"Railroads in North Dakota, 1872-1956" was written in 2009.

It has not been reviewed by the Keeper of the National Register of Historic Places as the program requires a nomination to accompany new Multiple Property Documentation Forms. NDSHPO has accepted the context and approved use of the document in evaluating the eligibility of resources covered within the document.

**United States Department of the Interior**
**National Park Service**

# National Register of Historic Places
# Multiple Property Documentation Form

This form is for use in documenting multiple property groups relating to one or several contexts. See instructions in *How to Complete the Multiple Property Documentation Form* (National Register Bulletin 16B). Complete each item by entering the requested information. For additional space, use continuation sheets (Form 10-900-a). Use a typewriter, word processor, or computer to complete all items.

☒ New Submission ☐ Amended Submission

## A. Name of Multiple Property Listing

Railroads in North Dakota, 1872–1956

## B. Associated Historic Contexts

Railroad Development in North Dakota, 1872-1956

## C. Form Prepared By


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## D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. (☐ See continuation sheet for additional comments.)

Signature and title of certifying official Date

State or Federal Agency or Tribal Government

I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Signature of the Keeper of the National Register Date of Action

# TABLE OF CONTENTS FOR WRITTEN NARRATIVE

Provide the following information on continuation sheets. Cite the letter and the title before each section of the narrative. Assign page numbers according to the instructions for continuation sheets *in How to Complete the Multiple Property Documentation Form* (National Register Bulletin 16B). Fill in page numbers for each section in the space below.

**Section** **Page Numbers**

# LIST OF FIGURES

# SECTION E. STATEMENT OF HISTORIC CONTEXTS

## I. RAILROAD DEVELOPMENT IN NORTH DAKOTA, 1872-1956

### *Setting the Stage: Early Railroads*

Due to the country's vast geographic expanse, transportation has always been a significant issue in America, influencing production, trade, travel, and communication in ways not experienced by more compact European nations. In particular, as Euro-American settlers streamed into the trans-Appalachian west during the early nineteenth century, the United States needed an overland transportation system to link different regions of the country. From early roads to canals and finally to railroads, Americans built a transportation system by the turn of the twentieth century that was larger and more complex than any other in the world.

The transformation of transportation in the United States began with the era of canal building. Although a system of roads extending westward from the major seaports had been established by 1820, water-borne transportation was more efficient for shipping heavy freight and generally faster than overland transport. Completion of the Erie Canal in 1825 demonstrated that canals could be built over long distances to connect major waterways and could be operated profitably. The immediate success of the Erie Canal led to a canal building boom that lasted through the 1830s. The network of canals and natural waterways provided antebellum America with important interregional links to exchange raw materials and manufactured goods, to transport passengers, and to deliver mail.

When the Baltimore and Ohio Railroad began construction on the first railroad in the United States in 1828, Baltimore city leaders had chosen to support that mode not because they had faith in the new technology, but because building a canal over mountainous terrain to the Ohio River was not feasible. Waterways remained the leading mode of transportation through the 1850s. In 1859, however, railroads surpassed canals in freight traffic and began a 60-year run as the single most dominant form of transportation. The advantages of railroads over other forms of transportation were numerous. Railroads were fast: for the first time in history, overland travel could move faster than the speed of a horse. Railroads were relatively reliable: due to their own operating and scheduling requirements, companies established timetables and a standard timekeeping system. Furthermore, because they required fewer transshipments than water-borne freight and were not slowed by the limitations of animal power, railroads were more efficient, especially for long hauls. Railroads were less expensive to maintain than canals, and routes were more direct because tracks were less dependent on topography and hydrology. In addition to their advantages in hauling freight, railroads dramatically reduced passenger travel times. While, for example, a trip from New York to

Chicago previously required two weeks of travel, railroad connections by the early 1850s trimmed travel time to two days.

By the early 1830s, numerous railroad charters were created with the intention to link cities on the eastern seaboard to each other and to the West. Often railroad construction was slower and more expensive than anticipated. The initial routes were often short lines connecting two cities, and connections to other lines were haphazard, due to differences in equipment and track gauges. Often no physical link existed between railroads. Nonetheless, the miles of track increased nationally to approximately 1,000 miles by 1835, then to 2,800 in 1840, and 8,900 by 1850. Most of that mileage was concentrated in the Northeast, which had a basic railroad network by 1850, predominately of tracks that already conformed to what would become the standard gauge of 4 feet, 8½ inches.

Railroad construction during the 1840s was only a prelude to the rapid expansion during the 1850s, when railroad mileage more than tripled from 8,900 to over 30,000 miles. The combination of a generally prosperous economy; expanding Euro-American settlement into new areas; and abundant optimism in the future of railroad transportation, along with generous subsidies, grants, and bonds from federal, state, and local governments, all acted to stimulate rapid growth. While state and local governments borrowed millions of dollars to help finance railroad construction, the largest subsidies came from the federal government, which granted railroad companies 25 million acres of land during the 1850s and a total of 175 million acres by 1871. In the future state of North Dakota alone, the federal government granted the Northern Pacific railroad 10.7 million acres of public domain lands, representing 24 percent of the total land area (Cotroneo 1970:79). Although 70 railroad companies received land grants, 70 percent of the acreage went to only four companies, including the Northern Pacific. The land grants did not provide immediate capital for the railroads, but they provided substantial collateral for loans and encouraged railroad construction into new territories in advance of settlement.

Although the 1850s was a period of rapid expansion for the railroads, by the eve of the Civil War the United States still did not have an integrated system. Differing track gauges between regions and companies required frequent transfers for freight and passengers traveling long distances, and a lack of rail service meant reverting to water-borne or animal-powered transportation. During the late 1850s, for example, a lack of rail connections meant a trip from St. Paul to the Pembina settlement on the Red River required two weeks of travel via keel boat or ox cart. Although the steamboat Anson Northrup made its maiden voyage on the Red River in 1859, travel remained slow (Gilman et. al. 1979:21).

Following the Civil War, railroad mileage in the United States more than quadrupled, primarily during three great waves of expansion: 1868 to 1873; 1879 to 1883; and 1886 to 1893. After the first period of expansion, a vast rail network extended from the Atlantic coast on the east to Minneapolis-St. Paul (the

Twin Cities) in the northwest and to Kansas City in the southwest, with connections to the West Coast via the Union Pacific line. This area included a mix of integrated agricultural and industrial areas that would become America's manufacturing and corn belts. During the late 1870s to early 1890s, railroad construction expanded the existing rail systems east of the Mississippi River and extended railroad service into less developed areas to the west. In North Dakota for example, companies completed the **Northern Pacific** (see company history, page 64) and **Great Northern** (see company history, page 50) transcontinental routes, plus connections to the Canadian Pacific transcontinental line via the **Minneapolis St. Paul and Sault St. Marie (Soo Line)** (see company history, page 74) (Borchert 1987; Brownlee 1979:272; Holt 1885; Rand McNally & Co. 1895).

North Dakota's railroad history extends back to the territorial period (Holt 1885:34-38). Prior to the coming of the railroads during the early 1870s, transportation in northern Dakota Territory was limited to river and overland (stage or ox cart) travel. Early Euro-American settlements were located on rivers—Pembina on the Red River and a series of U.S. Army forts on the Red, James, Sheyenne, and Missouri rivers.

Planning for a railroad began with a U.S. Army expedition led by Isaac Stevens in 1853, which reported that a northern transcontinental railroad route was feasible. In 1864 the U.S. Congress chartered the Northern Pacific railroad and granted the Northern Pacific 40 sections of land per mile through Dakota Territory. Despite the generous land grants, the Northern Pacific's directors had difficulty raising capital to finance construction through such sparsely settled areas such as western Minnesota and North Dakota. After Jay Cooke was hired in 1869 to sell bonds for financing, construction began near Duluth, Minnesota in 1870, and the railroad reached the Red River in 1871. Construction continued westward in 1872, and the railroad reached the Missouri River at Bismarck in 1873. In addition, the St. Paul and Pacific railroad, of which the Northern Pacific owned a controlling interest, built westward from the Twin Cities and reached Breckenridge, Minnesota on the Red River in 1871. Crossing of the Red River from Breckenridge to Wahpeton, however, would not happen until 1880, after the Manitoba railroad had acquired the St. Paul and Pacific. Due to the Panic of 1873 and ensuing economic depression, no additional railroad mileage in addition to the Northern Pacific main line was built in northern Dakota Territory until 1878.

Thus, railroads had come to northern Dakota Territory by the early 1870s. Initially, the primary beneficiaries were the Red River Valley settlements, which obtained either direct railroad connections to markets in the Twin Cities or benefited from the increased traffic on the Red River. None benefited more than Fargo, which was established as a railroad camp on Northern Pacific land and soon evolved into a settlement off of railroad lands made up of "tracklayers, outlaws, prostitutes, and many future residents hoping for lower lot prices" (Engelhardt 2007:27-28). Although title disputes led to delays in laying out a formal townsite, the Northern Pacific Land Department platted 240 acres in September 1873 and filed the plat for Fargo the following January. The Northern Pacific established Fargo as a division headquarters with a roundhouse and machine shop, contracted for construction of a grain elevator, and built stockyards. In addition, Fargo became a major shipping point for hauling out Red River Valley wheat and shipping in manufactured goods. By 1880, Fargo's population had reached 2,795 (Engelhardt 2007:38).

Wahpeton was established before a railroad reached the community. The first Euro-American settlers arrived in the area in 1896, and a post office was established in present-day Wahpeton in 1871. The community began to grow in 1872 after the St. Paul and Pacific railroad reached Breckenridge on the Minnesota side of the Red River. When the Manitoba extended the railroad line across the river in 1880, Wahpeton quickly grew to 1,400 people.

Unlike other North Dakota cities, Grand Forks began as a river-oriented supply and trade center. First a base of fur-trade operations as early as the 1740s, present-day Grand Forks became a stopping point for the Red River ox cart trade during the 1850s, then a steamboat landing during the 1870s. Although Grand Forks was an important trade center on the Red River, the city grew rapidly after the 1880 arrival of the **St. Paul Minneapolis and Manitoba Railway (Manitoba)** (see Great Northern company history on page 50).

The single railroad operating in northern Dakota prior to 1878, the Northern Pacific main line, offered irregular train service due to the company's bankruptcy and the relatively light passenger and freight traffic. Nevertheless, the railroad led to the founding of Valley City (known as Worthington until 1881), Jamestown, and Bismarck in 1872 at major river crossings. Bismarck was the end of the line from 1873 until railroad construction resumed in 1878.

## *The Golden Age: 1878 through 1916*

### System Building in Eastern Dakota, 1878 through 1898

During the late nineteenth century, railroad companies established a rail network within the east half of North Dakota. In 1878, only one railroad corridor operated in northern Dakota Territory—the Northern Pacific main line, which extended west from Fargo some 200 miles to Bismarck. By 1898, railroads in North Dakota included two transcontinental main lines and a direct connection to a third, and a network of branch lines covered the Red River Valley and much of the Drift Prairie.[1] At the turn of the twentieth century, the state had three times as many railroad miles per capita as did the United States as a whole (Robinson 1966:236-237). Railroad construction in North Dakota during the late nineteenth century can be divided into two eras. The first era, from 1879 to 1888, is characterized by aggressive expansion of railroad

[1] Here and below, terms such as Drift Prairie, Missouri Plateau, and Missouri Slope refer to major topographic areas in North Dakota. See Figure 1 at the end of Section F for approximate boundaries.

mileage into new geographic areas. Railroad companies built on average about 165 miles of railroad per year during this period, with a peak of 420 miles constructed in 1887. The second era, from 1888 to 1899, was a period of slower growth for railroads in the state, during which construction averaged about 50 miles per year (averages calculated from statistics provided in State Planning Board 1939:23). Nevertheless, by 1900, railroad mileage in North Dakota exceeded 2,700 miles. After another boom in railroad construction from about 1898 to 1915, railroad mileage would reach 5,300 miles (Table 1). For a map of railroads in North Dakota as of 1914, see Maps section.

**Table 1. North Dakota Railroad Mileage**

| **Year** | 1870 | 1878 | 1890 | 1900 | 1920 | 1940 | 1955 |
|---|---|---|---|---|---|---|---|
| **Miles of Track** | 0 | 199 | 2,093 | 2,731 | 5,311 | 5,266 | 5,257 |

Note: mileage does not include siding tracks

Construction of railroads in North Dakota followed a general pattern common to western states. East of the Mississippi River, railroads typically were built in settled areas with established markets and were expected to begin generating substantial revenues immediately. The only speculation involved how much the terminal cities and areas between them would grow in population and commerce to increase revenues for the railroads. West of the Mississippi River, where Euro-American settlement was generally sparse during the 1860s to 1880s, railroad lines often preceded established markets and carved out their own "territories." Construction was more speculative, and profits often were delayed until more settlers arrived. The advantage was that the railroads enjoyed initial monopolies within their territories.

Although railroad construction in North Dakota during the nineteenth century was often speculative, only the main lines of the Northern Pacific and Great Northern railroads in the western half of the state were entirely speculative. Branch lines and later main lines typically were built in emerging markets where settlement and agricultural production, primarily wheat, had begun. Once a railroad connection was in place, settlement and townsite platting increased rapidly. In the midst of the population growth and agricultural development, a hierarchy of urban centers, smaller trade centers, and small towns sprouted up on the railroad network in order to distribute raw commodities and manufactured goods (see **Trade Centers**, page 27). Beginning in the late 1870s, the pattern of initial settlement, railroad construction, and rapid expansion of wheat production in the Red River Valley became known as the first Dakota Boom. Although a number of factors contributed to the Boom and the establishment of bonanza wheat farms, railroads played an important role, both in hauling the massive volumes of wheat to market and in bringing settlers and laborers, manufactured goods, and building materials into the valley. Although some smaller flour milling operations developed, bonanza farm operators as well as small-scale farmers generally sold the wheat to elevator companies who distributed the whole grain to large milling operations in Minneapolis or to eastern states via the Duluth port. During this period, Minneapolis became the leading flour milling center in the world (see **Agricultural Development**, page 17).

By the end of the nineteenth century, North Dakota was within an economic region that included western Wisconsin, northern Iowa, Minnesota, North and South Dakota, and eastern Montana. Places within this region were linked economically to the Twin Cities via multiple railroad connections. The Twin Cities in turn were the gateway linking the Upper Midwest to a broad industrial/agricultural belt that extended from the East Coast to the Twin Cities on the northwest and Kansas City on the southwest (Borchert 1987). With Fargo and Grand Forks as secondary distribution centers and a railroad-based network of small trade centers, railroads connected northern Dakota to the larger national economy during the 1880s.

As railroads linked northern Dakota Territory with the Twin Cities and beyond during the 1880s, the economic opportunities, along with plenty of available land and promotional activities by the railroad companies, the population grew dramatically. While the population of northern Dakota was about 16,000 people in 1878, by 1890 the new state of North Dakota had a population of 191,000, mainly in the Red River Valley. Although the Boom subsided after about 1886, settlement continued, especially into the Drift Prairie region, and the statewide population grew to 319,000 by 1900 (Robinson 1966:227). Many of the new residents were European immigrants, encouraged by the railroad companies to establish farms near their railroad lines. Aside from the Northern Pacific and Great Northern main lines, however, settlement and railroad construction had barely begun on the Missouri Plateau by 1900.

Just as settlement in northern Dakota during the late 1870s and early 1880s was concentrated in the Red River Valley, railroad construction during that period focused on establishing both north-south and east-west connections through the valley. Both the Northern Pacific and the Manitoba railroad built multiple branch lines in the valley during this period in order to tap the growing wheat production and to encourage continued expansion of wheat-growing operations. For both railroads, the branch lines funneled wheat to the main lines, which shipped it east to Minneapolis or Duluth. On the return trip, the railroads brought building materials and manufactured goods to the new townsites and farms. In addition, the **Chicago Milwaukee and St. Paul (CM&StP)** railroad (see company history on page 44), which had built across southern Minnesota and into southern Dakota Territory, built three branch lines north into northern Dakota by the mid 1890s. Similarly, the Chicago and North Western (C&NW) railroad built a single branch line into northern Dakota from southern Dakota. These two railroads dominated southern Dakota and provided direct connections to Chicago that by-passed the Twin Cities. The Minneapolis and Pacific railroad (later St. Paul Minneapolis and Sault Ste. Marie or Soo Line) also built a railroad west from its crossing of the Red River south of Wahpeton to Ransom by 1886 and then to Boynton the next year.

In addition to the branch lines it constructed in the Red River Valley during the late 1870s and 1880s, the Manitoba railroad built the line that would become the Great Northern main line across northern Dakota Territory. While the Northern Pacific had focused first on completing its line to Puget Sound, and then on building a network, the James J. Hill line established a strong home territory first, and then built to the West Coast. As the Manitoba railroad built west out of the valley, it reached Devils Lake in 1883 and Minot in 1886, and it completed the line across Dakota and into Montana in 1887.

Acquiring the old St. Paul and Pacific line from the bankrupt Northern Pacific with a group of investors in 1878, Hill formed the St. Paul Minneapolis and Manitoba Railway to connect the milling and wholesaling operations in the Twin Cities with the Red River Valley. Once a reliable source of income had been secured, the Hill interests formed the Great Northern in 1890 and completed the railroad to the West Coast in 1893. Before the end of the 1890s, Hill would gain control of the Northern Pacific as well.

After peaking in 1887, construction of new railroad mileage declined in 1888 and generally remained low through the 1890s. One major construction episode during the 1890s was the Soo Line main line, which was the third transcontinental to build across North Dakota before the turn of the twentieth century. Formed from several railroad companies, the Soo Line built its main line across North Dakota during 1891 to 1893 from the southeast corner of the state to the Canadian border at Portal, where it connected with the Canadian Pacific.

By the time North Dakota achieved statehood in 1889, the eastern one-third of the state (roughly east of the James River, Devils Lake, and the Turtle Mountains) had a basic railroad network, and most places within that area were within 25 miles of a railroad station. One reason for the decline in railroad construction after 1888 was that the settled portions of the state had adequate rail service. Another reason for the decline in construction was that the Dakota Boom had peaked in 1883, and by the late 1880s, the rate of settlement had slowed. Finally, the financial Panic of 1893 and the ensuing severe economic depression limited capital improvements for all types of businesses for much of the 1890s. Railroads in particular were hurt by the depression. Heavily in debt from the rapid expansion of the previous decade and having limited revenue on lines built ahead of demand, many railroad companies, including the Northern Pacific, went into bankruptcy and receivership during the mid 1890s. In North Dakota, new railroad construction nearly halted altogether from 1894 to 1899, averaging about 25 miles per year (State Planning Board 1939:23).

The 1880s to early 1890s was a period of national railroad system-building throughout the United States. In establishing their systems, railroad companies sought a continuous flow of passengers and freight by controlling the connections between major markets that were independent of competing lines. Thus, companies added branch lines to their existing main lines to increase their control over a given territory, and they built new main lines to secure access into terminal points. This construction pattern, however, led to redundancies of service and expansion into areas where traffic volumes did not support the cost of construction at that time (Chandler 1977:147). This pattern of railroad development became apparent in North Dakota during the 1890s when the Soo Line built its main line through areas with existing railroad service. The pattern of overbuilding in railroads would become more pronounced after 1898.

The costs of railroad construction and maintenance were unlike any previous enterprises. Although railroads chartered prior to 1870, such as the Northern Pacific, generally received generous subsidies in the form of federal land grants and state and local bonds, all railroads issued stock and borrowed large sums to finance construction or acquisition of new lines and equipment, as well as upgrades to the existing infrastructure. Total railroad investments nationwide by 1860 already had surpassed $1.1 billion, as companies were poised to begin their great post-Civil War expansions. By way of comparison, construction and operation of the canal system up to 1860 had required a total investment of approximately $200 million. In North Dakota by 1890, railroad companies had invested $25 to 30 million in building railroads in a state with a population under 200,000 people. Much more investment would come, and by 1915, railroad investment in North Dakota totaled approximately $100 million (Cronon 1991:80; Robinson 1966:143, 236).

As elsewhere in the country, when railroads in North Dakota competed with each other, they lowered rates for passengers and freight. When a railroad company held a monopoly, however, it was unchecked and sought to maximize revenue. Because the investment in railroads was so great, every action by the railroads was driven by the imperative to increase revenue, reduce costs, or both, in order to ensure dividends for shareholders and to service the debt load. In addition, railroads bore extremely high fixed costs, not only from servicing debts but from high operating expenses, such as maintaining grades, rails, and bridges and paying employee salaries. Fixed charges represented as much as two-thirds of a railroad company's expenses and were unaffected by the volume of traffic it carried. As a result, the railroad companies believed that carrying freight, no matter how low the rates, was better than an idle line. Thus, customers with high volumes of freight and areas served by competing railroads often received relatively low rates, whereas areas served by a single line were often charged much higher rates (Cronon 1991:84-85).

Even as the railroads were building across North Dakota and were embraced by the farmers they served and the communities they helped to create, conflicts became apparent almost immediately. Railroad companies had little competition and often outright monopolies within northern Dakota Territory during the 1870s and early 1880s. The Manitoba railroad dominated the north half and the Northern Pacific dominated the south half of northern Dakota. Although the Manitoba and Northern Pacific railroads competed in the Red River Valley, and the CM&StP and C&NW encroached on Northern Pacific's area with several branch lines from southern Dakota, by and large, there was little competition in most places (Robinson 1966:228).

In areas of North Dakota with no railroad competition, particularly during the 1880s, the rate structures appeared profoundly unfair. In addition, grain elevators were generally controlled by large line elevator companies associated with Minneapolis millers. These companies often graded the wheat low and offered lower prices. Railroads restricted small elevators and wheat buyers by offering the line elevators rebates on freight charges and setting rules regarding track loading and buying and the size and location of elevators. These practices of the railroads and line elevators were a major factor in the formation of local farmers' organizations in 1884 and their consolidation as the Dakota Farmers' Alliance in 1885. The local organizations helped farmers to sell their wheat cooperatively, and the territorial group worked to elect sympathetic public officials. The farmers' organizations were part of the broader Populist movement, which had its roots in the Grange movement beginning in the late 1860s.
Competition, however, increased among railroads by the 1890s, causing freight rates to decline. After 1893, for example, as the bankrupt Northern Pacific railroad cut its freight rates and the Soo Line built its main line across the state, the Great Northern railroad's freight rates declined. The Great Northern's average rate per ton mile in North Dakota in 1893 was 1.23 cents, and in 1896 it was 0.98 cents (Robinson 1966:228).

In 1885, the territorial legislature created the Board of Railroad Commissioners to oversee railroads and the grain trade. With statehood in 1889, the board was renamed the North Dakota Railroad Commission. Despite creation of the railroad commission, railroads had a great deal of political power in Dakota Territory and North Dakota; for example, the federal government had granted the Northern Pacific 10.7 million acres of land in what would become North Dakota, representing nearly a quarter of the state's land area (Robinson 1966:198). The Northern Pacific through its political agent Alexander McKenzie engineered removal of the territorial capitol from Yankton to Bismarck on its main line.

Murray (1967:57) summarizes the impact of railroads in the Red River Valley, which could be expanded to all of North Dakota: "[Railroads] furnished transportation facilities; they encouraged settlement, land surveys, and the establishment of civil government; they colonized portions of their land grants; they helped to develop large-scale wheat farms; and they began to promote diversified agriculture." It should also be noted, however, that aside from the Northern Pacific main line, which was built well ahead of settlement in northern Dakota during the early 1870s, railroads facilitated settlement but did not precede it. As noted by Hudson (1985:68): "Railroads did not lead grain farmers into unsettled country away from their main lines; rather, they lagged behind the settlement of agricultural population and extended lines only after the demand for transportation was well established, and often then only when a competitor threatened to serve the territory." This building pattern was particularly true during the early twentieth century.

## Expansion of Railroads Statewide, 1898 through 1916

By 1898, North Dakota's railroad network had transformed from the single Northern Pacific main line between Fargo and Bismarck to three transcontinental main lines and a solid network of branch lines in the eastern half of the state. Most places within this area were within 25 miles of a railroad, and some places had connections to two railroads.

From the late 1890s through World War I, railroad construction in the United States expanded again, roughly doubling the nation's track mileage. During this time, the United States railroad network reached maturity: the last of the transcontinental lines were built, extensive webs of main lines and branch lines covered all the areas east of the 100th meridian (midway through North Dakota), and railroad mileage nationwide peaked in 1916 to an estimated 250,000 miles. Construction focused on building main lines in the West, filling in branch lines in established regions, and adding passenger routes around the larger cities. Railroad companies also invested heavily in improvements to the earlier, hastily built lines and upgrades to their rolling stock (Stover 1961).

Expansion of the North Dakota railroad network during the early twentieth century followed the national pattern: new construction focused on the western half of the state, branch lines were added in the eastern half, and the older railroad corridors were upgraded. The North Dakota railroad network was completed by 1916, when railroad mileage peaked in the state at approximately 5,300 miles, and even the remotest areas of the far western region were no more than 30 miles from a railroad. In addition, during this period, railroad companies upgraded their earlier lines by reducing grades and curves, improving roadbeds with ballast, and laying heavier rails, and they upgraded motive power and rolling stock (North Dakota Railroad Commission 1914; State Planning Board 1939:22).

The late 1890s through the 1910s was generally a period of prosperity, and North Dakota's population and agricultural production expanded so rapidly that the era is known as the Second Dakota Boom. The state population grew from 319,146 in 1900 to 577,056 in 1910 and reached 646,842 by 1920. During this period, North Dakota's agriculture provided an expanding economic base, as both commodity prices and agricultural production rose. The rural population grew, particularly in the Drift Prairie, which increased from 151,000 in 1900 to 262,000 in 1910, and on the Missouri Plateau, which increased from 47,000 in 1900 to 187,000 in 1910 (Robinson 1966:246). In effect, the state's population center shifted westward during this period. In addition, the state's urban population grew, led by the main urban centers of Fargo, Grand Forks, Bismarck, and Minot; a half-dozen multi-county trade centers; and numerous new townsites platted on the expanding railroad network.

Railroad companies both spurred and benefited from North Dakota's growth during the first two decades of the twentieth century. Wheat production during this period rose from 69 million bushels in 1898 to 159 million bushels in 1915 (Robinson 1966:247). Nearly all of that wheat was hauled out from local elevators by railroads. In addition, residents of the growing cities and new towns required all order of building materials, manufactured goods, and foodstuffs, all of which were hauled by railroads. On top of their significant transportation role, railroads were major employers. Facilities such as division headquarters, switching yards, and maintenance or repair shops were present in seven of North Dakota's nine largest cities (State Planning Board 1939:25).

While the focus of the railroad companies nationwide during the 1880s and early 1890s had been on building regional systems to control as much traffic as possible within their territories, during the first decade of the twentieth century, interregional combined systems began to dominate. A relatively few major investment groups gained controlling interest in multiple railroad companies, and as a result, by the early twentieth century nearly two-thirds of the railroad mileage in the United States was controlled by seven groups. One of the groups was led by James J. Hill and John Pierpont Morgan, who controlled the Great Northern, Northern Pacific, and Chicago, Burlington and Quincy railroads. The Hill group encompassed a total of about 21,000 miles of railroads, including 3,440 miles in North Dakota or about 65 percent of the state's railroads (State Planning Board 1939:22; Stover 1970:93-97). The combined systems not only controlled large territories, they influenced the smaller, regional carriers. The CM&StP, for example, was not aligned with any of the interregional systems, so in an effort to remain competitive, it built during 1906 through 1909 its own extension to the West Coast.

During the early twentieth century, new railroads were built throughout North Dakota. Initially, up to about 1905, railroad companies expanded their networks mainly in the east half of the state through construction of branch lines, then after 1905, they focused construction in the Missouri Plateau and Missouri Slope regions. The Northern Pacific and CM&StP built branch lines in the southern portion of the state, while the Great Northern constructed a number of branch lines from its main line north toward the Canadian border. In 1902 and 1905, the **Farmers' Grain and Shipping Company** (see company history, page 48, and Farmers Railroads and Cooperatives and Railroad Regulation, page 24) began as a farmers' railroad. Built between Devils Lake and Hansboro near the Canadian border, the Farmers' Grain and Shipping Company railroad was largely financed by the Great Northern, operated by the larger company after 1905, and later acquired as a branch line.

Another independent railroad, the Bismarck Washburn and Fort Buford Railway Company was organized by William D. Washburn to access the lignite beds he owned near Wilton (see St. Paul Minneapolis and Sault Ste. Marie company history). Re-organized as the Bismarck Washburn and Great Falls Railway, the railroad was built from Bismarck to Wilton in 1900 and to Washburn in 1901, and then was acquired by the

Soo Line in 1904. This railroad may have been the only one built in North Dakota specifically to access lignite mines. Coal mining in northern Dakota had begun in 1873, when the Northern Pacific main line reached Bismarck and in the process entered the coal-bearing region in the western portion of the territory. During the 1870s and 1880s, lignite mining in western northern Dakota was mainly undertaken on a small scale and hauled in wagons to railroad stations. As the Great Northern and Soo Line built railroads into western North Dakota, they hauled a great deal of coal between the coal region and the more densely populated eastern half of the state. In this way, railroads facilitated coal mining in western North Dakota and provided necessary fuel to eastern. Because the lignite beds were spread over a wide area and lignite was not as profitable as the higher grade anthracite and bituminous coal or other minerals such as iron ore, railroad companies were reluctant to build branch lines or even spur lines to access the lignite mines. Nevertheless, railroads hauled large volumes of coal in North Dakota, reaching 416,580 tons in 1910 and 878,969 tons in 1920 (Hess, et. al. 1992:22).

The Bismarck Washburn and Great Falls railroad provided shipping for the Wilton Mine No. 1 beginning in 1900. The Wilton Mine utilized mechanized underground mining to extract the lignite on a large scale. By 1910, this mine employed 250 men and produced 140,000 tons, by far the largest production in North Dakota. Five years later, the Washburn Lignite Coal Company abandoned the depleted Wilton Mine No. 1 and opened Wilton Mine No. 2. The new mine, located two miles to the east, employed 300 men and was producing approximately 250,000 tons annually by 1920. Although the Wilton mines employed many people, a large number of them were homesteaders who worked in the mines as a side job (Hess, et. al. 1992:28-29), thus the lignite mines did not attract large numbers of workers specifically to work in the mines and did not lead to the formation of company towns, such as in Minnesota's iron ranges.

By 1905, railroads had just begun extending branch lines onto the Missouri Plateau, and only two, the Great Northern and Northern Pacific main lines, extended across the Missouri Slope. Over the next 10 years, the two Hill roads, the Soo Line, and the CM&StP all built multiple branch lines onto the plateau and the slope. Notably, the CM&StP built its Pacific Extension main line across the southwest corner of the state, which helped open that area to settlement.

Railroad companies were often slow to build new branch lines in North Dakota, even though doing so almost always led to additional grain production, which in turn provided additional ton-miles for the railroad. When a railroad had a monopoly within a certain area, the company needed to weigh the potential for additional freight revenue from increased wheat production against the cost of building and operating a new railroad line. If, however, a competitor threatened a railroad's captive trade area with a new railroad, the typical response was to retaliate by building one or more branch lines that would directly compete with the "intruder," regardless of the area's ability to support the additional railroad lines (Hudson 1981:7).

The "railway war of 1905" is an example of the fierce competition that could develop between railroad companies. In the area north of its main line between Grand Forks and Minot, the Great Northern had no serious competition prior to 1905. The Northern Pacific, which Hill controlled, had one branch line running north of Grand Forks to connect with the Canadian Pacific. Because this area had been filling in rapidly with settlers since about 1898, Soo Line officials saw an expanding market that could support an additional railroad, and they planned an extension from Thief River Falls, Minnesota, west to Kenmare on its main line to Portal. Viewing the area as its territory, the Great Northern retaliated by building new or extending existing branch lines such that they crossed the new Soo Line branch line roughly every 25 miles. Both companies used land development companies to aggressively plat new towns along their lines—26 for the Great Northern and 25 for the Soo Line (Hudson 1981:8-9). The result of the "war" was an area with too many railroads and towns for the population to support. This type of overbuilding based on competition or on speculation that the population and agricultural production would continue to grow was a pattern in North Dakota, particularly during the Second Dakota Boom.

When railroad companies built their lines during the Second Dakota Boom, they generally platted townsites in a systematic coordinated manner in order to capture as much of the surrounding trade area as possible. The platting and selling of town lots along a railroad was often handled by a single land development company. For example, when the Soo Line built its Wheat Line to Kenmare in 1905, the Minnesota Loan and Trust Company handled all of the townsite platting and lot sales along the line. In its effort to counter the Soo Line, the Great Northern enlisted David Tallman and his Dakota Development Company to undertake nearly all of the townsite planning along its new branch lines built in 1905 (Hudson 1981:10-11). For further discussion on cities and towns, see Development of Railroad Trade Centers, 1872-1920, below.

### *Agricultural Development, 1872-1920*

### Agricultural Trends

North Dakota historically has been an agricultural state. Numerous factors led to the rapid expansion of the agricultural frontier into Dakota Territory during the late 1870s: population increases and depletion of soil fertility in eastern and other Midwestern states; development of wheat markets, particularly in Minneapolis; the success of early large-scale wheat producers; and the development of trade centers, such as Fargo and Grand Forks, to supply farmers and serve as shipping points for their products. It was the introduction of railroad transportation, however, that allowed for fast and efficient transportation of agricultural products on a large scale. Indeed, except for the Missouri, a general lack of navigable rivers meant that railroads were the only form of long-distance transportation in much of present-day North Dakota prior to the development of the trucking industry. Railroads not only shipped out the produce and livestock to urban markets, they brought building materials, farm implements, and other manufactured goods to the settlers.

The expansion of agriculture to the prairies after the Civil War was a regional pattern. An area covering the west half of Minnesota and Iowa, North and South Dakota, Kansas, and Nebraska was brought into agricultural production between 1865 and 1900. More farmland was put into cultivation during this period than in the entire previous history of the nation. In the process, the center of crop production shifted from east of the Mississippi River to the west. At the same time, railroad mileage expanded rapidly. Within Minnesota, North Dakota, Iowa, Kansas, Nebraska, and Texas, railroad mileage increased from less than 1,000 miles in 1860 to over 42,000 miles in 1900 (Stover 1997:90-91). This railroad network helped create an agricultural-industrial complex that was part of the broader American industrial system.

Prior to the coming of railroads, Euro-American settlement in northern Dakota Territory was limited mainly to fur traders or former fur traders and their families and U.S. Army forts. As early as 1856 and 1857, when the Pacific Railway Survey Expedition, assessing the feasibility of a northern transcontinental route, passed through the Breckenridge and Moorhead areas, speculators began platting townsites at locations they thought a railroad would cross the Red River. Little settlement followed, however, until 1870, when the Northern Pacific railroad began building west from Duluth, and construction on the St. Paul and Pacific railroad had resumed. After the two railroads reached the Red River in 1871 and the Northern Pacific railroad began building west into Dakota in 1872, agricultural settlement expanded greatly in the Red River Valley and along tributary streams, such as the Goose, Wild Rice, and Sheyenne rivers.

People from the eastern United States and European immigrants were wary of the relatively dry, cold, and treeless environment of the northern prairies, and settlement in northern Dakota remained slow during the early 1870s. The development of large-scale (bonanza) wheat farms, railroad connections, and the Minneapolis wheat market encouraged the rapid agricultural settlement in eastern northern Dakota from the late 1870s to the mid 1880s known as the First Dakota Boom. One historian directly links the corporate interests of the Northern Pacific with the growth of bonanza farms in the Red River Valley (Strom 2003). As a result of the railroad's bankruptcy and the ensuing Panic of 1873, James B. Power, general agent of the company's land policy, believed the way to revive the company was through sale of its land grant. To demonstrate the suitability of land in the Red River Valley for agriculture and thus increase its sale value, Power persuaded George W. Cass, president of the Northern Pacific, to acquire 13,440 acres near Casselton and establish a model wheat farm. Other Northern Pacific bondholders then began to trade their worthless securities for railroad land, on which they also established large wheat farms. The bonanza wheat farms varied in size from 1,000 to 61,000 acres (Strom 2003:15). As word spread that great profit could be made growing wheat in the valley, speculators and small farmers alike bought railroad land or homesteaded federal land for wheat farms.

The growth of the Minneapolis wheat market was also an important factor leading to the Dakota Boom. Development of new flour milling methods and construction of multiple railroads northwest from

Minneapolis enabled northern Dakota and in particular the Red River Valley to become the city's primary supplier of wheat by the 1880s. The spring wheat grown in Minnesota and Dakota had brittle bran that broke into fine pieces difficult to separate through traditional milling methods, leaving darker flour that brought lower prices than winter-wheat flour. The New Process milling, with its middlings purifier, provided a more complete separation of the bran, leaving flour equal in color to winter wheat. This new milling was perfected at Minneapolis and developed on a large scale due to the water power supplied by St. Anthony Falls. Because spring wheat was higher in gluten content than winter wheat, the new flour sold at a higher price and was in great demand. Production of spring-wheat flour at Minneapolis mills increased from 193,000 barrels in 1870 to just over 2 million barrels in 1880 and to about 5.2 million barrels in 1885 (Robinson 1966:136). Construction of large new mills created an almost insatiable demand for spring wheat. The farmers who grew the wheat and the railroads that hauled it both responded to the demand by increasing their capacities.

Railroads revolutionized the process of hauling grain to markets. Prior to railroads, grain was typically packed in sacks on the farm, hauled by horse and wagon to a local market, and sold to local merchants or to commission merchants. The merchants then arranged for the sacks of grain to be transferred to river boats for shipment to terminal markets such as Chicago, Milwaukee, or New Orleans, where the sacks were transferred to lake- or ocean-going vessels for eastern markets. At each point of transshipment, the sacks were carried manually between wagons, boats, and ships—a process both time-consuming and limited in the volume it could handle.

Railroads transformed the old process of water-based grain shipping. Grains and cereals hauled by railroad came not by the sack-full but by the carload, each of which could consist of over 300 bushels during the 1850s and, later in the century, 2,000 to 3,000 bushels. The development of through routes reduced the number of transshipments, and with advances in grain elevator construction and mechanization, the handling of wheat at transshipment points became more efficient. St. Louis, for example, which depended heavily on river traffic and did not invest in grain elevators during the 1850s, shipped approximately 2 million bushels of wheat per year through its congested levee. At this time, a 10,000-bushel shipment of wheat might require a couple hundred workers several days to move through the levee. Chicago, on the other hand, with large state-of-the-art elevators, shipped 21 million bushels of grain in the single year of 1856. When Chicago's 12 largest elevators operated simultaneously, they could receive and ship nearly a half million bushels every 10 hours (Cronon 1991:110-115; Frame 1989:E2).

As had happened in Chicago during the 1850s, the railroads were hauling massive amounts of wheat into Minneapolis by the 1880s. The railroads and grain elevators fed the Minneapolis flour milling industry, which increased production six-fold from 1875 to 1885 and represented the single largest market for Dakota wheat. Receipts for wheat in Minneapolis led the nation at 32 million bushels by 1885 and would reach 100 million bushels by 1912. Although not all or even a majority of the wheat grown in North Dakota was always sent to Minneapolis, that city was the single most important market, and the price of grain there directly affected the price of grain in North Dakota (Hartsough 1925:178; Hess and Cudzia 1991:8-9). In addition to Minneapolis, Duluth was an important terminal market for North Dakota wheat. With multiple railroad connections, the Great Lakes port at Duluth had become a large grain market by the late nineteenth century. In 1886, Duluth elevators transferred 22 million bushels of grain from railroads to ships on Lake Superior. The Northern Pacific alone hauled on average 9.2 million bushels annually into Duluth (Koop and Morris 1996:E4-6, 15).

As railroads developed in eastern northern Dakota during the late 1870s and 1880s, the three railroad main lines—Northern Pacific, Great Northern, and Soo Line—primarily traveled east-west, connecting the territory with the Twin Cities and Duluth. Branch or "feeder" lines primarily ran north-south and completed the basic network in the Red River Valley and Drift Prairie.

In the small towns along the railroads, country elevators handled grain coming from the farms and transferred it to the railcars. During the late 1870s and early 1880s, as northern Dakota's grain markets developed, the railroads played a critical role in establishing the grain-handling infrastructure. Although railroad companies often owned elevators during the 1860s and early 1870s, following the depression of the mid 1870s, line elevators became the dominant type of country elevator until the early twentieth century. Line elevators were groups of country elevators under central management. Country elevators received grain from farmers, stored it, and transferred it to railcars for shipment to terminal markets. Large line elevator companies included Cargill, Peavey, and St. Anthony and Dakota. Although the railroads did not often own line elevators by the 1880s, they directly influenced the size and location of elevators by favoring larger elevators and controlling placement within their rights of way. The railroads, line elevator companies, and trade groups, such as the Minneapolis Millers Association, the Grain Exchange, and the Duluth Board of Trade, controlled the grain trade in North Dakota until the early twentieth century.

The coming of the railroads encouraged agricultural settlement first in the Red River Valley and then in the Drift Prairie. By the 1870s, land claims in the Red River Valley outstripped the capacity of the General Land Office surveyors to subdivide the lands. The first land office was established at Pembina in 1870, and two more on the northern Dakota side of the river followed, at Fargo in 1874 and Grand Forks in 1877. Another land office followed at Devils Lake in 1883. On the northern Dakota side of the Red River Valley, the population increased from 1,213 people in 1870 to 27,828 people in 1880 (Murray 1967: 62-63, 93). The influx of settlers led to the subdivision of the original Pembina County into six counties along the Red River between 1873 and 1881.

During the 1880s, land purchased and homesteaded in northern Dakota increased dramatically, and by 1890, approximately 7.7 million acres of land were in farms in North Dakota, representing 17 percent of the state. Settlement spread outside of the Red River Valley by this time and was thinly scattered across the Drift Prairie. Agricultural settlement had begun on the Missouri Plateau, as well, mainly in the counties east of the Missouri River, in the Knife River Valley, and along the Northern Pacific main line. Many of the new settlers were small landholders, and both the number of farms and the population of northern Dakota grew quickly. As the population grew to approximately 191,000 by 1890, the number of farms reached 27,611 (Robinson 1966:154).

Settlement in the Missouri Plateau by 1890 was largely constricted to select areas. Within the Missouri Slope, settlement had barely begun and was mainly limited to ranching. The Missouri Slope was well-suited to ranching, with its expanses of grasslands and sheltering ravines and coulees. With the Northern Pacific main line in operation, a ranching boom came to the slope during the 1880s. In 1883 and 1884, Texas cattlemen began bringing in large herds, and Theodore Roosevelt established his ranch about 35 miles north of the railroad on the Little Missouri River. The most elaborate operation belonged to the Marquis de Mores, who established a large ranch, a meat packing plant, and the town of Medora in 1883. The severe winter of 1886-1887 killed perhaps 75 percent of the cattle in the region, however, taming the enthusiasm for large-scale open-range ranching. Small ranching came to be the norm (Goplen 1994; Robinson 1966:188-191).

The period from the late 1890s to the mid 1910s was known as the Second Dakota Boom, during which time settlement and agricultural production, primarily wheat, expanded rapidly in North Dakota. A number of factors led to this phenomenon. The growing United States population, much of it made up of urban dwellers, increased the demand for farm produce. In addition, the most fertile lands in states to the east of the Dakotas were already in production, pushing marginal lands into agricultural production, such as in the semi-arid Missouri Plateau area. Unusually high rainfall also encouraged settlers to try farming on semi-arid lands. As the population and agricultural production increased, railroad companies responded by expanding their networks throughout the state. The new railroad lines encouraged more new residents and speculators to put more land into agricultural production.

