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1984 BARGE RATES FOR UPPER MISSISSIPPI RIVER COMMODITIES

by

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I. INTRODUCTION

Barge transportation on the Upper Mississippi River is very important to a number of Upper Midwest industries and to the regional economy. This report on the rates and costs associated with the 1984 shipping season was prepared for the St. Paul District of the U.S. Army Corps of Engineers. The St. Paul District has the primary responsibilities for the management and operation and maintenance of the navigation channel and structures from the head of navigation to Lock and Dam 10 at Guttenberg, Iowa. The information contained in this report should be of interest to other public and private organizations and industries who depend on the river and/or alternative modes of transportation.

II. ORGANIZATION OF THE REPORT

The following section includes a map of the Mississippi River in the St. Paul District, some general and specific findings and comments of the researchers and Tables 1 through 6 which provide statistics on barge movements for 1981 and 1982. These are the last years for which published data is currently available.

Section IV is devoted to analyzing grain rates including land transportation to barge terminals and the rates of alternative transport modes and routes. Grain dominates the commercial transportation on the river. Grain and grain products accounted for 73 percent of the downbound tonnage from the St. Paul District and 48 percent of total upbound and downbound tonnage.

Section V reports rates for other major commodities. Fertilizers are the most important upbound long-haul commodities. Section V also includes cement, sand and gravel, and coal. It should be noted that although there are large coal movements reported, these are generally for very short distances.

The switch over the last decade from eastern to western coal, and the increased use of unit coal trains directly from mines to power plants has drastically reduced the role and importance of the Mississippi River in coal movements in the St. Paul District.

III. BACKGROUND AND COMMENTARY

The bulk commodity barge industry is highly competitive and free of government rate regulation. Hence, rates are free to (and do) rise and fall reflecting market conditions. This report discusses the rates quoted and used during the 1984 shipping season. However, since barge firms must recover all costs in the long run if they are to survive, some cost data is included for benchmark and comparison purposes.

Barge rates for bulk commodities were quite low during 1984 reflecting a large over-supply of covered hopper barges. This was the result of over expansion of industry capacity induced by very high barge rates in the '70s. These were caused by the transportation shortages and bottlenecks of that period. This was followed by a final speculative binge of barge building fueled by outside investors lured by investment tax credits, guaranteed loans, and promises of a so-called sure thing and resulted in 30 to 40 percent excess capacity in the industry in 1983 and 1984.

On the demand side, grain exports did not increase at the rates commonly projected and rail deregulation and excess rail car capacity led to loss of business to that mode in some areas. This contributed to the supply-demand imbalance.

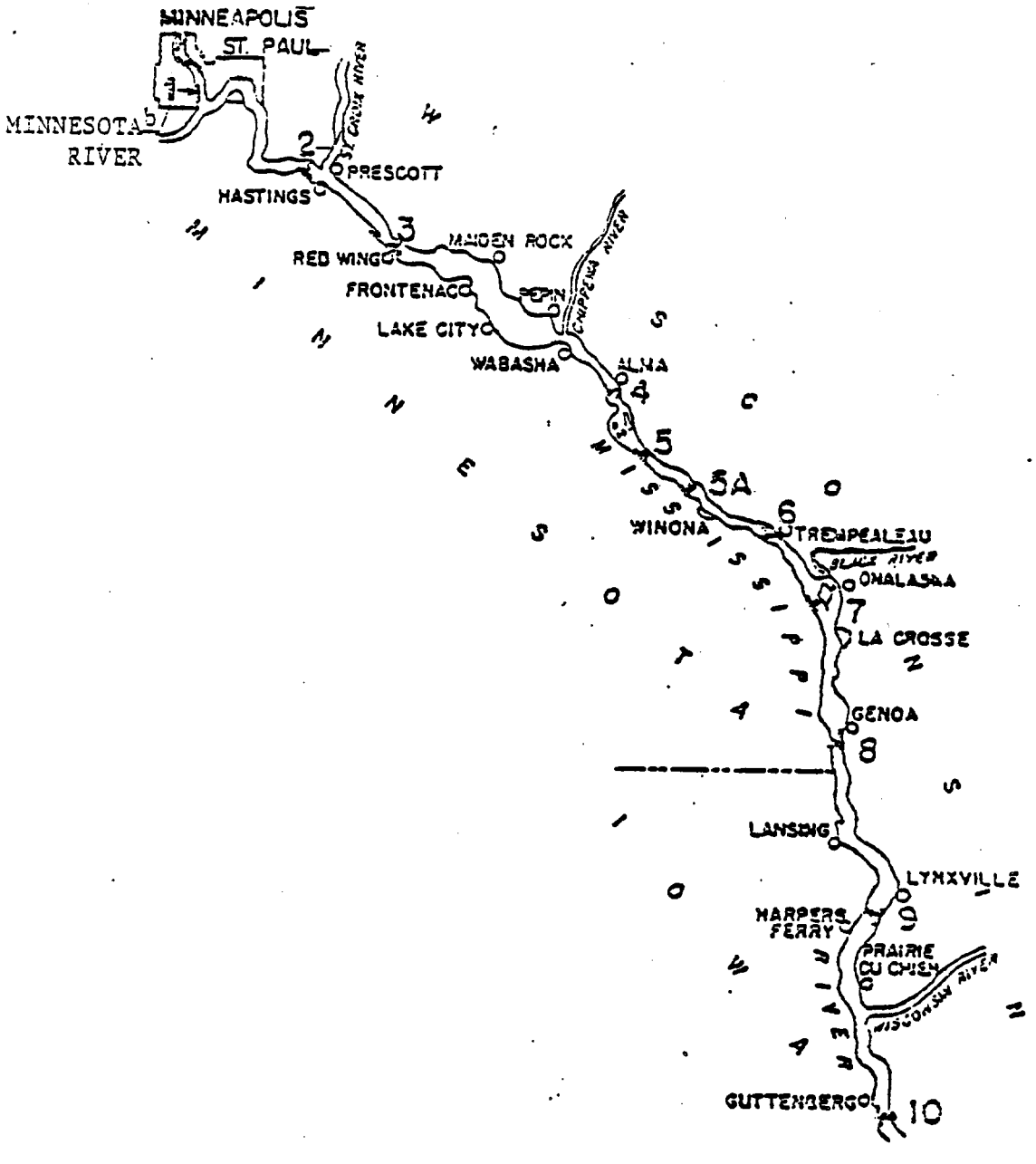
As a result of the extreme over-capacity, grain barge rates for the last three years have fluctuated around the lowest possible short-run level, i.e., the variable cost of operation. This is basically out-of-pocket costs for

fuel, labor, supplies, and necessary maintenance, but does not include depreciation or recovery of sunk costs. In fact, some barge companies probably took actual out-of-pocket losses and operated for periods of time below tangible variable cost levels. Their motivation would be to maintain "a going concern value" for their firm by retaining qualified crews and operating contacts. In other instances, a major shipper may subsidize barge subsidiaries operating below variable costs because subsidizing their barge operations would still provide a lower total transportation cost to the firm than would the alternatives of rail or truck transportation.

It should be recognized that downbound grain movements dominate river traffic in this region. This requires that many dry cargo barges be brought up river empty. Because of this imbalance, rates for any upbound "backhaul" cargos tend to be quite low and priced at or near out-of-pocket costs regardless of downbound rates.

The line-haul rates quoted generally include accessorial charges such as switching, fleeting and cleaning as this is the industry custom. There is generally a single quoted line-haul rate for downbound grain from any river terminal in Minnesota from Winona to Minneapolis, although costs will obviously differ due to distance. There is sometimes a 3 to 5 percent premium charged for movements to or from Minneapolis to reflect the added costs of moving two-barge tows through three lockages in a short distance. Minnesota River shipments cost more than St. Paul shipments, but these customarily move at the same rate.

Locations of Locks and Pools in the U.S. Army Corps of Engineers' St. Paul District



FREIGHT TRAFFIC TONNAGE: OUTBOUND COMMODITIES - 1982 [1]

TABLE 1

COMMODITY	St.Croix River		Minn. River		Black River		Minneapolis		St. Paul		TOTAL	
	Tonnage	%	Tonnage	%	Tonnage	%	Tonnage	%	Tonnage	%	Tonnage	%
GRAINS & MILL PRODUCTS:												
CORN		.00	1372970	44.35		.00	180268	22.43	1273808	19.39	2827046	27.01
WHEAT		.00	830945	26.84		.00	251471	31.29	1273290	19.38	2355706	22.50
SOYBEANS		.00	773534	24.99		.00	171718	21.37	997201	15.18	1942453	18.56
OATS		.00	51333	1.66		.00	17862	2.22	29139	.44	98334	.94
BARLEY		.00		.00		.00	4473	.56	5702	.09	10175	.10
OILSEEDS,NEC		.00	2119	.07		.00	4058	.50	31161	.47	37338	.36
ANIMAL FEEDS		.00	8260	.27		.00	47400	5.90	245899	3.74	301559	2.88
MILL PRODUCTS,NEC		.00	18499	.60		.00	38954	4.85	41573	.63	99026	.95
subtotal	0	.00	3057660	98.78	0	.00	716204	89.12	3897773	59.33	7671637	73.28
FERTILIZERS:												
NITROGENOUS		.00		.00		.00		.00		.00	0	.00
POTASSIC		.00		.00		.00	41014	5.10	202114	3.08	243128	2.32
PHOSPHATIC		.00	0	.00		.00		.00	4507	.07	4507	.04
OTHER,NEC		.00	0	.00		.00	0	.00		.00	0	.00
subtotal	0	.00	0	.00	0	.00	41014	5.10	206621	3.15	247635	2.37
COAL		.00		.00		.00		.00	2285823	34.80	2285823	21.84
SAND,GRAVEL,ROCK		.00		.00		.00		.00		.00	0	.00
NON-METALLIC MINERALS [2]		.00		.00		.00		.00		.00	0	.00
CEMENT		.00		.00		.00		.00		.00	0	.00
PETROLEUM & PRODUCTS		.00		.00		.00	6697	.83	18851	.29	25548	.24
COKE,PITCH,ASPHALT		.00		.00		.00	18223	2.27	99381	1.51	117604	1.12
LUMBER,PULP,PAPER		.00		.00		.00		.00	4378	.07	4378	.04
ALL OTHERS,NEC		.00	37899	1.22		.00	21467	2.67	56508	.86	115874	1.11
TOTAL	0	.00	3095559	100.00	0	.00	803605	100.00	6569335	100.00	10468499	100.00

SOURCE: Waterborne Commerce of the United States - WRSC-WCUG-82-2

[1]Black River Statistics are not designated outbound or inbound, but are included in the total.

[2]Includes salt and lime.

FREIGHT TRAFFIC TONNAGE: INBOUND COMMODITIES - 1982[1] TABLE 2

COMMODITY	St.Croix River		Minn. River		Black River		Minneapolis		St. Paul		TOTAL	
	Tonnage	%	Tonnage	%	Tonnage	%	Tonnage	%	Tonnage	%	Tonnage	%
GRAINS & MILL PRODUCTS:												
CORN		.00		.00		.00		.00		.00	0	.00
WHEAT		.00	4496	.62		.00		.00		.00	4496	.09
SOYBEANS		.00		.00		.00		.00	3083	.13	3083	.06
OATS		.00		.00		.00		.00		.00	0	.00
BARLEY		.00		.00		.00		.00		.00	0	.00
OILSEEDS,NEC		.00		.00		.00		.00		.00	0	.00
ANIMAL FEEDS		.00		.00		.00		.00	16074	.66	16074	.33
MILL PRODUCTS,NEC		.00		.00		.00		.00	6134	.25	6134	.13
subtotal	0	.00	4496	.62	0	.00	0	.00	25291	1.04	29787	.62
FERTILIZERS:												
NITROGENOUS		.00	32165	4.43		.00	2909	.46	4425	.18	39499	.82
POTASSIC		.00	1639	.23		.00		.00		.00	1639	.03
PHOSPHATIC		.00	2951	.41		.00	3107	.49	2885	.12	8943	.18
OTHER,NEC		.00	147699	20.34		.00	1567	.25	118983	4.91	268249	5.54
subtotal	0	.00	184454	25.40	0	.00	7583	1.20	126293	5.22	318330	6.57
COAL	1064305	100.00	348935	48.06		.00	111597	17.66	348914	14.41	1873751	38.69
SAND,GRAVEL,ROCK		.00	1486	.20		.00	306867	48.55	1038653	42.90	1347006	27.81
NON-METALLIC MINERALS[2]		.00	98000	13.50		.00	15891	2.51	184751	7.63	298642	6.17
CEMENT		.00		.00		.00	134695	21.31	1500	.06	136195	2.81
PETROLEUM & PRODUCTS		.00		.00		.00		.00	507236	20.95	507236	10.47
COKE,PITCH,ASPHALT		.00	65943	9.08		.00	2487	.39	40525	1.67	108955	2.25
LUMBER,PULP,PAPER		.00		.00		.00	2455	.39	2532	.10	4987	.10
ALL OTHERS,NEC		.00	22767	3.14		.00	50507	7.99	145166	6.00	218440	4.51
TOTAL	1064305	100.00	726089	100.00	0	.00	632082	100.00	2420861	100.00	4843337	100.00

SOURCE: Waterborne Commerce of the United States - WRGS-WCUS-82-2

[1]Black River Statistics are not designated outbound or inbound, but are included in the total.

[2]Includes salt and lime.

TOTAL FREIGHT TRAFFIC TONNAGE: 1982[1]

TABLE 3

COMMODITY	St.Croix River		Minn. River		Black River		Minneapolis		St. Paul		TOTAL	
	Tonnage	%	Tonnage	%	Tonnage	%	Tonnage	%	Tonnage	%	Tonnage	%
GRAINS & MILL PRODUCTS:												
CORN		.00	1372970	35.93	31116	17.97	180268	12.56	1273808	13.32	2858162	17.80
WHEAT		.00	835441	21.86		.00	251471	17.52	1273290	13.32	2360202	14.70
SOYBEANS		.00	773534	20.24	3029	1.75	171718	11.96	1000284	10.46	1948565	12.14
OATS		.00	51333	1.34	1440	.83	17862	1.24	29139	.30	99774	.62
BARLEY		.00		.00		.00	4473	.31	5702	.06	10175	.06
OILSEEDS,NEC		.00	2119	.06		.00	4058	.28	31161	.33	37338	.23
ANIMAL FEEDS		.00	8260	.22		.00	47400	3.30	261973	2.74	317633	1.98
MILL PRODUCTS,NEC		.00	18499	.48		.00	38954	2.71	47707	.50	105160	.65
subtotal	0	.00	3062156	80.13	35585	20.55	716204	49.89	3923064	41.03	7737009	48.19
FERTILIZERS:												
NITROGENOUS		.00	32165	.84		.00	2909	.20	4425	.05	39499	.25
POTASSIC		.00	1639	.04		.00	41014	2.86	202114	2.11	244767	1.52
PHOSPHATIC		.00	2951	.08		.00	3107	.22	7392	.08	13450	.08
OTHER,NEC		.00	147699	3.86		.00	1567	.11	118983	1.24	268249	1.67
subtotal	0	.00	184454	4.83	0	.00	48597	3.38	332914	3.48	565965	3.52
COAL	1064305	100.00	348935	9.13	6985	4.03	111547	7.77	2634737	27.56	4166509	25.95
SAND,GRAVEL,ROCK		.00	1486	.04		.00	306867	21.37	1347006	14.09	1655359	10.31
NON-METALLIC MINERALS[2]		.00	98000	2.56	15466	8.93	15891	1.11	226077	2.36	355434	2.21
CEMENT		.00		.00		.00	134695	9.38	136195	1.42	270890	1.69
PETROLEUM & PRODUCTS		.00		.00	59645	34.44	6697	.47	526087	5.50	592429	3.69
COKE,PITCH,ASPHALT		.00	65943	1.73	41829	24.15	20710	1.44	226559	2.37	355041	2.21
LUMBER,PULP,PAPER		.00		.00		.00	2455	.17	6910	.07	9365	.06
ALL OTHERS,NEC		.00	60666	1.59	13691	7.90	71974	5.01	201674	2.11	348005	2.17
TOTAL	1064305	100.00	3821648	100.00	173201	100.00	1435687	100.00	9561223	100.00	16056006	100.00

SOURCE: WATERBORNE COMMERCE OF THE UNITED STATES - WRSC-WCUG-82-2

[1]Black River Statistics are not designated outbound or inbound, but are included in the total.

