

**South Dakota
Department of Transportation**

Freight Plan

2023

**Prepared by:
South Dakota Department of Transportation
Project Development Office**



**DEPARTMENT OF
TRANSPORTATION**

**In cooperation with:
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Abbreviations and Acronyms

AADT	Average Annual Daily Traffic
ABR	Aberdeen Regional Airport
BIL	Bipartisan Infrastructure Law (see IIJA)
CATT	Center for Advanced Transportation Technology
CMV	Commercial Motor Vehicle
CRFC	Critical Rural Freight Corridor
CUFC	Critical Urban Freight Corridor
DoD	Department of Defense
FAST	Fixing America’s Surface Transportation
FHWA	Federal Highway Administration
FSD	Joe Foss Field Airport in Sioux Falls
GDP	Gross Domestic Product
IIJA	Infrastructure Investment and Jobs Act (see BIL)
ICS	Interstate Corridor Study
ITS	Intelligent Transportation System
LCV	Long Combination Vehicle
LRTP	Long Range Transportation Plan
MPO	Metropolitan Planning Organization
MTP	Metropolitan Transportation Plan
NASS	National Agricultural Statistics Service
n.e.c.	Not Elsewhere Classified
NEPA	National Environmental Policy Act of 1969
NHPF	National Highway Freight Program
NHPP	National Highway Performance Program
NHS	National Highway System
NPIAS	National Plan of Integrated Airport Systems
NPMRDS	National Performance Management Research Data Set
PCPI	Per Capita Personal Income
PHFN	Primary Highway Freight Network
PHFS	Primary Highway Freight System
SAT	Study Advisory Team
SCI	Surface Condition Index
SDDOT	South Dakota Department of Transportation

SHSP	Strategic Highway Safety Plan
STIP	Statewide Transportation Improvement Program
STRAHNET	Strategic Highway Network
TAMP	Transportation Asset Management Plan
TTR	Time Travel Reliability
U.S.C.	United States Code

CHAPTER 1: MISSION, VISION, AND GOALS

Introduction

This chapter introduces the vision and mission of the SDDOT, and the goals that are planned to achieve it. The purpose of the Freight plan is explained, and how it relates to other plans that affect the movement of freight. These other plans can come from the SDDOT itself, or other entities with authority over the SDDOT's actions (such as the FHWA).

Department Mission

To efficiently provide a safe and effective public transportation system.

Department Vision

Better lives through better transportation, by being the best.

Purpose of the South Dakota Department of Transportation (SDDOT) Freight Plan

The purpose of the SDDOT Freight Plan is to guide improvement of the state's overall freight system in alignment with national freight goals and the department's core value of all employees contribute to providing a high-quality transportation system by continuously striving to innovate and improve the quality of services.

Federal legislation, beginning with the Fixing America's Surface Transportation (FAST) Act and continued by the passing of the Infrastructure Investment and Jobs Act (IIJA), requires states to develop a freight plan to be eligible for federal funds provided through the National Freight Policy (23 USC § 167).

Integrating Goals of Separate Plans

The SDDOT is obligated to accomplish several different plans and policies. The goals of each plan or policy are often related to and affect each other in various ways. The plans include the SDDOT's Long Range Transportation Plan (LRTP), the National Multimodal Freight Policy, and the National Highway Freight Program. The SDDOT Freight Plan is created to develop goals and strategies that support the national multimodal freight policy goals and the national highway freight program goals. How the SDDOT's Freight plan achieves the goals of the other plans is detailed below.

The **SDDOT Long Range Transportation (LRTP)** goals are to:

- Improve transportation safety and security for all modes
- Preserve and maintain the transportation system
- Improve mobility, reliability, and accessibility
- Preserve South Dakota's quality of life
- Support economic growth and development
- Promote environmental stewardship
- Promote innovative transportation technologies

The state's LRTP goals can be correlated with national freight goals, as shown in Table 1-1.

The **national multimodal freight policy** goals are to:

- Identify infrastructure improvements, policies, and operational innovations that:

- Strengthen the contribution of the National Multimodal Freight Network to the economic competitiveness of the United States;
- Reduce congestion and eliminate bottlenecks on the National Multimodal Freight Network; and
- Increase productivity, particularly for domestic industries and businesses that create high-value jobs.

The SDDOT supports the above goals directly in its LRTP and through its department mission to efficiently provide a safe and effective public transportation system. It achieves this by actively maintaining assets while promptly responding to storm events to keep highways operating. Rather than congestion, the state must deal with weather related transportation issues of an unpredictable nature.

- Improve the safety, security, efficiency, and resiliency of multimodal freight transportation;
- Achieve and maintain a state of good repair on the National Multimodal Freight Network;
- Use innovation and advanced technology to improve the safety, efficiency, and reliability of the National Multimodal Freight Network;
- Improve the economic efficiency and productivity of the National Multimodal Freight Network;
- Improve the reliability of freight transportation;
- Improve the short and long-distance movement of goods that:
 - Travel across rural areas between population centers;
 - Travel between rural areas and population centers; and
 - Travel from the nation's ports, airports, and gateways to the national multimodal freight network.
- Improve the flexibility of States to support multi-State corridor planning and the creation of multi-State organizations to increase the ability of States to address multimodal freight connectivity; and
- Reduce the adverse environmental impacts of freight movement on the National Multimodal Freight Network.

The state's objectives in meeting these goals include:

The **national highway freight program** goals are to:

- Invest in infrastructure improvements and implement operational improvements on the highways of the United States that:
 - Strengthen the contribution of the National Highway Freight Network to the economic competitiveness of the United States;
- Reduce congestion and bottlenecks on the National Highway Freight Network;
- Reduce the cost of freight transportation;

- Improve the year-round reliability of freight transportation; and
- Increase productivity, particularly for domestic industries and businesses that create high value jobs;
- Improve the safety, security, efficiency, and resiliency of freight transportation in rural and urban areas;
- Improve the state of good repair of the National Highway Freight Network;
- Use innovation and advanced technology to improve the safety, efficiency, and reliability of the National Highway Freight Network;
- Improve the efficiency and productivity of the National Highway Freight Network;
- Improve the flexibility of States to support multi-State corridor planning and the creation of multi-State organizations to increase the ability of States to address highway freight connectivity; and
- Reduce the environmental impacts of freight movement on the National Highway Freight Network.

Table 1-1 Correlation Between LRTP and National Highway Freight Goals

National Freight Goals	SDDOT Long Range Plan Goals						
	Improve transportation safety and security for all modes	Preserve and maintain the transportation system	Improve mobility, reliability, and accessibility	Preserve SD's quality of life	Support economic growth and development	Promote environmental stewardship	Promote innovative transportation technologies
Improve economic efficiency, productivity, and competitiveness			✓	✓	✓		✓
Reduce congestion, bottlenecks, and cost of freight transportation	✓	✓	✓	✓	✓	✓	✓
Improve safety, security, and resiliency	✓	✓	✓	✓		✓	
Improve state of good repair	✓	✓		✓	✓	✓	
Use advanced technology, innovation, and competition	✓		✓	✓	✓	✓	✓
Performance management and accountability	✓	✓		✓	✓	✓	
Reduce adverse environmental and community impacts	✓	✓	✓	✓	✓	✓	✓

In 2021, the IIJA added the following seven (7) improvements to state freight plans:

- The most recent supply chain cargo flows in the State, expressed by mode of transportation;
- An inventory of commercial ports in the state;
- If applicable, consideration of the findings or recommendations made by any multi-State freight compact to which the State is a party under section 70204;
- The impacts of e-commerce on freight infrastructure in the State;
- Considerations of military freight;
- Strategies and goals to decrease:
 - The severity of impacts of extreme weather and natural disasters on freight mobility;
 - The impacts of freight movement on local air pollution;
 - The impacts of freight movement on flooding and stormwater runoff; and
 - The impacts of freight movement on wildlife habitat loss;
- A commercial motor vehicle (CMV) parking facilities assessment.

Plan Integration

The state Freight Plan and the state Long Range Transportation Plan are separate plans that support each other. The Freight Plan focuses on freight movement primarily occurring on the National Highway System, connectivity between modes, key goals, objectives, and strategies developed through this plan, the LRTP and other plan components, as follows:

- Statewide Transportation Improvement Program (STIP)
- Strategic Highway Safety Plan (SHSP)
- South Dakota Aviation System Plan
- State Rail Plan
- Transportation Asset Management Plan (TAMP)
- Metropolitan Planning Organization's (MPO) Long Range Plans
- Statewide Intelligent Transportation Systems Architecture Plan
- Interstate Decennial Corridor Study
- Various Planning Studies

SDDOT incorporates these goals into this plan to maintain and improve state's freight transportation system and identify challenges and opportunities regarding the safety, preservation, mobility, economic vitality, and environmental aspects of the freight system. The plan will propose strategies to achieve state and national freight goals and objectives identified in the plan. It also provides a framework, through performance measures, to implement the plan.

Promote Environmental Stewardship

The Environmental Office of SDDOT performs a systematic, interdisciplinary function to promote the integrated use of natural science, social science, and the environmental design arts in planning and decision making when evaluating potential impacts on the environment. SDDOT cultivates and ensures that the National Environmental Policy Act (NEPA) and other associated environmental regulations are implemented throughout its overall transportation decisions. Clear objectives to support freight goals during project development include:

- Identify environmental considerations in the early phases of project formation.
- Identify environmental issues that could affect schedule or budget.
- Establish and prepare environmental documentation required for transportation projects. This includes collecting and compiling information on social, economic, and environmental concerns for all transportation projects; developing and documenting environmental effects; involving the public, tribes, and federal and state resource agencies in the decision-making process; assembling environmental commitments; and finalizing the environmental document(s), as appropriate.
- Protect historical, archeological, and cultural resources, combined with the analysis of air, noise, and hazardous materials interests associated with transportation projects.
- Preserve ecological resources (wetlands, waterways, and protected species) associated with transportation project actions in conjunction with assessing, preparing, and acquiring environmental permits.
- Ensure transportation projects and facilities comply with environmental commitments, monitoring/reporting requirements, and current environmental regulations.
- Oversight of environmental issues that may arise during construction of projects.

Outreach

Preparation of this plan conformed to the SDDOT's Public Involvement Plan and customized virtual methods for conducting events to increase public engagement.

A Study Advisory Team (SAT) was assembled from various offices within the South Dakota Department of Transportation, complimented by interested partners from the state's trucking and agriculture industries to collaborate the development of this plan and consider key stakeholders. The SAT members are listed below:

Myron Rau	SD Trucking Association (<i>Retired</i>)
Brenda Forman	SD Association of Cooperatives
Jerry Ortbahn	SDDOT, Project Development
Julie Stevenson	SDDOT, Communications
Jack Dokken	SDDOT, Air, Rail, and Transit
Josh Bench-Bresher	SDDOT, Asset Management
Dave Huft	SDDOT, Intelligent Transportation Systems
Steve Gramm	SDDOT, Project Development
Danny Doorn	SDDOT, Project Development

Christina Bennett	SDDOT, Operations
Scott Rabern	SDDOT, Road Design
Mark Hoines	FHWA, South Dakota Division

Stakeholder interest has been historically low in South Dakota regarding state Freight Plan development. Virtual methods were deployed to promote public engagement and results have remarkably improved in comparison to hosting live in-person meetings.

Meetings were conducted during plan development to gain insights from the commercial motor vehicle permit regulators, the Metropolitan Planning Organizations within South Dakota, and other high-interest groups as recommended by the SAT utilizing a survey questionnaire. A Freight Plan survey was broadly distributed, and responses were captured in-person and on the plan’s webpage. A virtual public comment period was held in which the public and targeted stakeholders were encouraged to provide additional input; these collective efforts are summarized in Appendix A. Comment responses and actions taken to incorporate input may be found in Appendix B.

Periodic Leadership Coordination was also conducted throughout the plan’s development at project milestones.

Freight Advisory Committee

Many states have formed active Freight Advisory Committees (FAC) to foster partnerships between agencies and commercial enterprise that improve communication and generate improvements. The state of South Dakota recognizes the benefit of building relationships that improve freight movement throughout the state. The state continues to work towards common goals along with its many partners in local government, the agriculture industry, and commercial motor vehicle affairs.

CHAPTER 2: Freight Characteristics



Introduction to Freight

A safe, efficient, and reliable freight transportation network is essential to the state's economy. Highways, railroads, pipelines, and airports allow South Dakota businesses and consumers to export and receive goods to and from local, regional, and global markets and producers. Improvements to our freight system will move services and goods to all producers and consumers, lower costs for producers and consumers, and make South Dakota products more attractive in global markets. Failure to continue to make improvements or weaknesses in the supply chain result in decreased productivity and limited economic development.

The recent global pandemic brought to light vulnerabilities in the world's established supply chain methodology and attention to the various modes that make up a vast freight network that under normal conditions functioned adequately for just-in-time inventories and last-mile deliveries. The supply chain failures and delays have motivated states to bolster existing freight systems to improve the overall resilience of air, rail, and trucking modes of freight transportation.

This chapter will evaluate trends, identify common vulnerabilities, and show links between transportation and the economy.

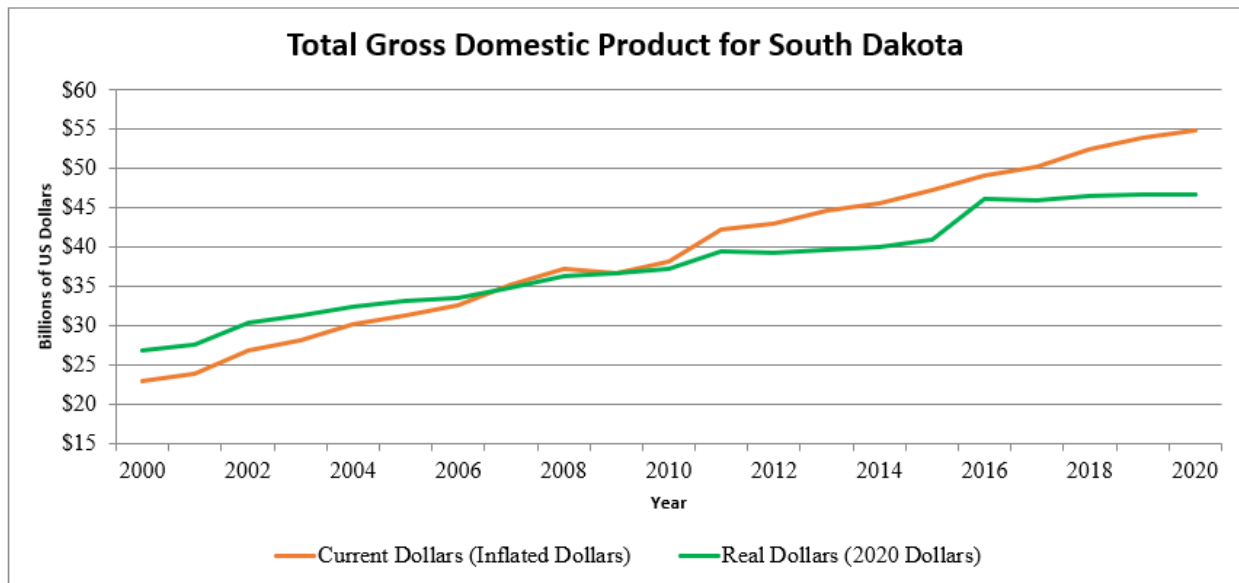
Freight and the Economy

Agriculture is very important to South Dakota's economy. Moving farm commodities to market is vital. Although retail trade, finance and insurance, educational services, health care, and government have a greater impact to the Gross Domestic Product (GDP), nothing relies more on the transportation system than agriculture. Failure to maintain agriculture's freight mobility will result in loss of jobs, economic development, and income for South Dakotans.

Gross Domestic Product (GDP)

The GDP is the total market value of everything produced in the economy. It is calculated in current and real dollars. Real dollars is the adjusted value removing the effects of inflation. South Dakota's GDP continues to grow as shown in Figure 2-1.

Figure 2-1: Total Gross Domestic Product for South Dakota



Source: U.S. Bureau of Economic Analysis;
<https://apps.bea.gov/itable/itable.cfm?ReqID=70&step=1&acrdn=1>

In 2015, South Dakota's current-dollar GDP \$47.2 billion, ranked 47th in the United States. In 2020, South Dakota's real GDP was \$54.7 billion, indicating a 15.9% increase from 2015 to 2020. South Dakota's GDP is growing faster than the national average and is expected to continue that trend.

Population

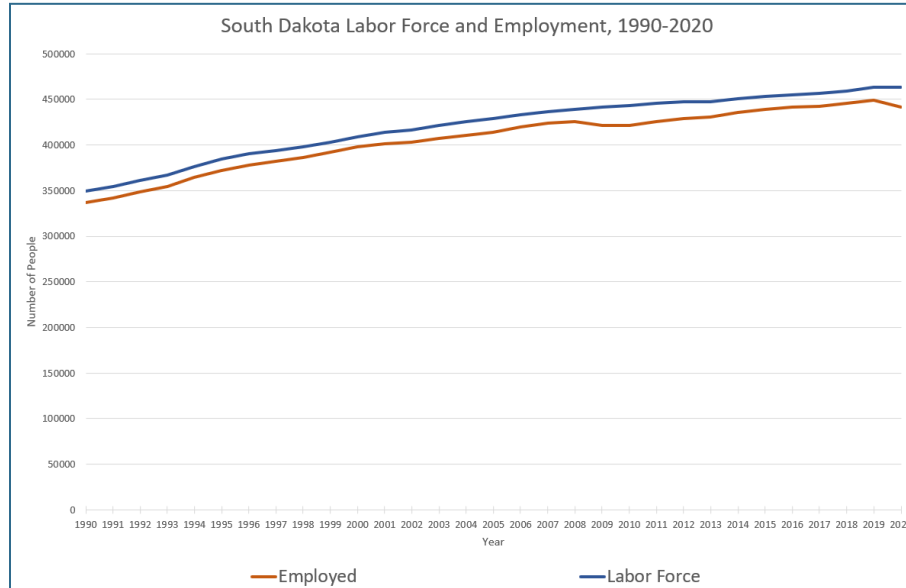
Freight demand is driven by multiple factors. Population growth has a direct impact. Population growth and density can also affect freight distribution patterns. Since 1990, population has increased steadily. The most recent population estimates of 884,659 from the U.S. Census Bureau, reflected an approximate 8.7% increase since the census of 2010. The state's two urban areas are Sioux Falls and Rapid City, situated east and west of the Missouri River, respectively. Both areas continue to grow at rates higher than the rural populations of the state.

Increased consumption of goods and services because of population growth increases the need for freight transportation as demand grows.

Employment

Population growth will also increase workforce availability. In 2020, South Dakota's unemployment rate reached 4.6%, however, the rate has stabilized down to 2.6% in 2021. Figure 2-2 shows South Dakota's actual labor force and employment from 1990-2020.

Figure 2-2: South Dakota Labor Force and Employment, 1990-2020

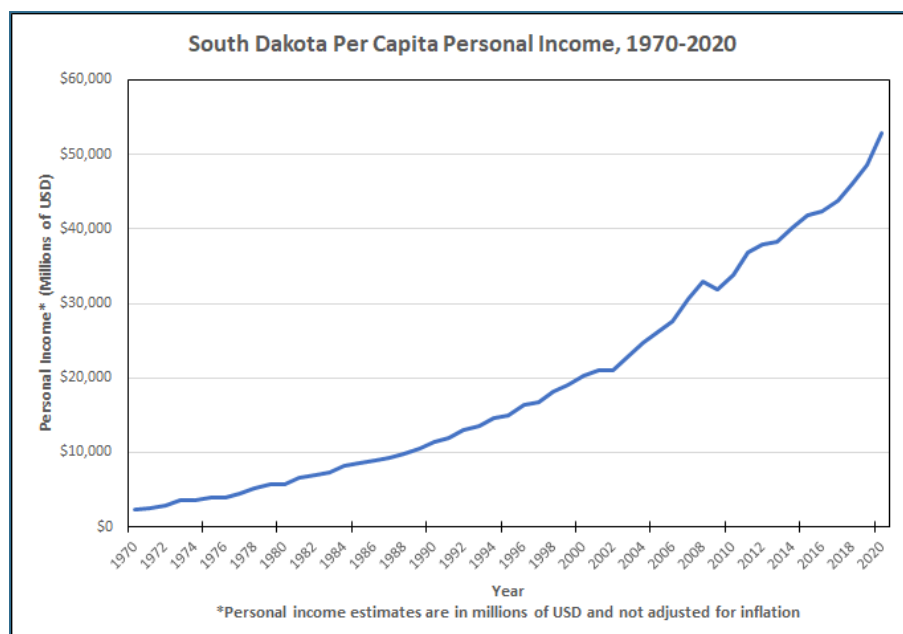


Source: South Dakota Department of Labor and Regulation (Actual)

Per Capita Income

According to the Bureau of Economic Analysis, in 2020, South Dakota had a per capita personal income (PCPI) of \$52,281 which ranked 18th in the United States and reflected a 9.0 percent increase from 2019. In 2010, the South Dakota PCPI was \$41,417 which ranked 19th in the United States. The 2010-2020 South Dakota compound annual growth rate of PCPI was 3.7 drifting slightly below the national average of 3.9 percent. Figure 2-3 shows the overall trend of PCPI in the state since 1970.

Figure 2-3: South Dakota Per Capita Personal Income, 1970-2020.



Source: U.S. Bureau of Economic Analysis

Commonly, increases in personal income will increase the amount of capital going into the economy. This will have a direct impact on the freight system as demand for goods and services are closely dependent on PCPI.

Freight Movement

South Dakota supplies the world with agricultural commodities. Farm to market freight movement is vital to the state's economy for both production and export purposes. Most of the top commodities moving to and from South Dakota are related to the agriculture industry. It is projected South Dakota will continue this trend into the future.

Freight movement is typically measured by weight and dollar value. Table 2-1 shows the top twelve commodities by weight moving to and from the state in 2017 and the projection for 2050. These commodities are typically high weight bulk shipments with a lower value. Of these, the top five commodities account for approximately 80% of the total commodities shipped by weight and are projected to comprise nearly 77% of commodity weight in 2050. Cereal grains and Coal Not Elsewhere Classified (n.e.c.), which includes liquefied natural gas and propane, are projected to remain the top commodities into 2050, using the sum of within and outbound flows. Table 2-1 illustrates the top twelve commodities making up the freight volume that originated in South Dakota.

Appendix C contains the definitions of the transported items used by the FAF and included within commodity groups reported in tables 2-1 through 2-11 of this Freight Plan. Standard Classification of Transported Goods (SCTG) Commodity Codes were used to group commodities as recorded in the Freight Analysis Framework. Refer to Appendix C to reference the indexed number in parenthesis of each commodity group for more detail. The baseline full year of actual data available at time of plan update was 2017.

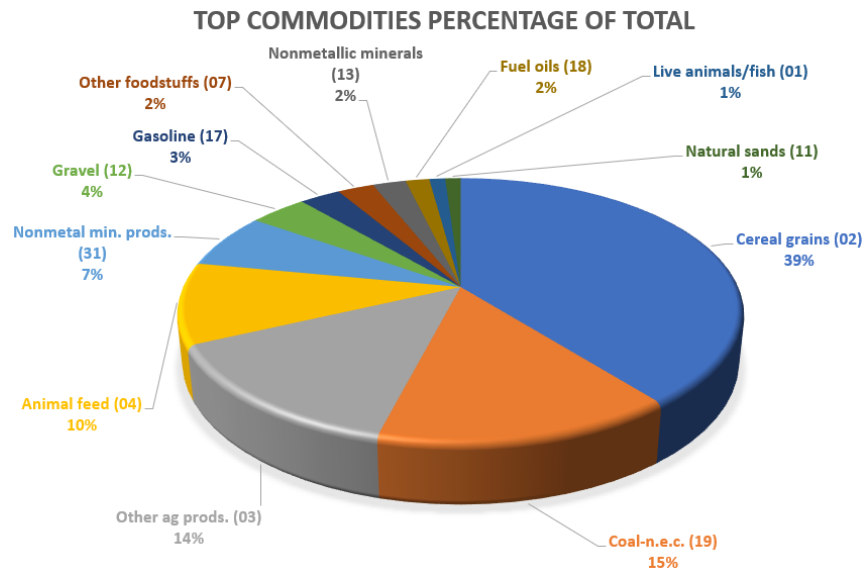
Table 2-1: South Dakota Commodity Shipments Ranked by **Weight**

Commodity - 2017	2017 Thousand Tons	Commodity - 2050	2050 Thousand Tons
Total	147,737.87	Total	210,706.33
Cereal grains (02)	54,336.29	Cereal grains (02)	63,033.33
Coal-n.e.c. (19)	20,346.77	Coal-n.e.c. (19)	33,054.71
Other ag prods. (03)	19,391.05	Animal feed (04)	28,544.39
Animal feed (04)	13,806.79	Other ag prods. (03)	23,074.59
Nonmetal min. prods. (31)	9,274.07	Nonmetal min. prods. (31)	13,931.69
Gravel (12)	5,459.94	Gravel (12)	8,616.83
Gasoline (17)	3,870.98	Other foodstuffs (07)	5,485.76
Other foodstuffs (07)	3,424.13	Live animals/fish (01)	5,326.23
Nonmetallic minerals (13)	3,140.57	Gasoline (17)	5,292.52
Fuel oils (18)	2,236.11	Fertilizers (22)	2,887.86
Live animals/fish (01)	1,499.22	Wood prods. (26)	2,189.13
Natural sands (11)	1,456.26	Natural sands (11)	2,116.02

Source: Data for Tables 2-1 through 2-11 taken from Freight Analysis Framework v5

The weight data shown in Table 2-1 is also shown as a corresponding percentage by commodity of all freight movement in Figure 2-4.

Figure 2-4: Top Commodities Percentage of Total **Weight** - 2017



Turning from weight to value, agricultural related commodities make up the majority of the top twelve ranked by value. Table 2-2 shows the top twelve commodities ranked by value for 2017 and projections for 2050, using the sum of within and outbound flows. These top twelve commodities account for 74% of the total commodities shipped by value in 2017 and are projected to comprise 76% of total shipment value in 2050.

Table 2-2: South Dakota Commodity Shipments Ranked by **Value**

2017	Value Millions of US Dollars	2050	Value Millions of US Dollars
Totals	\$53,214.6	Totals	\$98,141.7
Cereal grains (02)	\$6,390.6	Live animals/fish (01)	\$15,875.9
Other ag prods. (03)	\$6,052.6	Cereal grains (02)	\$7,509.8
Live animals/fish (01)	\$4,468.3	Other ag prods. (03)	\$7,210.4
Coal-n.e.c. (19)	\$4,076.9	Coal-n.e.c. (19)	\$6,604.9
Machinery (34)	\$2,770.0	Chemical prods. (23)	\$5,742.2
Other foodstuffs (07)	\$2,648.2	Mixed freight (43)	\$5,463.3
Mixed freight (43)	\$2,597.2	Plastics/rubber (24)	\$5,462.0
Electronics (35)	\$2,262.2	Machinery (34)	\$4,711.7
Chemical prods. (23)	\$2,145.4	Other foodstuffs (07)	\$4,295.7
Plastics/rubber (24)	\$2,143.1	Motorized vehicles (36)	\$4,176.6
Gasoline (17)	\$2,075.0	Electronics (35)	\$3,996.9
Motorized vehicles (36)	\$1,950.0	Animal feed (04)	\$3,672.2

Freight movement can be split into multiple categories: freight moving **within** South Dakota, freight moving from outside South Dakota to South Dakota (**Inbound**), and freight moving from South Dakota to a location outside South Dakota (**Outbound**). The following tables break down freight weights and values into these categories, using the sum of within and outbound flows reported in the Freight Analysis Framework.

The top commodities by **weight** for freight shipments **within** the state are agricultural related goods. Table 2-3 on the following page lists the top ten commodities shipped within the state in 2017 and what is projected for 2050. In 2017, cereal grains, other agricultural products, and animal feed accounted for 65% of the freight by weight transported within the state. Like in the last Freight Plan, cereal grains continued to lead the way by comprising 41% of the total commodities moving within the state.

Projected in 2050, agricultural commodities will continue to lead South Dakota's freight movement within by weight but is expected to comprise approximately 32% of the freight movement in the future. The top ten commodities will account for nearly 60% of the freight movement within the state by 2050. Table 2-3 shows the 2017 volumes and 2050 projections for shipments of the top commodities within South Dakota by weight. Note that animal feed replaces other agriculture products as second in the 2050 projection.

Table 2-3: Top Commodities Moving **Within** South Dakota by **Weight**, 2020 and 2050

Commodity	2017 Thousand Tons	Commodity	2050 Thousand Tons
Total	87,746.70	Total	119,119.67
Cereal grains (02)	36,052.92	Cereal grains (02)	38,303.61
Other ag prods. (03)	11,719.20	Animal feed (04)	20,055.07
Animal feed (04)	9,809.22	Other ag prods. (03)	13,047.66
Nonmetal min. prods. (31)	8,116.68	Nonmetal min. prods. (31)	12,258.79
Gravel (12)	5,375.90	Gravel (12)	8,424.17
Fuel oils (18)	2,180.03	Live animals/fish (01)	4,438.91
Other foodstuffs (07)	2,082.35	Other foodstuffs (07)	3,262.17
Coal-n.e.c. (19)	2,054.96	Coal-n.e.c. (19)	2,912.93
Nonmetallic minerals (13)	1,481.18	Fertilizers (22)	2,642.23
Natural sands (11)	1,444.30	Natural sands (11)	2,095.51

The **value** of commodities transported **within** South Dakota in 2020 is shown in Table 2-4. The top ten commodities transported by value are also related to agriculture. Cereal grains remain the top commodity shipped by value at \$3.7 billion, while live animals/fish come in as second at \$3.6 billion. The top ten commodities in 2017 accounted for 72% of the value of commodity shipments within the state and are projected to account for 74% in 2050.

The value of the commodities projected to be shipped within the state in 2050 differs in some ways to the top commodities moved in 2017. The top ten commodities shipped by value will

continue to be related to agriculture, but not necessarily in the same order. Chemicals are expected to move up to the second top commodity near \$4.2 billion, while cereal grains are projected to drop to third at \$4.0 billion. Live animals are projected to take the lead at \$13.1 billion in 2050.

Table 2-4: Top Commodities Moving **Within** South Dakota by **Value**, 2017 and 2050

Commodity	2017 Value in Millions of US Dollars	Commodity	2050 Value in Millions of US Dollars
Total	\$25,115.19	Total	\$47,522.35
Cereal grains (02)	\$3,767.48	Live animals/fish (01)	\$13,139.76
Live animals/fish (01)	\$3,650.08	Chemical prods. (23)	\$4,278.46
Other ag prods. (03)	\$3,578.47	Cereal grains (02)	\$4,002.68
Chemical prods. (23)	\$1,613.56	Other ag prods. (03)	\$3,984.11
Fuel oils (18)	\$1,135.07	Mixed freight (43)	\$2,213.04
Other foodstuffs (07)	\$1,076.18	Other foodstuffs (07)	\$1,685.92
Mixed freight (43)	\$1,054.10	Animal feed (04)	\$1,560.66
Machinery (34)	\$796.62	Motorized vehicles (36)	\$1,538.01
Animal feed (04)	\$763.34	Electronics (35)	\$1,435.87
Motorized vehicles (36)	\$758.71	Machinery (34)	\$1,366.49

Source: Data for Tables 2-1 through 2-11 taken from Freight Analysis Framework v5

As reported in the 2017 actual data, the top commodities moving **inbound by weight** into South Dakota were coal n.e.c. (includes natural gas and propane) followed by cereal grains and fertilizers. Most of the coal n.e.c. travels through pipelines to terminals where distribution begins. Propane is used to dry grains at elevators and is a vital resource for the agricultural industry. Cereal grains and fertilizers ranked second and third respectively. The top ten commodities coming into South Dakota by weight comprised 85% of the total weight in 2017.

The top ten commodities projected to move inbound in 2050 are slightly different from what we see today, especially noted are live animals projected to join the top ten at seventh. The top ten commodities are expected to account for 83% of the total inbound freight by weight, as shown in Table 2-5.

Table 2-5: Top Commodities Moving **Inbound** to South Dakota by **Weight**, 2017 and 2050

Commodity	2017 Thousand Tons	Commodity	2050 Thousand Tons
Total	40,698.55	Total	58,549.17
Coal-n.e.c. (19)	20,312.94	Coal-n.e.c. (19)	27,633.84
Cereal grains (02)	3,373.98	Fertilizers (22)	5,277.84
Fertilizers (22)	1,825.95	Cereal grains (02)	2,544.35
Nonmetal min. prods. (31)	1,719.18	Nonmetal min. prods. (31)	2,486.98
Gravel (12)	1,487.90	Mixed freight (43)	2,133.98
Coal (15)	1,373.20	Gravel (12)	2,015.26
Other ag prods. (03)	1,300.60	Animal feed (04)	1,876.04
Other foodstuffs (07)	1,273.02	Live animals/fish (01)	1,842.51
Mixed freight (43)	1,151.33	Other foodstuffs (07)	1,784.44
Animal feed (04)	973.97	Other ag prods. (03)	1,135.31

Next, as shown in Table 2-6, the latest top commodities moving **outbound** by **weight** remained coal n.e.c., followed by cereal grains and other agriculture products. The top five commodities account for approximately 86% of the total weight of freight moving out of South Dakota. The 2050 projected outbound commodities remain an exact match to the current top five commodities. In the future, these top five are projected to account for 92% of the total outbound freight movement in 2050.

