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Class III / Short Line System Inventory to Determine 286,000 lb (129,844 kg) Railcar Operational Status in Kansas

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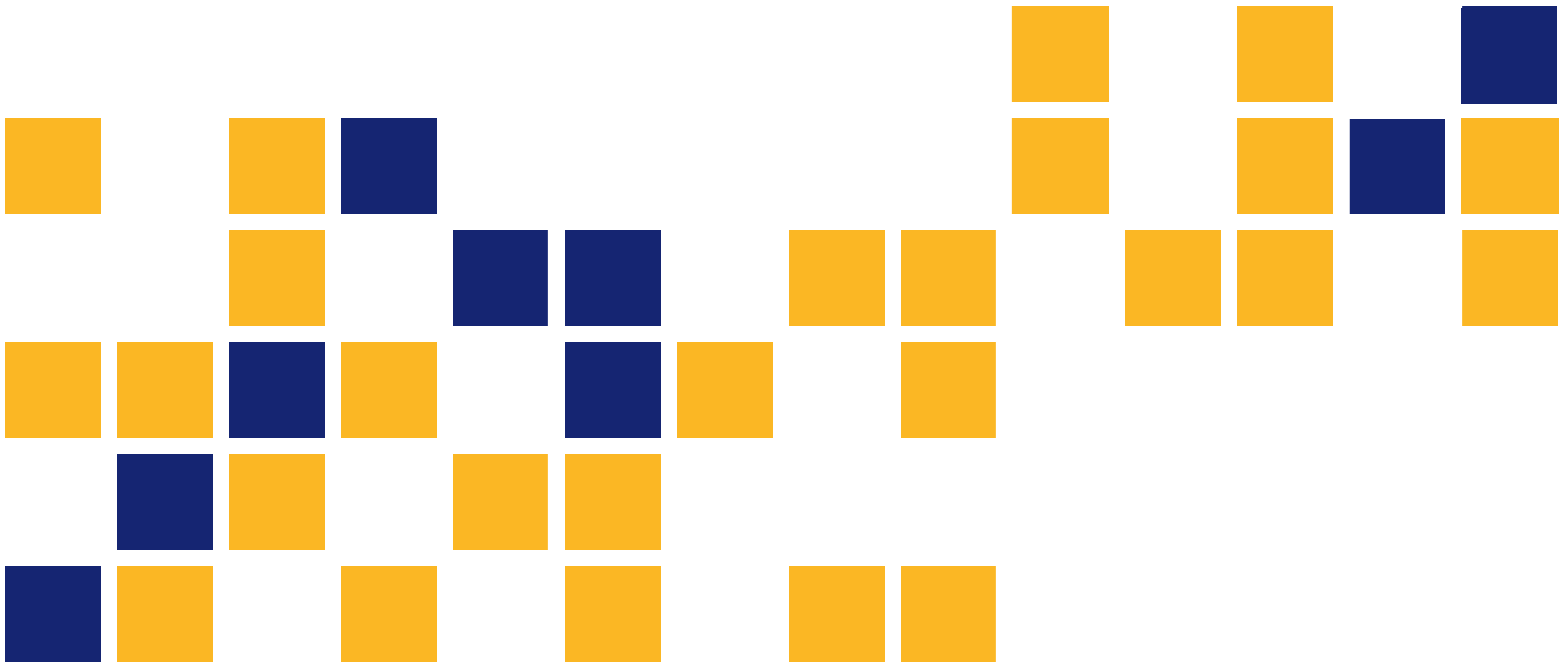

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The rail industry's recent shift towards larger and heavier railcars has influenced Class III/short line railroad operation and track maintenance costs. Class III railroads earn less than $38.1 million in annual revenue and generally operate first and last leg shipping for their customers. In Kansas, Class III railroads operate approximately 40 percent of the roughly 2,800 miles (4,500 km) of rail; however, due to the current Class III track condition, they move lighter railcars at lower speeds than Class I railroads. The State of Kansas statutorily allots $5 million to support rail improvement projects, primarily for Class III railroads. Therefore, the objective of this study was to conduct an inventory of Kansas's Class III rail network to identify the track segments in need of this support that would be most beneficial to the rail system. Representatives of each railroad were contacted and received a survey requesting information regarding the operational and structural status of their systems. The data collected were organized and processed to determine the sections of track that can accommodate the heavier axle load cars that are currently being utilized by Class I railroads. This study identified that Class III railroads shipped just over 155,000 carloads of freight in 2016 and 30 percent of Kansas's Class III track can currently accommodate heavy axle cars.

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PREFACE

The Kansas Department of Transportation's (KDOT) Kansas Transportation Research and New-Developments (K-TRAN) Research Program funded this research project. It is an ongoing, cooperative and comprehensive research program addressing transportation needs of the state of Kansas utilizing academic and research resources from KDOT, Kansas State University and the University of Kansas. Transportation professionals in KDOT and the universities jointly develop the projects included in the research program.

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Abstract

The rail industry's recent shift towards larger and heavier railcars has influenced Class III/short line railroad operation and track maintenance costs. Class III railroads earn less than $38.1 million in annual revenue and generally operate first and last leg shipping for their customers. In Kansas, Class III railroads operate approximately 40 percent of the roughly 2,800 miles (4,500 km) of rail; however, due to the current Class III track condition, they move lighter railcars at lower speeds than Class I railroads. The State of Kansas statutorily allots $5 million to support rail improvement projects, primarily for Class III railroads. Therefore, the objective of this study was to conduct an inventory of Kansas's Class III rail network to identify the track segments in need of this support that would be most beneficial to the rail system. Representatives of each railroad were contacted and received a survey requesting information regarding the operational and structural status of their systems. The data collected were organized and processed to determine the sections of track that can accommodate the heavier axle load cars that are currently being utilized by Class I railroads. This study identified that Class III railroads shipped just over 155,000 carloads of freight in 2016 and 30 percent of Kansas's Class III track can currently accommodate heavy axle cars.

Acknowledgements

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Chapter 1: Introduction

Railroad operations are the primary means of transporting goods, people, and services across the state of Kansas. To maintain and improve its Class III railroad network (i.e., track structures, bridges, and at-grade crossings), the Kansas Department of Transportation (KDOT) distributes state funding in the form of grants and loans to private railroad companies and parent companies. Parsons Brinckerhoff reviewed the Kansas Class III Railroad Rehabilitation Program for KDOT, concluding that the program was a worthy investment of state taxpayer funding because it benefited private and public sectors (Parsons Brinckerhoff, 2005). The study also determined the combined 10-year present value of public sector benefits for state and local tax revenues and highway maintenance cost savings to be $43.7 million. Parsons Brinckerhoff found the combined direct and indirect benefits to the private sector from rehabilitation projects surpassed $1 billion in business earnings and $425 million in personal wage income. The report also recommended that a Class III railroad infrastructure inventory assessment should be conducted to document and inventory infrastructure needs of the Class III railroad system in Kansas. A Class III inventory would prioritize and optimally distribute funds to high-volume priority Class III corridors.

1.1 The Kansas Rail System

The active portion of Kansas's freight rail system consists of 17 railroads, including three Class I railroads (annual revenue more than $475 million), 11 Class III carriers (annual revenue less than $38 million), and three switching and terminal railroads, mapped in Figure 1.1. The Class I railroads include Union Pacific (UP), Burlington Northern Santa Fe (BNSF), and Kansas City Southern, collectively operating approximately 2,790 miles (4,490 km) of track in Kansas. The Class III railroads collectively operate approximately 1,600 miles (2,575 km) of track, accounting for slightly more than 40 percent of all route mileage in Kansas (KDOT, 2011).

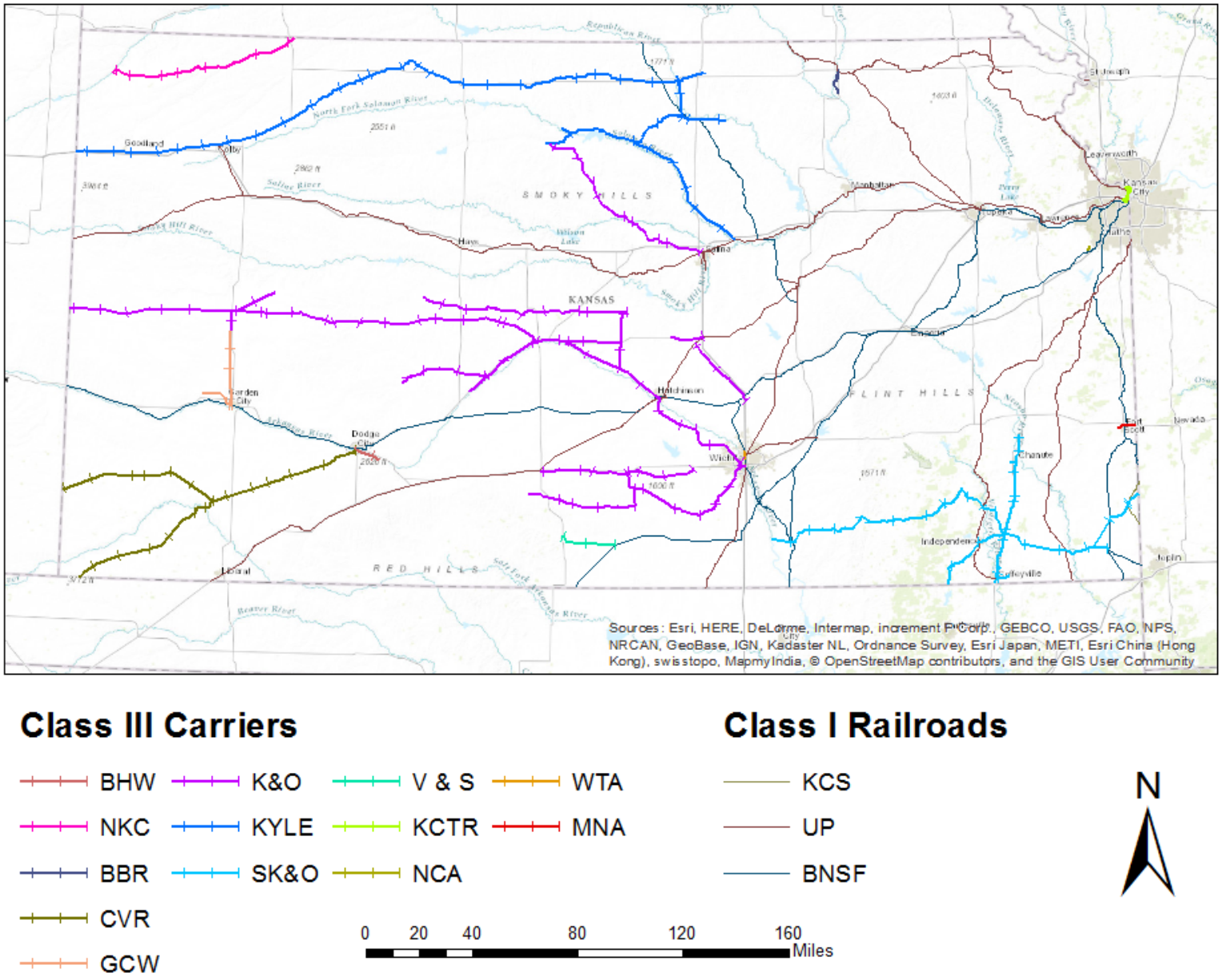

Figure 1.1: Active Freight Railroads in Kansas (2017)

Historically, Class I railroads have updated track sections that span throughout long distances along Kansas, allowing them to operate at high speeds (above 50 mph [80 kmh]) compared to 10–30 mph [16–48 kmh]) and support and pull heavy railcars (286,000 lb [129,844 kg]) instead of 263,000 lb [119,294 kg]). However, because current multimodal freight shipments commonly utilize railcars weighing 286,000 lb (129,844 kg) on the Class I network, Class III railroads have struggled to meet the rising costs of upgrading track structures to accommodate additional weight and increase operating speeds to accommodate freight demands (KDOT, 2011).

1.2 History of the Kansas Rail Funding Programs

In the late 1980's, KDOT became administrator over the federal Local Rail Freight Assistance (LRFA) Program. The goal of the LRFA was to disperse Federal Railroad Administration (FRA) funding in the form of loans to support improvement projects for small railroads, including Class III railroads. Interest earned from LRFA loans helped generate additional loans. Although FRA funding for this program ended in the early 1990s, success of the loan-based program encouraged the state of Kansas to establish its own state-funded assistance program (through KDOT) to address track structure upgrades of Class III railroads.

In 2000, KDOT developed the Comprehensive Transportation Program (CTP) to manage and improve Kansas's multimodal transportation network, which consists of trucking, rail, and air. The CTP utilized the State Rail Service Improvement Fund (SRSIF) to provide low-interest loans and grants to rehabilitate track structures of Class III railroads in Kansas. The SRSIF program provided $3 million annually in loans and grants to Class III railroads from 2000 to 2008, after which time, the program was planned to become self-sufficient due to the interest earned from loan repayments (Parsons Brinckerhoff, 2005). In 2001, however, the state of Kansas faced the pending abandonment of the Central Kansas Railway (CKR), a central 900-mile (1,450 km) section of the Class III network. To maintain operational feasibility and key rail corridors of this railroad in west-central and south-central Kansas, a portion of SRSIF program funds were granted to expedite acquisition of the CKR from a bankrupt company to a growing parent company.

Following Kansas legislative action in 2012 and in conjunction with the Transportation Works for Kansas (T-Works) program, the SRSIF now statutorily allots $5 million annually to

track improvement projects primarily for Class III railroads. To apply for a state loan or grant through the SRSIF program, proposed projects must follow a 40-30-30 distribution in which 40 percent of the capital cost is a loan with a 2 percent interest rate that must be paid back within 10 years, 30 percent is matched as a grant by the state of Kansas, and the remaining 30 percent must come from the project applicant. Class III railroads applying for loans or grants must prove that the proposed upgrade will increase operations efficiency by either increasing the track's weight capacity (for heavy railcars) or meeting an FRA-mandated speed limit increase. Proposed projects are evaluated based on a cost-benefit analysis and are ranked for consideration. The cost-benefit analysis considers the project cost, customer needs, existing railcar loads, anticipated railcar loads based on proposed improvements, and public sector benefits (Parsons Brinckerhoff, 2005; KDOT, 2012).

KDOT's continuation of the SRSIF program highlights its confidence that the Class III railroad system will continue to be a logistically and economically sound option for freight transportation. The objective of this study was to determine the present state of the rail system in Kansas and guide future SRSIF rail improvement projects to maximize benefits for shippers, railroads, and the state by creating an inventory and synthesis of existing track locations. Quantiles were developed to relate track structure and business data for Class III railroads in Kansas. Collected Class III railroad data were used to identify high-priority track corridors as potential candidates for SRSIF funding.

In addition to the introduction, this report includes a review of literature that examines the economic feasibility of Class III railroads, the effect of heavy axle load (HAL) railcars on the Class III rail system, and methods of funding Class III railroad improvement projects. The report also contains an overview of the research methodology, including survey development and distribution. Subsequent sections document survey results for the entire freight rail system and individual Class III railroads in Kansas. Finally, conclusions are presented, as well as research recommendations, including a tiered system to prioritize the importance of upgrading rail corridors to accommodate 286,000 lb (129,844 kg) railcars.

Chapter 2: Literature Review

Since the 1860s during the Civil War, railroads have been essential to the American economy because they connect the coasts, allowing straightforward transportation of goods and services between major cities and waterway ports. The freight railroad system in the United States currently contains nearly 140,000 miles (225,310 km) of centerline track, accommodates more than 40 percent of intercity freight volumes, and provides an average of 4.5 jobs in related sectors for every internal freight rail job (Association of American Railroads, 2014). The American Short Line and Regional Railroad Association (ASLRRA) states that Class III railroads encompass approximately 43,000 miles (69,200 km) of centerline track in the United States, accounting for more than 8 million carloads of goods each year and cost-effectively allowing access to markets and ports throughout the country. Currently, there are more than 560 Class III railroads strategically connecting private industries, farms, factories, and waterway ports to major Class I freight rail network in the United States (ASLRRA, 2014). This chapter provides background on Class III railroads, including how they affect society, challenges faced by Class III railroads due to the shift towards HAL railcars, and a synopsis of current methods for funding Class III railroad improvements.

2.1 Railroad Classifications

The Surface Transportation Board (STB) has broad economic regulatory oversight for most modes of freight shipping in the United States, such as pipeline carriers, intercity bus carriers, trucking companies, and railroads, including shipping rates, service, construction, acquisition and abandonment of rail lines, carrier mergers, and classification of railroads (FRA, 2014). Class I railroads are private corporations consisting of expansive stretches of track that span across many states that typically allow trains to travel up to 60 mph (97 kmh). Class II and III railroads are often referred to as regional and local, or short line, railroads, respectively, and they primarily provide services for commodity groups based on area of operation, such as grain and non-grain food and farm products in the western two-thirds of Kansas. However, Class II and III railroads operate at slower speeds than Class I railroads due to inferior quality track structure, older rolling stock, lighter traffic densities, and shorter shipping distances between origin of goods and final

destinations. Due to their smaller physical and operating sizes, Class II and Class III railroads can readily cater to customer needs and adapt operations to meet those needs, including switching operations or increasing grain fleets to accommodate fruitful grain harvests (Allen, Sussman, & Miller, 2002; ASLRRA, 2014).

Railroad classification is based on the railroads' gross annual operating revenues based on dollar values from the year 1991 and adjusted annually for inflation (80 Federal Register 39836, 2015). Table 2.1 shows the defined ranges that specify railroad class based on annual operating revenues for the base years of 1991 and 2014.

Table 2.1: Categories for Railroad Classification According to the Surface Transportation Board

Class	Annual Carrier Operating Revenues in 1991 dollars in millions	Annual Carrier Operating Revenues for 2014 dollars in millions
I	more than $250	more than $475.7
II	more than $20 but less than $250	more than $38.1 but less than $475.7
III	less than $20	less than $38.1

Source: 80 Federal Register 39836 (2015)

As shown in Table 2.1, Class I railroads have annual carrier operating revenue greater than $250 million, Class II railroads have annual carrier operating revenue between $20 and $250 million, and Class III railroads have annual carrier operating revenue less than $20 million. For dollar values in the year 2014, then, these values translate into more than $475.7 million for Class I railroads, between $38.1 and $475.7 million for Class II railroads, and less than $38.1 million for Class III railroads. Regardless of annual operating revenues, all switching and terminal railroads, or urban-centered operations that primarily transfer goods to other railroads or businesses that transport freight, are labeled as Class III railroads. Switching and terminal railroads usually have rail yards to reorder or store railcars for customers. Reclassification occurs after a railroad's operating revenues meets the requirements of a different classification bracket than its current ranking for 3 consecutive years (FRA, 2014).

2.2 Staggers Rail Act and the Influx of Class III Railroads

Approximately 240 non-Class I railroads were in operation in the United States in 1980, and as of 2014, 560 Class II and III railroads were operating within the country (ASLRRA, 2014). The Staggers Rail Act of 1980, which deregulated and significantly altered the railroad industry, was the primary contributing factor for the proliferation of non-Class I freight railroads. The Staggers Rail Act also simplified the procedure for selling sections of track and decreased the time required to process such transactions (Allen et al., 2002). As a result, less profitable sections of Class I track were sold to investors instead of undergoing abandonment, thus conserving shippers' access to a railroad and preserving rail system connectivity (Witt, 2004). The Staggers Rail Act was instrumental in the creation of almost all Class II and III railroads in the United States. Prior to 1980, most Class III railroads were owned and operated by small, independent, family-oriented businesses. Today, however, the largest proprietary stake in the Class III railroad industry is held by holding companies that own multiple railroads throughout the country (Allen et al., 2002).

2.3 Economic Effects of Class III Railroads

The actual economic effect of Class II and III railroads are often underestimated because the railroads typically supply localized services. Multiple research studies have focused on various factors of influence in order to quantify the effects of Class III railroads on local economies.

2.3.1 Employment Effect

Class III railroads often create numerous jobs and attract businesses to local regions. Llorens and Richardson (2014) investigated the relationship between Class III railroads and increased job opportunities in Louisiana. The research team obtained data by conducting a survey of Louisiana's Class III railroads. Survey results showed that Class III railroads directly employ 330 individuals annually, offering an average of $67,000 in wages and benefits per individual. Results also showed that the railroads indirectly support an additional 1,500 jobs, consequently benefiting the state's economy, especially Louisiana's impoverished communities. These jobs contribute approximately $3.5 million and $2.86 million annually in state taxes and local revenues, respectively (Llorens & Richardson, 2014).