[2]Includes salt and lime.

FREIGHT TRAFFIC TONNAGE: OUTBOUND COMMODITIES - 1981 [1]

TABLE 4

COMMODITY	St.Croix River		Minn. River		Black River		Minneapolis		St. Paul		TOTAL	
	Tonnage	%	Tonnage	%	Tonnage	%	Tonnage	%	Tonnage	%	Tonnage	%
GRAINS & MILL PRODUCTS:												
CORN		.00	1259676	53.97		.00	432167	41.76	2519649	34.13	4211492	39.17
WHEAT		.00	527082	22.58		.00	191896	18.54	1411168	19.12	2130146	19.81
SOYBEANS		.00	458585	19.65		.00	104373	10.09	793067	10.74	1356025	12.61
OATS		.00	29450	1.26		.00	15075	1.46	54102	.73	98627	.92
BARLEY		.00		.00		.00		.00	4101	.06	4101	.04
OILSEEDS,NEC		.00	12330	.53		.00	45301	4.38	128608	1.74	186239	1.73
ANIMAL FEEDS		.00	2947	.13		.00	34471	3.33	191621	2.60	229039	2.13
MILL PRODUCTS,NEC		.00	25733	1.10		.00	89532	8.65	117775	1.60	233040	2.17
subtotal	0	.00	2315803	99.21	0	.00	912815	88.22	5220091	70.72	8448709	78.59
FERTILIZERS:												
NITROGENOUS		.00	3386	.15		.00		.00		.00	3386	.03
POTASSIC		.00		.00		.00	39661	3.83	29753	.40	69414	.65
PHOSPHATIC		.00	1389	.06		.00		.00		.00	1389	.01
OTHER,NEC		.00	0	.00		.00	0	.00		.00	0	.00
subtotal	0	.00	4775	.20	0	.00	39661	3.83	29753	.40	74189	.69
COAL		.00		.00		.00		.00	1765709	23.92	1765709	16.42
SAND,GRAVEL,ROCK		.00		.00		.00		.00		.00	0	.00
NON-METALLIC MINERALS [2]		.00		.00		.00		.00		.00	0	.00
CEMENT		.00		.00		.00		.00		.00	0	.00
PETROLEUM & PRODUCTS		.00		.00		.00	6641	.64	90690	1.23	97331	.91
COKE,PITCH,ASPHALT		.00		.00		.00	4533	.44	162185	2.20	166718	1.55
LUMBER,PULP,PAPER		.00		.00		.00		.00		.00	0	.00
ALL OTHERS,NEC		.00	13632	.58		.00	71111	6.87	113226	1.53	197969	1.84
TOTAL	0	.00	2334210	100.00	0	.00	1034761	100.00	7381654	100.00	10750625	100.00

SOURCE: Waterborne Commerce of the United States - WRSC-WCUS-81-2

[1]Black River Statistics are not designated outbound or inbound, but are included in the total.

[2]Includes salt and lime.

FREIGHT TRAFFIC TONNAGE: INBOUND COMMODITIES - 1981[1]

TABLE 5

COMMODITY	St.Croix River		Minn. River		Black River		Minneapolis		St. Paul		TOTAL	
	Tonnage	%	Tonnage	%	Tonnage	%	Tonnage	%	Tonnage	%	Tonnage	%
GRAINS & MILL PRODUCTS:												
CORN		.00		.00		.00		.00	5864	.21	5864	.13
WHEAT		.00	1310	.51		.00		.00	3028	.11	4338	.10
SOYBEANS		.00	1655	.64		.00		.00	1336	.05	2991	.07
OATS		.00	700	.27		.00		.00		.00	700	.02
BARLEY		.00		.00		.00		.00		.00	0	.00
OILSEEDS,NEC		.00		.00		.00		.00		.00	0	.00
ANIMAL FEEDS		.00		.00		.00	3483	.54	6813	.25	10296	.23
MILL PRODUCTS,NEC		.00	1400	.54		.00		.00		.00	1400	.03
subtotal	0	.00	5065	1.95	0	.00	3483	.54	17041	.62	25589	.56
FERTILIZERS:												
NITROGENOUS		.00	40753	15.72		.00	6498	1.01	88863	3.22	136114	3.00
POTASSIC		.00		.00		.00		.00		.00	0	.00
PHOSPHATIC		.00	16074	6.20		.00		.00	1414	.05	17488	.39
OTHER,NEC		.00	29243	11.28		.00	9147	1.43	37696	1.37	76086	1.68
subtotal	0	.00	86070	33.21	0	.00	15645	2.44	127973	4.64	229688	5.06
COAL	935872	99.83	59601	22.99		.00	89915	14.03	397824	14.44	1483212	32.68
SAND,GRAVEL,ROCK		.00		.00		.00	325166	50.75	1296080	47.03	1621246	35.72
NON-METALLIC MINERALS [2]	1600	.17	75266	29.04		.00	10524	1.64	96622	3.51	184012	4.05
CEMENT		.00		.00		.00	120619	18.83	1941	.07	122560	2.70
PETROLEUM & PRODUCTS		.00		.00		.00	6577	1.03	520680	18.89	472679	10.41
COKE,PITCH,ASPHALT		.00	8403	3.24		.00	16362	2.55	40702	1.48	65467	1.44
LUMBER,PULP,PAPER		.00		.00		.00	5415	.85	3003	.11	8418	.19
ALL OTHERS,NEC		.00	24791	9.56		.00	46999	7.34	253941	9.21	325731	7.18
TOTAL	937472	100.00	259196	100.00	0	.00	640705	100.00	2755807	100.00	4538602	100.00

SOURCE: Waterborne Commerce of the United States - WRSC-WCUS-81-2

[1]Black River Statistics are not designated outbound or inbound, but are included in the total.

[2]Includes salt and lime.

TOTAL FREIGHT TRAFFIC TONNAGE: 1981[1]

TABLE 6

	St.Croix River		Minn. River		Black River		Minneapolis		St. Paul		TOTAL	
COMMODITY	Tonnage	%	Tonnage	%	Tonnage	%	Tonnage	%	Tonnage	%	Tonnage	%
GRAINS & MILL PRODUCTS:												
CORN		.00	1259676	48.57	61162	29.81	432167	25.79	2525513	24.91	4278518	27.52
WHEAT		.00	528392	20.37		.00	191896	11.45	1414196	13.95	2134484	13.73
SOYBEANS		.00	460240	17.75	1602	.78	104373	6.23	794403	7.84	1360618	8.75
OATS		.00	30150	1.16		.00	15075	.90	54102	.53	99327	.64
BARLEY		.00		.00		.00		.00	4101	.04	4101	.03
OILSEEDS,NEC		.00	12330	.48		.00	45301	2.70	128608	1.27	186239	1.20
ANIMAL FEEDS		.00	2947	.11		.00	37954	2.27	198434	1.96	239335	1.54
MILL PRODUCTS,NEC		.00	27133	1.05		.00	89532	5.34	117775	1.16	234440	1.51
subtotal	0	.00	2320868	89.49	62764	30.59	916298	54.69	5237132	51.66	8537062	54.90
FERTILIZERS:												
NITROGENOUS		.00	44139	1.70	13536	6.60	6498	.39	88863	.88	153036	.98
POTASSIC		.00		.00		.00	39661	2.37	29753	.29	69414	.45
PHOSPHATIC		.00	17463	.67		.00		.00	1414	.01	18877	.12
OTHER,NEC		.00	29243	1.13		.00	9147	.55	37696	.37	76086	.49
subtotal	0	.00	90845	3.50	13536	6.60	55306	3.30	157726	1.56	317413	2.04
COAL	935872	99.83	59601	2.30	5839	2.85	89915	5.37	2163533	21.34	3254760	20.93
SAND,GRAVEL,ROCK		.00		.00	1472	.72	325166	19.41	1296080	12.79	1622718	10.44
NON-METALLIC MINERALS[2]	1600	.17	75266	2.90	14931	7.28	10524	.63	96622	.95	198943	1.28
CEMENT		.00		.00		.00	120619	7.20	1941	.02	122560	.79
PETROLEUM & PRODUCTS		.00		.00	90778	44.25	13218	.79	611370	6.03	715366	4.60
COKE,PITCH,ASPHALT		.00	8403	.32	8880	4.33	20895	1.25	202887	2.00	241065	1.55
LUMBER,PULP,PAPER		.00		.00		.00	5415	.32	3003	.03	8418	.05
ALL OTHERS,NEC		.00	38423	1.48	6966	3.40	118110	7.05	367167	3.62	530666	3.41
TOTAL	937472	100.00	2593406	100.00	205166	100.00	1675466	100.00	10137461	100.00	15548971	100.00

SOURCE: Waterborne Commerce of the United States - WRSC-WCUS-81-2

[1]Black River Statistics are not designated outbound or inbound, but are included in the total.

[2]Includes salt and lime.

IV. GRAIN

Agriculture plays an important role in the economy served by the St. Paul Distict Corps of Engineers. The health of the Agricultural sector depends increasingly on an excessible export market for the raw and processed products. Production from near one out of every two acres in the St. Paul District goes for export.

This area is at a locational disadvantage because of its distance to the major export markets. The output from the farms likely will follow one of the four major export paths with price as the driving force. The four major export flows are:

1)Great Lake/Seaway Shipments from Duluth/Superior

2)Barge from Minnesota and Mississippi River Ports to Gulf Terminals

3)Direct Rail to Gulf Terminals

4)Direct Rail to the Pacific Northwest Export Terminals

Agricultural products, as a group, are the most important commodities that move by barge in the St. Paul District. It is important to keep in mind when reading and using the tables that follow that in many cases there may not be any commodity "available" to move by barge due to movements to Duluth/Superior or the Pacific Northwest. Also, not all commodities are grown in quantity at all interior points. Export grain and products follow the path that provides the highest net price (price at export less the transportation cost) to the shipper subject to various constraints.

To better understand the mechanics of the export paths a number of illustrations are included in the following pages. Figure 1 is a diagram of how grain moves from the farm through the system of elevator to the overseas market. Figures 2-4 illustrates the physical distribution system for grain. Figure 2 shows an on farm storage system. Figure 3 represents a terminal elevator operation and figure 4 a port elevator.

The commodities used in the tables are representative for all grains and products. Products (screenings,meal,pellets,ect.) usually pay a 5-15% premium over the heavy grains due to their lighter weight. Sunflower shippers often pay a premium for the same reason. Enforcement of the premium depends on the supply of barges and the demand for those barges at a given place and point in time. Table 7 gives the weights and measures for various commodities. The grains used on the tables are corn, wheat, oats, soybeans and sunflowers.

- Origins -

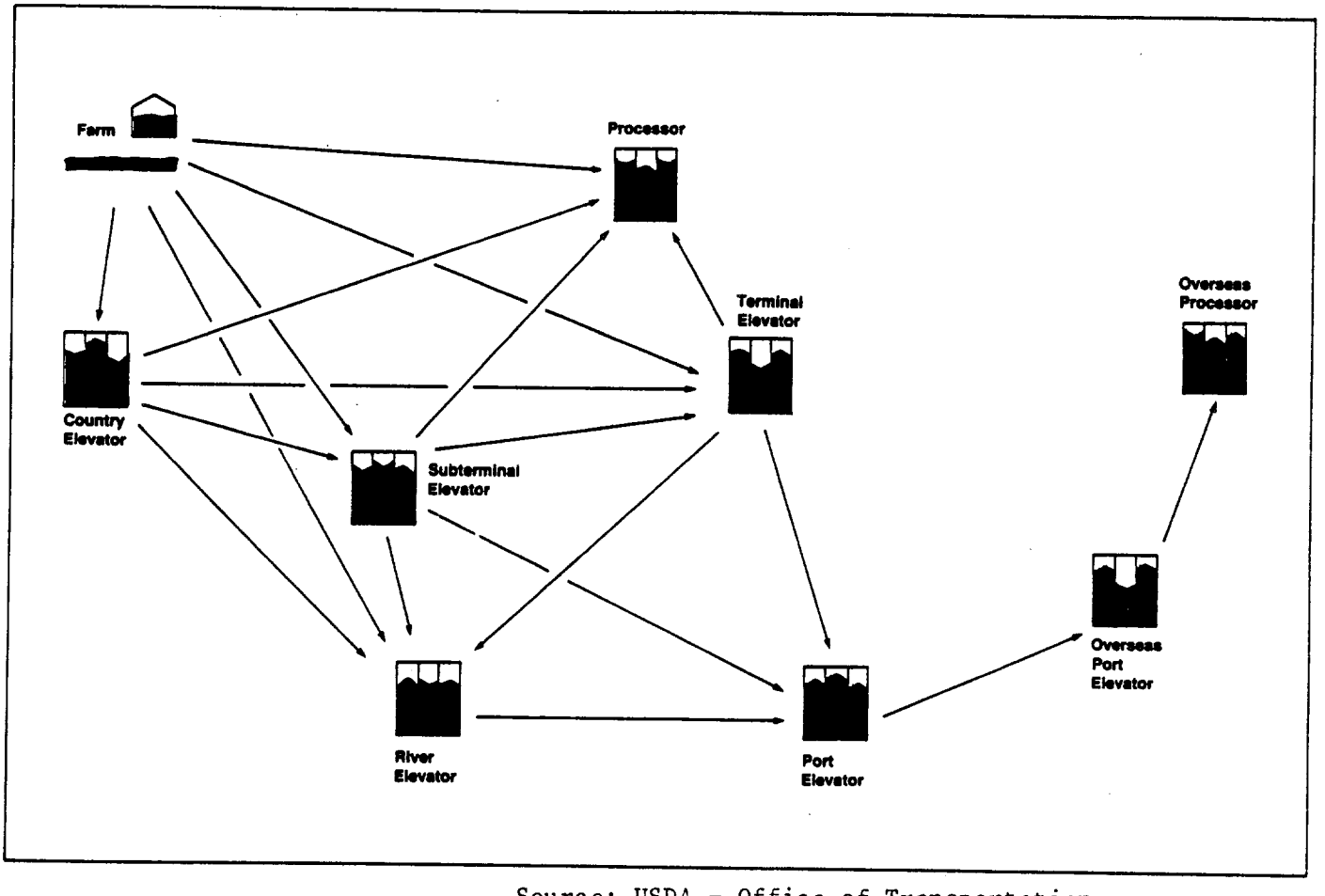
Nine origin points are presented for each grain. They are as follows:

1) Albert Lea, MN
2) Bismarck, ND
3) Fargo, ND
4) Jackson, MN
5) Litchfield, MN
6) Marshall, MN
7) Morris, MN
8) Winona, MN
9) Worthington, MN

Figure 5 shows the location of each of these points.