Table 2-6: Top Commodities Moving **Outbound** from South Dakota by **Weight**, 2017 and 2050

Commodity	2017 Thousand Tons	Commodity	2050 Thousand Tons
	59,991.17	Total	91,586.67
Coal-n.e.c. (19)	18,291.81	Coal-n.e.c. (19)	30,141.78
Cereal grains (02)	18,283.37	Cereal grains (02)	24,729.72
Other ag prods. (03)	7,671.85	Other ag prods. (03)	10,026.94
Animal feed (04)	3,997.57	Animal feed (04)	8,489.32
Gasoline (17)	3,471.99	Gasoline (17)	4,962.31
Nonmetallic minerals (13)	1,659.39	Other foodstuffs (07)	2,223.59
Other foodstuffs (07)	1,341.78	Nonmetal min. prods. (31)	1,672.90
Nonmetal min. prods. (31)	1,157.39	Mixed freight (43)	1,018.00
Wood prods. (26)	476.98	Wood prods. (26)	917.25
Mixed freight (43)	461.24	Live animals/fish (01)	887.31

Table 2-7, below, shows the top five commodities by **value** moving **inbound** were mixed freight, coal n.e.c., machinery, motorized vehicles, and pharmaceuticals. The value of these five commodities made up approximately 46% of the total value that came into South Dakota in 2017. The projections for 2050 include mixed freight and pharmaceuticals leaping to the top of the commodities inbound, ahead of the current top coal, n.e.c. predicted as a close third. The top five commodities are expected to comprise nearly 45% of the total value of freight moving inbound in 2050. The 2045 projection from South Dakota's previous freight plan predicted electronics at third, however, the 2050 projection now places electronics at fifth along with a 20% lower value.

Table 2-7: Top Commodities Moving **Inbound** to South Dakota by **Value**, 2017 and 2050

Commodity	2017 Value in Millions of US Dollars	Commodity	2050 Value in Millions of US Dollars
Total	\$31,860.05	Total	\$61,210.43
Mixed freight (43)	\$4,097.28	Mixed freight (43)	\$7,633.22
Coal-n.e.c. (19)	\$3,913.36	Pharmaceuticals (21)	\$5,856.23
Machinery (34)	\$2,369.63	Coal-n.e.c. (19)	\$5,304.98
Motorized vehicles (36)	\$2,182.24	Machinery (34)	\$4,394.75
Pharmaceuticals (21)	\$2,155.05	Electronics (35)	\$4,219.85
Electronics (35)	\$1,677.71	Motorized vehicles (36)	\$3,599.30
Plastics/rubber (24)	\$1,378.96	Plastics/rubber (24)	\$3,321.81
Chemical prods. (23)	\$1,250.17	Chemical prods. (23)	\$3,196.22
Live animals/fish (01)	\$1,121.93	Live animals/fish (01)	\$3,164.69
Misc. mfg. prods. (40)	\$1,091.72	Misc. mfg. prods. (40)	\$3,145.84

Table 2-8 shows the 2017 commodities moving **outbound** by **value**; it lists coal n.e.c., cereal grains, other agricultural products, machinery, and plastics/rubber as the top five commodities. These top commodities accounted for approximately 44% of the total commodity value moved out of the state. The 2050 projection indicates plastics/rubber to replace cereal grains as the second of the top commodities moving out of South Dakota. For 2050, the top five commodities are expected to comprise almost 40% of the outbound freight value. The 2050 projection differs from the previous freight plan that reported precision instruments and gasoline as the expected top two by 2045. The 2050 prediction indicates that plastics/rubber is expected to move from fifth to the second top commodity while gasoline will no longer be among the top groupings. The top five commodities are predicted to comprise almost 40% of the total outbound value by 2050.

Table 2-8: Top Commodities Moving **Outbound** from South Dakota by **Value**, 2017 and 2050

Commodity	2017 Value in Millions of US Dollars	Commodity	2050 Value in Millions of US Dollars
Total	\$28,099.46	Total	\$50,619.38
Coal-n.e.c. (19)	\$3,573.11	Coal-n.e.c. (19)	\$5,890.79
Cereal grains (02)	\$2,623.09	Plastics/rubber (24)	\$4,133.22
Other ag prods. (03)	\$2,474.11	Cereal grains (02)	\$3,507.09
Machinery (34)	\$1,973.39	Machinery (34)	\$3,345.17
Plastics/rubber (24)	\$1,610.50	Mixed freight (43)	\$3,250.22
Other foodstuffs (07)	\$1,572.06	Other ag prods. (03)	\$3,226.27
Electronics (35)	\$1,546.78	Live animals/fish (01)	\$2,736.16
Mixed freight (43)	\$1,543.09	Motorized vehicles (36)	\$2,638.62
Gasoline (17)	\$1,514.10	Other foodstuffs (07)	\$2,609.76
Meat/seafood (05)	\$1,236.92	Electronics (35)	\$2,561.05

Freight Movement by Mode

Most of the freight movement in South Dakota is by truck, pipeline and rail accounting for 95% of the shipments in 2020 and 2050 by **weight**. Table 2-9 shows the tonnage from 2017 and projections into 2050, which features domestic, export, and imports all totaled together for within, outbound, and inbound. Trucks dominate 2017 and 2050 in moving freight. In 2017, trucks accounted for 63% of the freight movement and remain projected as the top mode of freight movement by weight in 2050 with little change in percentage share by mode.

Table 2-9: **Mode** of Freight Movement by **Weight** (Millions of Tons)

Mode of Freight Movement by Weight (Millions of Tons)	2017	2050	Percent Change
Total	188.4364	269.2555	43%
Truck	118.9491	171.2213	44%
Pipeline	39.9209	59.8584	50%
Rail	21.2722	26.3652	24%
Multiple modes & mail	8.2794	11.7008	41%
Other and unknown	0.0075	0.0166	122%
Air (include truck-air)	0.0061	0.0126	107%
Water	0.0012	0.0007	-45%

By **value**, most of the freight movement in South Dakota is also by truck. Multiple modes and mail, pipeline and rail account follow in terms of value. Table 2-10 shows the value of freight by mode, which features domestic, export, and imports all totaled together for within, outbound, and inbound. As with weight, trucks continue to dominate by value in 2017 and 2050 as the top mode. Trucks accounted for 71% of the freight movement, by value, and are projected to account for nearly 73% of the freight movement, by value, in 2050. Air and multiple modes and mail will have the largest growth from 2017 to 2050.

Ports, or shipments by water as shown here, were not extensively considered as a contributing mode of freight movement on the Missouri River in South Dakota. Water as a freight mode continues to decline as a viable means of shipping via the river, due to several dams that impede barge movement. The Port of Blencoe, however, situated between neighboring Sioux City and Council Bluffs, IA; officially opened in June of 2021 to facilitate grain shipments and serves as the farthest north stop along the Missouri River today. The Iowa port's influence on South Dakota freight will be monitored and further analyzed in a future freight plan update as more data becomes available.

Table 2-10: **Mode** of Freight Movement by **Value** (Millions)

Mode of Freight Movement by Value (Millions of Dollars)	2017	2050	Percent Change
Total	\$85,074.696	\$159,352.163	87%
Truck	\$61,817.544	\$117,862.007	91%
Multiple modes & mail	\$10,598.615	\$22,383.681	111%
Pipeline	\$7,644.761	\$11,476.119	50%
Rail	\$4,474.952	\$6,278.029	40%
Air (include truck-air)	\$519.588	\$1,308.949	152%
Other and unknown	\$19.096	\$43.234	126%
Water	\$0.140	\$0.143	2%

Trading Partners

South Dakota's top domestic trading partners in 2017 are bordering states and the state of Washington, as shown in Table 2-11. In 2020, Minnesota remained the top partner with the most tonnage and value and is projected to continue at the top through 2050 in weight. The other top major domestic trading partners in 2020 included Nebraska, Washington, North Dakota, and Iowa. The 2050 projections indicate that Iowa is second to Minnesota in freight value as it is today. Table 2-12 estimates the projected top trading partners in 2050 by weight and value.

Table 2-11: Top Trading Partners in **2017** by Weight and Value

Weight (Thousands Tons)			Value (Millions of USD)		
State	Tons	Percent	State	Dollars	Percent
	147,737.9	100.0%		\$53,214.6	100.0%
Minnesota	23,412.1	15.8%	Minnesota	\$6,611.7	12.4%
Washington	6,036.2	4.1%	Iowa	\$2,997.3	5.6%
Nebraska	5,817.2	3.9%	North Dakota	\$2,184.1	4.1%
North Dakota	5,817.1	3.9%	Washington	\$1,974.5	3.7%

Table 2-12: Top Trading Partners in **2050** by Weight and Value

Weight (Thousands Tons)			Value (Millions of USD)		
State	Number	Percent	State	Number	Percent
2050 Total Projected	210,706.3	100.0%	Total	\$98,141.7	100.0%
Minnesota	37,625.2	17.9%	Minnesota	\$11,197.6	11.4%
North Dakota	9,480.4	4.5%	Iowa	\$4,952.8	5.0%
Nebraska	8,212.9	3.9%	North Dakota	\$4,539.3	4.6%
Washington	7,518.8	3.6%	Nebraska	\$3,339.9	3.4%

In 2020, South Dakota internationally exported goods valued \$1.379 billion, which increased to \$1.858 billion in 2021. The top international trading partner was Canada with exports valued at \$525 million, Mexico was second with exports valued at \$314 million. Table 2-13 shows South Dakota's breakdown of export value to foreign countries, according to the U.S. Department of Commerce.

Table 2-13: Top International Trading Partners by Value **Exported**, 2020

Country	Trade Value (Millions of USD)	Percent
World	\$1,379	100.0%
Canada	\$525	38.1%
Mexico	\$314	22.8%
China	\$98	7.1%
Japan	\$93	6.8%
Germany	\$39	2.8%
All Other Countries	\$310	22.5%

Source: U.S. Department of Commerce, International Trade Administration
Retrieved 2/8/2022 from: <https://www.trade.gov/tradestats-express-national-and-state-trade-data>

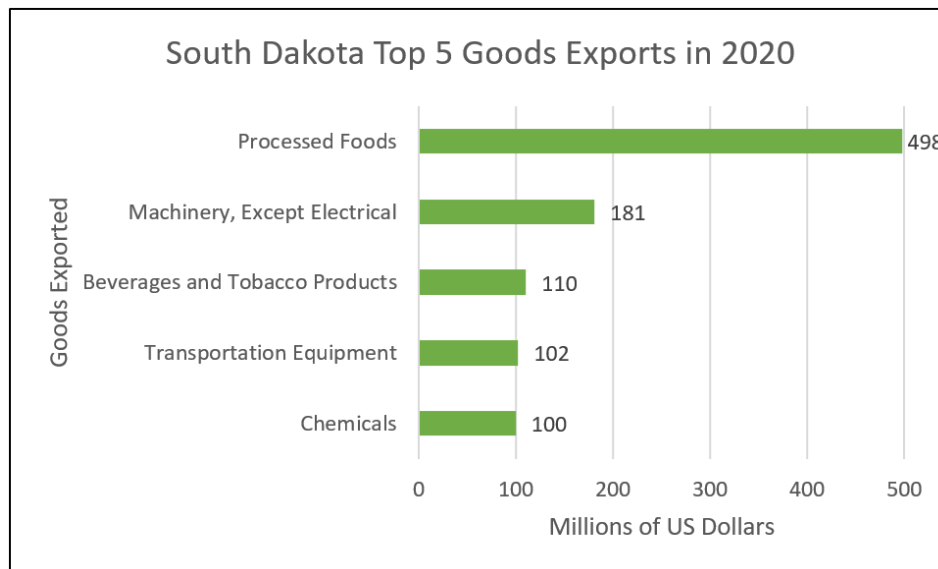
In 2020, Canada was also the leader in South Dakota's foreign import trade market with imports valued at \$428 million, which is 33.9% of the market share. The rest of the top five included China, Brazil, Mexico, and Germany. The top five made up approximately 77% of the total imports to South Dakota. Table 2-14 shows the breakdown of South Dakota's imports from foreign countries.

Table 2-14: Top International Trading Partners by Value **Imported**, 2020

Partner	Trade Value (Millions of USD)	Percent
World	\$1,261	100.0%
Canada	\$428	33.9%
China	\$230	18.2%
Brazil	\$184	14.6%
Mexico	\$77	6.1%
Germany	\$58	4.6%
All Other Countries	\$285	22.6%

The top valued South Dakota goods exported in 2020 are shown in Figure 2-5. Processed foods remained as the top export up from \$414 million in 2015 to \$498 million in 2020; an increase of 20%. Beverages and tobacco products jumped from fifth to third within the top exports at a 14% increase. Chemicals debuted among the top five in 2020, replacing computer and electronic products previously reported in South Dakota’s 2017 Freight Plan.

Figure 2-5: South Dakota Goods Exports in 2020 (Millions \$)



Source: U.S. Department of Commerce; International Trade Administration

CHAPTER 3: Transportation System

Introduction

There is an interrelationship and intermodal nature of freight that includes port, air, rail, pipeline, and truck. Together, these modes of freight support production, consumption, and all economic activity as an interconnected and interdependent system. Through proper stewardship and allocation of resources, the SDDOT maintains a portion of these modes to provide a resilient component for the transportation of goods and services throughout the state.

South Dakota's Highway System

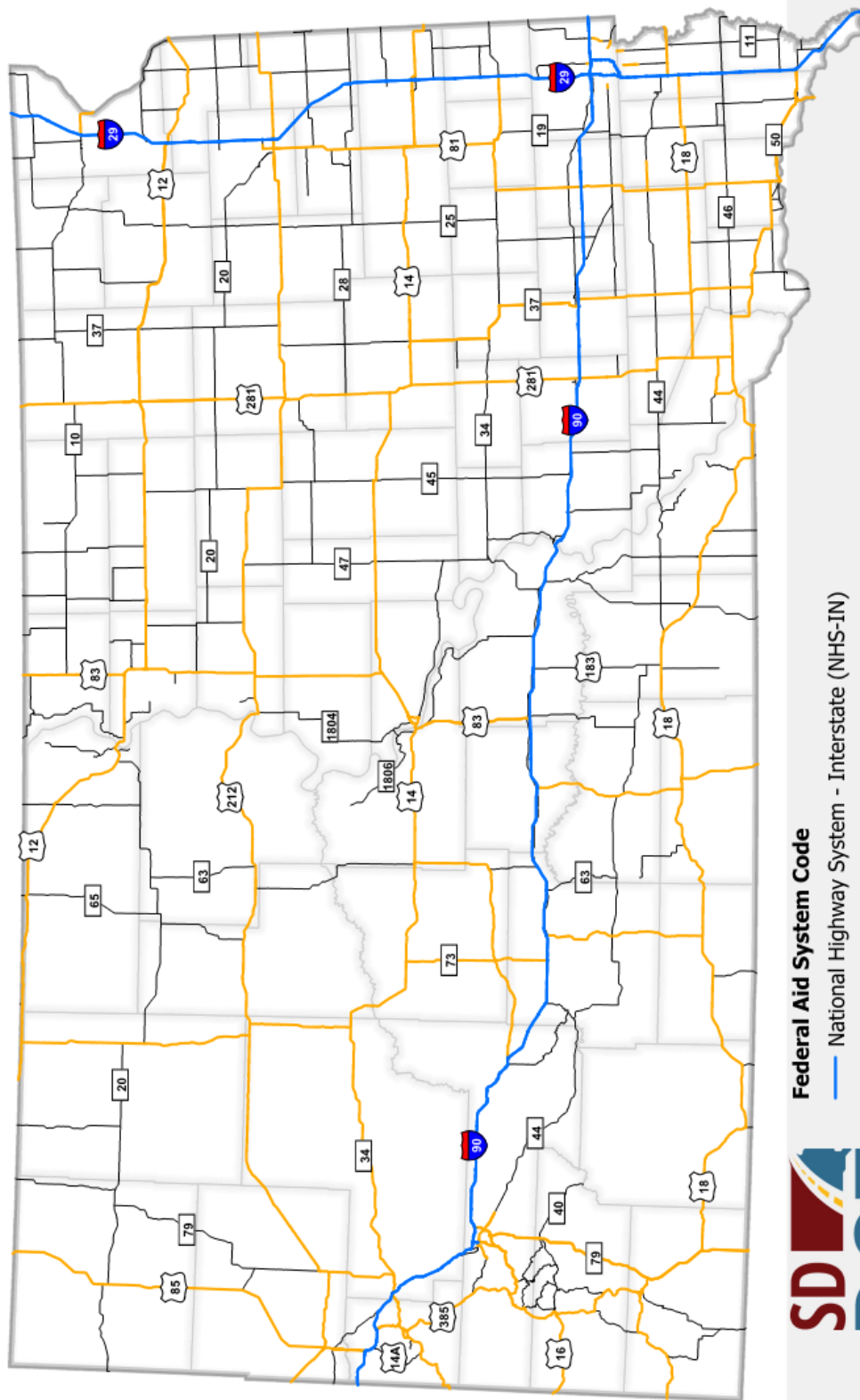
South Dakota's highway system is the lifeline of the transportation system that provides access to all areas of the state. South Dakota's roads range from Interstate, rural four-lane divided highways, multilane urban streets, paved secondary roads, and gravel roads. Bridges provide crossings at rivers, creeks, railroads, and other roadways. The combination of roadways, rails, and bridges provides a high level of access and mobility for freight movement.

The state's highway system comprises more than 7,794 centerline miles and approximately 1,807 structures. The state's preferential truck network comprises more than 4,700 miles with 969 structures. The state highway system is shown on Map 3-1 and the state's preferential truck network on Map 3-2. Most of the preferential truck network is included in the National Highway System (NHS). The NHS includes the Interstate highway system as well as other roads important to the nation's economy, defense, and mobility. The NHS provides connectivity to move freight to key intermodal freight facilities in South Dakota, the United States, Canada, and Mexico.

The anticipated impact of e-commerce on freight infrastructure in the state is evidenced by accelerated Interstate interchange improvements that address Amazon building a distribution center to the northwest of the I29 and I90 interchange in Sioux Falls. Various commercial developments are occurring in the area known as Foundation Park; however, none are at full occupancy to analyze operational impacts. There is no existing congestion and the extra capacity on most South Dakota roadways allows for future planning. Impacts of e-commerce will be continually monitored as Amazon and other e-commerce distribution operations become active. Interstate 90 in SD is the main east-west freight corridor. The vast majority of freight is pass-through as I90 links the ports of Washington State and Chicago area and other metropolitan points to the east. It is likely that a portion of the freight is related to e-commerce, however, there is adequate capacity now and into the foreseeable future to accommodate freight movement including e-commerce. Analysis of sales tax data may be used to assist in future identification of quantifiable e-commerce areas within the state.

Map 3-1: South Dakota's Highway System

South Dakota State Highway System

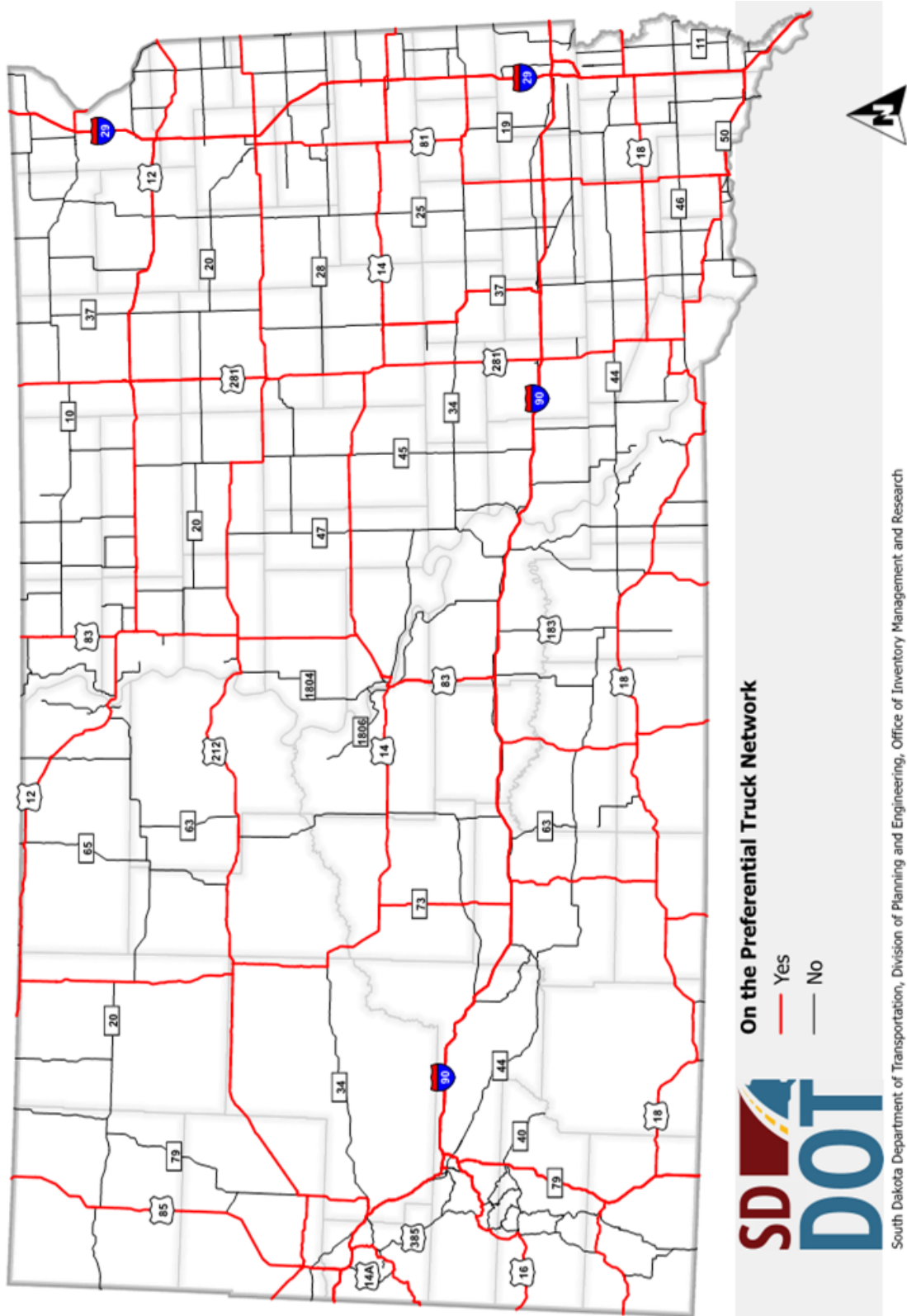


Federal Aid System Code

- National Highway System - Interstate (NHS-IN)
- National Highway System - Non Interstate (NHS-NI)
- All Other State Highways

Map 3-2: South Dakota Preferential Truck Network

South Dakota Preferential Truck Network



Pipelines

There are approximately 8,601 miles of natural gas and hazardous liquid pipelines in South Dakota, excluding service lines to end customers. While most natural gas is delivered to consumers through a network of distribution mains, petroleum and gas products are often delivered by truck from an above-ground terminal on the pipeline to their final point of consumption. Propane is essential for heating rural South Dakota homes and drying crops after harvest in areas that are not served by natural gas distribution pipelines.

The Dakota Access pipeline transports crude oil from the Bakken Formation in North Dakota to Illinois through 275 miles of pipeline in South Dakota. Pipeline miles by commodity are shown in Table 3-1 and pipeline operators in Table 3-2.

Table 3-1: Pipelines in South Dakota

Type of Pipeline	Miles
Distribution Mains	5049
Service Lines	3787
Intrastate Gas Transmission	288
Interstate Gas Transmission	1282
Interstate Hazardous Liquid	991
Crude	495
Refined Petroleum Products	494
HVL Flammable or Toxic	2

Source: South Dakota Public Utilities Commission

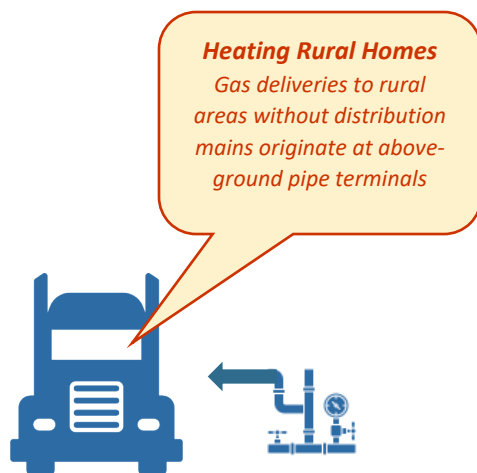


Table 3-2: Pipeline Operators in South Dakota

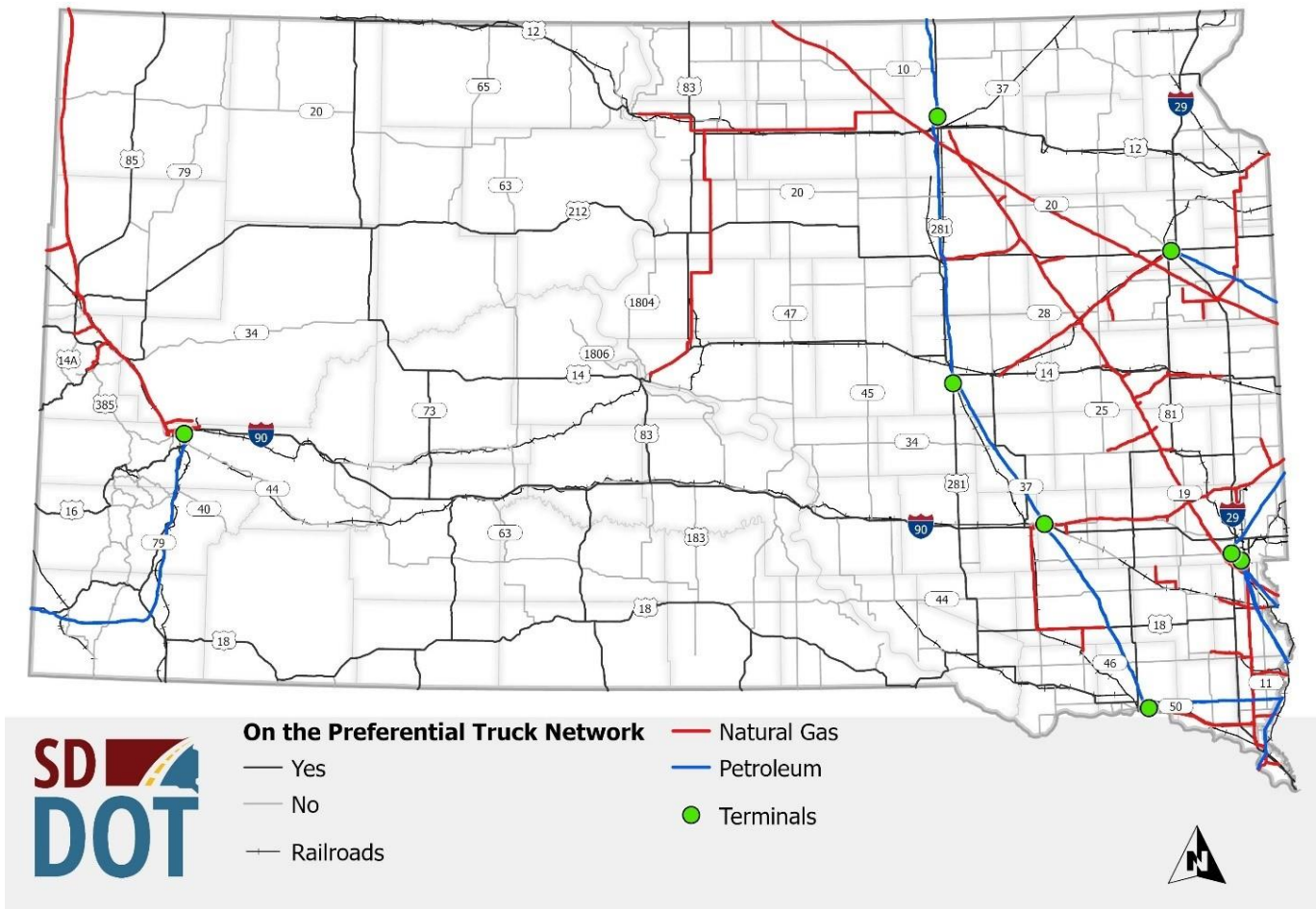
Pipeline	Owner/Operator
Private Gas Distribution	MEC, MDU, NW
Public Gas Distribution	Crooks, Garretson, Humboldt, Watertown
Intrastate Gas Transmission	Basin, Black Hills Power, Montana-Dakota Utilities, NorthWest Energy, SDIP, Sioux Falls Landfill, Xcel, Eastern Dakota Renewable Energy
Interstate Gas Transmission	Northern Natural Gas, Northern Border Pipeline, WBI, Great Plains Natural Gas
Interstate Hazardous Liquid	Dakota Access, Nustar, Magellan, TC Oil Pipeline Operations, Inc.

Source: South Dakota Public Utilities Commission (Data from Dec 2020)

Natural gas and petroleum pipelines are accessed through above ground terminals for distribution. Movement of these energy products to end-users is through localized truck deliveries of various vehicle size, while larger shipments are moved by rail. Figure 3-3 illustrates the location of these distribution points.

Figure 3-3 Pipelines and Truck Intermodal Terminals

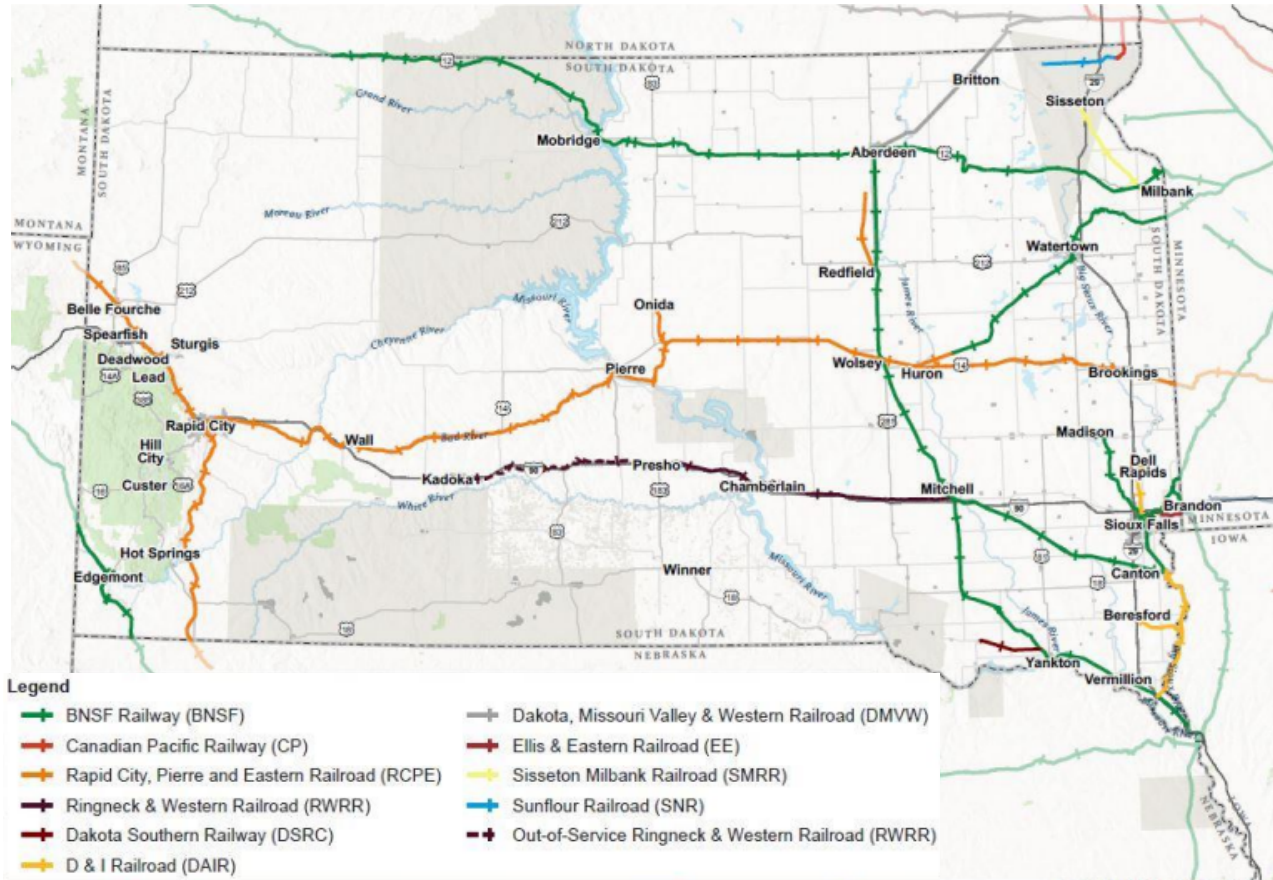
Pipelines and Truck Intermodal Terminals



Rail

Railroads are vital 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 heavy and bulky commodities.

