North Dakota Wheat Transportation Knowledge For Market Enhancement

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ABSTRACT

North Dakota wheat producers are located long distances from major consumer and export markets. Understanding the competitive position of their products is important to focusing efforts for market development and transportation investments. Research here provides some fundamental knowledge about market trends that is based on existing data sources. The data reveal shifts in some of the origin-destination corridors, a narrowing in rail rate spreads, and lower expenditures per bushel mile in rail wheat markets. In addition, a spike in deliveries to the Duluth market is identified for the most recent marketing year as well as an increasing trend in durum imports for the U.S. consumer market. Ongoing attention to logistics in the wheat market establishes a sustained knowledge base and provides systematic attention to this important market aspect.

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1. INTRODUCTION

U.S. wheat producers have long enjoyed the benefits of a relatively efficient and effective transport system. Over recent years, the American wheat rail transportation system has undergone some fundamental changes, including larger 100-plus car trains, capacity rationing, and North American network integration; and all have impacted the competitiveness of wheat among regions and markets, and relative to other commodities.

A study of rail rate deregulation and North Dakota railroads suggests wheat differs from other commodities, in its shipment and rate characteristics (Tolliver and Bitzan 2002, Bitzan and Vachal 2004). In this analysis of the U.S. Confidential Rail Waybill, findings suggested that the rail rate differential between wheat and other major crops, and within wheat shippers, is diverging.

In addition to inland transportation market phenomenon, it is important to recognize that as competitors make strategic transportation investments to gain competitive advantages, it is prudent for U.S. wheat producers to play an active role in shaping the transportation system and services that they utilize in marketing their products.

2. OBJECTIVE

The objective of this investigation is to provide insight about the competitive position of North Dakota wheat related to transportation. By increasing market knowledge of market flows and transportation rates to primary domestic markets and export market gateways, additional focus can be achieved in strengthening positions in existing and prospective markets. Understanding trends and shifts in transportation related factors is critical in assessing future transportation investments and policies.

3. METHODS AND DATA

Descriptive analysis will used to assess the competitive position of North Dakota wheat in domestic and export markets. Several data sources will be used, including the ND Public Service Commission Elevator Grain Movement Database (EGMD), Surface Transportation Board Public (STB), Use Carload Waybill Sample, U.S. Department of Agriculture grain export and marketing price data, and railroad published rate tariffs. The EMGD is a database of monthly reports from North Dakota elevators that is summarized in aggregation to satisfy confidentiality for individual elevators. It details information on mode, shipment size, and destination markets – as provided by the elevator originating shipments bound for end-user markets. The Waybill Sample is a "stratified sample of carload waybills for all U.S. rail traffic submitted by those rail carriers terminating 4,500 or more revenue carloads annually" (Surface Transportation Board 2009). It includes information such as origin, destination, rate, shipment size, interline connections, and car load factor. The Public Use Waybill Sample includes five-digit STCC identifiers which disaggregate grains to crops but do not allow class identification, such as HRS.

The jurisdictional boundaries used in these datasets vary. State-level estimates will be used in a discussion of regional wheat transportation characteristics and trends. Additional detail regarding rail shipment available with the Waybill Sample will rely on U.S. Census Bureau of Economic Analysis (BEA) boundaries. Port information on wheat exports uses port regions such as the Pacific Northwest and Gulf, which encompass numerous port authorities and facilities. The ND EGMD will be summarized under both state-level and crop reporting district jurisdictions. Data for the most recent five years will be used to explore wheat markets. Additional historical data may be included as available and appropriate for the study.

4. MARKET SCOPE

The United States produces over 2 billion bushels of wheat annually. Producers deliver most of the crop to local elevators where it is consolidated for sale to domestic and international buyers. Pricing in the market is based on factors such as class, quality, time, and quantity. Sellers compete to fulfill buyer requirements for wheat ingredients used in their end products. Transportation is a key market factor in this competition. Leading wheat producing states in the Midwest market are North Dakota, Kansas, Montana, and South Dakota – these states supplied 28%, 30%, 15%, and 12% of U.S. wheat over the past five years (Table 4.1**Table**). The focus is on wheat transportation for these states, along with limited information regarding rail shipments from Canadian origins because of class competition with North Dakota's hard red spring (HRS) and durum wheat products.

Table 4.1 Regional Wheat Production

	1999-2004	2005	2006	2007	2008	2009
Kansas	35%	33%	32%	27%	30%	30%
Minnesota	8%	6%	9%	8%	9%	7%
Montana	13%	17%	17%	14%	14%	15%
Nebraska	6%	6%	7%	8%	6%	6%
North Dakota	28%	26%	27%	29%	26%	31%
South Dakota	10%	12%	9%	14%	15%	11%
Share of U.S.	49%	55%	51%	51%	47%	55%

Source: NASS, USDA

Hard red winter wheat is largest among wheat classes, based on production over the three most recent market years (Figure 4.1). HRS is the largest wheat class in North Dakota, with durum also produced in substantial quantity. Neighboring state Montana is predominately HRS in wheat production, while the Kansas and South Dakota classes are mainly winter wheat. The quality attributes and end-use product requirements influence prices and buyers' decisions in year-to-year purchase decisions that determine market flows.

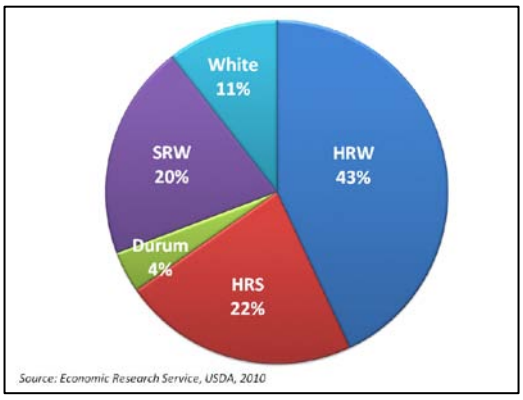


Figure 4.1 Wheat Production, by Class 2007/08 to 2009/10

Distinguishing export and domestic consumption of wheat is an important factor in understanding market flows and relevant transportation factors. The export market demand is centered in port regions, where large volume international purchases are discharged into ships. Delivery to these export facilities is largely completed by barge and rail. Domestic demand is widely dispersed, with millers making purchases in smaller lots that are completed primarily through truck and rail delivery from the local elevator to a mill facility.

The United States exports about half of its production each year. After dipping to near 40% in the late 1990s, the share has trended upward (Figure 4.2). HRS wheat has historically had a greater dependence on international markets with exports equaling more than 60% of production in the most recent years. Durum and HRW wheat classes are more likely to be marketed domestically, but both have seen expansion in the export market. In the most recent three-year average, from 2007/08 to 2009/10, an equivalent of 48% of HRS and 44% of durum and HRW wheat production, respectively, moved to export markets.

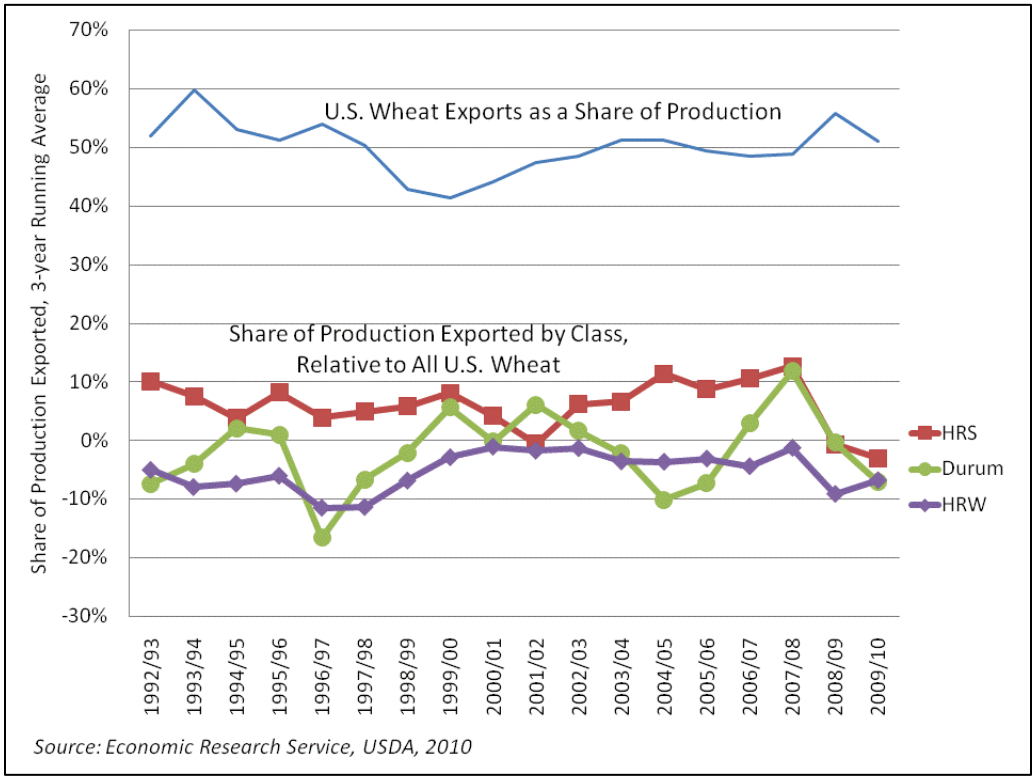


Figure 4.2 Share of Wheat Production Exported, by Class

Production and use information established a focus for competitive analysis related to the position of North Dakota in the wheat market. North Dakota is concentrated in producing hard wheat that has been competitively marketed to both domestic and export customers. While a comprehensive market flow model is beyond the resources available for this report, valuable insight for designing this type of model can be gained by studying information available regarding export customers, rail origins and destinations, and freight rates.

5. MARKET FLOWS

A fundamental aspect in addressing competitiveness in the market is understanding market geography, both in terms of competition and opportunities. As noted above, global competitiveness is key since about half of U.S. wheat is exported annually. North Dakota has a central location in the region with regard to coastlines – while other states, such as Kansas, are in closer in proximity to individual markets, such as the Gulf export region. It is also important to recognize opportunities in domestic wheat markets related to other states and competition evidenced in U.S. wheat imports. Average HRS imports, as a share of domestic use, were 14% over the past five years. This share is 7% higher than the average over the past two decades.

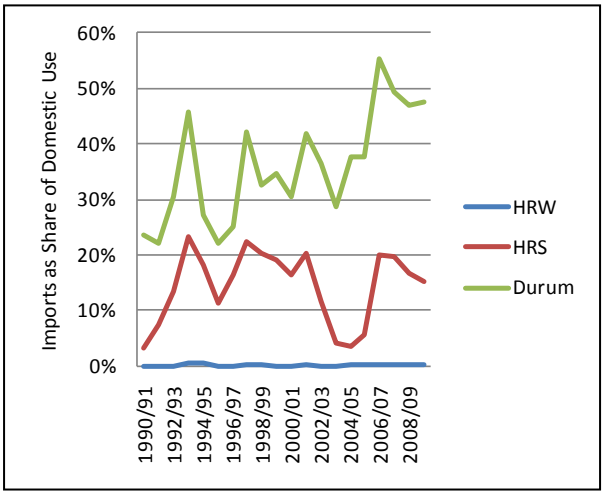


Figure 5.1 Imports as Share of Domestic Use

Durum imports during the most recent five years averaged 47% of domestic use. The share is 32% greater than the average over the past 20 years. HRW wheat imports are negligible, accounting for less than 1% of domestic use (Figure 5.1). Since local and surface transport costs are usually a greater share of delivered product costs in the domestic market, these trends suggest a more in-depth supply chain assessment may be beneficial.

Two primary data sources are used to illustrate activity and trends with regard to wheat market flows – the U.S. DOT Waybill Sample and USDA Export Inspections. Figure 5.2 illustrates the BEA geography included to estimate state Carload Waybill statistics. The BEA freight territories, in which the 170 BEAs are grouped into regions, are illustrated in Figure 5.3. This figure also shows the primary grain export regions used for the USDA data.

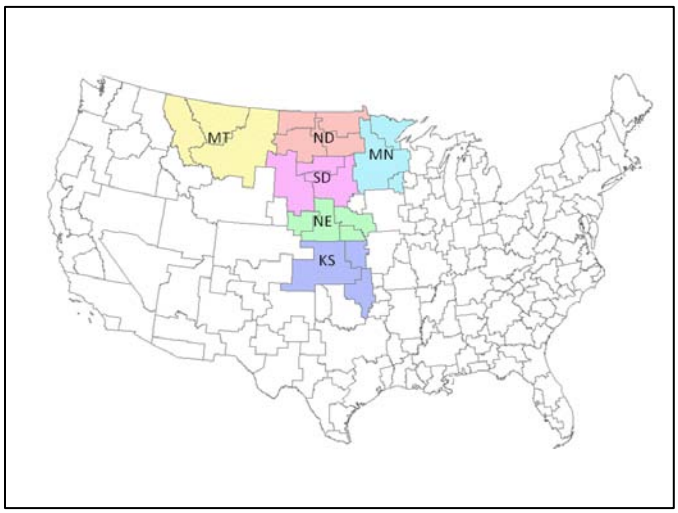


Figure 5.2 BEA Origin States

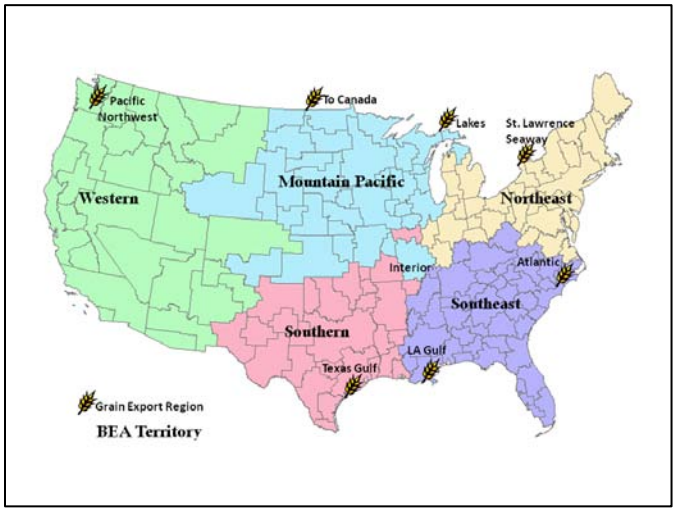


Figure 5.3 BEA Destination Regions and Ports

The rail utilization index presented in Figure 5.4 provides a measure for relative importance of rail in marketing wheat production in the region. It is calculated as the ratio of rail to production for an individual state in wheat compared with that for the region. The index does not reflect an exact measure of rail shipment for a state since the BEA boundaries used to measure do not follow state boundaries. The trend in the measure over the eight years does show strong and increasing utilization in North Dakota and Montana. These states have always had a high reliance on rail due to long distances in reaching export, consumer, and barge transshipment delivery points. South Dakota also shows an increasing utilization of rail in marketing its wheat crop, especially over the past four years. The increase in these states may be related to elevator investment and railroad strategies to utilize trains of 100 cars or more in transporting wheat. Kansas and Nebraska have remained relatively stable, with a large decline for rail utilization in the Minnesota market. The Minnesota decline may, however, be a function of shipments reported for Minneapolis as an arbitrage point for spot and eastern markets rather than marketing decisions related to local production.