Figure 1

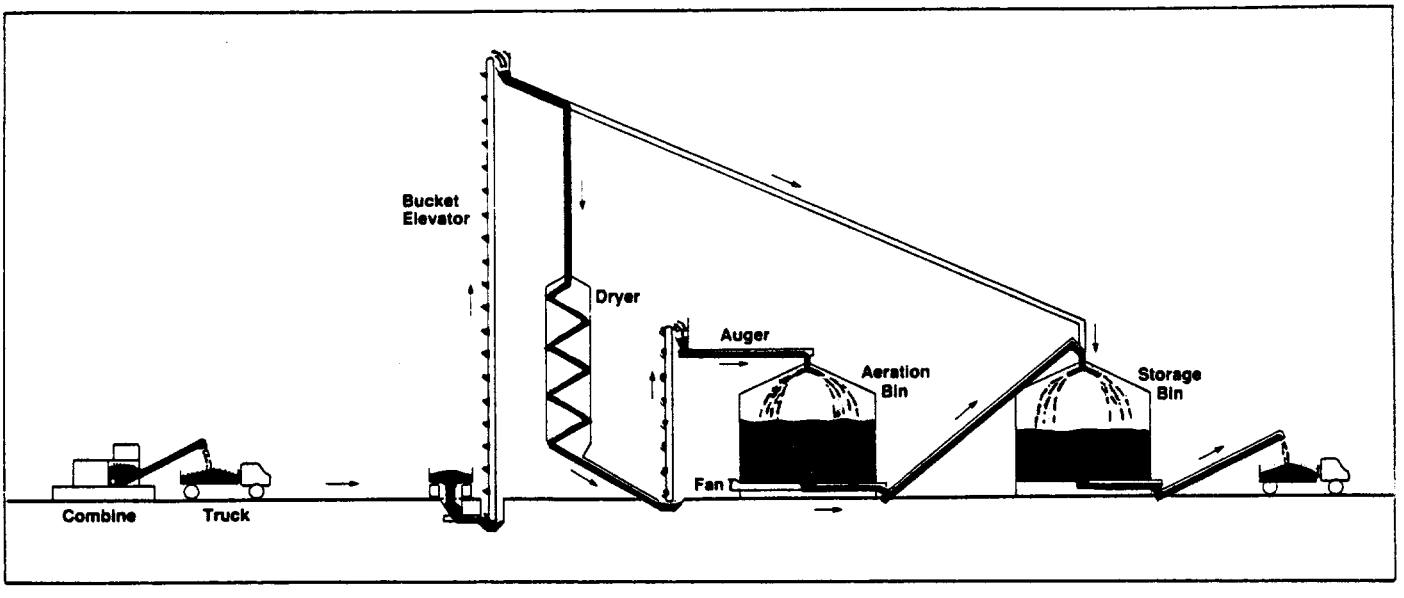
General Path of Grain Flow System



Source: USDA - Office of Transportation.

Figure 2

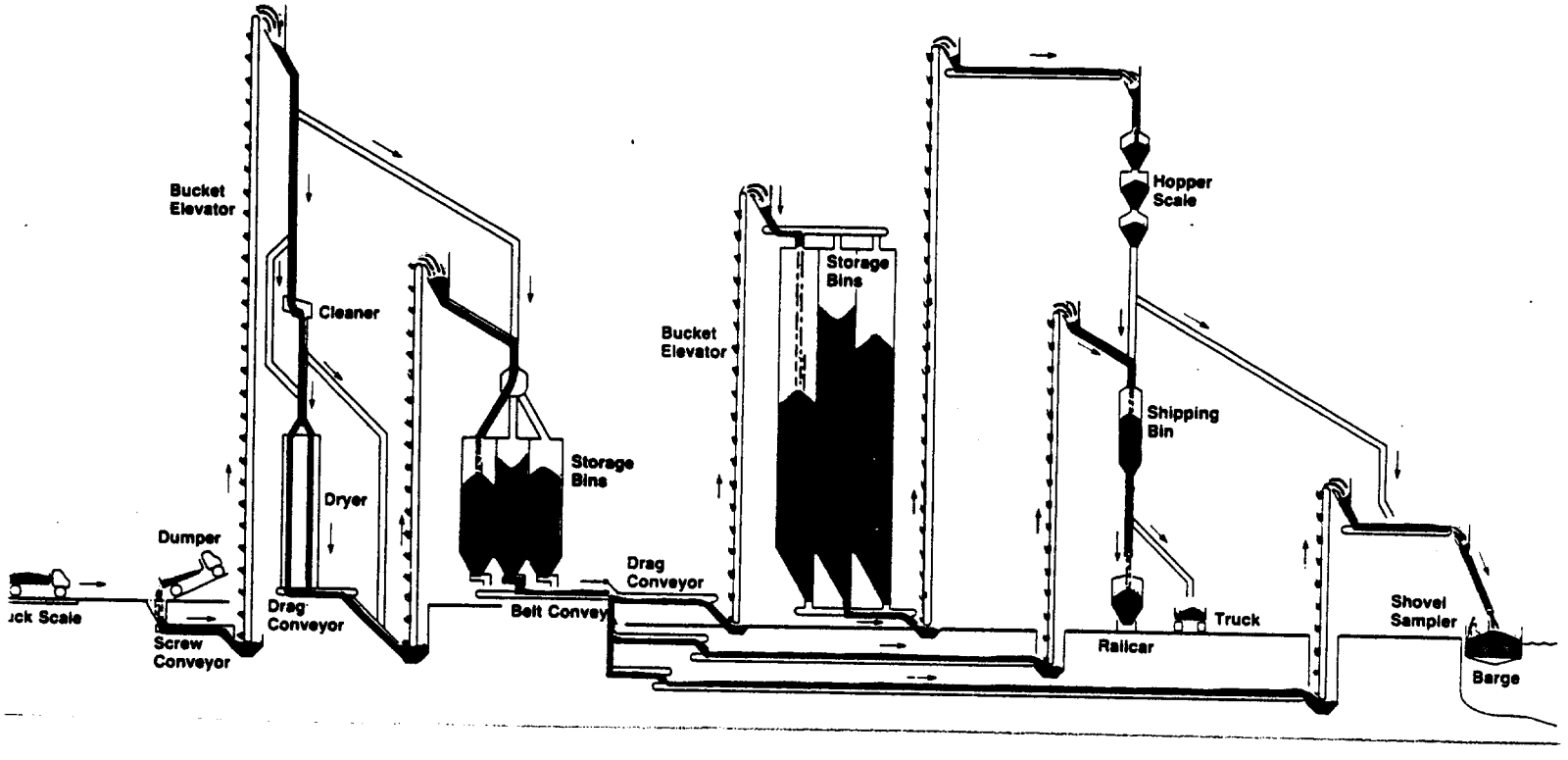
Flow of Grain from Field to an On-Farm Storage System



Source: USDA - Office of Transportation

Figure 3

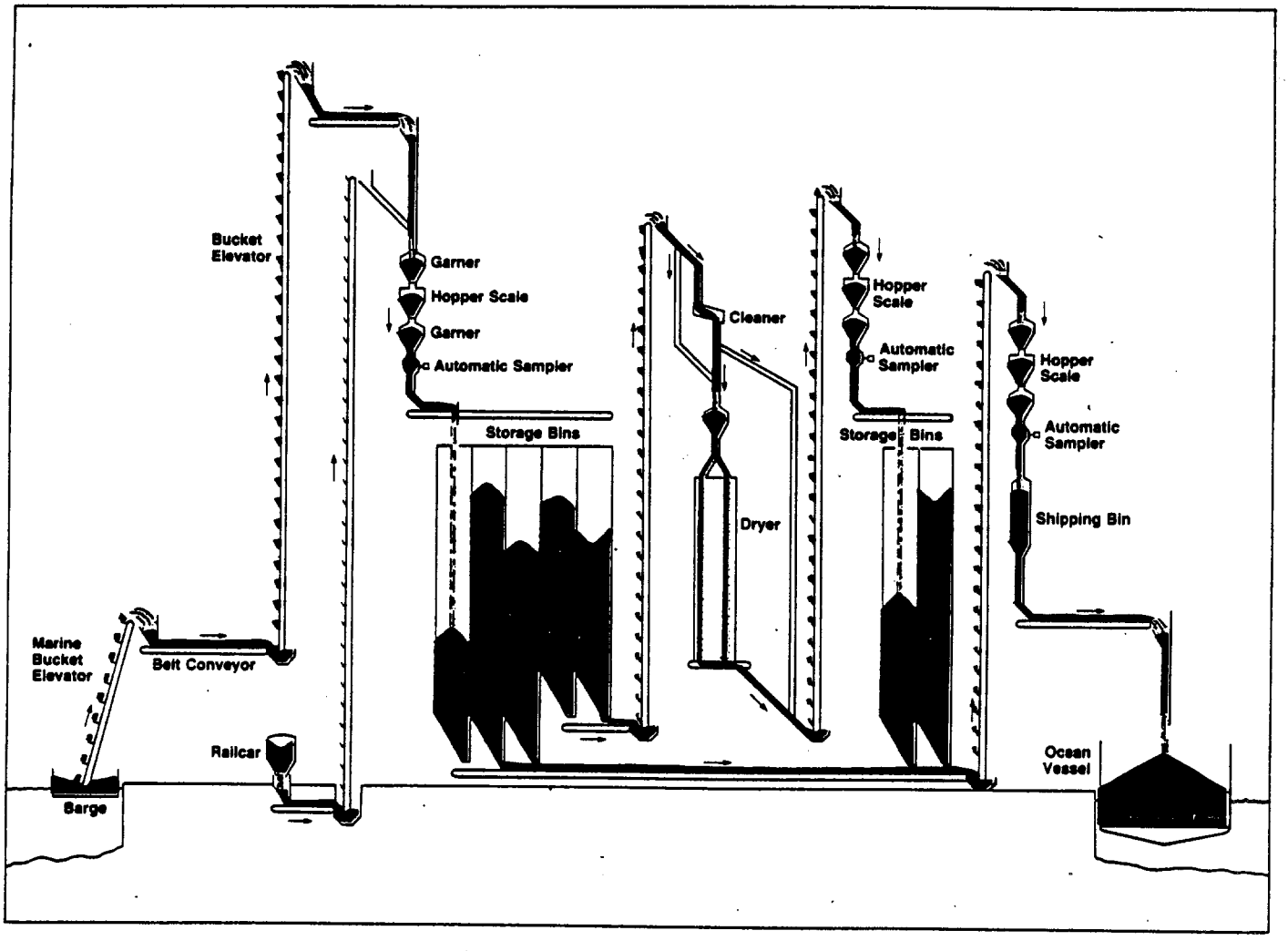
Flow of Grain Through a Terminal Elevator



Source: USDA - Office of Transportation

Figure 4

Flow of Grain from a Port Elevator to an Ocean Vessel



Source: USDA - Office of Transportation

Table 7

Weights, Measures, and Conversion Factors

Commodity	Units	Approximate Net Weight U.S.	Metric
Barley	Bushels	48 lbs.	21.8 Kg.
Buckwheat	Bushels	48 lbs.	21.8 Kg.
Corn	Bushels	56 lbs.	25.4 Kg.
Flax	Bushels	56 lbs.	25.4 Kg.
Oats	Bushels	32 lbs	14.5 Kg.
Rye	Bushels	56 lbs.	25.4 Kg.
Soybeans	Bushels	60 lbs.	27.2 Kg.
Sunflowers	Bushels	28 lbs.	12.7 Kg.
Wheat	Bushels	60 lbs.	27.2 Kg.

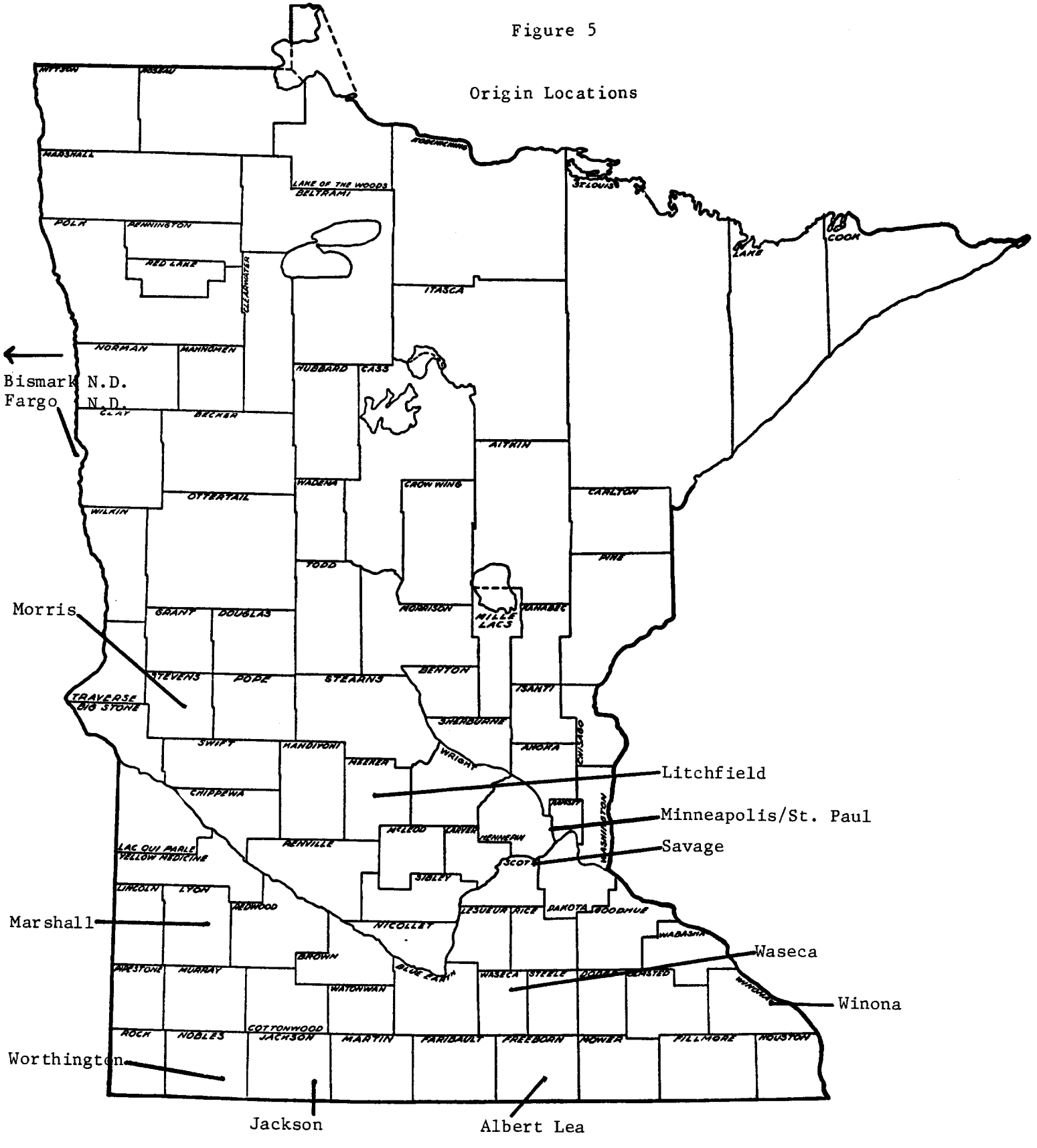
The standard bushel used in the United States contains 2,150.42 cubic inches.

1 ton	=	2,000 lbs.
1 ton	=	41.66 bushels of barley
1 ton	=	41.66 bushels of buckwheat
1 ton	=	35.71 bushels of corn
1 ton	=	35.71 bushels of flax
1 ton	=	62.50 bushels of oats
1 ton	=	35.71 bushels of rye
1 ton	=	33.33 bushels of soybean
1 ton	=	71.43 bushels of sunflowers
1 ton	=	33.33 bushels of wheat
1 metric ton	=	2,204.6 lbs.

