Montana Department of Transportation

Working Paper #1: Assessment of Existing Conditions

Final

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DISCLAIMER

Some of the claims and conclusions presented in this report are based on interviews conducted by the research team between May and July 2006. Whenever possible, data and technical analysis are provided in the report to substantiate these claims. When no data or analysis is provided, please remember that further analysis is necessary to determine whether the claim, or conclusion, is supported by the facts.

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1: INTRODUCTION

This Working Paper is a part of the US 2/MT 16 Transportation Regional Economic Development (TRED) Study. The primary objective of the TRED Study is to identify what economic, regulatory, or operational changes would result in traffic and safety conditions that would warrant building a four-lane roadway on the Theodore Roosevelt Expressway in Montana. As with any study, there is a process by which the determination of this objective must be evaluated and a judgment made as to its feasibility. This report is part of a methodical approach to determine the primary study objective. This report details the existing economic and roadway conditions within the corridor study area in Montana, as well as additional data and information about what is happening in the region and along the TRE through North Dakota and South Dakota to Rapid City. This information is being used to develop a baseline condition for assessment based upon the study scope.

Congress named the Theodore Roosevelt Expressway (TRE) as a National Highway System High Priority Corridor in the Safe, Accountable, Flexible, & Efficient Transportation Efficiency Act-A Legacy for Users (SAFETEA-LU). This corridor begins at the Port of Raymond, Montana and connects to the Heartland Expressway that links Rapid City, South Dakota to Denver, Colorado. The Heartland Expressway links to the Ports to Plains Trade Corridor, which connects Denver to Laredo, Texas. In total, the compilation of all three of these designated corridors creates the Great Plains International Trade Corridor, linking Canada, the United States, and Mexico. The TRE is one of three such corridors that have been designated through Montana.

The US Highway 2 section of the study corridor has special significance due to calls to widen all of the nearly 700 miles of US 2 in Montana to four lanes to spur economic development and enhance safety, particularly in Eastern Montana. Proponents of this effort see a four-lane US 2 as a key segment in a new east-west corridor between Duluth, Minnesota and the West Coast. However, previous examinations of improving a rural section of US 2 resulted in selection of an improved two-lane facility with passing lanes over a four-lane configuration. This decision was based on analyzing the different lane configurations and weighing, among other things, projected traffic volumes and existing economic development plans against the impacts and benefits realized from the highway improvements. The two-lane with passing lane configuration was selected by the Federal Highway Administration as best meeting the purpose and needs of the proposed improvements as required by the National Environmental Policy Act (NEPA). Compliance with NEPA is mandatory to use Federal funds in highway projects.

The inclusion of a portion of US 2 in the Theodore Roosevelt Expressway provided the Montana Department of Transportation (MDT) with an opportunity to take a broader look at the corridor in the context of a pre-NEPA planning effort that can look at local, regional, national, and international developments, such as the TRE designation, that may increase future traffic volumes on the study corridor beyond what normal forecasting methods would predict.

One of the first steps of the study’s approach is an overview of the existing economic environment in the region, in order to provide comments and an initial assessment of the existing highway infrastructure conditions and their impact on the local economy. This Working Paper presents the results of that research.

The research utilizes a combination of state-level, county-level (for counties included in the 6-county study area), and Provincial data on population and population trends, employment, industrial structure and output, commodity flows, traffic conditions, as well as results of other related studies.

Section 2 of this paper presents a socio-economic overview of the study area. Section 3 discusses transportation characteristics and performance in terms of traffic, commodity flows, and industry demand for transportation services. Section 4 provides an overview of existing conditions in regions adjacent to the study area. Finally, Section 5 summarizes and concludes the analysis. The appendix provides supporting material used as well as an annotated bibliography of the materials and data sources used.

2: OVERVIEW OF THE STUDY AREA

This section provides a general overview of currently planned projects in the state, defines the study area, and assesses trends in its population and general economic conditions.

2.1 Definition of the Study Area

There are two primary highway segments that define the study area: US 2 from the North Dakota State line to Culbertson, and MT 16 from Culbertson at the intersection with US 2 to the Port of Raymond at the Canadian Border. The two highways have similar characteristics. They are both rural, two-lane highways with approximately 4 to 5 foot shoulders. The pavement is in good condition throughout. The primary difference is that, within the study area, MT 16 has approximately one third less traffic than US 2, with the exception of traffic in the Plentywood area.

MT 16 doubles its traffic levels in and around Plentywood. This is due to the trip-generation characteristics of the businesses in Plentywood and Scobey. These communities combine to create a small but stable, rural, agrarian economy that generates additional traffic in the Plentywood area. As the highway turns north toward the Canadian border, traffic volumes again fall to same level as those south of Plentywood.

Planned projects on the study corridor include the Bainville East & West Project on US 2, which will replace a narrow two-lane highway that was last reconstructed in 1955 with a wide two-lane highway with wide shoulders and minor realignments. MDT has programmed Federal and State matching funds for the project, has completed design work, and is acquiring right-of-way for the project in advance of planned construction beginning in 2008. Where possible, MDT will acquire enough right-of-way to expand the highway to four-lanes if justified and documented in changes to the NEPA document for the project.

One issue that has been identified by stakeholders during interviews is the disparity between posted speed limits between trucks and other vehicles. There is a regulatory speed differential that limits truck speed to 10 miles per hour slower than the posted passenger vehicle speed. This differential creates an inherent conflict between vehicles, which is exacerbated by the lack of passing lanes, and in some parts of the corridor, primarily along US 2, limited passing opportunities. Eliminating this disparity in vehicle speeds will improve overall traffic flow and reduce the potentially dangerous differential in vehicle speeds.

Harmonization of regulatory standards for trucks between the US and Canada is a long-standing issue in the area; however, institutional disagreements have hindered significant progress toward true harmonization of standards. Canadian truck sizes and weights are typically bigger and heavier than those allowed in Montana. Discussions with people in the trucking industry give the overall impression that harmonization between Canada and Montana isn't as important as regional harmonization of standards to influence the amount of truck traffic with Canadian sizes and weights rolling into the United States. This is because most destinations of those using Montana highways are outside of the State of Montana.

The study area will be investigated on three levels: 1) local; 2) regional; and 3) national.

Locally, the study area is comprised of the Montana portion of the Theodore Roosevelt Expressway including MT 16 between Culbertson and the US-Canadian border and US 2 east from Culbertson to the North Dakota state line, as illustrated in Figure 2 - 1 below.

Figure 2-1: Study Area – Local Level

For the purposes of this report, the assessment of existing conditions, the Montana portion of the study area will take precedence. This area includes all the counties that the Corridor crosses, Sheridan and Roosevelt counties, as well as counties in the vicinity of the Corridor: Daniels, McCone, Richland, and Valley County.[1] In reality, the economy of the study area functions as if there were no state boundary between North Dakota and Montana. Due to their remote, rural natures, the economies of the adjacent areas in both states are more closely tied to each other than to the rest of their respective states.

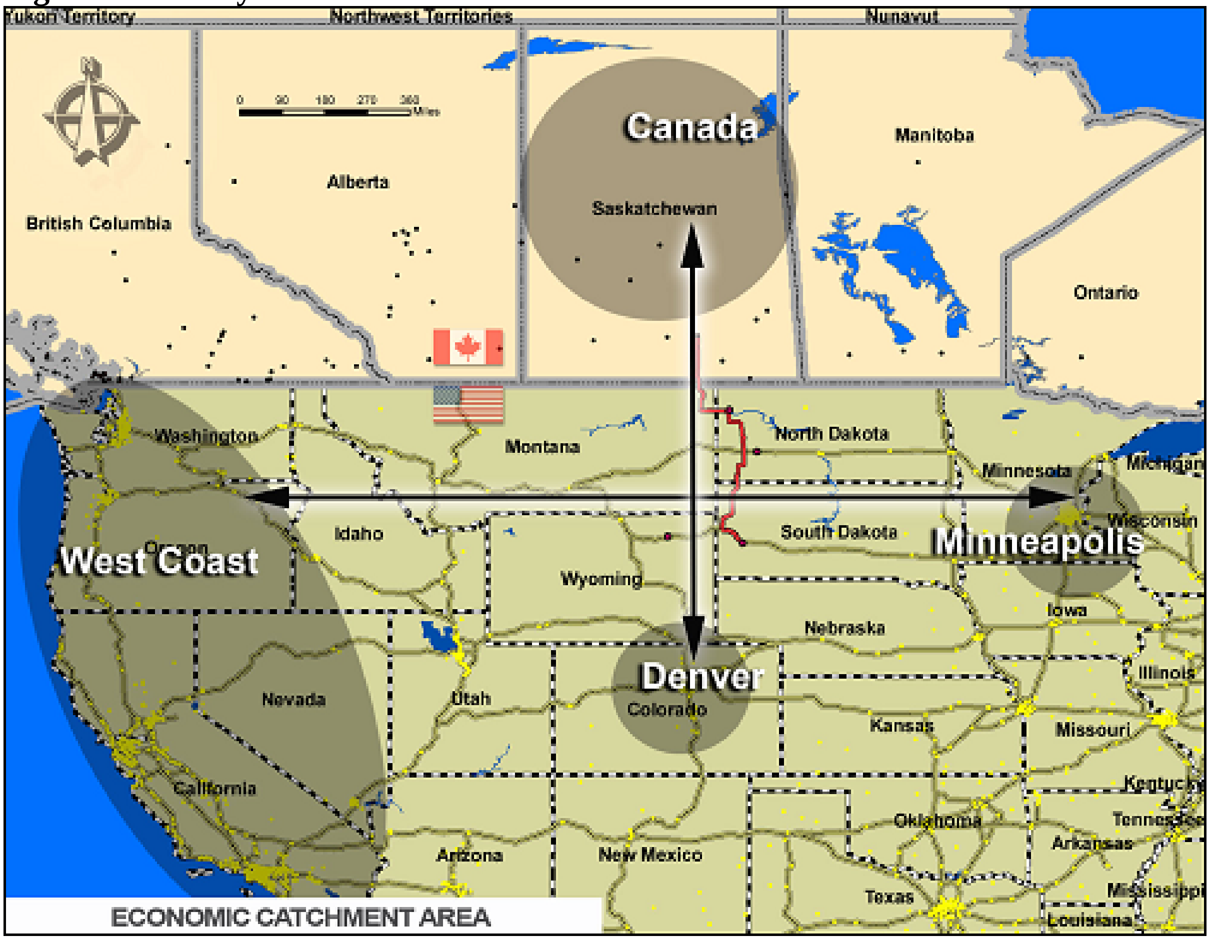
The US 2 and MT 16 sections of the Theodore Roosevelt Expressway are important because they provide regional connectivity with North Dakota and Saskatchewan. In fact, in August 2005, Congress named MT 16 between Culbertson and the Canada border and US 2 east from Culbertson to the North Dakota state line as segments of the Theodore Roosevelt Expressway "High Priority Corridor." Some of the major metropolitan areas in the region include Great Falls and Billings in Montana, Rapid City in South Dakota, and Regina and Saskatoon in Canada, as illustrated in Figure 2 - 2 below.

[1] As it will become apparent in the rest of the paper, this area, within the study area, was considered for the purpose of presenting and discussing Census data (which is readily available at the county level). These counties will collectively be referred to throughout the paper as the 6-county study area.

Figure 2-2: Study Area – Regional Level

On a larger scale, the study area encompasses the entire northwestern region of the United States and the southwest portion of Canada bordering Montana and North Dakota, as shown in Figure 2 - 3. The entire 2236 mile corridor, called the "Great Plains International Corridor," begins in Port of Laredo, Texas and ends at the Port of Raymond, Montana and runs through nine states. It is comprised of three segments: the "Theodore Roosevelt Expressway" running from the Port of Raymond, Montana to Rapid City, South Dakota (445 miles), "The Heartland Expressway" stretching from Rapid City to Limon, Colorado (401), and The Ports to Plains Trade Corridor which begins in Limon and ends in Laredo, Texas (1390 miles). In particular, travel and freight opportunities from Denver, Colorado and points south to Saskatchewan, Canada and the West Coast to Minneapolis, Minnesota and beyond are considered.

Figure 2-3: Study Area – National Level



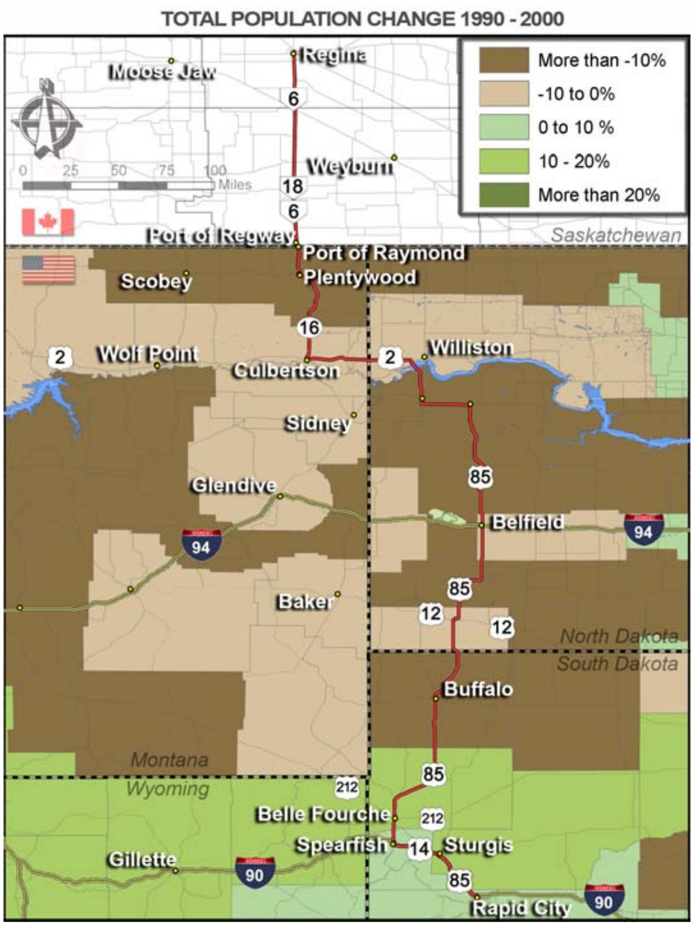
2.2 Population and Social Conditions

2.2.1 Population

The total population of the six-county study area is about 33,900 (2005 estimate), about 3.6 percent of Montana's population. The area can be described as remote rural in character. The 2003 Metropolitan and Micropolitan Statistical Area Codes indicate that the counties have no urban centers of over 10,000 and no social and economic integration with any economic core of 50,000 or more.

Most people in the six-county study area live in Roosevelt (pop. 10,524), Richland (9,096), and Valley (7,143) Counties. The remaining three counties account for about 20 percent of the total people in the study area (Table 2 – 1).

Figure 2-4: Population in Montana and the Study Area



Source: U.S. Census Bureau, 1990 and 2000 Census

Figure 2 - 4 and Table 2 - 1 show that population in the study area is declining. In the core study area, the total population decreased by 8.1 percent between 1990 and 2000 and by another 5.9 percent between 2000 and 2005. The declining trend is observed in all counties in the study area. In the Montana and nearby North Dakota counties in the study region, population change is roughly correlated with population size; more populous counties have tended to decline more

slowly. The largest county in the broader region, Ward (Minot), North Dakota, grew marginally in the 1990-2000 period.

The regional population trajectories of the study area are difficult to compare to Montana as a whole. The Great Plains area, including eastern Montana, has seen a persistent loss of population extending from Texas through Saskatchewan[2], which contrasts with the pattern of growth in urban and high amenity areas typical in Montana's more mountainous, western parts. The Census figures shown in table 2-1 indicate that Montana's state-wide population increased by 12.9 percent between 1990 and 2000 and by another 3.7 percent between 2000 and 2005, while the six-county study area declined by 8.1 and 5.9 percent in these same periods.

Both North Dakota and Saskatchewan have experienced slow to negative growth in recent years (see Section 4.3). Between 1990 and 2000, North Dakota experienced modest growth of 0.53 percent, but Census estimates suggest that trend has reversed since then. Those North Dakota counties closest to the Montana study area have seen a similar pattern of decline as their Montana peers (Table 2.1). In South Dakota, overall population growth has been moderately positive: growing 8.45 percent between 1990 and 2000, and 2.79 percent between then and 2005.

Table 2-1: Population in Montana, North Dakota, and South Dakota

	Population 2005 (est.)	Population change 2000-2005	Population change 1990-2000
Montana	935,670	3.70%	12.90%
Six County Study Area	33,928	-5.90%	-8.10%
Roosevelt	10,524	-0.90%	-3.40%
Richland	9,096	-5.90%	-9.80%
Valley	7,143	-6.90%	-6.80%
Sheridan	3,524	-14.20%	-13.30%
Daniels	1,836	-9.00%	-11.00%
McCone	1,805	-8.70%	-13.10%
North Dakota	636,677	-0.86%	0.53%
Ward	55,767	-5.20%	1.50%
Williams	19,282	-5.90%	-6.50%
Mountrail	6,513	-1.70%	-5.60%
McKensie	5,594	-2.50%	-10.10%
Divide	2,149	-5.90%	-21.20%
Burke	2,032	-9.40%	-2.50%
South Dakota	775,933	2.79%	8.45%

Source: U.S. Census Bureau

[2] Fulton, Murray, Rose Olfert, Mark Partridge, *Population Growth – Double or Nothing? Preparing for Saskatchewan's Next 100 Years*, Canada Rural Economy Research Lab, University of Saskatchewan (http://www.crerl.usask.ca/policy_briefs/C-RERL_policy_brief_Sept_7_2005.pdf)

2.2.2 Major Cities

Table 2 - 2 lists the major cities in the six-county study area. Within the primary study area, the largest cities are Sidney with a 2004 population of 4,774 and Glasgow with 3,253. Wolf Point (pop. 2663) and Plentywood (2061) are also significant communities in the region. Similar to the population trend in the study area, the population in most of these cities is declining. As Table 2 - 2 shows, Census estimates show that the population of Plentywood declined by over 11 percent between 2000 and 2004, and Sidney's population declined by 6.2 percent during the same period. The exception is Wolf Point, which held steady recently.

Table 2-2: Major Cities in the Study Area and their Populations

Cities in the Six County Area	Population 2000	Population 2004 (Estimate)	Change in Population, 2000 – 2004
Sidney	4,774	4,480	-6.2%
Glasgow	3,253	3,084	-5.2%
Wolf Point	2,663	2,667	0.2%
Plentywood	2,061	1,827	-11.4%
Scobey	1,082	995	-8.0%
Poplar	911	913	0.2%
Culbertson	716	727	1.5%
Circle	644	577	-10.4%
Other Area Cities	**2000 Population**	**Distance from Culbertson**	**Gravity Rank**
Williston, ND	12,512	42 miles	3
Glendive, MT	4,729	90 miles	7
Regina, SK	178,225*	166 miles	1
Minot, ND	36,567	167 miles	5
Havre, MT	9,621	262 miles	8
Billings, MT	89,847	308 miles	4
Saskatoon, SK	229,927*	327 miles	2
Great Falls, MT	56,690	375 miles	6

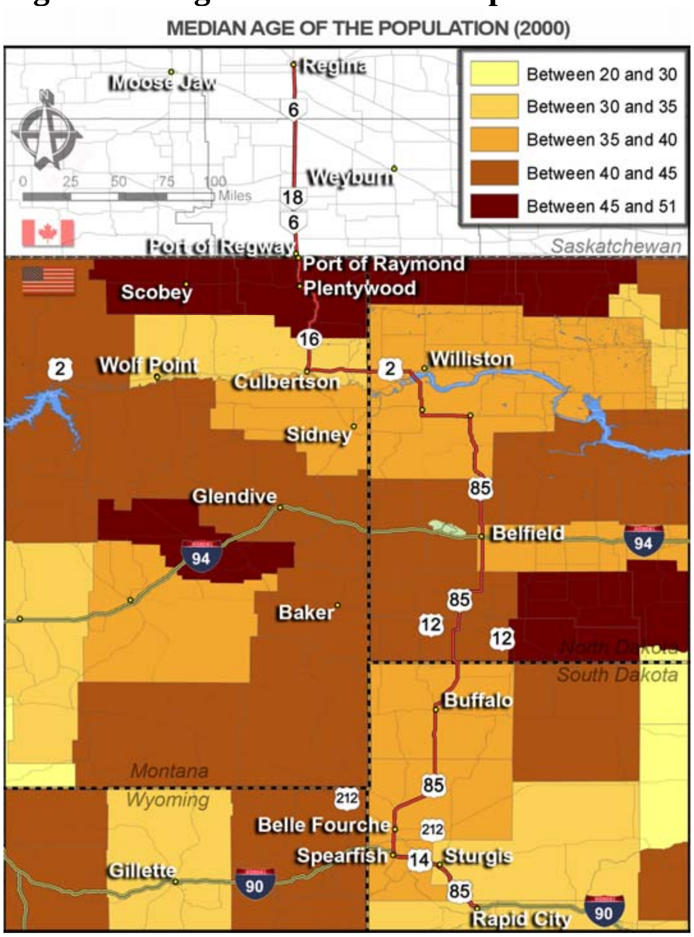
*Source: U.S. Census Bureau; Statistics Canada (*2001 population figures). "Other Area Cities" refers to significant urban areas in the regional trade area. Gravity Rank is the product of the regional populations divided by the distance between them, ranked; the figures order real and potential trade relationships, ignoring the influence of trade and traffic barriers.*

Table 2 -2 also lists urban areas in the broader regional trade area, showing population and distance from Culbertson (the approximate center of the study corridor). The table also shows a ranking of gravity calculations, a gauge of trade attractions if we assume no trade impediments (i.e., these figures rank potential regional trade relationships.) The closest mid-sized trade area to the corridor is Williston, 42 miles east of Culbertson, which is, by many accounts, a main destination for basic consumer purchasing. Billings also scores high on the gravity figures, and this has also been reported as a main source of wholesale and retail goods. Interestingly, Regina and Saskatoon, Saskatchewan, rank above all cities on the gravity measure; this is because they are the closest large trade centers to the study area. The gravity figures suggest regional opportunities in the economic region. There would be local economic advantages from improved connections to the east (North Dakota) and north (Saskatchewan).

2.2.3 Age Distribution

Figure 2 - 5 shows the age distribution of the population in the study area. Table 2 - 3 shows a comparison of the age distribution of the population in the 6-county study area with the age distribution in the state and nationwide. As the table shows, the percentage of youth and children in the 6-county study area (individuals 19 years of age and younger) was higher than in Montana on average or nationwide. However, the percentage of young adults between 20 and 34 years of age was substantially lower than the state or national average. This finding is consistent with the declining population trends reported above and suggests that younger people are leaving the region in pursuit of either education or work.

Figure 2-5: Age Distribution of Population in Study Area in Year 2000



Source: U.S. Census Bureau, 1990 and 2000 Census

In contrast, the percentage of seniors (individuals aged 65 and over) in the six-county study area was higher than in the state or nationwide. The distribution in other age categories was similar to that of all of Montana. It should be noted here that in the six-county study area as well as in the entire state, the percentage of middle age and older workers was somewhat higher than the national average. The age distribution of individuals in North Dakota and South Dakota is similar to that of Montana, with the percentage of individuals age 65 and over slightly higher than the national average.

Table 2-3: Age Distribution of Population in Year 2000, Percentage of Total Population

Age Categories	6-County Study Area	Montana	North Dakota	South Dakota	United States
19 years and younger	30.6%	28.5%	28.5%	30.2%	28.6%
20 to 34 years	13.2%	17.9%	19.9%	19.1%	20.9%
35 to 54 years	30.1%	30.7%	28.6%	28.2%	29.4%
55 to 64 years	9.5%	9.4%	8.3%	8.3%	8.6%
65 and over	16.7%	13.4%	14.7%	14.3%	12.4%

Source: U.S. Census Bureau, 2000 Census

2.2.4 Race Distribution

Table 2 - 4 shows the race profile of the population in the six-county study area and compares it with the race distribution in the state and the nation. A distinctive characteristic of the six-county study area is a high proportion of American Indians. This population group accounts for 19.1 percent of total population as compared to 6.2 percent for all of Montana and 0.9 percent of the entire United States. On the other hand, the percentage of Black or African Americans in the 6-county study area (as well as in all of Montana) is very small compared to all of the United States (0.1 percent in the six-county study area as opposed to 12.3 percent nationwide). The majority of the population in the six-county study area is white, accounting for 78.4 percent of the total.

Table 2-4: Race Distribution, Percentage of Total Population

Race	Six-County Study Area	Montana	United States
White	78.4%	90.6%	75.1%
Black or African American	0.1%	0.3%	12.3%
American Indian and Alaska Native	19.1%	6.2%	0.9%
Asian	0.3%	0.5%	3.6%
Other	2.1%	2.4%	8.1%

Source: U.S. Census Bureau, 2000 Census

2.2.5 Mobility Status

Table 2 - 5 shows the mobility status of individuals in the study area. The table shows that only about 31 percent of individuals living in the six-county study area had changed residence in the last 5 years. This is substantially less than the 45.6 percent of people in Montana and 43 percent nationwide who changed residences during that period. If people in the six-county study area changed their residence between 1995 and 2000, they tended to move within the same county. Of those individuals living in the six-county study area, only 6 percent had moved to the area from a different state between 1995 and 2000. This contrasts strongly with the statewide average of 13.2 percent and the nationwide rate of 8.4 percent of people who moved to a new residence from another state.

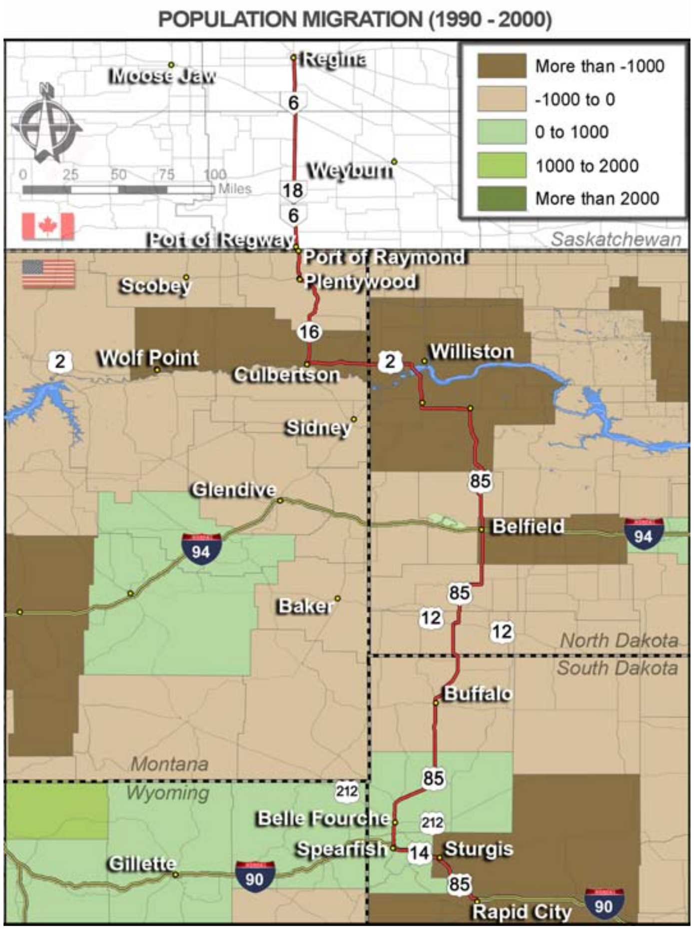
The data presented in Table 2 - 5 suggests that, on average, the population in the six-county study area is less mobile than the nation as a whole; that is, they tend to live in the same residence for longer periods of time. In addition, the table suggests that relatively few people from outside of the six-county study area, especially those in other states, are coming to settle in the area. This observation is, in turn, consistent with the pattern of declining population and the relatively small proportion of young adults residing in the area. Figure 2 - 6 illustrates the population migration within the six-county study area.

Table 2-5: Change in Place of Residence between 2000 and 1995, Percentage of Population 5 Years and Older

Place of Residence in 1995 Compared to 2000	Six-County Study Area	Montana	North Dakota	South Dakota	United States
Different Residence in 1995	31.0%	45.6%	42.0%	43.3%	43.0%
Same county	17.3%	22.5%	21.8%	21.2%	24.9%
Different county	13.7%	23.1%	20.2%	22.1%	18.1%
Same state	7.8%	9.9%	10.2%	11.8%	9.7%
Different state	6.0%	13.2%	10.0%	10.3%	8.4%

Source: U.S. Census Bureau, 2000 Census

Figure 2-6: Population Migration between 2000 and 1990



Source: U.S. Census Bureau, 1990 and 2000 Census

2.2.6 Income Status

Table 2 - 6 shows the income distribution among households in the six-county study area and compares it with the distribution for the entire state and the entire country. The table shows that in the six-county study area the proportion of households with incomes less than $35,000 was larger than on average in Montana or all of the United States (58.9 percent in the 6-county study area as opposed to 52.7 percent in Montana and 41.4 percent in the United States). It should be pointed out that Montana lags behind the nation in the percentage of households with income over $75,000. Just 11.9 percent of households claim such income in Montana, and 8.5 percent in the 6-county study area. Nationally, the rate is almost double that, at 22.5 percent.

Table 2-6: Household Income Distribution

Income Bracket	Six-County Study Area	Montana	United States
Less than $10,000	14.0%	11.3%	9.5%
$10,000 to $14,999	10.0%	8.9%	6.3%
$15,000 to $24,999	18.9%	17.1%	12.8%
$25,000 to $34,999	16.0%	15.4%	12.8%
$35,000 to $49,999	17.6%	18.2%	16.5%
$50,000 to $74,999	15.0%	17.1%	19.5%
$75,000 to $99,999	4.7%	6.4%	10.2%
$100,000 to $149,999	2.6%	3.6%	7.7%
$150,000 to $199,999	0.6%	0.9%	2.2%
$200,000 or more	0.6%	1.0%	2.4%
Less than $35,000	58.9%	52.7%	41.4%
$75,000 or more	8.5%	11.9%	22.5%

Source: U.S. Census Bureau, 2000 Census

In view of the results reported above, it can also be expected that the incidence of poverty in the six-county study area is higher than is average for Montana or the nation. As Table 2 - 7 reports, almost 15 percent of families and 19 percent of individuals in the six-county study area were classified as living below the poverty level. This is a higher rate than the 10.5 percent of families and 14.6 percent of individuals in Montana who live below the poverty level, and the 9.2 percent of families and 12.4 percent of individuals who live in these conditions in the US.

Table 2-7: Poverty Status

Poverty Measure	Six-County Study Area	Montana	United States
Families below Poverty Level, Percent of Total	14.7%	10.5%	9.2%
Individuals below Poverty Level, Percent of Total	18.9%	14.6%	12.4%

Source: U.S. Census Bureau, 2000 Census

2.3 Industry Structure and Trends

2.3.1 Employment by Industry

Table 2 - 8 shows employment structure in the Six-county study area and compares it with that of all of Montana and the United States. The table shows that the largest industry in terms of employment is the education, health care and social services sector, accounting for over 23 percent of total employment, a higher proportion than the state or nation.

The second largest industry in the six-county study area is the agriculture, forestry, fishing, hunting, and mining sector, accounting for 19.7 percent of total employment. This figure contrasts strongly with the state and nationwide employment structure: on average this sector accounts for 7.9 percent of employment in the state and 1.9 percent in the United States overall, and indicates the study area's heavy reliance on basic natural resources industries.

Table 2 - 8 shows employment location quotients for the six-county study area. Location quotients compare industries' shares of local to national employment, and are an indicator of relative industry concentration. The quotients are often interpreted as indicators of net exporting industries. Several general observations can be made from these quotients.

Table 2-8: Employment by Industry, Percent of Total Employment in 2000

Industry	Six-County Study Area	Location Quotient	Montana	United States
Agriculture, forestry, fishing and hunting, and mining	19.7%	10.37	7.9%	1.9%
Construction	5.6%	0.82	7.4%	6.8%
Manufacturing	2.6%	0.18	6%	14.1%
Wholesale trade	2.9%	0.81	3%	3.6%
Retail trade	11.2%	0.96	12.8%	11.7%
Transportation and warehousing, and utilities	5.8%	1.12	5.4%	5.2%
Information	1.9%	0.61	2.2%	3.1%
Finance, insurance, real estate, and rental and leasing	3.6%	0.52	5.5%	6.9%
Professional, scientific, management, administrative, and waste management services	2.8%	0.30	6.5%	9.3%
Educational, health and social services	23.1%	1.16	21.7%	19.9%
Arts, entertainment, recreation, accommodation and food services	7.8%	0.99	10.4%	7.9%
Other services (except public administration)	5.3%	1.08	5.3%	4.9%
Public administration	7.7%	1.60	5.9%	4.8%

Source: U.S. Census Bureau, 2000 Census
Notes: Location Quotients shown here are the percentage of industry to total employment in 6-county study region divided by the percentage for the U.S. Quotients greater than 1.00 indicate greater concentration of an industry in the area than in the U.S. The six counties are Roosevelt, Richland, Valley, Sheridan, Daniels, and McCone.

Most striking in Table 2 – 8 is the high concentration of employment in "Agriculture, forestry, fishing, and mining." The 10.37 location quotient means that employees in this region are over ten times as likely to work in this industry as they are in the nation as a whole, reflecting the region's specialization in basic natural resources. Public administration also is relatively high, at 1.6 times the national rate of jobs in this industry. Transportation and related jobs, too, are relatively concentrated in the area, at 1.12 times the national average. Finally, although both "Arts, entertainment, recreation, accommodations, and food services" and "Retail trade" sectors are below the national average (suggested by location quotients of less than one, they are only marginally so. The region holds its own in these industries.

Other industries are less well represented. Most remarkable is the very low (0.18) quotient for Manufacturing. Also, the three professional service industries tend to be less well represented in the study area.

Other basic sectors such as manufacturing, finance and insurance, and professional and scientific services play a much smaller role in the six-county study area than on average in the state or the entire country, accounting for only 2.6 percent, 3.6 percent, and 2.8 percent of employment, respectively. Retail trade employment in the study area is quite comparable to, although marginally lower than, the state and national rates.

Later in this report (see Table 4-2), comparable figures are presented for neighbouring counties in North Dakota. The broad similarities of these figures help highlight broad regional commonalities and interdependencies. Comparison of the location quotients between these two neighboring counties suggests that the North Dakota area, and particularly Williston, is a service center source for professional and financial services. This economic region crosses state lines.

Table 2 - 9 shows employment by industry for the six-county study area, Montana, and all of the United States for 1990. Comparison of this table with Table 2 - 8 allows for identification of trends in employment and the local industrial structure.[3]

Table 2-9: Employment by Industry, Percent of Total Employment in 1990

Industry	Six-County Study Area	Location Quotient	Montana	United States
Agriculture, forestry, and fisheries	10.1%	3.74	9.6%	2.7%
Mining	1.6%	2.67	1.6%	0.6%
Construction	5.7%	0.92	5.8%	6.2%
Manufacturing, nondurable goods	2.7%	0.39	2.7%	7.0%
Manufacturing, durable goods	4.7%	0.44	4.9%	10.7%
Transportation	4.7%	1.07	4.7%	4.4%
Communications and other public utilities	2.7%	1.00	2.7%	2.7%
Wholesale trade	3.7%	.084	3.7%	4.4%
Retail trade	19.3%	1.15	19.4%	16.8%
Finance, insurance, and real estate	4.9%	0.71	5.0%	6.9%
Business and repair services	3.9%	0.81	3.9%	4.8%
Personal services	3.5%	1.09	3.6%	3.2%
Entertainment and recreation services	1.4%	1.00	1.5%	1.4%
Health services	8.6%	1.02	8.6%	8.4%
Educational services	10.1%	1.22	10.1%	8.3%
Other professional and related services	6.7%	1.02	6.7%	6.6%
Public administration	5.7%	1.19	5.6%	4.8%

Source: U.S. Census Bureau, 1990 Census
Notes: See table 2 -8 for a definition of location quotients.

While changes in industry definitions limit the direct comparability of Tables 2 - 8 and 2 - 9, a few broad observations can be made. In the six-county study area employment in agriculture, forestry, fishing, hunting and mining increased its share of total employment has over the period 1990 to 2000 (from about 11.7 percent of total employment in 1990 to 19.7 percent in 2000). In contrast, in Montana and all of the United States, the share of employment in these industries declined. This suggests increasing specialization and competitiveness in this regional industry over the decade. A similar point can be made about the public administration, which increased its jobs share (i.e., location quotient) in the region over the decade compared to the national profile.

On the other hand, employment in manufacturing in the six-county study area has declined over the period from 1990 to 2000, from about 7.4 percent of total employment to 2.6 percent. The declining trend in the share of manufacturing in total employment was also observed on average in Montana and nationwide, although somewhat less markedly.

[3] Note that a full comparison of employment structure in year 1990 and 2000 is not possible due to changes in reporting and job classification.

Relative employment (i.e.: the change in industries' percentage of total employment) also declined in wholesale trade, retail trade, and finance and the insurance industry. Except for the finance and insurance industry, a similar trend was observed in general in Montana and nationwide. The share of employment in the finance and insurance industry increased in Montana and all of the United States, but declined in the study area.

Industries where relative employment in the six-county study area has increased include public administration and health and educational services. Relative employment in the health and educational services sector has also increased on average in the state and all of the United States, although at a smaller rate. Employment in public administration in Montana and nationwide remained relatively stable over the years from 1990 to 2000.