The Boom transformed North Dakota. The population nearly doubled from 319,000 in 1900 to 577,000 in 1910, and during the same period, the number of farms in North Dakota grew from about 45,000 on 15.5 million acres to 74,000 farms on 28.4 million acres. Wheat, however, continued to be the dominant crop, as production grew from 69 million bushels in 1898 to 159 million bushels in 1915. North Dakota was the national leader in wheat production in more than half those years. In addition, flax was an important crop, and North Dakota produced more than half of the national crop. Like wheat, much of the flax crop was shipped to Minneapolis, where companies produced linseed oil for paint and other industrial uses. In the

Red River Valley, where growth was slower and populations even declined in some places, wheat was still king, but farmers were beginning to diversify their operations (Robinson 1966:247-248).

Agricultural commodity prices continued to rise during the first two decades of the twentieth century and peaked during World War I. The demand for farm products created by the military, combined with disrupted European production, created a spike in prices that encouraged farmers to increase production by buying more land and mechanizing their operations. As a result, land put into agricultural production continued to increase during 1910 to 1920, reaching 36 million acres, even as the increase in new farms slowed to a gain of 4,000 farms, reaching 78,000 by 1920 (Robinson 1966:370). Following the war, however, overproduction combined with a slack in demand led to a severe drop in commodity prices during 1920, setting the stage for two decades of agricultural depression.

## Immigration

The Northern Pacific not only encouraged settlement in North Dakota by providing transportation and through sale of its land grants, it actively promoted colonization through its Land Department. The construction of railroads was essential to fast and cost-efficient transportation in the United States from the mid nineteenth century into the twentieth century, but such transportation, and the new mass production and distribution economy, were only necessary and profitable if people were available at the points being connected to be the laborers, producers, markets, and consumers. This fact was not lost on the railroad companies, many of whom accepted large land grants from the federal government beginning in 1850, with the understanding that much of the land could be sold to subsidize railroad construction. This arrangement required people to purchase the lands to help finance construction.

In addition, the railroads needed to sell the land to people who intended to settle and work those lands because, in doing so, those people would require the shipment of products and consumer goods. To encourage such settlement, most westward-bound railroad companies holding land grants established land departments and bureaus of emigration. These entities all worked with a common purpose: land departments were organized to sell railroad-owned lands to new settlers, and bureaus of emigration were organized to bring settlers from overseas. Both entities employed a wide variety of media to achieve their goals. Most popular were pamphlets, sometimes quite lengthy, that promoted the natural and already-built advantages of a given location. Other media included newspaper advertising, lectures, bureaus of information, and traveling exhibits, as well as testimonial letters of questionable veracity, often having been written by railroad agents based on their communications with settlers or created for prize-winning contests (Peterson 1932:31).

The timing of these promotional activities began when numerous Europeans were seeking change. The Industrial Revolution, intense population growth, and other conditions overseas displaced workers so they sought residence elsewhere (Holmquist 1981:4). Most notable of these conditions were the advances in agricultural mechanization over the course of the eighteenth century and changes to the European system of farming that left many farmers without land and without jobs. The overabundance of labor combined with additional population growth helped to fuel the nineteenth-century Industrial Revolution by creating a pool of willing factory workers.

Because the continuing development of new machines made additional job tasks more efficient, the increasing supply of labor again outweighed the work available and left many people in poverty. Other location-specific or group-specific catalysts occurred in the mid nineteenth century, including "famine in Ireland and Finland . . . political inequality . . . rebellion against state-church dictation, direct persecution (such as the Jews in eastern Europe), [and] compulsory military service" (Holmquist 1981:4).

Railroad companies played a direct role in promoting immigration to North Dakota. The Northern Pacific, for example, held approximately 10.7 million acres of land in northern Dakota granted to the company from the public domain by the federal government. As discussed above, the Northern Pacific began actively promoting the sale of its land grants in the Red River Valley following its bankruptcy in 1873 as a means of raising capital. Between 1873 and 1878, the company sold approximately 1.7 million acres in Dakota to 2,988 purchasers (Hedges 1926:328). Aside from land sales, however, the Northern Pacific's efforts to attract settlers and immigrants were limited until its finances improved in the late 1870s. By 1880, the Land and Immigration departments of the Northern Pacific were actively promoting Dakota lands and maintained an office in Liverpool, England, to distribute literature in Great Britain, northern Germany, and Scandinavia. The company also had agencies in New York, Philadelphia, Boston, and Chicago to distribute promotional literature.

Railroad companies designed and produced promotional materials for distribution by the commissioners and railroad agents who were stationed in European offices. They also provided financial incentives, such as discounted or free transportation and food to new immigrants, not just along the railroad lines but "from the steamboat landings to the depots" (Peterson 1932:30). Also offered were refundable fares for prior land-inspection travel, with refunds contingent on the purchase of at least 40 acres of land within 60 days of obtaining such a fare.

Despite the railroads' efforts, the Dakota territorial government undertook relatively little promotional work. The bureau of immigration was cancelled in 1877 and not restored until 1885. Again, in 1890, the office was abolished and its function absorbed by the state Department of Agriculture and Labor. Not until 1905 when the Second Dakota Boom was well under way did the North Dakota legislature appropriate funds sufficient for an extensive advertising campaign. Over the next 10 years, the legislature appropriated $90,000 for promoting immigration. North Dakota could not claim extensive mineral deposits, but the promoters could easily demonstrate what appeared to be endless amounts of agricultural lands (Strom 2003:8). Promoters projected the state as a garden whose riches could be had by anyone willing to work the land.

To displaced European farmers, owning 160 acres was enticing; even more so if those acres were located among people from their home country who spoke their language. Many German-Russians and Norwegians settled in the state. In addition, emigrants often recruited for and formed a colony before leaving their homeland, working with the railroad agents to find a suitable North Dakota location.

Colonization work was continued by some railroads into the 1950s. Due, however, to immigration restrictions and a significant decrease in available land, such work had lost its basis for success and importance to the railroads three decades earlier. It was briefly revived during the “back-to-the-farm movement” of the Great Depression, but in the years after World War II it ended, having been supplanted by a focus on agricultural and industrial development.

### *Farmers’ Railroads and Cooperatives, and Railroad Regulation, 1890s-1920*

By the early twentieth century, many Americans felt that railroads were not providing a sufficient level of service or fair pricing. Particularly in western states like North Dakota, which were less densely populated and located far from major markets, producers generally were subject to higher freight rates. Two main themes emerged in North Dakota by the turn of the twentieth century in the people’s response to railroads: efforts to gain local control of grain shipping and storage facilities and increased government regulation of railroads.

By the turn of the twentieth century, North Dakota farmers were becoming increasingly aware of unfair practices by elevator companies and grain dealers. Studies conducted by the legislatures of North Dakota and Minnesota, the Interstate Commerce Commission, and others all reached the same conclusion—grain dealers and elevator companies used unfair grading and weighing of the wheat and excessive dockage charges to cheat farmers out of a substantial amount of income. Although railroad companies rarely owned elevators by the early twentieth century, they collaborated with grain dealers by offering favorable rates and rebates to large elevators and to line elevator companies, making it difficult for small independent and cooperative elevators to compete.

Farmers fought against the unfair practices in the grain trade by establishing cooperative grain elevators. Although there were only four farmers’ elevators in North Dakota in 1900, the number rose quickly as farmers became increasingly aware of the need for reform and as good crop and price conditions favored establishing new elevators. Within four years, there were 40 cooperative grain elevators, and by 1915, there were 264. North Dakota now led the nation in cooperative elevators, and more than a quarter of the state's farmers belonged to elevator associations. Independent elevators were also assisted by the Equity Cooperative Exchange (Exchange), a terminal grain marketing association based in Minneapolis but incorporated in North Dakota. With most of its 17,500 members in North Dakota by 1922, the Exchange owned 80 rural elevators and financed grain purchases for another 100 elevators (Robinson 1966:275-278).

Farmers sought to build locally owned railroads, or farmers' railroads, beginning in the late nineteenth century. Intentional or cooperative communities that developed as a response to the economic crisis of the 1890s often included in their plans railroads to be built with the labor of community members. Similarly, in farmers' railroads, local farmers would organize a company, survey a route typically on land donated by members, and oversee construction of the railroad. The railroad would then be operated by the company or used to bargain with a larger railroad company. An early example of a farmers' railroad in North Dakota, though it was never completed, was the Duluth & North Dakota Railroad Company, intended to run from Rolla, North Dakota to Duluth, Minnesota. The company, formed in 1895 and led by David Wellington Hines, surveyed a route and graded some segments of roadway, but the project stalled and was never built (Grant 1979:13-18).

A number of other farmers' railroad companies were formed in North Dakota, such as the Brazil Grain and Shipping Company and the Leeds Dunseith and Northern railroad, with the purpose of operating independent railroads, elevators, and townsites. Only the Farmers' Grain and Shipping Company, however, succeeded in building a railroad and then only with the assistance of the Great Northern. Organized by Joseph M. Kelly, a Devils Lake farmer and business man, the company built a railroad line during 1900 to 1902 from Devils Lake to Starkweather. Although the company was owned by Kelly and several farmers near Garske and Webster, the Great Northern provided financial assistance from the start, and within two years, the company came to a lease agreement with the Great Northern. In 1905, the railroad was extended to Hansboro, and it was later absorbed by the Great Northern (Grant 1982).

In addition to local efforts to build and operate railroads, by the early twentieth century, federal and state governments subjected railroad companies to increasing levels of regulation. The federal government had established a regulatory framework for railroads through passage of the Interstate Commerce Act in 1887. During the depression of the 1890s, many people either blamed the railroads for the country's economic problems or focused their discontent on railroad management, particularly in the wake of the American Railroad Union and Pullman strikes of 1894.

By the turn of the twentieth century, many Americans were searching for order in a society rapidly transforming from rural and agricultural to urban and industrial. Many believed the government was responsible for remedying perceived social problems. Over the next two decades, known as the Progressive

Era, unprecedented government regulation was overlaid on American life, including the railroads. The rise of the Nonpartisan League (NPL), which was formed in 1915, is perhaps the most notable example of reform efforts in North Dakota during the early twentieth century. As a nonpartisan coalition of farmers, the NPL was run by Arthur C. Townley. By the fall of 1915, NPL membership reached 15,000, and by the following spring, it stood at about 26,000 members. The NPL swept the 1916 elections, including governor, 81 seats in the state house of representatives, and 18 seats in the state senate. Although reforms were modest during the 1917 legislative session, they included a ban on rate discrimination by the railroads. The NPL expanded its control of the state legislature as a result of the 1918 election and, during the following year, passed a series of reform laws. Despite its rise to power in North Dakota, the NPL did not have great influence on railroads because from late 1917 to 1920, the railroads were run by the federal government (see below). In 1921, in-fighting, scandals, and funding problems hurt the NPL's image, and many members stopped paying dues. In 1922, the NPL shut down its offices and publications, and no longer endorsed candidates for public office (Dennis 2006:E9-13; Robinson 1966:348-351).

Regulation of the railroads during the early twentieth century stemmed not only from new laws, but also more vigorous enforcement of existing laws. When the Hill-Morgan interests combined with Harriman to form the Northern Securities holding company, the federal government prosecuted the company for violation of the Sherman Anti-Trust Act of 1890. In 1897, the North Dakota legislature authorized the Board of Railroad Commissioners to set rate ceilings for passengers and freight within the state. When the board reduced rates on local traffic, however, several railroad companies sought and received in 1898 an injunction against the rates by the U.S. Supreme Court. At the same time, the North Dakota board of equalization increased the assessed value of railroads in the state, dramatically increasing their property taxes. Several years later, with the passage of the Elkins Act of 1903 and Hepburn Act of 1906, the U.S. Congress authorized the federal government to set price ceilings on rates.

Government control over the railroads came to a head during World War I. Because the demands of the war effort required the movement of vast amounts of materials, supplies, fuel, and troops and recruits, the federal government assumed control of the railroads in an effort to ensure the availability of transportation. The United States Railroad Administration (USRA) operated the railroads from late 1917 to 1920. Although the USRA assured priority for military traffic on the railroads, minimal maintenance and no upgrades were made to the infrastructure, despite the heavy demands. Furthermore, while revenues increased greatly during 1915 to 1920 as railroads hauled supplies to East Coast ports, operating costs grew even faster. By 1920, operating costs averaged 94 percent of operating revenues among Class One railroads (Hofsommer 2005a:260; Prosser 1966:50).

Federal and state regulations and policies were viewed by many as a necessary check on the power of railroads, particularly farmers and small town business owners, who were disadvantaged by rate differentials and rebates. The regulations, however, left the railroads without a reasonable means of adjusting their rates to reflect not only their high fixed costs, but rising costs related to labor, material, fuel, equipment, and debt service. In addition, such regulation made it difficult for railroads to raise the capital necessary for infrastructure improvements. Because passenger and freight traffic, and thus revenue, were high during the 1910s, the new regulatory environment did not present great problems for the railroads. During the 1920s and particularly the 1930s, however, this system would limit the ability of railroad companies to respond to new challenges (Hofsommer 2005a:186-187, 205-206; Robinson 1966:232-233).

Despite the efforts to regulate the railroads, most Americans viewed them as a vital force in society. As one historian put it, "the discrimination, the abuses, and the charges of monopoly…were really minor when compared with the major contributions railroads made to the expanding American economy and society in the half century prior to World War I" (Stover 1970:93). The railroad influence on American life was perhaps at its peak during the early decades of the twentieth century. By 1920 for example, railroads directly employed two million people, carried the bulk of the mail, hauled 77 percent of the freight, and carried 98 percent of the traveling public. Railroad companies had developed Standard Time in 1883 in order to better coordinate operations, as well as for safety purposes. Although the federal government did not officially acknowledge Standard Time until 1918, most Americans had set their clocks to railroad time soon after its introduction. In addition, the railroad companies had developed administrative systems that, by the early twentieth century, were the model for other corporations (Chandler 1977; Stover 1970:93, 98).

### *Development of Railroad Trade Centers, 1872-1920*

As cities grew larger and an integrated national economy emerged during the mid to late nineteenth century, different regions of the United States became interdependent. In addition, cities, towns, and rural areas came to depend on each other for raw materials, processed foods, manufactured goods, labor, distribution, and markets for their respective products. The eastern part of the United States counted on the western population to provide markets for goods manufactured in eastern factories as well as a labor force for obtaining extractive resources (coal, minerals, lumber) that were needed to produce the manufactured goods. Similarly, the western part of the country relied on the eastern as a market for its commodities and to provide goods. Without a growing western population, no market would exist, nor the need for the shipment of resources and goods between the East and West. This pattern was reproduced on a smaller scale throughout the country for different resources and goods as large cities developed a mutual interdependence with their rural hinterlands. Rural areas, undergoing economic and population growth of their own, developed towns and smaller cities which maintained interdependent relationships with their own hinterlands and with larger cities. The railroads facilitated this symbiotic relationship between urban centers, smaller trade centers, and the country. They hauled raw materials and agricultural produce into the city and carried manufactured or processed goods out into the country, while passengers and mail traveled in both directions.

During the late nineteenth and early twentieth centuries, railroads were the single most powerful force shaping the American built environment. To the east of North Dakota, where Euro-American settlement often preceded railroad construction, pre-railroad towns were typically platted along rivers and streams to take advantage of navigation or water-power potential. When railroads were built in those areas, they provided both through transportation and connections to the existing river-oriented commercial centers. In areas settled after the Civil War, particularly on the prairies, the railroads either preceded settlement or were built into lightly settled areas. In those areas, town sites were platted by the railroad companies themselves, by land development companies, or by speculators based on the projected location of the railroad corridor. This pattern continued into the early twentieth century. In North Dakota, 147 towns were incorporated along new railroad branch lines after 1900.

At the most basic level, railroads influenced the geographies of towns and cities. Many, though not all, railroad towns were platted by railroad companies or affiliated firms. When railroad companies platted towns, the location along a railroad corridor depended on the projected trade area as well as the location of towns on competing railroads. Each railroad town was platted in direct relationship to a railroad corridor, and the tracks, right of way, and depot were the core of the town. The railroad companies tended to prefer town configurations where business districts were parallel to the tracks, but private proprietors preferred town patterns in which the commercial strip extended from one side of the tracks in an approximately T-shaped pattern. Unlike the earlier river towns, in which original plats generally were oriented to the river, railroad towns were typically platted on a grid pattern, and streets were oriented to the four cardinal directions.

The railroad lines and lands surrounding the rights of way have been called “metropolitan corridors” that represented entirely new environments developed both to serve the railroads and to benefit from them. The corridor provided order in disorderly, even chaotic, urban environments, and it provided a commercial focus for small town and rural environments. Through the efficient designs for their own facilities and by encouraging efficiency through grouped land uses, such as industrial zones, railroads created highly centralized corridors of technically controlled order (Stilgoe 1983).

Regardless of how a town initially developed, a railroad connection was critical to its success, and railroads had a clear influence on the built environment of North Dakota’s cities and towns during the late nineteenth and early twentieth centuries. Because railroads operated most efficiently with a centralized, hierarchical distribution system, cities and towns dependent on railroads in North Dakota also developed in a hierarchy. The smallest order community was the “inland” trade center, which may have consisted of simply a general store, blacksmith shop, or saloon. A railroad connection was necessary for a town to serve larger retail functions, such as dry goods stores, bakeries, and specialty shops and services. Towns that served solely as a railroad stop, however, tended to remain small and serviced only a small geographic area. Railroads connected the smaller towns along the corridors to larger urban areas, and those cities served as collection and distribution points for their surrounding service areas. Cities located at river crossings, intersections of railroad lines or that attracted specialized functions, such as railroad shops or division offices, agricultural processing or manufacturing facilities, or governmental or educational institutions, grew into modest-sized cities with multiple-county service areas (Borchert 1989:56).

As commodities and manufactured goods flowed back and forth between out-of-state metropolitan centers, in-state urban centers, and small cities and towns, a constellation of trade centers was spread out on the railroad network. At the top of the hierarchy in North Dakota stood the urban centers Fargo, Grand Forks, Minot, and Bismarck, where the railroad corridor was of vital importance, as warehouses and manufacturing plants lined the tracks and the central business districts either paralleled or radiated out from the tracks. In the downtowns, large ornate passenger depots welcomed visitors to the cities. Following the urban centers were smaller cities that served as trade centers for multiple-county areas, including Devils Lake, Jamestown, Valley City, Mandan, Dickinson, and Williston. As in the larger cities but on a smaller scale in the smaller cities, warehouses lined the railroad tracks, and main streets ran parallel or perpendicular to the railroad corridors. In the small trade-center towns, grain elevators along the railroad tracks were the dominant feature of the skyline, and depots were the centers of activities. Although well-matched to railroad transportation, these built environments would require rebuilding and reconfiguring during the second half of the twentieth century to suit the needs of the new automobile era.

The four largest urban centers in North Dakota in 1920 were Fargo, Grand Forks, Bismarck, and Minot. All but Minot were established prior to 1880, grew rapidly during the 1880s, and were awarded state institutions at the constitutional convention in 1889: Bismarck, the state capital; Grand Forks, the university; and Fargo, the agricultural college. In addition to hosting major state institutions, all three cities became important commercial centers by the turn of the twentieth century. Minot's main growth came after 1900, and it developed into the main commercial center for the northwestern portion of North Dakota.

Fargo grew from an outpost on the Northern Pacific during the early 1870s into North Dakota's primary commercial center. Fargo rapidly expanded after about 1880, developing as a hub for retail and wholesale businesses, including clothing and agricultural implements. In addition, by 1881 there were two banks, a flour mill, three elevators, and a wholesale grocery house (Hartsough 1925:173). Fargo's industries were primary commercial, both wholesale and retail, though manufacturers also served local markets. A large cooperative meat packing plant, for example, was located in West Fargo, as well as various smaller manufacturing plants. By 1890, Fargo's population reached 5,664, and in 1900, it was 9,589. By 1916, the city had 108 distributing agencies (branch and independent wholesale houses and manufacturing jobbers). By 1920, Fargo's population reached 21,961. The city was the most important commercial center in North Dakota, and its firms distributed goods in North Dakota, northwestern Minnesota, eastern Montana, and northern South Dakota. Fargo also held an important financial position, and 10 banks were located there by the 1920s, including three national banks. Fargo's commercial district was focused primarily on the Northern Pacific railroad corridor, both parallel to the tracks and perpendicular (Hartsough 1925:187, 193; Robinson 1966:155, 378).

Grand Forks played a similar commercial role as Fargo for northern North Dakota, though on a smaller scale. The city's population, at 4,979 in 1890, rose to 7,652 in 1900 and 12,478 in 1915. Eight wholesale houses and five banks were located in Grand Forks by the 1920s (Hartsough 1925:186, 193; Robinson 1966:155, 378). Minot served western North Dakota, primarily as a retail center but included some wholesaling and six grain elevators, and it served as a shipping point for the lignite coal mined nearby. The city's population increased from 1,277 in 1900 to 6,188 in 1910, and then to 10,476 in 1920 (Hartsough 1925:187; Robinson 1966:155, 378). The smallest of the four cities, Bismarck's influence lay primarily as the state capitol, but along with Mandan, served an important commercial function for the southwestern portion of the state. Bismarck's population grew from 2,186 in 1890 to 5,443 in 1910 and to 7,122 in 1920 (Robinson 1966:155, 247, 378).

The next order of smaller cities included Jamestown, Valley City, Devils Lake, Wahpeton, Mandan, and Williston. All of them except Williston had multiple railroad connections by the early twentieth century. Most of them had grown sufficiently during the 1880s to be awarded state institutions at the constitutional convention in 1889: Jamestown, the hospital for the insane; Valley City, a normal school; Wahpeton, a school of science; Devils Lake, a school for the deaf (Robinson 1966:211). Mandan had a large railroad yard of the Northern Pacific. Williston, located on the Great Northern main line, developed primarily during the early twentieth century, its population growing from 763 in 1900 to 3,124 in 1910 (Robinson 1966:247).

In addition to the cities, a constellation of small towns and market centers developed in North Dakota by 1920. Prior to 1900, 75 villages and towns were incorporated in North Dakota; between 1900 and 1910, 137 were incorporated (Robinson 1966:242). Most Americans living in small towns or rural areas during the early twentieth century interacted with the railroads primarily through the small local depot. "With its telegraph office, its mail and express service, and its full complement of daily passenger and freight trains, the local depot was the focal point of communication with the outside world" (Stover 1970:98). Although separate depots were often provided for passengers and freight in large cities, depots in small towns typically served both functions.

Most of the townsites platted prior to 1900 were viable as at least small market centers because the railroad network provided adequate service but was not over-extended, and the population generally was growing. After 1900, however, as railroads competed for trade areas, far more towns were platted than the population or economic activity could support. With questionable economic viability, many of those towns struggled during the agricultural depression of the 1920s. Between 1920 and 1930, 44 percent of North Dakota's incorporated cities and villages lost population. Hardest hit were the small cities in the 1,000 to 2,500 population range—16 of the 17 cities lost population during the 1920s, and population in the 17th was stationary. Of the towns with populations between 500 and 999 people, 37.5 percent lost population. Conversely, all 12 of the cities with more than 2,500 residents gained in population during the 1920s (Korthal 1935:52).

The trend toward consolidation of North Dakota's population in urban areas (cities with more than 2,500 residents) would continue through the twentieth century. Populations in small cities and towns began declining around 1920, and although the rural population in North Dakota continued to grow until about 1930, it has been in decline since that time. The urban population has steadily grown and has accounted for an increasingly larger percentage of the total state population since 1900. The percentage of urban population, which stood at 7.3 percent in 1900, rose to 13.6 percent in 1920, 20.6 percent in 1940, and 35.2 percent in 1960. In 1990, for the first time, a majority of North Dakotans lived in urban areas (53.3 percent) (U.S. Census Bureau 2009).

### *Competition between Transportation Modes, 1920-1960*

The years 1920 to 1956 could be characterized as a second transportation revolution, when both flexibility and speed of transportation increased dramatically over the previous railroad era. New modes of transportation presented great challenges to the railroads, such as the greater flexibility provided by automobiles or trucks, and the greater speed offered by airlines. The large railroad companies, organized to ensure stability and regularity of operations, had become slow-moving bureaucracies and did not respond quickly enough to those challenges. In addition, regulations enacted in the early twentieth century to check the monopolistic power of the railroad companies limited their ability to change rates, reduce service on unprofitable lines, or merge with other companies and, thus, limited their ability to compete with other forms of transportation. Overall, this period was one of decline for the railroads. They lost most of their passenger business, their share of freight tonnage nationwide slid to less than 50 percent, and many spent long periods in bankruptcy and receivership.

Railroads began this era at their peak. In 1920, track mileage nationwide was at its maximum extent, and freight volumes, passengers, and revenues were at their highest numbers. The CM&StP, for example, hauled 45 million tons of freight in 1920, a 36 percent increase over 1915 and 50 percent higher than 1908.

The number of passengers carried in 1920 was only slightly lower than the peak during World War I. Despite such positive statistics, the railroad industry was confronted by the highest operating costs, wage aggregate, and taxes in its history, and the smallest net operating income in over 30 years. With operating costs nearly equal to operating income in 1920, railroad companies were vulnerable to any reduction in traffic and, therefore, in revenue (CM&StP Annual Reports 1908, 1915, 1920; Hofsommer 2005a:266).

As demand for goods and commodities fell after World War I, the United States sank into a short but sharp recession. Agricultural commodity prices, at an all-time high in 1920, slumped the following year, remained depressed through the 1920s, then fell even further after 1929. Wheat prices, for example, dropped from $2.35 per bushel in 1919 to $1.01 per bushel in 1921, then to $0.60 per bushel in 1930 (Robinson 1966:374). The low prices hurt many North Dakota farmers' ability to repay debts during the prior expansion years and led to many foreclosures. With farmers unable to repay loans, banks, particularly in small towns, saw their reserves dwindle and were unable to repay their loans to the larger Twin Cities banks. After expanding rapidly during the early twentieth century, from 102 banks in 1895 to 898 banks in 1920, banks began to fail by the scores in 1923 and continued to fail, until by 1933, 573 of the state's banks had closed (Robinson 1966:376).

Other areas of the economy, such as manufacturing, securities, and housing, recovered after 1921. Those areas, however, were relatively small portions of North Dakota's economy and were concentrated in the cities. Statewide, the rural population declined 0.5 percent during the 1920s. Cites continued their growth, and population increased 28 percent in cities with over 2,500 people. Fargo grew from 21,961 to 28,619, Minot from 10,476 to 16,099, and Bismarck from 7,122 to 11,090 (Robinson 1966:378). After the stock market crashed in 1929, however, the general economy sank into the economic crisis known as the Great Depression and did not fully revive until World War II (Borchert 1989:57).

Most railroads operated at a profit from 1923 to 1929, but net incomes continued to decline. Despite record volumes of freight, profit rates were low due to high operating costs. Because their ability to raise rates was limited, many lines attempted to reduce operating costs by increasing efficiency. They upgraded motive power, rolling stock, and track and roadbeds during the 1920s. Even more troubling to the railroads than operating costs was the rapid decline of their commercial passenger traffic. Rail lines' share of this market dropped from 98 percent in 1916 to 75 percent by 1930. More dramatically, intercity private-automobile traffic not only surpassed that of the railroads during the 1920s, but by the end of the decade, it was six times greater. Cars and buses offered intense competition for the railroads' passengers due to their greater flexibility, mobility, and in the case of automobiles, privacy. The number of registered automobiles nationwide grew from about 3.5 million in 1916 to 23 million by 1929, and intercity buses captured about 18 percent of commercial passenger traffic in 1930 (Stover 1961:212-213, 238).

During the Depression, the railroad's previously precarious position became untenable for most, as passenger numbers continued to decline and freight levels dropped off. When production fell on farms, mines, and factories, there simply was not enough freight to go around. In North Dakota, wheat production declined, reaching a low of 19 million bushels in 1936 (yields in excess of 100 million bushels were common during the 1910s) (Robinson 1966:399). During the Depression, railroad revenues fell sharply, and both freight tonnage and overall revenue in 1933 were half of their 1929 levels. In addition to losing their passenger base and facing a nationwide decline in shipping, railroads were under increasing competition for freight traffic by the 1930s. Improvements in truck design and upgrades to highways allowed trucking to capture a substantial share of intercity freight, growing from about 4 percent in 1930 to 10 percent in 1940. Likewise, pipelines' share of intercity freight, particularly petroleum, expanded from 5 percent to 10 percent over the same period. These specialized carriers could haul certain types of freight at lower cost than the railroads (Borchert 1987:87-88; Hofsommer 2005a:281-282; Stover 1961:238).

With no end in sight to the red ink, numerous railroad companies filed for bankruptcy during the 1930s, including the CMSt&P and the Soo Line. In further cost-cutting measures, companies abandoned the least profitable lines, reduced service on others, stored equipment, and laid off workers. National railroad main line mileage fell from its 1916 peak of 255,000 miles to 232,000 miles in 1941, and in North Dakota the mileage declined from a peak in 1916 of 6,184 miles to 5,266 in 1940. Similarly, by 1941 the number of railroad employees nationwide fell by about one-third, and there one-quarter to one-third fewer railroad cars and locomotives were in service (Stover 1961).

With full-scale war being waged in Europe by 1940 and the United States' entry into World War II in December 1941, production and manufacture of all order of commodities and goods increased, effectively lifting the economy out of the Depression. Railroads played an important role in the war effort and benefited from the massive movement of raw materials to factories and of supplies and troops to the East and West Coasts. Railways carried 97 percent of the domestic troop movements and 90 percent of the military supplies. Already by 1941, railroad freight tonnage exceeded the previous peak in 1918, and in 1944 it was nearly double. With gasoline rationing in effect, passenger traffic on the railroads also increased dramatically, and in each of the years from 1943 to 1945, passenger mileage was double that of 1918 (Bryant 1988:xxiii; Stover 1961:202-205).

Having learned from their mistakes during World War I, railroad companies took cooperative measures to coordinate their operations and thus reduce congestion at the ports. The federal government formed the Office of Defense Transportation to coordinate railroad operations but did not take direct control. Although operating at full capacity, railroad companies were unable to make major improvements in infrastructure due to limitations imposed by the federal War Production Board.

The spike in revenues during World War II only temporarily masked the problem of inter-modal competition that had plagued the railroads prior to the war. From the late 1940s to the late 1950s, steady economic growth coupled with a rapid population increase resulting from the Baby Boom led to a period of prosperity in the United States. Although railroad companies previously had been profitable during periods of general prosperity, such was not the case following World War II.

In the post-World War II era, transportation continued to decentralize and specialize. During the earlier heyday of the railroads, traffic movement was hierarchical; it focused on distribution centers and ultimately flowed toward the major terminal hubs that collected and redistributed passengers and freight. With automobiles and trucks, people could travel and ship goods and materials much more directly between smaller cities and towns. In addition, improvements in aircraft led to the growth of commercial airlines offering very rapid transportation between major hubs for passengers, mail, and special freight. During this period, railroads transitioned from being the dominant freight transportation mode to being one of many options among specialized carriers.

Passage of the Federal Aid Highway Act of 1956 established the interstate highway system, and subsequent appropriations financed the transition of the American transportation network from a railroad base to a highway base. In addition, this Act signaled a symbolic shift in transportation priorities. Development of the highway system reflected a trend in transportation that was well-established by the mid 1950s. By then, railroads slipped to third place among passenger carriers, behind automotive and aircraft. The railroads' percentage of intercity commercial passenger traffic continued the long decline that began in the 1920s, falling to 28 percent, while airline travel surged to over 30 percent. In the area of freight, although gross tonnage hauled increased, railroads were not keeping pace with their rivals. Their share of intercity freight declined from 77 percent in 1916 to 44 percent by the end of the 1950s (Borchert 1987:84; Stover 1961:238).

Communication and interstate transportation systems improved in North Dakota during the 1950s. The first television station went on the air in 1952 at Minot. Construction of a Federally controlled access highway system began in 1956. Changes in communications and transportation were enhanced by better airline service and a rapid shift away from dependence on railways. Though airline routes had included North Dakota since 1927, regular service expanded in the 1940s and 1950s, at least in part as a result of a conscious effort by the state government to develop local and regional airports. Likewise, the steadily more modern network of state and federal highways made truck transportation a viable alternative to railroads. Those same highways made private auto transportation more reliable; more North Dakotans bought cars after World War II than ever, soon giving the state a ratio of over two vehicles for every person. As a consequence, use of railroad passenger service declined, and by the end of the 1950s, railroads had increasingly become a means for hauling freight, not people.

Even in the area of national defense, where railroads had played a significant role in every conflict from the Civil War to World War II, the relative significance of railroads was in decline by the 1950s. Although large Air Force bases were built at Grand Forks and Minot during the 1950s, Cold War-era facilities generally used automobile- and truck-based transportation, which was better suited to the decentralized facilities.

In response to the competition from other transportation modes, railroad companies reduced their costs to operate more efficiently. One cost-savings tactic was to cut underutilized services, such as eliminating local passenger trains to focus on limited, through routes or to abandon branch lines with low traffic volumes. Due to such abandonment, by 1959 railroad mileage in the United States had fallen to 217,000 miles. In addition, railroads cut crew size, partly as a result of the abandonment of lines and service reductions and partly due to increased automation. By the late 1950s, railroad employment dropped to 800,000 people, representing a decline of 60 percent since 1920. During the 1960s, railroads continued to abandon branch lines, and by the end of the decade, most had abandoned passenger service altogether. Railroads also altered their operations and, after World War II, began to specialize as carriers of long-haul, bulk items where speed and direct distribution were not a priority. By focusing on high-traffic corridors and long-haul freight, railroad ton-miles reached 575 billion in 1960, up from 367 billion in 1916. As noted above, however, railroads' share of freight slipped to less than half of the total in the United States (Stover 1961:224, 256).

The decentralization of transportation had the effect of also decentralizing the built environment. The population, for example, of the Twin Cities metropolitan area grew continually and expanded from 842,000 in 1920 to 1.6 million in 1960 and to 2.2 million in 1980. During the same period, the populations of Minneapolis and St. Paul peaked in 1950 at 522,000 and 311,000 respectively, and declined in every subsequent decade through the 1980s. Industrial parks, shopping malls, and residential subdivisions, which all focused on the roadway network, spread over the seven-county metropolitan area creating a much lower population density than in the older urban core. Similar developments on a smaller scale occurred in urban centers throughout Minnesota (Borchert 1989:57).

### *Railroad Engineering and Architecture*

Track-guided transportation systems had existed in various forms in Europe since at least the 1500s, but the first practical application of an engine-powered passenger railroad with components technologically similar to modern railroads was England's Stockton and Darlington Railway (S&D), completed in 1825. Although the first run of the steam engine Locomotion on the 37-mile railway was an important event, the S&D was essentially the cumulative result of centuries of individual technological advances in the fields of ironworking, bridge building, and mechanical and civil engineering.[2] Railroad technology continued to evolve over the course of the nineteenth century as the materials and designs improved for the track structures, which included rails, ties, and ballast, and for the roadway, which included the roadbed under the track structure, roadbed shoulders, and ditches.

The most basic issue for a railroad designer was the alignment of the roadway. According to Vance (1995:48), the fundamental geographic features of a railroad roadway alignment were the two established termini and the minimum irreducible grade of the line.[3] Once those were established, derivative features included establishment of a working grade for steam locomotives that avoided grade redundancies (repeated ascents and descents while approaching a summit), provision of reasonable curvature in the alignment (more curves meant additional miles traveled, sharper curves meant slower speeds), and connection to established markets between the termini. The preferred alignment would be a route that provided the gentlest grades on the least circuitous route that connected the greatest number of existing markets. In England and the eastern United States, where railroads were heavily capitalized, direct routes could be obtained and grades could be leveled through cuts, fill, and extensive viaduct work where needed. In lightly populated western areas, such as North Dakota during the nineteenth and early twentieth centuries, the scarcity of capital required the lower-cost alternative of building over or around topographical features. Those lines would then be reconstructed as traffic increased. In doing so, railroad companies often upgraded all of the infrastructure elements of a line to incorporate the latest technology. So common was this practice that Vance cited “reconstruction” as a “characteristic of American railroads” (1995:48-50).

### Track Structure

From their inception, tramways and railways featured custom-designed guidance systems, initially in the form of simple ruts that kept wagons on a proscribed track and later fixed rails that provided guidance for flanged wheels. In the sixteenth and seventeenth centuries, various types of rail systems were fashioned from wood, and later from cast iron as blast furnace technology developed in the mid eighteenth century (Goodale 1920:64). In the early nineteenth century, English railways used cast or wrought iron rails fastened to longitudinal stone sleepers, a configuration that was still under development in the 1820s when the Baltimore and Ohio railroad began construction (Kirkman 1902:26).

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[2] Technological advances associated with engine types and hauling power or the operation of passenger and freight cars will not be addressed by this study unless such developments were specifically associated with the history of North Dakota railroading or where such developments resulted in the historically significant modification of North Dakota railroad buildings or structures.

[3] To avoid a steep grade (the slope of the roadbed), which would require greater motive power, a railroad engineer may design around a geographic feature rather than surmount it, thus reducing the grade. The minimum irreducible grade is the gentlest grade that can be obtained and still connect the established termini.

An issue for early American railroad builders was the gauge or width of the track structure. The S&D in England used a track gauge of 4 feet, 8½ inches, ostensibly because it was the standard width of horse-drawn carriage wheels. Variations of track gauge were used in the development of the early United States railroad network: A five-foot gauge was common in the South, whereas a narrower three-foot gauge was often used in rugged terrain. In the Northeast, a gauge of 4 feet, 8½ inches was common, and because it was adopted as the standard gauge in the Pacific Railroad Act of 1862, it became the standard gauge for American railroads (Weitzman 1980:32). As a result, standard-gauge track was the standard in North Dakota.

**Rails:** While it took decades for a standard gauge to develop, a common design for rails evolved much more quickly. When the earliest railroads were constructed, the general lack of iron smelting and forging facilities in the United States forced builders to use wrought iron straps spiked to longitudinal wooden sleepers. That system worked well for light loads, but heavier loads worked the stringer nails loose, causing straps to curl and occasionally rip through the floorboards of passenger cars (Veenendaal 2003:16). In 1830, Robert L. Stevens developed the inverted T profile rail for the Camden and Amboy Railroad in New Jersey. The wide portion of the T was fastened to wood ties that were laid perpendicular to the rail, and flanged wheels ran on the slightly bulbous top of the T's vertical member (Kirkman 1902:32). The first T rails were rolled in England, but with the proliferation of United States ironworks in the 1840s, rail production began to grow. In 1861, Congress passed the Morrill Tariff which stopped the import of foreign rails and provided a significant boost to United States mills and foundries (Veenendaal 2003:16).

After the Civil War, the new Bessemer process for manufacturing steel was used to cast rails for heavy-traffic routes. Steel was much harder yet more elastic than iron, and it weighed less. Early steel rails weighed about 30 pounds per yard, but as annual freight tonnages increased in the last decades of the nineteenth century, rails increased to 50 to 60 pounds per yard. North Dakota's first railroad, the Northern Pacific main line built to Bismarck in 1872 and 1873, used 56-pound iron rails. Despite its advantages, only 29 percent of the rail lines in the United States were laid with steel rail by 1889 (Swank 1892:410). New railroad lines, as a rule, utilized steel; for example, in constructing its main line in North Dakota during 1891 to 1893, the Soo Line used 60-pound steel rails. By the turn of the twentieth century, the nation's main lines had been converted entirely to steel—iron rails remained only on branch lines and spurs, where traffic speed, volume, and weight were low and therefore less punishing (Veenendaal 2003:17). By 1900, steel rails reached a robust 90 pounds per yard, stout enough to carry the heaviest annual traffic at main line speeds. Rail weights steadily increased in tandem with the weight of locomotives and freight cars, with rail weights reaching an average of 131 pounds per yard by about 1930 and 152 pounds per yard by the 1940s (Weitzman 1980:31). An additional attempt to fortify routes for particularly heavy freight included welded rail.

**Ties:** Although stone sleepers were used initially to support the rails, railroad companies abandoned the sleeper system during the 1830s because the stone did not adequately cushion the relatively brittle iron rails. The switch to wood ties heralded another change in the basic character of the track structure. White oak, rock oak, and burr oak were the first choices for wood ties and had a usable life ranging from 5 to 12 years or as long as 25 years under certain conditions. Softer wood, however, such as cedar, pine, and cypress, had a shorter usable life, ranging from three to seven years, depending on the type of wood and the environmental conditions. Uniform and long-lasting ties were important not only because replacing them was expensive, but also because ties take time after being laid to settle and create a smooth surface for the rails. Maintaining a smooth roadbed affected the life of the rails, wear and tear on the rolling stock, speed of the trains, and comfort of the passengers. The life of ties varied a great deal depending not only on the type of wood but also the weight, volume and speed of traffic; drainage of the ballast; climate; and other variables (Colliery Engineer Company 1899:1029; Webb 1901).

The increasing scarcity of durable hardwoods by the late nineteenth century led to the development of preservatives for softer woods and the adoption of stone ballast to facilitate better drainage of the rail bed. The most common wood-tie treatment was surface scorching. More effective chemical treatments soon followed, including saturation with mercury chloride (Kyanizing), copper sulfate (Boucherie), or zinc chloride (Burnettizing) and high-pressure impregnation with creosote, a technique that preserved ties for up to 30 years (Kirkman 1902:182; Veenendaal 2003:17).

**Ballast:** The advantages of a solid bed of ballast were clear by the late nineteenth century. As one railroad engineer noted: “On many American railroads, the neglect of this safeguard [ballast] against the effects of our Northern winters, renders them very unsafe at high velocities” (Gillespie 1869:295). Ballast provided a more stable foundation, reduced dust, and assured that the tracks were clear of seasonal water and mud. Despite the benefits of ballast, as late as the 1890s a railroad engineer stated that “the steel is often thrown down on rough grades and run over without ballasting” (Kindelan 1894:25). When ballast was not used, often the ties were bedded (a layer of dirt or earth was placed under thin ties, or the bed was dug out under thick ties) to ensure a level surface to receive the rails. By the turn of the twentieth century, ballasting the roadbed became more common, as heavier and longer trains traveling at higher speeds required greater stability. Initially, ballast materials included stone, slag, gravel, sand, cinders, or burned clay, although stone was the preferred material (Kirkman 1902:164). During the early twentieth century, companies replaced such ballast with layers of crushed granite two to three feet thick on the heavily used routes and on the high-speed, luxury passenger lines. These raised tracks were known as “high iron,” a status reserved for important main corridors.

## Roadway

A railroad roadway that was level, stable, and well drained was critical to the stability of the track structure. According to one railroad engineer, "The stability of the track depends upon the strength and permanence of the roadbed and structures upon which it rests" (Webb 1901:69). A line's roadway was the earthwork within the right of way that was worked to prepare for reception of the tracks. A railroad roadbed was the finished surface on which the tracks rested. A roadbed may have consisted of simply a ground surface graded to be level, or it may have been a surface raised on fill with a layer of gravel, slag, or cinder sub-ballast. By the early twentieth century, the recommended minimum width of roadway between the toe of each slope on a standard-gauge, single-track, Class A (heaviest traffic) railway was 20 feet with 18-inch shoulders. On single-track fills, roadways ranged from 16 to 25 feet wide, while in cuts they were typically 16 to 20 feet (Howson 1926:96; Tratman 1926:17-21). Also by that time, it became common practice to create a thicker roadbed by adding a layer of gravel or cinder sub-ballast to help prevent the surface ballast material from being pushed into the roadbed.

