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Grain Transportation Prospects

USDA/STB Grain Logistics Task Force



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The Grain Transportation Prospects is a product of the Department of Agriculture (USDA) and Surface Transportation Board (STB) Grain Logistics Task Force (GLTF). The members of the GLTF working group are: Gerald A. Bange, Chairperson, World Agricultural Outlook Board, USDA; Melvin F. Clemens, Jr., Surface Transportation Board; Steve P. Gill, Farm Service Agency, USDA; Mack N. Leath, Economic Research Service, USDA; Brian D. McKee, Grain Inspection, Packers and Stockyards Administration, USDA; Jerry D. Norton, Agricultural Marketing Service, USDA; Robert Riemenschneider, Foreign Agricultural Service, USDA; Jim Schaub, Office of Chief Economist, USDA; and Frederic A. Vogel, National Agricultural Statistics Service, USDA.

Summary

The U.S. Department of Agriculture's October forecast for the 1999/2000 corn, sorghum, barley, oat, wheat, rye, and soybean crops put this year's grain (excluding rice) and soybean production at 15,504 million bushels, down 4 percent from 1998/99. Despite reduced production, the largest carryover in a decade will increase total grain and soybean supplies to their highest levels since 1987/88. Current projections put 1999/2000 use up just 74 million bushels, or less than 1 percent, from 1998/99. At this level, 1999/2000 use would still be the second highest ever. A projected decline in feed and residual use for the year is expected to largely offset increases in exports and milling and processing use. With 1999/2000 use expected to be up so little from last year, ending stocks are expected to be up for the fourth straight year. This would be the longest period of expansion for grain and soybean carryover since the late 1970's.

September 1 grain and soybean stocks totaled 5,114 million bushels, up 684 million bushels, or 15 percent, from 1998. These were the largest September 1 stocks since 1993. The large September 1 stocks add to harvest-time storage and handling problems, particularly in the Eastern and Western Corn Belt and in the Central Plains, where storage capacity is especially short. September 1 grain and soybean stocks accounted for 27 percent of total U.S. storage capacity as reported for December 1, 1998. This is the highest September 1 utilization since 1988 when stocks accounted for 34 percent of total storage capacity.

Exports of grain and soybeans for 1999/2000 are projected up 2 percent from 1998/99. At 4,162 million bushels, 1999/2000 exports would be the highest since 1995/96. Export inspections of grain and soybeans have been above year-ago levels since January, with some of the largest year-to-year increases during the July-September period. Strong export demand for grain and soybeans has kept rail and barge shipments running above year-ago levels for several months. Lower rates for forward barge freight and discounted values in the secondary market for guaranteed rail freight suggest some easing of demand for transportation in early 2000.

Expected increases in domestic corn use should add to transportation demand and partly offset any reductions in export corn shipments. However, domestic shipping relies substantially less on barge transportation and more on rail and truck. This suggests some weakening in barge demand over the coming months. Price incentives to hold corn may also dampen transportation demand for corn modestly over the next several months.

Demand for soybean transportation should remain strong throughout the 1999/2000 marketing year. Domestic soybean crushing for 1999/2000 is projected to set a new record, and soybean exports for the marketing year are projected up from 1998/99. Export sales of soybeans have continued at a strong pace during the first weeks of the 1999/2000 marketing year. With very little incentive in the futures prices to carry soybeans forward, producers should continue to market this year's crop at a fairly steady pace. This should keep barge shipments at or near year-ago levels over the next few weeks as the navigation season on the Upper Mississippi River draws to a close. Overall barge transportation demand, however, will continue to depend heavily upon the strength of corn exports.

Wheat transportation demand should continue to weaken as winter approaches. Wheat use for 1999/2000 is expected to be down modestly. Substantial price premiums also exist in the futures markets to carry wheat forward. The strong price incentives to hold wheat should slow movements over the next several months. Despite the closing of the Upper Mississippi River and the St. Lawrence Seaway, both of which typically occur in mid-December, rail demand in the Western United States should not exceed available capacity in the absence of any significant changes in the market situation for wheat.

Fall seeding of the 2000/01 winter wheat crop is nearing completion. With July 2000 wheat futures prices currently 30-40 cents per bushel below July futures prices last year at this time, 2000/01 winter wheat acreage may be down from 1999/2000. Projected increases in wheat carryover for 1999/2000 only add to the pressure on producers to reduce their winter wheat seeding.

Ocean freight rates for two of the key grain routes, U.S. Gulf to Japan and Pacific Northwest (PNW) to Japan, have moved upward during September and October relative to July-August rates. The ocean rate spread to Japan from the Gulf and PNW widened this year throughout the third quarter and into the fourth quarter, favoring shipments from the PNW. Future ocean rates for the Gulf and PNW indicate continued upward movement during the rest of the fourth quarter and into the year 2000.

Barge grain shipments so far for 1999 have been higher than during any comparable period in the last 5 years. The surge in grain movements which began earlier this year, may be peaking as the harvest ends. Average weekly barge shipments for October are down modestly

from those for the July-September period. Early indications also show a possible decrease in demand for barge services over the next few months. In recent weeks, there have been no major repair or maintenance activities that would limit barge traffic. Starting in mid-October and continuing through the second week of November, there will be some dredging at various locations on the Upper Mississippi River, but this is not expected to cause any river closures.

In October, barge rates for grain shipped from St. Louis, MO, to the Gulf were up over year-ago levels, reflecting higher than normal shipments of export grain by rail to the St. Louis area for transloading to barge. These rates are expected to drop toward the end of the calendar year. Forward rates for barge freight from Minneapolis-St. Paul, MN, to the Gulf indicate that grain shippers expect rates and volumes on the Upper Mississippi to be down modestly for the remainder of this year's navigation season.

Rail demand has remained strong throughout calendar year 1999. The overall increase in grain carloadings for 1999 is largely the result of stronger demand for rail transportation on western railroads. In the East, grain loadings for the July-September quarter were down from the preceding two quarters and up only 1 percent from third quarter 1998. The fact that the year-to-year increase in eastern grain loadings is small, reflects the service problems associated with the takeover of Conrail (CR) by CSX Transportation (CSXT) and Norfolk Southern (NS) more than the true level of demand that has existed in the eastern grain markets since the takeover in June.

Service reliability continues to be an issue in the Eastern United States, particularly on the lines of the former CR system now operated by CSXT and NS. Critical performance measures monitored by the Surface Transportation Board's Office of Compliance and Enforcement have generally leveled off since the June 1 operational takeover. During the past several weeks, these measures have shown no marked improvement. In fact, increased demand during recent weeks has resulted in slightly diminished performance in terms of increased dwell times and reduced system velocity. Some shippers of time-sensitive traffic continue to be plagued by erratic transit times. Other traffic that is not usually considered time-sensitive, such as coal and grain, is sensitive because of the continuing heavy volume and problems with empty car supply. Two of the most critical railroad resources continue to be power and crews, and they remain strained. In response, both CSXT and NS continue to supplement

their locomotive fleets and to hire and qualify additional train service employees. Service design changes and infrastructure improvements continue to be made to adapt the new rail systems to the evolving service demands of shippers and to deal with additional traffic resulting from peak-season shipping demand. National economic trends suggest strong demand for rail service will continue for nearly all commodity groups.

Operational problems continue to plague grain shippers and receivers on CSXT, with weekly grain carloadings falling short of apparent demand. Stronger demand for rail transportation and problems associated with flooding caused by hurricanes appear to have reduced grain train speeds again in October. Dwell times in key terminals that connect the Eastern Corn Belt and Southeast markets also continue to be up from their levels before the takeover slowing less than unit-train load shipments of feed grains and feed ingredients. Operational problems related to the CR takeover are also reducing system fluidity and performance on NS. Some indicators suggest that service problems for grain shippers on NS are even more serious than on CSXT. Service problems are likely constraining the amount of grain traffic that would otherwise move over NS at this time.

A serious concern for Eastern Corn Belt grain and feed ingredient shippers and Southeastern poultry and hog feeders alike is the toll that winter could take on both NS and CSXT. Without significant improvements in operating performance on both railroads in the next few weeks, it will be impossible to expand Southeast feed inventories sufficiently to deal with any major snowfalls that could block rail lines in critical passes through the eastern mountains. Reduced Southeast grain and soybean production and smaller September 1 stocks only add to the seriousness of this problem.

Despite continued strong demand for western rail grain transportation, the western railroads have largely been able to keep their systems fluid and meet shipper transportation needs. Burlington Northern Santa Fe (BNSF) has kept its past-due car orders substantially below year-ago levels by keeping a high percentage of its fleet loaded and moving to destination and, at the same time, holding its grain car cycle times at some of the lowest levels in weeks. Grain train speeds on the Union Pacific (UP) suggest that UP has been able to maintain good cycle times on its grain cars despite stronger demand on its system over the past few months. Average grain train speeds on the Kansas City Southern have also improved since summer.

Despite the strength of rail demand over the past few months and heading into November, particularly in the Western United States, the demand for guaranteed grain car service has weakened significantly since August. In late August, press accounts were suggesting the possibility of harvest-time rail service problems in the Western United States. These have not materialized to any significant extent on the western railroads. Since August, prices have dropped substantially for car service guarantees on UP and BNSF. Current discounts in the secondary market for guaranteed rail freight suggest that western rail demand during the coming weeks is likely to remain below year-ago levels.

This report is compiled by USDA's Agricultural Marketing Service. It contains information provided by the Surface Transportation Board and by USDA's Agricultural Marketing Service, Economic Research Service, Farm Service Agency, Foreign Agricultural Service, and National Agricultural Statistics Service. It is approved for release by the World Agricultural Outlook Board. For questions concerning this report, contact Jerry D. Norton, USDA-Agricultural Marketing Service, 202-690-1303, "jerry.norton@usda.gov". Unless otherwise referenced, information in the report is based on data from the October 10, 1999, *World Supply and Demand Estimates* and *Crop Production* reports and the September 30, 1999, *Grain Stocks* and *Small Grains* reports.

Grain Market Situation

Grain and Soybeans

Grain (excluding rice) and soybean production for 1999/2000 is forecast down 4 percent from last year. With smaller corn, soybean, and wheat crops, this year's production is expected to be the lowest in 3 years. Despite reduced production, the largest carryover in a decade will increase total grain and soybean supplies to their highest levels since 1987/88. Current projections put 1999/2000 use up just 74 million bushels, or less than 1 percent, from 1998/99. At this level, 1999/2000 use would still be the second highest ever. A projected decline in feed and residual use for the year is expected to largely offset increases in exports and milling and processing use. With 1999/2000 use expected to be up so little from last year, this year's ending stocks are expected to be up for the fourth straight year. This would be the longest period of expansion for grain and soybean carryover since the late 1970's. Export inspections of grain and soybeans have been above year-ago levels since January with some of the largest year-to-year increases during the July-September period. Strong export demand for grain and soybeans since early 1999 have kept rail and barge shipments running above year-ago levels. Lower rates for forward barge freight and discounted values in the secondary market for guaranteed rail freight suggest some easing of demand for transportation in early 2000.

Supplies. The U.S. Department of Agriculture's (USDA) October forecast for the 1999/2000 corn, sorghum, barley, oat, wheat, rye, and soybean crops puts this year's grain (excluding rice) and soybean production at 15,504 million bushels, down 4 percent from 1998/99. Beginning stocks for 1999/2000 are up 37 percent at 3,381 million bushels. This is the largest carry-in since 1989/90. With imports projected at 258 million bushels, down 4 percent from 1998/99, available grain and soybean supplies for 1999/2000 are expected to total 19,143 million bushels, up 2 percent from 1998/99 and the highest since 1987/88. Ending stocks for 1999/2000 are projected up 7 percent at 3,607 million bushels. At this level, 1999/2000 ending stocks will be the largest since 1987/88 and the fourth straight year in which carryover has increased. If these projections are realized, this would be the longest period of ending stock expansion since the late 1970's.

Based on the September *Small Grains* report and the October *Crop Production* report, combined grain and soybean production for 1999/2000 is forecast to be down 595 million bushels from 1998/99. Production is forecast down in every region except the Delta and

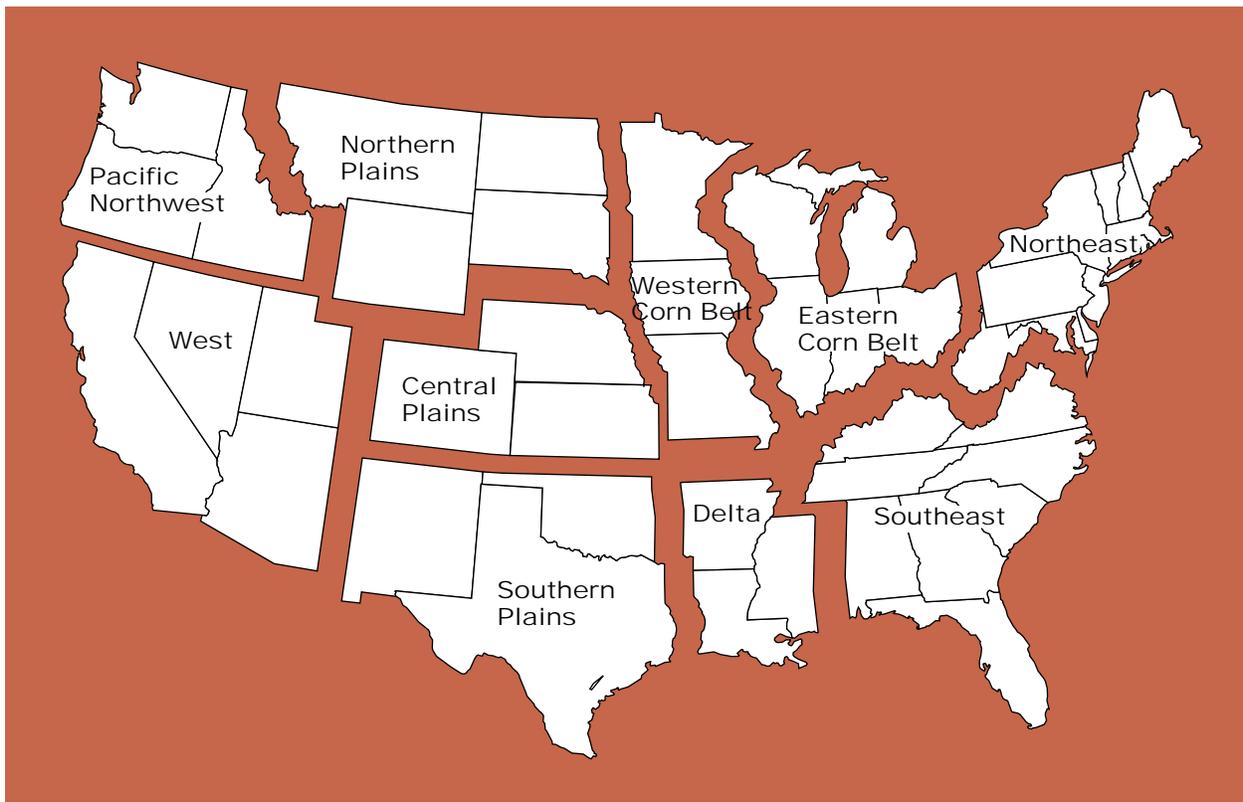
Southern Plains (figure 1, table 1). The largest decreases are forecast for the Central and Northern Plains, which are expected to account for 19 and 9 percent, respectively, of 1999/2000 grain and soybean production. Central Plains production is forecast down 173 million bushels. This is down 6 percent from 1998/99, but 7 percent above the 5-year average for the region. In the region, Kansas production is forecast down 102 million bushels, or 8 percent, and Nebraska production is forecast down 79 million bushels, or 5 percent. Grain and soybean production in the Northern Plains is forecast down 201 million bushels, 13 percent below last year and 4 percent below the 5-year average. North Dakota and South Dakota account for the bulk of this drop in the region's 1999/2000 production with year-to-year decreases of 107 and 82 million bushels (19 and 11 percent), respectively.