2.3.2 Output and Establishments by Industry

Table 2 - 10 shows the industrial structure (number of establishments, value of sales, and employment) of Montana's non-farm economy. The largest industry in terms of sales was retail and wholesale trade followed by manufacturing, health care and social assistance, and construction. The retail trade was still the largest industry in the state of Montana in terms of the number of establishments, followed by construction and the accommodation and food services. In terms of employment, retail trade was again the largest industry, followed by health care and social assistance, accommodation and food services, and construction.

Table 2 - 10 also provides partial information for the six-county study area. Unfortunately, much of the information is not available at the six-county study area level, as some data are not collected at the county level and other data are not disclosed due to a small number of businesses.

Table 2-10: Industrial Structure of the 6-County Study Area and the State

NAICS Code	Industry Description	Montana			Six-County Study Area		
		Establishments	Sales ($1,000)	Employment	Establishments	Sales ($1,000)	Employment
21	Mining and Oil & Gas Extraction	266	1,226,555	4,622	X	X	X
22	Utilities	221	X	3,057	X	X	X
23	Construction	4,025	3,372,837	22,506	X	X	X
31-33	Manufacturing	1,234	4,987,577	18,582	X	X	X
42	Wholesale Trade	1,485	7,223,420	13,728	64	X	474
44-45	Retail Trade	5,145	10,122,625	52,891	235	319,218	1,643
48-49	Transportation and Warehousing	1,148	996,647	9,094	X	X	X
51	Information	633	X	9,357	25	X	421
52	Finance and Insurance	1,803	X	13,596	X	X	X
53	Real Estate, rental, and Leasing Services	1,416	520,932	4,763	X	X	X
54	Professional, Scientific and Technical Services	2,886	1,249,057	15,617	67	X	260
55	Management of Companies and Enterprises	104	50,898	1,546	X	X	X
56	Administrative, Support and Waste Managements Services	1,299	544,236	12,616	X	X	X
61	Educational Services	188	39,674	876	X	X	X
62	Health Care and Social Assistance	3,032	3,432,698	51,770	84	X	2,112
71	Arts, Entertainment, and Recreation	922	486,116	9,252	29	X	173
72	Accommodation and Food Services	3,260	1,537,986	40,918	122	32,664	1,027
81	Other Services	2,231	737,387	10,295	82	X	308

Source: U.S. Census Bureau, 2002 Economic Census

Notes: X denotes data that are not available, not collected at the county level, or not disclosed due to a small number of businesses and potential confidentiality issues.

From the partial information that is available, it follows that the largest sector in terms of employment in the six-county study area is health care and social assistance, with over 2,000 employees. In terms of the number of establishments, the largest sector was retail trade, with 235 establishments. Retail trade was the second-largest sector in the study area in terms of employment, with 1,643 employees. Accommodation and food and services industry was the second-largest sector in terms of the number of establishments (with 122 businesses) and third-largest in terms of employment (with 1,207 employees).

The largest growth industries (in terms of employment) in both Montana and the six-county study area were health care and social assistance, arts, entertainment and recreation, as well as "other" services and professional services industries. In Montana, a strong growth was also experienced in the information, construction, and administrative support services (see Table 2 - 11).

Table 2-11: Change in Industrial Structure in Montana and the Six-County Study Area, 1997-2002

NAICS Code	Industry Description	Montana		Six-County Study Area	
		Establishments	Employment	Establishments	Employment
21	Mining and Oil & Gas Extraction	-9.5%	-13.3%	X	X
22	Utilities	2.8%	-7.3%	X	X
23	Construction	16.6%	24.4%	X	X
31-33	Manufacturing	6.4%	-5.2%	X	X
42	Wholesale trade	-5.7%	-4.4%	-15.8%	-13.3%
44-45	Retail trade	2.0%	9.4%	-0.8%	4.4%
48-49	Transportation & warehousing	18.7%	3.8%	X	X
51	Information	11.4%	32.2%	X	X
52	Finance & insurance	16.1%	8.1%	X	X
53	Real estate & rental & leasing	19.4%	11.7%	X	X
54	Professional, scientific, & technical services	38.6%	45.5%	17.5%	21.5%
56	Administrative & support & waste management & remediation services	34.2%	29.0%	X	X
61	Educational services	77.4%	47.2%	X	X
62	Health care & social assistance	49.1%	230.3%	47.4%	407.7%
71	Arts, entertainment, & recreation	44.3%	64.1%	107.1%	133.8%
72	Accommodation & food services	-0.6%	6.1%	-14.7%	17.8%
81	Other services (except public administration)	38.4%	47.4%	34.4%	115.4%

Source: Based on U.S. Census Bureau, 2002 Economic Census and 1997 Economic Census
Notes: X denotes data that are not available, not collected at the county level, or not disclosed due to a small number of businesses and potential confidentiality issues

2.4 Key Industries and Sectors in the Study Area

There are several key industries in the study area. Arguably, the largest and most important basic industry in the state and specifically in the study area is the agriculture sector. Other important areas include energy, tourism, and the retail trade sector.

2.4.1 Agriculture

The study area represents some of the largest centers of agricultural production in Montana. Table 2 - 12 presents some of Montana's most heavily produced agricultural crops. As can be seen, the six-county study area combined accounted for about 30 percent of harvested crops of wheat, oats, and sugar beets. (At the same time, population in the 6-county study area accounted for only about 4 percent of state population).

Compared to 2000, production of wheat in the six-county study area increased, but at a smaller rate than in the state (13.6 percent in the six-county study area versus almost 28 percent in all of Montana), and production of barley increased at a much faster rate than in the state (69.2 percent in the 6-county study area versus 28.9 in Montana). On the other hand, production of oats and sugar beets has declined.

Table 2-12: Agricultural Production in Montana and Six-County Study Area, 2004

Agricultural Crop	Montana	Six-County Study Area	Six-County Study Area as Percentage of Montana	Change in Production, 2000 – 2004, Percent	
				Montana	Six-County Study Area
Wheat, all Types, Millions of Bushels	173.1	52.5	30.3%	27.9%	13.6%
Barley, Thousands of Bushels	48,970.0	3,513.0	7.2%	28.9%	69.2%
Oats, Thousands of Bushels	2,400.0	693.0	28.9%	-7.7%	-13.8%
Sugar Beets, Thousands of Tons *	1,131.0	383.2	33.9%	-14.3%	-20.5%

Source: United States Department of Agriculture, National Agricultural Statistics Service
** See Table A-1 in Appendix A for Acres of Crops Planted*

There are also some specialty crops produced in the study area. Table 2 - 13 shows that between 2000 and 2004, there was a substantial increase in almost all of the crops whose production is more than 2/3 concentrated within the study area.

Table 2-13: Agricultural Production in Montana and the Six-County Study Area, Specialty Crops, 2004

Agricultural Crop	Montana	Six-County Study Area	Six-County Study Area as Percentage of Montana	Change in Production, 2000 – 2004, Percent	
				Montana	Six-County Study Area
Flaxseed, Thousands of Bushels *	342.0	321.0	93.9%	74.49%	168.62%
Wheat Durum, Thousands of Bushels	17,985	16,746	93.1%	36.66%	43.63%
Lentils, Thousand Hundredweight *	1,008.0	827.0	82.0%	380.00%	513.05%
Peas (All Dry Edible), Thousand Hundredweight *	1,266.0	930.0	73.5%	508.65%	3269.57%
Safflower, Thousands of Pounds *	21,080	11,231	53.3%	-29.80%	-45.81%
Canola, Thousands of Pounds *	23,850	12,490	52.4%	-57.17%	-43.37%
Wheat Spring, Thousands of Bushels	88,350	35,085	39.7%	14.00%	7.94%
Corn for Grain, Thousands of Bushels	2,145	212	9.9%	-4.24%	-24.29%
Beans (All Dry Edible), Thousand Hundredweight	285.0	11.4	4.0%	-44.34%	-89.97%

Source: United States Department of Agriculture, National Agricultural Statistics Service
** See Table A-1 in Appendix A for Acres of Crops Planted*

One specialty crop to note is the safflower. There has been an increasing trend in the United States toward consuming healthier oil. Research suggests that healthy oil should be high in mono-unsaturates and low in saturated fats. Montola safflowers produce oil that is high in oleic acid and low in saturated fat. Montola Growers Inc. reports exclusive rights to the Montola 2000 and 2001 seed varieties developed at Montana State University's Agricultural Research Center, which are used in producing the oil. Several studies have determined that Montola Safflower Oil is even healthier than olive oil, which is commonly thought of as the healthiest oil available.

Montola Growers Inc. is owned and operated in northeast Montana. Their seed crushing facility is located in Culbertson, within the study area. In addition to producing healthy vegetable oils that are high in quality, Montola Growers Inc. also produces protein meal and birdseed. Recently, Sustainable Systems of Missoula bought Montola Growers, Inc. They have plans to build a bio-diesel production facility in Culbertson (see Section 2.4.2 for a description of the Montola/Sustainable Systems project).

The trend towards consuming healthier oils could increase production of safflower and canola in the future. However, Table 2 - 13 shows a decrease in production of both safflower and canola. Since production is reported in thousands of pounds produced, it is possible that harvested acreage actually increased in the four year period, but that yields were down. For example, safflower is very sensitive to frost and is a poor competitor with weeds, so factors such as these may have caused decreased in the actual yield of safflower.

Following this trend towards consuming healthier food, organic products have become increasingly popular in recent years. As can be seen in Table 2 - 14, the 6-county study area accounts for 14.6% of farms growing organic crops and 16% of the total value of certified organically produced commodities in the state.

Table 2-14: Agricultural Production in Montana and the Six-County Study Area, Organically Produced Commodities, 2002

Agricultural Statistic	Montana	Six-County Study Area	Six-County Study Area as Percentage of Montana
Farms, Number	137	20	14.6%
Value of Certified Organically Produced Commodities, $1000	$3,847	$617	16.0%

Source: USDA, National Agricultural Statistics Service, 2002 Census of Agriculture

Montana's cattle sector comprises the largest percentage of the state's livestock industry. Table 2 - 15 shows that this sector is important in the six-county study area, with 10.6% of the industry concentrated in this region. Despite the fact that cattle numbers have decreased in the state by 7.69%, there has actually been a rather substantial increase in cattle numbers in the six-county study area. The sheep sector has 7.7% of the industry concentrated in the six-county study area. Sheep numbers have fallen in both the state and in the six-county study area, but the six-county study area experienced a gentler drop.

Table 2-15: Agricultural Production in Montana and the Six-County Study Area, Livestock, 2004

Agricultural Livestock	Montana	Six-County Study Area	Six-County Study Area as Percentage of Montana	Change in Counts, 2000 – 2004, Percent	
				Montana	Six-County Study Area
Cattle All, Heads	2,400,000	255,000	10.6%	-7.69%	10.39%
Sheep, heads	300,00	23,000	7.7%	-18.92%	-10.51%

Source: United States Department of Agriculture, National Agricultural Statistics Service

Table 2 - 16 and Table 2 - 17 show dairy numbers for the state and nation. It can be seen that between 2000 and 2004, the number of milk farms and the number of milk cows decreased in both Montana and the United States. The decrease in the number of milk farms in the United States was much more substantial in this period than it was in the state. The total production of milk has increased in both the state and in the nation, but not by a significant amount. It is evident from Table 2 - 16 that Montana does not currently control a very large percentage of the dairy industry.

Table 2-16: Agricultural Production in Montana and the United States, Dairy, 2004

Agricultural Statistic	Montana	United States	Montana as Percentage of US	Change in Production, 2000 – 2004, Percent	
				Montana	US
Milk Farms, Number	600	81,520	0.70%	-7.69%	-22.40%
Milk Cows, Thousand Heads	18	9,012	0.20%	-5.56%	-2.08%
Total Milk Production, Million Pounds	348	170,934	0.20%	2.96%	2.12%

Source: United States Department of Agriculture, National Agricultural Statistics Service

Table 2 - 17 shows the production of various ice cream products in Montana and in the United States. Between 2000 and 2004, there was a large increase in the production of low fat ice cream mix in the state even though the increase in production for the United States was small. However, Montana only produces a very small percentage of these products when compared to the country as a whole. A location quotient of 0.65 suggests that the state is an importer of milk products at this time.

Table 2-17: Agricultural Production in Montana and the United States, Specific Dairy Products, 2004

Dairy Product	Montana	United States	Montana as Percentage of US	Change in Production, 2000 – 2004, Percent	
				Montana	US
Ice Cream Lowfat Mix Produced, thousand gallons	1,018	224,464	0.45%	27.57%	6.71%
Ice Cream Lowfat Hard, thousand gallons	102	114,090	0.09%	-31.08%	28.86%
Ice Cream Lowfat Soft, thousand gallons	1,436	301,384	0.48%	-3.49%	5.81%
Ice Cream Lowfat Total, thousand gallons	1,538	415,474	0.37%	-5.99%	11.27%

Source: United States Department of Agriculture, National Agricultural Statistics Service

Table 2 - 18 illustrates other aspects of trends in the agricultural industry. The table shows that between 1997 and 2002 the land in farms in the 6-county study area increased by 5.5 percent and the number of farms increased by 9 percent. Although the percentage increase in the number of farms was smaller than in the entire state, the increase in farm land was much higher.

Table 2-18: Percentage Change in Number of Farms and Land in Farms in the 6-County Study Area and Montana, 1997 to 2002

Agricultural Statistic	Montana	6-County Study Area
Number of Farms	14.8%	9.0%
Land in Farms (millions of acres)	1.7%	5.5%

Based on Source: United States Department of Agriculture, 1997 Census of Agriculture and 2002 Census of Agriculture

The agriculture industry is highly dependent on transportation. In Montana, high rail rates and the increased trend towards consolidation of loading facilities present an obstacle to growth in the agriculture industry. Section 3.1.1 goes into a deeper analysis of this issue.

2.4.2 Energy

Montana has vast opportunities for energy development. The state is rich in natural resources and has great renewable energy potential. Importantly, Montana has the potential to produce a large supply of clean energy, such as bio-diesel, ethanol, and wind power. Montana also has considerable oil production capabilities.

Oil and Gas Industry

Northeastern Montana is the largest oil exploration area in Montana. A substantial share of oil production is concentrated in the study area.

As Table 2 - 19 shows, oil production has been expanding rapidly in Northeastern Montana and in the six-county study area in particular. Between 2000 and 2005, oil production in Northeastern Montana increased by 75 percent; in the six-county study area, production more than doubled. The growth rate was particularly strong in 2003 and 2004 at 25.6 percent and 57.7 percent, respectively. As a result, the six-county study area accounted for more than half of all oil production in the state.

Oil production is concentrated primarily in Richland, Roosevelt, and Sheridan Counties. In particular, production in Richland County increased almost four hundred percent between 2000 and 2004, with much of that increase occurring between 2003 and 2004. In fact, the increase in production of oil in Montana between 2003 and 2004 was almost entirely due to the increase in oil production in Richland County.

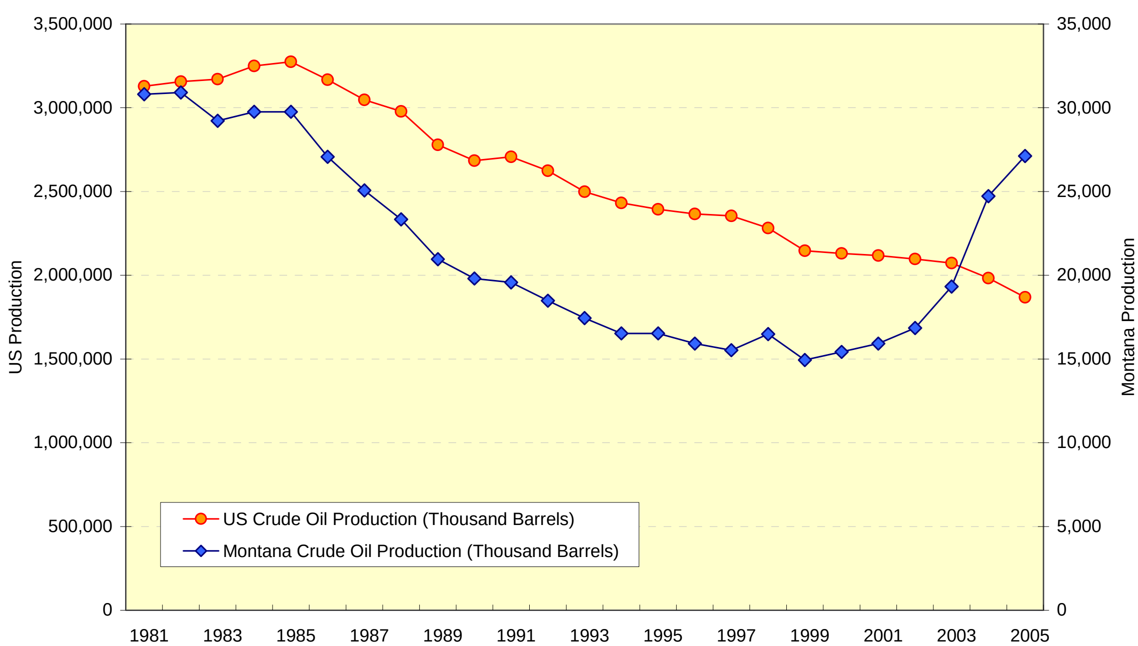
Table 2-19: Production of Oil in Montana, Northeastern Montana, and Six-county Study Area, Millions of Barrels

Geographic Area	2000	2001	2002	2003	2004
Montana	15.7	16.3	17	19.4	24.7
Northeastern Montana	12.6	13.4	14.3	16.8	22.1
6-County Study Area	**5.87**	**6.27**	**6.68**	**8.39**	**13.23**
Richland County	2.6	3	3.4	5.3	10.2
Roosevelt County	1.5	1.4	1.5	1.4	1.4
Sheridan	1.6	1.7	1.6	1.5	1.5
Valley County	0.17	0.17	0.18	0.19	0.13
Production in Six-County Study Area as Percentage of All of Montana	37.4%	38.5%	39.3%	43.2%	53.6%
Rate of Growth of Production in Six-County Study Area, in Percent		6.8%	6.5%	25.6%	57.7%

Source: Montana Oil and Gas. Annual Review, various issues, Montana Board of Oil and Gas

Figure 2 - 7 shows the substantial growth in crude oil production in Montana over the past couple of years. In fact, production is at its highest levels since the 1980s. Additionally, it is evident that Montana has recently gained a larger percentage of total US crude oil production.

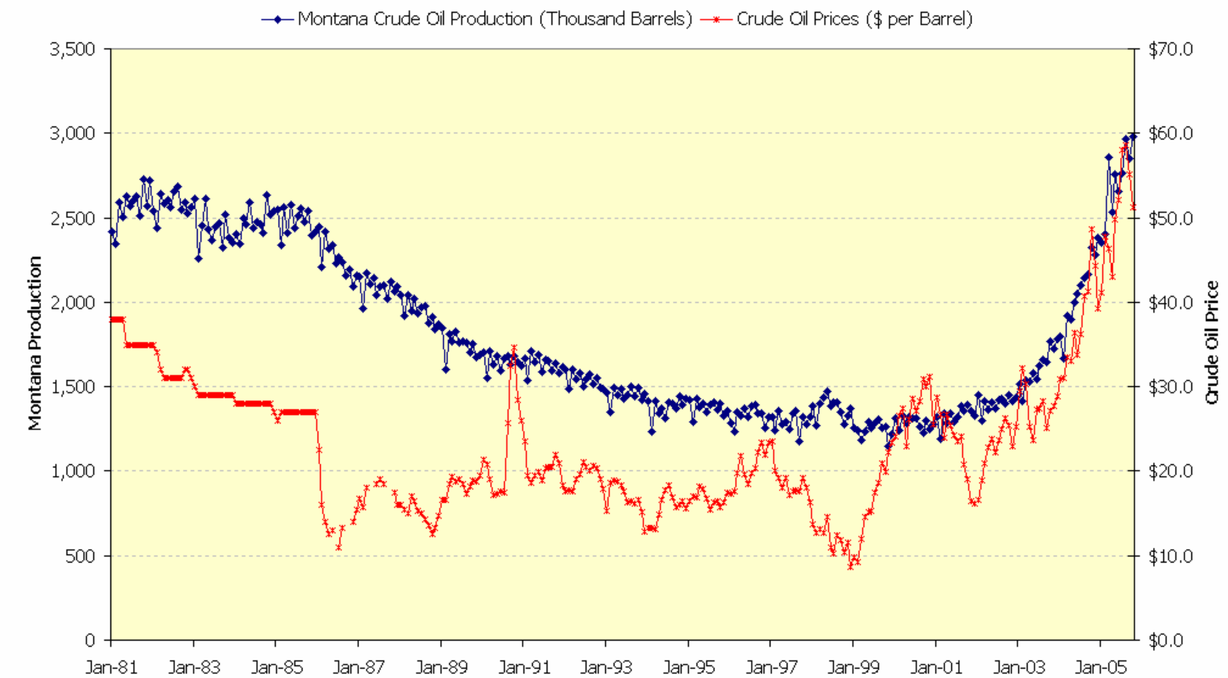
Figure 2-7: Crude Oil Production in the U.S. and Montana



Source: Energy Information Administration

Figure 2 - 8 on the next page shows that production of crude oil is cyclical and highly dependent on the price of crude oil. It is only profitable to drill when the price of crude oil is high enough, and this appears to be the trend in Montana. In the past 25 years, production of crude oil has followed prices very closely.

Figure 2-8: Montana Crude Oil Production with World Prices



Source: Energy Information Administration

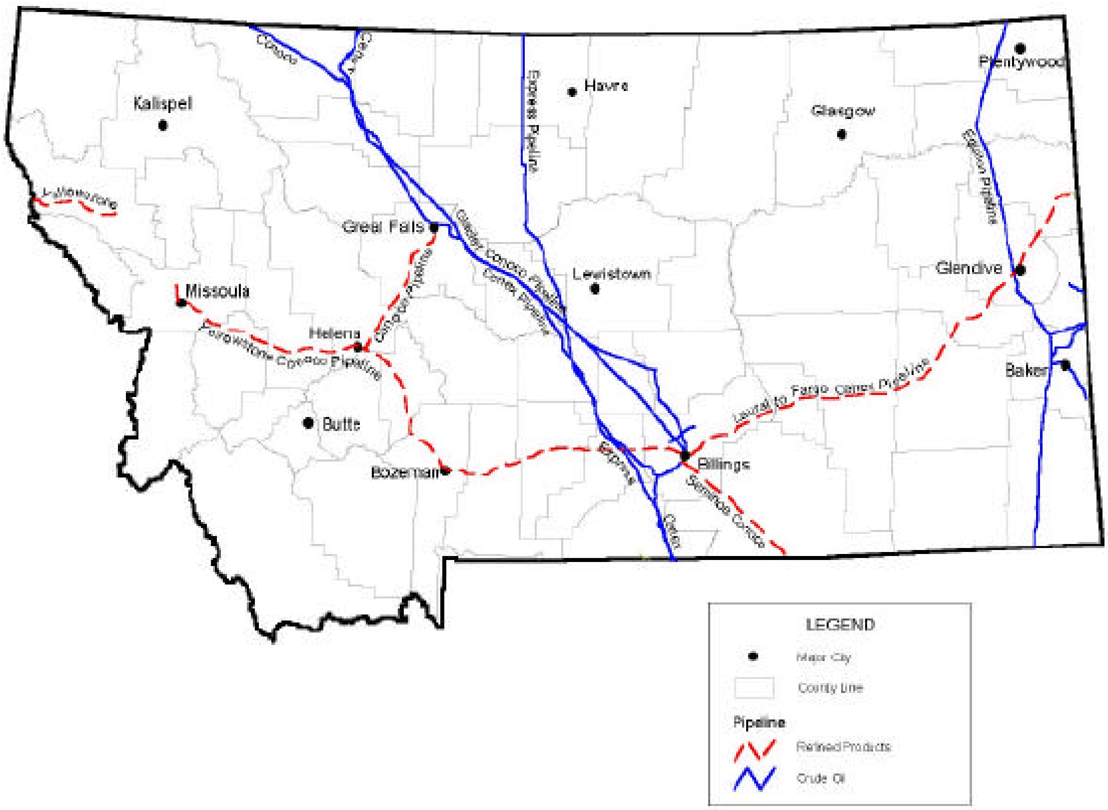
There are four refineries in Montana: Conoco Phillips and Exxon Mobil in Billings, Cenex in Laurel, and Montana Refining in Great Falls. Almost all of the petroleum consumed in the state is produced in Montana refineries. About half of the remaining liquid fuel produced is exported.

A map outlining the petroleum pipelines in the state is shown in Figure 2 - 9. Recently, more than ¾ of the oil produced in Montana has been exported, mainly to Wyoming. However, the export of oil to Wyoming is moved via the eastern pipeline, which is not connected to any of the four Montana refineries, thus limiting the amount of Montana crude oil that can be refined in the state.

Data from the Bureau of Transportation Statistics show that the Port of Raymond, in the study area is the nation's eighth largest port in terms of the value of cross-border pipeline trade (i.e., oil imports). Two other Montana ports also rank: Sweetgrass at fourth, and Piegan at sixth.[4]

[4] US Department of Transportation, Bureau of Transportation Statistics, Transborder Surface Freight Data, Washington, DC, 1998.
http://www.bts.gov/publications/north_american_transportation_in_figures/html/table_6_3c.html

Figure 2-9: Map of Petroleum Pipelines in Montana



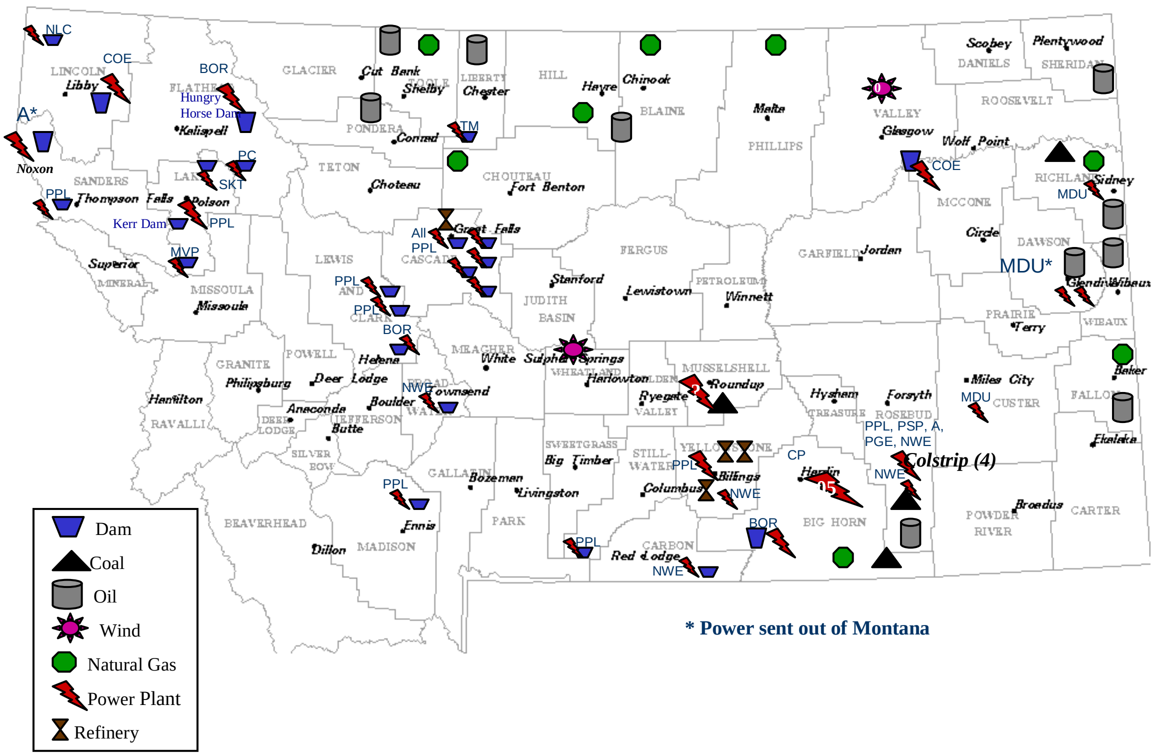
Source: Petroleum and Petroleum Products in Montana

Other Energy

In addition to crude oil, Montana has vast reserves of other valuable energy resources. Montana has the largest **coal** reserves in the United States and the fifth largest wind resource. It is also the 6th largest producer of coal, the 8th and 10th largest in terms of oil and natural gas wells drilled (as of 2003), respectively, and the 13th largest in terms of installed wind energy capacity.

As Figure 2 - 10 shows, energy production is prominent in and surrounding the study area. 94% of the state oil production, 36% of the state natural gas production, and 67% of the state oil and gas production tax is accounted for in eastern Montana. More specifically, 54% of the state's oil production, 10% of the state's natural gas production, and 25% of the state's oil and gas production tax (totaling $16.5 million) is concentrated in Richland County.

Figure 2-10: Existing Energy Production in Montana



Source: 2005 Census and Economic Information Center, Montana Department of Commerce
COE-US Army Corps of Engineers; CP-Cooperative Power; MDU-Montana Dakota Utilities, Resources Group, Inc.; MVP-Mission Valley Power; NWE-Northwestern Energy; PGE-Portland General Electric; PPL-PPL Corporation; PSP-PSP Global

One promising energy source is **bio-diesel**, a renewable fuel used for diesel engines. It is derived from natural oils (i.e.: soybean oil and canola oil). There are numerous advantages resulting from the use of bio-diesel, such as environmental, economic, and quality benefits. Bio-diesel provides a cleaner alternative to gasoline and reduces dependency on foreign oil. In addition, bio-diesel may actually improve engine performance because of its lubricating properties. Bio-diesel would boost crop sales and prices for natural oils, thus further promoting Montana's agriculture industry. This renewable fuel meets clean diesel standards, and both the US Department of Energy and the US Department of Transportation have named it an alternative fuel. Also, the Congressional Budget Office and the US Department of Agriculture have said that bio-diesel is the most cost-friendly alternative to conventional diesel fuel within the limits of the Federal government's Energy Policy Act (EPAct) compliance requirements. Bio-diesel has relatively few harmful emissions compared to petroleum diesel. Tax incentives have been given to bio-diesel blenders to promote the use of bio-diesel energy.[5] In Montana, bio-diesel pumps have been open to the public since 2004 in Missoula County.

In addition to bio-diesel, **ethanol** is another potential natural resource for development in Montana. In the United States, ethanol is derived mainly from corn grain. Because 10% of corn gain production is concentrated in the 6-county study area, ethanol may prove to be a valuable energy source in Montana, and more specifically in the study area. An added benefit to using

[5] See *BIODIESEL, The Official Site of the National Biodiesel Board.*

ethanol as an energy source is that feed grain is a byproduct of producing the alcohol. The additional feed may increase opportunities in the livestock sector (specifically, cattle numbers may increase).

Another important natural resource is **wind energy**. Montana has the fifth largest pool of wind resources in the United States. There are several existing wind energy projects, as outlined in Table 2 - 20. Wind energy provides a reasonably priced means of obtaining inexhaustible, pollution free energy. In the last 20 years, the price of building wind energy projects has dropped more than 80%. Prices are now competitive with new coal or gas-fired power plants, costing less than 5 cents per kWh. Montana has various renewable energy incentives, such as tax credits, for renewable energy developments (i.e.: the tax credits required by the Energy Policy Act of 1992). Another important benefit of creating new wind energy plants is job potential. About 4.8 job-years of employment are provided per megawatt installed wind capacity.[6] Other economic benefits include tax revenues from annual property tax payments and increases in taxes on sales and use. Finally, there may be an increase in tourism as a result of people coming to visit the wind energy plants. In Washington, guided tours of the Wind Power project have been popular.

Table 2-20: Existing Wind Energy Projects

Existing Project or Area	Owner	Date Online	MW	Power Purchaser/User	Turbine
Blackfeet Reservation	Blackfeet Nation	1996	0.1	Glacier Electric Cooperative	Vestas V-17 (1)
Martinsdale Wind Farm	Martinsdale Hutterite Colony	2005	0.715	Martinsdale Hutterite Colony	Refurbished Nordtank 65 kW (11)
Judith Gap	Northwestern / Invenergy Wind	2005	135	Northwestern	GE Wind 1500kW (90)

Source: American Wind Energy Association

Because of the recent renewed interest in developing Montana's natural resources, **four energy related projects** have been proposed within the study area: the Valley County Wind Energy Project, the Nelson Creek Project (a coal project near Circle), the Montola/Sustainable System Project (a bio-diesel refinery in Roosevelt County), and the Yellowstone Ethanol LLC Power Plant (see Table 2 - 21).

[6] See *American Wind Energy Association*, www.awea.org.

Table 2-21: Proposed Energy Projects

Project	Estimated Energy Output	Estimated Employment	Estimated Costs
Rocky Boy Ethanol Dry mill ethanol production facility, Rocky Boy's Reservation, NE MT	• 40 or 60 million gallons/year (MMGY) ethanol, distiller's grains and solubles • Potentially wheat gluten	Operation: • 43 FT (40 MMGY) • 46 FT (60 MMGY) • Ave. Wage: ~$40,000/yr	• $84.6 million (40 MMGY) • $107.75 million (60 MMGY) • Direct labor & benefits: $1.8 million
Fisher Tropsch Coal liquefaction facility Otter Creek Coal Tracks, SE MT	• 80,000 barrels/day synthetic fuels	Operation: • 2,000 PFT • Ave. Wage: $19-25/hr Construction: • 4,000	• $6 billion for construction over 5 years
Montola/Sustainable Systems Biodiesel refinery, NE MT, near Culbertson	• 15 million gallon/yr	Operation: • 31 FT • Ave. Wage: $14/hr	• $10-12 million • Total salary wages ~$1.5 million
Nelson Creek Project 500 MW circulating fluidized bed (CFB) clean coal technology and coal-fired mine mouth plant Just west of Circle, MT	• 500 MW electric power	Operation: • 150 PFT • Ave. Wage: $60,000/yr Construction: • Peak: 1,200	• $900 million construction costs
Wind Hunter Project aka Valley County Wind Energy Project (VCWEP), north of Glasgow, MT	• Total 334 wind turbines generating 500 MW power • Built in 4 phases, and available by 2008-2016	Operation: • 89 FTE Construction: • 618 FTE Ave. wage: • $28,800/employee/yr	Construction: • $546.45 million inc. $20.21 million wages • $2.26 million in employee taxes O&M: • $4.98 million/yr in wages • $685,786/yr taxes

Source: The Montana Symposium: Energy Future of the West, Montana's Energy Symposium, October 2005; retrieved from: http://www.energyfuture.mt.gov

The Valley County Wind Energy Project (a.k.a. Wind Hunter Project) will generate up to 500 MW of wind energy using 334 wind turbines with a 30-mile 230 kV transmission line. The construction will take place in three phases, beginning in 2008 and ending in 2016. There has recently been an increasing market for "green power," and it is forecasted that there will be increased demand for electrical energy in the future. Wind generation is the fastest growing energy technology. There are a variety of economic incentives encouraging the construction of the Valley County Wind Energy Project. First, there will be a temporary increase in employment from 2006 through 2017 during the construction phases (approximately 618 full time employees will be needed). Some permanent jobs will also be created involving the operation and maintenance of the Valley County Wind Energy Project (an estimated 89 full time employees will be needed). Additionally, companies in need of energy will be able to relocate to Valley County. Thus, there is potential for a boost in the local economy resulting from additional jobs in the area.

The Nelson Creek Project is a proposed lignite-fired power plant to be built in Circle, Montana. This clean-coal mine-mouth power plant will provide 500 MW of electrical power. The construction will bring many temporary employment opportunities to the area. As many as 1,200 people will be needed during the construction period. 150 permanent full time employees will be needed to operate the project. The average wage for this project is $60,000 per year. This project will also aid in the development of the Valley County Wind Energy Project.

The Montola/Sustainable Systems Project involves building a bio-diesel refinery near Culbertson in Roosevelt County, Montana. The facility is estimated to produce 15-20 million gallons of seed-oil per year. It will provide permanent work to 31 full time employees with an average wage of $14 per hour.

Finally, the Yellowstone Ethanol LLC Power Plant is a 50-million-gallon-per-year ethanol plant (with the potential to produce up to 100 million gallons per year in future) to be built in North Dakota between Williston and Fairview. It is projected that the plant will cost $120 million and will generate 400 construction jobs ($6 million in construction wages) during the building phase and 40 permanent jobs (annual payroll in excess of $1.5 million) to maintain the plant. 18-20 million bushels of corn and up to 2 million bushels of barley or wheat will be needed per year to sustain the plant and the pulp byproduct from the plant will be enough to feed 250,000 feeder cattle.

2.4.3 Tourism

The analysis of employment by industry suggests that the tourism-related industries – accommodation and food services and arts, entertainment, and recreation – contribute over 1,000 jobs to the local economy. This sector's share of the study area's employment is about the same as the national scale, suggesting that the area gets its share of tourism dollars. The proportion of employment in tourism is smaller than the sector's share of the total employment of Montana. The state's relatively large tourism sector can most readily be attributed to two major destinations, Glacier and Yellowstone National Parks, and to mountain and wilderness activities in the state's mountainous, western region.

Table 2 – 22 lists Montana's top travel destinations. One of these, Fort Peck Lake, is located in the 6-county study area. Montana's Congressional Delegation has allocated more than $7 million to improve access roads to Fort Peck Lake fishing sites. These improvements may encourage greater visitation to Fort Peck Lake.