Because water would quickly undermine the track structure, particularly the ties, good drainage was seen as critical. "The worst enemy is water… therefore the first and most important provision for good track is drainage" (Webb 1901:69). Engineers were generally in favor of rounding off shoulders and toes of embankments, sodding the slopes, and using drain tile in the ditches to promote drainage and reduce erosion. In the early years of the twentieth century, railroad managers often did not approve the additional up-front costs to include such measures—despite substantial savings in future maintenance. Such improvements would become more common during the 1920s and especially following World War II.

## Bridges

The heavy live loads associated with freight trains required that trestles and bridges meet exacting engineering standards without excessive cost. Wooden trestles were often temporary structures used to bridge small topographic features on branch lines where the cost of filling and cutting exceeded the value of the line or where the value of the branch line's resource had not been determined. Where cutting and filling was possible, stone culverts (and later, metal pipes) were built to facilitate drainage under the track.

By 1900, plate girder bridges were commonly used for short spans of less than 50 feet, although spans up to 100 feet could be achieved if necessary. Spans of 50 to 150 feet were bridged with multiple deck trusses or through trusses of the Whipple, Baltimore, Pratt, or Warren types that were supported on piers founded on wood piles or (after 1890) steel or concrete piles (Disney and Legget 1949:31). Robust modifications of the Warren truss, including cantilevered versions, could be extended to between 150 and 550 feet, but these designs were reserved for major crossings where the maintenance of river traffic was a consideration

(Kirkman 1902:246). Where a fixed bridge was too low to allow boats to pass under it, movable spans were installed including vertical lift bridges, rolling lift bridges, and swing spans.

The earliest metal bridges in North Dakota were riveted iron with pin-connected joints (Vose 1873:175). After 1890, steel became more common with connections between truss elements bolted and/or welded (Weitzman 1980:75). At the same time, pre-cast reinforced-concrete slab and rigid-frame bridges came into use for short spans, particularly for grade separations with vehicular roads (Disney and Legget 1949:62). In North Dakota, railroad companies built landmark examples of steel truss bridges at major river crossings, including the Red, James, Sheyenne, and Missouri rivers. For more detailed discussion of bridge types, see Railroad Grade Separation Structures on page 114.

### Safety Systems

Advancements in railroad technology during the late nineteenth and early twentieth centuries provided for safer as well as more efficient operation of railroads. Railroad-related accidents came in several forms including derailment of an individual train, collision between two trains, and collision between a train and another vehicle or pedestrian. Improvements to the roadway and track structure during the nineteenth century, as discussed above, allowed trains to run on smoother and more stable tracks, thus reducing derailments. Reducing the number of collisions, however, would depend on other safety measures.

The first traffic on United States railroads did not have the benefit of rapid communication via the telegraph. As a result, traffic was managed by signalmen who recorded individual train movements, visually signaled the information to other passing trains, and changed the switches as necessary to prevent collisions. The system worked for low-traffic rural lines, but quickly became unworkable in high-traffic urban environments. Charles Hutton Gregory developed an interlocking foot-powered mechanism in 1843 that prevented conflicting signals from being displayed, and thirteen years later John Saxby designed the first interlocking mechanism that operated switches and signals in tandem from a central bank of levers. This system prevented a signal operator from inadvertently opening a junction to more than one train or from displaying the all-clear signal on occupied track. The first United States-built interlocking machine was designed in 1875 by J. M. Toucey and W. Buchanan of the New York Central and Hudson River Railroad for Manhattan Island, but the Union Switch and Signal Company provided 95 percent of the nation’s interlocking towers by 1885. The signal towers used for operating the interlocking switches and levers were generally two-story wood-framed buildings until the early twentieth century, when brick became standard.

After 1910, high-traffic routes in North Dakota began to use block signaling to facilitate train movement. Each train was assigned a block of space on a track, and an automatic red/yellow/green light signaling system allowed engineers to maintain safe distances (Raymond 1917:122). At the same time, electrical and pneumatic control systems were revolutionizing interlocking facilities. Site-specific interlocking mechanisms evolved into division-wide computer-managed systems in the 1960s and remotely managed nationwide networks in the 1970s.

While the derailments and train-to-train collisions had declined by the turn of the twentieth century, the number of pedestrians and vehicles struck by trains increased dramatically. One source estimated that 200,000 persons were killed or injured by railroads between 1900 and 1920, including nearly 14,000 persons killed after being struck by trains in 1919 alone (Stilgoe 1983:167). While many trespassers were killed while walking along the tracks or crossing at unspecified points, numerous accidents occurred at grade crossings. As trains ran at increasingly faster speeds, such as the express limited trains that often exceeded 60 miles per hour, pedestrians and drivers had difficulty gauging speeds or mistook the fast trains for slow-moving freights.

Due to the growing carnage and the resulting public outcry, as well as local ordinances in some cities, railroad companies began installing more elaborate safety measures at grade crossings or building grade separations. While simple signs had long marked crossings, by the 1910s railroad companies began posting watchmen, crossing gates, and bells and flashing lights at the busier intersections to warn drivers and pedestrians of oncoming trains. Another solution was to separate the grade crossings through either elevation or depression of the railroad corridor or a combination of the two. Although grade separation was a safer alternative than otherwise uncontrolled grade crossings, it was a costly undertaking and elevated tracks could become an eyesore to the community. A series of urban grade separation structures were built in Fargo between 1921 and 1930 when seven underpasses or bridges were built to cross the Northern Pacific main line (Sluss 1998:4-9).

### North Dakota Designs

By the time the first railroad was constructed in North Dakota in 1872, many basic design issues associated with the development of railroad technology had been addressed by railroads in the eastern United States. As standard gauge was becoming the norm for track width, the iron T-rail had been established as the standard rail profile, and many problems related to live loads on wood trestles and metal truss bridges had been solved. Nevertheless, North Dakota benefited from significant advances in railroad engineering between the end of the Civil War and the first several decades of the twentieth century, including the production of high-tensile steel rail, treated ties, superior roadway design, semi-automated interlocking and switching machinery, and the design of specialized yards and terminals for the state’s grain industry.

In general, North Dakota benefited from advances in railroad engineering throughout the nineteenth and twentieth centuries. The railroad industry generally relied on established engineering designs for their routine operation—showing a marked tendency to reject the unproven in favor of older but reliable mechanical systems. Innovative technologies were typically incorporated only when they could provide a measurable economic advantage over competitors.

As the North Dakota railroad network was completed in the eastern half of the state by about 1905 and in the western half by 1916, railroad companies made infrastructural improvements in their existing networks to gain economic advantage over competitors. During the first decade of the twentieth century, as railroad companies competed in mature markets, they reconstructed lines that had been built 20 or 30 years earlier with minimal roadway preparation. Then, again in the 1920s, railroad traffic was increasing with heavier loads and longer trains, and the railroads faced intermodal competition from automobiles, buses, trucks, and pipelines. "Intensive improvement and partial reconstruction of railroads, in order to secure increased efficiency and economy in operation as well as to meet the requirements of increasing traffic, have been conspicuous features in recent years and will continue for a long while," noted a writer in the mid 1920s (Tratman 1926:380). Common railroad reconstruction work nationally and on North Dakota lines from the late 1890s through the 1920s included:

- Double tracking the busiest corridors to increase overall capacity
- Grade reduction and curve revision
- Extension of passing sidings
- Enlargement of freight yards and passenger terminals
- Relocation and redesign of engine terminals, shops, and coal/water stations
- Enlarged warehouses, freight houses, and grain elevators
- Cutoff lines to reduce mileage for through freight
- Grade separation at crossings with highways and city streets
- Replacing lighter bridges with heavier structures
- Replacing trestles and viaducts with filled embankments
- Widening cuts and fills
- Installing block signals

The architectural properties associated with North Dakota's railroad system reflect the general progression of design and styles built from the 1870s to the present. The earliest buildings from the 1870s were wood frame, and none are known to have survived. Depots were the public face of the railroads, and their designs reflected the influence of popular architectural styles. Depots in larger cities generally were designed by architects in styles common for public buildings, such as Romanesque, Classical Revival, or Beaux Arts. These depots were built with high-quality materials like brick, stone, and terra cotta, as well as marble, terrazzo, and hardwoods in the interiors. Notable examples include the Great Northern Depot in Grand Forks, designed by Cass Gilbert in the Richardson Romanesque style (altered, tower removed), and the Great Northern Depot in Fargo, designed by Samuel Bartlett in the Romanesque style. Apparently unique among Northern Pacific depots, the depot in Grand Forks represents a Tudor Revival design.

Depots in smaller cities that handled high volumes, such as division points or main line junctions, were often architect designed, such as the Soo Line Depot in Minot designed by William Kenyon and the Soo Line Depot in Wilton designed by William J. Keith. Conversely, the lower volume Second Class depots were built according to standardized plans developed internally by the railroads' engineering departments. Typically wood-framed and sided, though occasionally brick, those depots were mostly functional and represented modest stylistic influence, such as Craftsman or Tudor Revival (Grant and Bohi 1978). Shop complexes were generally comprised of functional buildings, though stylistic elements were often incorporated.

# II. CHICAGO MILWAUKEE ST. PAUL AND PACIFIC RAILROAD COMPANY

## *Introduction*

The renaming of the Milwaukee and St. Paul Railway Company to the Chicago Milwaukee and St. Paul Railway Company (CM&StP, later Chicago Milwaukee St. Paul and Pacific or CMStP&P) in February of 1874 reflected its connections between three major Midwestern urban centers and particularly its connection with the city of Chicago just two years earlier. Like all major railroads, however, the CM&StP needed to complement these connections by linking to hinterland resources, such as agricultural and mining products, to maximize traffic and thereby profits. Following, therefore, many of its counterparts, the CM&StP spent the better part of the 1880s pushing its lines west into Dakota Territory. As the St. Paul Minneapolis and Manitoba and the Northern Pacific quickly staked their claims over northern Dakota Territory, the CM&StP, in competition with the Chicago and North Western, took hold of the southern portion (Mitchell 1982:179). Although concentrated there, the CM&StP made its way in a limited fashion into the area that would become southern North Dakota, where it connected to the lines of companies with access to other regions of the future state. This foray began in the 1880s in the eastern half of the state, and then shifted to the western half during the decade from 1900 to 1910. For a map of the CMStP&P railroad network in North Dakota, see Maps section.

## *Acquisitions by the CM&StP, 1880-1890*

Only two acquisitions were made by the CM&StP of companies with lines built in North Dakota between 1880 and 1890, both in the latter half of the decade.

### The Fargo and Southern Railroad Company

The Fargo and Southern Railroad Company was incorporated in June of 1881 by a group of 23 Fargo businessmen, who hoped for a piece of the profits that were being yielded by railroad transportation in the Red River valley (Mitchell 1982:185 n.1; Hesrud 1989:9). Grading on the Fargo and Southern's only line, which eventually ran 116 miles from Fargo to Ortonville, Minnesota (Fargo to Wahpeton in North Dakota), where it intersected with the CM&StP, began shortly after the railroad company was incorporated, but its progress was slow, and only 20 miles of the road had been graded by December of 1882 (Mitchell, 1982:179).

In the meantime, the Fargo and Southern had attracted the attention of the CM&StP based on the connections it could provide to the larger road (Kingsbury 1915:1383). A deal was struck between William A. Kindred, the smaller road's largest shareholder, and the CM&StP which was highly advantageous to the Fargo and Southern shareholders and provided for the CM&StP to pay for the remaining construction on the struggling line. In return, the CM&StP would take control of and have the eventual right to purchase the Fargo and Southern (Mitchell 1982:180). To avoid, however, the wrath of and any counter-action by James J. Hill, who maintained a tight leash over the Red River valley for his railroad, the Manitoba, the CM&StP attempted to hide their control of the Fargo and Southern.

Construction progressed steadily until the fall of 1883, when the Fargo and Southern reached Wahpeton, where it needed to cross the Manitoba line. There the Manitoba, suspecting CM&StP involvement, sent crews to stop construction by the Fargo and Southern, and court battles ensued until the two roads reached an agreement in December of 1883, allowing the Fargo and Southern to make its crossing. The Fargo and Southern line was subsequently completed in July of 1884 (Mitchell 1982:181).

Over the next year, the majority of the Fargo and Southern's traffic consisted of freight, 42 percent of which was grain, 17 percent of which was merchandise, and 15 percent of which was lumber. The grain and lumber traffic resulted largely from an arrangement that the Fargo and Southern made with the Northern Pacific, by which the Fargo and Southern would pull grain from elevators along its line then turn it over to the Northern Pacific at Wahpeton for shipment to Duluth, while the Northern Pacific would bring lumber shipments to the Fargo and Southern (Mitchell 1982:182). In July of 1885, however, the CM&StP officially took over the Fargo and Southern and severed the agreement, hoping to move the grain traffic from along the smaller line to Minneapolis. The result, instead, was a little-used road that was devastated by plummeting wheat prices and competition by the Manitoba for the Twin Cities market and soon limited to passenger traffic, which it carried until 1931 (Mitchell 1982:183-184; Hesrud 1982:9).

## The Dakota and Great Southern Railway Company

The Dakota and Great Southern Railway was the brainchild of a Minnesota artist-turned-land agent, George Ellsbury. As part of his real estate ventures, in 1878, Ellsbury contacted a Northern Pacific stockholder, Charlemagne Tower, who "controlled most of the land in the western part of Cass County" (*Fargo Forum* 2007:1) in the hopes of purchasing some of his land. Ellsbury became a land agent for Tower, and he also bought from him lands surrounding a site then known as Spring Tank. Bringing with him 23 people from Winona, Minnesota, Ellsbury platted a new town at Spring Tank in April of 1879 and named it Tower City.

The following year, Ellsbury determined that although the Northern Pacific ran through Tower City, additional connections were needed to bolster the well-being of the community and began a campaign to construct a branch line. In August of 1883, Ellsbury incorporated the company to build this line, the Dakota and Great Southern Railway Company (D&GS), and was elected its president, serving as such for only three months until he resigned and was replaced by the general manager of the Northern Pacific, General Herman Haupt.

Although a few different versions of the DG&S line were envisioned early on, as incorporated, the DG&S was meant to build a railroad from Sioux City, Iowa, to Grand Forks via Tower City. The railroad, however, was not completed as planned. While the survey work and some grading were completed in 1885, in the fall of that year, the road was sold to former Minnesota governor William R. Marshall, who determined that the railroad would pass through Valley City instead of Tower City (*Fargo Forum* 2007). In the end, it went through neither. When the DG&S was constructed in 1886, it reached only as far north as Harlem (north of Cogswell) in North Dakota, with a southern terminus of Andover, South Dakota, and in October of that year, it was deeded to the CM&StP. The DG&S operated as a branch line of the CM&StP from Andover to Harlem until 1923, when the 5.11 miles north from Cogswell to Harlem was abandoned, and then in 1936, the 7.49 mile segment south from Cosgwell to Brampton was abandoned (Derleth 1948:284, 293, 298-299).

### *New Construction by the CM&StP, 1880-1910*

The first two episodes of new construction carried out by the CM&StP in North Dakota occurred in the period between 1880 and 1890 and combined to form a single railroad. The first portion was a railroad running north from the CM&StP main line at Aberdeen, South Dakota. Constructed in 1881, the North Dakota portion extended from the future border between North and South Dakota to the town of Ellendale. In 1886, the railroad was extended approximately 24 miles north from Ellendale to Edgeley, where a Northern Pacific branch line would make a connection to it in 1887, as would the Midland Continental over 20 years later (Derleth 1948:292-293; Johnson 1952:48).

No additional CM&StP construction occurred in the state until 1902-1903, when an existing branch north from the main line at Roscoe, South Dakota, was extended from Eureka, South Dakota to Linton. Five years later, construction of the main line west from the Missouri River in South Dakota to Montana crossed the southwestern-most portion of North Dakota from the state line near Haynes to Marmarth. The construction of this portion of the main line was carried out by one of several companies incorporated by the CM&StP during 1905 and 1906 to facilitate building the extension of the main line to the Pacific Coast. In this case, the Chicago Milwaukee and St. Paul Railway Company of South Dakota was incorporated in August of 1906 and later conveyed by deed to the Chicago Milwaukee and St. Paul Railway Company of Washington (Milwaukee of Washington) on December 26, 1908 (Derleth 1948:171, 284, 295).

The CM&StP of Washington had previously existed as the Pacific Railway Company, incorporated by the CM&StP in October of 1905 for the same purpose of extending the main line. In January of 1909, the CM&StP of Washington was changed to the Chicago Milwaukee and Puget Sound Railway Company (Puget Sound), who built the final railroad constructed by the CM&StP in North Dakota. This railroad, a 132.6-mile branch line built in 1910 north off the transcontinental main line at McLaughlin, South Dakota, through the state line south of Selfridge to New England, was also located in the southwestern-most part of the state (Derleth 1948:296). The Puget Sound was deeded to the parent company on December 24, 1912.

### AFTER THE PACIFIC EXTENSION, 1920-1985

Although the CM&StP Pacific Extension was built quickly and was well engineered, it was also costly, exceeding the original estimate of $45 million by over 400 percent. While carrying this heavier debt load, the CM&StP did not gain the amount of revenue expected from the Pacific Extension. The line crossed a sparsely populated region between its terminal points and was forced to depend primarily on through traffic for revenue. When the Pacific Northwest economy slumped during the 1910s, and then the Panama Canal diverted traffic after 1914, the company incurred a loss in 1917: its first since the early 1890s.

The commandeering of the railroads by the federal government during World War I only delayed the inevitable, and during the early 1920s, the CM&StP operated at a deficit—estimated at a total of $20 million during 1921 to 1924. From a high of $200 per share in 1905, the value of the company stock dropped to about $4 per share in early 1925. With a heavy debt, passenger revenues falling, and insufficient freight revenues, the CM&StP declared bankruptcy and entered receivership in 1926. It emerged two years later, re-organized as the Chicago Milwaukee St. Paul and Pacific Railroad Company (CMStP&P) (Borak 1930; Bryant 1988:76-78).

After emerging from receivership in 1928, the CMStP&P enjoyed a brief return to profitability before the stock market crashed in October 1929 and the Great Depression began. After five years of declining passenger and freight revenues due to the Depression, the CMStP&P declared bankruptcy in 1935. Unlike the brief period of receivership during the 1920s, the CMStP&P did not emerge from receivership this time until 1945.

The heavy demands of the war effort during World War II restored the profitability of the CMStP&P, and the company remained profitable through the 1950s. Due to inter-modal competition, the CMStP&P had to increase its efficiency through such measures as increasing automation in operations, consolidating freight yards, and phasing out steam locomotives. Despite those improvements, by the early 1960s it was clear that railroad companies would have to consolidate and abandon unprofitable routes. The CMStP&P was unable to come to a merger agreement with the C&NW during the late 1960s, and when the new Burlington Northern emerged in 1970, the CMStP&P could no longer compete. The railroad declared bankruptcy for the last time in 1977, and during the early 1980s, it abandoned all of the lines constructed in North Dakota during the period after 1900. In 1982, the main line segment was put back into service by the State of South Dakota and Burlington Northern. Four years later, the remainder of the CM&StP, the company unable to pull itself out of debt, was purchased by the Soo Line (Mills 1998:90, 131-132).

## III. FARMERS' GRAIN AND SHIPPING COMPANY

The Farmers' Grain and Shipping Company (FG&S) was, like most farmer roads, the culmination of frustration with high shipping rates imposed by the large corporate railroads and a lack of alternative transportation. In North Dakota, this frustration was amplified by the Panic of 1893 and subsequent depression (Robinson 1966:218; Grant 1982:4-5). During this time, fueled by an 1896 visit from David Wellington Hines, "the region's foremost advocate of the farmer's railroad scheme" (Grant 1982:5), those living near Devils Lake began to conceive of an independent road that would serve not only their shipping needs but also those of their neighbors in the more northerly part of Ramsey County, and, potentially, eventually extend into Canada. Although the depression had subsided by the turn of the twentieth century, the seeds for a local railroad sown in previous years had taken root, and the residents of the Devils Lake area would bring it to fruition through the FG&S. For a map of the FG&S railroad in North Dakota, see Maps section.

It was at this time that Joseph M. Kelly, a bonanza wheat farmer joined forces with another local farmer, Rasmus Sorenson, and a local lawyer, John W. Maher, to elicit funds and labor from Devils Lake-area farmers for the construction of the railroad. The promotion of the road, then envisioned as the Devils Lake and Northern Railway Company, was made easy by the sentiments cultivated by Hines in the 1890s, and work on the railroad north from Devils Lake began in the summer of 1900. After experiencing substantial weather-related delays, the railroad between Devils Lake and Starkweather was complete in the fall of 1902 (Grant 1982:5).

Although it was organized as an independent railroad, the FG&S was dependent on the Great Northern almost from the start. While it was true that the labor was largely that of local farmers:

> . . . the GN supplied building materials, often at cost and on credit, and it either leased or sold the necessary rolling stock. When the FG&SCo attempted to place its financial house in good order in 1902, the Great Northern accepted $71,000 of First Mortgage Twenty-Year Five Per Cent Gold Bonds [Grant 1982:6].

James J. Hill had, in fact, been the force behind Kelly's drive to create the FG&S, which would be beneficial to Hill for its ability to feed traffic to the Manitoba at Devils Lake. Once construction was complete, it was Hill who instigated the incorporation of the company not as a railroad but as an elevator and shipping company, allowing it to shut down in the winter when it would not be profitable. A Great Northern attorney even prepared the incorporation papers (Grant 1982:6). When, therefore, the FG&S was incorporated on October 11, 1902, it was "to carry on the business of engaging, receiving, transporting and delivering merchandise; also to carry on its line of railway, mail, passengers, goods and merchandise, and to carry on a general transportation, freight, passenger and express business; likewise to acquire by purchase, lease or otherwise all articles and things requisite or expedient in the transaction of such business or incidental thereto" (GNRC 1945).

The benefit of the FG&S railroad to the Great Northern was enough to keep the larger company interested in making sure that the smaller company met local needs not just sufficiently, but well. To this end, the Great Northern provided the FG&S with financial backing and the use of one of its professional contractors to extend the line north from Starkweather to Rock Lake in the summer of 1905. The Great Northern also provided the FG&S low-cost rolling stock, and beginning in December of 1905, accelerated service from St. Paul and Grand Forks for shipments to the FG&S line (Grant 1982:6-8).

As the Starkweather to Rock Lake segment was being completed, the Great Northern was quietly asserting control of the FG&S. Meanwhile, the Soo Line was planning to construct a parallel railroad between Devils Lake and Rock Lake, intending to connect with the Canadian Pacific at the border. Blocking the Soo Line branch line would require the FG&S to build to Canada, which its charter did not cover (GNRC 1960). To avoid the delays to construction that would result from amending the charter, the Great Northern instead organized and provided financial backing for the Brandon Devils Lake and Southern Railway Company (BDL&S) (see Great Northern Railway Company history, page 58). The BDL&S line between Rock Lake and Hansboro was begun in September of 1905, completed the same year, and immediately leased to the FG&S for 10 percent of the latter company's net earnings along the full stretch from Devils Lake to Hansboro (GNRC 1960; Roger 1982:6, 9). Within five years, all of the FG&S securities held directly by the Great Northern were transferred to the BDL&S, which was wholly owned by the Great Northern (GNRC 1960).

Despite the Great Northern's hold over the FG&S, it operated as an independent railroad until it was foreclosed on and sold to the Great Northern in 1943. Operating as a branch line of the Great Northern, the FG&S corporation was dissolved in 1945.

# IV. GREAT NORTHERN RAILWAY COMPANY

## *Introduction*

In 1893, the Great Northern Railway Company became the fifth transcontinental railroad in the United States. Extending from St. Paul to Seattle, this northernmost of the transcontinental lines represented the vision and the business acumen of James Jerome Hill: a man with a legacy of undisputed importance in the development of the railroad industry and the state of North Dakota. Hill is widely known as the Empire Builder. Propelled by his active efforts in the areas of immigration, legislation, advertising, and agriculture, his empire grew along the routes of his railroads into the western United States. By the time of his death in 1916, the Great Northern covered over 8,100 miles and ran through parts of Michigan, Wisconsin, Minnesota, Iowa, North Dakota, South Dakota, Montana, Idaho, Washington, and Canada (Hidy et al. 1988:318-323). For a map of the Great Northern railroad network in North Dakota, see Maps section.

Although the Great Northern had its origins in Minnesota, the influence of the railroad and the man behind it was so immense in North Dakota, particularly the Red River Valley, that the state was eventually dubbed "Hill Country" (Robinson 1966:141; Tweton and Jelliff 1976:79). On paper, the direct predecessor of the Great Northern is the Minneapolis and St. Cloud Railway Company. Incorporated in 1856 with the intent to "build and operate a railroad between Minneapolis and the navigable waters of Lake Superior via St. Cloud [Minnesota]" (Prosser 1966:142), this road was reorganized as the Great Northern Railway in 1889. Physically, however, the Great Northern in North Dakota is truly the descendant of the St. Paul Minneapolis and Manitoba Railway Company, whose network of railroads would become the dominant one in the state and include part of the Great Northern main line to the Pacific Coast.

## *Predecessor Lines in North Dakota*

### St. Paul Minneapolis and Manitoba Railway Company

The St. Paul Minneapolis and Manitoba Railway Company (Manitoba) was formed in May of 1879 with the purpose of taking over the properties of the St. Paul and Pacific Railway Company, which included two major railroads connecting the Twin Cities of Minnesota to markets north and west (Prosser 1966:161). A sluggish market for securities, compounded by the Panic of 1873, had forced the struggling St. Paul and Pacific railroad out of Northern Pacific control and into receivership. The formation of the Manitoba was the culmination of the negotiation efforts of James J. Hill, Norman Wolfred Kittson, Donald Alexander Smith, and George Stephen to acquire St. Paul and Pacific stocks and bonds during the later half of the 1870s (Hidy et al. 1988:23-36). The Manitoba, led by Stephen, took control of the St. Paul and Pacific on May 23, 1879, before purchasing it outright on June 14 of that year (Hidy et al. 1988:28-36; Prosser

1966:161). Beginning one week after taking control of the St. Paul and Pacific and over the next four and a half years, the Manitoba engaged in a flurry of acquisitions and construction that would provide it with key connections between the Twin Cities of Minnesota and the Red River Valley.

The Red River Valley had become a key economic center by the mid nineteenth century with the growth of the fur trade. Various goods were transported via oxcarts north to Canada along paths paralleling the river, and furs, hides, and related goods returned south the same way. The ox-cart paths also extended to St. Paul, Minnesota, but they stopped short of that destination after the St. Paul and Pacific built its line to Sauk Rapids in 1867. Hill, recognizing the profits that might be generated by innovative transportation between the Twin Cities and the Red River Valley, became part-owner of a steamboat company in 1871. When he and Kittson incorporated the Red River Valley Railroad Company in 1875, the fur trade was in decline, but the Red River Valley was developing into a center of wheat cultivation. Over the next 10 years, Hill became a dominant figure in transportation to, from, and within the Red River Valley, first through his steamboat company, next through his affiliation with the St. Paul and Pacific, and especially through his role in the Manitoba, which had made the Red River Valley its stronghold.

During this period, James J. Hill served first as general manager, then after election in 1882, as president of the Manitoba. It was at this time that Hill would solidify his hold over rail traffic in the Red River Valley of North Dakota through construction by the Manitoba; the acquisition of the Red River Valley Railroad Company in 1879 and the Casselton Branch Railroad Company in 1882; and the incorporation of the Moorhead and Southeastern in 1884. The Moorhead and Southeastern and two other small railroad companies having lines in North Dakota were acquired by the Manitoba in 1886, 1891, and 1893. These acquisitions, which eventually became part of the Great Northern network, were of railroad companies in which Hill and his cohorts held leadership roles and/or that had been financially backed by the Manitoba with the goal of eventual assimilation into the Manitoba system. As noted by Malone (1996:88):

The Manitoba followed a general policy of relying on small and separate companies to construct its branch lines. It usually invested in the stocks and bonds of these little area lines and in turn leased and operated them directly. Such branches might, on occasion, link major cities in the heart of the railroad's empire, like the Minneapolis and St. Cloud. More often, they reached out to the less populous hinterland.

Although it lacked population density, Dakota Territory was a solid source of freight. In 1884, for example, 20 percent of the freight traffic of the Manitoba was wheat, coming chiefly from the farmers of the Red River Valley and destined largely for the flour mills of Minneapolis (Hidy et al. 1988:52). Not satisfied, however, with the Red River Valley to Twin Cities-based market alone, and concerned about the seasonality of and increasing competition for wheat shipments, Hill saw the need for the Manitoba to tap into other markets.

It was fortunate for Hill that he had the foresight to diversify his markets. The year 1885 marked a severe drop in wheat prices and a slackening of the bonanza wheat farming boom in the Red River Valley. Though the Manitoba's hold over this location was such that it retained the wheat traffic that remained, it was equally necessary for Hill to concentrate on new products. In North Dakota, the diversification of the Manitoba was manifest primarily in the 1886-1887 push for construction or acquisition of lines west that would connect the railroad to gold, silver, copper, and coal mining operations in Montana and later transform it into a transcontinental operation (Malone 1996:115). After this period, construction was sporadic until the company was folded into the Great Northern in 1907.

### *Construction by the St. Paul Minneapolis And Manitoba*

The Manitoba made its foray into North Dakota almost immediately after the railroad company's formation in 1879, when it acquired the Red River Valley Railroad Company and its just-completed railroad from western Minnesota into Grand Forks. From this point, over the next four years, the Manitoba built a main east-west line west to Devils Lake, which marked the westernmost edge of the Red River drainage (Malone 1996:94).

During the same period, as Hill strove to make connections between the Red River Valley and Canadian markets, the Manitoba also built two main north-south railroads (Malone 1996:110). The first extended from the former Barnesville and Moorhead Railway Company line at Moorhead, Minnesota, which was financially backed then acquired by the Manitoba in the fall of 1880 to provide both its main line and major branch line with a connection to North Dakota. From Moorhead, the Manitoba constructed across the state line to Fargo and north to a point 0.4 mile west of Reynolds in late 1880, then from that point north to Grand Forks Junction, a few miles west of Grand Forks in 1881. There it met with the main east-west line, allowing it to connect to Grand Forks. From Grand Forks, the line was extended to Grafton, also in 1881, then to the north boundary of the state near Neche in 1882 (Hidy et al. 1988:318).

The second main north-south line was a direct extension of the Manitoba's main line from the Twin Cities to Breckenridge, Minnesota. It included 48 miles constructed from Breckenridge to Durbin via Wahpeton in 1880, approximately 53 miles from Durbin to Portland in 1881, and nearly 31 miles from Portland to Larimore, where it met with the main east-west line, in 1884. Construction of the line continued in 1884 north from the main east-west line at Park River Junction, just a few miles west of Larimore, approximately 35 miles to Park River. During the construction of this railroad, the former Casselton Branch Railroad Company line (see below) was connected to it via Everest on the south in 1882 and Portland Junction on the north in 1884. Additional construction during the early period of the Manitoba's expansion into the North Dakota side of the Red River Valley included 29.5 miles between Ripon and Hope in 1882 (Malone 1996:110; Hidy et al. 1988:318-319).

A new round of construction began in 1886, as the Manitoba took advantage of its dominance in the agricultural-shipments market and the drop in this market for competing railroads to expand its reach north, south, and especially west (Malone 1996:113). At this time, the main east-west line was extended from Devils Lake toward Montana, with over 121 miles of railroad constructed from Devils Lake to Minot in 1886 and over 545 miles from there across the state line near Buford into Great Falls, Montana, in 1887. From Great Falls, it would go on to become the Great Northern's first transcontinental line in 1893.

In 1887, the Manitoba made a connection to a railroad between the future states of North and South Dakota that it had recently purchased from the Aberdeen Fergus Falls and Pierre Railroad Company (see below) by constructing approximately 49 miles between Rutland and Ellendale. Additionally, it extended its railroad from Breckenridge to Park River 39 miles north to Langdon, and it added a north-south branch off of its main east-west line, from Rugby to Bottineau. The following year, another north-south branch was built off of the east-west line, from Church's Ferry north to St. John (Hidy et al. 1988:319).

Though still engaging in acquisition and new construction, in February of 1890, the Manitoba leased its properties to the recently formed Great Northern Railway Company. The lease represented little more than a change in name, as Hill was in control of both companies.

Among the new construction projects that were carried out in North Dakota after the lease was put into place were lines from Grafton to Cavalier (1890), into Alton from Halstad, Minnesota (1891), from Casselton to Fleming (1895), from Hope to Aneta (1896), from Cavalier to Walhalla (1897), from Langdon to Hannah (1897), and from Schurmeir Junction (near Grand Forks) to Schurmeir (1906). Although numerous other railroad lines that would link to those of the Manitoba would be built in North Dakota between 1901 and 1907, these were all constructed by smaller companies later taken over by the Great Northern (see below). Abandonments also occurred during the lease period, including North Dakota trackage from Everest to Fleming in 1896, 1.3 miles of the Alton to Halstad line in 1900, and from Grand Forks to Schurmeir in 1907 (Hidy et al. 1988:325).

On November 1, 1907, the Manitoba ceased to exist when it was officially acquired by the Great Northern.

### *Acquisitions by the St. Paul Minneapolis and Manitoba*

<u>The Red River Valley Railroad Company</u>

On June 12, 1875, the Red River Valley Railroad Company was incorporated by Hill and Kittson to "construct and operate a railroad from Breckenridge to Glyndon and other lines in the Red River Valley" (Prosser 1966:157). Truly, however, its purpose was to form a connection between the St. Vincent extension at Crookston to Fisher's Landing on the Red River in Minnesota, about 10 miles west of the railroad. To avoid charges of monopoly, Hill and Kittson did not sit on the board of directors, but instead paid Jesse Farley to construct the railroad, which he did in 1875 (Martin 1976:121).

Three years later and without concern for perceptions of monopoly, as Hill and Kittson moved to take over the St. Paul and Pacific, they were elected to the board of directors of the Red River Valley Railroad Company (Hidy et al. 1988:31). Early in 1879, the company constructed a railroad from Fisher's Landing, Minnesota, to Grand Forks, and on June 21 of that year, the company was subsumed in the formation of the Manitoba (Prosser 1966:157).

Casselton Branch Railroad Company

On August 26, 1880, the Casselton Branch Railroad Company (CB) was incorporated by the Northern Pacific to construct a railroad joining the Northern Pacific railroad in Cass County with a station to be established north of the Goose River in Trail County. The Northern Pacific constructed just over 43 miles of railroad for the CB, which paralleled construction by the Manitoba on its north-south line between Durbin and Portland. These 43 miles consisted of approximately 31 miles between Casselton to Blanchard from June 1879 to September 1880 and approximately 12 miles between Blanchard and Mayville from September 1880 to April 1882.

An agreement reached in October of 1882 between the Northern Pacific and the Manitoba involving the transfer of some of the Manitoba's east-west lines in progress for some of the Northern Pacific's existing north-south lines resulted in the transfer of the CB to the Manitoba, which subsumed the smaller company. In December of 1882, the Manitoba built the three miles of track needed to connect its railroad from Breckenridge, Minnesota, to Portland or Hope, North Dakota, to the former CB at Everest. In 1884, the Manitoba linked the former CB railroad to its main east-west line by constructing approximately four miles north from Mayville to Portland Junction (GNRC 1937).

Moorhead and Southeastern Railway Company

In 1884, the CM&StP began a foray into the Red River Valley via an affiliation with the Fargo and Southern railroad. In response, the Manitoba incorporated the Moorhead and Southeastern in September of 1884 with plans to parallel the Fargo and Southern, thereby taking the CM&StP out of the equation. The Manitoba, however, was combating the Fargo and Southern in other ways as well, including physically blocking construction with train cars and personnel at a grade crossing owned by the Manitoba and matching the Fargo and Southern's rates for transportation of wheat from Fargo to Minneapolis.

As the CM&StP was taking control of the railroad in July of 1885, overproduction of wheat combined with drought in the area was taking a toll on wheat prices and slowed the "Great Dakota Boom." The Fargo and

Southern railroad found itself going head to head with the Manitoba for limited wheat traffic in the upper Red River Valley. After the Moorhead and Southeastern was constructed from Moorhead to Brushvale, Minnesota, then across the state line and south to Wahpeton in 1887, the Manitoba won, leaving the Fargo and Southern to become a passenger line (Luecke 1997; Mitchell 1982). On January 28, 1891, the Moorhead and Southeastern was officially purchased by the Manitoba (Prosser 1966:154, 162).

Aberdeen Fergus Falls and Pierre Railroad Company

The Aberdeen Fergus Falls and Pierre Railroad Company (Aberdeen) was incorporated by a group of Aberdeen residents on April 19, 1886, to construct and operate a railroad from Aberdeen, South Dakota, "to the state line of Minnesota, towards Fergus Falls" (GNRC 1938). In early May of the same year, an agreement was reached between the Aberdeen, which did not have the "means to fully construct and to equip and operate" the railroad, and the Dakota Railway Construction Company (DRCC). The Aberdeen would, amongst other conditions, obtain the land and monies needed for the grading of a railroad from Aberdeen to a connection with a "railroad (other than the Chicago, Milwaukee & St. Paul Rail Road Company or the Chicago and Northwestern Railway Company, and preferring the St. Paul, Minneapolis and Manitoba Railway Company) affording an outlet to Duluth" (GNRC 1938), which would then be carried out by the Dakota Railway Construction Company by January 1 of the following year. Per the agreement, after construction was completed, the Aberdeen was required to transfer ownership of all of its holdings on demand to a railroad corporation of the Dakota Railway Construction Company's choosing (GNRC 1938).

The Dakota Railway Construction Company completed a railroad between Aberdeen, South Dakota, and Rutland in late 1886, extending between Havana and Rutland in North Dakota. In December of that year, the Manitoba purchased the holdings of the Aberdeen, who never operated the railroad, for a sum of $303,300 (GNRC 1938).

Red River Valley and Western Railroad Company

The Red River Valley and Western Railroad Company was incorporated in July of 1893 with the purpose of constructing a railroad west from a junction with the Great Northern at the former station of Addison (north of Davenport and south of Durbin) to a point at or near the Maple River. Although the charter projected a railroad of 20 miles in length, it was ultimately constructed, using Great Northern financing, by October of 1893 as an 11.78-mile railroad that crossed the Maple River and ended in Chaffee. Immediately after construction was completed, the railroad was purchased by the Manitoba and leased by the Great Northern (GNRC 1946).

### *Great Northern in North Dakota, 1907-1970*

In the years leading up to 1907, the Great Northern stamp was put on North Dakota as it purchased the railroads successively constructed by the Dakota and Great Northern Railway Company (see below). Then, in 1907, the Great Northern consolidated its holdings by purchasing several of its subsidiaries, which included, most notably for North Dakota, the purchase of the St. Paul Minneapolis and Manitoba Railway Company on November 1. In the same year, James J. Hill turned over the presidency of the company to his son, Louis, and assumed the position of chairman of the board.

Under the junior Hill's first term as company president, which lasted through May of 1912, and through the end of that year, four new Great Northern railroads were constructed in North Dakota. The first and largest of these was a line from Fargo to Surrey, aptly named the Fargo-Surrey Cutoff, which was to serve as an airline route between the Red River Valley and a point near Minot (Hidy et al. 1988:114). It was built between 1910 and 1912, with 17.6 miles constructed between Surrey and 3.5 miles east of Simcoe in 1910; 0.62 mile constructed between 3.5 miles east of Simcoe and 4.12 miles east of Simcoe, and 20.6 miles constructed between 0.26 mile east of Nolan to 1.31 miles west of Luverne in 1911; and 146.26 miles constructed to join the points east of Simcoe and west of Luverne, as well as 40.1 miles constructed to join Fargo with the point east of Nolan in 1912 (Hidy et al. 1988:322-323). The other three new roads extended from Stanley to Wildrose (1911), Niobe to 2.54 miles north of Niobe (1912), and from south of Snowden, Montana, to south of Dore (1912) (Hidy et al. 1988:323).

In late May of 1912, Louis Hill took over the position of chairman of the board, and Carl R. Gray, who had up until then been president of the Spokane Portland and Seattle, was elected President. Gray served for two years before Louis Hill retook the presidency, where he remained until 1919, with a brief interlude during the first half of 1918, when the United States Railroad Administration took charge of all roads. Because Hill refused to work for the government, William P. Kenney, the vice president of traffic for the Great Northern, took over as president until the railroads were returned to private ownership. During this time, Hill served again as chairman of the board. Between the end of Louis Hill's first presidency and the end of his second, railroads were constructed between 2.54 miles north of Niobe and Northgate (1913), Fairview and Watford City (1913 [Fairview to Arnegard] and 1914 [Arngeard to Watford City]), and Wildrose to Genora (1916). During Louis Hill's tenure as president his father retired from all official positions within the Great Northern organization in 1912 and the senior Hill's death in May of 1916. Only 8.5 miles of the Halstad, Minnesota to Alton line (1908) were abandoned in North Dakota during this period (Hidy et al. 1988:326).

In October of 1919, Louis Hill chose to resume the position of chairman of the board, and the presidency of the Great Northern was turned over to Ralph Budd. Budd, who began work as an engineer for the Great

Northern in 1909, had worked his way up to vice president by 1918. Budd worked primarily on improvements to rolling stock, motive power, and fixed properties. The only North Dakota line taken up during Budd's presidency, which lasted until 1931 when he left to serve as president of the Chicago Burlington and Quincy, was the 1.52 miles between Gretna and Neche (Hidy et al. 1988:326).

With Budd's departure, William Kenney had a second opportunity to serve as company president, a position he held until his death on January 24, 1939. Under Kenney, no new construction occurred, and only the line into Walhalla from Morden, Manitoba, was abandoned (1936) (Hidy et al. 1988:199, 216, 326).

On September 26, 1939, Frank J. Gavin, who had been serving as the assistant to the president, was elected to the senior post (Hidy et al. 1988:216). Between that date and his retirement in 1951, no North Dakota lines were abandoned, and none were constructed. When he retired, the Great Northern elected its last president, John Budd, who was the son of Ralph Budd.

John Budd, previously the president of the Chicago and Eastern Illinois, left this post to become the vice president of operations for the Great Northern in 1949. During his tenure, lines from Hankinson east into Minnesota (1956) and west to Geneseo (1960), and from Clifford to Portland (1960) were abandoned, as were approximately 0.3 mile near Neche Junction (Hidy et al. 1988:327). During Budd's presidency the Great Northern built its last new construction in North Dakota, a 16.81-mile branch line between Minot and the station of Tatman, to service the Minot Air Force Base (Hidy et al. 1988:272, 324). Budd strove throughout his presidency for a merger with the Northern Pacific. The merger became a reality on March 3, 1970, when the Great Northern joined with the Northern Pacific and the Chicago Burlington and Quincy to become the Burlington Northern (Hidy et al. 1988: 248-249; Prosser 1966:136).

## Acquisitions by the Great Northern Railway Company

### *Dakota and Great Northern Railway Company*

The incorporation of the Dakota and Great Northern Railway Company in June of 1900 was not associated with any specific construction goals, but when its articles of incorporation were amended in 1906, 13 lines were outlined therein. Financial backing of the construction of Dakota and Great Northern lines was provided by the Great Northern as they fought the "railway war of 1905" with the Soo Line for control of northern North Dakota and southern Saskatchewan and Manitoba territory.