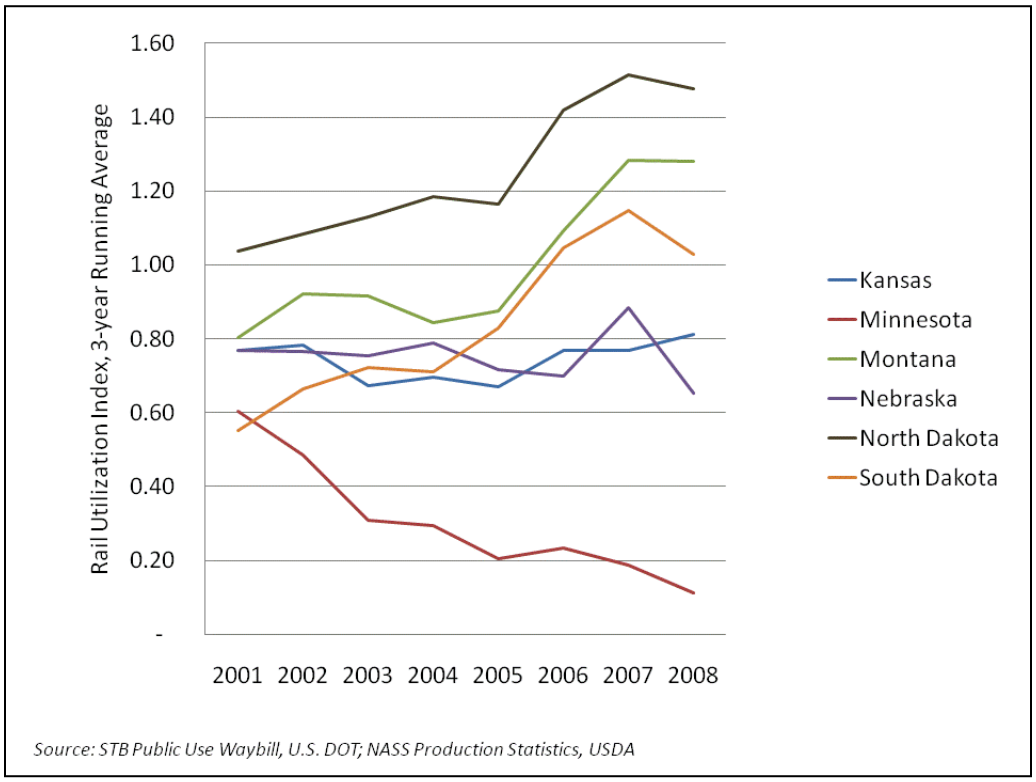


Figure 5.4 Rail Utilization Index, Rail Shipments to Production

A snapshot of annual rail market flow information is provided with the figures in Table 5.1. In 2008, a majority of North Dakota rail wheat shipments were bound for western markets – including export and domestic buyers – with 61% of wheat shipments terminated in the Western BEA Territory. North Dakota wheat was also shipped in large quantity to the Mountain Pacific Territory, where about a quarter of the rail shipments were terminated. South Dakota also shipped the largest share of its wheat to western markets – 62%, with another large portion, 26%, destined for the Southwestern BEA Territory. Montana wheat was destined almost exclusively, at 93%, for the Mountain Pacific Territory with a small share shipped into the Western BEA Territory. Kansas wheat was shipped largely to southern markets with a more limited amount to the Mountain Plains Territory. The Canadian shipments are dispersed, rather than concentrated, as 34%, 28%, and 21% are shipped to northeastern, western, and southern territories, respectively. Canadian shipments are also reported into the Southwestern and Mountain Pacific Territories.

Table 5.1 Rail Wheat Shipments by BEA Freight Territory, 2008

State, by BEA Group	BEA Freight Territory					Thousand Bushels
	Northeastern	Southern	Western	Southwestern	Mountain Pacific	
North Dakota	2%	1%	61%	7%	28%	365,557
Kansas	0%	5%	17%	65%	13%	303,476
South Dakota	0%	1%	62%	26%	10%	145,451
Montana	0%	0%	6%	1%	93%	163,041
Canada	34%	21%	28%	11%	5%	84,650

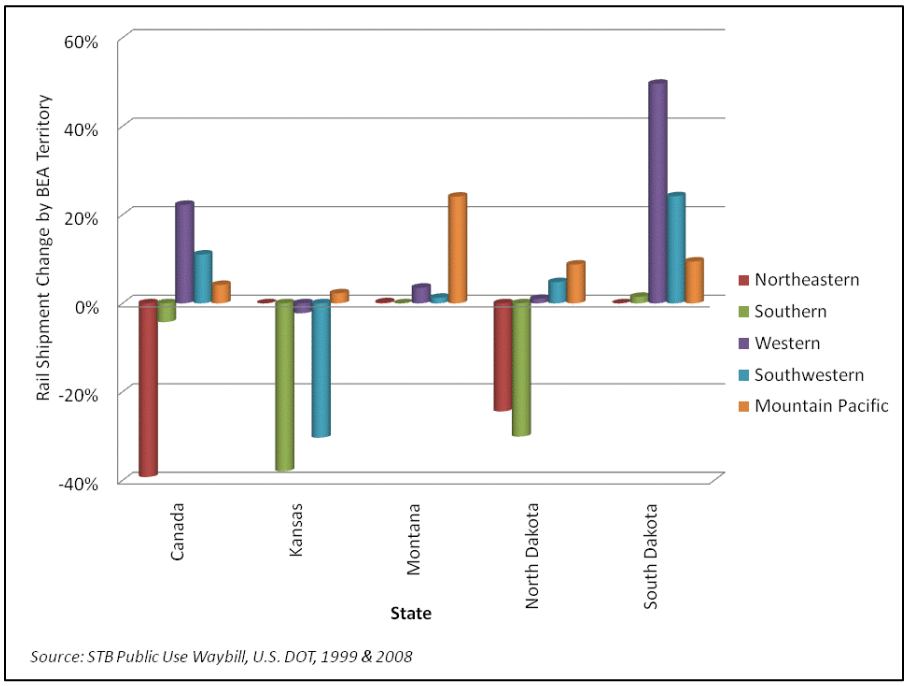


Figure 5.5 Change in Rail Wheat Destinations, 1999 to 2008

Additional detail regarding wheat shipments from BEA regions in the states to destination markets are presented in Table 5.2. Shipments from the most recently available year are presented, along with average shipments for the most recent three years and for historical shipments between 1999 and 2001. This information may be useful in focusing efforts to specific marketing corridors and in identified increases and decreases in competitiveness associated with specific markets. For instance, the Grand Forks BEA has substantially increased rail wheat shipments to the Pacific Northwest area as encompassed in the Portland, OR-Salem, WA, BEA in recent years compared with the historical shipments. The share of shipments bound for the Chicago area, from the Grand Forks BEA, has declined substantially in recent years compared with the historical distribution figures. The Minot BEA, covering the northwest region of North Dakota along with a segment of northeast Montana, has seen a shift away from Chicago and Minneapolis toward primarily western markets. The Bismarck BEA, primarily covering southwest North Dakota, has shifted away from Chicago and the Pacific Northwest markets to deliver a larger share to other western markets. The Fargo BEA, as with the Grand Forks BEA, has shifted away from eastern markets to serve export and domestic markets in the west.

Among other major wheat suppliers, the Billings and Great Falls BEAs in Montana have retained relatively similar distribution patterns, considering destination BEAs, with a majority of wheat moving to the Pacific Northwest region. The Wichita BEA has diversified markets in expanding the share of its rail wheat moving to the southwest market territory.

Table 5.2 Rail Waybill Shipments, Origin BEA to Destination BEA

	2008	Avg 99-01	Avg 06-08	Avg 99-01	Avg 06-08
Grand Forks. ND-MN (ND, NE BEA - #110)		*Tons*			
Portland-Salem. OR-WA	1,073,243	35,109	1,019,011	2%	25%
Territory – Western	759,993	133,022	780,680	6%	19%
Chicago-Gary-Kenosha. IL-IN-WI	611,932	584,339	203,977	26%	5%
St. Louis. MO-IL	318,100	348,098	542,917	15%	13%
Minneapolis-St. Paul. MN-WI-IA	197,101	187,894	185,820	8%	5%
Houston-Galveston-Brazoria. TX	136,131	71,123	107,020	3%	3%
Minot. ND (ND, NW BEA - #111)					
Portland-Salem. OR-WA	371,838	338,520	558,146	21%	26%
St. Louis. MO-IL	336,573	155,130	266,924	9%	12%
Territory - Western	195,989	33,290	353,712	2%	16%
Chicago-Gary-Kenosha. IL-IN-WI	195,291	184,674	65,097	11%	3%
Minneapolis-St. Paul. MN-WI-IA	73,579	92,793	89,750	6%	4%
San Antonio. TX	69,524	16,571	37,550	1%	2%
Bismarck. ND-MT-SD (ND, SW BEA - #112)					
Chicago-Gary-Kenosha. IL-IN-WI	562,941	355,184	187,647	22%	8%
Portland-Salem. OR-WA	275,010	461,367	336,733	29%	14%
Minneapolis-St. Paul. MN-WI-IA	153,758	91,388	123,789	6%	5%
Territory – Western	135,421	109,333	456,742	7%	19%
Los Angeles-Riverside-OrangeCnty.CA-AZ	131,628	17,877	109,346	1%	5%
St. Louis. MO-IL	121,397	147,367	270,662	9%	11%
Fargo-Moorhead. ND-MN (ND, SE BEA - #113)					
Chicago-Gary-Kenosha. IL-IN-WI	556,258	712,659	185,419	30%	7%
Portland-Salem. OR-WA	556,194	118,968	546,296	5%	20%
Territory – Western	328,330	114,445	580,568	5%	21%
St. Louis. MO-IL	279,435	327,624	374,695	14%	14%
Minneapolis-St. Paul. MN-WI-IA	172,891	201,901	127,376	8%	5%
Rochester. MN-IA-WI	93,002	0	66,998	0%	2%
Billings. MT-WY (MT, W BEA - #144)					
Portland-Salem. OR-WA	1,124,688	890,913	1,214,400	63%	61%
Seattle-Tacoma-Bremerton. WA	133,547	41,221	144,642	3%	7%
Territory – Western	68,122	28,627	92,586	2%	5%
St. Louis. MO-IL	57,402	16,272	68,262	1%	3%
Chicago-Gary-Kenosha. IL-IN-WI	51,162	84,823	17,054	6%	1%
San Francisco-Oakland-San Jose.CA	43,856	41,984	41,069	3%	2%

Table 5.2 continued

	2008	Avg 99-01	Avg 06-08	Avg 99-01	Avg 06-08
Great Falls. MT (MT, NC BEA - #145)					
Portland-Salem. OR-WA	2,134,649	1,059,168	2,717,069	82%	83%
Territory - Mountain Pacific;	189,600	146,541	248,523	11%	8%
Los Angeles-Riverside-OrangeCnty.CA-AZ	82,053	36,447	170,016	3%	5%
Seattle-Tacoma-Bremerton. WA	41,765	4,873	43,655	0%	1%
San Francisco-Oakland-San Jose.CA	26,857	30,704	33,037	2%	1%
Territory - Southwestern	21,855	0	19,171	0%	1%
Missoula. MT (MT, E BEA - #146)					
Portland-Salem. OR-WA	101,680	14,899	45,894	32%	41%
Los Angeles-Riverside-OrangeCnty.CA-AZ	39,612	23,146	38,877	49%	34%
Denver-Boulder-Greeley. CO-KS-NE	15,581	0	7,596	0%	7%
San Francisco-Oakland-San Jose.CA	7,960	5,239	11,571	11%	10%
Territory - Mountain Pacific;	3,920	1,320	1,307	3%	1%
Salt Lake City-Ogden. UT-ID	-	0	2,640	0%	2%
Wichita. KS-OK (KS, E BEA - #122)					
Houston-Galveston-Brazoria. TX	2,340,299	3,115,719	1,600,807	44%	25%
Territory - Southwestern	1,815,475	812,733	1,682,491	12%	26%
Los Angeles-Riverside-OrangeCnty.CA-AZ	546,899	221,415	507,315	3%	8%
Kansas City. MO-KS	461,834	478,979	370,361	7%	6%
St. Louis. MO-IL	433,343	579,540	479,112	8%	7%
New Orleans. LA-MS	386,911	215,780	220,597	3%	3%
Canada (CN, BEAs #173 to #183)					
Chicago-Gary-Kenosha. IL-IN-WI	564,309	764,294	188,103	38%	9%
Territory - Southern	292,319	133,543	240,509	7%	11%
Minneapolis-St. Paul. MN-WI-IA	275,598	344,283	242,699	17%	11%
San Antonio. TX	244,788	29,588	184,844	1%	9%
New Orleans. LA-MS	195,267	204,448	226,976	10%	11%
Kansas City. MO-KS	112,603	9,379	135,281	0%	6%

Source: Surface Transportation Board

USDA grain inspection information also provides valuable insight regarding wheat marketed by U.S. producers. A distinct drop-off in the Lakes inspections is reported for 2008 and 2009, compared with the previous three years for HRS wheat. Durum inspections at the Lakes ports also dropped substantially in 2008 but recovered somewhat in 2009. A spike in durum shipments to Canada is also reported for the most recently completed market year.

Table 5.3 Grain Inspected by Export Region and Destination

	2005	2006	2007	2008	2009	Average
HRS Wheat		*Share and Average Bushels in 1,000s*				
PACIFIC	46%	62%	50%	60%	67%	148,778
GULF	23%	22%	20%	21%	19%	56,332
LAKES	10%	10%	11%	4%	3%	21,311
TO CANADA ST LAWR	9%	2%	8%	5%	5%	16,144
SWY	10%	2%	7%	5%	4%	15,852
INTERIOR	2%	2%	3%	3%	1%	6,280
ATLANTIC	0%	1%	2%	1%	0%	2,352
	328,278	244,232	320,291	245,249	97,196	245,249
Durum						
	2005	2006	2007	2008	2009	Average
GULF	57%	38%	38%	83%	37%	15,565
LAKES	37%	60%	58%	13%	45%	14,930
TO CANADA ST LAWR	2%	0%	2%	0%	12%	1,115
SWY	4%	0%	2%	0%	6%	824
ATLANTIC	0%	1%	0%	4%	0%	232
INTERIOR	0%	0%	0%	0%	0%	70
PACIFIC	0%	0%	0%	0%	0%	37
	32,716	36,792	39,500	21,621	33,232	32,772

Source: Federal Grain Inspection Service, USDA

6. RAIL RATES

Rail rates are an important factor in the competitiveness of North Dakota wheat. Analysis of the Public Use Waybill shows that revenue per ton mile (RPTM) has trended down for the Minot BEA – while it still remains above the average RPTM paid for rail shipments originated from other North Dakota and competitor BEAs. RPTM from the Minot BEA averaged $0.0433 in 2008 compared with $0.0462 in 2001. All BEAs have experienced a decrease in the RPTM, comparing 2008 with 2001, with the exception of the Kansas and Canada BEAs. The declines, in percentage change, are reported for the Billings and Grand Forks BEAs, where average RPTM in 2008 is 13% lower than that reported in 2001. The change in RPTM may be a result of railroad pricing that reduces shipment costs for a like shipment made in the past. Alternatively, the rate declines may be a function of changes in the shipment types – such as investment in elevator infrastructure to a shift to relatively lower cost 100-plus car rail shipments, or shifts in distribution markets where relatively more competitive rail rate structures are in place. The Waybill does not account for fuel surcharges or other rail market premiums or discounts.

