EMERGING STATE RAIL ISSUES: IMPLICATIONS FOR RAIL PLANNING IN NORTH DAKOTA

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North Dakota Rail Services Planning Study

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HIGHLIGHTS

Several important rail issues have been revealed since the state of North Dakota undertook a comprehensive rail plan. One of these issues is the issue of rail labor costs. Because of restrictive work rules and high wages for rail labor, Class I carriers have been unable to operate some light-density lines, resulting rail abandonments. Another issue is the deteriorating condition of rural roads and bridges in North Dakota. Because of limited resources in rural areas, these roads and bridges are not receiving necessary maintenance. A final issue is that of rail car supply. Shippers in North Dakota have complained of covered hopper car shortages in recent years, and current trends make the prospect of future shortages appear greater.

This study examines some of the most significant new rail issues facing the state of North Dakota, and their ramifications for future rail policy. The study finds that: (1) the state of North Dakota should advocate alternatives to rail abandonment, (2) rail banking should be used when the possibility of future growth is perceived in areas served by abandoned lines, (3) policy encouraging future rail car purchases is needed to prevent future rail car supply problems, (4) and the importance of rail preservation is amplified by the condition of rural roads and bridges.

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I. INTRODUCTION

North Dakota is particularly sensitive to state rail issues, since much of its economy depends on efficient and continued rail service. North Dakota's primary resource is agriculture, and continued rail service at competitive rates is important in agricultural marketing. Several years have elapsed since North Dakota undertook the development of a comprehensive state rail plan. In the interim, many changes have occurred in the economic and political environment which impact state railroad planning and policy analysis. First, high rail labor costs have become a major issue. Because of the increased competition from other modes of transportation, high rail labor costs have increased in importance for Class I carriers. High rail labor costs have eaten into Class I carriers' profits and fueled rail abandonments nationwide. Rail abandonments in North Dakota may total over 1800 miles in the next 30 years (NDDOT). Second, rural roads and bridges in North Dakota are in need of extensive replacement and rehabilitation with little money to support these improvements. Third, rail grain car shortages have impacted North Dakota shippers. These shortages are expected to get worse throughout the coming decade.

The important rail issues facing the state today provide opportunities and challenges for the North Dakota Department of Transportation. The DOT's decisions and policies can help shape the future of rail service in North Dakota. This report looks at some of the most important new rail issues facing North Dakota, and their implications for future rail policy. The primary purpose of the report is to highlight major problems and issues which need to be addressed in the next state rail plan. The study is intended to be an issue paper, rather than a comprehensive review such as would be contained in a state rail plan.

II. RAIL LABOR

A major issue in rail planning today is the high cost of labor faced by Class I carriers, and the restrictive work rules that increase this cost. To a large extent, high rail labor costs are being passed on to rail users, resulting in decreased rail shares of shipments. In 1960 railroads owned a 44 percent share of total revenue ton-miles moved by all forms of transportation. In 1985, however, the railroads' share had decreased to 37 percent of total revenue ton-miles (Gohmann).

Rail service to the nation and North Dakota is extremely important, as the majority of all grain moved is by rail. Rail movement provides a relatively inexpensive way to ship grain long distances. However, high labor costs, restrictive work rules, high severance costs for displaced workers, and labor's right to secondary boycotts are all making it difficult for Class I carriers to operate light-density lines.

The high cost of rail labor has become increasingly important in recent years, because of increasing competition from other modes of transportation. Both rail labor's wages and the work rules restricting its use have made rail labor costs prohibitively high for the operation of several light-density lines. There are several indications that rail labor's wages are extremely high. Nearly fifty cents out of every revenue dollar earned by Class I carriers is paid to labor. Furthermore, the average rail worker earns nearly twice what the average American worker earns (Gohmann).

A related factor placing a burden on Class I carriers is the restrictive work rules of rail labor (Gohmann). Class I carriers often have four or five person work crews which include brakemen and firemen. Workers on these crews are restricted to one job, and can't perform duties that aren't included in their job titles. The work day is often based on 108 miles of travel rather than the amount of hours worked. With current technology 108 miles

can be run in two to four hours, and brakemen and firemen are no longer necessary.

