

SOUTH DAKOTA STATE RAIL PLAN

VOLUME 1 – EXECUTIVE SUMMARY



prepared for

South Dakota Department of Transportation

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EXECUTIVE SUMMARY

INTRODUCTION

The South Dakota State Rail Plan provides an assessment of the freight railroad system serving South Dakota businesses and communities. The South Dakota Department of Transportation (DOT) commissioned the Plan. It provides information on the condition and performance of the freight rail system and guidance on policies, programs and projects to improve the system.

The Plan –

- Examines how South Dakota uses railroad services;
- Identifies where improvements are needed;
- Describes opportunities for the State, through policy initiatives and targeted investments, to make public sector investments and encourage private sector investments; and
- Recommends priorities for State and public and private rail partner action.

The Plan recommendations are based on the State's Vision and goals for the rail system –

The 2014 South Dakota State Rail Plan Vision Statement

The South Dakota rail system provides competitive and efficient service, in the safest manner possible, to connect South Dakota businesses and industries with domestic and international markets, and support statewide economic development activities.

The Vision is supported by the following goals --

- Support economic growth and development;
- Ensure connectivity for critical industries;
- Maintain State railroad assets in a state of good repair;
- Reduce highway impacts; and
- Improve railroad safety, security and resiliency.

The Plan was initiated and funded by South Dakota DOT, but scope and methods are consistent with the U.S. DOT's recommended best practices for state rail plans.

Volume I of the Plan provides a summary of the key findings and recommendations. It describes the role of freight railroads in the South Dakota economy, the condition and performance of the South Dakota freight rail network and the use of the freight rail system by South Dakota shippers and their needs. It then identifies public and private sector projects that would improve the performance of the system. The final sections evaluate and recommend public sector projects and supporting initiatives for review and approval by the State. The appendices to Volume I include additional information on the State's rail goals (Appendix A) and detailed descriptions of the projects (Appendix B).

Volume II of the Plan is the Technical Report. It is a consolidation of the technical memoranda developed over the course of the project covering –

- Vision for rail in South Dakota;
- State and local rail programs;
- Existing system description and infrastructure inventory;
- Impact of rail transportation (economic, social, environmental and energy);
- Needs, issues and opportunities;
- Physical project identification and evaluation of State-owned rail line projects; and
- Recommendations for physical improvement and supporting policy and other actions.

The appendices to Volume II include a summary of prior South Dakota Rail Plans, a listing of South Dakota Regional Rail Authorities and a report on Demand and Throughput of Grain Elevators in South Dakota.

RAILROADS AND THE SOUTH DAKOTA ECONOMY

THE ECONOMY

In 2013, the gross domestic product (GDP) of the South Dakota economy was \$46.7 billion. GDP is a measure of the value added in production by labor and capital in the state. The key industries of the South Dakota economy are—

- Finance/insurance/real estate—including serving as a center for national banking operations;
- Agriculture— including serving as a major national producer of corn, soybeans, wheat, cattle and hogs;
- Government spending—including military spending at facilities such as Ellsworth Air Force Base; and
- Manufacturing—including agriculture-related industries such as meat packing and ethanol production.

Table 1 lists the contribution of each major industry group to the South Dakota economy.

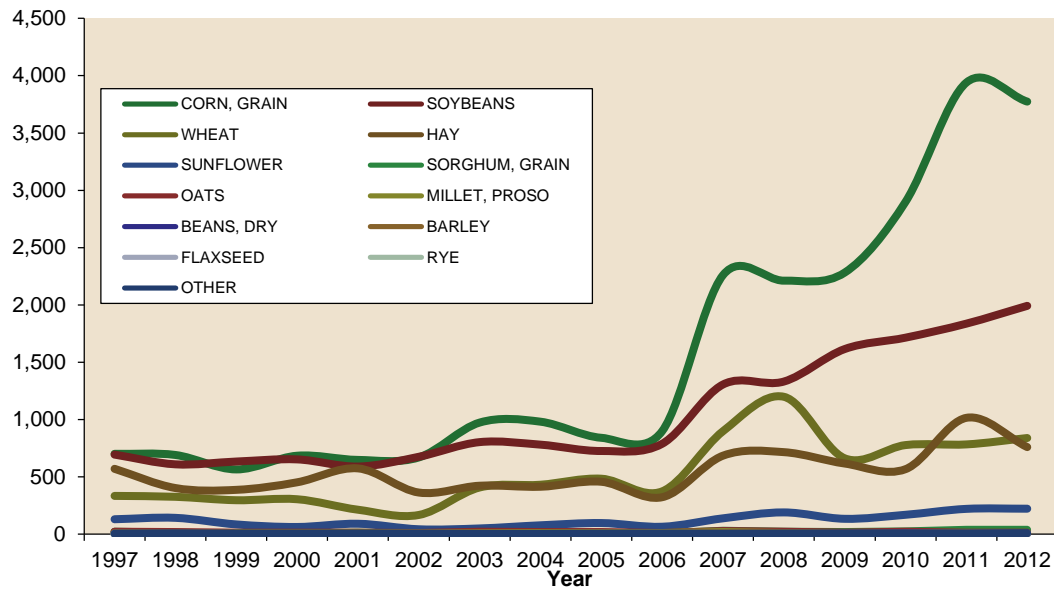
Table 1. Gross Domestic Product by South Dakota Industry, 2013
(millions of current dollars)

Industry	Gross Domestic Product (GDP)	Percentage
Finance, insurance, real estate, rental and leasing	\$11,440	24%
Agriculture, forestry, fishing and hunting	\$6,380	14%
Government	\$5,207	11%
Manufacturing	\$4,245	9%
Educational services, health care and social assistance	\$4,168	9%
Retail trade	\$3,003	6%
Wholesale trade	\$2,892	6%
Professional and business services	\$2,357	5%
Construction	\$1,631	3%
Arts, entertainment, recreation, accommodation and food services	\$1,409	3%
Information	\$1,134	2%
Transportation and warehousing	\$1,035	2%
Other services, except government	\$882	2%
Utilities	\$720	2%
Mining	\$229	0%
Total	\$46,732	100%

Source: U.S. Bureau of Economic Analysis

The South Dakota agricultural sector depends heavily on export of crops, feed, animal products, ethanol and other products to U.S. and global markets. Agricultural production in the state has been increasing, and export markets for the state's agricultural products, especially corn and soybeans, are expected to grow steadily over the next decades. Figure 1 shows the trend in crop production from 1997 to 2012. Figure 1 data is taken from the U.S. Department of Agriculture's Census of Agriculture. This census is conducted every 5 years, with the most recent census results available for 2012. Growth shown is in spite of the fact that both 2002 and 2012 were drought years.

Figure 1. Statewide Trends in Crop Production, 1997-2012
(millions of dollars, not adjusted for inflation)



Source: U.S. Department of Agriculture's National Agricultural Statistics Service data for South Dakota.

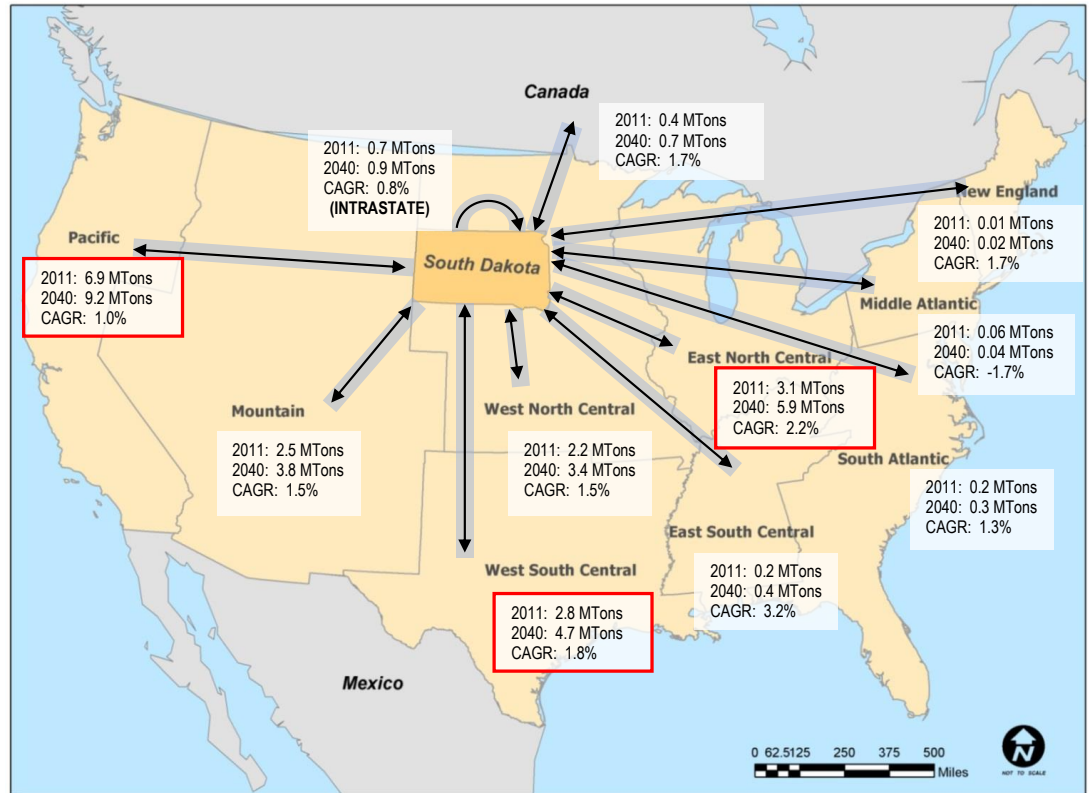
ROLE OF RAIL

Railroads are particularly critical to the state's agricultural industry, which, in turn, is critical to the overall economy. Railroads are the primary means of moving South Dakota agricultural exports, including ethanol, to U.S. and global markets. Trucks are generally not cost-effective for the long-haul transport of these heavy and bulky commodities, and barge service down the Missouri River is no longer a viable option because of the variability in water levels and declining funding for lock and channel maintenance.

ACCORDING TO THE ASSOCIATION OF AMERICAN RAILROADS, EACH FREIGHT RAIL JOB SUPPORTS 4.5 JOBS ELSEWHERE IN THE ECONOMY. EACH \$1 BILLION IN NEW RAIL INVESTMENT SUPPORTS MORE THAN 17,000 JOBS.

Figure 2 shows the tonnage of rail freight moving between South Dakota and its major trading regions. The callout boxes show the tonnage reported in 2011, the tonnage projected for 2040 and the compound annual growth rate (CAGR). The top three trading regions are the Pacific Northwest (primarily grain shipments exported through Ports of Seattle and Tacoma and the Port of Portland), the Midwest (grains, ethanol and meat products) and Texas and Louisiana (ethanol, feed and grains).