Only 10 of the 13 lines were constructed, which occurred as follows in North Dakota:

- Bottineau to Antler, 41.89 miles (1901 [Bottineau to Souris], 1903 [Souris to Westhope], and 1905 [Westhope to Antler]);
- Lakota to Sarles, 73.13 miles (1902 [Lakota to Edmore], 1904 [Edmore to Munich], and 1905 [Munich to Sarles]);
- Granville to Sherwood, 61.82 miles (1903 [Granville to Mohall] and 1904 [Mohall to Sherwood]);
- St. John to the northern boundary of North Dakota, 3.87 miles (1905 [0.11 mile of this line was constructed by the Great Northern]);
- Towner to Maxbass, 46.10 miles (1905);
- Ellendale to Forbes, 14.11 miles (1905 [0.75 mile of this line was constructed by the Great Northern];
- York to Dunseith, 42.27 miles (1905 [York To Thorne] and 1906 [Thorne to Dunseith]);
- Berthold to Crosby, 89.16 miles (1906 [Berthold to Aurelia] and 1907 [Aurelia to Crosby]);
- Aneta to Devils Lake, 57.67 miles (1906 [Aneta to 2.03 miles west of Tokio] and 1907 [2.03 miles west of Tokio to Devils Lake]); and
- Walhalla to the northern boundary of North Dakota, 5.35 miles (1907).

As each line was completed, its operations were transferred to the Great Northern, which purchased the Dakota and Great Northern in July of 1907 (GNRC n.d.[a]; Hidy et al. 1988:321-322). These lines, largely a series of parallel north-south lines, form a part of what is known as the Great Northern's "picket fence" across northern North Dakota.

### *Farmers' Grain and Shipping Company*

The Farmers' Grain and Shipping Company was incorporated on October 11, 1902, "to carry on the business of engaging, receiving, transporting and delivering merchandise; also to carry on its line of railway, mail, passengers, goods and merchandise, and to carry on a general transportation, freight, passenger and express business; likewise to acquire by purchase, lease or otherwise all articles and things requisite or expedient in the transaction of such business or incidental thereto" (GNRC 1945). Although the company was established to provide a means of hauling grain via a railroad independent of the major railroads, this farmer's road received substantial support from James J. Hill and the Great Northern (see Farmers' Grain and Shipping Company history, pages 47-48).

When grading began on the future FG&S main line in 1900, the company was not incorporated and was informally referred to as the Devils Lake and Northern Railway. Local volunteer labor was largely responsible for the grading and 1902 track-laying between Devils Lake and Starkweather. Incorporation took place after the completion of this portion of the railroad, and subsequently, with financial backing by the Great Northern and the use of one of its professional contractors, the railroad was extended from Starkweather to Rock Lake in 1904 and 1905 (Grant 1982:5-6). Although quietly under Great Northern control, the FG&S operated as an independent railroad until it was foreclosed on and sold to the Great Northern in 1943. The company was dissolved in 1945.

### *Brandon Devils Lake and Southern Railway Company*

The Brandon Devils Lake and Southern Railway Company (BDL&S) was incorporated in July of 1905, formally to construct two railroads: one from Devils Lake to a point on the international boundary between Towner, North Dakota, and Manitoba, Canada, and the other from Devils Lake to a point on the Missouri River in McLean County. Underlying this reasoning, however, was the goal of preventing Soo Line construction between Devils Lake and Rock Lake, which was to parallel the Farmers Grain and Shipping Company (FG&S) line between the same points. Blocking the Soo Line would require the FG&S to build to Canada, which its charter did not cover (GNRC 1960).

To avoid the delays to construction that would result from amending the charter, the Great Northern instead organized and provided financial backing for the BDL&S. The BDL&S began construction between Rock Lake and Hansboro in September of 1905, just after the FG&S completed its portion between Starkweather and Rock Lake, and completed it the same year. Over the next five years, the BDL&S, which never extended to the international boundary, was operated as part of the FG&S, after which it received a percentage of the net earnings of the FG&S in return for the use of its line. The BDL&S was transferred to the Great Northern in November of 1943 (GNRC 1960).

### *Northern Dakota Railway Company*

The Northern Dakota Railway Company was incorporated on October 7, 1907 “to construct and maintain a railroad from Edinburg, North Dakota, to the factory of the Pembina Portland Cement Co. in Cavalier County, North Dakota” (GNRC n.d.[c]). Construction materials were subsequently provided to the Northern Dakota by the Great Northern, and the railroad was completed between Edinburg and Concrete in 1908. Within a year, however, the Pembina Portland Cement Company had closed its doors, and the Northern Dakota, unable to turn a profit or meet its financial commitments, rapidly went into debt. Service was cut substantially through 1915, by then limited to hauling out grain three times a week. Two years later, the Great Northern filed foreclosure proceedings against the company, and in 1920, foreclosure was ordered. An appeal by local farmers, however, prevented the abandonment of the railroad until September of 1922. Rail and other materials taken up were purchased by the Great Northern in November of the same year (GNRC n.d.[c]).

### *Montana Eastern Railway Company*

In 1912, the Montana Eastern Railway Company was formed to take over the construction of a railroad between Lewiston, Montana, and New Rockford “which, prior to December 1, 1912, had been located and partially constructed by the Great Northern Railway Company" (GNRC 1924). Organized to facilitate financing for the railroad by the Great Northern, the Montana Eastern was planned to compete with other major connections between Montana, North Dakota, and Chicago. In addition, the railroad was intended to address delays that had been caused by increased rail traffic on connecting lines and to encourage new settlement, particularly by farmers, in the area that the Montana Eastern main line would traverse (Johnson 1993:1-2).

The Montana Eastern constructed the North Dakota portion of the railroad, from the state border across from Fairview, Montana, to Watford, in 1913 (Fairview to Arnegard) and 1914 (Arnegard to Watford) (Hidy et al, 1988:323). A few segments were subsequently constructed in Montana. The railroad, however, was suffering the effects of slow construction due to substantial bridge and tunnel work combined with sporadic financial investment by the Great Northern. In addition, due to predicted competition by the Northern Pacific, CM&StP, and Soo Line, all of which were surveying parallel and more cheaply constructed branch lines, and a decline in transcontinental railroad business once the Panama Canal was completed, the railroad never reached New Rockford (Johnson 1993:12, 15). The Great Northern purchased the properties of the company in 1928, but chose to keep it operational until 1935, to avoid giving the public the impression that plans for one of the Montana lines would not be carried out. In the latter year, the company was disincorporated and subsumed into the Great Northern (GNRC n.d.[b]).

## V. MIDLAND CONTINENTAL RAILROAD COMPANY

In March of 1906, the Midland Continental Railroad Company (Midland) was incorporated with the goal of building an 1,800-mile line stretching from Winnipeg to the Gulf of Mexico. A group of businessmen from the Midwest incorporated the railroad, hoping to take advantage of traffic from the hinterlands of the Great Plains and to gain access to a Gulf port, particularly after the in-progress Panama Canal was completed (Grant 1976:29). At the same time that the railroad company was incorporated, the group incorporated the Midland Construction Company, which would carry out the construction of the proposed railroad (Johnson 1952:14). For a map of the Midland Continental Railroad in North Dakota, see Maps section.

Early plans for the Midland called for the construction of a railroad between the Northern Pacific at Jamestown and both the Northern Pacific and the CM&StP at Edgeley, then extend north and south, respectively, from these towns. To this end, surveys for the Midland began in the spring of 1907, covering an area that ran from Wheeler, South Dakota, to Pembina. Grading for the initial 42-mile Edgeley to Jamestown segment commenced two miles north of Edgeley on August 12, 1909, despite insufficient funding. One attempt to remedy this deficiency was the creation of the Midland Townsite Company, incorporated by members of the Midland group in November of 1909 to purchase “land to be surveyed and layed out as townsites along the projected railroad and then sold to settlers and business enterprises moving into the new villages” (Johnson 1952:54). The shortage of funds, however, soon caught up with the construction effort, which was drawn out for over three years (Johnson 1952:28, 31-32, 48, 52).

Financial setbacks notwithstanding, by the time the Midland had reached Jamestown on November 1, 1912, it had established freight traffic, largely agricultural and primarily wheat. Along the completed line were 10 stations, four of which were located at townsites, Sydney, Millarton, Nortonville, and Franklin, created by the Midland Townsite Company. These townsites, or at least the agricultural fields surrounding them, were largely responsible for this traffic. Freight traffic, which soon consisted primarily of mining products such as coal but also included “products of agriculture, manufactures and miscellaneous, products of forests, less-than-carload freight, and animals and their products” (Johnson 1952:123-124) would become the mainstay of the Midland throughout its history. During its early years, this traffic was supplemented by passenger traffic, which generated approximately one sixth of the revenues of freight at an average of over 15,000 passengers per year, and to a still-smaller degree, mail, express, and switching traffic (Johnson 1952:62-63, 123-124).

It was shortly after the first segment of the Midland was finished in 1912 that Frank Seiberling, then president of the Goodyear Tire & Rubber Company, was approached for financial involvement in extending the railroad. Although two accounts differ as to precisely who spoke to Seiberling about the financial impediments faced by the railroad, both are in agreement that the result of the contact was a $400,000 loan from Seiberling that carried the Midland Construction Company's notes as collateral (Grant 1976:30-31).

After receiving the loan, the Midland Construction Company embarked on constructing the line north of Jamestown, with grading commencing in April of 1913. Unfortunately for the Midland, the hoped-for crossing of the Northern Pacific could not be made at grade due to the hazardous grade of the Northern Pacific there nor above or below grade, due to a lack of funds. In the end, the "only alternative was for the Midland literally to back out of Jamestown over the tracks by which it had entered about seven miles and thence in a northeasterly direction to Wimbledon" (Johnson 1952:81). A wye was thus built at Jamestown Junction, and the line to Wimbledon, including a junction with the Soo Line, was finished in October of 1913. Plans were already in place to extend the line north from Wimbledon to Cooperstown, but the ensuing entrance of the United States into World War I postponed these plans, which were abandoned altogether in 1916. By then, the war had taken its toll on the Midland's financial state, and the notes and bonds of the Midland Construction Company went into default. Seiberling filed a foreclosure suit and was granted ownership of the Midland, while the Midland Construction Company was dismantled (Johnson 1952:86, 95, 98-99).

Seiberling was less than thrilled with his acquisition and did not see any promise in the line becoming a transcontinental railroad, but he was determined to make the existing Midland profitable and sell it. Having ruled out the north-south transcontinental route, Seiberling contemplated extending the line to Grand Forks, but with neither the funds nor a potential buyer lined up, abandoned this plan. Instead, in the summer of 1916, a small extension was made from the end of the line on the east side of Jamestown into downtown Jamestown, where industrial concerns could be accessed and some of their traffic siphoned away from the Northern Pacific. Later that year, a 0.3-mile extension was made north of Wimbledon to obtain more of the available coal and grain traffic there. In 1917, Seiberling ordered improvements to the depots, which were previously almost inaccessible due to grading problems. During this period, a new roundhouse, passenger depot, and freight depot were built in downtown Jamestown. Three years later, after wartime control of the railroads had been rescinded by the federal government, Seiberling had carried out the final construction of the Midland. This line, an extension into downtown Wimbledon, allowed the placement of a depot there and proximity to the business district (Johnson 1952:113-115; Grant 1976:33-35).

In the years after the final line was constructed and until Seiberling retired leaving other family members in charge in 1948, the Midland was profitable, "show[ing] a net operating deficit for only four years, 1926, 1932, 1934 and 1936" (Johnson 1952:131). Although the rise of the automobile caused a corresponding plummet in its passenger traffic, the Midland picked up some of the resultant petroleum products traffic, and this became its most significant source of freight behind mining and agricultural products, eventually surpassing the latter after 1927. Most importantly, the Midland found its niche as a connecting carrier.

Although many of the agricultural products shipped by the Midland originated along its line, much of its other traffic came from transfers between the CM&StP, Northern Pacific, and Soo Line, allowing it to survive as North Dakota's only true intrastate railroad until it was purchased jointly by the Northern Pacific and the Soo Line in 1966 (Johnson 1952:132-135, 155; Grant 1976:36).

# VI. NORTHERN PACIFIC RAILWAY COMPANY

## *Introduction*

The Northern Pacific Railway Company was incorporated as the Northern Pacific Railroad Company via a bill signed by Abraham Lincoln on July 2, 1864, in the midst of a national push to build transcontinental railroads to the Pacific Ocean. The previously chartered Union Pacific and Southern Pacific were established to cross the central and southern, respectively, portions of the United States. The Northern Pacific was to traverse the northern portion of the country by constructing a route from a point on Lake Superior in Minnesota or Wisconsin to a point on Puget Sound (Renz 1980:18-19). As part of the bill, the Northern Pacific received 50 million acres of land, which included nearly one quarter of the entire future state of North Dakota (Cotroneo 1970:79; Lubetkin 2006:33). For a map of the Northern Pacific railroad network in North Dakota, see Maps section.

Of the numerous incorporators of the railroad company designated in the bill, the individual primarily responsible for bringing it to Congress and who would subsequently serve as the Northern Pacific's first president was Josiah Perham. Perham, a wealthy entrepreneur from Maine, believed that a transcontinental railroad to the Pacific could be built on popular subscription, and thus wrote into to the charter a provision "that forbade the issuance of mortgage or construction bonds" (Renz 1980:20). The popular subscription strategy failed soundly, and Perham stepped down in December of 1865 before any construction had occurred, along with all but one of his contingent on the Board of Directors, leaving a group of Boston businessmen in charge of the railroad.

Led by J. Gregory Smith, the Boston group sought to acquire government subsidies for construction. As 1866 waned without any hint of government assistance, Smith worked to form a syndicate of individuals with positions of power in eastern railroads. The following year, six members of the Boston group resigned from the board, allowing such individuals from the Erie Railway, New York Central Railroad, Pennsylvania Railroad, Chicago and North Western Railway, and Pittsburgh Fort Wayne and Chicago Railway to hold seats, with the idea that they would assist in the funding of efforts to obtain government subsidies. In 1869, however, after over three years of failed attempts to procure such backing, the Northern Pacific determined it would seek alternative means of financing (Renz 1980:22-24). To this end, the board first went about securing "passage of a Joint Resolution whereby the company could issue bonds secured by a mortgage on the railroad and [associated] telegraph line" (Renz 1980:29), which was approved in March of 1869. While this process was underway, the Northern Pacific made its first contact with the banking house of Jay Cooke & Co., whose involvement would eventually lead to the first railroad construction in the future state of North Dakota.

Construction, however, would have to wait until Jay Cooke was satisfied that the Northern Pacific was a solid business proposition. In the months leading up to 1870, Cooke ordered surveys of the lands granted to the railroad by the 1864 charter, particularly for the feasibility of building a line across the country. On the basis of the favorable reports that came out of these surveys, Jay Cooke agreed to extend credit to the Northern Pacific, pending an amendment to the charter as well as to the March 1869 joint resolution. The amendments directed that the main line would run down the Columbia River then up to Puget Sound, and that the mortgage was not only on the railroad and telegraph line, but also on the land grant. These, amongst other financial details, were affected via an agreement reached on January 1, 1870, and a public resolution signed by President Grant on May 31, 1870. As part of the former, Jay Cooke & Co. agreed to raise five million dollars to launch construction in February of 1870 (Renz 1980:29-33). A ground-breaking ceremony was held near present-day Carlton, Minnesota, on February 15, and the laying of track officially commenced six months later (Renz 1980:34-35).

### *Building the Transcontinental Line through North Dakota, 1872-1880*

The tracks of the Northern Pacific main line reached present-day North Dakota in early June of 1872, crossing the Red River from Moorhead, Minnesota, into Fargo. Four months later, another 130 miles of track had been laid west from Fargo. Work progressed steadily into the summer of 1873, with the track extending 175 miles west of Fargo by December of 1872, and through to the Missouri River at Bismarck by June of 1873. During this period, however, the Northern Pacific overextended its finances by spending more to bolster the railroad's capabilities, such as purchasing the Oregon Steam Navigation Co. and leasing the Lake Superior and Mississippi Railroad, than could be supported by the unfinished main line. As a result, J. Gregory Smith came under fire from Northern Pacific management and then resigned on October 1, 1872. He was replaced by board member George W. Cass, who also held the office of president for the Pittsburgh Fort Wayne and Chicago railroad (Renz 1980:39-43, 45). This change in regime, however, came too late for the struggling railroad.

Initially, 1873 looked to be a positive year for the Northern Pacific as the cities at either end of the existing main line took on added importance as shipping centers. Bismarck became a routing center for the United States Army, while Duluth was to see increased traffic from the Hudson Bay Company and the Canadian Pacific Railway, the latter as they shipped the equipment and materials needed for construction work on their line. Additionally, the outlook for the railroad was excellent on the natural resource front. Surveyors had reported coal deposits just 50 miles from Bismarck, and the certification of 10 million acres of timber land and farm land was at hand (Lubetkin 2006:271-272).

The months leading up to September of 1873, however, would fully reverse the good fortunes of the Northern Pacific. Northern Pacific bond sales stalled well short of the number needed to bring the railroad back to financial stability. The railroad attempted but failed to sell its equity in the St. Paul and Pacific Railroad Company, sending it into receivership and ultimately into the hands of James J. Hill, who would integrate it into the future Great Northern system. The Northern Pacific was passed over by the Post Office for mail delivery to Helena, Montana. Newspapers peppered their pages with accounts of conflicts with American Indians in the western part of the country, culminating in Custer's account of battling the Lakota and Cheyenne at the Yellowstone as he accompanied the Northern Pacific survey crew in August of 1873. These accounts were interspersed with those of the failing financial situation of the railroad, both of which drastically increased the apprehension of current and potential Northern Pacific investors. All of these combined to tip the scales in a country already on the economic edge due to years of inflation and excess speculation (Lubetkin 2006:273-274). On September 18, Jay Cooke & Co., its liquid assets insufficient to meet customer, investor, and lender demands, collapsed, thus beginning the Panic of 1873.

The Northern Pacific would see nearly six years and three new presidents before construction would resume on the main line in North Dakota. The failure of Jay Cooke & Co. also meant the cessation of service on the existing Fargo to Bismarck portion until April of 1874, when the line was opened for a period of seven months, the Northern Pacific hoping to take advantage of a recent surge in wheat farming in the Red River Valley, before it was shut down again. On March 18, 1875, the railroad, which was not turning a profit, went into receivership. George Cass, designated as receiver, soon stepped down as President, and was replaced on April 24 by Charles B. Wright, shortly before the Fargo to Bismarck segment of the line re-opened for the 1875 spring to fall seasons (Renz 1980:48-49).

Under Wright's presidency, the Northern Pacific was reorganized per a plan largely created by Frederick Billings, a former California lawyer who had obtained a one twelfth interest in the railroad in 1869. The reorganization, finalized in December of 1875, allowed operations to resume on a year-round basis on the Fargo to Bismarck segment beginning May 1, 1876, after some improvements were made in the spring, and the purchase of land saw a major upswing throughout the remainder of the year. During this period, the Fargo to Bismarck line carried considerable traffic destined for the Black Hills, thanks to the recent gold rush there, as well as growing amounts of Red River Valley wheat. The Northern Pacific, finding success, solicited bids for the construction of the line west of Bismarck in November of 1878. In May of the following year, his health declining, Wright resigned from the presidency. Frederick Billings was elected as his successor (Renz 1980:54-55, 60-62).

The Northern Pacific main line across northern Dakota was completed under Billings' tenure, which lasted until June of 1881. Construction work resumed west from Bismarck beginning in April of 1879, but it proceeded slowly, with only 10 miles of track constructed by June. Under Billings' threat of pulling the job, the contractors made slightly better progress, so that the tracks extended 30 miles west of Mandan in August and 52 miles west of Mandan at the end of the construction season on October 31. After recommencing construction in April of 1880, track was laid to the Knife River by June, over the Green River by September, and to the present state line west of Beach on November 10, when it met with a segment of the line coming east from Montana Territory (Renz 1978:20, 1980:65, 68, 70).

The late 1870s were good years for traffic on the Fargo to Bismarck line, and for traffic farther west as construction progressed. By 1879, over 260,000 acres of land along the Northern Pacific railroad were dedicated to wheat, and in that year, the railroad shipped over one fifth of the wheat crop to Duluth and the Twin Cities, that percentage skyrocketing in the next couple of years. Once the line was completed 50 miles past Mandan, coal shipped from that location became a steady source of traffic, as did cattle being shipped from the ranches of Montana to Bismarck. Though slow to start, passenger traffic increased on the Northern Pacific overall, as people began to move or visited those who moved west (Renz 1978:71, 1980:65, 70). While the main line became profitable, other revenue opportunities were to be had by making connections to it. Due to these opportunities, a wave of branch line construction occurred in North Dakota beginning in 1882, after the main line through the state was finished, and about the time Henry Villard was elected president of the Northern Pacific.

### *Acquisitions by the Northern Pacific, 1882-1890*

The construction of the earliest Northern Pacific branch lines in North Dakota is largely the outgrowth of its projected competition with the Oregon Railway and Navigation Company (OR&N) in the western part of the United States. Although one branch line, the Casselton Branch, was conceived of and construction initiated during the presidency of Frederick Billings, this line was ultimately transferred to the Manitoba railroad, (see the Great Northern Railway Company history).

Henry Villard, who controlled the OR&N in 1880, was concerned that the Northern Pacific would build a line along the Columbia River, where the OR&N had already begun construction on the south bank. Although the two railroads came to terms on traffic agreements and the south bank of the river, the Northern Pacific did not provide the OR&N any assurances where the north bank was concerned. To prevent a contest with the Northern Pacific in the region, Villard's strategy was to gain control of the potential rival by purchasing its stock first on his own and then with the assistance of associates. To house this stock, Villard and these associates incorporated in June of 1881 a holding company called the Oregon and Transcontinental Company (O&T). The O&T was additionally incorporated to control the OR&N and construct branch lines for the Northern Pacific.

After an interim presidency by A. H. Barney that lasted until September 16, 1881, Henry Villard was elected president of the Northern Pacific. Although plans for some of the branch lines constructed during his tenure had been previously developed, none were implemented until the Northern Pacific was under O&T control. Of the branch lines discussed below, the Fargo and Southwestern, Jamestown and Northern, and Sanborn Cooperstown and Turtle Mountain were constructed by the Northern Pacific under contract to the O&T, for which the O&T received the bonds issued under the first mortgage, while the Northern Pacific operated the railroad (Renz 1980:74-76, 79, 110). Financial troubles for both the O&T and the Northern Pacific forced Villard's resignation and replacement by Robert Harris in December of 1883. Harris' presidency, during which the Northern Pacific LaMoure and Missouri River Railroad and the Southeastern Dakota Railroad were incorporated, lasted until the fall of 1887. Villard, however, would return, in control of both companies, as Chairman of the Board in the fall of 1887, the presidency then going to Thomas F. Oakes. All of the companies discussed below were acquired by the Northern Pacific on April 21, 1898 (Renz 1978:28-30).

### Fargo and Southwestern Railroad Company

The Fargo and Southwestern Railroad Company was incorporated on August 20, 1881, to build a line from Fargo "to a point on the left bank of the Missouri River, opposite Fort Yates" (Articles of Incorporation of the Fargo and South Western Railroad Company, on file at the Minnesota Historical Society [MHS]). With this railroad, the Northern Pacific sought to tap into the heavy wheat traffic that could be had in the upper Red River Valley, which was not well-served by railroads at that time. Grading for the railroad began in the fall of 1881, and tracks extended from Fargo to Lisbon by December of 1882. The railroad was completed to LaMoure in the summer of 1883, and operations began in late August of that year (Renz 1980:111).

### Jamestown and Northern Railroad Company

Within days of Henry Villard's election as president, the Jamestown and Northern Railroad Company was incorporated with the goal of building a railroad from Jamestown north to the United States border in Rolette County (Articles of Incorporation of the Jamestown and Northern Railroad Company, on file at the MHS). Initial construction on the railroad began at Jamestown in 1882, and by December of that year, trackage was complete to the northern Stutsman County line. The next segment, from the county line to New Rockford, was finished in 1883, as was an offshoot from Carrington to Sykeston. With funds somewhat drained, both lines were shut down over the winter, with operations resuming in May of the following year. Within a year of reopening the Jamestown and Northern, the line north from New Rockford reached Minnewaukan. The Jamestown and Northern would never reach Canada, though the railroad was extended to Leeds by the Jamestown and Northern Extension Railroad Company (see below) in 1889 (Renz 1980:111-112).

## Sanborn Cooperstown and Turtle Mountain Railroad Company

On July 18, 1882, the Sanborn Cooperstown and Turtle Mountain Railroad Company (SC&TM) was incorporated to transport freight and passengers from Sanborn in Barnes County to the Turtle Mountains in Rolette County (Articles of Association, on file at the MHS). With a plan to access the wheat fields situated between the Sheyenne and James rivers, the railroad was constructed from Sanborn to 1.5 miles south of Dazey in the latter half of 1882, and from 1.5 miles south of Dazey to Cooperstown in 1883. Operations on the railroad commenced on December 1, 1883 (Renz 1978:29, 1980:113).

## Northern Pacific Fergus and Black Hills Railroad Company

The Northern Pacific Fergus and Black Hills Railroad Company (NPF&BH) was formed as the Minnesota Northern Railroad Company in 1878. The main supporter of the railroad was George B. Wright, a former St. Paul and Pacific supporter who aligned himself with the Northern Pacific to further his true interest, promotion of Fergus Falls, Minnesota (Luecke 1997). The company was incorporated with two objectives: to build and operate a railroad from the Northern Pacific at Wadena, Minnesota, via Fergus Falls to the Black Hills, and to build and operate a branch from Fergus Falls to Pelican Rapids, Minnesota (Prosser 1966:154). The Minnesota Northern was acquired and subsequently reorganized as the NPF&BH between January and mid April of 1881 (Renz 1980:109).

The NPF&BH began grading for both of its lines in the spring of 1881. The Manitoba, considering the Pelican Rapids branch encroachment on its territory, countered by grading a parallel route on the Pelican Rapids branch, while James J. Hill filed an injunction to halt construction by the NPF&BH, alleging that it was on Manitoba right of way. After months of battle between Hill and Villard, and the completion of both lines in January and July of 1882, an agreement was reached between the Manitoba and the Northern Pacific, including the transfer of the Pelican Rapids branch to the Manitoba, which took effect November 2, 1882. The Northern Pacific retained the Wadena to the Black Hills line, which it extended from Breckenridge, Minnesota, to De Lamere in 1883 (Renz 1978:28; Luecke 1997). In August and September of 1884, the O&T constructed a 3.06 mile railroad off of this line south from Fairview Junction to Mathew, which was subsequently taken over by the Southeastern Dakota Railroad Company (see below) (Northern Pacific Railway Company 1922; Renz 1980:158).

## James River Valley Railroad Company

Incorporated on August 2, 1883, the James River Valley Railroad Company (JRV) constructed a line from Jamestown to LaMoure in a period spanning a little over two years, completing the line in December of 1885. Although not an O&T road, the JRV line was leased by the Northern Pacific immediately upon completion, then purchased by the larger road. It was largely used for agricultural freight traffic (Northern Pacific Railway Company 1922; Renz 1980:115).

### Northern Pacific LaMoure and Missouri River Railroad Company

The Northern Pacific LaMoure and Missouri River Railroad Company (NPLM&MR) was incorporated in December of 1886 with the goal of building a railroad from the JRV line at LaMoure to the Missouri River. Its ties to the Northern Pacific were clear in both name and personnel, as Robert Harris served also as its president. Construction on the NPLM&MR began in May of 1887 but ceased at Edgeley, well short of its goal of the Missouri River, in September of that year (Renz 1980:158).

### Southeastern Dakota Railroad Company

The Southeastern Dakota Railroad Company was formed at the same time as the NPLM&MR, initially with the idea for a railroad that would run south from the NPF&BH at Fairview Junction through Wilmot to Watertown, South Dakota (Articles of Incorporation, on file at the MHS). Its actual extent would be much less. Once incorporated, it took over three miles of railroad that had been constructed in 1884 from the NPF&BH at Fairview Junction south to the former town of Mathew. Subsequently, in 1887, another 5.74 miles of railroad were constructed south from Mathew to Great Bend, off of which 6.04 miles were constructed west from Keystone Junction to Bayne in 1890 (Renz 1978:30, 1980:158).

### Jamestown and Northern Extension Railroad Company

As its name implies, this company was incorporated, in June of 1889, to extend the Jamestown and Northern's north-south running railroad. Construction occurred between September and December of 1889, during which 18.03 miles were built between Minnewaukan and the Manitoba railroad at Leeds (Renz 1980:112).

## *Construction by the Northern Pacific, 1899-1945*

Northern Pacific built no new railroad lines during the years 1890 to 1899 in North Dakota. During this period, new financial difficulties led the Northern Pacific back into bankruptcy and receivership in 1893. Until that time, Thomas Oakes continued his tenure as president, after which he was appointed receiver along with Henry C. Payne and H. C. Rouse (Renz 1980:175). During the Northern Pacific bankruptcy, James Hill saw an opportunity to gain control of the company began acquiring stock. In a further attempt to control unpredictable rates on the competing railroads, the Great Northern, the Northern Pacific, and the Chicago Burlington and Quincy Railroad Company (CB&Q) formed the Northern Securities Company as a holding company. This proposal was seen by the State of Minnesota as a direct violation of its prohibition on the monopolistic ownership of parallel railroad lines, and the US Supreme Court eventually heard the case as the *State of Minnesota v. Northern Securities Co.* (US 199 [1902]). The Court deemed the partnership in violation of the Sherman Antitrust Act, and ordered it dissolved in 1904. Hill, however, was left in control of the Northern Pacific.

In late 1896, E. W. Winter, the general manager for the Chicago St. Paul Minneapolis and Omaha, was named president of the Northern Pacific. He would, however, quickly resign, and he was replaced by C. S. Mellen on September 1, 1897. Under Mellen, all the early branch lines were acquired by the Northern Pacific, and construction in North Dakota resumed (Renz 1980:191, 194, 208). Railroads built during the Mellen era, which lasted until September of 1903, included the following.

- An extension of the east-west running track off the former Jamestown and Northern railroad was built from Sykeston to Denhoff in 1899 (Sykeston to Bowdon) and 1901-1902 (Bowdon to Denhoff).
- A more northerly east-west running track off of the former Jamestown and Northern, from Oberon to Esmond was built in 1901.
- An east-west running extension of the former SC&TM was built from Cooperstown to McHenry in 1899.
- An extension of the former NPF&BH was built west from Milnor to Oakes in 1900.
- A branch line from the main line was built southwest from Casselton to Marion in 1900 and 1901
- A branch line from the main line was built south from McKenzie to Linton in 1902 and 1903 (Renz 1980:198, 219, 222).

The extension of early branch lines acquired by the Northern Pacific continued to a limited extent in North Dakota under Mellen's successor, Howard E. Elliott. The Northern Pacific built northwest from the former Fargo and Southwestern railroad at Edgeley to Streeter in 1904-1905, and the original east-west running line off the former Jamestown and Northern was extended west from Denhoff to Turtle Lake during the same years (Renz 1980:213, 222). Elliott's tenure, however, would also encompass a wave of substantial new branch line construction in the southwest quadrant of the state.

In 1910, construction was begun west from Pingree on the former Jamestown and Northern line and completed at Wilton in 1912. The purpose of this line was to take advantage of the agricultural traffic along the route (Renz 1980:222).

In 1909, two new companies were incorporated to construct railroads that would cross the Northern Pacific main line at the Missouri River, then run some distance north and south along the river before heading west in a parallel fashion. The first of these, the Missouri River Railway Company (MRR) was responsible for building north and south from Mandan along the river, as well as the east-west running railroad north of the main line. In 1909 and 1910, the MRR built north from Mandan to Sanger and south from Mandan to Cannon Ball. During the latter year, the second company, the Western Dakota Railway Company (WDR) built a railroad west from Cannon Ball to Mott, which would constitute the entirety of its line. In the period between 1911 and 1914, the MRR finished its lines, building from Sanger to Fort Clark (1911), Fort Clark to Stanton (1912), and Stanton to Golden Valley (1913-1914) (Renz 1978:37, 1980:222).

After Elliott resigned to assume the presidency of the New York New Haven and Hartford Railroad Company, both the MRR and WDR were acquired by the Northern Pacific, on June 20, 1914 (Renz 1978:222; 1980:233). In this year, as Jules H. Hannaford made the transition to president, construction began on the last lines of the second wave of branch construction in North Dakota. A line was built from Beach to Ollie, where a "large dry land wheat area [was present] along the North Dakota-Montana boundary" (Renz 1980:235), in 1914 and 1915, and the former MRR was extended from Golden Valley to Killdeer in 1915 (Renz 1980:222).

The strain of the war effort during World War I led the federal government to temporarily nationalize the country's railroads 1918, during which time much critical line maintenance was deferred. When the Northern Pacific was returned in 1919, its challenges included litigation related to its National Forest land grants, ongoing consolidation efforts with the Great Northern, and contentious valuation proceedings with the Interstate Commerce Commission (ICC) (Renz 1980:238). After reviewing the condition of its lines, it entered into a series of legal claims and counter-claims with the government. Following the federal control, Charles Donnelly was named president, his tenure lasting until his death on September 4, 1939, and was succeeded by the then-president of the Erie Railway, C. E. Denney. The 1920s were generally profitable for the country's railroads, and by 1927 a consolidation of the Great Northern and Northern Pacific finally seemed possible. A merger proposal was submitted to the ICC in October 1928 and approved in March 1930—under the condition that the new entity divest all Burlington system stock. Given the stock market crash of the previous year, this condition was sufficient to torpedo the proposed union.

The Depression of the 1930s had one beneficial effect on the nation's railroads: it forced a pervasive reduction in unnecessary expenditures and an increase in efficiency. There were to be no profits for the Northern Pacific, however, until 1939 when agricultural shipments from the drought-stricken plains had increased and the construction industry began to recover. With the entry of the United States into World War II, relaxations in agricultural restrictions and increases in commodity shipments resulted in the Northern Pacific's rapid financial recovery. The final new construction by the Northern Pacific in the state of North Dakota came in 1945, with a line built off of the former MRR at Hazen north 6.37 miles to Truax (Renz 1978:37).

Like all North American railroads, the Northern Pacific faced pivotal financial and operational decisions in the post World War II era. Although the war had stimulated the national economy, the rising cost of labor and price of construction materials forced railroad companies to abandon unprofitable lines, cut staff, and raise rates throughout the late 1940s and 1950s—decisions that made effective competition with the growing trucking industry difficult. Some staff reductions were a result of the Northern Pacific's increased use of continuous welded steel rail and the development of automated roadway maintenance machines in the 1950s. The $4 million spent on automation lessened the need for expensive track gangs and allowed the company's maintenance expenditures to increase by only 1.5 percent between 1950 and 1960. The Northern Pacific also completed a program to modernize its railroads with the final transition from steam locomotives to diesel engines in 1958, a move that saved the company millions of dollars in maintenance. Later, in 1966, the Northern Pacific jointly purchased, with the Soo Line, the Midland Continental Railway, which had been primarily serving the two companies as a transfer railroad (see Midland Continental Railway company history).

In 1961, merger plans for the Northern Pacific and Great Northern were revived and an application submitted to the ICC, but after five years of review, the plan was rejected by a slim margin. After adjustments to the agreement were made, the ICC finally issued its approval on November 30, 1967. The Northern Pacific merged with the CB&Q; Great Northern; and the Spokane, Portland and Seattle Railroad to become the Burlington Northern on March 2, 1970. The Burlington Northern sought additional rail mergers throughout the 1970s, which were mostly denied, and diversified its holdings in the oil and energy-production industries. In the late 1980s, the diversification strategy was abandoned (with Burlington Northern spinning off its energy holdings into a subsidiary) in favor of a comprehensive program to increase shipping efficiency and improve labor relations.

On September 22, 1995, the Burlington Northern Railroad and the Atchison Topeka and Santa Fe Railroad merged to form the Burlington Northern Santa Fe Railway Company (BNSF). As of 2006, BNSF's system included 33,000 miles of track in 28 states and two Canadian provinces (BNSF 2006b).

# VII. MINNEAPOLIS ST. PAUL AND SAULT STE. MARIE RAILWAY COMPANY

## *Introduction*

During the early 1880s, a number of conditions seemed to conspire against Minneapolis milling interests. Chicago-based railroads were favoring their home city in setting rates, which promoted the flow of unprocessed grain from southern Dakota and Minnesota directly to the east. In 1882, the Minneapolis and St. Cloud railroad, which was controlled by the St. Paul Minneapolis and Manitoba (Manitoba), began building a railroad from the Manitoba's St. Vincent, Minnesota, line toward Duluth. This railroad would allow Red River Valley wheat to bypass Minneapolis via the Great Lakes. Finally, the Chicago Rock Island and Pacific (CRI&P) railroad, which was based in Chicago, had gained control of the formerly local Minneapolis and St. Louis (M&StL) railroad, and Minneapolis millers feared that wheat would flow south to the CRI&P instead of north into Minneapolis.

In response, a group of Minneapolis businessmen, primarily in the milling industry, incorporated three separate predecessor companies to the Minneapolis St. Paul and Sault Ste. Marie Railway Company (Soo Line) in 1883 and 1884. The purpose of these companies was to create locally owned, independent connections to the Dakota wheat fields and to Eastern flour markets that would give priority of wheat shipments to the Minneapolis mills over those of Duluth and Chicago and would haul flour to eastern markets at competitive rates. The Minneapolis and Pacific Railway Company was incorporated to build west to the Dakota wheat fields. The Minneapolis and St. Croix Railway Company and the Minneapolis Sault Ste. Marie and Atlantic Railway Company were incorporated to build east to Sault Ste. Marie, Michigan, and a connection with the Canadian Pacific Railway Company. These three railroads were known as the Washburn Roads due to Minneapolis mill-owner William D. Washburn's controlling interest in all three.

When the Washburn Roads were consolidated with the Aberdeen Bismarck and Northwestern Railway Company to become the Minneapolis St. Paul and Sault Ste. Marie Railway Company (Soo Line) in 1888, the new railroad was controlled by the Canadian Pacific, yet it provided competitive shipping in the areas it served. By 1893, the Soo Line established its main line from Sault Ste. Marie, Michigan, to Portal, North Dakota, connecting to the Canadian Pacific at both ends. This railroad was the third transcontinental line to pass through North Dakota. From the late 1890s to the 1910s, the Soo Line expanded its mileage in North Dakota to become the third largest network in the state, behind only the Northern Pacific and Great Northern railroads. For a map of the Soo Line network in North Dakota, see Maps section.

# *Predecessor Lines in North Dakota*

## Minneapolis and Pacific Railway Company

The Minneapolis and Pacific Railway Company was incorporated in 1884 to build westward from Minneapolis into North Dakota. This line was to be the other half of the new "Washburn Road," along with the Minneapolis Sault Ste. Marie and Atlantic Railway Company, which had been incorporated the year before. The incorporators were a who's who of the Minneapolis milling industry, including William D. Washburn (President), Charles A. Pillsbury, H. T. Welles, John Martin, Charles M. Loring, Clinton Morrison, William D. Hale, and W. W. Eastman, as well as Thomas Lowry of the Minneapolis Street Railway Company. With no land grants or significant subsidies, the new company was completely financed by Minneapolis investors, and 75 percent of the total stock was owned by flour-milling interests. The Minneapolis and Pacific railroad was intended to bring wheat to the mills to be processed, then shipped east. Construction began in Minneapolis in April 1886 and the railroad was extended 218 miles northwest to Lidgerwood, some 30 miles into Dakota Territory, by December of that year. Glenwood, Minnesota, was established as the division point of the new railroad. In 1887, the railroad pushed another 60 miles west to Boynton.

Although the Minneapolis and Pacific railroad accomplished its objective of providing an independent supply of wheat to Minneapolis, construction had been expensive and depleted the resources of the local investors. The company was merged into the new Soo Line in 1888 when the Canadian Pacific railroad bought a controlling interest (see below) (Gjevre 1990:15-16; Prosser 1966:141).

## Aberdeen Bismarck and Northwestern Railway Company

The Aberdeen Bismarck and Northwestern Railway Company was originally incorporated on June 1, 1883, as the Ordway Bismarck and Northwestern Railway with the intent of running a line between Ordway, South Dakota, and Bismarck. No construction work was completed on the railroad, but the Northwestern Construction and Improvement Company, which was controlled by Thomas Lowry, purchased right of way in 1886 on behalf of the railroad. In 1887, the Board of Directors approved a route change from Ordway to Aberdeen and then to Watertown, as well as a name change to the Aberdeen Bismarck and Northwestern Railway Company. Also during 1887, Northwestern completed a grade over the 210 miles between Bismarck and Aberdeen, though no tracks were laid. In return for the construction work, Lowry and his associates at Northwestern took payment in railroad stock. With this controlling interest in a railroad that now had a valuable right of way into Bismarck, Lowry brought the Aberdeen Bismarck and Northwestern into the Soo Line merger in 1888 (Gjevre 1990:17).

# *The Consolidated Soo Line, 1888-1910s*

## Introduction

With cash running short on the Washburn Roads by 1888, the shareholders began looking for additional investors. At the same time, the Canadian Pacific, which had recently completed a line to Sault Ste. Marie from the northeast, was eager to firm up its new connection with the Twin Cities and to block the Grand Trunk railroad, which operated in Quebec and Ontario, Canada, from making such a connection. Two large shareholders of the Canadian Pacific, George Stephen and Donald Smith of Montreal, acquired a controlling interest in shares of the Minneapolis Sioux Ste. Marie and Atlantic, the Minneapolis and Pacific, and the Minneapolis and St. Croix railroads, as well as the Aberdeen Bismarck and Northwestern Railway, and moved to consolidate the companies into the Soo Line. Two years later in 1890, the Canadian Pacific acquired a majority of the Soo Line's equity and thus, formalized its controlling interest in the company. Despite the change in ownership, Minneapolis men remained on the board of directors, and Thomas Lowry served as the president. Because the Canadian Pacific and the Great Northern competed for northern transcontinental traffic, the Soo Line, in effect, entered the competition on the side of the Canadian Pacific. In North Dakota, this competition played out most noticeably in the building and counter-building campaign, known as the "railway war of 1905" (Gjevre 1990:18; Hudson 1981; Lamb 1977:167).

After consolidation, the Soo Line assumed an important role in North Dakota railroading. Over the next two decades, the Soo Line grew into one of the big three railroads in the state, along with the Great Northern and Northern Pacific. Those three railroads accounted for 91 percent of the total railroad mileage in the state by the 1920s, and the Soo Line alone maintained about 24 percent. From a primarily through route across the state that connected the Canadian Pacific with the Twin Cities, the Soo Line created its North Dakota rail network during the early twentieth century. From 1900 to 1910, the total mileage of track owned by the Soo Line nearly doubled, and more than 60 percent of the new trackage was in North Dakota. By the eve of World War I, the Soo Line served all areas of the state except the southwest corner (Gjevre 1990:151; North Dakota Board of Railroad Commissioners 1924:13; Poor 1900, 1910).

Beyond the railroad itself, the Soo Line helped shape North Dakota. The Soo Line was a major employer in the state, employing, for example, 250 to 300 people at its division headquarters at Enderlin from the 1890s through the 1920s. In addition to Enderlin, the Soo Line had six-stall or larger engine houses and yards at Harvey, Kenmare, Portal, Wishek, and Bismarck, employing various numbers of people. Already by 1897, there were 100 line elevators on the Soo Line in North Dakota, and that number expanded greatly during the early twentieth century, when the Soo built the Wheat Line and other smaller branches. While most railroad companies platted towns when building through lightly settled territories, the Soo Line did so at a higher rate than most because, lacking land grants, platting and selling town lots helped to offset construction costs. In 1905 alone, for example, as the Soo Line was building the Wheat Line to Kenmare, its affiliated land development company, Minnesota Loan & Trust Company, platted 25 new townsites (Harvey 1982:65-70; Hudson 1981:9; Welton and Nelson 2008:15).