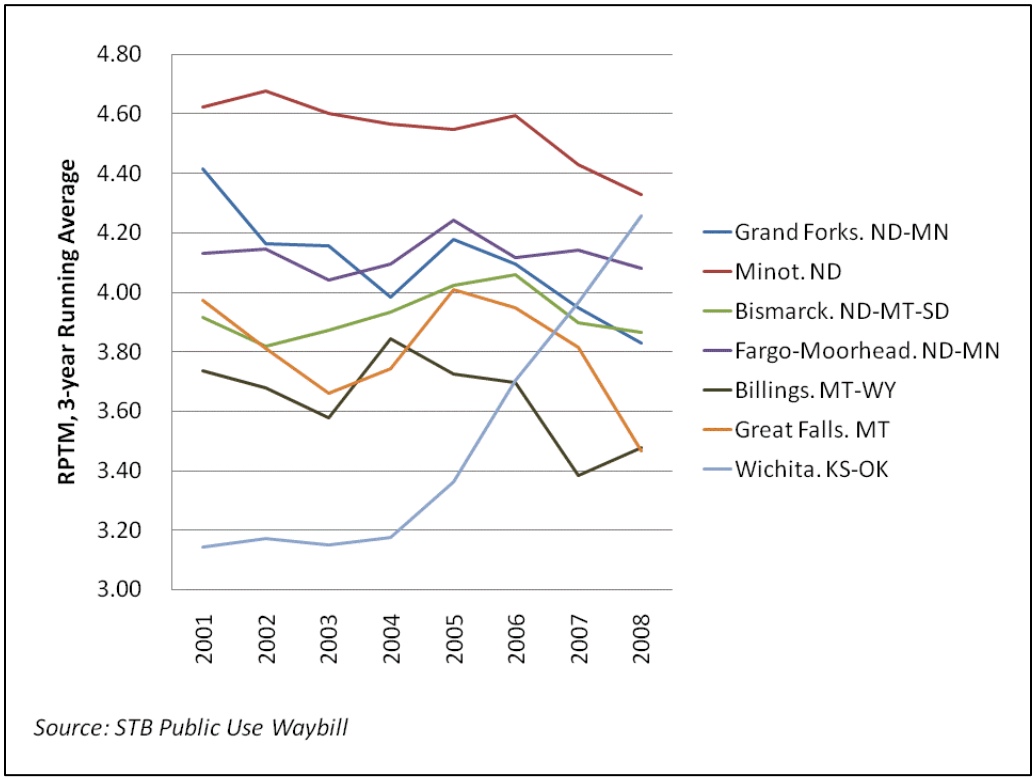


Figure 6.1 Wheat Rail Rates in the ND Market Region

Published tariff rates also provide insight for understanding trends and shifts in the rail market as a vital element in the competitiveness of North Dakota wheat. Rail rate bundles for Minneapolis and the Portland are used to illustrate rate trends over recent years in Figure 6.2 and Figure 6.3. The information included is based on rate data collected periodically for wheat market projects. Unlike the RPTM trends, the North Dakota tariff rates are mixed, with some evidence of increasing rates during the most recent year. Statistical tests regarding trends were not conclusive due to limited data points. The Minneapolis single and multiple car rates have increased over recent years; at the same time, the gap has narrowed so shipping under multiple car rates offer customers little advantage in competitively accessing North Dakota wheat supplies. The unit train rate has been absorbed into the DET (domestic efficiency train)

program. Under the DET program, a large train of about 100 cars is loaded at origin and may be split into four smaller trains beyond a named railroad arbitrage point such as Chicago. Rates to the PNW have been relatively stable until recent years when the gap between single and multiple car rates was narrowed and these rates were increased. The shuttle rate was also increased in the most recent marketing year.

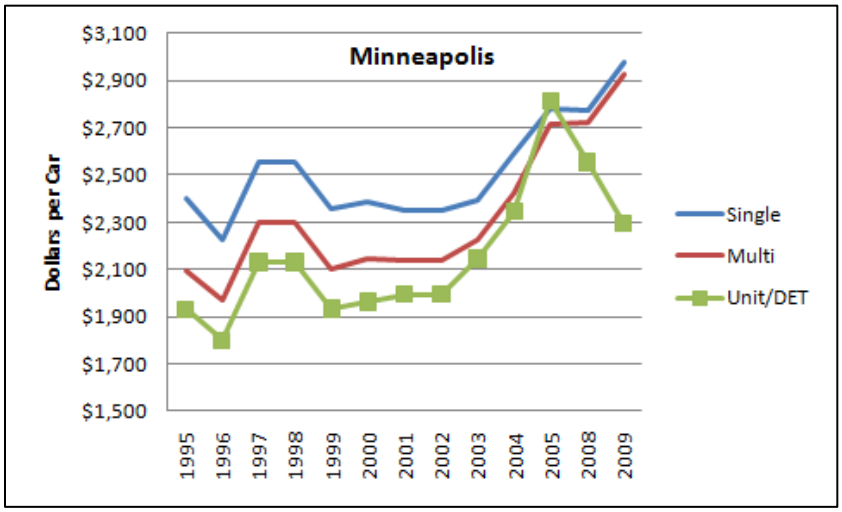


Figure 6.2 Wheat Rail Rate Trends, Tariff Rates from ND to Minneapolis

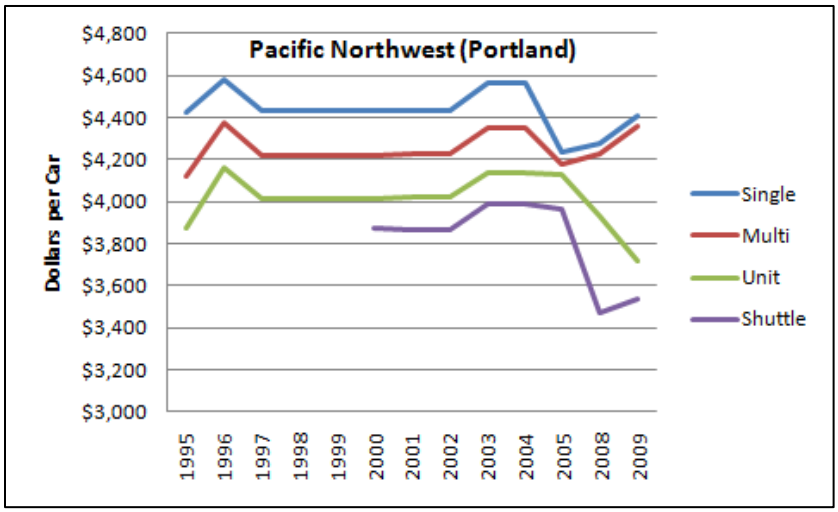


Figure 6.3 Wheat Rail Rate Trends, Tariff Rates from ND to the PNW

7. GENERALIZED URCS COMPARATIVE REVENUE TO VARIABLE COST RATIO ANALYSIS

A generalized analysis of railroad cost was performed using the Uniform Railroad Cost Program (URCS), the official costing procedure of the Surface Transportation Board (STB). Railroad cost estimates were developed using URCS, and compared with tariffs published by the Burlington Northern Santa Fe (BNSF) railroad for selected North Dakota or with median BEA revenues for selected regional BEAs containing the area of study. This comparison, in this report only a generic analysis, provides an overview of railroad costs to railroad revenue. This analysis was performed for several North Dakota origins shipping wheat to Minneapolis and for selected BEA's shipments of wheat to their largest market destination. Because of the generalized nature of this analysis, revenue to variable cost ratios are estimates and are rounded off for presentation.

Again, the analysis is illustrative and not confirmed for specific rate analysis. Detailed railroad shipment costing parameters are generalized and, with the exception of route miles, are identical among the railroad routing locations. For example, all URCS run BNSF system-wide default costing parameters, and apply identical values for movement characteristics or detailed parameters. Rail car switching, way train miles, or other specific movement characteristics that would vary amongst the costing comparisons have not been investigated for use in this report. The URCS batch process was utilized with the STB costing data-year matching the railroad revenue year.

BNSF offers several service levels from these origins to their major market destinations. This analysis compared a level of service offered in 2008 to all origin/market routes. The Public Use Waybill was used to estimate the median train size as representative of the level of service.

The service is in covered hoppers with a load factor of 102 tons. Wheat (STCC 0113710), wheat not organically grown free of fertilizer and/or pesticide applications, is used in the analysis. For the North Dakota selected origins, published single-car BNSF tariffs were used as revenues for the single-car level of service.

7.1 Selected North Dakota Origins

BNSF wheat shipments to Minneapolis from several North Dakota origins were analyzed for three separate years. Table 7.1 details the origins and the rates used for 2002, 2005, and 2008. Fuel surcharges, described below, were applied in 2008 and are used to reflect a shipper's perspective of railroad revenues and costs.

Table 7.1 Selected Burlington Northern Santa Fe Single-Car (1 to 23 Cars) Wheat Rates to Minneapolis

Origin	2002	2005	2008	2008 (with fuel surcharge)
Bottineau	$2,693	$2,951	$3,056	$3,458
Crosby	$3,375	$3,628	$3,525	$3,992
Devils Lake	$2,230	$2,474	$2,627	$2,952
Grand Forks	$1,810	$2,021	$2,219	$2,477
Joliette	$2,055	$2,242	$2,418	$2,737
Minot	$3,075	$3,319	$3,267	$3,645
Rolla	$2,555	$2,809	$2,928	$3,306

Source: BNSF, UGPTI

7.2 Fuel Surcharge

Each Class I railroad has a fuel surcharge cost structure. For the 2008 rates in Table 7.2, the applicable BNSF fuel surcharge is mileage-based and is determined by the using the U. S. Average Price of Retail On-Highway Diesel Fuel (HDF) from the U.S. Department of Energy's EIA Retail On-Highway Diesel Prices Report. Mileages between BNSF-served originating or terminating stations is available on their Web site. Table 7.2 reports the mileage subject to fuel surcharges between the North Dakota origins and Minneapolis.

Table 7.2 North Dakota Origins to Minneapolis Mileages Subject to Burlington Northern Santa Fe Fuel Surcharge

Origin	Mileage
Bottineau	502
Crosby	584
Devils Lake	406
Grand Forks	323
Joliette	399
Minot	472
Rolla	472

Source: BNSF

The BNSF mile inquiry Web site was used to find mileage.[1] The BNSF mileage-based fuel surcharge was $0.80 for July, 2008.

[1] http://www.bnsf.com/bnsf.was6/RailMiles/RMCentralController.

By comparison, BNSF terminations into the Pacific Northwest (PNW) export destinations are grouped using Seattle, WA, as the destination upon which the mileage-based fuel surcharge will be calculated for all whole grain (STCC 011) shipments. BNSF lists these PNW export destinations as follows:

- Rivergate, OR
- Portland, OR
- Kalama, WA
- Seattle, WA
- Tacoma, WA
- Vancouver, WA.

BNSF also reports that Texas Gulf export facilities will be grouped using Houston, TX, as the destination upon which the mileage-based fuel surcharge will be calculated for all whole grain (STCC 011) shipments. Export destinations will be as follows:

- Beaumont
- Corpus Christi
- Galena Park
- Galveston
- Houston
- Port of Brownsville, TX.

Figure 7.1 illustrates the estimated revenue to variable cost ratios for the selected North Dakota origins for single car wheat shipments to Minneapolis. The three years display a downward trend. Again, all ratios in this generalized analysis are rounded.

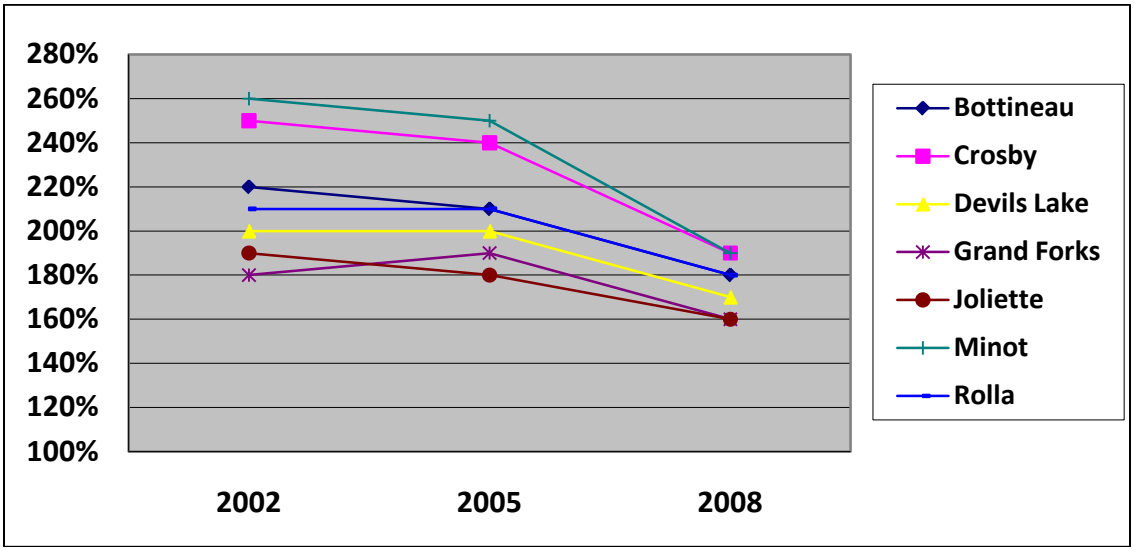


Figure 7.1 Estimated Generalized Revenue to Variable Cost Ratios (URCS 2010)

Figure 7.1 shows the estimated generalized revenue to variable cost ratios for selected North Dakota single car wheat shipments to Minneapolis. These rates cover train shipments of 1 to 23 cars. The 2008 rate does include the fuel surcharge. So even though the tariff rates increased, the URCS analysis shows the revenue to variable cost ratios for the selected North Dakota shipments were reduced.

7.3 Regional BEA Comparison

Three originating BEA regions were selected for comparison. These three are 1) Grand Forks. ND-MN, 2) Bismarck, ND-MT-SD, and 3) Great Falls, MT. The major markets for these BEAs are detailed in Table 5.2. The largest major BEA market was selected for analysis and is the destination BEA in Table 7.3. This table also reports the 2008 median train size originating and terminating between the selected BEAs. The train size, an URCS input parameter, was estimated from the Public Use Waybill.

Table 7.3 Median Public Use Waybill 2008 Train Size for Selected BEA Origin/Destination Markets

Origin BEA	Destination BEA	2008 Median Train Size
Grand Forks. ND-MN (ND, NE BEA -#110)	Portland-Salem. OR-WA	110
Bismarck. ND-MT-SD (ND, SW BEA - #112)	Chicago-Gary-Kenosha. IL-IN-WI	25
Great Falls. MT (MT, NC BEA - #145)	Portland-Salem. OR-WA	48

Source: Public Use Waybill, STB 2008

Public Use Waybill Median Rail Miles

The Public Use Waybill was also used to calculate the median rail mileage and estimated median railroad revenue for wheat shipments originating and terminating between the selected BEAs. The median rail mileages and median railroad revenues per car were used in the URCS Analysis. Table 7.4 lists the median rail mileage. Table 7.5 reports the median railroad revenue per car.