Miller and Stich (2013) investigated the effects of the Class III railroad industry on economic development in Mississippi, determining that an estimated $273 million capital investment was needed to upgrade all of Mississippi's Class III railroads for full operation with no impending degradation of track quality. They also calculated the number of expected direct and indirect jobs created by such an investment and compared this data to previous data of jobs created by publicly funded automotive assembly plants, as shown in Table 2.2.

Table 2.2: Comparison of Economic Development Expenditures per Job Created

Investment	Public Financial Assistance (in millions)	Direct and Indirect Jobs Created	Public Expenditure per Job Created
Mississippi Class IIIs	$273	66,430 over 30 years	$4,000
Toyota Assembly Plant	$356	4,000 in 5 years	$89,000
Nissan Assembly Plants	$363	4,000 in 5 years	$90,000

Source: Miller and Stich (2013)

Miller and Stich (2013) determined that the $273 million invested in the Mississippi Class III industry would create 66,430 jobs over 30 years. In contrast, the Toyota and Nissan assembly plants would create 4,000 jobs at much higher costs of $356 and $363 million, respectively, proving that investments in a Class III railroad create new jobs approximately 22 times more effectively than the automotive assembly plants. However, Miller and Stich readily admitted that their estimation was a simplified comparison and that many more factors must be investigated to design effective local economic development strategies in correlation with Class III railroads. Factors requiring further investigation include public opinions, actual funding sources, and situational variables (Miller & Stich, 2013).

A study conducted by Feser and Cassidy (1996) warned against overly optimistic economic development projects for Class III railroad projects. The authors reviewed 14 studies involving Class III railroads and compared the estimated versus actual experienced economic effects of the Class III railroads. They found that the estimation of employment influences had the largest degree of discrepancies between the expected and actual economic impacts of Class III railroad projects, and they proposed three factors that contributed to these inconsistencies. First, the data used for

estimations based on rail users overestimated the impact a service change would have on the rail's businesses. Second, assessment of the actual proportion of total employment created can be difficult to calculate, requiring transfers of employment to be distinguished as true jobs or wage gains. Third, there is an industrywide lack of evaluation of estimations after completion of projects that potentially contributes to continuous overestimation of job creation rates of Class III rail projects (Feser & Cassidy, 1996).

2.3.2 Abandonment Effects

Another common method to estimate regional impacts of a Class III railroad simulates the abandonment of all or portions of the railroad network. Babcock, Bunch, Sanderson, and Witt (2003) investigated the impact of Class III railroad abandonment in the state of Kansas by simulating the complete transfer of all wheat production in the western two-thirds of Kansas from Class III railcars to trucks. The researchers used geographic information system (GIS) software to calculate the minimum transportation and handling costs required to move wheat from Kansas farms to export terminals in Houston, Texas. The authors found that increased costs to transport wheat products to export terminals via trucks decreased financial gains for wheat producers. The authors also estimated pavement damage costs due to complete railroad network abandonment by converting the amount of wheat usually transported by rail to truckloads and then estimating the increased damage trucks would cause to the pavement. The study concluded that total Class III abandonment would reduce Kansas farm income by $17.4 million per year due to increased shipping and handling costs and cause $57.8 million in highway damage per year due to increased truck mileage (Babcock et al., 2003).

Witt (2004) improved the methodology for estimating the effect of railroad track abandonment on highway safety by accounting for the costs and benefits of stopping operations of railroads. Like Babcock et al., Witt also simulated the total abandonment of Class III railroads in the western two-thirds of Kansas and determined that corresponding truck traffic must accommodate wheat typically shipped in railcars. Witt took into account that freight shipment from rails to trucks reduces the occurrence of crashes involving trucks due to the removal of at-grade rail crossings in rural regions. The costs and benefits of the change were based on the average cost

and number of crashes per truck mile traveled, and annual collisions at highway-rail crossings with no rail traffic. Witt found the net annual safety cost to be $1.3 million and the net annual safety benefit to be $2.7 million. Thus, the net annual safety impact of rail abandonment would be an annual savings of $1.4 million primarily due to the reduction of crash-prone at-grade rail crossings (Witt, 2004).

Bitzan and Tolliver (2001) compared total highway impact costs of all North Dakota Class III railroads with less than 150 cars per mile running on rails less than 90 lb/yd (44.6 kg/m) to the total cost to upgrade the 1,200 miles (1,930 km) of track in North Dakota to accommodate 286,000 lb (129,844 kg) railcars. They used a method similar to Witt (2004) to calculate total economic effect on the state's highways, determining that, although the change in shipping mode could cost the state of North Dakota $73 million, the cost to completely upgrade the lower quality Class III track would exceed $257 million. Therefore, a complete upgrade of the railroad network is highly unfeasible, but the researchers suggested that the improvement of sections of certain railroads may be economically feasible, consequently earning justly awarded subsidies (Bitzan & Tolliver, 2001).

Zink (1984) investigated the economic viability of converting Class III railroads instead of abandoning low-volume track miles in grain-shipping regions of North Dakota. Zink estimated the total revenue for converting abandoned rail segments into Class III railroads under five separate scenarios in a heavily grain-dependent market, accounting for necessary rehabilitation costs, maintenance, interest rates, and earnings per railcar. Each scenario predicted a shortfall of $500,000 to $1.1 million per year, meaning that unless high volumes of grain or similar commodities were shipped, acquisition of sufficient revenue to justify the conversion of abandoned lines to Class III railroads would be difficult.

Sage, Casavant, and Eustice (2015) estimated the economic impact for three Class III railroads in Washington State. The costs of transporting commodities using Class III railroads in 2013 were estimated for three situations: use of rail only, use of trucks and rail, and use of trucks only. These costs were then compared to the product value. For each situation, the shipping distance used to determine the transportation cost was based on nationwide averages for each commodity group. Results of this study for the Columbia Basin Railroad are shown in Table 2.3.

Table 2.3: Travel Cost Scenarios for Transport Diversion from Rail to Truck of the Columbia Basin Railroad

Commodity	Total Estimated Value of Product Moved	Total Estimated Cost of Movement by Rail	Cost if Truck/Rail Combination	Cost if Moved Fully by Truck
Food or Kindred Products (STCC 20)	$624,843,750	$21,176,145	$28,387,861	$251,561,254
Farm Products (STCC 01)	$69,253,032	$2,937,626	$7,485,749	$34,897,418
Chemicals or Allied Products (STCC 28)	$71,177,775	$2,711,296	$5,439,809	$32,208,744
Hazmat (STCC 49)	$62,602,000	$2,968,376	$4,966,521	$35,262,720
Pulp, Paper or Allied Products (STCC 26)	$28,616,327	$1,249,382	$2,006,802	$14,841,994
Non-Metallic Minerals (STCC 14)	$485,182	$232,332	$742,688	$2,759,976
TOTAL	$856,978,067	$31,275,157	$49,029,433	$371,532,106

Source: Sage et al. (2015)

As shown in Table 2.3, the estimated value of goods shipped was approximately $857 billion, and the total cost for shipping goods by rail only was approximately $31 billion. If the movement of goods was changed to a rail and truck combination or truck only, the shipping cost would increase to approximately $49 billion and $371 billion, respectively.

2.3.3 Summary of the Effect of Class III Railroads

The effect of Class III railroads varies regionally and by railroad, as indicated by the mentioned studies. Although Class III railroads are a significant source of employment and support several regional industries, simple methods often overestimate the value of these railroads (Llorens & Richardson, 2014; Miller & Stich, 2013; Babcock et al., 2003; Feser & Cassidy, 1996). Therefore, most Class III rail improvements are based on robust cost-benefit analyses that include improved operating performance, customer service, and safety. The removal of Class III railroads and the use of large trucks to transport products have increased shipping costs for local industries and annual highway damage costs but have decreased state highway costs increasing the net annual highway safety (Babcock et al., 2003; Witt, 2004; Sage et al., 2015). However, costs required to

upgrade Class III railroads to optimal working conditions are not justified due to lack of adequate traffic generation (Bitzan & Tolliver, 2001; Zink, 1984).

2.4 Heavy Axle Loads

Railroad technology is continually progressing, and the ability to improve and innovate the size and shape of railcars has led to the creation of many shipping options for goods and services. One type of railcar, the large HAL railcar, can transport large volumes of goods, but it increases stress on the track. The Heavy Axle Load Research Program, administered by the Association of American Railroads (AAR) and conducted from 1988 to 2000, attempted to develop HAL guidance for the North American railroad industry to determine the safest and optimum economic payload for bulk shipments. In 1991, a railcar with a 286,000 lb (129,844 kg) gross value weight became the new industry standard for a cost-effective HAL instead of the previous 263,000 lb (119,295 kg) gross value weight (Martland, 2013). The new cost effectiveness was attributed to increased savings in operating costs for the railroads compared to the corresponding increase in track maintenance and equipment costs. Operation costs for the heavier railcars proved to be approximately 9 percent less than the lighter cars due to the decreased number of carloads needed to haul the same volume of goods (Casavant & Tolliver, 2001). Although the increased stress applied by HAL traffic to the track structure was expected to increase railroad expenditures by $50 or $60 million per year, in actuality, the constant dollar infrastructure expenditure per 1,000 revenue ton-miles decreased from $10.25 million in 1990 to $9.41 million in 2010 as a result of enhanced technology and improved track maintenance methods and the fact that not all railroad tracks are currently maintained sufficiently to accommodate HAL railcars (Martland, 2013).

Resor, Zarembski, and Patel (2000) investigated minimum track requirements to accommodate HALs, determining that a railcar weighing over 286,000 lb (129,844 kg) on a track structure with rails less than or equal to 70 lb/yd (35 kg/m) is likely to deteriorate quickly, and may cause derailments, but 90 lb/yd (45 kg/m) rail may perform satisfactorily depending on the track substructure quality and train speed. Finally, 112 lb/yd (55 kg/m) rail with average track support performs satisfactorily with train speeds up to 40 mph (64 kmh). The authors recommended that all tracks with less than 90 lb/yd (45 kg/m) rail should be upgraded to 112 or

115 lb/yd (55 or 57 kg/m) rail so that trains can operate at or above 25 mph (40 kmh). Additionally, all jointed 90 lb/yd (45 kg/m) rail in service should be welded into longer sections to lessen dynamic effects and increase continuous support (Resor et al., 2000). However, research results showed that most rail sections with 90 lb/yd (45 kg/m) or less are owned by small, low-volume railroads that do not generate enough revenue to improve track structure conditions.

2.4.1 Impact of Heavy Axle Loads on Class III Railroads

Most Class III railroads have been acquired by private companies from low-performing branch lines of Class I track that currently may be suffering from decades of deferred maintenance, preventing many Class III railroad networks from accommodating trainsets with HAL railcars. Several research studies have attempted to quantify funding required to upgrade rail segments to accommodate HAL railcars and increased train speeds. Babcock and Sanderson (2004), Casavant and Tolliver (2001), and Bitzan and Tolliver (2001) investigated upgrade costs for Kansas, Washington State, and North Dakota, respectively. Additionally, Resor et al. (2000) investigated ways to calculate the current conditions and needs of Class III railroads on a national level.

Babcock and Sanderson (2004) researched the effects of 286,000 lb (129,844 kg) railcars on five Class III railroads in Kansas. They surveyed representatives of these railroads and found that approximately 70 percent of the total mainline route miles and 86 percent of the total number of bridges must be upgraded to safely accommodate HAL railcars. The total cost of the proposed upgrades was estimated to be approximately $308.7 million (Babcock & Sanderson, 2004).

Casavant and Tolliver (2001) estimated the cost of upgrading light-density segments of track in Washington state to handle carloads weighing 286,000 lb (129,844 kg). The authors estimated upgrade costs to be between $250,000 and $300,000 per mile ($156,000 and $186,000 per km) of track, not counting any bridge upgrade costs. The researchers estimated that 482 miles (776 km) of track must be upgraded, resulting in a minimum rehabilitation cost between $117 million and $141 million, including the use of second-hand rail and limited replacement of crossties (Casavant & Tolliver, 2001).

Bitzan and Tolliver (2001) simulated the effects of the use of HAL railcars to determine if a Class III railroad would be a beneficial investment for North Dakota. They determined that

approximately 1,200 miles (1,931 km) of track would need to be upgraded for the rail system to fully accommodate HAL cars and that upgraded track sections would cost between $258 million and $324 million, excluding any necessary bridge rehabilitations. Using an internal rate of return to determine the economic feasibility of upgrading track, they found that minimum traffic needed to justify upgrading Class III track was more than 200 cars per mile (125 cars per km). However, for Class I railroads with shipping competition nearby, minimum necessary traffic was as low as 40 cars per mile due to their higher revenues (25 cars per km; Bitzan & Tolliver, 2001).

Resor et al. (2000) surveyed a representative sample of 46 Class III railroads throughout the United States, which was slightly less than 10 percent of the industry at the time. The objectives of the survey were to determine existing track conditions and calculate improvement costs to determine the total cost of upgrading the national Class III system. They found that approximately 23 percent of national rail needed to be replaced, 43 percent of ties needed to be replaced, 23 percent of the track mileage needed ballast and resurfacing, 22 percent of bridges needed to be completely replaced, and another 27 percent of bridges needed upgrading, requiring a total of $650 million to perform maintenance work for the surveyed sample. When translated to the entire Class III rail industry, the researchers estimated it would cost approximately $6.9 billion for all track mileage. To verify the quality of estimated values, the researchers investigated two recent studies conducted by Departments of Transportation and determined that the numbers were equitable; a certain degree of variance between the different studies was deemed acceptable due to differences in replacement standards, labor costs, and the condition of the replacement materials.

As shown by the described research studies, the total expenditure needed to completely upgrade Class III railroads throughout the United States is a considerable cost that no private railroad could feasibly afford based solely on annual operating costs. Additionally, as discussed in the literature review, the actual economic benefits of improving sections of Class III rail track structures with light traffic may not justify the funding needed for such an improvement.

2.5 Financial Support for Class III Railroads

As of 2017, several sections of Class III railroads in Kansas do not produce enough revenue to justify upgrading track beyond general maintenance for current operations even though the

potential increase of traffic allowed by the upgrade would justify the investment. For Class III railroads in such a situation, bank loans, federal and state funding sources, and larger railroads that trade with Class III could be beneficial sources of funding, as explained in the next sections.

2.5.1 Bank Funding

A study conducted by the FRA in 1993 found that Class III railroads, although creditworthy companies, had difficulty obtaining financing for track structure upgrades because a limited number of financial institutions specialized in Class III railroad loans (FRA, 1993). In addition, the scarcity of public information about Class III railroads limited financial institutions' knowledge on which to base risk assessment, and the minimum required amount of $5 million for Class III railroad loans for small projects often prevents ready financing. Lack of interest by financial institutions to increase loan availability for Class III railroads and a certain degree of unwillingness by financial institutions to offer loans for non-liquid assets such as track structure and bridges/structures also hinder the acquisition of financing for Class III railroads.

Bitzan, Tolliver, and Benson (2002) investigated six large financial institutions that specialized in railroad financing to determine if the previous conditions still influenced the lending market. Survey results showed that a limited number of financial institutions specialized in financing Class III railroads and that public information on which credit lines could be based was still sparse. Additionally, these institutions were still unwilling to offer loans for track and bridge repairs since those structures are not able to be readily liquidated. However, all surveyed financial institutions indicated they were interested in providing more loans to Class III railroads despite a historic lack of lending (Bitzan et al., 2002).

2.5.2 Federal and State Funding

A variety of federal and state financing programs have been created as alternatives to private financial institutions for financing Class III railroad track and bridge structure rehabilitation projects. These programs, still active in 2017, assist in the continued growth of Class IIIs as the railroads play a key role in the movement of goods to Class I railroads (FRA, 2014).

2.5.2.1 Railroad Rehabilitation and Improvement Financing

The largest federally funded rail program, Railroad Rehabilitation and Improvement Financing (RRIF), is administered by the FRA. Since its initiation, the program has provided nearly $2.7 billion in loans to railroads, with 80 percent of the loans directly pertaining to Class II and III railroads. This program allows for improvement or rehabilitation of infrastructure and rail equipment but not operating expenses. The loan ceiling is currently $35 billion, with $7 billion reserved for non-Class I railroads, and the maximum loan term for RRIF is 35 years. As of May 2015, 35 loans were provided throughout 27 states (FRA, 2015; Sage et al., 2015).

2.5.2.2 Transportation Investment Generating Economic Recovery Grants

The American Recovery and Reinvestment Act of 2009 (ARRA) and the Transportation Investment Generating Economic Recovery (TIGER; a supplementary discretionary grant program included in ARRA) provided the United States Department of Transportation (USDOT) funding for discretionary grants towards capital investment in the nation's surface transportation infrastructure, including transit, planning, port, road, and bicycle/pedestrian projects (FRA, 2014). The railroad industry has received approximately $1 billion from TIGER grants, primarily for capacity enhancements, track improvements, and bridge repairs.

TIGER grants also leverage other funding sources. For example, for Class III projects, the funding match comes from the railroad company and/or state and/or local jurisdiction. Then federal, state, and private contributions construct a public private partnership (PPP) that promises to deliver public benefits for which the public pays at least part and private benefits for which the Class III railroad pays. TIGER grants are highly competitive, resulting in a small percentage of all submitted projects being funded (FRA, 2014; Sage et al., 2015). Two Class III railroads in Kansas have received this grant for rail infrastructure improvement: KYLE and South Kansas & Oklahoma.

2.5.2.3 Railroad Track Maintenance Tax Credit (26 U.S.C. 45G)

The United States allows a tax credit of up to 50 percent from railroad maintenance projects for Class II and Class III railroads to improve infrastructure, including maintaining tracks,

roadbeds, bridges, and related structures underneath the regulation of 26 U.S.C. 45G. This credit is capped at $3,500 per mile ($2,190 per km) of track structure the railroad owns or leases. Per the American Short Line and Regional Railroad Association (ASLRRA), more than $300 million worth of Class III infrastructure improvements are assisted by this tax credit each year (FRA, 2014; Sage et al., 2015).

Several states' Departments of Transportation have recognized the economic benefits of Class III railroads because they link local producers and manufacturers to the national Class I rail network. Therefore, states have provided funding options and tax benefits specifically designed to support local Class III railroads.

2.5.2.4 Annual Revolving Loans

Annual revolving loans and grant programs capitalized with annual appropriations are overseen by the Secretary of Transportation if the financing is federal and managed by local Departments of Transportation if the financing is state funded. These programs assist railroad companies by providing matching funds for loan terms of up to 10 years. Interest paid on these loans helps fund additional projects through additional loans. Applicants compete for funding, and recipients can use the funding for state businesses, community industrial parks, and Class III railroads. States currently offering such programs include Idaho, Kansas, New Jersey, New York, Ohio, Oregon, Pennsylvania, Virginia, and Wisconsin (FRA, 2014).

2.5.2.5 Tax Benefits

Some states recognize Class I and Class III railroads' contributions to economic growth by providing the railroads with additional tax benefits. Connecticut, North Carolina, and Pennsylvania impose statewide gross earnings or receipt taxes on railroads rather than property tax. Massachusetts and New Jersey require only minimal property tax from railroads. New York and Virginia provide railroad property tax relief using an individual classification rule: they inventory each item of taxable property and value it separately regardless of any cooperative effect on the railroad's other properties (FRA, 2014).

2.5.3 Class I Funding

Class I railroads have recently begun collaborating with Class II and Class III railroads to make capital improvements. This collaboration typically occurs when a Class I railroad business is expected to improve due to the rehabilitation of the Class III's asset. Such situations could include extensive disrepair to the Class III's track structure so that it slows down the line or strategic locations of the track for access to a regional freight market. Previous joint ventures have allowed the preservation and rehabilitation of rail lines for public benefit while reducing the Class III industry's reliance on financial support from federal or state governments. Corporate partnerships have been shown to increase competition in some regional freight markets (FRA, 2014).

Chapter 3: Study Method

The objective of this research study was to inventory Class III railroad track structure in Kansas, including critical assessment of the amount of Kansas's railroad system that is compatible with HAL railcars. The predominant commodity and quantity hauled by each Class III railroad were recorded, providing the basis for KDOT-predicted growth in carloads to the network and determining track structure locations for critical upgrades necessary to accommodate HAL railcar service. This section explains the development, contents, and process of distributing the survey to Class III railroads in Kansas.