Some information about visitor spending shows that the area's tourism sector is remarkably strong in the "shoulder" seasons and in winter. Table 2-25 (in a later section of this report) reports findings from a study that indicates that the Richland County alone captures about six percent of the state's fall and spring season travel spending, and three percent of winter spending. The county captures less than one percent share of summer tourism spending. Hunting and related activities appear to be the area's greatest tourism advantage today, at least outside the Fort Peck Lake area.

Table 2-22: Top Travel Destinations in Montana

Destination	2003 Visitation Counts
Glacier National Park	1,664,046
Yellowstone National Park	1,539,881*
Little Bighorn Battlefield	422,566
Fort Peck Lake	**209,634**

National Bison Range	105,700

Source: Based on Table 14 from The Economic Review of the Travel Industry in Montana, 2004 Edition, Institute for Recreation and Tourism Research, University of Montana, July 2004.
** Figures reflect Yellowstone National Park visitors who enter the park from Montana only*

Other frequently visited attractions in the study area include:[7]

- Culbertson Museum and State Information Center;
- Wolf Point area and museum;
- Fort Union Trading Post; and
- Valley County Pioneer Museum and other museums in the area.

Specifically, the Lewis and Clark Trail and the Dinosaur Trail are popular among tourists traveling to the study area. Montana's Dinosaur Trail is a state-wide network of museums and dig sites that tourists can visit. Five of the thirteen sites are in the Missouri River Country area. In addition to the many dinosaur museums, some of the state's best fishing and camp sites are located along the 1,000 mile long Dinosaur Trail. The Montana's Northeastern Plains Birding Trail is another developed trail in the study area. The Big Sky Back Country Byway, which links the Yellowstone and the Missouri Rivers, also passes through the study area. The route is easy to travel and is well marked. There are various activities (i.e.: sightseeing, wildlife viewing, hiking, fishing, and hunting) along the route.

The McCone County Museum; Fort Peck Paleontology, Inc. and Dinosaur Field; Fort Peck Interpretation Center and Museum; the Pioneer Pride Museum (in Bainville); Sheridan County Museum; and Brush Lake State Park (in Plentywood) are among other tourist attractions in the study area. The Montana Cowboy Hall of Fame, which is currently under development, is designated to be built along US 2 in Wolf Point.

Potential natural tourist attractions, such as Medicine Lake and the Medicine Lake Wildlife Refuge, or the Missouri River in areas other than Fort Peck Lake, appear to be less frequently visited, although the specific data on the number of visitors was not readily available for this study.

The study area is part of the larger Missouri River Country, which includes Daniels, Garfield, McCone, Phillips, Richland, Roosevelt, Sheridan, and Valley Counties. About one-quarter of visitors to Montana travel through Missouri River Country. The majority of visitors to this region come for vacation purposes (as opposed to family/friend visits). Visitors to the region are most frequently coming from Washington, Minnesota, California, North Dakota, and Wisconsin, respectively. The top sited attractions for visitors to Missouri River Country are the mountains (48%), Glacier National Park (39%), open space (37%), and uncrowded areas (32%). The largest percentage of expenditures (35%) among visitors to the area was spent in retail, followed by gas and oil (23%). A total of about $52 million was spent by non-resident travelers in Missouri River Country as opposed to the over $1.58 billion that was spent state-wide.

Residents of Missouri River Country feel that the primary area for tourist development is Fort Peck Lake and its surrounding area. They also feel a need for improvements to current transportation conditions in the area, especially with regards to bus transportation.[8]

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[7] Information based on Chapter 2 from report *Attraction Visitors in Missouri River Country Travel Region*, Research report 2003-9, Institute for Recreation and Tourism Research, University of Montana, May 2003.

[8] See *Exploring Tourism Potential: Resident Attitudes in Missouri River Country, Montana*, University of Montana, Institute for Tourism and Recreation Research, Research Report 74, March 2000.

A more specific investigation into visitor characteristics to Richland County shows that less than one percent of visitors to the county spent at least one night. The majority of visitors to Richland County were visiting friends or relatives. The primary attraction to visitors of this county was hunting and the primary activity of interest was shopping. The majority of visitors were coming from Idaho, Wyoming, Washington, and North Dakota, respectively. Nearly all visitors to Richland County were repeat visitors and over half had lived in Montana in the past.[9]

Although a comprehensive study of the profile and role of tourism in the study area was not identified, related studies suggest that many visitors to the study area are just passing through and are on their way Glacier National Park.[10] This may explain a relatively limited role of tourism in the study area.

2.4.4 Retail Trade

Table 2 - 23 shows the number of establishments, sales, annual payroll, and employee numbers for the retail trade sector in the nation, state, and six-county study area. Table 2 - 24 further breaks down these statistics by county. As discussed in Section 2.3, the retail trade sector is the largest industry in Montana in terms of the number of establishments, and the second largest in terms of employment.

This table suggests that the six-county area gets somewhat less than its share of retail spending (at 3.15 percent), compared to the region's overall share of the states population (3.63 percent in 2005). It also suggests that retail establishments in the region are smaller than is typical in the state or nation: retailers in the area average 7.0 employees, compared to 10.3 in Montana and 13.1 in the nation as a whole.

Table 2-23: Retail Trade in the Six-County Study Area, the State, and the Nation, 2002

	Six-County Study Area	Montana	United States	Six-County Study Area as Percent of Montana	Montana as Percent of US
Establishments	235	5,145	1,114,637	4.57%	0.46%
Sales ($1000)	319,218	10,122,625	3,056,421,997	3.15%	0.33%
Annual Payroll ($1000)	26,843	988,009	302,113,581	2.72%	0.33%
Paid Employees	1,643	52,891	14,647,675	3.11%	0.36%
Population (2005)	33,928	935,670	296,657,000	3.63%	0.32%

Source: U.S. Census Bureau, 2002 Economic Census, and 2005 Population Estimates

[9] See *Niche News: Richland County Visitor Characteristics*, University of Montana, Institute for Tourism and Recreation Research, June 2004.
[10] See *Valley County Explores Tourism Potential*, the 1999 Montana Community Tourism Assessment Process, University of Montana, Institute for Recreation and Tourism Research, Research Report 71, January 2000.

Table 2-24: Retail Trade in the Six-County Study Area, 2002

	Daniels	McCone	Richland	Roosevelt	Sheridan	Valley	Total Six-County Study Area
Establishments	16	11	66	54	34	54	235
Sales ($1000)	20,009	11,488	104,540	83,386	26,233	73,562	319,218
Annual Payroll ($1000)	1,346	888	9,048	6,667	2,450	6,444	26,843
Paid Employees	89	58	528	419	183	366	1,643
Population (2005)	1,836	1,805	9,096	10,524	3,524	7,143	33,928
Per capita retail spending (est.)	$10,900	$6,365	$11,500	$7,925	$7,445	$10,300	$9,410

Source: U.S. Census Bureau, 2002 Economic Census, and 2005 Population Estimates

Table 2 – 24 shows that retail sales are a very important source of income to Richland County, with per capita spending estimated at $11,500 per capita. Retail spending is also relatively strong in Daniels and Valley counties.

Table 2 – 25 summarizes findings of a tourism study specific to Richland County. The study breaks down visitor spending into specific goods and services. Forty-eight percent of the $30 million spent by visitors to the region was spent in the retail trade sector.[11] This table also highlights an important seasonal aspect of the tourism industry. Tourism in Richland County alone represents 6 percent of the state's tourism market in the spring and fall, and three percent of the winter tourism spending, probably on hunting and related activities. By contrast, the county has less than one percent of the market in the summer season.

Table 2-25: Visitor Expenditure Distribution in Richland County

	Total Spending ($million)	% of State Total	Hotels, Lodging, Camping	Auto Rental, Repairs, Transp. Fees	Gasoline, Oil	Restaurant, Bar	Groceries, Snacks	Retail Sales	Misc. Services
Summer	$5.0	<1%	2%	3%	24%	16%	15%	30%	10%
Winter	$8.0	3%	0%	0%	29%	23%	10%	38%	0%
Shoulder	$18.0	6%	3%	0%	5%	12%	14%	58%	0%
Annual Total	**$30.0**	**2%**	**2%**	**0%**	**14%**	**16%**	**13%**	**48%**	**6%**

Source: Regional Nonresident Spending in Montana, Institute for Recreation and Tourism Research, University of Montana, March 2000, Table 8.2, page 40.

[11] Richland County was chosen as an example to illustrate the type and seasonality of tourist spending in the study area. This data was readily available from the University of Montana.

2.5 Labor Market

2.5.1 Employment, Unemployment, and Participation Rates

As shown in Table 2 - 26 below, total employment in the six-county study area is slightly less than 16,000 and accounts for about 3.4 percent of state employment, down from 4.1 percent over the ten years shown here, consistent with the declining population in the six-county study area. As the table shows, employment in the 6-county study area declined between 1996 and 2005. After a period of growth up to 1998, the area saw four years of losses totaling 2,254 jobs. Since 2002, however, the total employment figures show a substantial turnaround, with overall employment growth of 460 jobs.

Table 2-26: Employment in the Six-County Study Area

Year	Total Employment	Percent of State Employment	Year-to-year Percent change
1996	17,292	4.1%	
1997	17,302	4.0%	0.06%
1998	17,757	4.1%	2.63%
1999	17,740	4.0%	-0.10%
2000	16,260	3.6%	-8.34%
2001	15,830	3.5%	-2.64%
2002	15,503	3.5%	-2.07%
2003	15,529	3.4%	0.17%
2004	15,742	3.4%	1.37%
2005	15,963	3.4%	1.40%

Source: Bureau of Labor Statistics

Table 2 – 27 shows unemployment rates in the last 10 years in the six-county study area, all of Montana, and nationwide. The table shows that unemployment rates in the six-county study area tended be lower than those for the entire state or the entire country, except for in Roosevelt County, where the unemployment rate was higher for the years shown in the table and in Richland County, where the unemployment rates were higher between 1996 and 2000.

Table 2-27: Unemployment Rate in the Six-County Study Area (by County), State, and Nationwide

Year	Daniels County	McCone County	Valley County	Sheridan County	Roosevelt County	Richland County	Montana	United States
1996	2.4%	3.6%	4.5%	2.5%	10.6%	5.9%	5.5%	5.4%
1997	1.8%	3.4%	4.1%	2.8%	8.9%	5.2%	5.3%	4.9%
1998	2.7%	3.8%	4.4%	4.7%	9.1%	6.1%	5.6%	4.5%
1999	3.2%	3.7%	4.7%	5.7%	10.0%	7.1%	4.2%	4.2%
2000	4.3%	3.5%	4.3%	4.4%	7.0%	5.3%	4.8%	4.0%
2001	4.0%	2.8%	4.0%	3.8%	5.8%	4.6%	4.5%	4.7%
2002	4.1%	2.6%	4.0%	3.9%	5.9%	5.0%	4.4%	5.8%
2003	4%	3.2%	3.9%	4.0%	5.8%	4.4%	4.4%	6.0%
2004	3.9%	2.8%	4.2%	3.8%	6.4%	3.6%	4.4%	5.5%
2005	3.8%	3.6%	4.4%	3.4%	7.1%	3.7%	4.4%	5.1%

Source: Bureau of Labor Statistics

However, a low unemployment rate does not necessarily imply a good performance of the local economy. A low unemployment rate may also result if unemployed individuals who cannot find a job stop looking for a job and drop off the labor force, or if individuals who are not working are not actively looking for a job (maybe because they are discouraged by a personal experience or that of a friend or family member) or because of out-migration. As Table 2 - 28 shows, labor force participation in the Six-county study area in year 2000 was lower than on average in Montana and nationwide.[12] This observation applies to both the entire working-age population as well as working-age females and is consistent with the "discouraged worker" hypothesis.

Table 2-28: Employment Status of Population in the Six-County Study Area, Montana, and Nationwide, in Percent of Working-Age Population, 2000

Employment Status Characteristic	6-County Study Area Total	Montana	United States
Participation in Labor Force, Total Population	62.2%	65.4%	63.9%
Employed, Total population	57.2%	60.8%	59.7%
Participation in Labor Force, Females	56.4%	59.9%	57.5%
Employed, Females	52.7%	56.6%	54.0%

Source: U.S. Census Bureau, 2000 Census

It should be noted, however, that participation rates in the six-county study area increased considerably over the period from 1990 to 2000, particularly for females (see Table 2 - 29). This is consistent with the trends in Montana and the United States.

Table 2-29: Employment Status of Population in the 6-County Study Area, Montana, and Nationwide, in Percent of Working-Age Population, 1990

Employment Status Characteristic	Six-County Study Area Total	Montana	United States
Participation in Labor Force, Total Population	61.1%	63.7%	65.3%
Employed, Total Population	56.2%	58.5%	60.3%
Participation in Labor Force, Females	51.3%	55.8%	56.8%
Employed, Females	47.8%	52.2%	53.1%

Source: U.S. Census Bureau, 1990 Census

[12] Comparison with more recent data on participation in employment in the study area would be more appropriate here from analytical point of view. However, such data was not available at the time of writing this report.

2.5.2 Educational Attainment

Table 2 - 30 shows that the typical level of education in the six-county study area was a high school diploma or college without degree, with almost 60 percent of adults aged 25 and over achieving one of these levels of education. In comparison, 56.9 percent of population aged 25 and over in the entire state of Montana and 49.6 percent in all of United States attained this level of education. On the other hand, the percentage of population with a bachelor's, graduate, or professional degree was, on average, smaller than in Montana and the nation. In the six-county study area, only about 16.3 percent of adults 25 years and over achieved this level of education as compared to 24.4 percent in both Montana and the United States.

Table 2-30: Educational Attainment in the Six-County Study Area, Montana, and Nationwide, as Percent of Population 25 and Over

Educational Level	6-County Study Area Total	Montana	United States
Less than 9th grade	7.4%	4.3%	7.5%
9th to 12th grade, no diploma	9.8%	8.6%	12.1%
High school graduate (includes equivalency)	35.3%	31.3%	28.6%
Some college, no degree	24.4%	25.6%	21.0%
Associate degree	6.7%	5.9%	6.3%
Bachelor's degree	13.0%	17.2%	15.5%
Graduate or professional degree	3.3%	7.2%	8.9%

Source: U.S. Census Bureau, 2000 Census

2.6 Existing Economic Development Plans and Emerging Trends

2.6.1 Agriculture

Growth in agriculture is vital for economic growth in Montana. There have been talks of some projects in the Fort Peck area, including an irrigation project and the possibility of growing camelina crops for use in bio-diesel production.

Conversations with representatives within the Fort Peck tribe reveal that the tribes could increase irrigation of their crop land. The tribe was granted water rights to divert up to approximately 1,000,000 acre feet of water per year from the Missouri river. If this amount of water was actually diverted it would create the possibility of irrigating up to 450,000 acres of cropland. The only limitation to the magnitude of this irrigation project is the number of acres of tribal-owned land suitable for crop production. With water values at $200 per acre foot, the tribe could potentially earn $200,000,000 per year <u>if</u> they were able to fully utilize their water rights.

Additionally, as the possibility of bio-diesel production comes closer to reality, the camelina seed is a better producer of oil for development of bio-diesel than Canola Oil. The Fort Peck area has long grown seed for Canola Oil. Yet there are some difficulties in growing camelina, as the area is not equipped to mass produce this seed crop (the ground needs to be prepared differently, the harvesting of the crop done differently, and special equipment is needed to efficiently handle this crop). Thus, there may need to be a commitment to development of bio-diesel before mass production of camelina would be viable.

2.6.2 Energy

Various energy projects have been proposed in the study area. There have been talks of a bio-diesel production facility in conjunction with Sustainable Systems, which would be located in Culbertson (Roosevelt County). Additionally, the building of an ethanol production plant in Oswego (Valley County) and an oil refinery outside of Culbertson have been discussed. There is also the possibility that the old oil refinery located at the intersection of US 2 and MT 13, just west of Wolf Point, will be re-established.

Several energy projects in the study area have already been approved, including a coal-fired power plant near Circle (which should be ready in the next 10 years) and a wind project in Valley County.

In addition, there has been a recent renewed interest in oil exploration in the study area (especially in Richland County). On a national level, Alberta has recently seen substantial economic growth as a result of oil & gas and oil sands projects. Such projects account for the majority of economic growth in this region. There is great potential for growth in the future because of the substantial oil sands deposits in Alberta.

Oil exploration and extraction activities would increase truck traffic in the area because the oil pipeline is already functioning at capacity, shipping oil out of Canada to points south for refining. The only alternative to pipeline is trucking, which is very costly (up to $20 per barrel). There is need for additional capacity in oil transport. The current lack of oil transport infrastructure has forced some oil companies to shut down their wells while waiting for additional transport capacity or for a refinery to open in the region. Development of an oil refinery in the region would be highly beneficial.

2.6.3 Tourism

Fort Peck tribal officials have put a growing importance on the tourism industry and there have been talks of developing a destination resort in the area. In addition, as discussed in section 2.4.3, road improvements in the Fort Peck Lake area may encourage tourism.

Also, there have been recent developments to the portion of the Dinosaur Trail in the study area. The Dinosaur Trail is one of the major tourist attractions in the region.

2.6.4 Transportation

It is projected that there will be an increase in truck traffic in the study area in the near future. First, with the trend towards consolidating grain loading facilities, trucks will need to haul loads to the 110-rail-car loading facilities in Wolf Point and Macon, which can process 170 semi trucks per day. Also, should a bio-diesel production facility open in Roosevelt County, it would need adequate seed to crush, likely requiring imports from Canada. Transporting these imports would potentially increase truck traffic in the study area.

US-Canadian border crossings in Montana and North Dakota ports grew by about 2.5 percent annually in the 1994-2003 period. Since then, the growth in crossings have markedly accelerated. Port of Raymond officials have observed a significant increase (on the order of 200%) in oil and gas trucks in the recent months; current oil related traffic entering through the Port of Raymond is about 35-50 trucks per day.

Currently, there are about 50-100 trucks/day crossing the border in the winter, and 100-250 trucks/day crossing the border in the summer. Also, with the present price of diesel being much cheaper in the US than in Canada (by at least $1/gallon), trucks traveling east to west in Canada often come across the border and travel across US highways and then go back into Canada at their final destinations. Finally, the development of oil fields in Alberta and Saskatchewan may generate truck traffic with the southern United States, including Texas, where numerous oil production companies and facilities are currently operating.

With the shift in trade movement from the rail infrastructure that runs east-west to a more north-south movement, trucking has become a necessary means of transport. Trucks traveling from Saskatchewan to destinations in the Midwest have the option of crossing at the Port of Raymond (Montana's third largest port) or at the Port of Portal (North Dakota's second largest port). There are time incentives for trucks to cross at the Port of Raymond rather than at the Port of Portal due to potential processing delays. However, the distance is slightly greater using Raymond than Portal. If cross-border trucking increases, time delays at the Port of Portal could intensify and make truckers more likely to choose to cross at the Port of Raymond if that is cost-effective based on their destinations.

When MT 16 was rebuilt from Culbertson to Sidney, there was a large increase in truck traffic at the Port of Raymond, possibly due to improvements to this segment. And, a few years ago, the Canadians improved their side of the highway, which resulted in a large increase in truck volume. However, the road is already wearing, which will decrease truck volumes if proper repairs are not made. Canadian Highway 6 to Regina would be a good link in this system, connecting with MT 16 to Glendive and then I-90. This would be the most direct route to the US Interstate system from the Province of Saskatchewan via a 24-hour port.

2.6.5 Others

There are various other economic opportunities being discussed in the area. First, there have been talks of a possible Fed Ex hub in Plentywood to reduce the time it takes to ship across the Canadian border. Also, there is speculation that the widening of US 2 and MT 16 would lead to the possibility of 2 or 3 additional duty free providers on either side of the Port of Raymond. Improved road conditions would likely reduce freight rates, which could provide various economic opportunities.

Some also report that safety is an issue that is currently hindering growth in the area. The variation in speed between cars and trucks is a problem on narrow two-lane roads without passing lanes. Widening US 2 could improve tourism and improve the possibility of businesses locating in the study area.

Finally, the Municipal and Rural Water Pipeline project (MR&I) is a project designed to provide a high quality and safe drinking water supply in the area. Using the existing Culbertson water treatment plant, the communities of Froid and Medicine Lake were connected to the regional system last year. In 2006, the community of Bainville and surrounding rural hookups will be added to the system. On the Fort Peck Reservation, the Tribe has completed construction of a water intake and transmission line to the location of the systems central water treatment facility. The Tribe is in the process of bidding the construction of the treatment plant at this time. At completion, the Fort Peck / Dry Prairie Regional Water System will provide service to communities and rural farmsteads north of the Missouri River, to the Canadian Boarder and from the North Dakota state line west to a boundary that lies just west of Glasgow. Ground water in this region is poor and heavily mineralized. In some areas, nitrates have been measured above levels that are safe for human consumption. In other areas, oil exploration activities have affected ground water quality. Through centralized treatment of Missouri River water, high-quality and safe drinking water will be supplied to the region. With the water comes increased possibility of growth.

3: TRANSPORTATION CHARACTERISTICS, ACCESS, AND PERFORMANCE ISSUES

This section provides an overview of the transportation network, traffic, and performance issues in Montana and the study area to shed light on the role of transportation in the local economy.

3.1 Existing Transportation Network and Its Characteristics

3.1.1 Transportation Network and Key Routes

Road Network

Table 3 - 1 shows the length of the road network in Montana and nationwide. The vast majority of roads in Montana are rural roads. Urban roads account for just 4.1 percent of all lane-miles of roads. This is much less than the national average of 26.4 percent.

The lane-miles of urban roads in Montana increased over the period from 2000 to 2004, and the lane-miles of rural roads decreased slightly. The total lane-miles of both rural and urban roads in Montana remained virtually unchanged during the four year period. Similar trends were observed nationwide. However, total lane-miles of roads have increased by 1.4 percent during the same period.

Table 3-1: Lane Miles of Roads in Montana and Nationwide

Geographic Area	Lane-Miles of Roads, 2000			Lane-Miles of Roads, 2004			Rate of Growth 2000-2004	Percent Urban in Total, 2004
	Rural	Urban	Total	Rural	Urban	Total		
Montana	136,656	5,321	141,977	135,923	5,854	141,777	-0.1%	4.1%
United States	6,308,213	1,915,180	8,223,393	6,139,666	2,199,155	8,338,821	1.4%	26.4%

Source: Highway Statistics, 2000 and 2004 issues

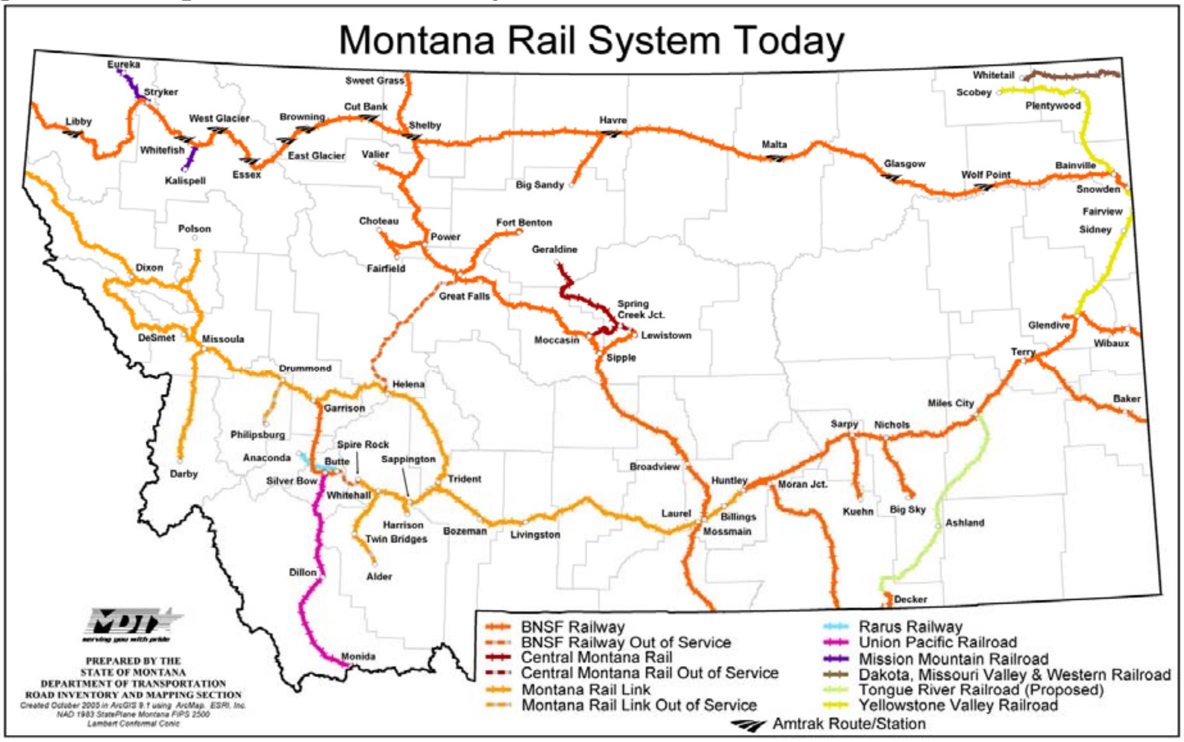
The major transportation route in the study area is the US 2 route which runs west to east parallel to the Missouri River. The route crosses Valley County and Roosevelt County. Another key highway is Montana Highway 16, which runs north-south through Richland, Roosevelt and Sheridan Counties and crosses US 2 at Culbertson. Both US 2 and MT 16 are on the National Highway System.

Other highways in the study area include Montana Highway 13, Montana Highway 24, and Montana Highway 200. The remaining roads in the study area are smaller, typically local and unpaved roads.

Rail Network

The study area is covered by three major railway routes: BNSF Railway, the Yellowstone Valley Railroad (YSVR), and the Dakota Missouri Valley and Western (DMVW) (see Figure 3 - 1).

Figure 3-1: Map of Montana's Rail System



The BNSF line runs parallel to US 2. The YSVR route is comprised of two segments totaling 171 miles. The northern segment, known as the "Scobey Line," interchanges with the BNSF at Bainville and travels north to Plentywood and Scobey. The southern segment, known as the "Sidney Line," travels in the vicinity of MT 16 between two BNSF interchange points, Glendive and Snowden. Finally, the DMVW route runs from west to east connecting Whitetail and Westby in the northern part of the Daniels and Sheridan County near the border with Canada.

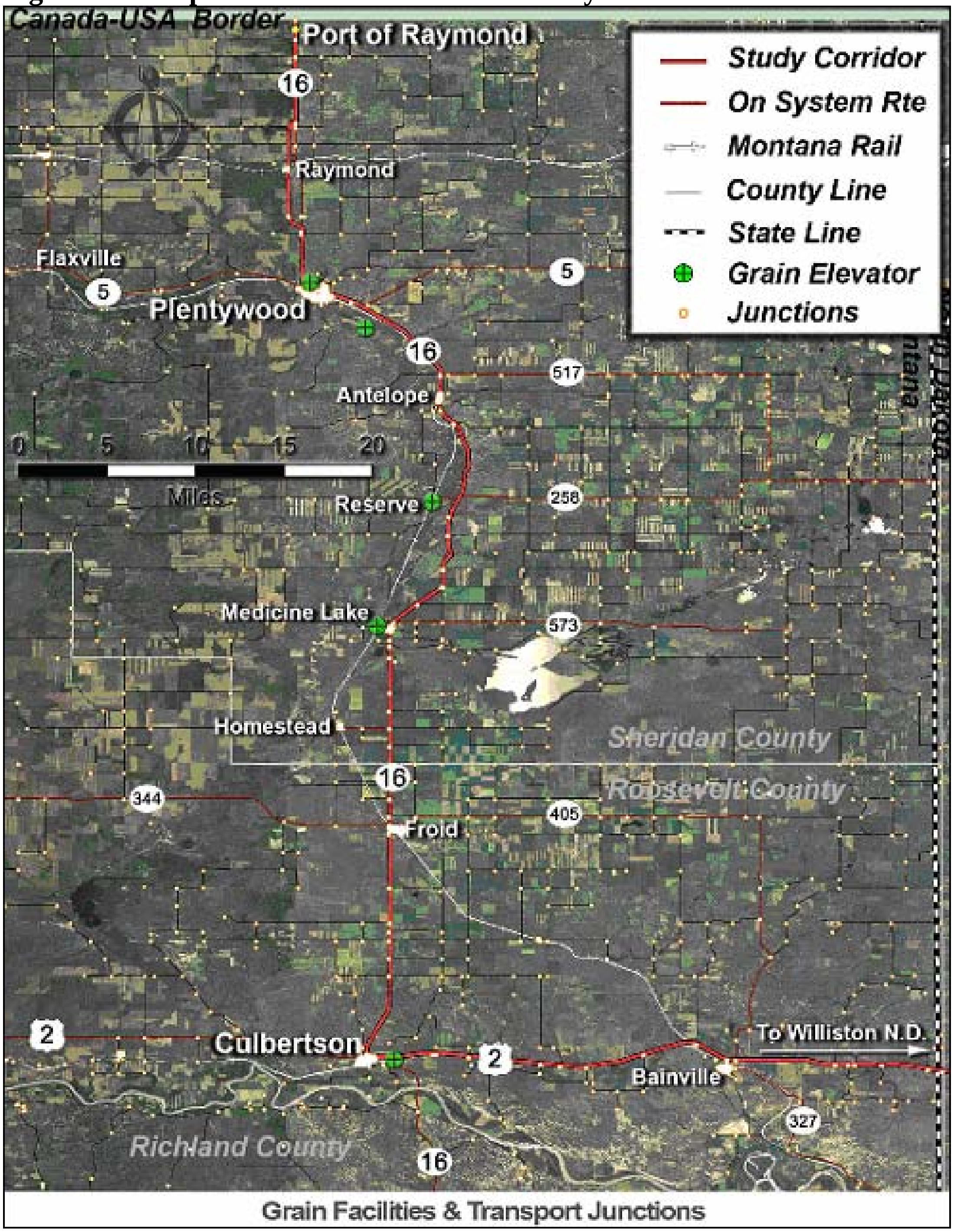
It is evident from Figure 3 - 1 that most of the rail line is laid east to west. This is because, historically, the majority of freight movement was in this direction. However, there has been a growth in north-south freight movement in recent years, particularly because of the North American Free Trade Agreement (NAFTA). The increased north-south traffic will inevitably lead to increased truck traffic since existing rail cannot adequately serve movement of freight in this direction and new cross-border rail lines are unlikely because of cost and security issues.

Another problem with using rail as a means of transport in Montana is the high cost. The main factor contributing to high rail rates in the state is the lack of competition. In Montana, there is very limited rail competition as a result of BNSF controlling over 90 percent of rail use.

In June 2005, BNSF announced an increase in the shipping rate on grain loaded at 52-car elevators. Very often, the elevators located most closely to farms are 52-cars, as opposed to the larger 110-car grain elevators. However, after only a few months, this decision was reversed because of high opposition to the new rules. Still, rates are higher at 52-car loading facilities than at 110-car loading facilities. Potential future rate increases at 52-car grain elevators could force numerous loading terminals to shut down and cause many job losses.

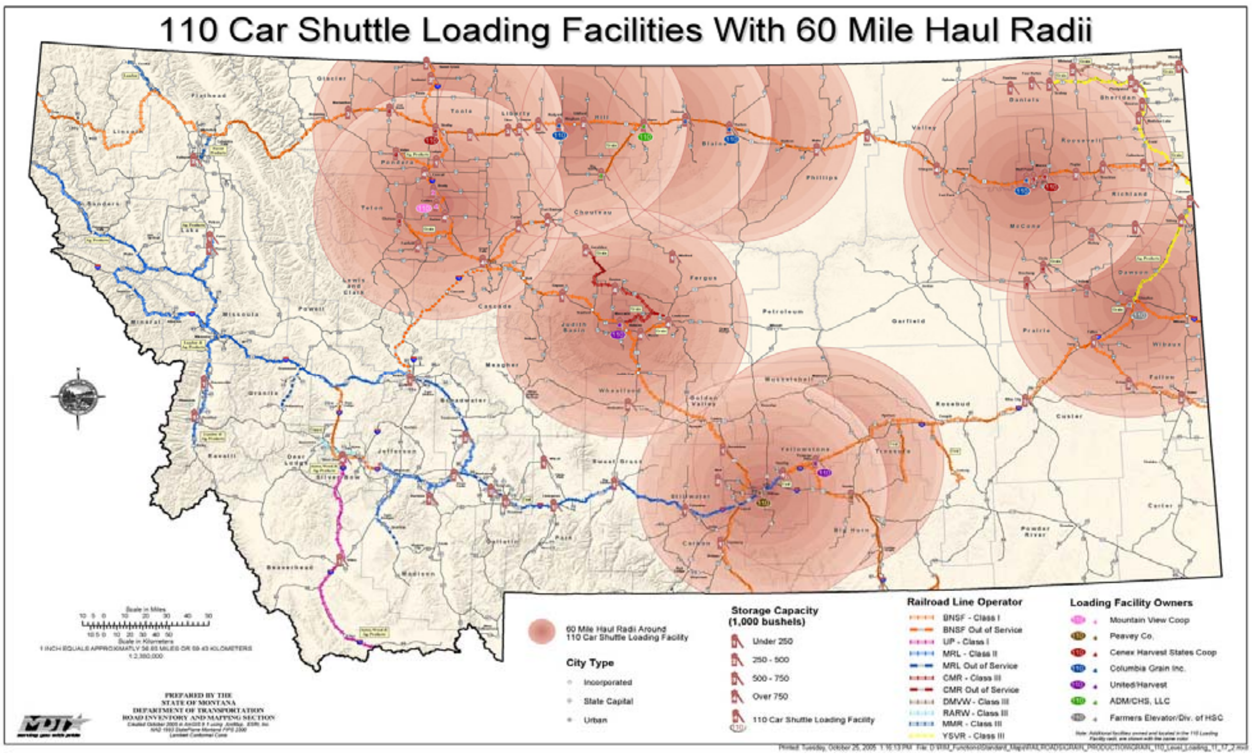
Figure 3 - 2 shows a map of the grain elevators in the study area.

Figure 3-2: Map of Grain Elevators in the Study Area



There has been an increasing trend toward the use of shuttle trains (see Figure 3 - 3). Shuttle trains (a.k.a. unit trains) are high-capacity freight trains consisting of only a single product. Newer shuttle trains typically consist of 110 cars and enable more efficient and cheaper rail transport. In Montana, they are predicted to be very important in ensuring the feasibility of wheat export in the near future. However, as can be seen in Figure 3 - 3, there are currently only 11 shuttle loading facilities in the state and 2 within 60 miles of the study area (though there are plans to build another facility in Culbertson). The need to haul shipments farther to get to the loading facility has resulted in an increase in truck traffic on highways. A case study conducted in North Dakota showed that large shuttle-train elevators may generate up to 40,000 loaded and empty truck trips per year.[13] With much truck traffic concentrated at harvest season, a 110 car shuttle facility could generate 225 truck trips per day.

Figure 3-3: Location of Shuttle Facilities in Montana



With regards to passenger train service, Amtrak's Empire Builder provides daily passenger train service in the Midwest and Northwestern US. The Empire Builder route passes through Northern Montana along the Hi-Line (parallel to US 2).

Other Transportation

There is an extensive network of oil pipelines in the study area. Pipelines originate and cross through Sheridan, Roosevelt, and Richland Counties, the three counties in the study area with the highest oil production (see Table 2 - 19).[14]

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[13] See *Trip Generation Rates for Large Elevators: A North Dakota Case Study*, Tolliver, Dybing, and Mitra, January 2006

[14] Based on a 1987 map of oil and gas fiend and pipelines produced by the Montana Oil and Gas Board.

The study area is less accessible by air. Although there are airports in many local communities, some airports have relatively short runways, unpaved runways, or no officially published instrument approach procedure. The airports with at least a 5000 feet paved runway are in Sidney and Wolf Point. Other airports with a paved runway are in Glasgow, Poplar, Plentywood, and Scobey.[15] In addition, Big Sky provides commercial air service to Wolf Point and Sidney with financial assistance from the Essential Air Service Program.

3.1.2 Highway Traffic and Congestion

Table 3 - 2 shows highway traffic characteristics for Montana and all of the United States. The table indicates that over the period from 2000 to 2004, highway travel, as measured by annual vehicle miles of travel, increased by 12 percent on rural roads and 11.2 percent on urban roads. Even though the share of travel by trucks in Montana is marginally lower than the national average, it is growing at a faster rate in Montana than in the US. In 2004, the share of trucks in traffic on rural roads in Montana amounted to 13.2 percent, and the share of trucks on urban roads amounted to 4.6 percent. In the same year, the national share of trucks in traffic amounted to 15.6 percent on rural roads and 7.7 percent on urban roads. However, Montana's share of trucks in traffic in urban areas is increasing at a much faster rate than the national average.