Table 7.4 Median 2008 Public Use Waybill Rail Mileage for Selected BEA Origin/Destination

Origin BEA	Destination BEA	Median Rail Mileage
Grand Forks. ND-MN (ND, NE BEA -#110)	Portland-Salem. OR-WA	1,550
Bismarck. ND-MT-SD (ND, SW BEA - #112)	Chicago-Gary-Kenosha. IL-IN-WI	910
Great Falls. MT (MT, NC BEA - #145)	Portland-Salem. OR-WA	870

Source: Public Use Waybill, STB 2008

Table 7.5 Median 2008 Railroad Revenue per Car for Selected BEA Origin/Destination Markets

Origin BEA	Destination BEA	Median Revenue per Car
Grand Forks. ND-MN (ND, NE BEA -#110)	Portland-Salem. OR-WA	$3,859
Bismarck. ND-MT-SD (ND, SW BEA - #112)	Chicago-Gary-Kenosha. IL-IN-WI	$3,112
Great Falls. MT (MT, NC BEA - #145)	Portland-Salem. OR-WA	$2,829

Source: Public Use Waybill, STB 2008

Figure 7.2 illustrates estimated and generalized regional ratios from the selected BEAs. In this example, Grand Forks to the PNW has the highest revenue to variable cost ratio.

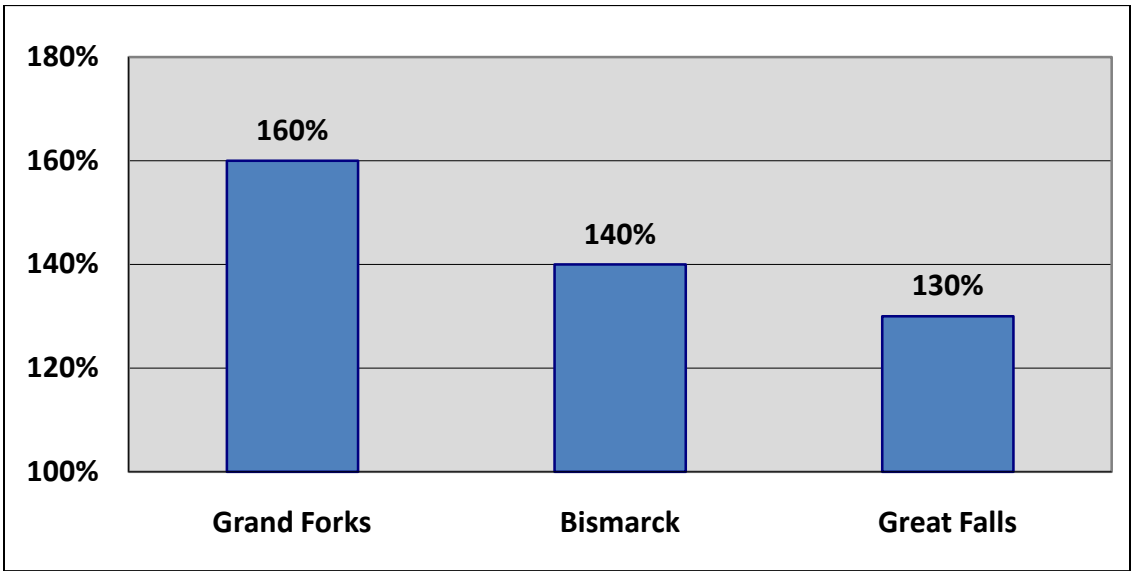


Figure 7.2 Estimated Generalized Revenue to Variable Cost Ratios Illustration for Selected BEAs to Major Market BEA for Median Public Use Waybill Wheat Shipments (URCS 2010).

7.4 Proposed STB URCS Update

The STB, in a report to Congress dated May 27, 2010, proposes updating URCS. In the STB report, *Surface Transportation Board Report to Congress Regarding the Uniform Rail Costing System,* several reasons are given for the update. Of particular interest is the second reason, as noted in the executive summary of the STB report to Congress, which states, in part, "Second, the Board has increased its reliance of URCS. In the past five years, the Board has adopted a number of changes to its rate case methodologies that give URCS a more prominent role in determining whether a rate is reasonable and what relief a rail shipper should receive."

8. SUMMARY

Monitoring and understanding transportation in the wheat market is important to investment and policy decisions that affect competitiveness of North Dakota wheat. The market information presented in this report is used to identify shifts and trends in wheat market logistics based on existing market information. Leading wheat producing states in the Midwest market are North Dakota, Kansas, Montana, and South Dakota. These states supplied 28%, 30%, 15%, and 12% of U.S. wheat over the past five years. HRS is the largest wheat class in North Dakota, with durum also produced in substantial quantity. Neighboring state Montana is predominately HRS in wheat production, while the Kansas and South Dakota classes are mainly winter wheat. Production and use information established a focus for competitive analysis related to the position of North Dakota in the wheat market. North Dakota is concentrated in producing hard wheat that has been competitively marketed to both domestic and export customers.

The United States exports about half of its production each year, and after retreating to near 40% in the late 1990s, the share has recently trended upward. HRS wheat has historically had a greater dependence on international markets with exports equaling more than 60% of production in the most recent years. Durum and HRW wheat classes are more likely to be marketed domestically, but both have seen some expansion in the export market. In the most recent three-year average, from 2007/08 to 2009/10, an equivalent of 48% of HRS and 44% of durum and HRW wheat production, respectively, moved to export markets. Average HRS imports, as a share of domestic use, were 14% over the past five years. This share is 7% higher than the average over the past two decades. Durum imports during the most recent five years averaged 47% of domestic use. The share is 32% greater than the average over the past 20 years.
The rail utilization index provides a measure of relative importance of rail in marketing wheat in the region. It is calculated as the ratio of rail to production for an individual state in wheat compared with that for the region. The increasing trend in the index shows the strong and increasing rail usage in North Dakota and Montana, and these states have always had a high reliance on rail due to long distances to almost all markets. South Dakota also shows an increasing utilization of rail in marketing its wheat crop, especially over the past four years. The increase in these states may be related to elevator investment and railroad strategies to utilize trains of 100 cars or more.

In 2008, 61% of North Dakota rail wheat shipments were bound for western markets, while an estimated 25% was shipped to the Mountain Pacific Territory. South Dakota shipped 62% to the western market and Montana shipped 93% to the Mountain Pacific Territory.

Shipments from the most recently available year are compared with average shipments for the most recent three years and for historical shipments between 1999 and 2001. For instance, the Grand Forks BEA has substantially increased rail wheat shipments to the Pacific Northwest compared with the historical shipments and reduced shipments to the Chicago area compared with the historical distribution figures. The Minot BEA has shifted away from Chicago and Minneapolis toward primarily western markets. The Bismarck BEA, primarily covering southwest North Dakota, has shifted away from Chicago and the Pacific Northwest markets to deliver a larger share to other western markets. The Fargo and Grand Forks BEA, have shifted away from eastern markets to serve export and domestic markets in the west.
Rail rates are an important factor in the competitiveness of North Dakota wheat. Analysis of the Public Use Waybill shows that RPTM (revenue per ton mile) has trended down for all BEAs when comparing 2008 with 2001, with the exception of the Kansas and Canada BEAs. The change in RPTM may be a result of railroad pricing that reduces shipment costs for a like shipment made in the past. Alternatively, the rate declines may be a function of changes in the shipment types such as the shift to relatively lower cost 100-plus car rail shipments or shifts in distribution markets where more competitive rail rate structures exist. The Waybill does not account for fuel surcharges or other rail market premiums or discounts.

Unlike the RPTM trends, the North Dakota tariff rates are mixed with some evidence of increasing rates during the most recent year. The Minneapolis single and multiple car rates have increased over recent years, at the same time the gap has narrowed so shipping under multiple car rates offer customers little advantage in competitively accessing North Dakota wheat supplies. The unit train rate has been absorbed into the domestic efficiency train (DET) program. Under the DET program, a large train of about 100 cars is loaded at origin and may be split into four smaller trains beyond a named railroad arbitrage point such as Chicago.

A generalized analysis of railroad cost was performed using the Uniform Railroad Cost Program (URCS), the official costing procedure of the Surface Transportation Board (STB). Railroad cost estimates were developed using URCS and compared with tariffs published by the Burlington Northern Santa Fe (BNSF) railroad for selected North Dakota sites or with median BEA revenues for selected regional BEAs. This generic analysis provides an overview of railroad costs to railroad revenue. The estimated revenue to variable cost ratios for the selected North Dakota origins for single car wheat shipments to Minneapolis during three years display a downward trend. Grand Forks had the highest revenue to variable cost ratio at 160%, followed by Bismarck at 140%, and Great Falls at 130%.

9. REFERENCES

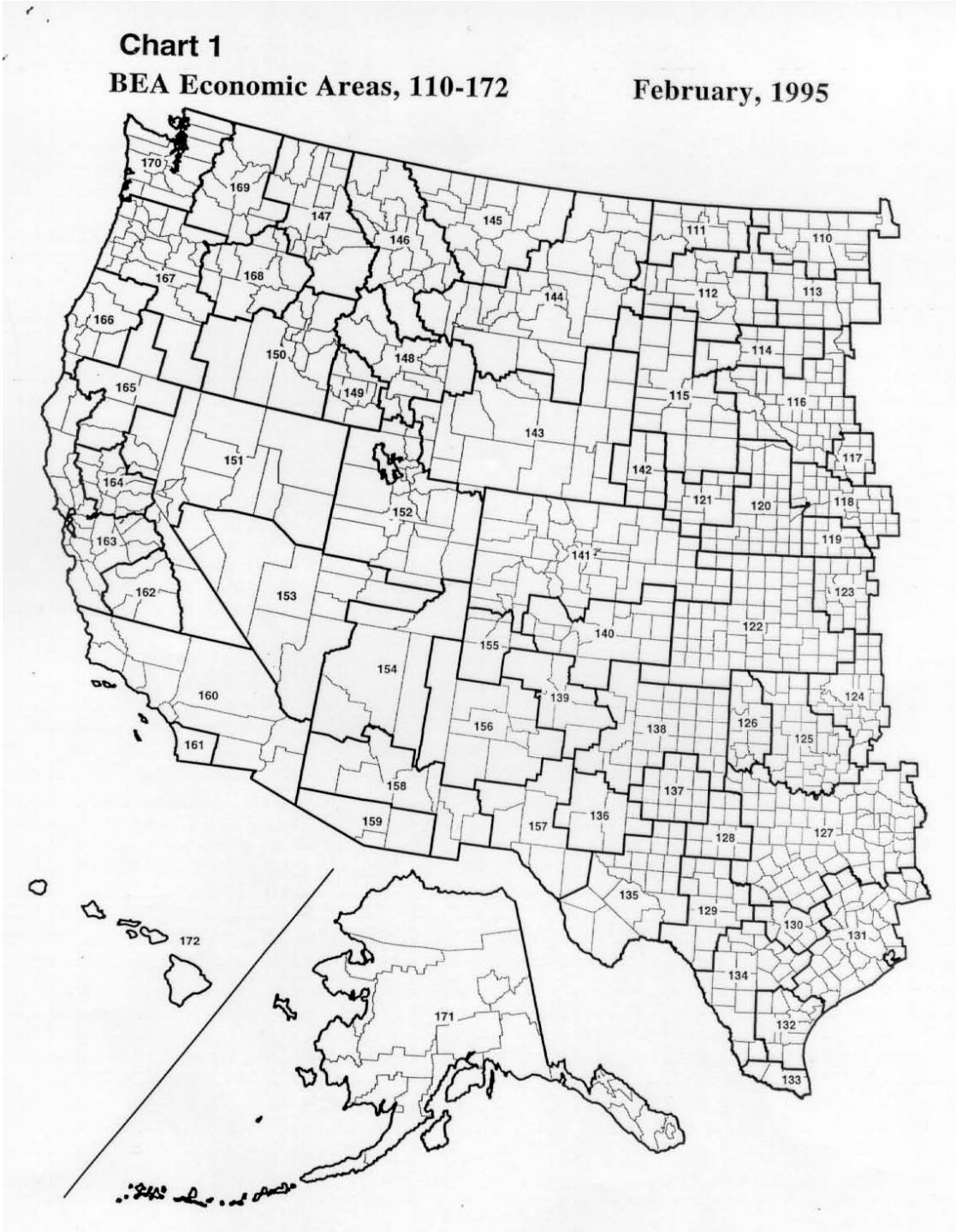
Economic Research Service, 2010. Wheat Year in Review (Domestic): 2008 U.S. Wheat Production Rose in Response to High Prices. U.S. Department of Agriculture, Electronic Outlook Report, WHS-2009. Accessed online March 4, 2010, at www.ers.usda.gov.

Federal Grain Inspection Service, 2010. Wheat Inspected and/or weighed for Export by Class, Region, and Country of Destination, Market News. U.S. Department of Transportation. Accessed online at www.ams.usda.gov/mnreports/wa_gr151.txt, Washington, D.C.

Surface Transportation Board, Public Use Carload Waybill Sample. U.S. Department of Transportation. Accessed December 14, 2009, at www.stb.dot.gov/stb/industry/econ_waybill.html.

Uniform Rail Costing System, Surface Transportation Board, Washington, D.C. http://www.stb.dot.gov/stb/index.html.