## New Construction

In response to the Great Northern campaign to reach the west coast, during 1891 to 1893 the Soo Line extended its main line from Lidgerwood to Portal, where it connected with the Canadian Pacific. This was the third of the northern transcontinental routes, along with the Great Northern and Northern Pacific, and all three crossed through North Dakota. Despite a slowdown in construction during the economic depression of the mid 1890s, by the turn of the century, the Soo Line was poised to expand its network throughout the state.

### *Main Line to Portal*

After the Minneapolis and Pacific railroad was built to Boynton in 1887, the intent was to continue westward to Bismarck. After the Canadian Pacific consolidated its control over the Soo Line in the early 1890s, a new main line in North Dakota emerged. Building northwest from Hankinson in 1891, the new Soo main line bisected the state from southeast to northwest, crossing through new territory as well as territory controlled by the Northern Pacific and Great Northern. It reached Valley City later in 1891, crossing the Northern Pacific main line. The following year, the Soo Line reached Cathay. In 1893, the main line was completed, crossing the Great Northern main line at Minot and reaching the Canadian border at Portal. At the border, the Soo Line connected with a Canadian Pacific branch line, which extended northwest to the Canadian Pacific main line. Enderlin was established as the division headquarters, and the complex eventually would include railroad yards, a 24-stall roundhouse, a turntable, various shops, and coal and water facilities (Welton and Nelson 2008:8, 12-13).

### *Bismarck Extension, Hankinson to Bismarck*

After the Soo Line completed its main line from Hankinson to Portal in 1893, the former Minneapolis and Pacific main line from Hankinson to Boynton was reduced to branch line status. Nevertheless, the Soo Line extended the line westward in 1892 from Boynton to Kulm, which remained the end of the line for another six years. The economic depression of the 1890s stalled railroad construction, and when the Soo Line resumed building later in the decade, the goal was to gain access to Bismarck. The branch line was extended in 1898 from Kulm to Wishek on the Aberdeen Bismarck and Northwestern grade (see below) (Gjevre 1995:128-130).

### *Wheat Line*

As settlement in northern North Dakota began increasing after about 1898, Soo Line officials viewed the area north of the Great Northern main line, much of it prime wheat-growing lands, as capable of supporting a railroad line, despite several branch lines extending north from the Great Northern main line. The Soo Line thus planned a branch line from Thief River Falls, Minnesota, on its Winnipeg Line to Kenmare on its main line. Known as the Wheat Line, construction began during the summer of 1905, and crews worked on both ends, westward from Thief River Falls and eastward from Kenmare. By December, the crews met between Rolette and Bisbee, completing the branch line (Gjevre, et. al. 1990:39; Hudson 1981). For further discussion of this construction campaign and the Great Northern reaction, see page 16.

### *Egeland Branch*

The Egeland branch line, also known as the Armourdale branch, was an extension from the Wheat Line built northwest from Egeland to Armourdale in 1906. This branch line was built into an area already well-served by the Great Northern, including the Great Northern-controlled Farmers Grain and Shipping Company railroad that paralleled the Armourdale Line within one to two miles. Despite the existing competition, the intent of the branch line was to connect with a proposed Canadian Pacific branch line at the border about eight miles northwest of Armourdale. Due to changes in regulations restricting Canadian wheat exports into the United States, the Canadian Pacific branch line was not built, and Armourdale remained the terminal of the Soo Line branch (Welton and Nelson 2002:18).

### *Bismarck Lines*

This series of small branch lines connected the Soo Line main line with Bismarck from the north and includes segments between Drake and Max, Garrison and Max, and Max and Sanish (and later to New Town). These lines also provided direct railroad service to the ranches and newly developing wheat farms in McLean, Ward, and Mountrail counties, and brought the railroad closer to ranchers west of the Missouri River. The Soo Line built the Drake-Max branch line in 1906. This 84-mile railroad connected the Soo main line at Drake with the Garrison-Max branch line being built north from the former Bismarck Washburn and Great Falls railroad. In 1907, the Soo Line extended a line west from Max to Plaza. Plaza remained the end of the line until 1914, when the railroad was extended from Prairie Junction (just south of Plaza) west to Sanish. Much later, in 1952, when the new Garrison Dam on the Missouri River created Lake Sakakawea, the towns of Sanish and Van Hook were moved to a new location named New Town. The railroad was also rerouted to New Town (Gjevre, et. al. 1995:116; Tank 1997a:28).

### *Whitetail (Flaxton) Branch*

In its ongoing competition with the Great Northern, the Soo Line built west in 1905 from Flaxton on its main line to Ambrose to extend its railroad service into the northwest corner of the state. In 1913, the Soo

Line extended this branch line westward to Alkabo and on to Whitetail, Montana. This branch line was the farthest westward reach of the Soo Line (Gjevre 1990:100).

### *Drake-Fordville Line*

The Soo Line began grading in 1910 for a branch line between Drake on its main line and Fordville on its Wheat Line. Known as the Drake-Fordville Line, the branch line was completed and passenger service begun in June 1913. The branch line crossed the Great Northern's Surrey Cut-Off just east of Drake and the Great Northern main line at Darby just west of Devils Lake. Built through an area that already had adequate railroad service, the Drake-Fordville Line was another example of the ongoing competition between the Soo Line and the Great Northern (Tank 1997a:26-27).

## Acquisitions

### *Bismarck Washburn and Great Falls Railway*

The town of Washburn was incorporated in 1882 on the Missouri River north of Bismarck. Steamboat service provided a connection between Washburn and the Northern Pacific in Bismarck, but no railroad had been built north out of Bismarck by the turn of the twentieth century. In 1899, William D. Washburn, who had recently lost re-election as senator in Minnesota, bought nearly 114,000 acres north of Bismarck and, to promote settlement and sale of his lands, organized the Bismarck Washburn and Fort Buford Railway. Construction of the new railroad began in June 1899. Although the name of the railroad was changed to the Bismarck Washburn and Great Falls Railway in January 1900, construction continued that spring, and the line was completed to Wilton in June. The railroad was soon extended to Washburn and then to Coal Harbor in 1903. The Soo Line, which had provided financial backing to the Bismarck Washburn and Great Falls through direct loans and assurances for bank loans, acquired the smaller railroad in 1904 (Gjevre 1990:112-113).

### *Fairmount and Veblen Railway Company*

By the early twentieth century, the far northeastern corner of South Dakota still lacked railroad service. In 1900 and 1907, a group of area farmers made preliminary surveys for a railroad from Wheaton, Minnesota to Veblen, South Dakota, crossing through the southeastern corner of North Dakota. Despite these surveys and although the Veblen and Northwestern railroad was incorporated in 1910, no construction was undertaken. In 1912, two Veblen men convinced banker Julius Rosholt of Minneapolis to promote and arrange financing for a railroad from Fairmount to Veblen. On December 18, 1912, the Fairmount and Veblen Railway was incorporated. Construction of the railroad began in April 1913, and service began later that year. In 1914, the railroad was extended south to Grenville, South Dakota. Although the Fairmount and Veblen initially operated independently, the Soo Line was involved from the start, providing financial backing and supervising construction of the railroad. After less than two years of operation, the Fairmount and Veblen Railway was acquired in 1915 by the Soo Line (Gjevre 1990:120-121).

### *The Soo Line After 1920*

By the 1920s, the Soo Line was a financially sound regional railroad. It carried diverse freight, including agricultural products, iron ore, coal, and lumber. It served as the U.S. leg of the Canadian Pacific transcontinental, and it connected with major terminal markets at Minneapolis/St. Paul, Duluth, and Chicago. Its railroad network in North Dakota had been completed by the mid 1910s, and following United States Railroad Administration control during World War I, the company focused on maintenance and improvements to its railroad lines and rolling stock. Although freight volumes increased during the 1920s, passenger numbers were declining, and passenger revenue fell by more than $1 million during 1924 alone. Automobiles were competing successfully for local traffic, and the Soo Line began cutting back local passenger services. Nonetheless, the Soo Line was in sound financial condition and, by decade's end, maintained a $20 million reserve (Gjevre 1990:209).

The Great Depression affected the Soo Line like most railroads—revenues fell precipitously after 1929. The Soo Line staved off bankruptcy longer than many railroads, due to the cash reserves it accumulated prior to 1929, the backing of the Canadian Pacific railroad, deferred maintenance, and cutbacks in operations. After years of operating at a deficit, however, the Soo Line filed for bankruptcy at the end of 1937. The company remained in receivership for nearly five years until World War II created sufficient demand for railroads. The railroad emerged from receivership in 1942, and two years later, the company was renamed the Minneapolis St. Paul and Sault Ste. Marie Railroad Company. During the war, the Soo Line carried heavy volumes of passengers and raw materials, though relatively little military equipment (Gjevre 1990:197).

During the 1950s and 1960s, the Soo Line resumed its strategy from the 1920s and successfully operated as a regional carrier with strong transcontinental connections. During the 1947 through 1953 construction of the Garrison Dam, the Soo Line gained additional revenues because it was the sole railhead for construction materials and personnel. In addition, the Korean War during the early 1950s created additional traffic. With solid revenues, the company began converting its motive power to diesel, a process completed in 1955. On January 1, 1961, the Wisconsin Central and the Duluth South Shore and Atlantic railroads were merged into the Minneapolis St. Paul and Sault Ste. Marie Railroad, and the new company was officially renamed the Soo Line Railroad Company, which had long been its logo. Although the Soo Line was financially strong through the 1960s, passenger traffic continued its long decline, including long-haul service. Passenger routes were discontinued one by one, until by the end of the decade, the Soo Line no longer provided passenger service.

Although the Soo Line continued to operate as a profitable regional carrier through the 1970s, its management grew concerned about being boxed into its territory by the much larger interregional rivals, such as the Burlington Northern. In 1983, the Soo Line acquired the Minneapolis Northfield and Southern railroad, which provided additional industrial mileage. Then in 1985, it acquired the bankrupt Chicago Milwaukee St. Paul and Pacific, which doubled its revenue base and territory. During the early 1990s, the Canadian Pacific, in turn, acquired all of the outstanding Soo Line stock, and the Soo Line became a wholly owned subsidiary of the Canadian Pacific (Abbey 1988:407).

# SECTION F. ASSOCIATED PROPERTY TYPES

## I. NAME OF PROPERTY TYPE: RAILROAD CORRIDOR HISTORIC DISTRICTS

## II. DESCRIPTION

The property type "railroad corridor historic district" encompasses the right of way within which a railroad operated and all of the buildings, structures, and objects that worked together for the dedicated purpose of running trains to transport freight and passengers. The elements of railroad corridor historic districts are organized within linear rights of way that range from approximately 30 feet to several hundred feet in width but may extend for hundreds of miles in length. The linear nature of the railroad corridor historic district is an important associative characteristic that conveys the sense of a train traveling to a destination (Figure 2; Note: all figures are located at the end of Section F).

The MPDF *Railroads in North Dakota, 1872-1956* does not distinguish between railroad main lines and branch lines. Although, historically, railroad companies identified their railroad corridors as main lines or branch lines, the definition of main line varied from company to company, depending on volume of freight, priority on operations time tables, and other factors. In addition, a railroad corridor's status may have changed over time, depending on operating conditions. For the purposes of evaluating historic significance, a railroad corridor's status as main line or branch line is not a determinant; a railroad corridor can be eligible for the National Register regardless of its status as a main line or branch line.

**Corridor Elements.** At minimum, a railroad corridor historic district includes a railroad roadway, which is the portion of the right of way modified to support the railroad tracks (see Railroad Roadway discussion below). The configuration of a railroad roadway in North Dakota is commonly a single track on a railroad bed with cuts and fills, and ditches. Other layouts may be present or may have been used historically (see Railroad Roadway below).

In addition to the railroad roadway, a railroad corridor historic district can include associated railroad-related support buildings and structures. The railroad support buildings and structures will vary between railroad corridor historic districts and can include: railroad stations, railroad yards, railroad depots, railroad grade separation structures, and railroad section houses (see below). The locations of these elements historically varied according to local geography, existence of other railroad corridors and vehicular roads, markets served, and population. For example, railroad stations historically were located every 5 to 10 miles along a railroad corridor, but railroad yards were required only in special locations, such as at terminals, division points, and large railroad stations and junctions.

**Geographic Influences.** The geography of North Dakota influenced the location and design of railroad corridors in the state, although non-geographic factors, such as competition between railroad companies, also influenced the location of railroad corridors. The location of North Dakota between important terminal points—the Twin Cities and Duluth to the east and Puget Sound to the west—led to the construction of multiple transcontinental railroad corridors through the state. Aside from the Northern Pacific main line, the Red River Valley was the early focus of railroad construction during the late 1870s through the 1880s. As commercial hubs developed, they attracted additional railroad corridors. Companies extended their railroad networks throughout the state during the early twentieth century, but the network thinned west of the Missouri River, where the drier climate and hillier land was better suited cattle ranching. Access to commodities, terminal facilities, and transfer points defined the destinations for railroad corridors. Once the destination points were established, the ideal railroad corridor alignment provided the gentlest grades on the straightest route, which could require extensive cutting, filling, and bridging, depending on the topography and other natural features to be crossed. The built environment influenced the alignment of railroad corridors as well; for example, railroad corridors sometimes detoured from the most direct alignments between destination points in order to connect with established towns along the way. In other cases, railroad corridors by-passed towns, forcing residents to move to company-platted townsites on the railroad corridors.

**Boundaries.** The boundaries of a railroad corridor historic district will be the historic right of way of the railroad company that built and operated the corridor. If the current railroad right of way is different than the historic railroad right of way, the historic right of way will be the boundaries of the railroad corridor historic district. If, however, portions of the historic right of way that are not important to convey the associative linear characteristic of the district are no longer within the railroad right of way and have lost historic integrity, the boundaries of a railroad corridor historic district may be limited to the current right of way. For example, if a former railroad yard is no longer within a railroad right of way and has lost its ability to convey its association with the railroad corridor historic district, the district’s boundaries may be limited to the current railroad right of way.

**Variations.** A railroad corridor historic district will consist of elements that span the period of significance and that illustrate changes in industry standards for the elements of the district. The physical characteristics of railroad corridor historic districts will vary based on technological changes, the need to replace roadway elements due to wear and tear, and the desire by railroad companies to gain operating efficiencies. Ballast design and, therefore, railroad bed width was dependent on the materials used, the climate, the weight of rails, and the volume, weight, and speed of train traffic. As more powerful engines hauled heavier loads at faster speeds, or as freight volumes increased generally, railroad companies installed heavier-weight rail, more substantial ballast, and wider railroad beds, which at times necessitated more extensive cuts and fills.

During the twentieth century, railroad companies regularly upgraded the railroad roadway and tracks in their railroad corridors. In addition to the elements of railroad roadways, each railroad corridor historically required different numbers and types of supporting buildings and structures. The contributing elements of a railroad corridor historic district will consist of combinations of the following elements.

### Common Elements of Railroad Corridor Historic Districts

#### *Railroad Roadway*

A railroad roadway is an element in a railroad corridor historic district. The design and material composition of a railroad roadway will vary within a railroad corridor historic district depending on environmental conditions. Typically in North Dakota, a railroad roadway will include a single set of tracks (Figure 3). Historically, in single track corridors, passing sidings were located approximately every 5 miles to allow opposing trains to pass each other and to allow fast-freight or express trains to pass slower trains. Busier railroads historically may have been double-tracked, and in railroad stations and yards, multiple tracks provided access to the facilities (Figures 2 and 4).

A railroad roadway will consist of a combination of the following structural components: ground modification (cuts, fills, and grades), a railroad bed, ballast, tracks, and ditches (Figure 5). Historically, the minimal ground modification needed for a railroad roadway, typical in flat dry lands, was a smooth-graded ground surface with small amounts of fill and shallow cuts, as needed. In rougher terrain and in wetlands or seasonally inundated lands, extensive fills and cuts were necessary to maintain a gentle gradient. The slopes on the sides of cuts and fills (side slopes) were typically at a horizontal to vertical ratio of 1½:1, though flatter slopes of 2:1 or 3:1 were necessary in areas with sandy or clayey soils.

A railroad bed is always present within the railroad roadway, regardless of the amount of cut or fill necessary (Figure 6). A railroad bed consists of a layer of soils applied to the ground surface to provide a smooth regular plane for the tracks and to uniformly distribute loads from trains, tracks, and ballast. Single-track railroad beds ranged from 16 to 24 feet wide, and a 20-foot width was most common.

Active railroad corridor historic districts will always include ballast and railroad tracks, but abandoned railroad corridor historic districts may not. Ballast is the layer of material between the railroad bed and the tracks. Although current ballast materials uniformly consist of crushed stone, historically, ballast materials varied among railroad corridor historic districts and consisted of crushed stone, slag, gravel, sand, cinders, or burned clay. The purpose of ballast is to promote water drainage away from the wood ties and to distribute the loads imposed on the railroad bed by the railroad tracks and trains. To further distribute loads and to help prevent the ballast material from being pushed into the railroad bed, a sub-ballast layer of gravel, slag, or cinder may be placed between the railroad bed and the ballast.

The railroad tracks of a railroad corridor historic district are positioned on the ballast. Railroad tracks in railroad corridor historic districts in North Dakota always conform to standard gauge (4 feet, 8 ½ inches). Railroad tracks consist of steel rails on wood ties (Figures 7 and 8). Typical ties are pieces of timber that measure 6-by-8 inches to 7-by-9 inches in cross section and 8 to 9 feet in length; they are laid perpendicular to the rails and are bedded in the upper portion of the ballast. Rails conform to the inverted T profile (Figure 9). Rails are spiked to the ties, though they usually rest directly on square, steel tie plates to prevent them from cutting into the ties (Figure 10). Although the material composition of rails has evolved since the nineteenth century (from iron to steel and progressively heavier weight, from 35 to 45 pounds per yard to more than 130 pounds per yard), their basic appearance has changed little. Drainage ditches typically flank the railroad bed or the side slopes where fill is present (Figure 11). To further promote drainage, tile pipes often line the ditch bottoms, and culverts carry water through the railroad roadway (Figures 12 and 13). To reduce erosion, the slopes may be planted with grasses, and the shoulders rounded off. The outer shoulders of the ditch slopes are the edges of the railroad roadway.

Historically, the area between the railroad roadway and the edge of the right of way was overgrown with vegetation. This vegetation contrasted with the surrounding fields of row crops, pastures, or forests. Telegraph poles and lines, as well as fences, which were originally wood or stone and later barbed wire with wood posts, further delineated the edge of the right of way.

### *Railroad Grade Separation Structures*

Railroad grade separation structures carry railroad tracks of one railroad corridor over those of another railroad corridor, a vehicular roadway, a water course, or a topographic feature. These structures are elements in railroad corridor historic districts; or where a railroad corridor historic district is not present, railroad bridges, trestles, viaducts, and culverts will be a separate property type (see Property Type: Railroad Grade Separation Structures).

**Railroad bridges** during the nineteenth century mostly consisted of iron or steel truss spans. Fixed metal bridges were installed at most permanent river crossings, and utilized a variety of truss types, the most common of which are the Howe, Pratt, and Warren trusses (Figure 14). Movable bridges were built in locations where another form of transportation, such as a river, required an intermittent gap in a railroad corridor and include the vertical lift bridge, the swing bridge, and the cantilevered bascule bridge. Masonry arch railroad bridges used classic hyperbolic, segmental, and semi-circular arches of cut granite or sandstone ashlar masonry seated on massive stone piers. Concrete slab railroad bridges consist of three types: reinforced concrete, concrete I-beam, and concrete rail top (Figure 15).

**Railroad trestles and viaducts** are braced-framework structures designed to cross deep river valleys that lack navigable channels or to cross minor streams and gullies. Trestles have short (12 to 14 feet) spans (bents) fashioned from driven wood piles or cut framed timber (Figure 16). Viaducts use a skeletal frame of steel girders (Figure 17).

**Culverts** are small bridges designed to provide drainage for water or form a passageway through a fill material (usually earth). The simplest forms of culvert are boxes constructed of wood beams or stone or concrete slabs, and prefabricated concrete or metal pipes (Figure 18). Formal masonry arch culverts may resemble arch bridges with stone or concrete drainage floors.

### *Railroad Stations*

Railroad stations are encompassed within railroad corridor historic districts (Figure 19). A railroad station may contribute to a railroad corridor historic district if it retains historic integrity; or where a railroad corridor historic district is not present, railroad stations will be a separate property type (see Property Type: Railroad Station Historic Districts). A railroad station is the portion of railroad right of way operated for the purpose of a railroad stop and designated by name in railroad timetables. Railroad stations consist of buildings, structures, and objects used for loading and unloading passengers and freight and for operational needs. The most common buildings and structures within a railroad station include: railroad roadway; platforms; depots (passenger, freight, or combination); commercial buildings and structures within the right of way (elevators, warehouses, stockyards, lumberyards); and operations structures (water towers, coal chutes, light signals, interlocking towers).[4] Railroad stations were the commercial nodes of a railroad corridor historic district; whereas railroad yards provided the major maintenance, repair, sorting, and classification of railroad motive power and rolling stock. Although railroad stations and yards, at times, were located in geographic proximity, they operated as separate facilities.

Factoring out special circumstances, railroad stations typically were located every 5 to 10 miles along a railroad corridor historic district (and not more than 20 miles because steam locomotives required refills of water). Railroad corridor historic districts widen considerably at railroad stations in order to accommodate the additional tracks and support buildings and structures. As a railroad corridor historic district approaches a station, the number of approach tracks may increase, and within the railroad station, the sidings and spurs that provide access to railroad depots, loading and storage buildings and structures, and operations facilities further increases the number of tracks. The through tracks, which continue on a

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[4] The terms "depot" and "station" were often used interchangeably by railroad companies. In this document, depot refers to the main building used for loading passengers and perhaps freight (where separate freight houses are not present) within a railroad station. A station is made up of the entire area within the right of way that operated as a railroad stop, including the depot and other buildings and structures used for loading freight or minor maintenance of engines and rolling stock.

railroad corridor historic district beyond a railroad station, can run down the middle of a railroad station with loading and storage facilities located on both sides, or can run along the side of the railroad station with loading and storage facilities on one side. Sidings, also referred to as house tracks, are side tracks that connect to through tracks at both ends, whereas spurs are side tracks that connect to through tracks at one end.

A railroad depot is usually oriented on a long axis parallel to the railroad tracks. In this way, it sharply defines two separate functional areas: a passenger or freight arrival area, usually recognizable as a parking lot or freight drop-off platform; and a passenger boarding or freight loading platform immediately adjacent to the tracks. There are four main groupings of railroad depots, based on size, layout, services offered, and architectural detail: flag depots, combination depots, passenger depots, and union/terminal depots. Historically, depots provided a means for receiving, sorting, and loading any combination of passengers and freight. The majority of North Dakota's railroad depots were combination depots—small and capable of receiving both passengers and freight, with separate loading facilities for bulk freight, such as grain elevators. Large cities had union or terminal depots, which were designed exclusively for passenger traffic and were often one of the most architecturally sophisticated buildings in the community.

Any one of the following building or structure types could contribute to a railroad corridor historic district if it dates to the period of significance and retains historic integrity. They have been grouped within the railroad station element for ease of identification. Note the difference from railroad station historic district, which is a separate property type from railroad corridor historic district and in which certain buildings and structures must be present.

**Platforms** facilitated movement between railroad cars and railroad depots and warehouses. Low platforms are at grade, which would require a passenger to board a train by climbing the passenger car steps. High platforms are built up approximately 4 feet to facilitate loading of freight and boarding of passengers. Low platforms are concrete or brick, and high platforms are built up with wood framing or concrete (Figure 20).

**Flag depots** are open-air or enclosed, gable- or shed-roofed buildings with simple platforms located in areas where traffic was restricted to the occasional passenger, and where the train was flagged to stop rather than making scheduled stops. If passenger traffic at a flag depot increased, it could be upgraded to include a building with a railroad agent's office and a passenger waiting room.

**Passenger depots** vary in appearance. The smallest passenger depots are single-story frame or brick buildings with a waiting room, ticket office, and baggage room, which accommodated the occasional freight shipment. Small depots express nationally popular architectural styles through standardized plans developed by railroad architects and engineers. Large first-class passenger depots were designed individually in styles common for public buildings, such as Richardsonian Romanesque, Classical Revival, and Beaux Arts. These depots could be two-story buildings with waiting rooms, restrooms, smoking rooms, dining rooms, baggage rooms, offices for mail, telegraph, and wire services, news stands, supply rooms, lounges for conductors and trainmen, and administrative offices (Figures 21 and 22).

**Combination depots** have a single, central office space where an agent processed passenger tickets and freight bills, a passenger waiting area at one end of the building, and a freight room at the other end. Architecturally, combination depots were similar to passenger depots and may include a second story to provide housing for the station agent and his family, a watch-tower, and wings for baggage and freight (Figure 23).

**Commercial buildings and structures** located within railroad station districts include general freight warehouses, specialty warehouses such as for agricultural produce or beer, grain elevators and storage bins, stockyards, and lumberyards (Figures 24 and 25).

**Section Houses** provided living quarters for railroad employees working as section foremen or track hands. Located in low population areas approximately every 3 to 10 miles along railroad corridors, section houses are architecturally modest, wood-frame buildings with gabled or salt-box roofs.

**Water tanks** (also known as water stations) used to refill locomotive steam boilers are located within railroad stations. A water tank included connections to the water source through uptake pipes, a wood or metal water tank or tower, a delivery-spout or discharge pipe, and a small, usually wood frame, pump house (Figure 26).

**Coaling facilities** (coal stations) to receive, store, and deliver coal to steam locomotives are located within railroad station districts. Elevated coaling trestles included an inclined trestle approach to a platform, where the coal was dumped through chutes into a locomotive's coal tender below. Mechanical coaling stations (coaling elevators), constructed of reinforced concrete or steel, used a conveyor system to lift coal into loading chutes or into square bins with angular hopper delivery systems, or cylindrical bins with conical bottoms (Figure 27).

**Ice houses** provided ice for refrigerated cars and for use in passenger cars. Ice houses are of wood frame or occasionally brick construction, and historically were insulated with sawdust, wood shavings, or ashes, or occasionally with layers of tongue-in-groove sheathing and insulating paper (Figure 28).

**Interlocking towers** operated to protect trains from collisions with other trains and intersecting vehicles and were historically located as part of a block signaling system, at the head of switch and yard systems.

Towers are raised, hip- or gable-roofed, wood frame buildings with large windows or banks of windows to provide the operator with views of the railroad roadway and surroundings (Figure 29).

### Railroad Yards

Railroad yards are encompassed within railroad corridor historic districts (Figures 30 and 31). A railroad yard may contribute to a railroad corridor historic district if it retains historic integrity; or where a railroad corridor historic district is not present, railroad yards will be a separate property type (see Property Type: Railroad Yard Districts). A railroad yard is a system of tracks and support buildings and structures, associated with the switching and assembly of trains and the construction, maintenance, service, and repair of railroad rolling stock. Historically, the most common buildings and structures within railroad yards included: engine houses, shop buildings, turntables and transfer tables, yard offices, worker shelters, power houses, coaling stations, ash pits, water stations, ice houses, storage buildings, and safety structures (signals and interlocking towers).

Railroad yards were required only in special locations along a railroad corridor historic district, such as terminals, division points, and large railroad stations and junctions. Railroad corridor historic districts widen considerably within railroad yards. The yard tracks are located on one or both sides of the through tracks or between a set of double tracks. The body tracks of the yard are laid out in groups of parallel tracks that provide for the switching and storage of railroad cars. The parallel tracks are connected via diagonal ladder tracks. Railroad tracks within a railroad yard district temporarily store trains for switching and assembly, and provide access to railroad buildings and structures within a railroad yard.

Any one of the following building or structure types could contribute to a railroad corridor historic district if it dates to the period of significance and retains historic integrity. They have been grouped within the railroad yard element for ease of identification. Note the difference from railroad yard historic district, which is a separate property type from railroad corridor historic district and in which certain buildings and structures must be present.

**Engine houses** were designed to provide the regular mechanical service required to keep a railroad's motive power running. Square engine houses are located in smaller railroad yards and are wood frame buildings that provided side-by-side berths for locomotives undergoing service and repair. Roundhouses were constructed with multiple engine berths in a radial pattern and could have a segmental plan with the berths occupying a segment of a circle or a closed or full-circle plan, in which a through-passage provided access to a central turntable (Figures 31 and 32).

**Transfer tables and turntables** were used to maneuver locomotives into engine houses. Railroad transfer tables, used at square engine houses and shop buildings, consist of rectangular platforms with sets of tracks that moved locomotives perpendicular to the incoming spur tracks. Railroad turntables consist of circular platforms supported by steel truss or plate frameworks that could turn engines and freight cars or orient them properly for entry into roundhouses or repair shops (Figure 33).

**Maintenance shops** for locomotives and rolling stock were established at junctions and division points within a railroad corridor and could be combined with engine houses. Shops complexes historically included machine shops, oil houses, blacksmith shops, carpentry shops, wheel foundries, and mill rooms. Passenger and freight car shops are located where paint, cabinet, upholstery, planing, electrical, pattern, and special-purpose work would be done. Shop buildings are most often constructed of brick or brick veneer on wood frames, and have large bay doors and multi-light windows. Blacksmith shops included multiple chimneys to vent the forges (Figure 34).

**Railroad power houses** provided steam-generated electricity to the shops and engine houses, and distributed steam for heat. Power houses could consist of a small wood frame building located near the engine house or could be more substantial buildings with a single large room for the boilers (Figure 35).

**Water tanks** used to refill locomotive steam boilers are located within railroad yard districts. A water tank included connections to the water source through uptake pipes, a wood or metal water tank or tower, a delivery-spout or discharge pipe, and a small, usually wood frame, pump house (see Figure 26).

**Coaling facilities** to receive, store, and deliver coal to steam locomotives are located within railroad yard districts. Elevated coaling trestles included an inclined trestle approach to a platform, where the coal was dumped through chutes to stationary tenders below. Mechanical coaling stations (coaling elevators), constructed of reinforced concrete or steel, used a conveyor system to lift coal into loading chutes or into square bins with angular hopper delivery systems, or cylindrical bins with conical bottoms (see Figure 26).

**Ash pits** allowed locomotives to dump their ash and cinders. Ash pits ranged from 1 to 4 feet deep with side walls of stone, brick, or metal and sometimes had water pits for quenching hot coals (Figure 36).

**Railroad yard offices** housed employees responsible for orchestrating incoming and outgoing traffic; classifying passenger and freight cars and assembling the trains; and scheduling the servicing, repair, and pre-run preparation of locomotives. Railroad yard offices are typically architecturally plain office buildings of frame construction but could be substantial brick buildings.

**Worker shelters** in railroad yards included watchman shanties, flagman shanties, and signal maintainer houses. Worker shelters were simple, standard-plan, wood-frame buildings with hipped or gable roofs, board and batten or clapboard siding, and large windows.

**Interlocking towers** operated to protect trains from collisions with other trains and intersecting vehicles and were historically located as part of a block signaling system, at the head of switch and yard systems. Towers are raised, hip- or gable-roofed, wood frame buildings with large windows or banks of window to provide the operator with views of the railroad roadway and surroundings (see Figure 29).

## III. SIGNIFICANCE

Due to the important contributions of railroads to the development of North Dakota during the late nineteenth and early twentieth centuries, railroad corridor historic districts are associated with the National Register area of significance, *transportation*. The significance of railroad corridors within this area of significance is linked to the historic context, *Railroad Development in North Dakota, 1872-1956*.

During the nineteenth and early twentieth centuries, as North Dakota moved from a sparsely settled territory to a state integrated in the national economy, railroads provided important transportation connections that contributed to settlement, agriculture, commerce, industry, and community development. Between 1872 and the 1890s, railroad companies established a network of railroad corridors in the eastern half of North Dakota. The network connected resource procurement areas, smaller cities, urban centers, and the state's primary commercial centers, and the transcontinental railroad corridors crossing through the state connected to the urban centers of Minneapolis-St. Paul and Duluth in Minnesota. During the early twentieth century, the railroad network extended throughout the state. In North Dakota, railroads were the dominant form of transportation and for many people were the only practical means of long distance transportation. The economic influence of railroads peaked in North Dakota and nationally during the early decades of the twentieth century. By 1920, railroads directly employed two million people nationwide, carried the bulk of the mail, hauled 77 percent of all freight, and carried 98 percent of the traveling public (Stover 1970:93).

The economy of North Dakota during the nineteenth and early twentieth centuries was based on agricultural production. Towns were platted along railroad corridors as gathering points for commodities and as distribution centers for manufactured goods, and some of those towns grew into urban centers that became hubs for industry and commerce. Railroad corridors were at the heart of the commercial and industrial development of the state, transporting the commodities, manufactured goods, and people between the rural areas, small towns, and cities. Transportation via railroad corridors opened up the state to crop production and ranching. Railroad corridors brought in new residents and shipped out their produce and livestock. Furthermore, railroad corridors actively encouraged migration from the eastern United States and from abroad.

Within the context of agricultural development, railroad corridors hauled crops and animal products from farm to market with a speed and level of service that was unmatched during the nineteenth century. The massive volumes of wheat hauled on railroad corridors to mills in Minneapolis and elsewhere facilitated industrial crop production and encouraged agricultural development throughout most of North Dakota. Railroad corridors spurred the development of trade centers, as well as the state's main commercial centers. Railroad corridors modeled engineering efficiency through the designs for their own facilities and encouraged efficiency through grouped land uses, such as industrial zones and warehouse districts. In Fargo for example, an extensive commercial corridor developed along the Northern Pacific railroad corridor, including wholesale and retail operations. In other urban centers and smaller cities and towns, elevators and warehouses lined the railroad corridor, and central business districts either paralleled or radiated out from it. In most towns in North Dakota, the grain elevators within the railroad corridors were the dominant feature of the skyline.

# IV. REGISTRATION REQUIREMENTS

A railroad corridor historic district is a substantive concentration of railroad-related buildings and structures that were built and operated within a railroad right of way in North Dakota between the years 1872 and 1956. Some railroad tracks used to access coal mines that were built outside of railroad rights of way by mining companies or by railroad companies on easements are not considered or included within the MPDF *Railroads in North Dakota, 1872-1956*.[5] To be eligible for listing in the National Register within the MPDF *Railroads in North Dakota, 1872-1956*, a railroad corridor historic district must meet one of the following significance criteria, and it must retain historic integrity.

### Criterion A

To meet National Register Criterion A, a railroad corridor historic district will have significant and demonstrable association with the *transportation* area of significance. The significant association may be within any of the contexts described in Section E. Significant railroad corridors can be characterized by the important connections they made or by the types and volumes of traffic they carried. For a railroad corridor to be eligible for association with *transportation*, it must meet at least one of the following significance requirements.

1. A railroad corridor historic district opened to settlement a region of the state with no, or virtually no, regional roads or navigable rivers by providing the only long-distance transportation option, and construction of the railroad was followed by a significant increase in the rate of settlement. By definition, this first requirement (though not requirements two through four) would exclude the Red River Valley, as

[5] Hess et. al. (1992) developed registration requirements for mining railroads outside of railroad company rights of way as an element of the Surface Works property type of a historic coal mining operation.

well as areas along navigable portions of the Missouri River. Approximate geographic regions consist of the following (see Maps section):

- Drift Prairie—marked by the Pembina Escarpment (30 to 40 miles west of the Red River) and extending west to the Missouri Escarpment (the topography becomes more rugged; the boundary roughly parallels the Missouri River approximately 50 miles to the east);
- Missouri Plateau—between the Missouri Escarpment and the Missouri River;
- Missouri Slope—the portion of the Missouri Plateau west of the Missouri River, encompassing the southwest corner of the state.

For example, a railroad corridor that built into the Drift Prairie during the early 1880s, provided the first railroad service in the area and was followed by rapid settlement would be a significant corridor. Such a corridor also would have been the only long-distance transportation in the area until additional railroad corridors were built during the late 1880s or 1890s. If more than one railroad built into a region during the same time period, they both may be significant corridors, particularly if they built in different directions within the region, or if there was a significant distance between them (greater than about 50 miles or two day's travel). For example, two railroads building through the Drift Prairie during the early 1880s, one in an east-west direction and the other in a north-south direction, would meet the conditions of this requirement.

2. A railroad corridor historic district provided transportation between a significant class of resource or a significant manufacturing or commerce node and an important transfer point or terminal market for commodities, products, or services. Furthermore, the railroad corridor historic district either established a railroad connection that did not previously exist or served as the dominant transportation corridor, and establishment of the connection was followed by a significant expansion of an industrial, commercial, or agricultural practice. An example of this type of association is a railroad corridor that was an early branch line in the Red River Valley and made a significant contribution to the expansion of bonanza wheat farming in the valley.

3. A railroad corridor historic district was an influential component of the state's railroad network, or it made important early connections within the network or with other modes of transportation. An example of this association may include a transcontinental railroad corridor in North Dakota. Although transcontinental corridors (or those with transcontinental connections) are not automatically eligible under this requirement, all should be given consideration under this requirement due to their inter-regional nature. Another example of a significant railroad corridor historic district would be a railroad corridor connection built during the early 1880s between Fargo and Grand Forks or north from Grand Forks to connect with the Canadian Pacific (and on to Winnipeg).

4. A railroad corridor historic district provided a critical link or junction between two or more important railroad corridors, and the connection led to significant expansion of operations in the transportation network or in commerce, industry, or agricultural production. The corridor directly contributed to the development of the commercial, industrial, or agricultural operations, or it influenced transportation patterns in an area of particularly heavy railroad traffic.

## Criterion B

Railroad corridors will not be eligible for the National Register under Criterion B. Railroad corridors were built and operated by large corporations that represent the work of many people, rather than individuals. Although prominent individuals dominated some of the companies, such as James J. Hill of the Great Northern, they managed the construction while working out of the company's headquarters. Administrative offices would represent their corporate lives better than railroad corridor historic districts.

## Criterion C

Railroad corridors will not be eligible for the National Register under Criterion C. To be eligible for the National Register, a railroad corridor historic district would need to be a significant and distinguishable entity that embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work of a master. Due to the nature of railroads in North Dakota, this will not be the case.

By the time railroad construction began in North Dakota during the 1870s, the basic technology of railroad tracks had been established, and railroad engineers had a great deal of experience in designing railroad roadways. As railroad technology and engineering advanced during the late nineteenth century, new components were introduced elsewhere on older, more established railroad corridors. Furthermore, there are few areas in North Dakota where the steep topography presented engineering challenges, such as portions of the Missouri Slope. Even in those areas, topographical features to be surmounted were minor compared with mountainous regions elsewhere. Furthermore, except for short branch lines, railroad corridors were not designed or built in singular episodes; rather they were built over periods of years or even decades. In all railroad corridors, the buildings and structures generally followed standard designs that were modified to meet local site conditions, except where those conditions required an original design for specific individual structures, such as a bridge at a major river crossing. Finally, segments of railroad corridors were modified and individual components were upgraded and replaced periodically due to wear and tear or to meet evolving operational needs.

### Criterion D

It is unlikely that a railroad corridor historic district would meet Criterion D. To do so, further analysis of the corridor must be likely to yield important information about significant aspects of the evolution or development of railroad corridor design, operations, or the inter-relationships between railroads and the industrial and commercial operations they served. The extant built environment of the railroad corridor historic district must be the principal source of the important information—archaeological resources are not considered or included in the *Railroads in North Dakota, 1872-1956* MPDF. It would be an extremely unusual set of circumstances by which railroad buildings and structures are extant in sufficient number and diversity within a railroad corridor to yield important new information. Even the railroad roadway itself, the single essential element of a railroad corridor historic district, is unlikely to provide important new information based on its extant physical features, due to the alteration or dismantling of railroad roadways in the course of railroad operations or abandonment.

Because so many railroad buildings have been demolished over the years, too few historic-period buildings and structures within railroad corridors are extant to make an analysis of the spatial, organizational, or construction patterns of only the extant built environment a likely source of new information regarding railroad properties. This is particularly so because railroad corridors generally were well documented by the railroad companies. Future studies, however, in which archaeological analysis is combined with analysis of the extant built environment, could provide important new information significant under Criterion D.

### Criteria Considerations

The National Register Criteria Considerations will not apply to railroad corridor historic districts.

### Periods of Significance

The period of significance of a railroad corridor historic district will begin with its date of construction or establishment of significant operations and will be no earlier than 1872. Railroad corridors may have relatively long periods of significance, depending on the area of significance and contexts with which they are associated, but the period will end no later than 1956. When a railroad corridor is associated with broad historic patterns, its period of significance will be the time when the corridor provided the significant transportation connection to a region or to specific commercial, industrial, or tourist operations. If a railroad corridor is significant for its association with the opening of a region of the state to settlement, its period of significance will end when another railroad line provided additional service into the area. If the corridor is significant for its association with the opening of a resource procurement area or for connecting significant commercial or industrial operations: the end date of the period of significance will coincide with the end of the significance of the resource or commercial/industrial operation; or it will end when another railroad corridor provided similar service.

An important consideration for the period of significance of a railroad corridor is to distinguish between the time when the corridor played a significant transportation role and the time when it simply provided a useful service. Continued use of a railroad corridor historic district does not necessarily justify continuing the period of significance.

A railroad corridor historic district will have a single period of significance even if there are multiple construction episodes; the period of significance should encompass all significant construction episodes. This approach reflects that railroad corridors often were built and rebuilt over a time span that will be within the railroad corridor's historically significant period of time. If, for example, a smaller segment of a railroad corridor was constructed at an early date, achieved significance, and then became part of a larger corridor later, the period of significance for the entire corridor begins at the earliest date of construction and continues to the end of the significant associations. If an early segment of a railroad corridor was not significant by itself but gained significance as part of the larger corridor, the period of significance would begin with establishment of the larger corridor.

### Integrity Requirements

To be eligible for the National Register, a railroad corridor historic district must not only meet the National Register significance criteria, but it must also retain historic integrity. The seven aspects of integrity must be applied to the railroad corridor historic district to assess its historic integrity (see discussion of each aspect below). At minimum, a railroad corridor historic district must retain integrity of location, design and materials. Railroad corridor historic districts may include many contributing elements but must include, at minimum, a railroad roadway that retains historic integrity. The number and arrangement of contributing elements will vary between railroad corridor historic districts. The integrity of location, design, and materials of railroad buildings and structures within a railroad corridor historic district will determine whether they contribute to the district. Setting that still reflects the historic appearance of a railroad corridor historic district can mitigate for the loss of railroad tracks and railroad support buildings and structures within the right of way, provided the railroad bed and other elements of the roadway are intact. The loss of setting, however, in combination with the loss of railroad tracks and railroad support buildings and structures within the right of way, further diminishes a railroad corridor historic district's overall historic integrity and may lead to a loss of integrity. If a railroad corridor historic district retains the other aspects of integrity, it will also retain integrity of feeling and association. Integrity of workmanship in contributing elements, such as bridges and depots, will contribute to a railroad corridor historic district's overall historic integrity.

Historically, it has been typical for railroad corridors to evolve over time—they were extended into new geographic areas, they were rebuilt, and specific elements were replaced or upgraded—and such modifications reflect the historic operating patterns of railroads. Therefore, the historic integrity of a railroad corridor historic district should be judged based on its conditions at the end of the period of significance.