Table 3-2: Highway Traffic Characteristics in Montana and Nationwide

Measure of Travel	Montana			U.S.		
	2000	2004	2000-2004 Growth Rate	2000	2004	2000-2004 Growth Rate
Annual Vehicle-Miles of Travel (Millions) - Rural	7,590	8,627	12.0%	1,084,961	1,070,248	-1.4%
Percent Trucks	14.2%	13.2%	-7.6%	14.8%	15.6%	4.9%
Annual Vehicle-Miles of Travel (Millions) - Urban	2,292	2,580	11.2%	1,664,842	1,892,265	12.0%
Percent Trucks	2.9%	4.6%	37.0%	7.0%	7.7%	9.7%
Annual Vehicle-Miles of Travel (Millions) - Total	9,882	11,207	11.8%	2,749,803	2,962,513	7.2%
AADT per Lane (State-Agency Owned Road System), Total Urban and Rural*	1,023	1,041	1.7%	2,693	2,833	4.9%

Source: Highway Statistics, 2000 and 2004 issues
** AADT stands for Annual Average Daily Traffic.*

The increase in traffic on urban roads is much in line with the national average. However, the increase in travel on rural roads between 2000 and 2004 in Montana contrasts with the decreasing trend in the US. It should be noted, however, that despite the fact that there has been a rather large increase in traffic in Montana, road congestion in the state still remains at very low levels.

[15] Based on information from website www.aircraft-charter-world.com.

Figure 3-4: Typical Congestion Levels in the Study Area, Winter Times

Looking ahead to Table 3 - 3, it can be seen that the large majority of roadways in Montana have a very low volume-service flow ratio (the volume-service flow ratio is used to calculate level of service). The last row in Table 3 - 2 shows that the Average Annual Daily Traffic (AADT) per lane in Montana amounts to less than 50 percent of the national AADT per lane. The national AADT per lane was also growing at a faster rate than in the state. Over the period from 2000 to 2004, AADT per lane in Montana increased by 1.7 percent, compared to 4.9 percent nationwide.

Table 3 - 3 shows the roadway characteristic and traffic and congestion levels on the portions of US 2 and MT 16 in the study area. The study area does not have a lot of traffic compared to the many other areas in Montana. The portions of US 2 and MT 16 in the study area are two lanes. In general, in the study area, the shoulder width on US 2 is wider than that on MT 16 and there is more traffic on US 2. Congestion levels are low for all segments of US 2 and MT 16 in the study area.

Table 3-3: Highway Traffic Characteristics in the Study Area

Measure of Travel	Total Study Area	US 2		MT 16		
		Valley	Roosevelt	Sheridan	Roosevelt	Richland
Total Segment Length	241.24	79.73	86.04	44.99	17.21	13.26
Average Number of Lanes	2.03	2.09	2.02	2	2	2
Average Shoulder Width*	4-5	5-6	4-5	4-5	3-4	1-2
Average AADT	1,484	1,603	1,692.35	1,040	916	1,657
Average AADT/Lane	722	753	836	520	458	828
Average V/C Ratio **	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Source: Montana Department of Transportation
** Shoulder width reported is the width of one shoulder (the left or right)*
*** The ratio of traffic volume (number of vehicles) on a roadway to the roadway's vehicle capacity; used to calculate level of service; capacity constraint assumption for rural 2-3 lane road: 1,500 vehicles/hour/lane (assuming no significant nighttime traffic)*

Table 3 - 4 shows the distribution of the National Highway System in Montana and all of the United States across various ranges of volume-service flow ratios. The table demonstrates that less than 1 percent of road length in Montana exceeds the volume-service flow ratio of 0.7 (a ratio in excess of 0.7 implies increased road congestion and possible slow-downs in traffic). In contrast, in 2004, 13.3 percent of all roads in the United States had a volume-service flow ratio of 0.7 or larger.

Table 3-4: National Highway System by Volume-Service Flow Ratios, Percent of Total Road Length Falling into each Range of Volume-Service Flow Ratio

Geographic Area	Year	Volume-Service Flow Ratio					
		<0.21	0.21-0.40	0.41-0.70	0.71-0.79	0.80-0.95	>0.95
Montana[1]	2000	80.5%	16.4%	2.7%	0.3%	0.1%	0.0%
	2004	73.9%	23.1%	2.8%	0.1%	0.1%	0.0%
U.S. Total	2000	32.7%	32.2%	23.1%	3.6%	4.3%	4.2%
	2004	30.5%	33.8%	22.5%	3.5%	5.0%	4.7%

Source: Calculated based on Highway Statistics, 2000 and 2004 issues
[1] *Used as a proxy to estimate volume-service flow in the study area.*

3.2 Commercial Shipments in Montana

3.2.1 Origin and Destination of Commercial Shipments

Table 3 - 5 shows the structure of commercial shipments in Montana. The table demonstrates that both in terms of value of shipments as well as tonnage, the vast majority of shipments originating in Montana and the vast majority of shipments with Montana destinations are domestic shipments. In other words, cross-border shipments and international shipments account for a rather small fraction of all shipments to or from Montana.

Table 3-5: High-Level Structure of Montana Commercial Shipments

Category of Shipment	Value of Shipments (Millions of Dollars)	Tonnage of Shipments (Thousands of Short Tons)
Shipments Originating in Montana		
Domestic Shipments	$27,315.7	131,024.3
Cross-border Shipments	$264.6	1,107.4
Overseas Shipments	$207.9	3,549.8
Total Shipments Originating in Montana	**$27,788.2**	**135,681.5**
Shipments with Montana Destinations		
Domestic Shipments	$28,532.3	68,912.9
Cross-border Shipments	$1,862.2	9,726.8
Overseas Shipments	$980.9	331.9
Total Shipments with Montana Destinations	**$31,375.4**	**78,971.6**

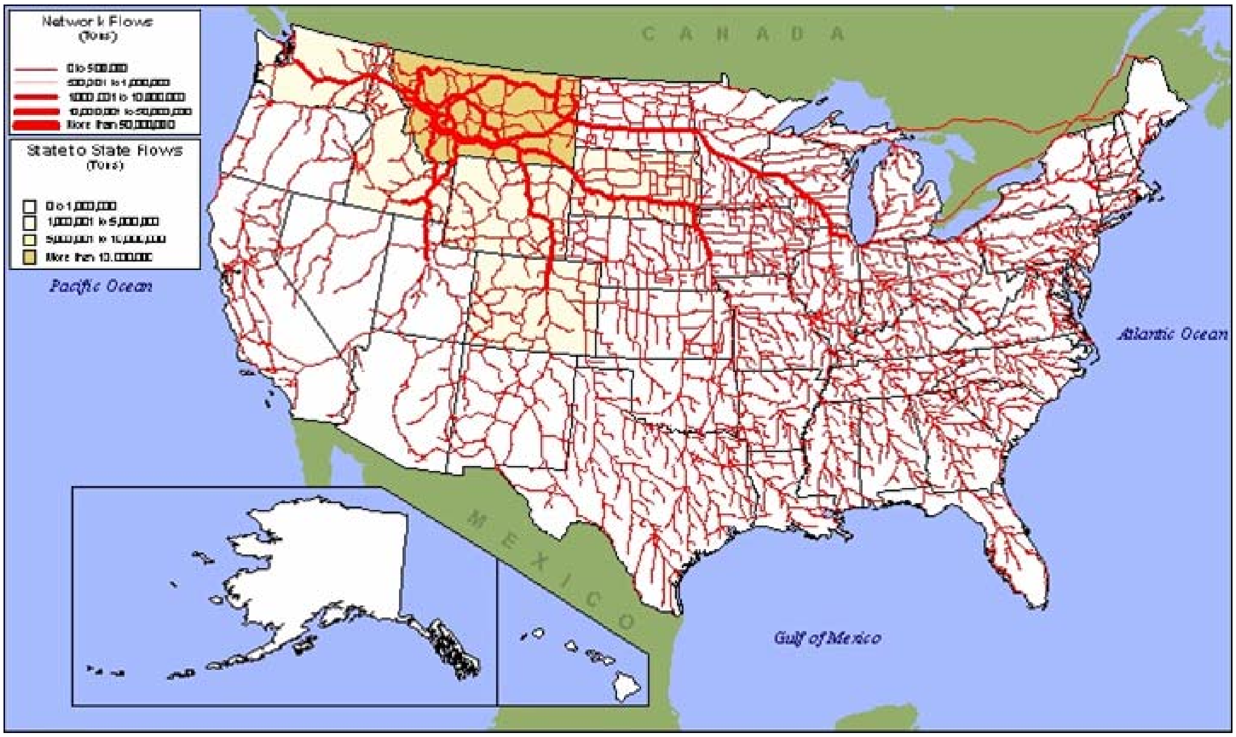
Source: Extracted from 2002 Freight Analysis Framework (FAF) Database for Montana, Federal Highway Administration

Table 3 - 6 and Table 3 - 7 show the states where the shipments from Montana are going to and where shipments with Montana destinations are coming from (see Figure 3 - 5 for an illustration of total truck flows).

The tables demonstrate that about half of all commercial shipments in Montana are shipments with both their origin and destination in Montana. Specifically, 57.3 percent of shipments in terms of value and 45.4 percent in terms of tonnage originating in Montana are shipped to another location in Montana. At the same time, 54.9 percent of shipments in terms of value and as much as 86.3 percent in terms of tonnage that are shipped to Montana locations also originate in Montana.

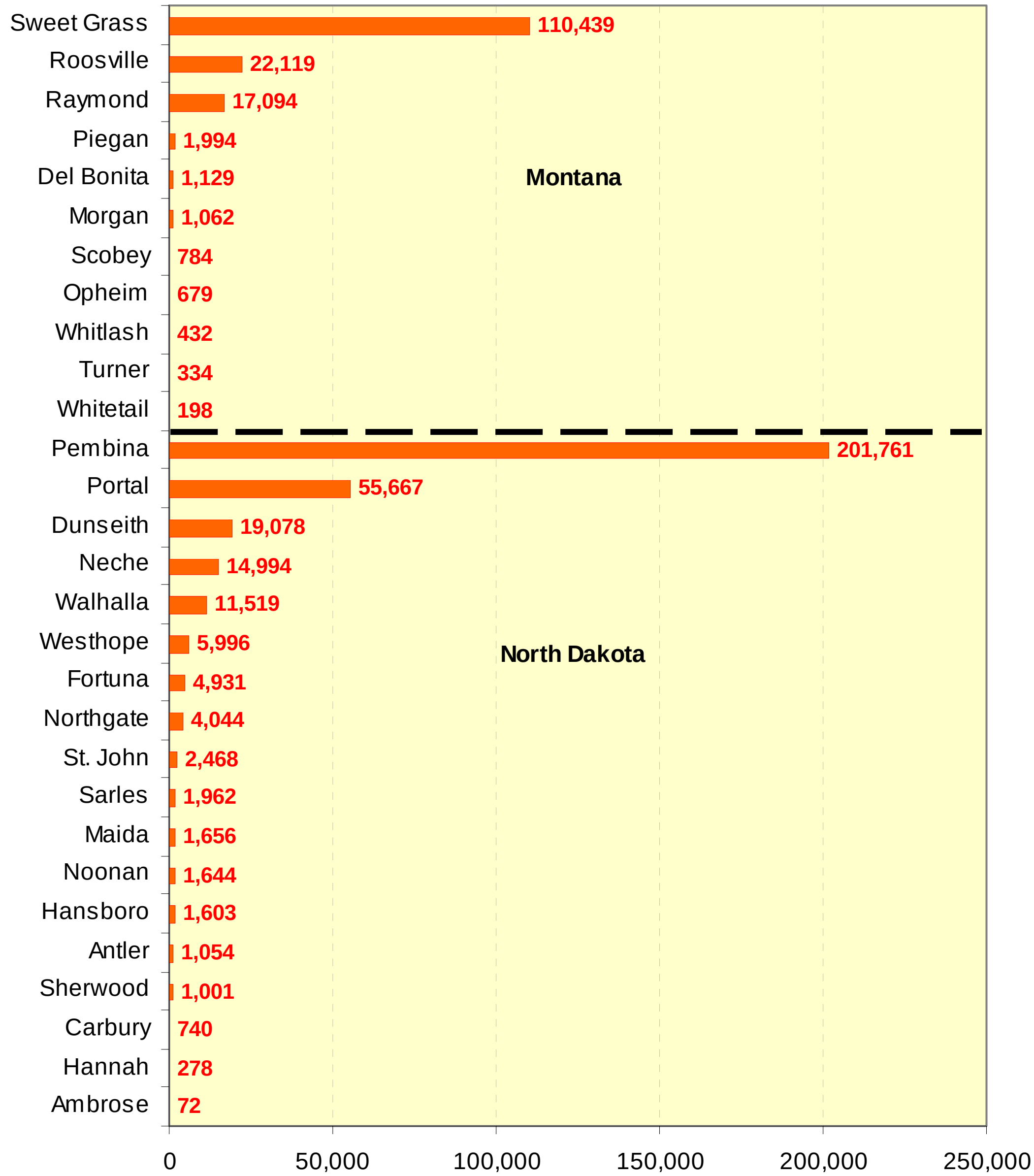
It is evident from Figure 3 - 5 that there are a wide variety of destinations for shipments out of Montana and origins for shipments into Montana. There is a significant amount of freight movement on the interstate. There is also some freight movement on US 2, though not as significant an amount as on the Interstate System. The most significant amount of freight is moved east to west as opposed to north to south. Figure 3 - 6 shows the truck flows through Montana and North Dakota ports of entry.

Figure 3-5: International and Domestic Truck Flows In and Out of Montana



Source: Federal Highway Administration, Freight Analysis Framework
** The map only shows truck flows along routes covered by FHWA's traffic assignment process. Because of their functional classification, many of the north-south routes along the Canadian border are not represented in FHWA's framework.*

Figure 3-6: Number of Annual Incoming Trucks from Canada to MT or ND Ports



Source: US Customs and Border Protection 2003

Table 3-6: Destinations of Domestic Shipments Originating in Montana

Destination State	Value of Shipments as Percentage of Total	Tonnage of Shipments as Percentage of Total
Montana	57.3%	45.4%
Nevada	19.6%	13.3%
Wyoming	3.1%	0.9%
Idaho	2.2%	1.1%
California	2.1%	1.2%
Minnesota	1.8%	11.6%
Illinois	1.5%	4.9%
Wisconsin	0.9%	9.5%
Other States	**11.5%**	**12.1%**

Source: Extracted from 2002 Freight Analysis Framework (FAF) Database for Montana, Federal Highway Administration

Table 3-7: Origins of Domestic Shipments with Montana Destinations

Origin State	Value of Shipments as Percentage of Total	Tonnage of Shipments as Percentage of Total
Montana	54.9%	86.3%
Washington	5.0%	1.6%
New Jersey	5.2%	0.1%
Utah	2.6%	0.9%
Wyoming	2.4%	3.3%
Colorado	2.3%	2.1%
Indiana	2.3%	0.1%
Other States	**25.2%**	**5.7%**

Source: Extracted from 2002 Freight Analysis Framework (FAF) Database for Montana, Federal Highway Administration
** For an alternative breakdown of this data, refer to Table A-2 in Appendix A*

For shipments originating in Montana, the largest share of shipments going out-of-state have destinations in Nevada, Wyoming, Idaho, and California (with 19.6 percent, 3.1 percent, 2.2 percent, and 2.1 percent of shipment value, respectively). Other states account for less than 2 percent of total value of shipments. The distribution of shipments is somewhat different when the tonnage of shipments is considered. In terms of tonnage of shipments, Nevada, Minnesota, Wisconsin and Illinois have the largest share of total shipments (13.3 percent, 11.6 percent, 9.5 percent, and 4.9 percent, respectively).

For shipments destined for Montana, the largest shares of shipments are coming from Washington, New Jersey, Utah, Wyoming, Colorado, and Indiana (5 percent, 5.2 percent, 2.6 percent, 2.4 percent, 2.3 percent, and 2.3 percent of shipment value, respectively). According to the 2002 FAF database, trade flows from New Jersey to Montana are comprised primarily of printed products, furniture, mattresses and illuminated signs, and mixed freight.

3.2.2 Shipments Crossing the US – Canadian Border

Table 3 - 8 shows the number of incoming trucks from Canada to all Montana and North Dakota ports and Figure 3 - 7 shows a map of these ports with hours of operation. In the table, the main ports of interest to this study are highlighted with bold font, North Dakota ports in close proximity to the study area are highlighted in blue, and the major ports of entry are bold. Sweet Grass, the only port in Montana on an Interstate, has the largest percentage of truck traffic of all of the ports in the state. The Port of Raymond, in the study area, is Montana's third largest port by traffic. Portal, the second largest port in North Dakota, is in close proximity to the study area. Both Raymond and Portal are 24-hour ports of entry.[16]

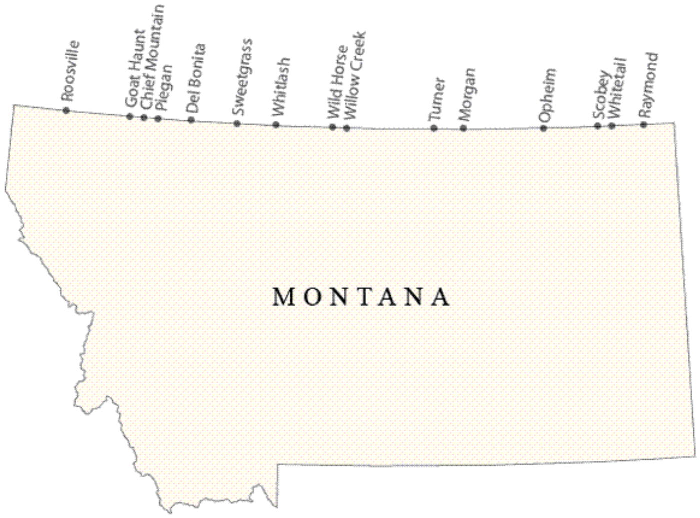
[16] Opposite Raymond, on the Canadian side, hours of operation for commercial traffic at the Port of Regway are limited to 8:00AM to 5:00PM, Monday through Friday (except holidays). This limited service may constrain growth in north-bound movements at this location. North Portal, opposite Portal operates 24 hours a day, 7 days a week. Source: Canada Border Services Agency, http://www.cbsa-asfc.gc.ca/contact/listing/offices/office616-e.html.

Table 3-8: Incoming Trucks from Canada to All Montana and North Dakota Ports

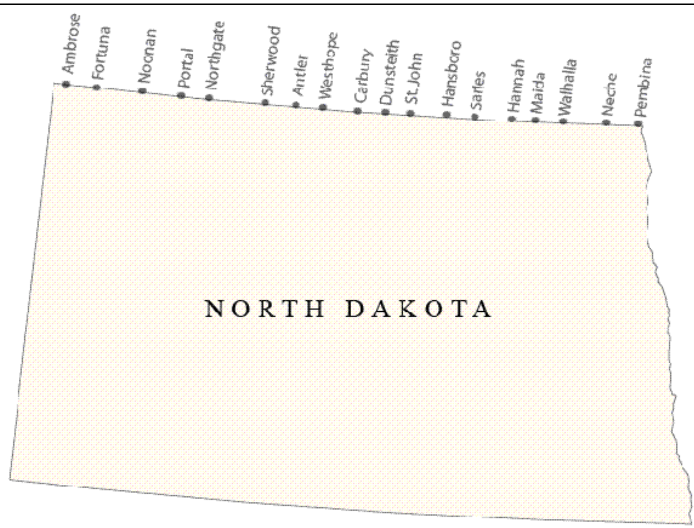
Port Name	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	% of State (2003)	Mean Growth Rate	AACG
Montana, All	**130,046**	**132,845**	**148,483**	**156,900**	**165,764**	**182,563**	**205,577**	**198,215**	**188,195**	**156,264**		2.49%	2.06%
Del Bonita, MT	1,080	607	697	826	1,096	550	865	1,164	1,138	1,129	0.7%	6.80%	0.49%
Morgan, MT	1,586	1,518	2,058	1,955	1,735	1,941	3,270	3,783	1,469	1,062	0.7%	2.46%	-4.36%
Opheim, MT	716	584	717	506	547	901	2,047	2,556	1,175	679	0.4%	11.50%	-0.59%
Piegan, MT	2,092	2,269	2,054	2,249	2,264	2,406	2,466	2,682	1,855	1,994	1.3%	0.37%	-0.53%
Raymond, MT	**15,475**	**14,331**	**14,785**	**16,940**	**17,020**	**17,345**	**17,907**	**21,018**	**17,283**	**17,094**	**10.9%**	**1.61%**	**1.11%**
Roosville, MT	17,542	19,618	22,540	20,875	22,289	30,907	30,870	24,308	27,416	22,119	14.2%	4.10%	2.61%
Scobey, MT	171	363	495	331	149	294	579	1,090	997	784	0.5%	34.79%	18.43%
Sweet Grass, MT	**89,530**	**91,438**	**104,110**	**111,962**	**120,084**	**127,468**	**146,162**	**140,233**	**135,879**	**110,439**	**70.7%**	**2.86%**	**2.36%**
Turner, MT	719	647	407	703	410	333	620	554	285	334	0.2%	1.04%	-8.17%
Whitetail, MT	58	120	140	106	78	243	251	264	257	198	0.1%	29.70%	14.62%
Whitlash, MT	1,077	1,350	480	447	92	175	540	563	441	432	0.3%	17.11%	-9.65%
North Dakota, All	**266,552**	**257,926**	**270,583**	**301,326**	**307,081**	**325,212**	**344,524**	**360,486**	**350,409**	**330,468**		2.55%	2.42%
Ambrose, ND	466	534	395	270	142	115	168	231	191	72	0.0%	-11.73%	-18.74%
Antler, ND	1,090	830	683	1,252	1,300	832	1,058	1,584	1,548	1,054	0.3%	5.81%	-0.37%
Carbury, ND	2,430	2,151	1,575	2,638	2,067	1,613	1,780	1,890	1,119	740	0.2%	-8.06%	-12.38%
Dunseith, ND	19,439	13,957	16,953	19,050	17,371	18,406	18,321	19,753	21,522	19,078	5.8%	0.86%	-0.21%
Fortuna, ND	2,888	2,672	3,886	4,094	3,121	3,222	3,305	4,657	4,910	4,931	1.5%	8.01%	6.12%
Hannah, ND	400	433	279	359	201	178	353	254	290	278	0.1%	2.91%	-3.96%
Hansboro, ND	822	1,135	1,421	1,307	907	1,157	1,764	1,760	1,505	1,603	0.5%	10.72%	7.70%
Maida, ND	2,057	1,199	1,145	1,185	1,079	1,227	1,429	1,542	1,978	1,656	0.5%	-0.18%	-2.38%
Neche, ND	12,031	8,909	9,687	10,543	11,482	12,713	11,361	12,211	15,670	14,994	4.5%	3.57%	2.48%
Noonan, ND	1,575	1,403	1,766	1,391	1,368	1,037	1,289	1,848	2,344	1,644	0.5%	3.61%	0.48%
Northgate, ND	12,347	12,097	9,579	6,724	2,554	2,958	3,227	5,515	4,103	4,044	1.2%	-5.10%	-11.66%
Pembina, ND	**127,204**	**143,441**	**140,627**	**152,110**	**177,916**	**200,456**	**214,377**	**219,733**	**203,416**	**201,761**	**61.1%**	**5.53%**	**5.26%**
Portal, ND	**52,729**	**50,983**	**59,500**	**74,126**	**66,053**	**64,167**	**64,581**	**66,939**	**67,060**	**55,667**	**16.8%**	**1.30%**	**0.60%**
Sarles, ND	2,061	867	884	945	789	861	1,183	1,564	1,862	1,962	0.6%	4.17%	-0.55%
Sherwood, ND	3,863	3,223	1,912	3,620	4,138	2,281	3,206	3,055	1,659	1,001	0.3%	-5.33%	-13.93%
St. John, ND	1,087	734	985	888	711	1,043	1,863	1,638	1,875	2,468	0.7%	14.59%	14.59%
Walhalla, ND	17,256	8,535	14,019	14,941	9,605	7,874	9,132	9,721	12,924	11,519	3.5%	1.23%	1.23%
Westhope, ND	6,807	4,823	5,287	5,883	6,277	5,072	6,127	6,591	6,433	5,996	1.8%	-0.17%	-0.17%

Source: US Customs and Border Protection

Figure 3-7: Montana and North Dakota Ports of Entry, Maps and Hours of Operation



- **Roosville**: 24 hours a day 7 days a week
- **Piegan**: 7:00 AM-11:00 PM (Mountain) 7 days a week
- **Del Bonita**: 8:00 AM-9:00 PM (Mountain) 7 days a week from 06/01/2004 to 09/15/2004; 9:00 AM-6:00 PM 7 days a week from 09/16/2003 to 05/31/2004
- **Sweet Grass**: 24 hours a day 7 days a week
- **Whitlash**: 9:00 AM-5:00 PM (Mountain) 7 days a week
- **Wild Horse**: 8:00 AM-9:00 PM (Mountain) 7 days a week from 05/15/2004 to 09/30/2004; 8:00 AM-5:00 PM 7 days a week from 10/01/2003 to 05/14/2004
- **Turner**: 9:00 AM-6:00 PM (Mountain) 7 days a week from 09/16/2003 to 05/31/2004; 8:00 AM-9:00 PM, 7 days a week from 06/01/2004 to 09/15/2004
- **Morgan**: 9:00 AM-6:00 PM (Mountain) 7 days a week from 09/16/2003 to 05/31/2004; 8:00 AM-9:00 PM 7 days a week from 06/01/2004 to 09/15/2004
- **Opheim**: 9:00 AM-6:00 PM (Mountain) 7 days a week from 09/16/2003 to 05/31/2004; 8:00 AM-9:00 PM 7 days a week from 06/01/2004 to 09/15/2004
- **Scobey**: 8:00 AM-9:00 PM (Mountain) 7 days a week from 06/01/2004 to 09/15/2004; 8:00 AM-6:00 PM 7 days a week from 09/16/2003 to 05/31/2004
- **Whitetail**: 9:00 AM-6:00 PM (Mountain) 7 days a week from 09/16/2003 to 05/31/2004; 8:00 AM-9:00 PM 7 days a week from 06/01/2004 to 09/15/2004
- **Raymond**: 24 hours a day 7 days a week

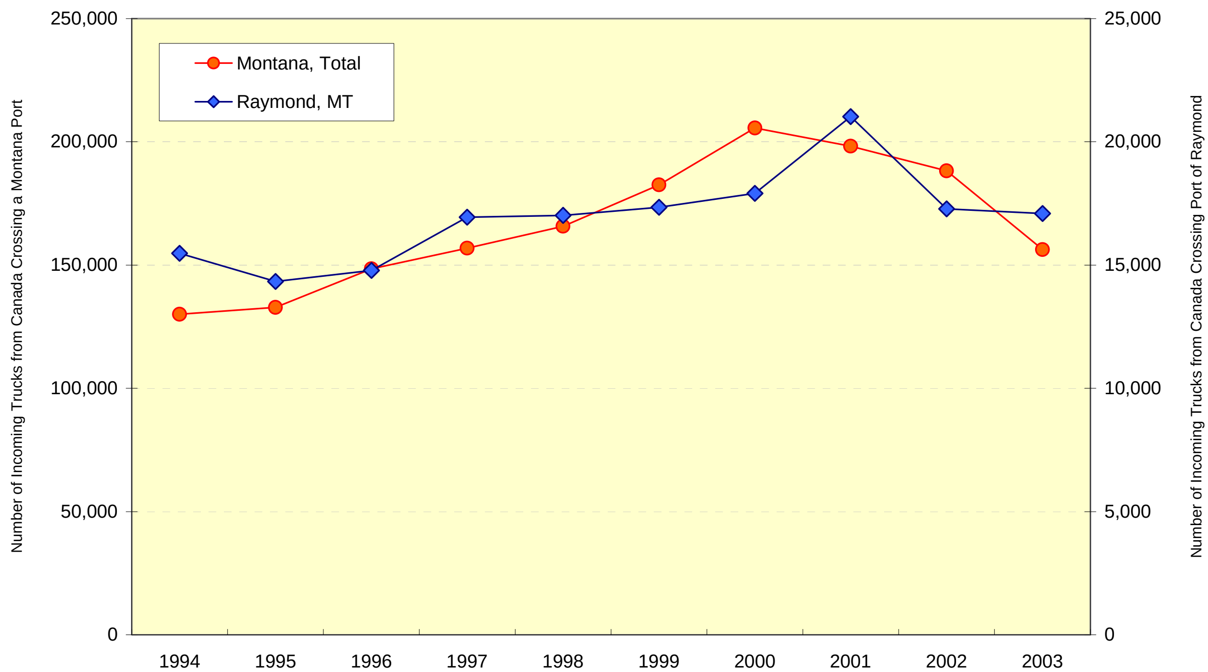


- **Ambrose**: 9:00 AM-10:00 PM (Central) 7 days a week
- **Fortuna**: 9:00 AM-10:00 PM (Central) 7 days a week
- **Noonan**: 9:00 AM-10:00 PM (Central) 7 days a week
- **Portal**: 24 hours a day 7 days a week
- **Northgate**: 9:00 AM-10:00 PM (Central) 7 days a week
- **Sherwood**: 9:00 AM-10:00 PM (Central) 7 days a week
- **Antler**: 8:00 AM-9:00 PM (Central) 7 days a week
- **Westhope**: 8:00 AM-9:00 PM (Central) 7 days a week
- **Carbury**: 9:00 AM-10:00 PM (Central) 7 days a week
- **Dunsteith**: 24 hours a day 7 days a week
- **Saint John**: 8:00 AM-9:00 PM (Central) 7 days a week
- **Hansboro**: 8:00 AM-9:00 PM (Central) 7 days a week
- **Sarles**: 9:00 AM-10:00 PM (Central) 7 days a week
- **Hannah**: 9:00 AM-10:00 PM (Central) 7 days a week
- **Maida**: 9:00 AM-10:00 PM (Central) 7 days a week
- **Walhala**: 8:00 AM-10:00 PM (Central) 7 days a week
- **Neche**: 8:00 AM-10:00 PM (Central) 7 days a week
- **Pembina**: 24 hours a day 7 days a week

Source: U.S. Customs and Border Protection, http://www.customs.gov/xp/cgov/toolbox/ports

Figure 3 - 8 shows that the trend in the number of trucks from Canada entering the U.S. at Port of Raymond closely followed the trend in the number of trucks using any Montana port in the 1994-2003 period. When looking at the mean growth rates in Table 3 - 8, it can be seen that Scobey, Whitetail, and Opheim, all three of which are small ports in the study area, have shown substantial growth when compared to other ports in the state. Use of these minor ports grew to a peak in 2001, and although inbound truck counts declined in the following years, their growth is still substantial.

Figure 3-8: Annual Number of Trucks from Canada Crossing Port of Raymond and all Montana Ports



Source: US Customs and Border Protection

As can be seen from Table 3 - 8, the number of trucks entering both Montana and North Dakota from Canada declined in 2002 and again in 2003. Since the decline affects both states it is most likely due to universal impediments, such as exchange rate fluctuations and the security changes put in place after September 11, 2001. One of the changes that could explain this decrease is the additional impediment to shipping from Canadian origins and destinations via U.S. highways (called “transit shipping”). Before the new security policies were enacted, it was more common for Canadian trucks to pass through the US in transit. This was because Canadian truckers minimize cost and distance by using U.S. routes, due in part to the quality of the roadways. However, with heightened port security, this practice has been made more costly and time consuming. Canadian shippers report that increased paperwork and advance submissions required for crossing each port of entry, in addition to customs checks at each port.

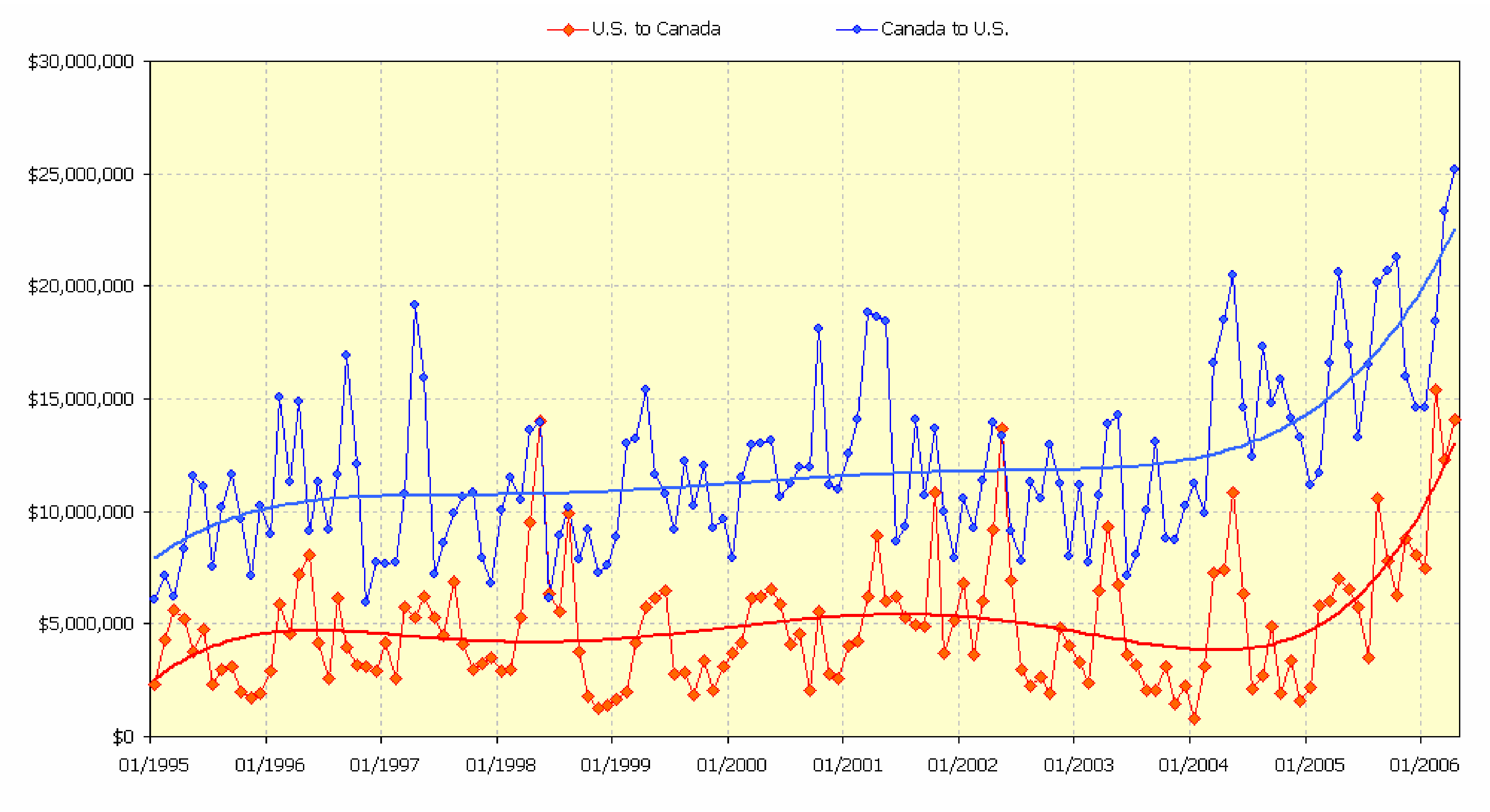
Another measure imposed by heightened security is the advance submission of manifest information requirement on LTL (less than truckload) carriers. These carriers are usually destined to fulfill the just-in-time delivery that many firms are utilizing to lower their warehousing costs. However, the added time commitment needed to prepare and transmit the documentation to US Customs, and the short-term nature of these shipments in general, leads to a significant increase in the generalized cost for these trucking firms, lowering the volume of such trucks coming in from Canada.

Figure 3 – 9 covers a more recent period than the preceding tables, and it shows the value of truck freight passing through customs at Raymond, import and export. In general, there has been an increase over time in the value of shipments passing through this port. In the past 10 years, shipments from Canada to the US passing through the Port of Raymond have been, on average, consistently higher value than those shipments from the US to Canada. The average annual compound growth rates from 1995 to 2006 for the value of shipments from the US to Canada and from Canada to the US passing through the Port of Raymond have been 11 percent and 8 percent, respectively. Also notable is that the value of shipments from the Canada to US (i.e., imports) is higher than the value of shipments from the US to Canada (exports). Interviews suggested this is probably due to the higher number of trucks traveling back empty to Canada, and the number of trucks going north on different routes.

A sharp increase, since 2004, in both import and export values is remarkable in Figure 3 – 9. Values of both imports and exports trucked through customs at Raymond about doubled in the 2004-2006 period. Compared to a similar chart for the Port of Portal, North Dakota (Figure 4 – 1), there is not the same acceleration pattern, and the values of imports at Portal appear fairly flat by comparison. Use of customs facilities at Raymond may have been affected by improvements to the US Customs facilities at this location (completed in 2004) and by recent highway improvements. They also reflect fundamental changes in market conditions driving more north-south shipments through this corridor.

It is currently faster to access the Midwestern U.S. from Saskatchewan through the Port of Portal than through the Port of Raymond. However, in the future, longer wait times at the Port of Portal may divert a share of eastbound traffic to the Port of Raymond.