Not only do Class I carriers incur high labor costs, but they also must pay high severance costs. Class I carriers must provide displaced workers with full pay and full benefits for six years, and must provide unemployment benefits for an additional two years (Gohmann). The costs to Class I carriers from labor protection was estimated to be $700 million in 1985 (Wilner). In the Norfolk & Western, Penn Central, and Burlington Northern mergers, some workers were guaranteed lifetime jobs (Thoms, Dooley, and Tolliver). In contrast to the rail industry, most industries provide a two week notice for plant closings without compensating displaced workers. Some of these industries pay eight weeks to six months severance, and all workers receive assistance under the Federal Job Partnership Act of 1983. This assistance consists of retraining and subsistence. While the assistance programs for workers in most industries are designed to train the workers to be productive in other jobs, the severance to rail workers doesn't promote retraining.

Finally, the ability of Class I carriers to decrease labor and severance costs is restricted by railroad unions' right to use secondary boycotts. Secondary boycotts occur when a rail labor union carries a strike from one railroad to other carriers which deal with it, in order to apply pressure on the railroad to meet labor's demands. Secondary boycotts are also used by labor to create the fear of government intervention into the labor dispute.

A striking example of secondary boycotts occurred in 1986, when two hundred maintenance of way employees struck on the Maine Central Railroad. The Brotherhood of Maintenance of Way Employees coordinated with all other railroad unions and struck several other carriers, including the Burlington Northern, Conrail, and Southern Pacific (Gohmann). This resulted in the President of the United States appointing an Emergency Board to solve the dispute.

The use of secondary boycotts affects railroads not involved in labor disputes, and forces railroads to give in to union pressures. The mere existence of rail labor's right to apply secondary boycotts causes settlements to lean in labor's favor, because carriers fear government involvement in labor disputes.

The state has little or no statutory influence over rail work rules and labor costs. However, state rail policies generally support efficient and cost-effective light-density operations. In the next rail plan, the DOT should develop a series of even-handed statements or policies concerning rail labor, which recognize the trade-offs between cost-effective branch-line operations and rail jobs and income streams.

III. CONTINUED RAIL SERVICE WHEN FACING ABANDONMENT THREATS

One of the major goals of state rail planning is to preserve as much of the light-density network as possible. Because of high labor costs and diseconomies of traffic density, Class I carriers have been unable to operate profitably on many branch lines in the past. For example, over 700 miles of track have been abandoned in the state of North Dakota since 1980 (Evans). However, there are several alternatives to rail abandonment. Two of the most promising are discussed below.

A. Short Line Sales

One alternative to rail abandonment of unprofitable lines is the sale of track to short lines. Short-line carriers have frequently been able to operate failing or marginal lines at profits because of their ability to use smaller crew sizes and pay lower wages than the Class I carriers.

Short-line railroads generally create economies in branch-line operations. One of the primary reasons is that labor costs are typically much higher for Class I carriers than for

short lines. Average hourly wage rates for the typical short line are about 52 percent of those for the Burlington Northern, and fringe benefits are about 47 percent of those for the BN (Dooley and Tolliver). As noted earlier, short lines also use smaller crews. Also, short-line workers are paid for hours worked rather than miles traveled. This allows short-line employees to work an eight hour day without being paid overtime.

An important policy for the state of North Dakota may be to encourage the sale of short lines prior to rail abandonment. A recent study has estimated that if 2,010 miles of track are sold to short lines in North Dakota (672 of which would be abandoned in the absence of short-line sales), the net efficiency benefits of the sales will be approximately $89,617,000 (Tolliver, pub. 71). Benefits of $158,585,000 would result from lower branch line costs, increased rail traffic, and reduced highway costs. Efficiency losses of $68,968,000 would occur as the result of rail worker layoffs.[1]

Short-line sales almost stopped in the fall of 1987 because of a dispute between carriers and the rail labor unions (Dooley and Tolliver). In June of 1989, the United States supreme court ruled that a Class I carrier could make a short-line sale without negotiating the effects of the sale on labor ahead of time (Rosenfeld). It will be important in the future for short-line sales to occur without labor agreements prior to the sale. The main advantage short lines have over Class I carriers is the lower labor costs. Attaching restrictive labor rules or protection to short-line sales will inhibit the natural process of rationalization, and indirectly exacerbate the abandonment problem.