In coordination with KDOT project monitors, the research team at Kansas State University conducted a survey of Class III railroads in Kansas over a 6-month period from late 2015 to early 2016. The survey was based on previous studies KDOT and other private consulting firms performed with similar objectives (Sage et al., 2015; Parsons Brinckerhoff, 2005). The survey (included in the Appendix) sought to determine operating and structural characteristics of the railroads, current track inventory, needed upgrades, and scheduled/planned track improvement projects. The survey included the following questions:

1. What are the top five commodities shipped on your railroad?
2. Is your business affected by seasonal differentiation in products? If so, explain to what extent.
3. What are your main locations for originating and terminating traffic?
4. Is your railroad owned by a parent company? If so, which one?
5. What are your railroad's primary corridors? Feeder line corridors?
6. What is your railroad's operating characteristic by subdivision and key segments within subdivisions? Specifically, subdivision route mileage, gross ton-miles per year, number of slow orders, average number of railcars by weight, total revenue, and percentage non-Class I revenue.
7. What are the infrastructure characteristics of your Class III by subdivision and key segments within the subdivisions? Specifically, the average FRA track class, current operating speed, type of rail, rail weight, rail age, ballast and tie conditions, and weight capacity for each subdivision.

8. Does your railroad have trackage rights on another railroad's track or does another railroad have trackage rights over your railroad? If so, what segments are shared?
9. Do you have a map showing the exact segments or Sub-Divisions that you'd willingly share with us that show 286,000 lb railcar handling capacity; bridge structural issues; geometric issues; track speed; trackage rights?
10. Are there any scenarios (including economic impacts) under which you could foresee the abandonment of your railroad, or specific line segments?
11. Does your company make projections as to future growth in your business? If so, are these by tonnage or number of carloads and what is the basis for these projections? What are your most recent projections for the next three years?
12. Do you have an adequate number of locomotives with the power to pull fully loaded 286,000 lb cars?
13. Does your company have any plans to increase track capacity to handle fully loaded 286,000 lb railcars (or along greater lengths of track)? If so, what track segments? Do you have a timeframe during which you hope to complete these upgrades? Can you prioritize these projects?
14. Are there other issues that your railroad experiences that you feel hamper your operations and/or affect customer service? (i.e., car supply shortage)

Digital surveys were sent to representatives of the Class III railroads operating in Kansas. Prior to sending the official survey, however, verbal and electronic communications were made with each representative to ensure willingness and ability to provide data. The research team also explained the purpose of the study so companies would understand the importance of the information requested. Surveys were sent to 10 out of 13 Class III railroads because KDOT project monitors identified four Class III railroads as having limited route mileage in Kansas, a recent history of low-volume shipping, or less than 10 percent of the total Class III route mileage in Kansas. Data were organized and analyzed in a tiered system to provide guidance for the allocation of funding from the SRSIF.

Chapter 4: Inventory Results

4.1 Class III Carrier Systemwide Inventory

Although Class III railroads in Kansas are as diverse as the communities they serve, recurring themes emerged from the survey data which are summarized in the subsequent sections. The tables in this section categorize Class III railroads as local and regional carriers or switching and terminal carriers. Local and regional railroads tend to have more track miles and haul goods across different regions; switching and terminal railroads typically operate as traditional rail yards in which railcars move within the same city. Results showed that all Class III railroads except one are owned by subsidiaries of parent companies that own and manage a collection of Class III railroads throughout the United States. Table 4.1 specifies the parent company that owns each railroad surveyed in Kansas and summarizes the route mileage of each railroad. As shown in Table 4.1, the length of track operated by Class III railroads varies from 6 miles (10 km) to more than 750 miles (1,200 km).

Table 4.1: Summary of Surveyed Class III Carrier Route Mileages and Parent Companies

Class III Carriers	Route Mileage (km)	Parent Company
Local and Regional Carriers		
Blue Rapids	10 (16)	Georgia-Pacific Gypsum LLC
Boothill & Western	10 (16)	MidWest Pacific Rail
Cimarron Valley	183 (295)	The Western Group, Ogden, UT
Garden City Western	42 (68)	Pioneer Railcorp
Kansas & Oklahoma	642(1,033)	WATCO Co.
KYLE	271 (436)	Genesee & Wyoming Inc.
Missouri & Northern Arkansas	8 (5)	Genesee & Wyoming Inc.
Nebraska, Kansas, & Colorado	68 (109)	OmniTRAX
South Kansas & Oklahoma	267 (430)	WATCO Co.
V&S	21 (34)	Affiliated Railroads
Switching and Terminal Carriers		
Kansas City Terminal (Kaw)	21 (34)	BNSF (track rights) / WATCO Co. (operations)
New Century AirCenter	6 (10)	n/a
Wichita Terminal	9 (15)	BNSF / UP
TOTAL CLASS III	1,558 (2,507)	n/a

An important variable for evaluating railroad business effectiveness is the number of railcars that originate and terminate annually. Table 4.2 presents annual carloads by weight and by railroad as reported by Class III railroads in Kansas. As shown in Table 4.2, Class III railroads in Kansas hauled approximately 163,300 carloads of goods based on the data collected. KYLE's carloads were estimated by converting trains to carloads, assuming 25 carloads per train, and Wichita Terminal does not keep record of the weight of the railcars they move. South Kansas & Oklahoma shipped the most total cars, but the Kansas & Oklahoma railroad shipped more than three times the number of 286,000 lb (129,844 kg) carloads as any other railroad. A common estimate found during the survey was that every railcar on Class III railroads in Kansas removes three to four semi-trucks from the highway system, translating to between 468,600 and 624,800 trucks (KDOT, 2011).

Table 4.2: Summary of Surveyed Class III Carrier Carloads by Railcar Weight (2015)

Class III Carriers	Yearly 263,000 lb (119,295 kg) Carloads	Yearly 286,000 lb (129,844 kg) Carloads	Total Carloads
Local and Regional Carriers			
Blue Rapids	383	0	383
Cimarron Valley	6,602	4,400	11,002
Garden City Western	1,200	0	1,200
Kansas & Oklahoma	11,096	32,600	43,696
KYLE	19,136	500	19,636
South Kansas & Oklahoma	61,197	5,700	66,897
V&S	409	480	889
Switching and Terminal Carriers			
Kansas City Terminal	21,419	5,316	16,103
New Century AirCenter	571	140	711
Wichita Terminal	n/a	n/a	15,986
TOTAL CLASS III	87,010	64,190	176,503

Note: Nebraska, Kansas, & Colorado Railroad, Boothill & Western Railway, and Missouri & Northern Arkansas Railroad were not surveyed.

Railroads often project future growth based on customers and market predictions for the shipped commodities. Table 4.3 details reported (2015 and 2016) and predicted (2017) of the surveyed railroads. As shown in Table 4.3 all Class III railroads in Kansas expect growth in future carloads. However, Wichita Terminal did not independently project future carloads since the UP and BNSF railroads have joint ownership and are in charge of marketing projections. Also, KYLE's future projections were not available to the research team or public due to company policy at the time of this research study.

Table 4.3: Summary of Surveyed Class III Carrier Projected Future Carloads

Class III Carrier	2015	2016	2017 (Predicted)
Local and Regional Carriers			
Blue Rapids	383	500	653
Cimarron Valley	11,002	14,411	18,876
Garden City Western	1,200	1,464	1,786
Kansas & Oklahoma	43,636	45,173	46,700
KYLE	19,636	24,121	n/a
South Kansas & Oklahoma	66,897	68,808	70,774
V&S	889	849	811
Switching and Terminal Carriers			
Kansas City Terminal	16,103	17,883	19,860
New Century AirCenter	711	820	946
Wichita Terminal	15,986	15,774	n/a
TOTAL CLASS III	176,503	189,803	

Note: Nebraska, Kansas, & Colorado Railroad, Boothill & Western Railway, and Missouri & Northern Arkansas Railroad were not surveyed.

A track's weight capacity, or the maximum allowable weight the track can safely support, is determined by the interaction of its rail, ballast, and ties. Trained track inspectors can determine the weight capacity of a section of track and identify poor track conditions. The minimum rail weight for a track to accommodate 286,000 lb (129,844 kg) railcars with low risk of derailment or other similar operation issues is 85 lb/yd (42 kg/m), providing that tie condition, ballast depth, and

other track material are in acceptable condition (Resor et al., 2000). Table 4.4 to Table 4.6 provide a summary of the track conditions of Class III railroads in Kansas, including the rail weight by mile and the percentage of 286,000 lb (129,844 kg) railcar capacity track versus the percentage of tons from 286,000 lb (129,844 kg) railcars and FRA class track by mile, respectively.

As shown in Table 4.4, based on rail weight, approximately 16 percent of the Class III railroad mileage was not adequate for HAL cars even if the rest of the track was in acceptable condition. In the "Greater than 100 lb/yd (50 kg/m)" category, most of the rail was 115 lb/yd (57 kg/m), with a maximum weight of 136 lb/yd (68 kg/m), demonstrating rail weights that were considerably lighter than the 133 and 141 lb/yd (66 and 70 kg/m) Class I railroads currently use for high-speed operations.

Table 4.4: Summary of Surveyed Class III Carrier Rail Weights by Miles

Class III Carrier	Total	70–85 lb/yd (35–42 kg/m)	86–99 lb/yd (42–49 kg/m)	Greater than 100 lb/yd (50 kg/m)
Local and Regional Carriers				
Blue Rapids	10	0	10	0
Cimarron Valley	255	0	51	204
Garden City Western	42	38	4	0
Kansas & Oklahoma	759	253	145	361
KYLE	458	0	46	412
South Kansas & Oklahoma	276	1	105	170
V&S	21	0	0	21
Switching and Terminal Carriers				
Kansas City Terminal	21	0	0	21
New Century AirCenter	6	0	3	3
Wichita Terminal	10	0	5	5
TOTAL CLASS III	1,944	292	369	1,283

Note: Nebraska, Kansas, & Colorado Railroad, Boothill & Western Railway, and Missouri & Northern Arkansas Railroad were not surveyed.

Table 4.5 compares surveyed short line railroads with 286,000 lb capacity versus estimated tons shipped using HAL railcars. Table 4.5 shows that, overall, only 30 percent of the entire Class III network in Kansas has been upgraded to accommodate 286,000 lb (129,844 kg) carloads, which account for approximately 31 percent of Class III rail shipments in Kansas.

Table 4.5: Comparison of Surveyed Class III Carrier's 286,000 lb (129,844 kg) Capacity Versus Estimated Tons Shipped Using 286,000 lb (129,844 kg) Railcars

Class III Carrier	Route Mileage	Length 286,000 lb Capable	Percentage 286,000 lb Capable Track	Percentage Tons from 286,000 lb Cars
Local and Regional Carriers				
Blue Rapids	10	0	0%	0%
Cimarron Valley	255	135	53%	40%
Garden City Western	42	28	67%	0%
Kansas & Oklahoma	759	236	31%	75%
KYLE	458	57	12%	3%
South Kansas & Oklahoma	276	49	18%	9%
V&S	21	21	100%	54%
Switching and Terminal Carriers				
Kansas City Terminal	21	21	100%	33%
New Century AirCenter	6	6	100%	20%
Wichita Terminal	10	10	100%	n/a
TOTAL CLASS III	1,857	563	30%	31%

Note: Nebraska, Kansas, & Colorado Railroad, Boothill & Western Railway, and Missouri & Northern Arkansas Railroad were not surveyed.

The FRA defines maximum allowable operating speed limits of trains based on the track condition, and track conditions are divided into classes based on strict track structure parameters. The Excepted class is the lowest quality of track allowed and requires freight trains to travel below 10 mph (16 kmh). Class 1, Class 2, Class 3, Class 4, and Class 5 have maximum allowable freight operating speeds of 10, 25, 40, 60, and 80 mph (16, 40, 64, 97, and 129 kmh), respectively. Table 4.6 classifies the total mileage as each FRA track for Class III railroads in Kansas.

Table 4.6: Summary of Surveyed Class III Carrier FRA Track Class by Mile

Class III Carrier	Total	Excepted	Class 1 (10 mph)	Class 2 (25 mph)	Class 3 (40 mph)
Local and Regional Carriers					
Blue Rapids	10	10	0	0	0
Boothill & Western	10	0	10	0	0
Cimarron Valley	255	0	255	0	0
Garden City Western	42	0	42	0	0
Kansas & Oklahoma	759	45	352	362	0
KYLE	458	0	72	149	237
Missouri & Northern Arkansas	8	8	0	0	0
Nebraska, Kansas, & Colorado	68	68	0	0	0
South Kansas & Oklahoma	276	0	164	112	0
V&S	21	21	0	0	0
Switching and Terminal Carriers					
Kansas City Terminal	21	0	21	0	0
New Century AirCenter	6	0	6	0	0
Wichita Terminal	10	0	10	0	0
TOTAL CLASS III	1,944	152	932	623	237

As shown in Table 4.6, approximately half of all Class III railroads in Kansas are restricted to speeds of 10 mph (16 kmh) or less. Although the KYLE, Kansas & Oklahoma, and South Kansas & Oklahoma railroads have long stretches of track that are Class 2 and above, many sections of those tracks may still operate at slower speeds due to safety concerns such as derailment. For sections of track hundreds of miles long with a lower class, speed restrictions can slow operations, decrease operating efficiencies, increase fuel consumption, and hinder customer service due to the distance the train must travel and FRA restrictions mandating 12 hours as the maximum number of consecutive hours an employee can work (49 U.S.C. § 21103, 2008).

Figure 4.1 illustrates where Class III railroads with 286,000 lb (129,844 kg) railcar compatible tracks are located in Kansas. Red segments on the map signify that the track can accommodate 286,000 lb (129,844) railcars; black segments cannot accommodate railcars of that weight. In addition to locations of compatible track, the figure also shows where short line railroads connect to Class I railroads.

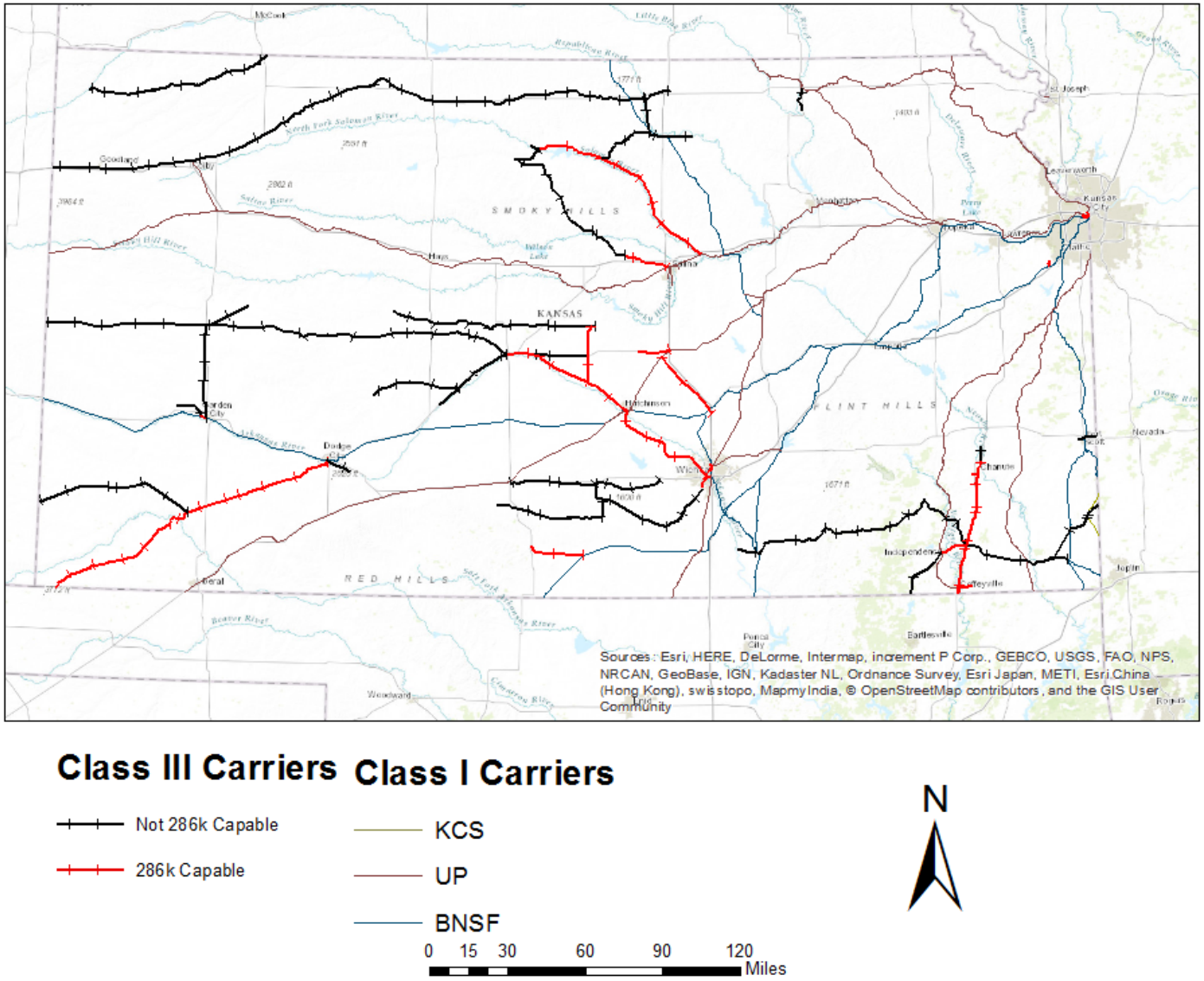

Figure 4.1: Active Freight Railroads in Kansas by Weight Capacity (2017)

4.2 Individual Class III Railroad Inventory

4.2.1 Blue Rapids Railroad

The Blue Rapids Railroad (BRRR) is a 10-mile (16-km) segment of track connecting Georgia Pacific Gypsum LLC's manufacturing facility in Blue Rapids, Kansas, to UP railroad lines. Since the mid-1980's, Georgia Pacific has used railcars to transport industrial gypsum plaster from their plant to the UP railyard in Marysville, Kansas. The company relies on UP for twice-weekly switching operations. In 2015, BRRR hauled approximately 500 carloads weighing 263,000 lb (119,295 kg). Survey results showed that no track segments could accommodate 286,000 lb (129,844 kg) railcars and that the company does not intend to increase track capacity. Figure 4.2 shows the weight capacity of the BRRR.

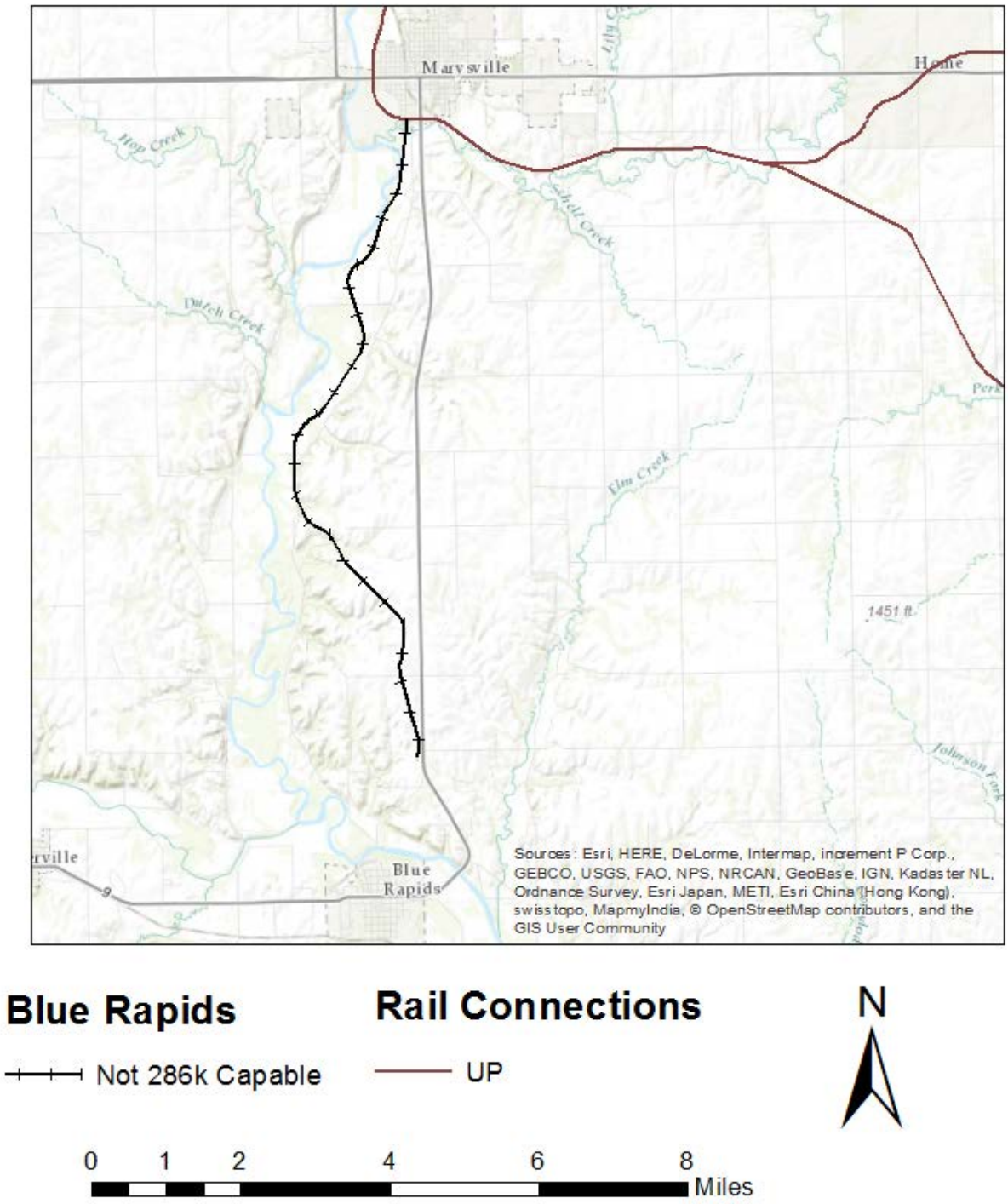

Figure 4.2: Weight Capacity Map for the Blue Rapids Railroad

4.2.2 Boothill & Western Railway

The Boothill & Western (BH&W) railway is a 10-mile (16-km) stretch of track that connects Dodge City, Kansas, to Bucklin, Kansas. BH&W was created from the former Chicago, Rock Island and Pacific Railroad. BH&W currently only generates revenue from car storage fees. Figure 4.3 shows the weight capacity of the BH&W railway.