Figure 2. South Dakota Rail Flows by Trading Region, 2011 and 2040 (millions of tons)



Source: STB 2011 Confidential Carload Waybill Sample data; FHWA FAF3 2011 provisional estimates and 20040 projections.

Table 2 provides a more detailed listing of the commodities that are moved into, out of and within South Dakota by rail. Three-quarters of rail freight tonnage is outbound, most accounted for by shipments of grain and ethanol. The table does not report through-freight movements (which include coal, general merchandise and goods shipped in intermodal rail containers) because these commodities are not produced or used directly by South Dakota businesses. Through-freight tonnage is dominated by coal shipments from the Powder River Basin in Wyoming to other states on the Midwest; however, the coal lines touch only the far southwest corner of South Dakota. If coal tonnage were included in the State’s statistics, coal would account for 72 percent of all rail commodity tonnage.

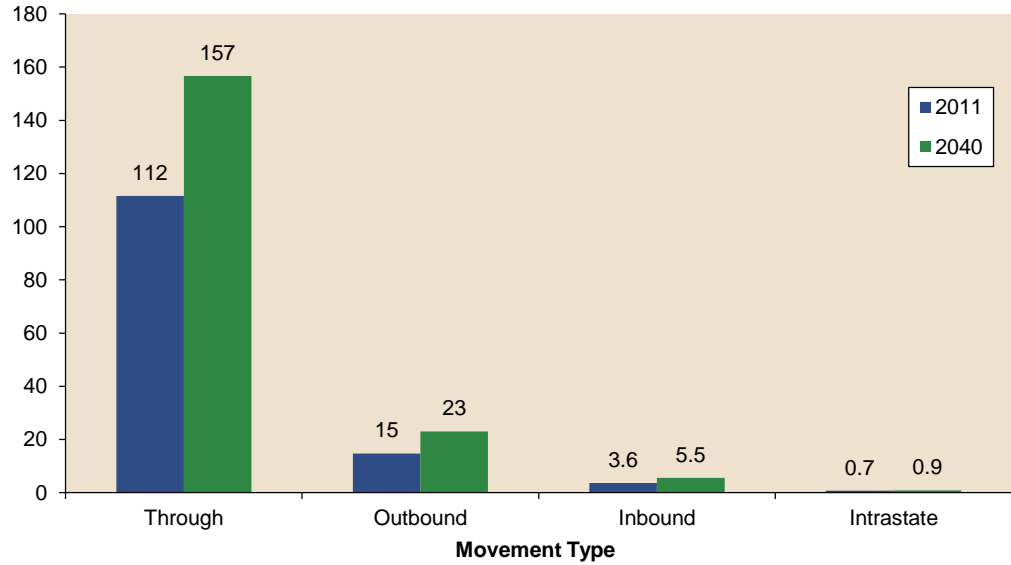
Table 2. Top 15 Rail Commodities, Excluding Through Movements, 2011
(millions of Tons)

	Inbound	Outbound	Intrastate	Total	Percent
Cereal Grains (including seed)	0	6,442	380	6,822	36%
Alcohol	0	3,176	0	3,176	17%
Other Agricultural Products, except for Animal Feed	0	2,498	43	2,541	13%
Animal Feed and Products of Animal Origin, n.e.c.	0	1,750	159	1,909	10%
Coal	1,604	0	0	1,604	8%
Fertilizers	1,001	0	8	1,009	5%
Other	464	314	8	786	4%
Nonmetallic Mineral Products	352	105	110	567	3%
Waste and Scrap	0	307	0	307	2%
Other Prepared Foodstuffs and Fats and Oils	4	168	8	180	1%
Pulp, Newsprint, Paper, and Paperboard	146	0	0	146	1%
Nonmetallic Minerals, n.e.c.	31	0	0	31	0%
Coal and Petroleum Products, n.e.c.	23	7	0	30	0%
Crude Petroleum Oil	0	0	0	0	0%
Metallic Ores and Concentrates	0	0	0	0	0%
Milled Grain Products and Preparations and Bakery Products	0	0	0	0	0%
Total	3,624	14,766	717	19,107	100%
<i>Percent</i>	<i>19%</i>	<i>77%</i>	<i>4%</i>	<i>100%</i>	

RAIL DEMAND

The total demand for freight rail transportation in South Dakota is projected to increase from 130.6 million tons in 2011 to 186.1 million tons in 2040, a compounded annualized growth rate (CAGR) of 1.2 percent. Figure 3 shows the reported 2011 volumes by direction of rail shipment alongside the projected 2040 volumes. The data are for all rail movements (inbound, outbound, intrastate and through) and all commodities (including coal and intermodal freight). Through-movement of coal accounts for most of the through-movement tonnage, but the projections also show that outbound and inbound rail tonnage, the direct result of economic activity within South Dakota, could each increase by upwards of 50 percent.

Figure 3. Rail Volumes by Direction, 2011 and 2040 (millions of tons)



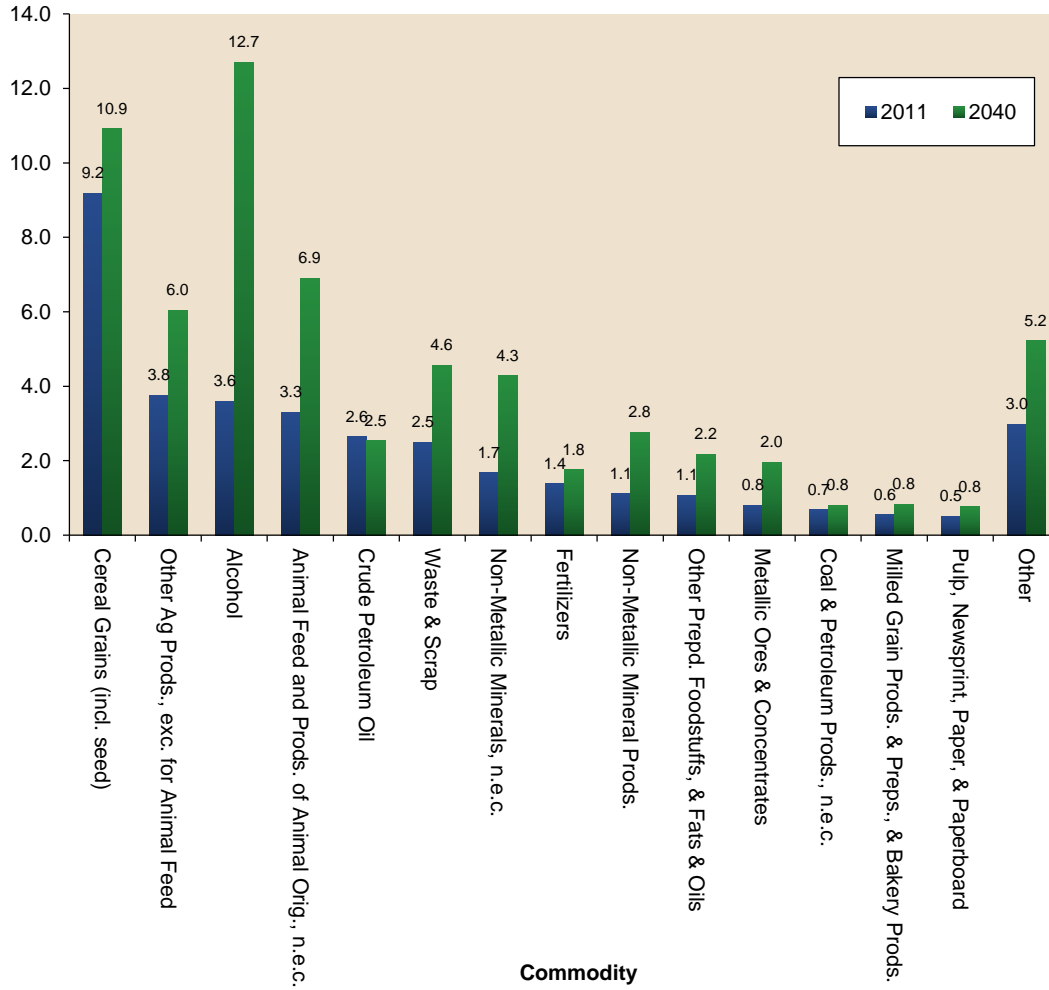
Source: STB 2011 Confidential Carload Waybill Sample data; FHWA FAF3 2011 provisional estimates and 2040 forecasts.

Figure 4 provides more detail, pairing the 2011 volumes with the projected 2040 volumes by type of commodity. This chart excludes coal, but includes rail shipments of general merchandise and goods shipped in intermodal rail containers (with the latter typically classified under “Other”).

The projections show substantial increases in outbound shipments of grains, alcohol (ethanol), animal feed and animal products; however, the projections of ethanol production and shipment were made before the recent reductions in subsidies for ethanol production and, therefore, the projections may prove to be overly aggressive.

The next sections describe the South Dakota rail network, examine how South Dakota shippers use rail services and identify where investment is needed to improve service and keep pace with the economy and projected demand.

Figure 4. Top Rail Commodities, Excluding Coal, 2011 and 2040 (millions of tons)

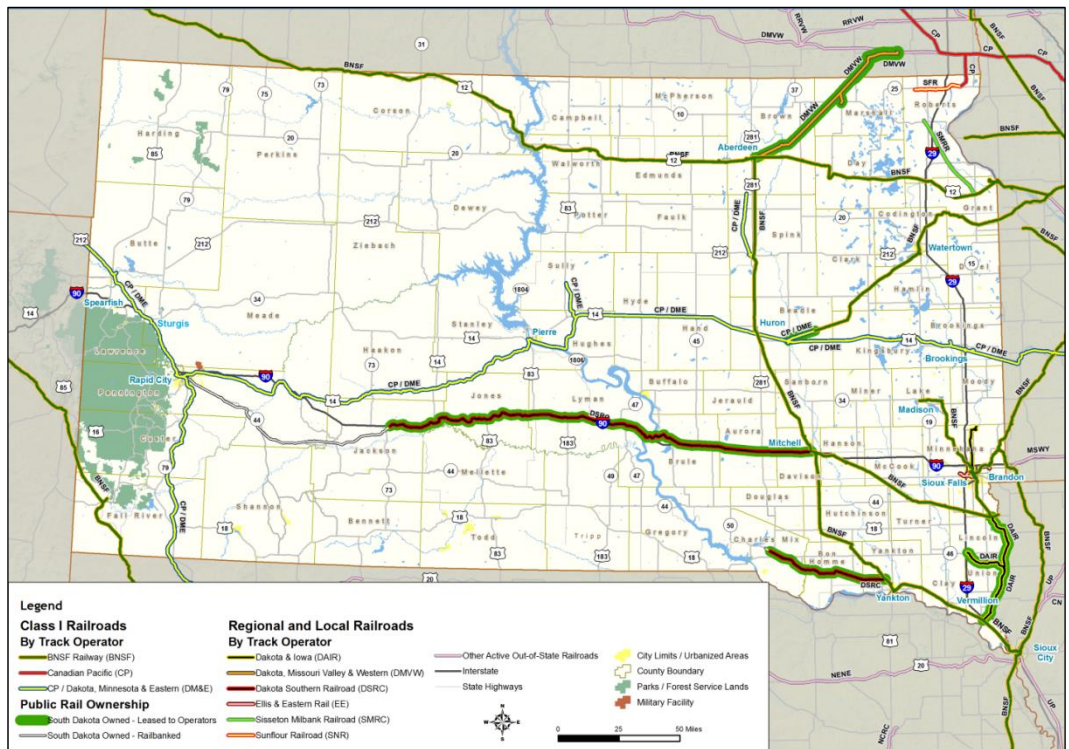


Source: STB 2011 Confidential Carload Waybill Sample data; FHWA FAF3 2011 provisional estimates and 2040 forecasts

SOUTH DAKOTA RAIL NETWORK

South Dakota has a substantial rail network, shown in Figure 5. There are 1,851 miles of rail in South Dakota. BNSF Railway owns approximately 900 miles of track in South Dakota and the Rapid City, Pierre & Eastern Railroad (formerly CP/DM&E) owns nearly 600 miles, combined encompassing nearly 80 percent of the rail system. Three short line railroads (Ellis & Eastern Railroad (EE), Sisseton/Milbank Railroad (SMRR) and Sunflower Railroad) and CP operate on approximately another 5 percent of the system. The privately owned railroad lines account for approximately 83 percent of the rail network in the state.