The seven aspects of historic integrity are discussed below in order of importance to the overall integrity of a railroad corridor historic district. In assessing the integrity of a railroad corridor historic district, the cumulative effect of changes to the corridor since the period of significance must be compared with the cumulative presence of the elements of the corridor that retain integrity.

**Location.** Location is the place where the elements of a railroad corridor historic district were constructed and operated, and it is the most important aspect of integrity for a railroad corridor historic district. The horizontal alignment (both the general route and the degree of curves) and the vertical alignment (particularly the degree of gradient within specific segments) affected the markets served, distance traveled, motive power required, and speeds attainable. To retain integrity of location, a railroad corridor historic district must conform to the horizontal and vertical alignment present at the end of the period of significance. Changes in alignment and grade or other modifications during the period of significance will not compromise the integrity of the railroad roadway. Such alterations themselves reflect historic trends or changes in operation, such as the introduction of high-speed limited passenger service or the need to accommodate longer and heavier trains running at higher speeds.

**Design.** Design is the combination of planned, developed, and constructed elements within a railroad corridor historic district that created its form, plan, and structure. Historically, much of the effort related to the design of railroad corridors was focused on the alignment of the railroad roadway. Beyond the alignment, entire railroad corridors were rarely designed and built in a single episode, and segments of corridors were reconstructed as financial conditions allowed and as needed based on wear and tear and operating requirements. In North Dakota, segments of railroad corridors and elements within them followed standardized designs and well-established technologies (see engineering context in Section E), though elements of railroad corridors often required location-specific design modifications. Although the design of a railroad corridor historic district evolved over time, this aspect of integrity is important to convey a railroad corridor historic district's function as a railroad. To retain integrity of design, a railroad corridor historic district must retain integrity of location. In addition, the elements of the railroad roadway—railroad bed, fills or cuts, and ditches—should retain sufficient visual presence to convey their historic functions. Physical changes to the railroad roadway undertaken after the close of the period of significance will affect its integrity of design.

Buildings and structures within a railroad corridor historic district other than the railroad roadway help to convey the overall design and operation of a railroad corridor historic district. When those buildings and structures retain integrity of location and materials, they increase a railroad corridor historic district's overall integrity of design. Railroad support buildings and structures need not be present in a railroad corridor historic district if the railroad roadway retains a high degree of integrity of design, materials, and setting. Railroad stations or railroad yards, however, must retain some buildings and structures other than the roadway in order to be contributing elements to a railroad corridor historic district. In addition to the railroad roadway, a railroad station must retain at least a depot and a commercial loading structure or warehouse, unless the station operated as a flag stop and there were no separate freight facilities. A railroad yard must retain at minimum, in addition to the railroad roadway, an engine house and maintenance or repair shop building.

**Materials.** A railroad corridor historic district must retain some of the physical materials from its period of significance. Due to the large number of elements combined to create a railroad corridor historic district, not all of them need to be present for the railroad corridor historic district to retain at least partial integrity of materials. The modified ground of the railroad roadway, represented by cuts, fills, and grades, must retain its historic materials and they must be visible. Replacement of the ballast, ties, and rails within a railroad corridor historic district represents a loss of historic materials. However, the almost identical appearance of modern tracks to their historic counterparts—steel T-rails, supported by wood cross ties, resting on a bed of stone ballast—means that the replacement of tracks within a historic railroad roadway will not result in a complete loss of the railroad roadway's integrity of materials or the other aspects of integrity for the district as a whole. When the tracks have been removed altogether as part of abandonment, a railroad corridor historic district loses part (though not all) of its historic characteristics, and its ability to convey its historic significance is diminished. In a railroad corridor historic district, the loss of tracks from a railroad roadway increases the relative importance of other elements of the roadway and of other support buildings and structures in the district. For example, the district may retain overall integrity of materials if it includes an intact railroad bed clearly defined by substantial cuts and fills, as well as associated buildings and structures, such as bridges and grain elevators. The loss of the railroad tracks, in itself, would not entirely compromise the integrity of a railroad roadway as a contributing element of the district.

**Setting.** The setting of a railroad corridor historic district includes properties adjacent to the right of way and may include the broad landscapes through which railroads passed, such as agricultural fields and urban areas. Adjacent properties help to convey the transportation function of a railroad corridor historic district. In addition, due to their locations lining railroad corridor historic districts, adjacent properties help to convey the linear aspect of a corridor and to provide the corridor with a visual frame. The setting of a railroad corridor is an important aspect of its historic integrity, both because it helps to define the corridor and because individual elements within the corridor are often lost due to replacement, abandonment, or demolition. To retain integrity of setting, the general land uses adjacent to a corridor must be similar to the historic land uses. Surrounding buildings and structures will retain sufficient historic appearance to convey their functions during the period of significance. Similarly, landscape features will be able to convey the historic functions of surrounding lands, such as agricultural fields. Many railroad corridors around urban centers have lost their integrity of setting due to suburban development, though they may retain the other aspects of integrity. Properties comprising the setting of a railroad corridor historic district need not be present if the railroad corridor historic district retains a high degree of integrity of location, design, and materials, and the corridor's right of way is sufficiently wide to maintain the feeling and association of the railroad corridor historic district despite alterations to adjacent properties.

**Feeling.** Feeling is conveyed by a railroad corridor historic district's ability to illustrate its historic function and feel from its period of significance. It is the cumulative presence of a railroad corridor historic district's character defining features, such as a linear railroad roadway, railroad yards, depots, and compatible setting, that conveys the feeling of traveling on a railroad corridor during the late nineteenth or early twentieth centuries. The extent to which a railroad corridor historic district retains its integrity of feeling is derived from the extent to which it retains its other aspects of integrity.

**Association.** Association is the direct link between a railroad corridor historic district and the significant transportation it provided. A railroad corridor historic district retains its integrity of association if it retains integrity of location, materials, and design.

**Workmanship.** For many elements of a railroad corridor historic district, workmanship will not be a factor in evaluating integrity, due to the utilitarian nature of the resource and standardized design of its components. Some specific elements within a corridor, however, may exhibit high degrees of workmanship, such as the stonework on a bridge abutment or the finishes on a depot. In such cases, evidence of the craftsmanship used to work the materials should be evident.

### Contributing vs. Non-Contributing Segments

The length of a railroad corridor historic district can be subdivided into segments, or linear portions, of the whole; the district will consist of contributing segments, and it may include non-contributing segments. A non-contributing segment of a railroad corridor historic district is a portion of the railroad corridor historic district that lacks historic integrity. For example, if the railroad roadway has been altered and the setting is poor, the segment is a non-contributing segment of the larger railroad corridor historic district. Provided that the non-contributing segment of a railroad corridor historic district retains some visible expression on the landscape of the former railroad roadway, the segment is within the district boundaries, and the district as a whole may retain integrity (see District Boundaries discussion below).

A railroad corridor historic district retains historic integrity when enough of its contributing segments are sufficiently intact to convey that the linear corridor is, in fact, a railroad corridor that connected regions of the state or opened them up to settlement. Although contributing segments should constitute a majority of the linear mileage of a district, it is not practical to define a minimum required percentage of contributing segments necessary for a railroad corridor historic district to retain integrity because this integrity threshold will vary to some extent between districts. For example, a particular group of corridor segments that retain their integrity may be critical to conveying the historic character of a railroad corridor, even though the segments together do not comprise a majority of the corridor's historic linear mileage. Similarly, a railroad corridor historic district significant for the connections it once made does not retain historic integrity if the segment providing connection to its significant terminal, transfer, or resource procurement area lacks historic integrity and if the portion lacking historic integrity is of sufficient length that the corridor no longer approaches the area of significant connection. This area will vary between railroad corridor historic districts. If the significant connection was a resource procurement area, contributing segments of the railroad corridor historic district must extend at least into the region where the resources were gathered. If the significant connection was a terminal or transfer, contributing segments of the railroad corridor historic district must extend at least to the metropolitan area or urban center where the connection was made, though not to the specific connection point.

### District Boundaries

The starting point for delineating boundaries for a railroad corridor historic district is the historic right of way and terminal destinations. Railroad corridor historic district boundaries, however, may also be delineated based on historic integrity. Because the critical associative characteristic of a railroad corridor historic district is the linear quality, at least some visual continuity along the entire corridor is necessary to provide cohesiveness to the contributing elements of the district and maintain the overall linear quality of the district. A railroad corridor historic district cannot include a segment where the associative linear quality is not present. For a segment of a railroad corridor to be considered within the boundaries of a railroad corridor historic district, there must be some remaining visible expression on the landscape of the railroad. For example, when a portion of a larger corridor has been abandoned, all elements of the corridor have been removed, and the railroad bed has been plowed over, the historic district boundaries end where that removed segment begins. These physical conditions are to be distinguished from corridor segments that have lost historic integrity but retain some visual presence; such segments are non-contributing segments within a railroad corridor historic district, as discussed above.

If a railroad corridor segment has completely lost its integrity, such that there is no visible expression on the landscape, corridor segments on either side of that segment have also lost their ability to convey the operation of the whole corridor as a single transportation corridor. A railroad corridor historic district cannot jump over this type of missing gap to connect segments retaining integrity any more than a train traveling along a corridor could jump such a gap. When a segment of a larger railroad corridor retains integrity, that segment will be a railroad corridor historic district eligible for the National Register if, by itself and exclusive of other segments, it meets the significance criteria. For example, when a railroad corridor historic district retains historic integrity between a resource procurement area and an intermediary transfer or commercial market, but has been completely removed between the intermediary and terminal markets, it will be eligible if the intact connection to the intermediary market is historically significant. Also, when a railroad corridor historic district retains historic integrity up to its destination city, but not the exact terminal or transfer point, such as the railroad station or junction, the district retains integrity as a whole because it still conveys the important association of connecting two cities or a resource procurement area with a city.

# I. NAME OF PROPERTY TYPE: RAILROAD STATION HISTORIC DISTRICTS

## II. DESCRIPTION

The property type "railroad station historic district" is a grouping of railroad-related buildings and structures that provided the services and facilities required for the efficient railroad transport of passengers and freight (see Figure 19). A railroad station historic district functioned as a gateway for passenger traffic and as a transfer and storage point for common carrier freight. It also included limited repair and maintenance facilities common to railroad yards. Railroad station historic districts consist of buildings, structures, and objects used for loading and unloading passengers and freight and for operational needs. The buildings and structures include railroad roadway and platforms; depots; commercial buildings and structures within the right of way (elevators, warehouses, stockyards, and lumberyards); and operational support structures (watering and coaling facilities, signals, and interlocking towers).

A railroad station historic district will include, at minimum, a railroad depot, and it will include at least some of the following buildings and structures (for brief descriptions, see Railroad Corridor Historic District above; also see Figures 20-29).

- Freight and Passenger Platforms (may be integrated with the depot)
- Associated Railroad Roadway
- Engine House
- Maintenance or Repair Shops
- Turntable or Transfer Table
- Coaling Station
- Ash Pit
- Watering Station
- Ice House
- Switching and Signaling Structures
- Freight Houses
- Storage Warehouses
- Commercial Loading Facilities (such as grain elevators, stockyards, and lumberyards)
- Sheds
- General Repair and/or Maintenance Buildings
- Power House (although many urban stations used municipal electric services)

A railroad station historic district will not include the following property types that are only found in railroad yard historic districts:

- Classification Track Systems
- Yard Offices
- Worker Shelters
- Car Construction Shops

Railroad rights-of-way widen considerably within railroad station historic districts in order to accommodate additional tracks and support buildings and structures. As a railroad line approaches a station, the number of railroad tracks (termed approach tracks) increases, and within the railroad station historic district boundaries, there are additional sidings and spurs providing access to the depot and to loading and storage facilities. The through tracks, which continue on a railroad station historic district beyond a combination railroad station, run down the middle of a railroad station district with loading and storage facilities located on both sides, or along the side of the railroad station historic district with loading and storage facilities on one side. Platform structures facilitated movement between railroad cars and railroad depots and warehouses. Low platforms were built at grade, and they required a passenger to board by climbing the passenger car steps. High platforms were built up approximately 4 feet with wood framing or concrete to facilitate loading of freight and boarding of passengers, particularly when luggage was brought aboard.

A railroad depot was usually oriented on a long axis parallel to the railroad tracks. In this way, it sharply defined two separate functional areas: a passenger or freight arrival area, usually recognizable as a parking lot or freight drop-off platform; and a passenger boarding or freight loading platform immediately adjacent to the tracks. Depots provided a means for receiving, sorting, and loading any combination of passengers and freight. The majority of North Dakota's railroad depots were combination depots—small and capable of receiving both passengers and freight, with separate loading facilities for bulk commercial freight. Because wheat was the primary crop in North Dakota during the historic period, railroad stations (or land adjacent to them) will almost always include at least one grain elevator. In addition, stockyards were common, particularly in the western portion of the state. Larger cities had separate passenger depots, which were designed primarily for passenger traffic but also functioned as centers for shipping non-industrial freight, and freight houses.

**Geographic Influences.** In North Dakota, where areas remained lightly populated prior to the coming of railroads, railroad corridors facilitated settlement, and the locations of railroad stations were often determined by railroad surveyors and engineers. Variables such as the projected market service area of a railroad and operations needs, such as watering and coaling facilities, were factors in the locations of railroad stations. The earliest railroad corridors within a region of the state, such as the Northern Pacific and the Manitoba main lines, often pre-dated any Euro-American settlement, and as such, established only as many railroad stations as were needed for their operations. Railroad companies or affiliated land companies also often platted the townsites at the railroad station locations. As settlement increased in the vicinity of their railroad corridors and competing railroad corridors were built, companies established additional railroad stations to add to or maintain their markets. When the railroad network matured, railroad stations and townsites generally were located every 5 to 10 miles along railroad corridors. Less often in North Dakota, railroad corridors connected with existing townsites.

**Boundaries.** The boundaries of a railroad station historic district will be the historic right of way and station property boundaries of the railroad company that built and operated the station. If the current right of way and station property boundary is different than that of the period of significance, the historic right of way will comprise the boundary of the railroad station historic district. If, however, portions of the historic right of way and station property boundary that are not important to convey the essential characteristics of the district are no longer within the railroad right of way and no longer possess integrity, the boundaries of a railroad station historic district may be limited to the current right of way and station property boundaries.

**Variations.** A railroad station historic district will consist of elements that span the period of significance and that illustrate the historic significance of the railroad shipping node. The physical characteristics of a railroad station historic district will vary based on the local geographical environment, the historic volumes of shipping or passenger traffic associated with the station, the technological engineering design associated with the period of significance, and the architectural principles employed in the depot's design and construction. In addition, railroad station historic districts may include different numbers and types of supporting buildings and structures, depending on the types of services and shipping volumes associated with the station.

## III. SIGNIFICANCE

Railroad station historic districts are significant in the area of *transportation* as major nodes of passenger transportation and freight shipping on North Dakota's railroad network. A railroad station historic district's significance begins at the period when significant repair and maintenance buildings and structures for rolling stock were established or when significant freight loading and storage facilities or passenger operations were established. The gradual addition of such buildings and structures elevated simple passenger-freight depots into diversified transportation and service centers that were important engines for local economic growth, strategic storage and distribution centers for regional shipping, and way-stations for the critical servicing and repair of a railroad company's engines and freight cars. The end of a railroad station historic district's period of significance will coincide with the termination of either passenger or freight shipping services, or with the closing of rolling stock service facilities.

# IV. REGISTRATION REQUIREMENTS

A railroad station historic district is a substantive concentration of railroad-related buildings and structures within a current or former railroad right of way that were built and operated in North Dakota between the years 1872 and 1956. To be eligible for listing in the National Register within the MPDF *Railroads in North Dakota, 1872-1956*, a railroad station historic district must meet one of the following significance criteria and must retain historic integrity.

## Criterion A

To meet National Register Criterion A, a railroad station historic district must meet at least one of the following requirements.

1. The railroad station historic district was a significant contributor to the economic growth of surrounding commercial or industrial operations.

2. The railroad station historic district served as a significant regional distribution center for commercial or industrial products (defined within the context of overall regional commercial traffic).

3. The railroad station historic district served as a significant regional transportation center for passengers (defined within the context of overall regional passenger traffic).

## Criterion B

Railroad Stations will not be eligible for the National Register under Criterion B. Railroad stations were built and operated by large corporations that represent the work of many people, rather than individuals. Although prominent individuals dominated some of the companies, such as James J. Hill of the Great Northern, they managed the construction while working out of the company's headquarters. Administrative offices would represent their corporate lives better than railroad corridor historic districts.

## Criterion C

Railroad station historic districts comprise a complex of railroad-related service and maintenance buildings and structures that are associated with either a large combination or passenger depot. These complexes were the result of the piecemeal addition of buildings and structures associated with the gradual increase of local passenger and freight traffic at a railroad depot, and not the result of a single design/construction event. As a result, railroad station historic districts will not meet Criterion C.

### Criterion D

It is unlikely that a railroad station historic district would meet Criterion D. To do so, further analysis of the station area must be likely to yield important information about significant aspects of the evolution or development of railroad design, operations, or the inter-relationships between railroads and the industrial and commercial operations they served. The extant built environment of the railroad station historic district must be the principal source of the important information—archaeological resources are not considered or included in the MPDF *Railroads in North Dakota, 1872-1956*. It would be an extremely unusual set of circumstances by which historic-period railroad buildings and structures are extant in sufficient number and diversity within a railroad station to yield important new information. Even the buildings that remain within a railroad station, such as a depot or warehouse, are unlikely to provide important new information because railroad buildings in North Dakota typically followed standardized designs to meet standardized functions.

Because so many railroad buildings have been demolished over the years, too few historic-period buildings and structures within railroad stations are extant to make an analysis of the spatial, organizational, or construction patterns of only the extant built environment a likely source of new information regarding railroad properties. This is particularly so because railroad stations generally were well documented by the railroad companies. Future studies, however, in which archaeological analysis is combined with analysis of the extant built environment, could provide important new information significant under Criterion D.

### Criteria Considerations

The National Register Criteria Considerations will not apply to railroad station historic districts.

### Integrity Requirements

To be eligible for listing in the National Register within the MPDF *Railroads in North Dakota, 1872-1956*, a railroad station historic district must meet one of the National Register significance criteria and must retain historic integrity. Because railroad station historic districts evolved organically, they will consist of contributing elements (see Description above) and may include non-contributing elements. In addition to retaining integrity of *location*, a sufficient number of a district's contributing elements must retain integrity of *design* and *materials* to convey the district's historic character. At minimum, a railroad station historic district will include a depot and additional operations or commercial buildings and structures. The railroad roadway need not be present, but some visible expression of the railroad corridor must remain to convey a connection with a linear transportation corridor. Non-contributing elements within the district must not visually overwhelm the contributing properties to the degree that the district cannot convey its historic character. For example, non-contributing elements must not be a majority of buildings and structures within the historic district, and their height, massing, and materials must be compatible with the contributing elements of the district.

**Location.** A railroad station historic district must remain at the location of its historic operations, and enough of its contributing elements must remain at their historic locations within the railroad station to sufficiently convey the historical appearance and functional character of the district. Movement of buildings and structures within the railroad station during the period of significance will not compromise the integrity of location. Such alterations themselves reflect historic trends or changes in operation.

**Design.** Because railroad station historic districts consist of a group of buildings and structures that were not designed as a single entity, the overall integrity of design for the layout of a railroad station historic district is not critical. However, a sufficient number of contributing buildings and structures within the district must retain enough integrity of design to effectively convey the district's historical appearance.

**Materials.** The group of contributing buildings and structures within a railroad station historic district must retain sufficient overall integrity of materials to convey the character and appearance of the district during its period of significance.

**Setting.** A railroad station historic district need not retain integrity of setting if it has a high degree of integrity of location, design, and materials, and alterations to or new construction on adjacent properties do not interfere with the district's ability to convey its period of significance.

**Feeling.** Feeling is the cumulative sum of a railroad station historic district's character defining features. If a railroad station historic district retains integrity of location, design, and materials, it will retain integrity of feeling.

**Association.** Association is the direct link between a railroad station historic district and the significant services it provided or the significant engineering embodied in its design. A railroad station historic district retains its integrity of association if it retains integrity of location, materials, and design.

**Workmanship.** Integrity of workmanship will not be a factor in evaluating the integrity of railroad station historic districts, due to the utilitarian nature of the resource and standardized design of its components. Some specific elements within a railroad station historic district, however, may exhibit high degrees of workmanship, such as the finishes on a depot. In such cases, evidence of the craftsmanship used to work the materials should be evident.

# I. NAME OF PROPERTY TYPE: RAILROAD YARD HISTORIC DISTRICTS

# II. DESCRIPTION

A "railroad yard historic district" includes a system of tracks associated with: the sorting, classification, switching, disassembly, and assembly of trains; specialized support buildings and structures; and specific facilities associated with the construction, maintenance, service, repair, refueling, and storage of railroad rolling stock (see Figures 30 and 31). This property type includes railroad yard facilities primarily designed for rolling stock maintenance, as well as those designed primarily for freight car classification. Although rolling stock maintenance facilities were commonly referred to as "shop complexes," they also included track systems for the sorting, switching, disassembly, and assembly of trains. Buildings and structures within this type of district include engine houses, shop buildings, turntables and transfer tables, yard offices, worker shelters, power houses, coaling stations, ash pits, water stations, ice houses, storage buildings, and signaling structures.

A railroad right of way widens considerably as it enters a railroad yard historic district, providing space for various support buildings and structures and the multiple branches of interconnected track used for the sorting of rolling stock. The total size of a railroad yard reflects its capacity for the organization of rolling stock and the disassembly and assembly of trains. Trains arriving at a railroad yard on the through tracks were typically switched onto the arrival/departure tracks and then routed to the long yard lead track. Once positioned on the lead track, a train could be disassembled and its component cars distributed by switch engines onto parallel groups of tracks known as yard body tracks. Here, the switch engines routed cars to the proper locations on the yard body tracks and facilitated the gradual building of new trains by either physically pushing cars together or setting cars in motion down a switchable series of inclined tracks (known as a hump yard). Depending on the destination of a given freight car, yard personnel operated the series of switches required to shunt a car through the complex series of parallel yard body tracks and diagonal ladder tracks. Once an engine had properly distributed its freight cars, it navigated the network of track spurs that provided access to the yard's ash pit and refueling stations, and to the yard's repair and maintenance shops.

The largest railroad yard historic districts, located in major urban centers and railroad division points, also included the shops necessary for the construction of new locomotive engines and new passenger and freight cars or major repairs to locomotives and cars.

A railroad yard historic district must be associated with a historically significant railroad corridor. If the significant railroad corridor retains historic integrity, the railroad yard may contribute to the railroad corridor historic district. If the railroad corridor lacks integrity, the railroad yard itself may be eligible. A railroad yard historic district must include 1) a system of tracks and support buildings associated with the classification, switching, disassembly, and assembly of trains and specialized support buildings and structures; or 2) specific facilities associated with the construction, maintenance, service, repair, refueling, and storage of railroad rolling stock. Railroad yard historic districts will include the following contributing elements (for brief descriptions, see Railroad Corridor Historic Districts above; also see Figures 26-29 and 32-36).

- Engine Houses (square or round, with or without transfer or turntable structures)
- Yard Offices, Worker Shelters, or Maintenance or Repair Shop Buildings

A railroad yard historic district may also include the following elements.

- Car Construction Shop Buildings
- Freight Houses
- Express Buildings
- Storage Warehouses
- Specialized Maintenance and/or Repair Shops
- Power Houses (although many urban railroad yards used municipal electric services)
- Coaling Stations
- Ash Pits
- Watering Stations
- Ice Houses
- Switching and Signaling Structures

A railroad yard historic district will not include the following property type: Passenger Depots (any variety, excluding small buildings for the boarding of railroad employees).

**Geographic Influences.** Because railroad yards were used for the labor-intensive sorting and classification of freight cars, they required large acreage and level topography to function correctly. Railroad yards were often located on the fringes of rural or urban communities because of their industrial character, although many yards built in the late nineteenth and early twentieth century are now surrounded by mixed commercial and residential development. Topographical considerations aside, the locations of railroad yards were usually determined by railroad company’s shipping traffic and sorting/classification needs within the railroad network, and the yard sites laid out by surveyors and engineers. As a result, railroad yards may be present in established rural or urban communities or located in more remote rural settings.

**Boundaries.** The boundaries of a railroad yard historic district will be the historic right of way of the railroad company that built and operated the yard. If the current right of way and yard property boundary is different than that of the period of significance, the historic right of way will comprise the boundary of the railroad yard historic district. If, however, portions of the historic right of way and yard property boundary that are not important to convey the essential characteristics of the district are no longer within the railroad right of way and no longer possess integrity, the boundaries of a railroad yard historic district may be limited to the current right of way and yard property boundaries.

**Variations.** Railroads yards were among the most variable of railroad facilities, including nearly any combination of railroad car classification systems, repair, and maintenance shops. The most common variation in yard function often reflected the yard's focus on the repair and maintenance of rolling stock versus railroad car classification and train building. Although repair and maintenance yards were often referred to as railroad shops, they typically possessed enough sorting and classification tracks to be considered a railroad yard variant.

## III. SIGNIFICANCE

Railroad yard historic districts are significant in the area of transportation for their important functions related to the historical operation of North Dakota's railroad network, including 1) the classification, disassembly, and assembly of trains, and 2) the construction, repair, maintenance, and refueling of rolling stock. Although stylish depot façades are most closely identified with North Dakota's historic railroads, the utilitarian service facilities and complex web of tracks associated with railroad yards were critical to the efficient operation of the state's railroad network.

If all the required elements necessary to comprise a railroad yard historic district were initially present at a site, the district's historic significance will begin on the yard's initial operation date. If a railroad yard was initially established exclusively as a classification yard but was later upgraded to include rolling stock construction and maintenance facilities, its significance as a railroad yard historic district would begin on the date when the required additional elements listed above became active.

The end of a railroad yard historic district's period of significance will coincide with the termination of freight car classification services, or with the closing of the rolling stock service facilities specified above.

# IV. REGISTRATION REQUIREMENTS

To be eligible for listing in the National Register within the MPDF *North Dakota Railroads, 1872-1956*, a railroad yard historic district must meet one of the following significance criteria and must retain historic integrity.

## Criterion A

To meet National Register Criterion A, a railroad yard historic district must meet at least one of the following requirements.

1. The railroad yard historic district provided freight car classification services on a historically significant railroad corridor (see Railroad Corridor Historic Districts).

2. The railroad yard historic district provided facilities for the construction, maintenance, service, repair, refueling, and storage of railroad motive power or rolling stock on a historically significant railroad corridor (see Railroad Corridor Historic Districts).

## Criterion B

Railroad yards will not be eligible for the National Register under Criterion B. Railroad yards were built and operated by large corporations that represent the work of many people, rather than individuals. Although prominent individuals dominated some of the companies, such as James J. Hill of the Great Northern, they managed the construction while working out of the company's headquarters. Administrative offices would represent their corporate lives better than railroad corridor historic districts.

## Criterion C

Railroad yards will not be eligible for the National Register under Criterion C. To be eligible for the National Register, a railroad yard historic district would need to be a significant and distinguishable entity that embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work of a master. Due to the nature of railroads in North Dakota, this will not be the case.

By the time railroad construction began in North Dakota during the 1870s, the basic technology of railroad tracks had been established, and railroad engineers had a great deal of experience in designing railroad yards. As railroad technology and engineering advanced during the late nineteenth century, new components were introduced elsewhere on older, more established railroad corridors and in areas with higher traffic densities. Furthermore, railroad yards generally were not designed or built in singular episodes; rather they were initially established and expanded or contracted as operating conditions required. In all railroad yards, the buildings and structures generally followed standard designs that were modified to meet local site conditions, except where those conditions required an original design for specific individual structures.

### Criterion D

It is unlikely that a railroad yard historic district would meet Criterion D. To do so, further analysis of the yard area must be likely to yield important information about significant aspects of the evolution or development of railroad design, operations, or the inter-relationships between railroads and the industrial and commercial operations they served. The extant built environment of the railroad yard historic district must be the principal source of the important information—archaeological resources are not considered or included in the MPDF *Railroads in North Dakota, 1872-1956*. It would be an extremely unusual set of circumstances by which historic-period railroad buildings and structures are extant in sufficient number and diversity within a railroad yard to yield important new information. Even the buildings that remain within a railroad yard, such as a shop building or yard office, are unlikely to provide important new information because railroad buildings in North Dakota typically followed standardized designs to meet standardized functions.

Because so many railroad buildings have been demolished over the years, too few historic-period buildings and structures within railroad yards are extant to make an analysis of the spatial, organizational, or construction patterns of only the extant built environment a likely source of new information regarding railroad properties. This is particularly so because railroad properties generally were well documented by the railroad companies. Future studies, however, in which archaeological analysis is combined with analysis of the extant built environment, could provide important new information significant under Criterion D.

### Criteria Considerations

The National Register Criteria Considerations will not apply to railroad yard historic districts.

### Integrity Requirements

To be eligible for listing in the National Register within the MPDF *Railroads in North Dakota, 1872-1956*, a railroad yard historic district must not only meet one of the significance criteria, it must also retain historic integrity. Railroad yard historic districts will include contributing elements (see Description above) and may include non-contributing elements. In addition to the railroad yard historic district retaining its integrity of location, a sufficient number of a district's contributing buildings and structures must retain integrity of design and materials sufficient to convey the district's historic character. At minimum, a railroad yard historic district will include an engine house and support building. The classification tracks need not be present, but there must be some visible expression of the yard track areas (alterations or new construction should be limited to surface level, such as a parking lot) and of the through roadway. Non-contributing elements within the district must not visually overwhelm the contributing properties to the degree that the district cannot convey its historic character. For example, non-contributing elements must not be a majority of buildings and structures within the historic district, and their height, massing, and materials must be compatible with the contributing elements of the district.

**Location.** To retain its integrity of location, a railroad yard historic district must occupy its historic site. In addition, enough of its contributing elements must retain integrity of location sufficient to convey the historic appearance and functional character of the district.

**Design.** The integrity of design for the overall layout of a railroad yard from its period of significance is critical to its eligibility as a railroad yard historic district. In addition, a sufficient number of contributing buildings and structures within the district must retain adequate integrity of design to effectively convey the district's historic appearance.

**Materials.** The contributing buildings and structures within a railroad yard historic district must retain sufficient overall integrity of materials to convey the character and appearance of the district during its period of significance. The routine replacement of the railroad roadway structures (including railroad bed, ballast, ties, and rail) does not affect the district's overall integrity of materials.

**Setting.** A railroad yard historic district need not retain integrity of setting if it has a high degree of integrity of location, design, and materials, and the scale, height, and massing of new construction or alterations to adjacent properties do not significantly interfere with the district's ability to convey its historical character.

**Feeling.** Feeling is a railroad yard historic district's ability to illustrate the historic sense of the period of significance. Because it is the cumulative sum of character defining features, if a railroad yard historic district retains integrity of location, design, and materials, it will retain integrity of feeling.

**Association.** Association is the direct link between a railroad yard historic district and the significant classification, maintenance, or repair it provided or the significant engineering embodied in its design. A railroad yard historic district retains its integrity of association if it retains integrity of location, materials, and design.

**Workmanship.** Integrity of workmanship will not be a factor in evaluating the integrity of a railroad yard historic district due to the utilitarian nature of the resource and standardized design of its components. Some specific elements within a railroad yard historic district, however, may exhibit high degrees of workmanship, such as the finishes on a shop building. In such cases, evidence of the craftsmanship used to work the materials should be evident.

# I. NAME OF PROPERTY TYPE: RAILROAD GRADE SEPARATION STRUCTURES

# II. DESCRIPTION

The property type "railroad grade separation structures" is the grade-separated crossing between a railroad corridor and another railroad corridor, a vehicular roadway, a water course, or a topographic feature. Structures within this property type include railroad bridges, railroad trestles and viaducts, culverts, and tunnels. The boundaries of railroad grade separation structures include the right of way occupied by the railroad bridge, trestle, viaduct, or culvert. The following property descriptions are based on a historic context previously developed primarily for bridges carrying vehicular traffic in North Dakota (Johnson et. al. 1992), bridge studies completed for the Dakota Minnesota and Eastern (DM&E) railroad in Minnesota and South Dakota (Architectural and Historical Research, LLC and Hess, Roise and Company 2000a and 2000b), and highway bridges in Minnesota (Hess 1988; Frame 1988; Quivik and Martin 1988).

## Railroad Bridges

While most of North Dakota's railroad grade separation structures are trestles and viaducts, railroad bridges from the late nineteenth through mid twentieth centuries typically used steel spans. Early in the period, spans utilizing geometric frameworks (or trusses) of first iron then steel members in various states of tension or compression were common. During the twentieth century, steel plate girders and I-beams came to be the most common types of superstructure for railroad bridges.

### *Truss Bridges*

The engineering principles underlying the development of metal truss systems for railroad traffic were based on the same principles that led to the development of earlier wooden truss systems. Although metal trusses carrying railroads were more stoutly designed than those carrying vehicular roads in order to resist the heavy live loads associated with railroad traffic, the truss types developed by pre-railroad engineers and the configuration of their posts, chords, and bracing elements remained essentially unchanged. Fixed metal bridges were installed at most permanent river crossings, and utilized a variety of truss types, the most common of which were the Howe, Pratt, and Warren varieties (see Figure 14). Trusses of all varieties could be constructed as through trusses (in which traffic passes between the bridge's main girder panels and under a series of cross-bracing elements tying the panels together); pony trusses (in which traffic loads are transferred to a web of cross-bracing elements without resting directly on the main girders, but the main girders are not situated high enough to warrant the use of an upper portal brace); and deck trusses (in which traffic loads rest directly on the top surfaces of the main girders).

After 1840, Howe truss bridges became an early standard truss for use on railroads. Howe trusses have inclined portal posts, with vertical members in tension and a set of mirrored diagonal members in compression. Additional diagonal members may be present to cross-brace each truss panel, acting in counter-stress when loaded. The Pratt truss, patented in 1844, has vertical members in compression and diagonal members in tension. Early examples of the type have inclined portal posts, intermediate posts, hip verticals, and bottom chord joints with pin and eyebar connections; later examples have riveted or welded joints. The steel plate, channel, angle bars, and gussets that typically comprise the elements of the upper chord and inclined portal posts are often riveted with straight-neck button rivets. Variants of the Pratt truss include the Parker, or camelback truss (with a single slanted upper chord in the panel medial to each portal strut), the Baltimore truss (with additional vertical and diagonal bracing in the bridge panels), and the Pennsylvania, or Petit truss, combining elements of the Parker and Baltimore variants. A typical Warren truss (patented in 1848) has inclined portal posts and diagonals which carry both compressive and tensile forces. The Subdivided Warren variant adds vertical beams to help brace the triangular web system. Warren trusses may also have arched, polygonal upper chords.

The most notable truss bridge in North Dakota is the Northern Pacific bridge over the Missouri River in Bismarck. This bridge originally was built in 1882 with multiple Whipple truss spans on massive stone piers. The original spans were later replaced with the current Warren through truss spans, reusing the original piers.

### *Girder and I-Beam Bridges*

Developed in the mid-1800s, plate girder bridges carry loads on composite steel I-beams that rest on abutments or piers and are one of the simplest forms of metal railroad span. Each I-beam girder is composed of a solid sheet of plate steel with flange plates attached to the edges by riveted or welded steel angle bars. The floor system of plate girder bridges is composed of beams and stringers, also composed of riveted or welded plate and angle. In the 1920s, rolled I-beams could be used to bridge spans of up to 30 feet. Plate girders, however, because of their composite construction, could be used for spans up to 125 feet, and their ease of erection made them economically attractive alternatives to metal truss railroad bridges. Deck plate girder bridges carry loads on the surfaces of the girder top plates, which are stabilized by cross bracing. Pony plate girder bridges, in which rail traffic is carried between the plate girders, distribute loads throughout the floor system to the main girders, with knee bracing stabilizing the juncture between the plate girders and the deck (Hool and Kinne 1924:287; Howson 1926:461).

### *Movable Bridges*

Movable bridges are used in locations where a temporary gap in a railroad corridor is needed to allow passage of other traffic, usually water-borne shipping. Because the Red River and Missouri River were effectively the only navigable waterways in North Dakota, movable bridges are extremely rare. Movable railroad bridges in North Dakota are significant attempts to address site-specific engineering challenges and represent a rare construction type. Common movable bridge types—the bascule bridge, the swing bridge, and the vertical lift bridge—are summarized below.

In their simplest form, bascule bridges were typified by medieval castle drawbridges (the single-leaf variety). Double-leaf bascules used two symmetrical movable spans to open wider navigation channels. Though first developed in the 1830s, the first structurally important bascule bridge was the 1897 Michigan Avenue Bridge in Buffalo, New York, a counterweighted bridge that used a trunnion (or axle) system as a pivot (Waddell 1916:12). Bascules could operate on a single trunnion or multiple trunnions. Rolling lift bascule bridges, which rolled back from the navigational channel on semi-circular girder tracks, were first developed in the 1820s but later versions were patented in the 1890s (Hool and Kinne 1923:1). .

Swing bridges become common in the United States after the 1850s (Hovey 1926:12). Swing bridges typically utilized a metal through truss that rotated on a center pivot anchored to a pier. While swing bridges were often considered the simplest and most cost-effective solution to managing competing traffic, they were slow to operate and could create significant delays for watercraft when located in proximity to each other (Hool and Kinne 1923:2).

Vertical lift bridges employed a system of counterweights, sheaves, and steel ropes to lift the central section of a bridge out of a navigable right of way. Squire Whipple began designing, patenting, and building small vertical lift bridges for New York state canal crossings between 1872 and 1880. In 1910, J. B. Strauss patented a design for a movable bridge where the required vertical lift was small and used no sheaves or ropes, but made use of pin joints to move two large counterbalancing devices at each end of a movable span. The Strobel system used a rolling trunnion on the upper surface of the lift tower in an attempt to compensate for horizontal movement of the counterweight-span structure (Hovey 1926:168). Despite these improvements, the reliable operation of vertical lift spans over 400 feet (such as the Missouri Kansas and Texas Railroad’s Boonville Bridge in Missouri) was only achieved with the invention of the synchronous motor systems in the late 1920s.

### *Masonry and Concrete Bridges*

The ability of the arch to bear heavy loads has been known to builders for thousands of years, and the form was adopted by railroad engineers for masonry arch bridge, designed to carry fully loaded freight trains by gradually distributing their enormous weight throughout the arch structure. Arch forms included classic hyperbolic, segmental, or semi-circular arches of brick or of cut granite or sandstone ashlar masonry. Common geometric variants included simple arches and skewed arches. The masonry blocks at the base of the arch barrel were seated on massive stone piers, and the fill supporting the railroad roadway was retained by thick masonry spandrel walls. Due to their strength and durability, masonry arch bridges were an alternative to wood trestles or metal truss bridges prior to the introduction of steel and concrete. Because masonry arch bridges could be extraordinarily expensive, however, they were rarely employed. Masonry arch railroad bridges in North Dakota are significant attempts to address site-specific engineering challenges and represent a rare construction type.

As a raw material, the plasticity of concrete made it "peculiarly adaptable as a material for arch construction" (Howson 1926:457). Experimentation during the nineteenth century led to the development of reinforced concrete; an arched bridge form that used a parallel series of curved steel I-beams jacketed with concrete; and a simpler version of the arched bridge that used two parallel, curved I-beams to support a roadway bridge deck (Newlon 1979:100). By circa 1915, reinforced concrete was being used in the open-spandrel arch designs. This approach to reinforced concrete construction allowed a much greater strength-to-weight ratio for arch superstructures and quickly became the economically competitive design choice for monumental concrete arch bridges. Reinforced concrete largely replaced ashlar masonry as a building material for arch bridges after circa 1920 (Howson 1926:459). These open-spandrel arch bridges often use intermediate vertical posts that rested on the upper surface of the arches and supported the roadway deck above. Single arches required massive, stable abutments to support lateral forces. Multiple concrete arches in a viaduct configuration offered some support to one another, but still required monolithic piers for overall stability. Reinforced concrete structures that utilized patented systems or arch designs, including the Melan reinforcing system, the James B. Marsh rainbow-arch design, are significant bridge forms.

The concrete rigid frame bridge was developed in the early 1920s. Within 15 years of its introduction, the form was replacing arches, slabs, and girders at many crossings, and by 1938, approximately 400 had been built in the United States (Hayden 1950:184). The concrete rigid-frame was the economical choice for spans from 35 to 80 feet and the steel rigid frame form for spans from 80 to 120 feet. The rigid frame design later gave way to less expensive concrete slab and concrete girder designs as concrete jacketing technology improved in the 1940s and 1950s. There were several varieties of the concrete rigid frame bridge, including the barrel, ribbed, and cellular types. Nevertheless, the form remains among the simplest of engineering designs.

Reinforced-concrete slab railroad bridges were built as early as reinforced-concrete arch bridges, but were utilized for very short crossings (no longer than about 20 feet), supporting loads through sheer strength. Still used in railroad corridor construction, they are generally of three types: reinforced-concrete slab, reinforced-concrete I-beam, and reinforced-concrete rail top. Reinforced concrete slab bridges depend on the simple cohesive strength of the concrete and metallic reinforcement to bear the direct flexing moment applied by a train in motion. Concrete I-beam bridges carry these same loads by using multiple, heavy, concrete-jacketed I-beams as stringers. The concrete rail top form uses closely-spaced lengths of steel rails as stringers to support a concrete slab.

Bridge substructures, such as piers and abutments, also may be significant for their employment of important historical construction methods (including the use of stone masonry for abutments or underwater caissons in pier construction).

### Railroad Trestles and Viaducts

Railroad trestles and viaducts are braced frameworks designed to cross deep river valleys that lack navigable channels or to cross minor streams and gullies (see Figures 16 and 17). Trestles have short (12 to 14 feet) spans (bents) fashioned from driven wood piles or cut framed timber. Viaducts use a skeletal frame of steel girders. Trestles and viaducts had particular advantages and disadvantages—wood trestles were cheap to build, but until the introduction of wood preservatives, such as creosote, had short lifespans; steel viaducts were expensive, but lasted longer and responded better to heavier live loads.

Small wood trestles over minor gullies, wetlands, and drainages were the most common railroad crossing structure due to their lower cost and relative ease of construction. Trestles were constructed with 15- to 18-inch diameter, wood piles vertically driven into stable sediments and with 3- by 6-inch scantlings bolted diagonally across the piles to serve as cross-bracing (usually when the piles were over about 9-feet tall). A series of timber stringers are attached to this wood substructure to support a standard set of ties and rails. Trestles built after the early twentieth century may use steel piles for shallow crossings. Higher and longer wood trestles cross deeply dissected drainages or valleys where the maintenance of a navigable river channel is not required. To allow for passage of river traffic, a metal truss, usually a deck truss, may be used to bridge the gap in the wood trestle system.

Because of their great expense, metal framework viaducts were usually only constructed in railroad corridors with high traffic volumes or trains with particularly heavy loads, or in areas that regularly experienced high cross-winds.

### Railroad Culverts

Culverts provide drainage for water or form a passageway through a fill material (usually earth) and are usually located where a railroad roadway passes over a minor or intermittent stream (see Figure 18). Culverts are actually miniature bridges, and their historical significance should be evaluated with reference to a comparable bridge design type, such as masonry arch or concrete slab. Although there is little analytical information regarding their historical development, one of the earliest (pre-railroad) forms of culvert consisted of a simple box constructed of wooden beams, or wooden beams that were laid on masonry ledges to bridge small drainages. The first railroad culverts were box-like cut masonry structures, with stone slabs or sections of rail carrying the roadway load and resting on masonry sidewalls. Formal masonry arches were designed for more permanent crossings, resembling arch bridges with stone or concrete drainage floors. Occasionally, more elaborate culverts were constructed using brick or interlocking metal plates in semicircular barrel arches. Cast iron pipe culverts were developed circa 1850, and were the most commonly used culvert type during the latter half of the nineteenth century. After circa 1900, prefabricated reinforced concrete pipe and corrugated metal pipe were used increasingly for railroad culverts (Howson 1926:446-447).