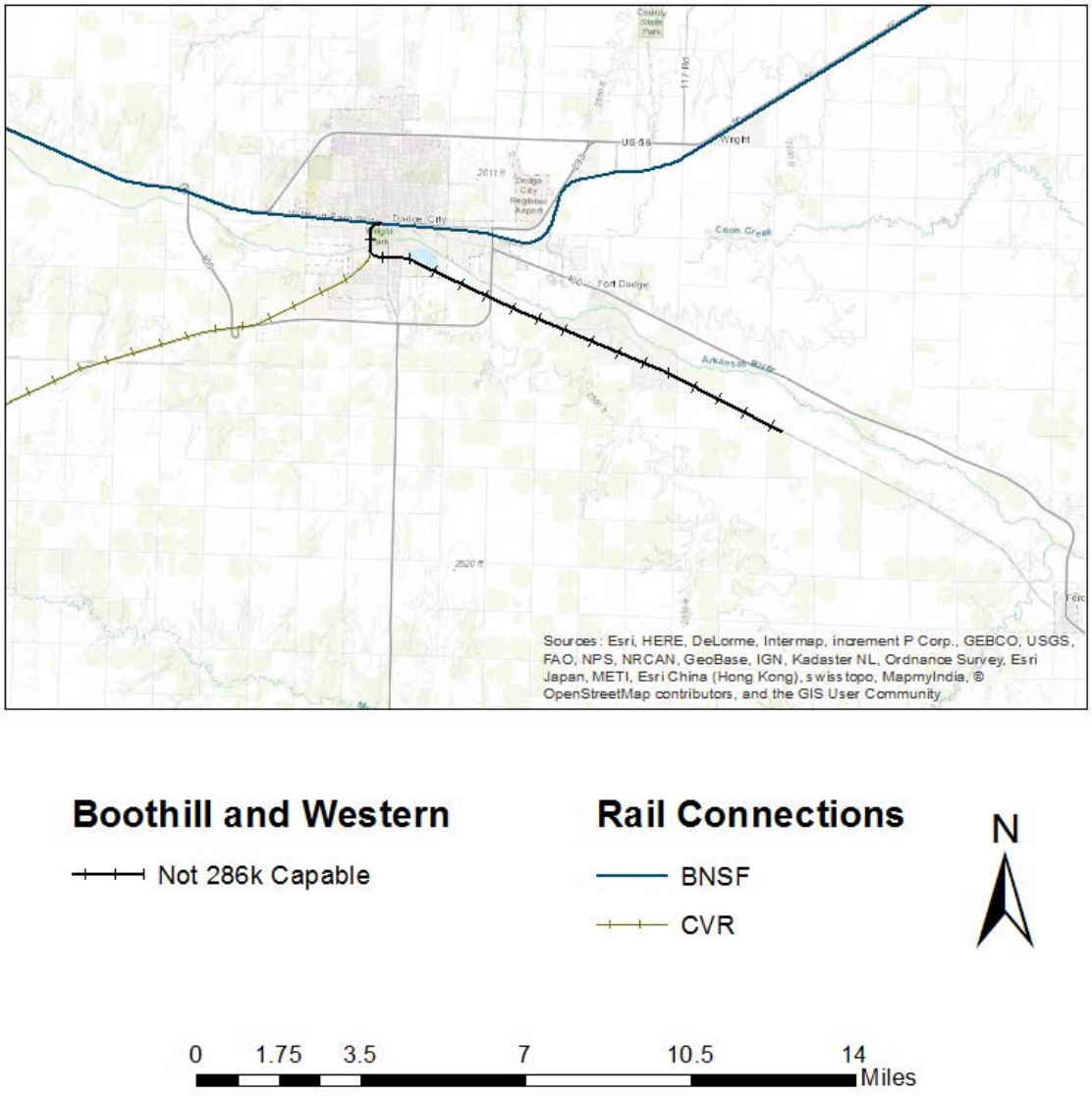

Figure 4.3: Weight Capacity Map for the Boothill & Western Railway

4.2.3 Cimarron Valley Railroad

The Cimarron Valley Railroad (CVR) is a subsidiary of the Western Group. CVR operates a total of 255 miles (410 km) of track, of which approximately 183 miles (294 km) are located in Kansas. The primary agricultural commodities shipped by CVR include wheat, milo, soybean meal, corn, and fuel oil. CVR runs from Dodge City, Kansas, to Satanta, Kansas, where it splits into two lines. The western route continues to Springfield, Colorado, and the southern route continues to Boise City, Oklahoma. The southern route was reported to be able to accommodate 286,000 lb (129,844 kg) railcars, while the western route cannot. According to the survey, CVR currently has no plans to upgrade the weight capacity of the western route. As reported, CVR transported six thousand 263,000 lb (119,295 kg) and four thousand four hundred 286,000 lb (129,844 kg) carloads in 2015. Figure 4.4 details the weight capacity of CVR.

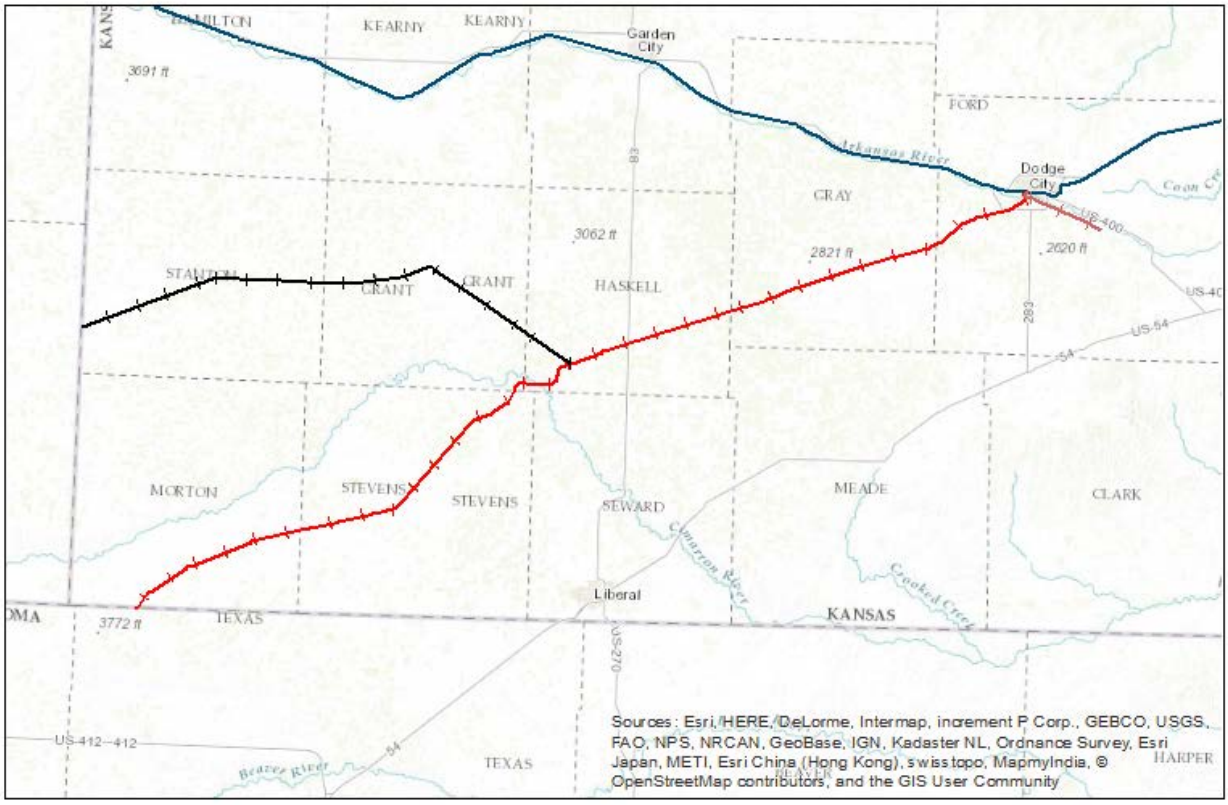

Figure 4.4: Weight Capacity for the Cimarron Valley Railroad

4.2.4 Garden City Western Railway

The Garden City Western (GCW) railway is a wholly-owned subsidiary of Pioneer Railcorp. GCW consists of a 40-mile (64-km) track segment serving the southwestern part of Kansas near Garden City, Kansas. The primary commodities hauled by GCW include fertilizers, meal, scrap metal, molasses, and utility poles. GCW recently upgraded three miles of their main line and 13 yard switches to accommodate 286,000 lb (129,844 kg) railcars. Survey results showed that 286,000 lb (129,844 kg) railcars account for 95 percent of all inbound and outbound traffic for the railroad. In 2015, GCW transported one thousand four hundred 263,000 lb (119,295 kg) railcars. Figure 4.5 illustrates the weight capacity of the GCW railway.

Figure 4.5: Weight Capacity Map for the Garden City Western Railway

4.2.5 Kansas & Oklahoma Railroad

The Kansas & Oklahoma Railroad (KO) is a subsidiary of WATCO Companies Inc., a Class III railroad-holding company headquartered in Pittsburg, Kansas. KO hauls commodities such as wheat, sorghum, rains, fertilizers, and soybean meals, as well as Class 8 corrosive materials, paper, and flammable gases. KO, one of the largest Class III railroads in North America, operates approximately 766 track miles (1,232 km) that stretch in three directions from Wichita, Kansas. Table 4.7 summarizes the carloads and weight capacity for sections of the KO.

Table 4.7: Summary of Kansas & Oklahoma Data by Rail Corridor

Section	Route Mileage	Mileage 286,000 lb Capable	Percentage Track 286,000 lb Capable	Yearly 263,000 lb Railcars	Yearly 286,000 lb Railcars	Percentage of Tons from 286,000 lb Cars
Conway Springs	101.3	0	0.0%	2,220	12,600	86.3%
Kingman	60.2	0	0.0%	492	0	0.0%
Hutchison	52.9	52.9	100.0%	0	2,412	100.0%
Great Bend	120	51.2	42.7%	0	4,608	100.0%
Hoisington	104.9	104.9	100.0%	1,692	0	0.0%
Scott City	203.4	0	0.0%	4,980	0	0.0%
McPherson	13.2	5.7	43.2%	0	7,212	100.0%
Newton	27	27	100.0%	0	612	100.0%
Salina	82.7	0	0.0%	1,212	5,160	82.5%
K&O TOTAL:	765.6	241.7	32%	10,596	32,604	77.4%

As shown, the Conway Springs section has no track structure that can accommodate 286,000 lb (129,844 kg) railcars. However, a majority of KO business involves 286,000 lb (129,844 kg) railcars, so the railroad only partially fills the larger cars. Figure 4.6 shows weight capacity of KO track corridors.

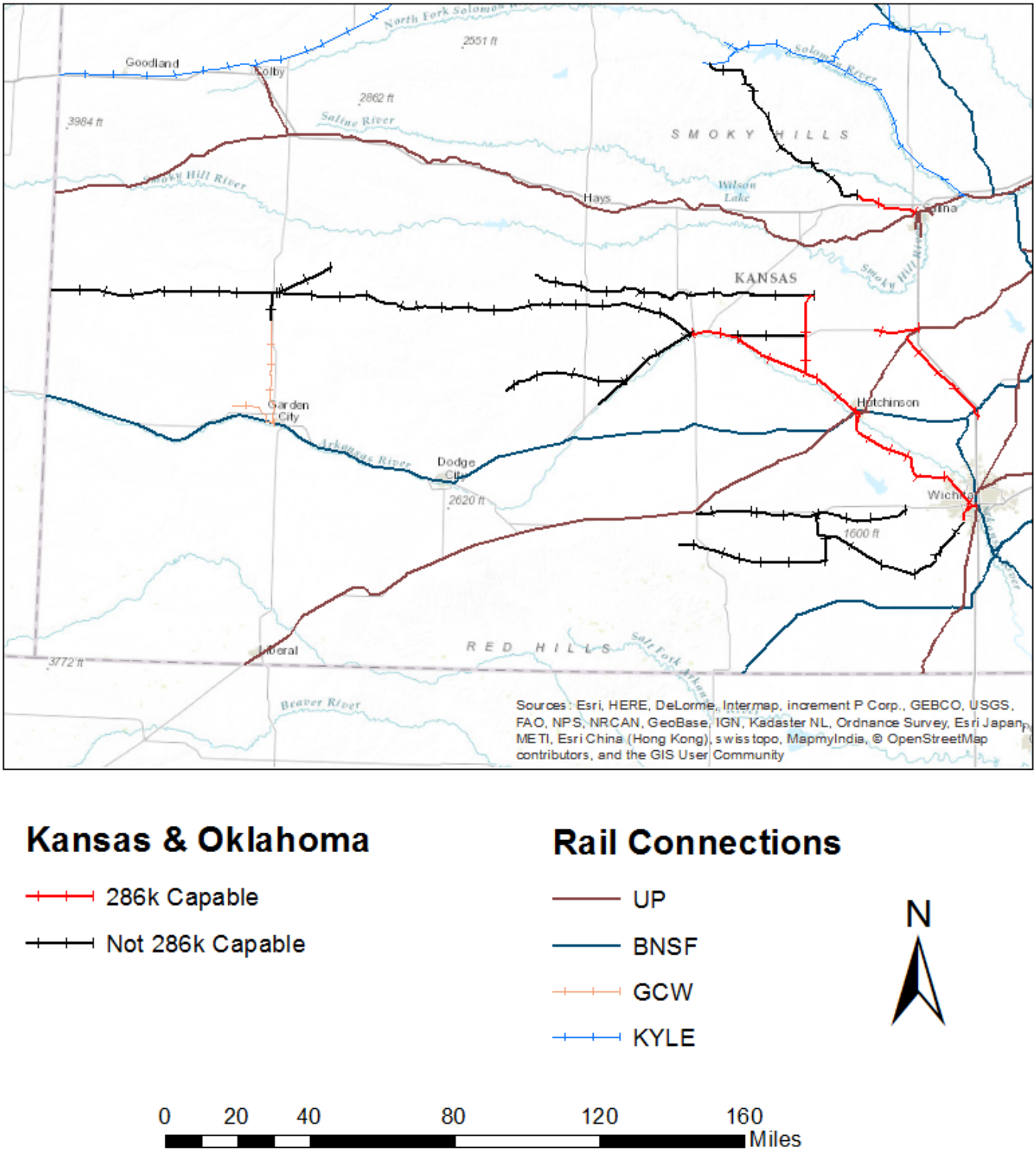

Figure 4.6: Weight Capacity Map for the Kansas & Oklahoma Railroad

4.2.6 Kyle Railroad

Since 2012, Kyle Railroad (KYLE) has been owned and operated by Genesee & Wyoming Inc., the largest publicly traded Class III holding company in the United States. Prior to ownership by Genesee & Wyoming, the KYLE was owned by Rail America. KYLE operates more than 500 miles (805 km) of track, of which 458 miles (737 km) are located in Kansas and connect to BNSF, UP, and KO railroads, allowing shippers multiple transportation options. KYLE primarily transports winter wheat, sorghum, roofing granules, and corn. Table 4.8 summarizes the carloads and weight capacities for sections of the KYLE.

Table 4.8: Summary of KYLE Data by Rail Corridor

Section	Route Mileage	Mileage 286,000 lb Capable	Percentage Track 286,000 lb Capable	Yearly 263,000 lb Railcars	Yearly 286,000 lb Railcars	Percentage of Tons from 286,000 lb Cars
Solomon	57	57	100.0%	0	90	100.0%
Concordia	53	0	0.0%	72	0	0.0%
Yuma	15	0	0.0%	nominal	0	0.0%
Bellville	96	0	0.0%	72	0	0.0%
Phillipsburg	140	0	0.0%	72	0	0.0%
Goodland	97	0	0.0%	72	0	0.0%
KYLE TOTAL:	458	57	12%	288	90	24.50%

As shown in Table 4.8, the Yuma section segment contains an out-of-service bridge that hinders any shipments utilizing this route. Currently, only the Solomon segment can accommodate 286,000 lb (129,844 kg) railcars; however, as stated in the survey, the KYLE hopes to improve the Bellville and Concordia subdivisions so the Phillipsburg operations and Goodland division can include 286,000 lb (129,844 kg) cars, offering heavier carloads to their grain customers. Figure 4.7 details the weight capacity and rail connections for the KYLE.

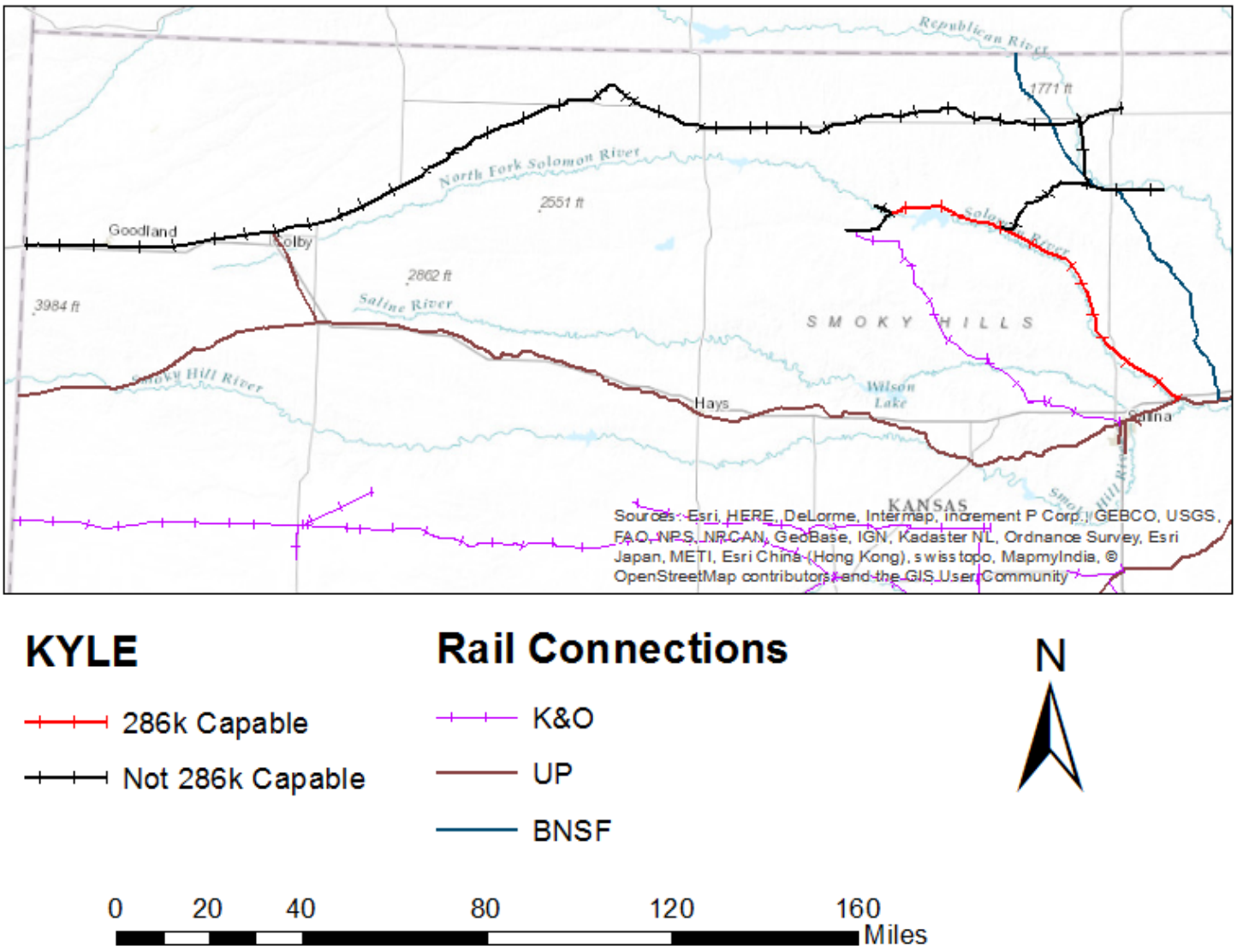

Figure 4.7: Weight Capacity Map for the KYLE Railroad

4.2.7 Missouri & Northern Arkansas

The Kansas portion of the Missouri & Northern Arkansas (M&NA) is an 8-mile segment that connects Fort Scott, Kansas, to Nevada, Missouri. Although the railroad is owned by Genesee & Wyoming Inc., this track segment is leased from UP. While the railroad is currently classified as active, no shipping is occurring on this segment of track. The weight capacity map for M&NA is shown in Figure 4.8.