Figure 5. South Dakota Railroad System

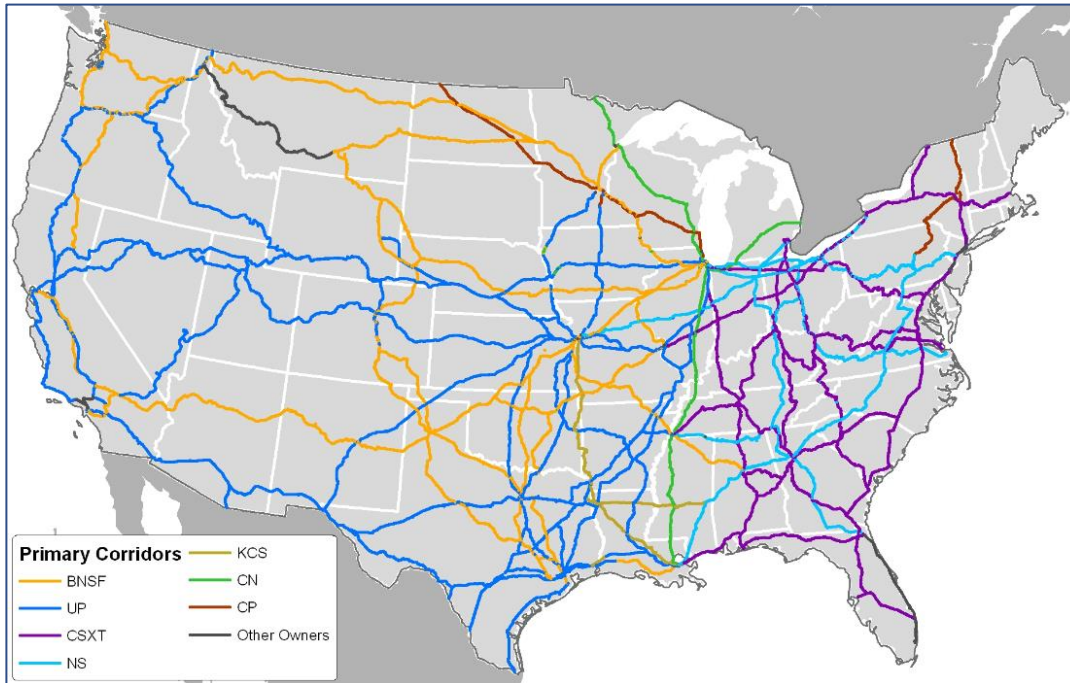


MOST SOUTH DAKOTA RAIL SHIPPERS DO NOT HAVE DIRECT ACCESS TO THE NATIONAL RAIL CORRIDORS, AS DEFINED BY THE ASSOCIATION OF AMERICAN RAILROADS. THE STATE'S RAILROAD SYSTEM IS PRIMARILY ORIENTED TO CONNECT SHIPPERS TO THIS NETWORK VIA CONNECTIONS OUTSIDE THE STATE.

However, the primary national freight rail corridors are outside South Dakota. Figure 6 shows the primary corridors, all of which skirt South Dakota. The primary rail corridors comprise one-third of the total U.S. rail network but carry about 80 percent of rail ton-miles and account for an equivalent percentage of rail revenues.

Access to these primary rail corridors is critically important to South Dakota businesses that use rail because these they provide access to the major markets and export ports, and because they provide the most frequent and cost-effective levels service.

Figure 6. Primary National Freight Rail Corridors



Source: Association of American Railroads, *National Rail Freight Infrastructure Capacity and Investment Study, 2007*.

For South Dakota shippers, the primary east-west corridors are –

- BNSF's High Line (the former Great Northern transcontinental route) route, which runs through North Dakota, paralleling US Route 2 and providing rail service between the Pacific Northwest and the Twin Cities;
- BNSF's/Montana Rail Link's Northern Pacific line, which parallels I-94 and provides a direct connection to the former Milwaukee Road transcontinental line at Terry, Montana;
- CP's mainline, which parallels the High Line through North Dakota and provides service between the Port of Vancouver and the western Canada provinces, the Twin Cities and Chicago; and
- UP's Central Corridor mainline, to the south in Nebraska and paralleling I-80, carries intermodal, carload and coal traffic between the West Coast and Chicago.

The primary north-south routes that provide South Dakota shippers with access to Chicago, the Gulf and Mexico are –

- The UP's Lamar Subdivision line from Twin Cities to Omaha, which touches South Dakota at Sioux City;
- BNSF's Wilmar to Omaha line, which runs east of the state, touching the state at Sioux Falls; and
- BNSF's and UP's Powder River Basin lines, which primarily carry coal from Wyoming through Nebraska to Midwest electric utility plants. The BNSF line crosses the far southwest corner of South Dakota.

Access to these primary freight corridors from within South Dakota is provided by several private railroads and a half-dozen, state-owned short lines within South Dakota.

The state-owned rail lines and the short line railroads that operate them are mapped in Figure 7. The Dakota, Missouri Valley and Western (DMVW) operates the 76.7-mile, State-owned stretch between Geneseo Junction, North Dakota and Aberdeen. The Dakota Southern Railway (DSRC) is licensed to operate the State-owned route from Mitchell through Chamberlain to Kadoka, as well as the licensed operator of the Napa to Platte line between Napa Junction and Ravinia. The Dakota and Iowa (D&I) Railroad operates the 68.6-mile, State-owned stretch between Canton and Elk Point with a branch near Hawarden that leads to Beresford and the CP operates the 15.3-mile, State-owned stretch between Huron and Yale. In total, the State of South Dakota currently owns 316.9 active rail miles. State-owned rail lines account for 17 percent of the active network. An additional approximate 125 miles of track are “railbanked” for potential future reconstruction use.

Figure 7. State-Owned Rail Lines in South Dakota



With the exception of the BNSF and UP coal lines to the southwest, all the lines within the state are single-track lines as shown in Figure 8.

Figure 9 shows the average daily train volumes on the lines in 2011. The BNSF and UP coal lines carry upwards of 50 trains per day. The BNSF Mobridge Line, which parallels U.S. Route 12 into Aberdeen, sees about 10 trains per day. All the other lines average between one and five trains per day.

Figure 8. Number of Tracks, South Dakota Railroad Network

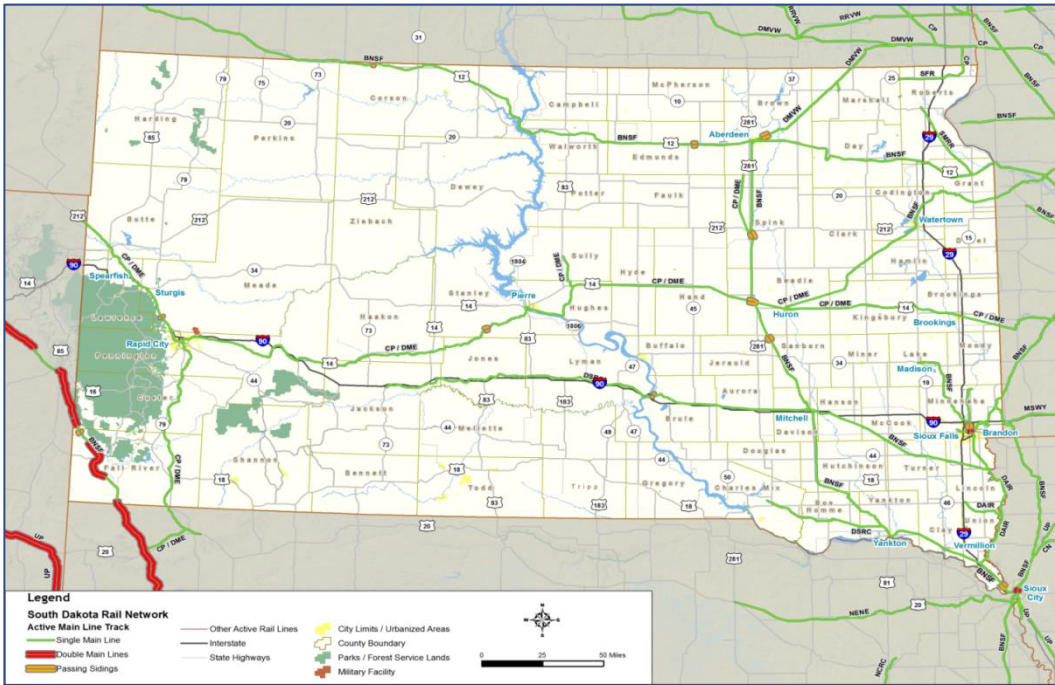


Figure 9. Average Daily Trains by Rail Line, 2011



The Class I mainlines in the state are in good condition, but the performance of many of the secondary lines are constrained by the weight-bearing capacity of their tracks and bridges. The maximum allowable railcar weights of the lines are shown in Figure 10. The BNSF lines are capable of carrying industry-standard 286,000 pound railcars, but with a few exceptions, the state's other lines are not.

The number and distance between sidings also limits the performance of the network. Widely separated sidings mean that trains scheduled to meet or pass must wait long periods for tracks to clear.

Figure 10. Maximum Allowable Gross Weight and Other Restrictions, South Dakota Railroad Network



The next section looks at how these lines serve businesses and rail shippers in South Dakota and the types of improvements that are needed to ensure that the lines continue to provide accessible, cost-effective and reliable rail service and connections to the primary national rail corridors.

