prod. Growth Rate	
	1960	1972	1980	1985
Adair	223	1,393	2,803	3,621
Adams	182	847	1,724	2,149
Allamakee	7	89	246	357
Appanoose	491	819	1,408	1,660
Audubon	51	775	2,330	3,290
Benton	321	2,608	5,637	7,539
Black Hawk	393	1,546	3,557	4,521
Boone	1,117	2,849	4,989	6,030
Bremer	227	1,159	2,207	2,791
Buchanan	255	1,512	3,076	3,928
Buena Vista	1,103	2,711	4,901	5,605
Butler	405	1,771	3,302	4,173
Calhoun	2,000	3,255	5,916	6,929
Carroll	545	1,687	3,738	4,629
Cass	106	1,199	2,774	3,782
Cedar	161	2,087	4,113	5,723
Cerro Gordo	631	2,093	4,226	5,266
Cherokee	809	1,703	3,156	3,766
Chickasaw	327	1,043	2,053	2,509
Clarke	245	617	1,100	1,326
Clay	1,086	2,806	4,671	5,651
Clayton	7	82	241	349
Clinton	167	1,488	3,251	4,405
Crawford	81	1,001	3,668	5,285
Dallas	1,188	2,588	4,211	4,996
Davis	470	880	1,273	1,524
Decatur	227	621	1,077	1,276
Delaware	55	556	1,498	2,097
Des Moines	581	1,419	2,146	2,615
Dickinson	479	1,570	2,704	3,326
Dubuque	1	60	266	467
Emmet	914	2,168	3,447	3,766
Fayette	426	1,252	2,271	2,784
Floyd	424	1,852	3,686	4,647
Franklin	661	2,782	5,274	6,735
Fremont	460	1,719	3,173	3,836
Greene	1,525	2,850	5,291	6,224
Grundy	663	2,422	4,615	5,795
Guthrie	472	1,559	2,969	3,659
Hamilton	1,503	3,608	6,213	6,907
Hancock	1,098	3,053	5,632	6,358
Hardin	711	2,936	5,393	6,805
Harrison	551	1,426	3,119	3,764
Henry	482	1,819	2,751	3,433
Howard	343	681	1,790	2,198
Humboldt	1,174	2,783	4,604	5,090
Ida	245	1,027	2,411	2,955
Iowa	185	1,204	2,328	3,094
Jackson	15	192	478	670

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County	Estimated		High Prod. Growth Rate	
	1960	1972	1980	1985
Jasper	511	2,276	4,273	5,494
Jefferson	620	1,504	2,377	2,892
Johnson	280	1,536	2,557	3,284
Jones	57	806	2,222	3,181
Keokuk	679	1,695	2,555	3,088
Kossuth	2,522	5,589	9,652	10,518
Lee	599	1,270	1,968	2,413
Linn	277	1,939	3,803	4,999
Louisa	580	1,632	2,492	3,056
Lucas	287	585	1,187	1,434
Lyon	514	1,312	2,435	2,938
Madison	545	1,499	2,549	3,107
Mahaska	633	2,089	3,456	4,269
Marion	423	1,587	2,351	2,882
Marshall	516	2,249	4,216	5,354
Mills	173	1,383	3,056	3,879
Mitchell	371	1,124	2,608	3,266
Monona	1,098	1,575	2,600	3,050
Monroe	265	545	846	1,006
Montgomery	161	1,300	2,773	3,622
Muscatine	441	1,303	2,091	2,572
O'Brien	1,399	2,979	4,581	5,443
Osceola	786	1,747	2,824	3,386
Page	281	1,781	3,326	4,179
Palo Alto	1,336	3,350	5,706	6,298
Plymouth	470	1,386	3,526	4,445
Pocahontas	1,806	3,997	6,631	7,410
Polk	1,113	2,246	3,961	4,733
Pottawattamie	281	2,300	5,811	7,485
Poweshiek	349	1,839	3,650	4,738
Ringgold	402	803	1,415	1,692
Sac	748	1,843	3,920	4,763
Scott	202	1,247	2,413	3,143
Shelby	43	1,097	3,948	3,957
Sioux	719	1,457	2,783	3,329
Story	1,008	3,126	5,348	6,523
Tama	478	2,517	4,988	6,492
Taylor	402	1,006	1,995	2,421
Union	208	629	1,201	1,456
Van Buren	661	1,069	1,296	1,525
Wapello	673	1,218	2,026	2,438
Warren	633	1,298	2,164	2,542
Washington	566	2,206	3,597	4,502
Wayne	461	947	1,603	1,906
Webster	2,405	4,478	7,700	9,028
Winnebago	683	1,966	3,845	4,698
Winneshiek	56	263	674	889
Woodbury	715	1,199	2,446	2,925
Worth	671	1,271	2,723	3,282
Wright	1,494	3,819	6,360	6,964
Total	58,394	170,049	318,235	389,201