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[1]The efficiency loss of $68,968 is estimated for a worst case scenario. The efficiency loss could be reduced to zero if all rail workers become employed elsewhere in North Dakota (Tolliver, pub. 71).

B. Feeder Railroad Development Program

Another alternative to rail abandonment is provided by the Feeder Railroad Development Program [Ex Parte No. 395].[2] This program, which was established by section 401 of the Staggers Rail Act of 1980, allows the Interstate Commerce Commission to require railroads to sell certain lines to financially responsible applicants under some specific circumstances.

As stated by the ICC in Ex Parte No. 395, the two types of lines that qualify under this program are:

> *(1) lines for which we (ICC) find that the public convenience and necessity permit or require the sale; and (2) lines that appear in category 1 or 2 of the carrier's system diagram map as potentially subject to abandonment but for which the carrier has not filed an application to abandon.*

The purchase price must be at or above the Constitutional minimum value of the line. The Constitutional minimum value is determined to be the greater of two values; 1) the going concern value or 2) the net liquidation value of the line. When a value for the rail line can't be agreed upon, binding arbitration is used. The ICC will choose either the seller's or the buyer's price. Arbitration serves as an incentive for parties to come to an agreement, rather than settling for an arbitrator's decision on one amount or the other.

According to Ex Parte No. 395 the ICC can also:

> *require the selling carrier to provide trackage rights to the acquiring party to allow reasonable interchange or to move power equipment or empty rolling stock between noncontiguous feeder lines operated by the acquiring party.*

Another power granted to the ICC from this program is that the ICC can require joint rate establishment at reasonable rates. Finally, the ICC requires the purchasing party to use the employees who normally worked on the line to the maximum extent that is feasible.

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[2]Interstate Commerce Commission, 49 CFR Parts 1002 and 1128.

The Feeder Railroad Development Program offers the right of first refusal to the original seller of the rail line in the event that the new owner tries to sell or abandon any part of the line. The original seller must, however, be willing to buy the line at the price paid by the original purchaser plus the market value of any improvements, in order to exercise this right. The original purchaser must have performed three years of service before it may sell or abandon a line. This will assure that the purchaser intends to use the line for rail service.

The efficiency gains from continued rail service in North Dakota are extremely large (Tolliver, pub. 71). The FRDP could be very beneficial in keeping existing rail service in rural areas. It assures the continued use of rail lines that may be abandoned, when potential buyers are available.

One possible weakness that should be of concern to the state of North Dakota is that the provision for the use of existing employees is not clearly defined. The provision only says that existing employees must be used when feasible. The question to be asked is, who will the burden of proof of feasibility be placed upon? This provision may give impetus to rail labor unions in their fight to keep union shop rules in newly formed railroads. If the program requires the use of union workers by the purchasing party, it is almost certain that no purchasing parties will come forward. Lower labor costs are what allows short lines to turn profits on previously unprofitable rail segments. An effort should be made to assure that purchasing parties in this program will not be held to any labor restrictions which are not currently imposed upon existing short-line sales.

The sale of light-density track to local or regional operators, whether initiated by the Class I carrier, the state or third parties through the Feeder Railroad Development Program, represents an alternative to the downgrading and abandonment of branch lines. The NDDOT

has not utilized the Feeder program in the past, nor become actively involved in sale negotiations. The unofficial position of the NDDOT and other state agencies has been that short-line sales are preferable to abandonment, and represent a primary mechanism for preserving North Dakota's light-density system. In the next comprehensive rail plan, the NDDOT should develop a set of policies regarding line sales which include:

1. Instances in which the Feeder Railroad Development Program might be utilized,
2. Instances in which line sales should (or should not) be supported or facilitated by the state,
3. Feasibility indices or criteria for profitable short-line operations,
4. Instances in which rail banking (to be discussed later) represents an alternative to line sales.

IV. RESTORATION AFTER ABANDONMENT

There is an option remaining, even after rail lines have been abandoned. The rail bank programs allow states to acquire abandoned rail property for future use. The state buys an abandoned rail line and maintains the property to preserve right-of-ways and roadbeds while it is being banked. The rail line can then be sold for rail use, or other use, in the future. Several states have rail bank programs in place, including Minnesota and Wisconsin.

An outline of an existing rail bank program would be helpful for illustration. The Minnesota program is outlined, because of the state's similarity to North Dakota.