## III. SIGNIFICANCE

Because railroad grade separation structures played an important role in the operation of railroad corridors in North Dakota, they are associated with historical significance in transportation. In addition, because railroad bridges, trestles and viaducts, and culverts are associated with the application of scientific principals to the design and construction of structures, they are also associated with engineering. The significance of railroad grade separation structures within those areas of significance are linked to the historic context: *Railroad Development in North Dakota, 1872-1956.*

Masonry arch bridges are rare property types in North Dakota's railroad network and are significant for their association with early construction of the state's railroad network and for their design and construction.

Metal truss bridges and viaducts built of wrought iron typically predate the mid-1890s. After that date, most metal trusses and viaducts were constructed of steel. Steel trusses built during the period between circa 1894 and 1900 were early examples of the use of the material and represent an important transitional type of design and construction. Although pin-connected Pratt and riveted Warren truss bridges were the most common truss types constructed on late nineteenth and early twentieth century North Dakota railroad lines, they are significant for their association with the state's early railroad corridors and may be significant for innovative engineering design and construction related to their crossing site. All metal truss bridges that exceed standard span lengths or unusual configurations of trusses or spans are considered significant as major engineering solutions to address unusual or complex site conditions.

Movable spans such as bascule bridges, swing bridges, and vertical lift bridges are significant examples of complex engineering designs applied to unusual site circumstances.

Early examples of reinforced-concrete arch bridges, slab bridges, girder bridges, and rigid frame bridges and viaducts are significant as transitional types of design and construction and also may be associated with historically significant grade crossing programs of the mid-twentieth century. Reinforced-concrete bridges that exceed standard span lengths also are considered significant as major engineering solutions to address unusual or complex site conditions.

Wood trestles were constructed with relatively short-lived materials, represent simple engineering solutions to grade separations, and were the most common structure type on North Dakota railroads. As an individual structure, a trestle is not historically significant, but a trestle may contribute to a historic bridge, such as an approach span, or a historic district.

Railroad tunnels are rare railroad-related structures in North Dakota and are significant as major engineering solutions to unusual or complex site conditions.

# IV. REGISTRATION REQUIREMENTS

To be eligible for listing in the National Register within the MPDF *Railroads in North Dakota, 1872-1956*, a railroad grade separation structure must have been built within a railroad corridor between the years 1872 and 1956; must meet one of the National Register Criteria for Evaluation; and must retain overall historic integrity.

## Criterion A

A railroad grade separation structure will meet National Register Criterion A only if it is a contributing element of a railroad corridor historic district, a railroad station historic district, or a railroad yard historic district. The period of significance for the grade separation structure will be the same as that of the historic district.

## Criterion B

Railroad grade separation structures will not be eligible for the National Register under Criterion B. These structures were built and operated by large corporations that represent the work of many people, rather than individuals. Although prominent individuals dominated some of the companies, such as James J. Hill of the Great Northern, they managed the construction while working out of the company's headquarters. Administrative offices would represent their corporate lives better than railroad corridor historic districts.

## Criterion C

While most grade separation structures could be considered representatives of a type, evaluation of significance under Criterion C must address additional important aspects of the property within a larger population of similar structures. Evaluations must consider the age of the structure, the relative rarity of the structure as a design type, the prominence of the engineer or construction contractor, and unusual engineering characteristics. A railroad grade separation structure will meet Criterion C if it meets one of the following conditions.

1. The structure represents the early work of a historically important railroad engineer, architect, contractor, or fabricator, or the structure was designed with patented or otherwise specially designed elements.
2. The structure utilizes designs or building systems that represent historically important types or construction methods, or that utilize experimental or innovative elaborations of those types or methods. This will include any masonry arch bridges, movable-span bridges, or tunnels; a pony truss bridge that is not a Pratt or Warren truss; a through truss that is not a Pratt or Parker truss; a metal truss or viaduct built prior to 1900; a reinforced concrete structure built prior to 1910; a rigid frame bridge built prior to 1940; unusual span lengths that represent the engineering limits of a structural type; or bridges or viaducts with highly skewed configurations.
3. The structure employed important contemporary construction methods, including but not limited to the use of stone masonry for abutments or underwater caissons in pier construction.
4. The structure demonstrates exceptional aesthetic details or ornamentation.

### Criterion D

Although unlikely, railroad grade separation structures or their structural remains may meet Criterion D if further analysis can yield important information about a significant type of technology or construction employed as part of the evolution of its class of railroad-related properties. In order to meet Criterion D, the structure itself must be the principal source of the important information.

The information that a railroad grade separation structure yields, or will yield, must be evaluated within an appropriate historic context. This requires consulting the body of information already collected from similar properties or other pertinent sources, including modern and historic written records. The researcher must be able to anticipate if and how the potential information will affect the definition of the context. The information likely to be obtained from a particular railroad bridge, trestle, viaduct, or culvert structure must confirm, refute, or supplement existing information in an important way. The importance of the information to be potentially obtained must be justified through the formulation of research questions that address historically significant questions. Research questions are usually developed as part of a research design, which specifies the questions to be asked, the types of data needed to supply the answers, and the techniques needed to recover the data.

The assessment of integrity for a railroad bridge, trestle, viaduct, or culvert considered under Criterion D depends on the research design’s data requirements. A structure possessing information potential does not need to recall visually a manufacturing process or construction technique. However, the significant data required to yield the expected important information must be intact.

### Criteria Considerations

In order to meet Criteria Consideration B, a moved railroad grade separation structure individually eligible under Criterion C must retain enough of its historic features to convey its engineering or architectural values and retain sufficient integrity of design, materials, workmanship, feeling, and association to effectively convey its historical function as a railroad grade separation structure. In addition, the new location must have a setting that is compatible with the historic setting of the railroad grade separation structure.

### Integrity Requirements

In addition to the requirement that a railroad grade separation structure must meet one of the National Register Criteria to be considered eligible, it must also retain integrity. Integrity requirements for masonry arch, metal truss, and reinforced concrete bridges in Minnesota have been developed by Hess (1988), Quivik and Martin (1988), and Frame (1988), respectively and may be used as a basis for evaluating the integrity of railroad bridges.

**Location.** A railroad grade separation structure must retain its integrity of location if it contributes to a railroad district under Criterion A. Grade separation structures that have been relocated may still be eligible under Criterion C for their historically significant design and construction characteristics. Per Criteria Consideration B, a grade separation structure that achieves significance after relocation within a railroad network may be considered to have integrity of location.

**Design.** A grade separation structure must retain enough original physical features to effectively convey the significance of its engineering design. The most important part of railroad bridges, trestles, viaducts, and culverts is their superstructure, which expresses the engineering principles integral to their design. Therefore, for such structures to retain integrity of design, their superstructures must be substantially intact, including their connection types and the composition and configuration of their structural members. Movable bridges must retain their original machinery, control systems, and structural elements (e.g., the lifting towers characteristic of a vertical lift bridge) to effectively convey their operational design.

**Setting.** To be eligible under Criterion A, a grade separation structure must be located in a setting similar to that during its period of significance. For example, a bridge should still cross a river or stream channel or other body of water, another railroad corridor, or be situated over a similar barrier to travel. Grade separation structures eligible under Criterion C do not need to retain integrity of setting.

**Materials.** A railroad grade separation structure retains integrity of materials if the superstructure either: 1) retains original construction materials; 2) has replacement materials that were installed during the structure's period of significance; or 3) has modern repairs or replacements that have the same material character as those used during the period of significance. The presence of a bridge's original piers, abutments, decking, and guard rails adds to the overall material and design integrity of a bridge. However, because the periodic replacement of these elements was historically required to maintain the safety and operability of a bridge, their presence is not required for eligibility. Nevertheless, any replacements in these categories should be of appropriate scale and should not substantially obscure the functional identity of the superstructure, particularly the truss type.

**Workmanship.** Most components of railroad grade separation structures were mass-produced and do not exhibit qualities of workmanship. If, however, a decorative or aesthetic feature of a grade separation structure is an important feature of a structure, that feature must retain its original visual appearance.

**Feeling.** A grade separation structure's integrity of feeling will only be lost if modern alterations to its historical design or the addition of modern materials to its structure are of sufficient scale or visual contrast so as to dominate its overall visual appearance. A structure that retains integrity of design and materials will also retain integrity of feeling.

**Association.** Association is the direct link between a grade separation structure and the significant engineering embodied in its design. A grade separation structure retains its integrity of association if it retains integrity of location, materials, and design.

**Criterion A.** Because a railroad grade separation structure's site is integral to its association with the historical development of a railroad corridor or the opening of a region or locality, it must retain its integrity of location, materials, design, and setting to be considered eligible under Criterion A as part of an historic district.

**Criterion C.** A grade separation structure may retain overall integrity even if there have been alterations to its form and materials, as long as the historically significant engineering characteristics of the design or construction method are intact. Integrity of design and materials is critical if the structure is to convey its historical significance under Criterion C. Because the expression of historically important engineering design or construction is embodied in the structure itself and not in its specific physical environment, integrity of *location* is not necessary for eligibility under Criterion C.

**Criterion D.** The integrity requirements for a railroad grade separation structure considered under Criterion D depends on the data requirements of the research design. For example, if a research design specified that the remains of a grade separation structure had the potential to meaningfully contribute to the body of knowledge regarding the evolution of engineering theory and manufacture for that property type, the grade separation structure would have to retain integrity of materials and design.

# I. NAME OF PROPERTY TYPE: RAILROAD DEPOTS

# II. DESCRIPTION

The depot buildings associated with North Dakota's railroad system reflect the general progression of design and styles built from the 1870s to the present. The earliest depots from 1872 to circa 1880 were wood frame buildings, none of which are known to be extant. Depots served as the public face of the railroads, and their designs after 1880 reflected the influence of popular architectural styles.

Using Berg's (1900) classification system, depots in North Dakota can be classified into three subtypes: flag depots, combination depots, and passenger depots. From a functional standpoint, these buildings and any associated support structures serve the same purpose: to provide a means for receiving, sorting, and loading any combination of passengers and freight. The predominantly rural character of North Dakota meant that the majority of depots would be combination depots—small and capable of receiving both passengers and freight. Cities had either larger versions of the combination depot or passenger depots. Fargo and Grand Forks had the largest and most ornate passenger depots, which were designed exclusively for passenger traffic and were among the most architecturally sophisticated buildings in the communities. Depots in the other larger cities varied in size and architectural detail according to the amount of traffic moving through them. Communities with specialized functions, such as Dickinson and Enderlin, which were division headquarters, and Wilton, which was the center to the lignite mining north of Bismarck, included larger depots with office space.

The depot was usually oriented within a railroad station on a long axis parallel to the railroad tracks. In this way, it defined two separate functional areas: a passenger or freight arrival area, recognizable as a parking lot or freight drop-off platform; and a passenger boarding or freight loading platform immediately adjacent to the tracks. Smaller railroad stations were often referred to as depots, although they also included the buildings, platforms, structures, and track within the immediate right of way, including passenger platforms, freight loading platforms, warehouses, and service buildings. For the purposes of this property type description, however, such groups are defined as railroad "stations" and are described in the property type "railroad station historic district."

A railroad depot may be a contributing element to a railroad station historic district or a railroad corridor historic district. Where neither of those two district property types is present, a railroad depot will be eligible for the National Register individually if it meets the registration requirements described below.

### Flag Depots

A flag depot often was the first type of station built in a small town following the construction of a railroad, or a new community may have grown and developed around it. Flag depots were small buildings or simple platforms located in areas where traffic was restricted to the occasional passenger, who waved a flag to signal a train to stop. Platform stops could be either low or high. Low platforms were common at the lowest traffic points on a line, and were simple, open-air frame shelters with shed or gable roofs. Built at grade, they required a passenger to board by climbing the passenger car steps. A high platform included an approximately 4-foot-high wood-frame or concrete platform covered by an open-sided structure. High platforms facilitated easier passenger access to cars, particularly when luggage was being brought aboard. In cold climates such as in North Dakota, flag depot platforms were typically enclosed to provide additional shelter in the winter, but were limited to a single room.

If passenger traffic at a flag depot increased, it could be upgraded by the railroad company to include a small building with a railroad agent's office and a passenger waiting room. From an operational standpoint, the replacement of a simple platform with a formal passenger building meant a significant change in the class of the station, which might then be referred to as a second-, third-, or fourth-class passenger depot.

### Combination Depots

Combination depots were usually located in small rural communities where there was both passenger and freight traffic, but not enough of either to justify the construction of separate buildings (see Figure 23). Usually no larger than a small passenger depot, they had a single, central office space that processed passenger tickets and freight bills, a passenger waiting area at one end of the building, and a freight room at the other end. When space allowed, the passenger area might be split in two by the ticket office, forming separate waiting rooms for men and women. Passenger and freight loading usually occurred at either end of a common loading platform. Berg (1900:247) noted several options for safely configuring track at combination depots with a high volume of passenger service, including separate side-tracks for loading freight cars left at the depot.

Second class combination depots and many of the lower-volume first class combination depots were built from standardized plans developed internally by the railroads' engineering departments. Constructed of brick or wood frame with wood siding, these depots exhibited modest stylistic influence from the Victorian Eclectic, Arts and Crafts, and Tudor Revival traditions (Grant and Bohi 1978). Although there were variations on the design and layout of the combination depot, a common form was a long rectangular single-story building divided between passenger and freight areas. Common variations were to add a second story for living quarters for the station agent, separate wings for baggage and freight, and extending the freight wing (Vyzralek, Grant, and Bohi 1975:5-16).

### Passenger Depots

Passenger depots were constructed where there was significant passenger traffic (see Figures 21 and 22). Their size and configuration usually varied directly with the volume of traffic. The smallest passenger depots were simple buildings with a waiting room, ticket office, and baggage room, which accommodated the occasional freight shipments. Large first-class passenger depots could be "two-story structures with capacious waiting-rooms, toilet-rooms, smoking-room, dining-room and appurtenances, baggage-room, express-room, mail-room, telegraph-office, parcel-room, news-stand, supply-rooms, rooms for conductors and trainmen, and offices" (Berg 1900:278).

Passenger depots varied in appearance, and like the size of the buildings, their architectural character directly related to the volume of passenger and freight traffic. Low, single-story frame and brick buildings with various restrained expressions of nationally popular architectural styles were common in smaller towns. Expressing the practicality of a railroad engineer, Berg (1900:284) noted that while "picturesqueness" in design can be important to a depot, "the style of the building should correspond to the use it is put to, [and] it can hardly be considered good practice to design a large depot on the same outlines as a church or an old-fashioned country tavern, especially when very serious defects of the ground-plan layout are created by giving too much attention to the architectural effect of the building." Nevertheless, he recommended that the standard passenger depot plans employed by most railroad companies be slightly modified at each site to avoid architectural monotony. In practice, the likelihood of a passenger depot to vary from a standard design was a function of the size of the community it served and its volume of business.

## III. SIGNIFICANCE

Railroad depots are associated with patterns of transportation development in North Dakota within the historic context *Railroad Development in North Dakota, 1872-1956*. The period of significance for the railroad depots property type is 1872-1956; periods of significance for individual depots will depend on construction dates, years of operation, and reasons for eligibility.

Depots served important functions in the development of North Dakota's railroad network, are physical reminders of the railroad's importance to the early settlement of the state, and functioned as the critical interaction point between railroad companies and their clients. Depots are also one of the most visually recognizable elements of the state's railroad infrastructure. When associated with a historically significant railroad corridor, they are significant in the area of *transportation*. When considered individually, depots may be significant in the area of *architecture*.

Some depots were among the first built features at newly-platted townsites. They initially served as delivery points for the raw materials needed to construct houses and commercial buildings, and later as gateways for passenger traffic and common-carrier freight. In addition to facilitating the shipping of outgoing agricultural products, depots received all order of manufactured goods that made life on the North Dakota frontier seem somewhat more "civilized." The potential economic benefits of railroad access for a pre-railroad community or growing industry in nineteenth-century and early twentieth-century North Dakota could hardly be underestimated. Although railroads generally built into areas where settlement had already begun, establishment of a railroad station and depot ensured the economic viability of a community.

Railroad companies often used standardized blueprints for the construction of flag, passenger, and combination depots. These highly functional building plans were designed to reduce the costs associated with building new line and may be significant in the area of *architecture* for their ability to convey the railroad's corporate identity. Also structurally simple, most standard depots incorporated decorative details influenced by the Italianate, Tudor Revival, Stick, or Arts & Crafts architectural movements and could be a source of local pride and an inspiration for area builders.

# IV. REGISTRATION REQUIREMENTS

## Criterion A

To meet National Register Criterion A, a railroad depot must meet at least one of the following requirements.

1. The railroad depot was a significant contributor to economic growth, and its construction was followed by a significant expansion of industrial, commercial, or agricultural operations.

2. The design of the depot was influenced by natural, economic, political, or social conditions within its community or region, and those conditions are reflected in the design. For example, a depot that was unusually large for the size of the community because it included offices for a division headquarters or large repair facility would be a significant depot.

3. The railroad depot served as a significant regional distribution center for commercial or industrial products or as a significant regional transportation center for passengers.

### Criterion B

Railroad depots will not be eligible for the National Register under Criterion B. Railroad depots were built and operated by large corporations that represent the work of many people, rather than individuals. Although prominent individuals dominated some of the companies, such as James J. Hill of the Great Northern, they managed the construction while working out of the company's headquarters. Administrative offices would represent their corporate lives better than railroad corridor historic districts.

### Criterion C

A depot will meet Criterion C if it meets one of the following requirements.

1. A depot embodies distinctive architectural design or construction methods associated with a railroad company, and the design or construction methods represent an early or transitional example; or a depot embodies stylistic qualities important to the development of railroad depot architecture. For example, an early example of the standard, two-story second-class depot on the Soo Line will be a significant depot.

2. A depot embodies the distinctive characteristics of an architectural style, and it was the earliest or fullest expression of that particular style within a community.

3. A depot was the work of a significant architect, engineer, or builder, and the design represents an important phase or a particular aspect in the designer's or builder's career. For example, a depot that was designed by a master architect who completed railroad commissions only during a certain period in his career will be a significant depot.

### Criterion D

Depots will meet Criterion D if further structural analysis can yield important information about a significant type of construction or the spatial arrangement of depot-related support facilities at important locations along significant corridors. The mere existence, or former existence, of a depot at a particular location does not constitute sufficient important information to warrant eligibility. Rather, the information to be garnered should be supplemental to or in contrast with information available through other sources, such as historical documents or similar buildings. Furthermore, the depot itself must be the source of the information.

### Integrity Requirements

In addition to the requirement that a railroad depot must meet one of the National Register Criteria to be considered eligible, it must also retain integrity. A depot's integrity of location and its association with a railroad corridor are of critical importance when evaluating its eligibility under Criterion A. Many small depots have been relocated, either to transportation museums or as part of their commercial renovation and reuse. Depots that are not located on the site associated with their historic significance have usually lost integrity of location, setting, association, and feeling. They may, however, still be considered eligible under Criterion A if they meet the requirements under Criteria Consideration B for moved properties.

**Location.** In order to meet Criterion A, a railroad depot must retain its integrity of location by being physically located on its historic building site within its former railroad corridor. Although a railroad corridor historic district will not be present if a railroad depot is individually eligible, there must be at least some visible expression of the corridor to convey the depot's historic location within a larger transportation corridor. A depot may also retain its integrity of location if it has been relocated to a site with a setting comparable to its historic site, but only if the relocation site is within or adjacent to a railroad corridor that conveys the depot's association. Relocated railroad depots may still be eligible under Criterion C for historically significant design and construction characteristics. Per Criteria Consideration B, a railroad depot that achieves significance following its relocation within a railroad network, but within its period of significance, will be considered to have integrity of location.

**Design.** A railroad depot must retain enough original architectural, structural, and stylistic features to convey effectively the significance of its architectural or engineering designs or its function as a railroad depot.

**Materials.** A railroad depot retains integrity of materials if the building either: 1) retains its original materials; 2) has replacement materials that were installed during the depot's period of significance; or 3) has modern repairs, alterations, or additions that have the same design and material character as those used during the period of significance. Smaller depots were often modified to accommodate increased traffic or additional services on a railroad. Structural or decorative alterations made during a depot's period of significance may be considered part of its historic fabric, provided that they do not substantially diminish the qualities that make it significant.

**Setting.** To retain integrity of setting, a railroad depot must be located in a setting similar to that during its period of significance and must remain physically and visually associated with a railroad corridor or a corridor that maintains at least some visible expression of a former railroad corridor.

**Workmanship.** The structural components of railroad depots were usually mass-produced and thus do not exhibit qualities of workmanship. If, however, a decorative or aesthetic architectural feature of a railroad depot is considered a stylistically defining feature of the depot, that feature must retain its original visual appearance.

**Feeling.** A railroad depot's integrity of feeling will only be lost if modern alterations to its historic architectural design or the addition of modern materials or additions to the building are of sufficient scale or visual contrast so as to dominate its overall visual appearance. Usually, a depot that has lost integrity of feeling will have lost both integrity of design and materials.

**Association.** Association is the direct link between a railroad depot and the significant services it provided or the significant architecture embodied in its design. A railroad depot retains its integrity of association if it retains integrity of location, materials, and design.

**Criterion A Integrity.** Because a railroad depot's site is integral to its association with a railroad corridor, it must retain its integrity of location, materials, design, and setting to be considered individually eligible under Criterion A.

**Criterion C Integrity.** Integrity of design and materials are critical if the building is to convey its historic significance under Criterion C. Integrity of location is not necessary for eligibility under Criterion C, and a relocated depot may retain overall integrity if it is located in a setting similar to its historic setting.

**Criterion D Integrity.** The integrity requirements for railroad depots considered under Criterion D depend on the data requirements of the research design. For example, if a research design specified that the remains of a railroad depot had the potential to contribute meaningfully to the body of knowledge regarding the evolution of the architectural design of depots, the depot remains would need to retain sufficient integrity of materials and design to address the research design questions.

# I. NAME OF PROPERTY TYPE: RAILROAD ENGINE HOUSES, TRANSFER TABLES, AND TURNTABLES

# II. DESCRIPTION

There were two categories of engine houses: square houses and roundhouses. Both were commonly found at railroad stations and railroad yards where steam locomotives were maintained or repaired and prepared for line service (see Figures 30 and 31). Engine houses were critical components of railroad networks, providing the regular mechanical service required to keep a railroad's motive power running.

In smaller railroad yards, square houses were wood frame buildings that provided side-by-side berths for locomotives undergoing service and repair (see Figure 32). Square houses were accessed by a single track that branched to individual berths as it approached the building. Each berth was able to accommodate two and occasionally three engines.

Roundhouses were common at larger railroad yards in the nineteenth century, but could also be found near remote railroad junctions or on high-traffic corridors where engine service and maintenance facilities were routinely required (Figures 30 and 31). Constructed to allow the berthing of multiple engines in a radial pattern, roundhouses usually required the use of a turntable. Depending on the traffic volume of the railroad yard and the frequency of engine maintenance, roundhouses could be small, with an open or "segmental" plan (with only a few berths occupying a small segment of a circle) or very large, with a closed, or full-circle plan, in which a through-passage provided access to a central turntable (Berg 1900:168).

Because of the expense involved in their construction, roundhouses were carefully located, with consideration given to the current and projected engine traffic; the topography of the building site; the availability of building materials; and the possible effect of such a large structure on the rest of the railroad yard infrastructure. Berg (1900:166) counseled railroads not to under-build their roundhouse capacity or fail to plan for possible expansions. At the same time, he warned against the construction of expensive engine houses on new railroad lines, where subsequent and potentially significant changes in traffic flow or shifting rail junctions could result in their marginalization or abandonment.

The limited space at most railroad yards required the use of transfer tables or turntables to maneuver locomotives into engine houses (see Figure 33). Transfer tables consisted of a rectangular platform that carried a locomotive on a set of rails perpendicular to the incoming spur tracks—a system used most often at square houses. Railroad turntables consisted of circular platforms supported by steel truss or plate frameworks that could turn locomotives in areas of heavy traffic, or orient them properly for entry into roundhouses or repair shops. There were three common types of turntables: cantilevered (or center-balanced); articulated (or center-hinged); and continuous girder, which incorporated a center pivot and wheels that rolled on a track along the circumference of the turntable. Power sources included electricity, compressed air from the local steam plant, a gasoline engine, or a hand-crank. The choice of turntable depended on the size of the railroad's locomotives and the turning speed required. Some patented versions, such as the Mundt turntable, were designed to economize on materials while maximizing the stability of the platform. By the mid-1920s, turntable diameters ranged between 80 feet and 115 feet (Howson 1926:514).

## III. SIGNIFICANCE

Railroad engine houses and their associated transfer tables or turn tables are associated with the historical patterns of transportation development in North Dakota detailed in the historic context *Development of North Dakota Railroads, 1872-1956*. The engine houses were the most prominent buildings and structures found in nineteenth and twentieth century railroad yards and convey the extensive financial investment in maintenance and service facilities required to operate and maintain North Dakota's railroads. The utilitarian design and hard-used condition of engine houses often belies their critical importance to the ongoing functioning of locomotives. Many buildings were subject to heavy industrial use, and continually repaired or modified with little regard for design subtleties related to architectural ornament or material finishes. In addition, the nationalization of railroad companies during World War I and the economic depression of the 1930s resulted in the deferred maintenance of engine houses, and subsequent economic recoveries prompted the demolition of many outmoded properties. As a result, few late nineteenth century and early twentieth century engine houses have survived. Those remaining early examples of railroad engine houses that possess integrity are thus considered significant for their association with the historical growth and development of North Dakota railroads and the operation of historic railroad station and yard facilities.

## IV. REGISTRATION REQUIREMENTS

### Criterion A

Railroad engine houses and transfer tables or turntables will meet Criterion A if they are associated with railroad corridors that were historically important in the development of North Dakota's railroad transportation network, or if they are associated with important stations, terminals, railroad yards, or junctions.

### Criterion B

Railroad engine houses and transfer or turn tables will not be eligible for the National Register under Criterion B. These structures were built and operated by large corporations that represent the work of many people, rather than individuals. Although prominent individuals dominated some of the companies, such as James J. Hill of the Great Northern, they managed the construction while working out of the company's headquarters. Administrative offices would represent their corporate lives better than railroad engine houses and transfer tables or turntables.

### Criterion C

Railroad engine houses and transfer tables or turntables will meet Criterion C if they meet one or more of the following requirements.

1. The railroad engine house, transfer table, or turntable exhibits design or construction characteristics that were important in the historical development or evolution of railroad maintenance or service facilities in North Dakota such as an early or innovative example of engine house, transfer table, or turntable design.

2. The railroad engine house, transfer table, or turntable is an important example of a standardized railroad support building design. Important examples would include, among others, any wood-framed or rectangular engine houses due to their relative rarity, and large roundhouses that encompass more than 180 degrees of a circle.

### Criterion D

An engine house and transfer table or turntable will be eligible under Criterion D if further structural analysis can yield important information about a significant type of construction; the infrastructure or spatial characteristics of a significant station, terminal, railroad yard, or junction; or the physical extent or function of the facility at important locations on significant corridors. The mere existence, or former existence, of an engine house and transfer table or turntable at a particular location does not constitute sufficient important information to warrant eligibility. Rather, the information to be garnered should be supplemental to or in contrast with information available through other sources, such as historical documents or similar buildings. Furthermore, the structures themselves must be the source of the information.

### Integrity Requirements

A railroad engine house and transfer table or turntable must retain, at minimum, its integrity of location, materials, and design to be considered eligible. The property may retain historic integrity if there have been minor alterations to its form and materials, provided the historically significant aspects of its design or construction method are intact.

**Location.** In order to meet Criterion A, an engine house and transfer table or turntable must retain its integrity of location by being physically located on its historic building site within its former railroad corridor, yard, or station. Although a railroad corridor, yard, or station historic district will not present if an engine house and transfer table or turntable is individually eligible, there must be at least some visible expression of the railroad corridor to convey the structure's historic location within a larger transportation corridor. A relocated engine house and transfer table or turntable may still be eligible under Criterion C for historically significant design and construction characteristics. An engine house and transfer table or turntable may meet Criteria Consideration B if they have been relocated to a site with a setting comparable to their historic site, but only if the relocation site is within or adjacent to a railroad corridor that conveys the engine house and transfer table or turntable's historic association.

**Design.** To retain integrity of design, an engine house and transfer table or turntable must retain the original architectural, structural, and stylistic features that convey the significance of its historic functions or its architectural or engineering designs.

**Materials.** An engine house and transfer table or turntable retain integrity of materials if they: retain original materials; have replacement materials that were installed during the period of significance; or have minor modern repairs, alterations, or additions that have the same design and material character as those used during the period of significance. Structural and design alterations made during the period of significance may be considered part of the historic fabric.

**Setting.** To retain integrity of setting, an engine house and transfer table or turntable must be located in a setting similar to that during its period of significance and must remain physically and visually associated with a railroad corridor or a corridor that maintains at least some visible expression of a former railroad corridor.

**Workmanship.** If the decorative or aesthetic architectural features of an engine house are considered stylistically defining features of the building, to retain integrity of workmanship, those features must retain enough of their original visual appearance to effectively convey the building's historical significance.

**Feeling.** An engine house and transfer table or turntable have lost their integrity of feeling if modern alterations to its historic architectural design or the addition of modern materials or additions are of sufficient scale or visual contrast so as to dominate its overall visual appearance. An engine house and transfer table or turntable that retain integrity of location, design, and materials feeling also will retain integrity of feeling.

**Association.** Association is the direct link between an engine house and transfer table or turntable and the significant services it provided or the significant architecture or engineering embodied in its design. An engine house and transfer table or turntable retains its integrity of association if it retains integrity of location, materials, and design.

**Criterion A Integrity.** Because the site of an engine house and transfer table or turntable is integral to its association with a railroad corridor, they must retain their integrity of location, materials, and design to be considered individually eligible under Criterion A.

**Criterion C Integrity.** An engine house and transfer table or turntable will retain overall integrity even if there have been alterations to their design and materials, as long as the historically significant architectural characteristics of the design or construction method are intact. Integrity of design and materials is critical if the structure is to convey its historical significance under Criterion C. Integrity of location is not necessary for eligibility under Criterion C, and a relocated engine house and transfer table or turntable may retain overall integrity if they are located in a setting similar to their historic setting.

**Criterion D Integrity.** The integrity requirements for an engine house and transfer table or turntable considered under Criterion D depend on the data requirements of the research design. For example, if a research design specified that the structural remains of an engine house and transfer table or turntable had the potential to contribute meaningfully to the body of knowledge regarding the evolution of the design of railroad yards, the engine house and transfer table or turntable remains would have to retain sufficient integrity of materials and design to address the research design questions.

# I. Name of Property Type: Railroad Section Houses

## II. Description

When railroads passed through sparsely populated areas, railroad companies commonly divided the line into short segments called sections, each of which had a railroad employee (or a group of employees) assigned to it to provide maintenance and emergency services. Railroad companies often provided small houses to these employees called "section houses," which were typically built alongside railroad roadways within the right of way (see Figure 24). Berg (1900:15) states that a section house should be "cheap and built to suit the local climatic conditions." Berg further notes that section houses built by the Northern Pacific Railroad Company were predominantly designed "to keep the cold out" and that there were two varieties of section house: "one for accommodation of one or more families and the other for a number of men" (Berg 1900:14).

Section houses could be of single or duplex configuration, but were nearly always one- or two-story wood frame structures with clapboard or board-and-batten sheathing and roofs of tin sheet, cedar shakes, or asphalt shingles. The modest architectural style expressed by section houses varied from region to region, but were generally influenced by the contemporary styles of local farmhouses.

The smallest section houses had only a living room and bedroom, with the fireplace used for cooking food, but most that were designed to accommodate a family had a living room, bedroom, and kitchen. When section houses were required to house groups of men, additional bedrooms were added to the floorplan. Berg (1900:19) describes a standard two-story section house designed by the Northern Pacific Railroad Company to accommodate a group workers:

> The main portion of the house is 26 ft. x 20 ft., with a kitchen annex, 26 ft. x 10 ft. There are five rooms on the ground-floor, namely, a dining-room, three bedrooms, and a kitchen. The second floor forms one large common bedroom with a number of double bunks, 6 ft. 6 in. x 4 ft. 6 in. Where desired, this second floor can be divided into rooms by appropriate partitions.

## III. Significance

Section houses are associated with historical patterns of transportation development in North Dakota within the statewide contexts *Development of North Dakota Railroads, 1872-1956*. Section houses and the men and families who occupied them were important components of a railroad company's track maintenance system. Because section houses were usually built from standard company plans, a comparison of extant examples may provide information regarding the evolution of worker housing during the development of

North Dakota's railroad network. Generally, they are considered significant for their association with historic railroad corridors and for their representation of evolving trends in railroad worker housing.

# IV. Registration Requirements

A railroad section house can be individually eligible under Criteria C and D. Periods of significance for individual railroad section houses will depend on the date of construction and years of operation.

### Criteria A and B

A railroad section house will not meet Criterion A or B as individual property. Section houses served as the residence for the section crew foreman, and as such, functioned as other residences would. The difference for a section house was that it was located on railroad property within or adjacent to a railroad corridor. Therefore, if the railroad corridor does not retain integrity as a historic district, a section house will not convey its function as a specialized railroad building, rather it will have the appearance of any other house. In addition, section houses were built and operated by large corporations that represent the work of many people, rather than individuals. Although prominent individuals dominated some of the companies, such as James J. Hill of the Great Northern, they managed the construction while working out of the company's headquarters. Administrative offices would represent their corporate lives better than railroad corridor historic districts.

### Criterion C

A railroad section house will meet Criterion C if it meets one of the following conditions: it embodies the distinctive architectural design or construction methods associated with significant railroads, including the use of standard company designs; it embodies the work of a significant architect, engineer or builder; or it represents historically important trends in the evolution of standardized railroad company architecture.

### Criterion D

A railroad section house or its structural remains will meet Criterion D if further analysis can yield important information about a significant aspect of the standardized architecture developed as part of the evolution of its class of railroad-related properties. To meet Criterion D, a railroad section house itself must be, or must have been, the principal source of the important information. The information that a railroad section house yields, or will yield, must be evaluated within an appropriate historic context. This requires consulting the body of information already collected from similar properties or other pertinent sources, including modern and historic written records. The researcher must be able to anticipate if and how the potential information will affect the definition of the context. The information likely to be obtained from a particular railroad section house must confirm, refute, or supplement existing information in an important way. The importance of the information to be potentially obtained must be justified through the formulation of research questions that address historically significant questions.

The railroad section house or its remains should then be investigated with techniques sufficient to establish the presence of data relevant to the research questions being asked. The method of investigation will depend upon specific circumstances including the house's location, condition, and the research questions being addressed. Justification of the research potential of a section house may be based on analogy to another better known property if sufficient similarities exist to establish the appropriateness of the analogy. The assessment of integrity for railroad section houses considered under Criterion D depends on the research design's data requirements.

### Integrity Requirements

In addition to the requirement that a railroad section house must meet one of the National Register Criteria to be considered eligible, it must also retain integrity.

**Materials.** A railroad section house retains integrity of materials if it: retains original materials; has replacement materials that were installed during the period of significance; or has minor modern repairs, alterations, or additions that have the same design and material character as those used during the period of significance. Structural and design alterations made during the period of significance may be considered part of the historic fabric.

**Design.** To retain integrity of design, a railroad section house must retain the original architectural, structural, and stylistic features that convey the significance of its architectural design.

**Workmanship.** If an architectural design feature of a railroad section house is considered a stylistically defining feature of the property, that feature must retain enough of its original visual appearance to effectively convey the historical significance of its workmanship.

**Feeling.** If a railroad section house retains integrity of design, materials, and workmanship, it will retain integrity of feeling.

**Association.** A railroad section house will retain integrity of association if it retains its associated significant architectural features.

**Location.** Railroad section houses eligible under Criterion C that meet Criteria Consideration B for relocated properties are not required to retain their integrity of location.

**Setting.** Railroad section houses that are eligible under Criterion C are not required to retain integrity of setting.

# Figures

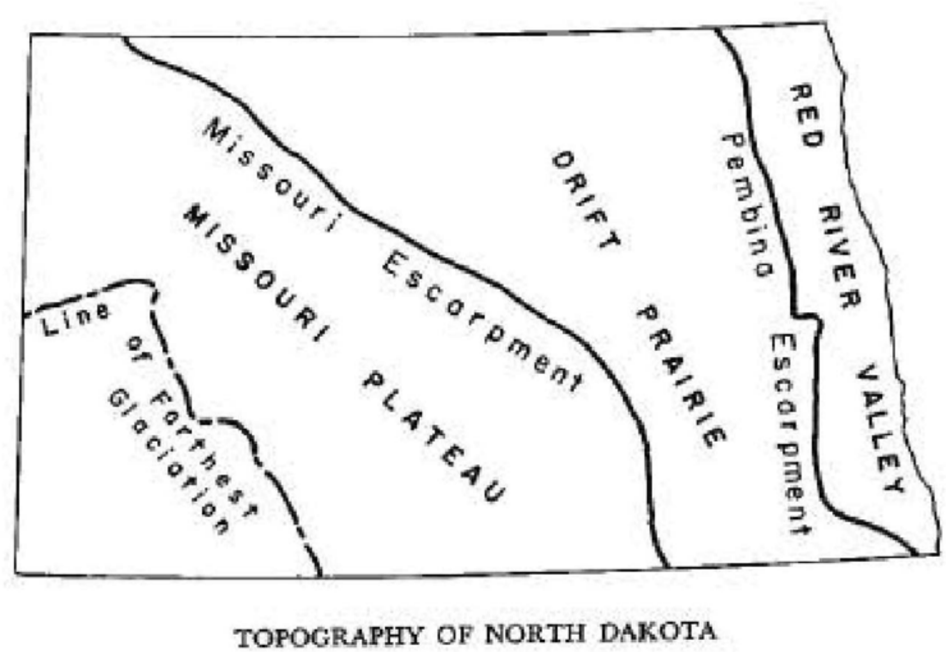


**Figure 1. Topography of North Dakota (Robinson 1966:7)**

**United States Department of the Interior**
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# National Register of Historic Places
# Continuation Sheet



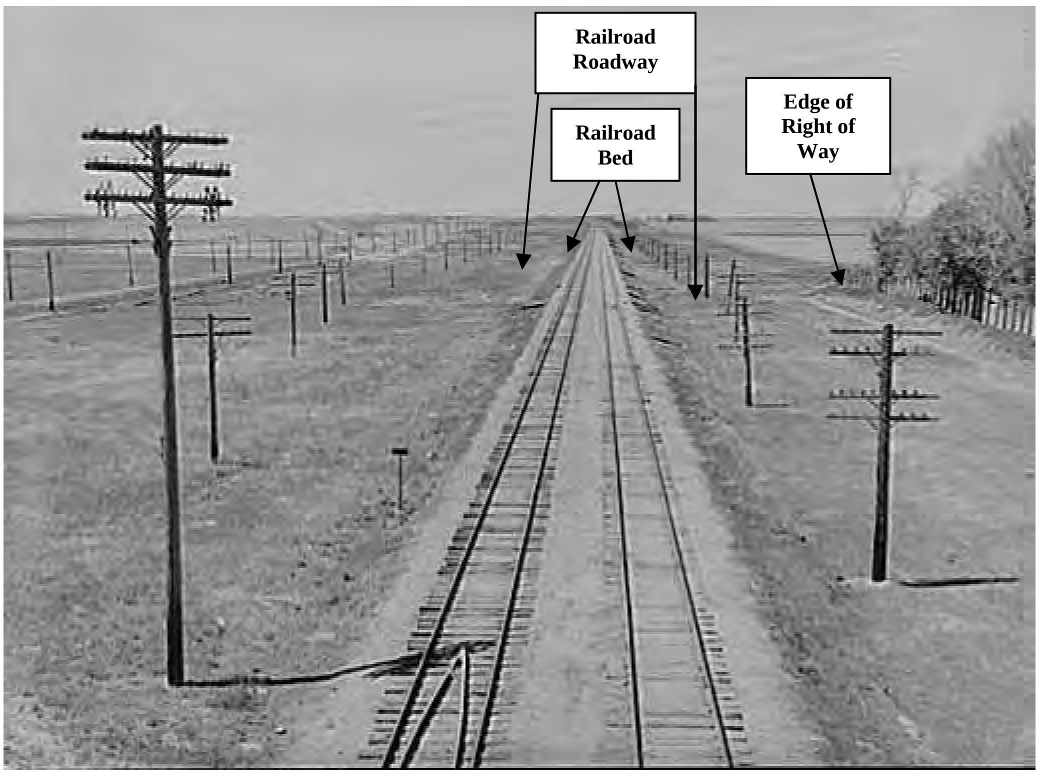


**Figure 2. Railroad Corridor, west of Fargo, ca. 1939**
**(Library of Congress, LC-USF34- 027243-D, accessed on-line at: http://memory.loc.gov)**


**Figure 3. Single-tracked roadway near Kenmare, Soo Line, ca. 1910**
**(State Historical Society of North Dakota, WD-01a-41)**


**Figure 4. Multiple Tracks at Jamestown Railroad Station, ca. 1910**
**(Institute for Regional Studies, North Dakota State University, 2000.263.86)**