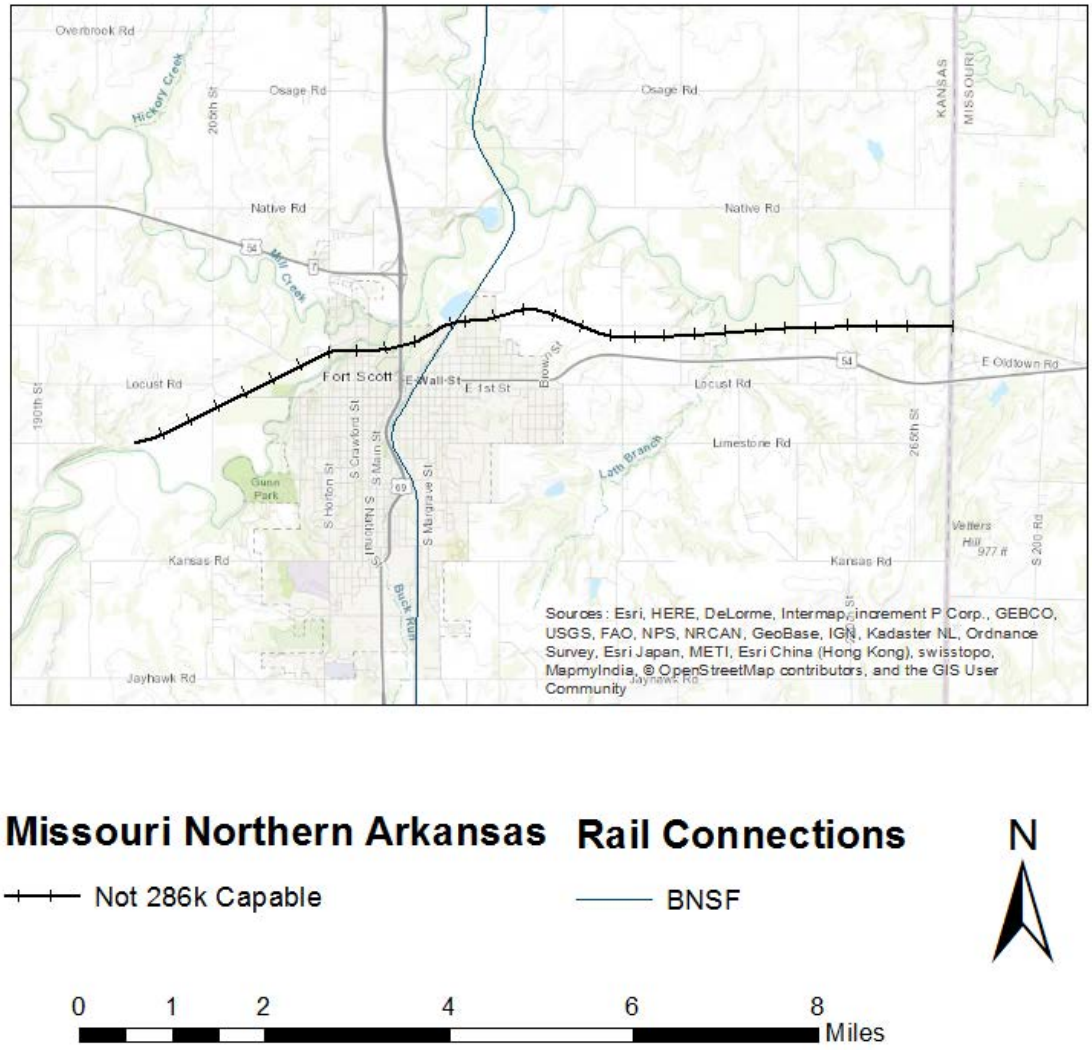

Figure 4.8: Weight Capacity Map for the Missouri & Northern Arkansas Railroad

4.2.8 Nebraska, Kansas, & Colorado Railway

The Nebraska, Kansas, & Colorado Railway, LLC (NKCR), is an 86-mile stretch of track in the northwestern corner of Kansas. This section of rail currently only generates revenue via railcar storage. NKCR previously had two separate subdivisions in Kansas, but the Oberlin subdivision was abandoned, leaving only the St. Francis subdivision. Figure 4.9 shows the weight capacity map for NKCR.

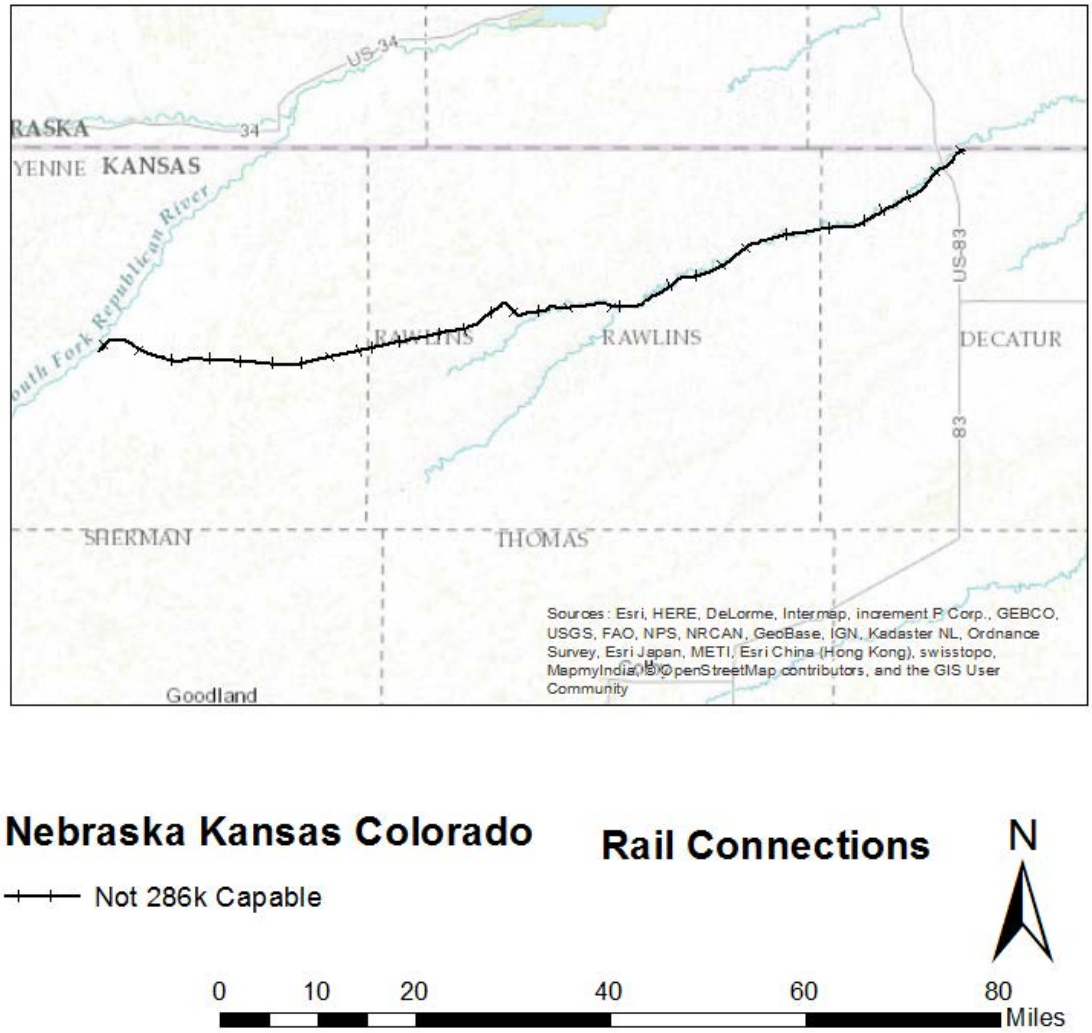

Figure 4.9: Weight Capacity Map for the Nebraska, Kansas, & Colorado Railway

4.2.9 South Kansas & Oklahoma Railroad

The South Kansas & Oklahoma (SKOL) railroad, a subsidiary of WATCO, operates nearly 300 miles (482 km) of track in Kansas, originating in Cherryvale, Kansas. SKOL ships commodities such as cement, chemicals, sand, rocks, grains, and grain products. Table 4.9 summarizes shipping and structural data by SKOL subdivision. As shown in the table, SKOL transported over fifty thousand 263,000 lb (119,294 kg) and five thousand five hundred 286,000 lb (129,844 kg) railcars during 2015. Although only the Chanute and Coffeyville portions of the SKOL can currently accommodate 286,000 lb (129,844) carloads, SKOL officials are evaluating track capacity upgrades on the Moline, Chanute, Coffeyville, and Tulsa sections. Figure 4.10 illustrates the weight capacity of the SKOL.

Table 4.9: Summary of South Kansas & Oklahoma Data by Rail Corridor

Section	Route Mileage	Mileage 286,000 lb Capable	Percentage Track 286,000 lb Capable	Yearly 263,000 lb Railcars	Yearly 286,000 lb Railcars	Percentage of Tons from 286,000 lb Cars
Chanute	35.2	35.2	100.0%	5,029	2,263	33.3%
Coffeyville	14	14	100.0%	13,771	2,987	17.8%
Tulsa	15	0	0.0%	8,206	24	0.3%
Neodesha	96	0	0.0%	11,728	635	5.7%
Gorilla	140	0	0.0%	5,176	0	0.0%
Moline	97	0	0.0%	7,430	121	1.8%
SKOL TOTAL:	397.2	49.2	12%	51,339	5,729	16.7%

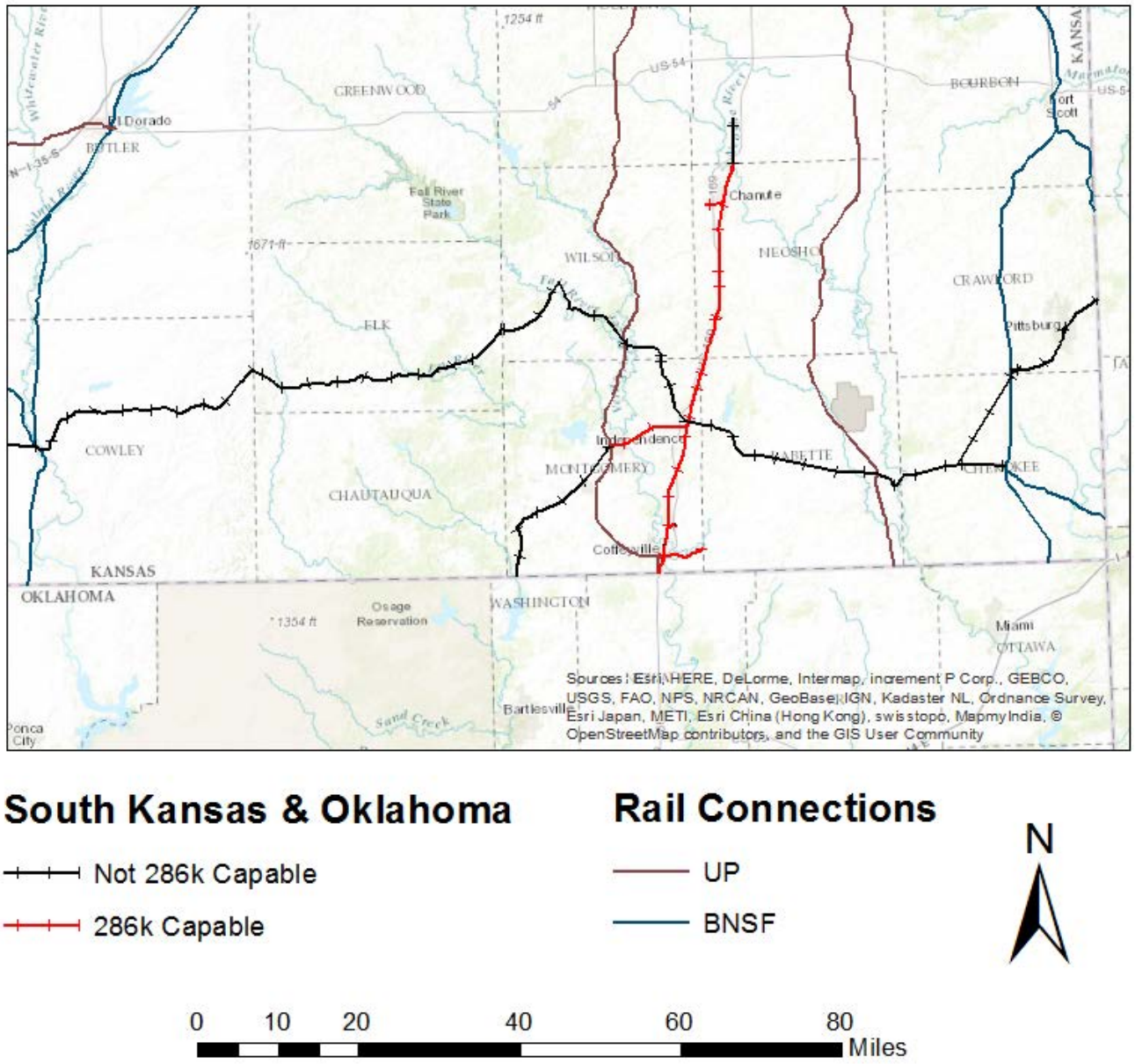

Figure 4.10: Weight Capacity Map for the South Kansas & Oklahoma Railroad

4.2.10 V&S Railway

The V&S Railway (VSR) is a stand-alone company managed by Affiliated Railroads as part of a non-corporate designation with four other Class III railroads. VSR operates two disconnected lines in Kansas consisting of a 22-mile (35-km) segment of track from Medicine Lodge, Kansas, to Attica, Kansas, and a 5-mile (8-km) segment of switching track in Hutchinson, Kansas. VSR transports industrial goods such as wallboards, plaster, scrap metal, and fertilizer from a manufacturing plant in Medicine Lodge, Kansas. All VSR track sections can accommodate 286,000 lb railcars (129,844 kg). The survey indicated that the most pressing issues for VSR are the aging of their bridges and needed funding to repair them. In 2015, VSR transported approximately four hundred and eighty 263,000 lb (119,295 kg) and four hundred and eighty 286,000 lb (129,844 kg) railcars. Figure 4.11 contains a map of the Medicine Lodge subdivision of the VSR.

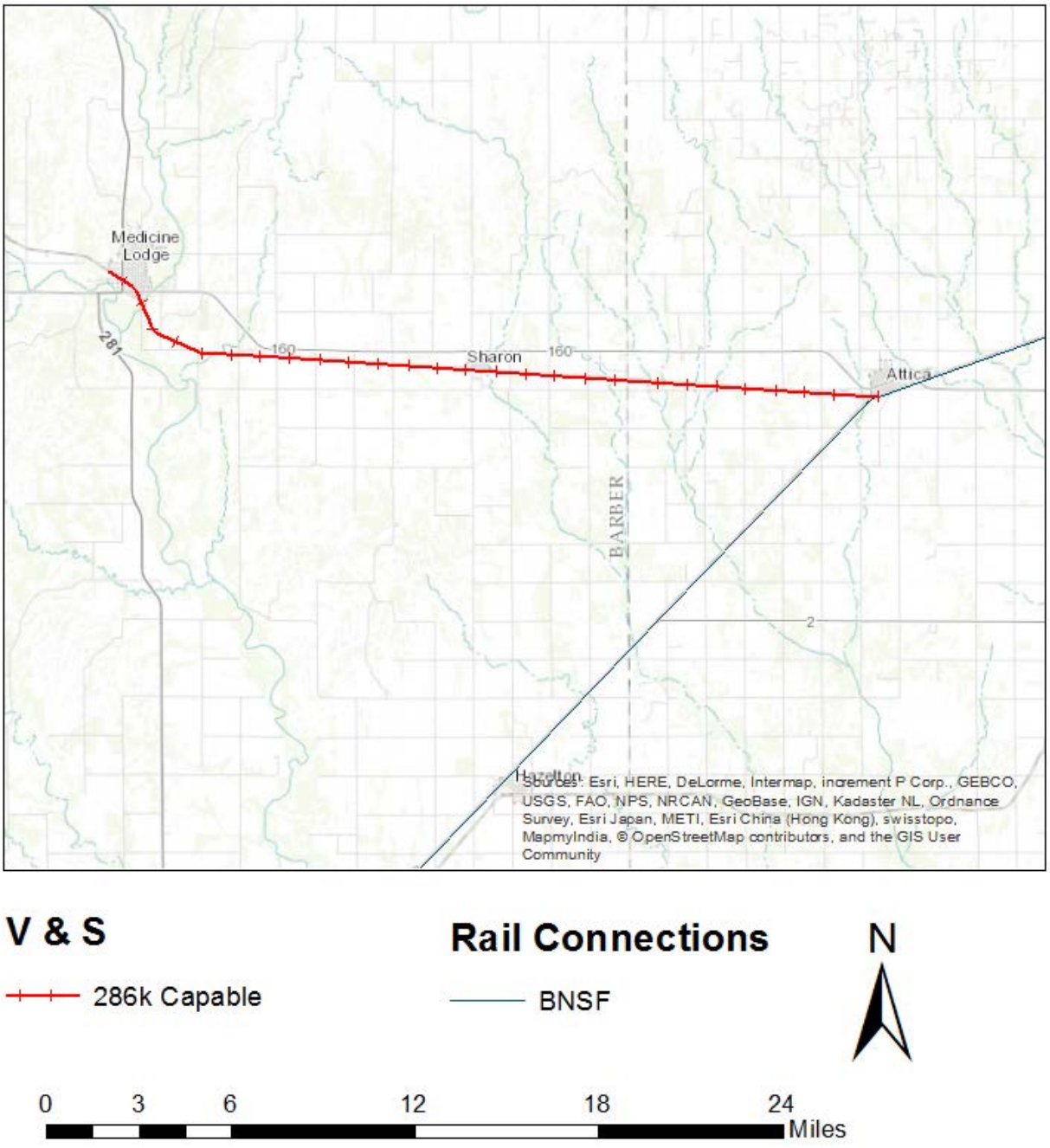

Figure 4.11: Weight Capacity Map for the V&S Railway

4.2.11 Kansas City Terminal Railway

The Kansas City Terminal (KCT) Railway serves as a joint operation for the major freight railroads serving the Kansas City metropolitan area. The Kaw River Railroad (KAW), a subsidiary of WATCO, provides industry switching and operations for KCT. KCT consists of approximately 85 miles (137 km) of track sections owned by BNSF, with 33 miles (52 km) of track in Kansas and the rest in Missouri. The major commodities handled by KCT include grain products, paper, cement, lumber, and plastics. In 2015, KCT transported more than 16,000 carloads of goods. Figure 4.12 illustrates the weight capacity of the KCT.