Estimated quantities of oats sold through commercial channels in 1960 and 1972 and projections for 1980 and 1985 under high productivity growth rate and maximum soil conservation assumptions, in thousands of bushels, by counties, Iowa.

County	Estimated		High Prod. Growth Rate	
	1960	1972	1980	1985
Adair	424	348	332	349
Adams	241	206	186	196
Allamakee	135	122	150	161
Appanoose	46	96	102	109
Audubon	365	285	245	254
Benton	1,298	729	760	776
Black Hawk	755	363	359	363
Boone	1,089	423	381	378
Bremer	467	307	324	340
Buchanan	734	441	470	493
Buena Vista	1,089	409	341	131
Butler	660	465	438	457
Calhoun	1,303	414	352	342
Carroll	768	432	377	377
Cass	431	272	246	251
Cedar	815	433	499	511
Cerro Gordo	771	276	279	276
Cherokee	710	328	293	293
Chickasaw	346	230	290	312
Clarke	153	221	218	239
Clay	959	315	257	249
Clayton	220	206	249	268
Clinton	688	440	488	423
Crawford	759	545	472	489
Dallas	883	305	270	264
Davis	47	137	130	143
Decatur	83	116	123	131
Delaware	348	297	356	382
Des Moines	266	115	129	129
Dickinson	498	231	189	187
Dubuque	319	340	387	417
Emmet	675	154	142	134
Fayette	474	349	424	456
Floyd	629	264	269	270
Franklin	894	391	323	223
Fremont	87	16	7	7
Greene	1,024	257	208	199
Grundy	883	373	366	365
Guthrie	516	317	292	299
Hamilton	1,354	348	262	128
Hancock	888	385	341	162
Hardin	856	256	217	209
Harrison	443	270	192	194
Henry	270	156	166	170
Howard	322	178	270	292
Humboldt	793	217	157	53
Ida	517	329	259	262
Iowa	457	420	427	452
Jackson	265	291	320	343

(cont. on next page)

County	Estimated		High Prod. Growth Rate	
	1960	1972	1980	1985
Jasper	879	595	610	631
Jefferson	218	258	249	267
Johnson	493	364	352	365
Jones	392	277	313	325
Keokuk	377	257	287	304
Kossuth	1,765	576	252	266
Lee	47	78	64	65
Linn	977	591	622	638
Louisa	351	159	142	142
Lucas	93	147	153	165
Lyon	771	783	622	645
Madison	436	304	278	287
Mahaska	471	327	341	361
Marion	326	293	265	278
Marshall	885	350	354	351
Mills	278	63	42	39
Mitchell	384	210	255	262
Monona	319	263	209	218
Monroe	54	68	63	68
Montgomery	224	92	66	65
Muscatine	375	223	219	224
O'Brien	803	455	402	408
Osceola	509	422	383	396
Page	150	76	62	64
Palo Alto	1,182	405	294	250
Plymouth	1,150	891	800	826
Pocahontas	1,242	362	262	107
Polk	631	286	235	236
Pottawattamie	889	379	323	322
Poweshiek	608	525	495	517
Ringgold	90	152	162	177
Sac	1,003	429	380	375
Scott	470	291	303	309
Shelby	941	717	601	636
Sioux	940	611	492	498
Story	1,124	230	194	182
Tama	883	559	546	558
Taylor	148	163	162	172
Union	192	203	198	213
Van Buren	51	109	123	134
Wapello	223	190	254	280
Warren	371	293	267	279
Washington	474	260	266	273
Wayne	130	260	246	270
Webster	1,617	399	309	294
Winnebago	527	197	218	218
Winneshiek	240	214	283	307
Woodbury	666	595	461	476
Worth	523	230	262	266
Wright	1,262	299	134	142
Total	58,171	31,298	29,209	29,05[illegible]