To	From	Multiply by
Kilograms	Lbs.	0.45359
Lbs.	Kilograms	2.2046
Metric tons	Lbs.	0.00045359

Figure 5

Origin Locations



- Tranfer/Destinations -

There were five destination and/or transfer points for grain. These five points and other major points used throughout this report can be found on Figure 6. The points for grain are:

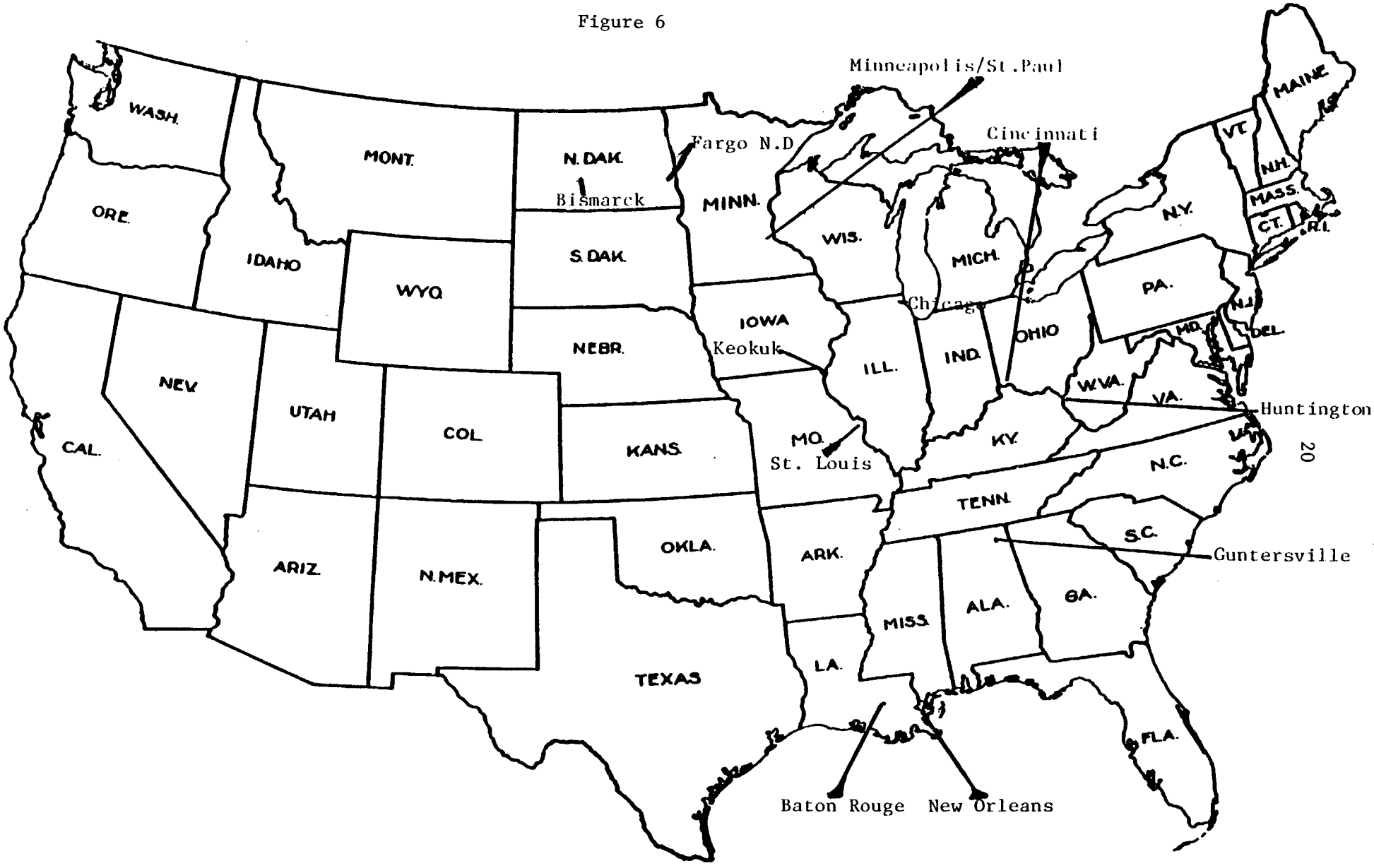
1) Minneapolis/St.Paul
2) Winona, MN
3) St. Louis, MO { only oats }
4) Guntersville, AL { only oats }
5) Baton Rouge/New Orleans, LA

Sample barge and alternative mode rates for these origins and destinations for the listed commodities are presented on Tables 8-16. The final total is given in dollars per ton. Transfer costs are not included in the calculations because they tend to be similar and are a function of the age of the physical equipment more than a function of the modes. A range of tranfer costs are as follows:

Truck to Rail	$1.00 - $3.54 / ton
Rail to Barge	$ .67 - $2.54 / ton
Truck to Barge	$ .67 - $2.54 / ton

All are based on a 60 lbs. bushel with the low end for new facilities and the upper end for old facilities. Truck to rail has the lowest fixed cost as a percent of total cost. Fixed costs for truck to rail is about fifty percent. Rail to barge and truck to barge would have fixed costs of appoximatly seventy to eighty percent. The Transfer costs from barge to ocean vessel at the Gulf ranges from $.74 - $2.65.

Figure 6


Minneapolis/St.Paul
Fargo N.D
Cincinnati
WASH.
MONT.
N. DAK.
Bismarck
MINN.
MAINE
VT.
N.H.
MASS.
CT.
R.I.
N.Y.
ORE.
IDAHO
WYO.
S. DAK.
WIS.
MICH.
PA.
N.J.
DEL.
MD.
Chicago
IOWA
Keokuk
NEBR.
OHIO
NEV.
ILL.
IND.
W.VA.
VA.
Huntington
UTAH
COL.
KANS.
MO.
St. Louis
KY.
CAL.
N.C.
TENN.
S.C.
Guntersville
OKLA.
ARK.
ARIZ.
N.MEX.
MISS.
ALA.
GA.
TEXAS
LA.
FLA.
Baton Rouge
New Orleans

The mode codes used in the fifth and seventh columns for the total and initial move in cost per ton are as follows:

1) Truck
2) Rail { 1-5 cars rates }
3) Rail { 25-29 car rates }
4) Rail { 50-54 car rates }
5) Rail { 75+ car rates }
6) Barge
7) Truck { initial } & Rail { 25-29 car }
8) Truck { initial } & Rail { 50-54 car }
9) Truck { initial } & Rail { 75+ car }
10) Truck { initial } & Barge
11) Rail { initial 25-29 car } & Barge
12) Rail { initial 50-54 car } & Barge
13) Rail { initial 75+ car } & Barge

The "3" in the fifth column of table 8 stands for a 25-29 rail car rate. Barge line haul rates are given in dollars per ton. Rates for November, 1984 are used. To show the supply and demand nature of grain barge rates table 17 contains average market rate from July 1979 to the present. Barge rates are generally expressed as a percent of a benchmark (a 1975 "tariff rate "). The breakeven rate for the barge industry is thought to be around 170 % of tariff or about $10.50 per ton. Ninteen eighty-four is the third straight year that the grain barge industry has averaged less than 170 percent. A large supply of barges, coupled with low commodity prices and an abundance of farm and country elevator storage has held down the need for river transportation, and as a consequence, barge rates.

Truck rates are expressed in cents per 100 lbs. The rates stated are the actual rates paid by elevators and grain shippers when available. A column of truck prescribed minimum rates { PMR } is also included . However; rates for truck movements to river terminals are no longer regulated and so vary

from the prescribed minimum rates. Rail rates are for the Burlington Northern Railroad { BN }, Chicago & North Western Railroad { CNW }, Milwaukee Road { MIL }, or the Soo Line Railroad { SOO }.

Additional Notes on Tables 8-16

Symbols used throughout the tables

"NMM" = No Meaningful Movement

" * " = For Comparison Only - No Significant Moves

"NMR" = No Meaningful Rate

" X " = Not Meaningful

1) Actual Mileage Dependent on Route

TABLE 8

SAMPLE BARGE AND ALTERNATIVE MODE RATES FOR LISTED COMMODITIES FROM ALBERT LEA, MN TO LISTED DESTINATIONS

Rates in Cents Per CWT.

	ORGIN	TRANSIT	DESTINATION	FINAL TOTAL $/TON	MODE	INITIAL MOVE $/TON	MODE	BARGE LINE HAUL	TRUCK RATE	TRUCK PMR	RAIL RATES	# OF CARS 1 CAR	3-5	25-29	50-54	75+	RAIL MILES	TRUCK MILES	WATER MILES
CORN	ALBERT LEA		TWIN CITIES	4.40	3	4.40	3	X	.35	.375	MIL	48	28	22	NMR	NMR	109	99	0
	ALBERT LEA		WINONA	7.00	1	7.00	1	X	.35	.385	CNW	NMR	NMR	41	37	NMR	138	103	0
	ALBERT LEA	TWIN CITIES	GULF	14.92	11	4.40	3	10.52	.35	.375	CNW	NMR	NMR	NMR	NMR	NMR	109	99	1723
	ALBERT LEA	WINONA	GULF	17.52	10	7.00	1	10.52	.35	.385	CNW	NMR	NMR	NMR	NMR	NMR	138	103	1585
	ALBERT LEA		GULF	27.00	3	27.00	3	X	X	X	CNW	168	NMR	135	126	113	1169	1152	0
	ALBERT LEA		GULF	22.60	5	22.60	5	X	-	-	-	-	-	-	-	-	-	-	-
WHEAT	ALBERT LEA		TWIN CITIES	4.40	3	4.40	3	X	.35	.375	MIL	46	28	22	NMR	NMR	109	99	0
	ALBERT LEA		WINONA	7.00	1	7.00	1	X	.35	.385	CNW	NMR	NMR	41	37	NMR	138	103	0
	ALBERT LEA	TWIN CITIES	GULF	14.92	11	4.40	3	10.52	.35	.375	CNW	NMR	NMR	NMR	NMR	NMR	109	99	1723
	ALBERT LEA	WINONA	GULF	17.52	10	7.00	1	10.52	.35	.385	CNW	NMR	NMR	NMR	NMR	NMR	138	103	1585
	ALBERT LEA		GULF	27.00	3	27.00	3	X	X	X	CNW	NMR	NMR	135	126	113	1169	1152	0
	ALBERT LEA		GULF	22.60	5	22.60	5	X	-	-	-	-	-	-	-	-	-	-	-
SOYBEANS	ALBERT LEA		TWIN CITIES	4.40	3	4.40	3	X	.35	.375	MIL	48	28	22	NMR	NMR	109	99	0
	ALBERT LEA		WINONA	7.00	1	7.00	1	X	.35	.385	CNW	NMR	NMR	41	37	NMR	138	103	0
	ALBERT LEA	TWIN CITIES	GULF	14.92	11	4.40	3	10.52	.35	.375	CNW	NMR	NMR	NMR	NMR	NMR	109	99	1723
	ALBERT LEA	WINONA	GULF	17.52	10	7.00	1	10.52	.35	.385	CNW	NMR	NMR	NMR	NMR	NMR	138	103	1585
	ALBERT LEA		GULF	27.00	3	27.00	3	X	X	X	CNW	168	NMR	135	126	113	1169	1152	0
	ALBERT LEA		GULF	22.60	5	22.60	5	X	-	-	-	-	-	-	-	-	-	-	-

TABLE 8 Cont.

SAMPLE BARGE AND ALTERNATIVE MODE RATES FOR LISTED COMMODITIES FROM ALBERT LEA, MN TO LISTED DESTINATIONS

Rates in Cents Per CWT.

	ORGIN	TRANSIT	DESTINATION	FINAL TOTAL $/TON	MODE	INITIAL MOVE $/TON	MODE	BARGE LINE HAUL	TRUCK RATE	TRUCK PMR	RAIL RATES	# OF CARS 1 CAR	3-5	25-29	50-54	75+	RAIL MILES	TRUCK MILES	WATER MILES
OATS	ALBERT LEA		TWIN CITIES	5.40	3	5.40	3	X	.35	.375	CNW	48	NMR	27	24	21	109	99	0
	ALBERT LEA		WINONA	7.00	1	7.00	1	X	.35	.385	CNW	NMR	NMR	41	37	NMR	138	103	0
	ALBERT LEA	TWIN CITIES	ST LOUIS	12.40	11	5.40	3	7.00	.35	.375	CNW	NMR	NMR	NMR	NMR	NMR	109	99	660
	ALBERT LEA	WINONA	ST LOUIS	14.00	10	7.00	1	7.00	.35	.385	CNW	NMR	NMR	NMR	NMR	NMR	138	103	549
	ALBERT LEA	TWIN CITIES	GUNTERSVILLE	16.35	11	5.40	3	10.95	.35	.375	CNW	NMR	NMR	NMR	NMR	NMR	109	99	1262
	ALBERT LEA	WINONA	GUNTERSVILLE	17.95	10	7.00	1	10.95	.35	.385	CNW	NMR	NMR	NMR	NMR	NMR	138	103	1151
	ALBERT LEA	TWIN CITIES	GULF	15.92	11	5.40	3	10.52	.35	.375	CNW	NMR	NMR	NMR	NMR	NMR	109	99	1723
	ALBERT LEA	WINONA	GULF	17.52	10	7.00	1	10.52	.35	.385	CNW	NMR	NMR	NMR	NMR	NMR	138	103	1585
	ALBERT LEA		ST LOUIS	14.40	3	14.40	3	X	X	X	CNW	NMR	NMR	72	68	64	470	518	0
	ALBERT LEA		GUNTERSVILLE	NMM	-	-	-	X	X	X	CNW	NMR	NMR	NMR	NMR	NMR	1082	949	0
	ALBERT LEA		GULF	NMM	-	-	-	X	X	X	CNW	NMR	NMR	NMR	NMR	NMR	1169	1152	0
SF SEED	ALBERT LEA		TWIN CITIES	5.40	3	5.40	3	X	.35	.375	CNW	81	NMR	27	24	21	109	99	0
	ALBERT LEA		WINONA	7.00	1	7.00	1	X	.35	.385	CNW	NMR	NMR	NMR	NMR	NMR	138	103	0
	ALBERT LEA	TWIN CITIES	GULF	15.92	11	5.40	3	10.52	.35	.375	CNW	NMR	NMR	NMR	NMR	NMR	109	99	1723
	ALBERT LEA	WINONA	GULF	17.52	10	7.00	1	10.52	.35	.385	CNW	NMR	NMR	NMR	NMR	NMR	138	103	1585
	ALBERT LEA		GULF	NMM	-	-	-	X	X	X	CNW	NMR	NMR	NMR	NMR	NMR	1169	1152	0

TABLE 9

SAMPLE BARGE AND ALTERNATIVE MODE RATES FOR LISTED COMMODITIES FROM BISMARCK, ND TO LISTED DESTINATIONS

Rates in Cents Per CWT.

	ORGIN	TRANSIT	DESTINATION	FINAL TOTAL $/TON	MODE	INITIAL MOVE $/TON	MODE	BARGE LINE HAUL	TRUCK RATE	TRUCK PMR	RAIL RATES	# OF CARS 1 CAR	3-5	25-29	50-54	75+	RAIL MILES	TRUCK MILES	WATER MILES
CORN	BISMARCK ND		TWIN CITIES	16.80	3	16.80	3	X	1.39	1.39	BN	156	96	84	79	NMR	425	436	0
	BISMARCK ND		WINONA	35.60	1	35.60	1	X	1.78	1.78	BN	NMR	NMR	NMR	NMR	NMR	524	546	0
	BISMARCK ND	TWIN CITIES	GULF	27.32	11	16.80	3	10.52	1.39	1.39	BN	NMR	NMR	NMR	NMR	NMR	425	436	1723
	BISMARCK ND	WINONA	GULF	46.12	10	35.60	1	10.52	1.78	1.78	BN	NMR	NMR	NMR	NMR	NMR	524	546	1585
	BISMARCK ND		GULF	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1709	1583	0
	BISMARCK ND		GULF	NMM	-	-	-	X	-		-	-	-	-	-	-			-
WHEAT	BISMARCK ND		TWIN CITIES	16.80	3	16.80	3	X	1.39	1.39	BN	156	96	84	79	NMR	425	436	0
	BISMARCK ND		WINONA	35.60	1	35.60	1	X	1.78	1.78	BN	NMR	NMR	NMR	NMR	NMR	524	546	0
	BISMARCK ND	TWIN CITIES	GULF	27.32	11	16.80	3	10.52	1.39	1.39	BN	NMR	NMR	NMR	NMR	NMR	425	436	1723
	BISMARCK ND	WINONA	GULF	46.12	10	35.60	1	10.52	1.78	1.78	BN	NMR	NMR	NMR	NMR	NMR	524	546	1585
	BISMARCK ND		GULF	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1709	1583	0
	BISMARCK ND		GULF	NMM	-	-	-	X	-		-	-	-	-	-	-			-
SOYBEANS	BISMARCK ND		TWIN CITIES	13.40	3	13.40	3	X	1.39	1.39	BN	156	96	67	60	NMR	425	436	0
	BISMARCK ND		WINONA	35.60	1	35.60	1	X	1.78	1.78	BN	NMR	NMR	NMR	NMR	NMR	524	546	0
	BISMARCK ND	TWIN CITIES	GULF	23.92	11	13.40	3	10.52	1.39	1.39	BN	NMR	NMR	NMR	NMR	NMR	425	436	1723
	BISMARCK ND	WINONA	GULF	46.12	10	35.60	1	10.52	1.78	1.78	BN	NMR	NMR	NMR	NMR	NMR	524	546	1585
	BISMARCK ND		GULF	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1709	1583	0
	BISMARCK ND		GULF	NMM	-	-	-	X	-		-	-	-	-	-	-			-

TABLE 9 Cont.