SOUTH DAKOTA RAIL SHIPPERS AND THE RAIL NETWORK

EAST OF MISSOURI RIVER

This section looks at the rail lines serving shippers east of the Missouri River. The following section looks at the lines serving businesses west of the river. The division reflects South Dakota's geography –

- East of the Missouri River, South Dakota's terrain is relatively flat and fertile, and is largely utilized for growing corn, wheat, soybeans and similar crops;
- West of the Missouri River, South Dakota's terrain is more uneven, arid and less fertile. Much of this land is used for grazing, although with warmer conditions and more rainfall, corn production is increasing west of the river. The Black Hills, a range running north-south along the State's western border, is South Dakota's only significant mountain group. Mining and logging industries were established in and around Rapid City as early as in the 19th Century and bentonite is mined just across the state line in Wyoming.

Rail Network

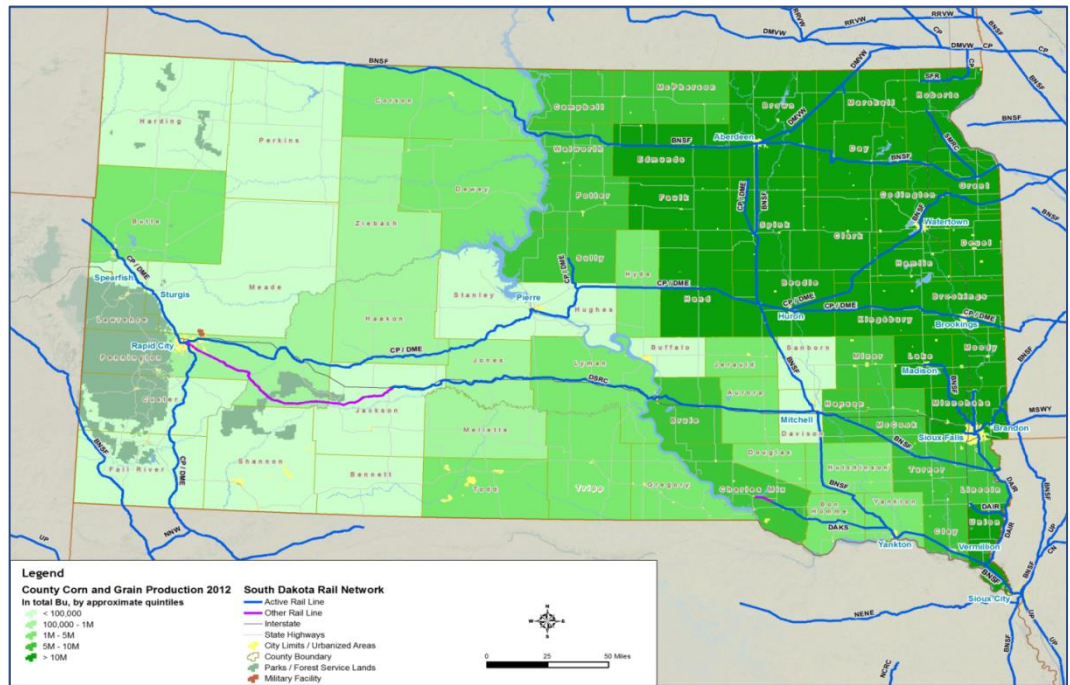
East of river is served by a substantial network of rail lines –

- The BNSF Core Line (also called the Aberdeen Subdivision) runs north-south from Aberdeen through Mitchell and then to Sioux City, providing access to several of the Class I railroads' transcontinental lines;
- The northern tier of the east of river region is served by the BNSF's Mobridge and Appleton lines, which provide access west to the Pacific Northwest and east to the Twin Cities; and by the Dakota, Missouri Valley and Western Railroad's (DMWR) Britton/Rutland line, which provides a connection from Aberdeen east to the CP;
- The central tier of the region is served by the CP/DM&E's (now Genesee & Wyoming's Rapid City Pierre & Eastern (RCP&E) railroad) Huron and Pierre lines, which provide access east to Winona and Chicago and west to Pierre and Rapid City; and by the BNSF's Watertown line, which links Huron to Watertown and the Twin Cities;
- The southern tier of the region is served by the Dakota Southern Railway's (DSRC) Mitchell to Rapid City (MRC) and Napa to Platte lines. The DSCR MRC line serves shippers west of Mitchell, providing connections at Mitchell to the BNSF Aberdeen and Mitchell Subdivisions to Sioux City. The Napa to Platte line serves shippers west of Yankton, connecting to the BNSF Aberdeen Subdivision and thence to Sioux City.

Farmers/Ranchers

Agricultural production accounted for about 14 percent of output value of the South Dakota economy in 2013, with much of the production occurring east of the river. Figure 11 shows the intensity of corn and grain production by county in 2012.

Figure 11. South Dakota Corn and Grain Production by County, 2012



Forecasts of agricultural production and demand anticipate a shrinking local market for ethanol corn, but steady increases in productivity and increasing export demand. The industry moved 9.2 million tons of cereal grains by rail in 2011 and is projected to move upwards of 10.9 million tons in 2040. The industry also generated 3.8 million tons of other agricultural products, projected approach 6.0 million tons in 2040, and 3.3 million tons of feed and animal products, projected to grow to 6.9 million tons.

The supply chains paths for corn and other grains varies by crop, count and season, but generally corn and grain is trucked to local grain elevators (the majority of which have space to load 25-75 cars). The loaded hopper cars are moved by short line railroads for interchange with the Class I railroads, who then haul them to ports such as Seattle/Tacoma and the Port of Portland for export. Grain shippers may also use rail to bring in shipments of fertilizer, although some of this market has been lost to trucks as both feed and fertilizers are custom blended for specific farms and ranches.

The immediate opportunity for grain, soybean, cattle and hog farmers is to ride the rising wave of demand across overseas markets for grains and meat products. Much of this demand will continue to move through the Pacific Northwest ports, but with the expansion of the Panama Canal there may also be opportunities to export both bulk and containerized products through Gulf ports.

To realize these opportunities, shippers must gain economies of scale in grain and other shipments by rail to keep export costs down and be competitive in global markets. Their ability to do this is limited by capacity constraints on both the transcontinental rail lines and South Dakota's network.

On the transcontinental routes, South Dakota shipments must compete with intermodal, general merchandise and coal trains for track time and space. Since the economic deregulation of the rail industry in 1980, the Class I railroads have rebuilt their services and networks to make money

through economies of scale – hauling long trains of relatively uniform car types over long distances and minimizing the number of labor-intensive and time-consuming stops to pick up and put out small numbers of rail cars. The industry’s preference today is for cost-effective “hook and haul” operations. Shippers who cannot put together large consists of cars, typically 100 or more cars ready for long-haul movement, may be lower on the service priority list than those who can.

Within South Dakota, the rail lines are competing with truckers and grain elevator operators who have the capacity to accumulate large volumes of grain and assemble 100+ car consists for shipment. Many of the short lines and a few of the Class I railroads operate over aged track that cannot support fully loaded grain cars. (At major grains consolidation facilities, the Class I railroads are now routinely loading 315,000 pound cars.) Slow operating speeds that are mandated to avoid derailments and infrequent train moves over single-track lines, when coupled with relatively long-distance runs to interchange points on the primary rail corridors drive up costs and lead to less-than-reliable shipping and delivery schedules.

IF ALL OF SOUTH DAKOTA’S CORN WAS SHIPPED BY RAIL IN 2012, IT WOULD HAVE TAKEN OVER 1,500 100-CAR TRAINS. IF IT WAS SHIPPED BY TRUCK IT WOULD HAVE TAKEN OVER 600,000 TRIPS.

These problems can be addressed by –

- Upgrading rails and bridges to handle industry-standard 286K cars, thus preserving short line service as viable business;
- Maintaining track and signals to a state of good repair, thereby guaranteeing reasonable travel speed and safety and the ability to compete with trucks on cost. Shifting heavy loads from truck to rail also helps reduce truck-miles of travel and the resultant wear and tear on county, state and Interstate roads.
- Consolidating grain shipments at larger elevator/shuttle facilities with greater staging capacity to build large train consists that will attract Class I railroad service. This can be done by negotiating trackage rights so that short line carriers can access these locations and by providing additional sidings to hold trains during transfer and loading operations.
- Providing expanded capacity at interchange points in the form of turnouts, additional sidings, and newer train-control signal systems, etc. – between short lines and Class I railroads.

Chemical Manufacturers (ethanol)

The production of ethanol from corn has grown rapidly, accounting for a substantial portion of the 9 percent of the state's GDP generated by the manufacturing industry. The available, 2011 FHWA Freight Analysis Framework (FAF) projections suggest that the tonnage of ethanol produced and shipped by rail from South Dakota will grow from 3.6 million tons in 2011 to nearly 12.7 million tons in 2040. However, the future rate of growth is likely to be slower because subsidies for the production of ethanol (to be mixed with gasoline) have been reduced, dampening demand.

Again, supply chains vary from ethanol plant-and-plant and county-to-county. Some plants receive corn by rail, but typically, corn is trucked into plants from farms with a radius of 50+ miles of the plant. The ethanol product is then shipped to refineries and fuel distribution terminals near major population centers where it is mixed with gasoline for retail sale. Rail will remain the mode of choice for ethanol shipments because of both bulk and weight of the shipments, and also because of safety – ethanol is highly corrosive, requiring specialized tanks and pumping equipment, and rail provides the economies of scale that make such investment cost-feasible.

Current estimates are that 44 percent of ethanol shipments from South Dakota go to the East North Central region (e.g., Illinois, Indiana, Ohio); 32 percent go Pacific markets; and 17 percent move to the West South Central region (e.g., TX, LA, etc.).

Even if the growth rate in demand for ethanol is less than projections, normal growth in population, automobiles ownership and economic activity will likely increase the demand for ethanol. As with grain shippers, ethanol shippers will need capacity within South Dakota and competitive access to the Class I railroads to maintain market share. Likewise, the same set of rail improvement strategies – upgraded track and bridges for weight-bearing capacity, maintenance of line to state of good repair, and better interchange points – will serve ethanol shippers.

Wholesalers

Wholesalers are reported here as proxy for a broad range of industries, especially those in the east of river region, that depend indirectly on freight movement for building materials, manufacturing and medical equipment, office supplies, home and consumer goods, food and clothing. These industries include finance, government, manufacturing, education, health care, retailing, professional and business services, construction, tourism and information services. Together these industries account for three-quarters of the State's GDP.

With the exception of the construction industry, few of these industries generate much direct demand for freight transportation, and most of their freight demand is met by truckers not railroads. However, all these industries generate indirect demand for freight movement, typically through wholesale suppliers and retailers. An increasing amount of wholesale/retail goods (as well as construction materials) are moved long-distance in intermodal rail containers and then moved the "last mile" by truck from wholesalers and retailers to businesses and consumers.