BEFORE THE

INTERSTATE COMMERCE COMMISSION

DOCKET EX PARTE 270 SUB 9

APPENDIX E

LEAST SQUARES TREND FORMAT USED TO CALCULATE TRENDS IN TONS PER CAR BY COMMODITY

PRESENTED ON BEHALF OF
RATE ANALYSIS SECTION
IOWA DEPARTMENT OF TRANSPORTATION

COMMODITY 01
AVERAGE TONS PER CAR

n	Y	X	X^2	XY	Yc
1964	53.0	-5	25	-265	50.7
1965	55.0	-4	16	-220	53.0
1966	56.3	-3	9	-168.9	55.3
1967	56.0	-2	4	-112	
1968	57.4	-1	1	-57.4	
1969	59.9	0	0	0	
1970	62.9	1	1	62.9	
1971	64.3	2	4	128.6	
1972	66.3	3	9	198.9	
1973	74.2	4	16	296.8	
1974	78.9	5	25	394.5	73.7
	684.2		110	258.4	

$a = \frac{\Sigma Y}{n} \quad \frac{684.2}{11} = 62.2$

$b = \frac{\Sigma XY}{\Sigma X^2} \quad \frac{258.4}{110} = 2.3$

$Yc = a+bX \quad 62.2+2.3\ (X)$

BEFORE THE

INTERSTATE COMMERCE COMMISSION

DOCKET EX PARTE 207 SUB 9

APPENDIX F

IOWA RAILROAD ASSISTANCE PROGRAM

PRESENTED ON BEHALF OF
RATE ANALYSIS SECTION
IOWA DEPARTMENT OF TRANSPORTATION

F A C T S H E E T

Iowa Railroad Assistance Program

The State of Iowa in the fall of 1974 initiated a program of direct financial assistance to railroads for the upgrading of their branch line railroad trackage. As far as we have been able to learn, the program is unique in that it provides direct aid and in the three-way agreements among shippers, the railroad and the State that have been developed.

History. The number of railroad abandonments in Iowa increased rapidly in the early 1970s and the ICC's 34-car rule would have facilitated the abandonment of about 1,700 miles of the nearly 5,000 miles of branch lines located in the state. The deteriorating condition of the state's rail systems was dramatized by the railroad's inability to move the large 1972 and 1973 corn and soybean crops to export markets. With these shortcomings as the backdrop, the Legislature in 1974 appropriated $3 million in "financial assistance" to upgrade branch lines.

Energy Policy Council. The Council, a new agency with responsibilities for energy-related programs, was given great latitude in designing the assistance program. The Council made a rapid survey of the state's more than 100 branch lines and identified those with high potential for increased shipments, attractive cost-benefit ratios and other public advantages.

Agreements. The assistance is being provided through negotiated agreements with the railroads and the shippers on a branch line Six agreements have been negotiated. The agreements cover over 300 miles of trackage. The State has agreed to provide $2,869,249 for these six projects. The railroads are putting up $1,814,249; the shippers, $1,641,000. The total cost of the improvements is $6,324,498. In most agreements, the track is improved to FRA Class 2 standards (25 mph) for 263,000 pound cars.

Pay-back Arrangements. The funds advanced by the shippers are repaid to them by the railroads according to formulas based upon the number of cars shipped and the revenues produced. All or a portion of the funds advanced by the State are "rolled over" and used to improve other Iowa branch lines if the traffic on the branch line increases. The shippers, in effect, provide interest-free funds to the railroad. On high-volume lines, all or most of the State's money will be recycled to other projects. On more marginal lines. only a small portion of the money may be reused.

Advantages. The Iowa program has stretched a limited State appropriation into a significant track improvement activity. The railroads and shippers are talking to each other and becoming more familiar with each others' problems. The State is serving as a third party to moderate shipper-railroad disagreements. The railroads and State have entered into discussions on what branch lines

should be continued. The State has become more familiar with railroad problems, such as a shortage of rail and ties. The State has gained some leverage in such areas as trackage agreements between railroads. Branch lines have been improved so as to provide better railroad service to Iowa shippers. Freight has been moved by rail which otherwise would be shifted to trucks.