SAMPLE BARGE AND ALTERNATIVE MODE RATES FOR LISTED COMMODITIES FROM BISMARCK, ND TO LISTED DESTINATIONS

Rates in Cents Per CWT.

	ORGIN	TRANSIT	DESTINATION	FINAL TOTAL $/TON	MODE	INITIAL MOVE $/TON	MODE	BARGE LINE HAUL	TRUCK RATE	TRUCK PMR	RAIL RATES	# OF CARS 1 CAR	3-5	25-29	50-54	75+	RAIL MILES	TRUCK MILES	WATER MILES
OATS	BISMARCK ND		TWIN CITIES	16.80	3	16.80	3	X	1.39	1.39	BN	156	96	84	79	NMR	425	436	0
	BISMARCK ND		WINONA	35.60	1	35.60	1	X	1.78	1.78	BN	NMR	NMR	NMR	NMR	NMR	524	546	0
	BISMARCK ND	TWIN CITIES	ST LOUIS	23.80	11	16.80	3	7.00	1.39	1.39	BN	NMR	NMR	NMR	NMR	NMR	425	436	660
	BISMARCK ND	WINONA	ST LOUIS	42.60	10	35.60	1	7.00	1.78	1.78	BN	NMR	NMR	NMR	NMR	NMR	524	546	549
	BISMARCK ND	TWIN CITIES	GUNTERSVILLE	27.75	11	16.80	3	10.95	1.39	1.39	BN	NMR	NMR	NMR	NMR	NMR	425	436	1262
	BISMARCK ND	WINONA	GUNTERSVILLE	46.55	10	35.60	1	10.95	1.78	1.78	BN	NMR	NMR	NMR	NMR	NMR	524	546	1151
	BISMARCK ND	TWIN CITIES	GULF	27.32	11	16.80	3	10.52	1.39	1.39	BN	NMR	NMR	NMR	NMR	NMR	425	436	1723
	BISMARCK ND	WINONA	GULF	46.12	10	35.60	1	10.52	1.78	1.78	BN	NMR	NMR	NMR	NMR	NMR	524	546	1585
	BISMARCK ND		ST LOUIS	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1010	979	0
	BISMARCK ND		GUNTERSVILLE	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1483	1420	0
	BISMARCK ND		GULF	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1709	1583	0
SF SEED	BISMARCK ND		TWIN CITIES	18.20	3	18.20	3	X	1.39	1.39	BN	105	NMR	91	85	NMR	425	436	0
	BISMARCK ND		WINONA	35.60	1	35.60	1	X	1.78	1.78	BN	NMR	NMR	NMR	NMR	NMR	524	546	0
	BISMARCK ND	TWIN CITIES	GULF	28.72	11	18.20	3	10.52	1.39	1.39	BN	NMR	NMR	NMR	NMR	NMR	425	436	1723
	BISMARCK ND	WINONA	GULF	46.12	10	35.60	1	10.52	1.78	1.78	BN	NMR	NMR	NMR	NMR	NMR	524	546	1585
	BISMARCK ND		GULF	69.60	3	69.60	3	X	X	X	SOO	NMR	NMR	348	322	NMR	1709	1583	0

TABLE 10

SAMPLE BARGE AND ALTERNATIVE MODE RATES FOR LISTED COMMODITIES FROM FARGO, ND TO LISTED DESTINATIONS

Rates in Cents Per CWT.

	ORGIN	TRANSIT	DESTINATION	FINAL TOTAL $/TON	MODE	INITIAL MOVE $/TON	MODE	BARGE LINE HAUL	TRUCK RATE	TRUCK PMR	RAIL RATES	# OF CARS 1 CAR	3-5	25-29	50-54	75+	RAIL MILES	TRUCK MILES	WATER MILES
CORN	FARGO ND		TWIN CITIES	11.40	3	11.40	3	X	.8	.8	BN	110	67	57	52	NMR	232	243	0
	FARGO ND		WINONA	22.20	1	22.20	1	X	1.11	1.11	BN	NMR	NMR	NMR	NMR	NMR	331	353	0
	FARGO ND	TWIN CITIES	GULF	21.92	11	11.40	3	10.52	.8	.8	BN	NMR	NMR	NMR	NMR	NMR	232	243	1723
	FARGO ND	WINONA	GULF	32.72	10	22.20	1	10.52	1.11	1.11	BN	NMR	NMR	NMR	NMR	NMR	331	353	1585
	FARGO ND		GULF	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1515	1394	0
	FARGO ND		GULF	NMM	-	-	-	X	-		-	-	-	-	-	-			-
WHEAT	FARGO ND		TWIN CITIES	11.40	3	11.40	3	X	.8	.8	BN	110	67	57	52	NMR	232	243	0
	FARGO ND		WINONA	22.20	1	22.20	1	X	1.11	1.11	BN	NMR	NMR	NMR	NMR	NMR	331	353	0
	FARGO ND	TWIN CITIES	GULF	21.92	11	11.40	3	10.52	.8	.8	BN	NMR	NMR	NMR	NMR	NMR	232	243	1723
	FARGO ND	WINONA	GULF	32.72	10	22.20	1	10.52	1.11	1.11	BN	NMR	NMR	NMR	NMR	NMR	331	353	1585
	FARGO ND		GULF	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1515	1394	0
	FARGO ND		GULF	NMM	-	-	-	X	-		-	-	-	-	-	-			-
SOYBEANS	FARGO ND		TWIN CITIES	11.40	3	11.40	3	X	.8	.8	BN	110	67	57	52	NMR	232	243	0
	FARGO ND		WINONA	22.20	1	22.20	1	X	1.11	1.11	BN	NMR	NMR	NMR	NMR	NMR	331	353	0
	FARGO ND	TWIN CITIES	GULF	21.92	11	11.40	3	10.52	.8	.8	BN	NMR	NMR	NMR	NMR	NMR	232	243	1723
	FARGO ND	WINONA	GULF	32.72	10	22.20	1	10.52	1.11	1.11	BN	NMR	NMR	NMR	NMR	NMR	331	353	1585
	FARGO ND		GULF	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1515	1394	0
	FARGO ND		GULF	NMM	-	-	-	X	-		-	-	-	-	-	-			-

TABLE 10 Cont.

SAMPLE BARGE AND ALTERNATIVE MODE RATES FOR LISTED COMMODITIES FROM FARGO, ND TO LISTED DESTINATIONS

Rates in Cents Per CWT.

	ORGIN	TRANSIT	DESTINATION	FINAL TOTAL $/TON	MODE	INITIAL MOVE $/TON	MODE	BARGE LINE HAUL	TRUCK RATE	TRUCK PMR	RAIL RATES	# OF CARS 1 CAR	3-5	25-29	50-54	75+	RAIL MILES	TRUCK MILES	WATER MILES
OATS	FARGO ND		TWIN CITIES	11.40	3	11.40	3	X	.8	.8	BN	110	67	57	52	NMR	232	243	0
	FARGO ND		WINONA	22.20	1	22.20	1	X	1.11	1.11	BN	NMR	NMR	NMR	NMR	NMR	331	353	0
	FARGO ND	TWIN CITIES	ST LOUIS	18.40	11	11.40	3	7.00	.8	.8	BN	NMR	NMR	NMR	NMR	NMR	232	243	660
	FARGO ND	WINONA	ST LOUIS	29.20	10	22.20	1	7.00	1.11	1.11	BN	NMR	NMR	NMR	NMR	NMR	331	353	549
	FARGO ND	TWIN CITIES	GUNTERSVILLE	22.35	11	11.40	3	10.95	.8	.8	BN	NMR	NMR	NMR	NMR	NMR	232	246	1262
	FARGO ND	WINONA	GUNTERSVILLE	33.15	10	22.20	1	10.95	1.11	1.11	BN	NMR	NMR	NMR	NMR	NMR	331	353	1151
	FARGO ND	TWIN CITIES	GULF	21.92	11	11.40	3	10.52	.8	.8	BN	NMR	NMR	NMR	NMR	NMR	232	243	1723
	FARGO ND	WINONA	GULF	32.72	10	22.20	1	10.52	1.11	1.11	BN	NMR	NMR	NMR	NMR	NMR	331	353	1585
	FARGO ND		ST LOUIS	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	816	850	0
	FARGO ND		GUNTERSVILLE	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1289	1297	0
	FARGO ND		GULF	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1515	1394	0
SF SEED	FARGO ND		TWIN CITIES	12.80	3	12.80	3	X	.8	.8	BN	77	NMR	64	58	NMR	232	243	0
	FARGO ND		WINONA	22.20	1	22.20	1	X	1.11	1.11	BN	NMR	NMR	NMR	NMR	NMR	331	353	0
	FARGO ND	TWIN CITIES	GULF	23.32	11	12.80	3	10.52	.8	.8	BN	NMR	NMR	NMR	NMR	NMR	232	243	1723
	FARGO ND	WINONA	GULF	32.72	10	22.20	1	10.52	1.11	1.11	BN	NMR	NMR	NMR	NMR	NMR	331	353	1585
	FARGO ND		GULF	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1515	1394	0

TABLE 11

SAMPLE BARGE AND ALTERNATIVE MODE RATES FOR LISTED COMMODITIES FROM JACKSON, MN TO LISTED DESTINATIONS

Rates in Cents Per CWT.

	ORGIN	TRANSIT	DESTINATION	FINAL TOTAL $/TON	MODE	INITIAL MOVE $/TON	MODE	BARGE LINE HAUL	TRUCK RATE	TRUCK PMR	RAIL RATES	# OF CARS 1 CAR	3-5	25-29	50-54	75+	RAIL MILES	TRUCK MILES	WATER MILES
CORN	JACKSON		TWIN CITIES	5.80	3	5.80	3	X	.42	.63	MIL	70	35	29	NMR	NMR	191	150	0
	JACKSON		WINONA	15.60	1	15.60	1	X	0	.78	MIL	NMR	NMR	NMR	NMR	NMR	235	188	0
	JACKSON	TWIN CITIES	GULF	16.32	11	5.80	3	10.52	.42	.63	MIL	NMR	NMR	NMR	NMR	NMR	191	150	1723
	JACKSON	WINONA	GULF	26.12	10	15.60	1	10.52	0	.78	MIL	NMR	NMR	NMR	NMR	NMR	235	188	1585
	JACKSON		GULF	28.20	3	28.20	3	X	X	X	MIL	185	NMR	141	132	120	1331	1232	0
	JACKSON		GULF	24.00	5	24.00	5	X	-	-	-	-	-	-	-	-			-
WHEAT	JACKSON		TWIN CITIES	5.80	3	5.80	3	X	.42	.63	MIL	70	35	29	NMR	NMR	191	150	0
	JACKSON		WINONA	15.60	1	15.60	1	X	0	.78	MIL	NMR	NMR	NMR	NMR	NMR	235	188	0
	JACKSON	TWIN CITIES	GULF	16.32	11	5.80	3	10.52	.42	.63	MIL	NMR	NMR	NMR	NMR	NMR	191	150	1723
	JACKSON	WINONA	GULF	26.12	10	15.60	1	10.52	0	.78	MIL	NMR	NMR	NMR	NMR	NMR	235	188	1585
	JACKSON		GULF	NMM	3		3	X	X	X	MIL	NMR	NMR	NMR	NMR	NMR	1331	1232	0
	JACKSON		GULF	NMM	5		5	X	-	-	-	-	-	-	-	-			-
SOYBEANS	JACKSON		TWIN CITIES	5.80	3	5.80	3	X	.42	.63	MIL	70	35	29	NMR	NMR	191	150	0
	JACKSON		WINONA	15.60	1	15.60	1	X	0	.78	MIL	NMR	NMR	NMR	NMR	NMR	235	188	0
	JACKSON	TWIN CITIES	GULF	16.32	11	5.80	3	10.52	.42	.63	MIL	NMR	NMR	NMR	NMR	NMR	191	150	1723
	JACKSON	WINONA	GULF	26.12	10	15.60	1	10.52	0	.78	MIL	NMR	NMR	NMR	NMR	NMR	235	188	1585
	JACKSON		GULF	28.20	3	28.20	3	X	X	X	MIL	185	NMR	141	132	120	1331	1232	0
	JACKSON		GULF	24.00	5	24.00	5	X	-	-	-	-	-	-	-	-			-

TABLE 11 Cont.

SAMPLE BARGE AND ALTERNATIVE MODE RATES FOR LISTED COMMODITIES FROM JACKSON, MN TO LISTED DESTINATIONS

Rates in Cents Per CWT.

	ORGIN	TRANSIT	DESTINATION	FINAL TOTAL $/TON	MODE	INITIAL MOVE $/TON	MODE	BARGE LINE HAUL	TRUCK RATE	TRUCK PMR	RAIL RATES	# OF CARS 1 CAR	3-5	25-29	50-54	75+	RAIL MILES	TRUCK MILES	WATER MILES
OATS	JACKSON		TWIN CITIES	8.40	1	8.40	1	X	.42	.63	MIL	70	NMR	NMR	NMR	NMR	191	150	0
	JACKSON		WINONA	15.60	1	15.60	1	X	0	.78	MIL	NMR	NMR	NMR	NMR	NMR	235	188	0
	JACKSON	TWIN CITIES	ST LOUIS	15.40	10	8.40	1	7.00	.42	.63	MIL	NMR	NMR	NMR	NMR	NMR	191	150	660
	JACKSON	WINONA	ST LOUIS	22.60	10	15.60	1	7.00	0	.78	MIL	NMR	NMR	NMR	NMR	NMR	235	188	549
	JACKSON	TWIN CITIES	GUNTERSVILLE	19.35	10	8.40	1	10.95	.42	.63	MIL	NMR	NMR	NMR	NMR	NMR	191	150	1262
	JACKSON	WINONA	GUNTERSVILLE	26.55	10	15.60	1	10.95	0	.78	MIL	NMR	NMR	NMR	NMR	NMR	235	188	1151
	JACKSON	TWIN CITIES	GULF	18.92	10	8.40	1	10.52	.42	.63	MIL	NMR	NMR	NMR	NMR	NMR	191	150	1723
	JACKSON	WINONA	GULF	26.12	10	15.60	1	10.52	0	.78	MIL	NMR	NMR	NMR	NMR	NMR	235	188	1585
	JACKSON		ST LOUIS	NMM	-	-	-	X	X	X	MIL	NMR	NMR	NMR	NMR	NMR	574	558	0
	JACKSON		GUNTERSVILLE	NMM	-	-	-	X	X	X	MIL	NMR	NMR	NMR	NMR	NMR	1051	1128	0
	JACKSON		GULF	NMM	-	-	-	X	X	X	MIL	NMR	NMR	NMR	NMR	NMR	1331	1232	0
SF SEED	JACKSON		TWIN CITIES	7.60	3	7.60	3	X	.42	.63	MIL	92	NMR	38	33	29	191	150	0
	JACKSON		WINONA	15.60	1	15.60	1	X	0	.78	MIL	NMR	NMR	NMR	NMR	NMR	235	188	0
	JACKSON	TWIN CITIES	GULF	18.12	11	7.60	3	10.52	.42	.63	MIL	NMR	NMR	NMR	NMR	NMR	191	150	1723
	JACKSON	WINONA	GULF	26.12	10	15.60	1	10.52	0	.78	MIL	NMR	NMR	NMR	NMR	NMR	235	188	1585
	JACKSON		GULF	NMM	-	-	-	X	X	X	MIL	NMR	NMR	NMR	NMR	NMR	1331	1232	0

TABLE 12

SAMPLE BARGE AND ALTERNATIVE MODE RATES FOR LISTED COMMODITIES FROM LITCHFIELD, MN TO LISTED DESTINATIONS

Rates in Cents Per CWT.