Grain and soybean production is forecast down for the Eastern and Western Corn Belts, which are expected to account for 29 and 27 percent, respectively, of total production for 1999/2000. Despite drought-reduced summer crops in the parts of the Eastern Corn Belt, production in this region is forecast down just 42 million bushels, 1 percent below 1998/99, but 4 percent above the 5-year average. Drought- and heat-related decreases in Ohio and Indiana production of 111 and 36 million bushels (15 and 3 percent), respectively, were partly offset by increases in Illinois, Michigan, and Wisconsin, where production was up 72, 23, and 10 million bushels (4, 7, and 2 percent), respectively. Western Corn Belt production is forecast down 134 million bushels, 3 percent below last year, but 5 percent above the 5-year average. An 82-million-bushel (6 percent) decrease in Minnesota production and a 77-million-bushel (14 percent) decrease in Missouri production far outweighed the 25-million-bushel (1 percent) increase in Iowa production.

Summer drought and heat throughout the East and coastal plain flooding in the Mid-Atlantic States reduced 1999/2000 grain and soybean crops in the Southeast and Northeast. Production in these regions is forecast down 7 and 21 percent, respectively. Production in the Pacific Northwest (PNW) and West is also forecast down 13 and 3 percent, respectively, for the year.

Use. October projections put grain and soybean use for 1999/2000 at 15,534 million bushels, up 74 million bushels, or less than 1 percent, from 1998/99. If realized, this would be the second highest use ever (figure 2). Domestic use for 1999/2000 is projected at 11,372 million bushels, down 23 million bushels, or less than

Figure 1—U.S. grain production regions



Source: USDA-AMS

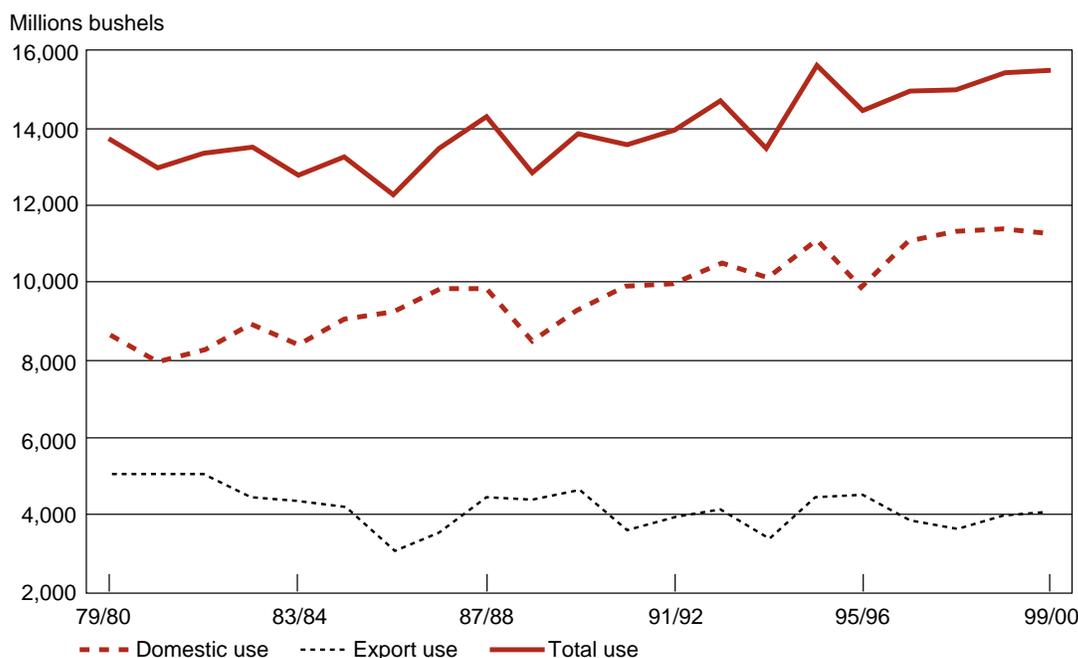
Table 1—U.S. grain and soybean production, 1994/95-1999/2000

Region	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	Percent of 1998/99	Percent of 5-yr. avg.
	<i>Million bushels</i>							
Northeast	375	326	394	341	361	286	79	80
Southeast	795	642	770	703	584	546	93	78
Delta	360	290	475	403	338	366	108	98
Eastern Corn Belt	4,998	3,804	4,034	4,493	4,605	4,563	99	104
Western Corn Belt	4,200	3,304	3,981	3,934	4,260	4,126	97	105
Southern Plains	692	597	649	828	717	820	114	118
Central Plains	2,745	2,078	2,767	2,898	3,087	2,914	94	107
Northern Plains	1,448	1,154	1,522	1,325	1,550	1,349	87	96
Pacific Northwest	405	441	497	478	459	400	87	88
West	128	110	150	143	139	134	97	100
United States	16,147	12,746	15,240	15,546	16,099	15,504	96	102

Note: 1999 production forecast is from the October 8, 1999, *Crop Production* report.

Source: USDA-NASS

Figure 2—U.S. grain and soybean use, 1979/80-1999/2000



Note: 1998/99 use is preliminary, and 1999/2000 use is projected. Both are based on the October 8, 1999, *World Agricultural Supply and Demand Estimates*.
Source: USDA-ERS, USDA-WAOB

1 percent, from last year's record. Domestic use projections reflect expected increases in milling and processing use in 1999/2000. Feed and residual use for 1999/2000, however, is projected down 2 percent at 6,433 million bushels. This would be the lowest feed and residual use since 1995/96. Export use for 1999/2000 is projected up 2 percent from 1998/99. At 4,162 million bushels, 1999/2000 exports would be the highest since 1995/96.

Since January, grain and soybean export inspections have outpaced those in 1998. For the January-September period, inspections were up 29 percent over the same period last year. For the July-September period, inspections were up 39 percent over year-ago levels.

World Trade. World wheat trade in 1999/2000 is projected at 100.2 million metric tons (mmt). This is the seventh consecutive year that trade has been around this level, although prices have fluctuated between record highs and near record lows. Slightly higher U.S. exports will face strong competition from Canada, Argentina, and Australia due to bumper harvests. Global production is down from the 1997/98 record, owing to smaller crops in several key importing countries, as well as the United States and the European Union (EU). For the first time in nearly a decade, glob-

al consumption is forecast slightly lower, as the growth in food use is overshadowed by a decline in wheat used for feeding. Nevertheless, consumption is still forecast to exceed production for the second year in a row; consequently, ending stocks will be drawn down. However, stocks in the major exporting countries will remain large, limiting any price increase.

World coarse grain trade for 1999/2000 is down slightly reflecting global consumption that has stalled since 1996/97. Corn trade is forecast down 2.5 mmt, with U.S. exports dropping 4.5 mmt because of increased competition from China. World barley trade is forecast to remain robust as Middle Eastern and North African demand continues strong. The EU is currently forecast to export a record 9 mmt. A reduced U.S. barley crop is expected to result in the U.S. being a net importer for a second consecutive year.

Stocks and Storage. The September 30 *Grain Stocks* report puts September 1 grain and soybean stocks at 5,114 million bushels, up 684 million bushels, or 15 percent, from 1998 and 35 percent above the 5-year average (table 2). These are the highest September 1 grain and soybean stocks since 1993. Stocks in off-farm facilities accounted for 58 percent of the total and were reported at 2,981 million bushels, up 19 percent from 1998 and 43 percent above the 5-year average.

Table 2—U.S. grain and soybean stocks by position, September 1, 1993-99

Region	1993			1994			1995		
	On Farms	Off Farms	Total	On Farms	Off Farms	Total	On Farms	Off Farms	Total
	<i>Million bushels</i>			<i>Million bushels</i>			<i>Million bushels</i>		
Northeast	36	33	69	21	30	51	24	43	67
Southeast	21	78	98	14	80	94	15	74	89
Delta	1	52	53	1	43	44	1	40	42
Eastern Corn Belt	339	577	916	195	391	586	284	513	797
Western Corn Belt	719	604	1,323	282	346	628	475	603	1,077
Southern Plains	34	229	263	26	192	217	22	155	178
Central Plains	311	659	970	195	477	671	217	500	717
Northern Plains	929	161	1,091	774	197	972	672	185	856
Pacific Northwest	165	220	385	106	231	338	121	227	348
West	13	31	44	10	38	48	7	34	41
Unallocated	88	34	122	72	28	99	75	51	126
United States	2,657	2,678	5,335	1,695	2,053	3,748	1,914	2,424	4,338

Region	1996			1997			1998		
	On Farms	Off Farms	Total	On Farms	Off Farms	Total	On Farms	Off Farms	Total
	<i>Million bushels</i>			<i>Million bushels</i>			<i>Million bushels</i>		
Northeast	12	23	36	22	37	60	16	41	57
Southeast	6	48	54	12	58	70	15	64	79
Delta	1	37	38	1	38	39	1	60	61
Eastern Corn Belt	131	223	355	187	290	477	244	472	716
Western Corn Belt	226	211	437	310	311	621	421	396	817
Southern Plains	20	117	136	24	213	237	26	303	330
Central Plains	119	291	410	221	508	729	235	620	855
Northern Plains	675	177	852	636	195	831	710	191	901
Pacific Northwest	111	244	355	131	259	390	129	270	399
West	8	29	37	6	39	45	3	47	50
Unallocated	62	27	89	79	43	122	127	37	165
United States	1,371	1,426	2,798	1,630	1,991	3,621	1,928	2,502	4,430

Region	1999			Percent of 1998			Percent of 5-yr. avg.		
	On Farms	Off Farms	Total	On Farms	Off Farms	Total	On Farms	Off Farms	Total
	<i>Million bushels</i>								
Northeast	18	47	65	111	115	114	94	135	121
Southeast	10	65	75	70	101	95	83	100	98
Delta	1	49	50	106	81	82	65	112	111
Eastern Corn Belt	298	585	883	122	124	123	143	155	151
Western Corn Belt	505	642	1,147	120	162	141	147	172	160
Southern Plains	26	318	344	97	105	104	109	162	156
Central Plains	291	734	1,025	124	118	120	148	153	152
Northern Plains	727	204	931	102	107	103	105	108	106
Pacific Northwest	121	242	363	94	89	91	101	98	99
West	2	47	49	80	99	98	29	126	111
Unallocated	134	48	182	105	128	111	162	129	152
United States	2,133	2,981	5,114	111	119	115	125	143	135

Source: USDA-NASS

September 1 off-farm stocks were their highest since 1988. September 1 on-farm inventories were reported at 2,133 million bushels, up 11 percent from last year and 25 percent above the 5-year average.

As of September 1, the Eastern and Western Corn Belts accounted for 40 percent of U.S. grain and soybean stocks. The Southern, Central, and Northern plains accounted for 45 percent of September 1 U.S. grain and soybean stocks. These are also the regions that experienced the largest year-to-year increases in September 1 stocks. The largest increase was in the Western Corn Belt, where September 1, 1999, stocks were up 330 million bushels. This is up 41 percent from 1998 and 60 percent above the 5-year average. September 1 stocks in the Eastern Corn Belt were up 167 million bushels, or 23 percent, from last year and 51 percent above the 5-year average. Central Plains stocks were up 170 million bushels for September 1, compared to last year. This is a year-to-year increase of 20 percent and 52 percent above the 5-year average. Northern and Southern Plains September 1 stocks were up 30 and 14 million bushels (3 and 4 percent), respectively, from September 1, 1998.

In the Eastern and Western Corn Belts, 66 and 56 percent, respectively, of September 1 stocks were held off farm in commercial facilities. In the Central and Southern Plains, 72 and 92 percent, respectively, of September 1 stocks were held in commercial facilities. By contrast, Northern Plains September 1 stocks were held predominantly on farm with only 22 percent in commercial facilities.

The large September 1 stocks added to harvest-time storage and handling problems, particularly in the Western Corn Belt and Central Plains where storage capacity was especially short. September 1 grain and soybean stocks accounted for 27 percent of total U.S. storage capacity as reported for December 1, 1998¹ (table 3). This is the highest September 1 utilization since 1988 when stocks accounted for 34 percent of total storage capacity. Stocks in on-farm positions accounted for 19 percent of on-farm storage capacity as of September 1. This is the highest September 1 on-farm storage utilization since 1993 when stocks accounted for 22 percent of on-farm capacity. Stocks held off farm accounted for 37 percent of commercial storage capacity on September 1. This is the highest September 1 off-farm capacity utilization since 1988 when off-farm stocks accounted for 49 percent of commercial capacity.

¹ Storage capacity as of December 1, 1999, will be reported by USDA in the January 12, 2000, *Grain Stocks* report.

As would be expected, the highest September 1 storage utilizations were reported for the Plains regions where most of new crop wheat and small grains had already been harvested by September. In the Eastern and Western Corn Belts, where fall-harvested corn and soybeans account for the largest share of grain and soybean production, September 1 storage utilizations were as high as they have been in several years. September 1 utilization for the Eastern Corn Belt was 17 percent, the highest since 1993. Eastern Corn Belt off-farm storage utilization was 28 percent, the highest since 1988 when off-farm utilization reached 50 percent. On-farm storage utilization for the Eastern Corn Belt was 10 percent, the highest since 1993. Western Corn Belt September 1 storage utilization was 23 percent, also the highest since 1993. Western Corn Belt off-farm storage utilization was 37 percent, the highest since 1988 when September 1 off-farm utilization reached 49 percent. On-farm storage utilization in the Western Corn Belt was 16 percent, the highest since 1993. Large fall crops are also expected in the Central Plains, where September 1 storage utilization was 32 percent. This is the highest September 1 utilization for the Central Plains since 1988 when it reached 40 percent. Off-farm storage utilization in the Central Plains was 48 percent, the highest utilization since 1988 when it reached 55 percent. Central Plains on-farm storage utilization was 18 percent, the same as in 1993 but below 1988 when September 1 on-farm utilization was 27 percent.

Corn

Despite hot, dry weather, particularly in the Northeast and Eastern Corn Belt, and crop damage from flooding in parts of the Southeast, the October forecast puts the 1999/2000 (September-August marketing year) average corn yield at 133.5 bushels per acre. This would be the third highest average yield on record and result in the fourth largest production. The largest beginning stocks since 1993/94 combine with this year's production to leave supplies at their highest level in more than a decade. Projected use for 1999/2000 would be up just slightly from last year, reflecting stronger domestic demand, which will more than offset expected reductions in exports from 1998/99. Despite expectations for lower exports in 1999/2000, shipments have remained strong during the first weeks of the 1999/2000 marketing year. For the past several months, corn exports have remained well above year-ago levels adding to barge and rail transportation demand. Projected increases in domestic use for the current marketing year should keep barge and rail demand at or near last year's level in the coming months. Recent weakening in export corn demand, however, is being reflected in both the forward barge and guaranteed rail freight markets.

Table 3—U.S. grain storage capacity utilization, September 1, 1994-99

Region	1994			1995			1996		
	On Farms	Off Farms	Total	On Farms	Off Farms	Total	On Farms	Off Farms	Total
	<i>percent</i>			<i>percent</i>			<i>percent</i>		
Northeast	8	20	12	10	30	17	5	16	9
Southeast	2	22	10	3	21	10	1	14	6
Delta	1	11	8	1	11	7	1	10	7
Eastern Corn Belt	6	18	11	9	24	16	4	11	7
Western Corn Belt	8	20	12	14	35	21	7	12	9
Southern Plains	9	17	15	8	14	13	8	11	10
Central Plains	12	29	21	13	31	22	7	18	13
Northern Plains	46	45	46	41	41	41	42	40	42
Pacific Northwest	39	59	51	46	60	54	41	64	54
West	0	25	31	0	24	29	0	21	26
United States	15	24	19	17	29	22	12	17	14

Region	1997			1998			1999		
	On Farms	Off Farms	Total	On Farms	Off Farms	Total	On Farms	Off Farms	Total
	<i>percent</i>			<i>percent</i>			<i>percent</i>		
Northeast	10	25	16	7	28	15	8	33	17
Southeast	2	17	8	3	19	9	2	20	9
Delta	0	11	7	0	17	11	0	13	9
Eastern Corn Belt	6	14	10	8	23	14	10	28	17
Western Corn Belt	10	18	13	13	23	17	16	37	23
Southern Plains	10	22	20	12	35	30	12	38	33
Central Plains	14	34	23	15	42	28	18	48	32
Northern Plains	40	44	41	45	43	45	45	45	45
Pacific Northwest	52	67	61	53	70	63	49	63	58
West	0	28	32	0	34	36	0	34	36
United States	15	25	19	18	31	23	19	37	27

Note: Based on storage capacity as reported December 1 of the preceding year.