IOWA BRANCH LINE ASSISTANCE PROGRAM
PRIORITY RATING

November 1, 1975

Branch Line	Railroad	Mileage	Historic Cars/Mi.			Projected Cars/Mi.	Derailments			Track Condition			Load Limit (1000 lb.)		Estimated Total Cost	Percent Participation			Priority Rating							Status
			1972	1973	1974		72	73	74	Rail	Ties	Bal.	Pres.	Proj.		State	Shipper	Railroad	Historic Viability 15	Potential Viability 20	Track Structure 20	Safety 10	Shipper Part. 20	Railroad Part. 15	Total 100	Viability Adjusted	
Orient - Fontanelle	BN	33.0	19.9	30.8	30.4	50	1	3	0	66	Poor	Poor	210	263	650,000	33	33	33	4	20	20	10	15	15	84	84	Negotiations
Palmer - Royal	RI	47.1	49.7	21.4	32.6	50	4	4	1	71[W]	Fair	Poor	210	263	307,700	15	52	33	5	18	15	10	20	15	83	83	Under Const.
Humboldt - Eagle Grove	C&NW	25.4	41.0	70.2	89.8	98	0	0	0	Poor	Poor	Poor	263	263	1,800,000	44	28	28	10	19	20	0	13	13	75	75	Under Const.
Indianola - Carlisle /	RI	11.3	42.7	56.5	62.3	100	0	2	2	Light	Poor	Poor	177	263	600,000	67	33	0	8	20	20	10	15	0	73	73	Complete
Iowa Falls - Estherville	RI	109.5	78.3	95.9	83.2	106	21	36	43	Fair*	Fair	Poor	263	263	863,100	48	52	0	13	9	13	10	20	0	65	65	Under Const.
Estherville - Rake	RI	50.6	49.7	55.1	75.8	77	0	5	0	Fair*	Poor	Poor	263	263	563,100	48	52	0	9	11	17	4	20	0	61	61	Under Const.
Alden - Eldora	C&NW	21.0	258.9	213.2	113.7	229	0	2	1	Poor	Poor	Poor	160	251	1,080,000	67	33	0	15	7	20	4	15	0	61	61	Negotiations
Stockport - Ft. Madison	BN	34.8	41.4	48.3	33.0	48	0	1	2	60[W]	Fair	Fair	177	210	1,425,000	33	33	33	6	7	12	7	15	15	62	60	Negotiations
Spencer - Herndon**	Milw	101.0	86.6	107.5	105.6	110	2	1	4	88[W]	Poor	Poor	220	263	2,000,000	40	20	40	15	4	14	1	10	15	59	59	Under Const.
Ida Grove - Maple River	C&NW	38.4	35.7	59.4	67.9	80	0	0	0	85	Fair	Fair	263	263	176,000	45	45	10	8	19	6	0	20	5	58	58	Complete
Dows - Forest City	RI	44.3	150.5	136.2	83.2	140	3	3	4	75[W]	Fair	Fair	263	263	575,500	48	52	0	15	5	13	5	20	0	58	58	Under Const.
Vinton - Iowa Falls	RI	50.8	149.2	129.4	67.4	129	1	3	4	Fair	Poor	Poor	263	263	1,781,100	67	33	0	15	5	17	3	15	0	55	55	Negotiations
Farragut - Griswold	BN	44.4	86.2	93.5	75.5	97	0	0	0	97[W]	Fair	Fair	263	263	650,000	33	33	33	13	5	6	0	15	15	54	54	Negotiations
Creston - Orient	BN	12.0	26.7	32.8	45.6	50	0	1	1	66	Poor	Poor	210	263	291,000	100	0	0	4	20	20	10	0	0	54	54	Complete
Mona Jct. - Minn. Border	ICG	83.2	51.0	56.4	63.5	65	0	0	0	Fair	Fair	Fair	220	263	557,498	34	32	34	9	6	9	0	14	15	53	53	Under Const.
Cherokee - Minn. Border	ICG	70.0	22.9	21.9	20.6	42	0	0	0	Fair	Fair	Fair	210	210	1,750,000	33	33	33	3	20	9	0	15	15	62	52	Negotiations
Ames - Burt	C&NW	94.2	114.9	122.7	126.5	135	5	1	5	Good	Fair	Good	263	263	6,500,000	36	31	33	15	4	3	1	14	15	52	52	Negotiations

Assumed condition detailed inspection necessary.
Weighted average of weight of rail on line.
* Based on FY 1975 agreements, state provided additional $790,357 in FY 1976 to supplement railroad's share and cover additional cost due to inflation.