Figure 3-9: Total Truck Freight Value Passing through Port of Raymond

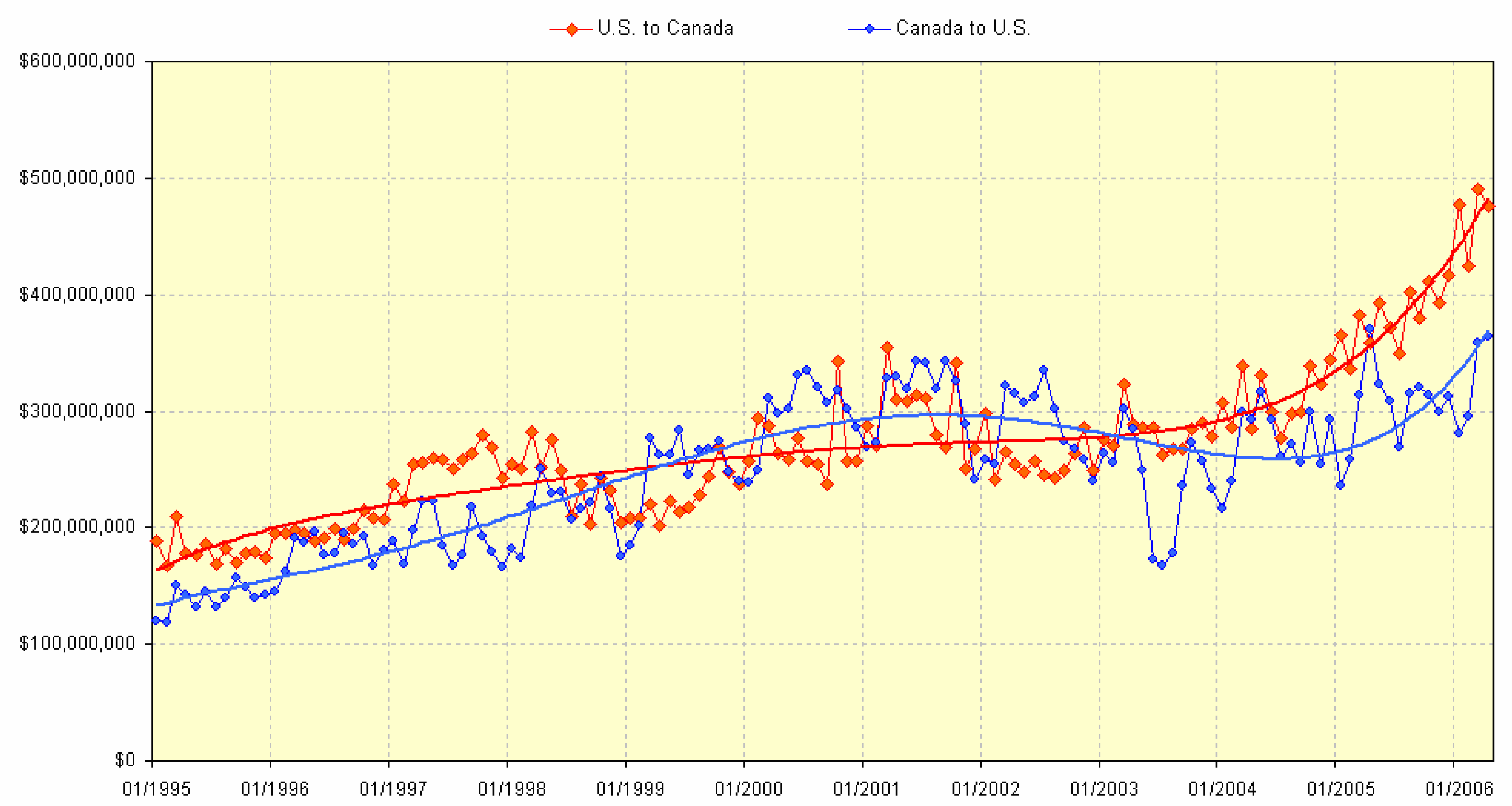


Source: U.S Department of Transportation, Bureau of Transportation Statistics, Transborder Surface Freight Database

Figure 3 - 10 shows the total truck freight value of shipments passing through all Montana ports of entry (POEs). There is an overall positive trend in the total value of freight passing through these ports in the past 10 years. The average annual growth rates between 1995 and 2006 in the value of shipments passing through all Montana ports from the US to Canada and from Canada to the US have been 9 percent and 8 percent, respectively. While the average value of shipments destined for Canada passing through Montana ports is not consistently higher than that of shipments originating in Canada passing through Montana ports of entry, the value of U.S. exports shown here have accelerated more since 2004.

Comparing Figure 3 - 9 and Figure 3 - 10, it is evident that, in the last 10 years, there has been an increase in the total truck freight value passing through the Port of Raymond and through all Montana POEs in general. The acceleration at the Port of Raymond, however, is at a higher intensity than through all Montana POEs. The values of imports have increased faster at Raymond, versus the faster growth in export values for the state as a whole. There has also been an increase in total truck freight value passing through all North Dakota POEs, as can be seen in Figure 4 - 2.

Figure 3-10: Total Truck Freight Value Passing through Montana Ports of Entry (POEs)



Source: U.S Department of Transportation, Bureau of Transportation Statistics, Transborder Surface Freight Database

3.2.3 Shipments by Mode

Table 3 - 9 shows the modal split of shipments originating from and destined to Montana for both the tonnage of shipments as well as the value of shipments.

The table shows that in terms of tonnage of shipments originating in Montana, rail was the most significant mode of transport, accounting for 38.9 percent of total tonnage shipped. However, truck and pipeline transportation also played a substantial role, accounting for 32.2 and 28.4 percent of all shipments, respectively. On the other hand, in terms of the value of shipments, truck was the dominant mode, accounting for 64 percent of value. This was followed by pipeline transportation and rail, which accounted for 25.4 and 6.7 percent of value, respectively. The role of rail was much larger for cross-border and overseas shipments, for which rail accounted for 55.4 and 94.8 percent of tonnage and 26.4 and 73.1 percent of value, respectively.

A larger share of rail in terms of tonnage shipped than value indicates that rail is used predominantly for shipments of bulky commodities with low unit value (i.e.: low value per ton of shipment). Trucks, in turn, are being used for shipments of relatively expensive goods with a high unit value. Pipeline transportation is between the two extreme cases.

For shipments with Montana destinations, truck was the dominant mode of transport. Overall, trucks accounted for 57.4 percent of tonnage and 79.3 percent of value shipped to the state. This was followed by pipeline and rail transportation. It should be noted that pipelines played an important role in cross-border shipments, accounting for nearly 80 percent of all cross-border shipments in terms of tonnage shipped to Montana. However, pipelines played a less significant role in terms of value, accounting for only 10.1 percent of total shipments destined for Montana. Rail accounts for only about 7.7 percent of tonnage and 1.1 percent by value of shipments to the state.

The reduction in inter-modal transportation within the state should also be noted. This has led to the increased dependence on commercial carriers trucking manufactured and retail goods into the state.

Table 3-9: Shipments from and to Montana, by Mode, in Percentage of Total for Geographic Shipment Category

Geographic Category of Shipments	Total Tonnage of Shipments				Total Value of Shipments			
	Rail	Truck	Pipeline	Other	Rail	Truck	Pipeline	Other
Domestic Shipments Originating in Montana	37.3%	32.9%	29.4%	0.4%	6.0%	64.3%	25.8%	3.9%
Cross-border Shipments Originating in Montana	55.6%	35.2%	8.5%	0.7%	26.4%	66.2%	6.5%	0.9%
Overseas Shipments Originating in Montana	94.8%	2.6%	0.0%	2.6%	73.1%	13.3%	0.0%	13.5%
Total Shipments Originating in Montana, by Mode	**38.9%**	**32.2%**	**28.4%**	**0.5%**	**6.7%**	**64.0%**	**25.4%**	**3.9%**
Domestic Shipments with Montana Destination	7.9%	63.3%	28.6%	0.2%	0.8%	81.8%	7.0%	10.3%
Cross-border Shipments with Montana Destination	6.2%	14.3%	79.5%	0.0%	5.7%	31.2%	62.8%	0.3%
Overseas Shipments with Montana Destinations	0.6%	97.9%	0.3%	1.3%	0.1%	95.4%	0.3%	4.2%
Total Shipments with Montana Destinations, by Mode	**7.7%**	**57.4%**	**34.7%**	**0.2%**	**1.1%**	**79.3%**	**10.1%**	**9.5%**

Source: Extracted from 2002 Freight Analysis Framework (FAF) Database for Montana, Federal Highway Administration
** For actual tonnage and value of shipment figures, see Table A-3 in Appendix A*
*** For an alternative breakdown of this data, refer to Table A-4 in Appendix A*

3.2.4 Commodity Structure of Shipments

Domestic Shipments with Montana Origin

Table 3 - 10 shows the top 15 commodities in terms of tonnage shipped from Montana and Table 3 - 11 shows the top 15 commodities in terms of value of commodities shipped from Montana.

Table 3-10: Top 15 Commodities Shipped in Montana by Weight, Domestic Shipments with Montana Origin, Thousands of Short Tons

Commodity	Total	Cumulative Percentage	Shipments by Mode			
			Pipeline &Unknown	Rail	Truck	Other
Coal	55,920.6	42.7%	13,998.5	39,841.3	1,639.3	441.6
Coal, n.e.c.	21,456.3	59.1%	18,715.4	1,070.9	1,670.1	0.1
Cereal grains	10,857.0	67.3%	0.0	1,661.9	9,195.0	0.0
Gasoline	6,032.2	71.9%	1,100.8	499.2	4,432.2	0.0
Crude petroleum	5,189.8	75.9%	4,602.9		586.9	0.0
Logs	4,403.2	79.3%			4,403.2	0.0
Wood prods.	3,892.9	82.2%	16.3	1,359.2	2,489.8	27.6
Nonmetallic minerals	3,846.1	85.2%		2,805.2	993.1	47.8
Fuel oils	2,933.5	87.4%	5.8	34.5	2,893.2	0.0
Gravel	2,485.0	89.3%		0.0	2,485.0	0.0
Waste/scrap	1,997.3	90.8%			1,997.3	0.0
Nonmetal min. prods.	1,970.3	92.3%	0.7	432.7	1,536.0	0.9
Unknown	1,556.5	93.5%	0.0		1,556.5	0.0
Natural sands	1,325.6	94.5%			1,325.6	0.0
Other foodstuffs	918.3	95.2%	4.0	96.6	817.7	0.0
Live animals/fish	905.9	95.9%			905.9	0.0
Mixed freight	696.0	96.5%	0.1		694.6	1.3
Fertilizers	610.6	96.9%	0.0	415.1	195.6	0.0
Other commodities	4,027.1	100.0%	57.9	596.8	3,327.7	44.7
Total	**131,024.3**		**38,502.3**	**48,813.4**	**43,144.6**	**564.0**

Source: Extracted from 2002 Freight Analysis Framework (FAF) Database for Montana, Federal Highway Administration

** For an alternative breakdown of this data, refer to Table A-5 in Appendix A*

Table 3 - 10 shows that the top 6 commodities accounted for almost 80 percent of all shipments in terms of their tonnage, and the top 15 commodities combined accounted for over 96 percent of tonnage. These commodities were natural resources products or products based on natural resources, including coal, grains, gasoline, crude oil, and logs. Some of the top commodities in terms of shipment's weight were also top commodities in terms of value, including coal, gasoline and wood products.

The structure of shipments in terms of value was much more diversified. The top 6 commodities in terms of shipment value accounted for 56.2 percent of all shipments, and the top 15 commodities accounted for less than 80 percent of all shipments.

Table 3-11: Top 15 Commodities Shipped in Montana by Value, Domestic Shipments with Montana Origin, Millions of Dollars

Commodity	Total	Cumulative Percentage	Shipments by Mode			
			Pipeline & Unknown	Rail	Truck	Other
Coal, n.e.c.	$6,250.8	22.9%	$5,783.6	$90.2	$375.7	$1.2
Machinery	$3,152.4	34.4%	$82.2		$2,975.0	$95.2
Gasoline	$1,699.3	40.6%	$341.3	$78.5	$1,279.5	$0.0
Mixed freight	$1,537.6	46.3%	$0.2		$1,510.2	$27.2
Wood prods.	$1,357.9	51.2%	$25.0	$501.5	$811.1	$20.2
Unknown	$1,342.3	56.2%	$0.1		$1,341.7	$0.5
Live animals/fish	$1,059.5	60.0%			$1,059.5	$0.0
Cereal grains	$777.3	62.9%	$2.9	$239.0	$535.3	$0.0
Misc. mfg. prods.	$770.2	65.7%	$3.8		$487.9	$278.5
Fuel oils	$741.0	68.4%	$9.7	$1.8	$729.5	$0.0
Articles-base metal	$676.8	70.9%	$6.1	$1.0	$636.7	$33.0
Other foodstuffs	$585.3	73.0%	$3.3	$41.3	$539.9	$0.9
Motorized vehicles	$548.0	75.0%	$109.8		$401.6	$36.6
Textiles/leather	$545.0	77.0%	$3.0		$413.2	$128.7
Coal	$538.4	79.0%	$122.5	$407.2	$3.8	$4.9
Other commodities	$5,734.1	100.0%	$542.4	$291.5	$4,469.3	$430.9
Total	**$27,315.7**		**$7,035.9**	**$1,652.0**	**$17,569.9**	**$1,057.9**

Source: Extracted from 2002 Freight Analysis Framework (FAF) Database for Montana, Federal Highway Administration
** For an alternative breakdown of this data, refer to Table A-5 in Appendix A*

Domestic Shipments with Montana Destinations

Table 3 - 12 shows the top 15 commodities in terms of tonnage shipped domestically to Montana destinations, and Table 3 - 13 shows top 15 commodities in terms of value shipped domestically to Montana destinations.

Table 3 - 12 shows a similar structure between the top commodities by weight as Table 3 - 10 for commodities shipped domestically originating in Montana. This suggests that a large fraction of these goods (by both weight and value) are shipped from and to destinations in Montana. Some of the top commodities by weight include coal, cereal grains, gasoline, logs, and fuel. Some of the top commodities by value include machinery, mixed freight, miscellaneous manufactured goods, gasoline, and chemical products. The top 15 commodities in terms of weight accounted for almost 90 percent of all shipments, and the top 15 commodities in terms of value accounted for 73 percent of all shipments. As with commodities originating in Montana, we see a somewhat more diversified shipment structure as it would be suggested by the weight of the shipments alone.

Table 3-12: Top 15 Commodities Shipped in Montana by Weight, Domestic Shipments with Montana Destination, Thousands of Short Tons

Commodity	Total	Cumulative Percentage	Shipments by Mode			
			Pipeline &Unknown	Rail	Truck	Other
Coal	19,778.9	28.6%	13,998.5	4,119.0	1,661.4	0.0
Cereal grains	9,241.7	42.0%	73.5	0.0	9,168.2	0.0
Gasoline	5,980.7	50.7%	1,100.8	499.2	4,380.7	0.0
Logs	3,908.4	56.3%			3,908.4	0.0
Coal, n.e.c.	3,856.7	61.9%	2,435.3	1.2	1,420.0	0.1
Fuel oils	3,051.8	66.3%	5.8	34.5	3,011.5	0.0
Crude petroleum	2,531.6	70.0%	1,944.6		586.9	0.0
Gravel	2,490.5	73.6%	0.0	0.0	2,490.5	0.0
Nonmetal min. prods.	2,141.2	76.7%	5.9	266.5	1,867.4	1.3
Waste/scrap	2,023.9	79.6%			2,023.9	0.0
Wood prods.	1,824.6	82.3%	52.2	207.7	1,556.5	8.3
Unknown	1,496.4	84.4%	0.0		1,496.3	0.1
Natural sands	1,382.6	86.4%		43.0	1,339.6	0.0
Mixed freight	1,305.6	88.3%	8.2		1,287.1	10.3
Live animals/fish	901.0	89.6%			901.0	0.0
Other commodities	7,161.6	100.0%	123.8	275.6	6,622.7	139.5
Total	**69,077.3**		**19,748.6**	**5,446.9**	**43,722.2**	**159.6**

Source: Extracted from 2002 Freight Analysis Framework (FAF) Database for Montana, Federal Highway Administration

** For an alternative breakdown of this data, refer to Table A-5 in Appendix A*

Table 3-13: Top 15 Commodities Shipped in Montana by Value, Domestic Shipments with Montana Destination, Millions of Dollars

Commodity	Total	Cumulative Percentage	Shipments by Mode			
			Pipeline &Unknown	Rail	Truck	Other
Machinery	$3,923.2	13.6%	$87.8	$0.0	$3,648.4	$187.0
Mixed freight	$3,281.1	24.9%	$3.9		$3,169.2	$108.1
Misc. mfg. prods.	$1,915.1	31.5%	$159.9	$0.0	$933.4	$821.8
Gasoline	$1,709.5	37.4%	$341.3	$78.5	$1,289.7	$0.0
Unknown	$1,271.5	41.8%	$0.1		$1,270.9	$0.6
Chemical prods.	$1,224.5	46.1%	$32.4	$0.2	$1,061.1	$130.8
Coal, n.e.c.	$1,101.4	49.9%	$753.1	$2.7	$344.5	$1.1
Live animals/fish	$1,045.9	53.5%			$1,045.9	$0.0
Motorized vehicles	$1,030.0	57.1%	$142.8	$45.1	$569.0	$273.1
Pharmaceuticals	$881.1	60.1%	$8.0		$368.4	$504.6
Meat/seafood	$838.5	63.0%	$0.6		$834.6	$3.2
Articles-base metal	$822.4	65.9%	$9.9	$1.0	$706.5	$105.1
Fuel oils	$747.7	68.4%	$9.7	$1.8	$736.2	$0.0
Plastics/rubber	$703.0	70.9%	$12.6	$0.0	$677.4	$13.0
Textiles/leather	$689.8	73.3%	$3.0	$0.1	$551.6	$135.1
Other commodities	$7,733.1	100.0%	$462.4	$110.0	$6,460.1	$700.7
Total	**$28,917.8**		**$2,027.6**	**$239.2**	**$23,666.9**	**$2,984.1**

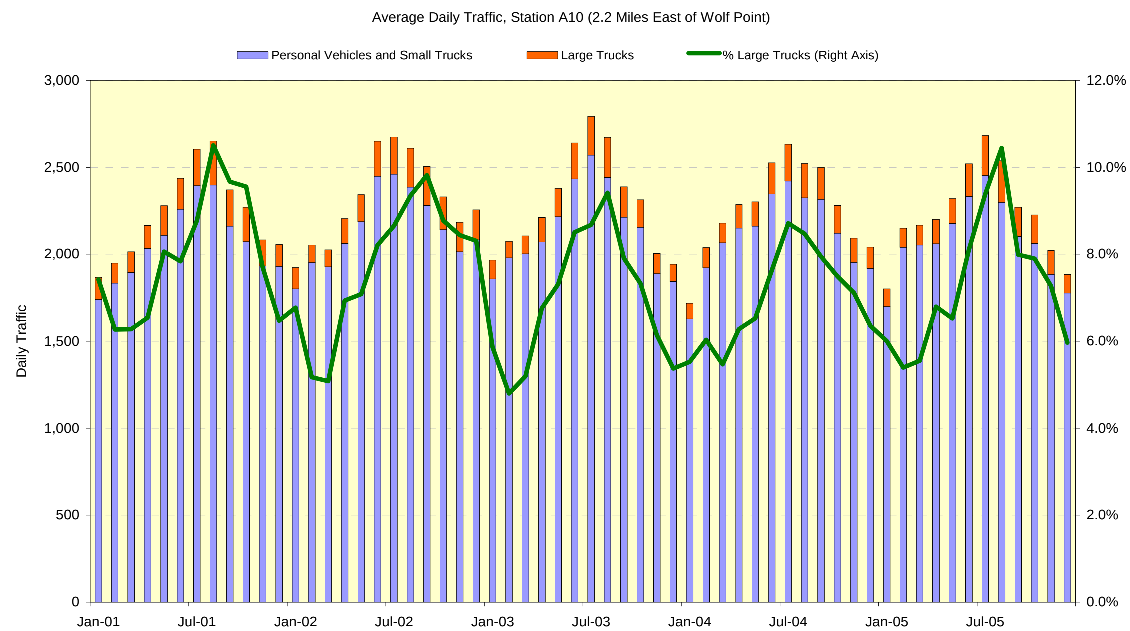
Source: Extracted from 2002 Freight Analysis Framework (FAF) Database for Montana, Federal Highway Administration

** For an alternative breakdown of this data, refer to Table A-5 in Appendix A*

3.3 Commercial Shipments in the Study Area

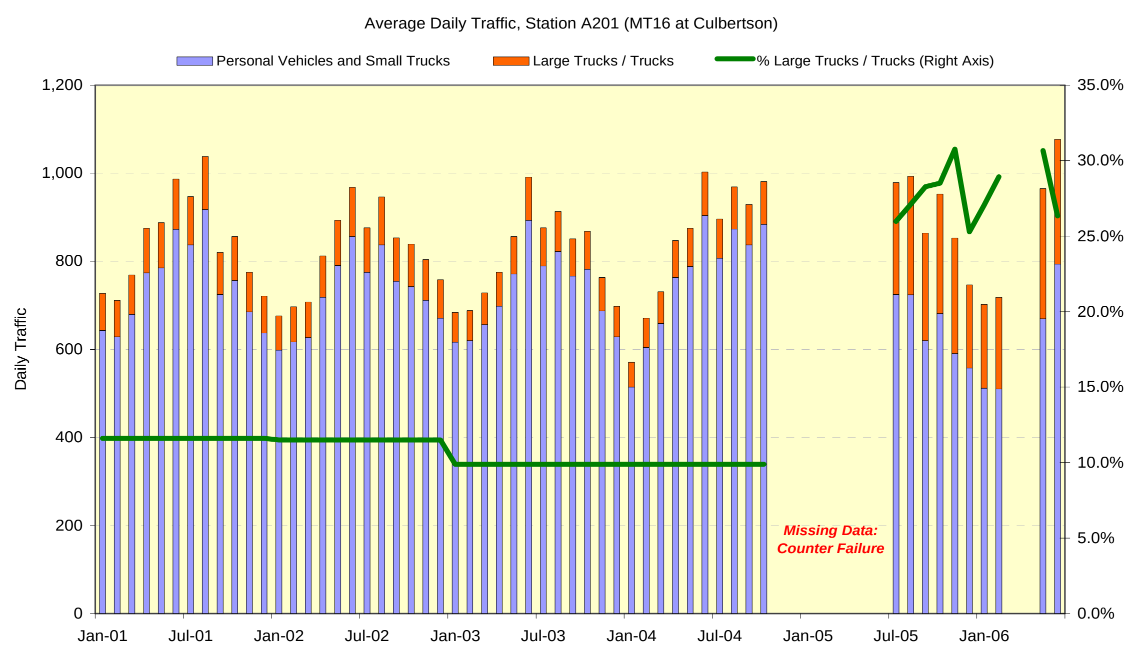
Figure 3 - 11 and Figure 3 - 12 show AADT data at two selected stations: station A-10 (US 2 near Wolf Point) and station A-201 (MT 16 at Culbertson). It can be seen that there has been little to negative growth on the sections of US 2 and MT 16 for which data is available. It is also evident that there are strong seasonality effects, with spikes in AADT levels in June, July, and August. Also, truck traffic does not comprise a large percentage of total AADT traffic on either the sections of US 2 or MT 16 being discussed. Less than 5 percent of total traffic is truck traffic on US 2 near Wolf Point. There is slightly more truck traffic on MT 16 at Culbertson (around 10 percent of total traffic). Figure 3 - 13 shows a map of AADT in the study area.

Figure 3-11: Average Daily Traffic on US 2 Near Wolf Point, Jan. 2001 – Dec. 2005



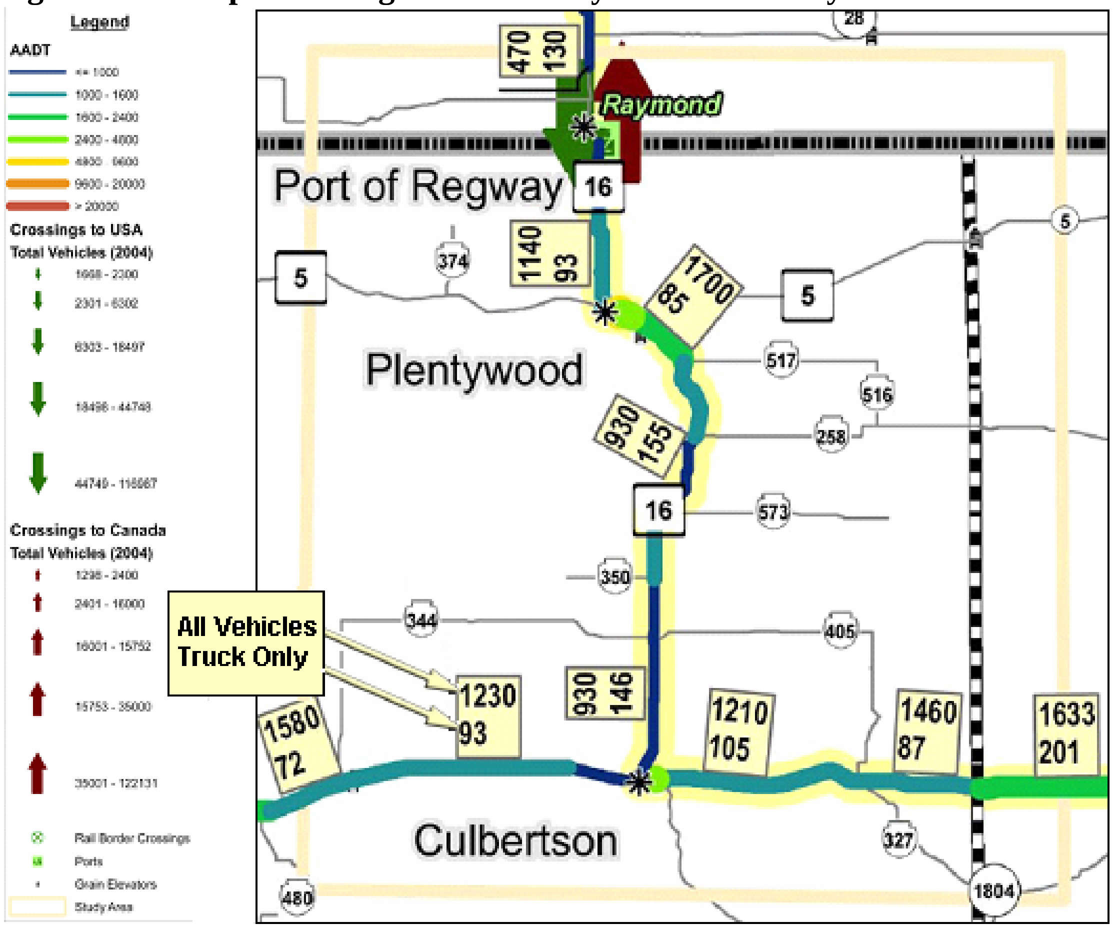
Source: MDT Automatic Traffic Recorders; http://www.mdt.mt.gov/publications/datastats.shtml

Figure 3-12: Average Daily Traffic Counts on MT 16 at Culbertson, Jan. 2001 - June 2006



Source: MDT Automatic Traffic Recorders; http://www.mdt.mt.gov/publications/datastats.shtml
Note: Monthly vehicle distribution (personal vehicles vs. large trucks) not available before 2005. Change in data sources and variable definition (all vs. large trucks) may explain the jump in truck percentage after July 2005. Data after 2005 is for East lane only; multiplied by two to obtain two-way AADT comparable to pre-2005 data.

Figure 3-13: Map of Average Annual Daily Traffic in Study Area



Source: 2003 Automatic Traffic Recorders

3.4 Individual Traffic Generation

The study area is a largely rural area with small cities having a population of less than 5,000 (see Table 2 - 2). Table 2 - 1 and Table 2 - 2 also show that populations in the entire six-county study area and most of its major cities are declining. This suggests that, for now, local population is not very likely to be a significant factor leading to a substantial increase in traffic.

In the medium to long term, population in the study area is projected to increase at a small to moderate rate compared to the entire state. Specifically, as Table 3 - 14 indicates, population between now and 2025 in the six-county study area is projected to grow at 0.3 percent per year compared to 1 percent per year in all of Montana.

The strongest growth is expected in Richland and Roosevelt Counties, 0.6 percent per year on average, or about 13 percent over the period from 2004 to 2025. Therefore, over the next twenty years, a moderate increase in traffic in the study corridor could be expected from increasing population.

Table 3-14: Population Projections for Montana and the 6-County Study Area

County	2004	2010	2020	2025	Average Annual Rate of Growth 2004-2025	Total Change 2004-2025
Montana	926,865	988,874	1,090,686	1,148,162	1.0%	23.9%
6-County Study Area	**34,281**	**34,681**	**35,518**	**36,586**	**0.3%**	**6.7%**
Daniels	1,844	1,890	1,877	1,910	0.2%	3.6%
McCone	1,775	1,780	1,767	1,771	0.0%	-0.2%
Richland	9,112	9,561	9,966	10,362	0.6%	13.7%
Roosevelt	10,660	10,920	11,553	11,992	0.6%	12.5%
Sheridan	3,620	3,680	3,635	3,750	0.2%	3.6%
Valley	7,270	6,850	6,720	6,801	-0.3%	-6.5%

Source: Montana Department of Commerce

3.5 Effect of Transportation System on Tourism

The quality and level of service capabilities of a transportation network are essential components for the prosperity and growth of a tourism industry within any region. Within remote regions, this dependence upon transportation infrastructure is intensified. Given the remoteness of the study area's region from major population centers within the United States, it should come as no surprise that tourism industry stakeholders within the area have identified the transportation system as a primary facilitator of growth for their industry. Through numerous interviews of tourism stakeholders within the region, it was expressed that the existing two-lane transportation system contains inherent limitations that negatively affect the regional tourism industry.[17]

Respondents stated that out-of-area travelers know what to expect from a four-lane highway, whereas a two-lane road is wrought with uncertainties which contribute to a hesitancy to visit more areas far from a four-lane highway. The perception of the expected travel experience was also cited as an impediment to more extensive travel within the region, because of the belief that four-lane highways create a comfort level for travelers beyond satisfying capacity. It should be noted that these issues may be less related to absolute road capacity than to the perception of road quality and the level of service improvements provided by a four-lane corridor.

[17] Survey interviews were conducted by the research team from June – July 2006.

3.6 Transportation and Competitiveness of Industries in the Study Area

3.6.1 Supply of Transportation Services

The total shoulder widths (the sum of the left and right shoulders) along the corridor, as seen in Figure 3 – 14, are six to ten feet. These widths do not appear sufficient to allow a semi-truck to safely pull to the side of the road.

As can be seen from Figure 3 - 15, the study area corridor currently consists of a road network of two lanes. The implications for industries that are currently located in or are contemplating locating within the region are important. Many of the economic development stakeholders surveyed in the region report that the area has lost potential businesses seeking to relocate to the region because there is no nearby four-lane highway.

For a business analyzing possible relocation to a remote area, a sufficient transportation system is many times a major concern and many firms consider the minimum level of transportation network to consist of a four-lane highway. The reasoning is that firms located far from final markets are dependent on a transportation network to receive the inputs and deliver their products to markets and many firms therefore value locations with close-by access to a four-lane highway.

For industries that are already located within the area, some of the survey respondents stated that the lack of a four-lane system inhibits their businesses in some ways. Several respondents stated that the current road conditions are not up to an acceptable level of quality, thus increasing the wear and tear on their transport vehicles. Others stated that having a two-lane system makes moving trucks along this route more dangerous and can possibly create a bottleneck due to the difficulty in passing vehicles.

A four-lane system along the corridor would also be important for regional connectivity reasons. The area shares many similarities with adjacent states and provinces that extend beyond political borders. The broader region is largely comprised of comparable agriculture-based economy, experiencing energy sector expansions, and sharing similar historical and cultural heritage. A MDT survey of regional transportation agencies[18] also found that some neighboring states are progressing towards four-lane expansions of their portions of the TRE corridor. System continuity is critical for four main perspectives:

- Strategic: Four-lane continuity ensures that the true interconnectivity of national corridors linking markets from Mexico through key states like Texas and Colorado all the way to Canada. Given the great capacity at the Port of Raymond and the growth of the region, the four-lane continuity will strategically position the corridor as a freight corridor and as NAFTA corridor that handles the long term growth.

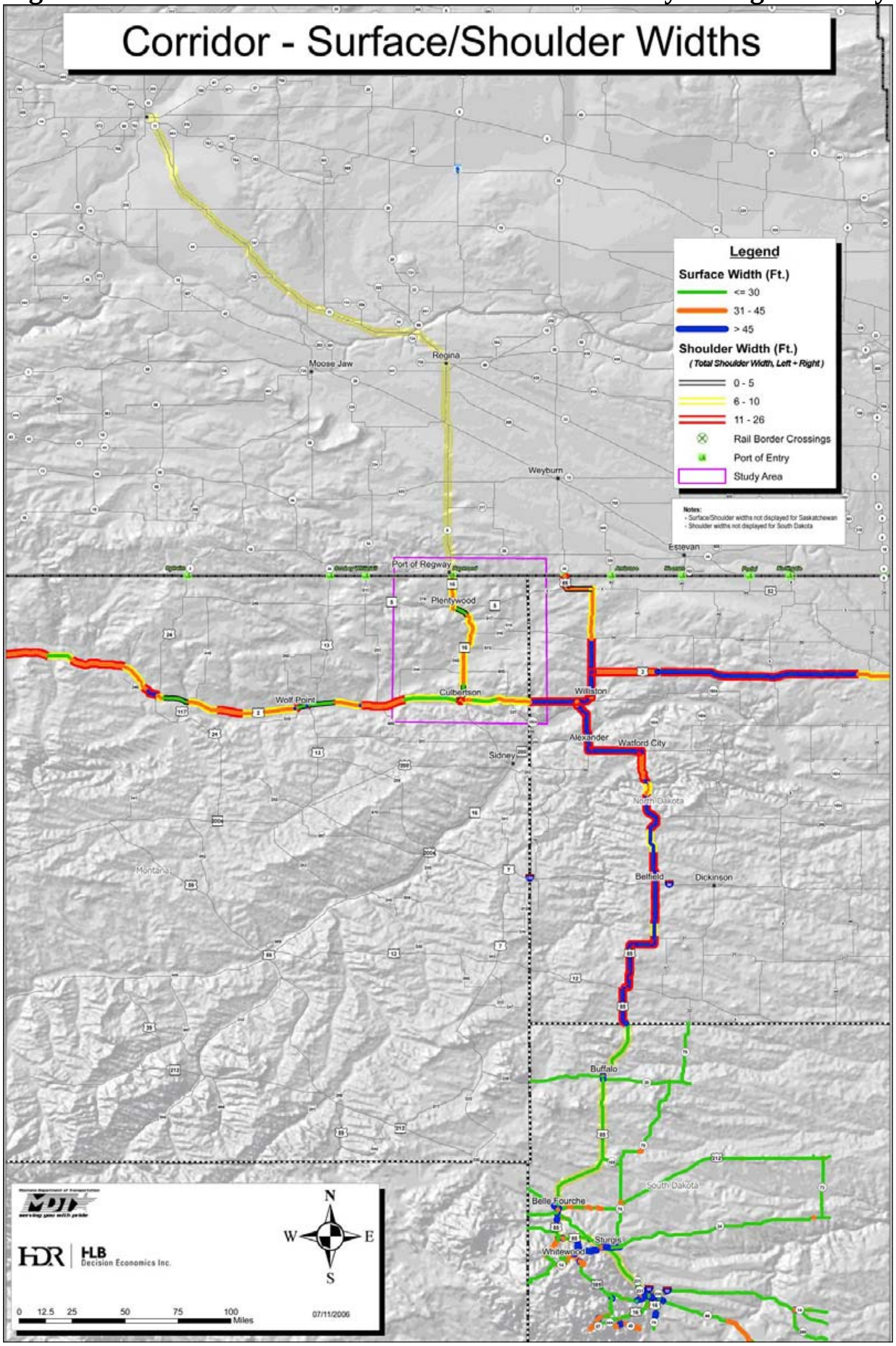
[18] See section 5.1.4 in Working Paper #2: Assessment of Existing and Future Opportunities.

- Competitiveness: Four-lane continuity positions the corridor as a true alternative, and therefore a competitor, to interstate roadways in the region. The competitiveness of the corridor will be reflected in induced traffic demand and eventually increasing economic development. The competitiveness can be both as a north-south segment and as a link between the east and west regions.

- User Perception: Four-lane continuity would play a significant role in drivers' perception. Research in road pricing showed that driver's choice for roadway is based more on the perceived level of service rather than the actual level of service. Accordingly, through our stakeholders interviews, we found that they perceived the existing roadway is less safe than the data shows and that they think that a four-lane roadway would provide safer travel and a good level of service for both personal vehicles and truck traffic. It is this perception that would also lead truck dispatchers as well as logistics and supply chains managers to make this corridor as the segment of choice for their long-haul trucks in the region.

- Design Consistency: Four-lane continuity will also ensure design consistency and therefore a synergistic effect on traffic and freight growth along the corridor.