Figure 3-4: South Dakota State Rail Network, By Owner (2022)



Source: South Dakota Rail Plan, Chapter 2

The state's rail network, as depicted in Figure 3-4, totals 2,038 miles of active rail. In recent years there have been changes in ownership of the railways within the state, in an attempt to reduce state-owned rail miles that were purchased in the 1970s to keep the system viable as a vital component of agriculture freight movements. State-owned rail comprised 15% of the system in 2017, which has been reduced to 7.4% today. The current ownership composition of the rail system within the state is as follows:

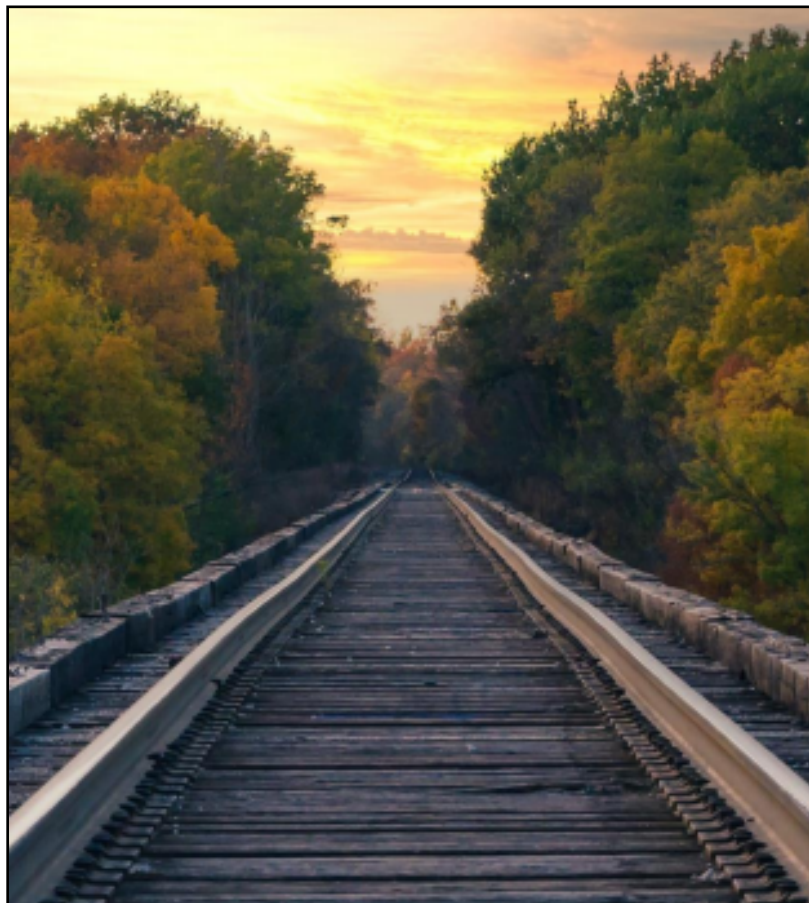
- Ringneck & Western owns 187.8 miles – 9.5%
- Rapid City, Pierre & Eastern (RCP&E) owns 577.5 miles – 29.4%
- Burlington Northern/Santa Fe (BNSF) owns 900.4 miles – 45.8%
- CP/SOO Line owns 6 miles – 0.3%

- D&I Railroad owns 84.8 miles – 4.3%
- Twin City Railroad owns 37.1 miles – 1.8%
- Ellis & Eastern (EE) owns 14.5 miles – 0.7%
- Sunflour Railroad owns 19 miles in-service and 9 miles inactive – 0.9%
- South Dakota owns 146.51 active rail miles with the following railway companies operating on the state-owned rail lines:
 - Dakota Missouri Valley & Western operates 76.71 miles – 3.9%
 - Dakota Southern operates 54.5 miles – 2.7%
 - Rapid City, Pierre & Eastern operates 15.3 miles – 0.8%

Note: Percentages are approximate, Source: State Rail Plan 2022, Table 1, Chapter 2

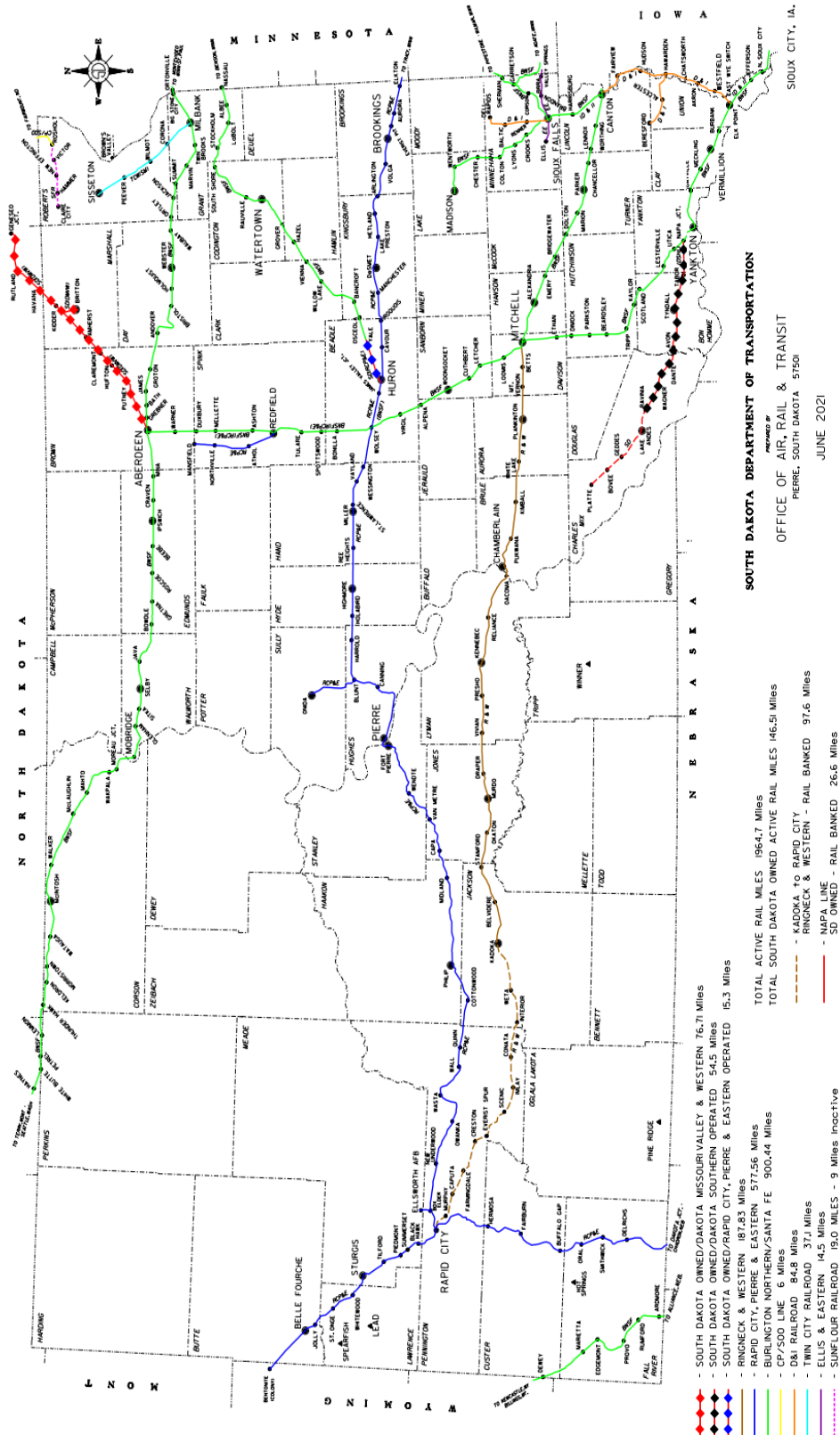
For more in-depth information regarding rail, check out South Dakota’s past and current State Rail Plans at: https://dot.sd.gov/transportation/railroads/state-rail-plan#listItemLink_1738

Chapter 4 of the 2022 Rail Plan is devoted to proposed Freight Rail improvements and investments. The official State Rail Map is shown in Figure 3-4.



Map 3-3: Official South Dakota Rail Map

OFFICIAL SOUTH DAKOTA RAIL MAP

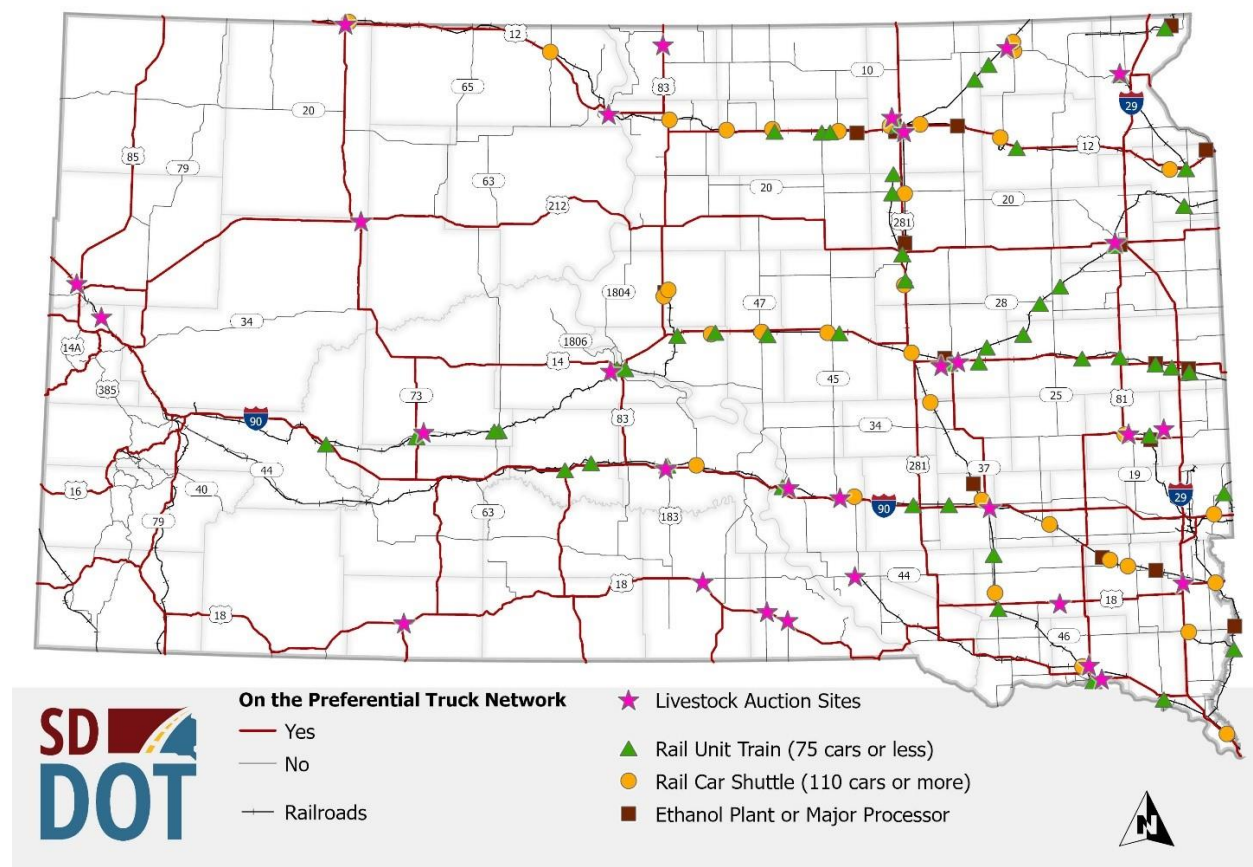


Interconnectivity

Within South Dakota, rail remains vital to the state's ability to move bulk goods because of the lack of access to the Mississippi River due to numerous dams that prevent barge movements on the Missouri River. Intermodal is predominantly between pipe, truck, and rail. About half of the state's corn crop is processed by ethanol plants scattered east of the Missouri River. Figure 3-5 illustrates the interconnectivity between highway, rail and major processing facilities.

Figure 3-5 South Dakota Intermodal Facilities

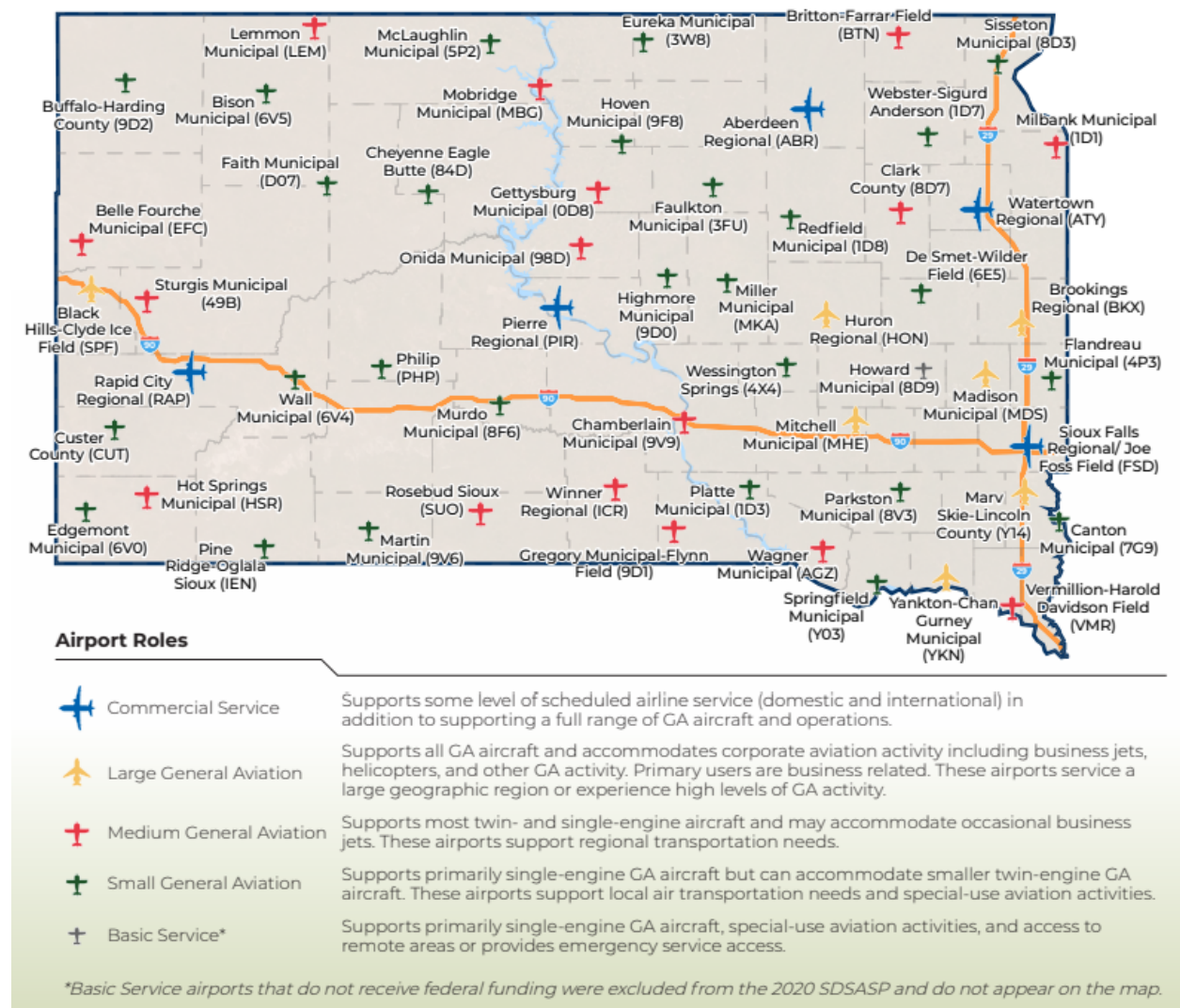
South Dakota Intermodal Facilities



Air and Ports

There are no water shipping ports in South Dakota, due to the dams on the Missouri River; however, there are airports that serve as commercial ports contributing to air freight. Figure 3-6 shows airport locations within the state with a description of their roles as summarized in the current South Dakota Aviation Systems Plan.

Figure 3-6 South Dakota Airports by Location and Role



Retrieved from: https://dot.sd.gov/transportation/aviation/aviation-systems-plan#listItemLink_1605

The 2019-2023 National Plan of Integrated Airport Systems (NPIAS) Report lists three airports in South Dakota as primary airports, which are public airports with scheduled air carrier service generating 10,000 passenger enplanements or more a year. The primary airports in the state are shown in Table 3-3, indicating Joe Foss Field in Sioux Falls as the largest.

Historically air cargo has been relatively limited in South Dakota. The majority of air cargo is shipped from Rapid City and Sioux Falls. Continued growth in these metro areas has resulted in the uptick of air

cargo, however, these volumes are relatively low compared to more populated states. For example, Sioux Falls shipped on average between 30,000 and 40,000 metric tons per year over the last 5 years.

Table 3-3 Current Classification of South Dakota Primary Airports in 2019-2023 NPIAS Report

Classification	Number of Airports		South Dakota Example
	U.S.	South Dakota	
Primary			
Large Hub	30	0	N/A
Medium Hub	31	0	N/A
Small Hub	72	1	Sioux Falls Regional Airport/Joe Foss Field
Nonhub	247	4*	Rapid City Regional Airport
Subtotal	380	5	
Nonprimary			
Commercial Service	126	0	N/A
Reliever	261	0	N/A
General Aviation	2,554	51	Platte Municipal Airport
Subtotal	2,941	51	
Total	3,321	56	

Source: 2019-2023 NPIAS Report

*Note: Pierre and Watertown are classified as Nonprimary airports in the 2019-2023 Report; however, both airports crossed the 10,000-enplanement threshold since the 2019-2023 NPIAS Report data was gathered and published. As such, both airports are shown as Primary Nonhub airports in this table. For more information on recommended changes to NPIAS classifications

See SD Aviation System Plan: https://dot.sd.gov/transportation/aviation/aviation-systems-plan#listItemLink_1605

Military Freight

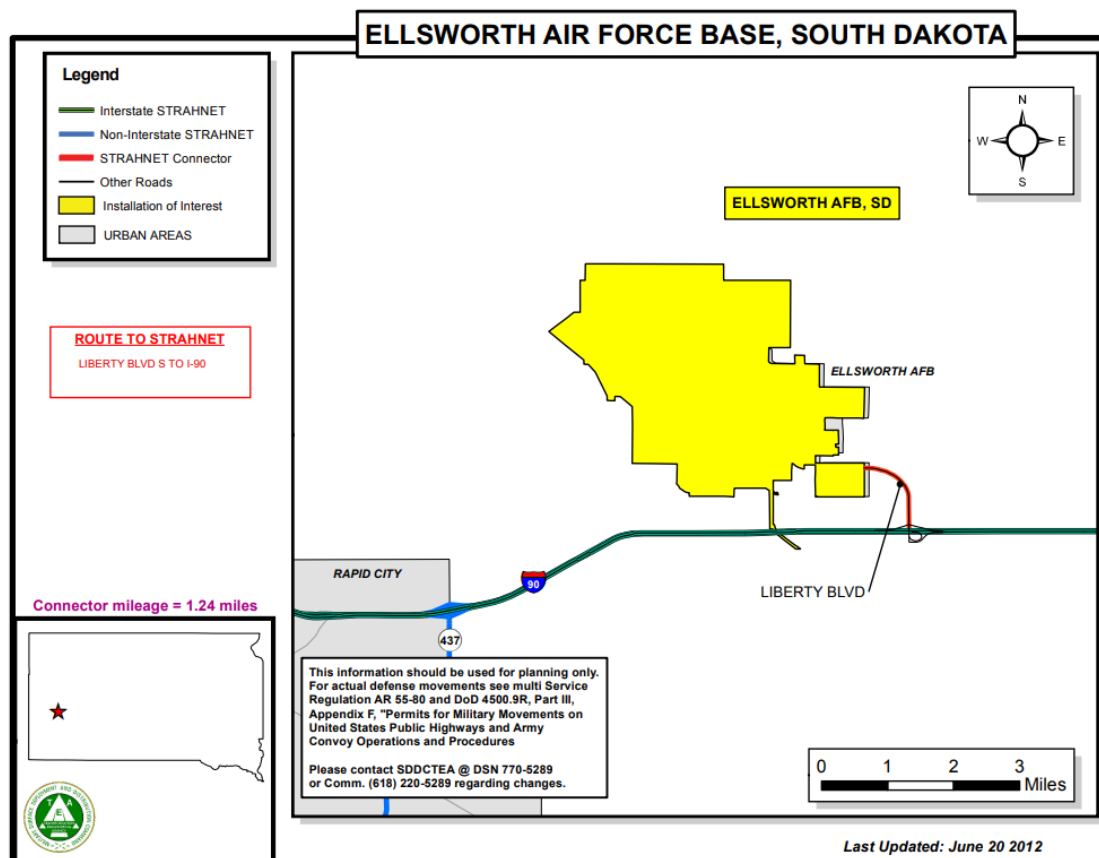
STRAHNET is a system of public highways that is a key deterrent in United States strategic policy. It provides defense access, continuity, and emergency capabilities for movements of personnel and equipment in both peace and war. It is 61,044 miles, including the 45,376-mile Interstate System and 15,668 miles of other important public highways.

STRAHNET Connectors (about 1,700 miles) are additional highway routes linking over 200 important military installations and ports to STRAHNET. These routes are typically used when moving personnel and equipment during a mobilization or deployment. Generally, these routes end at the port boundary or installation gate. However, if the installation gate that is used for mobilization or deployment is usually closed, then the STRAHNET Connector should be designated as the route between the primary peacetime gate and STRAHNET. While installations may have multiple access/egress routes, the STRAHNET Connector is generally the most direct and highest functional class roadway.

Ellsworth Air Force Base (EAFB) is situated near Box Elder, SD; a town that falls within the Rapid City Metropolitan Planning Area. EAFB has a membership on the Technical Coordinating Committee (TCC) of the Rapid City Metropolitan Planning Organization (MPO), which practices a regional transportation planning process that includes freight considerations. Current planning efforts to improve military freight movements include eliminating two railroad underpasses on I-90.

The portion of the STRAHNET system within the state and the military facilities based in South Dakota are shown in Map 3-3. Figure 3-7, below, shows Liberty Blvd, the local connector to Ellsworth Air Force Base in the Rapid City area near Box Elder, SD.

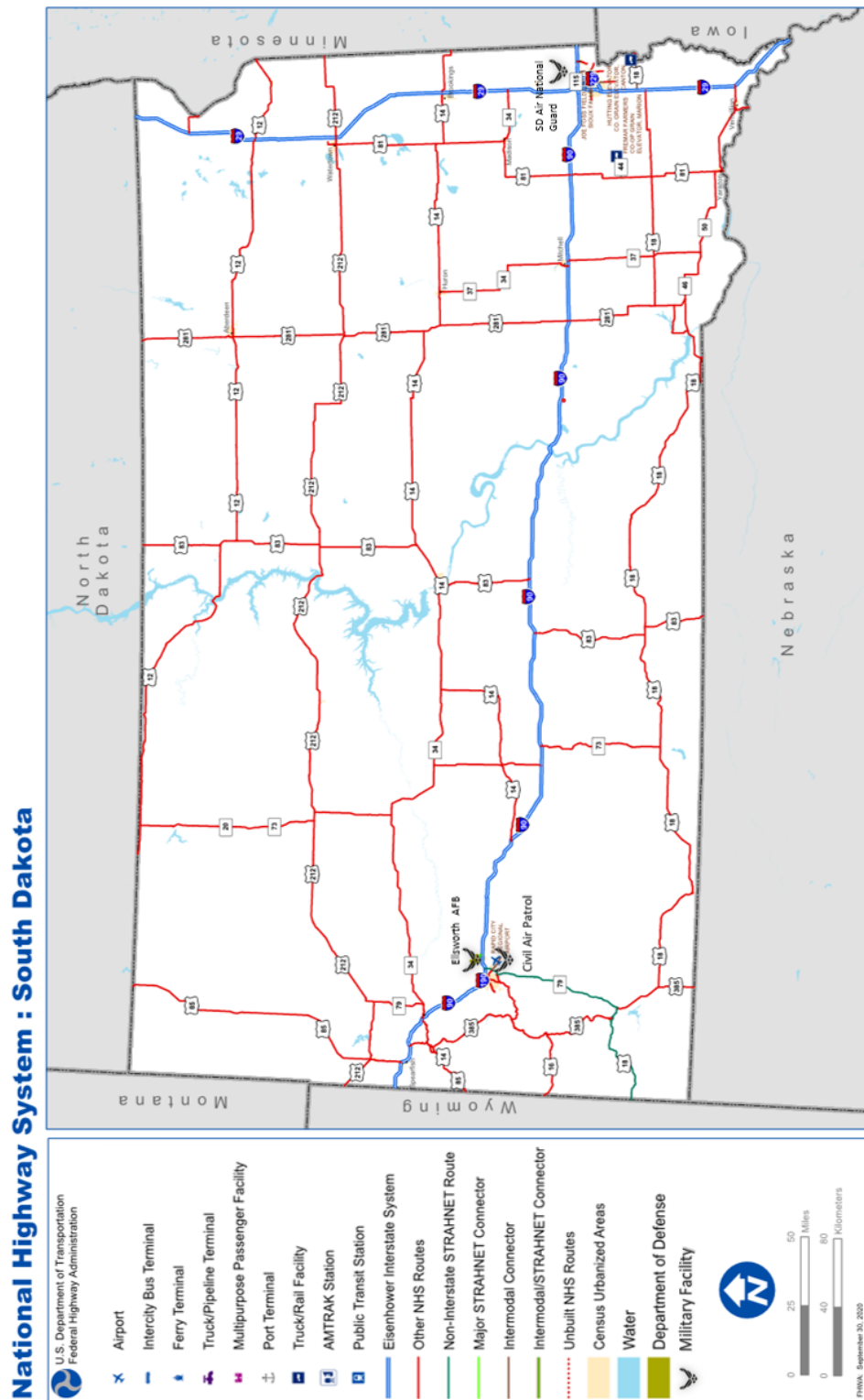
Figure 3-7: STRAHNET Local Connector in South Dakota



Retrieved from: <https://www.sddc.army.mil/sites/TEA/Functions/SpecialAssistant/STRAHNET/SouthDakota.pdf>

Joe Foss Field, previously mentioned as a primary airport situated in Sioux Falls, houses the SD Air National Guard. The Sioux Falls primary airport is currently updating their Airport Master Plan, details can be found at: <https://www.sfairport.com/about-our-airport/development-plans> as the plan develops.

Map 3-3: STRAHNET in South Dakota



Sources: https://www.fhwa.dot.gov/planning/national_highway_system/nhs_maps/south_dakota/sd_southdakota.pdf
 And [Office of the Special Assistant for Transportation Engineering Highways for National Defense \(army.mil\)](https://www.army.mil/transportation-engineering-highways)

CHAPTER 4: Condition and Performance

Introduction

South Dakota's economy depends on an efficient and reliable transportation system. Agriculture producers and shippers rely on the transportation system to move their products to U.S. and global markets. South Dakota's transportation infrastructure has provided agriculture producers and shippers the network needed to serve their markets and to maintain a strong economy.

Condition of the Highway System

Efficiently moving freight across the highway system is vital to the economy of South Dakota. Sixty-seven percent of the freight moved in South Dakota is moved by truck. Agriculture commodities are a major contributor, so it is vital for the highway system to be in adequate condition to move these products from farm to market. The majority of the first and last miles in the commodity chain are moved by truck.

South Dakota uses a pavement management system to create a Surface Condition Index (SCI) for pavement condition. Data used to compute SCI is gathered on a yearly basis. SCI considers different types of pavement cracking, roughness, rutting, punchouts, faulting, joint condition, and patching depending on the surface type for asphalt and Portland cement concrete. It uses a scale from 0 to 5 with four rating categories, excellent, good, fair, and poor shown below.

South Dakota's National Highway System is in very good condition with 94% of the roadways in excellent or good, 5% in fair, and 1% in poor condition. Table 4-1 shows the percent of pavement in excellent, good, fair, and poor condition on the National Highway System and the range for each category. South Dakota developed performance targets for pavements that are published in the Transportation Asset Management Plan (TAMP). The performance measures and targets developed in the Transportation Asset Management Plan support the freight plan's goals and strategies.

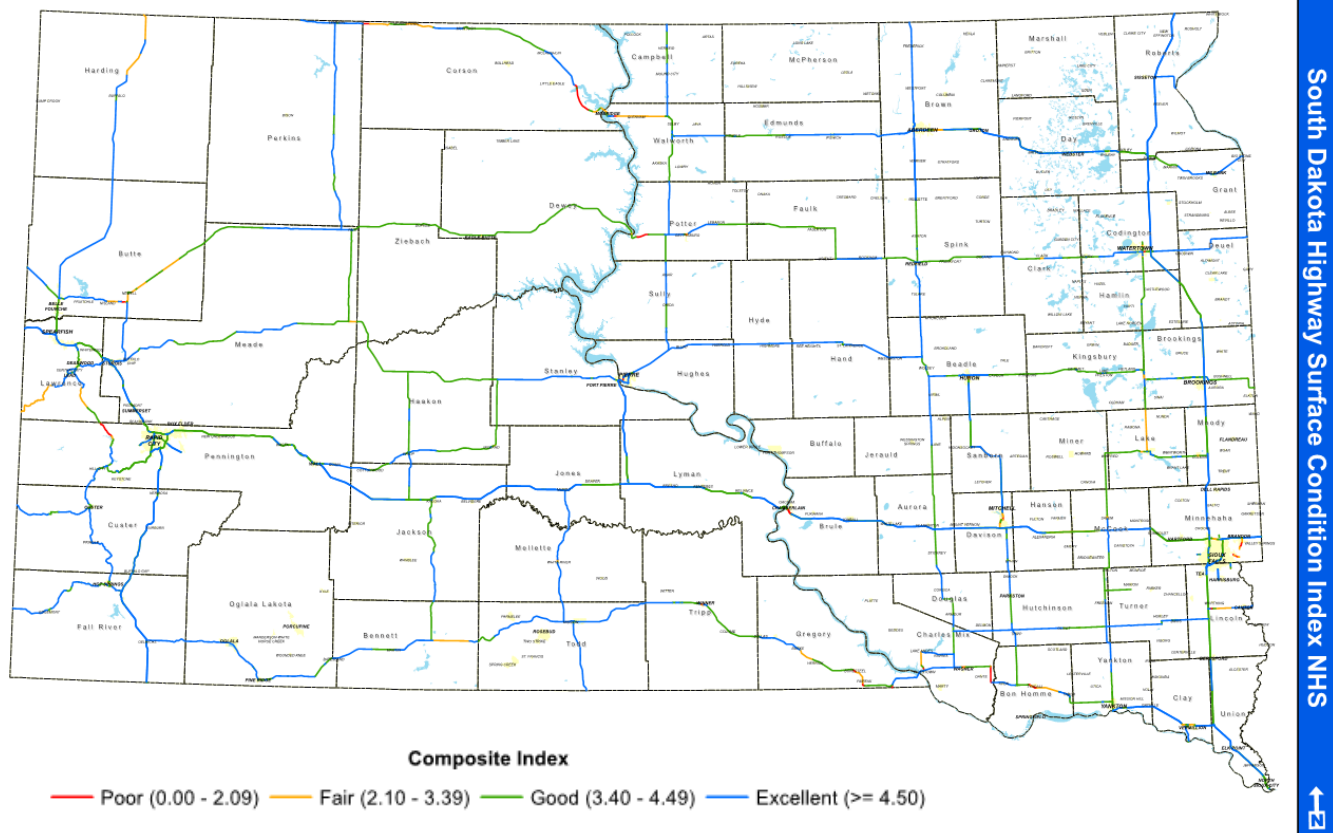
Table 4-1: Surface Condition Index Values and 2021 Pavement Condition on the NHS

Composite Index Value	Rating	SD NHS Pavement Condition
5.00 to 4.50	Excellent	54%
4.49 to 3.40	Good	40%
3.39 to 2.10	Fair	5%
2.09 to 0.00	Poor	1%

Source: South Dakota Department of Transportation

Figure 4-1 shows the locations of the pavement condition on the NHS. Projects are programmed in the 2022-2025 Statewide Transportation Improvement Program (STIP) according to pavement management priorities.