EXPENDITURES (Millions of Dollars)

	State	Total
FY 1975 Program	2.6	4.7
FY 1976 Program	1.8 1/	3.1
	4.4	7.8

1/ $1.6 million balance in Assistance Fund for additional FY 1976 projects.

Iowa Railroad Assistance Program
Priority Rating System

The following branch line priority rating system was developed in order to analyze potential branch line rehabilitation candidates objectively and consistently.

Branch lines are rated in six categories. Each category can receive between 0 and the maximum number of points specified. The higher the rating, the higher the priority.

Rating Category	Maximum Points
Historic Viability	15 pts.
Potential Viability	20 pts.
Track Structure	20 pts.
Safety	10 pts.
Shipper Participation	20 pts.
Railroad Participation	15 pts.
	100 pts.

A viability adjustment factor was developed and applied on all branch lines with a projected traffic volume of 50 cars per mile or less. This adjustment factor reduces the final rating in proportion with the projected traffic volume, i.e., the lower the projected cars/mile below 50, the greater the downward adjustment on the total rating, hence, the lower the priority rating. In this way, branch lines which are possible candidates for abandonment will not receive a high priority rating and therefore will not be included in the 1976 program. Prior to the development of the 1977 fiscal year program, all marginal branch lines will be analyzed in depth to determine their future viability and status in the Iowa Rail Transportation Plan presently being developed.

RATING TECHNIQUES

Historic Viability

$$\text{pts.} = \frac{\text{1972 cars/mi.}}{20} + \frac{\text{1973 cars/mi.}}{20} + \frac{\text{1974 cars/mi.}}{20}$$

Max. Rating = 15 pts. when average annual volume (1972-1974) = 100 cars/mi. or more

Potential Viability

$$\text{pts.} = \left\{ \frac{\text{projected cars/mi. (after improvement)}}{\text{ave. cars/mile (72, 73, 74)}} - 1 \right\} \times 40$$

Max. Rating = 20 pts. for 50% increase in volume over 1972-1974 average.

Track Structure

Tie Condition	Pts.	Ballast Condition	Pts.
Good	0	Good	0
Fair	3	Fair	3
Poor	7	Poor	7

Rail Condition	Pts.
Good	0
Fair	3
Poor	6

If rail weight data is available, the following formula is used to assign points for rail condition:

$$\text{Rail condition pts.} = \frac{85\# - \text{rail weight}}{3} \qquad 6 \text{ pts. max.}$$

Max. Rating = 7 + 7 + 6 = 20 pts.

Safety

pts. = (Average derailment Rate: 1972-1974) x (.30)

$$\text{where derailment rate} = \frac{\text{No. derailments}}{\text{1 million car-miles}}$$

Max. Rating = 10 pts. when average derailment rate = 33 or more derailments per 1 million car-mile.

Shipper Participation

pts. = (Percent shipper participation) x (.45)

Max. Rating = 20 pts. at 45% shipper participation.

Railroad Participation

pts. = (% railroad participation) x (.45)

Max. Rating = 15 pts. at 33% railroad participation.

Viability Adjustment

$$\text{Final Adjusted Rating} = \frac{(\text{no. projected cars/mi.})}{50} \times (\text{total rating})$$