Figure 3-14: Surface and Shoulder Widths of Roadways along the Study Corridor



** Surface/shoulder widths not available for Saskatchewan; shoulder widths not available for South Dakota*

Figure 3-15: Number of Lanes on Roadways in the Study Area

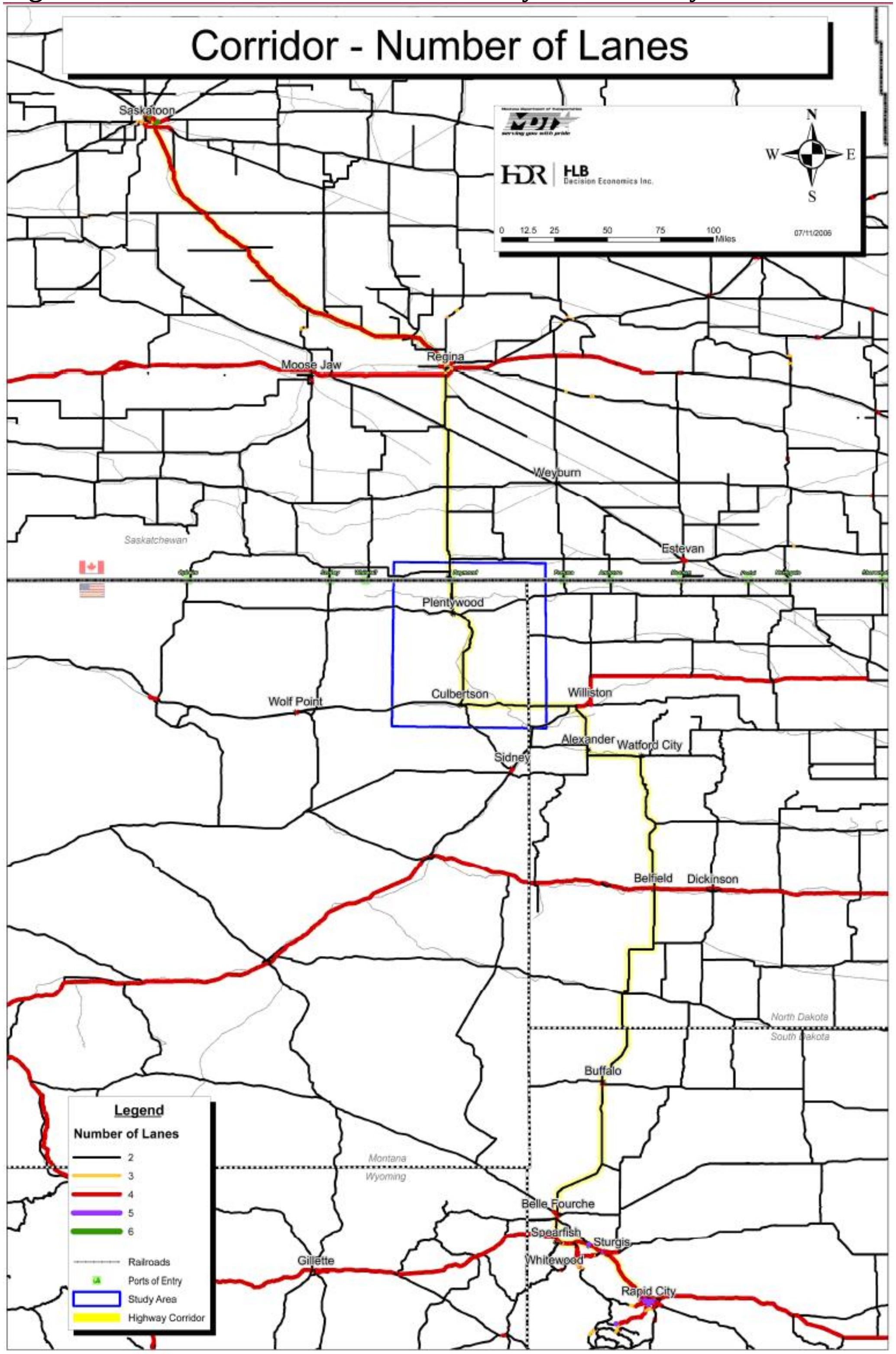
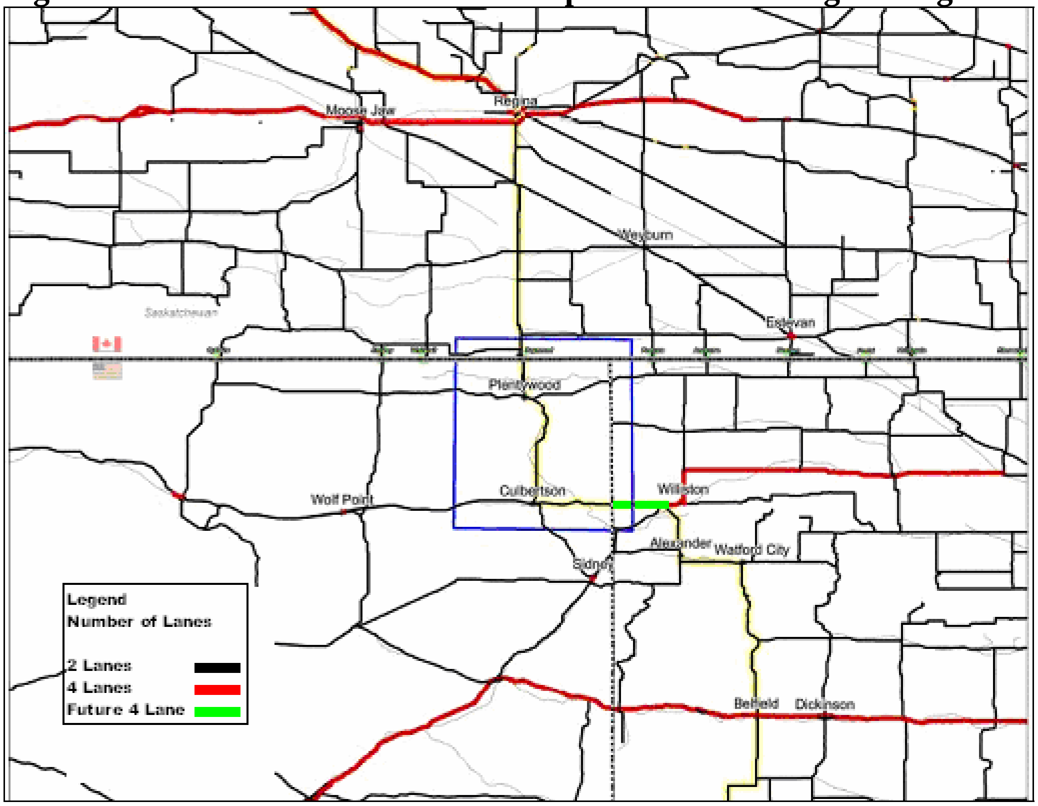


Figure 3-16: Future Planned 4-Lane Expansions from Neighboring Corridor States



3.6.2 Industrial Demand for Transportation

Crude Petroleum Industry

The analysis and data presented in Section 2 indicate that the oil industry has been growing rapidly in the study area in the last two years. The rise in world crude oil prices in the last few years has likely contributed significantly to this growth.

The oil industry requires roadway transportation to move inputs such as labor, equipment, and supplies, as well as large quantities of output to refineries and distribution centers. The analysis of the data on transportation mode for various commodities shows that crude petroleum is typically transported by pipelines, and only a fraction is transported by truck (see Table 3 - 10). Analysis and interviews with industry reported in a related study indicates that Montana oil companies consider the transportation system as currently serving their needs well.[19]

Bureau of Transportation Statistics information suggests that the Port of Raymond is the nation's eighth largest port, by value, in merchandise (i.e., oil) trade borders by pipeline.[20] Some reports suggest that the pipeline infrastructure in the area is inadequate. Currently, pipelines in the region are filled to capacity. Without more pipeline capacity, it is not possible to transport all of the oil being produced in the region to domestic refineries except by (more costly) trucking. Trucking oil to refineries significantly cuts producer's profits and dampens investment in the area.[21]

Highway transportation is important for the oil industry primarily for movement of supplies, equipment and workers. A large proportion of supply transportation and personal travel to work occurs on local roads in remote areas. Conditions of these roads may impact access to labor markets (i.e.: whether a company with extraction fields in remote areas will be able to attract a suitable labor force) as well as reliability and timeliness of supplies.

Agriculture

Agriculture in Montana relies on truck transportation. Table 3 - 10 shows that in terms of weight, 85 percent of cereal grains are transported by truck during some part of shipment. Note that even products which will ultimately be transported via rail often need to first be trucked to a loading facility. In terms of shipment value, the share of trucks transporting cereal grains is somewhat lower at 68 percent (see Table 3 - 11).

A low overall share of rail for transportation of a bulky commodity such as grains suggests that rail is relatively more expensive, or not easily accessible. In fact, some farmers in Montana are reported to ship their crops by truck to distant rail terminals to obtain better shipping rates. The

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[19] See *Montana Highway Reconfiguration Study*, report for Montana Department of Transportation, prepared by Cambridge Systematics with Economic Development Research Group, ICF Consulting, and Short Elliot Hendrikson, May 2005, page 3-27.

[20] U.S. Department of Transportation. Bureau of Transportation Statistics. Transborder Surface Freight Data (Washington, DC 1998).
http://www.bts.gov/publications/north_american_transportation_in_figures/html/table_6_3c.html

[21] See *Governors to Discuss Need for Better Oil Infrastructure*, The Associated Press, April 2006.

recent trend toward consolidating grain elevators on the BNSF main line also may have contributed to increased shipments by truck.[22]

Another factor contributing to a high use of truck transportation may be production of certain specialized high-value crop varieties, such as organic grains, seed and pulse crops, or Montana wheat varieties. These higher value crops are typically shipped by truck.[23]

Thus, as agricultural production continues to increase, there will likely be increased demand for truck transportation services. Transportation improvements would certainly support business expansion (including production of higher-value crops) by improving market access and helping attract and encourage value-added processing.[24]

3.7 Safety Issues

Safety concerns attributed to transportation systems manifest themselves in several ways. Some respondents to the survey believe that the mixture of auto and truck traffic creates an inherently unsafe and frustrating driving experience on two-lane roads that would be addressed by a four-lane facility. Others believe that the inability of vehicles to pass others conveniently along a two-lane roadway, and disparities in vehicle speeds by type, contribute to an overall unsafe environment along the corridor.

Speed limits in Montana are shown in Table 3 - 15.

Table 3-15: Speed Limits for Montana, in miles per hour

Type of Highway	Cars and Light Trucks		Heavy Trucks (over one ton manufacturer's rated capacity)	
	Daytime	Nighttime	Daytime	Nighttime
Interstate	75	75	65	65
Interstate Within Urban Area Billings, Great Falls and Missoula	65	65	65	65
Two-Lane	70	65	60	55
U.S. 93	65	65	60	55

Source: Montana Department of Transportation

Table 3 - 16 shows the crash and injury counts and rates for the state and the 6-county study area in 2004. The study area has lower crash and injury rates than the state as a whole.

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[22] See *US 2, Havre to Belknap EIS. Existing Economic Conditions Report*, ICF Consulting, PLH-TCSP 1-6(44)384, Control Number 4951, June 2003, page 35.
[23] See *US 2, Havre to Belknap EIS. Existing Economic Conditions Report*, ICF Consulting, PLH-TCSP 1-6(44)384, Control Number 4951, June 2003, page 38
[24] See *Montana Highway Reconfiguration Study*, report for Montana Department of Transportation, prepared by Cambridge Systematics with Economic Development Research Group, ICF Consulting, and Short Elliot Hendrikson, May 2005, page 3-33.

Table 3-16: Crash and Injury Counts and Rates for Montana and the Six-County Study Area, 2004

	Six-County Study Area*	Montana	Six-County Study Area as Percentage of Montana
Crashes	508	21,776	2.3%
Crash Rate**	1.20	1.95	-
Injuries	261	9,261	2.8%
Injury Rate**	0.62	0.83	-

Source: Montana Department of Transportation, Traffic Safety Problem Identification, FY 2006
** Includes all public roadways in the 6 counties*
*** Crash and injury rates are based upon a calculated expose factor (i.e.: the crash rate is the total number of crashes divided by the exposure factor). This expose factor is calculated based on vehicle miles and population. The rates are reported per 100 million vehicle miles traveled.*

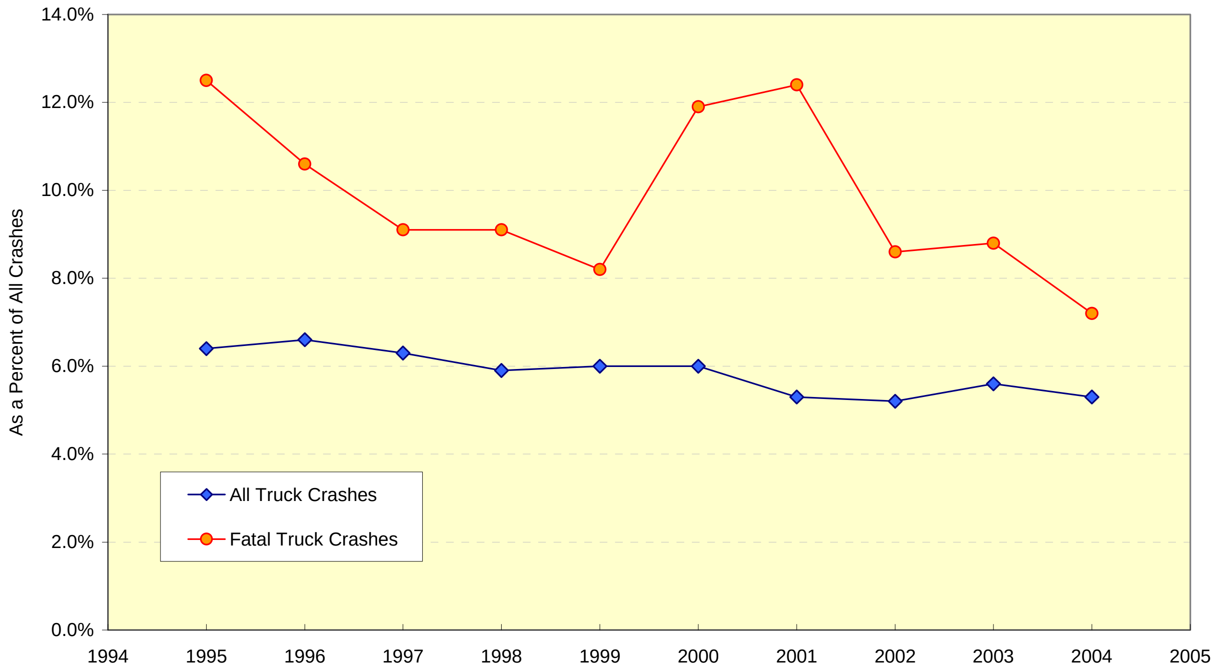
Table 3 - 17 shows the number of crashes involving trucks at the state level. The number of truck crashes has declined by almost 30 percent since 1996. Figure 3 - 17 and Table 3 - 17 both show crashes and fatal crashes involving trucks as a percentage of total crashes and fatal crashes. They illustrate that the incidence of a crash causing a fatality is higher when a truck is involved in the accident.

Table 3-17: Number of Crashes Involving Trucks in Montana

Year	Crashes		Fatal Crashes	
	Number	Percent of all Crashes	Number	Percent of all Fatal Crashes
1995	1,314	6.4%	27	12.5%
1996	1,646	6.6%	21	10.6%
1997	1,426	6.3%	24	9.1%
1998	1,310	5.9%	19	9.1%
1999	1,262	6.0%	16	8.2%
2000	1,346	6.0%	24	11.9%
2001	1,159	5.3%	25	12.4%
2002	1,228	5.2%	20	8.6%
2003	1,288	5.6%	21	8.8%
2004	1,163	5.3%	15	7.2%

Source: Montana Department of Transportation, Traffic Safety Problem Identification, FY 2006

Figure 3-17: Truck Crashes as a Percentage of All Crashes in Montana



Because of the importance of agriculture in the study area, economic growth and change will likely bring increased truck traffic, which can be expected to reduce the overall safety of the corridor. Oversized loads (see Figure 3 - 18), often required for moving agricultural equipment and products, also reduce safety.

Figure 3-18: Truck Carrying Oversized Load Traveling along US 2

3.8 Constraints and Regulations Affecting Transportation

The vehicle type used for cross-border trucking is largely determined by State Gross Vehicle Weight (SGVW) regulations. Among the western Border States, Montana has the highest GVW limit, at 131,060 pounds for the majority of the state (between Shelby, Montana and the Montana-Alberta border at the Port of Sweet Grass, the limit is higher at 137,500 pounds). In North Dakota, South Dakota, and Minnesota, the GVW limits are 105,500 pounds, 129,000 pounds and 80,000 pounds, respectively. Manitoba, Canada's weight limit is only slightly more strict than that for the majority of Montana, at 124,300 pounds.

The weight limits in the western Border States are generally 20,000 pounds on single axles and 34,000 pounds on tandem axles. These weight limits tend to be more restrictive than those in Canada. Also more restrictive than the requirements in Canada are the load distribution requirements (number of axles and axle spacing) for the western Border States. Bridge Formula B (BFB)[25] is used to calculate western border crossing load distribution requirements.

However, Canada's steering axle limit (5,500 kg) is lower than that in the western Border States (6,000 kg). This requires truckers to move their fifth wheel when traveling into Canada in order to meet regulations. Also, the split tandems used for semi trailers in the western Border States are not allowed in western Canada. Finally, the western Border States (except for Minnesota) currently allow 14-foot high vehicles, whereas most western Canadian provinces have somewhat more restrictive truck height limits. Saskatchewan, for instance, permits 4.15 meter (13.65 feet) heights.

The majority of trucks used for shipments in the western Border States (75 percent in Montana) are small trucks of four axles or less. Due to the wide variation of truck size and weight regulations, trucks in the western US and Canada crossing international and State borders are required to stretch or contract trucks; have axles raised, lowered, or repositioned; have fifth wheels repositioned; have tires added or removed; and have loads shifted/modified.

Numerous respondents surveyed within the transportation sector expressed their desire to obtain a harmonization of the different bridge length rules in the western states and western Canadian provinces. It was their belief that this would save much time and therefore lower the overall cost of transport within regions that contain standardized restrictions.

3.8.1 Federal Highway Regulations

Federal size and weight regulations are enforced on all routes included on the National Network. In Montana, only Interstate Highways are on the National Network. On the other hand, both North and South Dakota have some non-Interstate routes that are on the National Network (including US 2 and US 85), which means these routes are constrained by Federal Highway regulations. Thus, Montana has the flexibility to change truck standards on MT 16 and US 2, while North Dakota and South Dakota do not have this flexibility on similar routes. The fact that

[25] A formula to determine the maximum allowable weight of a vehicle given the number of axels and axle spacing (see http://www.fhwa.dot.gov/)

Montana is not constrained by these regulations could lead to regulatory changes that increase truck flows through Montana if the traffic's destination states also adopted the standardized regulations. This would require a broad move toward a regional harmonization of highway regulations amongst Saskatchewan, Wyoming, Colorado, and Montana.[26]

[26] See *Estimating Traffic Changes and Pavement Impacts from Freight Truck Diversion Following Changes in Interstate Truck Weight Limits*, Humphreys and Fortowsky, January 2006, p. 75

4: EXISTING CONDITIONS IN NEIGHBORING REGIONS

This section provides an overview of existing conditions in regions neighboring the study area so as to gain a firmer understanding of the study area's economic potential. The study area is bordered on the east by North Dakota and South Dakota and on the north by the province of Saskatchewan, in Canada.

4.1 North Dakota

4.1.1 Population and Employment

Table 4 - 1 shows the population of the two most northwestern counties in North Dakota, Williams and Divide. Williston, in Williams County, is one of the 10 largest cities in North Dakota, with a population of 12,512. This only accounts for less than 2 percent of the state's total population. Williston is the largest North Dakota city in close proximity to the study area.

Table 4 - 1 also shows employment numbers for the two counties and their major cities. In North Dakota, a little over 50 percent of the population is part of the labor force. Williams County has a higher rate of labor force participation than Divide County does. Of the cities listed in the table, Williston has the highest rate of labor force participation.

Table 4-1: Population in Williams and Divide Counties and Their Major Cities, 2000

		Williams County				Divide County			North Dakota
		Total County	Williston City	Tioga City	Ray City	Total County	Crosby City	Noonan City	
Total Population	Number	19,761	12,512	1,125	534	2,283	1,089	154	642,200
	% of State	3.08%	1.95%	0.18%	0.08%	0.36%	0.17%	0.02%	---
Employment	Number	10,191	6,673	520	236	1,029	493	62	338,982
	% in Labor Force	51.57%	53.33%	46.22%	44.19%	45.07%	45.27%	40.26%	67.50%

Source: U.S. Census Bureau, 2000 Census

4.1.2 Industry Structure

Table 4 - 2 shows the employment structure of Williston, North Dakota, and the five counties closest to the six-county region on the Montana side of the border. The table shows that the largest industry in terms of employment is the education, health care and social services sector, accounting for over 23 percent of total employment. The second largest industry is retail trade, with a little over 16 percent of total employment concentrated in this sector.

The similarities in industrial structure between this area and the six-county study area are made plain by comparing this table with Table 2 – 8. Generally, the North Dakota counties are somewhat less dependent on agriculture, and somewhat better represented in retail trade and the professional services industries. This is almost certainly due to the city of Williston and its function as a trade center for the region including northeast Montana.

Table 4-2: Employment by Industry in Percent of Total Employment, 2000

Industry	Williston, North Dakota	Five County Area	Location Quotient	United States
Agriculture, forestry, fishing and hunting, and mining	8.5%	16.6%	8.74	1.9%
Construction	5.9%	5.7%	0.84	6.8%
Manufacturing	3.7%	3.2%	0.23	14.1%
Wholesale trade	4.4%	3.1%	0.86	3.6%
Retail trade	16.1%	12.5%	1.07	11.7%
Transportation and warehousing, and utilities	4%	5.3%	1.02	5.2%
Information	1.6%	1.8%	0.58	3.1%
Finance, insurance, real estate, and rental and leasing	6.2%	5.1%	0.74	6.9%
Professional, scientific, management, administrative, and waste management services	7.6%	5.3%	0.57	9.3%
Educational, health and social services	23.1%	22.6%	1.14	19.9%
Arts, entertainment, recreation, accommodation and food services	8.2%	7.9%	1.00	7.9%
Other services (except public administration)	5.4%	5.2%	1.06	4.9%
Public administration	5.3%	5.7%	1.19	4.8%

Source: U.S. Census Bureau, 2000 Census
Notes: Location Quotients shown here are the percentage of industry to total employment in 5-counties in northwest North Dakota region divided by the percentage for the U.S. Quotients greater than 1.00 indicate a greater concentration of the activity in the area than the U.S. Five Counties include: Burke, Divide, McKensie, Mountrail, and Williams.

4.1.3 Traffic and Freight Movements

Table 4 - 3 shows the length of the road network in North Dakota. The vast majority of roads in North Dakota are rural roads. Urban roads account for just 2.3 percent of all lane-miles of roads, much less than the national average of 26.4 percent.

Though there was a slight increase in lane-miles of both urban and rural roads in North Dakota over the period from 2000 to 2004, the total lane-miles of both rural and urban roads in North Dakota remained virtually unchanged.

Table 4-3: Lane Miles of Roads in North Dakota

Lane-Miles of Roads, 2000			Lane-Miles of Roads, 2004			Rate of Growth 2000-2004	Percent Urban in Total, 2004
Rural	Urban	Total	Rural	Urban	Total		
171,338	4,010	175,348	171,630	4,061	175,691	0.2%	2.3%

Source: Highway Statistics, 2000 and 2004 issues

Table 4 - 4 shows highway traffic characteristics for North Dakota. The table indicates that over the period from 2000 to 2004, highway travel, as measured by annual vehicle miles of travel, increased by 4.5 percent on rural roads and 7.3 percent on urban roads. In 2004, the share of trucks in traffic on rural roads in North Dakota amounted to 18.6 percent, and the share of trucks on urban roads amounted to 6.4 percent.

The rate of growth in traffic is much higher in North Dakota than in the nation. However, it should also be noted that traffic levels in North Dakota are substantially below the national average.

Table 4-4: Highway Traffic Characteristics in North Dakota and the Nation

Measure of Travel	North Dakota			United States		
	2000	2004	2000-2004 Growth	2000	2004	2000-2004 Growth
Annual Vehicle-Miles of Travel (Millions) - Rural	5372	5614	4.50%	1,084,961	1,070,248	-1.4%
Percent Trucks	15	18.6	24.00%	14.8%	15.6%	4.9%
Annual Vehicle-Miles of Travel (Millions) - Urban	1845	1980	7.32%	1,664,842	1,892,265	12.0%
Percent Trucks	4.3	6.4	48.84%	7.0%	7.7%	9.7%
Annual Vehicle-Miles of Travel (Millions) - Total	7217	7594	5.22%	2,749,803	2,962,513	7.2%
AADT per Lane (State-Agency Owned Road System), Total Urban and Rural*	135	150	11.11%	2,693	2,833	4.9%

Source: Highway Statistics, 2000 and 2004 issues

In North Dakota, the effort to expand US 2 from Minot to Williston to 4 lanes has been initiated. The project has been segmented into 10 smaller projects, and the completion date is set for 2008. The reconstruction is for almost 98 miles of US 2 between the two cities. Community leaders expect that the expansion of this section of US 2 will bring new economic opportunities to the northwest corridor of North Dakota, especially by attracting new business.

Table 4 - 5 shows the top 15 commodities in terms of tonnage shipped to North Dakota;
Table 4 - 6 shows the top 15 commodities in terms of value.

Table 4-5: Top 15 Commodities Shipped to North Dakota by Weight, Domestic Shipments with North Dakota Destination, Thousands of Short Tons

Commodity	Total	Cumulative Percentage	Shipments by Mode			
			Pipeline &Unknown	Rail	Truck	Other
Coal	39,361.3	30.0%	33,082.8	1,116.9	5,161.6	0.0
Cereal grains	36,120.4	57.47%		116.8	36,003.6	0.0
Coal, n.e.c.	20,143.2	72.80%	18,234.7	74.1	1,834.2	0.2
Gravel	5,157.7	76.73%	0.0	148.8	5,008.9	0.0
Waste/scrap	4,989.5	80.53%		117.3	4,872.2	0.0
Crude petroleum	4,867.4	84.23%	4,855.1		12.2	0.0
Nonmetal min. prods.*	4,170.1	87.41%	20.8	628.4	3,515.9	5.1
Other ag prods.	4,056.3	90.50%	2.6	129.6	3,924.1	0.0
Gasoline	3,656.8	93.28%	27.3		3,629.5	0.0
Fuel oils	2,100.7	94.88%	10.4		2,090.4	0.0
Other foodstuffs	1,854.5	96.29%	27.7	510.5	1,308.0	8.2
Fertilizers	1,774.7	97.64%		1,477.4	297.3	0.0
Unknown	1,293.3	98.63%	8.0		1,285.3	0.0
Natural sands	943.0	99.35%	8.3	177.6	757.1	0.0
Wood prods.	859.0	100.00%	11.3	126.1	719.9	1.8
Total	**131,347.9**		**56,288.9**	**4,623.5**	**70,420.1**	**15.3**

Source: Extracted from 2002 Freight Analysis Framework (FAF) Database for North Dakota, Federal Highway Administration

Table 4 - 5 shows that the top 6 commodities by weight shipped to North Dakota were coal, cereal grains, coal n.e.c. (not elsewhere classified), gravel, waste/scrap, and crude petroleum. Some of the top commodities in terms of shipment's weight were also top commodities in terms of value, including coal n.e.c. and cereal grains (see Table 4 - 6).

Table 4-6: Top 15 Commodities Shipped to North Dakota by Value, Domestic Shipments with North Dakota Destination, Millions of Dollars

Commodity	Total	Cumulative Percentage	Shipments by Mode			
			Pipeline &Unknown	Rail	Truck	Other
Coal, n.e.c.	$5,940.9	29.58%	$5,606.5	$1.7	$332.5	**$0.3**
Machinery	$3,360.3	46.31%	$197.1	$51.2	$2,945.6	**$166.3**
Cereal grains	$2,210.2	57.32%		$27.2	$2,182.9	**$0.0**
Mixed freight	$1,268.9	63.64%	$22.2		$1,179.9	**$66.8**
Unknown	$1,113.5	69.18%	$3.7		$1,109.6	**$0.2**
Other ag prods.	$1,058.2	74.45%	$15.2	$15.1	$1,027.5	**$0.4**
Gasoline	$750.3	78.19%	$4.5		$745.8	**$0.0**
Other foodstuffs	$690.3	81.63%	$28.9	$80.1	$580.3	**$0.9**
Nonmetal min. prods.*	$672.5	84.97%	$30.0	$362.7	$271.7	**$8.1**
Articles-base metal	$570.5	87.81%	$22.7	$0.8	$518.9	**$28.2**
Textiles/leather	$550.6	90.56%	$62.7	$0.2	$466.9	**$20.8**
Pharmaceuticals	$541.7	93.25%	$13.6		$251.1	**$276.9**
Crude petroleum	$486.8	95.68%	$485.5		$1.2	**$0.0**
Live animals/fish	$435.7	97.85%			$435.7	**$0.0**
Wood prods.	$432.4	100.00%	$28.0	$35.2	$365.9	**$3.4**
Total	**$20,082.6**		**$6,520.5**	**$574.2**	**$12,415.7**	**$572.2**

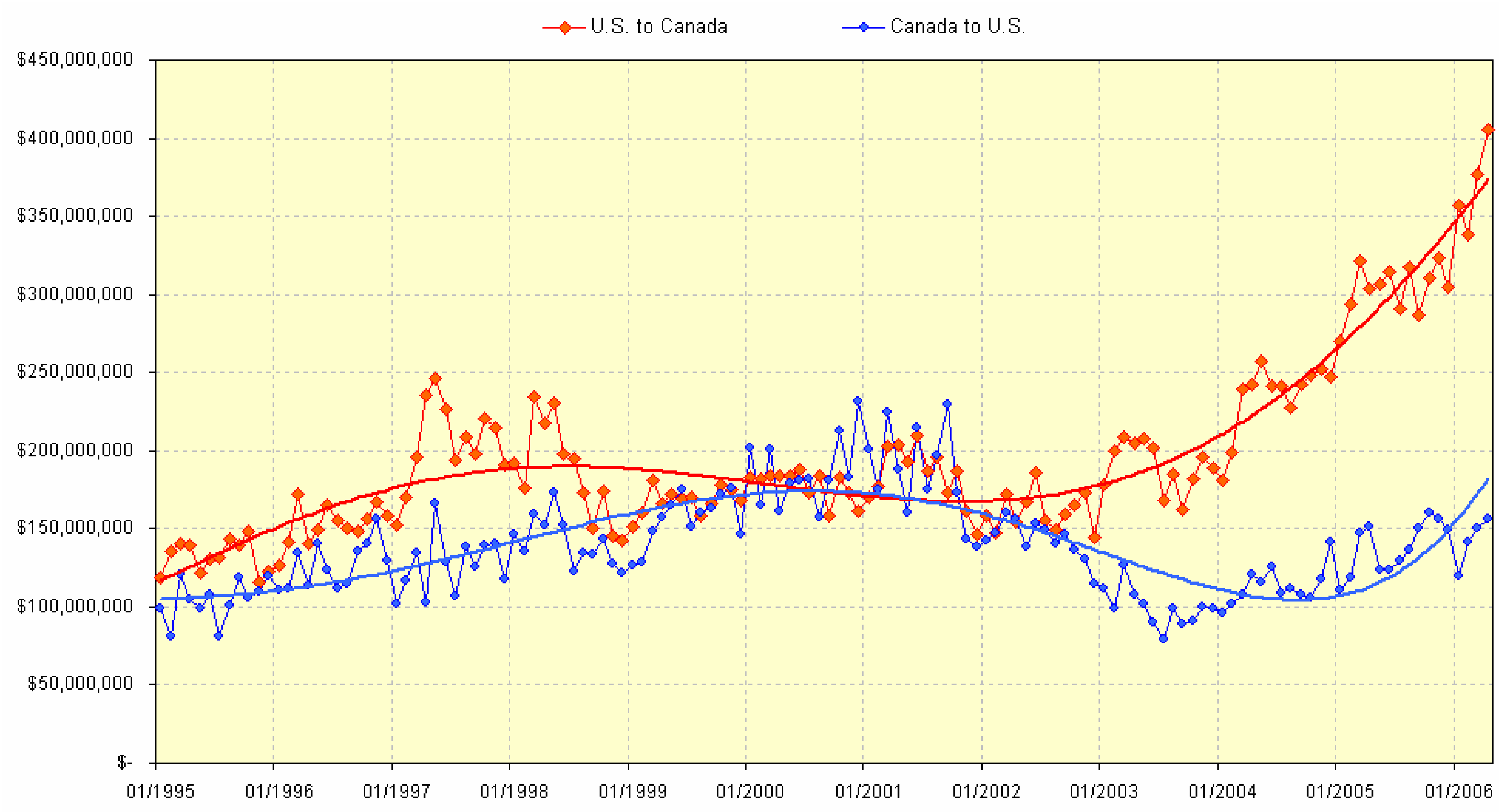
Source: Extracted from 2002 Freight Analysis Framework (FAF) Database for North Dakota, Federal Highway Administration

4.1.3.1 Shipments Crossing the US-Canadian Border

Figure 4 - 1 shows the total truck freight value passing through the Port of Portal. In the past 10 years, the value of shipments from the US to Canada passing through the Port of Portal has been, in general, higher than the value of shipments from Canada to the US passing through this port. This difference in value has grown substantially since 2003. Since 2003, in fact, there has been a rather significant increase in the total truck freight value of shipments passing through the Port of Portal from the US to Canada. Similar growth is not seen in shipments originating in Canada and destined for the US passing through the Port of Portal. The average annual compound growth rate from 1995 to 2006 for the value of shipments from the US to Canada and from Canada to the US passing through the Port of Portal has been 11% and 2%, respectively.[27] (Compare to Figure 3 – 9. The port at Raymond has seen faster growth in both import export and values, and faster growth of import than export values.)

[27] For an overview of the final destination of the freight passing through the Canadian border, see Figure A-2 in Appendix A.

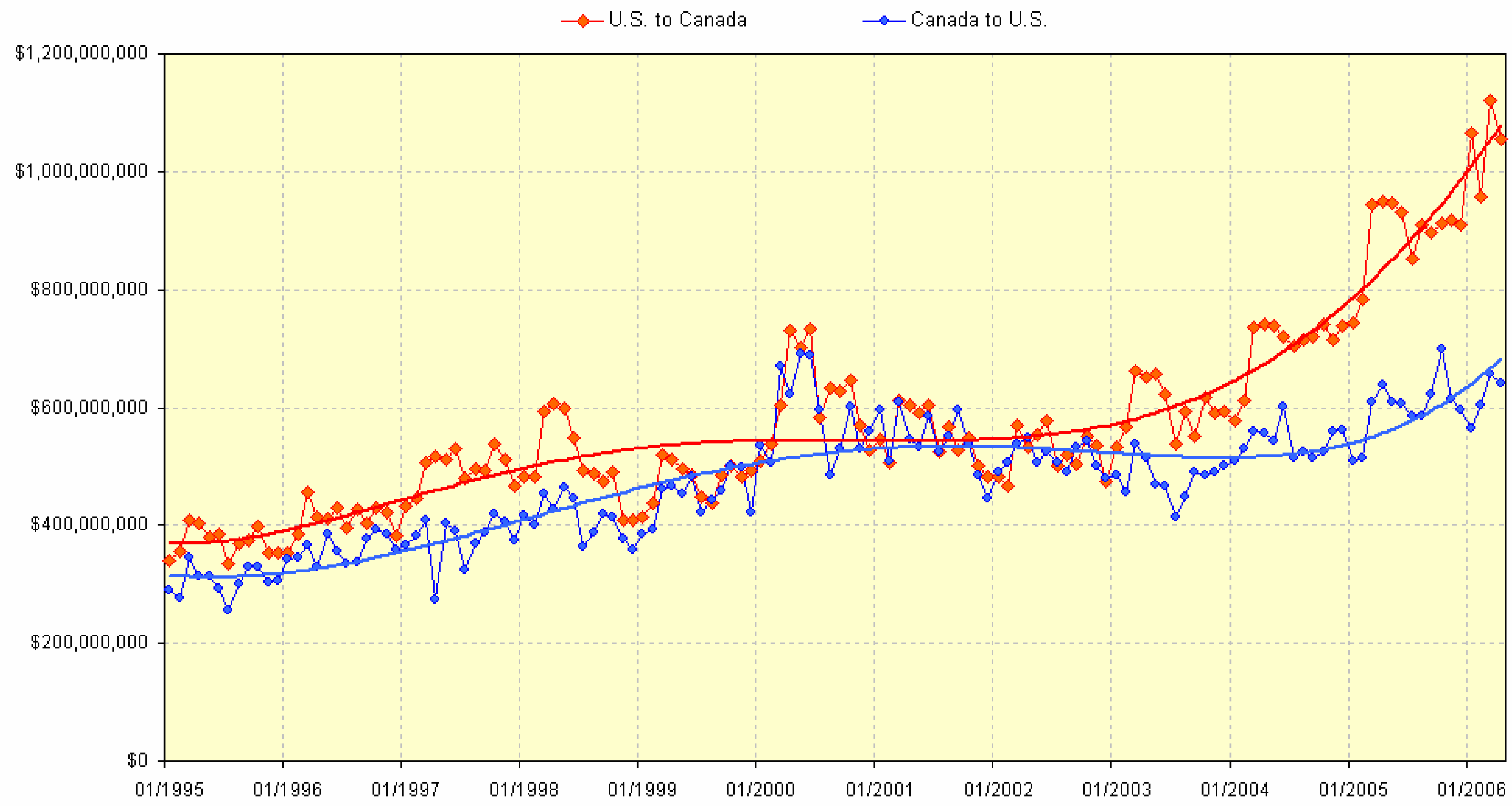
Figure 4-1: Total Truck Freight Value Passing through Port of Portal



Source: U.S Department of Transportation, Bureau of Transportation Statistics, Transborder Surface Freight Database

Figure 4 - 2 shows the total truck freight value of shipments passing through all North Dakota ports of entry. There is an overall positive trend in the total value of freight passing through these ports over the past 10 years. The average annual growth rates between 1995 and 2006 in the value of shipments passing through all North Dakota ports from the US to Canada and from Canada to the US have been 11% and 6%, respectively. In general, over the past 10 years, the value of shipments destined for Canada passing through North Dakota ports are higher than those originating in Canada passing through North Dakota ports of entry. The difference in values between shipments originating in the US passing through North Dakota ports and those originating in Canada passing through North Dakota ports becomes increasingly significant from 2003 to 2006.