Source: USDA-NASS

Supplies. USDA's October forecast for 1999/2000 corn grain production puts this year's crop at 9,467 million bushels, down 294 million bushels, or 3 percent, from 1998/99. With September 1 beginning stocks estimated at 1,796 million bushels, up 37 percent from last year, and imports projected at 10 million bushels, total corn supplies for the 1999/2000 marketing year are projected at 11,273 million bushels. This is up 2 percent from 1998/99 and the largest available supplies since 1987/88 when marketing year supplies totaled 12,016 million bushels. Ending stocks for 1999/2000 are projected at 1,968 million bushels, up 10 percent from those for 1998/99. If realized, 1999/2000 ending stocks will be the largest since 1992/93. This will also be the fourth consecutive year in which carryout stocks have increased.

The October 8 *Crop Production* report puts corn grain production in 1999/2000 down in all the major producing areas including the Eastern and Western Corn Belts and the Central and Northern Plains (table 4). Despite the expected drop from 1998/99, forecast production in each of these regions is expected to exceed the 5-year averages. The only regions expected to have increases in corn production for 1999/2000 are the Southern Plains, where production is expected to be up 68 million bushels, or 30 percent; the PNW, where production is expected to be up 9 million bushels, or 28 percent; and the West, where production is expected to be up 2 million bushels, or 4 percent. These three regions, however, are expected to account for only 4 percent of U.S. production this year.

Table 4—U.S. corn production, 1994/95-1999/2000

Region	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	Percent of 1998/99	Percent of 5-yr. avg.
	<i>Million bushels</i>							
Northeast	268	228	295	232	254	188	74	74
Southeast	457	370	461	395	324	319	99	80
Delta	72	59	155	118	108	104	96	102
Eastern Corn Belt	3,823	2,701	2,994	3,260	3,336	3,315	99	103
Western Corn Belt	3,103	2,309	2,920	2,793	3,087	2,980	97	105
Southern Plains	269	245	238	280	228	296	130	118
Central Plains	1,573	1,191	1,663	1,650	1,814	1,715	95	109
Northern Plains	422	241	428	394	528	454	86	113
Pacific Northwest	28	28	34	30	33	42	128	140
West	36	30	45	55	50	52	104	121
United States	10,051	7,400	9,233	9,207	9,761	9,467	97	104

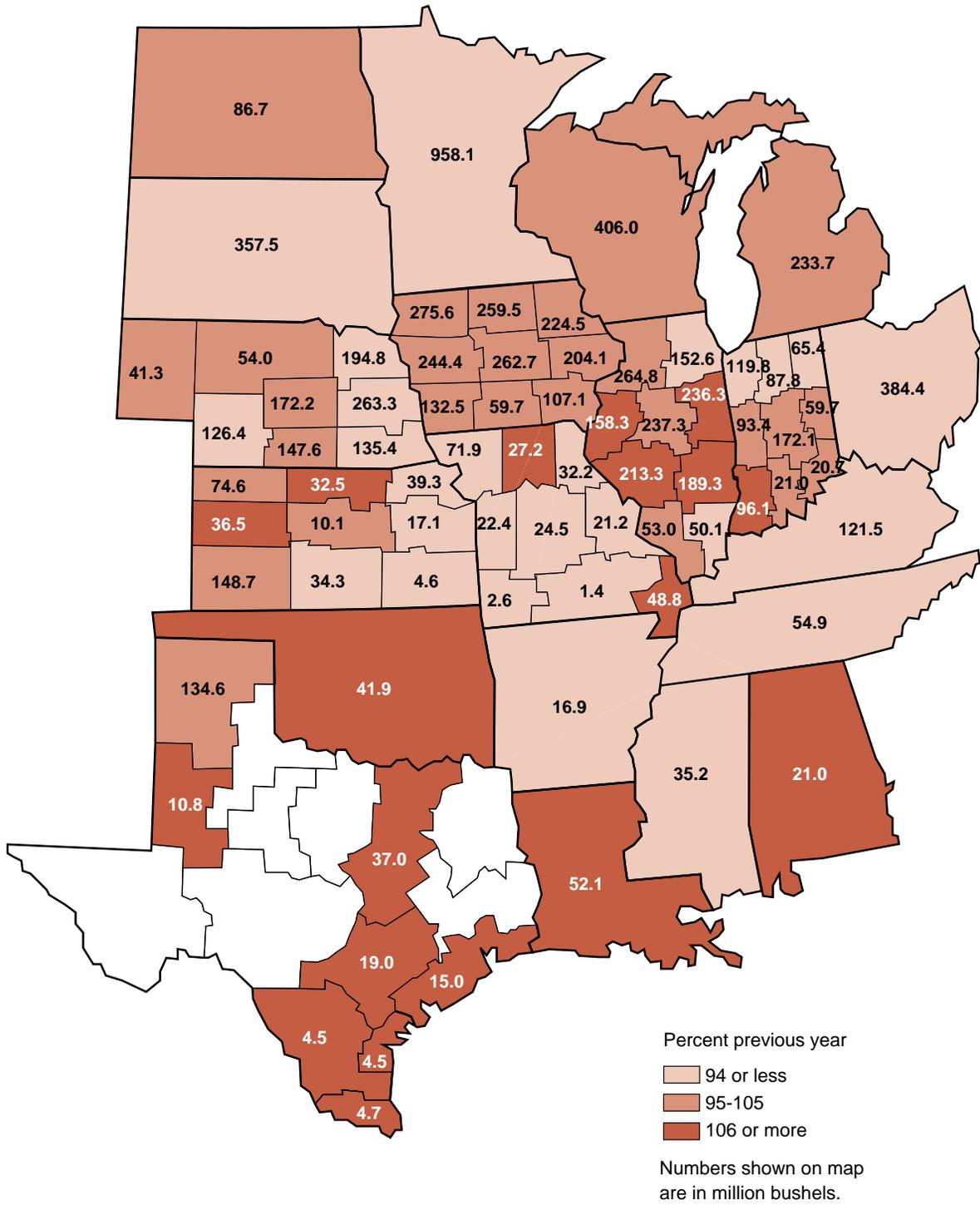
Note: 1999 production forecast is from the October 8, 1999, *Crop Production* report.
Source: USDA-NASS

The largest regional decreases in corn production are expected in the Western Corn Belt and Central Plains, where production is forecast to be down 107 and 99 million bushels (3 and 5 percent), respectively, from 1998/99 (figure 3). The largest percentage decreases in production are expected in the Northeast and the Northern Plains, where production is forecast down 26 and 14 percent (66 and 74 million bushels), respectively, from last year. Despite drought and heat in the Eastern Corn Belt, 1999/2000 corn production in the region is expected to fall by only 21 million bushels, or 1 percent. Decreases in Indiana and Ohio production of 24 and 86 million bushels, respectively, were partly offset by an increase in Illinois production of 82 million bushels (figure 3). Western Corn Belt production is forecast down 107 million bushels, or 3 percent, from last year. Of the three Western Corn Belt States, Iowa is the only State where production for 1999/2000 is expected to surpass that for 1998/99. The forecast for Iowa is for an increase of just 1 million bushels, or less than 1 percent, from last year. Production in the Southeast is also forecast down 5 million bushels, or 1 percent, from last year. Although, Alabama and Georgia are expected to have increases in production, production in Kentucky and Tennessee is expected to be down from last year. North Carolina production is forecast down 4 million bushels, or 7 percent. North Carolina production was expected to be up prior to the October forecast. Hurricanes and subsequent coastal plain flooding resulted in a loss of 30,000 acres of North Carolina corn in September.

Crop losses in North Carolina will add to demand for rail-delivered Eastern Corn Belt corn at a time when the two major railroads, CSX Transportation (CSXT) and Norfolk Southern (NS), are still working through service problems associated with their takeover of the Conrail (CR) system. The reduction in local feed grain supplies will have its most significant impact on the market during the fourth quarter of the calendar year, a time when rail demand in the Eastern United States is typically at its seasonal peak.

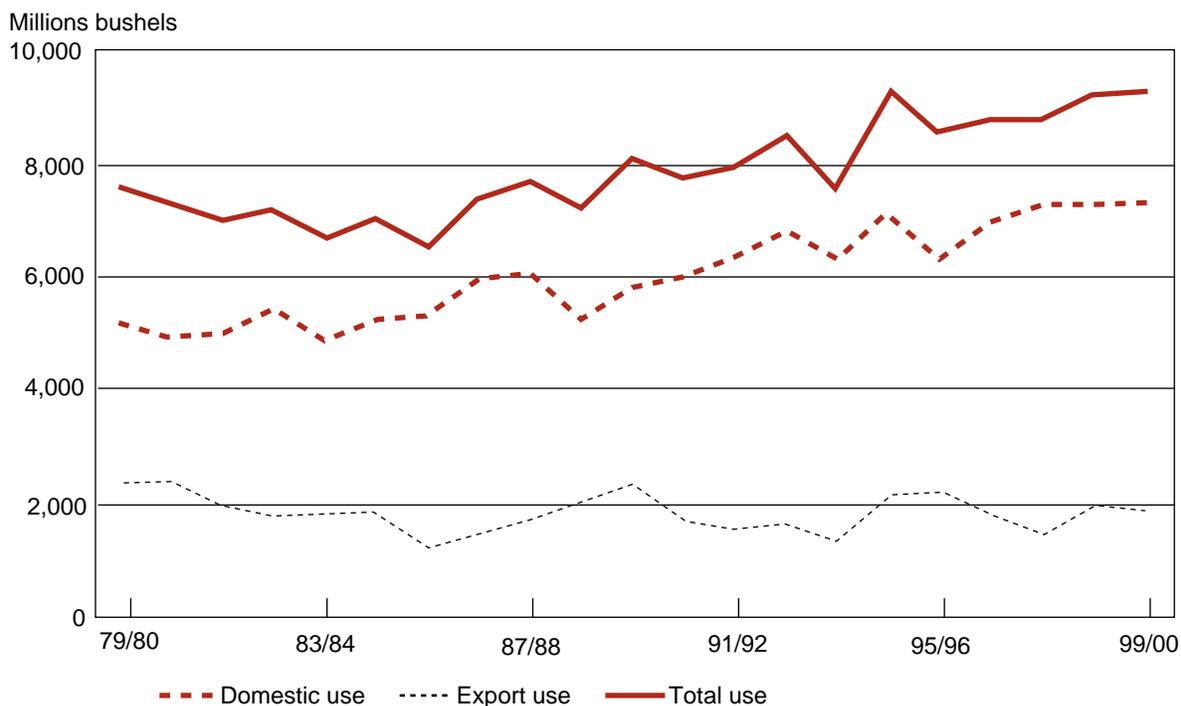
Use. Total corn use for the 1999/2000 marketing year is projected at 9,305 million bushels, up just 12 million bushels from 1998/99 (figure 4). If realized, 1999/2000 corn use would be the second highest ever, falling just 47 million bushels short of 1994/95's record use. Domestic use for 1999/2000 is projected at a record 7,380 million bushels, up 72 million bushels from 1998/99. Feed and residual use for 1999/2000 is projected at 5,500 million bushels, up 14 million bushels from last year. Food, seed, and industrial use (FSI) is projected at a record 1,880 million bushels for 1999/2000, up 58 million bushels, or 3 percent from 1998/99. This is the result of an expected 5-percent increase in ethanol production for the current marketing year. Exports for 1999/2000 are projected at 1,925 million bushels, down 60 million bushels, or 3 percent, from 1998/99. This reduction in marketing year exports is due to stronger competition from China, especially in Asian markets.

Figure 3—U.S. 1999/2000 corn production forecast for selected States/districts, October 1, 1999



Source: USDA-NASS

Figure 4—U.S. corn use, 1979/80-1999/2000



Note: 1998/99 use is preliminary, and 1999/2000 use is projected. Both are based on the October 8, 1999, *World Agricultural Supply and Demand Estimates*.
Source: USDA-ERS, USDA-WAOB

Monthly corn export inspections have been running ahead of year-ago levels since October 1998. Export inspections for January-September were up 41 percent over those for the same months in 1998. Inspections for July-September were up 43 percent from those during the same quarter last year. As of October 21, outstanding export sales (sold but unshipped) of corn for 1999/2000 totaled 325.6 million bushels, virtually even with last year at this time. For the first week reported for 1999/2000 (September 2), outstanding sales totaled 340.4 million bushels.

Expected increases in corn shipments for domestic use should more than offset any modest reductions in export shipments. However, domestic shipping relies substantially less on barge transportation and more on rail and truck. This suggests some weakening in barge and export rail demand over the coming months but continued strong demand for rail and truck transportation in the domestic market.

Stocks and Storage. The September 30 *Grain Stocks* report puts September 1 corn stocks in all positions at 1,796 million bushels, up 488 million bushels from 1998. This represents a 37-percent increase over year-earlier stocks and a 79-percent increase over the 5-year

average for September 1 stocks (table 5). September 1 stocks in all positions were the largest since 1993 when they reached 2,113 million bushels. On-farm stocks, which accounted for 44 percent of the total, were reported at 807 million bushels. This is up 167 million bushels, or 26 percent, from 1998 and 65 percent above the 5-year average. On-farm inventories, as of September 1, were the largest since 1993. Off-farm stocks for September 1 totaled 989 million bushels, up 321 million bushels, or 48 percent, from 1998 and 92 percent above the 5-year average. These were the largest September 1 off-farm stocks since 1993.