APPENDIX A. BEA REGION MAP AND LIST OF NAMES



Source: Surface Transportation Board

Source: Surface Transportation Board

Bureau of Economic Analysis Names (BEA)

1 = Bangor, ME
2 = Portland, ME
3 = Boston-Worcester-Lawrence-Lowell-Brockton , MA-NH-RI-VT
4 = Burlington, VT-NY
5 = Albany-Schenectady-Troy, NY
6 = Syracuse, NY-PA
7 = Rochester, NY-PA
8 = Buffalo-Niagara Falls, NY-PA
9 = State College, PA
10 = New York-No. New Jersey- Long Island, NY-NJ-CT-PA-MA-VT
11 = Harrisburg-Lebanon-Carlisle, PA
12 = Philadelphia-Wilmington- Atlantic City, PA-NJ-DE-MD
13 = Washington-Baltimore, DC-MD-VA-WV-PA
14 = Salisbury, MD-DE-VA
15 = Richmond-Petersburg, VA
16 = Staunton, VA-WV
17 = Roanoke, VA-NC-WV
18 = Greensboro-Winston-Salem-High Point, NC-VA
19 = Raleigh-Durham-Chapel Hill, NC
20 = Norfolk-Virginia Beach-Newport News, VA-NC
21 = Greenville, NC
22 = Fayetteville, NC
23 = Charlotte-Gastonia-Rock Hill, NC-SC
24 = Columbia, SC
25 = Wilmington, NC-SC
26 = Charleston-North Charleston, SC
27 = Augusta-Aiken, GA-SC
28 = Savannah, GA-SC
29 = Jacksonville, FL-GA
30 = Orlando, FL
31 = Miami-Fort Lauderdale, FL
32 = Fort Myers-Cape Coral, FL
33 = Sarasota-Bradenton, FL
34 = Tampa-St. Petersburg- Clearwater, FL
35 = Tallahassee, FL-GA
36 = Dothan, AL-FL-GA
37 = Albany, GA
38 = Macon, GA
39 = Columbus, GA-AL
40 = Atlanta, GA-AL-NC
41 = Greenville-Spartanburg-Anderson, SC-NC
42 = Asheville, NC
43 = Chattanooga, TN-GA
44 = Knoxville, TN
45 = Johnson City-Kingsport-Bristol, TN-VA
46 = Hickory-Morganton, NC-TN
47 = Lexington, KY-TN-VA-WV
48 = Charleston, WV-KY-OH
49 = Cincinnati-Hamilton, OH-KY-IN
50 = Dayton-Springfield, OH
51 = Columbus, OH
52 = Wheeling, WV-OH
53 = Pittsburgh, PA-WV
54 = Erie, PA
55 = Cleveland-Akron, OH-PA
56 = Toledo, OH
57 = Detroit-Ann Arbor-Flint, MI
58 = Northern Michigan, MI
59 = Green Bay, WI-MI
60 = Appleton-Oshkosh-Neenah, WI
61 = Traverse City, MI
62 = Grand Rapids-Muskegon-Holland, MI
63 = Milwaukee-Racine, WI
64 = Chicago-Gary-Kenosha, IL-IN-WI
65 = Elkhart-Goshen, IN-MI
66 = Fort Wayne, IN
67 = Indianapolis, IN-IL
68 = Champaign-Urbana, IL
69 = Evansville-Henderson, IN-KY-IL
70 = Louisville, KY-IN
71 = Nashville, TN-KY
72 = Paducah, KY-IL
73 = Memphis, TN-AR-MS-KY
74 = Huntsville, AL-TN
75 = Tupelo, MS-AL-TN
76 = Greenville, MS
77 = Jackson, MS-AL-LA
78 = Birmingham, AL
79 = Montgomery, AL
80 = Mobile, AL
81 = Pensacola, FL
82 = Biloxi-Gulfport-Pascagoula, MS
83 = New Orleans, LA-MS
84 = Baton Rouge, LA-MS
85 = Lafayette, LA
86 = Lake Charles, LA
87 = Beaumont-Port Arthur, TX
88 = Shreveport-Bossier City, LA-AR
89 = Monroe, LA
90 = Little Rock-North Little Rock, AR
91 = Fort Smith, AR-OK
92 = Fayetteville-Springdale-Rogers, AR-MO-OK
93 = Joplin, MO-KS-OK
94 = Springfield, MO
95 = Jonesboro, AR-MO
96 = St. Louis, MO-IL
97 = Springfield, IL-MO
98 = Columbia, MO
99 = Kansas City, MO-KS
100 = Des Moines, IA-IL-MO
101 = Peoria-Pekin, IL

102 = Davenport-Moline-Rock Island, IA-IL
103 = Cedar Rapids, IA
104 = Madison, WI-IL-IA
105 = La Crosse, WI-MN
106 = Rochester, MN-IA-WI
107 = Minneapolis-St. Paul, MN-WI-IA
108 = Wausau, WI
109 = Duluth-Superior, MN-WI
110 = Grand Forks, ND-MN
111 = Minot, ND
112 = Bismarck, ND-MT-SD
113 = Fargo-Moorhead, ND-MN
114 = Aberdeen, SD
115 = Rapid City, SD-MT-NE-ND
116 = Sioux Falls, SD-IA-MN-NE
117 = Sioux City, IA-NE-SD
118 = Omaha, NE-IA-MO
119 = Lincoln, NE
120 = Grand Island, NE
121 = North Platte, NE-CO
122 = Wichita, KS-OK
123 = Topeka, KS
124 = Tulsa, OK-KS
125 = Oklahoma City, OK
126 = Western Oklahoma, OK
127 = Dallas-Fort Worth, TX-AR-OK
128 = Abilene, TX
129 = San Angelo, TX
130 = Austin-San Marcos, TX
131 = Houston-Galveston-Brazoria, TX
132 = Corpus Christi, TX
133 = McAllen-Edinburg-Mission, TX
134 = San Antonio, TX
135 = Odessa-Midland, TX
136 = Hobbs, NM-TX
137 = Lubbock, TX
138 = Amarillo, TX-NM
139 = Santa Fe, NM
140 = Pueblo, CO-NM
141 = Denver-Boulder-Greeley, CO-KS-NE
142 = Scottsbluff, NE-WY
143 = Casper, WY-ID-UT
144 = Billings, MT-WY
145 = Great Falls, MT
146 = Missoula, MT
147 = Spokane, WA-ID
148 = Idaho Falls, ID-WY
149 = Twin Falls, ID
150 = Boise City, ID-OR
151 = Reno, NV-CA
152 = Salt Lake City-Ogden, UT-ID
153 = Las Vegas, NV-AZ-UT
154 = Flagstaff, AZ-UT
155 = Farmington, NM-CO
156 = Albuquerque, NM-AZ
157 = El Paso, TX-NM
158 = Phoenix-Mesa, AZ-NM
159 = Tucson, AZ
160 = Los Angeles-Riverside-Orange County, CA-AZ
161 = San Diego, CA
162 = Fresno, CA
163 = San Francisco-Oakland-San Jose, CA
164 = Sacramento-Yolo, CA
165 = Redding, CA-OR
166 = Eugene-Springfield, OR-CA
167 = Portland-Salem, OR-WA
168 = Pendleton, OR-WA
169 = Richland-Kennewick-Pasco, WA
170 = Seattle-Tacoma-Bremerton, WA
171 = Anchorage, AK
172 = Honolulu, HI
184 = Newfoundland
185 = Maritimes
186 = Quebec
187 = Ontario
188 = Manitoba
189 = Saskatchewan
190 = Alberta
191 = British Columbia
192 = Puerto Rico
193 = Yukon
194 = Northwest Territories
195 = Mexico

APPENDIX B. NORTH DAKOTA RAIL WHEAT SHIPMENTS, 1999 TO 2008

Table B.1 ND Rail Shipments Wheat Shipments by Origin and Destination BEA

Origin	Termination BEA	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Avg 99-01	Avg 06-08
Grand Forks. ND-MN							*Tons*						
	Portland-Salem. OR-WA	46,550	26,478	32,299	203,829	44,160	618,253	401,522	1,140,270	843,520	1,073,243	2%	25%
	Territory - Western	99,592	151,568	147,906	159,873	284,940	969,825	107,308	680,700	901,348	759,993	6%	19%
	Duluth-Superior. MN-WI	811,208	459,540	569,528	779,866	954,512	859,758	1,098,136	837,749	888,840	-	27%	14%
	St. Louis. MO-IL	291,923	417,678	334,694	295,077	351,693	594,231	432,650	684,772	625,880	318,100	15%	13%
	Chicago-Gary-Kenosha. IL-IN-WI	438,040	559,637	755,339	614,112	417,237	-	506,762	-	-	611,932	26%	5%
	Minneapolis-St. Paul. MN-WI-IA	194,329	161,088	208,266	228,051	118,882	186,097	264,138	147,991	212,368	197,101	8%	5%
	Houston-Galveston-Brazoria. TX	4,085	86,291	122,993	63,153	90,229	126,336	243,235	67,001	117,927	136,131	3%	3%
	Rochester. MN-IA-WI	-	-	-	-	-	-	-	53,173	185,042	67,003	0%	3%
	New York-NewJrsy-LongIs NY-NJ-CT-PA-MA-VT	3,917	49,588	38,888	97,313	69,051	68,620	130,366	46,818	141,386	9,974	1%	2%
	Territory - Mountain Pacific;	-	-	17,638	4,125	-	-	-	121,172	-	53,019	0%	1%
	Territory - Southwestern	-	4,002	34,488	22,718	22,698	3,960	36,642	64,164	19,175	54,830	1%	1%
	Dallas-Fort Worth. TX-AR-OK	32,460	40,366	48,587	37,369	-	-	37,846	86,775	45,981	3,966	2%	1%
	Grand Forks. ND-MN	-	-	-	-	-	-	-	-	-	127,970	0%	1%
	Des Moines. IA-IL-MO	31,759	21,627	20,785	-	31,145	21,013	22,007	97,033	24,004	3,960	1%	1%
	Fargo-Moorhead. ND-MN	9,900	11,060	-	10,270	-	-	29,315	69,831	25,232	19,546	0%	1%
	Kansas City. MO-KS	12,074	70,966	61,231	14,200	24,063	61,080	34,654	48,883	36,407	14,399	2%	1%
	New Orleans. LA-MS	41,225	48,405	-	40,385	64,558	131,654	94,244	-	50,877	48,127	1%	1%
	Wichita. KS-OK	33,821	16,985	34,713	-	-	-	-	-	27,265	59,186	1%	1%
	Territory - Southern	10,964	-	-	10,270	24,476	24,530	18,343	9,950	18,060	39,709	0%	1%
	Omaha. NE-IA-MO	10,426	32,573	5,980	6,025	-	-	20,617	-	11,043	56,070	1%	1%
	San Antonio. TX	-	-	-	-	11,356	82	8,344	-	10,278	39,764	0%	0%
	Albany-Schenectady-Troy. NY	-	-	10,197	-	-	-	-	-	-	40,937	0%	0%
	Oklahoma City. OK	10,348	20,091	-	55,236	-	7,921	-	-	24,426	7,938	0%	0%
	Phoenix-Mesa. AZ-NM	-	-	-	-	-	-	-	11,695	-	-	0%	0%
	Mexico	-	-	-	-	-	-	-	-	-	9,753	0%	0%
	Seattle-Tacoma-Bremerton. WA	-	-	-	-	-	-	-	5,950	-	-	0%	0%
	Birmingham. AL	-	-	-	-	-	-	-	3,963	-	-	0%	0%
	San Francisco-Oakland-San Jose.CA	-	4,003	-	7,171	-	-	-	-	3,961	-	0%	0%
	Chattanooga. TN-GA	-	18,052	10,600	15,880	10,868	-	14,321	-	-	-	0%	0%
	Cleveland-Akron. OH-PA	-	10,140	-	-	-	-	-	-	-	-	0%	0%
	Evansville-Henderson. IN-KY-IL	-	-	3,960	-	-	-	-	-	-	-	0%	0%
	Amarillo. TX-NM	-	-	-	3,961	-	-	-	-	-	-	0%	0%
	Great Falls. MT	-	-	-	3,600	-	-	-	-	-	-	0%	0%
	Los Angeles-Riverside-OrangeCnty.CA-AZ	-	20,816	3,964	-	-	-	-	-	-	-	0%	0%
	Alberta	-	-	3,998	-	-	-	-	-	-	-	0%	0%
		2,082,621	2,230,954	2,466,054	2,672,484	2,519,868	3,673,360	3,500,450	4,177,890	4,213,020	3,752,651		

Minot. ND

Portland-Salem. OR-WA	331,362	272,343	411,854	678,269	664,048	686,650	568,421	533,383	769,218	371,838	21%	26%
Territory - Western	24,099	21,553	54,219	19,825	224,124	209,815	20,669	450,266	414,880	195,989	2%	16%
Duluth-Superior. MN-WI	353,995	358,620	668,592	231,723	276,958	245,136	252,163	313,635	674,112	-	28%	15%
St. Louis. MO-IL	150,390	108,803	206,196	61,697	218,382	231,988	240,858	340,771	123,428	336,573	9%	12%
Kansas City. MO-KS	32,869	75,592	66,885	20,974	125,967	38,303	25,075	70,181	186,986	32,788	4%	4%
Minneapolis-St. Paul. MN-WI-IA	140,408	52,952	85,019	27,910	36,590	62,380	70,463	96,063	99,609	73,579	6%	4%
Chicago-Gary-Kenosha. IL-IN-WI	305,763	175,651	72,609	154,653	239,772	-	329,083	-	-	195,291	11%	3%
Fargo-Moorhead. ND-MN	235,690	268,369	127,954	231,613	-	161,560	120,799	97,286	36,120	59,433	13%	3%
Houston-Galveston-Brazoria. TX	-	-	9,875	-	83,348	-	73,532	63,856	38,780	40,443	0%	2%
New York-NewJrsy-LongIsd.NY-NJ-CT-PA-MA-VT	-	11,949	-	-	-	19,622	68,992	38,194	48,245	45,030	0%	2%
San Antonio. TX	9,483	31,162	9,069	-	-	10,719	42,220	-	43,127	69,524	1%	2%
Denver-Boulder-Greeley. CO-KS-NE	-	-	-	3,645	3,561	-	-	24,202	52,060	24,994	0%	2%
Los Angeles-Riverside-OrangeCnty.CA-AZ	-	4,122	3,964	-	-	6,139	11,860	12,130	32,920	53,150	0%	2%
Dallas-Fort Worth. TX-AR-OK	-	-	-	-	-	3,561	-	34,472	10,599	25,623	0%	1%
Des Moines. IA-IL-MO	-	-	11,188	-	11,939	9,887	13,501	51,832	17,357	-	0%	1%
Territory - Mountain Pacific;	-	10,296	83,261	27,665	11,484	7,920	-	3,961	45,193	3,633	2%	1%
Territory - Southwestern	20,736	9,800	-	-	23,760	30,100	-	-	40,849	10,024	1%	1%
San Francisco-Oakland-San Jose.CA	-	16,458	-	4,200	-	-	-	8,804	5,900	31,501	0%	1%
Seattle-Tacoma-Bremerton. WA	-	-	-	-	-	-	-	-	20,853	23,221	0%	1%
Grand Forks. ND-MN	-	-	-	-	-	-	-	-	-	40,363	0%	1%
Albany-Schenectady-Troy. NY	-	-	-	-	-	-	-	-	-	31,779	0%	0%
New Orleans. LA-MS	4,120	20,251	22,540	15,398	32,639	21,216	19,537	15,574	-	11,594	1%	0%
Rochester. MN-IA-WI	-	-	-	-	-	-	-	14,712	10,604	-	0%	0%
Phoenix-Mesa. AZ-NM	-	4,001	-	-	-	-	-	17,874	-	-	0%	0%
Other	-	-	-	4,042	-	-	-	-	-	-	0%	0%
Omaha. NE-IA-MO	-	-	4,804	-	-	-	-	-	-	-	0%	0%
Wichita. KS-OK	-	-	29,959	-	-	-	-	-	-	-	1%	0%
Great Falls. MT	-	-	-	3,374	-	-	-	-	-	-	0%	0%
Salt Lake City-Ogden. UT-ID	-	10,364	-	-	-	-	-	-	-	-	0%	0%
Richland-Kennewick-Pasco. WA	-	3,546	-	-	-	-	-	-	-	-	0%	0%
Alberta	-	-	18,653	-	-	-	-	-	-	-	0%	0%
	1,608,915	1,455,832	1,886,641	1,484,988	1,952,572	1,744,996	1,857,173	2,187,196	2,670,840	1,676,370		