Figure 4-1: South Dakota Highway Surface Condition Index NHS

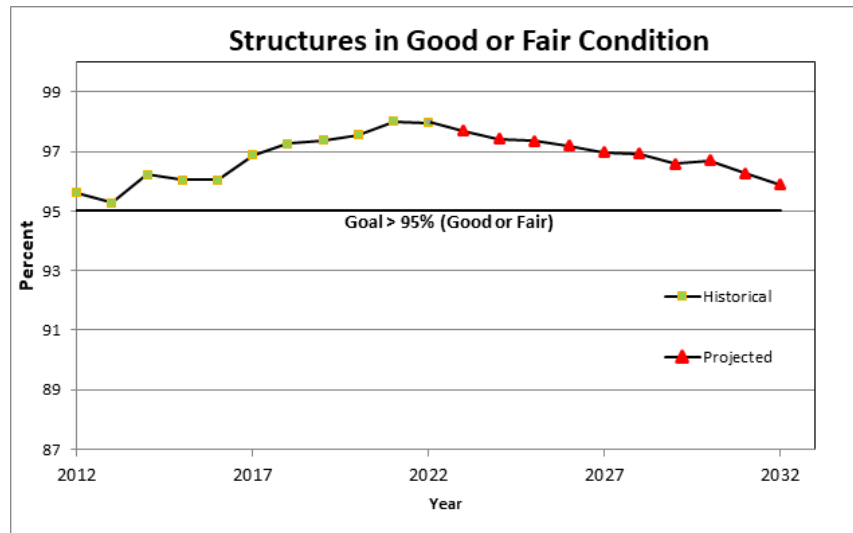


Bridge condition is determined from the condition rating of the bridge deck, substructure, and superstructure. The condition of a bridge, commonly referred to as structure, is measured by good, fair, and poor. South Dakota owns 1807 structures on the State Highway System. South Dakota's performance target is to have less than 5% rated in the poor category and has consistently achieved this mark since 2011. In 2021, the South Dakota Department of Transportation reported 2.4% in poor condition as it continues to preserve and maintain bridges and culverts efficiently. South Dakota developed performance targets for structures that are defined in the Transportation Asset Management Plan, which can be found at

<https://dot.sd.gov/media/documents/SDDOT2019TAMPFHWSummittalrevised8-28-2019.pdf>

The structure performance measures and targets support South Dakota's Freight Plan strategies by providing a safe and efficient transportation system. Figure 4-2 shows historical and projected condition of the state-owned structures.

Figure 4-2: Condition of State-Owned Structures



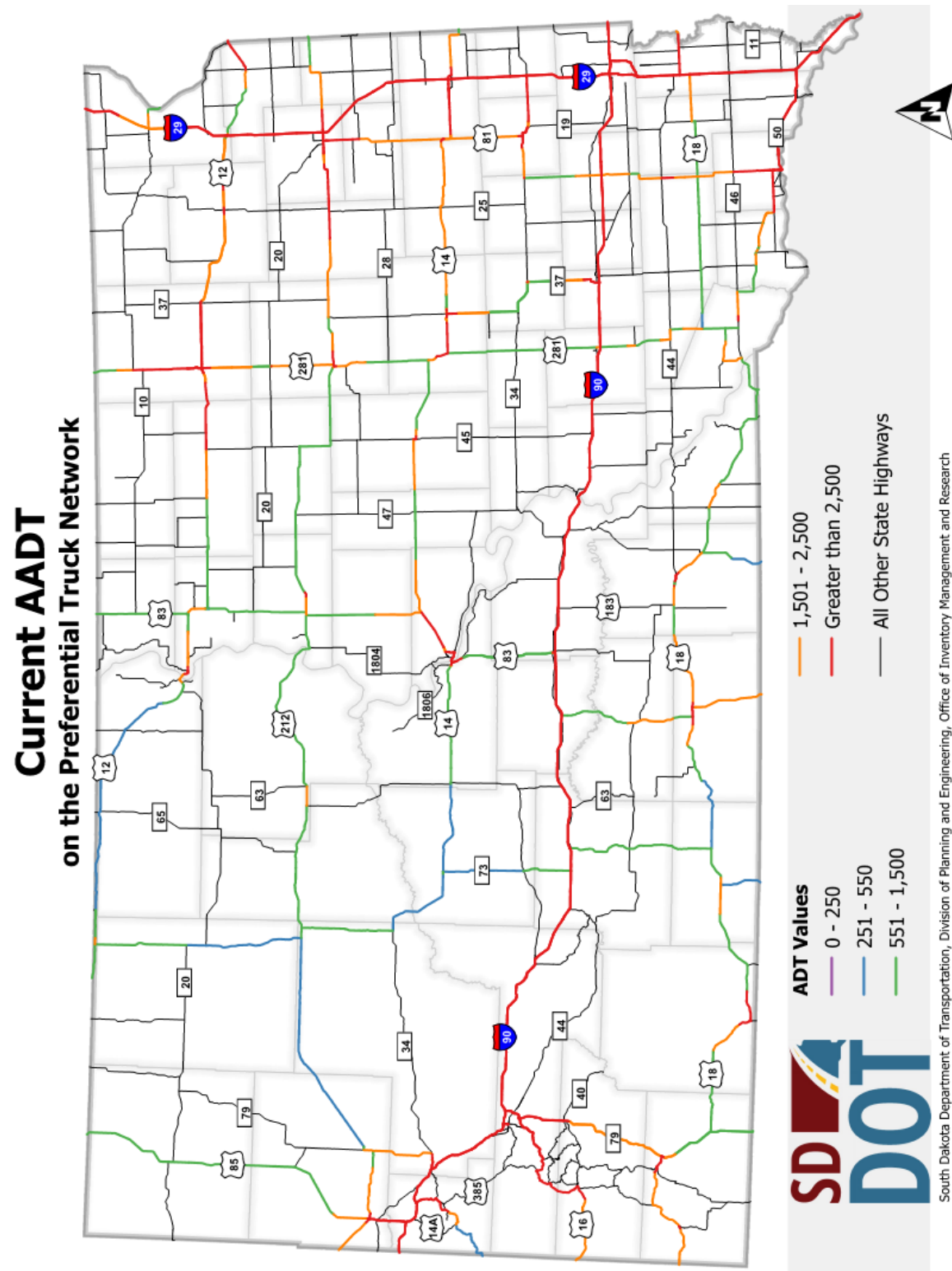
Preferential Truck Network

Efficiently moving freight across the highway system is vital to the economy of South Dakota. Truck traffic in the state is concentrated on the Interstate system, where truck traffic ranges from 1000 to greater than 5000 trucks per day depending on the highway segment. The higher truck traffic is located around the Sioux Falls area where segments show greater than 5000 trucks per day. Overall, the truck traffic on the Interstate is approximately 20 to 25 percent of the total traffic.

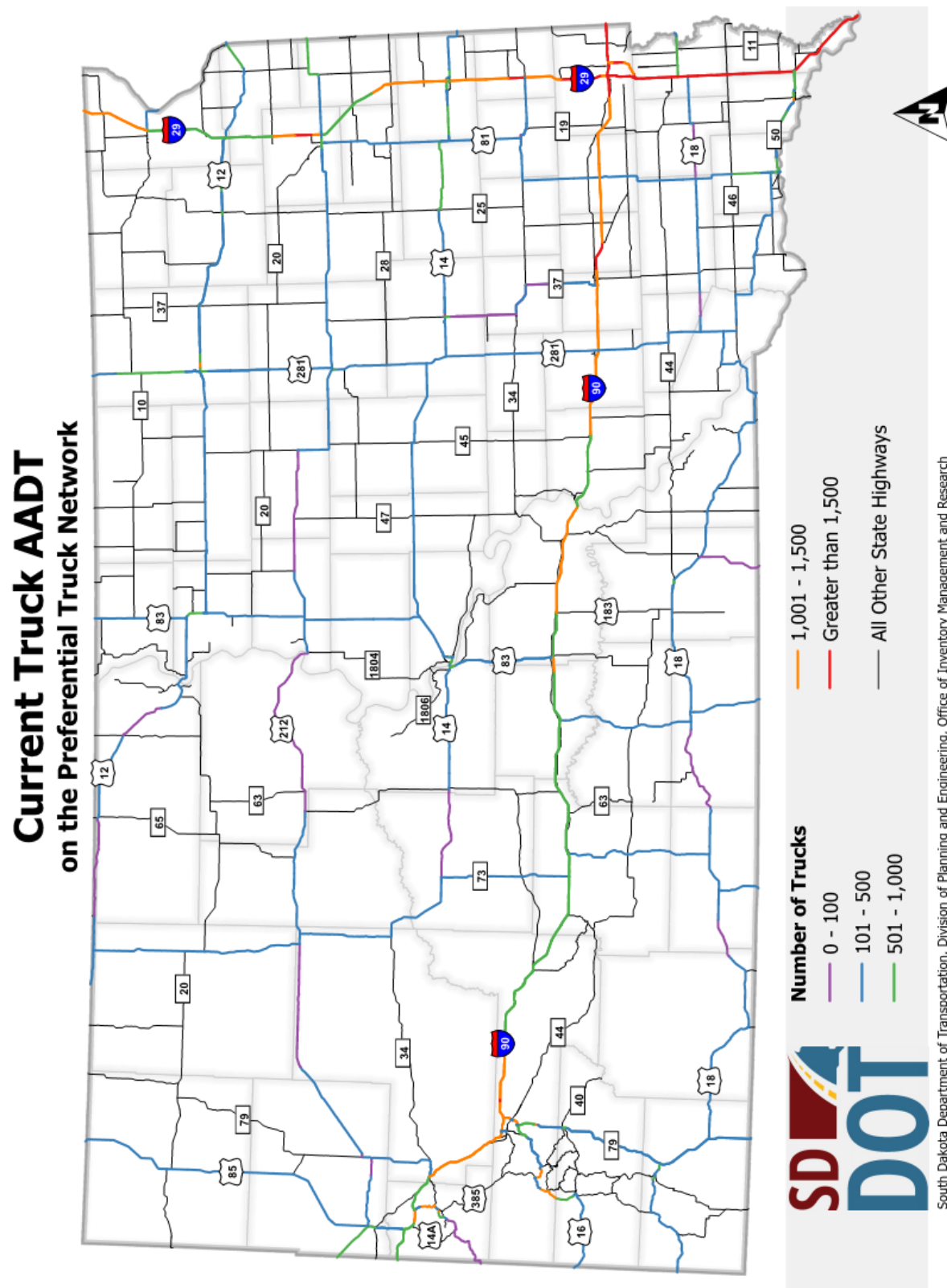
Most of the non- Interstate preferential truck network consists of two-lane rural highways which have an average annual daily traffic (AADT) of 2500 or fewer vehicles per day and truck traffic of less than 200 per day. The average truck traffic on the non-Interstate preferential truck network ranges from 10 to 20 percent of the total traffic. Map 4-1 shows the 2021 AADT and Map 4-2 shows the 2021 AADT truck traffic on the preferential truck network.

As South Dakota does not have any non-attainment areas for critical pollutants, no freight related local air pollution contributors have been identified. The SDDOT is in the process of developing its carbon reduction strategy requirement of the IIJA and will follow applicable strategies once implemented. Future development of measures of local air pollution and greenhouse gases would be hinged upon baseline conditions determined as the strategy is developed. Currently, SDDOT continues development of improved construction methods to reduce energy consumption. Paving projects result in a smoother surface therefore reducing the overall fuel consumption for highway users. Generally, SDDOT has and will continue to focus on energy efficiency as it has a direct correlation to carbon reduction. Strategies such as reducing truck haul for construction projects, installation of energy efficient lighting, reduction of truck idling at ports of entry, and research/implementation of new construction techniques which require less energy inputs.

Map 4-1: Current Average Annual Daily Traffic on the Preferential Truck Network



Map 4-2: 2021 Average Annual Daily **Truck** Traffic on the Preferential Truck Network



Performance Measures

South Dakota does not have any bottlenecks or other congestion issues that commonly occur elsewhere in the nation. Our rural state's lack of bottlenecks pertains to both truck and rail modes of freight movements. SDDOT has and continues to invest improvements at its ports of entry to ensure reliability for haulers and reducing emissions associated with idling, slowing, and acceleration using weigh in motion, tire anomaly, and e-screening.

A performance measure associated with freight to indicate system performance is travel time reliability. The Federal Highway Administration is contracting the collection of travel time data throughout the nation on the National Highway System using the Regional Integrated Transportation Information System (RITIS). RITIS is a tool developed by the Center for Advanced Transportation Technology (CATT) Laboratory that uses this data to show how the National Highway System is moving traffic in relation to the speed limit. In 2021, South Dakota's Interstate system had a 99.9 percent travel time reliability rating.

The Interstate was flowing at acceptable speeds 99.9 percent of the time. South Dakota's non-Interstate National Highway System had a 95.2 percent rating in 2021. These ratings show South Dakota has minimal congestion on the state's highways. Table 4-2 shows the travel time reliability for the Interstate and the non-Interstate NHS for all vehicles and the truck travel time reliability index for the Interstate.

Table 4-2: Travel Time Reliability on the Interstate and NHS

Year	Interstate Reliability	NHS-Non Interstate Reliability	Truck Travel Time Reliability Index*
2017	99.8	94.0	1.15
2018	100.0	93.6	1.16
2019	99.9	92.8	1.19
2020	99.9	95.0	1.15
2021	99.9	95.2	1.19

*NOTE: This is the PM3 Index, which is a different measure than the Interstate Trucks Reliability shown in the previous plan.

A formal definition for travel time reliability is the consistency or predictability to travel a certain distance, as measured from day to day, and /or across different times of the day. Personal and business travelers value reliability because it allows them to accurately plan departures and arrivals with minimal unproductive time. Shippers and freight carriers especially rely on predictable travel times because manufacturers often use "just-in-time" and "lean manufacturing" practices to maximize economic efficiency.

Performance Measures Targets developed by SDDOT shown in Table 4-3 were coordinated with and adopted by the Metropolitan Planning Organizations (MPO) within SD and the Sioux City, IA MPO.

Table 4-3 SDDOT Performance Measure Targets for Freight

South Dakota DOT targets for 2022-2025 performance period

	Category	Performance measure(s)	Baseline (CY 2021 data)	Proposed 2-year target (CY 2023 data)	Proposed 4-year target (CY 2025 data)
PM3	System Performance	Percent of person-miles traveled on the Interstate that are reliable	99.9%	90.0%	90.0%
		Percent of person-miles traveled on the non-Interstate NHS that are reliable	95.2%	85.0%	85.0%
	Freight	Truck Travel Time Reliability Index (Interstate only)	1.19	1.50	1.50

Weather Impacts

Winter weather impacts travel time and freight movement in South Dakota and remains the most common hindrance to freight movement for the state. During an extreme winter weather event, traffic slows resulting in a dramatic decrease in travel time reliability. To help travelers plan for winter storm delays, SDDOT provides travel advisory and condition information predominantly through its 511 system, complemented with timely media feeds. Schools, governments, and local businesses close or have limited staffing during winter storm events to reduce the number of drivers on the road in the interest of public safety. South Dakota actively participates in multi-agency and multi-state planning efforts to better prepare for weather-related emergency events. The SDDOT's plowing efforts are regionally recognized for clearing roads efficiently and safely.

During interstate closures in South Dakota, there is a multi-agency coordination effort to get the interstate open as quickly and safely as possible. While interstates are closed, truck parking can become problematic, yet South Dakota is committed to making advances in improving truck parking during these events. The state recently completed its 2020 Decennial Interstate Corridor Study (ICS) that incorporated truck freight movements and accommodations into the study as part of SDDOT's preparations to improve. The SDDOT also fosters close working relationships with multiple agencies as partners in the Commercial Vehicle Information Systems & Networks Innovation Technology Deployment (CVISN-ITD) work group.

Limitations of freight movement due to flooding and stormwater runoff are extremely rare. However, there were portions of I90 in eastern South Dakota between Mitchell and Sioux Falls that were susceptible to isolated overtopping after excessive and repeated rainfall events that occurred in September of 2019. The rainfall also impacted harvest season. Like winter event road closures, a multi-agency response was coordinated to reroute traffic and assess damage. SDDOT maintenance crews monitored roadways and bridge structures for safety as waters receded. Various intermittent measures were taken to improve drainage at numerous locations along the impacted section of interstate and more substantial engineering solutions, including bridge replacements, are being designed. These efforts soundly demonstrate the state's ability to rapidly restore access and reliability of the I90 corridor.

Freight movement in South Dakota and potential bottlenecks are generally subject to severe winter storms, flooding events, or existing infrastructure conditions which reduce speeds and therefore impact deliveries. Regarding rail freight, action is being taken to upgrade various commercial rail lines to improve freight flow. For example, the RCP&E railroad has projects planned utilizing RAISE grant funding

to upgrade the route from Fort Pierre to Rapid City, a line that neighboring state Wyoming is upgrading west of the South Dakota/Wyoming state border to support inter-state bentonite bulk shipments.

Truck Parking

To determine whether there exist any areas within South Dakota with a shortage of adequate truck parking, SDDOT included a truck parking analysis along the interstate as part of the 2020 ICS. From the final report, four broad types of parking facilities within ½ mile of the Interstate corridor were evaluated:

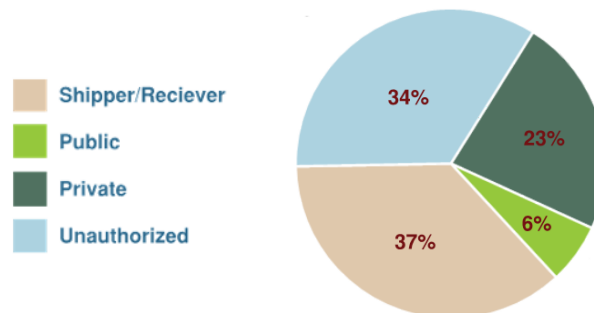
- **Shipper/Receiver;** warehouses, manufacturing facilities, retail outlets
- **Public Facilities;** rest areas, scenic overlooks, weigh stations, ports of entry
- **Private Facilities;** gas/convenience stores, hotels, motels
- **Unauthorized Parking;** shoulders of Interstate on-off ramps, vacant lots, on-street parking in commercial or residential areas

The inventory based on these categories is shown in Table 4-3 and Figure 4-3. It is important to note that only 6% of the available parking facilities are publicly owned, while 34% of the sites where truck parking was recorded were at sites considered unauthorized.

Table 4-4: Total Number of Identified Truck Parking Sites Within ½ Mile of Interstate System

Route	Number of Sites				
	Private	Public	Shipper	Unauthorized	Total
I-29	52	12	97	79	240
I-90	96	31	117	139	383
I-190	1	0	1	1	3
I-229	4	0	26	7	37
Total	153	43	241	226	663

Figure 4-3: Truck Parking Sites by Type



The 2018 South Dakota Rest Area and Truck Pullout Truck Parking Analysis determined future parking needs for SDDOT controlled facilities and is being implemented. The 2020 Decennial ICS provided an assessment of truck parking spaces along the Interstate System and identified areas of unauthorized parking and provided a list of truck parking facility recommendations to accommodate future normal conditions. However, the major underlying cause of truck parking shortages, as expressed by stakeholders, is during interstate closures associated with winter storm events.

South Dakota participates in a multi-state planning effort to accommodate truck parking through the Northwest Passage Freight Task Force that facilitates and coordinates topics of mutual benefit to improve freight movement along the I-90/I-94 corridor to the Pacific coast.

Traffic Considerations

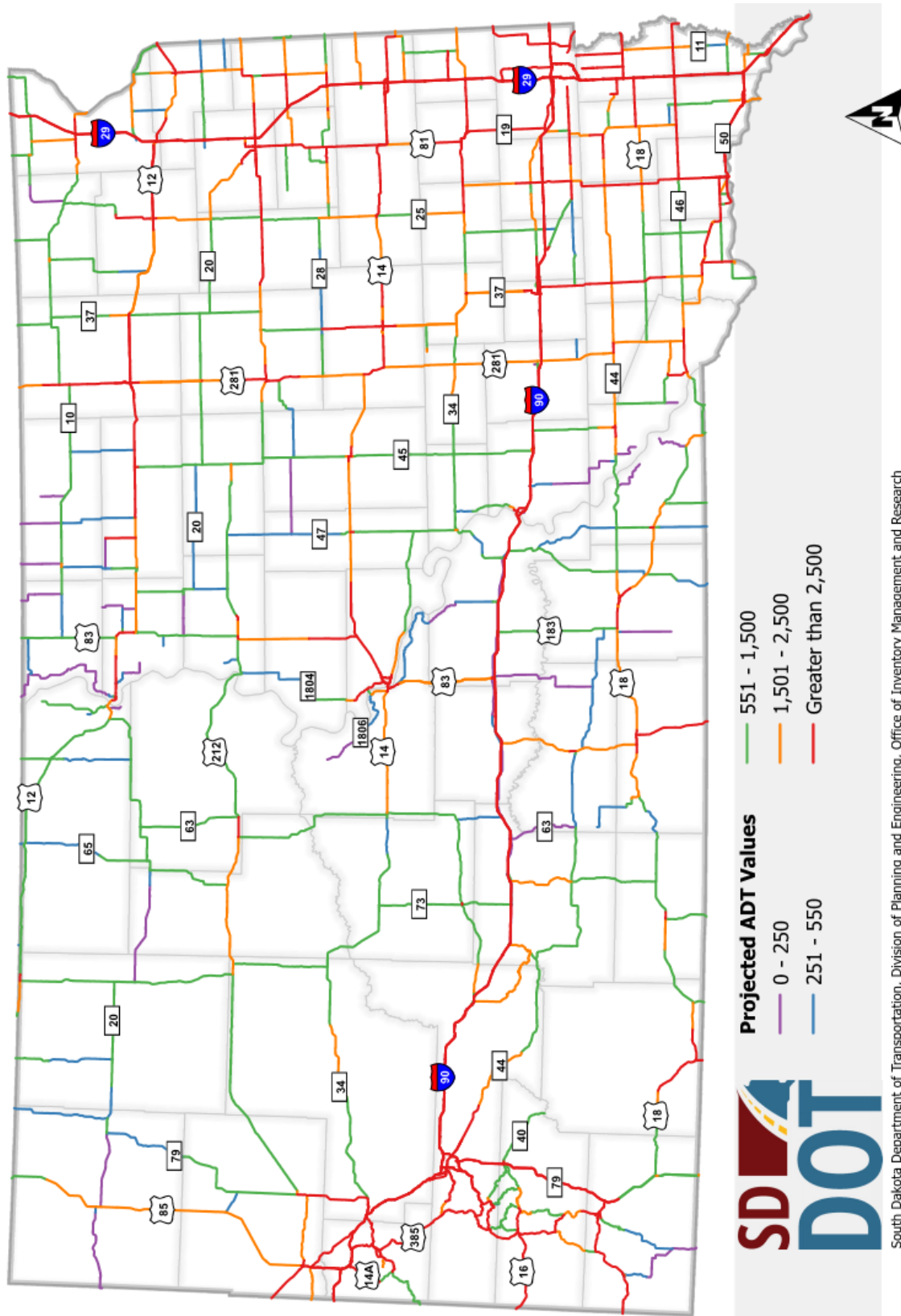
South Dakota monitors traffic on the highway system using automatic traffic recorders and annually conducts traffic counts at specified locations. South Dakota also conducts a decennial Interstate corridor study to look at the operation of the Interstate System to ensure that mainline and interchanges operate at an acceptable level of service and to verify compliance with current Interstate design standards. South Dakota analyzes current and 20-year traffic projections to prioritize improvements that mitigate any issues or deficiencies. Map 4-3 shows the projected AADT.

Traffic is also expected to increase on the preferential truck network along with truck traffic. Map 4-3 shows the 20-year projected traffic on the preferential truck network and Map 4-4 shows the 20-year projected truck traffic.

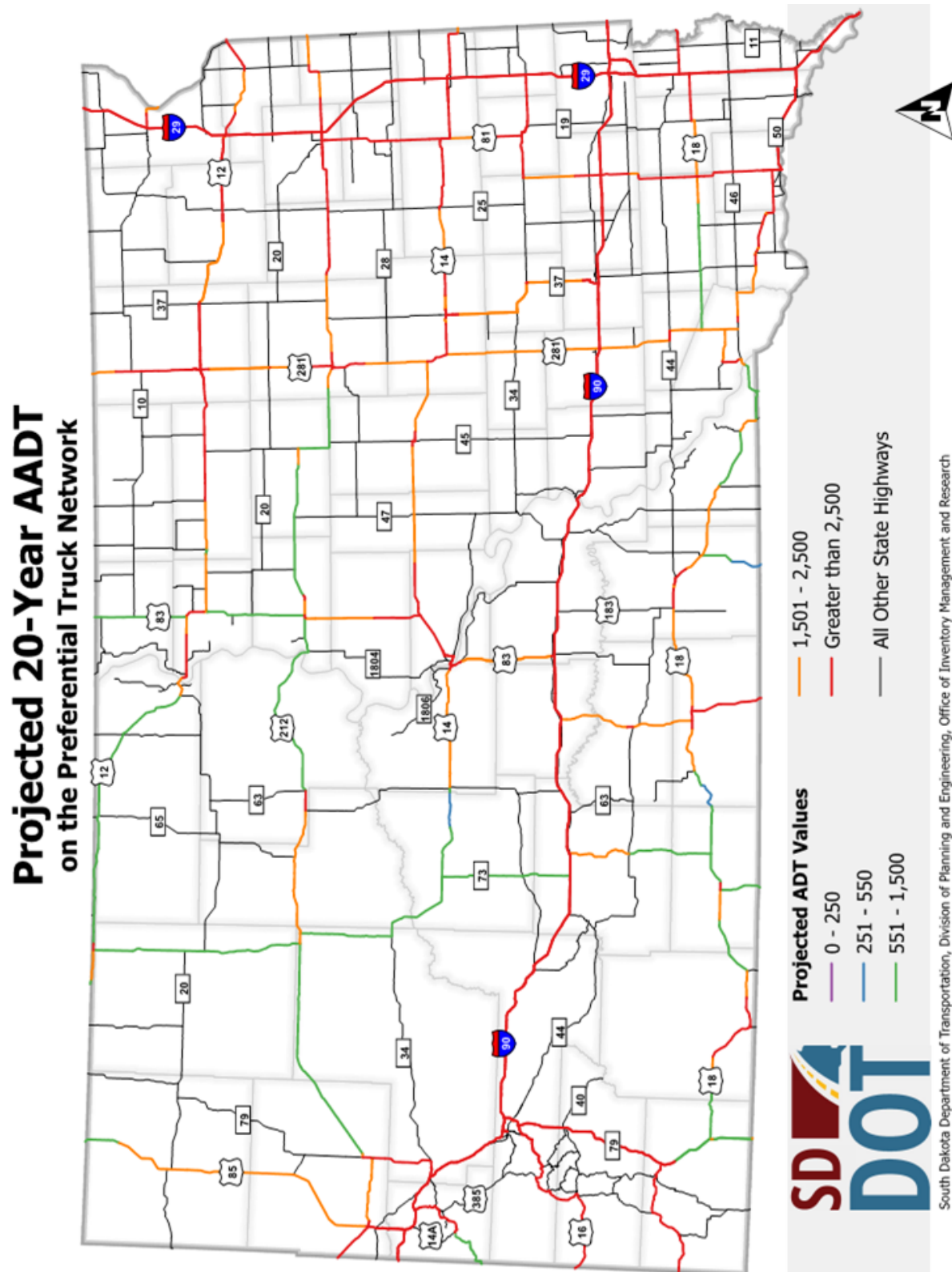
Maps 3-3, 3-4, and 3-5 are shown on the following pages.

Map 4-3: Projected 20-Year AADT

Projected 20-Year AADT

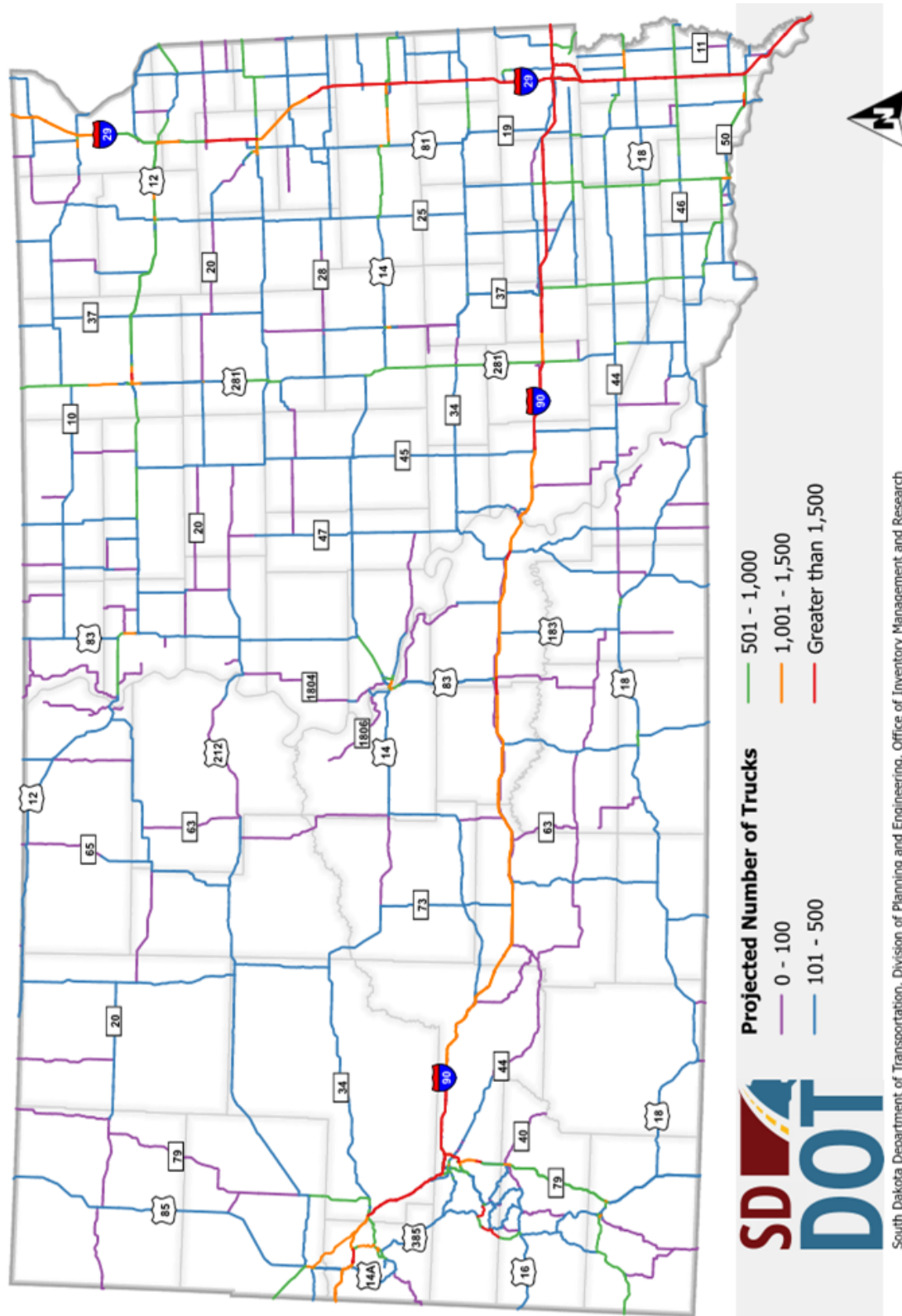


Map 4-4: 2040 Projected 20-year AADT on the Preferential Truck Network



Map 4-5: Projected 20-year **Truck** AADT

Projected 20-Year Truck AADT



Wildlife Habitat Preservation

The National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. § 4321-4370h (2014), and the Regulations for Implementing the Procedural Provisions of NEPA (40 CFR parts 1500-1508) direct Federal agencies to consider the environmental impacts of their proposed major Federal actions through the preparation of an environmental assessment (EA) or environmental impact statement (EIS) unless a particular action is categorically excluded. SDDOT follows Federal Highway Administration's NEPA implementing procedures in 23 CFR part 771. SDDOT has developed an Environmental Procedures Manual (EPM) to provide guidance to communicate preferred environmental processes and procedures, evaluate environmental impacts due to projects, and implement subsequent environmental commitments in an efficient and effective manner with staff, consultants, and contractor personnel performing environmental services associated with SDDOT transportation projects, including appropriate local government projects. The EPM can be found at <https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf>

Protecting wetlands in the planning, construction, and maintenance of transportation projects is important for managing water quality and habitat for fish and wildlife. Wetland and stream delineations are conducted in the planning phase of project development to avoid and minimize impacts. When impacts are unavoidable, mitigation may be required by the appropriate regulatory agency (USACE, FHWA).

NEPA requires the identification and assessment of reasonable alternatives that will avoid and minimize adverse effects on the quality of the human environment, which includes species and habitats protected under the Endangered Species Act (ESA), the Migratory Bird Treaty Act (MBTA), and the Bald and Golden Eagle Protection Act (BGEPA). SDDOT Wildlife Biologists are involved in all stages of project development, conducting habitat surveys, coordination with regulatory (USFWS) and resource agencies (SDGFP), evaluating potential adverse impacts, and recommending impact avoidance or minimization measures.