September 1 corn stocks were reported up for 1999 in every region except the Northeast, Southeast, and West. The largest increases were in the Western Corn Belt, Central Plains, and Eastern Corn Belt, where September 1 stocks were up 253, 108, and 97 million bushels, respectively. These increases represent year-to-year expansions in corn stocks of 51 percent for the Western Corn Belt, 47 percent for the Central Plains, and 24 percent for the Eastern Corn Belt. September 1 stocks in these regions are also well above the 5-year averages. The largest volume increases for the three regions were in off-farm stocks. The drop in Southeast corn stocks of 5 million bushels (14 percent) from a

Table 5—U.S. corn stocks by position, September 1, 1993-99

Region	1993			1994			1995		
	On Farms	Off Farms	Total	On Farms	Off Farms	Total	On Farms	Off Farms	Total
	Million bushels			Million bushels			Million bushels		
Northeast	23	7	30	11	4	14	15	8	23
Southeast	17	24	41	8	14	23	9	17	25
Delta	0	11	11	0	3	3	0	1	1
Eastern Corn Belt	261	384	645	131	165	296	218	264	482
Western Corn Belt	501	413	914	138	165	303	321	378	699
Southern Plains	3	13	16	1	6	7	3	7	10
Central Plains	162	164	326	61	78	140	97	117	214
Northern Plains	62	14	76	24	9	33	51	15	66
Pacific Northwest	0	4	4	0	4	4	0	3	3
West	0	2	2	0	2	2	0	3	3
Unallocated	43	5	48	21	5	26	28	4	32
United States	1,071	1,042	2,113	395	455	850	741	817	1,558

Region	1996			1997			1998		
	On Farms	Off Farms	Total	On Farms	Off Farms	Total	On Farms	Off Farms	Total
	Million bushels			Million bushels			Million bushels		
Northeast	6	5	10	13	8	21	11	7	18
Southeast	3	9	12	9	14	23	11	21	32
Delta	0	0	0	0	3	3	0	11	11
Eastern Corn Belt	82	92	174	128	99	227	181	233	414
Western Corn Belt	62	73	135	181	169	350	273	224	497
Southern Plains	1	4	5	1	7	7	0	11	11
Central Plains	17	38	54	83	87	169	92	138	229
Northern Plains	11	4	14	39	17	56	44	15	59
Pacific Northwest	0	2	2	0	1	1	0	2	2
West	0	1	1	0	2	2	0	3	3
Unallocated	16	1	17	23	1	24	29	4	33
United States	197	229	426	475	408	883	640	668	1,308

Region	1999			Percent of 1998			Percent of 5-yr. avg.		
	On Farms	Off Farms	Total	On Farms	Off Farms	Total	On Farms	Off Farms	Total
	Million bushels								
Northeast	13	9	21	119	121	120	115	140	124
Southeast	7	20	27	66	93	84	91	130	116
Delta	0	4	4	0	42	42	0	125	125
Eastern Corn Belt	222	290	511	122	125	124	150	170	161
Western Corn Belt	337	413	750	123	184	151	173	204	189
Southern Plains	0	17	17	0	155	155	0	237	203
Central Plains	138	198	337	151	144	147	198	217	209
Northern Plains	66	25	91	150	170	155	195	210	199
Pacific Northwest	0	5	5	0	266	266	0	219	219
West	0	3	3	0	119	119	0	154	154
Unallocated	25	5	30	86	131	91	107	178	115
United States	807	989	1,796	126	148	137	165	192	179

Source: USDA-NASS

year earlier, represents a further reduction in that region's local feed grain supplies. September 1 stocks in North Carolina alone dropped 3 million bushels, or 24 percent, between 1998 and 1999. These reductions in old-crop stocks will further add to Southeast demand for rail-shipped corn over the coming months.

Carrying incentives built into the futures market prices for corn have increased since midsummer, signaling the market to store corn. Prices for March corn on the Chicago Board of Trade were 10.75 cents per bushel above December prices (3.6 cents per bushel per month) on October 27. On the same day, May prices were 17.75 cents per bushel above December prices (3.6 cents per bushels per month). With the interest cost to carry corn from December to March at 4.2 cents per bushel (1.4 cents per bushel per month) and from December to May at 7.3 cents per bushel (1.5 cents per bushel per month), the market is signaling to store and hold grain. Anecdotal information suggests many producers and elevators are doing just that. Price incentives to hold corn should dampen transportation demand for corn modestly over the next several months. The forward market for guaranteed rail service has weakened since August, reflecting, at least in part, this desire by the market to carry grain forward.

Soybeans

Soybean supplies for 1999/2000 (September-August marketing year) are expected to reach a new record despite drought- and heat-reduced crops throughout the Northeast and Southeast and in parts of the Delta and Eastern and Western Corn Belts. Excellent growing conditions in the western and northern growing areas and this year's expanded acreage have offset production losses in the drought-affected areas and resulted in the second largest soybean crop ever. The large crop combined with the largest carry-in stocks in more than a decade have pushed 1999/2000 supplies beyond last year's record. With domestic crushing projected at a new record and exports projected up from last year, demand for soybean transportation should remain strong throughout the 1999/2000 marketing year. Export sales of soybeans have continued at a strong pace during the first weeks of the 1999/2000 marketing year. This should keep barge shipments at or near year-ago levels over the next few weeks as the navigation season on the Upper Mississippi River draws to a close. Despite strong export soybean demand, barge demand overall will continue to depend heavily upon the strength of corn exports.

Supplies. October forecasts put 1999/2000 soybean production at 2,696 million bushels, down 2 percent from the last year's record production. Stronger than expected soybean use during the final months of the 1998/99 marketing year reduced this year's carry-in from earlier projections, but, at 348 million bushels, beginning stocks are up 74 percent from last year and at their highest level since 1987/88. Total supplies for 1999/2000, which include a projected 5 million bushels in imports, will be up for the fourth straight year at a record 3,049 million bushels. This is a 4-percent increase from last year's record supplies. Even with soybean use expected to rise in 1999/2000, ending stocks are projected to increase by 11 percent to 385 million bushels, the largest soybean carryover since 1986/87.

The October 8 *Crop Production* report forecast 1999/2000 soybean production down 2 percent from last year but 8 percent above the 5-year average (table 6). Production was forecast up from 1998/99 in every region except those hardest hit by the summer heat and drought, including the Northeast, Southeast, and Eastern Corn Belt. The Southeast is forecast to have the largest drop in production for 1999/2000. Southeast production is forecast down 44 million bushels, or 31 percent, from last year. Although production is forecast down in every State in the Southeast except Virginia, Tennessee and Kentucky are expected to account for the bulk of year-to-year reduction in Southeast soybean production. Eastern Corn Belt production is forecast down 31 million bushels, or 3 percent, for 1999/2000. Increases in production in Michigan and Wisconsin were more than offset by reductions in Illinois, Indiana, and Ohio (figure 5). Ohio, hard hit by the drought, is expected to experience a decrease in production for 1999/2000 of 23 million bushels, or 12 percent. Soybean production is forecast up 16 million bushels, or 7 percent, in the Central Plains, with Nebraska production up 20 million bushels, or 12 percent, more than offsetting the forecast drop of 4 million bushels, or 5 percent, in Kansas production. Western Corn Belt production is forecast up just 2 million bushels for 1999/2000. Forecast increases in Iowa and Minnesota were largely offset by reductions in Missouri production. Northern Plains production is forecast up for the fourth straight year.

Use. October projections put 1999/2000 soybean use at a record 2,663 million bushels, up 66 million bushels, or 3 percent, from 1998/99 (figure 6). At this level, 1999/2000 soybean use would surpass 1997/98's record

Table 6—U.S. soybean production, 1994/95-1999/2000

Region	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	Percent of 1998/99	Percent of 5-yr. avg.
	<i>Million bushels</i>							
Northeast	46	29	41	40	44	34	76	84
Southeast	179	139	170	163	143	99	69	63
Delta	205	152	202	213	155	162	104	88
Eastern Corn Belt	911	822	839	965	1,014	983	97	108
Western Corn Belt	840	775	790	908	952	954	100	112
Southern Plains	16	12	14	21	12	22	186	149
Central Plains	208	152	209	231	240	256	107	123
Northern Plains	110	94	115	147	180	185	103	143
United States	2,515	2,174	2,380	2,689	2,741	2,696	98	108

Note: 1999 production forecast is from the October 8, 1999, *Crop Production* report.
Source: USDA-NASS

by 37 million bushels. Domestic use is projected at 1,783 million bushels, down 2 million bushels from last year. Crushing use, however, is projected at a record 1,630 million bushels, up 38 million bushels, or 2 percent, from 1998/99. Export use for 1999/2000 is projected at 880 million bushels, up 68 million bushels, or 8 percent, from 1998/99. Stronger crushing and export demand should increase demand for soybean transportation in 1999/2000. Increases in soybean exports will add to demand for barge transportation over the coming months and should partly offset any reductions in export barge corn shipments during the 1999/2000 marketing year.

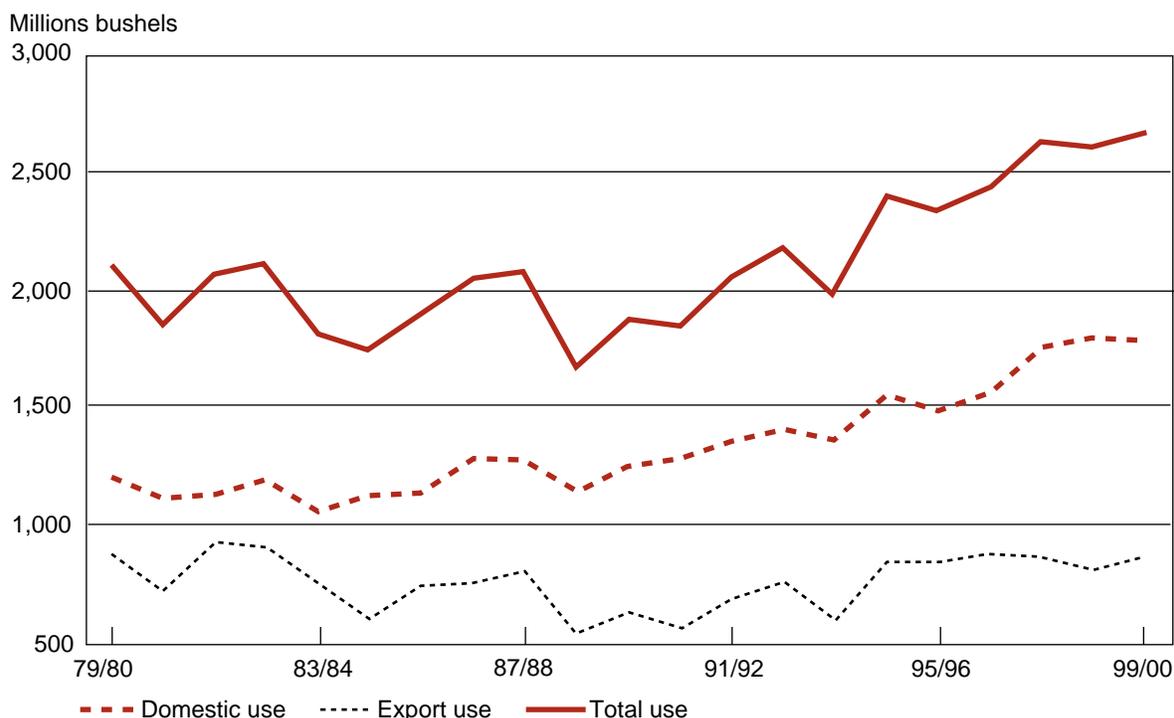
Since March, soybean exports have outpaced those during the same months in 1998. For the January-September period, export inspections of soybeans were up 27 percent over the same months in 1998; however, July-September inspections were up 118 percent over the same 3 months last year. Export shipments appear likely to fall below year-ago levels during the final quarter of the calendar year (October-December). Last year, the October-December period accounted for 45 percent of all calendar year soybean export inspections. Outstanding export sales (sold but unshipped) for the 1999/2000 marketing year are also down from a year ago, totaling 208 million bushels as of October 21. This is down 16 percent from the same week last year.

Stocks and Storage. September 1 soybean stocks in all positions were reported in the September 30 *Grain Stocks* report at 348 million bushels, up 148 million bushels, or 74 percent, from a year earlier and 64 per-

cent above the 5-year average (table 7). These were the largest September 1 soybean stocks since 1987. September 1 on-farm stocks were reported at 145 million bushels, up 61 million bushels, or 72 percent, from a year ago and 106 percent above their 5-year average. September 1 off-farm stocks, at 203 million bushels, were up 88 million bushels, or 76 percent, over 1998 and 43 percent above the 5-year average. Off-farm stocks accounted for 58 percent of total stocks.

The largest increases in September 1 soybean stocks were in the Eastern and Western Corn Belts. Together these two regions accounted for 73 percent of September 1 stocks. In the Western Corn Belt, stocks were reported at 163 million bushels, up 75 million bushels, or 85 percent, from last year and 79 percent above the 5-year average. Western Corn Belt on-farm stocks accounted for 41 percent of the region's total September 1 stocks. Eastern Corn Belt stocks were reported at 92 million bushels, up 38 million bushels, or 70 percent, from 1998 and 47 percent over the 5-year average. On-farm stocks in the Eastern Corn Belt accounted for 42 percent of the region's total stocks. Central Plains soybean stocks for September 1 were reported at 33 million bushels, up 11 million bushels, or 47 percent, from 1998 and 54 percent above the 5-year average. On-farm stocks accounted for 30 percent of the total in the Central Plains. Northern Plains soybean stocks were reported for September 1 at 17 million bushels, up 8 million bushels, or 94 percent, from 1998 and 121 percent above the 5-year average. On-farm stocks accounted for 65 percent of the Northern Plain's total stocks.

Figure 6—U.S. soybean use, 1979/80-1999/2000



Note: 1998/99 use is preliminary, and 1999/2000 use is projected. Both are based on the October 8, 1999, *World Agricultural Supply and Demand Estimates*.

Source: USDA-ERS, USDA-WAOB

Price incentives to hold soybeans currently do not exist. Prices for March soybeans on the Chicago Board of Trade were 21 cents per bushel above November prices (5.2 cents per bushel per month) on October 27. May prices were 28.5 cents per bushel above November prices (4.8 cents per bushel). The interest cost alone to carry soybeans forward from November to March would be 13.1 cents per bushel (3.3 cents per bushel per month). To carry soybeans from November to May, the interest cost would be 19.9 cents per bushel (3.3 cents per bushel per month). Futures prices reflect the strong near-term demand for soybeans, particularly in the export market. The lack of carrying premiums should encourage producers and merchants to keep pushing soybeans into the domestic and export markets.

Wheat

Despite a smaller wheat crop for 1999/2000 (June-May marketing year), large carry-in stocks will make available wheat supplies this year the second highest in more than a decade. Exports have outpaced year-ago levels for several months and driven up demand for rail transportation to Gulf and PNW export elevators. That demand appears to have weakened somewhat in recent

weeks. Reported export sales have been trending downward for several weeks. Sold but unshipped export balances have remained below year-ago levels since summer. Outstanding balances of Hard Red Winter (HRW) and Hard Red Spring (HRS), in particular, have fallen substantially since late summer. The latest projections put 1999/2000 total and domestic wheat use down from last year. With wheat use expected to be down modestly and substantial price premiums in the futures markets to carry wheat forward, demand for rail transportation to move wheat will likely be down over year-ago levels over the next few months.

Supplies. October production estimates for all classes of wheat put the 1999/2000 wheat crop at 2,318 million bushels, down 9 percent from 1998/99. With June 1 beginning stocks reported at 946 million bushels and imports for the marketing year projected at 105 million bushels, total supplies are projected at 3,369 million bushels, down 4 million bushels from 1998/99. At this level, available supplies will be at their second highest level since 1987/88. Ending wheat stocks for the 1999/2000 marketing year are projected up 4 percent, or 41 million bushels, from 1998/99 carryout. If the projections hold, this will be the fourth year that ending

Table 7—U.S. soybean stocks by position, September 1, 1993-99

Region	1993			1994			1995		
	On Farms	Off Farms	Total	On Farms	Off Farms	Total	On Farms	Off Farms	Total
	Million bushels			Million bushels			Million bushels		
Northeast	0	0	0	0	0	0	0	1	1
Southeast	2	10	12	2	7	9	4	7	11
Delta	1	5	6	0	9	10	1	9	10
Eastern Corn Belt	27	47	74	19	49	68	31	67	98
Western Corn Belt	74	82	156	27	54	81	47	104	151
Southern Plains	0	1	1	0	1	1	0	2	2
Central Plains	9	13	23	5	15	20	11	21	31
Northern Plains	9	3	13	4	3	6	9	5	13
Unallocated	2	6	8	2	12	14	3	14	18
United States	125	167	292	59	150	209	105	230	335

Region	1996			1997			1998		
	On Farms	Off Farms	Total	On Farms	Off Farms	Total	On Farms	Off Farms	Total
	Million bushels			Million bushels			Million bushels		
Northeast	0	0	0	0	0	0	0	0	0
Southeast	1	5	6	1	2	3	0	4	4
Delta	0	8	8	0	5	5	0	6	6
Eastern Corn Belt	19	36	54	13	26	39	22	32	54
Western Corn Belt	30	49	79	20	36	55	40	48	88
Southern Plains	0	0	0	0	0	0	0	0	0
Central Plains	5	13	18	5	10	15	7	16	22
Northern Plains	3	2	5	4	2	6	6	3	9
Unallocated	2	10	12	1	7	8	10	6	16
United States	60	124	183	44	88	132	84	115	200

Region	1999			Percent of 1998			Percent of 5-yr. avg.		
	On Farms	Off Farms	Total	On Farms	Off Farms	Total	On Farms	Off Farms	Total
	Million bushels								
Northeast	0	1	1	0	253	253	0	275	275
Southeast	0	5	5	0	113	113	0	89	67
Delta	0	9	9	0	154	154	0	125	120
Eastern Corn Belt	39	52	92	178	165	170	190	125	147
Western Corn Belt	67	96	163	168	198	185	203	165	179
Southern Plains	0	0	0	0	101	101	0	52	52
Central Plains	10	23	33	152	145	147	158	152	154
Northern Plains	11	6	17	183	216	194	222	219	221
Unallocated	18	10	28	180	177	179	513	104	210
United States	145	203	348	172	176	174	206	143	164

Source: USDA-NASS

stocks have increased. This type of year-to-year expansion in wheat carryout has not occurred since the mid-1970's. At 986 million bushels, projected ending stocks for 1999/2000 would be the largest since 1987/88.