Figure 4-2: Total Truck Freight Value Passing through North Dakota Ports of Entry



Source: U.S Department of Transportation, Bureau of Transportation Statistics, Transborder Surface Freight Database

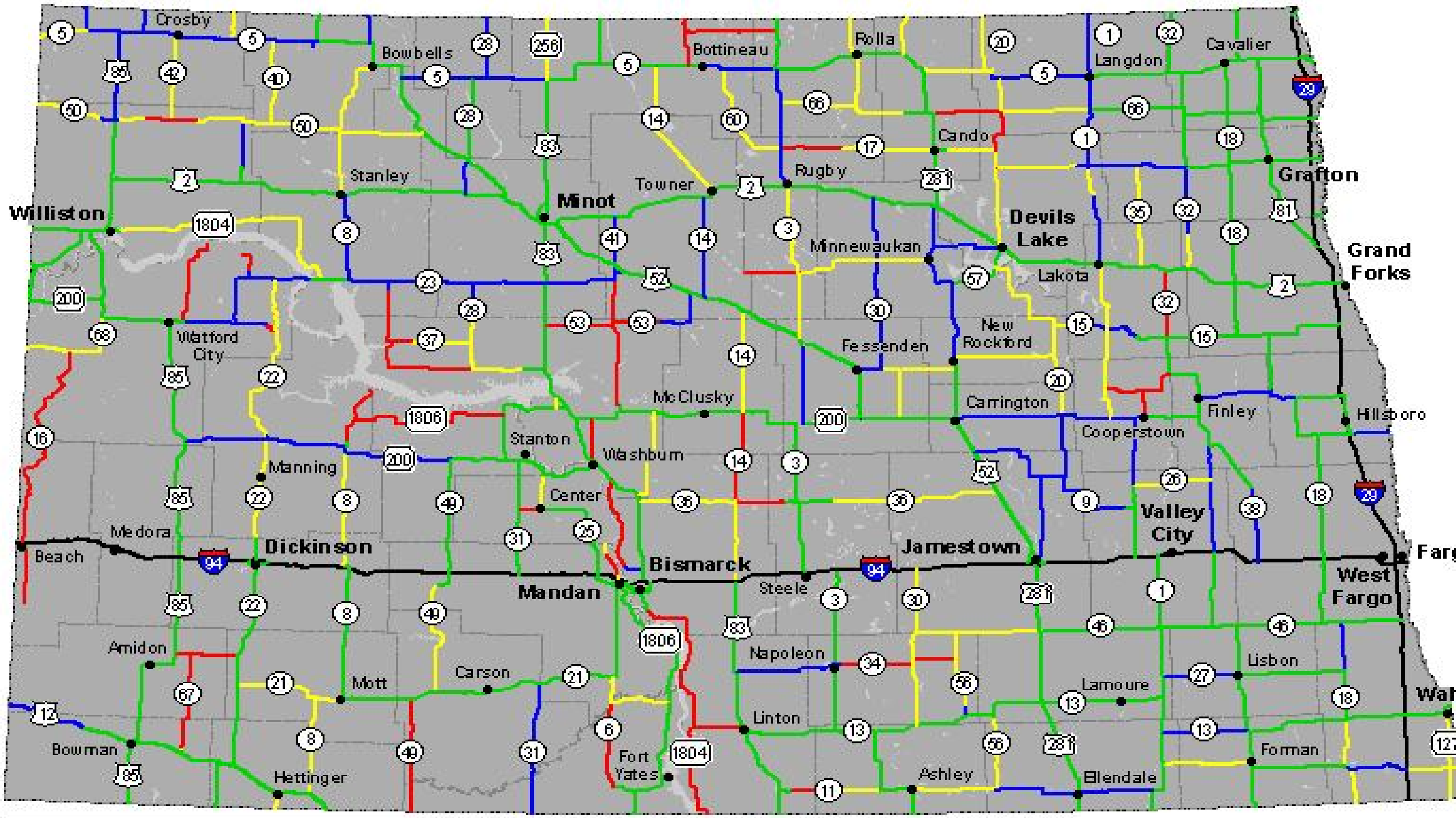
4.1.3.2 North Dakota Sections of the Theodore Roosevelt Expressway

The sections of US 2 and US 85 in North Dakota along the Teddy Roosevelt Expressway (TRE) are almost exclusively two-lane roadways (except for a short segment west of Williston which has been expanded to four-lanes). However, the North Dakota Department of Transportation has indicated they do plan on extending the four-lane section of US 2 to the Montana border.[28] The speed limits are 65 miles per hour for both daytime and night time traffic.

The weight restriction along the US 2 and US 85 sections of the TRE can be seen in Figure 4 - 3.

[28] Information comes from MDT surveys of transportation agencies in other states and provinces within the broader region. (See Section 5.1.4 of Working Paper #2: Assessment of Existing and Future Opportunities)

Figure 4-3: North Dakota Load Restrictions

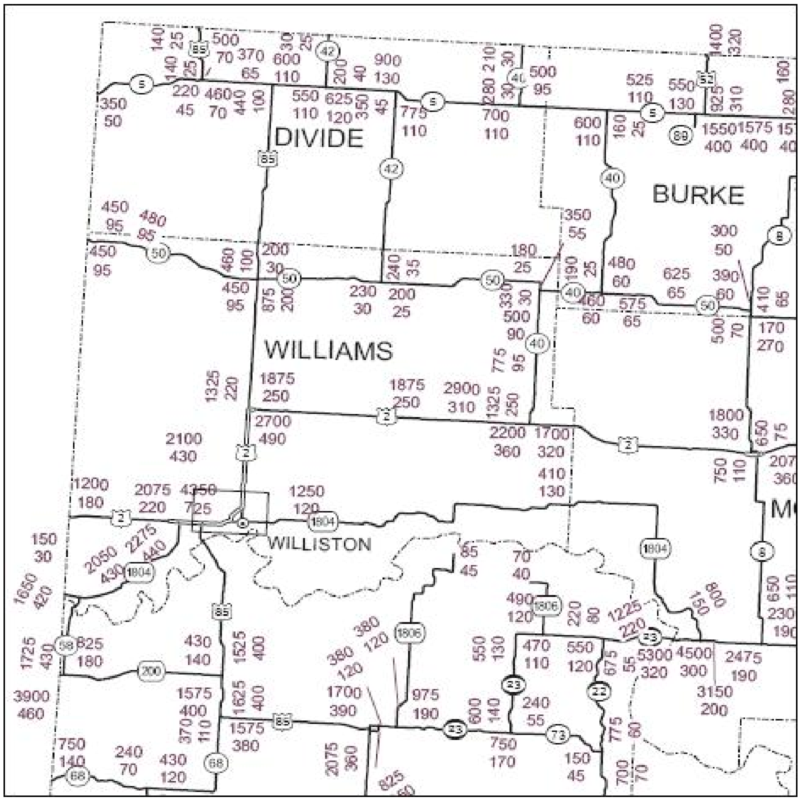


Restrictions in Effect / Interstate System	by Legal Weight	8 - Ton	7 - Ton	6 - Ton
Single Axle	20,000 lbs	16,000 lbs	14,000 lbs	12,000 lbs
Tandem Axle	34,000 lbs	32,000 lbs	28,000 lbs	24,000 lbs
3 Axle Group or more per Axle	17,000 lbs	14,000 lbs	12,000 lbs	10,000 lbs
Max. Axle Group	48,000 lbs	42,000 lbs	36,000 lbs	30,000 lbs
Gross Weight	105,500 lbs	105,500 lbs	105,500 lbs	80,000 lbs

Source: North Dakota Department of Transportation, http://www.dot.nd.gov/roadreport/loadlimit/loadlimit.asp

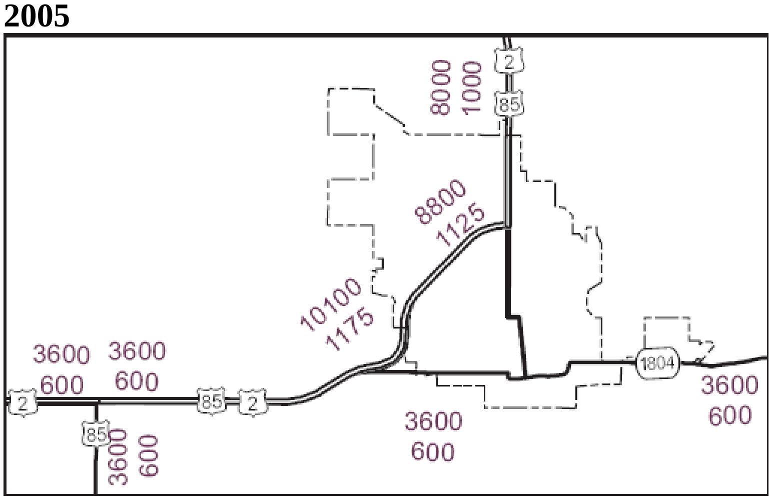
Figure 4 - 4 and Figure 4 - 5 show AADT counts and commercial truck traffic for the US 2 and US 85 sections of the TRE.

Figure 4-4: Northwestern North Dakota Average Daily Traffic and Commercial Truck Traffic, 2005



Source: North Dakota Department of Transportation, http://www.dot.nd.gov/road-map/pdf/traffic/trafficstate_2005.pdf

Figure 4-5: Williston Average Annual Daily Traffic and Commercial Truck Traffic, 2005



Source: North Dakota Department of Transportation, http://www.dot.nd.gov/road-map/pdf/traffic/trafficstate_2005.pdf

4.2 South Dakota

4.2.1 Population and Employment

Table 4 - 7 shows total population in South Dakota. In 2004, total population was estimated at 741,480. This is a decrease of 1.8 percent since the 2000 Census. Table 4 - 7 also shows employment numbers for the state. In South Dakota, nearly 70 percent of the population is part of the labor force.

Table 4-7: Population and Employment in South Dakota, 2000

		North Dakota		
		2000	2004	2000-2004 Growth
Total Population		754,844	741,480	-1.77%
Employment	Number	394,945	408,125	3.34%
	% In Labor Force	68.4%	70.9%	

Source: U.S. Census Bureau, 2000 Census and 2004 Estimates

4.2.2 Industry Structure

Table 4 - 8 shows the employment structure of South Dakota. The table shows that the largest industry in terms of employment is the education, health care and social services sector, accounting for about 22 percent of total employment. The second largest industry is retail trade, with 12 percent of total employment concentrated in this sector.

Table 4-8: Employment by Industry in Percent of Total Employment, 2000

Industry	South Dakota
Agriculture, forestry, fishing and hunting, and mining	8.1%
Construction	6.3%
Manufacturing	11.1%
Wholesale trade	3.3%
Retail trade	12%
Transportation and warehousing, and utilities	4.7%
Information	2.1%
Finance, insurance, real estate, and rental and leasing	7.4%
Professional, scientific, management, administrative, and waste management services	5%
Educational, health and social services	22%
Arts, entertainment, recreation, accommodation and food services	8.3%
Other services (except public administration)	5.1%
Public administration	4.8%

Source: U.S. Census Bureau, 2000 Census

4.2.3 Traffic and Freight Movements

Table 4 - 9 shows the length of the road network in South Dakota. The vast majority of roads in South Dakota are rural roads. Urban roads account for just 3.2 percent of all lane-miles of roads, much less than the national average of 26.4 percent.

There was a slight increase in lane-miles of total roads in South Dakota over the period from 2000 to 2004. This was due to the nearly 22 percent increase in total lane-miles of urban roads in the State between 2000 and 2004.

Table 4-9: Lane Miles of Roads in South Dakota

Lane-Miles of Roads, 2000			Lane-Miles of Roads, 2004			Rate of Growth 2000-2004	Percent Urban in Total, 2004
Rural	Urban	Total	Rural	Urban	Total		
164,640	4,421	169,061	164,052	5,391	169,443	0.23%	3.18%

Source: Highway Statistics, 2000 and 2004 issues

Table 4 - 10 shows highway traffic characteristics for South Dakota. The rate of growth in traffic is higher in South Dakota than in the nation, but traffic levels in South Dakota are substantially below the national average.

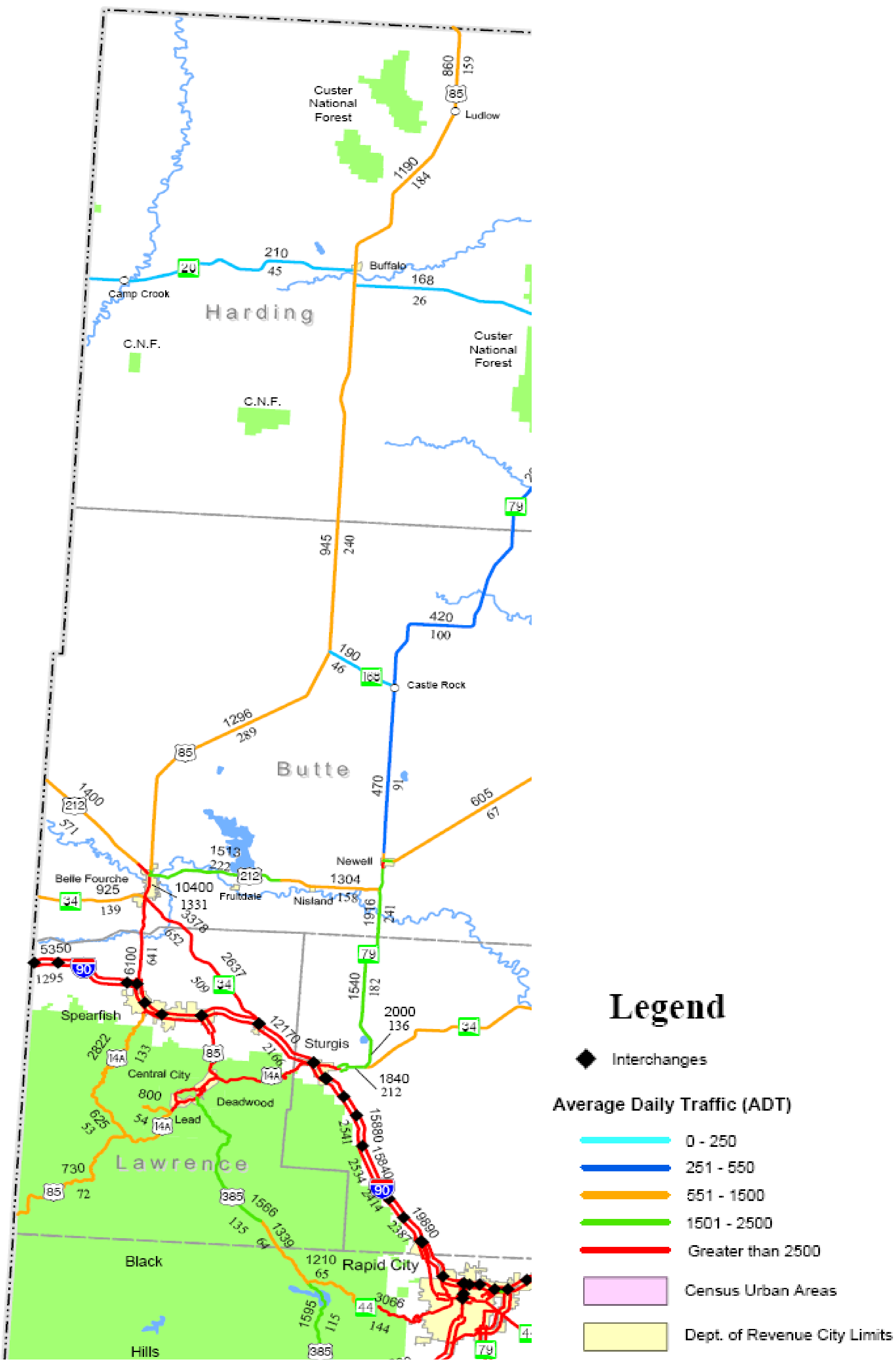
Table 4-10: Highway Traffic Characteristics in South Dakota and the Nation

Measure of Travel	South Dakota			United States		
	2000	2004	2000-2004 Growth	2000	2004	2000-2004 Growth
Annual Vehicle-Miles of Travel (Millions) - Rural	6,519	6,597	1.2%	1,084,961	1,070,248	-1.4%
Annual Vehicle-Miles of Travel (Millions) - Urban	1,913	2,187	14.3%	1,664,842	1,892,265	12.0%
Annual Vehicle-Miles of Travel (Millions) - Total	8,432	8,784	4.2%	2,749,803	2,962,513	7.2%

Source: Highway Statistics, 2000 and 2004 issues

Figure 4 - 6 shows the average annual daily traffic for the South Dakota portion of US 85 north of Rapid City.

Figure 4-6: Northwestern South Dakota Average Annual Daily Traffic, 2005



Source: South Dakota Department of Transportation

** AADT counts – upper value is for all vehicles; lower value is for trucks only.*

Table 4 - 11 shows the top 15 commodities in terms of tonnage shipped to South Dakota, while Table 4 - 12 shows the top commodities in terms of value.

Table 4-11: Top 15 Commodities Shipped to South Dakota by Weight, Domestic Shipments with South Dakota Destination, Thousands of Short Tons

Commodity	Total	Cumulative Percentage	Shipments by Mode			
			Pipeline &Unknown	Rail	Truck	Other
Cereal grains	26,168.4	32.10%			26,168.4	
Coal, n.e.c.	19,916.4	56.53%	19,184.8	122.1	606.4	3.2
Gravel	8,943.7	67.50%	2,354.4	378.5	6,210.8	0.0
Nonmetal min. prods.*	6,027.3	74.89%	292.8	472.2	5,217.0	45.3
Other ag prods.	2,876.8	78.42%	89.7		2,786.0	0.0
Natural sands	2,784.2	81.84%	29.2		2,755.0	
Gasoline	1,987.3	84.27%	4.7		1,982.6	
Coal	1,939.6	86.65%		1,471.1	468.5	
Live animals/fish	1,829.8	88.90%			1,829.8	
Fertilizers	1,685.3	90.97%	18.5	84.9	1,581.9	
Articles-base metal	1,530.8	92.84%	8.8	1.5	1,512.2	8.4
Wood prods.	1,476.4	94.65%	0.6	48.7	1,424.7	2.5
Waste/scrap	1,472.8	96.46%		37.1	1,435.7	
Unknown	1,463.4	98.26%	0.9		1,462.6	0.0
Fuel oils	1,422.1	100.00%	1.3	56.6	1,364.2	
Total	**81,524.3**		**21,985.7**	**2,672.7**	**56,805.7**	**59.4**

Source: Extracted from 2002 Freight Analysis Framework (FAF) Database for South Dakota, Federal Highway Administration

Table 4 - 11 shows that the top 6 commodities by weight shipped to South Dakota were cereal grains, coal n.e.c., gravel, non-metal mineral products, other agricultural products, and natural sands. Some of the top commodities in terms of shipment's weight were also top commodities in terms of value, including coal n.e.c. and cereal grains (see Table 4 - 12).

Table 4-12: Top 15 Commodities Shipped to South Dakota by Value, Domestic Shipments with South Dakota Destination, Millions of Dollars

Commodity	Total	Cumulative Percentage	Shipments by Mode			
			Pipeline &Unknown	Rail	Truck	Other
Coal, n.e.c.	$6062.0	21.37%	$5,923.7	$8.1	$127.9	$2.3
Machinery	$4241.6	36.32%	$93.7		$3,886.5	$234.4
Mixed freight	$2615.2	45.53%	$44.4		$2,398.0	$172.8
Articles-base metal	$2345.7	53.80%	$46.9	$1.1	$2,171.8	$123.4
Live animals/fish	$2175.9	61.47%			$2,175.9	
Cereal grains	$1487.5	66.71%			$1,487.5	
Motorized vehicles***	$1342.3	71.44%	$86.3	$38.0	$1,082.1	$101.8
Electronics	$1283.6	75.97%	$33.8		$807.5	$355.9
Unknown	$1212.6	80.24%	$0.7		$1,211.2	$0.7
Misc. mfg. prods.	$1183.2	84.41%	$10.1		$683.0	$472.8
Textiles/leather	$947.0	87.75%	$324.0		$555.6	$67.4
Other ag prods.	$919.3	90.99%	$13.7		$886.0	$19.1
Pharmaceuticals	$871.1	94.06%	$9.0		$475.7	$333.9
Transport equip.	$856.4	97.08%	$67.7		$698.1	$50.2
Other foodstuffs	$828.9	100.00%	$5.8		$820.5	$2.7
Total	**$28,372.4**		**$6,659.8**	**$47.2**	**$19,467.2**	**$1,937.4**

Source: Extracted from 2002 Freight Analysis Framework (FAF) Database for South Dakota, Federal Highway Administration

4.3 Saskatchewan

4.3.1 Population and Employment

Saskatchewan is one of Canada's three Prairie Provinces. Table 4 - 13 shows population estimates for Canada, Saskatchewan, and Saskatchewan's two largest cities. Saskatchewan has a population of 978,933, which is 3.26 percent of Canada's total population. The largest city in Saskatchewan is Saskatoon, having a population of 225,927. The second largest city is Regina, Saskatchewan's capital, with a total population of 192,800. Regina is situated about 107 miles north of the Port of Raymond, making it the study area's nearest large population and trade center.

Table 4 - 13 also shows employment estimates for the country, the province, and Saskatchewan's two largest cities. About half of Canada's population is part of the labor force as is the case in Saskatchewan. Regina and Saskatoon both have slightly higher employment rates.

Table 4-13: Population and Employment in Saskatchewan and Canada, 2001

		Saskatchewan			Canada
		Total	Regina	Saskatoon	
Total Population	Number	978,933	192,800	225,927	30,007,094
	% of Country	3.26%	0.64%	0.75%	---
Employment	Number	504,020	105,105	122,900	15,576,565
	% in Labor Force	51.49%	54.52%	54.40%	51.91%

Source: Statistics Canada, 2001 Census

4.3.2 Industry Structure

Saskatchewan's main industries are the health and education sector and the agriculture and other natural resources sector (see Table 4 - 14). Each of these sectors makes up a little over 18 percent of total employment. Canada's agriculture industry is over 10 percent concentrated in Saskatchewan.

Regina's main industries are business services and health and education, with each of these sectors making up over 18 percent of total employment. The wholesale and retail trade sector makes up almost 16 percent of total employment in Regina.

Table 4-14: Employment by Industry in Percent of Total Employment, 2001

Industry	Regina	Saskatchewan	Canada	Saskatchewan as % of Canada
Agriculture and other resource-based industries	3.77%	18.27%	5.50%	10.75%
Manufacturing and construction industries	10.33%	11.23%	19.60%	1.85%
Wholesale and retail trade	15.97%	14.57%	15.67%	3.01%
Finance and real estate	8.76%	5.02%	5.75%	2.83%
Health and education	18.16%	18.29%	16.26%	3.64%
Business services	18.42%	12.87%	17.94%	2.32%
Other services	24.59%	19.75%	19.28%	3.31%

Source: Statistics Canada, 2001 Census

In recent years, the Province has experienced a significant increase in oil exploration activities. In Alberta, oil & gas and oil sands projects account for the majority of the region's economic growth. There is great potential for growth in the future because of the substantial oil sands deposits in the region.

4.3.3 Traffic and Freight Movements

Table 4 - 15 shows traffic levels on the primary provincial highway network, as of 1996. Quebec and Ontario have the highest levels of average annual daily traffic. Saskatchewan's AADT levels are well below these levels.

Table 4-15: Traffic Levels on the Primary Provincial Highway Network, 1996

	Network Length (Thousands)			1996 Vehicle-kilometers (Billions)			Percent Distribution: Network Length (Thousands)			Percent Distribution: 1996 Vehicle-kilometers (Billions)			Average Annual Daily Traffic		
	NHS	**Other**	**Primary**	**NHS**	**Other**	**Primary**	**NHS**	**Other**	**Primary**	**NHS**	**Other**	**Primary**	**NHS**	**Other**	**Primary**
Newfoundland	0.9	-	0.9	1.3	-	1.3	3.9	-	1.1	1.6	-	0.9	3,800	-	3,800
Prince Edward Island	0.1	0.3	0.4	0.2	0.4	0.7	0.5	0.5	0.5	0.3	0.7	0.5	5,200	3,800	4,200
Nova Scotia	0.9	0.6	1.4	2.7	0.9	3.6	3.6	1	1.7	3.4	1.4	2.5	8,300	4,300	6,800
New Brunswick	0.9	1.1	2	2.3	1.3	3.6	3.9	1.8	2.4	2.9	2.1	2.5	6,700	3,400	5,000
Quebec	3	8.5	11.5	19.9	14.9	34.8	12.1	14.6	13.9	25.2	23.4	24.4	18,500	4,800	8,300
Ontario	5	11.5	16.5	28.7	23.2	51.9	20.5	19.8	20	36.2	36.5	36.3	15,700	5,500	8,600
Manitoba	0.9	6.4	7.3	1.5	3.2	4.7	3.5	11	8.8	1.9	5	3.3	4,800	1,400	1,800
Saskatchewan	2.1	13.9	16	3.1	4.9	8	8.6	23.8	19.3	3.9	7.7	5.6	4,000	1,000	1,400
Alberta	3.5	10.2	13.7	8.4	6.4	14.9	14.5	17.5	16.6	10.6	10.1	10.4	6,500	1,700	3,000
British Columbia	5.4	4.8	10.2	10.8	8.4	19.2	22	8.3	12.3	13.6	13.1	13.4	5,500	4,800	5,200
Yukon	1.1	0.7	1.8	0.2	0.1	0.3	4.4	1.2	2.2	0.3	0.1	0.2	600	300	500
Northwest Territories	0.6	0.2	0.8	0.1	0	0.1	2.4	0.4	1	0.1	0	0.1	300	50	300
Canada	**24.3**	**58.2**	**82.5**	**79.3**	**63.8**	**143**	**100**	**100**	**100**	**100**	**100**	**100**	**8,900**	**3,000**	**4,700**

Source: Transportation in Canada 2000, Transport Canada, 2000

Table 4 - 16 shows for-hire truck traffic by sector and province in Canada. Manitoba, Saskatchewan, and territories collectively account for only 7.3 percent of total tonne-kilometers traveled. Ontario and Quebec have the highest levels of truck traffic, respectively.

Table 4-16: For-Hire Truck Traffic by Sector and Province, 2004, Billions of Tonne-Kilometers

	Intra-provincial	Inter-provincial	Inter-national	Total	Percent Share
Ontario	12.56	18.3	43.22	74.08	40.1
Quebec	7.68	9.73	25.08	42.49	23
Alberta	7.31	9.76	8.59	25.66	13.9
Manitoba, Saskatchewan, and territories	1.81	5.99	5.73	13.54	7.3
British Columbia	3.88	5.54	7.54	16.97	9.2
Atlantic provinces	1.67	4.72	5.84	12.23	6.6
Total	34.92	54.04	96	184.96	100

Source: Transportation in Canada 2004, Transport Canada, 2004

Table 4 - 17 shows that freight transported by truck in Canada has been growing since 1999. For-hire trucking has seen substantial growth since the early 1990s. Between 1993 and 2003, for-hire truck traffic more than doubled, from 84.6 to 185.0 billion tonne-kilometers. The transborder sector was the main contributor to this growth, with an average annual growth rate of 11.4 percent. In fact, by weight, about 65 percent of Canada-US trade movement was by truck. Commodities shipped by truck to/from the US accounted for $335 billion (in Canadian dollars) by value.[29]

Table 4-17: Freight Transported by Truck in Canada, In Thousands

	Freight Transported, In Thousands					Rate of Growth
	1999	2000	2001	2002	2003	
Tonnes transported	269,285	278,442	287,975	293,644	305,153	13.32%
Tonnes-kilometers transported	158,656,177	164,981,978	170,936,593	177,215,621	184,963,662	16.58%
Number of shipments (Units)	36,410	35,561	36,917	38,492	40,259	10.57%

Source: Statistics Canada

In 2003, for-hire truck traffic generated a total of $8.8 billion (in Canadian dollars) for domestic movements and $8.0 billion (in Canadian dollars) for international transport (see Table 4 - 18). The most revenue came from shipments of manufactured goods, accounting for 26 percent of total revenue for commodities shipped by truck. Similarly, manufactured products were the largest contributor to truck traffic (see Table 4 - 19). Agriculture and food products accounted for the second highest levels in terms of both revenue and truck traffic. In fact, the four

[29] See *Transportation in Canada 2004*, Transport Canada, 2004.

commodities with heaviest traffic flows are also the top commodities in terms of revenue generated.

Table 4-18: For-Hire Trucking Activity Revenues by Commodity Group, 2003, Billions of Dollars

SCTG Commodities	Domestic	International	Total	Percent of Total
Misc. and other manufactured products	2.41	1.97	4.38	26
Agriculture and food products	1.61	1.23	2.84	16.9
Forest products	0.99	1.2	2.19	13
Base metal, steel, alloy products	0.71	0.84	1.54	9.2
Plastics & chemical products	0.51	0.88	1.39	8.3
Auto & other transport products	0.62	0.75	1.37	8.2
Machinery and equipment	0.63	0.58	1.21	7.2
Cement & mineral non-metal products	0.35	0.23	0.58	3.4
Ores and non-metallic minerals	0.5	0.07	0.57	3.4
Petroleum products	0.27	0.14	0.41	2.5
Waste & scrap material	0.22	0.12	0.34	2
Total All Commodities	8.82	8.01	16.82	100

Source: Transportation in Canada 2004, Transport Canada, 2004

Table 4-19: For-Hire Trucking Traffic by Commodity Group, 2003, Billions of Tonne-Kilometers

SCTG Commodities	Domestic	International	Total	Percent of Total
Misc. and other manufactured products	20.25	19.64	39.89	21.6
Agriculture and food products	18.21	17.32	35.52	19.2
Forest products	14.3	19.1	33.4	18.1
Base metal, steel, alloy products	7.98	10.49	18.47	10
Plastics & chemical products	5.77	8.74	14.51	7.8
Auto & other transport products	2.13	7.06	9.2	5
Machinery and equipment	3.1	4.47	7.57	4.1
Cement & mineral non-metal products	3.95	3.17	7.12	3.8
Ores and non-metallic minerals	4.23	2.72	6.95	3.8
Petroleum products	5.92	0.88	6.79	3.7
Waste & scrap material	3.12	2.42	5.54	3
Total All Commodities	88.96	96	184.96	100

Source: Transportation in Canada 2004, Transport Canada, 2004

4.3.3.1 Saskatchewan Highway 6 Information

Saskatchewan Highway 6 is a two-lane Primary roadway stretching from the Port of Regway in the south to Regina in the north. Along Primary designated roadways in Canada, the speed limit can vary from 90 kilometers per hour to 110 kilometers per hour depending on the road geometry.

Table 4 - 20 illustrates the weight restrictions for different classifications of Canadian highways.

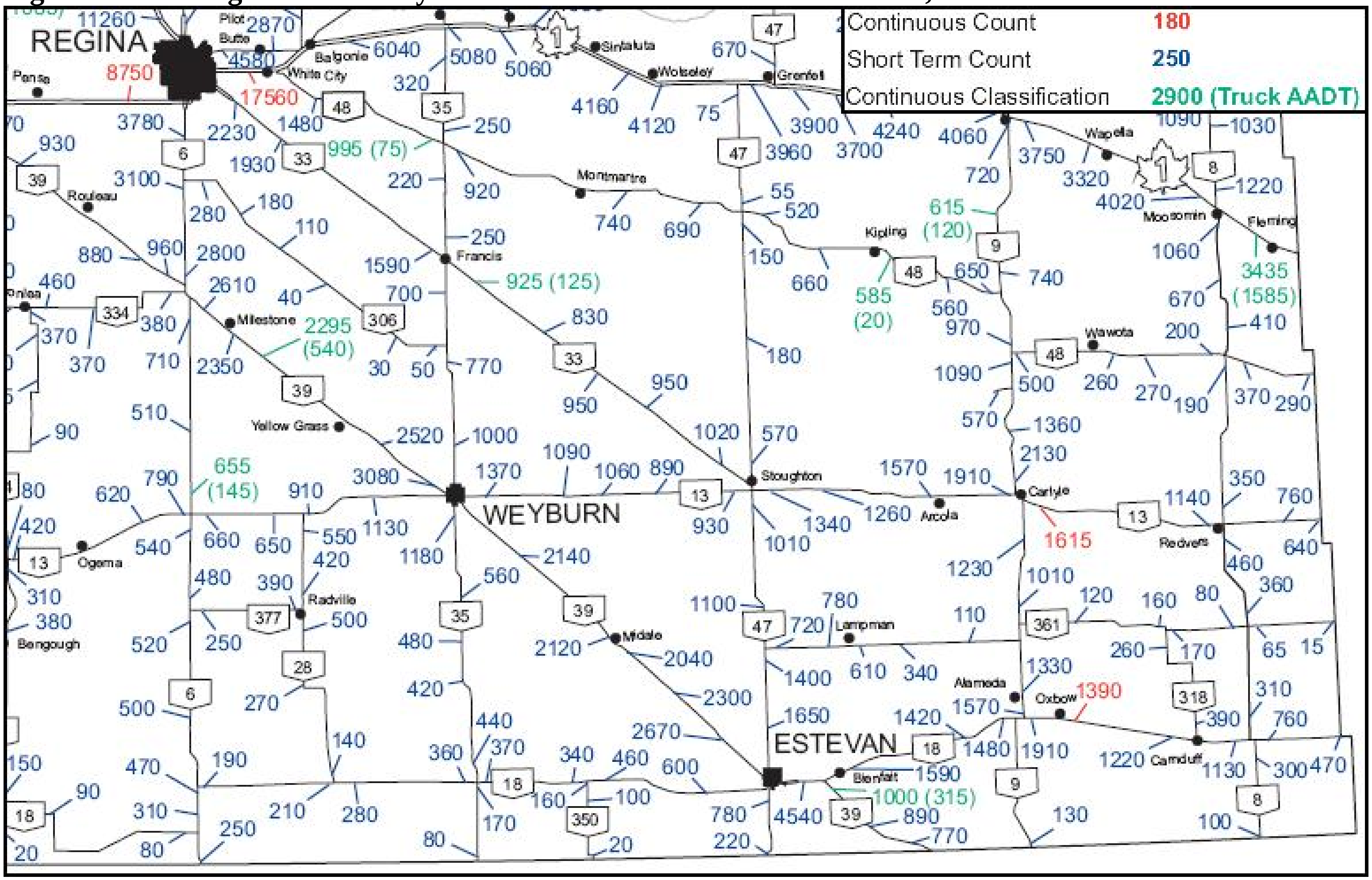
Table 4-20: Saskatchewan Highway Weight Limits by Truck Configuration and Highway Classification

Truck Type	Primary	Secondary	Municipal	Winter Primary	Winter - Secondary and Municipal
Straight truck 2 axles	16,350 kg	13,700 kg	13,700 kg	17,250 kg	15,500 kg
Straight truck 3 axles	24,250	20,000	20,000	25,250	23,500
Straight truck with tandem steering	30,600	25,500	25,000	31,600	29,000
Truck and tandem pony	41,250	34,500	34,500	43,250	41,500
Truck and tridem pony	45,250	40,000	40,000	46,250,	44,500
Truck and full trailer 5 axles	42,450	36,400	36,400	45,250	43,500
Truck and full trailer 6 axles	50,350	42,700	42,700	53,250	51,500
Truck and full trailer 7 axles	53,500	49,000	49,000	53,500	53,500
Tractor and semi-trailer 4 axles	31,600	28,200	28,200	33,500	33,500
Tractor and semitrailer 5 axles	39,500	34,500	34,500	41,500	41,500
Tractor and semitrailer 6 axles	46,500	40,000	40,000	46,500	46,500
A -C Train 6 axles	49,800	44,600	44,600	53,500	53,500
A -C Train 7 axles	53,500	49,000	49,000	53,500	53,500
A -C Train 8 axles	53,500	49,000	49,000	53,500	53,500
C Train 8 axles with approved dolly	60,500	54,500	54,500	60,500	54,500
B Train 7 axles	56,500	49,000	49,000	59,500 (primary and secondary)	54,500 (for municipal)
B Train 8 axles	62,500	54,500	54,500	62,500 (primary and secondary)	54,500 (for municipal)

Source: Saskatchewan Department of Highways

Highway 6 AADT from Regina to the Port of Regway is shown in Figure 4 - 7.

Figure 4-7: Average Annual Daily Traffic and Commercial Truck Traffic, 2005



Source: Saskatchewan Highways and Transportation, http://www.highways.gov.sk.ca/docs/maps/2005_Highway_Traffic_volume_maps.pdf

5: SUMMARY AND CONCLUSIONS

The analysis conducted in Section 2 and 3 leads to the following set of observations and conclusions regarding the current road network and transportation conditions in the study area.