South Dakota has seen positive growth in finance, health care, professional services and tourism as well as some modest growth in export manufacturing. The future growth of these industries will depend on the ability of businesses to keep the cost of doing business and the cost of employee living down. Moreover, these factors will depend in part on keeping down the cost of importing and distributing building materials, manufacturing and office equipment and supplies, home and consumer goods, food and clothing.

However, there are no intermodal rail terminals in South Dakota. This means that most goods brought into the state, whether domestic or international goods, move into South Dakota by truck. In the east of river region, general merchandise and consumer goods are staged out of intermodal rail hubs and distribution centers in Chicago and the Twin Cities, and then trucked to wholesalers in South Dakota for delivery to retailers and businesses.

South Dakota will benefit if it can bring rail intermodal terminals and rail transload facilities closer, or into, South Dakota. This will help to reduce trucking costs and keep the cost of consumer goods and manufacturing parts and materials down.

In the short term, South Dakota must maintain good highway access between the intermodal rail hubs and distribution centers in Chicago and the Twin Cities and wholesalers and retailers in South Dakota. In the longer-term, the needs of wholesalers/retailers can be addressed by developing intermodal terminals in or near the state.

WEST OF MISSOURI RIVER

Network

Western South Dakota is served by a thin network of rail lines, mapped in Figure 12. The most important is the CP/DM&E (now RCP&E) line, which runs parallel but north of I-90, connecting Rapid City to Pierre and points east. The line forks at Rapid City. One branch runs northwest and terminates at the bentonite mines just over the South Dakota/Wyoming border. This line is active. The other branch runs southwest, connecting with the BNSF coal lines near Crawford, Nebraska. On average, the RCP&E line to Colony, Wyoming services less than one train per day.

SOUTH DAKOTA'S RAIL SYSTEM HAS STRONG LINKS TO THE LIVABILITY OF URBAN AND RURAL COMMUNITIES. RAIL IS ESSENTIAL FOR HANDLING GROWING VOLUMES OF FREIGHT WITHOUT OVERBURDENING THE HIGHWAY SYSTEM.

A second east-west line, the State-owned and DSRC operated MRC line, parallels I-90 and once connected Rapid City to Mitchell, South Dakota. The DSRC is active as far west as Presho; the remainder of the line to Rapid City which is West River is inactive and/or railbanked for future use. The State filed a TIGER application in 2014 seeking approximately \$13 million of the nearly \$30 million cost to rebuild the branch line from Chamberlain to Presho.

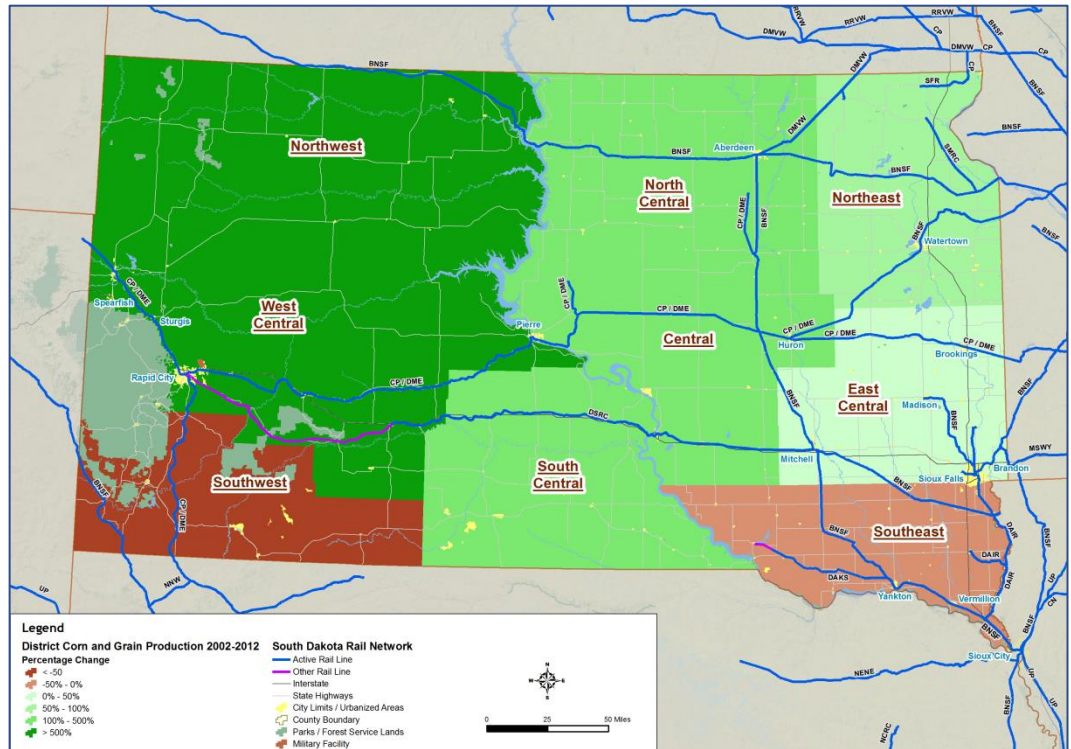
Figure 12. West of River Rail Lines



Farmers/Ranchers

Farming and ranching are growing industries west of the river, buoyed by the global demand for grain and climate changes that are expanding the areas where corn can be farmed profitably. Figure 13 shows the relative change in corn for grain production between 2002 and 2012.

Figure 13. South Dakota Corn for Grain Production by Agricultural District, 2002 and 2012



West River is considered transportation disadvantaged due to the lack of rail service. Corn, grain and other agricultural products are typically trucked to local elevators if there is capacity and rail service; otherwise, the grain is trucked to elevators east of river. This adds substantially to the cost of export grain and increases the shipment time to market.

If west of river agricultural shippers are to take advantage of increasing productivity and growing range, service must be improved on the RCP&E line and continued effort made to resuscitate the DSRC west of Chamberlain to Presho, and further west, as well as expand elevator facilities on this line.

Mining (bentonite)

Bentonite is mined in Colony, Wyoming, just west of the South Dakota border. Bentonite, a form of clay, is used in drilling mud, as a binder for foundry-sand molds, as absorbent in pet litter and a purifier of wines and other food products.

There is an active U.S. and global market for bentonite. Minerals Technologies Inc. has recently purchased Amcol International, which includes the operations at Colony, for \$1.49 billion. A

portion of the mine's output is shipped eastward in railcars, but most bentonite exports are trucked over 400 miles to Denver where they are transloaded into intermodal rail cars for shipment to western U.S. and Pacific Rim markets

As with grain and animal product shippers, Amcol could significantly expand their business, especially their export business, with better rail service east and west. This will require truck-to-rail transload facilities and increased capacity and service along the RCP&E line eastward, as well as improved track south of Rapid City to Dakota Junction.

Energy (oil)

Gas and oil extraction is a booming industry in North Dakota, but South Dakota has no significant gas and oil plays. However, the Rapid City region could expand its oil industry supply and support businesses, acting as a major staging and distribution center for frac sand, drilling equipment, building materials and supplies brought in to support and maintain oil field operations. Rail-to-truck transload facilities and staging areas around Belle Fourche, which is north of Rapid City and within reasonable trucking distance up US Route 85 to the North Dakota fields, could be served by trains operating over the RCP&E line.

RAIL NETWORK PROJECTS

PROJECTS

The Plan identified twenty-seven (27) desirable rail improvement projects. Twenty-one (21) would directly benefit shippers in the east-of-river region and six rail projects would directly benefit west-of-river shippers. The full benefits to west-of-river shippers would depend in part on completion of key east-of-river rail improvements that ensure access to the Class I primary freight rail corridors. Detailed descriptions of the projects are in Appendix B.

The total estimated cost of the projects is \$455 million. Table 3 lists the projects, not in priority order, and Figure 16 shows the locations of the projects. The projects fall into five categories –

- **Efficiency/Chokepoint.** These projects identify areas where system efficiencies are lacking due to a physical system bottleneck or other capacity constraint. Types of projects in this category are new sidings and interchanges.
- **Bridge Capacity.** These projects are focused on bridge replacement and rehabilitation. There are numerous aged bridges in the State and many are not 286,000 pound compliant.
- **Track Condition.** These projects are focused on rail line condition and include projects that upgrade lightweight rail to heavy rail (110 pounds or heavier), replace mismatched jointed rail segments, and refresh ballast and ties. Track condition projects also include upgrade of sod railroads that exist from years out of service and general neglect.
- **Safety.** These projects are focused on at-grade crossing safety. While only one project is identified specifically as a safety project in the projects list, there are safety components noted in several of the other projects.
- **Industrial Park Development.** These projects highlight areas where rail transfer facilities should be considered to bolster local economic development activities.

Table 3. Rail Improvement Projects

Map ID	Project Name	Estimated Cost	Rail Operator	State-Owned
Efficiency/Chokepoint Projects				
1	Wolsey Interchange	\$1,750,000	Rapid City, Pierre, and Eastern (former CP/DM&E)	●
2	Napa-Platte Interchange	\$1,750,000	Dakota Southern Railway	●
3	MRC Passing Siding	\$1,750,000	Dakota Southern Railway	●
4	MRC – Reconstruct Wye in Chamberlain	\$650,000	Dakota Southern Railway	●
5	Sioux Valley Subdivision Meet and Pass Siding	\$1,750,000	Dakota and Iowa Railroad	●
6	Sioux City Interchange	\$3,500,000	Multiple Railroads	
7	MRC Northbound BNSF Connection	\$8,200,000	Dakota Southern Railway	●
8	RCP&E Yard near Huron	\$16,000,000	Rapid City, Pierre, and Eastern (former CP/DM&E)	
9	RCP&E Siding near Huron	\$3,500,000	Rapid City, Pierre, and Eastern (former CP/DM&E)	
10	RCP&E Siding near Aurora	\$3,500,000	Rapid City, Pierre, and Eastern (former CP/DM&E)	
11	Mankato, MN Wye	\$2,000,000	Rapid City, Pierre, and Eastern (former CP/DM&E)	
Bridge Capacity Projects				
12	Napa to Platte Mainline Bridge Repair/Replacement	\$2,500,000	Dakota Southern Railway	●
13	Huron to Yale Line Bridge Upgrade	\$2,000,000	Rapid City, Pierre, and Eastern	●
14	Sioux Valley Subdivision Bridge Upgrade	\$40,000,000	Dakota and Iowa Railroad	●
Track Condition Projects				
15	Britton Line Rail Upgrade	\$32,000,000	Dakota, Missouri Valley and Western Railroad	●
16	MRC West of Chamberlain – Phase 2	\$30,000,000	Dakota Southern Railway	●
17	Sioux Valley Subdivision Slide Repair	\$3,500,000	Dakota and Iowa Railroad	●
18	Sisseton to Milbank Railroad Reconstruction	\$23,000,000	Sisseton Milbank Railroad	
19	Napa to Platte Mainline Reconstruction	\$25,000,000	Dakota Southern Railway	●
20	Redfield to Mansfield Line Upgrade	\$14,500,000	Rapid City, Pierre, and Eastern	
21	Huron to Yale Line Upgrade	\$6,000,000	Rapid City, Pierre, and Eastern	●
22	Sioux Valley Subdivision Rail Upgrade	\$6,000,000	Dakota and Iowa Railroad	●