	ORGIN	TRANSIT	DESTINATION	FINAL TOTAL $/TON	MODE	INITIAL MOVE $/TON	MODE	BARGE LINE HAUL	TRUCK RATE	TRUCK PMR	RAIL RATES	# OF CARS 1 CAR	3-5	25-29	50-54	75+	RAIL MILES	TRUCK MILES	WATER MILES
CORN	LITCHFIELD		TWIN CITIES	6.00	1	6.00	1	X	.3	.31	BN	82	42	33	28	NMR	85	75	0
	LITCHFIELD		WINONA	12.00	1	12.00	1	X	0	.6	BN	NMR	NMR	NMR	NMR	NMR	195	183	0
	LITCHFIELD	TWIN CITIES	GULF	16.52	10	6.00	1	10.52	.3	.31	BN	NMR	NMR	NMR	NMR	NMR	85	75	1723
	LITCHFIELD	WINONA	GULF	22.52	10	12.00	1	10.52	0	.6	BN	NMR	NMR	NMR	NMR	NMR	195	183	1585
	LITCHFIELD		GULF	31.60	3	31.60	3	X	X	X	BN	NMR	172	158	143	NMR	1358	1394	0
	LITCHFIELD		GULF	28.60	5	28.60	5	X	-	-	-	-	-	-	-	-			-
WHEAT	LITCHFIELD		TWIN CITIES	6.00	1	6.00	1	X	.3	.31	BN	82	42	33	28	NMR	85	75	0
	LITCHFIELD		WINONA	12.00	1	12.00	1	X	0	.6	BN	NMR	NMR	NMR	NMR	NMR	195	183	0
	LITCHFIELD	TWIN CITIES	GULF	16.52	10	6.00	1	10.52	.3	.31	BN	NMR	NMR	NMR	NMR	NMR	85	75	1723
	LITCHFIELD	WINONA	GULF	22.52	10	12.00	1	10.52	0	.6	BN	NMR	NMR	NMR	NMR	NMR	195	183	1585
	LITCHFIELD		GULF	31.60	3	31.60	3	X	X	X	BN	NMR	172	158	143	NMR	1358	1394	0
	LITCHFIELD		GULF	28.60	5	28.60	5	X	-	-	-	-	-	-	-	-			-
SOYBEANS	LITCHFIELD		TWIN CITIES	6.00	1	6.00	1	X	.3	.31	BN	82	42	33	28	NMR	85	75	0
	LITCHFIELD		WINONA	12.00	1	12.00	1	X	0	.6	BN	NMR	NMR	NMR	NMR	NMR	195	183	0
	LITCHFIELD	TWIN CITIES	GULF	16.52	10	6.00	1	10.52	.3	.31	BN	NMR	NMR	NMR	NMR	NMR	85	75	1723
	LITCHFIELD	WINONA	GULF	22.52	10	12.00	1	10.52	0	.6	BN	NMR	NMR	NMR	NMR	NMR	195	183	1585
	LITCHFIELD		GULF	31.60	3	31.60	3	X	X	X	BN	NMR	172	158	143	NMR	1358	1394	0
	LITCHFIELD		GULF	28.60	5	28.60	5	X	-	-	-	-	-	-	-	-			-

TABLE 12 Cont.

SAMPLE BARGE AND ALTERNATIVE MODE RATES FOR LISTED COMMODITIES FROM LITCHFIELD, MN TO LISTED DESTINATIONS

Rates in Cents Per CWT.

	ORGIN	TRANSIT	DESTINATION	FINAL TOTAL $/TON	MODE	INITIAL MOVE $/TON	MODE	BARGE LINE HAUL	TRUCK RATE	TRUCK PMR	RAIL RATES	# OF CARS 1 CAR	3-5	25-29	50-54	75+	RAIL MILES	TRUCK MILES	WATER MILES
OATS	LITCHFIELD		TWIN CITIES	6.00	1	6.00	1	X	.3	.31	BN	82	42	33	28	NMR	85	75	0
	LITCHFIELD		WINONA	12.00	1	12.00	1	X	0	.6	BN	NMR	NMR	NMR	NMR	NMR	195	183	0
	LITCHFIELD	TWIN CITIES	ST LOUIS	13.00	10	6.00	1	7.00	.3	.31	BN	NMR	NMR	NMR	NMR	NMR	85	75	660
	LITCHFIELD	WINONA	ST LOUIS	19.00	10	12.00	1	7.00	0	.6	BN	NMR	NMR	NMR	NMR	NMR	195	183	549
	LITCHFIELD	TWIN CITIES	GUNTERSVILLE	16.95	10	6.00	1	10.95	.3	.31	BN	NMR	NMR	NMR	NMR	NMR	85	75	1262
	LITCHFIELD	WINONA	GUNTERSVILLE	22.95	10	12.00	1	10.95	0	.6	BN	NMR	NMR	NMR	NMR	NMR	195	183	1151
	LITCHFIELD	TWIN CITIES	GULF	16.52	10	6.00	1	10.52	.3	.31	BN	NMR	NMR	NMR	NMR	NMR	85	75	1723
	LITCHFIELD	WINONA	GULF	22.52	10	12.00	1	10.52	0	.6	BN	NMR	NMR	NMR	NMR	NMR	195	183	1585
	LITCHFIELD		ST. LOUIS	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	659	678	0
	LITCHFIELD		GUNTERSVILLE	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1132	1116	0
	LITCHFIELD		GULF	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1358	1394	0
SF SEED	LITCHFIELD		TWIN CITIES	6.00	1	6.00	1	X	.3	.31	BN	53	NMR	39	33	NMR	85	75	0
	LITCHFIELD		WINONA	12.00	1	12.00	1	X	0	.6	BN	NMR	NMR	NMR	NMR	NMR	195	183	0
	LITCHFIELD	TWIN CITIES	GULF	16.52	10	6.00	1	10.52	.3	.31	BN	NMR	NMR	NMR	NMR	NMR	85	75	1723
	LITCHFIELD	WINONA	GULF	22.52	10	12.00	1	10.52	0	.6	BN	NMR	NMR	NMR	NMR	NMR	195	183	1585
	LITCHFIELD		GULF	69.60	3	69.60	3	X	X	X	BN	NMR	NMR	348	342	NMR	1358	1394	0

TABLE 13

SAMPLE BARGE AND ALTERNATIVE MODE RATES FOR LISTED COMMODITIES FROM MARSHALL, MN TO LISTED DESTINATIONS

Rates in Cents Per CWT.

	ORGIN	TRANSIT	DESTINATION	FINAL TOTAL $/TON	MODE	INITIAL MOVE $/TON	MODE	BARGE LINE HAUL	TRUCK RATE	TRUCK PMR	RAIL RATES	# OF CARS 1 CAR	3-5	25-29	50-54	75+	RAIL MILES	TRUCK MILES	WATER MILES
CORN	MARSHALL		TWIN CITIES	9.20	3	9.20	3	X	.5	.6	BN	92	54	46	41	NMR	179	157	0
	MARSHALL		WINONA	14.00	1	14.00	1	X	.7	.78	BN	NMR	NMR	NMR	NMR	NMR	316	235	0
	MARSHALL	TWIN CITIES	GULF	19.72	11	9.20	3	10.52	.5	.6	BN	NMR	NMR	NMR	NMR	NMR	179	157	1723
	MARSHALL	WINONA	GULF	24.52	10	14.00	1	10.52	.7	.78	BN	NMR	NMR	NMR	NMR	NMR	316	235	1585
	MARSHALL		GULF	29.00	3	29.00	3	X	X	X	BN	NMR	158	145	128	NMR	1348	1326	0
	MARSHALL		GULF	25.60	4	25.60	4	X	-	-	-	-	-	-	-	-		-	-
WHEAT	MARSHALL		TWIN CITIES	9.20	3	9.20	3	X	.5	.6	BN	92	54	46	41	NMR	179	157	0
	MARSHALL		WINONA	14.00	1	14.00	1	X	.7	.78	BN	NMR	NMR	NMR	NMR	NMR	316	235	0
	MARSHALL	TWIN CITIES	GULF	19.72	11	9.20	3	10.52	.5	.6	BN	NMR	NMR	NMR	NMR	NMR	179	157	1723
	MARSHALL	WINONA	GULF	24.52	10	14.00	1	10.52	.7	.78	BN	NMR	NMR	NMR	NMR	NMR	316	235	1585
	MARSHALL		GULF	29.00	3	29.00	3	X	X	X	BN	NMR	158	145	128	NMR	1348	1326	0
	MARSHALL		GULF	25.60	4	25.60	4	X	-	-	-	-	-	-	-	-		-	-
SOYBEANS	MARSHALL		TWIN CITIES	9.20	3	9.20	3	X	.5	.6	BN	92	54	46	41	NMR	179	157	0
	MARSHALL		WINONA	14.00	1	14.00	1	X	.7	.78	BN	NMR	NMR	NMR	NMR	NMR	316	235	0
	MARSHALL	TWIN CITIES	GULF	19.72	11	9.20	3	10.52	.5	.6	BN	NMR	NMR	NMR	NMR	NMR	179	157	1723
	MARSHALL	WINONA	GULF	24.52	10	14.00	1	10.52	.7	.78	BN	NMR	NMR	NMR	NMR	NMR	316	235	1585
	MARSHALL		GULF	29.00	3	29.00	3	X	X	X	BN	NMR	158	145	128	NMR	1348	1326	0
	MARSHALL		GULF	25.60	4	25.60	4	X	-	-	-	-	-	-	-	-		-	-

TABLE 13 Cont.

SAMPLE BARGE AND ALTERNATIVE MODE RATES FOR LISTED COMMODITIES FROM MARSHALL, MN TO LISTED DESTINATIONS

Rates in Cents Per CWT.

	ORGIN	TRANSIT	DESTINATION	FINAL TOTAL $/TON	MODE	INITIAL MOVE $/TON	MODE	BARGE LINE HAUL	TRUCK RATE	TRUCK PMR	RAIL RATES	# OF CARS 1 CAR	3-5	25-29	50-54	75+	RAIL MILES	TRUCK MILES	WATER MILES
OATS	MARSHALL		TWIN CITIES	9.20	3	9.20	3	X	.5	.6	BN	92	54	46	41	NMR	179	157	0
	MARSHALL		WINONA	14.00	1	14.00	1	X	.7	.78	BN	NMR	NMR	NMR	NMR	NMR	316	235	0
	MARSHALL	TWIN CITIES	ST LOUIS	16.20	11	9.20	3	7.00	.5	.6	BN	NMR	NMR	NMR	NMR	NMR	179	157	660
	MARSHALL	WINONA	ST LOUIS	21.00	10	14.00	1	7.00	.7	.78	BN	NMR	NMR	NMR	NMR	NMR	316	235	549
	MARSHALL	TWIN CITIES	GUNTERSVILLE	20.15	11	9.20	3	10.95	.5	.6	BN	NMR	NMR	NMR	NMR	NMR	179	157	1262
	MARSHALL	WINONA	GUNTERSVILLE	24.95	10	14.00	1	10.95	.7	.78	BN	NMR	NMR	NMR	NMR	NMR	316	235	1151
	MARSHALL	TWIN CITIES	GULF	19.72	11	9.20	3	10.52	.5	.6	BN	NMR	NMR	NMR	NMR	NMR	179	157	1723
	MARSHALL	WINONA	GULF	24.52	10	14.00	1	10.52	.7	.78	BN	NMR	NMR	NMR	NMR	NMR	316	235	1585
	MARSHALL		ST LOUIS	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	649	652	0
	MARSHALL		GUNTERSVILLE	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1126	1222	0
	MARSHALL		GULF	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1348	1326	0
SF SEED	MARSHALL		TWIN CITIES	10.40	3	10.40	3	X	.6	.6	BN	66	NMR	52	47	NMR	179	157	0
	MARSHALL		WINONA	14.00	1	14.00	1	X	.7	.78	BN	NMR	NMR	NMR	NMR	NMR	316	235	0
	MARSHALL	TWIN CITIES	GULF	20.92	11	10.40	3	10.52	.6	.6	BN	NMR	NMR	NMR	NMR	NMR	179	157	1723
	MARSHALL	WINONA	GULF	24.52	10	14.00	1	10.52	.7	.78	BN	NMR	NMR	NMR	NMR	NMR	316	235	1585
	MARSHALL		GULF	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1348	1326	0

TABLE 14

SAMPLE BARGE AND ALTERNATIVE MODE RATES FOR LISTED COMMODITIES FROM MORRIS, MN TO LISTED DESTINATIONS

Rates in Cents Per CWT.

	ORGIN	TRANSIT	DESTINATION	FINAL TOTAL $/TON	MODE	INITIAL MOVE $/TON	MODE	BARGE LINE HAUL	TRUCK RATE	TRUCK PMR	RAIL RATES	# OF CARS 1 CAR	3-5	25-29	50-54	75+	RAIL MILES	TRUCK MILES	WATER MILES
CORN	MORRIS		TWIN CITIES	7.20	3	7.20	3	X	.5	.58	BN	92	45	36	31	NMR	171	158	0
	MORRIS		WINONA	18.00	1	18.00	1	X	0	.9	BN	NMR	NMR	NMR	NMR	NMR	281	266	0
	MORRIS	TWIN CITIES	GULF	17.72	11	7.20	3	10.52	.5	.58	BN	NMR	NMR	NMR	NMR	NMR	171	158	1723
	MORRIS	WINONA	GULF	28.52	10	18.00	1	10.52	0	.9	BN	NMR	NMR	NMR	NMR	NMR	281	266	1585
	MORRIS		GULF	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1444	1504	0
	MORRIS		GULF	NMM	-	-	-	X	-	-	-	-	-	-	-	-			-
WHEAT	MORRIS		TWIN CITIES	7.20	3	7.20	3	X	.5	.58	BN	92	45	36	31	NMR	171	158	0
	MORRIS		WINONA	18.00	1	18.00	1	X	0	.9	BN	NMR	NMR	NMR	NMR	NMR	281	266	0
	MORRIS	TWIN CITIES	GULF	17.72	11	7.20	3	10.52	.5	.58	BN	NMR	NMR	NMR	NMR	NMR	171	158	1723
	MORRIS	WINONA	GULF	28.52	10	18.00	1	10.52	0	.9	BN	NMR	NMR	NMR	NMR	NMR	281	266	1585
	MORRIS		GULF	NMM	-	-	-	X	X	X	BN	NMR	158	145	128	NMR	1444	1504	0
	MORRIS		GULF	NMM	-	-	-	X	-	-	-	-	-	-	-	-			-
SOYBEANS	MORRIS		TWIN CITIES	7.20	3	7.20	3	X	.5	.58	BN	92	45	36	31	NMR	171	158	0
	MORRIS		WINONA	18.00	1	18.00	1	X	0	.9	BN	NMR	NMR	NMR	NMR	NMR	281	266	0
	MORRIS	TWIN CITIES	GULF	17.72	11	7.20	3	10.52	.5	.58	BN	NMR	NMR	NMR	NMR	NMR	171	158	1723
	MORRIS	WINONA	GULF	28.52	10	18.00	1	10.52	0	.9	BN	NMR	NMR	NMR	NMR	NMR	281	266	1585
	MORRIS		GULF	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1444	1504	0
	MORRIS		GULF	NMM	-	-	-	X	-	-	-	-	-	-	-	-			-

TABLE 14 Cont.