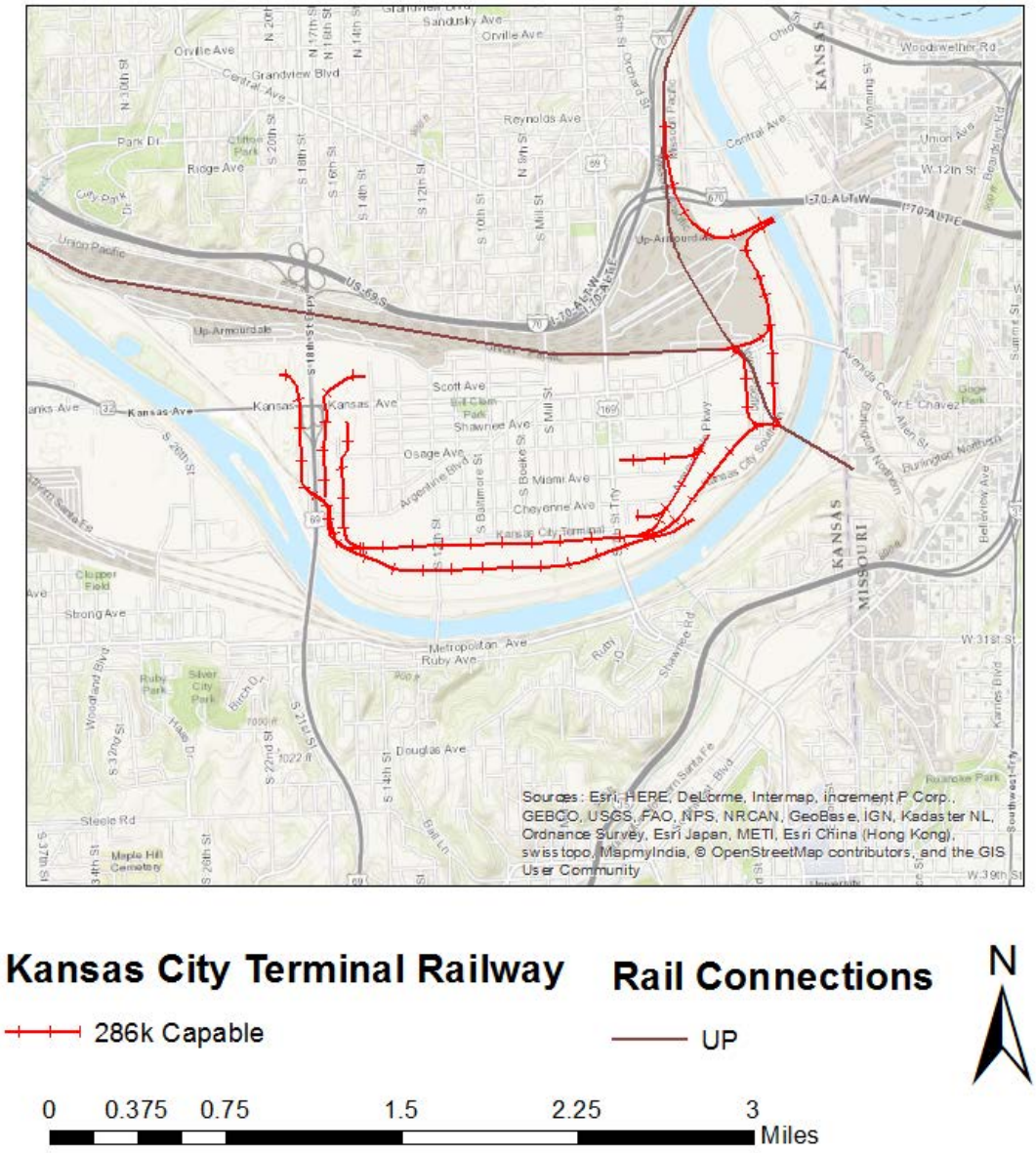

Figure 4.12: Weight Capacity Map for the Kansas City Terminal Railway

4.2.12 New Century AirCenter

The New Century AirCenter (NCA) railroad provides rail service to New Century AirCenter/JCAX, a 2,300-acre (9.3 km^2) inland port along the I-35 North American Free Trade Agreement (NAFTA) corridor. NCA is a 5-mile track (8 km) section that provides switching services to meet the AirCenter's demands. The track section includes weigh-in-motion technology for railcar identification and reporting systems. NCA transports a wide variety of goods, including soybean oil, lumber, steel, acetic acid, and plastic beads. In 2015, NCA transported seven hundred 263,000 lb (119,294 kg) and two hundred and fifty 286,000 lb (129,844 kg) railcars. The only growth for NCA is expected from additional businesses moving to the industrial park. Figure 4.13 shows the route and weight capacity of the NCA, all of which can accommodate 286,000 lb (129,844 kg) railcars.

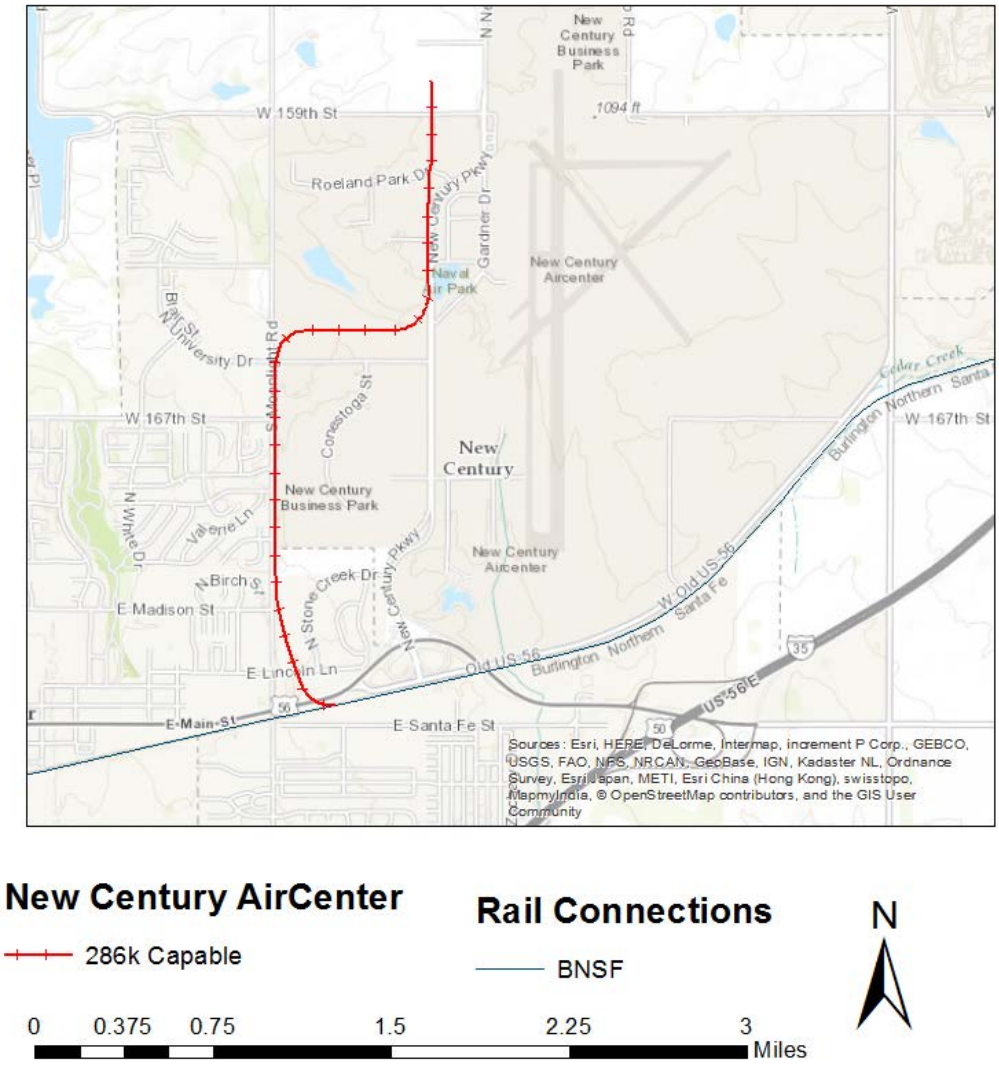

Figure 4.13: Weight Capacity Map for the New Century AirCenter Railroad

4.2.13 Wichita Terminal Association

The Wichita Terminal Association (WTA) is owned by BNSF and UP railroads, and both Class I railroads oversee maintenance and dispatching on the line as well as finance-required track maintenance. WTA primarily transports grain products such as wheat, flour, soybeans, and soybean oil, as well as scrap metals. In 2015, WTA transported approximately 3,750 carloads on an entire track structure that is compatible with 286,000 lb (129,844 kg) railcars. WTA is planning to construct an additional storage track for 12 cars in 2017. Figure 4.14 contains a map of the WTA railroad.

Figure 4.14: Weight Capacity Map for the Wichita Terminal Association Railroad

4.3 Proposed Project Upgrade Prioritization Tiers

Prioritization of proposed engineering projects, specifically railroads, depends on the project's ability to improve the mobility, safety, economic development, and environmental impacts of its serving region more significantly than competing projects. However, differences of opinion between stakeholders, unforeseen events, local politics, and shifting economic circumstances can complicate the prioritization of large-scale railroad improvement projects. This research study quantified the potential impact of proposed upgrades to Class III track structures using collected shipping data and the capability of corridors to move goods to Class I railroads. Based on survey results and interviews with company officials, a project prioritization is proposed using a three-tiered approach.

As shown in Table 4.10, the projects proposed in the tiered system were selected from railroad representatives' answers to Question 13 of the survey as described in Section 3.1. Tier One projects are expected to provide significant improvements to allow two Class III railroads to transport 286,000 lb (129,844 kg) railcars. Tier Two and Tier Three projects are expected to provide less benefit than Tier One projects, but they will improve Class III railroad infrastructures to better accommodate 286,000 lb (129,844 kg) railcars. The proposed tiers allow for a degree of flexibility. For example, if an unexpected safety concern occurred on a Tier Two corridor, the project can be upgraded to a Tier One status. However, detailed engineering assessments of the bridges, rail, and track structures are needed to determine the cost for each project, potentially changing project tier arrangements or providing additional subprojects to track sections overlooked in this study.

Table 4.10: Proposed Tiered System

Rail Improvement Project	Rationale
Tier One	
KO's Scott City Subdivision	The Scott City subdivision contains one of Kansas's longest sections of track (203 miles [327 km]), which currently moves 286,000 lb (129,844 kg) at 10 mph (16 kmh) for most of the stretch
KYLE's Belleville and Concordia Subdivisions	These projects would allow their Phillipsburg customers to ship and receive 286,000 lb (129,844 kg) railcars
WTA's Additional Storage Track	WTA plans to add a 12-car length storage track in 2017
Tier Two	
One of SKOL's Subdivisions: Moline, Chanute, Coffeyville, or Tulsa	SKOL is currently evaluating these subdivisions to upgrade track capacity based on customer needs with consideration of operational efficiencies
Improvement of KYLE's Goodland Subdivision	This project will allow grain shipments in Phillipsburg to reach an interchange in 286,000 lb (129,84 kg) loadings
Tier Three	
Repair of VSR's Aging Bridges	The most serious, relevant threat to the VSR is their aging bridges

Chapter 5: Discussion and Recommendations

Class III railroads are critical for the transportation of goods and services within the United States. Although Class III railroads often transport fewer carloads at slower speeds than Class I railroads due to decades of deferred maintenance of Class III track structure, Class III railroads serve as last and first line operations for customers of manufactured and agricultural goods, providing vital links to the nation's rail network.

The state of Kansas has allocated up to $5 million per year for rail rehabilitation and expansion projects of Class III railroads through the SRSIF program administered by KDOT. The state of Kansas has 14 registered Class III railroads that consist of 1,600 track miles (2,875 km), including switching and terminal yards. With the help of KDOT, researchers at Kansas State University conducted this study to increase understanding of track structure inventory, shipping and carload data, and Class III business climate in 2015. This critical data will allow KDOT to prioritize projects, assist Class III railroads by investing in infrastructure, and maximize the benefit from SRSIF funding.

The research team and KDOT project monitors constructed a survey detailing required operational and structural information. The survey was sent to representatives of the 10 Class III railroad companies currently operating in Kansas; completed surveys were inventoried, organized, and synthesized. Special emphasis was given to understanding the current operational status of each Class III railroad with respect to accommodating railcars weighing 286,000 lb (129,844 kg). During 2015, Class III railroads in Kansas carried approximately 163,300 carloads, approximately equivalent to the fully loaded capacity of 600,000 semi-trucks.

Although approximately 64 percent of Class III rail weigh more than 100 lb/yd (47 kg/m), only 30 percent, or 560 miles, of track in Kansas can currently accommodate HAL railcars. The survey also determined that many Class III railroads in Kansas contain portions of track structure that are rated for faster operating speeds (up to 25 mph [40 kmh]) but still require locomotives to travel at 10 mph (16 kmh) to minimize the risk of derailment.

Based on the survey data, Class III representative recommendations, and comparisons of Class III railroad data between companies, the research team developed a proposed list of priority

upgrade projects for KDOT to consider. The list was divided into three tiers based on priority rankings: Tier One projects are given the highest priority for funding, while Tier Three projects are given the least priority based on total expected system benefits for each project as determined by shipping characteristics and connections to Class I railroads. The research team recommended KO's Scott City subdivision and KYLE's Belleville and Concordia subdivisions as Tier One projects. WTA's additional storage track was also recommended, but this storage track is currently fully funded by the BNSF railway.

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Appendix: Returned Surveys

BLUE RAPIDS:

1. What are the top five commodities shipped on your railroad?

Commodities:	**Industrial Gypsum Plasters**	-	-	-	-

2. Is your business affected by seasonal differentiation in products? If so explain to what extent.

   No

3. What are your main locations for originating and terminating traffic?

   Originating: Blue Rapids
   Terminating: Various, North America

4. Is your railroad owned by a parent company? If so, which one?

   Georgia-Pacific Gypsum LLC

5. What are your railroad's primary corridors? Feeder line corridors?

   Primary: Georgia-Pacific Gypsum, Blue Rapids KS to UPRR, Marysville KS
   Feeder: N/A

6. What is your railroad's operating characteristic by subdivision and key segments within subdivisions? (If you have more subdivision, you can add more Rows)
   a) Subdivisions and key segment route miles
   b) Gross ton-miles per year
   c) Number of slow orders
   d) Average number of railcars by weight (263,000 or 286,000) per week, month, year and season
   e) Total revenue
   f) Percentage non-class I line revenue

7. What are the infrastructure characteristics of your class III by subdivision and key segments within the subdivisions? (If you have more subdivision, you can add more Rows)
   a) FRA Track Class and operating speed
   b) Current operating speed
   c) Jointed or welded rail
   d) Rail weight
   e) Rail age
   f) Ballast conditions (type of ballast, depth, etc.)
   g) Tie age and condition (i.e., plate cut, split, etc.)
   h) Weight capacity
   i) Structure sufficiency data (capability of handling 286,000 pound cars)

Subdivision	*Length (miles)*	*Number of Slow Orders*	*Average 263,000 lb Railcars Per*				*Average 286,000 lb Railcars Per*			
			Week	*Month*	*Year*	*Season*	*Week*	*Month*	*Year*	*Season*
Column 1	9.5	1 for entire	10	-	-	-	0	-	-	-

Subdivision	*FRA Track Class*	*Current Operating Speed*	*Jointed or Welded Rail*	*Rail Weight*	*Rail Age*	*Ballast Condition*				*Tie Age*	*Tie Cond.*	*Weight Capacity*
						Type	*Depth*	*Age*	*Other*			
Column 1	Exempt	10	Jointed	90	100	Chat	12”	100	-	1 to 100	Fair	268K

8. Does your railroad have trackage rights on another railroad's track or does another railroad have trackage rights over your railroad? If so what segments are shared?

   We do not have rights on another railroad.

   We have a contract in place to extend rights to the Union Pacific for twice weekly switching.

9. Do you have a map showing the exact segments or Sub-Divisions that you'd willingly share with us that show 286,000 lb railcar handling capacity; bridge structural issues; geometric issues; track speed; trackage rights?

   No.

10. Are there any scenarios (including economic impacts) under which you could foresee the abandonment of your railroad, or specific line segments?

    Undetermined at this time.

11. Does your company make projections as to future growth in your business?

    No projected growth reported

    a) If so, are these by tonnage or number of carloads?

       NA (see 11)

    b) If so, what is the basis for these projections?

       NA (see 11)

    c) What are your most recent projections for the next three years?

Year	2015	2016	2017
Projection	NA	NA	NA

12. Do you have an adequate number of locomotives with the power to pull fully loaded 286,000 lb cars?

    NA

13. Does your company have any plans to increase track capacity to handle fully loaded 286,000 lb railcars (or along greater lengths of track)? If so, what track segments? Do you have a timeframe during which you hope to complete these upgrades? Can you prioritize these projects?

    No

14. Are there other issues that your railroad experiences that you feel hamper your operations and/or affect customer service? (i.e. car supply shortage)

    No

CIMARRON VALLEY

1. What are the top five commodities shipped on your railroad?

Commodities:	Wheat	Milo	Fuel oil	Soybean meal	Corn

2. Is your business affected by seasonal differentiation in products? If so explain to what extent.

   Our main commodities are grain, dependent on harvests and markets

3. What are your main locations for originating and terminating traffic?

   Originating: Dodge City, KS
   Terminating: Dodge City, KS

4. Is your railroad owned by a parent company? If so, which one?

   The Western Group, Ogden, UT

5. What are your railroad's primary corridors? Feeder line corridors?

   Primary: Southwest Kansas, Southeastern Colorado, Oklahoma Panhandle
   Feeder: BNSF

6. What is your railroad's operating characteristic by subdivision and key segments within subdivisions? (If you have more subdivision, you can add more Rows)
   a) Subdivisions and key segment route miles
      CV Sub – 151.04 miles, Manter Sub – 103.43 miles
   b) Gross ton-miles per year 42,954 miles traveled 2015
   c) Number of slow orders No slow orders – Everything is 10 mph
   d) Average number of railcars by weight (263,000 or 286,000) per week, month, year and season 60% - 40%
   e) Total revenue N/A
   f) Percentage non-Class I line revenue 7%

7. What are the infrastructure characteristics of your class III by subdivision and key segments within the subdivisions? (If you have more subdivision, you can add more Rows)
   a) FRA Track Class and operating speed
   b) Current operating speed
   c) Jointed or welded rail
   d) Rail weight
   e) Rail age
   f) Ballast conditions (type of ballast, depth, etc.)
   g) Tie age and condition (i.e., plate cut, split, etc.)
   h) Weight capacity
   i) Structure sufficiency data (capability of handling 286,000 pound cars)

Subdivision	*Length (miles)*	*Number of Slow Orders*	*Average 263,000 lb Railcars Per*				*Average 286,000 lb Railcars Per*			
			Week	*Month*	*Year*	*Season*	*Week*	*Month*	*Year*	*Season*
CVR	255	NA	253.84	549.99	6600	-	169.22	366.66	4400	-

Subdivision	*FRA Track Class*	*Current Operating Speed*	*Jointed or Welded Rail*	*Rail Weight*	*Rail Age*	*Ballast Condition*				*Tie Age*	*Tie Cond.*	*Weight Capacity*
						Type	*Depth*	*Age*	*Other*			
CVR	1	10 mph	Jointed	85-136	20-97	Green Granite	12-15” AVG	5-25	-	0-75	Fair	263000–286000

8. Does your railroad have trackage rights on another railroad's track or does another railroad have trackage rights over your railroad? If so what segments are shared?

   No

9. Do you have a map showing the exact segments or Sub-Divisions that you'd willingly share with us that show 286,000 lb railcar handling capacity; bridge structural issues; geometric issues; track speed; trackage rights?

   Yes, State already has it

10. Are there any scenarios (including economic impacts) under which you could foresee the abandonment of your railroad, or specific line segments?

    No

11. Does your company make projections as to future growth in your business?

    Yes

    a) If so, are these by tonnage or number of carloads?

       Number of carloads

    b) If so, what is the basis for these projections?

       Grain harvests and markets

    c) What are your most recent projections for the next three years?

Year	**2015**	**2016**	**2017**
Projection	**10%**	**10%**	**10%**

12. Do you have an adequate number of locomotives with the power to pull fully loaded 286,000 lb cars?

    Yes

13. Does your company have any plans to increase track capacity to handle fully loaded 286,000 lb railcars (or along greater lengths of track)? If so, what track segments? Do you have a timeframe during which you hope to complete these upgrades? Can you prioritize these projects?