Map ID	Project Name	Estimated Cost	Rail Operator	State-Owned
23	Pierre to Rapid City Track Upgrade	\$105,000,000	Rapid City, Pierre, and Eastern	
24	Rapid City to Dakota Junction Track Upgrade	\$40,000,000	Rapid City, Pierre, and Eastern	
Safety Projects				
25	Brookings 22 nd Avenue Grade Crossing	\$500,000	Rapid City, Pierre, and Eastern	
Industrial Park Development Projects				
26	Intermodal Yard at Sherman	\$75,000,000	BNSF	
27	Belle Fourche Transloading Facility	\$6,000,000	Rapid City, Pierre, and Eastern	
Total South Dakota Rail System Needs		\$455,350,000		

Figure 14. Location of Potential Rail Infrastructure Projects



PROJECTS ON STATE-OWNED LINES

Fifteen (15) out of the twenty-seven (27) projects are located on the South Dakota-owned rail system. Twelve (12) are east of river and 3 are west of river. Table 4 lists the projects corresponding to the projects listed in Figure 14. The projects are grouped into six "line packages," reflecting how they would be most likely be funded and implemented. The estimated cost of these projects is \$163 million (36 percent of the total).

Table 4. State-Owned Rail System Needs

Railroad Operator	Rail Line	Project Name	Project Type	Map ID	Estimated Cost
Rapid City, Pierre & Eastern (former CP/DM&E)	Huron to Yale Line	Huron to Yale Line Bridge Upgrade	Bridge Capacity	9	\$2,000,000
		Huron to Yale Line Upgrade	Track Condition	17	\$6,000,000
					<i>Rail Line Subtotal</i>
Rapid City, Pierre & Eastern	Wolsey Interchange	Wolsey Interchange	Efficiency/Chokepoint	1	\$1,750,000
Dakota, Missouri Valley and Western Railroad	Britton Line	Britton Line Rail Upgrade	Track Condition	11	\$32,000,000
Dakota and Iowa Railroad	Sioux Valley Subdivision	Sioux Valley Subdivision Meet and Pass Siding	Efficiency/Chokepoint	5	\$1,750,000
		Sioux Valley Subdivision Bridge Upgrade	Bridge Capacity	10	\$40,000,000
		Sioux Valley Subdivision Slide Repair	Track Condition	13	\$3,500,000
		Sioux Valley Subdivision Rail Upgrade	Track Condition	18	\$6,000,000
Dakota and Iowa Railroad	Sioux Valley Subdivision – Hawarden Branch	N/A			

Railroad Operator	Rail Line	Project Name	Project Type	Map ID	Estimated Cost
Dakota Southern Railway	Mitchell to Rapid City Line (in partial service)	MRC Passing Siding	Efficiency/Chokepoint	3	\$1,750,000
		MRC– Reconstruct Wye in Chamberlain	Efficiency/Chokepoint	4	\$650,000
		MRC Northbound BNSF Connection	Efficiency/Chokepoint	7	\$8,200,000
		MRC West of Chamberlain–Phase 2	Track Condition	12	\$30,000,000
				<i>Rail Line Subtotal</i>	<u>\$40,600,000</u>
Dakota Southern Railway	Napa to Platte Line (not in active service)	Napa-Platte Interchange	Efficiency/Chokepoint	2	\$1,750,000
		Napa to Platte Mainline Bridge Repair/ Replacement	Bridge Capacity	8	\$2,500,000
		Napa to Platte Mainline Reconstruction	Track Condition	15	\$25,000,000
				<i>Rail Line Subtotal</i>	<u>\$29,250,000</u>
Total State-Owned Rail System Needs					\$162,850,000

EVALUATION OF PROJECTS ON STATE-OWNED LINES

The six line packages were evaluated against the State’s rail program goals –

- Support economic growth and development;
- Ensure connectivity for critical industries;
- Maintain State railroad assets in a state of good repair;
- Reduce highway impacts; and
- Improve railroad safety, security, and resiliency.

The goals are discussed in more detail in Appendix A.

The projects within each “line package” were assigned to one of three tiers based on how well the projects address the state's goals.

- Tier 1 packages are those which provide “high benefits” in the given goal category;
- Tier 2 packages are those which provide “potential benefits” in the given goal category, but where, for example, additional investment by the private sector is needed to fully realize the benefits; and
- Tier 3 packages that may produce benefits, but do not contribute substantially to the achievement of a State goal.

The detailed assessments for each project are reported in Volume II Technical Report, Technical Memorandum.

RECOMMENDATIONS

PROJECTS

Each of the projects identified on the South Dakota state-owned rail system meets the needs identified in this Plan, as well as received the agreement on need by the Rail Plan Advisory

Committee. However, determining which of these projects should be prioritized over others can often be a matter of subject, as well as is critically dependent on available resources and partnerships. The qualitative benefits of each of the state-owned rail line project was arrayed against cost as an aid in determining which projects may provide immediate returns to the State.

SINCE THE 1980S, FEDERAL FUNDING ASSISTANCE FOR RAIL LINE REHABILITATION HAS BEEN PROBLEMATIC. THE STATE'S OWN RESOURCES ARE BEING STRETCHED TO ACCOMMODATE THE LONG LIST OF RAIL INFRASTRUCTURE NEEDS.

Table 5 summarizes the relative benefits of each of the "line packages" across all the goals. The assessments are based on the best professional judgment of the consultant team working in consultation with South Dakota DOT rail officials and the study stakeholders. The

detailed assessments for each project are reported in Volume II Technical Report, Technical Memorandum.

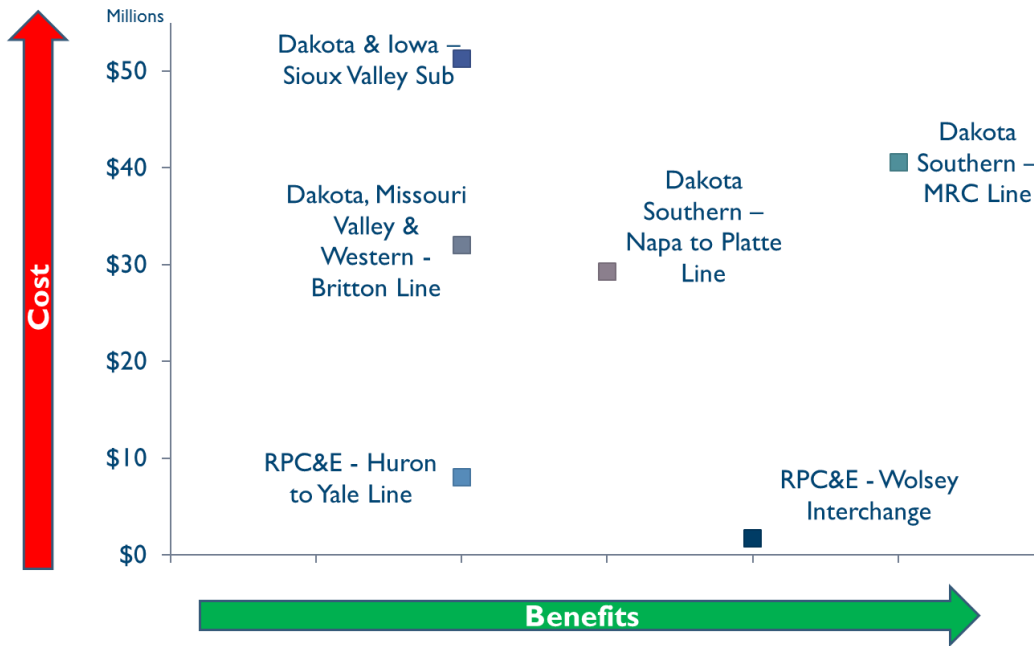
Table 5. Estimated Benefits and Costs of State-Owned Rail Improvement Projects

Rail Line	Project	Summarized Benefits	Overall Cost
RCP&E- Huron to Yale Line	Bridge & Line Upgrades		\$8 Mil
RCP&E - Wolsey Interchange	Wolsey Interchange		\$1.75 Mil
DMWR - Britton Line	Rail Upgrade		\$32 Mil
Dakota & Iowa – Sioux Valley Sub	Rail, Bridge & Siding Repairs		\$51.25 Mil
Dakota Southern – MRC Line	BNSF Conn, Rail, Bridge & Siding Upgrades		\$40.6 Mil
Dakota Southern – Napa to Platte Line	Interchange, Rail & Bridges Upgrades		\$29.25 Mil

= High Benefits = Potential Benefits = No Change

Figure 16 arrays the line packages by cost and anticipated benefits. The highest anticipated benefits and costs are from the improvements to the Dakota Southern MRC line. The lowest estimated and costs are for the improvements to the RCP&E Huron to Yale line projects.

Figure 15. Comparison of Estimated Benefits and Costs of State-Owned Rail Improvement Projects



SUPPORTING STRATEGIES

Physical infrastructure projects, alone, will not be sufficient to address the numerous needs that exist internal and external to South Dakota. An array of supporting strategies have been recommended to serve as an action plan for the coming years for both the South Dakota DOT, as well as its public and private sector rail partners. The supporting actions are outlined below under the relevant State Rail Plan goal.

SUPPORT ECONOMIC GROWTH AND DEVELOPMENT

South Dakota business, industry, and government leaders continue to emphasize the importance of statewide economic growth and development activities. The State can support local and regional economic development efforts by the following actions:

- Be an advocate for State, regional and local efforts that:
 - Increase freight handling capacity and capabilities (including grain shuttle facilities, transload facilities and industrial parks),
 - Develop and promote existing and new local freight connections, and/or
 - Increase rail siding availability and length.
- Be an advocate for short line railroads to upgrade track and maintain their systems in a state of good repair.
- Proactively work with local economic development and planning/zoning agencies to obtain local buy-in and advance projects that increase economic development opportunities.
- Consider financial support of projects that advance State Rail Plan goals, in a manner commensurate with benefits received.

ENSURE CONNECTIVITY FOR CRITICAL INDUSTRIES

Providing competitive, efficient, and reliable rail connections to existing and emerging industries helps lower the cost of doing business in the State, broadens the market reach for South Dakota products, and is a critical component of business attraction and retention strategies. South Dakota can ensure that key State industries have competitive and efficient links to the broader rail networks through the following actions:

- Proactively work to maintain, and increase, access for South Dakota shippers to Class I rail operators.
- Coordinate identifying rail investment needs (bottlenecks), and quantifying their impacts to South Dakota, with neighboring states, including Iowa, Minnesota, North Dakota and Nebraska.
- Be an advocate for National rail system investments that ensure efficient and reliable service and connections for South Dakota’s key industries across Class I transcon corridors and at deep water export ports.
- Consider financial support of projects that advance State Rail Plan goals, in a manner commensurate with benefits received.