Wildlife movements and habitats are analyzed during project planning and minimized or mitigated during project design. South Dakota especially considers wildlife movement and underpass accommodations where migration trails cross the Interstate corridors as part of transportation planning studies. Freight movements along the Interstate, like passenger vehicles, frequently collide with deer as well as other small mammals. Wildlife hits reported to law enforcement are recorded and further analyzed as segments of the Interstate are improved. SDDOT raises public awareness using dynamic message board reminders that deer are more active during harvest/mating season to encourage driver attentiveness. Other highway engineering deterrents have been implemented to reduce animal crashes, including the installation of reflective posts to alert animals at nighttime, with marginal success. In 2019, the South Dakota Department of Transportation (SDDOT) conducted a research project to develop guidelines for wildlife vehicle collision mitigation (SD019-02). SDDOT staff utilize the decision guides throughout the transportation decision making process to determine if wildlife collision mitigation is recommended and what type of mitigation strategy is most feasible. Some of the mitigation strategies considered include vegetation management, signage, fencing, and structures. Preliminary data shows a significant reduction in wildlife crashes, when feasible to incorporate mitigation.

Agriculture Industry Freight Considerations

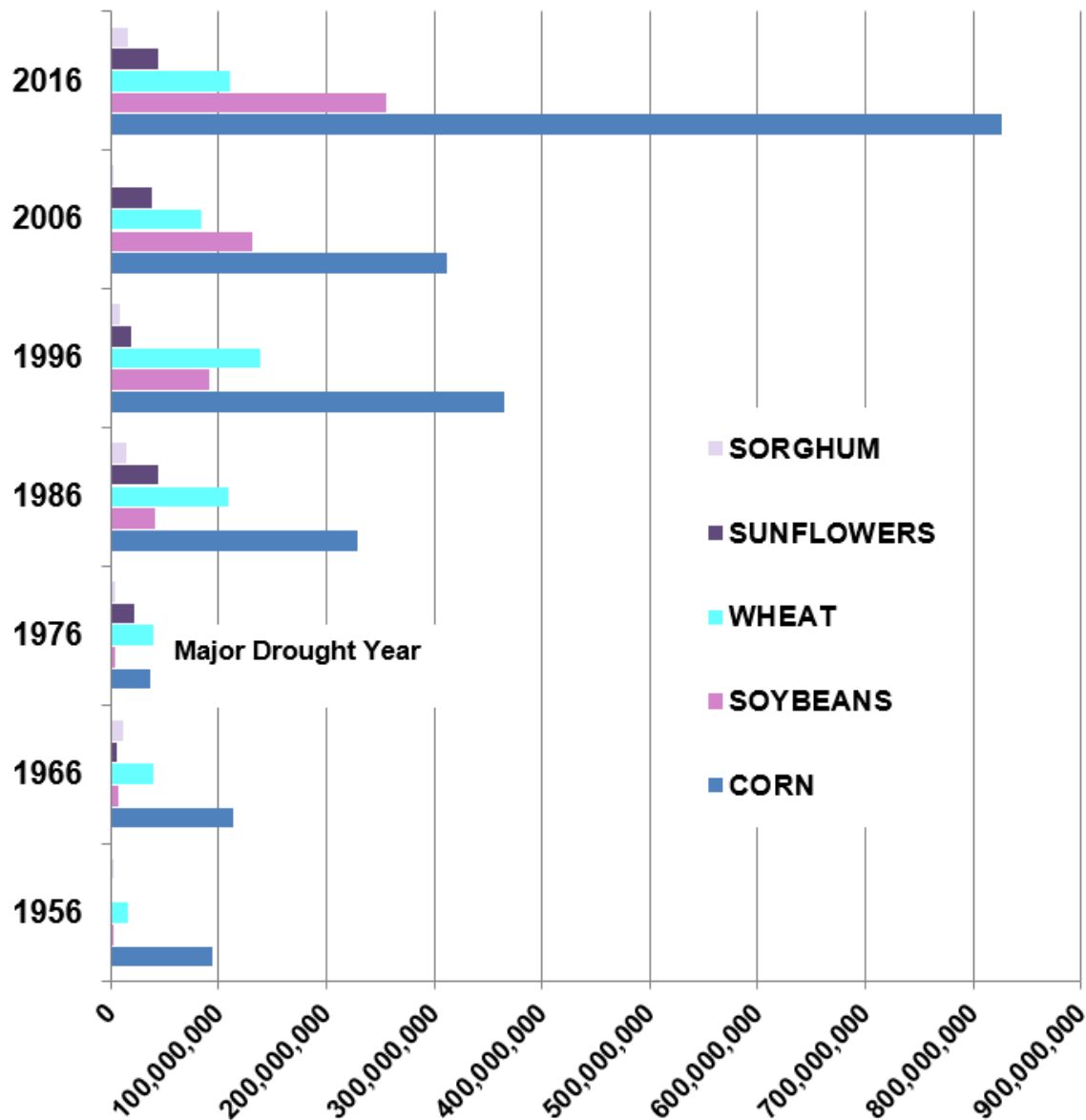
Agricultural land use and commodity movements may determine locations where transportation improvements and asset modifications are needed. Although the highway network has available capacity, grain elevators and agricultural processing facilities like ethanol plants may concentrate truck traffic. During harvest, or when a 110-car shuttle train is being loaded for rail transport, some corridors may be busy. Loading one shuttle train can require more than 400, 18-wheel truck loads. Also, large dairy operations generate traffic as feed, forage, and milk are transported on rural roads in a fashion that resembles moving grain to cattle feedlots. From an asset management standpoint, these facilities may increase stress on transportation pavements and bridges which may increase the rate of deterioration. Though rural congestion and capacity are of concern, the size and weight of modern agricultural machinery can become a burden on highways that do not have a stabilized subbase in place.

Average South Dakota corn crop yields have increased by about 2 percent per year for the past two decades, plus the acreages planted to corn production continue to increase. Recent growth in corn production has been remarkable, growing by over 780 percent since 1956 and more than doubling since 1996. Production of other crops like wheat, soybeans, and sunflowers has also increased.

There has been an increase in agricultural commodity prices, acres under cultivation, improvements in crop genetics, and management practices which created agricultural freight growth which was addressed by additional intermodal facility capacity. Figure 4-5 shows the crop production from 1956 to 2016 for sorghum, sunflowers, wheat, soybeans, and corn in 10-year increments to show long-term trends and control for short-term fluctuations due to farmers' responses to short-term markets, droughts, and other factors.

Agricultural freight movements have kept pace with these increased yields. The importance of good highways to move crops to rail terminals, processing facilities, and points of animal feeding or conversion cannot be overstated. Quick access from truck to rail reduces producer's costs and it also reduces the generation of greenhouse gases and carbon because of the energy efficiency of rail. Farmers have built large privately-owned grain storage bins on their property to store commodities. This allows the movement of commodities from the farm to the terminal according to market demand or when convenient for the farmer. Field grain tubes are also used to store commodities in the fields and then move crops to grain terminals intermittently. These practices have helped decrease harvest peak travel demand on the highway network and reduced short-term congestion between passenger vehicles and farm machinery movements.

Figure 4-5: South Dakota Crop Production in Bushels

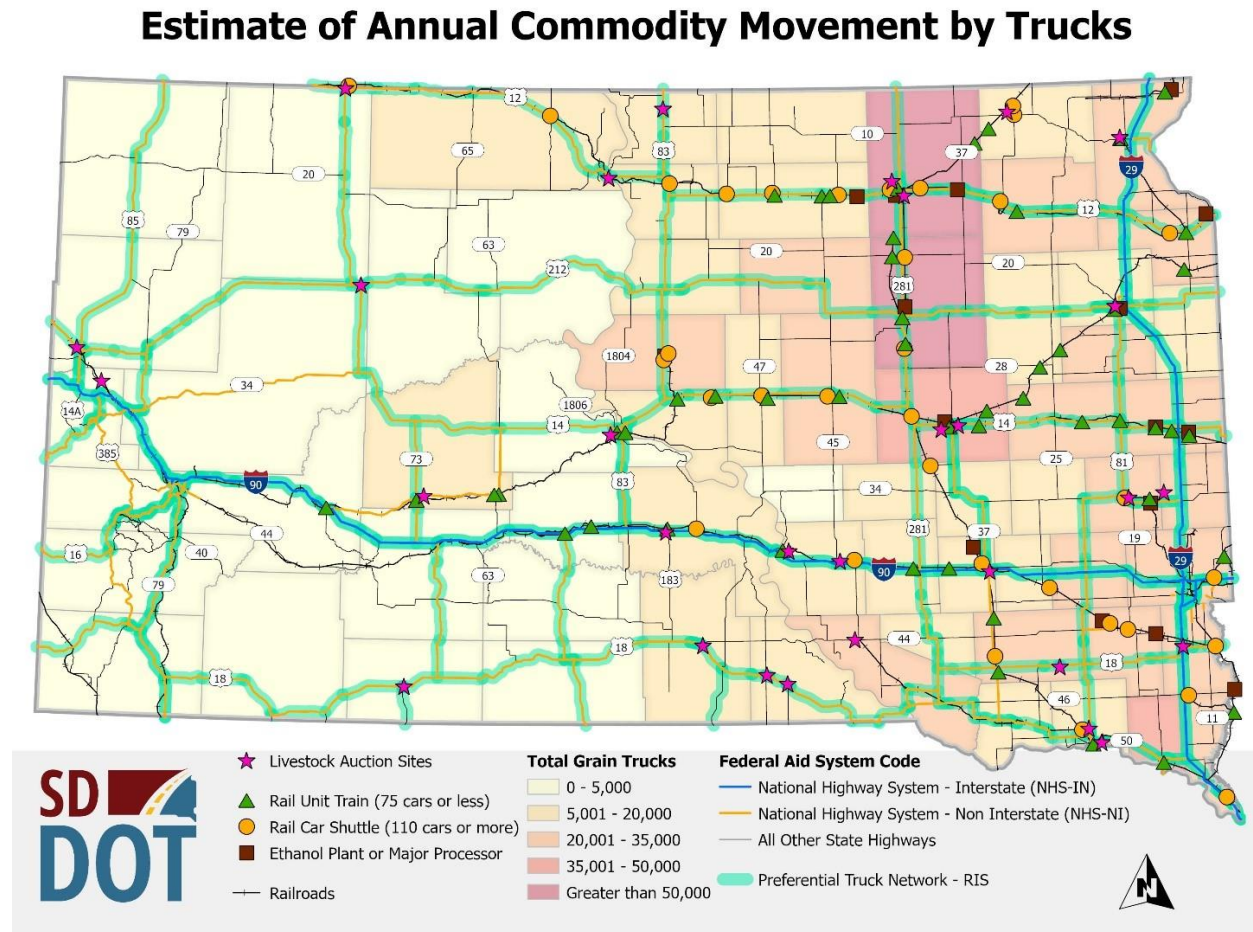


Source: NASS

Commodity movements for corn, wheat, soybeans, sunflowers, and sorghum generate the equivalent of over 1 million 18-wheel truck trips per year on average. Some data is not disclosed because of confidentiality or the limited number of farmers growing a particular crop. Such a data gap would result in an underestimation of production. Figure 4-6 shows the most recent estimated county commodity movements by trucks based on average annual production levels relative to the locations of processing and shuttle train facilities. The truck movements are estimated based on an 18-wheel configuration at 80,000 pounds using average annual crop production over multiple years. The numbers estimate the movement occurring only one time, but it may occur several times from field to storage bin, and finally to market. Consequently, it is probably an underestimation of the total truck movements. Most of the data is at the county level. Using the Federal Highway Administration's Freight Analysis Framework,

there could be about 1.5 million agricultural trucks if all the internal shipments used fully loaded 18-wheel trucks. This is fifty percent over the rough estimate using only agricultural production tonnage to estimate commodity truck volumes.

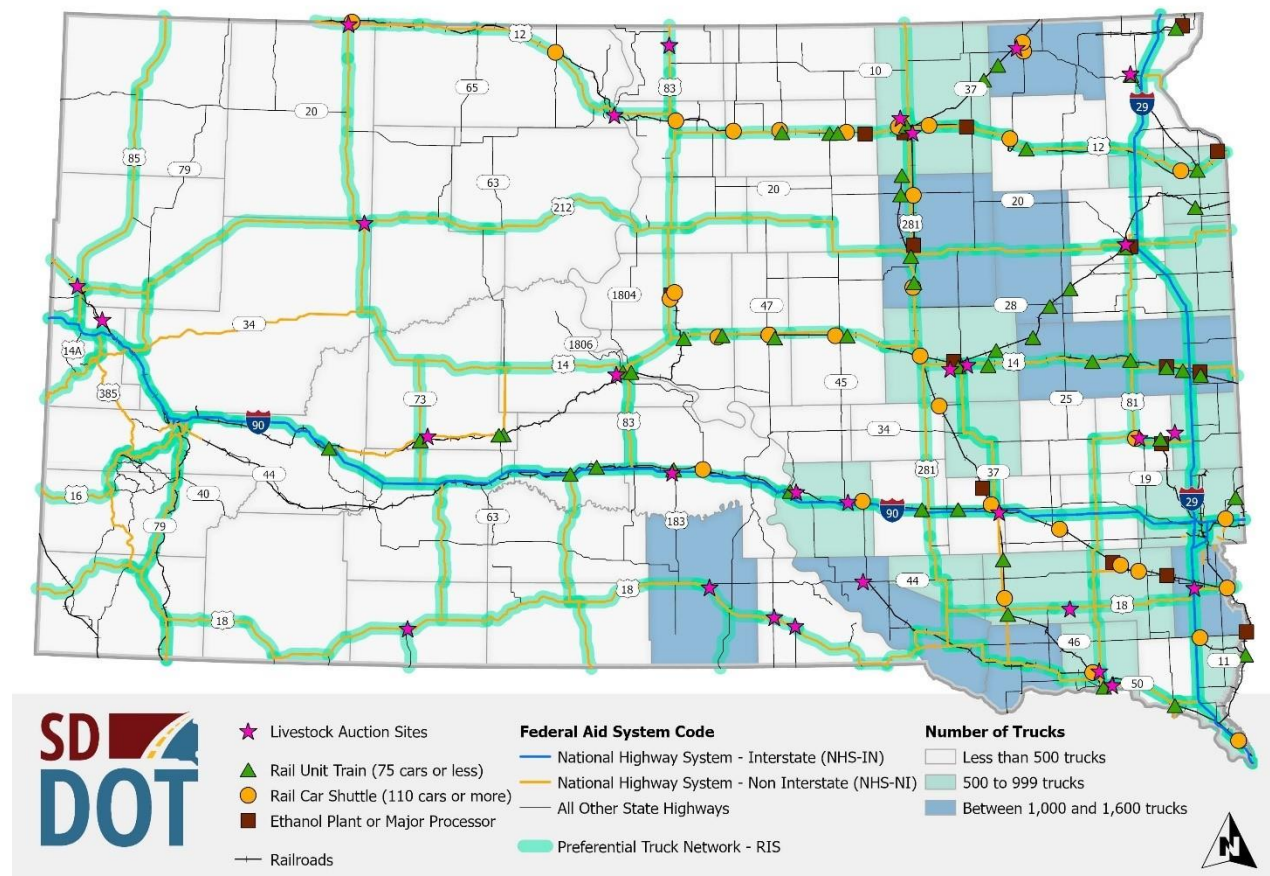
Figure 4-6: Estimate of Annual Commodity Movement by Trucks



In the previous Freight Plan, cattle outnumbered people in South Dakota by about 5:1 at 3.95 million. In 2021, approximately 6.02 million cattle were inventoried, increasing this ratio to nearly 7:1. There were approximately 1.2 million hogs and 255,000 sheep reported in 2017. Currently, hogs have increased to 2.01 million while sheep decreased to 235,000. In 2021, total farm cash receipts were about \$9.16 billion. Over 90 percent of farm cash receipts came from cattle and calves, corn, soybeans, wheat, hogs, and dairy and milk. Cattle movements do not generate as many trucks as crop commodities, but cattle values exceed most crop values. Figure 4-7 shows an estimate of cattle movement by trucks in relationship to auction sites and intermodal facilities.

Figure 4-7: Estimate of Annual Cattle Movement

Estimate of Annual Cattle Movement by Trucks



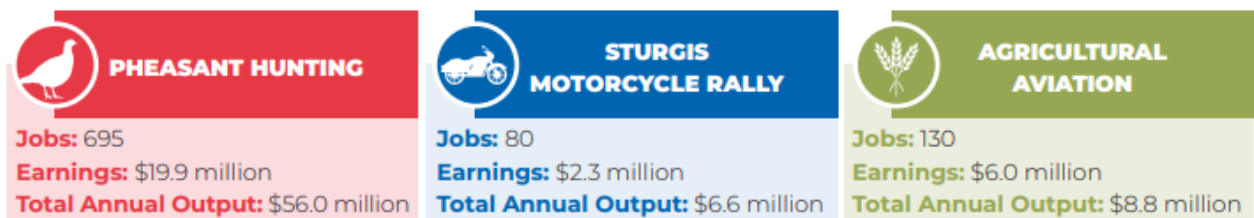
Cattle and calf movements may generate over 30,000 truck equivalent trips per year in single movements from points of production. This is a minimum estimate based on typical load capacity of an 18-wheel configuration. Livestock move using other configurations, for example, it is common to move livestock by pick-up trailer. Livestock movements are probably much higher because there are often multiple movements per year using various vehicle types that are not tracked by regulatory means. Movements for hogs and sheep are less common than cattle.

Rail transportation is much more energy efficient in reducing emissions than trucks. The Department has used loans and value capture strategies to encourage shuttle transfer facilities at Yankton and Presho. The location of key facilities in relationship with commodity and animal production points are illustrated in figure 4-7. SDDOT will continue to monitor truck traffic in relationship with these intermodal facilities and invest in rail improvements to aid decision-making as needs grow and funding allows.

Figure 3-7 Air Contributions to Economic Growth

Unique Activities in South Dakota

South Dakota airports support several special activities across the state by serving as gateways to one-of-a-kind pheasant hunting experiences and the world-famous Sturgis Motorcycle Rally. Both events attract tens of thousands of visitors to the state each year, many of whom opt to travel through one of the system airports. Airports in South Dakota not only support heavy seasonal traffic for unique tourist experiences, but also play a crucial role in one of South Dakota's most important industries: agriculture. Almost half of the airports in the system support this industry, serving as bases for aerial agriculture applicators that apply fertilizers, crop protectants, and more to the state's cropland. South Dakota airports host some of the largest agricultural firms in the country that work hard alongside farmers to increase crop yields that can lead to increased value of exported commodities. The impacts of these three special activities are presented below. These figures are accounted for in the total system impact of \$907 million but are separated here for clarity.



The Pierre and Watertown airports have exceeded the 10,000 passenger enplanements thresholds since the NPIAS was last published. South Dakota has made recommendations for re-classification to update Pierre and Watertown Airports to primary airports, as shown in Table 4-5. Air freight continues to grow in SD especially Sioux Falls where expansion is being considered to accommodate forecasted air cargo tonnage which is anticipated to double in the next 20 years.

Table 4-5: Recommended Re-Classifications to Primary Airports in South Dakota

Associated City	Airport Name	FAA ID	2019 NPIAS Classification	2018 Annual Enplanements	Percent of National Enplanements (887,027,038)	2020 SDSASP Recommended NPIAS Classification
Aberdeen	Aberdeen Regional	ABR	Nonhub	28,337	0.003%	Nonhub
Pierre	Pierre Regional	PIR	Nonprimary Regional	33,903	0.003%	Nonhub
Rapid City	Rapid City Regional	RAP	Nonhub	297,133	0.034%	Nonhub
Sioux Falls	Sioux Falls Regional/ Joe Foss Field	FSD	Small Hub	530,931	0.060%	Small Hub
Watertown	Watertown Regional	ATY	Nonprimary Regional	12,794	0.001%	Nonhub

Retrieved from: https://dot.sd.gov/transportation/aviation/aviation-systems-plan#listItemLink_1605.

CHAPTER 5: Strategies

Introduction

This chapter outlines the strategies that the SDDOT will be taking to address the national freight goals. Strategies that the SDDOT will be using range from monitoring the current freight trends to improving the state of Intelligent Transportation Systems (ITS) technology. Strategies in this chapter will be grouped into data gathering, planning, and implementation categories.

South Dakota's Freight Improvement Strategies

South Dakota developed strategies to address the national freight goals, South Dakota Long Range Plan goals, and the State Freight Plan objectives identified in Chapter 1. The following strategies represent the primary elements that aid South Dakota in planning and selecting freight projects. Strategies are grouped into logical phases as Data Gathering, Planning, and Implementation.

Data Gathering

Use FHWA travel time data to monitor freight movements for bottlenecks and develop proposed solutions.

South Dakota's data shows no identified bottlenecks on the National Highway System, and none are predicted in the 20-year planning horizon. South Dakota will continue to use travel time on the National Highway System to compare expected travel times to observed travel times. South Dakota will monitor mainline, intersection, and interchange capacity and geometrics where bottlenecks could occur. Winter weather events have the greatest impact on travel time and South Dakota will monitor ways to improve travel time during and after events. Snow fencing has been installed in areas of known drift impacts to travel and results will be closely observed for implementation at additional sites.

Explore ITS technology to enhance safety and security.

South Dakota will explore ways to use ITS technology to improve safety and security. Some of the ways South Dakota has implemented ITS technology to improve safety and security are:

- 511 and Safe Travel USA for road and traffic conditions
- Cameras and weather stations at various locations throughout the state
- Cameras at rest areas
- Dynamic message signs
- Tire anomaly sensors

South Dakota will continue to explore options to enhance safety and security using ITS technology.

Use pavement and bridge management systems and Transportation Asset Management Plan to prioritize improvements on the freight network.

South Dakota will continue to use its pavement management system and bridge management system to program projects. The pavement management system determines the best treatment for pavements to maximize the efficient use of highway funds. The bridge management system manages bridge improvements to maximize the efficient use of highway funds. South Dakota developed performance

measures and targets for pavements and bridges published in the Transportation Asset Management Plan and reported to FHWA. The performance measures identified in TAMP will support the freight plan and continue to use the pavement and bridge management systems to prioritize infrastructure improvements in the Statewide Transportation Improvement Program. The TAMP can be found at: <https://dot.sd.gov/media/documents/SDDOT2019TAMPFHWAsubmittalrevised8-28-2019.pdf>

Monitor freight trends to better support freight decision-making.

South Dakota will continue to monitor freight trends to aid in the decision-making process. Agriculture production continues to increase in South Dakota. The increases of commodity unloading and loading facilities will need to be monitored for transportation issues. Most of these facilities are being built along the state highway system and rail network.

South Dakota will continue to monitor freight travel through South Dakota to the Bakken oil fields in North Dakota. The amount of freight traffic fluctuates based on market forces. South Dakota will monitor the freight movement to aid in the decision-making process.

Improve data at critical freight links.

With the implementation of performance-based planning, South Dakota reviews data needs and continues to improve collection, analysis, and dissemination of data that aids in the decision-making process. The use of automated traffic recorders, National Performance Management Research Data Set (NPMRDS), and crash data analysis are subject to continuous improvement. ITS infrastructure improvements further aid in improving data collection.

Planning

Identify deficiencies that limit connectivity to freight destinations and develop proposed solutions.

South Dakota will monitor growth and locations of freight destinations and their relationship to the transportation system. Examples are new industrial parks and grain elevators. South Dakota will continue to identify deficiencies and mitigate solutions as part of the transportation planning process in place.

Support the Aviation and Rail Plans.

The South Dakota Freight plan supports the aviation systems plan and rail plan goals and strategies. The National Highway System provides access to intermodal connections to air and rail facilities which provides freight access to the world. South Dakota manage the transportation system using freight strategies and asset management tools to ensure the connections to the intermodal facilities are maintained. The state Rail Plan can be found here: <https://dot.sd.gov/transportation/railroads/state-rail-plan> and the Aviation Plan can be found here: <https://dot.sd.gov/transportation/aviation/aviation-systems-plan>

Conduct necessary freight corridor studies to improve freight movements.

South Dakota will continue to monitor freight corridors and initiate studies where deficiencies are identified. As the interstate corridors serve as the most critical freight corridor, every 10 years South

Dakota conducts a Decennial Interstate Corridor Study to look at the entire Interstate system including interchanges. South Dakota uses this tool to program projects and identify corridors or interchanges for detailed study. SDDOT's last study was completed in 2020 and is currently working on a study on I29 from the Iowa-South Dakota state line to the Jefferson City, SD exits 1 through 9. Freight, especially truck and rail freight movements are considered on all other planning studies, though the context may focus on passenger vehicles and pedestrian movements. Regardless, efficient freight movements are considered during the transportation planning process. Freight considerations are also given during interchange-specific studies such as Exit 86 and Exit 133 of I29 and during design of interchanges, such as I90 Exit 406 and I229 Exit 9.

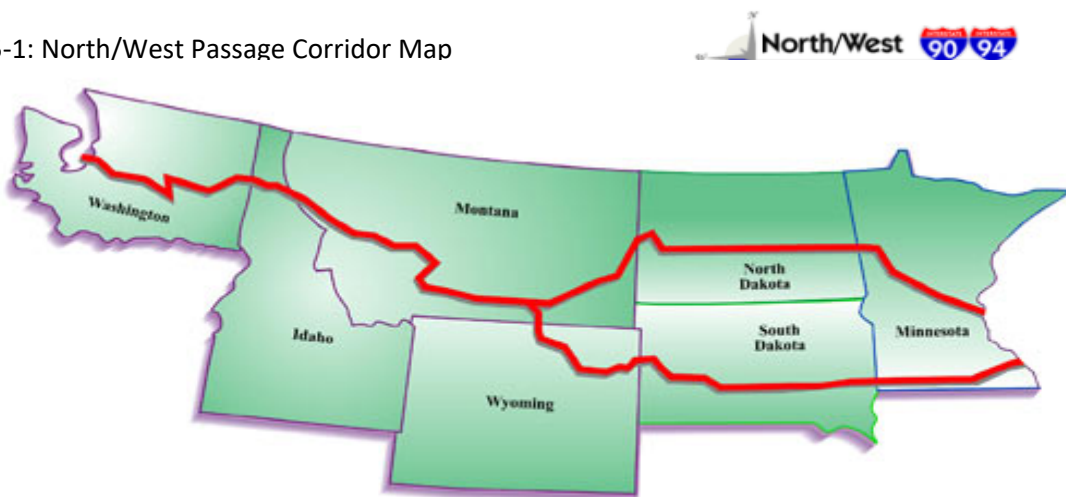
Participate in multistate freight planning.

The surrounding states generate freight affecting South Dakota. North Dakota has the Bakken oil fields and Minnesota has ports and rail terminals. South Dakota will continue to monitor freight movement through the state. Freight planning that includes freight which passes through to destinations outside of South Dakota will require coordination with other states. South Dakota participates in multistate freight planning that aids short- and long-range freight planning through the North/West Passage Freight Task Force and as a stakeholder during neighboring states' plan updates. The North/West Passage Freight Task Force will be conducting a Truck Parking Information Management Systems (TPIMS) assessment, a multi-state effort along the I90 corridor in 2023.

Improve understanding of international and Interstate corridor movements.

South Dakota's economy relies heavily on interstate and international freight movement. South Dakota will continue to monitor this movement and could study interstate and international freight movements and how they affect South Dakota's freight transportation system. The North/West Passage Freight Task Force consists of representatives from Minnesota, North Dakota, South Dakota, Montana, Wyoming, Idaho, and Washington; focusing on mutual interests along the I90 and I94 interstate corridors, shown in Figure 5-1. This also supports the improvement of flexibility of States to support multi-State corridor planning. Commercial motor vehicle parking facilities assessment is just one example of the projects the task force discussed.

Figure 5-1: North/West Passage Corridor Map



Implementation

Use Intelligent Transportation System (ITS) technology to decrease delay, idle time, and emissions for freight movers.

ITS technology can be a way to keep freight moving more efficiently. South Dakota will continue to use ITS technology to keep freight moving efficiently and have less idle time. South Dakota will include ITS technology when conducting studies on the Interstate highway system or on the freight network where ITS technology could be used to improve freight movement. South Dakota will explore potential ITS enhancements that could improve freight movement.

Examples of technologies South Dakota has implemented to decrease delay and idle time, which also decreases emissions, are:

- Electronic screening
- Automated commercial vehicle permitting
- Travel information for commercial vehicle operators
- Autonomous freight movement is being tested in the United States. South Dakota continues to monitor the progress to identify measures that may assist in autonomous freight movement through and within the state as advances in its use are made.

Use the Strategic Highway Safety Plan strategies to reduce fatalities and serious injury crashes.

South Dakota has identified performance targets, goals, and strategies in the Strategic Highway Safety Plan (SHSP) to decrease serious injury and fatality crashes. The freight plan supports the goals and strategies identified in the SHSP to reduce fatalities and serious injury crashes to help achieve the performance targets.

Identify truck parking deficiencies and improve access to truck parking facilities to reduce fatigue on freight drivers.

South Dakota completed a study that identified current and future truck parking needs at the Interstate rest areas. Changes in national logbook monitoring requirements could create truck parking issues. South Dakota incorporated a truck parking element into the 2020 Decennial Interstate Corridor Study (ICS), which helped to identify locations of unauthorized truck parking within a mile of the interstate corridors in the state, which could help identify areas for the expansion of truck parking facilities.

Use asset management to maintain rest area security cameras and lighting.

South Dakota uses a building management system to manage rest area assets. The state will use this tool to maintain the rest area security cameras and lighting to enhance safety and security at the rest areas.

Monitor future freight truck parking needs at rest areas.

Correlating Strategies with Goals

From the previous section of this chapter, SDDOT's strategies can be directly linked with National Freight Goals. The correlation between the strategies and national freight goals is continually demonstrated during the data gathering, planning, and implementation of these strategies.

Table 5-1: Correlating Data Gathering Strategies with National Freight Goals

SDDOT's Data Gathering Strategies	National Freight Goals						
	Improve economic efficiency, productivity, and competitiveness	Reduce Congestion, Bottlenecks, and cost of Freight Transportation	Improve Safety, Security, and Resiliency	Improve State of Good Repair	Use Advanced Technology, Innovation, and Competition	Performance Management and Accountability	Reduce Environmental and Community Impacts
Use FHWA travel time data to monitor freight movements for bottlenecks and develop proposed solutions		X				X	
Monitor freight trends to better support freight decision-making	X	X	X			X	
Explore ITS technology to enhance safety and security			X		X		
Use pavement and bridge management systems and transportation asset management plan to prioritize infrastructure improvements on the freight network	X	X	X	X		X	X
Improve data at critical freight links	X	X	X	X	X	X	X

Table 5-2: Correlating Planning Strategies with National Freight Goals

SDDOT's Planning Strategies	National Freight Goals						
	Improve economic efficiency, productivity, and competitiveness	Reduce Congestion, Bottlenecks, and cost of Freight Transportation	Improve Safety, Security, and Resiliency	Improve State of Good Repair	Use Advanced Technology, Innovation, and Competition	Performance Management and Accountability	Reduce Environmental and Community Impacts
Identify deficiencies which limit connectivity to freight destinations and develop proposed solutions	X	X	X				
Support the Aviation and Rail Plans	X					X	X
Conduct necessary freight corridor studies to improve freight movements	X	X	X	X	X	X	X
Participate in multistate freight planning	X	X	X		X	X	
Improve understanding of international and interstate corridor movements	X	X	X		X	X	

Table 5-3: Correlating Strategy Implementation with National Freight Goals

SDDOT's Strategy Implementation	National Freight Goals						
	Improve economic efficiency, productivity, and competitiveness	Reduce Congestion, Bottlenecks, and cost of Freight Transportation	Improve Safety, Security, and Resiliency	Improve State of Good Repair	Use Advanced Technology, Innovation, and Competition	Performance Management and Accountability	Reduce Environmental and Community Impacts
Use ITS technology to reduce delay, idle time, and emissions	X	X	X		X	X	X
Use the Strategic Highway Safety Plan strategies to reduce fatalities and serious injury crashes			X		X	X	
Identify truck parking deficiencies and improve access to truck parking facilities to reduce fatigue on freight drivers	X		X				
Use asset management to maintain rest area security cameras and lighting			X	X			
Monitor future freight truck parking needs at rest areas		X	X			X	

Summary

During Project Development, projects are coordinated between the SDDOT and local governments to improve condition, capacity, and safety, which in turn considers impacts and volumes on the entire transportation network. Consideration of extreme weather events and mobility are incorporated into a project's design. Grade raises of susceptible corridors prone to flooding are programmed to further add resiliency to the transportation network. In rest areas, additional truck parking helps reduce excessive truck movements looking for parking.

In an effort to improve air quality and reduce carbon production, SDDOT continues to focus on energy efficiency for construction projects, traveling public, freight haulers, and the infrastructure itself. One specific example includes SD511 which advises travelers of road conditions, extreme weather events and other incidents which may impact travel time reliability. Flooding and significant run-off can have impact on the transportation system which also impacts freight movement. SDDOT has and continues to enhance design criteria and planning to reduce the potential of these events or extreme weather impacting freight movement.

CHAPTER 6: Projects and Funding

Introduction

Freight projects are identified in this chapter in accordance with the Fast Act and as continued in under the IIJA/BIL. This chapter also presents a financial plan showing how National Highway Freight Program (NHFP) funds will be allocated.