Wheat production for 1999/2000 was up in all of the eastern regions including the Northeast, Southeast, Delta, and Eastern Corn Belt (table 8). Southeast production was up 6 million bushels, or 6 percent, from 1998/99. Reductions in wheat production in Florida, Georgia, and Kentucky were more than offset by increases in the region's other States. Delta wheat production was up 8 million bushels, or 8 percent, with winter wheat production up in all the States in the region (figure 7). In the Eastern Corn Belt, production was up 9 million bushels, or 4 percent from last year. Reduced winter wheat production in Ohio and Indiana was more than offset by increases in Illinois and Michigan. Despite increases in production in these regions, together they are expected to account for only 18 percent of all U.S. wheat production in 1999/2000.

Any increases in 1999/2000 wheat production in the eastern regions were more than offset by reductions in the West. Northern Plains wheat production was down 70 million bushels, or 12 percent, from 1998/99. This is the lowest production for the region in 10 years despite increases in spring wheat production in Minnesota and South Dakota and the same size spring wheat crop as last year in Montana. North Dakota spring wheat (other than durum) was down 43 million bushels or 20 percent from last year (figure 8). Southern Plains wheat production for 1999/2000 was down 60 million bushels, or 18 percent. Oklahoma and Texas production was down

48 and 14 million bushels (24 and 10 percent), respectively. In the Central Plains, where production was down 55 million bushels, or 8 percent, from last year, a 62-million-bushel, or 13 percent, reduction in the Kansas wheat crop outweighed small increases in Colorado and Nebraska production. PNW production was down 54 million bushels, or 17 percent, for 1999/2000. Decreases in Oregon and Washington production, 23 and 33 million bushels (40 and 21 percent), respectively, dwarfed a small year-to-year increase in Idaho production.

Fall seeding of the 2000/01 winter wheat crop is nearing completion. Although the area actually seeded will not be reported until the January 12, 2000, *Winter Wheat and Rye Seedings* report, current prices suggest that seeded area may again be down. Last fall, farmers seeded less winter wheat acreage in response to lower wheat prices and expectations of higher returns on other crops. July 2000 wheat futures prices are currently 30-40 cents per bushel below July futures prices last year at this time. The projected increase in carryover for 1999/2000 only adds to pressure on producers to reduce their winter wheat seeding.

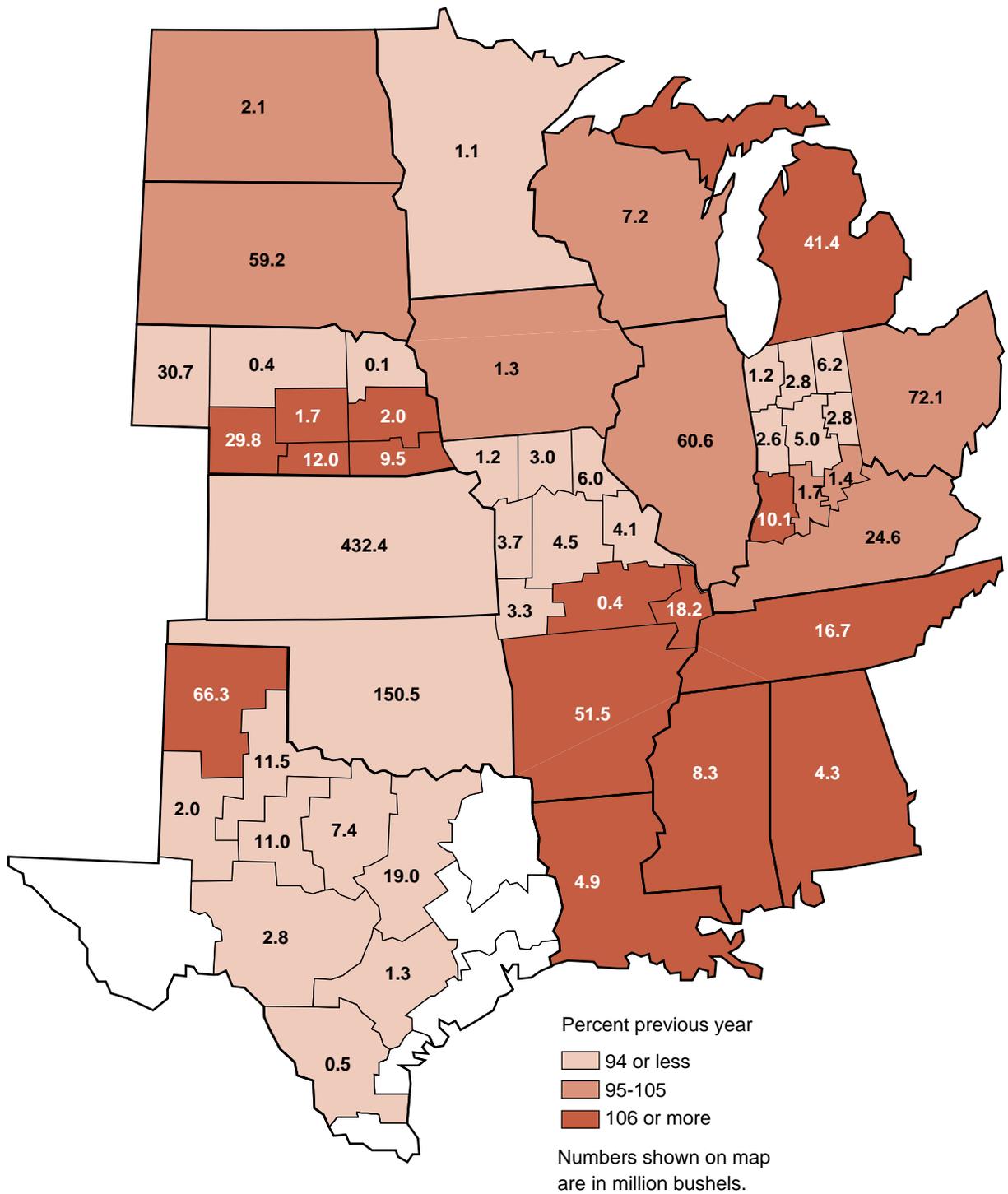
Use. Wheat use for 1999/2000 is projected at 2,382 million bushels, down 2 percent from 1998/99 (figure 9). Domestic use of all classes of wheat is projected at 1,257 million bushels, down 9 percent from last year. Food use is projected up 1 percent for 1999/2000, at 915 million bushels. Feed and residual use is projected down 38 percent, at 250 million bushels. Abundant supplies of low-priced corn are expected to hold down feed wheat demand throughout the marketing year.

Table 8—US wheat production, 1994/95-1999/2000

Region	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	Percent of 1998/99	Percent of 5-yr. avg.
	<i>Million bushels</i>							
Northeast	32	38	34	39	34	37	108	104
Southeast	128	110	117	125	101	107	106	92
Delta	49	56	84	51	57	65	114	109
Eastern Corn Belt	196	227	150	212	206	215	104	109
Western Corn Belt	124	121	157	137	139	131	94	96
Southern Plains	224	188	173	298	343	283	82	115
Central Plains	584	477	404	662	681	626	92	111
Northern Plains	627	595	715	556	604	534	88	86
Pacific Northwest	293	318	367	339	317	263	83	81
West	63	53	77	61	64	56	88	89
United States	2,321	2,183	2,277	2,481	2,547	2,318	91	98

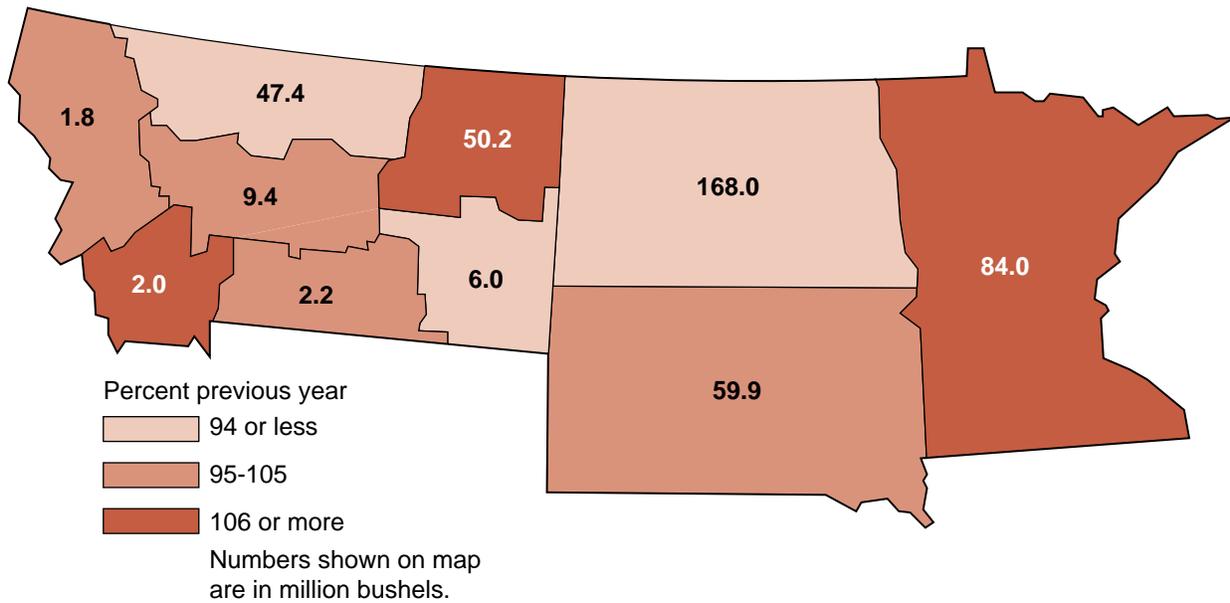
Note: 1999 production forecast is from the October 8, 1999, *Crop Production* report.
Source: USDA-NASS

Figure 7—U.S. 1999/2000 winter wheat production forecast for selected States/districts, October 1, 1999



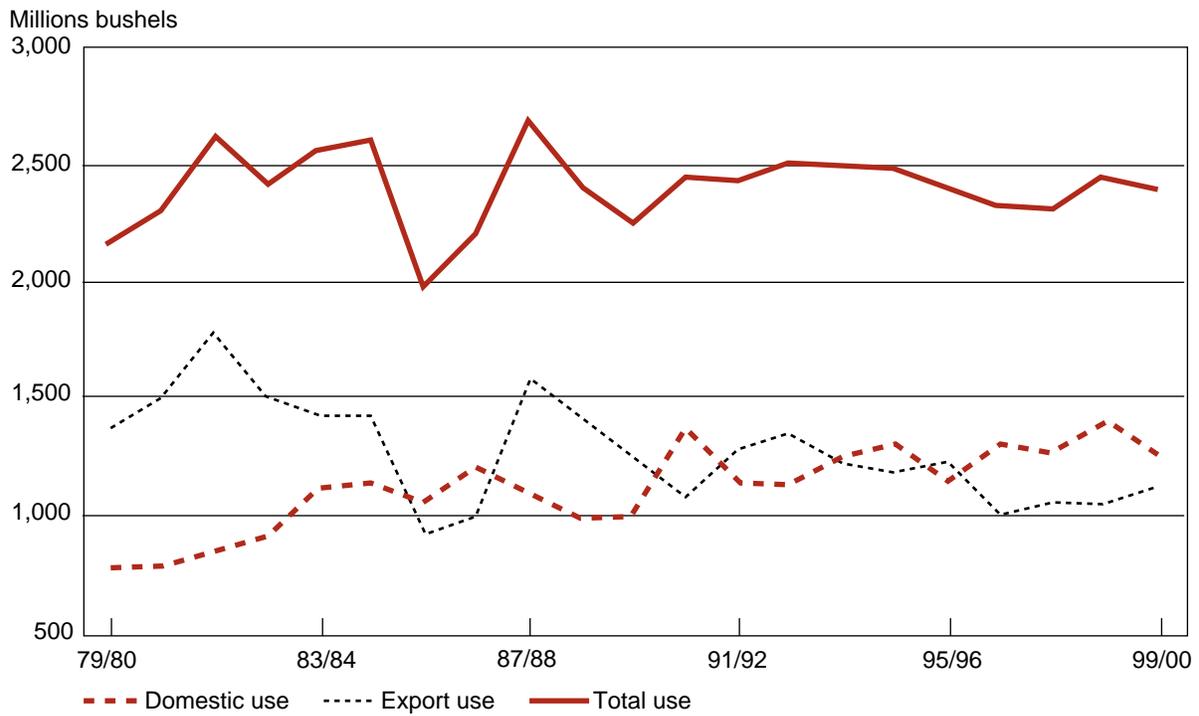
Source: USDA-NASS

Figure 8—U.S. 1999/2000 spring wheat production forecast for selected States/districts, October 1, 1999



Source: USDA-NASS

Figure 9—U.S. wheat use, 1979/80-1999/2000



Note: 1998/99 use is preliminary, and 1999/2000 use is projected. Both are based on the October 8, 1999, *World Agricultural Supply and Demand Estimates*.
Source: USDA-ERS, USDA-WAOB

Table 9—U.S. wheat stocks by position, September 1, 1993-99

Region	1993			1994			1995		
	On Farms	Off Farms	Total	On Farms	Off Farms	Total	On Farms	Off Farms	Total
	<i>Million bushels</i>			<i>Million bushels</i>			<i>Million bushels</i>		
Northeast	0	21	21	0	22	22	0	29	29
Southeast	2	41	42	3	57	60	3	47	49
Delta	1	33	34	1	30	30	1	29	29
Eastern Corn Belt	19	119	138	16	147	163	12	166	179
Western Corn Belt	84	57	140	65	71	136	65	64	129
Southern Plains	26	172	198	21	175	196	16	130	146
Central Plains	102	385	487	107	350	457	86	320	406
Northern Plains	615	99	714	545	136	681	455	127	582
Pacific Northwest	108	188	296	73	191	264	76	198	274
West	7	22	29	3	27	30	2	23	25
Unallocated	25	9	34	27	4	31	28	4	32
United States	987	1,146	2,133	860	1,210	2,069	744	1,137	1,881

Region	1996			1997			1998		
	On Farms	Off Farms	Total	On Farms	Off Farms	Total	On Farms	Off Farms	Total
	<i>Million bushels</i>			<i>Million bushels</i>			<i>Million bushels</i>		
Northeast	0	16	16	0	26	26	0	28	28
Southeast	2	32	34	3	39	42	4	38	42
Delta	1	28	29	1	31	32	1	42	43
Eastern Corn Belt	11	79	90	23	144	167	26	186	212
Western Corn Belt	94	50	144	73	62	135	71	79	150
Southern Plains	18	108	126	21	198	220	26	286	312
Central Plains	83	222	305	112	384	496	123	433	556
Northern Plains	501	127	628	436	132	568	501	132	633
Pacific Northwest	84	208	292	90	214	304	93	224	317
West	4	21	25	2	31	33	3	37	40
Unallocated	27	6	33	35	20	55	39	15	53
United States	825	900	1,724	794	1,282	2,076	886	1,500	2,385

Region	1999			Percent of 1998			Percent of 5-yr. avg.		
	On Farms	Off Farms	Total	On Farms	Off Farms	Total	On Farms	Off Farms	Total
	<i>Million bushels</i>								
Northeast	0	33	33	0	119	119	0	138	138
Southeast	3	39	42	79	103	101	0	91	92
Delta	1	34	35	106	81	81	0	107	107
Eastern Corn Belt	23	218	241	90	117	114	134	151	149
Western Corn Belt	76	85	160	106	108	107	103	131	116
Southern Plains	26	287	312	97	100	100	125	160	156
Central Plains	128	472	600	104	109	108	125	138	135
Northern Plains	520	133	653	104	101	103	107	102	106
Pacific Northwest	85	197	282	91	88	89	102	95	97
West	2	37	39	80	98	97	75	131	126
Unallocated	40	21	61	104	138	114	129	209	148
United States	903	1,556	2,459	102	104	103	110	129	121

Source: USDA-NASS

Export use is projected at 1,125 million bushels, up 8 percent from 1998/99.