IOWA RAILROAD ASSISTANCE PROGRAM
FY'S 1975 - AND 1976 EXPENDITURES

	BRANCH LINE	RAILROAD	MILEAGE	TOTAL ESTIMATED PROJECT	STATE PARTICIPATION	APPRO. 3,000,000.00
E.P.C. - 1975	Indianola-Carlisle	R.I.	11.3	600,000.00	400,000.00	2,600,000.00
	Creston-Orient	B.N.	12.0	291,000.00	291,000.00	2,309,000.00
	Ida Grove-Maple River	C&N.W.	38.4	176,000.00	80,000.00	2,229,000.00
	Spencer-Herndon	MILW.	101.0	2,000,000.00	807,500.00	1,421,500.00
	Mona-Junction-Minn. Border	I.C.G.	83.2	561,000.00	190,749.00	1,230,751.00
	Humboldt-Eagle Grove	C.&N.W.	25.4	1,800,000.00	800,000.00	430,751.00
						3,000,000.00
						3,430,751.00
E.P.C. - 1976	Spencer-Herndon	Milw.	101.0	Supplement	790,357.00	2,640,394.00
	Palmer-Royal	R.I.	47.1)	Iowa Falls Gateway		
	Iowa Falls-Estherville	R.I.	109.5)	(10,500,000.00)		
	Dows-Forest City	R.I.	44.3)	2,309,400.00	1,000,000.00	1,640,394.00
D.O.T - 1976	Orient-Fontanelle*	B.N.	12.0	667,000.00	222,333.00	1,418,061.00
	Alden-Eldora *	C&NW	21.0	1,080,000.00	720,000.00	698,061.00
	Atlantic-Audubon *	R.I.	25.0	830,000.00	406,700.00	291,361.00
	Cherokee-Rock Rapids*	ICG	71.5	(5,900,000.00)		
				1,270,375.00(1976)	635,000.00xx	
	Ames-Burt *	C&NW	94.2	3,500,000.00	2,310,000.00xxx	
	Farragut-Griswold *	B.N.	44.4	650,000.00	217,000.00	
	Iowa Falls-Gateway *	R.I.		2,167,830.00	1,000,000.00	

*PENDING FINAL NEGOTIATIONS

xx

xxx TO BE ADJUSTED AMT. OF APPRO.

IOWA RAILROAD ASSISTANCE PROGRAM
FY'S 1975 - AND 1976 EXPENDITURES

	BRANCH LINE	RAILROAD	MILEAGE	TOTAL ESTIMATED PROJECT	STATE PARTICIPATION	APPRO. 3,000,000.00
E.P.C. - 1975	Indianola-Carlisle	R.I.	11.3	600,000.00	400,000.00	2,600,000.00
	Creston-Orient	B.N.	12.0	291,000.00	291,000.00	2,309,000.00
	Ida Grove-Maple River	C&N.W.	38.4	176,000.00	80,000.00	2,229,000.00
	Spencer-Herndon	MILW.	101.0	2,000,000.00	807,500.00	1,421,500.00
	Mona-Junction-Minn. Border	I.C.G.	83.2	561,000.00	190,749.00	1,230,751.00
	Humboldt-Eagle Grove	C.&N.W.	25.4	1,800,000.00	800,000.00	430,751.00
						3,000,000.00
						3,430,751.00
E.P.C. - 1976	Spencer-Herndon	Milw.	101.0	Supplement	790,357.00	2,640,394.00
	Palmer-Royal	R.I.	47.1)	Iowa Falls Gateway		
	Iowa Falls-Estherville	R.I.	109.5)	(10,500,000.00)		
	Dows-Forest City	R.I.	44.3)	2,309,400.00	1,000,000.00	1,640,394.00
D.O.T - 1976	Orient-Fontanelle*	B.N.	12.0	667,000.00	222,333.00	1,418,061.00
	Alden-Eldora *	C&NW	21.0	1,080,000.00	720,000.00	698,061.00
	Atlantic-Audubon *	R.I.	25.0	830,000.00	406,700.00	291,361.00
	Cherokee-Rock Rapids*	ICG	71.5	(5,900,000.00)		
				1,270,375.00(1976)	635,000.00xx	
	Ames-Burt *	C&NW	94.2	3,500,000.00	2,310,000.00xxx	
	Farragut-Griswold *	B.N.	44.4	650,000.00	217,000.00	
	Iowa Falls-Gateway *	R.I.		2,167,830.00	1,000,000.00	

*PENDING FINAL NEGOTIATIONS

xx
xxx TO BE ADJUSTED AMT. OF APPRO.