In order for a rail line to be eligible for the rail bank program in Minnesota, it must be abandoned and meet at least one of the criteria under 1 or 2.

1. Provide access to a:

   a. major energy generating or using facility,
   b. major facility for storing or marketing agricultural or forest products,
   c. surrounding state
   d. extractive resources requiring transportation or transmission services for their development.

2. Provide a present or potential corridor for:

a. rail freight or passengers
b. pipeline
c. electrical transmission line
d. highway
e. transit, or
f. other similar transportation and transmission uses.

Source: Minnesota State Rail Plan, 1988

For the most part, Minnesota criteria for eligibility would be directly applicable to North Dakota. Eligibility standards include provisions for agriculture and extractive resources, both of which will be important elements in North Dakota's future.

The state of Minnesota prioritizes lines eligible under the rail bank program according to the following criteria:

1. Those to be utilized for continued rail operations,
2. Those needed as part of the future overall rail system,
3. Those where the identified future use will benefit a greater portion of the state, and
4. Those where identified future utilization includes more than one use.

Source: Minnesota State Rail Plan, 1988

These priority criteria would be applicable for any state for the following reasons: (1) Preservation of rail service reduces road maintenance costs, (2) The economic well being of many communities depends on continued rail service, (3) Future uses that benefit large parts of a state will benefit many people, and (4) Lines that have several uses are likely to benefit a large amount of people.

Under the rail bank program, property that is being preserved for future use may be leased for other purposes. The Minnesota criteria for leasing banked rail lines are as follows.

Lines may be leased when:

1. The other use was in effect prior to the property being banked, (example: Power line on right-of-way),
2. The use reduces maintenance costs and increases program income,

3. The use is compatible with adjacent land uses, and
4. The use benefits the state.

Source: Minnesota State Rail Plan, 1988

The use of rail banking in the future could be an important element of North Dakota rail policy. While short-line sale prior to abandonment is preferred, rail bank programs provide a means of preserving abandoned rail lines for future use. When future growth potential is seen in areas where rail lines are abandoned, rail banking can produce long-term benefits.

V. RAIL CAR SUPPLY SHORTAGES FOR GRAIN

During late 1987 and early 1988, agricultural shippers in the Midwest and other parts of the country complained of acute shortages of grain covered hopper cars. Limited supplies of covered hopper cars spurred prices in the rental market. The monthly lease charge for a typical covered hopper car rose from one hundred and fifty dollars per month in August of 1986 to four hundred and fifty dollars in the spring of 1988.

Significant trends have occurred in grain movements in recent years (Norton and Klindworth). Total grain movements in the United States have increased more than twenty-nine percent since 1978. In addition, rail movements of grain have increased from fifty-seven percent of all U.S. grain movements in 1984 to nearly seventy percent of all U.S. grain movements in 1987.

Along with grain movement trends, an analysis of recent railroad behavior and performance suggests that rail car shortages may become increasingly severe in the future (Norton and Klindworth). Since 1982, there have been only a few significant covered hopper car purchases by Class I carriers. In addition, the annual retirement rate of covered hopper cars averaged 2.7 percent between 1977 and 1987. Four percent of the covered hopper car

fleet was out of service in 1989, and this percentage is expected to increase as the age of the fleet increases. Finally, while cycle times decreased 2.2 percent per year between 1983 and 1987, they are not expected to decrease more than 1.5 percent per year in the future. This is because the majority of the improvement in cycle times has been the result of reducing empty hauling, and this component can only be decreased by a limited amount. Norton and Klindworth estimate that with improvements in cycle times of 1.5 percent per year, a grain car deficit of 29,700 will exist by the year 2001.

Car shortages like those occurring in 1987 and 1988, are particularly frustrating to landlocked states in the Upper Great Plains. Shippers in North Dakota, eastern Montana, and other parts of the region do not have the option of barge transportation for the shipment of grain. In many instances, motor carriers provide the only competition and alternative method of movement. The lack of competition for the transport of grain in this region may affect the railroads' priorities in supplying covered hopper cars. One theory is that carriers tend to first allocate cars to regions where stiff competition for grain movements exists. If this practice occurs, it may limit the ability of shippers in the Upper Great Plains to participate in market peaks.