SAMPLE BARGE AND ALTERNATIVE MODE RATES FOR LISTED COMMODITIES FROM MORRIS, MN TO LISTED DESTINATIONS

									Rates in Cents Per CWT.									
				FINAL TOTAL		INITIAL MOVE		BARGE	TRUCK	TRUCK	RAIL	# OF CARS					RAIL	TRUCK	WATER
	ORGIN	TRANSIT	DESTINATION	$/TON	MODE	$/TON	MODE	LINE HAUL	RATE	PMR	RATES	1 CAR	3-5	25-29	50-54	75+	MILES	MILES	MILES
OATS	MORRIS		TWIN CITIES	7.20	3	7.20	3	X	.5	.58	BN	92	45	36	31	NMR	171	158	0
	MORRIS		WINONA	18.00	1	18.00	1	X	0	.9	BN	NMR	NMR	NMR	NMR	NMR	281	266	0
	MORRIS	TWIN CITIES	ST LOUIS	14.20	11	7.20	3	7.00	.5	.58	BN	NMR	NMR	NMR	NMR	NMR	171	158	660
	MORRIS	WINONA	ST LOUIS	25.00	10	18.00	1	7.00	0	.9	BN	NMR	NMR	NMR	NMR	NMR	281	266	549
	MORRIS	TWIN CITIES	GUNTERSVILLE	18.15	11	7.20	3	10.95	.5	.58	BN	NMR	NMR	NMR	NMR	NMR	171	158	1262
	MORRIS	WINONA	GUNTERSVILLE	28.95	10	18.00	1	10.95	0	.9	BN	NMR	NMR	NMR	NMR	NMR	281	266	1151
	MORRIS	TWIN CITIES	GULF	17.72	11	7.20	3	10.52	.5	.58	BN	NMR	NMR	NMR	NMR	NMR	171	158	1723
	MORRIS	WINONA	GULF	28.52	10	18.00	1	10.52	0	.9	BN	NMR	NMR	NMR	NMR	NMR	281	266	1585
	MORRIS		ST LOUIS	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	745	788	0
	MORRIS		GUNTERSVILLE	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1218	1226	0
	MORRIS		GULF	NMM	-	-	-	X	X	X	BN	NMR	NMR	NMR	NMR	NMR	1444	1504	0
SF SEED	MORRIS		TWIN CITIES	8.40	3	8.40	3	X	.5	.58	BN	56	NMR	42	36	NMR	171	158	0
	MORRIS		WINONA	18.00	1	18.00	1	X	0	.9	BN	NMR	NMR	NMR	NMR	NMR	281	266	0
	MORRIS	TWIN CITIES	GULF	18.92	11	8.40	3	10.52	.5	.58	BN	NMR	NMR	NMR	NMR	NMR	171	158	1723
	MORRIS	WINONA	GULF	28.52	10	18.00	1	10.52	0	.9	BN	NMR	NMR	NMR	NMR	NMR	281	266	1585
	MORRIS		GULF	69.60	3	69.60	3	X	X	X	BN	NMR	NMR	3.48	3.42	NMR	1444	1504	0

TABLE 15

SAMPLE BARGE AND ALTERNATIVE MODE RATES FOR LISTED COMMODITIES FROM WINONA, MN TO LISTED DESTINATIONS

Rates in Cents Per CWT.

	ORGIN	TRANSIT	DESTINATION	FINAL TOTAL $/TON	MODE	INITIAL MOVE $/TON	MODE	BARGE LINE HAUL	TRUCK RATE	TRUCK PMR	RAIL RATES	# OF CARS 1 CAR	3-5	25-29	50-54	75+	RAIL MILES	TRUCK MILES	WATER MILES
CORN	WINONA		TWIN CITIES	8.00	1	8.00	1	X	.4	.4	CNW	48	NMR	NMR	NMR	NMR	137	110	0
	WINONA		WINONA	-	-	-	-	X	0	0	CNW	NMR	NMR	NMR	NMR	NMR	0	0	0
	WINONA	TWIN CITIES	GULF	18.52	10	8.00	1	10.52	.4	.4	CNW	NMR	NMR	NMR	NMR	NMR	137	110	1723
	WINONA	WINONA	GULF	10.52	6	10.52	6	10.52	0	0	CNW	NMR	NMR	NMR	NMR	NMR	0	0	1585
	WINONA		GULF	30.20	3	30.20	3	X	X	X	CNW	181	NMR	151	142	130	1142	1236	0
	WINONA		GULF	26.00	5	26.00	5	X	-	-	-	-	-	-	-	-		-	-
WHEAT	WINONA		TWIN CITIES	8.00	1	8.00	1	X	.4	.4	CNW	48	NMR	NMR	NMR	NMR	137	110	0
	WINONA		WINONA	-	-	-	-	X	0	0	CNW	NMR	NMR	NMR	NMR	NMR	0	0	0
	WINONA	TWIN CITIES	GULF	18.52	10	8.00	1	10.52	.4	.4	CNW	NMR	NMR	NMR	NMR	NMR	137	110	1723
	WINONA	WINONA	GULF	10.52	6	10.52	6	10.52	0	0	CNW	NMR	NMR	NMR	NMR	NMR	0	0	1585
	WINONA		GULF	30.20	3	30.20	3	X	X	X	CNW	NMR	NMR	151	142	130	1142	1236	0
	WINONA		GULF	26.00	5	26.00	5	X	-	-	-	-	-	-	-	-		-	-
SOYBEANS	WINONA		TWIN CITIES	8.00	1	8.00	1	X	.4	.4	CNW	48	NMR	NMR	NMR	NMR	137	110	0
	WINONA		WINONA	-	-	-	-	X	0	0	CNW	NMR	NMR	NMR	NMR	NMR	0	0	0
	WINONA	TWIN CITIES	GULF	18.52	10	8.00	1	10.52	.4	.4	CNW	NMR	NMR	NMR	NMR	NMR	137	110	1723
	WINONA	WINONA	GULF	10.52	6	10.52	6	10.52	0	0	CNW	NMR	NMR	NMR	NMR	NMR	0	0	1585
	WINONA		GULF	26.00	5	26.00	5	X	X	X	CNW	181	NMR	151	142	130	1142	1236	0
	WINONA		GULF	10.52	6	10.52	6	X	-	-	-	-	-	-	-	-		-	-

TABLE 15 Cont.
SAMPLE BARGE AND ALTERNATIVE MODE RATES FOR LISTED COMMODITIES FROM WINONA, MN TO LISTED DESTINATIONS

Rates in Cents Per CWT.

	ORGIN	TRANSIT	DESTINATION	FINAL TOTAL $/TON	MODE	INITIAL MOVE $/TON	MODE	BARGE LINE HAUL	TRUCK RATE	TRUCK PMR	RAIL RATES	# OF CARS 1 CAR	3-5	25-29	50-54	75+	RAIL MILES	TRUCK MILES	WATER MILES
OATS	WINONA		TWIN CITIES	8.00	1	8.00	1	X	.4	.4	CNW	48	NMR	NMR	NMR	NMR	137	110	0
	WINONA		WINONA	-	-	-	-	X	0	0	CNW	NMR	NMR	NMR	NMR	NMR	0	0	0
	WINONA	TWIN CITIES	ST LOUIS	13.00	10	8.00	1	7.00	.4	.4	CNW	NMR	NMR	NMR	NMR	NMR	137	110	660
	WINONA	WINONA	ST LOUIS	7.00	6	7.00	6	7.00	0	0	CNW	NMR	NMR	85	80	75	0	0	549
	WINONA	TWIN CITIES	GUNTERSVILLE	18.95	10	8.00	1	10.95	.4	.4	CNW	NMR	NMR	NMR	NMR	NMR	137	110	1262
	WINONA	WINONA	GUNTERSVILLE	10.95	6	10.95	6	10.95	0	0	CNW	NMR	NMR	NMR	NMR	NMR	0	0	1151
	WINONA	TWIN CITIES	GULF	18.52	10	8.00	1	10.52	.4	.4	CNW	NMR	NMR	NMR	NMR	NMR	137	110	1723
	WINONA	WINONA	GULF	10.52	6	10.52	6	10.52	0	0	CNW	NMR	NMR	NMR	NMR	NMR	0	0	1585
	WINONA		ST LOUIS	7.00	6	7.00	6	X	X	X	CNW	NMR	NMR	NMR	NMR	NMR	439	520	0
	WINONA		GUNTERSVILLE	10.95	6	10.95	6	X	X	X	CNW	NMR	NMR	NMR	NMR	NMR	998	958	0
	WINONA		GULF	10.52	6	10.52	6	X	X	X	CNW	NMR	NMR	NMR	NMR	NMR	1142	1236	0
SF SEED	WINONA		TWIN CITIES	8.00	1	8.00	1	X	.4	.4	CNW	81	NMR	NMR	NMR	NMR	137	110	0
	WINONA		WINONA	-	-	-	-	X	0	0	CNW	NMR	NMR	NMR	NMR	NMR	0	0	0
	WINONA	TWIN CITIES	GULF	18.52	10	8.00	1	10.52	.4	.4	CNW	NMR	NMR	NMR	NMR	NMR	137	110	1723
	WINONA	WINONA	GULF	10.52	6	10.52	6	10.52	0	0	CNW	NMR	NMR	NMR	NMR	NMR	0	0	1585
	WINONA		GULF	NMM	-	-	-	X	X	X	CNW	NMR	NMR	NMR	NMR	NMR	1142	1236	0

TABLE 16

SAMPLE BARGE AND ALTERNATIVE MODE RATES FOR LISTED COMMODITIES FROM WORTHINGTON, MN TO LISTED DESTINATIONS

Rates in Cents Per CWT.

	ORGIN	TRANSIT	DESTINATION	FINAL TOTAL $/TON	MODE	INITIAL MOVE $/TON	MODE	BARGE LINE HAUL	TRUCK RATE	TRUCK PMR	RAIL RATES	# OF CARS 1 CAR	3-5	25-29	50-54	75+	RAIL MILES	TRUCK MILES	WATER MILES
CORN	WORTHINGTON		TWIN CITIES	7.60	3	7.60	3	X	.5	.6	CNW	48	NMR	38	33	29	171	180	0
	WORTHINGTON		WINONA	12.00	1	12.00	1	X	.6	.705	CNW	NMR	NMR	NMR	NMR	NMR	218	218	0
	WORTHINGTON	TWIN CITIES	GULF	18.12	11	7.60	3	10.52	.5	.6	CNW	NMR	NMR	NMR	NMR	NMR	171	180	1723
	WORTHINGTON	WINONA	GULF	22.52	10	12.00	1	10.52	.6	.705	CNW	NMR	NMR	NMR	NMR	NMR	218	218	1585
	WORTHINGTON		GULF	27.80	3	27.80	3	X	X	X	CNW	181	NMR	139	130	119	1235	1262	0
	WORTHINGTON		GULF	23.80	5	23.80	5	X	-	-	-	-	-	-	-	-		-	-
WHEAT	WORTHINGTON		TWIN CITIES	7.60	3	7.60	3	X	.5	.6	CNW	74	NMR	38	33	29	171	180	0
	WORTHINGTON		WINONA	12.00	1	12.00	1	X	.6	.71	CNW	NMR	NMR	NMR	NMR	NMR	218	218	0
	WORTHINGTON	TWIN CITIES	GULF	18.12	11	7.60	3	10.52	.5	.6	CNW	NMR	NMR	NMR	NMR	NMR	171	180	1723
	WORTHINGTON	WINONA	GULF	22.52	10	12.00	1	10.52	.6	.71	CNW	NMR	NMR	NMR	NMR	NMR	218	218	1585
	WORTHINGTON		GULF	27.80	3	27.80	3	X	X	X	CNW	NMR	NMR	139	130	119	1235	1262	0
	WORTHINGTON		GULF	23.80	5	23.80	5	X	-	-	-	-	-	-	-	-		-	-
SOYBEANS	WORTHINGTON		TWIN CITIES	7.60	3	7.60	3	X	.5	.6	CNW	48	NMR	38	33	29	171	180	0
	WORTHINGTON		WINONA	12.00	1	12.00	1	X	.6	.71	CNW	NMR	NMR	41	37	NMR	221	218	0
	WORTHINGTON	TWIN CITIES	GULF	18.12	11	7.60	3	10.52	.5	.6	CNW	NMR	NMR	NMR	NMR	NMR	171	180	1723
	WORTHINGTON	WINONA	GULF	22.52	10	12.00	1	10.52	.6	.71	CNW	NMR	NMR	NMR	NMR	NMR	221	218	1585
	WORTHINGTON		GULF	27.80	3	27.80	3	X	X	X	CNW	181	NMR	139	130	119	1235	1262	0
	WORTHINGTON		GULF	23.80	5	23.80	5	X	-	-	-	-	-	-	-	-		-	-

TABLE 16 Cont.

SAMPLE BARGE AND ALTERNATIVE MODE RATES FOR LISTED COMMODITIES FROM WORTHINGTON, MN TO LISTED DESTINATIONS

Rates in Cents Per CWT.

	ORGIN	TRANSIT	DESTINATION	FINAL TOTAL $/TON	MODE	INITIAL MOVE $/TON	MODE	BARGE LINE HAUL	TRUCK RATE	TRUCK PMR	RAIL RATES	# OF CARS 1 CAR	3-5	25-29	50-54	75+	RAIL MILES	TRUCK MILES	WATER MILES
OATS	WORTHINGTON		TWIN CITIES	7.60	3	7.60	3	X	.5	.6	CNW	74	NMR	38	33	29	171	180	0
	WORTHINGTON		WINONA	12.00	1	12.00	1	X	.6	.71	CNW	NMR	NMR	NMR	NMR	NMR	221	218	0
	WORTHINGTON	TWIN CITIES	ST LOUIS	14.60	11	7.60	3	7.00	.5	.6	CNW	NMR	NMR	NMR	NMR	NMR	171	180	660
	WORTHINGTON	WINONA	ST LOUIS	19.00	10	12.00	1	7.00	.6	.71	CNW	NMR	NMR	NMR	NMR	NMR	221	218	549
	WORTHINGTON	TWIN CITIES	GUNTERSVILLE	18.55	11	7.60	3	10.95	.5	.6	CNW	NMR	NMR	NMR	NMR	NMR	171	180	1262
	WORTHINGTON	WINONA	GUNTERSVILLE	22.95	10	12.00	1	10.95	.6	.71	CNW	NMR	NMR	NMR	NMR	NMR	221	218	1151
	WORTHINGTON	TWIN CITIES	GULF	18.12	11	7.60	3	10.52	.5	.6	CNW	NMR	NMR	NMR	NMR	NMR	171	180	1723
	WORTHINGTON	WINONA	GULF	22.52	10	12.00	1	10.52	.6	.71	CNW	NMR	NMR	NMR	NMR	NMR	221	218	1585
	WORTHINGTON		ST LOUIS	NMM	-	-	-	X	X	X	CNW	NMR	NMR	NMR	NMR	NMR	536	588	0
	WORTHINGTON		GUNTERSVILLE	NMM	-	-	-	X	X	X	CNW	NMR	NMR	NMR	NMR	NMR	1013	1158	0
	WORTHINGTON		GULF	NMM	-	-	-	X	X	X	CNW	NMR	NMR	NMR	NMR	NMR	1235	1262	0
SF SEED	WORTHINGTON		TWIN CITIES	7.60	3	7.60	3	X	.5	.6	CNW	92	NMR	38	33	29	171	180	0
	WORTHINGTON		WINONA	12.00	1	12.00	1	X	.6	.71	CNW	NMR	NMR	NMR	NMR	NMR	221	218	0
	WORTHINGTON	TWIN CITIES	GULF	18.12	11	7.60	3	10.52	.5	.6	CNW	NMR	NMR	NMR	NMR	NMR	171	180	1723
	WORTHINGTON	WINONA	GULF	22.52	10	12.00	1	10.52	.6	.71	CNW	NMR	NMR	NMR	NMR	NMR	221	218	1585
	WORTHINGTON		GULF	NMM	-	-	-	X	X	X	CNW	NMR	NMR	NMR	NMR	NMR	1235	1262	0

Table 17

Average market rates for heavy grains from St. Paul to New Orleans expressed as a % of $6.19 (1975 tariff rate) per short ton.

	YEAR					
MONTH	1979	1980	1981	1982	1983	1984
MARCH		240	187	150	149	209
APRIL		166	178	170	135	151
MAY		153	150	153	129	130
JUNE		187	155	145	129	126
JULY	307	280	140	145	146	126
AUGUST	326	338	160	147	223	144
SEPTEMBER	276	281	215	145	157	175
OCTOBER	356	335	230	146	250	165
NOVEMBER	364	283	210	164	245	170

V. OTHER COMMODIES

--- Fertilizer ---

There are two major types of fertilizer movements. These are a downbound potassium fertilizer movement and an upbound movement of nitrogenous, phosphatic, and compound fertilizer. As a result there are two entirely different pricing mechanisms for the ferilizer movements.