BEFORE THE

INTERSTATE COMMERCE COMMISSION

DOCKET EX PARTE 207 SUB 9

APPENDIX G

SINGLE CAR RATES TO SEVEN PRIMARY MARKETS

PRESENTED ON BEHALF OF
RATE ANALYSIS SECTION
IOWA DEPARTMENT OF TRANSPORTATION

SINGLE CAR RATES TO
PRIMARY MARKETS

DISTANCE IN MILES	BETWEEN CHICAGO, ILL. AND*	RATES IN CENTS PER 100 POUNDS AT X-256 LEVEL	RATES IN CENTS PER 100 POUNDS AT X-310 LEVEL
137.3	Clinton	— 29½	49 —
160.0	Grand Mound	30½	52
165.7	Calamus	32½	54
192.3	Mechanicsville	33	56
199.3	Lisbon	— 33½	57 —
221.8	Fairfax	34½	59½
229.2	Norway	35½	60½
239.7	Luzerne	37	63
248.2	Belle Plaine	— 37½	63 —
271.8	Montour	— 39	67 —
275.0	Le Grand	39½	67
290.9	La Moille	— 40	68½ —
305.7	Colo	— 42½	72 —
329.1	Jordan	43	72
334.5	Boone	44	75
343.7	Ogden	— 45	76 —
354.3	Grand Junction	— 46	77 —
370.0	Scranton	48	82
379.9	Glidden	48½	83½
400.4	West Side	— 49½	84½ —
406.5	Vail	50	84½
432.3	Dunlap	50½	86
450.2	Logan	— 53½	91½ —
478.9	Council Bluffs	53½	91½

SOURCE: CNW Freight Tariff 17040-I

* Points are in Iowa unless otherwise shown.

SINGLE CAR RATES TO
PRIMARY MARKETS

DISTANCE IN MILES	BETWEEN OMAHA, NEBR. AND	X-256 LEVEL	X-310 LEVEL
25.4	Council Bluffs	-0-	-0-
29.9	Loveland	15½	27
37.1	Missouri Valley	17	29½
45.3	Logan	18½	31½
53.4	Woodbine	19	31½
63.2	Dunlap	21	36½
71.0	Dow City	21½	36½
73.1	Arion	21½	36½
80.1	Denison	21½	36½
89.0	Vail	22½	39
98.1	Arcadia	23	39
104.1	Maple River	23	39
108.1	Carroll	23	39
115.6	Glidden	24	40½
125.5	Scranton	25½	43
134.6	Jefferson	27½	47
141.2	Grand Junction	27½	47
146.3	Beaver	27½	47
151.8	Ogden	29	49
161.0	Boone	29½	49
178.2	Ames	29½	49
182.6	Nevada	29½	49
189.8	Colo	30½	52
197.6	State Center	32½	54
211.9	Marshalltown	32½	54
223.7	Montour	33	56
230.1	Tama	33½	57
240.8	Chelsea	34½	59½
247.3	Belle Plaine	35½	60½
257.5	Blairstown	37	63
266.3	Norway	37½	63
277.4	Beverly	-0-	-0-
281.9	Cedar Rapids	37½	63
298.1	Mt. Vernon	37½	63
306.6	Mechanicsville	39½	67
312.1	Stanwood	40	68½
317.0	Clarence	42½	72
324.0	Lowden	42½	72
329.0	Wheatland	42½	72
333.2	Calamus	43	72
338.9	Grand Mound	44	75
344.6	DeWitt	44	75
350.7	Low Moor	44	75
358.2	Clinton	46½	78

SOURCE: CNW Freight Tariff 17040-I

SINGLE CAR RATES TO
PRIMARY MARKETS

DISTANCE IN MILES	BETWEEN ST. PAUL, MIN. AND	X-256 LEVEL	X-310 LEVEL
221.9	Ledyard	29½	49
212.4	Bancroft	29½	49
205.8	Burt	29½	49
196.1	Algona	32½	54
191.2	Irvington	32½	54
182.6	Luverne	33	56
190.5	Renwick	33½	57
191.7	Goldfield	33½	57
191.6	Eagle Grove	33½	57
191.1	Woolstock	33½	57
206.2	Webster City	33½	57
213.7	Kamrar	34½	59½
223.1	Ellsworth	35½	60½
226.6	Randall	35½	60½
230.0	Story City	35½	60½
246.3	Ames	35½	60½
248.0	Kelley	37	63
253.6	Sheldahl	37½	63
265.0	Ankeny	37½	63
274.8	Des Moines	37½	63
284.7	Carlisle	39	67
305.9	Chariton	42½	72
324.8	Corydon	43	72
329.7	Allerton	44	75