Since February, stronger wheat exports have increased demand for rail transportation in the Western United States. For the January-September period, export inspections of all wheat were up 15 percent over the same period last year. Strong exports of wheat at Texas Gulf ports have kept rail demand in the Southern and Central Plains strong for several months. Export wheat inspections at Texas Gulf ports were up 35 percent for January-September, compared to the same period in 1998. Export inspections for July-September were up 39 percent over the comparable period last year. Strong exports of wheat, other than soft white wheat, at PNW ports have also added to demand in the rail corridor connecting PNW export facilities with the Northern and Central Plains. Inspections of HRW and HRS wheat at PNW facilities for the January-September period are up 15 percent from the same period last year. This export pace, however, has weakened somewhat during the July-September period. July-September inspections for these classes of wheat at PNW export facilities were up 8 percent over inspections for the same months last year, but down 8 percent from April-June inspections. Despite the higher wheat exports over the past several months, there are indications that export wheat demand is moderating. Weekly export sales of all wheat have been trending downward for several weeks with accumulated sales at or near year-ago levels. Outstanding sales (sold but unshipped) of all wheat, however, are below year-ago levels and have been for some weeks now. As of October 21, sold but unshipped balances of all wheat totaled 133.5 million bushels, down 21 percent from the same week last year. For the same week, outstanding export sales of HRW, HRS, and white wheat were down 22, 12, and 39 percent, respectively, from last year. Outstanding export sales of Soft Red Winter (SRW) wheat were up 2 percent from last year at this time.

Stocks and Storage. The September 30 *Grain Stocks* report put September 1 wheat stocks in all positions at 2,459 million bushels, up 3 percent from a year earlier and 21 percent above the 5-year average (table 9). Of the total, on-farm stocks were reported at 903 million bushels, up 2 percent from last year, and off-farm stocks were reported at 1,556 million bushels, up 4 percent from last year. September 1 total and off-farm stocks were their highest since 1987. September 1 on-farm stocks were their highest since 1993.

September 1 wheat stocks were up over year-ago levels and above the 5-year averages in the Eastern and Western Corn Belts and in the Central and Northern Plains. The Eastern and Western Corn Belts accounted for 16 percent of all September 1 stocks, and the Central and Northern Plains accounted for 51 percent of all September 1 stocks. Among these regions, the largest volume increase in stocks was in the Central Plains, where stocks were up 44 million bushels, or 8 percent, over those in 1998. Northern Plains September 1 stocks were up 20 million bushels, or 3 percent, from a year ago. The largest percentage increase in September 1 stocks among the four regions was in the Eastern Corn Belt, where stocks were up 14 percent, or 29 million bushels, from last year. Western Corn Belt stocks were up 7 percent, or 10 million bushels, from September 1 1998. In the Central Plains, 79 percent of all stocks were held off farm. In the Northern Plains, 80 percent of all stocks were held on farm. In the Eastern and Western Corn Belts, 90 and 53 percent of all stocks, respectively, were held in off-farm facilities. September 1 stocks in the PNW were down 35 million bushels, or 11 percent, from 1998.

Futures market prices include significant carrying incentives for wheat. Prices for March HRW wheat were 15.75 cents per bushel (5.2 cents per bushel per month) above prices for December on the Kansas City Board of Trade on October 27. May prices for HRW wheat were 24.75 cents per bushel (5 cents per bushel per month) above those for December. Last year at this time, the December-March and December-May spreads were 11.25 and 16.75 cents per bushel, respectively. The interest cost to carry December HRW wheat into March is 5.9 cents per bushel (2 cents per bushel per month) and to carry it into May is 10.1 cents per bushel (2 cents per bushel per month). Prices on October 27 for March SRW wheat on the Chicago Board of Trade were 16 cents per bushel (5.3 cents per bushel per month) above December, and May prices were 25.75 cents per bushel (5.1 cents per bushel per month) above December. Last year at this time, the December-March and December-May spreads were 15.5 and 24.25 cents per bushel. The interest cost to carry SRW wheat from December to March and from December to May is 5.5 and 9.4 cents per bushel (1.8 and 1.9 cents per bushel per month), respectively. March HRS wheat was 9 cents per bushel (3 cents per bushel per month) above December on the Minneapolis Grain Exchange at the market's close on October 27. May HRS wheat, on that day, was 17 cents per bushel (3.4 cents per bushel per

month) above December. Last year at this time, these spreads were 6.25 cents per bushel for December-March and 9.75 cents per bushel for December-May. The interest cost to carry HRS wheat from December to March and from December to May is 6.7 cents per bushel (2.2 cents per bushels per month) and 11.5 cents per bushel (2.3 cents per bushels per month), respectively.

Strong price incentives to hold wheat into forward months should slow shipments over the next several months. This suggests weakening in the demand for wheat transportation as winter approaches. Despite the closing of the Upper Mississippi River and the St. Lawrence Seaway, both of which typically occur in mid-December, rail demand, especially in the Western United States, should not exceed available capacity in the absence of any significant changes in the market situation for wheat.

Transportation Situation

Ocean Freight Rates

Ocean freight rates for two of the key grain routes, U.S. Gulf to Japan and PNW to Japan, have moved upward during September and October relative to July-August rates. Early fourth quarter (October-December) rates from the Gulf averaged \$22.26 per mmt, up 16 percent from third quarter (July-September) 1999 and up 63 percent from fourth quarter 1998. Rates from the PNW for early fourth quarter averaged \$13.71 per mmt, up 24 percent from third quarter and up 12 percent from fourth quarter 1998. Despite this year's increase in ocean freight rates, Gulf and PNW rates remained below the 5-year averages during the first three quarters. Gulf rates are down 6 percent from the 5-year average of \$23.58 per mmt, while PNW rates are down 4 percent from the 5-year average of \$14.35 per mmt (table 10).

Future ocean rates for the Gulf and PNW indicate continued upward movement during the fourth quarter (figure 10). October implied rates for the Gulf average \$23.52 per mmt, while November implied rates average \$25.68 per mmt.² PNW implied rates for October average \$14.46 per mmt and for November average \$15.17 per mmt. Based on these implied rates, fourth quarter rates appear likely to near the 5-year average. October rates, combined with the implied rates, suggest a fourth quarter Gulf rate of \$23.49 per mmt, less than 1 percent below the 5-year average, and a fourth quarter PNW rate of \$14.45 per mmt, less than 1 percent above the 5-year average. Based on these projections, the fourth quarter spread is expected to be \$9.04 per mmt, down 2 percent from the 5-year average. Going into the year 2000, implied ocean rates for January indicate continued rate increases. The implied rate for January 2000

² Future ocean rates were obtained from Clarkson Securities Ltd. and are reported consistent with their nomenclature as "implied rates."

³ Grain barge shipments are monitored by USDA from specially prepared lock reports provided by the U.S. Army Corps of Engineers. The collective data from Mississippi River Locks 27, Ohio River Locks 52, and Arkansas Norrell Lock are considered to be the total volume of barged grain since each lock is the last one on its respective river. A typical covered grain barge is 195 feet long by 35 feet wide, with a 1,500-ton or 52,500-bushel capacity.

⁴ Barge rates are quoted in terms of differentials from barge tariff benchmarks. The tariff rate from Minneapolis-St. Paul to the Gulf is \$6.19 per ton; therefore, the spot market rate quoted is 3.25 times \$6.19, or \$20.12 per ton. The benchmarks are from the Bulk Grain and Grain Products Freight Tariff No. 7, which was issued by the Waterways Freight Bureau (WFB) of the Interstate Commerce Commission (ICC). In 1976, the United States Department of Justice entered into an agreement with the ICC and made Tariff No. 7 no longer applicable. Today, the WFB no longer exists, and the ICC has become the Surface Transportation Board of the United States Department of Transportation. However, the barge industry continues to use the benchmarks as rate units.

for the Gulf is \$24.31 per mmt and for the PNW is \$15.01 per mmt.

Barge

For calendar year 1999, cumulative year-to-date barge grain shipments have been higher than during any comparable period in the last 5 years. As of mid-October, a total of 1.4 billion bushels of grain had been shipped on the Mississippi River during 1999.³ This represents a 22-percent increase over last year and is 18 percent above the 5-year average. Corn, the primary grain moved on the river, represents about 72 percent of the year-to-date movements. Soybeans and wheat make up about 16 percent and 6 percent, respectively, of the major barged farm commodities. The remaining 6 percent of the barged farm commodities are barley, oats, and sorghum. The surge in grain movements which began earlier this year may have peaked as early indications show a possible decrease in demand for barge services. This reflects a decreased demand for grain, especially corn, in the international market.

Data collected for the first 2 weeks of October on the locks and dams north of St. Louis, MO, suggest some decrease in weekly barge grain volumes for the fourth quarter of 1999 (October-December) on those parts of the river. In the last 5 years, fourth quarter movements were 29 percent higher than those during the third quarter. Early fourth quarter weekly volumes averaged 34.8 million bushels per week (table 11). This is slightly below the weekly average of 36.5 million bushel reported for third quarter 1999. In previous instances this year, short-term decreases in barge traffic have been attributable to traffic congestion and delays caused by lock repair and maintenance; however, there have been no major activities that would limit barge traffic in recent weeks. Starting in mid-October and continuing through the second week of November, there will be some dredging at various locations on the Upper Mississippi River. This is not expected to cause any river closures.

For the first 3 weeks of October, spot market barge rates for grain shipped from Minneapolis-St. Paul to Mississippi River Gulf ports averaged 325 percent of tariff (table 12).⁴ This is the same as the average during fourth quarter last year but 14 percent higher than the 5-year average for the fourth quarter. Barge companies offer freight at spot market rates for the current week, 1 month out, and 3 months out. Forward rates being offered for the rest of the shipping season are down from this level. Rates being offered by barge companies during October for 1 month out were at

292 percent of tariff. These forward rates indicate that grain shippers expect Minneapolis-St. Paul barge volumes to be down modestly for the remainder of this year's navigation season, typically the first week of December.

Barge rates for grain shipped from St. Louis to the Gulf were 257 percent of tariff during the first 3 weeks of October, up 36 percent from the average for fourth quarter 1998 and 44 percent higher than the 5-year average. Barge company officials have speculated that higher than normal shipments of export grain by rail to the St. Louis area have tightened barge supply and caused a recent increase in barge rates for the area. Forward rates being offered through January are down from this level. Rates being offered by barge compa-

nies during October for 1 and 3 months out (November and January) were 159 and 119 percent of tariff, respectively. This suggests that barge freight demand at St. Louis will decline during the final weeks of 1999 and into the new year.

Last year at this time, downbound barge rates were significantly affected by an increase in upbound movements of nongrain traffic. Barge companies have indicated that some of the upbound movements of commodities, such as steel, were more profitable last year than the downbound movement of grain. Presently, the nongrain traffic has returned to more normal levels. Although, grain barge rates are presently at last year's level, current rates do not reflect the types of nongrain shipments that drove up rates in 1998.

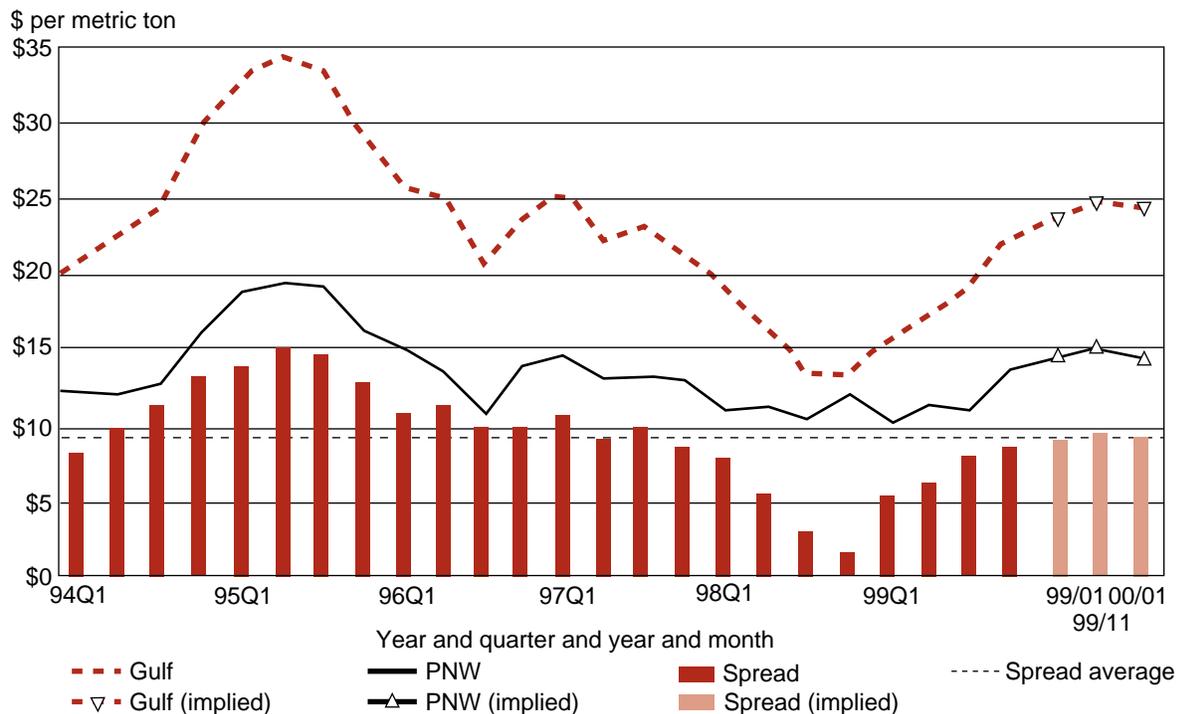
Table 10—Average daily ocean grain freight rates to Japan by quarter, 1994-99

Export range/year	1st quarter (Jan.-Mar.)	2d quarter (Apr.-Jun.)	3d quarter (Jul.-Sep.)	4th quarter (Oct.-Dec.)	Annual (Jan.-Dec.)
	<i>Dollars per metric ton</i>				
Gulf					
1994	20.59	22.31	24.40	29.54	24.21
1995	32.96	34.61	33.84	29.19	32.65
1996	25.91	24.93	20.58	23.78	23.80
1997	25.47	22.31	23.23	21.72	23.18
1998	18.95	16.85	13.41	13.65	15.71
1999	15.65	17.47	19.13	22.26	18.63
5-yr avg.	24.78	24.20	23.09	23.58	23.91
Pacific Northwest					
1994	12.32	12.32	12.95	16.35	13.49
1995	19.00	19.49	19.16	16.30	18.49
1996	15.04	13.52	10.79	13.85	13.30
1997	14.72	13.09	13.25	13.06	13.53
1998	11.08	11.31	10.41	12.20	11.25
1999	10.18	11.32	11.07	13.71	11.57
5-yr avg.	14.43	13.95	13.31	14.35	14.01
Spread					
1994	8.27	9.99	11.45	13.19	10.72
1995	13.96	15.12	14.68	12.89	14.16
1996	10.87	11.41	9.79	9.93	10.50
1997	10.75	9.22	9.98	8.66	9.65
1998	7.87	5.54	3.00	1.45	4.47
1999	5.47	6.15	8.06	8.55	7.06
5-yr avg.	10.34	10.26	9.78	9.22	9.90

Notes: Spread is based on the Gulf minus Pacific Northwest rates. 4th quarter 1999 rates are based on those reported through October 27, 1999.