1. The Theodore Roosevelt Expressway is a congressionally designated "high priority trade corridor" running from the Port of Raymond, at its northern extent, to Rapid City, South Dakota, in the south. The TRE includes segments of two highways in Montana: MT 16 (Port of Raymond to Culbertson) and US 2 (Culbertson to North Dakota). The corridor's designation reflects the increasing importance of north-south, truck-borne trade at the national scale. Within Montana, improving the corridor could contribute to enhanced trade activity through a portion of the state that has seen modest and negative growth in recent years, and it would help maintain high standards of safety and service for the affected communities as through-traffic grows.

2. Recent improvements on US 2 in North Dakota constitute a desirable design target. The continuation of a four lane design, as is being completed in North Dakota, would establish continuity of the highway system configuration in an area where the integration of the economies and communities across transparent state lines is already well established. Continuity of the corridor between the current four-lane segment of US 2 and the planned four-lane extension to the Montana border[30] in North Dakota is also important for reasons of roadway competitiveness, strategic transportation functionality, and user perception.

3. The population of the six-county study area declined over the last decade. In the period from the present to 2025, population is expected to increase at a slow to moderate rate compared to the state. Population growth is not expected to be a significant source of traffic pressure in the foreseeable future.

4. Several findings indicate that the study area is part of an economic region that is, now and increasingly, integrated across state and national boundaries. Settlement in the six-county study area is predominantly rural. The area is dotted with small communities, the largest being Sidney at about 4,500. As a consequence, regional consumer trade and work-related traffic appears to flow readily in a broad, two-state area with additional interchanges with southern Saskatchewan. Williston, North Dakota, (pop. 12,200) is the nearest higher-order trade center to the six-county study region of northwestern Montana. Study participants report routinely traveling to that city for consumer purchasing. Professional and financial services are also more concentrated in Williston. The nearest major-order trade center is Regina, Saskatchewan. As travel and border barriers are reduced, more consumer and commercial traffic can be expected to flow that direction. Some key industries, agriculture and oil, appear to be closely integrated across state and national lines, and the local tourism sector clearly relies on people outside the state

[30] Information derived from MDT surveys of regional transportation agencies and their plans for future roadway enhancements. See section 5.1.4 in Working Paper #2: Assessment of Existing and Future Opportunities.

coming to and through the area. All this suggests that there would be local and regional economic advantages from improved and consistent transportation connections to the east, north, and south.

5. Key industries in the study area depend on quality highway transportation, including agriculture, tourism, and the crude oil industries.

6. The oil industry relies on the road network for transportation of inputs, equipment, supplies, and workers. While pipelines are the preferred mode of transporting oil, the pipelines in the study area region are running at capacity. Until additional pipelines are developed, much of the oil produced in the study area is expected to be trucked to purchasers. At both the local and international scales of analysis, the development of facilities related to extraction, processing, and pipeline capacity are likely to generate substantial heavy traffic in and through the local study area.

7. The cost and quality of transportation is a primary factor shaping the course of agricultural development in the area. Agriculture depends on truck transportation to transport farm production from to rail heads or markets. Demand for truck transportation services will increase with growth in agricultural production. Changes in rail transportation – notably the emergence of large grain loading facilities – require grain to be trucked to them over longer distances. Specialized value-added agricultural opportunities rely on the ability to get specialized crop inputs from a wide territory and to ship output to markets efficiently. Transportation improvements could support business expansion and market access, as well as facilitate hauling of products from farms to more distant processing plants, or conversely, shipping crops into the area for specialized processing.

8. Tourism relies on adequate highways to serve attract visitors to Montana and the region. The unusual seasonality of visitor spending data in some parts of the study region suggests that hunting may be the area's largest advantage today. During summer months, the Fort Peck Reservoir is one of the state's leading attractions. Other attractions in the study area include the Dinosaur Trail, and the Montana Cowboy Hall of Fame. By and large, the region's tourist traffic today appears to be less oriented to specific destinations as to activities that are widely dispersed in the broader territory. Most visitors traveling to the area are from neighboring states, and in many cases there are substitute activities along alternative routes. The attractiveness and safety of local highways, real and perceived, affect individuals' choices to travel to and through the region.

9. The region has significant opportunities for energy development. Northeastern Montana is the largest oil exploration area in Montana, and much of the exploration activity is concentrated within the study area. In addition to the oil and gas industry, the state is rich in natural resources, such as wind energy and has additional development potential bio-energy resources, such as bio-diesel and ethanol production. With the recent renewed interest in natural resources, the area has great potential for growth in this sector.

10. While the origin and destination structure of commodity shipments in Montana indicates that about 50 percent of commercial shipments are within-state shipments (i.e.: they originate in Montana and go to a Montana destination), this may be a result of counting intermediate destinations as final destinations. This high rate could be due to many shipments in the state being initially shipped to storage locations (i.e.: grain silos) prior to shipment to the final market.

11. Road congestion in the study area at the present time is minimal compared to the national average. Although travel is increasing, congestion at the levels at which significant slow-downs in speed may occur currently affect only a small percentage of road sections. Despite low congestion, today, safety concerns due to mixed truck and auto traffic are still an issue. These concerns may be especially pertinent if truck traffic in the area were to increase.

APPENDIX A: SUPPORTING MATERIAL

Table A-1: Total Crop Acres Planted in the 6-County Study Area

Crop	Crop Acres in the 6-County Study Area							
	1990	1995	1998	2001	2002	2003	2004	2005
Fallow Acres	1,146,129	---	1,068,406	749,684	687,690	648,548	615,673	579,120
CRP Acres	865,327	874,546	866,566	956,317	951,144	949,844	935,953	942,267
Field Peas Acres	13	1,651	5,146	14,542	22,181	21,921	51,900	116,252
Lentil Acres	110	851	3,594	13,226	16,759	21,195	68,409	134,582
Chick Peas Acres	---	---	1,226	15,738	8,700	1,931	1,480	5,639
Alfalfa Acres	63,076	58,445	24,351	38,672	43,580	43,975	47,825	52,648
Flax Acres	1,184	1,247	7,093	10,403	14,147	15,092	17,846	49,933
Canola Acres	1,653	8,819	3,841	37,752	28,007	18,931	9,830	11,198
Safflower Acres	15,774	13,090	23,733	17,191	23,750	23,457	18,669	18,270
Sunflower Acres (Oil and Non-Oil)	0	100	1,056	197	341	638	4,321	4,877
Soy Bean Acreas	14	141	21	80	57	1,721	3,023	317
Sugar Beat Acres	19,001	18,007	23,746	25,653	24,780	20,777	---	19,855

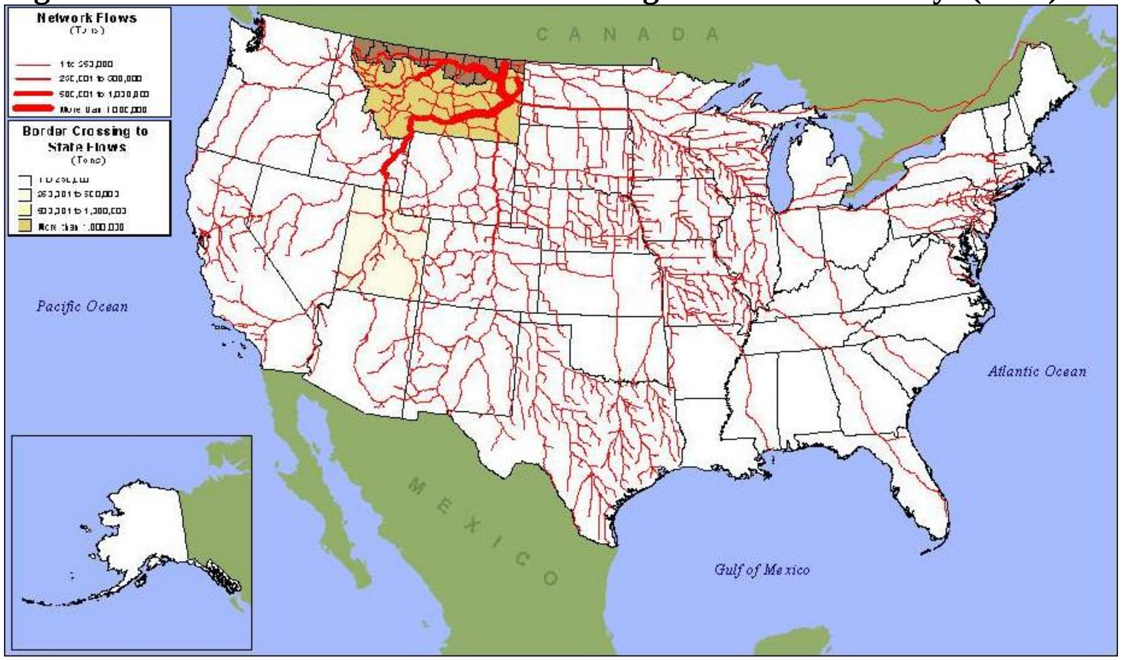
Source: Mon-Dak Ag Frontier, Williston Herald, August 2006

Table A-2: Top Trading Partners, 2002

Tons (Millions)			Value ($ Millions)		
	Number	Percent		Number	Percent
Total	**95.9**	**100**	**Total**	**28,221.3**	**100**
Foreign	14.7	15	**Foreign**	3,315.5	12
Domestic	81.2	85	**Domestic**	24,905.7	88
North Dakota	18.2	19	**North Dakota**	5,848.9	21
Minnesota	15.3	16	**Washington**	2,016.9	7
Wisconsin	12.6	13	**New Jersey**	1,545.6	5

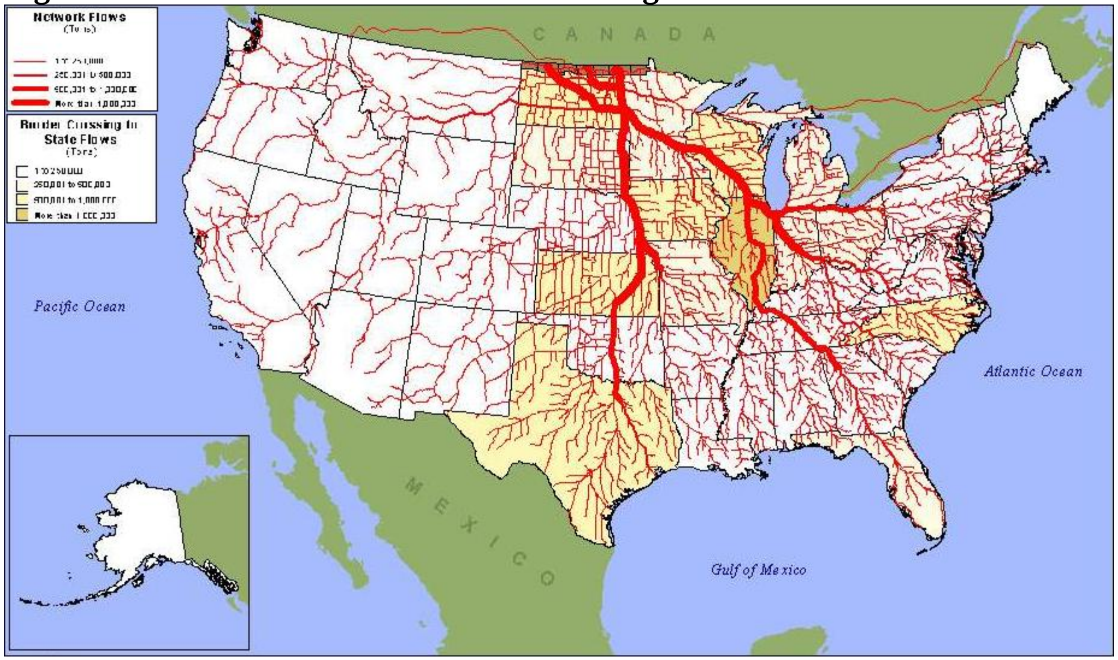
Source: 2002 Freight Analysis Framework (FAF) Database for Montana, Federal Highway Administration

Figure A-1: International Truck Flows through Montana Gateways (1998)



Source: Federal Highway Administration, Freight Analysis Framework

Figure A-2: International Truck Flows through North Dakota / Western Minnesota Gateways (1998)



Source: Federal Highway Administration, Freight Analysis Framework

Table A-3: Shipments from and to Montana, by Mode, for Geographic Shipment Category

Geographic Category of Shipments	Total Tonnage of Shipments				Total Value of Shipments			
	Rail	Truck	Pipeline	Other	Rail	Truck	Pipeline	Other
Domestic Shipments Originating in Montana	48,813	43,145	38,502	564	$1,652	$17,570	$7,036	$1,058
Cross-border Shipments Originating in Montana	616	390	94	7	$70	$175	$17	$3
Overseas Shipments Originating in Montana	3,364	93	0	92	$152	$28	$0	$28
Total Shipments Originating in Montana, by Mode	52,793	43,628	38,596	664	$1,874	$17,773	$7,053	$1,089
Domestic Shipments with Montana Destination	5,447	43,722	19,749	160	$239	$23,667	$2,028	$2,984
Cross-border Shipments with Montana Destination	606	1,389	7,729	2	$106	$582	$1,169	$5
Overseas Shipments with Montana Destinations	2	325	1	4	$1	$936	$3	$41
Total Shipments with Montana Destinations, by Mode	6,055	45,436	27,479	166	$346	$25,184	$3,200	$3,031

Source: Extracted from 2002 Freight Analysis Framework (FAF) Database for Montana, Federal Highway Administration

Table A-4: Shipments to, from, and within Montana, by Mode, 2002

	Tons (Millions)						Value ($ Millions)					
	Within State		From State		To State		Within State		From State		To State	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	59.5	100	76.2	100	19.7	100	15,663.9	100	12,124.2	100	16,097.0	100
Truck	36.6	62	7.0	9	8.8	45	13,907.8	89	3,864.9	32	11,276.7	70
Rail	4.4	7	48.4	63	1.6	8	122.2	<1	1,751.6	14	223.8	1
Water	<0.1	<1	<0.1	<1	<0.1	<1	<0.1	<1	0.2	<1	<0.1	<1

Air, air and truck	<0.1	<1	0.1	<1	<0.1	<1	7.1	<1	96.4	<1	362.2	2
Truck and Rail	<0.1	<1	<0.1	<1	<0.1	<1	1.7	<1	5.1	<1	162.7	1
Other Intermodal	<0.1	<1	0.5	<1	0.1	<1	307.9	2	669.6	6	2,189.2	14
Pipeline/ Unknown	18.3	31	20.3	27	9.1	46	1,317.2	8	5,736.5	47	1,882.5	12

Source: 2002 Freight Analysis Framework (FAF) Database for Montana, Federal Highway Administration

Table A-5: Total Shipments to, from, and within Montana, by Commodity, 2002

Tons (Millions)						**Value ($ Millions)**					
Within State		**From State**		**To State**		**Within State**		**From State**		**To State**	
Total	**59.5**	**Total**	**76.2**	**Total**	**19.7**	**Total**	**15,663.9**	**Total**	**12,124.2**	**Total**	**16,097.0**
Coal	19.2	Coal	39.3	Coal, n.e.c.[1]	9.7	Machinery	2,682.3	Coal, n.e.c.	5,576.4	Mixed freight	2,341.1
Cereal grains	8.4	Coal, n.e.c.	19.1	Wood prods.	1.4	Gasoline	1,642.3	Wood prods.	1,021.3	Machinery	1,883.8
Gasoline	5.8	Nonmetallic minerals	3.9	Cereal grains	0.9	Unknown	1,176.0	Misc. mfg. prods.	533.9	Coal, n.e.c.	1,692.1
Logs	3.6	Cereal grains	3.3	Mixed freight	0.9	Mixed freight	1,129.2	Machinery	492.4	Misc. mfg. prods.	1,669.9
Fuel oils	2.7	Wood prods.	2.9	Chemical prods.	0.6	Live animals/fish	1,010.4	Coal	454.3	Chemical prods.	1,216.5

Source: 2002 Freight Analysis Framework (FAF) Database for Montana, Federal Highway Administration

APPENDIX B: ANNOTATED BIBLIOGRAPHY AND DATA SOURCES

The purpose of this appendix is to outline the sources from which we have collected background information. We have organized this annotated bibliography into four sections: research papers, newspaper articles, data sources, and other.

Research Papers

Cambridge Systematics with Economic Development Research Group, ICF Consulting, and Short Elliot Hendrikson, "Montana Highway Reconfiguration Study," May 2005, p. 3-27 – 3-33

> The Reconfiguration Study was conducted to assess the potential economic benefits resulting from improvements to Montana's highways. The focus of the study was to look at the effects of expanding Montana's two-lane state highways. To analyze the economic benefits resulting from improvements to the highways, the Highway Economic Analysis Tool (HEAT) was created. The study found that many industries, such as oil and industrial machinery firms, felt that the highways already met their transportation needs. However, in industries such as mining, lumber/wood, and farming, improved roadways are seen as being necessary for industry growth. Food processing firms, for example, complain of high freight costs impeding their industry's growth, suggesting that roadway improvements are necessary. Suppliers in the lumber/wood industry are heavily reliant on trucking and the current roadway infrastructure will not sustain continued growth in their industry. Some farmers feel that transportation costs in Montana are higher in state than outside of it. Also, lack of direct routes in the state makes receiving supplies costly. Some Montana firms in the farming industry believe that transportation improvements are necessary for business expansion. Trucking is also becoming an increasingly popular means of transporting coal because of high rail costs. With roadway improvements, trucking would become a more viable option for shipments.

Department of Environmental Quality, "Petroleum and Petroleum Products in Montana," March 2003; retrieved from: http://leg.state.mt.us/content/publications/lepo/deq_petroleum_report/reporttext.pdf

> This report details the history of petroleum production in Montana and discusses the current state of refineries and pipelines and consumption figures for petroleum products.

Dillon, Thale (2000, March). "Exploring Tourism Potential: Resident Attitudes in Missouri River Country, Montana," University of Montana, Institute for Tourism and Recreation Research, Research report 74.

> This study reports the structure of tourism in Missouri River Country as well as the opinions and attitudes of residents in this region towards tourism. Missouri River Country includes Daniels, Garfield, McCone, Phillips, Richland, Roosevelt, Sheridan, and Valley Counties. The opinions of residents were collected through a mail-back questionnaire given to 500 residents of the area. It was found that 26% of Montana visitors travel through Missouri River Country. Over $1.58 billion statewide and $52 million in the region were spent by nonresident travelers. The primary purpose for travel to the region was for vacation. Among travelers through Missouri River Country, the top-sited attractions were Glacier National Park and the mountains. Residents in the region tend to feel that the greatest tourist potential is in Fort Peck Lake and its surrounding area and they tend to support promotion of tourism in this area. Also, more than half of Missouri River Country residents are dissatisfied with the current transportation conditions and feel that improvements are necessary, especially with regards to bus service.

Economic Development Research Group, Inc. and Dye Management Group, Inc., "Montana Tran Plan 21 Update - Economic Development Issues and Recommendations," 2002; retrieved from: http://www.edrgroup.com/edr1/library/lib_trans_roads/P076-Montana-tranplan-21.shtml

This paper discusses findings provided by EDR Group assessing the economic benefits of transportation improvements in the state of Montana. In order to evaluate potential economic developments, past economic trends and future economic forecasts for each of the five regions within the state were studied. Also, employment opportunities resulting from such things as technology and transportation changes were investigated. Finally, the study looked at how reliant future economic trends would be on freight and passenger transport in Montana. The study found major technology changes in traditional industries (i.e.: mining, agriculture, food processing) as well as advanced technology sectors, which are reliant on intermodal road-rail and road-air transfers. Also, tourism needs are constantly changing. Thus, EDR Group concluded that, overall, there are opportunities for economic development which would justify expanding some two-lane highways.

Gorman, Ed, "Opportunities and Challenges for Montana's Workforce on New Energy Projects," October 2005; retrieved from: http://energyfuture.mt.gov/presentations/Ed%20Gorman%20-%20MT%20Symposium%2010-18-05.pdf

This report outlines proposed Montana energy projects. It gives the estimated energy output, estimated employment, and estimated costs of each project. One such project is the Wind Hunter Project (a.k.a. Valley County Wind Energy Project) in Valley County, Montana.

Humphreys and Fortowsky, "Estimating Traffic Changes and Pavement Impacts from Freight Truck Diversion Following Changes in Interstate Truck Weight Limits (06-1225) - S25," January 2006, p. 75; retrieved from: http://pubsindex.trb.org/document/view/default.asp?lbid=776776

This study analyzes the pavement, crash, and bridge costs of allowing higher truck weight limits upon a specific Interstate route.

ICF Consulting and AECOM Consulting, "Roosevelt County/Fort Peck Indian Reservation Corridor, Montana," *U.S. Department of Transportation, Federal Highway Administration*, November 2003

This study evaluates the relationship between economic development and highway improvements along US-2 in the Fort Peck Reservation area. Incremental Benefit and Input-Output analysis are used to assess potential benefits resulting from the proposed project. The study first assesses existing conditions and the potential for economic development in the area. Second, transportation needs and investments relevant to wind power, irrigation, tourism, oil and gas development, and manufacturing are evaluated. Finally, investigation of the economic impacts of transportation investments is carried out. The study concludes that further analysis is necessary to warrant the proposed widening of US-2 to a continuous four lane highway. For example, additional studies of tourism in the broader region, safety factors, the need for turn-off lanes for slower vehicles, etc. may justify the project.

ICF Consulting Inc., "U.S. 2, Havre to Fort Belknap E.I.S., Existing Economic Conditions Report," PLH-TCSP 1-66(44)384, Control Number 4951, June 2003

This report assesses current economic conditions for the US2, Havre to Fort Belknap environmental impact statement. After identifying existing economic baseline conditions, a comparison of the economic impacts of various alternatives to these baseline conditions was conducted using a benefit-cost analysis. The study finds that transportation factors have been a factor in failed business ventures, but that the condition of the US 2 segment under investigation has not been a reason for these business failures. So, it is concluded that significant regional economic benefits will not be generated from major capacity improvements. However, improvements to the operation and safety of US 2 (i.e.: wider shoulders, new turning lanes) are worthwhile investments as they are necessary for sustaining the economy in the region. The study methodology involved identifying initiatives that could potentially generate economic growth and assessing their relationship to US2 improvements. Site visits and interviews were conducted to collect this information.

Cooper, "A Critical Review of the U.S. 2, Havre to Fort Belknap, Montana E.I.S. Existing Economic Conditions Report Final Document," July 2004

This paper is a critical review of the past Environmental Impact Study (EIS) concerning the expansion of US 2. It states that the past study, while reporting on existing economic conditions accurately, fails to acknowledge the full future economic possibilities in the area. Some major flaws are: underestimated traffic growth; miscalculation of potential vehicle operating cost savings; lack of a prediction of economic development in the area and of specific Native American demographic trends or employment projections; and the study's focus on a small section (the 45-mile stretch between Havre and Fort Belknap) as opposed to the entire 666 mile highway (from Idaho to North Dakota). Very importantly, the previous study neglects to study potential freight movements between eastern Canada and the Pacific Northwest. The study findings predict that some of the major benefits of the proposed expansion will be employment creation, transportation improvements, and energy issues. Such energy developments include new coal power plants, petroleum refineries, and manufacturing plants, as well as a major electrical transmission line to connect coal and wind generating plants.

Institute for Recreation and Tourism Research, "Attraction Visitors to Missouri River Country Travel Region," University of Montana, Research report 2003-9, May 2003

This report aims to describe summer travel in the Missouri River Country in terms of demographics, trip characteristics, attraction, and travel patterns. The study was conducted through a series of survey questionnaires given to visitors of the area. Some of the major findings include: the main purpose for visiting the area was vacation; the majority of people visiting Missouri River Country went to museums and the most visited attraction in the area was the Fort Peck Dam and Lake; the average duration of stay was about 7 nights in Montana and 4 nights in Missouri River Country; most visitors were couples; more than half of the visitors were from out of the state, with the majority visiting from Washington; about half of the visitors planned to visit a National Park (Glacier or Yellowstone).

Institute for Recreation and Tourism Research, "The Economic Review of the Travel Industry in Montana," University of Montana, 2004 Edition, July 2004

This report describes the current state of tourism in Montana and the impact of the travel industry on the state as a whole.

Institute for Recreation and Tourism Research, "Niche News: Richland County Visitor Characteristics," University of Montana, June 2004

Niche news is a summary sheet of key findings extracted from the Institute for Recreation and Tourism Research reports.

Institute for Recreation and Tourism Research, "Regional Nonresident Spending in Montana," University of Montana, Research report 75, March 2000

This report provides an analysis of nonresident spending in various Montana counties.

Institute for Recreation and Tourism Research, "Valley County Explores Tourism Potential," University of Montana, 1999 Montana Community Tourism Assessment Process, Research report 71, January 2000

This report describes tourism in Valley County, Montana in terms of present levels of travel in the region, trip characteristics, and residents' views of tourism in the state and the county. The study was conducted through a series of mail-back questionnaires distributed to both residents of the state and more specifically to residents of Valley County in October and November of 1999. Some of the major findings regarding tourists include: about 5 percent of the over 3.8 million visitors of Montana traveled through Valley County; over $1.5 billion and about $6.6 million was spent by tourists to the state and county respectively;

most visitors were in Montana for vacation as opposed to for visiting relatives and friends; primary attraction in the region were Glacier National Park, the mountains, fishing, and Yellowstone National Park; tourists in the region spent the most money on gas and oil, lodging, and in restaurants/bars. Valley County residents tend to feel that tourism should be more heavily promoted in Montana (especially through hunting and fishing activities) as it will encourage economic development in the region.

R.L. Banks & Associates, Inc. with Railroad Industries Inc., "Rail Freight Competition Study as Provided by Montana Senate Bill (SB) 315," October 2004

This study discusses Montana's lack of rail freight competition and analyzes some possible improvements. In 1970, four railroads were merged into one, and Burlington Northern Railroad was created. Today, there are only two large Class-1 railroads: Burlington Northern Santa Fe (BNSF), which dominates over 90% of rail use, and Union Pacific (UP). This limited competition is one of the main factors in high rail rates, since there is no need to make rates competitive. Lower rates are very important because they would increase the likelihood of moving goods by rail in Montana. However, lack of competition is not the only factor causing rates to be high. Other issues discussed in this study are Montana's relatively small transportation markets, its geographic position, Staggers Rail Act (which allows railroads to set their own rates based upon market value of service), and the limited transportation options in Montana. Thus, intermodal (truck-trail and trail-truck) movement in Montana is not keeping up with the nationwide trend. The substantial benefit of using shuttle trains in Montana is also discussed. Shuttle trains (a.k.a. unit trains) are high-capacity freight trains consisting of only a single shipment. They will ensure the feasibility of wheat export in the near future.

R.L. Banks & Associates, Inc. with Railroad Industries Inc., "Montana Branch Line Study: Phase I – Plentywood-Scobey and Glendive-Circle," June 2004

This study investigates the impacts of closing two railroad segments in Montana: the Plentywood-Scobey line (located in northeast Montana) and the Glendive-Circle line (located in the eastern central portion of Montana). Interviews were conducted and previous reports (of the area and of other states that had faced similar situations) were researched to understand the impacts of rail line abandonment. Some important impacts of the closing of these lines are the inability for grain producers to carry grain to the next closest elevator, the necessity of acquiring semis for transport, and increased truck traffic on highways. In the interviews, farmers complain about the high prices of rail movement and thus the high cost of grain transport. Also, much truck movement has been observed since the cessation of rail service on these two lines. It has been found that what has proven economically beneficial is for the state to assist small railroads and acquire abandoned rail lines.

R.L. Banks & Associates, Inc. with Railroad Industries Inc., "Montana Branch Line Study: Phase II – Other at Risk Lines," September 2004

This study evaluates the top ten at-risk rail lines both from the standpoint of County Commissioners, rail shippers, railroads and from a financial standpoint. It evaluates the future prospects of these rail lines and makes recommendations for ways to improve the conditions at these locations so as to preserve rail service. One of the at-risk lines is on the BNSF Bainville - Plentywood rail line (located in northeast Montana). The main predictor in evaluating whether a rail line is at-risk is the number of carloads (traffic revenue) per mile.

Saskatchewan Highways and Transportation, "Regway/Raymond Border Crossing Study," January 2000

This study looks at international commercial truck traffic at the Port of Regway/Raymond in 1998/1999. Truck operators were surveyed in Canada and US Customs at the port as a means of data collection. The major findings of the study are as follows: the majority of truck movements were out of Canada; the majority of movements were between Montana and Saskatchewan; and most trucks into the US were loaded while most trucks into Canada were empty.

Tolliver, Denver, Alan Dybing, and Subhro Mitra, "Trip Generation Rates for Large Elevators: A North Dakota Case Study," January 2006; retrieved from: http://www.trb.org/am/ip/paper_detail.asp?paperid=11852

This is case study examining truck trips generated by large shuttle facilities in North Dakota.

Transport Canada, "Transportation in Canada 2004 (and 2000)," 2004 (and 2000); retrieved from: http://www.tc.gc.ca/pol/en/anre/menu.htm

This is an annual report published by Transport Canada discussing the current state of transportation in the Country.

Department of Environmental Quality, "Fact Sheet: Valley County Wind Energy Project;" retrieved from: http://deq.mt.gov/MFS/WindHunter/application/FACTSHEETwmap.pdf

This document describes the proposed Valley County Wind Energy Project. Wind Hunter LLC will be in charge of the building, operation, and maintenance of the wind turbines in north-central Valley County. The purpose of the project is to provide electrical power around Montana. The project is organized into four phases (ending in 2016). The first phase (to be completed in 2008) will generate 50 MW of electricity using 33 turbines, which is enough energy to provide power to about 25,000 homes. Construction is planned to begin in spring 2007.

Grain Transportation Report, August 2005; retrieved from: http://www.ams.usda.gov/tmdtsb/grain

This report is published weekly and summarizes news affecting grain movements. It also provides updates on volume and price data for barges, railroads, trucks, and ocean vessels transporting grain.

US Department of Transportation, "Highway Statistics 2004 (and 2000)," 2004 (and 2000); retrieved from: http://www.fhwa.dot.gov/policy/ohim/hs04/index.htm

This is an annual report presenting statistics pertaining to highway transportation, particularly highway use, highway finance, and various other highway characteristics.

US Department of Transportation, "Western U.S. – Canada Crossborder Case Study," U.S. DOT Comprehensive Truck Size and Weight Study, Report number 5, December 1995

This report describes the truck size and weight regulations for trucks traveling between the western US and Canadian border. The study aims to determine the effects of some of these requirements on the trucking industry.

Newspaper Articles

Falstad, Jan, "State clocks 4% growth in economy," *Billingsgazette.com*, February 2006; retrieved from: http://www.billingsgazette.net/articles/2006/02/01/news/state/25-econ-growth.txt

This article reports on Montana's economic growth resulting from the Eastern Montana oil boom and higher global metal prices. A 4% growth in the economy, which is expected to continue through 2009, is higher than the national average. Additionally, cattle prices in 2005 were strong and are expected to be strong in 2006 also. Housing prices, retail sales, and tourism were all up.

Federal Highway Administration, "State Profile – Montana;" retrieved from: http://ops.fhwa.dot.gov/freight/freight_analysis/state_info/montana/profile_mt.htm

This article describes present and projected future freight activity using the Freight Analysis Framework. It provides data on: freight shipments to, from, and within Montana by mode with respect to weight and value of shipments; the top five commodities shipped to, from, and within Montana with respect to weight and value; and some traffic flow estimates.

Kline, Larry, "Highway 2 Association hasn't given up the fight," *Havre Daily News*, January 2006; retrieved from: http://www.havredailynews.com/articles/2006/01/17/local_headlines/highway2.txt

Highway 2 Association's president discusses the hope of widening US-2. There have been some recent economic developments in Havre, such as the building of 2 motels, increased oil and gas exploration, and increased presence of US Customs and Border Protection. The Association pushes the fact that expanding business in the US has been closely related to proximity to four-lane highways, so a four-lane highway is necessary to economic prosperity in Montana. In addition, safety is a concern on the highway since much agricultural equipment is carried. Finally, the north route along US-2 would be beneficial to trucking companies with regards to both time and fuel; the southern route (I-90 and I-94) has many more hills.

Miller, Jared, "'4 for 2' defenders criticize governor, MDT draft review," *Great Falls Tribune Online*, July 2004; retrieved from: http://www.greatfallstribune.com/news/stories/20040714/localnews/840475.html

This article reports on a public hearing discussing improving US-2 to a four-lane highway. Members of the Highway 2 Association are fighting in favor of the proposed improvements to the highway. However, they are facing against much opposition. Some important state officials are against the four-lane widening and members of the Highway 2 Association believe they are impeding approval of the project. The draft Environmental Impact study that was published judged the four-lane expansion unnecessary, and members of the association released a critical review of the report.

The Associated Press, "Governors to Discuss Need for Better Oil Infrastructure," May 2005; retrieved from: http://www.helenair.com/articles/2006/04/18/montana/08mt20060418001.txt

This article discusses the inadequacy of the current pipeline infrastructure in Montana.

Data Sources

Bureau of Labor Statistics (1996-2005 Estimates); retrieved from: http://www.bls.gov/

This agency provides statistics related to standard economic and demographic indicators, such as: real GDP, personal income, population, and unemployment rates.

Canada Border Services Agency; retrieved from: http://www.cbsa-asfc.gc.ca/contact/listing/offices/office616-e.html

The Canada Border Services Agency (CBSA) provides information cross-border and international trade.

Energy Information Administration (1982 – 2005 Estimates); retrieved from: http://tonto.eia.doe.gov/dnav/pet/pet_crd_crpdn_adc_mbbl_m.htm

This agency provides various energy statistics from the U.S. Government, such as information on crude reserves and production, crude oil prices, refining and processing, imports/exports and movements, and consumption/sales.

Freight Analysis Framework (2002 Estimates), compiled by the U.S. Department of Transportation; retrieved from: http://ops.fhwa.dot.gov/freight/freight_analysis/faf/index.htm

This database contains region-to-region commodity flow data for the entire country. It provides various statistics, including the volume of freight by mode of transportation and commodity type.

Highway Performance Monitoring System (1980-2004 Estimates), compiled by the Federal Highway Administration; retrieved from: http://www.fhwa.dot.gov/policy/ohpi/hpms/index.htm

This database provides an array of highway statistics, including data on roadway condition, extent of use (traffic volumes), congestion levels, and operating characteristics.

Montana Department of Commerce; retrieved from: http://commerce.mt.gov/censusresources.asp

This agency provides demographic and economic data on the State of Montana, including current estimates and projections for state population, housing, income, employment, gross state product, and personal income.

Montana Department of Transportation; retrieved from: http://www.mdt.mt.gov/

This agency provides transportation statistics for the state as well as publications of various projects and studies.

Montana Oil and Gas (2000-2004 Estimates), Annual Report, compiled by the Montana Board of Oil and Gas; retrieved from: http://bogc.dnrc.state.mt.us/annualreviews.asp

This Montana Board of Oil and Gas provides an annual report which supplies oil, gas, and Underground Injection Control (UIC) data, including basic well, production, disposition, injection, and inspection information.

National Agricultural Statistics Service (2004 Estimates, 1997 and 2002 Census of Agriculture), compiled by the United States Department of Agriculture; retrieved from http://www.nass.usda.gov/

This agency provides statistics pertaining to agriculture in the United States. Data at the U.S. and State level for various agricultural goods, such as crop, livestock, and farm numbers are supplied. The Census of

Agriculture is conducted every five years, and provides agricultural data (farm numbers, acres of farmland, market value of land and equipment, value of sales, crop and livestock numbers, etc.) for every county in the Nation.

North Dakota Department of Transportation; retrieved from: http://www.dot.nd.gov/

This agency provides transportation statistics for the state as well as publications of various projects and studies.

Statistics Canada (2001 Census); retrieved from: http://www.statcan.ca/start.html

This agency provides data from the censuses of population and of agriculture. Census data is collected every 5 years.

South Dakota Department of Transportation; retrieved from: http://www.sddot.com/

This agency provides transportation statistics for the state as well as publications of various projects and studies.

U.S. Census Bureau (1990-2004 Census and Estimates); retrieved from: http://www.census.gov/

This agency provides demographic data; including current estimates and forecasts of future population. Census data is collected every 10 years; annual updates are available for some series.

US Customs and Border Protection; retrieved from: http://www.cbp.gov/

This agency provides information relating to international trade.

U.S Department of Transportation, Bureau of Transportation Statistics, Transborder Surface Freight Database; retrieved from: http://www.bts.gov/programs/international/transborder/

This database provides trade data for North America by commodity type and surface mode of transportation.

Williston Herald, "Mon-Dak Ag Frontier," August 2006

This magazine provides data relevant to agricultural production in northeastern Montana and northwest North Dakota.

Other

American Wind Energy Association; retrieved from: http://www.awea.org

The American Wind Energy Association aims to promote growth in wind energy through advocacy, communication, and education.

BIODIESEL, The Official Site of the National Biodiesel Board; retrieved from: http://www.biodiesel.org

The website provides information on the biodiesel industry.

The Montana Symposium: Energy Future of the West, Montana's Energy Symposium, October 2005; retrieved from: http://www.energyfuture.mt.gov

The American Wind Energy Association aims to promote growth in wind energy through advocacy, communication, and education.