Bismarck. ND-MT-SD

Chicago-Gary-Kenosha. IL-IN-WI	551,755	267,240	246,557	163,882	310,610	-	591,653	-	-	562,941	22%	8%
Portland-Salem. OR-WA	351,397	365,923	666,782	450,141	213,150	173,413	317,640	290,466	444,722	275,010	29%	14%
Minneapolis-St. Paul. MN-WI-IA	114,963	39,180	120,022	139,726	100,098	37,023	131,466	131,825	85,785	153,758	6%	5%
Territory - Western	185,385	53,726	88,888	32,751	71,114	708,725	115,524	718,641	516,164	135,421	7%	19%
Los Angeles-Riverside-OrangeCnty.CA-AZ	-	10,687	42,943	3,528	-	-	23,410	62,617	133,792	131,628	1%	5%
St. Louis. MO-IL	43,939	212,931	185,231	163,160	130,042	307,707	210,221	325,074	365,515	121,397	9%	11%
Des Moines. IA-IL-MO	21,411	-	-	-	5,906	24,712	31,890	39,441	65,197	95,015	0%	3%
Rochester. MN-IA-WI	-	-	-	-	-	-	-	55,698	35,238	90,444	0%	3%
Territory - Mountain Pacific;	13,299	-	17,134	27,711	54,470	87,105	9,895	3,961	85,413	58,965	1%	2%
Houston-Galveston-Brazoria. TX	-	21,437	24,210	-	-	-	-	4,163	-	53,068	1%	1%
San Francisco-Oakland-San Jose.CA	-	-	10,829	10,322	-	9,875	13,127	14,294	35,871	47,745	0%	1%
Seattle-Tacoma-Bremerton. WA	-	-	-	-	-	-	-	35,681	77,685	44,742	0%	2%
Kansas City. MO-KS	19,857	54,992	-	-	67,104	25,166	20,302	59,361	18,726	35,769	2%	2%
Grand Forks. ND-MN	-	-	-	-	-	-	-	-	-	32,740	0%	0%
San Antonio. TX	-	10,692	-	-	25,335	-	-	-	19,502	30,374	0%	1%
Dallas-Fort Worth. TX-AR-OK	16,282	10,687	-	3,960	18,484	9,900	17,013	58,912	77,562	20,154	1%	2%
Billings. MT-WY	-	-	-	-	-	-	-	-	-	18,537	0%	0%
Territory - Southwestern	-	-	-	-	9,925	-	4,768	9,480	42,898	13,214	0%	1%
New Orleans. LA-MS	-	29,652	20,955	-	23,202	29,998	39,711	-	-	12,000	1%	0%
New York-NewJrsy-LongIsland.NY-NJ-CT-PA-MA-VT	136,653	72,430	42,283	48,036	29,137	34,667	29,923	8,170	20,127	6,399	5%	0%
Albany-Schenectady-Troy. NY	3,958	-	-	-	-	-	-	-	-	-	0%	0%
Chattanooga. TN-GA	-	-	-	20,592	-	3,960	38,892	-	-	-	0%	0%
Evansville-Henderson. IN-KY-IL	-	-	-	-	-	8,712	-	-	-	-	0%	0%
Duluth-Superior. MN-WI	101,364	262,346	228,623	253,283	202,201	256,452	172,949	467,983	608,593	-	12%	15%
Fargo-Moorhead. ND-MN	30,346	16,514	55,316	24,029	-	4,041	34,665	50,087	-	-	2%	1%
Omaha. NE-IA-MO	-	-	3,615	12,931	-	-	11,900	-	-	-	0%	0%
Wichita. KS-OK	-	-	-	-	-	-	-	-	10,247	-	0%	0%
Oklahoma City. OK	-	-	-	-	-	-	-	-	24,204	-	0%	0%
Denver-Boulder-Greeley. CO-KS-NE	-	-	-	20,989	49,299	-	32,343	24,118	24,628	-	0%	1%
Phoenix-Mesa. AZ-NM	-	5,103	-	-	-	-	-	73,241	-	-	0%	1%
Richland-Kennewick-Pasco. WA	-	3,579	-	-	-	-	-	-	-	-	0%	0%
Territory - Southern	-	-	10,692	-	20,153	10,039	40,660	11,072	22,031	-	0%	0%
	1,590,609	1,437,119	1,764,080	1,375,041	1,330,230	1,731,495	1,887,952	2,444,285	2,713,900	1,939,321		

Fargo-Moorhead. ND-MN

Territory - Western	115,976	123,103	104,256	158,424	82,473	792,588	75,207	750,981	662,393	328,330	5%	21%
Portland-Salem. OR-WA	36,970	10,542	309,391	289,584	67,454	580,826	427,978	813,063	269,632	556,194	5%	20%
Duluth-Superior. MN-WI	545,836	388,884	330,541	594,610	610,329	749,970	798,476	607,003	607,468	-	18%	15%
St. Louis. MO-IL	369,826	259,832	353,213	417,754	560,841	412,204	338,012	515,664	328,985	279,435	14%	14%
Chicago-Gary-Kenosha. IL-IN-WI	704,743	737,509	695,725	570,386	610,730	-	663,957	-	-	556,258	30%	7%
Minneapolis-St. Paul. MN-WI-IA	151,176	180,932	273,594	133,662	112,373	88,618	103,914	66,657	142,581	172,891	8%	5%
Fargo-Moorhead. ND-MN	26,144	24,023	27,267	29,156	-	145,776	144,145	89,346	138,154	62,798	1%	4%
Rochester. MN-IA-WI	-	-	-	-	-	-	-	35,551	72,440	93,002	0%	2%
Houston-Galveston-Brazoria. TX	10,937	50,880	92,384	106,036	66,337	125,117	53,411	46,952	61,334	39,788	2%	2%
Dallas-Fort Worth. TX-AR-OK	28,254	19,160	23,328	65,407	9,867	8,364	29,660	94,637	24,636	25,542	1%	2%
Territory - Southwestern	-	15,890	64,963	20,437	48,172	-	7,080	59,391	30,871	43,018	1%	2%
New Orleans. LA-MS	122,785	87,921	92,606	41,181	81,638	109,673	267,268	21,911	73,474	28,769	4%	1%
New York-NewJrsy-LongIsd.NY-NJ-CT-PA-MA-VT	125,554	86,108	33,511	7,057	28,294	76,016	82,694	9,826	48,690	53,236	3%	1%
Kansas City. MO-KS	50,210	36,073	16,562	20,544	42,340	33,463	59,739	12,550	25,564	36,878	1%	1%
San Antonio. TX	-	-	-	-	10,530	30,348	-	-	21,414	42,472	0%	1%
Territory - Mountain Pacific;	-	-	-	-	-	-	-	24,520	8,405	24,636	0%	1%
Des Moines. IA-IL-MO	21,572	21,936	22,519	7,110	50,342	-	18,768	20,819	36,495	-	1%	1%
Omaha. NE-IA-MO	10,794	14,610	12,240	-	-	-	15,113	-	25,901	17,634	1%	1%
Other	-	-	-	-	-	-	-	-	31,383	-	0%	0%
Wichita. KS-OK	-	-	24,999	8,250	-	-	-	-	-	24,808	0%	0%
Oklahoma City. OK	-	-	-	60,313	-	-	-	16,087	8,684	-	0%	0%
Grand Forks. ND-MN	-	-	-	-	-	-	-	-	-	22,155	0%	0%
Birmingham. AL	-	-	-	-	-	-	-	21,039	-	-	0%	0%
Seattle-Tacoma-Bremerton. WA	-	10,426	-	-	-	-	-	-	3,576	8,930	0%	0%
Los Angeles-Riverside-OrangeCnty.CA-AZ	-	-	12,120	-	-	-	-	-	3,630	7,524	0%	0%
Territory - Southern	13,200	-	-	31,871	3,961	-	13,507	6,729	-	4,087	0%	0%
Denver-Boulder-Greeley. CO-KS-NE	-	-	-	-	-	-	-	6,384	-	-	0%	0%
Billings. MT-WY	-	-	-	-	-	-	-	-	-	3,732	0%	0%
Albany-Schenectady-Troy. NY	145,227	30,329	10,049	-	-	-	-	-	-	-	3%	0%
Chattanooga. TN-GA	-	14,800	11,420	-	21,804	10,911	35,872	-	-	-	0%	0%
Cleveland-Akron. OH-PA	-	-	5,940	-	-	-	-	-	-	-	0%	0%
Salt Lake City-Ogden. UT-ID	-	-	-	-	-	4,200	-	-	-	-	0%	0%
Pendleton. OR-WA	-	-	10,017	-	-	-	-	-	-	-	0%	0%
Richland-Kennewick-Pasco. WA	-	8,336	-	-	-	-	-	-	-	-	0%	0%
Territory - Official (NE)	3,567	-	-	-	-	-	-	-	-	-	0%	0%
	2,482,771	2,121,294	2,526,645	2,561,782	2,407,485	3,168,074	3,134,801	3,219,110	2,625,710	2,432,117		

APPENDIX C. CANADA ORIGIN SUPPLEMENT, TBEA AND RATES

Table 3.1 Average Rail Rates, Origin BEA to Termination BEA

	2008	Avg 99-01	Avg 06-08	Avg 99-01	Avg 06-08
Ontario			*Tons*		
Territory - Official (NE)	54,748	56,248	72,284	51%	37%
Toledo. OH	34,848	12,206	46,007	11%	23%
Territory - Southern	36,712	4,796	38,103	4%	19%
Chicago-Gary-Kenosha. IL-IN-WI	26,220	0	8,740	0%	4%
Albany-Schenectady-Troy. NY	15,998	1,333	8,025	1%	4%
Buffalo-Niagara Falls. NY-PA	0	19,556	6,822	18%	3%
Manitoba					
New Orleans. LA-MS	133,891	148,523	146,237	15%	21%
San Antonio. TX	162,121	15,995	113,671	2%	16%
Territory - Southern	128,553	111,796	108,840	11%	16%
Chicago-Gary-Kenosha. IL-IN-WI	228,013	376,277	76,004	39%	11%
Territory - Official (NE)	8,041	5,309	62,272	1%	9%
Minneapolis-St. Paul. MN-WI-IA	81,949	106,488	46,437	11%	7%
Saskatchewan					
Territory - Official (NE)	0	1,334	236,890	0%	20%
Minneapolis-St. Paul. MN-WI-IA	193,649	227,204	194,928	27%	17%
Kansas City. MO-KS	92,015	4,009	127,085	0%	11%
Chicago-Gary-Kenosha. IL-IN-WI	306,036	366,721	102,012	44%	9%
Territory - Southern	123,214	16,951	92,286	2%	8%
Des Moines. IA-IL-MO	58,153	38,754	81,212	5%	7%

Source: Surface Transportation Board

APPENDIX D. WHEAT INSPECTED BY EXPORT REGION AND IMPORT COUNTRY

Table D.1 HRS Wheat Inspected by Export Region and Destination for Counties Averaging More Than 100,000 Bushels per Year.

Share and Average Bushels in 1,000s

Export Region	Importing Country	2005	2006	2007	2008	2009	Average
PACIFIC							
	JAPAN	55,875	57,195	53,440	62,598	51,250	56,072
	PHILIPPINES	36,723	39,437	27,159	36,363	22,472	32,431
	CHINA T	21,733	16,813	25,830	14,654	17,882	19,382
	KOREA REP	13,834	13,718	13,523	11,986	11,294	12,871
	THAILAND	7,628	7,284	7,157	6,427	10,193	7,738
	INDONESIA	2,064	3,595	11,192	4,920	2,715	4,897
	EL SALVADOR	973	3,827	6,747	4,179	4,008	3,947
	MALAYSIA	4,085	3,121	2,948	1,944	3,049	3,029
	GUATEMALA	-	5,705	1,891	414	1,660	1,934
	CHINA MAIN	6,231	926	36	10	1,978	1,836
	VIETNAM	882	346	2,067	1,059	113	893
	COLOMBIA	606	-	650	2,222	606	817
	SINGAPORE	670	353	925	604	965	703
	PERU	-	-	1,883	961	-	569
	SPAIN	-	-	-	-	2,704	541
	BANGLADESH	-	-	1,671	-	-	334
	TANZANIA	-	-	1,579	-	-	316
	SRI LANKA	-	-	202	-	1,078	256
	MALAWI	-	-	-	-	735	147
GULF							
	VENEZUELA	18,269	10,353	15,193	12,702	6,311	12,566
	DOMINICN REP	7,325	4,115	6,737	5,150	5,469	5,759
	MEXICO	5,409	4,020	3,403	5,007	3,597	4,287
	COLOMBIA	6,675	1,910	4,714	3,184	755	3,448
	COSTA RICA	4,045	3,641	3,374	3,044	2,433	3,307
	JAMAICA	3,434	3,216	3,411	1,963	3,364	3,078
	NICARAGUA	3,393	3,207	3,439	2,351	2,565	2,991
	TRINIDAD	3,140	3,250	2,720	2,156	2,289	2,711
	PANAMA	2,790	3,267	3,032	2,243	1,899	2,646
	HONDURAS	2,453	2,210	3,040	1,710	2,141	2,311
	NIGERIA	714	3,669	1,664	2,074	3,016	2,227
	BARBADOS	1,397	1,006	1,305	1,485	1,085	1,256
	EL SALVADOR	3,726	652	28	321	261	998
	REP S AFRICA	3,950	-	620	-	-	914

	GHANA	1,316	1,335	1,475	-	-	825
	MOZAMBIQUE	1,010	1,586	661	-	796	811
	GUATEMALA	1,420	1,214	-	-	219	571
	ST. VINCENT	211	336	1,025	712	532	563
	ECUADOR	2,225	268	184	-	-	535
	CUBA	-	605	-	2,020	-	525
	NAMIBIA	698	906	486	223	-	463
	SPAIN	-	-	2,149	-	-	430
	UN ARAB EM	-	-	933	-	1,010	389
	BELIZE	328	441	359	276	321	345
	KENYA	349	500	478	-	-	265
	TANZANIA	-	-	735	579	-	263
	EGYPT	-	318	308	331	331	258
	GUYANA	576	313	-	222	-	222
	TURKEY	-	-	-	1,051	-	210
	TUNISIA	-	-	947	-	-	189
	CAMEROON	-	-	605	-	-	121
	BAHRAIN	-	-	-	577	-	115
	CHILE	-	-	158	405	-	113
LAKES							
	SPAIN	8,833	2,309	14,957	3,607	667	6,075
	ITALY	9,983	5,535	3,639	601	1,568	4,265
	BELGIUM	3,216	1,981	5,687	1,431	428	2,549
	UN KINGDOM	2,998	961	4,590	1,752	351	2,130
	VENEZUELA	3,693	5,014	-	-	-	1,741
	PORTUGAL	3,102	329	2,422	1,934	878	1,733
	MALTA	1,061	1,460	575	357	268	744
	MOROCCO	-	-	687	720	1,437	569
	DOMINICN REP	-	2,142	-	-	-	428
	COLOMBIA	-	1,394	-	-	-	279
	GHANA	-	510	659	-	-	234
	NETHERLANDS	-	-	719	-	-	144
	MEXICO	-	694	-	-	-	139
	JORDAN	-	693	-	-	-	139
ATLANTIC							
	VENEZUELA	176	1,414	2,094	1,105	-	958
	ITALY	-	-	1,713	1,068	-	556
	SPAIN	-	-	1,478	-	-	296
	MOROCCO	-	-	1,010	-	-	202
	PORTUGAL	-	-	967	-	-	193
	DOMINICN REP	-	707	-	-	-	141