Source: Baltic Exchange

Figure 10—Ocean grain freight rates to Japan, Gulf vs. Pacific Northwest, 1994-99 and implied future rates (Oct. and Nov. 1999 and Jan. 2000)



Notes: Spread is based on the Gulf minus Pacific Northwest rates. 4th quarter 1999 rates are based on those reported through October 27, 1999.
Source: Baltic Exchange and Clarkson Securities Ltd.

Table 11—Average weekly barge grain shipments by quarter, 1994-99

Year	1st quarter (Jan.-Mar.)	2d quarter (Apr.-Jun.)	3d quarter (Jul.-Sep.)	4th quarter (Oct.-Dec.)	Annual (Jan.-Dec.)
- 1,000 bushels -					
1994	24,521	25,406	29,699	38,083	29,427
1995	32,097	28,752	40,706	44,462	36,504
1996	29,971	35,459	25,811	39,847	32,772
1997	26,383	27,024	28,138	39,864	30,352
1998	25,932	27,198	30,391	37,545	30,267
1999	29,074	38,105	36,497	34,771	
5-yr. avg.	27,781	28,768	30,949	39,960	31,864

Notes: Data for 4th quarter 1999 based on shipments through Oct 16, 1999. All averages based on shipments through Mississippi L&D 27, Ohio L&D 52, and Norrell L&D on the Arkansas River.

Source: U.S. Army Corps of Engineers

Table 12—Average weekly barge rates by quarter, 1994-99

Region/year	1st quarter (Jan.-Mar.)	2d quarter (Apr.-Jun.)	3d quarter (Jul.-Sep.)	4th quarter (Oct.-Dec.)
	<i>percent of tariff</i>			
Minneapolis-St. Paul to New Orleans: (tariff = \$6.19 per ton)				
1994	152	129	171	265
1995	253	221	347	347
1996	no rates	180	151	236
1997	165	146	179	249
1998	164	166	241	325
1999	213	182	271	325
5-yr. avg.	184	168	217	284
St. Louis to New Orleans: (tariff = \$3.99 per ton)				
1994	96	85	140	214
1995	205	155	263	197
1996	180	99	106	148
1997	118	90	122	140
1998	93	106	199	189
1999	123	107	196	257
5-yr. avg.	139	106	165	178

Note: Data for 4th quarter 1999 based on rates reported through October 20, 1999.

Source: USDA-AMS

Rail

Rail demand has remained strong throughout calendar year 1999. In each of the first three quarters, rail grain carloadings have exceeded those in the comparable quarter in 1998. For the January-September period, total grain carloadings were up 10 percent from 1998 and 5 percent above the 3-year average. So far this year, the strongest demand has been in the July-September period when grain carloadings were up 16 percent over the same period last year and 23 percent above the 3-year average.

The overall increase in grain carloadings for 1999 is largely the result of stronger demand for rail transportation on the western U.S. railroads. January-September grain carloadings on the western U.S. railroads totaled 667,891, up 13 percent from the same period last year. Grain demand, however, has also been up in the Eastern United States. Grain carloadings on the eastern railroads for the January-September period totaled 277,078, up 3 percent from 1998. Grain carloadings during the July-September (third quarter) period were the highest for the year on the western railroads. Western third quarter loadings were also up 21 percent over the same months in 1998. In the East, third quarter

grain loadings were down from the preceding two quarters and up only 1 percent from third quarter 1998. The fact that the year-to-year increase in eastern grain loadings is small, reflects the service problems associated with the takeover of CR by CSXT and NS more than the true level of demand that existed in the eastern grain markets during July-September.

Rail demand for grain remained strong into the early weeks of October. The weekly average for U.S. grain carloadings was 28,336 for the first three reported weeks in October. This is up from a weekly average of 26,220 for the third quarter and up from the weekly average of 26,429 for the same weeks in 1998.

Carloadings have remained particularly strong in the Western United States, where weekly loadings have averaged 20,902 for the first 3 reported weeks of October. This is up from the third quarter weekly average of 19,262 carloadings and up from the weekly average of 17,396 carloadings for the same weeks in 1998. October weekly grain loadings have been up in the Eastern United States from the previous quarter but down from last fall at this time. Eastern weekly carloadings have averaged 7,978 for the first 3 weeks in October. This is up from the weekly average of 6,716 carloads for the third quarter but down from the weekly

average of 8,863 carloads during the same weeks in 1998.

Export rail shipments have also been up for calendar year 1999. For the January-September period, rail shipments of grain to port areas totaled 213,377 carloads, up 6 percent from the same period in 1998. These numbers, however, understate the strength of export rail demand since March, particularly at the Texas Gulf and PNW. Texas Gulf export rail shipments for April-June and July-September were up 27 and 33 percent, respectively, over the same periods last year. PNW export rail shipments for April-June and July-September were up 31 and 72 percent, respectively, over the same periods in 1998. Export rail demand at the Texas Gulf and PNW have been driven by strong demand for hard red wheat. PNW rail demand has also been influenced strongly by changes in the ocean freight rates and by stronger export demand for corn.

Eastern Railroads

After 5 months of operational transition, significant issues remain relating to service reliability on the former CR. The critical measures monitored by the Surface Transportation Board's (Board) Office of Compliance and Enforcement (OCE) have generally leveled off since the June 1 operational takeover and have shown no marked improvement since the beginning of the fall peak shipping season in August. In fact, increased demand during recent weeks has resulted in slightly diminished performance in terms of increased dwell times and reduced system velocity. Some shippers of time-sensitive traffic continue to be plagued by erratic transit times. Other traffic that is not usually considered time-sensitive, such as coal and grain, is sensitive because of the continuing heavy volume and problems with empty car supply.

Two of the most critical railroad resources continue to be power and crews, and they remain strained. In response, both CSXT and NS continue to supplement their locomotive fleets and to hire and qualify additional train service employees. For example, NS added approximately 113 locomotives during the 30-day period ending October 15. NS has added 400 train and engine service employees over the past several months. The majority of these new employees were added to the Northern Region, which is NS's part of the former CR system.

Information technology (IT) cutovers continue on both CSXT and NS. The cutovers on NS have been more extensive and are expected to include the entire

Northern Region by mid-December. The results are already noticeable on NS. Shipment visibility has improved for customers through the implementation of the Thoroughbred Yard Enterprise System (TYES). Locomotive control has increased with the implementation of the Train Information System (TIS). The 10-phase TYES implementation is expected to be completed by December 7, and the TIS implementation will be completed by December 30.

Shared Assets Area (SAA) performance continues to be a focus for both the Board and the parent companies (CSXT and NS). The performance measures monitored by OCE continue to raise concern for SAA operations. On October 1, the highest dwell times since July 23 were recorded for the North and South Jersey SAA's. The Detroit, MI, SAA, however, continues to show moderate improvement. On time performance also lagged slightly for North and South Jersey due in part to a continuing problem with the availability of crews and locomotives. IT problems continue to be a source of concern for the shared areas as well as the need for improved communications and coordination between the parent companies and the shared area operator. Teams have been established by both CSXT and NS to consider shared area issues, and the Board has made on-site inspections of both the North and South Jersey shared areas.

Cars on line have reached unprecedented levels and remain an issue, particularly for CSXT (table 13). The number of cars on line peaked on October 8 at a combined total of 515,501 cars (262,318 on CSXT and 253,183 on NS). As of October 26, the total cars on line had dropped to 510,716 cars (265,257 on CSXT and 245,459 on NS). Cars are being evaluated to determine ownership and the extent to which other carriers and shippers are being deprived of empties for reloading. OCE is monitoring this very closely.

Service design changes and infrastructure improvements continue to be made to adapt the new rail systems to the evolving service demands of shippers and to deal with additional traffic resulting from peak-season shipping demand. National economic trends suggest strong demand for rail service will continue for nearly all commodity groups. The fall period remains a test for both CSXT and NS.

CSX Transportation. Despite operational problems related to the CR takeover, grain demand on CSXT has continued to be strong again in 1999. For the first 5 months of the year, prior to the June 1 takeover of parts of the former CR system, CSXT grain loadings

Table 13—Freight cars on line, January-October 1999

Car type/railroad	January	February	March	April	May	June	July	August	September	October
					<i>Number of railcars</i>					
All freight cars:										
CSX Transportation	199,529	205,218	203,147	201,876	201,120	244,923	248,123	251,653	252,739	261,361
Norfolk Southern	149,170	150,706	150,090	152,363	151,115	238,792	240,796	233,474	237,937	237,911
Burlington Northern Santa Fe	211,231	210,575	208,100	209,069	207,278	203,781	206,609	205,963	206,940	205,993
Kansas City Southern Railway	33,692	32,907	32,398	29,126	30,626	31,151	31,369	31,520	30,618	32,125
Union Pacific	316,349	315,945	310,389	310,389	312,357	306,353	310,458	312,179	311,571	308,457
All railroads	909,971	915,351	904,124	902,823	902,496	1,025,000	1,037,355	1,034,789	1,039,805	1,045,848
Covered hoppers:										
CSX Transportation	48,864	51,400	51,563	50,667	49,304	57,535	58,458	59,009	59,390	62,456
Norfolk Southern	31,225	31,864	31,183	31,468	31,237	45,725	46,959	47,310	48,552	49,518
Burlington Northern Santa Fe	64,291	64,045	63,397	63,672	62,771	60,498	61,955	62,255	62,889	61,929
Kansas City Southern Railway	6,939	9,113	9,281	8,618	8,811	9,079	9,152	8,727	8,234	8,954
Union Pacific	103,434	102,190	101,177	99,982	98,214	96,154	96,739	98,361	99,039	98,593
All railroads	265,982	269,542	267,236	264,982	250,337	268,991	273,263	275,662	278,104	281,448

Notes: The number of cars on line is a weekly average of the inventory of railroad and privately owned freight cars on each railroad's system. For information and specific definitions for individual railroads, see www.railroadpm.org. Because data on cars on line include those Conrail system cars absorbed by CSX Transportation (CSXT) and Norfolk Southern (NS) on June 1, 1999, comparisons may not be truly reflective of changes on the original portions of the CSXT and NS systems. October numbers are based on data reported through October 22, 1999.

Source: Association of American Railroads, *Railroad Performance Measures*

were up 1 percent from 1998. With the inclusion of former CR grain shipments since June 1, any year-to-year comparisons of grain traffic on CSXT become misleading. Even without such comparisons, it is clear that CSXT grain demand remains high. In recent weeks, CSXT has had some of the highest grain carloadings since the June 1 takeover. For the week ending October 16, grain carloadings on CSXT totaled 3,525. This is the highest level of carloadings since the takeover. It, however, remains below last year's peak weekly grain loading total of 3,731 cars in November. This was even without the addition of CSXT's share of CR grain traffic.

Operational problems continue to plague grain shippers and receivers on CSXT, and weekly grain carloadings appear to be falling short of actual demand. Grain train speeds appear to have been improving up through September when they averaged 18.1 miles per hour (table 14, figure 11). Stronger demand for rail transportation and problems associated with flooding caused by hurricanes appear to have again reduced grain train speeds in October. For October, grain train speeds dropped to an average of 15.3 miles per hour. This is substantially below the averages for every other month this year. Dwell times in key terminals that connect the Eastern Corn Belt and southeastern feeding markets also continue to be up from their levels before the takeover slowing less than unit-train load shipments of feed grains and feed ingredients (table 15).

Train speeds on CSXT have been volatile for all types of traffic since the takeover. Speeds for all types of trains were at their high point, prior to the merger in May, at 19.2 miles per hour. Train speeds remained relatively flat at an average 18.6 miles per hour in the first 3 months following the takeover. Any improvements in train speeds in September appear to have been lost in recent weeks as average speeds fell to 17.1 miles per hour during October.

Norfolk Southern. Operational problems related to the CR takeover are also reducing system fluidity and performance on NS. Some indicators suggest that service problems for grain shippers on NS are even more serious than on CSXT. Grain train speed is one such indicator. Average grain train speeds on NS have declined from 18.8 miles per hour in April to 15.5 miles per hour during October. Dwell times in key NS Southeast terminals have again increased in the wake of recent hurricanes, slowing the movement of less than unit-train load feed and ingredient traffic. As with CSXT, the addition of CR grain traffic makes year-to-year

comparisons in grain car loadings impossible. NS has, however, also had some of its highest weekly grain carloadings since the takeover in the most recent weeks. So far since the takeover, NS grain carloadings hit their highest level during the week ending October 9 when weekly loadings totaled 3,480 cars. These were the highest weekly grain carloadings on NS since November of 1998, but at that time, NS had not acquired its share of CR grain traffic. Service problems are likely constraining the amount of grain traffic that would otherwise move over NS at this time.

A serious concern for Eastern Corn Belt grain and feed ingredient shippers and Southeastern poultry and hog feeders alike is the toll that winter could take on both NS and CSXT. Without significant improvements in operating performance on both railroads in the next few weeks, it will be impossible to expand southeastern feed inventories sufficiently to deal with any major snowfalls that could block rail lines in critical passes in the eastern mountains. Reduced grain and soybean production and smaller September 1 stocks in the Southeast only add to the seriousness of this problem.

Western Railroads

Despite the strength of rail demand over the past few months and heading into November, particularly in the Western United States, the demand for guaranteed grain car service has weakened significantly since August. In late August, press accounts were suggesting the possibility of harvest-time rail service problems in the Western United States. These have not materialized to any significant extent on the western railroads. Since August, prices have dropped substantially for car service guarantees held by shippers on the Union Pacific (UP) and Burlington Northern Santa Fe (BNSF). Bidding activity in the railroad's own guaranteed grain car programs has also virtually come to halt over the past few weeks.

As of mid-October, car service guarantees held by shippers who have their own grain cars pooled into the UP grain fleet were selling at discounts of \$43, \$41, and \$41 per car for November, December, and January, respectively. Back in mid-August, secondary market car service guarantees on UP for November and December were selling at premiums of \$103 and \$46 per car, respectively. This year's mid-October values were also down compared to last year. In mid-October 1998, November guarantees were selling at a premium of \$23 per car, and December guarantees were selling at a premium of \$11 per car.

Table 14—Average train speed, January-October 1999

Train type/railroad	January	February	March	April	May	June	July	August	September	October
	<i>Miles per hour</i>									
All trains:										
CSX Transportation	18.4	17.9	17.7	18.9	19.2	18.7	18.7	18.5	18.5	17.1
Norfolk Southern	16.1	20.6	20.8	18.8	20.2	18.4	18.3	18.4	18.0	17.6
Burlington Northern Santa Fe	23.4	24.5	24.9	24.9	24.9	24.8	24.8	24.6	24.4	24.5
Kansas City Southern Railway	23.0	23.6	23.3	23.2	22.6	22.3	22.5	21.6	22.8	21.8
Union Pacific	24.1	24.7	24.6	25.2	23.7	24.4	24.7	24.0	24.9	24.7
All railroads	21.3	22.4	22.4	22.6	22.3	21.7	21.7	21.4	21.6	21.1
Grain trains:										
CSX Transportation	17.3	18.2	18.2	17.6	18.5	16.8	17.0	16.9	18.1	15.3
Norfolk Southern	17.9	17.2	17.4	18.8	16.6	15.8	14.2	15.0	15.9	15.5
Burlington Northern Santa Fe	20.1	20.3	20.9	21.3	21.4	22.3	22.3	21.1	21.8	21.3
Kansas City Southern Railway	21.5	19.1	18.9	19.6	18.9	16.3	16.4	15.3	17.9	17.9
Union Pacific	21.9	22.4	22.8	23.4	24.6	25.0	23.7	22.0	22.9	22.6
All railroads	19.2	19.5	19.8	20.2	21.4	20.8	20.1	19.3	20.3	19.3

Notes: Average train speed is calculated by dividing train-miles by hours operated for the line-haul portion of the movement and excludes time spent in terminals (dwell time). For information and specific definitions for individual railroads, see www.railroadpm.org. Because data on train speeds include those portions of the Conrail system absorbed by CSX Transportation (CSXT) and Norfolk Southern (NS) on June 1, 1999, comparisons may not be truly reflective of changes on the original portions of the CSXT and NS systems. October speeds are based on data reported through October 22, 1999.