Project Eligibility

NHFP funds can only be used on the following network:

- Primary Highway Freight System (PHFS) Map 6-1
- Critical Rural Freight Corridors (Maximum of 600 miles)
 - Designation of the state's CRFCs is in progress
- Critical Urban Freight Corridors (Maximum of 75 miles)
 - Designation of CUFCs is being coordinated with the Metropolitan Planning Organizations in the state, including STRAHNET local connectors
- Portions of the Interstate not designated as part of the PHFS

Project Selection

Projects utilizing NHFP funds must be programmed in the State Transportation Improvement Program (STIP) and are shown in Figure 6-1. Each spring, several internal pre-programming meetings are held to prioritize and program transportation projects. During these pre-programming meetings, SDDOT management and staff discuss transportation needs and resources available to meet the department's goals.

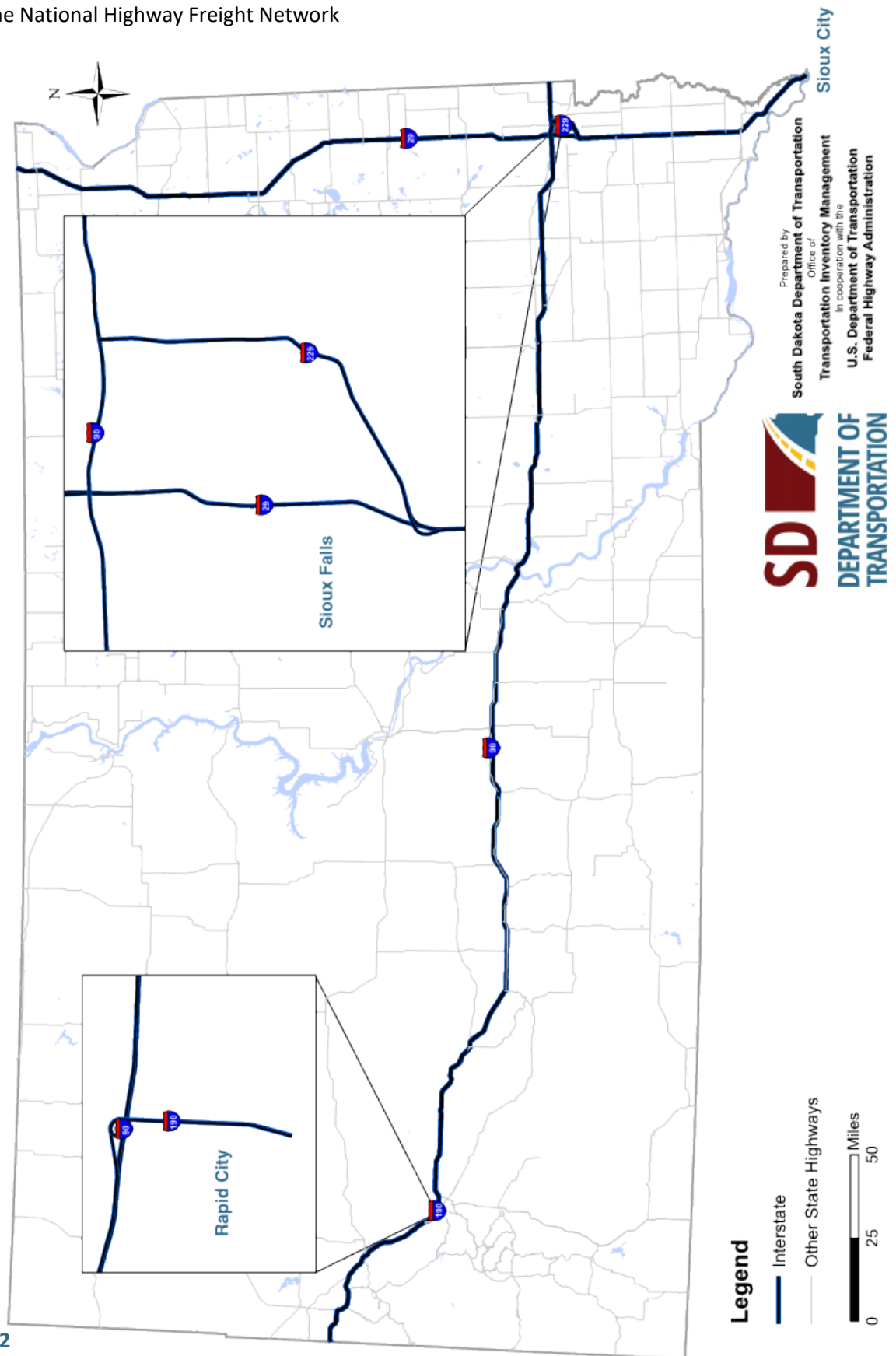
Projects are gleaned from the STIP that support the goals outlined in this plan and further examined for their eligibility under NHFP funding. Ideally, the selected projects have a clear connection to freight, but in practice many state-sponsored projects support freight indirectly or directly given the rural nature of the state and agriculture industry's prevalence in the state.

The National Highway Freight Program (NHFP) funding is one source of federal funding South Dakota receives for highway use. The freight plan requires South Dakota to identify and fiscally constrain projects using NHFP funding. There are multiple items required to be certified prior to letting a project. Some of the certifications that can delay project delivery are Right of Way acquisition, environmental permitting, design changes, wetland mitigation, tribal land agreements, and utility relocations. South Dakota works very hard to ensure the project is let in the year it is programmed, but sometimes unforeseen delays can occur that stall the certifications needed prior to beginning construction.

Because of possible project delays, South Dakota is taking the approach of showing two scenarios to fiscally constrain freight projects. If the prioritized project in Scenario 1 cannot meet the programmed year, funds can be shifted to the project in Scenario 2 to prevent a lapse of NHFP funding. National Highway Performance Program (NHPP) funding is the most likely other federal source used to make up the remaining estimated cost of projects identified in the freight plan. State funding will be used for the match. NHFP projects that are listed in Table 6-1.

Map 6-1: The National Highway Freight Network

National Highway Freight Network - South Dakota



South Dakota Department of Transportation

Freight Investment Plan 2023-2027

A B C D E F

							Scenario 1			Scenario 2		
Project Number	PCN	Location of Project	Type of Improvement	Fed Funds	FY	Total Cost	NHFP funds	Other Federal Funding	State Funds	NHFP funds	Other Federal Funding	State Funds
IM 0291(132)27	06DL	I29 N & S - From Exit 26 near Vermillion north 10 miles	AC Resurfacing, Extend Structure RCBC, Pipe Work	16.760	2023	18.710	10.260	6.500	1.950			
Totals 2023:							10.260	6.500	1.950			
IM 0902(18)101	035F	I90 E & W - Strs 33 E of the Wasta Interchange Over Bull Ck	Structure	14.180	2024	15.980	9.970	4.210	1.800			
Totals 2024:							9.970	4.210	1.800			
IM-B 2292(101)4	05HN	I229 - Exit 4 (Cliff Ave) in Sioux Falls	Interchange Reconstruction	47.360	2025	54.859	10.171	37.189	7.499			
Totals 2025:							10.171	37.189	7.499			
Project Number	PCN	Location of Project	Type of Improvement	Fed Funds	FY	Total Cost	NHFP funds	Other Federal Funding	State Funds	NHFP funds	Other Federal Funding	State Funds
P 0044(207)290***	05X0	SD44 - Over Missouri Rv (Plate/Winner)	Replace Str Bridge, Grading, Interim Surfacing	73.369	2026	86.612	10.586	62.783	13.243			
IM 0901(187)44	034J 0A9K	I90 E & W - Fm E of Exit 44 to W of Exit 48; Exit 46 (Elk Creek Rd)	Grading, PCC Surfacing, Interchange Reconstruction	66.090	2026	85.893				10.586	55.504	19.803
Totals 2026:							10.586	62.783	13.243	10.586	55.504	19.803
P 0044(207)290***	05X0	SD44 - Over Missouri Rv (Plate/Winner)	Replace Str Bridge, Grading, Interim Surfacing	73.792	2027	87.111	11.009	62.783	13.319			
IM 0901(198)32	06DN	I90 E - Fm Exit 32 (Sturgis) to W of Exit 37 (Pleasant Valley)	Grading, PCC Surfacing, Replace Str Bridge, Reconstruct Interchange (Exit 34)	40.021	2027	53.264				11.009	29.012	13.243
Totals 2027:							11.009	62.783	13.319	11.009	29.012	13.243

LEGEND

A = Fiscally constrained federal share as programmed
B = Total Project Cost
C = Amount from Allocation
D = Gap Coverage from other funding
E = State Share
F = Queued as Alternate NHFP Project

AMENDED

= Funds Expended
 Blue = Project Changes
 *** = Added Project, funding spans 3 construction years; 3rd year is outside of the State Freight Plan's planning horizon

South Dakota State Freight Plan

Amended Table 6-1

Appendix A summarizes methods used to encourage public involvement for input. The South Dakota Department of Transportation relied heavily on virtual methods and strong media push outs to reach a broad number of stakeholders throughout the state.

A survey questionnaire was developed and handed out at in-person public meetings to attendees that were interested. Approximately 35 hard copy questionnaires were distributed, four (4) completed surveys of this method were submitted. Results are in Appendix B.

An on line survey was developed to expand upon the 2-page hard copy questionnaire. The draft Freight Plan web page was developed and the survey was activated.

A virtual public meeting was recorded and posted along with the draft Freight Plan on the web page that also included a comment portal while the survey remained active. A press release was issued.

The Sioux Falls Area, Rapid City Area, and Sioux City Area Metropolitan Planning Organizations were notified of the survey and the draft plan as being open for public comment.

Informational announcements were made at the Sioux Falls Area MPO meetings in July and August 2022. An informational live presentation was given at the Rapid City Area MPO in August 2022. Verbal comments were addressed in real time. Participants were contacted upon request.

South Dakota Department of Transportation's website, Facebook, and Twitter accounts posted the draft Freight Plan announcement. The Rapid City MPO also posted on its website. Sioux Falls Area MPO emailed the press release to interested parties.

Other media outlets picked up on the press release and published portions of the press release along with the web page address to encourage participation, targeting the trucking and railroad industries through The Trucker and Progressive Railroading websites.

Analysis of outreach by visitor count is on page A-2.

SDDOT Virtual Public Involvement Statistics:

Corresponding graph shown below. Please note, this data excludes state employee traffic.

- Total unique page views: **165**
- Average time on page: **3 minutes and 55 seconds**
- Monday Aug. 8, 2022, was the highest spike in visitors to the page with 32 unique page views.

Social Media Statistics:

Three Posts were made to promote the State Freight Plan in August.

Social Media platforms used: Facebook, Instagram, LinkedIn, and Twitter on Aug. 3, 12, and 22, 2022.

Twitter and Facebook had the largest reach.

Highest impact posts for Facebook and Twitter were experienced on the days below:

Aug. 12, 2022

- Facebook
 - o 8,238 People Reached
 - o 281 Post Engagements
 - o 10 Shares

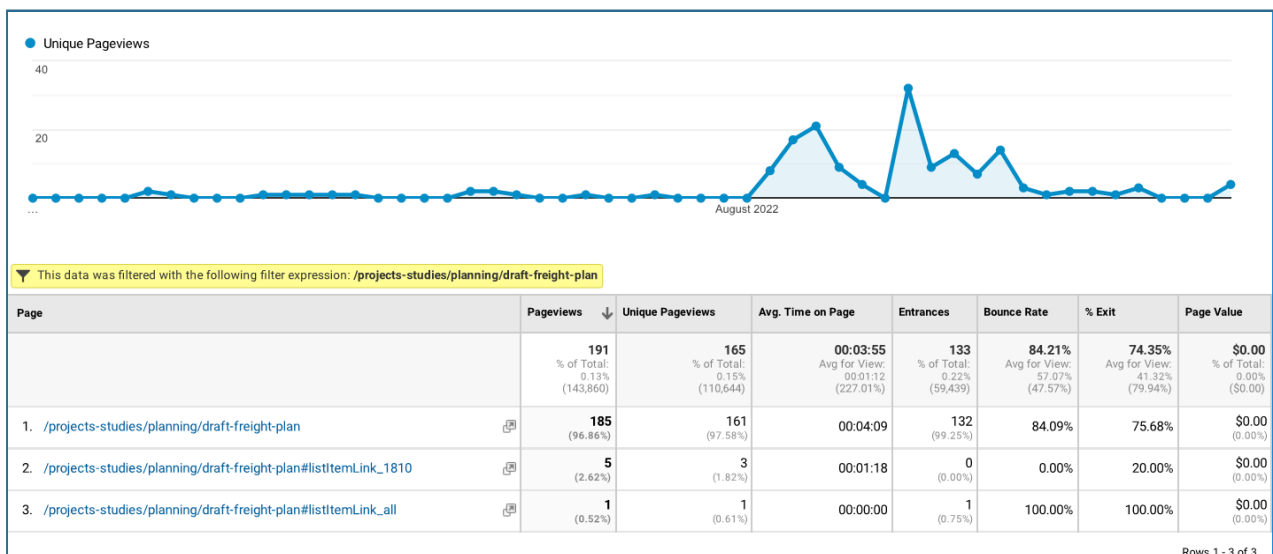
Aug. 22, 2022

- Twitter
 - o 626 Impressions
 - o 8 Post Engagements
 - o 3 Link Clicks

Social Media Totals Overall:

Total People Reached: **11,909**

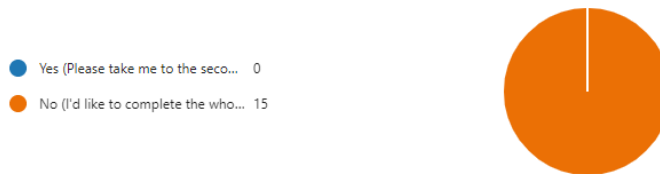
Total Post Engagements: **329**



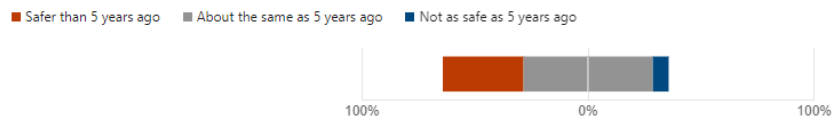
Appendix B summarizes public input as received during the outreach effort either through the plan's web page on the South Dakota Department of Transportation's website or by other means as noted.

A survey questionnaire was posted on line and distributed by hand; 15 participated in the on line outreach method, while 4 submitted hand-written surveys; public input has been summarized as follows:

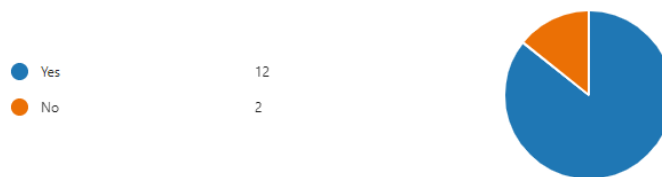
1. Have you previously completed the first portion of the survey on a handout or postcard?



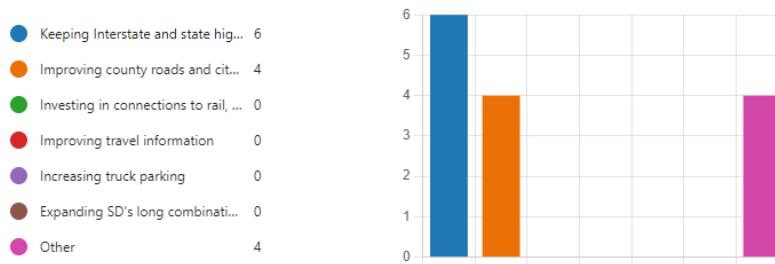
2. In the last 5 years, do you feel SD's highways are safer, about the same, or not as safe?



3. Do you favor temporarily lowering the speed limit on Interstate highways during severe winter storms to reduce crashes?



4. Which investments by the State of South Dakota do you feel would help your operation the most?



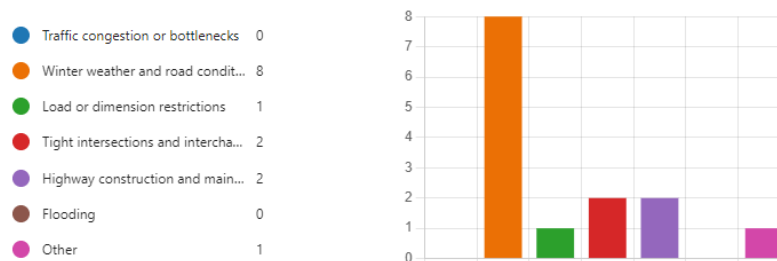
5. If you could recommend one action to the South Dakota Department of Transportation for improving freight movement, what would it be?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	Improving access to travel updates (construction)
3	anonymous	Less carrier enforcement
4	anonymous	Better information on road closures and updates on when it will be open.
5	anonymous	Install truck bypass in Custer.
6	anonymous	Invest more money and incentives for railway lines. SD lacks the ability to move large amounts of goods on rail compared to other states
7	anonymous	More rail to Worthington Mn.
8	anonymous	My selection above was to "Keeping Interstate and state highways smooth and in good repair", but I also feel that it is important to facilitate SD's long combination vehicle routes in order to keep freight cost as low as possible.
9	anonymous	Ensure the roads are safe and well-maintained. We need to be able to move freight and we want to encourage drivers to want to move it in SD. If the roads are not maintained, this is hard on a driver/carrier's equipment. Carriers/drivers have choices on what lanes they work and this is driven by their ROI. If roads are not safe or well-maintained, this will increase costs for the carrier/driver.

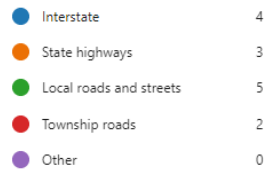
6. What issues have you experienced with large trucks on the highway in South Dakota?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	None!
3	anonymous	None
4	anonymous	Speeding vehicles the don't give trucks room. Only a few cause problems for everyone else.
5	anonymous	Need to get them out of town if they have no business to do in town.
6	anonymous	Over width trucks make other drivers feel uncomfortable on the interstates when passing on bridges
7	anonymous	To Fast!!
8	anonymous	Tarps should be a mandatory requirement for trucks hauling aggregates.
9	anonymous	none

7. What are the most frequent or significant impediments to your travel in South Dakota?



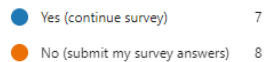
8. Where or on which types of roadways (Interstate, other state highways, and local roads and streets) are these problems most severe?



9. What could the State of South Dakota do to reduce your travel delays?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	Features like the DDI as the busiest interactions off the Interstate system (Rapid City/Sioux Falls) are great innovative ways to address concerns.
3	anonymous	Close all the scales
4	anonymous	More troopers to control bad actors.
5	anonymous	Update the 511 more often
6	anonymous	I understand that delays come with highway construction and repairs. Contractors should not be allowed to set up lane closures with out any work going on within the closure.

10. Are you willing to answer more detailed questions?



The hand out survey also contained questions #1-10 with a QRC to encourage further participation on line.

The remaining on line survey questions (#11-40) were answered by three (3) participants, as follows:

11. What kinds of commodities do you produce or haul?

ID ↑	Name	Responses
1	test	test
2	anonymous	grain
3	anonymous	None
4	anonymous	Aggregates, rock, sand

12. Do you expect the kinds of commodities you produce or haul to change in the next 5 – 10 years?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	yes, also an increased volume
3	anonymous	NA
4	anonymous	No

13. How many tons do you produce or ship per year?

ID ↑	Name	Responses
1	anonymous	
2	anonymous	2000+
3	anonymous	NA
4	anonymous	10,000,000 tons

14. Do you expect the quantity of commodities you produce or ship to change in the next 5 – 10 years?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	yes-increase
3	anonymous	NA
4	anonymous	Yes, increase

15. Are your shipments uniform through the year or seasonal?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	mostly throughout the year
3	anonymous	NA
4	anonymous	Seasonal, shipped more frequently during 2nd and 3rd quarters.

16. Is it difficult for you to meet the demand during peak periods?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	no
3	anonymous	NA
4	anonymous	At times

17. What type of equipment (single unit, tractor-semitrailer, double) does your firm operate?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	tractor-trailer
3	anonymous	Single end-dumps, tractor single trailer, tractor double trailer

18. How many units do you operate?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	1
3	anonymous	70

19. How do you expect the size or composition of your fleet to change in the next 5 – 10 years?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	additional capacity to a single power unit, i.e. doubles or more axels
3	anonymous	Increase

20. How much of your travel is within SD?

0-25%	0
20%-50%	0
50%-90%	4
100% of your travel is inside So...	2



21. Do you expect your destinations to change in the next 5 – 10 years?

Yes	0
No	6



22. What mix of highways (Interstate, other state highways, and local roads and streets) do you travel on?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	all listed
3	anonymous	I29, I229, I90, SD38, SD42, SD11, SD100
4	anonymous	Mostly state highways, secondly local roads and streets, thirdly interstate

23. Do you expect the types of highways or the length of your trips to change in the next 5 – 10 years?



24. Where do you get information on road and weather conditions, work zones, and commercial vehicle restrictions?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	511
3	anonymous	511 app
4	anonymous	I am not sure

25. Which types of information are most valuable to you?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	Road conditions
3	anonymous	na

26. How useful would information about truck parking availability be to you?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	minimal
3	anonymous	None
4	anonymous	not useful

27. What improvements would make travel information more useful to you?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	More camera locations to view in the 511 app

28. What is the best way (website, mobile app, in-vehicle device, other) to make information available to you?

Website	2
Mobile app	3
In-vehicle device	1
Other	0



29. What effect has the increase in e-commerce had on your operation?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	none
3	anonymous	na

30. How do you expect this to change in the next 5 – 10 years?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	unsure
3	anonymous	na

31. Do you plan to change your operation to respond to this change?

Yes	2
No	2



32. Do any regulations impede your ability to move freight efficiently?

Yes	2
No	3



33. Do differences between South Dakota's regulations and those of neighboring states cause you difficulty?



34. If you haul oversize/overweight loads, do you feel South Dakota's permitting system is easy to use?



35. What regulatory or administrative changes would improve your ability to operate?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	na

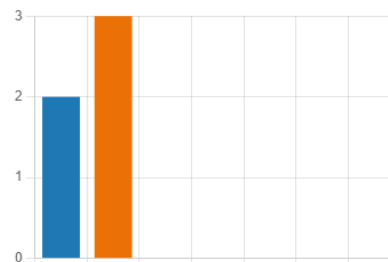
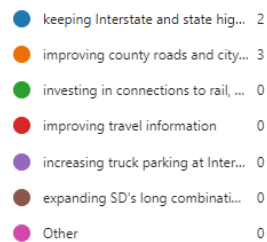
36. What concerns do you have about current and future operating costs?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	that costs will only increase
3	anonymous	Fuel costs, tire costs, labor costs

37. What could the State of South Dakota do to help reduce your fuel consumption?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	reduced speeds on interstate highways

38. Which investments by the State of South Dakota do you feel would help your operation the most?



39. If you could recommend one action to the South Dakota Department of Transportation, what would it be?

ID ↑	Name	Responses
1	anonymous	test
2	anonymous	Lower trucks speeds on interstate highways and state highways by 5-10 mph

40. If you would like to be contacted regarding the questions above, please select yes and fill in your information below.

☐ Yes 1
☐ No 3



Four (4) hand-written surveys were completed and submitted, using questions #1-10 of the on line questionnaire for hand outs, shown below; input is summarized on the next page.

STATE FREIGHT PLAN QUESTIONNAIRE

SD DOT FREIGHT PLAN

SAFETY:

In the last 5 years, do you feel SD's highways are safer, about the same, or not as safe?

☐ Not as safe as 5 years ago
 ☐ Same as 5 years ago
 ☐ Safer

Do you favor temporarily lowering the speed limit on Interstate highways during severe winter storms to reduce crashes?

☐ Yes
 ☐ No

INVESTMENTS:

Which investments by the State of South Dakota do you feel would help your operation the most?

☐ Keeping Interstate and state highways smooth and in good repair
 ☐ Improving travel information
 ☐ Other (please describe):
☐ Improving county roads and city streets
 ☐ Increasing truck parking
☐ Investing in connections to rail, air, or pipeline facilities
 ☐ Expanding SD's long combination vehicle routes

If you could recommend one action to the South Dakota Department of Transportation, for improving freight movement, what would it be?

Your thoughts here:

What issues have you experienced with large trucks on the highway in South Dakota?

Your thoughts here:

RELIABILITY:

What are the most frequent or significant impediments to your travel?

☐ Traffic congestion or bottlenecks
 ☐ Tight intersections and interchanges
 ☐ Other (please describe):
☐ Winter weather and road conditions
 ☐ Highway construction and maintenance
☐ Load or dimension restrictions
 ☐ Flooding

Where or on which types of roadways (Interstate, other state highways and local roads and streets) are these problems most severe?

☐ Interstates
 ☐ Local Roads and Streets
 ☐ Other (please describe):
☐ State Highways
 ☐ Township Roads

What could the State of South Dakota do to reduce your travel delays?

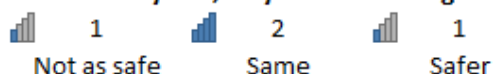
Your thoughts here:

Website: <https://dot.sd.gov/projects-studies/planning/draft-freight-plan>

SCAN HERE TO LEAVE YOUR INPUT ONLINE!

SD DOT FREIGHT PLAN

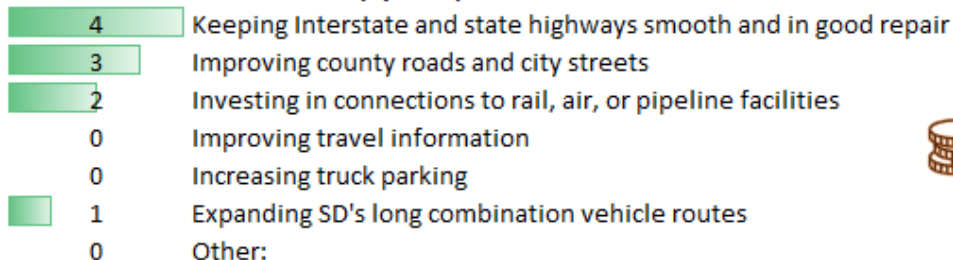
In the last 5 years, do you feel SD's highways are:



Do you favor temporary speed limit reductions during severe winter events?

4
Yes No *Note: One respondent marked "No" but wrote in "Only for winter storm"*

Which investments would help your operation the most?



Action recommended: (hand written)

Counter: 1

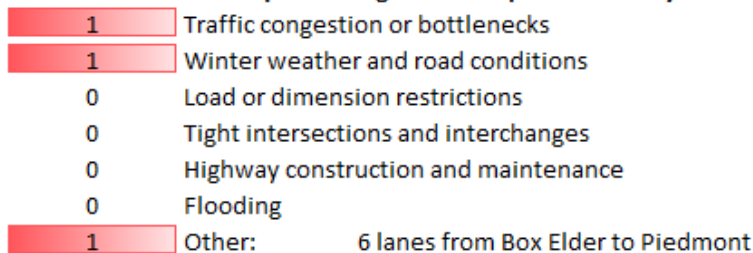
1st priority is rail improvement and passenger
2nd priority truck safety
3rd priority is air transportation and air freight enhancement

What issues have you experienced with large trucks on SD highways?

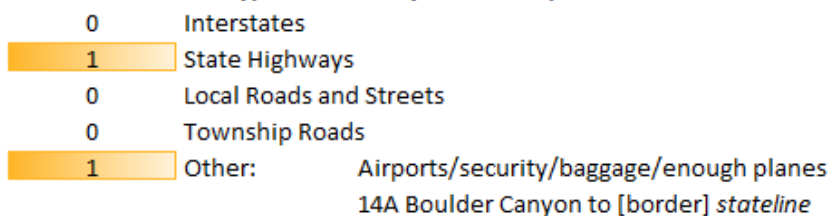
Counter: 1

Price of diesel fuel inhibits tourist RV, etc

What are the most frequent or significant impediments to your travel?



Where or on which types of roadways are these problems most severe?



What could the State of SD do to reduce travel delays?

Counter: 0

Comments:

0
0
0

2017 Commodity Flow Survey Standard Classification of Transported Goods (SCTG)

SCTG COMMODITY CODES

INTRODUCTION

This listing provides the 5-digit Standard Classification of Transported Goods (SCTG) commodity codes that you will use to complete column (F) of the shipment characteristics, Item F.

When a single shipment includes more than one commodity use the 5-digit code for the commodity with the greatest weight.

It is important that you use the 5-digit SCTG codes in this listing to classify your commodities. This enables the Census Bureau to uniformly aggregate and present the data produced from the CFS.

HOW TO USE THIS LISTING

A quick reference of selected commodities in alphabetic order follows to help you find the appropriate 5-digit SCTG code.

Find the major group description (in bold type) that best describes the shipment and turn to the indicated section and page. Note: subgroups are included below the major groups as a guide for locating the correct major group.

To assist in finding the correct 5-digit SCTG code, exclusions or inclusions are noted using italics, in parentheses. The numbers in the list of exclusions refer to the first 3, 4, or 5 digits of the correct SCTG code. For example: (*excludes electrical equipment 359xx*). Under SCTG code 359xx the correct 5-digit code may be 35911 (*Primary cells and batteries*), or 35912 (*Secondary cells and batteries, etc.*).

The term "includes" is often followed by **examples** of products in that particular product definition. These lists are **not** all inclusive.

Machinery Parts: In general, machinery parts are included in the same SCTG code as the machinery for which they are parts. For example, product code 36351 includes motorcycles, and mopeds, and their parts. Exceptions to this rule are noted where they occur, for example: SCTG 37210, Aircraft, *excludes parts*.

ALPHABETIC QUICK REFERENCE GUIDE

The following guide is intended to assist you in identifying the appropriate commodity section and its location within this booklet. It is not intended to be a comprehensive index of commodities and codes. Please refer to the more detailed descriptions contained in the Commodity Booklet and locate the appropriate 5-digit code matching that description.