INTERIOR							
	MEXICO	6,344	4,734	9,983	7,844	1,700	6,121
	INDONESIA	-	-	329	392	-	144
ST LAWR SWY							
	ITALY	12,848	2,380	4,806	4,676	1,728	5,288
	SPAIN	7,795	808	4,895	6,275	1,353	4,225
	EGYPT	4,317	-	-	-	1,176	1,099
	MOROCCO	-	-	4,936	-	-	987
	GHANA	1,263	1,007	899	417	400	797
	REP S AFRICA	2,365	-	-	-	1,213	716
	NIGERIA	-	363	1,941	-	-	461
	SUDAN	-	-	1,624	-	-	325
	BANGLADESH	-	-	-	-	1,590	318
	UN KINGDOM	297	-	394	-	449	228
	TURKEY	-	-	-	1,010	-	202
	VENEZUELA	957	-	-	-	-	191
	PORTUGAL	564	-	184	-	-	150
	BELGIUM	-	-	329	370	-	140
	SWITZERLAND	604	-	-	-	-	121
	SENEGAL	-	-	573	-	-	115
	MALTA	-	-	-	570	-	114
	KENYA	-	-	-	-	511	102
TO CANADA		29,841	4,108	24,644	12,409	9,720	16,144

Source: Federal Grain Inspection Service, USDA

Table D.2 Durum Inspected by Export Region and Destination for Counties Averaging More Than 10,000 Bushels per Year

Share and Average Bushels in 1,000s

Export Region	Importing Country	2005	2006	2007	2008	2009	Average
GULF							
	ITALY	7,253	4,574	6,309	8,544	6,054	6,547
	NIGERIA	1,838	2,290	3,568	3,263	3,696	2,931
	VENEZUELA	2,905	2,602	1,783	3,947	312	2,310
	COSTA RICA	1,007	897	881	627	629	808
	ALGERIA	1,856	945	-	-	-	560
	MOROCCO	-	1,412	971	-	-	477
	TUNISIA	-	-	-	1,174	889	413
	DOMINICN REP	526	640	348	-	118	326
	CUBA	403	-	175	192	377	229
	SPAIN	986	-	-	-	-	197
	REP S AFRICA	897	-	-	-	-	179
	PANAMA	-	152	115	118	234	124
	GUATEMALA	-	325	237	-	-	112
	COLOMBIA	277	40	92	98	-	101
	CHILE	364	-	-	-	-	73
	UN ARAB EM	-	-	351	-	-	70
	HONDURAS	157	105	-	-	-	52
	EL SALVADOR	-	123	-	-	-	25
	PERU	73	-	-	-	-	15
	ECUADOR	58	-	-	-	-	12
LAKES							
	ALGERIA	6,808	8,425	3,607	808	4,516	4,833
	ITALY	3,847	5,935	8,392	943	4,179	4,659
	MOROCCO	318	5,320	3,469	-	2,681	2,358
	TUNISIA	-	2,501	3,102	-	377	1,196
	PORTUGAL	473	-	1,233	959	244	582
	NETHERLANDS	-	-	1,324	-	826	430
	TURKEY	-	-	-	-	1,396	279
	BELGIUM	246	-	174	-	403	165
	SWITZERLAND	-	-	539	-	-	108
	UN KINGDOM	-	-	196	-	289	97
	SPAIN	-	-	484	-	-	97
	VENEZUELA	-	-	349	-	-	70
	NORWAY	170	-	-	-	-	34
	FINLAND	118	-	-	-	-	24

PACIFIC							
	GUATEMALA	-	139	-	-	-	28
	JAPAN	-	1	17	12	33	13
ST LAWR SWY							
	ITALY	1,454	-	456	-	933	569
	ALGERIA	-	-	-	-	925	185
	TUNISIA	-	-	352	-	-	70
ATLANTIC							
	TUNISIA	-	-	-	916	-	183
	VENEZUELA	-	242	-	-	-	48
INTERIOR							
	MEXICO	-	124	168	20	36	70
TO CANADA		682	-	808	-	4,085	1,115

Source: Federal Grain Inspection Service, USDA

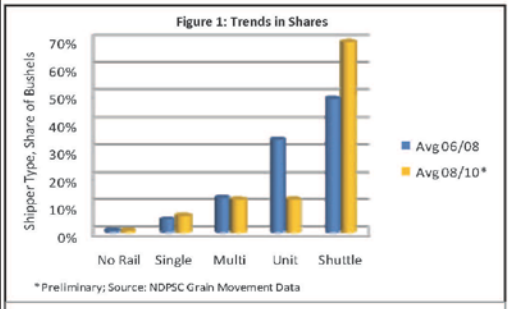
APPENDIX E. MARKET BRIEFS FOR HRS WHEAT AND DURUM

HARD RED SPRING WHEAT

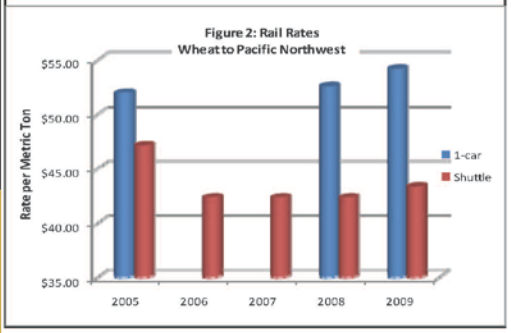
UGPTI Upper Great Plains Transportation Institute

AGRICULTURE SHIPMENT BRIEF MARCH, 2010

North Dakota is a forerunner in the U.S. wheat industry, ranking second among states in total wheat production and first in production of durum and hard red spring wheat (North Dakota Wheat Commission 2010). This report summarizes some logistical trends associated with the movement of hard red spring wheat from elevator to domestic and export markets. Figure 1 below illustrates a trend toward larger shipments in the wheat market. From 2006/08 to 2008/10, shuttle share increased from 49% to 70%. Further, rail rates to the Pacific Northwest continue to favor shuttles over single car shipments, as depicted in Figure 2 below.



*Preliminary; Source: NDPSC Grain Movement Data



Markets

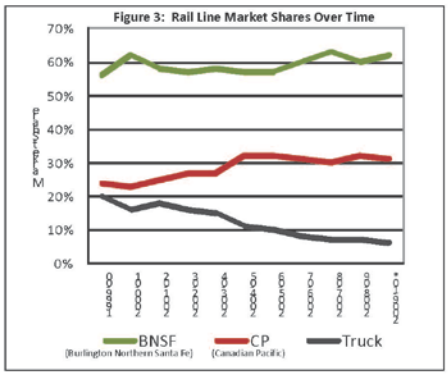
Hard red spring (HRS) wheat remains the leading crop planted in North Dakota (N.D. Agricultural Experiment Station, 2008), making it a key commodity in North Dakota agriculture. In fact, North Dakota accounts for nearly one-half of total HRS production in the United States. This wheat moves to domestic and export markets in both east and west bound shipments.

Shipments of HRS wheat originating from North Dakota elevators are most often bound for the Minneapolis gateway—with about one-third of shipments reportedly bound for this market. These shipments typically move beyond the gateway to U.S. domestic millers. The Pacific Northwest, a large U.S. grain port, is also a significant destination. It accounts for about 20% of the market share annually. Crop reporting district (CRD) origin detail for these markets, as well as a map of the North Dakota districts is provided on page 2.

Destination for HRS Wheat Originating from ND Elevators
ND PSC Grain Movement Summary, July-June Market Year
1,000 Bushels

	Duluth	Mpls	Other MN & WI	Midland & Gulf	PNW	ND	Other	Total
1999-00	16%	29%	3%	9%	13%	6%	22%	177,450
2000-01	12%	32%	4%	12%	15%	5%	19%	200,068
2001-02	10%	30%	4%	10%	24%	7%	15%	197,644
2002-03	13%	33%	4%	12%	16%	7%	14%	193,462
2003-04	10%	36%	7%	10%	16%	7%	14%	243,408
2004-05	13%	33%	4%	9%	19%	7%	15%	240,592
2005-06	12%	28%	5%	12%	17%	7%	20%	232,312
2006-07	6%	29%	4%	11%	25%	7%	18%	229,280
2007-08	8%	30%	3%	12%	21%	7%	19%	263,465
2008-09	6%	35%	5%	7%	18%	7%	22%	192,735
2009-10*	10%	30%	4%	8%	18%	7%	23%	153,061

*Preliminary



Rail Market Shares

Figure 3 (lower right) shows the trends in market shares for Burlington Northern Santa Fe (BNSF)* and Canadian Pacific (CP)** rail lines as well as trucks for HRS wheat shipped from North Dakota elevators. BNSF has remained relatively steady, remaining the largest hauler of North Dakota wheat. CP shows an increase of market share between 1999 and 2010. Between 1999 and 2001 CP shares were 24% and 23%, respectively, growing to 30% and 32% between 2007 and 2009, respectively. The truck share has shown a steady decline from a 1999 share of 20% to just 6% in the preliminary 2010 figures for shipments from ND elevators for the 2009/10 marketing year.

*Includes RRVW **Includes DMVW and NPR

HRS WHEAT PAGE 1

Destinations for Hard Red Spring Wheat Shipments from ND CRD's

(1000 Bushels) **

CRD 1 - Northwest

	Duluth	MN/WI	Midland	PNW	ND	Other	Total
2000-01	1%	14%	12%	65%	1%	6%	16,171
2001-02	4%	9%	2%	77%	3%	5%	16,831
2002-03	11%	7%	1%	72%	3%	6%	15,740
2003-04	1%	12%	2%	76%	6%	3%	17,820
2004-05	0%	9%	2%	73%	5%	11%	21,945
2005-06	4%	33%	4%	44%	10%	4%	20,892
2006-07	0%	13%	7%	69%	7%	2%	24,971
2007-08	1%	18%	4%	62%	4%	10%	27,135
2008-09	1%	31%	8%	50%	6%	4%	19,164
2009-10*	5%	39%	9%	28%	6%	12%	22,733

CRD 2 - North Central

	Duluth	MN/WI	Midland	PNW	ND	Other	Total
2000-01	7%	43%	8%	29%	7%	6%	9,090
2001-02	13%	26%	5%	47%	6%	3%	10,185
2002-03	20%	11%	14%	51%	4%	0%	16,063
2003-04	23%	13%	16%	37%	3%	7%	20,998
2004-05	20%	17%	15%	27%	3%	17%	23,765
2005-06	17%	22%	10%	22%	3%	26%	24,767
2006-07	5%	42%	15%	23%	2%	14%	24,889
2007-08	10%	34%	13%	21%	3%	19%	28,203
2008-09	5%	29%	12%	28%	3%	23%	18,905
2009-10*	9%	18%	4%	6%	3%	60%	11,862

CRD 3 - Northeast

	Duluth	MN/WI	Midland	PNW	ND	Other	Total
2000-01	2%	33%	8%	1%	14%	24%	46,282
2001-02	18%	30%	6%	4%	23%	19%	39,363
2002-03	17%	43%	5%	1%	18%	16%	54,305
2003-04	10%	46%	5%	4%	15%	20%	70,521
2004-05	17%	38%	5%	5%	15%	20%	67,782
2005-06	11%	32%	10%	9%	12%	26%	62,748
2006-07	7%	36%	7%	10%	15%	26%	66,731
2007-08	9%	36%	9%	10%	12%	24%	75,259
2008-09	5%	38%	3%	9%	12%	33%	65,227
2009-10*	16%	21%	4%	14%	14%	31%	34,229

CRD 4 - West Central

	Duluth	MN/WI	Midland	PNW	ND	Other	Total
2000-01	3%	48%	1%	22%	1%	25%	6,301
2001-02	5%	76%	2%	8%	1%	8%	6,716
2002-03	1%	79%	3%	7%	1%	10%	7,501
2003-04	3%	72%	6%	6%	5%	8%	9,017
2004-05	4%	68%	8%	2%	8%	9%	11,786
2005-06	9%	34%	5%	0%	5%	46%	13,511
2006-07	7%	28%	25%	6%	8%	26%	12,321
2007-08	5%	28%	19%	7%	6%	35%	18,021
2008-09	3%	30%	7%	14%	9%	36%	12,186
2009-10*	0%	28%	13%	19%	10%	30%	14,269

CRD 5 - Central

	Duluth	MN/WI	Midland	PNW	ND	Other	Total
2000-01	11%	33%	30%	2%	3%	22%	22,214
2001-02	5%	39%	9%	23%	3%	20%	23,570
2002-03	13%	49%	17%	1%	3%	17%	20,394
2003-04	8%	50%	7%	10%	4%	21%	24,206
2004-05	17%	48%	15%	8%	2%	11%	30,261
2005-06	27%	36%	21%	1%	9%	7%	24,392
2006-07	11%	43%	14%	7%	4%	20%	24,161
2007-08	7%	55%	7%	5%	10%	16%	28,867
2008-09	9%	53%	9%	3%	6%	19%	22,552
2009-10*	10%	57%	6%	2%	4%	21%	15,722

CRD 6 - East Central

	Duluth	MN/WI	Midland	PNW	ND	Other	Total
2000-01	19%	30%	16%	2%	2%	31%	33,091
2001-02	17%	21%	20%	11%	2%	28%	35,474
2002-03	23%	23%	27%	1%	6%	21%	32,793
2003-04	21%	25%	25%	16%	1%	12%	38,292
2004-05	15%	34%	11%	21%	2%	17%	28,650
2005-06	10%	13%	18%	48%	4%	6%	25,117
2006-07	6%	21%	14%	55%	3%	0%	28,960
2007-08	15%	16%	11%	37%	6%	15%	26,023
2008-09	10%	23%	16%	42%	4%	5%	22,884
2009-10*	19%	14%	21%	33%	3%	10%	12,566

CRD 7 - Southwest

	Duluth	MN/WI	Midland	PNW	ND	Other	Total
2000-01	6%	15%	17%	49%	3%	10%	27,822
2001-02	5%	9%	17%	62%	4%	5%	27,684
2002-03	0%	21%	18%	50%	2%	9%	17,940
2003-04	5%	48%	12%	25%	1%	10%	24,874
2004-05	11%	14%	18%	46%	3%	8%	27,393
2005-06	13%	29%	10%	18%	0%	30%	27,312
2006-07	7%	13%	12%	39%	0%	29%	22,790
2007-08	10%	12%	26%	40%	0%	12%	32,956
2008-09	24%	41%	8%	4%	1%	22%	9,734
2009-10*	13%	22%	12%	32%	2%	19%	24,827

CRD 8 - South Central

	Duluth	MN/WI	Midland	PNW	ND	Other	Total
2000-01	5%	84%	3%	2%	0%	6%	12,822
2001-02	1%	93%	3%	1%	0%	2%	11,688
2002-03	1%	84%	9%	4%	1%	1%	8,530
2003-04	3%	87%	6%	1%	2%	1%	12,047
2004-05	6%	79%	12%	1%	1%	1%	12,522
2005-06	0%	81%	13%	1%	1%	4%	11,666
2006-07	1%	90%	5%	1%	1%	3%	5,737
2007-08	1%	84%	8%	1%	5%	2%	10,983
2008-09	0%	84%	10%	0%	7%	0%	4,423
2009-10*	1%	86%	8%	0%	3%	3%	7,623

CRD 9 - Southeast

	Duluth	MN/WI	Midland	PNW	ND	Other	Total
2000-01	13%	58%	3%	0%	0%	24%	26,276
2001-02	5%	65%	8%	0%	5%	17%	26,128
2002-03	8%	62%	4%	0%	2%	24%	20,196
2003-04	5%	61%	5%	0%	6%	23%	25,632
2004-05	5%	60%	3%	0%	4%	27%	29,007
2005-06	7%	49%	15%	3%	3%	23%	21,907
2006-07	6%	33%	11%	25%	7%	18%	18,719
2007-08	5%	57%	12%	2%	2%	22%	16,018
2008-09	0%	70%	4%	5%	1%	19%	17,659
2009-10*	10%	34%	8%	18%	7%	23%	9,230

*Results are Preliminary

**One metric ton = 36.74 Bushels

Patterns and methods of shipping HRS wheat per the Annual North Dakota Elevator Marketing Report and the North Dakota Grain And Oilseed Transportation Statistics report. The complete reports and additional market information are available at http://www.ugpti.org/resources/grain/.