MAINTAIN STATE RAILROAD ASSETS IN A STATE OF GOOD REPAIR

Over the years, the State of South Dakota has acquired numerous small rail lines that primarily provide local service and serve as last-mile connections for local industries to the transcontinental freight rail network. Today, many of these lines have significant capital and ongoing maintenance needs. In addition to physical system investments, the State can ensure that these assets are preserved and will be available to provide value to the State and its residents now and in the future by the following actions:

- Develop and maintain a short-/long-range rail investment needs inventory in partnership with railroad owners and operators that is consistent with needs identified in this State Rail Plan.
- Work towards achieving minimum standards for all active, State-owned rail lines, including “heavy” rail and 286K-compliance.
- Require rail operators to develop annual maintenance plans for State-owned rail lines.
- Proactively work to secure funding for maintaining and improving the State-owned rail system, including:
 - Maximize and leverage State investments through available State and Federal grant and loan programs (e.g., TIGER and RRIF),
 - Pursue Public-Private Partnerships (PPPs) and secure private and public funds to support projects, and
 - Proactively work with the State Legislature to provide education on the benefits of rail.
- Consider financial support of projects that advance State Rail Plan goals, in a manner commensurate with benefits received.
- Proactively preserve rail system service, infrastructure and assets in South Dakota, to capitalize on future opportunities.

- Request the State Legislature explore and enact a policy regarding rail line preservation.
- In rail preservation, consider criteria such as:
 - Existing industry base using the line;
 - Potential industrial customers not presently using the line but can be accessed by it;
 - How the line is connected to the national railroad system;
 - Geography of the line and its potential service territory;
 - Unique circumstances affecting operating costs and revenue potential; and
 - Regional vision for the future (what is expected to happen in the area served over the next 50 years?).

REDUCE HIGHWAY IMPACTS

The current lack of rail service in some areas of South Dakota leads to higher transportation costs for producers who must rely on trucks to get product to market, which subsequently places a higher burden on the highway system, both in terms of weighted load and truck vehicle miles traveled. The State can reduce the burden on the highway system by taking the following actions:

- Coordinate among DOT divisions, system owners, operators, jurisdictions and other partners to ensure the rail system is integrated as a component of the broader multimodal transportation network in South Dakota.
- Be an advocate for increasing rail use by South Dakota businesses through projects, programs, and policies that:
 - Emphasize intermodal, multimodal, and first- and last-mile connectivity to key facilities,
 - Encourage and provide incentives for industrial land uses and development that are near and have access to rail lines, and
 - Increase freight handling capacity and capabilities in areas considered “transportation disadvantaged.”
- Consider financial support of projects that advance State Rail Plan goals, in a manner commensurate with benefits received.

IMPROVE RAILROAD SAFETY, SECURITY, AND RESILIENCY

Safety, security, and resiliency on the South Dakota railroad network goes hand in hand with economic growth and development. The State can further the safety, security, and resiliency of the system by the following actions:

- Coordinate and support safety and security awareness programs, operational improvements, new technology and equipment that promote overall system safety and security.
- Support efforts that further the safety and security of employees working on the rail system, communities near the rail lines and the commodities being transported by rail through the State.

- Work in partnership with railroad operators, state and federal agencies, local communities, and emergency response providers to provide for the safe and secure transport of commodities throughout the State, nationally, and internationally.
- Design transportation projects to avoid, reduce or address potential safety concerns with at-grade or grade separated crossings.
- Work toward rail system connectivity, resiliency and redundancy within the overall transportation system to help South Dakota mitigate and recover quickly from natural disasters or human caused disruptions.
- Consider financial support of projects that advance State Rail Plan goals, in a manner commensurate with benefits received.



APPENDICES

A. STATE RAIL GOALS

The goals for the South Dakota State Rail Plan are to:

- Support economic growth and development;
- Ensure connectivity for critical industries;
- Maintain State railroad assets in a state of good repair;
- Reduce highway impacts; and
- Improve railroad safety, security, and resiliency.

These goals are briefly elaborated on in the goal statements below. These goals are ordered based on the Advisory Committee's indication of importance.

SUPPORT ECONOMIC GROWTH AND DEVELOPMENT

South Dakota business, industry, and government leaders continue to emphasize the importance of statewide economic growth and development activities. The State's rail plans, investments, and policies should support these local and regional economic development efforts by seeking to increase local freight handling capacity and capabilities, developing and promoting local freight connections, and linking rail investments to actions that support economic development.

ENSURE CONNECTIVITY FOR CRITICAL INDUSTRIES

Providing competitive, efficient, and reliable rail connections to existing and emerging industries helps lower the cost of doing business in the State, broadens the market reach for South Dakota products, and is a critical component of business attraction and retention strategies. Through competitive rail access, targeted infrastructure investments, coordination with neighboring states, and rail-focused policy development, South Dakota should ensure that key State industries have competitive and efficient links to the transcontinental freight rail network, can operate reliably on that network, and have access to all domestic and international markets.

MAINTAIN STATE RAILROAD ASSETS IN A STATE OF GOOD REPAIR

Over the years, the State of South Dakota has acquired numerous small rail lines that primarily provide local service and serve as last-mile connections for local industries to the transcontinental freight rail network. The State purchased these lines as they were threatened for abandonment, and today many have significant capital and ongoing maintenance needs. The State of South Dakota should ensure that rail-focused asset management programs are in place and rail investments made to preserve these rail assets and increase their value to the public.

REDUCE HIGHWAY IMPACTS

There are areas within South Dakota that can be described as “transportation disadvantaged” due to their lack of rail service. This situation results in two key outcomes: the lack of access to rail and rail-served facilities (e.g., grain elevators) leads to higher transportation costs for producers in the region who must rely on trucks to get product to market; and the use of truck transportation in lieu of rail places a higher burden on the highway system, both in terms of weighted load and truck vehicle miles traveled. The State should support investments and policies that both encourage local economic development and reduce the use of the highway system for long-distance moves that may more cost-effectively be served by rail.

IMPROVE RAILROAD SAFETY, SECURITY, AND RESILIENCY

Ensuring the safety, security, and resiliency of South Dakota’s railroads goes hand in hand with the goal of supporting economic growth and development. The State’s rail policies should seek to improve railroad operations by developing and implementing rail safety measures, conducting rail safety public awareness programs, improving the safety of highway-rail grade crossings, assessing the system for external vulnerabilities, and protecting the security of rail technology, assets, and people.

B. RAIL PROJECT DESCRIPTIONS

EFFICIENCY/CHOKEPOINT PROJECTS

1. Wolsey Interchange

Provide one additional 8,000-foot siding to the existing interchange tracks. The current siding was constructed for the interchange of trains and rail cars and is located at the intersection of the BNSF and Rapid City, Pierre, and Eastern (RCP&E, former CP/DM&E) Railroads just west of Wolsey, South Dakota. The current interchange consists of two 8,000-foot tracks with access to both railroads in all four directions. The interchange is dispatched by the RCP&E and is owned by the State of South Dakota. This interchange track is used for interchange of cars between the two railroads and also provides for the interchange of unit trains between the BNSF and the RCP&E. Many times, there is not adequate trackage for the manifest car interchange and unit train interchange. One additional track will allow easier access for interchange between the two railroads.

The estimated cost of this siding is \$1.75 million.

2. Napa-Platte Interchange

Provide one 8,000-foot siding for interchange of BNSF traffic with the Napa to Platte Railroad.

The estimated cost of this work is \$1.75 million.

3. MRC Passing Siding

Construct one 8,000-foot meet and pass siding on the MRC Railroad. The exact location for this siding has not been determined, but could be either east or west of the Missouri River. With increasing traffic on the MRC due to improvements and development along the line, there will be a need for at least one location where a full train moving in each direction, will be able to meet or pass. Trains are becoming increasingly long and 8,000 feet is considered the minimum length needed for a siding. The exact location will be determined based on location of crossings, bridges, available right-of-way, and rail grade.

The estimated cost of this work is \$1.75 million.

4. MRC – Reconstruct Wye in Chamberlain

Reconstruct the wye track just east of Chamberlain. The wye track is very useful in turning locomotives and maintenance of way equipment on a line that is a dead end on both ends. The current wye track is very light rail and has very poor tie conditions. The track bed is sod which makes it impossible to maintain line and grade. Reconstruction would require three new turnouts and about 1,500 track feet of new track construction, including ballast.

The estimated cost for this work is \$650,000.

5. Sioux Valley Subdivision Meet and Pass Siding

Install one 8,000-foot meet and pass siding near Beloit, Iowa. The D&I Railroad operates the Sioux Valley Subdivision which is owned by the State of South Dakota. With increasing traffic on this subdivision, the need to be able to meet and pass trains is necessary for efficiency of the line and train operations.

The estimated cost of this work is \$1.75 million.

6. Sioux City Interchange

Reconfigure the Sioux City Interchange to reduce movements required for rail car exchange. There is an interchange point in Sioux City, Iowa where four railroads meet and interchange rail cars. Within this area, there are five diamonds and three bridges making it difficult to exchange rail cars between railroads. There is one business that is located in the northwest corner of this interchange that could be removed, leading to a feasible way for the BNSF and the D&I to interchange traffic with the CN and UP. If this land were procured, a connection could be provided from the west that would lead into the yard at the north end. Construction of additional track and switches would be required along with demolition of the business in the northwest corner. This improvement would provide for a much more efficient exchange of rail cars between railroads.

The estimated cost of this work is \$3.5 million.

7. MRC Northbound BNSF Connection

Construct a northbound connection from the MRC to the BNSF west of Mitchell, South Dakota. The MRC connection to the BNSF currently is through the yard in Mitchell. Long 110-plus-car trains, such as those traveling to and from the large grain elevator in Kimball, are required back the train beyond the northbound switch in the yard, blocking road crossings in order to proceed northbound to Aberdeen. A northbound connection from the MRC, originating just east of 407th Avenue and connecting just south of Wets 23rd Avenue would provide a direct route for northbound commodities and empty trains southbound. This connection would require construction of approximately 1.75 miles of new track and two switches, along with the acquisition of about 20 acres right-of-way and two new road crossings.

The estimated cost of this work is \$8.2 million.

8. RCP&E Yard near Huron

Construct a 300 to 400 car yard at a greenfield site immediately west of Huron. This yard would eliminate the issues related to road crossings in town. Estimate cost of this work is \$16 million.

The estimated cost of this work is \$16 million.