Commodity or Product	Section	Page(s)	Commodity or Product	Section	Page(s)
Acids	20	10	Computer software	35	16
Additives for mineral oils	23	11	Computers	35	16
Agricultural machinery	34	15	Concrete pipes	31	13
Air-conditioning	34	14	Condiments	07	7, 8
Aircraft and spacecraft	37	17	Converters	35	15
Alcohol, consumable or denatured	08	8	Dairy products	07	7
<i>See ethanol for fuel alcohol</i>			Denatured ethyl alcohol	08	8
Alcohols, acyclic	20	10	Dishwashers	34	15
Aluminum	32	13	Dog food	04	6
Animal feed	04	6	Doors	26	12
Animals and fish (live)	01	5	Edible preparations	07	7, 8
Armored fighting vehicles	36	17	Eggs	04	6
Arms, including ammunition	40	18	Eggs, processed	07	8
Articles of base metal	33	14	Electric domestic appliances	35	15
Artificial body parts	38	18	Electro-mechanical domestic appliances	35	15
Asbestos, products of	31	13	Electronic components and parts	35	16
Aviation turbine fuel	17	9	Electro-thermic domestic appliances	35	15
Baked products	06	6	Entertainment products, electronic	35	15
Bakery products	06	6	Essential oils	23	11
Beer	08	8	Ethanol, fuel alcohols	17	9
Beverages, alcoholic	08	8	Excavating equipment	34	15
Beverages, non-alcoholic	07	7, 8	Fats and oils and their cleavage products	07	7
Bicycle and other cycles parts	36	17	Fats and oils, modified	07	7
Bicycles and other cycles	36	17	Fertilizers	22	10
Blank books	29	12	Film, photographic or cinematographic film	23	11
Boilers	34	14, 15	Fish, seafood	05	6
Boring, and related machinery and equipment	34	15	<i>See section 01 for live fish</i>		
Brooms, brushes, mops	40	19	Food and supplies for fast food chains	43	19
Building blocks and bricks	31	13	Food for grocery and convenience stores	43	19
Cat food	04	6	Foodstuffs, other prepared	07	8
Ceramic products	31	13	Fruit and nuts, edible, fresh, chilled, or dried	03	5
Cereal foods, breakfast	06	6	Fruits and juices	03, 07	5, 7
Cereal grains (includes seed)	02	5	Fuel oils and biodiesel	18	9
<i>See 03219 for sweet corn</i>			Furniture	39	18
Cheese	07	7	Games	40	18
Chemical products and preparations, not elsewhere classified	23	10, 11	Gasoline, turbine fuel, and ethanol	17	9
Chemicals, inorganic	20	10	Generators	35	15
Chemicals, organic	20	10			
Cleaning or drying machines	34	15			
Coal	15	9			
Cocoa and cocoa preparations	07	7			
Coffee, tea, and spices	07	7			
Compressors	34	14			

ALPHABETIC QUICK REFERENCE GUIDE – Continued

Commodity or Product	Section	Page(s)	Commodity or Product	Section	Page(s)
Glass and glass products	31	13	Nuts	03, 07	5, 7
Glues	23	11	Office supplies	43	19
Grain products	06	6	Oil and fats, animal		
Gravel and crushed stone	12	8	or vegetable	04, 07	6, 7
Herbicides	23	11	Oil seeds	03	5
Honey	04	6	Optical instruments	38	17
Hydraulic cements	31	13	Orthopedic appliances	38	18
Ice cream, ice milk, sherbets,			Paints	23	10
and ices	07	7	Paper and paperboard, in		
Illuminated signs	39	18	large rolls or sheets	27	12
Inductors	35	15	Paper or paperboard articles	28	12
Insecticides	23	11	Pasta	06	6
Instruments and apparatus			Perfumery and cosmetic	23	11
for measuring	38	18	Petroleum, crude	16	9
Instruments and apparatus for			Pharmaceutical products	21	10
medical, dental, veterinary	38	18	Photographic and photocopying		
Internal combustion engines	34	14	machines	38	18
Juices, fruit	07	7	Plastics in primary form	24	11
Leather and articles of leather	30	13	Potato chips	07	7
Lime and similar minerals	31	13	Poultry	05	6
Live plants or parts of plants	03	5	Precious metal forms and		
Logs	25	11	shapes	40	18
Machinery	34	14, 15	Precision instruments and		
Manufactured products,			apparatus	38	17, 18
miscellaneous	40	18	Prefabricated buildings	40	18
Materials-handling			Printed products	29	12
equipment	34	15	Pulp, newsprint, paper, and		
Meat	05	6	paperboard	27	12
Mechanical machinery	34	15	Pumps	34	14
Media, prepared unrecorded			Railway equipment	37	17
or pre-recorded	35	16	Refrigerators, freezers	34	14
Metal containers	33	14	Rubber in primary form	24	11
Metal, articles of	33	14	Salt	13	8
Metal, base metal in primary			Sands, natural	11	8
or semi-finished forms	32	13, 14	Sauces	07	8
Metallic ores and			Scrap and waste, metallic	41	19
concentrates	14	9	Scrap and waste, non-metallic		
Meters	38	18	not from food	41	19
Milk and cream	07	7	Sewing and knitting	40	19
Minerals, other non-metallic	13	8, 9	Shingles, asphalt	31	13
Mixed freight	43	19	Shingles, wood	26	12
Motor vehicle parts	36	17	Ships, boats, and floating		
Motor vehicles	36	16	structures	37	17
Motor vehicles for the			Shortening	07	7
transport of goods	36	17	Silica and quartz	11	8
Motorcycles, scooters,			Soups and broths	07	8
and mopeds	36	17	Spices	07	7
Motors, electric	35	15	Stone, monumental or building	10	8
Musical instruments	40	18	Sugars, confectionery	07	7
Navigational instruments	38	18	Sulfur	20	10
Non-metallic mineral products,			Surveying instruments	38	18
not elsewhere classified	31	13			

ALPHABETIC QUICK REFERENCE GUIDE – Continued

<u>Commodity or Product</u>	<u>Section</u>	<u>Page(s)</u>	<u>Commodity or Product</u>	<u>Section</u>	<u>Page(s)</u>
Syrups and concentrates, consumable	07	8	Vegetables, processed or prepared	07	7, 8
Tea	07	7	Veneer sheets and sheets for plywood	26	12
Telephone or telegraph apparatus	35	15	Video games	40	18
Textile manufacturing machines	34	15	Waste and scrap, metallic	41	19
Textiles, leather, and articles of textiles or leather	30	12, 13	Waste and scrap, non-metallic, except from food	41	19
Tobacco not steamed or stripped	03	5	Water-treatment compounds	23	11
Tobacco products	09	8	Windows	26	12
Tools, powered hand tools	34	15	Wine	08	8
Tortilla chips	06	6	Wood chips or particles	26	11
Toys	40	18	Wood for fuel	25	11
Transformers	35	15	Wood in rough	25	11
Transportation equipment, not elsewhere classified	37	17	Wood products	26	11, 12
Turbines	34	14	Wood, shaped	26	12
Varnishes	23	10	Wood, treated	26	11
Vegetables, fresh, chilled, or dried	03	5			

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SCTG DESCRIPTION AND CODE

Description	SCTG	Description	SCTG
01 Animals and Fish (live)		► Fruits and nuts, edible, fresh, chilled, or dried – Continued	
Live bovine animals.	01001	Other citrus fruit, fresh or chilled.	03319
Live swine.	01002	Bananas and plantains, fresh or chilled.	03321
Live poultry.	01003	Grapes, fresh or chilled.	03322
Live fish (<i>includes live eels and aquarium fish</i>).	01004	Melons, fresh or chilled.	03323
Other live animals (<i>includes horses, sheep, goats, fur-bearing animals, reptiles, honey bees, insect larvae, bait, pet or song birds, cats, and dogs</i>) (<i>excludes live shellfish, crustaceans such as crabs and lobsters, squid, octopus, and other aquatic invertebrates, see 05204</i>).	01009	Apples, fresh or chilled.	03324
		Other fresh or chilled fruit (<i>excludes olives, see 03219</i>).	03329
02 Cereal Grains (includes seed)		Dried grapes (<i>includes raisins and "currants"</i>).	03331
Wheat.	02100	Other dried fruit, (<i>includes mixtures of dried fruit</i>).	03339
Corn (<i>excludes sweet, see 03219</i>).	02200	Nuts in the shell (<i>excludes peanuts, see 03501</i>).	03341
Rye.	02901	Shelled nuts (<i>includes sliced, chopped, shredded, stoned, pulped, and peeled, but not further processed</i>) (<i>excludes peanuts, see 03501</i>).	03342
Barley.	02902	► Other agricultural products (oil seeds, bulbs, live plants or parts of plants, cut flowers, unmanufactured tobacco), not elsewhere classified	
Oats.	02903	Soy beans (<i>includes for sowing</i>).	03400
Grain sorghum.	02904	Peanuts, unroasted (<i>includes for sowing</i>).	03501
Other cereal grains (<i>includes rice</i>) (<i>excludes soy beans, see 03400, and other seeds, see 0350x</i>).	02909	Linseed (flaxseed) (<i>includes for sowing</i>).	03502
03 Agricultural Products (excludes Animal Feed, Cereal Grains, and Forage Products)		Colza (rape) or canola seeds (<i>includes for sowing</i>).	03503
► Vegetables, fresh, chilled, or dried		Sunflower seeds (<i>includes for sowing</i>).	03504
Potatoes (<i>includes seed, fresh or chilled</i>) (<i>excludes sweet potatoes, see 03219</i>).	03100	Cotton seeds (<i>includes for sowing</i>).	03505
Tomatoes, fresh or chilled.	03211	Mustard seeds (<i>includes for sowing</i>).	03506
Onions, shallots, garlic, leeks, and onion sets, fresh or chilled.	03212	Other oil seeds and nuts.	03509
Lettuce, fresh or chilled.	03213	Bulbs and roots and similar products, live trees and other plants, and mushroom spawn.	03601
Leguminous vegetables such as peas and beans, fresh or chilled.	03214	Other seeds for sowing.	03602
Other fresh or chilled vegetables (<i>includes olives</i>).	03219	► Fresh-cut flowers, plants, and parts of plants, and other agricultural products (excludes forage products and cereal straw or husks)	
Leguminous vegetables, dried, such as peas, lentils, beans (<i>includes those for use as seed and fodder</i>) (<i>excludes milled vegetables, see 06299</i>).	03221	Fresh-cut flowers.	03910
Other dried vegetables, such as potatoes, mushrooms, and onions (<i>includes those for use as seed</i>) (<i>excludes milled vegetables, see 06299</i>).	03229	Tobacco, not stemmed or stripped.	03921
► Fruits and nuts, edible, fresh, chilled, or dried		Stemmed and partially stemmed tobacco.	03922
Oranges, fresh or chilled.	03311	Raw cotton (<i>not carded or combed</i>).	03930
Grapefruit, fresh or chilled.	03312	Unprocessed coffee and unfermented tea.	03991
		Sugar beet and sugar cane (<i>excludes raw cane, see 07501</i>).	03992
		Other agricultural products (<i>includes cotton linters, seaweed, and forestry products</i>) (<i>excludes forage products and cereal straw, see 04110, raw spices, see 07303, natural rubber and gums, see 24102, and plants processed for ornamentation, see 40999</i>).	03999

SCTG DESCRIPTION AND CODE – Continued

Description	SCTG	Description	SCTG
04 Animal Feed, Eggs, Honey, and Other Products of Animal Origin			
➤ Eggs, cereal straw or husks, forage products, residues and waste from the food industries used in animal feeding, and other products of animal origin not elsewhere classified		Aquatic invertebrates, live, fresh, chilled, frozen, salted, in brine, or dried, and crustaceans in shell (<i>such as lobsters, shrimps, crabs</i>) cooked by steaming or by boiling in water)	
Cereal straw or husks and forage products	04110		05204
Inedible flours, meals, and pellets of meat, fish, or seafood, and greaves.	04120	➤ Preparations, extracts, and juices of meat, poultry, fish, or seafood	
Bran, sharps, and other residues of cereals or leguminous plants	04130	Preparations, extracts, and juices of meat (<i>includes poultry</i>) (<i>excludes soups and broths, see 07720</i>)	05310
Oil cake and other solid residues from the manufacture of vegetable fats or oils	04140	Preparations, extracts, and juices of fish or seafood (aquatic invertebrates) (<i>excludes soups and broths, see 07720</i>)	05320
Eggs in the shell	04191	06 Milled Grain Products and Preparations, and Bakery Products	
Raw hides and skins (<i>includes fur skins</i>).	04192	➤ Milled or otherwise worked grain products	
Shorn or pulled greasy wool, animal hair not carded or combed, silk-worm cocoons suitable for reeling, and raw silk	04193	Wheat flour, groats, and meal (<i>excludes by products, see 04130</i>)	06100
Other products of animal origin, and residues and waste from the food industries used in animal feeding, not elsewhere classified (<i>includes natural honey, sausage casings, down, pigs' bristles, horsehair, degelatinized bone, shells, natural sponges, animal products used in the preparation of pharmaceuticals, bovine semen, and blood meal, and other feed ingredients such as vegetable waste, residues, or by-products such as gluten meal, dried beet-pulp, brewers' and distillers spent grains, malt sprouts, wine lees and argol, and acorns and horse-chestnuts</i>)	04199	Malt	06210
Dog or cat food put up for retail sale.	04210	Milled rice (<i>includes husked, broken, flour, groats, and meal</i>).	06291
Other animal feed preparations (<i>includes complete feeds, premixes, bird seed, fish food, and feed supplements</i>)	04290	Corn flour, groats, and meal.	06292
05 Meat, Poultry, Fish, Seafood, and Their Preparations		Starches and modified starches	06293
Meat, fresh or chilled (<i>excludes poultry</i>)	05111	Inulin; wheat gluten; milled cereals and other vegetables; and grains otherwise worked, (<i>includes rolled, flaked, hulled, pearled, sliced, or kibbled</i>) (<i>excludes milling by-products, see 04130</i>)	06299
Meat, frozen (<i>excludes poultry</i>).	05112	➤ Bakery products and food preparations of cereals, flour, starch or milk	
Poultry, fresh or chilled.	05121	Pasta (<i>includes stuffed, canned, frozen, or dried</i>) and couscous	06310
Poultry, frozen.	05122	Breakfast cereal foods, swelled, roasted, or partially cooked	06320
Meat, salted, in brine, dried, or smoked (<i>includes smoked hams, pork bellies, back bacon, cottage rolls, and pickled beef, edible flours and meals, and pig or poultry fat, not rendered</i>)	05130	Mixes and dough for the preparation of bakery products (<i>includes batters</i>)	06391
➤ Fish (excludes live) and seafood (exclude preparations)		Rice preparations, instant rice, and partially cooked rice.	06392
Fresh or chilled fish (<i>includes fillets</i>).	05201	Other food preparations of cereals, flour, starch, or milk, not elsewhere classified (<i>includes tapioca, malt extract, ice cream and milk shake mixes, pudding powders, and infant formula</i>).	06399
Frozen fish (<i>includes fillets</i>)	05202	➤ Baked products, including frozen	
Fish, salted, in brine, dried, or smoked, and edible fish meal.	05203	Baked snack foods (<i>includes pretzels, cheese sticks, and tortilla chips</i>) (<i>excludes cookies and crackers, see 06432</i>).	06410
		Frozen baked products (<i>includes quiche, pizza, bagels, waffles, and pastries</i>)	06420
		Perishable baked products (<i>includes fresh bread, pastries, pies, cakes, doughnuts, pizza, and quiche</i>).	06431
		Dry baked products (<i>includes cookies, crackers, and taco shells</i>).	06432

SCTG DESCRIPTION AND CODE – Continued

Description	SCTG	Description	SCTG
07 Other Prepared Foodstuffs, Fats and Oils		➤ Animal or vegetable fats and oils and their cleavage products, prepared edible fats, animal or vegetable waxes, and flours and meals of oil seeds	
➤ Dairy products (excludes beverages and preparations of milk)		Animal fats and oils and their fractions, not chemically modified (<i>includes fats and oils of fish or marine mammals</i>) (<i>excludes inedible flours, meals, and pellets, see 04120</i>)	07410
Milk and cream, unconcentrated and unsweetened	07111	Soy-bean oil	07421
Milk and cream, in powder, granules, or other solid forms	07112	Colza (canola) oil	07422
Other, not elsewhere classified (<i>includes evaporated or condensed whole milk</i>)	07119	Corn oil	07423
Cheese and curds,	07120	Other fixed vegetable fats and oils and their fractions (<i>includes peanut, olive, palm, sunflower-seed, safflower, cotton-seed, coconut (copra), palm kernel, mustard, linseed, castor, tung, sesame, jojoba, or wheat germ oil, not chemically modified</i>) (<i>excludes by-products of wet corn milling, see 04199, and oil seed waste and residues, see 04140</i>)	07429
Ice cream, ice milk, sherbets, and ices (<i>excludes frozen yogurt, see 07199, and ice cream and ice milk mixes, see 06399</i>)	07130	Non-liquid margarine (<i>for liquid margarine, see 07439</i>)	07431
Butter and other fats and oils derived from milk.	07191	Shortening	07432
Other dairy products (<i>includes yogurt, buttermilk, sour cream, whey, and casein</i>) (<i>excludes mixtures of butter and vegetable oil, see 0743x, preparations based on milk, see 06399, eggnog and flavored milk drinks, see 07899</i>)	07199	Chemically modified fats and oils, animal or vegetable waxes, and prepared edible fats, not elsewhere classified (<i>includes margarine, vegetable shortening, blended salad oils, crude glycerol, glycerol waters and lyes</i>) (<i>excludes oils and fats treated for use as biodiesel, see 18210</i>)	07439
➤ Processed or prepared vegetables, fruit, or nuts (excludes dried or milled, and juices)		Flours and meals of oil seeds (<i>excludes flours and meals of mustard, see 07719, and oil seed waste and residues, see 04140</i>)	07440
Frozen vegetables and vegetable preparations (<i>includes french fries and vegetable mixtures</i>)	07210	➤ Sugars confectionery in solid form, sugar syrups not containing added flavoring or coloring matter, and cocoa and cocoa preparations	
Potato chips (<i>includes from potato flour preparations</i>)	07221	Raw cane or beet sugar, in solid form.	07501
Other processed or prepared vegetables (<i>includes canned and pickled vegetables, relishes, and olives</i>) (<i>excludes frozen or dried vegetables, see 03221, 03229, or 07210; milled vegetables, see 06299; soup mixes, see 07720; tomato sauces, see 07711; or other sauces, see 07719</i>)	07229	Refined cane or beet sugar and chemically pure sucrose, in solid form (<i>includes icing or cubed sugar</i>)	07502
Jams, jellies, marmalades, fruit or nut purées, and fruit or nut pastes	07231	Glucose (corn sugar) and glucose syrup (corn syrup)	07503
Processed or prepared nuts, peanuts, or seeds (<i>includes roasted nuts and peanut butter</i>) (<i>excludes shelled, see 03342, purées and pastes, see 07231</i>)	07232	Other sugars in solid form, molasses, and sugar syrups with no added flavoring or colorings, not elsewhere classified (<i>includes maple sugar and syrup, chemically pure fructose and maltose, and invert sugars</i>) (<i>excludes by-products of sugar extraction, see 04199; syrups with added flavor/color see 07793</i>)	07509
Other processed or prepared fruit (<i>includes frozen or canned fruit</i>) (<i>excludes dried, see 0333x</i>)	07239	➤ Confectionery, cocoa, and cocoa preparations	
Frozen fruit and vegetable juices (<i>excludes beverages based on juices, such as ades or nectars, see 078xx</i>)	07241	Sugar confectionery not containing cocoa, (<i>includes sugar candy, and nuts, nut pastes, and fruit, fruit peel, and vegetables preserved by sugar glacé products</i>) (<i>excludes sugarless gum, see 07799</i>)	07611
Non-frozen fruit and vegetable juices (<i>excludes beverages based on juices, such as ades or nectars, see 078xx</i>)	07242	Chocolate confectionery (<i>includes chocolate-coated nuts</i>)	07612
➤ Coffee, tea, and spices (excludes unprocessed coffee and unfermented tea, see 03991)		Cocoa beans, paste, butter, and powder, and cocoa preparations (<i>includes instant chocolate</i>)	07620
Processed coffee (<i>includes roasted beans, decaffeinated or instant coffee, and coffee substitutes such as roasted chicory</i>)	07301		
Fermented (processed) tea (<i>includes tea bags and decaffeinated tea</i>)	07302		
Spices (<i>includes unprocessed spices</i>)	07303		

SCTG DESCRIPTION AND CODE – Continued

Description	SCTG	Description	SCTG
07 Other Prepared Foodstuffs, Fats and Oils – Continued		Denatured ethyl alcohol of a strength by volume of less than 80% volume, not for human consumption (<i>excludes ethanol for use as biofuel, see 17500 and 17600</i>)	
► Other edible preparations not elsewhere classified, and vinegar			08420
Tomato sauces (<i>includes ketchup and chili sauces</i>)	07711	09 Tobacco Products	
Other sauces and sauce mixes (<i>includes prepared mustard, mustard flours and meals, soy sauce, mayonnaise, salad dressings including dried, and mixed condiments and seasonings, not elsewhere classified</i>)	07719	Cigarettes.	09010
Soups and broths (<i>includes mixes</i>), and baby or dietetic foods.	07720	Tobacco products (manufactured), not elsewhere classified (<i>includes cigars, tobacco extracts and essences, and tobacco substitutes</i>) (<i>excludes leaf tobacco, see 0392x</i>)	09090
Syrups and concentrates used in food preparations or beverages	07731	10 Monumental or Building Stone	
Flavoring powders, extracts, or essences including cocktail mixes	07732	Calcareous monumental or building stone.	10010
Processed eggs (<i>includes egg albumin</i>)	07791	Monumental or building stone, other (<i>includes slate</i>) (<i>excludes dolomite, see 13300</i>)	10020
Yeasts and baking powder.	07792	11 Natural Sands	
Sugar syrups with added flavors and/or colors (<i>includes table syrups</i>)	07793	Silica sands and quartz sands for construction use.	11010
Edible preparations, not elsewhere classified (<i>includes protein concentrates, tofu, vegetable preparations for flavoring, jelly powders, concentrated juice fortified with vitamins or minerals, and vinegar</i>)	07799	Silica sands and quartz sands for uses other than construction; and other sands such as feldspathic, filter, fire, and clayey sands such as kaolinic.	11020
► Non-alcoholic beverages not elsewhere classified, and ice		12 Gravel and Crushed Stone (excludes Dolomite and Slate)	
Carbonated soft drinks.	07811	Limestone flux.	12011
Other sweetened or flavored water.	07819	Agricultural limestone.	12012
Water, unsweetened and unflavored (<i>includes potable, spring, carbonated, or mineral</i>)	07891	Other gravel and crushed, powdered, or broken limestone and chalk (calcium carbonate).	12019
Ice and other non-alcoholic beverages (<i>includes soya, almond, coconut, chocolate, and other milk drinks, and juices fortified with vitamins and minerals, not concentrated, and not elsewhere classified</i>) (<i>excludes dry ice (carbon dioxide), see 20241</i>)	07899	Other gravel and crushed stone (<i>excludes dolomite, see 13300; slate, see 13999; and limestone and chalk, see 1201x</i>)	12020
08 Alcoholic Beverages and Denatured Alcohol		13 Other Non-Metallic Minerals not elsewhere classified	
Beer (malt beer) (<i>excludes non-alcoholic beer, see 07899</i>)	08100	► Salt	
Wine and other fermented beverages (<i>excludes non-alcoholic wine, see 07899</i>)	08200	Table salt (<i>includes sea salt</i>)	13101
► Spirituous beverages and ethyl alcohol		Other salt (<i>includes rock salt, brine, and pure sodium chloride</i>)	13109
Undenatured ethyl alcohol that is 80% or more alcohol by volume	08310	Natural calcium phosphates, natural aluminum-calcium phosphates, and phosphatic chalk . . .	13200
Spirits, liqueurs, and other spirituuous beverages, and undenatured ethyl alcohol that is less than 80% alcohol by volume.	08320	Dolomite (<i>includes monumental, building, and crushed</i>)	13300
► Denatured ethyl alcohol, not for human consumption		Sulfur (<i>excludes sublimed, precipitated, or colloidal, see 20210</i>)	13910
Denatured ethyl alcohol of a strength of more than 80% by volume (<i>excludes ethanol for use as biofuel, see 17600</i>)	08410	Kaolinic clays (<i>includes China</i>)	13921
		Other clays (<i>includes bentonite, fire-clay, andalusite, kyanite, sillimanite, mullite, chamotte, and dinas earths</i>)	13929
		Pumice stone, emery, and natural abrasives . . .	13991
		Gypsum and anhydrite.	13992
		Asbestos.	13993
		Leucite, nepheline and nepheline syenite	13994

SCTG DESCRIPTION AND CODE – Continued

Description	SCTG	Description	SCTG
► Salt – Continued		► Ethanol, ethanol blends, and other fuel alcohols	
Other non-metallic minerals (<i>includes natural graphite, quartz, quartzite, mica, steatite and talc, natural, crude earths, and peat</i>) (<i>excludes natural asphalt, bitumen, shale, tar sands, and asphaltic rock, see 19990; precious and semi-precious stones, see 40942; and mined fertilizers except calcium phosphates, see 22xxx</i>).	13999	Alcohol and gasoline blends with more than 10 percent alcohol volume (<i>includes E15, E20, E25, E70, E75, E85</i>) and other blends of ethanol not elsewhere classified (such as ED95) (<i>excludes denatured anhydrous ethanol, see 17600</i>)	17500
14 Metallic Ores and Concentrates		Ethanol, anhydrous ethanol (E100) denatured, and other denatured alcohols for use in blends of biofuels.	17600
Iron ores and concentrates (<i>includes roasted iron pyrites</i>).	14100	18 Fuel Oils (includes Diesel, Bunker C, and Biodiesel)	
Copper ores and concentrates.	14910	Fuel oils (<i>includes diesel, distillate heating oil, Bunker C</i>) (<i>excludes biodiesel, see below</i>).	18100
Nickel ores and concentrates.	14991	Blends of fuel oils (<i>includes 5 percent or less biodiesel by volume, B5, or less</i>).	18200
Aluminum ores and concentrates, (<i>includes bauxite</i>).	14992	Blends of fuel oils with more than 5 percent biodiesel by volume, (<i>excludes B100, see 18220</i>)	18210
Lead ores and concentrates.	14993	Biodiesel (derived from vegetable oils or animal fats), B100 (<i>excludes mixtures of biodiesel and diesel fuel</i>)	18220
Zinc ores and concentrates.	14994	19 Other Coal and Petroleum Products, not elsewhere classified	
Uranium or thorium ores and concentrates.	14995	Lubricating oils and greases (<i>excludes mixtures and preparations containing less than 70% by weight of petroleum oils or oils obtained from bituminous materials, see 23909</i>)	19100
Titanium.	14996	Other refined petroleum oils and oils obtained from bituminous minerals, not elsewhere classified.	19209
Other ores and concentrates (<i>includes those of precious metals</i>)	14999	► Gaseous hydrocarbons	
15 Coal		Liquefied natural gas.	19310
Non-agglomerated bituminous coal.	15100	Propane, liquefied.	19321
Non-agglomerated anthracite.	15910	Butane, liquefied (<i>excludes chemically pure, see 20501</i>)	19322
Non-agglomerated lignite (<i>excludes jet, see 13999</i>)	15920	Other liquefied gaseous hydrocarbons, not elsewhere classified (<i>excludes chemically pure, see 20501</i>)	19329
Agglomerated coal (<i>includes briquettes</i>)	15930	Gaseous hydrocarbons in a gaseous state (<i>includes gaseous natural gas</i>) (<i>excludes chemically pure, see 20501</i>)	19330
16 Crude Petroleum		Coke and semi-coke of coal, lignite, or peat, and retort carbon.	19911
Crude petroleum oil and oils obtained from bituminous minerals (<i>includes from tar sands</i>)	16000	Petroleum coke (<i>includes calcined</i>).	19912
17 Gasoline, Aviation Turbine Fuel, and Ethanol (includes Kerosene, and Fuel Alcohols)		Petroleum asphalt.	19920
► Gasoline		Bituminous mixtures based on natural asphalt, natural bitumen, petroleum asphalt, mineral tar, or mineral-tar pitch, and tarred macadam	19930
Gasoline including for aviation use (<i>excludes blends of gasoline and alcohol, see 17120, and 17500, and aviation turbine fuel, see 17201</i>)	17110	Other coal products and products of petroleum refining, and natural asphaltic minerals, not elsewhere classified.	19990
Blends of gasoline and alcohol with up to 10 percent alcohol volume (E10 or lower) (<i>includes for aviation use</i>) (<i>excludes C192 aviation turbine fuel, see 17201, and blends of gasoline and alcohol with more than 10 percent alcohol volume, see 17500, and 17600</i>)	17120		
► Aviation turbine fuel (types A and B), and kerosene			
Aviation turbine fuel (jet types A and B) (<i>excludes kerosene for heating and uses for other than aviation fuel, see 17202</i>)	17201		
Kerosene for heating and uses other than aviation fuel.	17202		

SCTG DESCRIPTION AND CODE – Continued

Description	SCTG
20 Basic Chemicals	
► Inorganic chemicals	
Sodium hydroxide (caustic soda)	20101
Potassium hydroxide (caustic potash)	20102
Sulfur, sublimed, precipitated, or colloidal	20210
Hydrogen chloride (hydrochloric acid)	20221
Sulfuric acid and oleum	20222
Other inorganic acids, <i>(excludes nitric and sulfonitric acid, see and phosphoric acid, see 22039)</i>	20229
Artificial corundum	20231
Aluminum oxide and aluminum hydroxide <i>(excludes artificial corundum, see 20231)</i>	20232
Carbon dioxide	20241
Hydrogen, nitrogen, oxygen, and rare gases <i>(includes argon and helium)</i>	20242
Sodium sulfates	20251
Disodium carbonate, sodium hydrogen carbonate (sodium bicarbonate), and potassium carbonates	20252
Other sodium or potassium compounds	20259
Titanium oxides, pigments, and preparations	20261
Other inorganic pigments, and preparations and inorganic products used as luminophores, not elsewhere classified	20262
Calcium carbide	20263
Silicon or tungsten carbides	20264
Other metal compounds, not elsewhere classified	20269
Chlorine	20291
Carbon black	20292
Alkali or alkaline-earth metals, rare-earth metals, scandium, yttrium, and mercury	20293
Inorganic chemicals not elsewhere classified <i>(includes iodine, fluorine, bromine, boron, tellurium, silicon, silicon or sulphur dioxide, halide and halide oxides of non-metals, carbon disulphides, hydrazine, hydroxylamine, ammonium bifluoride, fluorosilicates, ammonium chloride, bromide oxide, ammonium bromide, perchlorates, ammonium thiosulphate, peroxyulphates, ammonium persulphate, phosphinates, triammonium phosphates, ammonium bicarbonates, fulminates, cyanates, peroxychromates, complex silicates, hydrides, nitrides, silicides, radioactive elements, isotopes, and compounds)</i>	20299
► Organic chemicals	
Cyclic hydrocarbons <i>(includes benzene, toluene, xylene, styrene, cyclanes, cyclenes, cycloterpenes, ethyl benzene, cumene, vinyl toluene, and naphthalene)</i>	20300
Acyclic alcohols	20410
Phenols, phenol-alcohols, aldehydes, cyclic polymers of aldehydes, paraformaldehyde, ketones, and quinones <i>(excludes their halogenated, sulfonated, nitrated, or nitrosated derivatives, see 20509)</i>	20420

Description	SCTG
► Organic chemicals – Continued	
Organic acids, their anhydrides, halides, peroxides, and peroxyacids, and their halogenated, sulfonated, nitrated, or nitrosated derivatives	20430
Acyclic hydrocarbons <i>(excludes methane and propane, see 193xx)</i>	20501
Halogenated derivatives of hydrocarbons	20502
Other sulfonamides, provitamins and vitamins, hormones, glycosides or vegetable alkaloids and their derivatives, antibiotics, and chemically pure sugars, not elsewhere classified <i>(excludes products put up in measured doses or for retail sales, see 21000)</i>	20503
Organic dyes, pigments, lakes, and toners	20504
Other organic chemicals <i>(excludes all cellulose derivatives, see 24101)</i>	20509

21 Pharmaceutical Products

Pharmaceutical products <i>(includes chemical mixtures for medical use, in any form unmixed chemicals for medical use, put up in measured doses or for retail sale; biological products; bandages (such as adhesive) and related products, prepared for medical use or in packages for immediate medical use; sutures; dental fillings; bone reconstruction cements; and chemical contraceptive preparations based on hormones or spermicides)</i> <i>(excludes unmixed chemicals not in the forms specified above, which include most of the products in 20503 but which can also fall elsewhere in 20xxx)</i>	21000
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22 Fertilizers

Animal or vegetable fertilizers and fertilizers produced by mixing or chemically treating animal or vegetable products	22010
Nitrogenous mineral or chemical fertilizers <i>(includes nitric acid, sulfonitric acids, and ammonia)</i>	22020
Phosphatic slag (basic slag or Thomas slag)	22031
Other phosphatic mineral or chemical fertilizers, not elsewhere classified <i>(includes superphosphates and phosphoric acid)</i>	22039
Potassium chloride (potash)	22041
Other potassic mineral or chemical fertilizers, not elsewhere classified	22049
Other fertilizers <i>(includes ammonium phosphate and fertilizers that are mixed or put up for retail sale)</i>	22090

23 Other Chemical Products and Preparations

Paints and varnishes <i>(includes enamels, lacquers, distempers, and prepared water pigments for finishing leather)</i>	23110
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SCTG DESCRIPTION AND CODE – Continued

Description	SCTG	Description	SCTG
23 Other Chemical Products and Preparations – Continued		24 Plastics and Rubber	
Vegetable tanning extracts or coloring matter, tannins and their derivatives, animal coloring matter, not elsewhere classified, mastics (<i>includes putty, powdered glass, household dyes, surfacing preparations, and specialty preparations for paint, glass, or similar uses</i>) (<i>excludes inorganic pigments, see 2026x; carbon black, see 20292; and organic dyes, pigments, lakes, and toners, see 20504</i>)	23121	► Plastics and rubber in primary forms	
Inks	23122	Plastics in primary forms; other cellulose derivatives.	24101
Essential oils, resinoids, and mixtures of odoriferous substances used as raw materials.	23201	Natural rubber and similar natural gums, reclaimed rubber, and synthetic rubber and factice, in primary form or in plates, sheets, or strip.	24102
Perfumery, cosmetic, or toilet preparations.	23202	► Articles of plastics	
Soap, organic surface-active agents, cleaning preparations, polishes and creams, and scouring preparations.	23300	Man-made fiber filament tow or staple fibers, not carded or combed	24211
Photographic or cinematographic film, plates, paper, paperboard, or textiles (<i>includes exposed only or exposed and developed, and chemical preparations for photographic use</i>)	23400	Monofilaments of plastics of which any cross-sectional dimension exceeds 1 mm; rods; sticks; and profile shapes.	24212
Insecticides, rodenticides, fungicides, herbicides, anti-sprouting products, plant-growth regulators, disinfectants, and similar products (<i>excludes chemicals not made up as preparations, see 20xxx</i>).	23500	Plastics plates, sheets, film, foil, tape, strip, and other flat shapes (<i>includes combinations with other materials</i>).	24213
Glues and prepared glues	23901	Plastics tubes, pipes, hoses, and fittings, including joints, elbows, and flanges	24221
Prepared explosives, pyrotechnic products, matches, pyrophoric alloys, and combustible preparations, not elsewhere classified (<i>excludes cellulosic explosives not in prepared forms, see 24101, and other explosives not in prepared forms, see 20xxx</i>)	23902	Plastics floor, wall, or ceiling coverings	24222
Activated carbon, activated natural mineral products, and animal black.	23903	Plastics bathtubs, shower-stalls, wash-basins, toilet bowls and tanks, toilet seats and covers, and similar sanitary ware	24223
Anti-knock preparations, oxidation or gum inhibitors, viscosity improvers, anti-corrosive preparations, and other prepared additives for mineral oils such as gasoline; hydraulic brake and transmission fluids containing none or less than 70% by weight of petroleum or bituminous oils; anti-freezing preparations; and prepared de-icing fluids	23904	Plastics closures and articles for conveyance or packing goods, including, cases, trays, pails, bags, bottles, flasks, spools, food or plant containers, and foam shapes for packing.	24224
Industrial monocarboxylic fatty acids and acid oils from refining	23905	Plastics household or toilet articles.	24225
Water-treatment preparations (<i>includes anti-scaling compounds, flocculating agents, and water-softening compounds</i>).	23906	Other plastics articles, not elsewhere classified (<i>includes builders' ware, hardware, fasteners, apparel, ornamental articles, and insulating or polarizing material and fittings for electrical equipments</i>).	24229
Other chemical products and preparations not elsewhere classified (<i>includes turpentine and other chemical products of wood distillation or the manufacture of wood pulp, gelatin, enzymes, artificial and prepared waxes, dental preparations (excludes fillings), and lubricating preparations containing less than 70% petroleum</i>) (<i>excludes preparations containing 70% or more by weight of petroleum oils or of oils obtained from bituminous minerals, see 19100</i>)	23909	► Articles of rubber	
		Tires, inner tubes, mud or tire flaps, and "camelback" strips for retreading, of vulcanized rubber (<i>excludes tread rubber, see 24102</i>).	24310
		Tubes, pipes, and hoses, of vulcanized rubber (<i>excludes hard rubber, see 24399</i>)	24391
		Other articles of rubber, not elsewhere classified.	24399
		25 Logs and Other Wood in the Rough	
		Logs for pulping (pulpwood).	25010
		Logs for lumber.	25020
		Fuel wood.	25091
		Wood in the rough, treated with paint, stains, creosote, or other preservatives	25092
		Other untreated wood in the rough.	25093
		26 Wood Products	
		Wood chips or particles.	26100
		Lumber, treated.	26211
		Lumber, untreated	26212