    Not at this time

14. Are there other issues that your railroad experiences that you feel hamper your operations and/or affect customer service? (i.e. car supply shortage)

    CV Sub is already doing 286,000 cars. Manter Sub can't handle 286000 cars. Half of our business is on the Manter Sub.

GARDEN CITY WESTERN RAILROAD:

1. What are the top five commodities shipped on your railroad?

Commodities:	Molasses	Scrap	Fertilizers	Meal	Utility poles

2. Is your business affected by seasonal differentiation in products? If so explain to what extent.

   Not really seasonal, but by market changes. (ex. Scrap market is very weak, as a result scrap shipments are down considerably in 2015 from that in 2014)

3. What are your main locations for originating and terminating traffic?

   Originating: Texas
   Terminating: Texas

4. Is your railroad owned by a parent company? If so, which one?

   Yes – Pioneer Railcorp

5. What are your railroad's primary corridors? Feeder line corridors?

   Primary: first 4 miles of West Line which runs from Garden City to Wolf
   Feeder: North Line – runs from Garden City to Shallow Water

6. What is your railroad's operating characteristic by subdivision and key segments within subdivisions? (If you have more subdivision, you can add more Rows)
   a) Subdivisions and key segment route miles
   b) Gross ton-miles per year
   c) Number of slow orders
   d) Average number of railcars by weight (263,000 or 286,000) per week, month, year and season
   e) Total revenue
   f) Percentage non-class I line revenue

7. What are the infrastructure characteristics of your class III by subdivision and key segments within the subdivisions? (If you have more subdivision, you can add more Rows)
   a) FRA Track Class and operating speed
   b) Current operating speed
   c) Jointed or welded rail
   d) Rail weight
   e) Rail age
   f) Ballast conditions (type of ballast, depth, etc.)
   g) Tie age and condition (i.e., plate cut, split, etc.)
   h) Weight capacity
   i) Structure sufficiency data (capability of handling 286,000 pound cars)

Subdivision	*Length (miles)*	*Number of Slow Orders*	*Average 263,000 lb Railcars Per*				*Average 286,000 lb Railcars Per*			
			Week	*Month*	*Year*	*Season*	*Week*	*Month*	*Year*	*Season*
West Line	14	None	26	112	1344	336	-	-	-	-
North Line	28	None	1	4.5	50	12	-	-	-	-

Subdivision	*FRA Track Class*	*Current Operating Speed*	*Jointed or Welded Rail*	*Rail Weight*	*Rail Age*	*Ballast Condition*				*Tie Age*	*Tie Cond.*	*Weight Capacity*
						Type	*Depth*	*Age*	*Other*			
Main	1	10MPH	Jointed	70/80/90	63+	-	+/-8”	-	-	Old	-	-
West Main 0-3.0	1	10MPH	Jointed	70	63+	-	-	-	-	Some New	Good	286K

8. Does your railroad have trackage rights on another railroad's track or does another railroad have trackage rights over your railroad? If so what segments are shared?

   No

9. Do you have a map showing the exact segments or Sub-Divisions that you'd willingly share with us that show 286,000 lb railcar handling capacity; bridge structural issues; geometric issues; track speed; trackage rights? Nothing but our marketing Maps, or create on in Google Earth

10. Are there any scenarios (including economic impacts) under which you could foresee the abandonment of your railroad, or specific line segments?

    No

11. Does your company make projections as to future growth in your business?

    Yes

    a) If so, are these by tonnage or number of carloads?
       Carloads
    b) If so, what is the basis for these projections?
       Data received from current/projected customers

    c) What are your most recent projections for the next three years?

Year	2015	2016	2017
Projection	1200	1375	1450

Note: GCW had one of our customers consolidate its operations and therein closing its doors on the facility in Garden City on the GCW

12. Do you have an adequate number of locomotives with the power to pull fully loaded 286,000 lb cars?

    Yes

13. Does your company have any plans to increase track capacity to handle fully loaded 286,000 lb railcars (or along greater lengths of track)? If so, what track segments? Do you have a timeframe during which you hope to complete these upgrades? Can you prioritize these projects?

    Yes. Data provided above regarding carload shipments is based on 2014 traffic. At this time, GCW has completed MP 0-3.0, for 286K and Upgrade of Yard Switches, from I/C to West Line MP 3.0, 286K. Again – GCW on this portion is now 286 capable – which at this time covers 95% of all inbound/outbound traffic.

14. Are there other issues that your railroad experiences that you feel hamper your operations and/or affect customer service? (i.e. car supply shortage)

    No.

KANSAS AND OKLAHOMA:

1. What are the top five commodities shipped on your railroad?

Commodities:	Wheat/Sorghum Grains	Flammable Gases/NGL's	Class 8 Corrosive Material	Fertilizer	Soybean Meal

2. Is your business affected by seasonal differentiation in products? If so explain to what extent.

   The summer and winter harvest for grain is affected by Mother Nature which dictates the beginning of harvest and how many railcars that we will move.

3. What are your main locations for originating and terminating traffic?

   Originating: Various locations
   Terminating: Wichita, Hutchinson, Newton, McPherson, Salina, Abilene

4. Is your railroad owned by a parent company? If so, which one?

   WATCO Companies

5. What are your railroad's primary corridors? Feeder line corridors?

   Primary: Conway Springs, Great Bend, Hoisington, Hutchinson, Kingman, McPherson, Newton, Salina and Scott City

   Feeder: Hutchinson, Wichita, McPherson, Newton, Salina

6. What is your railroad's operating characteristic by subdivision and key segments within subdivisions? (If you have more subdivision, you can add more Rows)
   a) Subdivisions and key segment route miles
   b) Gross ton-miles per year
   c) Number of slow orders – P = Permanent and Temporary Slow Orders Vary from week to week
   d) Average number of railcars by weight (263,000 or 286,000) per week, month, year and season
   e) Total revenue
   f) Percentage non-class I line revenue

Subdivision	*Length (miles)*	*Number of Slow Orders*	*Average 263,000 lb Railcars Per*				*Average 286,000 lb Railcars Per*			
			Week	*Month*	*Year*	*Season*	*Week*	*Month*	*Year*	*Season*
Conway Springs	101.3	5 P	42	185	2220	-	243	1050	12600	-
Kingman	60.2	0 P	10	41	492	-	-	0	-	-
Hutchinson	52.9	3 P	-		-	-	46	201	2412	-
Great Bend	120.1	1 P	-	-	-	-	89	384	4608	-
Hoisington	104.9	2 P	32	141	1692	-	-	-	-	-
Scott City	203.4	1 P	96	415	4980	-	-	-	-	-
McPherson	13.2	2 P	-	-	-	-	139	601	7212	-
Newton	27	1 P	-	-	-	-	12	51	612	-
Salina	82.7	0 P	23	101	1212		100	430	5160	

7. What are the infrastructure characteristics of your class III by subdivision and key segments within the subdivisions? (If you have more subdivision, you can add more Rows)
    a) FRA Track Class and operating speed
    b) Current operating speed
    c) Jointed or welded rail
    d) Rail weight
    e) Rail age
    f) Ballast conditions (type of ballast, depth, etc.)
    g) Tie age and condition (i.e., plate cut, split, etc.)
    h) Weight capacity
    i) Structure sufficiency data (capability of handling 286,000 pound cars)

Subdivision	*FRA Track Class*	*Current Operating Speed*	*Jointed or Welded Rail*	*Rail Weight*	*Rail Age*	*Ballast Condition*				*Tie Age*	*Tie Cond.*	*Weight Capacity*
						Type	*Depth*	*Age*	*Other*			
Conway Springs	2/1	25/20/10 mph	Jointed	85/90/112	1860-1944	Limestone	6”	Varies	-	Varies	Varies	263
Kingman	1	10 mph	Jointed	75/85/90	1904-1912	Limestone	6”	Varies	-	Varies	Varies	263
Hutchinson	1	10/25 mph	Both	110/115	1934-1947	Granite/ limestone	6/8”	Varies	-	Varies	Varies	286
Great Bend	EX/2	25/10 mph	Jointed	90/110	1909-1925	Limestone	6”	Varies	-	Varies	Varies	263/286
Hoisington	1/2	25/10 mph	Both	90/132	1952	Granite	8”	Varies	-	Varies	Varies	286
Scott City	1/2/EX	10/25 mph	Both	85/90/115	1904-1908	Limestone	6”	Varies	-	Varies	Varies	263
McPherson	1	10	Both	75/85/115	1902-1945	Limestone	6”	Varies	-	Varies	Varies	263/286
Newton	2	25	Welded	112	1943-1951	Granite	8”	Varies	-	Varies	Varies	286
Salina	1	10	Both	70/90/115	1913-1945	Limestone	6”	Varies		Varies	Varies	263

8. Does your railroad have trackage rights on another railroad's track or does another railroad have trackage rights over your railroad? If so what segments are shared?

   The K&O has trackage rights on the Union Pacific to run from Salina to Abilene for interchange with the BNSF

9. Do you have a map showing the exact segments or Sub-Divisions that you'd willingly share with us that show 286,000 lb railcar handling capacity; bridge structural issues; geometric issues; track speed; trackage rights?

   Find attached with one correction… Wichita to Frontier should be in red (286,000 lbs)

10. Are there any scenarios (including economic impacts) under which you could foresee the abandonment of your railroad, or specific line segments?

    No

11. Does your company make projections as to future growth in your business?

    We forecast/project for the next year in September/October

    a) If so, are these by tonnage or number of carloads?

    Carloads

    b) If so, what is the basis for these projections?

    Projections are based on input from our top customers, historical data, 3 & 5 year rolling averages for grain/agriculture and a few are based on a percentage increase

    c) What are your most recent projections for the next three years?

Year	2015	2016	2017
Projection	42,222	43,222	44,222

12. Do you have an adequate number of locomotives with the power to pull fully loaded 286,000 lb cars?

    Yes

13. Does your company have any plans to increase track capacity to handle fully loaded 286,000 lb railcars (or along greater lengths of track)? If so, what track segments? Do you have a timeframe during which you hope to complete these upgrades? Can you prioritize these projects?

    Currently creating a plan to make upgrades on the Scott City Sub but no set time table.

14. Are there other issues that your railroad experiences that you feel hamper your operations and/or affect customer service? (i.e. car supply shortage)

    We just try to improve every day.

KYLE

1. What are the top five commodities shipped on your railroad?

Commodities:	**Winter Wheat**	**Sorghum**	**Roofing Granules**	**Corn**	**-**

2. Is your business affected by seasonal differentiation in products? If so explain to what extent.

With wheat, sorghum and corn, there is a definite seasonality of shipments. Peak season for transportation is typically July / August / September

3. What are your main locations for originating and terminating traffic?

Originating: Downs, Glen Elder, Goodland
Terminating: Phillipsburg, Goodland

4. Is your railroad owned by a parent company? If so, which one?

KYLE is a wholly-owned subsidiary of Genesee & Wyoming Inc.

5. What are your railroad's primary corridors? Feeder line corridors?

Primary: Wheat: KYLE – St. Louis or Kansas City – points east and south Sorghum: KYLE – Gulf Coast ports
Corn: KYLE – mixed, predominately southern states Roofing Granules: Wisconsin – KYLE

6. What is your railroad's operating characteristic by subdivision and key segments within subdivisions? (If you have more subdivision, you can add more Rows)
   a) Subdivisions and key segment route miles
   b) Gross ton-miles per year: Not readily available, you can estimate using train frequency, estimated number of railcars per train, and length of subdivisions.
   c) Number of slow orders
   d) Average number of railcars by weight (263,000 or 286,000) per week, month, year and season

   Total revenue: Confidential. As a publicly traded company that reports unified financial results, G&W cannot make a non-public disclosure of financially material information. Providing a revenue or car load projection for KYLE would fall into this prohibition.

   e) Percentage non-class I line revenue: Amount of KYLE Local Traffic is approx. 2 percent.

7. What are the infrastructure characteristics of your class III by subdivision and key segments within the subdivisions? (If you have more subdivision, you can add more Rows)
    a) FRA Track Class and operating speed
    b) Current operating speed
    c) Jointed or welded rail
    d) Rail weight
    e) Rail age
    f) Ballast conditions (type of ballast, depth, etc.)
    g) Tie age and condition (i.e., plate cut, split, etc.)
    h) Weight capacity
    i) Structure sufficiency data (capability of handling 286,000 pound cars)

Subdivision	***Length (miles)***	***Number of Slow Orders (Appox. Number of miles of slow orders)***	***Average 268,000 lb Railcars per***				***Average 286,000 lb Railcars Per***			
			Week	***Month***	***Year***	***Season***	***Week***	***Month***	***Year***	***Season***
Solomon Sub	57	0 (0 Miles)	-	-	-	-	6-8 trains/week	-	-	-
Concordia Sub	53	1 (21 Miles)	6 trains / week	-	-	-	-	-	-	-
Yuma	15	Predominately OSS due to Republic River Bridge OSS	currently nominal	-	-	-	-	-	-	-
Bellville	96	9 (40 miles)	6 trains / week	-	-	-	-	-	-	-
Phillipsburg	140	12 (58 miles)	6 trains / week	-	-	-	-	-	-	-
Goodland	97	8 (45 miles)	6 trains / week	-	-	-	-	-	-	-

Subdivision	*FRA Track Class**	*Current Operating Speed*	*Jointed or Welded Rail*	*Rail Weight*	*Rail Age*	*Ballast Condition*				*Tie Age*	*Tie Cond.*	*Weight Capacity*
						Type	*Depth*	*Age*	*Other*			
Solomon Sub	1	10 mph	Predominately jointed	Mix, 90 to 115 lb	Approx 70 years and newer	Rock	-	-	Upgrade desirable	-	Fair	286k
Concordia Sub	2	Largely 10 mph due to slow orders, some 25 mph	Predominately jointed	Mix, 90 to 115 lb	Approx 70 years and newer	Rock	-	-	Upgrade desirable	-	Fair	268k
Yuma Sub	1	10 mph (what is currently in-service)	Predominately jointed	Mix, 90 to 115 lb	Approx 70 years and newer	Rock	-	-	Upgrade desirable	-	Fair	268k
Bellville Sub	2	Largely 10 mph due to slow orders, some 25 mph	Predominately jointed, with sections of CWR	Mix, 90 to 115 lb	Approx 70 years and newer	Rock	-	-	Fair	-	Fair	268k
Phillipsburg	3	Largely 10 mph due to slow orders, some 30 mph	Predominately jointed, with sections of CWR	Mix, 90 to 115 lb	Approx 70 years and newer	Rock	-	-	Fair	-	Fair	268k
Goodland	3	Largely 10 mph due to slow orders, some 30 mph	Predominately jointed, with sections of CWR	Mix, 90 to 115 lb	Approx 70 years and newer	Rock	-	-	Upgrade desirable	-	Fair	268k

NOTE: Timetable speed used for Class of Track definition, however, actually operating speeds substantially less due to slow orders on the subdivisions. If slow orders are in close proximity, timetable allowed track speed is not obtained between the slow orders

8 Does your railroad have trackage rights on another railroad's track or does another railroad have trackage rights over your railroad? If so what segments are shared?

KYLE trackage rights over other railroads:

Temporary BNSF trackage rights:
Concordia to Courtland Permanent Union
Pacific trackage rights: Salina to Solomon

No current trackage rights for another railroad over KYLE

9. Do you have a map showing the exact segments or Sub-Divisions that you'd willingly share with us that show 286,000 lb railcar handling capacity; bridge structural issues; geometric issues; track speed; trackage rights?

Such a map is not readily available. The ONLY section of KYLE rated to handle 286,000 lb freight cars is Downs to Solomon. The rest of the railroad has a freight car weight limit of 268,000 lbs. It is very important to note, however, that handling 286,000 lb freight cars over subdivisions not now rate to handle such shipments will require investments in bridges, rail and track structure (ties and ballast). Such investments vary by subdivisions. A more current detailed assessment would be necessary to provide a complete understanding of the limitations on each subdivision.

10. Are there any scenarios (including economic impacts) under which you could foresee the abandonment of your railroad, or specific line segments?

Like with any other freight railroad, future viability is dependent upon handling enough traffic to create a positive cash flow to ensure adequate maintain and coverage of expenses. Clearly the failed bridge over the Republic River on the Yuma Sub, resulting in the bulk of this subdivision
being placed into Out of Service (OOS) status, has put a significant question on the future of this subdivision.

11. Does your company make projections as to future growth in your business?

As a publicly traded company that reports unified financial results, G&W cannot make a non-public disclosure of financially material information. Providing a revenue or car load projection for KYLE would fall into this prohibition. Having stated this, it is possible for others to estimate future KYLE traffic by considering two markets: Kansas grain, specifically wheat, and roofing materials. These two markets directly drive KYLE carloads in its two largest traffic bases. Both markets are largely impacted by weather patterns and trends; for grain in determining the quality and quantity of the wheat harvest, and for roofing materials by the frequency of severe weather that would create heavy demand for such materials. Secondary factors impacting future KYLE traffic would be the overall strength of the U.S. dollar affecting the competitiveness of Kansas grains in the world marketplace and the U.S. housing market affecting the demand for roofing materials.

a) If so, are these by tonnage or number of carloads?

Not available

b) If so, what is the basis for these projections?

Projections not available

c) What are your most recent projections for the next three years?

Year	2015	2016	2017
Projection	-	-	-

12. Do you have an adequate number of locomotives with the power to pull fully loaded 286,000 lb cars?

    Locomotive fleet on KYLE is not limiting factor for the railroad to handle 286,000 lb freight cars over a large amount of its route structure. Bridge, rail and overall track structure are the limiting factors.

13. Does your company have any plans to increase track capacity to handle fully loaded 286,000 lb railcars (or along greater lengths of track)? If so, what track segments? Do you have a timeframe during which you hope to complete these upgrades? Can you prioritize these projects?

    There are no immediate plans to increase the 268,000 lb weight limited subdivisions of the KYLE to 286,000 lbs. If financially possible, it would be desirable to increase the Bellville and Concordia subdivisions to allow customers on the Phillipsburg subdivision to ship and receive 286,000 lb rail loadings, and to improve the Goodland Subdivision to allow for grain shipments in the Phillipsburg area to reach interchange in 286,000 lb car loadings.

14. Are there other issues that your railroad experiences that you feel hamper your operations and/or affect customer service? (i.e. car supply shortage)

    No, increasing the ability of KYLE to handle 286,000 lb freight cars is certainly a desirable long term objective for the railroad. Customers will be able to reach their customers or raw materials more economically, and be better able to compete in their marketplaces. Based on the mileages involved, with the associated amount of bridge, rail and roadbed upgrades that would be necessary to increase the railroad to a universal 286,000 lb railcar weight limit, this is a long term focus and will require public – private partnerships to realize. A detailed assessment of bridges, rail and track structure would be required for each KYLE subdivision (except for the Solomon Subdivision) to determine the cost to reach a 286,000 lb load limit. It is clearly beyond the current financial ability of KYLE to make all of these investments in the immediate future.

SOUTH KANSAS AND OKLAHOMA

1. What are the top five commodities shipped on your railroad?

Commodities:	Cement	Chemicals	Sand	Rock	Grain and Grain Products

2. Is your business affected by seasonal differentiation in products? If so explain to what extent.

   South Kansas & Oklahoma Railroad (SKOL) moves three of its five top commodities, during construction season which includes cement, sand and rock. Grain and grain products also run with seasonality due to harvest. SKOL serves a diverse customer base allowing us to move shipments of chemicals, coal, steel and plastics year round; in addition we serve three dimensional shippers.

3. What are your main locations for originating and terminating traffic?

   Originating: Coffeyville, KS; Chanute, KS; Humboldt, KS; Moline, KS
   Terminating: Coffeyville, KS; Pittsburg, KS; Wichita, KS; Tulsa, OK

4. Is your railroad owned by a parent company? If so, which one?

   Watco Companies is the parent company of SKOL.

5. What are your railroad's primary corridors? Feeder line corridors?

   Primary: Chanute Subdivision, Coffeyville Subdivision, Moline Subdivision, Neodesha Subdivision, Gorilla Subdivision, Tulsa Subdivision
   Feeder:Union Pacific Railroad – Interchange points at Coffeyville, KS; Winfield, KS; Tulsa, OK. BNSF Railway – Interchange points at Columbus, KS, Tulsa, OK; Winfield, KS. Kansas City Southern – Interchange point at Pittsburg, KS. Kansas & Oklahoma Railroad – Interchange point at Wichita, KS. Stillwater Central Railroad – Interchange point at Tulsa, OK. Sand Springs Railroad – Interchange point at Tulsa, OK.