9. RCP&E Siding Near Huron

Construct an 8000-foot siding at a greenfield site west of Huron for meet and pass and construction of longer trains from the proposed yard. This siding will alleviate issues associated with blocked crossings in Huron.

The estimated cost of this work is \$3.5 million.

10. RCP&E Siding Near Aurora

Construct an 8000-foot siding near Aurora. This siding is required to pass trains in and around an area of heavy traffic due to Valero Renewables. There are also plans for another industry to be located near Valero that will increase the need for a meet and pass track. Estimated cost of this work is \$3.5 million.

The estimated cost of this work is \$3.5 million.

11. Mankato, MN Wye

Construct additional trackage at the wye interchange between the Canadian Pacific and the Union Pacific to facilitate the transfer of cars from the RCP&E to the Union Pacific. The current capacity of this interchange is inadequate for efficient train interchange.

The estimated cost of this work is \$2 million.

BRIDGE CAPACITY PROJECTS

12. Napa to Platte Mainline Bridge Repair/Replacement

Repair or replace bridges on the Napa to Platte Railroad to provide at least 286,000 pound capacity. From Napa Junction to Wagner, there are about 27 timber bridges. These bridges would need to have additional stringers to increase capacity along with replacement of some deficient components of headwalls, bracing, and some piles.

The estimated cost for this work is \$2.5 million.

13. Huron to Yale Line Bridge Upgrade

Upgrade and rehabilitate five bridges on the mainline track. There are four bridges in or near Huron that are long timber bridges with the exception of the James River Bridge which is a steel girder structure. The timber bridges need to have some updating and upgrading to increase capacity. The steel structure over the James River requires work at the abutments to stabilize the embankments. Updating this structure also will be required.

The estimated cost of this work is \$2 million.

14. Sioux Valley Subdivision Bridge Upgrade

Replace or repair bridges on the Sioux Valley Subdivision. The Sioux Valley Subdivision consists of 68 total miles of track that is owned by the State of South Dakota and operated by the D&I Railroad. Bridges on this subdivision are between 60 years old up to and exceeding 100 years old. There are 19 steel truss bridges, through steel girder bridges and open steel girder bridges. Included in these 19 bridges are 9 major river crossings of between 123 feet and 152 feet in length with a total span length of 2,386 feet. The steel bridges are 80 to 100 years old and many do not have 286,000-pound capacity. Along with the steel bridges, there are 50 timber structures varying from a single span to 44 spans and having total length of 3,078 feet. At least 22 of the timber bridges have insufficient capacity. All of the timber bridges are at least 60 years old. Replacement of the steel bridges is estimated at \$31 million. The cost to replace the timber structures is estimated at \$9 million.

The total cost estimate for this item is \$40 million.

TRACK CONDITION PROJECTS

15. Britton Line Rail Upgrade

Replace existing light rail with heavy rail to support modern rail traffic and unit trains from Aberdeen, South Dakota to Geneseo Junction, North Dakota. This line is 77 miles long with good ties and ballast. The bridges are all rated at 286,000 pounds, or better. The rail on this line consists of a mixture from 75-pound to 100-pound and is deficient for modern traffic. Upgrades to the rail needed to support modern rail traffic consist of a minimum of 115-pound rail with matching plates and anchors. Along with the rail upgrades, all crossings would have to be adjusted and matching transitions from the current roadway surface would be required due to the increase in rail height.

The estimated cost for this work is \$32 million.

16. MRC West of Chamberlain – Phase 2

Reconstruct 42 miles of track from Chamberlain to Presho. The current railroad is a sod railroad with primarily timber bridges designed for 263,000 pounds. This project would include replacement of the rail along with the timber ties and walkways on the Chamberlain-Missouri River Bridge. The bridge at Kennebec also would need substantial rehabilitation to make it train worthy. All bridges on the segment in question would be upgraded to 286,000-pound capacity. Deficient or separated culverts would be relined to avoid future railroad grade washouts. Approximately 50 percent of the ties would be replaced along with the rail and other track material (OTM). Rail and OTM would be replaced to meet 115-pound rail standards. Ties would be good relay or new.

The estimated cost for this work is \$30 million.

17. Sioux Valley Subdivision Slide Repair

Construct approximately 4,000 linear feet of railroad to repair an area of unstable grade near Hawarden, Iowa. There is a location just south of Hawarden, Iowa where shale subgrade has caused the land to slide out from under the track. There has been a study to determine the most feasible method of repair which concluded that in-place repair is not feasible and relocation of this section is necessary. Relocation would require acquisition of additional right-of-way, wetland mitigation, clearing, installation of new culverts and other drainage structures and phased construction due to poor soils. This project is complicated by the fact that it is located within 500 feet of the Big Sioux River and in the flood plain. The State of South Dakota has received a \$2 million Federal grant to assist with implementation of the construction and has completed many of the required initial phases of this project.

The estimated cost of this work is \$3.5 million.

18. Sisseton to Milbank Railroad Reconstruction

Reconstruct 37 miles of railroad owned by the Twin Cities and Western Railroad (TC&W) between Milbank and Sisseton. This railroad currently is very light rail with low-rated bridges that do not comply with modern rail standards. The line is owned by the TC&W and provides access to the Class I carriers of BNSF, CP, UP and CN. The closest Class I connection is at Milbank. TC&W has trackage rights from Milbank to Appleton, Minnesota on the BNSF and can access Class I carriers other than BNSF in St. Paul, Minnesota. Upgrade of this line would provide an economic boost to the City of Sisseton, Roberts County and the Sisseton Wahpeton Oyate Indian Tribe. This project would include rehabilitation of bridges and culverts; replacement of rail, ties and OTM with minimum 115-pound rail and materials.

The estimated cost of this work is \$23 million.

19. Napa to Platte Mainline Reconstruction

Reconstruct approximately 46 miles of track between Napa Junction and Wagner. This shortline track currently is sod railroad with very light rail and underrated bridges. Many of the road crossings have been damaged and need to be reconstructed. Reconstruction would consist of replacement of ties, rail, OTM, and crossings. Bridges would be repaired and rebuilt where necessary. Ballast would be installed to create a ballasted railroad.

The estimated cost for this work is \$25 million.

20. Redfield to Mansfield Line Upgrade

Upgrade 29 miles of railroad from Redfield to Mansfield. This line starts in Redfield and serves the towns of Athol, Northville and Mansfield where it terminates. The line consists of several different sections of 90-pound and 100-pound rail dating back to 1907. Replacement of the rail to 115-pound, OTM and approximately 30 percent of the ties would upgrade this line to modern standards and provide reliable service to the communities served.

The estimated cost for this work is \$14.5 million.

21. Huron to Yale Line Upgrade

Upgrade 14.8 miles of railroad from Huron to 2.5 miles east of Yale. The rail in this section of track is old and light. The track needs upgrading to 115-pound rail to comply with modern rail standards. The ties and surface are in generally good condition although some additional ballast will be required to adjust line and grade on the finished track.

The estimated cost for this work is \$6 million.

22. Sioux Valley Subdivision Rail Upgrade

Upgrade 15 miles of rail to heavy rail. The Sioux Valley Subdivision consists of 68 total miles of track that is owned by the State of South Dakota and operated by the D&I Railroad. Past projects have replaced 35 miles of rail to 115-pound rail and 18 miles to Beresford are in good shape with 100-pound rail or better. The 15 miles of rail requiring upgrades to 115-pound rail are located from approximately two miles south of Hawarden, Iowa to two miles North of Hudson, South Dakota (D&I Mile Post 22-37).

The estimated cost for this work is \$6 million.

23. Pierre to Rapid City Track Upgrade

Improve the track conditions on approximately 165 miles of track from Pierre to Rapid City to make for more expedient and efficient train movements. Pierre Shale subgrade along the majority of the line between Pierre and Rapid City make for constantly changing track conditions in this section of mainline track. The shale in the subgrade creates low subgrade bearing pressures, and moisture conditions in the area constantly change the line and grade of the track. Since this subgrade was constructed in the early 1900s there has been technological advances in geotextiles and other methods for stabilizing this subgrade. Although the majority of the rail is 100-pound or heavier, there are approximately 20 miles of 90-pound rail that needs to be replaced to reduce subgrade pressures. Implementation of these techniques would improve the train speeds and track capacities making haulage much more economical.

The estimated cost of this work is \$105 million.

24. Rapid City to Dakota Junction Track Upgrade

Upgrade 73.5 miles of rail and ties from 5 miles south of Hermosa to Dakota Junction. The Black Hills Subdivision is a rail line from Rapid City to Dakota Junction, Nebraska. The track on this section of railroad is 72-pound rail that was installed in 1910. Rail from Hermosa to Rapid City is all heavy welded rail. By replacement of the light rail to 115-pound rail to Nebraska, there would be good access to the BNSF directly from Rapid City. Ballast and surfacing would be required as part of this project along with some bridge improvements.

The estimated cost of this work is \$40 million.

SAFETY PROJECTS

25. Brookings 22nd Avenue Grade Crossing

Replace the out-of-date signal system on 22nd Avenue in Brookings. 22nd Avenue in Brookings handles almost 8,000 cars per day and is projected to have an ADT of 16,700 in 2035. The outdated current crossing consists only of flashing lights and the approach roadway is in rough condition. The new crossing will consist of gates, flashing lights, new sidewalks, and a center roadway median to prevent cars from driving around the crossing gates. This crossing will be much safer while regrading of the approach roadway will provide a smoother ride for vehicles.

The estimated cost of this work is \$500,000.

INDUSTRIAL PARK DEVELOPMENT PROJECTS

26. Intermodal Yard at Sherman

Construct an intermodal yard near the town of Sherman, South Dakota on the BNSF Marshall Subdivision. There currently are many shippers that ship containers destined for the region through either Minneapolis, Minnesota or Omaha, Nebraska. If instead these containers could be rerouted to a facility in South Dakota, it would provide economic advantages to eastern and central South Dakota, western Minnesota, and northwestern Iowa. Properly determining an advantageous location for this facility is critical; the facility would require good highway access and rail access and must be on a main track with capacity for heavy loads and double-stack rail cars. This project would require land purchase and development of land and track.

The estimated cost for this work is \$75 million.

27. Belle Fourche Transloading Facility

Construct a transloading facility in or near Belle Fourche, South Dakota. The ability to move goods and materials by multimodal means is an advantage to all business near the transloading facility. At a transloading facility, goods and materials (i.e., agricultural products, raw materials) can be transferred from truck to rail cars and from rail cars to trucks. Equipment and supplies could be transloaded using ramp facilities, and bulk materials could be transloaded using conveyors and hoppers. The facility also would require storage yards, warehousing, and possibly other industrial facilities. This location has a strategic position to the North Dakota oil fields and due to the railroad congestion in North Dakota, would possibly offer a time and price advantage to supplying the needs of the oil industry.

The estimated cost of this work is \$6 million.