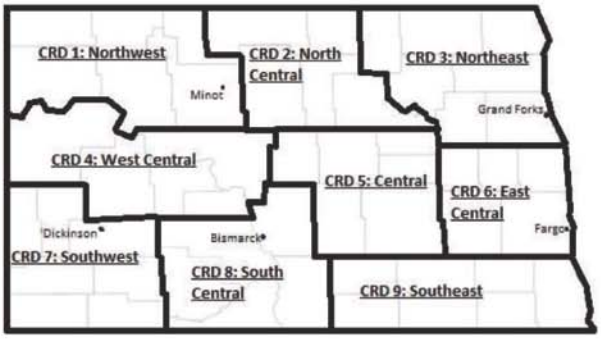


Figure 4: Map of North Dakota Crop Reporting

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North Dakota Wheat Commission (n.d.). Buyers and Processors. Retrieved May 26, 2014, from http://www.ndwheat.com/buyers/
North Dakota Hard Red Spring Wheat Variety Trial Results for 2008 and Selection Guide, N.D. Agricultural Experiment Station, NDSU. Extension Service.

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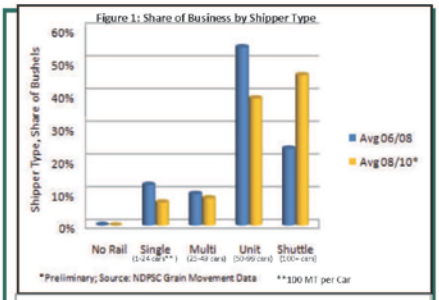
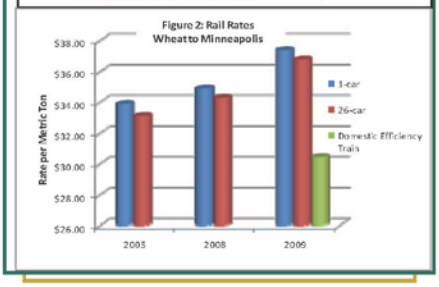
DURUM

UPPER GREAT PLAINS TRANSPORTATION INSTITUTE

AGRICULTURE SHIPMENT BRIEF JUNE 2010

Durum, used primarily for pasta products in the U.S., is consumed at a rate of more than 19 lbs. per capita every year. Export demand is based in Europe, North Africa, and Latin America, where durum is used in pasta, bread, and couscous. "Strong demand for excellent durum wheat raw material will persist in the domestic and export markets." ("Durum Wheat Production", NDSU Ag Department). Logistical data presented in this report reviews trends associated with the movement of durum from elevator to markets. Figure 1 below illustrates a growing tendency over time toward larger shuttle shipments. From 2006-08 to 2008-10 shuttle share increased from 23% to 46% while unit share decreased from 54% to 39% from 2006/08 to 2008/10 respectively.





Markets

More than 75% of land dedicated to durum wheat in the United States is located in North Dakota, where the annual durum wheat production from 1991 to 2006 averaged 2.1 million metric tons. At an average annual value of $388 million, durum remains highly important to the state of North Dakota ("Durum Wheat Production", NDSU Ag Department).

Destination statistics reveal that, for the last decade, durum from North Dakota elevators has consistently favored the Duluth and Minneapolis markets with individual shares ranging from 20 to 30 percent; their combined market share since 1999 has ranged from 40 to 50 percent. (see figure 3 below). Minneapolis shipments typically move beyond the gateway to U.S. domestic millers. The Duluth shipments are destined for major export customers in Europe and North Africa. Overall destination percentages remain fairly consistent for all ports. CRD origin detail for these markets is provided on page 2.

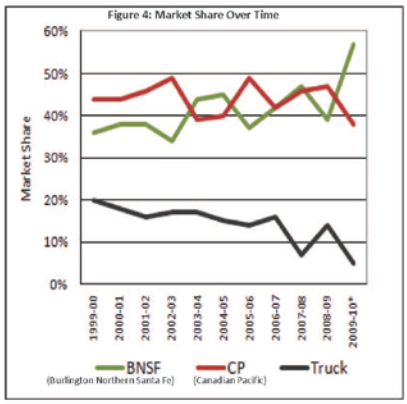
Figure 3: Destination for Durum Originating from ND Elevators
ND PSC Grain Movement Summary, June-July Market Year
1,000 Bushels

	Duluth	Mpls	Other MN & WI	Midland & Gulf	ND	Other	Total
1999-00	13%	34%	6%	15%	19%	13%	64,056
2000-01	13%	28%	10%	18%	16%	15%	77,025
2001-02	25%	26%	9%	9%	20%	9%	61,242
2002-03	18%	26%	10%	17%	24%	6%	45,327
2003-04	17%	28%	11%	23%	15%	7%	53,946
2004-05	15%	27%	10%	21%	18%	8%	42,953
2005-06	23%	24%	15%	17%	13%	8%	57,993
2006-07	24%	22%	10%	17%	20%	7%	40,850
2007-08	36%	20%	8%	17%	11%	6%	47,900
2008-09	13%	29%	7%	25%	22%	4%	21,911
2009-10*	37%	21%	8%	16%	9%	8%	31,058

*Preliminary

Rail Market Shares

Two major railroads provide service to North Dakota: Burlington Northern Santa Fe (BNSF) and Canadian Pacific (CP). Figure 4 (lower right) shows the trends in market shares for BNSF* and CP** rail lines, as well as trucks, for durum shipped from North Dakota elevators. BNSF has shown a sharp increase in the last year after an irregular trend towards increase, moving from 39% in 2008-09 to 57% in the preliminary 2009-10 figures. CP market shares have fluctuated, but show a decline between 1999 and 2010 with percentages of 44% and 38% respectively. The truck share has shown a fairly steady decline from a 1999 share of 20% to just 5% in the preliminary 2010 figures for shipments from ND elevators for the 2009/10 marketing year.



*Includes RRVW **Includes DMVW and NPR

Destinations for Durum Shipments from ND CRD's

*(1000 Bushels)***

CRD 1

	Duluth	MN/WI	Midland	PNW	ND	Other	Total
2000-01	12%	34%	27%	3%	20%	4%	39,479
2001-02	29%	28%	10%	2%	29%	2%	34,509
2002-03	21%	24%	21%	0%	32%	2%	29,854
2003-04	18%	24%	32%	1%	19%	5%	31,769
2004-05	15%	25%	27%	0%	25%	7%	26,849
2005-06	24%	33%	21%	1%	13%	7%	38,091
2006-07	27%	22%	22%	0%	24%	8%	25,451
2007-08	40%	23%	20%	0%	11%	5%	33,798
2008-09	18%	34%	26%	0%	21%	3%	16,797
2009-10*	46%	24%	14%	1%	8%	8%	22,079

CRD 2

	Duluth	MN/WI	Midland	PNW	ND	Other	Total
2000-01	25%	39%	5%	9%	17%	4%	5,751
2001-02	33%	48%	1%	3%	11%	3%	4,392
2002-03	32%	44%	0%	0%	15%	8%	2,146
2003-04	37%	45%	0%	0%	17%	0%	2,478
2004-05	27%	23%	14%	0%	12%	24%	1,864
2005-06	37%	20%	6%	0%	24%	13%	2,120
2006-07	25%	48%	8%	1%	19%	0%	1,729
2007-08	5%	35%	0%	0%	25%	33%	1,404
2008-09	1%	28%	4%	0%	66%	1%	584
2009-10*	50%	7%	0%	0%	44%	0%	364

CRD 3

	Duluth	MN/WI	Midland	PNW	ND	Other	Total
2000-01	26%	26%	8%	2%	17%	22%	8,864
2001-02	41%	18%	3%	1%	9%	28%	6,251
2002-03	31%	40%	2%	0%	13%	14%	2,535
2003-04	15%	50%	15%	0%	8%	12%	4,187
2004-05	42%	31%	3%	0%	12%	11%	1,818
2005-06	42%	13%	1%	0%	27%	18%	1,877
2006-07	33%	13%	4%	2%	27%	21%	1,556
2007-08	18%	17%	0%	0%	20%	46%	857
2008-09	1%	13%	65%	0%	14%	7%	508
2009-10*	7%	26%	0%	0%	34%	33%	51

CRD 4

	Duluth	MN/WI	Midland	PNW	ND	Other	Total
2000-01	6%	17%	9%	2%	14%	53%	8,838
2001-02	12%	28%	18%	0%	21%	21%	5,095
2002-03	1%	36%	24%	0%	16%	23%	3,752
2003-04	7%	63%	16%	0%	10%	4%	5,305
2004-05	0%	63%	27%	0%	6%	4%	5,088
2005-06	6%	57%	21%	0%	13%	4%	5,778
2006-07	0%	53%	14%	2%	27%	3%	4,119
2007-08	2%	42%	24%	0%	32%	0%	3,450
2008-09	0%	41%	26%	0%	33%	0%	1,620
2009-10*	7%	69%	12%	0%	11%	0%	2,145

CRD 5

	Duluth	MN/WI	Midland	PNW	ND	Other	Total
2000-01	17%	49%	15%	1%	11%	8%	3,393
2001-02	15%	52%	11%	13%	2%	7%	2,600
2002-03	14%	51%	11%	0%	6%	19%	1,444
2003-04	10%	54%	9%	0%	12%	15%	2,390
2004-05	5%	52%	10%	0%	10%	24%	1,388
2005-06	6%	62%	8%	0%	14%	10%	1,635
2006-07	8%	64%	2%	0%	24%	2%	1,156
2007-08	29%	47%	4%	0%	10%	11%	1,215
2008-09	3%	47%	0%	0%	24%	25%	440
2009-10*	19%	18%	8%	0%	10%	45%	538

CRD 6

	Duluth	MN/WI	Midland	PNW	ND	Other	Total
2000-01	27%	35%	8%	0%	1%	30%	1,899
2001-02	44%	31%	2%	6%	1%	16%	752
2002-03	14%	84%	0%	0%	1%	1%	160
2003-04	21%	18%	0%	0%	62%	0%	272
2004-05	18%	79%	0%	0%	3%	0%	453
2005-06	20%	80%	0%	0%	0%	0%	144
2006-07	8%	41%	0%	0%	51%	0%	31
2007-08	2%	71%	0%	0%	2%	25%	138
2008-09	0%	0%	0%	0%	0%	0%	-
2009-10*	0%	0%	0%	0%	100%	0%	48

CRD 7

	Duluth	MN/WI	Midland	PNW	ND	Other	Total
2000-01	2%	81%	11%	1%	2%	3%	7,601
2001-02	0%	78%	13%	2%	3%	5%	6,910
2002-03	0%	84%	7%	7%	1%	0%	5,216
2003-04	13%	68%	8%	5%	1%	5%	7,099
2004-05	12%	60%	14%	1%	9%	4%	7,544
2005-06	23%	59%	5%	2%	6%	4%	8,128
2006-07	32%	52%	7%	1%	1%	7%	6,445
2007-08	41%	44%	9%	1%	0%	4%	6,567
2008-09	11%	51%	24%	1%	4%	11%	1,781
2009-10*	22%	48%	12%	3%	0%	16%	3,741

CRD 8

	Duluth	MN/WI	Midland	PNW	ND	Other	Total
2000-01	5%	90%	0%	0%	4%	0%	514
2001-02	2%	92%	0%	0%	5%	0%	348
2002-03	0%	100%	0%	0%	0%	0%	110
2003-04	0%	92%	3%	0%	5%	0%	185
2004-05	0%	64%	1%	0%	35%	0%	199
2005-06	0%	98%	0%	0%	0%	2%	132
2006-07	0%	96%	0%	0%	4%	0%	68
2007-08	0%	100%	0%	0%	0%	0%	85
2008-09	0%	70%	0%	0%	30%	0%	56
2009-10*	0%	75%	0%	0%	25%	0%	34

CRD 9

	Duluth	MN/WI	Midland	PNW	ND	Other	Total
2000-01	24%	52%	0%	0%	1%	23%	687
2001-02	10%	70%	8%	0%	2%	10%	380
2002-03	8%	85%	0%	0%	5%	2%	110
2003-04	2%	68%	2%	0%	11%	16%	271
2004-05	2%	64%	0%	0%	2%	33%	314
2005-06	7%	93%	0%	0%	0%	0%	89
2006-07	0%	94%	0%	0%	5%	1%	293
2007-08	0%	100%	0%	0%	0%	0%	356
2008-09	0%	96%	0%	0%	11%	0%	124
2009-10*	39%	31%	14%	1%	8%	7%	29

*Results are preliminary

**One metric ton = 36.74 Bushels

Patterns and methods of shipping Durum per the Annual North Dakota Elevator Marketing Report and the North Dakota Grain And Oilseed Transportation Statistics report. The complete reports and additional market information are available at http://www.ugpti.org/resources/grain/.

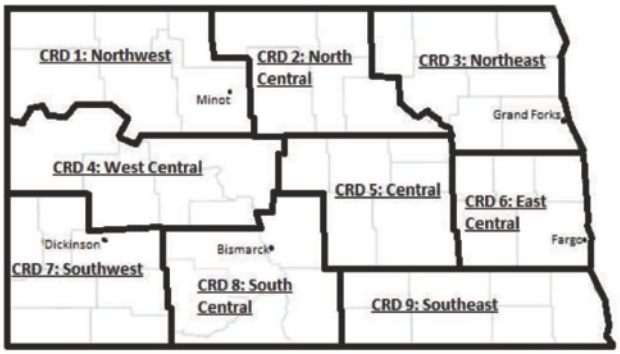


Figure 5: Map of North Dakota Crop Reporting

North Dakota Hard Red Spring Wheat: Variety Trial Results for 2008 and Selection Guide, N.D. Agricultural Experiment Station. NDSU Extension Service.
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The content of this report reflects the views of the authors, who are responsible for the facts and accuracy of the information presented. This document is disseminated under the sponsorship of the North Dakota Wheat Commission.

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