SCTG DESCRIPTION AND CODE – Continued

Description	SCTG	Description	SCTG
26 Wood Products – Continued			
Wood continuously shaped along any of its edges or faces.	26221	Wallpaper and similar wall coverings	28091
Shingles and shakes.	26222	Envelopes, letter cards, plain postcards and correspondence cards, and boxed sets of paper stationery.	28092
Veneer sheets and sheets for plywood	26310	Other paper or paperboard articles, not elsewhere classified (<i>excludes blank books, office pads, and forms, see 2999x</i>)	28099
Particle board, fiberboard, and similar board of wood or other ligneous materials	26320	29 Printed Products	
Plywood, veneered panels, and similar laminated wood (<i>includes door skins</i>).	26330	Printed books, brochures, leaflets, and similar printed products (<i>excludes advertising materials including catalogs, see 29300; atlases and music books, see 29999</i>)	29100
Windows, doors, and frames and thresholds.	26401	Newspapers	29210
Other builders' joinery and carpentry of wood, not elsewhere classified (<i>excludes shingles and shakes, see 26222</i>).	26409	Journals and periodicals	29220
Wood packing containers, cable drums, pallets and skids, and coopers' products such as cask and barrels	26901	Advertising material, commercial or trade catalogs, and similar printed products (<i>includes flyers</i>)	29300
Other wood products, not elsewhere classified, (<i>includes wood charcoal, densified wood, and coffins</i>).	26909	Printed or illustrated postcards, messages, or announcements, and printed cards bearing personal greetings.	29910
27 Pulp, Newsprint, Paper, and Paperboard		Manifold business-forms and interleaved carbon-sets	29991
► Pulp of fibrous cellulosic materials		Other printed products, not elsewhere classified (<i>includes blank books, binders, and albums</i>)	29999
Mechanical wood pulp.	27110	30 Textiles, Leather, and Articles of Textiles or Leather	
Non-dissolving grades of soda or sulfate chemical wood pulp.	27120	► Textiles and articles of textiles	
Dissolving grades of chemical wood pulp	27191	Textile fibers, processed but not spun or made into yarn (<i>excludes raw cotton, see 03930; other raw vegetable fibers, see 03999; and raw animal fibers such as greasy wool, see 04193</i>)	30110
Other pulp of fibrous cellulosic materials, not elsewhere classified (<i>includes recycled pulp</i>).	27199	Yarns and thread (<i>excludes specialty yarns such as metallized or gimped, see 30399</i>).	30120
► Paper and paperboard, in large rolls or sheets		Broad woven fabrics (<i>excludes metallized yarn, see 30399</i>)	30130
Newsprint in large rolls or sheets	27200	Knitted or crocheted fabrics	30140
Uncoated paper for writing, printing, or other graphic purposes, in large rolls or sheets.	27311	Textile clothing and accessories, clothing and headgear made of artificial fur (<i>excludes clothing and accessories of plastics, see 24229; of rubber, see 24399; of leather or fur, see 30503; of asbestos, see 31994; of paper, see 28010, except safety headgear, see 40999</i>)	30200
Toilet or facial tissue stock, towel or napkin stock, and similar paper stock used for household or sanitary purposes, in large rolls or sheets	27312	Narrow-woven fabrics and related products.	30310
Other uncoated paper in large rolls or sheets, not elsewhere classified.	27319	Tufted carpets and other textile floor coverings	30321
Uncoated paperboard in large rolls or sheets	27320	Other carpets and other textile floor coverings, not elsewhere classified.	30329
Paper, coated, impregnated, treated, or worked, in large rolls or sheets	27410	Textile household furnishings (<i>includes bed linens, table linens, toilet linens, curtains, quilts, comforters, pillows, and cushions</i>) (<i>excludes household furnishings of plastics, see 24225; of paper, see 28010; and of other non-textile materials</i>)	30330
Paperboard, coated, impregnated, treated, or worked, in large rolls or sheets.	27420	Nonwoven and felt fabrics	30391
28 Paper or Paperboard Articles			
Toilet paper, facial tissues, towels, tampons, sanitary napkins, disposable diapers, and similar articles of paper for household, sanitary, or hospital use, and paper articles of apparel.	28010		
Sacks and bags of paper, paperboard, cellulose wadding, or cellulose fiber webs.	28021		
Other packing containers of paper, paperboard, cellulose wadding, or webs of cellulose fibers, not elsewhere classified.	28029		

SCTG DESCRIPTION AND CODE – Continued

Description

SCTG

► Textiles and articles of textiles – Continued

Impregnated, coated, covered, or laminated textile fabrics (*includes rubberized*) 30392

Other textiles and textile articles, not elsewhere classified (*excludes garneted fibers, not further processed, see 41299*) 30399

► Leather and articles of leather

Footwear 30400

Leather (*includes sheep, or reptiles, chamois, metallized, patent, and composition leather and tanned or dressed fur skins*) (*excludes articles made of these materials, see 30502 and 30503*) 30501

Luggage, cases, and containers of leather or allied materials 30502

Other articles of leather, animal gut, or fur skins, not elsewhere classified (*includes apparel and clothing accessories, and saddlery*) (*excludes leather sport gloves, see 40220*) 30503

31 Non-Metallic Mineral Products

► Hydraulic cements

Hydraulic cements 31100

► Ceramic products

Refractory ceramic products (*includes mortars and mixes*) 31210

Ceramic pipes, conduits, guttering, and pipe fittings; ceramic flagstones; and ceramic paving, hearth, wall, or mosaic tiles 31221

Other ceramic construction products 31229

China, porcelain, or other ceramic household or personal articles 31230

Ceramic sanitary fixtures including sinks, urinals, and bathtubs 31291

Other ceramic products, not elsewhere classified 31299

► Glass and glass products

Glass in sheets or profiles (*includes worked glass and float, cast, rolled, drawn, or blown glass*) 31310

Glass containers for transporting or packing goods, such as bottles, flasks, jars, pots, ampoules, preserving jars, and closures such as stoppers and lids 31320

Safety glass, comprising toughened (tempered) or laminated glass 31391

Glassware used for table, kitchen, toilet, office, indoor decoration, or similar purposes 31392

Glass slivers, rovings, yarns, and chopped strands 31393

Other glass and glass products, not elsewhere classified (*includes optical fibers, woven fabric, and articles*) (*excludes non-woven products of glass fibers and other mineral wool, see 31993; communications and similar insulated optical cable, see 35994; and stamped and molded transportation equipment parts, see 36405*) 31399

Description

SCTG

► Other non-metallic mineral products

Worked monumental or building granite and articles 31911

Other worked monumental or building stone, such as limestone, marble, travertine, and articles (*includes mosaic cubes, chippings, or powder, not elsewhere classified*) 31919

Asphalt shingles 31921

Other articles of asphalt or of similar material, not elsewhere classified (*excludes asphaltic mixtures, see 19930*) 31929

Gypsum wallboard, sheets, and lath 31931

Other plaster and articles of plaster, or of compositions based on plaster, not elsewhere classified 31939

Non-refractory mortars and concretes, wet 31941

Non-refractory mortars and concretes, dry 31942

Building blocks and bricks, of cement, concrete, or artificial stone 31951

Concrete pipes 31952

Prefabricated structural components of concrete 31953

Other articles of cement, concrete, artificial stone, not elsewhere classified 31959

Quicklime, slaked lime, and hydraulic lime 31991

Exfoliated vermiculite, expanded clays, foamed slag, and similar expanded mineral materials 31992

Slag rock and similar mineral wools, and thin sheets, webs, mattresses, boards, and similar nonwoven products of glass-fibers 31993

Articles of asbestos-cement, cellulose fiber-cement, or of similar materials, fabricated asbestos fibers, mixtures with a basis of asbestos or with a basis of asbestos and magnesium carbonate and articles of such mixtures or of asbestos (*includes clutch facings and unmounted brake linings and pads*) 31994

Other non-metallic mineral products, not elsewhere classified 31999

32 Base Metal in Primary or Semi-Finished Forms and in Finished Basic Shapes

Ferro-alloys 32101

Iron and steel in primary forms and semi-finished forms, powders, and granules 32102

Flat-rolled products of iron or steel (*includes plate, sheet, foil, and strip*) 32200

Bars, rods, angles, shapes, sections, and wire, of iron or steel 32300

Copper in unwrought forms, powders or flakes, and additive alloys 32411

Copper bars, rods, profiles, wire, plates, sheets, strip, and foil (*includes backed foil*) 32412

Unwrought forms of aluminum, and powders and flakes 32421

Aluminum bars, rods, profiles, and wire 32422

Aluminum plates, sheets, strip, and foil (*includes backed foil*) 32423

SCTG DESCRIPTION AND CODE – Continued

Description	SCTG	Description	SCTG
32 Base Metal in Primary or Semi-Finished Forms and in Finished Basic Shapes – Continued			
Lead in unwrought forms, in finished basic shapes, or in powders or granules	32491	Metal containers with a capacity greater than 300 liters (about 80 gallons), and metal containers for compressed or liquefied gas . . .	33992
Nickel in unwrought forms, in finished basic shapes, or in powders or granules	32492	Springs including wire, leaf, helical, disc, or hair, and miscellaneous fabricated wire products (<i>excludes electrically insulated products, see 35994, and nails and staples, see 33310</i>). . . .	33993
Zinc in unwrought forms, in finished basic shapes, or in powders or granules	32493	Other articles of non-precious metal, not elsewhere classified (<i>excludes backed or printed foil, see 324xx, and musical instruments, see 40992</i>).	33999
Other nonferrous metal not elsewhere classified in unwrought forms, in finished basic shapes, or in powders or granules, including foil and backed foil (<i>excludes precious metals, see 40941</i>).	32499		
33 Articles of Base Metal		34 Machinery	
➤ Pipes, tubes, and fittings		➤ Turbines, boilers, internal combustion engines, and other non-electric motors and engines	
Pipes and tubes of iron or steel	33111	Spark-ignition reciprocating internal-combustion engines for motor vehicles, of a cylinder capacity exceeding 1000 cc	34110
Pipes and tubes of base metals other than iron and steel	33112	Other internal-combustion piston engines (<i>includes compression engines such as diesel and semi-diesel engines</i>).	34120
Pipe and tube fittings of iron or steel	33121	Parts of internal combustion piston engines (<i>excludes pumps for liquids, see 34310; filters, see 34999; crankshafts and camshafts, see 34972; and bearings, see 3497x</i>).	34130
Pipe and tube fittings of base metals other than iron and steel	33122	Steam, other vapor, or hydraulic turbines	34211
➤ Structures and structural parts		Turbo-jets, turbo-propellers, and other gas turbines (<i>includes for aircraft</i>).	34212
Metal doors and windows and their frames	33201	Boilers, power or heating, and nuclear reactors.	34221
Other metal structures and structural parts, not elsewhere classified, (<i>excludes prefabricated buildings, see 40920</i>).	33209	Other non-electric engines and motors, not elsewhere classified (<i>includes fluid power, windmills, spring- or weight-operated engines and motors, and missile and rocket reaction engines</i>).	34222
➤ Hand tools, cutlery, interchangeable tools for hand-or machine-tools, hardware, and industrial fasteners (excludes precious metal, see 40942)		➤ Pumps, compressors, and fans, and ventilating or recycling hoods incorporating a fan	
Nails, screws, bolts, nuts, washers, staples except in strips, and similar fastening articles.	33310	Pumps for liquids and liquid elevators (<i>includes fluid power, vehicle, and service station pumps</i>).	34310
Hand tools, small mechanical appliances for food preparation, and blades for saws	33321	Air or vacuum pumps and air or other gas compressors (<i>includes compressors for refrigerating and air conditioning equipment</i>).	34320
Cutlery (<i>includes cutlery plated with precious metal, razors, scissors, shears, swords, daggers, and similar arms</i>) (<i>excludes cutlery of precious metal, and cutlery clad with precious metal, see 40942</i>).	33322	Fans (<i>includes blowers</i>) and ventilating or recycling hoods incorporating a fan.	34330
Interchangeable tools for hand-or machine-tools, including for construction and mining tools . . .	33330	➤ Air-conditioning, refrigerating, or freezing equipment	
Locks, mountings and fittings, racks and similar fixtures, and automatic door closers, of base metal	33340	Air conditioning equipment (<i>excludes compressors, see 34320, and evaporative air coolers, see 34999</i>).	34410
➤ Other articles of base metal (excludes articles of precious metal, see 40942)		Household refrigerating or freezing equipment (<i>excludes compressors, see 34320</i>).	34421
Other metal containers with a capacity not exceeding 300 liters (about 80 gallons), not elsewhere classified (<i>excludes containers for compressed or liquefied gas, see 33992</i>).	33910	Commercial or industrial-type refrigerating or freezing equipment (<i>excludes compressors, see 34320</i>).	34422
Railway or tramway track construction material of iron or steel.	33991		

SCTG DESCRIPTION AND CODE – Continued

Description	SCTG
► Materials-handling, excavating, boring, and related machinery and equipment	
Work trucks and tractors designed for lifting or for short distance transport of goods in factories, warehouses, docks, or airports (<i>excludes trailers, see 36360</i>)	34511
Other lifting, handling, loading, or unloading machinery, not elsewhere classified (<i>excludes cranes for road use, see 36330</i>) . . .	34519
Moving, grading, leveling, scraping, excavating, tamping, compacting, extracting, or boring machinery for earth, minerals, or ores, pile drivers and extractors, and snow ploughs and blowers (<i>excludes motor vehicles for transporting goods, see 36220; tractors, see 36310; special purpose motor vehicles such as mobile drilling derricks, see 36330; parts for the vehicles listed above, see 3640x; powered hand tools, see 34950; and machinery for screening, mixing, etc., and minerals for drying, paving, etc., see 34999</i>)	34520
► Other mechanical machinery	
Dish-washing machines, machinery for cleaning or drying bottles or other containers, machinery for aerating beverages, and packing or wrapping machinery.	34910
Agricultural, horticultural, forestry, and poultry or bee-keeping machinery (<i>excludes powered hand tools, see 34950; tractors, see 36310; trailers and wagons, see 36360; and machinery for spraying or drying, see 34999</i>)	34920
Textile manufacturing machines; laundry machines (<i>includes dryers and sewing machines</i>)	34930
Machine-tools for working hard materials (<i>includes metal-working</i>) (<i>excludes other machines for working hard materials, such as woodworking presses; machines for working with metal wire; and machines for use in metallurgy, in foundries, or in metal rolling mills, see 34999 and in semiconductor manufacturing, see 34995</i>) . . .	34940
Powered hand-tools, pneumatic, hydraulic, or with a self-contained electric or non-electric motor (<i>includes tools for lawn or construction use</i>) . .	34950
Machines and apparatus for soldering, brazing or welding, for surface tempering, or for hot spraying of metals; and wire, rods, electrodes, and similar products for use with such machines and apparatus.	34960
Ball and roller bearings (<i>includes mounted</i>) . . .	34971
Transmission shafts and cranks, clutches, bearing housings and plain shaft bearings, gears and gearing, ball and roller screws, gear boxes and other speed changers, flywheels and pulleys, and shaft couplings (<i>excludes gear motors, see 35110; and roller and similar chain, see 33999</i>)	34972
Machinery for making pulp, paper, or paperboard (<i>includes dryers and calendering machines</i>) . .	34991

Description	SCTG
Book-binding, type-founding, type-setting, or printing machinery	34992
Molding boxes for metal foundry, mold bases, molding patterns, and molds for metal carbides, glass, minerals, rubber, plastics, or metal (<i>excludes ingot molds, see 34999</i>)	34993
Taps, cocks, valves, and similar appliances for pipes, boiler shells, tanks and vats, or the like, (<i>includes those for use in plumbing</i>)	34994
Semiconductor manufacturing machinery	34995
Other machinery, not elsewhere classified.	34999

35 Electronic and Other Electrical Equipment and Components, and Office Equipment

► Electric motors, generators, generating sets, rotary converters, transformers, static converters, and inductors	
Electric motors, generators, generating sets, and rotary converters	35110
Electric or electronic transformers, static converters (<i>includes rectifiers, inductors, and power supplies for small appliances and computers</i>)	35120
► Electric, electro-thermic, or electro-mechanical domestic appliances	
Electric cooking appliances (<i>includes stoves, ranges, grills, deep-fat fryers, and microwave ovens</i>)	35210
Electro-thermic or electro-mechanical domestic appliances such as vacuum cleaners, food grinders, blenders, juicers, coffee maker, can openers, electrical heating resistors (<i>excludes carbon, see 35995</i>), and personal appliances such as shavers, and toothbrushes (<i>excludes dishwashers, see 34910; refrigerators, see 34421; air conditioners, see 34410; fans and range hoods, see 34330; or non-electric cooking or heating appliances such as radiators or wood stoves, see 33999</i>)	35220
► Line telephone or telegraph apparatus and electronic entertainment products	
Line telephone and telegraph switching apparatus (<i>excludes parts, see 35390</i>)	35310
Other line telephone and telegraph communication apparatus, not elsewhere classified (<i>includes telephones, fax machines, ISDN apparatus, modems, and parts for telephone switching apparatus</i>) (<i>excludes cellular telephones, see 35700</i>)	35390
Electronic entertainment products (<i>includes televisions, radio broadcast receivers including satellite, disc players, digital recorders and playback devices, amplifiers, speakers, and digital cameras</i>) (<i>excludes parts of these goods, see 35820</i>)	35400

SCTG DESCRIPTION AND CODE – Continued

Description	SCTG	Description	SCTG
35 Electronic and Other Electrical Equipment and Components, and Office Equipment – Continued			
► Computer and office equipment			
Computer equipment (<i>includes mainframes, laptop units, processing units, monitors, and other data input and output devices such as fax/modem, and electronic reading devices, but not their parts</i>)	35510	Secondary cells and storage batteries (<i>includes motor vehicle and nickel-cadmium batteries</i>)	35912
Office equipment (<i>includes point-of-sale devices, and word-processing machines, calculators, shredders, banknote dispensers</i>) (<i>excludes photocopiers, see 38220, and facsimile machines, see 35390</i>)	35520	Apparatus for switching or protecting electrical circuits or for making connections to or in electrical circuits, and boards, panels, consoles, desks, cabinets, or similar bases equipped with these apparatus	35920
► Prepared unrecorded or pre-recorded media		Ignition or starting equipment used for spark-ignition or compression-ignition internal combustion engines; generators (<i>includes dynamos and alternators</i>) cutouts used with internal combustion engines; spark plugs; and wiring sets used in vehicles, aircraft, or ships.	35991
Unrecorded media (<i>includes blank tapes, disks, or other mediums for audio, video, computer data, or other use</i>) (<i>excludes photographic film, see 23400</i>)	35610	Electrical lighting or signaling equipment, windshield wipers, or defrosters and demisters, used for motor vehicles or bicycles (<i>excludes filament or discharge light bulbs, see 35993</i>)	35992
Computer software	35621	Electric filament or discharge light bulbs, ultraviolet or infra-red bulbs, and arc-lamps, sealed beam lamp units for vehicles, and photographic flashbulbs	35993
Other pre-recorded media, not elsewhere classified (<i>includes records, tapes, and compact disks, but excludes software, see 35621, and photographic film, see 23400</i>)	35629	Insulated electric conductors (<i>includes wire</i>), co-axial cables, and optical fiber cables (<i>excludes vehicle wiring sets, see 35991</i>)	35994
Transmission apparatus for radio or TV broadcasting; radio transmission and reception apparatus; radar apparatus; radio navigational-aid apparatus; and radio remote-control apparatus (<i>includes cordless microphones CB radios, cell-phones, pagers, GPS receivers, and television cameras</i>) (<i>excludes radio or television broadcast receivers, see 35400, or parts for these products, see 35820</i>)	35700	Artificial graphite, colloidal or semi-colloidal graphite, preparations based on graphite or carbon, and articles of graphite or carbon (<i>includes electric heating resistors of carbon battery carbons, lamp carbons, packing rings and seals, electrodes, and brushes</i>)	35995
► Electronic components and parts		Other electronic and electrical equipment and components, not elsewhere classified (<i>includes electric conduits and fittings</i>) (<i>excludes musical instruments, see 40992</i>)	35999
Capacitors (<i>includes power, resistors except heating but includes variable resistor switches, and thermionic, cold-cathode, or photo-cathode valves and tubes, includes vacuum, vapor, gas-filled, mercury-arc rectifying, cathode-ray, and television-camera</i>) (<i>excludes heating resistors, see 35220 or 35995</i>)	35811	36 Motorized and Other Vehicles (includes parts)	
Printed circuits	35812	► Vehicles for fewer than 10 people	
Diodes, transistors, and similar semiconductor devices, photosensitive semiconductor devices (<i>includes photovoltaic cells, light-emitting diodes, mounted piezoelectric crystals, and chemical elements and components doped for use in electronics</i>)	35813	Automobiles and vans for fewer than 10 people (<i>includes military jeeps and automobiles lightly armored</i>) or powered by an electric motor (EV), hybrid vehicles that use a battery powered electric motor in addition to gasoline powered engine for improved efficiency (<i>excludes all-terrain vehicles, racing cars, ambulances, hearses, prison vans, and motor homes, see 36109; vehicle parts, see Motor vehicle parts, 364xx</i>)	36101
Electronic integrated circuits and micro-assemblies (<i>includes memory chips</i>)	35814	Other motor vehicles for fewer than 10 people, not elsewhere classified (<i>includes all-terrain vehicles, racing cars, ambulances, hearses, prison vans, and motor homes</i>) (<i>excludes vehicle parts, see 364xx; and snowmobiles, golf carts, in-plant personnel carriers, see 36399; motorcycles, see 36351; and armored fighting vehicles, see 36391</i>)	36109
Parts for goods in SCTGs 35400, 35811, 35812, 35813, and 35814 above (<i>includes cabinets</i>)	35820		
► Other electronic and electrical equipment			
Primary cells and primary batteries (<i>includes alkaline, nickel-cadmium, and lithium batteries</i>)	35911		

SCTG DESCRIPTION AND CODE – Continued

Description	SCTG	Description	SCTG
► Motor vehicles for the transport of goods and road tractors for semi-trailers (excludes parts)		37 Transportation Equipment, not elsewhere classified	
Motor vehicles for transporting goods, (includes vehicles used in construction, mining, agriculture, military and armored commercial trucks).	36210	► Railway equipment Railway or tramway locomotives and self-propelled rolling-stock (excludes maintenance or service vehicles, see 37102)	37101
Road tractors for semi-trailers (excludes parts, see 364xx)	36220	Railway or tramway maintenance or service vehicles (includes self-propelled), and passenger coaches and freight cars (excludes self-propelled).	37102
► Other vehicles		Parts of locomotives and rolling stock (excludes engines, see 341xx; electric motors and generators, see 35110; pumps for liquids, see 34310; and lighting equipment, see 39030)	37103
Tractors (includes farm, lawn-and-garden, and track-laying tractors) (excludes road tractors and work tractors; tractor parts, see 364xx, or tractors of 34511)	36310	Track fixtures and fittings and their parts, mechanical signaling, safety, or traffic-control equipment, and containers specially designed and equipped for carriage by one or more transport modes	37104
Motor vehicles with a seating capacity of 10 or more persons (excludes parts, see 364xx). . .	36320	► Aircraft and spacecraft	
Special-purpose motor vehicles (includes mobile cranes, drilling derricks, concrete mixers, and fire-fighting vehicles) (excludes parts, see 364xx). .	36330	Aircraft (excludes parts, see below).	37210
Chassis fitted with engines, and separate bodies, for motor vehicles.	36340	Spacecraft (includes satellites and suborbital and spacecraft launch vehicles, but not their parts).	37220
Motorcycles, motor scooters, and mopeds, and their parts (includes side cars)	36351	Parts of aircraft and spacecraft (excludes internal combustion engines, see 341xx; turbines, see 34212; other engines and motors, see 34222; tires, see 24310; pumps for liquids, see 34310; filters, see 34999; plastics, see 24229; glass, see 313xx; lighting equipment, see 39030; ignition and starting equipment, see 35991; windshield wipers and defrosters, see 35992; and seats, see 39029)	37230
Bicycles and other cycles (includes unicycles and tricycles, and their parts)	36359	Parachutes, rotochutes, aircraft-launching gear, deck-arresters, and flight simulators.	37240
Trailers and semi-trailers and parts (includes camping and library trailers).	36360	► Ships, boats, and floating structures	
Armored fighting vehicles and their parts	36391	Pleasure or sporting vessels, and rowing boats (parts, except for hulls, should be classified according to what the article is)	37310
Other vehicles, not elsewhere classified (includes snowmobiles; golf carts and in-plant personnel carriers, segways) (excludes their parts, see 364xx; and hand-carts, grocery carts, wheelbarrows, and their parts)	36399	Commercial ships and boats and other floating structures (includes drilling or production platforms, lifeboats, inflatable rafts, buoys, and beacons) (parts, except for hulls, should be classified according to what the article is)	37320
► Motor vehicle parts (excludes motorcycles and armored fighting vehicles)		38 Precision Instruments and Apparatus	
Brakes (excludes unmounted brake linings and pads, see 31994)	36401	► Optical elements, instruments, and apparatus	
Gear boxes (excludes parts, see 36409).	36402	Eyewear (includes contact lenses and other lenses, goggles, and frames)	38101
Road wheels.	36403	Other optical elements, instruments, and apparatus, not elsewhere classified (excludes photographic, cinematographic, and photocopying equipment, see 38210 or 38220)	38109
Metal, stampings such as bumper, fender, door, hood, trim, and hub cap.	36404		
Other parts for motor vehicles, not elsewhere classified (includes seat belts and seat covers, trims, plastics grilles, suspension shock-absorbers, radiators, mufflers, exhaust pipes, clutches, axles, bumpers, and steering wheels) (excludes parts for motorcycles, mopeds and armored fighting vehicles, see 36351 and 36391; engines and engine parts, see 341xx; pumps for liquids, see 34310; filters, see 34999; tires, see 24310; glass, see 313xx; lighting and signaling equipment, see 35992; ignition and starting equipment, see 35991; windshield wipers and defrosters, see 35992; seats, see 39029; and catalytic converters, see 34999).	36409		

SCTG DESCRIPTION AND CODE – Continued

Description	SCTG	Description	SCTG
38 Precision Instruments and Apparatus – Continued		39 Furniture, Mattresses and Mattress Supports, Lamps, Lighting Fittings, and Illuminated Signs	
➤ Photographic and photocopying machines		➤ Furniture, mattresses and supports, lamps, and illuminated signs	
Photographic (<i>includes cinematographic cameras, image projectors, enlargers, reducers, and projection screens; negatoscopes, and apparatus and equipment for film developing</i>) (<i>excludes video, and digital cameras, see 35400</i>).	38210	Mattresses and mattress supports (<i>excludes inflatable and waterbed mattresses of plastics, see 24229, or of rubber, see 24399</i>)	39011
Photocopying and thermo-copying machines. . .	38220	Other household or office furniture, not elsewhere classified (<i>includes kitchen cabinets</i>) (<i>excludes desk top furniture, which is classified by its material; and TV and stereo cabinets, see 35820</i>)	39019
➤ Surveying, hydrographic, oceanographic, hydrological, geophysical, drawing, or length-measuring instruments and appliances, and navigational and meteorological instruments and appliances (excludes radar and other radio-type apparatus)		Medical, surgical, dental, or veterinary furniture	39021
Navigational instruments and appliances (<i>excludes radar and radio navigational-aid apparatus, see 35700</i>)	38310	Other furniture, not elsewhere classified	39029
Surveying, hydrographic, oceanographic, hydrological, meteorological, geophysical, drawing, mathematical calculating and length measuring hand instruments and appliances (<i>excludes radar apparatus, see 35700</i>)	38320	Lamps, lighting fittings, and illuminated signs or name plates (<i>excludes for motor vehicles, see 35992</i>)	39030
➤ Instruments and apparatus for medical, dental, veterinary, or similar purposes		40 Miscellaneous Manufactured Products	
Apparatus based on the use of X-rays or alpha, beta, or gamma radiation.	38410	➤ Arms and ammunition	
Electro-medical equipment (<i>excludes pacemakers, see 38491</i>)	38420	Arms (<i>excludes swords, daggers, etc., see 33322</i>)	40110
Orthopedic appliances; fracture appliances; artificial body parts; and appliances that are worn, carried, or implanted in the body to compensate for a medical condition	38491	Munitions and ammunition (<i>includes bombs, grenades, and missiles</i>)	40120
Surgical and medical instruments and apparatus	38492	➤ Toys and sporting equipment	
Other instruments, apparatus, and appliances for medical, surgical, dental, or veterinary sciences, or for similar purposes, not elsewhere classified (<i>excludes furniture, see 39021; wheelchairs, see 40999; and wadding, bandages, etc., see 21000</i>)	38499	Toys, games, and baby carriages (<i>includes dolls, stuffed animals, models, construction sets, video games and cartridges, electronic game consoles, coin-operated arcade games, puzzles, and bingo equipment</i>)	40210
➤ Instruments and apparatus for measuring, checking, testing, or controlling		Sporting equipment (<i>includes pool tables, bowling alley equipment such as pin-setting machines, and protective clothing and head gear such as pads, gloves, mittens, and helmets</i>)	40220
Instruments and apparatus for measuring or checking electrical quantities	38510	➤ Miscellaneous manufactured products	
Industrial process control instruments	38520	Clocks and watches.	40910
Instruments and appliances for testing mechanical properties of materials	38591	Prefabricated buildings (<i>including tool or garden sheds</i>)	40920
Instruments and appliances for measuring or detecting ionizing radiations	38592	Writing or drawing instruments and inked ribbons and pads.	40930
Gas or liquid supply or production meters.	38593	Precious metal forms and shapes.	40941
Other instruments and apparatus for measuring, checking, testing, or controlling, not elsewhere classified.	38599	Pearls, precious or semi-precious stones (<i>includes unworked; articles of pearls, stones, or precious metals (including jewelry, catalysts, anodes, and tableware); and coins</i>)	40942
		Costume jewelry	40991
		Musical instruments (<i>excludes amplifiers, see 35400, and mixing and editing boards, see 35920</i>)	40992

SCTG DESCRIPTION AND CODE – Continued

Description	SCTG	Description	SCTG
➤ Miscellaneous manufactured products – Continued		➤ Non-metallic waste and scrap (excludes from food processing)	
Brooms, brushes, mechanical floor-sweepers, mops, feather dusters and paint pads or rollers (<i>includes brushes for floor scrubbers, polishers and other machines, appliances, or vehicles</i>)	40993	Sawdust and wood waste and scrap.	41210
Sewing and knitting needles (<i>includes for machines</i>), crochet hooks, hook and eye fasteners, safety pins, straight pins, buttons, buckles and clasps, tubular and bifurcated rivets, snap-fasteners, zippers, and similar notions	40994	Waste and scrap of paper or paperboard	41220
Works of art, collections, and antiques	40995	Waste and scrap of glass.	41291
Other miscellaneous manufactured products, not elsewhere classified	40999	Other non-metallic waste and scrap, not elsewhere classified.	41299
41 Waste and Scrap (excludes of agriculture or food, see 041xx)		43 Mixed Freight	
➤ Metallic waste and scrap		Items (<i>includes food</i>) for grocery and convenience stores	
Metal slag, ash, and residues	41110	Supplies and food for restaurants and fast food chains	43991
Other waste and scrap of ferrous metals.	41120	Hardware or plumbing supplies	43992
Other waste and scrap of non-ferrous metals (<i>includes precious metals</i>)	41130	Office supplies	43993
		Miscellaneous.	43994
			43999