SOURCE: CNW Freight Tariff 17040-I
CRI&P Freight Tariff 34560-G

SINGLE CAR RATES TO
PRIMARY MARKETS

DISTANCE IN MILES	BETWEEN KANSAS CITY MO. AND	X- 256 LEVEL	X-310 LEVEL
18.3	Liberty, Mo.	18½	31½
31.2	Excelsior Springs, Mo.	21	36½
52.5	Polo, Mo.	21½	36½
85.7	Shearwood	23	38½
88.0	Coburn, Mo.		
96.9	Trenton, Mo.	25½	44½
119.1	Princeton, Mo.	27½	47
133.4	Lineville, Ia.	29½	49
148.8	Allerton	30½	52
153.7	Corydon	32½	44½
172.6	Chariton	33½	44½
188.6	Melcher	35½	44½
213.8	Carlisle	35½	60½
225.0	Des Moines	37½	44½
255.9	Nevada	40½	68½
268.7	McCallsburg	42½	72
296.2	Iowa Falls	43	72
312.5	Hampton	44	75
341.4	Mason City	46½	78
350.9	Manly	48	82
355.3	Kensett	48½	83½
361.7	Northwood	49½	84½

SOURCE: CRI&P - Freight Tariff 34560-G.

SINGLE CAR RATES TO
PRIMARY MARKETS

DISTANCE IN MILES	BETWEEN ST. LOUIS AND	X-256 LEVEL	X-310 LEVEL
173.9	Keokuk	32½	54
219.4	Mount Zion	35½	60½
237.6	Eldon	35½	60½
249.6	Ottumwa	37½	63
279.5	Oskaloosa	39½	67
277.3	Evans	39½	67
289.3	Pella	39½	67
297.5	Otley	40	68½
303.0	Monroe	42½	72
336.7	Des Moines	42½	70½
403.5	Gowrie	48½	83½
425.4	Manson	49½	84½
433.1	Palmer	50	84½
440.9	Pocahontas	50½	86
453.2	Laurens	54	91½
474.1	Rossie	54½	92½
480.2	Royal	55	92½
487.0	Moneta	55	93½
492.6	Hartley	55	93½
508.5	Cloverdale	56½	96
513.4	Sibley	56½	96
521.0	Little Rock, Iowa	56½	96

SOURCE: CRI&P Freight Tariff No. 34560-G.

SINGLE CAR RATES TO
PRIMARY MARKETS

DISTANCE IN MILES	BETWEEN SIOUX CITY AND	X-256 LEVEL	X-310 LEVEL
7.9	Sergeant Bluff	15	25
15.5	Salix	15	25
21.5	Sloan	15½	25
29.8	Whiting	15½	25
37.6	Onawa	16½	28½
44.1	Blencoe	18½	30½
53.2	River Sioux	19	31½
59.7	Mondamin	21	35½
66.0	Modale	21½	36½
70.4	California Jct.	22½	37½
76.1	Missouri Valley	22½	37½
84.3	Logan	23	39
92.4	Woodbine	24	40½
102.2	Dunlap	24	40½
119.1	Denison	24	43
128.0	Vail	25½	43
134.1	West Side	25½	43
137.1	Arcadia	25½	43
143.1	Maple River	25½	43
147.1	Carroll	25½	43
154.6	Glidden	26½	44½
159.7	Ralston	27½	45½
164.5	Scranton	27½	45½
173.6	Jefferson	29	48
180.2	Grand Junction	29½	49
185.3	Beaver	29½	49
190.8	Ogden	30½	51
200.0	Boone	32½	54
210.5	Ames	32½	54
214.9	Nevada	32½	54
222.1	Colo	33	54
229.9	State Center	33½	56
244.2	Marshalltown	33½	56
256.0	Montour	34½	57
262.9	Tama	35½	60½
273.1	Chelsea	37	62
279.6	Belle Plaine	37½	63
289.8	Blairstown	39	64
298.6	Norway	39½	67
314.2	Cedar Rapids	39½	67
328.5	Lisbon	40	67
341.0	Stanwood	43	73
345.9	Clarence	44	75
352.9	Lowden	44	75
357.9	Wheatland	44	75
362.1	Calamus	44	75
367.8	Grand Mound	44	75
373.5	DeWitt	44	75
383.0	Low Moor	44	75
390.5	Clinton	46½	77

SOURCE: CNW Freight Tariff No. 17040-I.

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