6. What is your railroad's operating characteristic by subdivision and key segments within subdivisions? (If you have more subdivision, you can add more Rows)
   a) Subdivisions and key segment route miles
   b) Gross ton-miles per year
   c) Number of slow orders
   d) Average number of railcars by weight (263,000 or 286,000) per week, month, year and season
   e) Total revenue

   $32 million

   f) Percentage non-class I line revenue

   53% which includes freight revenue only

Subdivision	***Length (miles)***	***Number of Slow Orders***	***Average 263,000 lb Railcars Per***				***Average 286,000 lb Railcars Per***			
			Week	***Month***	***Year***	***Season***	***Week***	***Month***	***Year***	***Season***
Chanute	39.2	12	210	838	10,058	-	94	377	4525	-
Coffeyville	17	7	574	2295	27,541	-	112	448	5374	-
Tulsa	100	20	342	1368	16,412	-	-	4	48	-
Neodesha	70	7	488	1954	23,455	-	26	106	1269	-
Gorilla	21.9	4	216	863	10,352	-	-	-	-	-
Moline	94.2	8	310	1238	14,860	-	5	20	242	-

7. What are the infrastructure characteristics of your class III by subdivision and key segments within the subdivisions? (If you have more subdivision, you can add more Rows)
    a) FRA Track Class and operating speed
    b) Current operating speed
    c) Jointed or welded rail
    d) Rail weight
    e) Rail age
    f) Ballast conditions (type of ballast, depth, etc.)
    g) Tie age and condition (i.e., plate cut, split, etc.)
    h) Weight capacity
    i) Structure sufficiency data (capability of handling 286,000 pound cars)

Subdivision	***FRA Track Class***	***Current Operating Speed***	***Jointed or Welded Rail***	***Rail Weight***	***Rail Age***	***Ballast Condition***				***Tie Age***	***Tie Cond.***	***Weight Capacity***
						Type	***Depth***	***Age***	***Other***			
Chanute	2	25	Jointed	90	60+	Limestone	6 in	Varies	-	Varies	Fair	286,000
Coffeyville	2	25	Welded	90	60+	Limestone	6 in	Varies	-	Varies	Fair	263,000
Tulsa	2	25	Both	90	60+	Limestone	6 in	Varies	-	Varies	Fair	263,000
Neodesha	2	25	Both	90/115	60+	Limestone	6 in	Varies	-	Varies	Poor	263,000
Gorilla	2	20	Jointed	115	20	Limestone	6 in	Varies	-	Varies	Poor	263,000
Moline	2	25	Welded	132	50+	Limestone	6 in	Varies	-	Varies	Fair	263,000

8. Does your railroad have trackage rights on another railroad's track or does another railroad have trackage rights over your railroad? If so what segments are shared?

   SKOL maintains trackage rights on BNSF track from Winfield, KS to Wichita, KS. This can be referenced on attached SKOL Track Capacity Map. Segment offers SKOL interchange with Kansas & Oklahoma Railroad to add value to western Kansas shippers and provide future rail solutions.

9. Do you have a map showing the exact segments or Sub-Divisions that you'd willingly share with us that show 286,000 lb railcar handling capacity; bridge structural issues; geometric issues; track speed; trackage rights?

   See attached SKOL Track Capacity Map.

10. Are there any scenarios (including economic impacts) under which you could foresee the abandonment of your railroad, or specific line segments?

    SKOL is committed to the communities we serve and we do not foresee abandonment of any track at this time.

11. Does your company make projections as to future growth in your business?

    Annual projections are completed and often times a three or five year outlook will be evaluated.

    d) If so, are these by tonnage or number of carloads?
    Projections are completed by carloads.

    e) If so, what is the basis for these projections?
    Projections are based on our customer input for planning purposes.

    f) What are your most recent projections for the next three years?

Year	2015	2016	2017
Projection	62,212	68,643	70,015

12. Do you have an adequate number of locomotives with the power to pull fully loaded 286,000 lb cars?

    SKOL maintains adequate locomotive power to pull our current 286,000 lb cars. In addition our connectivity with two sister railroads (Kansas & Oklahoma Railroad at Wichita, KS and Stillwater Central Railroad at Tulsa, OK) offers flexibility with locomotive power solutions.

13. Does your company have any plans to increase track capacity to handle fully loaded 286,000 lb railcars (or along greater lengths of track)? If so, what track segments? Do you have a timeframe during which you hope to complete these upgrades? Can you prioritize these projects?

    SKOL is evaluating track capacity upgrades on the following subdivisions Moline, Chanute, Coffeyville and Tulsa. A timeframe cannot be outlined at this time. We will prioritize projects based on our customers' needs and the consideration of operational efficiencies.

14. Are there other issues that your railroad experiences that you feel hamper your operations and/or affect customer service? (i.e. car supply shortage)

    Increasing our grain fleet could offer benefit to our operations and customer service. Currently we maintain a Central Region grain fleet and divide base on customer harvest feedback.

V & S RAILROAD

1. What are the top five commodities shipped on your railroad?

Commodities:	Wallboard	Plaster	Scrap Metal	Fertilizer	N/A

2. Is your business affected by seasonal differentiation in products? If so explain to what extent.

   Not really. Fluctuations are accounted for by market prices, or change the pricing of a finished product. Example: If a price increase goes into effect in January, we will see a surge in shipments leading up to the price increase. Traffic will drop off quickly, then slowly regain previous levels.

3. What are your main locations for originating and terminating traffic?

   Originating: Medicine Lodge (manufacturing plant)
   Terminating: Attica (interchange with BNSF)

4. Is your railroad owned by a parent company? If so, which one?

   V&S Railway, LLC is a standalone company, but managed in parallel with other railroads.

5. What are your railroad's primary corridors? Feeder line corridors?

   Primary: Attica, to Medicine Lodge
   Feeder: None

6. What is your railroad's operating characteristic by subdivision and key segments within subdivisions? (If you have more subdivision, you can add more Rows)
   a) Subdivisions and key segment route miles
   b) Gross ton-miles per year
   c) Number of slow orders
   d) Average number of railcars by weight (263,000 or 286,000) per week, month, year and season
   e) Total revenue
   f) Percentage non-class I line revenue

7. What are the infrastructure characteristics of your class III by subdivision and key segments within the subdivisions? (If you have more subdivision, you can add more Rows)
   a) FRA Track Class and operating speed
   b) Current operating speed
   c) Jointed or welded rail
   d) Rail weight
   e) Rail age
   f) Ballast conditions (type of ballast, depth, etc.)
   g) Tie age and condition (i.e., plate cut, split, etc.)
   h) Weight capacity
   i) Structure sufficiency data (capability of handling 286,000 pound cars)

      We are in the middle of a project to upgrade the line to Class II

Subdivision	*Length (miles)*	*Number of Slow Orders*	*Average 263,000 lb Railcars Per*				*Average 286,000 lb Railcars Per*			
			Week	*Month*	*Year*	*Season*	*Week*	*Month*	*Year*	*Season*
Column 1	21	Excepted	10	40	-	-	10	40	-	-

Subdivision	*FRA Track Class*	*Current Operating Speed*	*Jointed or Welded Rail*	*Rail Weight*	*Rail Age*	*Ballast Condition*				*Tie Age*	*Tie Cond.*	*Weight Capacity*
						Type	*Depth*	*Age*	*Other*			
Column 1	Ex.	10	10	112	-	Gran.	12”	-	-	5-80	poor	286K

8. Does your railroad have trackage rights on another railroad's track or does another railroad have trackage rights over your railroad? If so what segments are shared?

   No trackage rights except for interchange purposes.

9. Do you have a map showing the exact segments or Sub-Divisions that you'd willingly share with us that show 286,000 lb railcar handling capacity; bridge structural issues; geometric issues; track speed; trackage rights?

   We are currently moving 286k cars, and through the State program making changes so that this is maintained for the next ten years.

10. Are there any scenarios (including economic impacts) under which you could foresee the abandonment of your railroad, or specific line segments?

    If the plant in Medicine Lodge were to be shut down, or economics made trucking more attractive.

11. Does your company make projections as to future growth in your business?

    Any projections would be tied to the projection of the building industry, or unforeseen markets (i.e. frac sand, oil, wind turbine projects, etc.)

    a) If so, are these by tonnage or number of carloads?

    carloads

    b) If so, what is the basis for these projections?

    N/A

    c) What are your most recent projections for the next three years?

Year	2015	2016	2017
Projection	N/A	N/A	N/A

12. Do you have an adequate number of locomotives with the power to pull fully loaded 286,000 lb cars?

    The answer is dependent on the number of cars and the speed at which you choose to travel. On very rare occasions, we will have to increase service, or leave cars behind.

13. Does your company have any plans to increase track capacity to handle fully loaded 286,000 lb railcars (or along greater lengths of track)? If so, what track segments? Do you have a timeframe during which you hope to complete these upgrades? Can you prioritize these projects?

    Already handle them.

14. Are there other issues that your railroad experiences that you feel hamper your operations and/or affect customer service? (i.e. car supply shortage)

    We run into car supply issues for a few months each year. The biggest threat to the railroad at this time would be the age of bridges, and the need for funding to repair them.

KANSAS CITY TERMINAL // KAW RIVER RAILROAD

1. What are the top five commodities shipped on your railroad? Kaw River Railroad (KAW)

Commodities:	Grain Products	Paper	Cement	Lumber	Plastics

2. Is your business affected by seasonal differentiation in products? If so explain to what extent.

   Cement and lumber experience seasonality due to favorable weather for construction activity

3. What are your main locations for originating and terminating traffic?

   Originating: Kansas City, MO
   Terminating: Kansas City, MO
   Note: KAW is a handling carrier for BNSF.

4. Is your railroad owned by a parent company? If so, which one?

   KAW is a wholly owned subsidiary of Watco Companies. The railroad detail provided is referencing a lease rail line with BNSF Railway.

5. What are your railroad's primary corridors? Feeder line corridors?

   Primary: BNSF
   Feeder: BNSF

6. What is your railroad's operating characteristic by subdivision and key segments within subdivisions? (If you have more subdivision, you can add more Rows)
   a) Subdivisions and key segment route miles
   b) Gross ton-miles per year
   c) Number of slow orders
   d) Average number of railcars by weight (263,000 or 286,000) per week, month, year and season
   e) Total revenue
   f) Percentage non-class I line revenue

7. What are the infrastructure characteristics of your class III by subdivision and key segments within the subdivisions? (If you have more subdivision, you can add more Rows)
   a) FRA Track Class and operating speed
   b) Current operating speed
   c) Jointed or welded rail
   d) Rail weight
   e) Rail age -
   f) Ballast conditions (type of ballast, depth, etc.)
   g) Tie age and condition (i.e., plate cut, split, etc.)
   h) Weight capacity
   i) Structure sufficiency data (capability of handling 286,000 pound cars)

Subdivision	*Length (miles)*	*Number of Slow Orders*	*Average 263,000 lb Railcars Per*				*Average 286,000 lb Railcars Per*			
			Week	*Month*	*Year*	*Season*	*Week*	*Month*	*Year*	*Season*
Bedford	5	0	-	-	-	-	95	413	4958	NA
Kearney	16	0	-	-	-	-	7	30	358	NA

Subdivision	*FRA Track Class*	*Current Operating Speed*	*Jointed or Welded Rail*	*Rail Weight*	*Rail Age*	*Ballast Condition*				*Tie Age*	*Tie Cond.*	*Weight Capacity*
						Type	*Depth*	*Age*	*Other*			
Bedford	1	10 mph	Jointed	90-110	-	Granite/ Limestone	6 inch	2-5 yrs	-	10-15 yrs	Fair	286,000
Kearney	1	10 mph	Jointed	110	-	-	-	-	-	10-15 yrs	Fair	286,000

8. Does your railroad have trackage rights on another railroad's track or does another railroad have trackage rights over your railroad? If so what segments are shared?
   BNSF for interchange purposes only.

9. Do you have a map showing the exact segments or Sub-Divisions that you'd willingly share with us that show 286,000 lb railcar handling capacity; bridge structural issues; geometric issues; track speed; trackage rights?
   If so, please send with completed questionnaire

10. Are there any scenarios (including economic impacts) under which you could foresee the abandonment of your railroad, or specific line segments?
    None at this time.

11. Does your company make projections as to future growth in your business?
    Yes.

    a) If so, are these by tonnage or number of carloads?
       Carloads

    b) If so, what is the basis for these projections?
       Our projections mirror Customer projections for the line.

    c) What are your most recent projections for the next three years?

Year	2015	2016	2017
Projection	5316	5475	5639

12. Do you have an adequate number of locomotives with the power to pull fully loaded 286,000 lb cars?

13. Does your company have any plans to increase track capacity to handle fully loaded 286,000 lb railcars (or along greater lengths of track)? If so, what track segments? Do you have a timeframe during which you hope to complete these upgrades? Can you prioritize these projects?
    All track is 286k capacity.

14. Are there other issues that your railroad experiences that you feel hamper your operations and/or affect customer service? (i.e. car supply shortage)
    Not at this time.

NEW CENTURY AIRCENTER

1. What are the top five commodities shipped on your railroad?

Commodities:	Soybean oil	Steel	Lumber	Acetic acid	Plastic Beads

2. Is your business affected by seasonal differentiation in products? If so explain to what extent.

   NO

3. What are your main locations for originating and terminating traffic?

   Originating: Main yard track 8601
   Terminating: Main yard track 8601

4. Is your railroad owned by a parent company? If so, which one?

   No

5. What are your railroad's primary corridors? Feeder line corridors?

   Primary: None
   Feeder:

6. What is your railroad's operating characteristic by subdivision and key segments within subdivisions? (If you have more subdivision, you can add more Rows)
   a) Subdivisions and key segment route miles
   b) Gross ton-miles per year
   c) Number of slow orders
   d) Average number of railcars by weight (263,000 or 286,000) per week, month, year and season
   e) Total revenue
   f) Percentage non-class I line revenue

7. What are the infrastructure characteristics of your class III by subdivision and key segments within the subdivisions? (If you have more subdivision, you can add more Rows)
   a) FRA Track Class and operating speed
   b) Current operating speed
   c) Jointed or welded rail
   d) Rail weight
   e) Rail age
   f) Ballast conditions (type of ballast, depth, etc.)
   g) Tie age and condition (i.e., plate cut, split, etc.)
   h) Weight capacity
   i) Structure sufficiency data (capability of handling 286,000 pound cars)

Subdivision	*Length (miles)*	*Number of Slow Orders*	*Average 263,000 lb Railcars Per*				*Average 286,000 lb Railcars Per*			
			Week	*Month*	*Year*	*Season*	*Week*	*Month*	*Year*	*Season*
Column 1	6	0	4	150	1000-	-	3-	15-	250-	-

Subdivision	*FRA Track Class*	*Current Operating Speed*	*Jointed or Welded Rail*	*Rail Weight*	*Rail Age*	*Ballast Condition*				*Tie Age*	*Tie Cond.*	*Weight Capacity*
						Type	*Depth*	*Age*	*Other*			
Column 1	1-	10 mph	Jointed	90&105	60 yrs	Limestone	-	4 yrs	-	4 yrs	Good	-

8. Does your railroad have trackage rights on another railroad's track or does another railroad have trackage rights over your railroad? If so what segments are shared?
   No

9. Do you have a map showing the exact segments or Sub-Divisions that you'd willingly share with us that show 286,000 lb railcar handling capacity; bridge structural issues; geometric issues; track speed; trackage rights?
   No

10. Are there any scenarios (including economic impacts) under which you could foresee the abandonment of your railroad, or specific line segments?
    No

11. Does your company make projections as to future growth in your business?
    Yes

    a) If so, are these by tonnage or number of carloads?
    Number of carloads

    b) If so, what is the basis for these projections?
    Added businesses to our industrial park

    c) What are your most recent projections for the next three years?

Year	**2015**	**2016**	**2017**
Projection	**0-**	**0**	**500**

12. Do you have an adequate number of locomotives with the power to pull fully loaded 286,000 lb cars?
    Yes Sw900 and Sw1500

13. Does your company have any plans to increase track capacity to handle fully loaded 286,000 lb railcars (or along greater lengths of track)? If so, what track segments? Do you have a timeframe during which you hope to complete these upgrades? Can you prioritize these projects?
    Not at this time

14. Are there other issues that your railroad experiences that you feel hamper your operations and/or affect customer service? (i.e. car supply shortage)
    No

WICHITA TERMINAL

1. What are the top five commodities shipped on your railroad?

Commodities:	Wheat	Flour	Soybeans	Scrap	Soybean Oil

2. Is your business affected by seasonal differentiation in products? If so explain to what extent.

   Yes. Wheat is seasonal. We will typically get most of our wheat for Ardent Mills and Bartlett from May-Aug.

3. What are your main locations for originating and terminating traffic?

   Originating: Wichita
   Terminating: Wichita
   I have no information as to where the cars originate / terminate on the BNSF / UPRR.

4. Is your railroad owned by a parent company? If so, which one?

   Yes. BNSF and UPRR

5. What are your railroad's primary corridors? Feeder line corridors?

   Primary: N/A
   Feeder: N/A

6. What is your railroad's operating characteristic by subdivision and key segments within subdivisions? (If you have more subdivision, you can add more Rows)
   a) Subdivisions and key segment route miles – We have no named subdivisions.
   b) Gross ton-miles per year - Unknown
   c) Number of slow orders – All tracks are either 5 or 10 MPH. No slows. We pull it out of service if not good for posted speed.
   d) Average number of railcars by weight (263,000 or 286,000) per week, month, year and season – N/A
   e) Total revenue – We get no revenue. All revenue collected by owning rail companies.
   f) Percentage non-class I line revenue

7. What are the infrastructure characteristics of your class III by subdivision and key segments within the subdivisions? (If you have more subdivision, you can add more Rows)
   a) FRA Track Class and operating speed – Class 1 and Excepted – 5 mph except 10 mph on lead
   b) Current operating speed – 5 mph except 10 mph on lead
   c) Jointed or welded rail - jointed
   d) Rail weight – 90 to 115 lbs
   e) Rail age – new to 80 yrs old
   f) Ballast conditions (type of ballast, depth, etc.) – 2" ballast – 6 to 12 inches in depth
   g) Tie age and condition (i.e., plate cut, split, etc.) – new to 15 years old
   h) Weight capacity – 243 ton (not excepted track)
   i) Structure sufficiency data (capability of handling 286,000 pound cars)

      All tracks rate to 143 ton

Subdivision	*Length (miles)*	*Number of Slow Orders*	*Average 263,000 lb Railcars Per*				*Average 286,000 lb Railcars Per*			
			Week	*Month*	*Year*	*Season*	*Week*	*Month*	*Year*	*Season*
Column 1	10	0	-	-	-	-	-	-	-	-

Subdivision	*FRA Track Class*	*Current Operating Speed*	*Jointed or Welded Rail*	*Rail Weight*	*Rail Age*	*Ballast Condition*				*Tie Age*	*Tie Cond.*	*Weight Capacity*
						Type	*Depth*	*Age*	*Other*			
Column 1	1	5 to 10	Jointed	90 – 115	0-15	2”-	6-12 in		-	0-15-	-	286,000

8. Does your railroad have trackage rights on another railroad's track or does another railroad have trackage rights over your railroad? If so what segments are shared?
   We have trackage rights on BNSF and UPRR. No one has rights on WTA tracks.

9. Do you have a map showing the exact segments or Sub-Divisions that you'd willingly share with us that show 286,000 lb railcar handling capacity; bridge structural issues; geometric issues; track speed; trackage rights?
   N/A

10. Are there any scenarios (including economic impacts) under which you could foresee the abandonment of your railroad, or specific line segments?
    No

11. Does your company make projections as to future growth in your business?
    No. BNSF / UPRR make marketing projections.

    a) If so, are these by tonnage or number of carloads?

    b) If so, what is the basis for these projections?

    c) What are your most recent projections for the next three years?

Year	2015	2016	2017
Projection	-	-	-

12. Do you have an adequate number of locomotives with the power to pull fully loaded 286,000 lb cars?
    Yes

13. Does your company have any plans to increase track capacity to handle fully loaded 286,000 lb railcars (or along greater lengths of track)? If so, what track segments? Do you have a timeframe during which you hope to complete these upgrades? Can you prioritize these projects?
    Adding one storage track of about 12 car lengths in 2017.

14. Are there other issues that your railroad experiences that you feel hamper your operations and/or affect customer service? (i.e. car supply shortage)

K-TRAN

KANSAS TRANSPORTATION RESEARCH AND NEW-DEVELOPMENT PROGRAM

AD ASTRA PER ASPERA

Kansas

Department of Transportation