Source: Association of American Railroads, *Railroad Performance Measures*

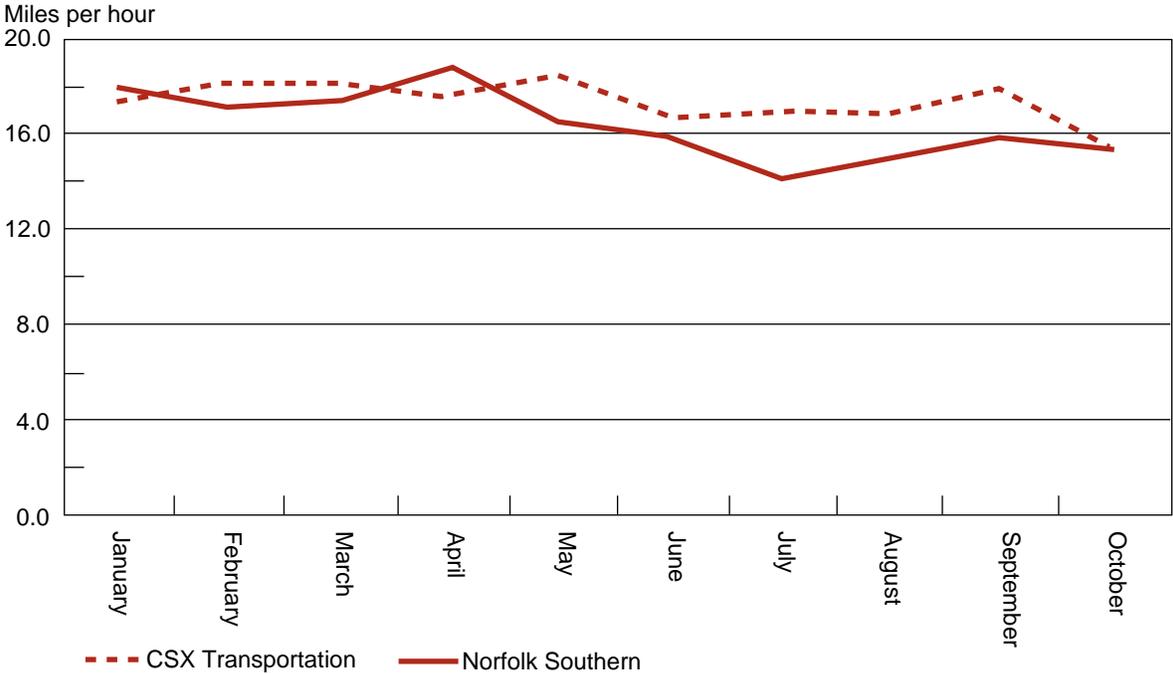
The value of shipper-guaranteed freight on BNSF has also gone from being at a premium to being at a discount since late summer. Mid-October values for BNSF shipper-held guarantees on the secondary market were selling at discounts of \$51 per car for November, \$50 per car for December, and \$50 per car for January. Mid-August values for November and December guarantees were at premiums of \$32 and \$11 per car, respectively. BNSF fall service guarantees are also down this year as compared with 1998. Last year, in mid-October, shipper-held guarantees were at premiums of \$93 per car for November and \$23 per car for December.

Bidding activity for grain car service in the railroads own guaranteed programs also reflect a weakening in rail demand over the past few weeks. Since late September, bidding for railroad-owned car capacity has virtually stopped. The amount of allocated capacity that has been purchased through these programs has correspondingly increased very little over that time. Of the car capacity allocated by UP to its Grain Car Allocation System (GCAS), only 54 percent of the November capacity and 24 percent of the December capacity were reported as sold on September 16. As of October 1, UP reported 56 percent of the November capacity and

26 percent of the December capacity sold. Not only have the GCAS sales come to a nearly complete stop, the capacity currently sold is also far below last year. On October 19, 1998, UP reported 75 percent of its November and 65 percent of its December GCAS capacity sold, well above the percentage of this year's capacity sold. The amount of GCAS capacity sold this year on UP is also down from last year at this time. Capacity sold is down 24 percent for November and down 56 percent for December, compared with the same months last year.

BNSF is experiencing very much the same situation in its Certificate of Transportation (COT) program. For the week ending September 3, BNSF was reporting 76 percent of its November and 39 percent of its December COT capacity sold. For the week ending October 7, BNSF reported 79 percent of its November and 41 percent of its December capacity sold. This is a fairly small increase in sold capacity over the period, particularly considering that rail demand tends to remain strong late into the fourth quarter (October-December). Last year, for the week ending October 8, BNSF reported 100 percent of its November and 90 percent of its December COT capacity sold. These higher percentages of capacity sold for 1998, to a large

Figure 11—Average Grain Train Speeds on Eastern Railroads, January-October 1999



Source: Association of American Railroads, *Railroad Performance Measures*

Table 15—Average dwell times for selected terminals by railroad, January-October 1999

Railroad/selected terminal/city and State	January	February	March	April	May	June	July	August	September	October
	Hours									
CSX Transportation:										
Cincinnati, OH	35.8	34.7	31.1	26.9	26.0	31.9	32.9	34.6	34.9	39.9
Corbin, KY	21.0	20.4	20.5	20.4	16.0	20.5	20.7	21.9	21.4	23.4
Hamlet, NC	32.7	32.4	30.9	32.8	27.0	28.1	30.6	33.5	31.9	32.7
Louisville, KY	42.1	44.0	36.0	32.5	32.4	32.6	34.5	39.6	40.3	41.7
Nashville, TN	34.8	41.8	39.1	34.7	32.9	36.5	38.4	42.4	46.2	50.9
Norfolk Southern:										
Chattanooga, TN	26.6	31.0	31.0	33.8	36.6	36.4	37.4	30.1	34.3	41.6
Columbus, OH	15.3	17.8	19.4	22.2	17.3	32.9	32.4	33.7	31.6	32.1
Knoxville, TN	30.4	32.4	27.7	31.4	33.7	36.7	37.8	36.3	37.6	44.3
Linwood, NC	26.9	30.5	30.2	37.8	32.5	29.5	34.7	33.8	30.8	32.7
Macon, GA	25.8	30.3	29.1	35.0	37.7	39.0	38.6	32.8	30.4	32.8
Burlington Northern Santa Fe:										
Barstow, CA	29.0	29.0	29.0	30.0	28.0	29.0	27.0	26.0	28.0	28.0
Fort Worth, TX	26.0	23.0	26.0	20.0	24.0	20.0	19.0	25.0	24.0	22.8
Houston, TX	14.0	12.0	14.0	15.0	15.0	16.0	15.0	15.0	16.0	14.5
Kansas City-Argentine, KS	30.0	26.0	25.0	26.0	26.0	27.0	27.0	26.0	28.0	27.3
Minn./St. Paul-Northtown, MN	33.0	28.0	30.0	25.0	27.0	27.0	26.0	27.0	28.0	27.8
Pasco, WA	25.0	24.0	24.0	23.0	23.0	23.0	22.0	21.0	22.0	22.3
Kansas City Southern Railway:										
Kansas City, MO	18.0	24.0	22.0	21.0	26.0	27.0	25.0	26.0	29.0	33.3
Shreveport, LA	34.0	35.0	35.0	36.0	37.0	36.0	38.0	38.0	36.0	43.8
Union Pacific:										
Fort Worth-Centennial, TX	39.9	33.8	37.3	32.3	29.4	35.9	29.6	31.2	28.8	29.2
Houston-Englewood, TX	41.2	31.9	32.0	30.7	34.4	36.3	40.5	47.2	35.5	35.7
Houston-Settegast, TX	38.7	35.5	34.4	29.9	32.7	36.1	33.6	38.5	36.6	35.7
Kansas City-Neff, MO	36.0	32.0	29.2	31.5	34.9	29.5	29.9	33.7	33.5	36.4
North Platte-East, NE	37.5	33.1	31.4	36.2	38.2	29.1	27.0	29.5	28.1	31.2
North Platte-West, NE	34.5	36.2	24.9	35.1	35.8	24.4	28.6	35.0	31.6	33.8
Roseville, CA	31.7	33.1	30.3	28.3	34.5	42.7	40.1	48.8	33.5	30.1

Notes: Dwell time is the total time, on average, that a car spends at a terminal location. A terminal can be a single or multiple yard facility. For information on additional terminals and specific definitions for individual railroads, see www.railroadprn.org. October dwell times are based on data reported through October 22, 1999.

Source: Association of American Railroads, *Railroad Performance Measures*

extent, reflect substantial increases in the amount of BNSF grain car capacity offered under the COT program this year. For November and December, BNSF increased its offered capacity 134 and 129 percent over the same months last year. Given this year-to-year increase, the amount of COT capacity actually purchased for November was up 85 percent from last year, as of October 7. The amount of December capacity purchased, however, was down 3 percent from December 1998 as of the same week.

The substantial drop in value for car service guarantees since late summer is a strong indication that western U.S. rail shipping demand, particularly for export, has weakened. Current discounts in the secondary market also suggest that western rail demand during the coming weeks is likely to remain below year-ago levels. The lack of bidding activity in the railroads' own guaranteed programs further supports such a scenario.

Burlington Northern Santa Fe Railway. Grain demand on BNSF has been strong throughout 1999 with the strongest demand during late summer. For January-September, BNSF grain carloadings totaled 341,477, up 8 percent from the same period in 1998. Grain carloadings for July-September were up 26 percent as compared to the same period last year. Grain demand on BNSF has remained strong into the fall harvest, with grain carloadings averaging 10,733 per week for the first 3 reported weeks of October. This is up from an average of 10,481 cars per week during July-September and up from the same 3 weeks in October 1998 when grain carloadings averaged 9,250 per week.

Strong grain demand has brought nearly every available grain car out of storage on BNSF since August. For the week ending October 16, BNSF reported only 68 grain cars in storage out of a total fleet 33,145 covered hopper cars. As recently as July 31, BNSF reported 1,349 cars still in storage. This, however, was well below the 6,294 cars reported in storage for the week ending June 5. Stronger demand has also added to the number of car orders reported as past due on BNSF. For the week ending October 19, BNSF reported 6,444 car orders past due. This number has been moving up consistently over the past few months, but it remains well below the level of past-due orders last year at this time. For the week ending October 20, 1998, BNSF reported 15,876 car orders past due with the average number of days late 9.1. Of the past-due car orders reported this year for the week ending October 19, 68 percent are reported as 4 days late or less. BNSF has been able to keep

these past-due car orders within tolerable ranges by keeping a high percentage of its fleet loaded and moving to destination and at the same time holding its grain car cycle times at some of the lowest levels in weeks. For the week ending October 16, BNSF reported that 56 percent of its fleet was loaded and in movement to destination. This is the twelfth straight week that more than half of its fleet has been loaded and in shipment. For the week ending October 16, BNSF also reported its average grain car cycle time at 23.15 days. This is the fastest average cycle time reported since April and well below the 28.89 days reported for the week ending August 21, when some short-lived congestion problems slowed grain shipments in parts of the Western Corn Belt and Central Plains.

Kansas City Southern. Grain carloadings on the Kansas City Southern (KCS) were up during the first 6 months of 1999 compared to 1998. Loadings, however, were down 17 percent for July-September, compared to the same period last year. Grain demand appears to have peaked with the fall harvest on KCS. On October 4, KCS reported grain car orders for the current and next 2 weeks at 4,199 cars. This is up substantially from previous weeks. Car orders for the current and next 2 weeks during September averaged 2,929 cars per week. Average grain train speeds on KCS have improved since summer. For September and October, grain trains averaged 17.9 miles per hour, up from 15.3 miles per hour for August.

Union Pacific Railroad. Grain demand has been up throughout 1999 on UP with the strongest demand during the July-September period. Grain carloadings for January-September totaled 300,367, up 19 percent over the same period in 1998. For July-September, UP grain carloadings total 106,693, up 14 percent from April-June and 19 from July-September 1998. Despite the increase in grain traffic, UP has kept its operations fluid and kept car orders current for most grain shippers. The number of freight cars on line has remained relatively consistent all year, ranging from a high of 316,349 cars in January to a low of 306,353 cars in June. Average train speeds for all types of traffic have also remained relatively consistent on UP over the year, ranging from a low of 23.7 miles per hour in May to a high of 24.9 miles per hour in September. Grain train speeds have varied somewhat more, ranging from a low of 21.9 miles per hour in January to a high of 25 miles per hour in May. Grain train speeds suggest that UP has been able to maintain good cycle times on grain cars despite stronger demand over the past few months.

UP has experienced some of its highest grain carloadings of the year in the past few weeks. For the week ending October 9, grain carloadings on UP, at 9,506, hit their highest level since November 1996 prior to UP's takeover of the former Southern Pacific. Weekly grain loadings for the first 3 reported weeks of October have averaged 9,059 cars. This is up from a weekly average of 8,207 cars during July-September and up from an average of 7,262 cars per week during the same 3 weeks in October 1998.

Additional Sources of Information

More detailed information on grain and oilseed production and stocks is available from the National Agricultural Statistics Service in:

Crop Production,
<http://jan.mannlib.cornell.edu/reports/nassr/field/pcp-bb>

Grain Stocks,
<http://jan.mannlib.cornell.edu/reports/nassr/field/pgs-bb>

Small Grains Summary,
<http://jan.mannlib.cornell.edu/reports/nassr/field/pcp-bbs>

More detailed information on grain and oilseed supplies and use is available from the Economic Research Service in:

Feed Outlook,
<http://usda.mannlib.cornell.edu/reports/erssor/field/fds-bb>

Wheat Outlook,
<http://usda.mannlib.cornell.edu/reports/erssor/field/whs-bb>

Oil Crops Outlook,
<http://usda.mannlib.cornell.edu/reports/erssor/field/ocs-bb>

The latest and most detailed grain and oilseed supply and demand information is available from the World Agricultural Outlook Board in:

World Agricultural Supply and Demand Estimates,
<http://www.usda.gov/oce/waob/wasde/wasde.htm>

More detailed information on grain and oilseed exports, trade, and outstanding sales is available from the Foreign Agricultural Service in:

Grains: World Markets and Trade,
<http://www.fas.usda.gov/grain/circular/1998/98-08/graintoc.htm>

Oilseeds: World Markets and Trade,
<http://www.fas.usda.gov/oilseeds/circular/1998/98-08/toc.htm>

Export Sales, <http://www.fas.usda.gov/export-sales/esrd1.html>

For additional information on grain and rail transportation see:

USDA-AMS, *Grain Transportation*,
<http://www.ams.usda.gov/tmd/grain.htm>

U.S. Surface Transportation Board,
<http://www.stb.dot.gov>

Association of American Railroads, <http://www.aar.org>

Burlington Northern Santa Fe, <http://www.bnsf.com>

Canadian National Railway Company,
<http://www.cn.ca>

Canadian Pacific Railway Company, <http://www.cpr.ca>

CSX Transportation, <http://www.csx.com>

Kansas City Southern, <http://www.kcsi.com>

Norfolk Southern, <http://www.nscorp.com>

Union Pacific, <http://www.up.com>

The *Grain Transportation Propects* is available at the time of its release on the Internet at [www.ams.usda.gov/tmd/mta/mta special reports.htm](http://www.ams.usda.gov/tmd/mta/mta_special_reports.htm).