Programs such as the Burlington Northern's Certificate of Transportation (COT) may help alleviate car service problems, with certain qualifications. The COT program should help the BN to better plan car distribution, and improve overall utilization of the fleet. Thus the program should provide some incentive to the BN to buy cars in the face of chronic shortages. Logically, the BN will buy more cars when the return on investment is good (e.g. the bids are very high).

There is concern among some shipper groups that the COT program still encompasses some elements which may not allow the market to operate freely. First, the COT program

does not allow bid prices to start below a specified minimum rate. This may keep bid prices artificially high. Second, COT bids are not seen by others. This does not necessarily allow bidders who value on time shipments the most to obtain them.

Innovative free market based programs like COT are one possible solution to the rail car supply problem. However, these programs must take full advantage of their free market basis. This can be done by eliminating elements of these programs which may not allow the market to operate freely.

The state has little or no statutory influence over car supply or car service. However, state policies and/or investments can facilitate ownership and free use of covered hopper cars by shippers or third parties. Suggestions have been made in the past that North Dakota or a group of neighboring states should acquire a covered hopper car fleet. While this may be an extreme scenario, a range of options need to be considered. In the next rail plan, the state should evaluate the available options and develop some long-term policies in this area.

VI. RURAL ROAD AND BRIDGE CONDITIONS

Another major factor influencing rail planning in North Dakota in future years will be the condition of rural roads and bridges. Several studies have concentrated on the condition of roads and bridges in urban areas across the United States, while few have focussed on rural roads and bridges. Although urban road and bridge conditions affect a greater number of people, rural road and bridge conditions are equally important. Replacement and maintenance costs of rural roads and bridges are large drains on local financial resources, and good condition of rural roads and bridges is critical to efficient and dependable transportation of agricultural commodities.

The maintenance of rural roads and bridges is particularly important in North Dakota, where agriculture is an important form of production. North Dakota's townships and

counties are small in population, leaving a limited tax base for rural road and bridge maintenance and improvements (Table 1).

Table 1 : Size Distribution of Townships

Township Population	Number of Townships in North Dakota	Number of Townships in the United States
100,000 or more	-------	30
50,000 to 99,999	-------	73
25,000 to 49,999	-------	214
10,000 to 24,999	-------	702
5,000 to 9,999	2	962
2,500 to 4,999	1	1,724
1,000 to 2,499	6	3,764
Less than 1,000	1351	9,265

Source: U.S. Bureau of the Census, Government Organization (Washington, DC: Government Printing Office, 1983), Table 7.

Many of the rural roads and bridges in the midwest are in poor and unsafe condition. In a study by Chicoine and Walzer, a survey of township officials was conducted for the states of Illinois, Minnesota, Ohio, and Wisconsin. The township officials rated 19.8 percent of the roads in the four states as needing major repair. They rated 29.5 percent of the roads needing minor repair, and the rest needing normal maintenance. The bridge conditions are even worse. Township officials rated 21.2 percent of rural bridges requiring complete replacement, 10.1 percent requiring major renovation, and 13.7 percent requiring more than the required maintenance. The rest require regular maintenance.

Weighted averages of the estimated costs of upgrading roads and bridges for Minnesota and Wisconsin on a per bridge and per mile basis are shown in Table 2 (Chicoine

and Walzer). These unit costs take into account the percentage of bridges and road miles needing each level of repair. To illustrate the potential magnitude of the problem in this state, the weighted averages are used to estimate the costs of upgrading rural roads and bridges in North Dakota. The weighted averages of Minnesota and Wisconsin are used because of the two states' similarity to North Dakota.[3]

Table 2 : Estimated Cost of Upgrading Township Roads and Bridges

Costs	MN/WI (weighted average by # of miles and bridges)	North Dakota
Cost per Bridge	$24,399	$24,399
Number of Bridges		3,218
Total Bridge Costs		$78.5 million
Cost per Road Mile	$6,564	$6,564
Road Mileage		65,524
Total Road Costs		$430.1 million
Total Road and Bridge Costs		$508.6 million

Source: Highway Statistics, 1982, U.S. Department of Transportation Survey of Township Officials, Spring 1984 (Chicoine and Walzer).

The analysis shows that the costs of upgrading township roads and bridges in North Dakota ($508.6 million) are extremely high in comparison to the revenues generated at the township level of $12.1 million (Table 3). This suggests that local officials will have to increase revenues and face a choice between upgrading some roads and reducing service on others or abandoning some roads.