The upbound fertilizer movement is generally referred to and priced as a backhaul movement. It has been at times called a "perfect" backhaul since its Gulf origins and upstream destinations are exactly the reverse of the major grain movement. This backhaul movement has no major effect on the downhaul grain movements, this is due to the fact that up to 80 % of the northbound dry hopper barges, being returned for southbound grain, move empty.

At first glance one would presume that any rate exceeding the additional variable cost of moving fertilizer barges north , as compared to moving empty barges would provide a net return to the handler. However; besides the added variable cost of cleaning, switching, fleeting, and additional fuel there are many indirect costs associated with this movement. The primary indirect cost is an increase in turnaround time between grain shipments. There are also additional administrative expenses involved in obtaining and coordinating backhauls. The major factors in the increase in turnaround time are; delays due to loading of barges, switching delays at points of loading, increase in travel time to the fertilizer destination points, additional time to clean empty barges,delays

due to multiple destination points for fertilizer. Thus, backhaul fertilizer rates are a function of additional variable costs of the backhaul and probably more important a function of downhaul grain rates.

Different barge companies have analyzed the backhaul movement and have different operating philosophies. Some barge companies feel the backhaul movements can be profitable at low rates and actively seek business. Others believe that the added administrative costs, scheduling problems, and increased turnaround time make backhauls marginally profitable at best and consequently don't place much emphasis on obtaining backhaul fertilizer movements. Table 18 gives a comparison of the line haul rates for upbound fertilizer by barge and rail. The chart reflects a distinct advantage for the upbound fertilizer movement from the Gulf. One point of caution is that the barge rates are actual reported rates, as compared to the single car rail rates. One could assume that contracted multiple car rates should be lower than the stated single car quotes.

Table 18

COMMODITY: UPBOUND FERTILIZER

		LINE HAUL TRANSPORTATION RATES			MILEAGE	
ORIGIN	DESTINATION	BARGE ALL	RAIL PHOSPHATE	RAIL UREA	BARGE	RAIL
GULF	TWIN CITIES,MN	4.00-5.00	47.90	41.43	1630	1333
GULF	REDWING,MN	4.00-5.00	47.90	41.43	1570	1286
GULF	WINONA,MN	4.00-5.00	45.46	39.39	1505	1248
GULF	LACROSSE,WI	4.00-5.00	44.79	38.73	1478	1211

All rates in $/net ton.
All rail rates, single car, 180,000 lbs. minimum weights

Table 19 gives a comparison of barge and rail costs for upbound fertilizer movements to three interior points in Minnesota.

For example, the cost to move phosphate fertilizer from the Gulf to Albert Lea, by barge to the Twin Cities and rail beyond, was $15.11-$16.11 per ton. The all rail movement would have cost between $34.52-$43.29 per ton. The $15.11-$16.11 total cost consist of $4.00 to $5.00 for the line haul barge cost, a $3.25 barge to rail transfer cost, and $7.86 for the rail movement from the Twin Cities to Albert Lea.

- Downbound Potash Movements -

Potash from Canada has become a major downbound commodity in recent years. Unit trains of potash are shipped from mines in Saskatchewan to the Twin Cities, where it is transferred to barges for movement downriver. Until recently, this material was primarily an all rail movement direct to the U.S. destination points. Unlike the low backhaul rates for upbound fertilizer, there is a direct relationship between downbound fertilizer rates and grain rates because they compete for the same equiptment. The primary causes of differences between downbound fertilizer and grain rates are higher switching costs due to the multiple destinations for fertilizer, barge cleaning costs, and added administrative costs. The downbound fertilizer rate is primarily a function of the grain rate as both are shipped in covered hopper barges. Table 20 gives a comparison of rates from the Twin Cities to several destinations. Rate differences increase in favor of barges as the move gets longer.

Table 19

COMMODITY: UPBOUND FERTILIZER-INTERIOR DESTINATIONS

ORIGIN	DESTINATION	TOTAL COST/TON PHOSPHATE	TOTAL COST/TON UREA	MODE	TRANSFER POINT	TRANSFER CHARGE	LINE HAUL TRANSPORTATION RATES BARGE ALL FERT	LINE HAUL TRANSPORTATION RATES RAIL PHOSPHATE	LINE HAUL TRANSPORTATION RATES RAIL UREA	MILEAGE BARGE	MILEAGE RAIL
GULF	ALBERT LEA,MN	15.11-16.11	16.72-17.72	BARGE-RAIL	TWIN CITIES,MN	3.25	4.00-5.00	7.86	9.47	1630	98
GULF	ALBERT LEA,MN	15.63-16.63	17.24-18.24	BARGE-RAIL	WINONA,MN	3.25	4.00-5.00	8.38	9.99	1505	122
GULF	ALBERT LEA,MN	43.29	47.00	RAIL				43.29	47.00		1233
GULF	MORRIS,MN	16.47-17.47		BARGE-RAIL	TWIN CITIES,MN	3.25	4.00-5.00	9.22		1630	166
GULF	MORRIS,MN	52.00	39.39	RAIL				52.00	39.39		1500
GULF	WORTHINGTON,MN	16.03-17.03	17.87-18.87	BARGE-RAIL	TWIN CITIES,MN	3.25	4.00-5.00	8.78	10.62	1630	173
GULF	WORTHINGTON,MN	21.21-22.21	24.23-25.23	BARGE-RAIL	WINONA,MN	3.25	4.00-5.00	13.96	16.98	1505	226
GULF	WORTHINGTON,MN	44.83	40.554	RAIL				44.83	40.54		1320

All rates and charges in $/ton.
All rail rates, single car 180,000 lbs. minumum weight

Table 20

COMMODITY: POTASSIC FERTILIZER

ORIGIN	DESTINATION	LINE HAUL TRANSPORTATION RATES BARGE	RAIL	MILEAGE BARGE	RAIL
TWIN CITIES	BURLINGTON, IOWA	6.00-7.00	18.00-22.00 #	152	412
TWIN CITIES	LOUSIANNA, MO	8.00-9.00	21.00-25.00 #	569	489
TWIN CITIES	CARUTHERSVILLE, MO	10.00-11.00	33.00 #	955	792
TWIN CITIES	NASHVILLE, TENNESSE	9.00-16.00	32.00-36.00 *	1096	842
TWIN CITIES	CINCINATTI, OHIO	9.00-15.00	39.40*	1413	677

All rates in $/net ton.
#)Single car 180,000 lbs. minimum weight
*)Single car 100,000 lbs. minimum weight

For a comparison of rates to interior destinations a transfer cost of about $3.25 should be included.

The overall rate advantage for barge is not as large as table 20 indicates because the rail to barge transfer cost of approxinately $3.25 per ton must be considered for the interior destinations. Also the stated rail rates are from the U.S. point of entry to the destination. Rates from the mine to the U.S. point of entry for rail movements and from the mine to the Twin Cities are needed for a definitive rate comparison. The recent growth of downbound potash barge movements indicates a current cost advantage for the barge industry.

---Sand, Rock, Gravel ---

The sand, rock, and gravel movements reported in tables 1-6 are almost exclusively local movements. These movements originate above Lock and Dam 2 with destinations in the Twin Cities. Truck is the only possible alternative form of transportation, but trucks are not cost competitive between these origins and destinations. There are limited long distance movements of specialty or industrial sand, these movements would be similar to upbound fertilizer movements and are represented in table 21, " All other Upbound Bulk Commodities ".

---Cement---

There are primarily two distint movements of cement. One is a movement of domestic cement from the Mid-Mississippi to LaCrosse and the Twin Cities. The other is a movement of imported cement from the Gulf. These are considered backhaul movements and rates are presented in table 21

Although there is a competing rail service the majority is barged in due to the rate differential. The rate differential is large enough that cement is frequently stockpiled for use in the winter months.

Table 21

COMMODITY: ALL OTHER UPBOUND BULK COMMODITIES,(CEMENT,LIME,SALT,SAND,etc.)

		LINE HAUL TRANSPORTATION RATES		MILEAGE	
ORIGIN	DESTINATION	BARGE	RAIL[1]	BARGE	RAIL
BURLINGTON,IOWA	TWIN CITIES	4.00-5.00	16.48-20.60	152	412
ST.LOUIS,MO	TWIN CITIES	4.00-6.00	22.96-28.70	684	574
MEMPHIS,TENN	TWIN CITIES	5.00-6.00	26.37-33.16	1110	879
GULF	TWIN CITIES	3.00-5.50	36.92-44.60	1630	1273

All rates in $/ton

1) Compiled rates from the " 1982 Carload Waybill Statistics ", U.S. Dept. of Commerce.

--- Coal ---

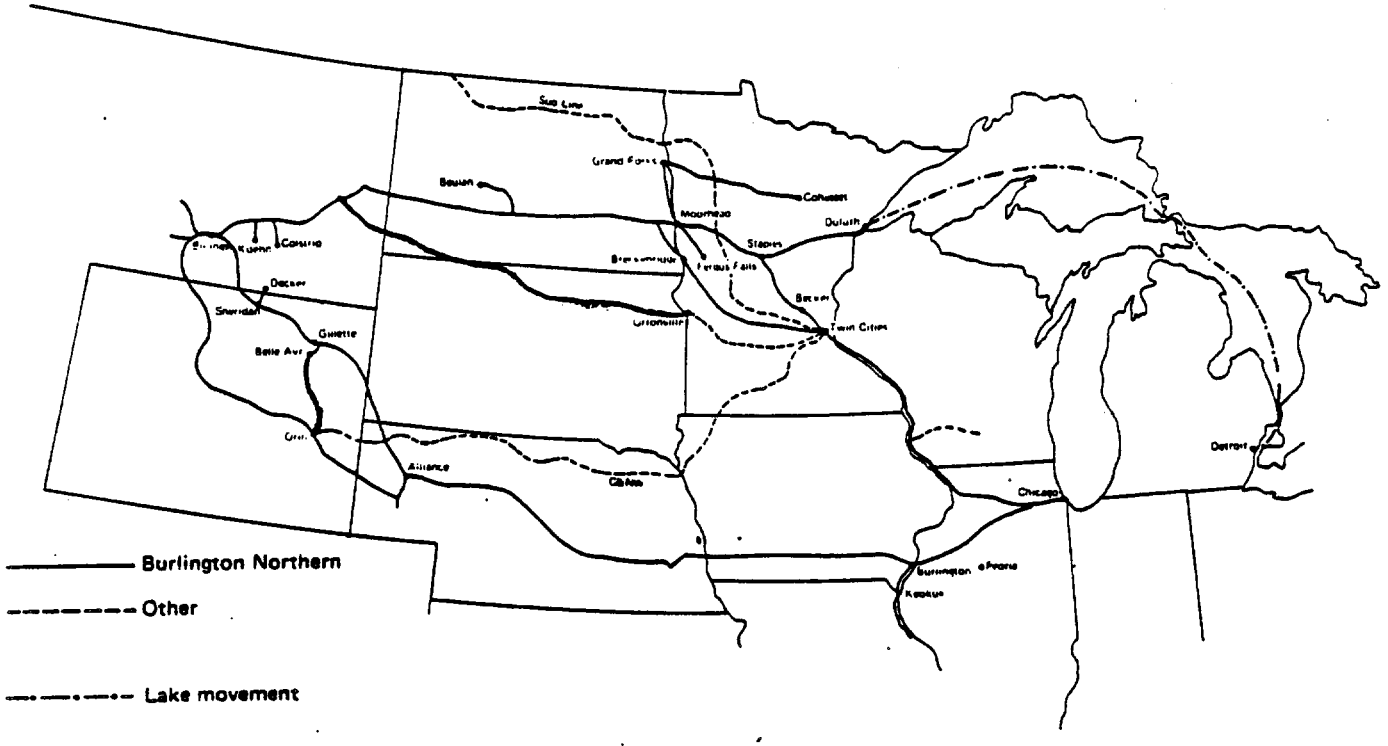
Coal is a very important source of energy for Minnesota. Most of the coal used in the St Paul District arrives from the West in unit train,or similar multiple car shipments. The origin of this sub-bituminous coal is the Powder River Basin in northeastern Wyoming and eastern Montana. The Eastern coal Minnesota does use is delivered mainly by barge or lake vessel. This Eastern bituminous coal originates in southern Illinois, Kentucky, and West Virginia. The bulk of all coal is used by electrical generating plants.[1] Coal from eastern sources has been declining in importance because of its relatively high price. Utilities deal with the total cost of the BTU's purchased, transportation is only one of the components, and at current coal prices one can assume that the trend to western coal will continue in the future.

The origin of the coal is important because it dictates the type of movement in the St. Paul District. Western coal is transfered from rail to barge for short local hauls to power plants. Little or no coal moves southbound from the St. Paul District because of more favorable rail routes and rates to river points such as St. Louis and/or direct rail shipments. Eastern coal would be an upbound move of hundreds of river miles. The Burlington Northern (BN) railroad moves most of the coal to Minnesota and they also move western coal to eastern Iowa which can move north by barge. Figure 7 shows the major rail routes for western coal. The tranfer cost from train to barge for a short haul may make the all rail move cheaper if available. The nature of the local move and transfer causes

1/ Over 82 percent of the total coal in Minnesota is used by electric utilities.

Figure 7

Major Rail Routes for Western Coal



the rates/cost to be confidential for coal. Table 22 gives representative rates for both rail and barge from various origins and destinations in use.

Table 22

COMMODITY: COAL

ORIGIN	DESTINATION	BARGE RATE $/TON	RAIL RATE $/TON	MILEAGE
WEST VIRGINIA SOUTHERN	TWIN CITIES	6.79		1527
ILLINOIS	TWIN CITIES	4.19		730
KEOKUK, IA	TWIN CITIES	3.27		490
BELLE AYR, WY	ALMA, WI		19.41	1186
BELLE AYR, WY	KEOKUK, IA		15.85	965
POWDER RIVER	ST. LOUIS, MO		18.13	1068-1112

ALL RATES IN DOLLARS PER TON

1/ 1984 AVERAGE RATE

2/ FROM BURLINGTON NORTHERN TARIFFS - 4195, 4194, AND 4216. SUBJECT TO SET TONS/PERIOD USING 105 CAR SHIPMENTS SHIPPERS' CARS, AND OTHER CONDITIONS.

Appendix A

Several organizations have contributed data and insight for this report. Contacted companies included :

Twin City Barge & Towing Company, Inc.	St.Paul, MN
Northern States Power Company	Minneapolis, MN
Packer River Terminal, Inc.	S. St. Paul, MN
Cargo Carriers, Inc.	Wayzata, MN
Saint Paul Navigation Inc.	St. Paul, MN
The Pillsbury Company	Minneaplois, MN
Burlington Northern Railroad - Rate Department	St. Paul, MN
The Valley Line Company	St. Louis, MO
Chicago & North Western Transportation Co. Rate Department	St. Paul,MN
Cargill Inc.	Wayzata, MN
Riverway Company	Minneapolis, MN
Dundee Cement	Minneapolis, MN
Harvest States Cooperative	St. Paul, MN
CFI, Inc.	Chicago, Ill
Ashland Oil, Inc.	St. Paul, MN
Bunge, Inc.	Minneapolis, MN
Apple Valley Cement	St. Paul, MN
G.L. Shiely Company	St. Paul, MN
University of Minnesota	Minneapolis, MN
Soo Line Railroad Company - Rate Department	Minneapolis, MN
Koch Refining Company	St. Paul, MN
Agri-Trans Corporation	St. Louis,MO
Agricultural Consulting Company	Madison, WI
Dakota Barge Service, Inc.	St. Paul, MN
Upper Mississippi Waterway Association	Amery, WI
Minnesota Department of Transportation	St. Paul, MN
Minnesota Department of Agriculture	St. Paul, MN
Minneapolis Grain Exchange - Traffic Department	Minneapolis, MN
University of Illinois - Ag Economics Department	Urbana, Ill

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