[3]This may represent a worst case scenario since the state of North Dakota probably has a slightly higher percentage of gravel roads in townships than Minnesota or Wisconsin.

Table 3 : Township Revenue 1981-82 (millions of dollars)		
Revenue	**North Dakota**	**United States**
Total Revenue	12.1	10,166.7
Total General Revenue (Percent)	12.1 (100)	9,582.3 (100)
Intergovernmental Revenues	3.6 (29.8)	2,900.8 (30.1)
Federal	1.8 (14.9)	544.0 (5.7)
State	1.6 (13.2)	2,179.4 (22.7)
General Revenue - Own Source	8.5 (70.2)	6,681.5 (69.7)
Tax Revenue	7.5 (62.0)	5,329.7 (55.6)
Property Tax	7.5 (62.0)	4,993.9 (52.1)
Other Taxes	-------	335.8 (3.5)
Charges & Misc. General Rev.	1.0 (8.3)	1,351.8 (14.1)
Source: U.S. Bureau of the Census, Government Finances in 1981-82 (Washington, DC: Government Printing Office, 1983).		

In addition to the poor condition of township roads and bridges, rural state highways and county roads are also deteriorating. Recently, the North Dakota Department of Transportation estimated that 2,937 miles of rural state highway will need rehabilitation, restoration, or reconstruction by the year 2000 at current funding levels (NDDOT). Rural county roads will also need repair and replacement.

Because of the introduction of unit train shipments in 1980, increased truck shipments between "satellite" and main stations are reducing the service lives of many rural highways

(Tolliver, report 75). Many rural highways are not built for heavy traffic densities, and the increased truck use on these roads is rapidly taking its toll.

In a study which analyzed changing highway costs due to subterminal use, Tolliver (report 75) estimated the short-run costs of accelerated replacement to total $1.14 million due to subterminal use for the Devils Lake area, and the long-run costs of upgrading low volume highways to total $8.41 million. If this region is assumed to be representative of rural North Dakota, the state wide short-run and long-run costs of highway replacement and upgrading resulting from subterminal use would be $57 million and $420 million respectively. This suggests that total state and county highway maintenance and replacement costs may be prohibitively high.

Highway funding problems accentuate the need for rail systems to continue operating in rural areas in North Dakota. If rail service is available in these areas, an alternative to wear and tear on rural roads and bridges will exist. As rail abandonments increase, highway problems will worsen. Traffic will increase on low-volume roads and bridges, causing additional wear and tear. Maintenance of these roads and bridges will thus become a critical intermodal issue.

VII. SUMMARY AND CONCLUSIONS

The purpose of this paper has been to highlight some of the major planning and policy issues which have become prominent since the last comprehensive state rail plan. The paper was not intended to be comprehensive in nature, or formulate state rail policies. Its major intent was to outline major new issues, and set the stage for a new rail plan at some future time.

In the paper, several emerging issues and potential policy options were discussed. As noted, rail labor costs are threatening the success of light-density Class I carrier operations.

Many miles of track have been abandoned in the past, and more can be expected in the future. Alternatives to abandonments, such as short-line sales and the Feeder Railroad Development program can allow rail service to continue in many areas. North Dakota should encourage such alternatives to rail abandonment, and work to assure that the labor cost savings realized by short lines remain.

The rail bank program is an effective way to preserve rail lines for future use after abandonment. When the possibility of future growth is seen in areas served by abandoned lines, rail banking will produce great benefits. Thus, the North Dakota DOT may wish to evaluate this option in the future.

Another important issue facing North Dakota is rail car supply shortages for grain. Shippers may lose some of their export market and receive lower prices due to the lack of cars. Programs encouraging future rail car purchases are needed to alleviate future supply problems and shortages.

Finally, the condition of rural roads and bridges across the nation is poor. This is a particular problem in rural states. The preservation of rail service in North Dakota is vital to provide an efficient alternative to road use.

Several important rail issues, which face the state of North Dakota today, will provide future opportunities and challenges for the North Dakota Department of Transportation. The future of rail service and highway usage in North Dakota will be greatly affected by the decisions and policies of the Department of Transportation. Extensive intermodal planning and policy analysis will be needed to effectively meet the future transportation needs of North Dakota.

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