**United States Department of the Interior**
**National Park Service**

# National Register of Historic Places Continuation Sheet

**Section: F** **Page 147**

Railroads in North Dakota, 1872-1956
**Name of Property**

North Dakota, Statewide
**County and State**

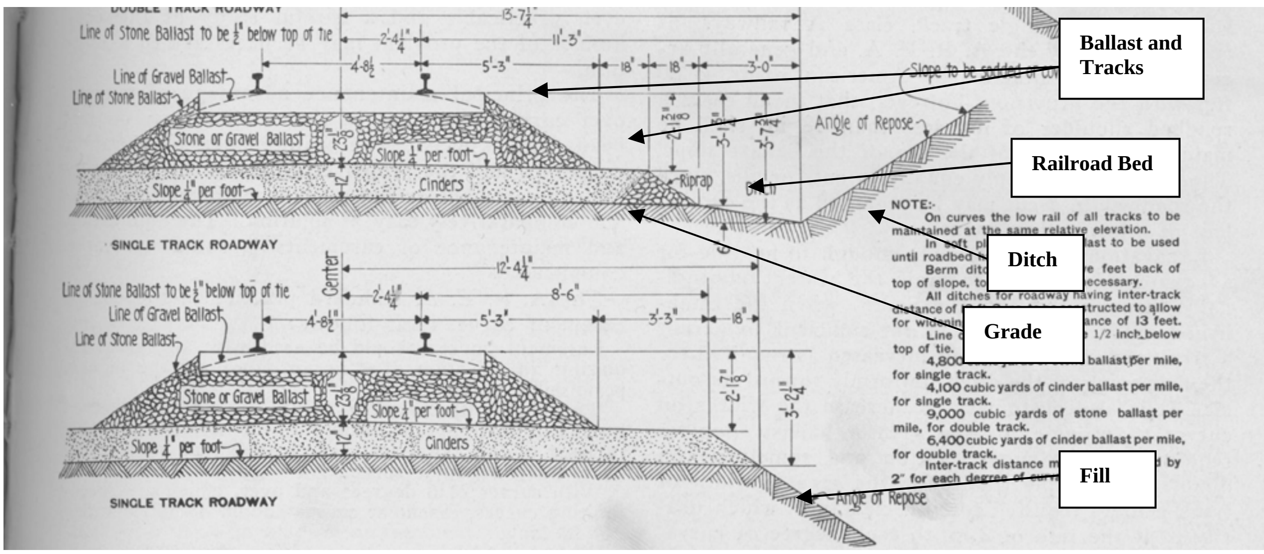


**Figure 5. Typical railroad roadway cross section (Howson 1926:95)**

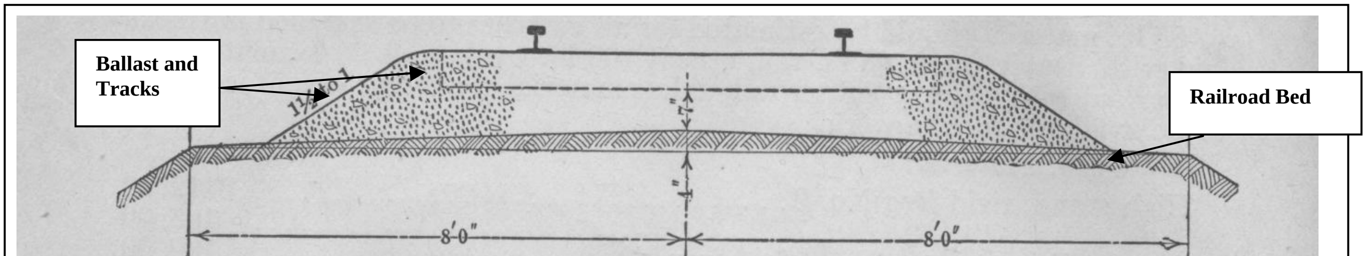


**Figure 6. Typical railroad bed, ballast, and tracks (Orrock 1918:14)**

**Figure 7. Tracks over typical stone ballast (Howson 1926:146)**

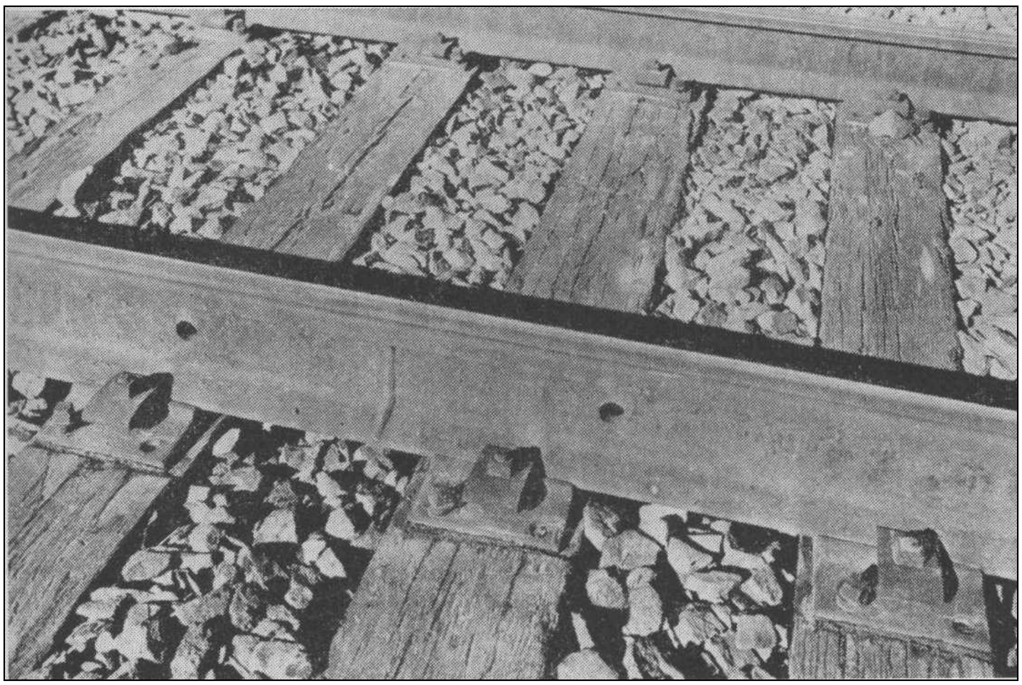

**Figure 8. Steel rails on wood ties (Hay 1953:381)**

**United States Department of the Interior**
**National Park Service**

# National Register of Historic Places
# Continuation Sheet

**Section: F** **Page 150**

Railroads in North Dakota, 1872-1956
**Name of Property**

North Dakota, Statewide
**County and State**

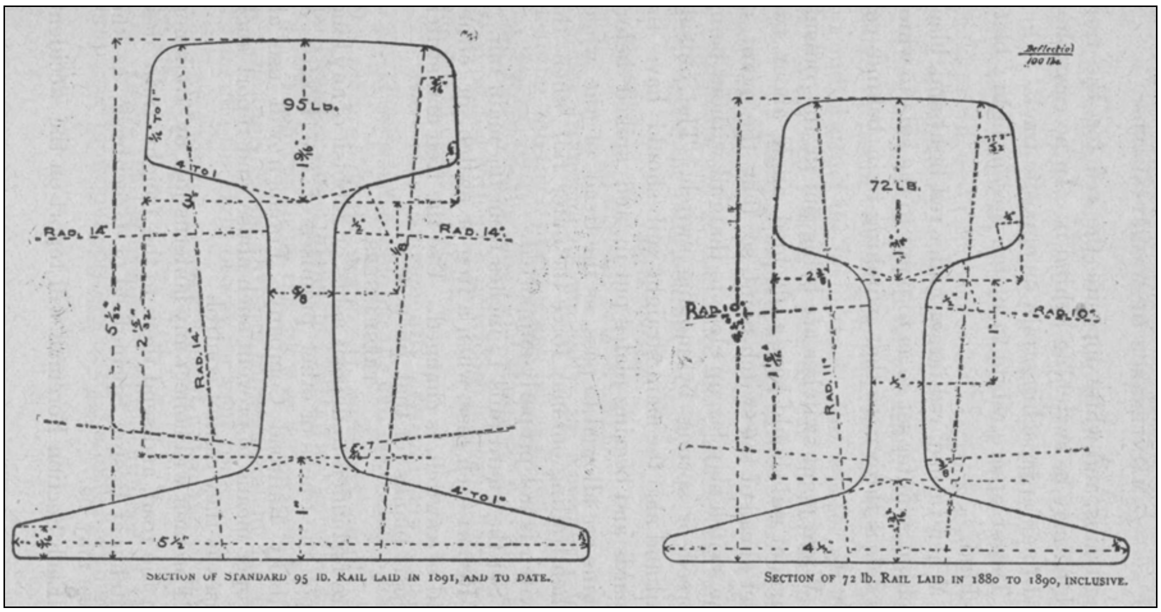


**Figure 9. Cross section of "inverted T" profile (Smith 1906:19)**

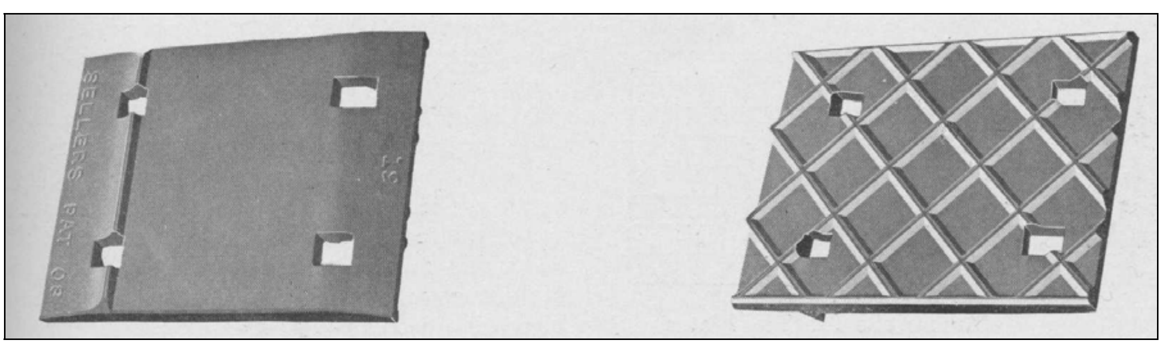


**Figure 10. Top and bottom views of tie plate (Howson 1926:235)**

**Figure 11. Construction of drainage ditches (Rench 1946:21)**

**Figure 12. Tile pipe for drainage (Howson 1926:123)**

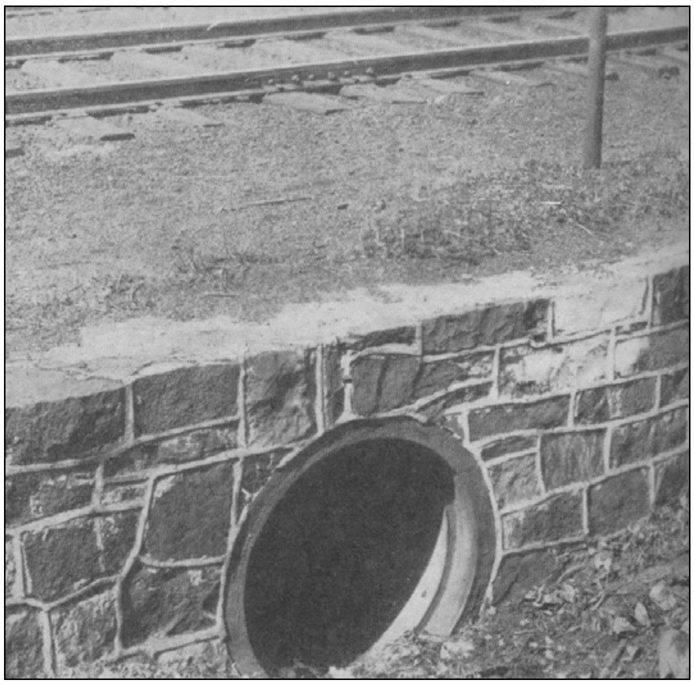

**Figure 13. Cast-iron and masonry pipe culvert (Howson 1926:448)**

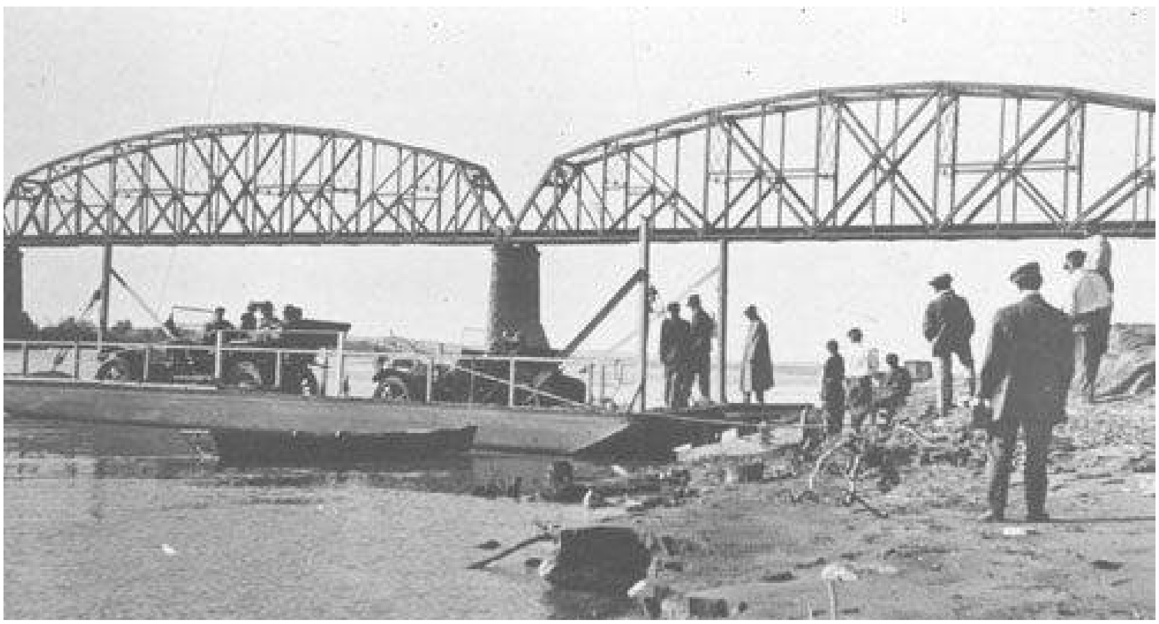

**Figure 14. Northern Pacific Bridge over the Missouri River, ca. 1909**
**(State Historical Society of North Dakota, 00151-60)**


**Figure 15. Great Northern Bridge over vehicular road, Fargo, ca. 1930**
**(Institute for Regional Studies, North Dakota State University, 2023.L-262)**

**Figure 16. Great Northern trestle at Mayville, ca. 1900**
**(State Historical Society of North Dakota, A4405)**

**United States Department of the Interior**
**National Park Service**

# National Register of Historic Places
# Continuation Sheet

**Section: F** **Page 156**

Railroads in North Dakota, 1872-1956
**Name of Property**

North Dakota, Statewide
**County and State**


**Figure 17. Great Northern viaduct near Minot, 1925**
**(Institute for Regional Studies, North Dakota State University, 2000.350.108)**

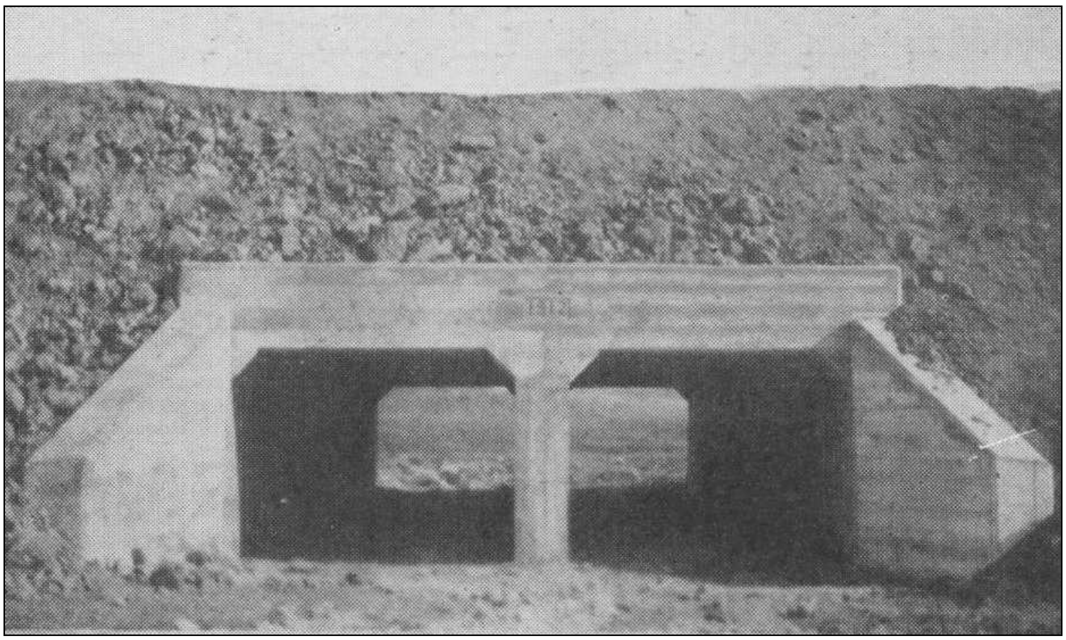

**Figure 18. Double concrete box culvert (Howson 1926:445)**

**United States Department of the Interior**
**National Park Service**

# National Register of Historic Places Continuation Sheet



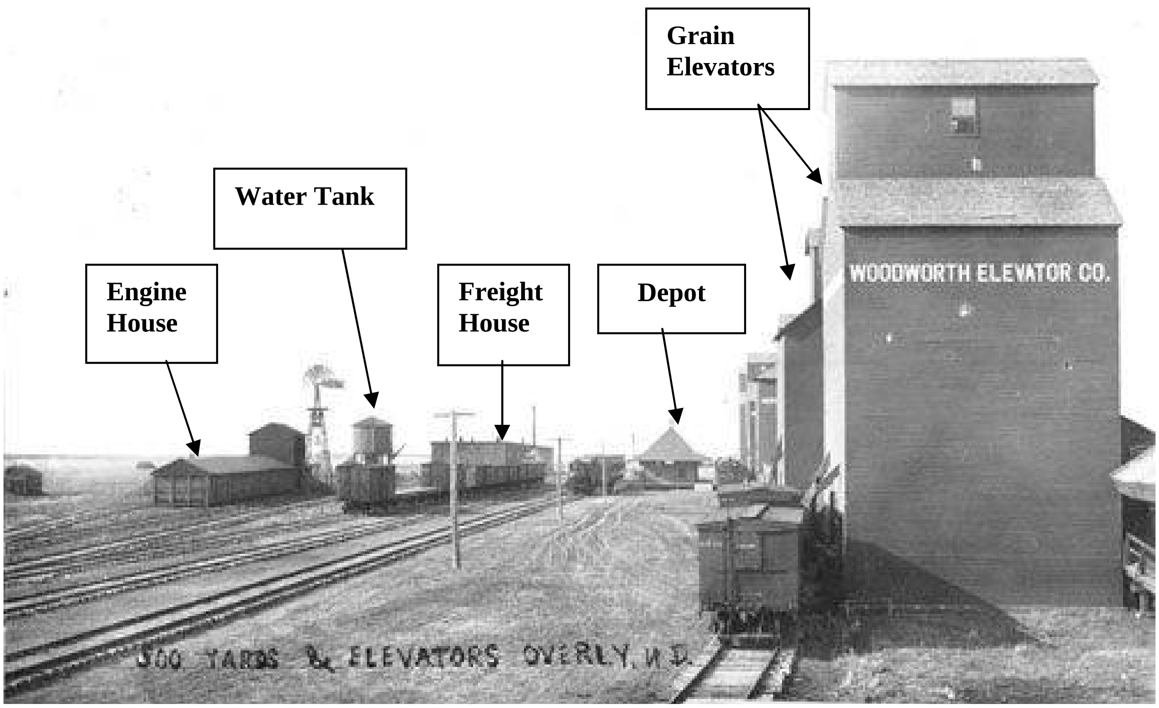


**Figure 19. Railroad maintenance yard and station, Overly, ca. 1910**
**(State Historical Society of North Dakota, 00193-029)**


**Figure 20. CM&StP station at Ellendale, with low concrete passenger platform, ca. 1910 (Institute for Regional Studies, North Dakota State University, 2000.158.20)**


**Figure 21. Soo Line large passenger depot, Bismarck, ca. 1910**
**(Institute for Regional Studies, North Dakota State University, 2000.54.315)**

**Figure 22. Great Northern Passenger Depot, Fargo, 1907**
**(State Historical Society of North Dakota, B0717-08)**


**Figure 23. Soo Line combination depot, Harvey, 1909**
**(Institute for Regional Studies, North Dakota State University, 2000.234.22)**


**Figure 24. Grain elevators, Perth, ca. 1915**
**(Institute for Regional Studies, North Dakota State University, 2000.396.4)**

**Figure 25. Northern Pacific freight house, Fargo, ca. 1880**
**(Institute for Regional Studies, North Dakota State University, 2029.8.26)**


**Figure 26. Water tank at Blanchard, ca. 1925**
**Institute for Regional Studies, North Dakota State University, 2000.56.4**

**Figure 27. Great Northern coaling station, Stanley, ca. 1905**
**(State Historical Society of North Dakota, B0736-07)**

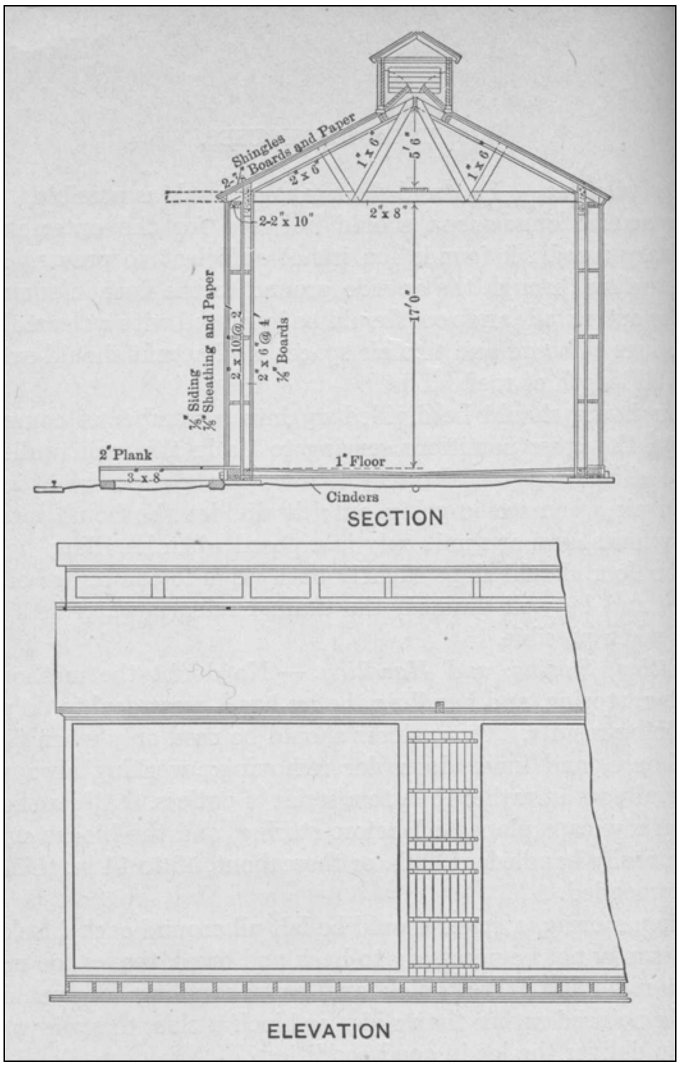


**Figure 28. Typical ice house drawings (Orrock 1918:398)**

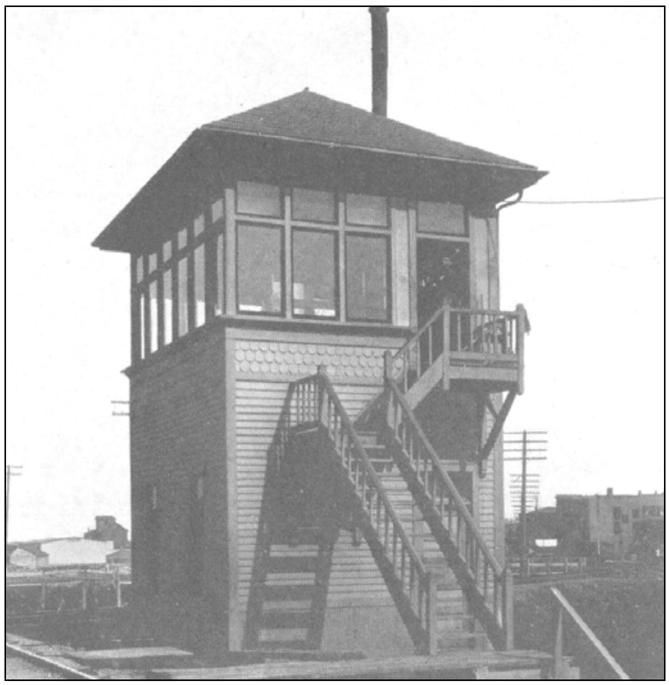

**Figure 29. Interlocking tower (Howson 1926:792)**

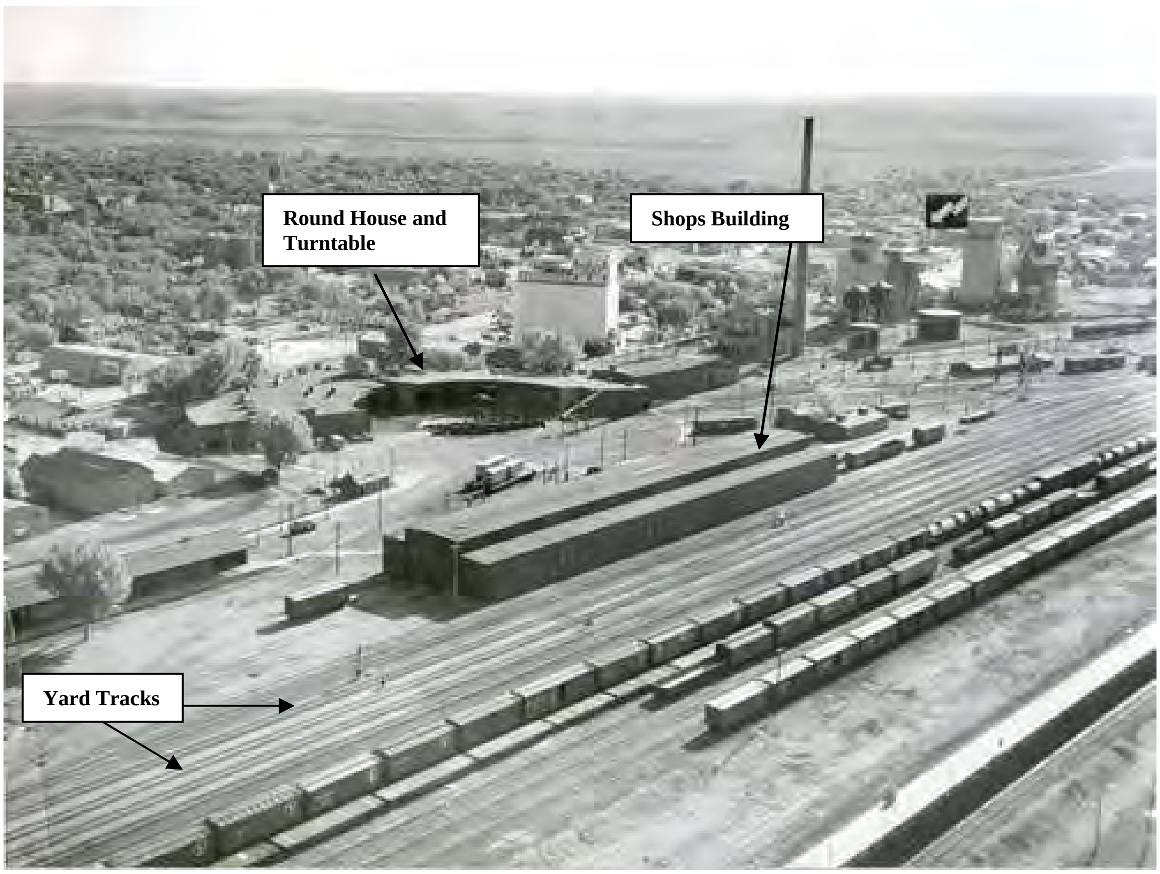


**Figure 30. Great Northern railroad yard, Williston, late 1940s**
**(Williston State College Foundation, William E. [Bill] Shemorry Photograph Collection, 1-18-15-25)**


**Figure 31. Great Northern roundhouse and yards, Williston, ca. 1910**
**(Institute for Regional Studies, North Dakota State University, 2000.527.35)**

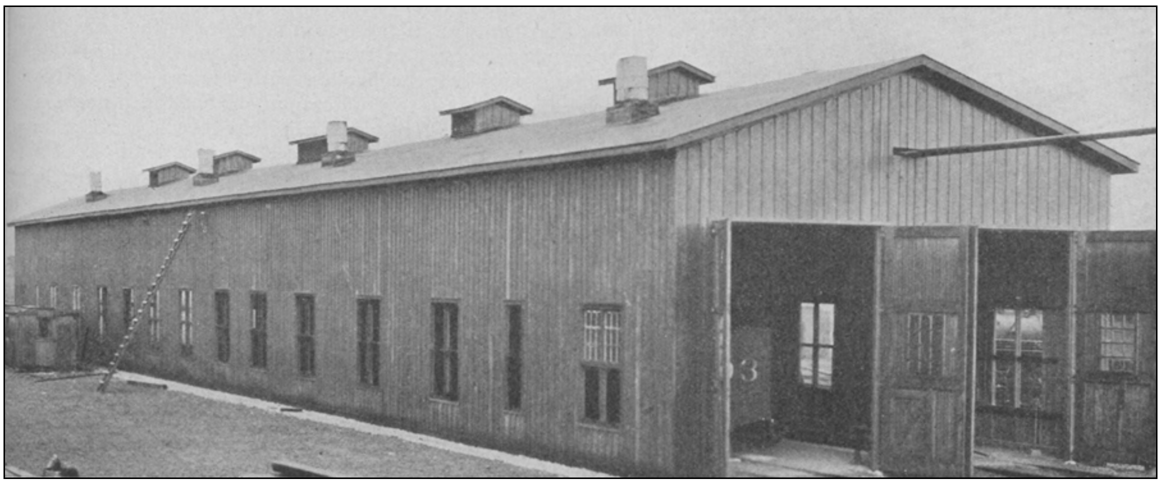


**Figure 32. Engine house (Howson 1926:561)**

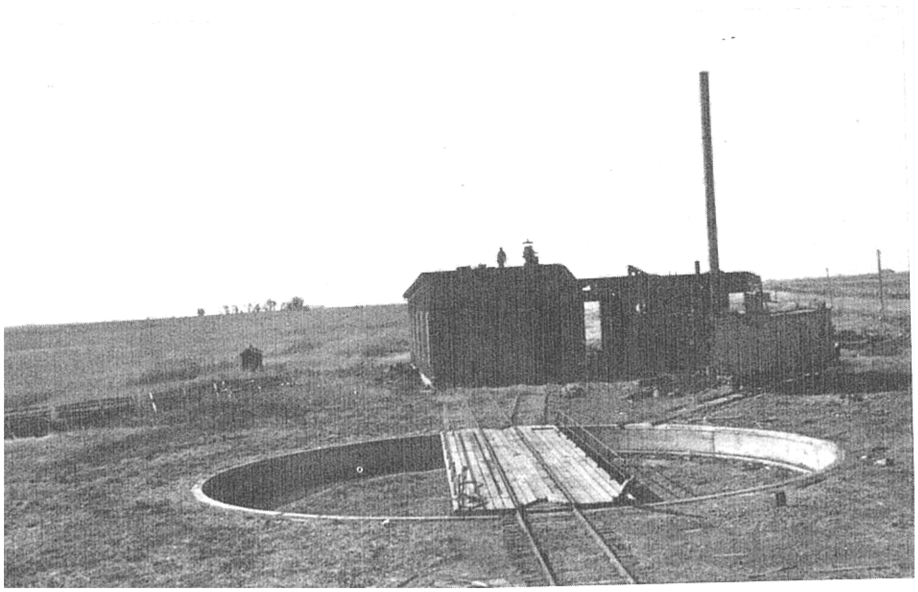

**Figure 33. Soo Line turntable, Overly, ca. 1940**
**(State Historical Society of North Dakota, 00193-029)**


**Figure 34. Great Northern shops, Devils Lake, early 1900s**
**(Institute for Regional Studies, North Dakota State University, 2000.133.239)**

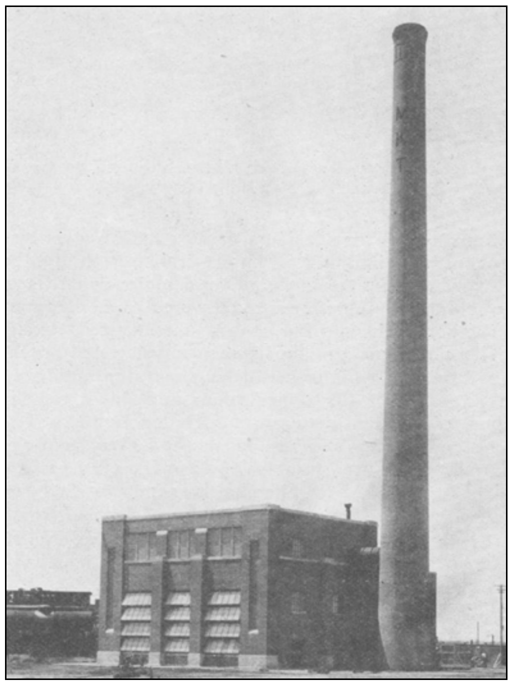

**Figure 35. Power house (Howson 1926:585)**

**Figure 36. Ash pit at Connecticut Eastern Railroad Museum, Willimantic, CT (www.cteastrrmuseum.org/gallery.htm, accessed April 14, 2007)**

# SECTION G. GEOGRAPHICAL DATA

The State of North Dakota.

# SECTION H. SUMMARY OF IDENTIFICATION AND EVALUATION METHODS

The MPDF *Railroads in North Dakota, 1872-1956* was developed in order to analyze railroad resources within the context of entire railroad corridors and to analyze railroad corridors within statewide contexts. Previous cultural resources management studies of railroad resources often were focused on the immediate project area, and the resources were evaluated for National Register eligibility within relatively short segments of larger corridors or as individual properties. Other published railroad histories tend to focus on the corporate history or economic influence of railroads. A notable exception is the MPDF *Railroads in Minnesota, 1862-1956*, which provides registration requirements for railroad corridor historic districts and other railroad property types (Schmidt et. al. 2007). The North Dakota MPDF is based on the Minnesota document but is specific to North Dakota.

*Railroads in North Dakota, 1872-1956* was intended to be a study, not a survey, of railroad resources. The focus of this study was on synthesis of secondary source materials. State and local databases were searched for railroad-related information in Bismarck, Fargo, and Grand Forks. In particular, research was completed at the following repositories: North Dakota State Historic Preservation Office; State Historical Society of North Dakota library and archives; the libraries at North Dakota State University and the University of North Dakota; and the Institute for Regional Studies at North Dakota State University. In addition, some research was conducted at the Minnesota Historical Society library and archives in St. Paul, particularly in the company records of the Great Northern, Northern Pacific, and Soo Line railroads. This research revealed an extensive existing literature regarding railroads. The main sources consulted include: previous railroad studies (books, articles, CRM reports); railroad engineering and architectural manuals from the late nineteenth and early twentieth centuries; other completed National Register nomination forms; railroad company annual reports; and historic period maps, particularly the *Railroad Commissioner's Map of North Dakota* (1914).

The historic contexts are derived from the historical research. The associated historic context is "Railroad Development in North Dakota, 1872-1956," with a number of subordinate themes, including "Agricultural Development" and "Trade Centers," as well as six railroad company-related contexts. The six companies selected represent the railroad corporations operating railroads in North Dakota as of 1914, which is near the peak of railroad mileage in the state. An exception is the Chicago and North Western railroad, which operated a small amount of right of way in North Dakota but had a much larger presence in other states. In addition, the Fairmount and Veblen Railway and the North Dakota Railway were two short lines that operated briefly and were acquired by the Soo Line and Great Northern, respectively. The six companies represent combinations of railroad companies that may have been originally independent, and subheadings for predecessor companies are provided within the contexts. Railroad corridors associated with railroad companies other than these six can be evaluated and nominated within this MPDF, but additional contextual information will be required. Because transportation was the function of railroads, the thematic contexts are focused on the interplay of railroad transportation during the nineteenth and early twentieth centuries with other aspects of North Dakota's economy, such as industry, commerce, urban development, and procurement of commodities.

The significant property types identified in this MPDF are based on function. Because all railroad buildings and structures functioned in combination with other railroad buildings and structures, individual resources were grouped into a limited number of district property types: railroad corridor historic district, railroad station district, and railroad yard district. It became apparent, however, that some railroad resources may be eligible individually: railroad depots, railroad grade separation structures, and engine houses. Those resources were also assigned property types.

The significance of railroads lies in the important transportation connections they made between resource procurement areas, railroad transfers, and railroad terminals. The registration requirements for significance under Criterion A reflect that significance and are primarily concerned with establishing the connections made by railroad corridors.

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# GLOSSARY OF RAILROAD TERMS

**Alignment:** The position of track in a horizontal or vertical plane.

**Ash pit:** Shallow pit used for the dumping of ash and cinders from locomotives.

**Ballast:** Material, such as crushed stone, gravel, cinders, burnt clay, or slag, that functions to distribute the load of the track and trains over the roadbed and drains water from the track.

**Branch line:** A secondary line that branches off of a main line.

**Bridge:** A structure that replaces the roadbed for some distance to provide passage over a body of water, chasm, road, or other feature that cannot support or interrupts the roadbed. It usually consists of two parts—substructure (abutments and piers) and superstructure.

**Classification yard:** A freight yard where trains are broken up and assembled by shifting cars with a switcher locomotive or by using a hump.

**Coaling facilities:** Coal storage and handling structures and equipment positioned near the track to deliver coal to steam locomotives.

**Coaling station:** A structure for storing coal and transferring it into locomotive tenders.

**Culvert:** A structure, usually a single-unit (a stone box or pipe), which creates a small opening in the roadbed (with some amount of roadbed above it) for the drainage of water.

**Cutoff:** A rail line constructed off of another to provide a shorter route to a given destination.

**Cut:** That part of the right of way which is excavated to provide a more gentle gradient for ascent or descent of a hill or mountain.

**Depot:** A building positioned parallel to the tracks used to receive, sort, and load any combination of passengers and freight.

**Depot, Combination:** Depot designed to receive both passengers and freight in locations where the amount of freight or the volume of passenger business does not warrant the construction of a separate freight-house or passenger depot.

**Depot, Flag:** Small, passenger depot at which a limited number of trains stop, usually on the signal of a flag. Historically, a flag depot may have been an open-air or enclosed, gable- or shed-roofed building with a simple platform.

**Depot, Passenger:** Depot designed solely for the accommodation of passenger business. Historically, small passenger depots consisted of a waiting room, ticket office, and baggage room. Larger, first-class passenger depots provided space for many additional functions, including restrooms, smoking rooms, dining rooms, offices for mail, telegraph, and wire services, news stands, supply rooms, lounges for conductors and trainmen, and administrative offices.

**Depot, Union:** A union depot united all of the railroads serving a city in a single facility, consolidating the various railroads' station facilities within a building or complex.

**Division point:** The location in a railroad corridor where one administrative and operational unit of a railroad ends and another begins. Division points often include railroad yards and maintenance shops.

**Double track:** Main line constructed of two tracks, in which one track supports traffic flow in one direction, and the other track supports traffic flow in the opposite direction.

**Engine house:** A railroad shop building used to provide the regular mechanical maintenance for a railroad's locomotives. Historically, these buildings were of the "square-" or "round-" house variety.

**Fill:** Earth or rock, used to make a level roadbed across a valley or depression.

**Freight house:** The station facility of a railroad line for receiving and delivering freight.

**Grade or gradient:** The ratio of elevation gained or lost per distance traveled measured in feet, expressed as a percent. The base is 100 feet, so a 1 percent grade represents a 1-foot elevation change in 100 feet of travel.

**Grade Separation:** A railroad crossing where the grade of the railroad bed or bridge is separated from another railroad line, a vehicular roadway, a water course, or a topographic feature.

**Granger railroad:** A term used for railroads that, during the late nineteenth and early twentieth centuries, hauled large volumes of grain from the primary grain-growing area of the Midwest, extending from Kansas, Missouri, and Illinois north to Canada.

**Hinterland:** The region situated beyond metropolitan centers but linked to those centers through lines of economic exchange and interaction.

**Hump yard**: A switching yard with an elevated track or hump over which cars are pushed by a switch engine so that they travel by gravity to classification tracks.

**Ice House**: Insulated building used to store ice for use in refrigerated and passenger cars.

**Interlocking tower:** A structure positioned at the point where two tracks intersect in order to house the automated switches that control the crossing of the two tracks.

**Intermodal:** The use of more than one type of transportation system or vehicle to move freight and passengers.

**Interurban (routes):** Between two cities.

**Limited service:** Express passenger or freight service with no stops between major terminals.

**Lead track:** Railroad track used to connect the through tracks with yard tracks.

**Main Line:** Rail line used for through trains or as the principal artery of a system, to which branches, yards, and spurs are connected. Main line tracks are typically constructed for the operation of trains at higher speeds, and these trains are typically given preference in time tables over branch lines. Main lines are also maintained to a higher standard than yards and branch lines.

**Maintenance shops:** A group of several use-specific shop buildings located at junctions and division points for the provision of maintenance on railroad rolling stock. The types of buildings that comprise a maintenance shop complex include machine shops, oil houses, blacksmith shops, carpentry shops, wheel foundries, and mill rooms, and shops for painting, carpentry, electrical, and special work could be completed.

**Motive power:** The locomotives owned and operated by a railroad.

**Rail yard:** A system of tracks branching from a common track used for switching, making up trains and storing cars.

**Railroad bed:** A layer of soils applied to the ground surface to provide a smooth regular plane for the tracks and to uniformly distribute loads from trains, tracks, and ballast.

**Railroad corridor:** The linear area that encompasses the right of way within which a railroad operated and all of the buildings, structures, and objects that worked together for the dedicated purposed of running trains to transport freight and passengers.

**Railroad roadway:** The portion of the railroad right of way modified to support the railroad tracks.

**Railroad shops:** Structures and buildings in which the building and repairing of railroad equipment is performed.

**Railroad station:** Dedicated stopping points within the right of way where trains load or unload passengers or freight.

**Railroad track:** A structure consisting of a pair of parallel lines of rails with their crossties, on which a railroad train runs. Standard-gauge railroad tracks are typically 4 feet, 8 ½ inches in width, while narrow-gauge tracks are 3 feet wide.

**Railroad yard office:** Building occupied by employees working in a transfer or freight yard.

**Retarder yard:** A switching yard in which the movement of cars, after they are released from a locomotive, are controlled by an employee in a control tower.

**Right of way:** The area owned by a railroad for the purpose of operating a railroad.

**Rolling stock:** The various types of freight and passenger cars owned and operated by a railroad.

**Roundhouse:** A form of engine house constructed with multiple engine berths in a radial pattern; it could have a segmental plan with the berths occupying a segment of a circle or be a closed or full-circle plan.

**Section house:** Dwelling erected along the rail line used to house the section maintenance crew.

**Short line:** A rail line that operates over a limited distance.

**Siding:** Side tracks that connect to through tracks at both ends.

**Signal:** A manual or automated device that indicates to the driver of a train information about the line ahead.

**Sleepers:** European term for railroad ties.

**Sorting yard:** See classification yard.

**Spur:** Side tracks that connect to through tracks at one end.

**Station platform:** A structure that facilitates movement between railroad cars and railroad depots and warehouses; it may be a low platform, at grade, or a structure raised to the height of approximately 4 feet above grade.

**Stub line:** A railroad corridor that terminates at a point with no through service.

**Tender:** A car that carries extra fuel or water for rolling stock.

**Through route:** Railroad corridor that provided through service.

**Through service:** When railroads offer transportation between major destination points without needing to transfer passengers or freight.

**Through tracks:** The tracks that continue through a railroad station or yard area where there are several sidings and/or spurs.

**Tie or Cross-tie:** Ties are pieces of timber that measure 6-by-8 inches to 7-by-9 inches in cross section and 8 to 9 feet in length that are laid perpendicular to the rails and are bedded in the upper portion of the ballast.

**Tie plate:** A metal plate providing a bearing surface for the rail on the crosstie.

**Toe:** The base of an embankment where the slope levels off to the naturally occurring ground surface.

**Trackage rights:** The legal right of one railroad company to use the tracks of another, as agreed to by the companies concerned or their predecessors.

**Transfer line:** A railroad corridor whose primary function is to transfer trains between through routes, to connect to large classification yards, or to provide a bypass around heavy traffic areas.

**Transfer table and turntable:** Structures used to maneuver into engine houses.

**Trestle:** A structure used to cross a deep river valley or to cross minor streams and gullies; usually a braced framework with 12- to 14-foot spans of wood piles or framed lumber.

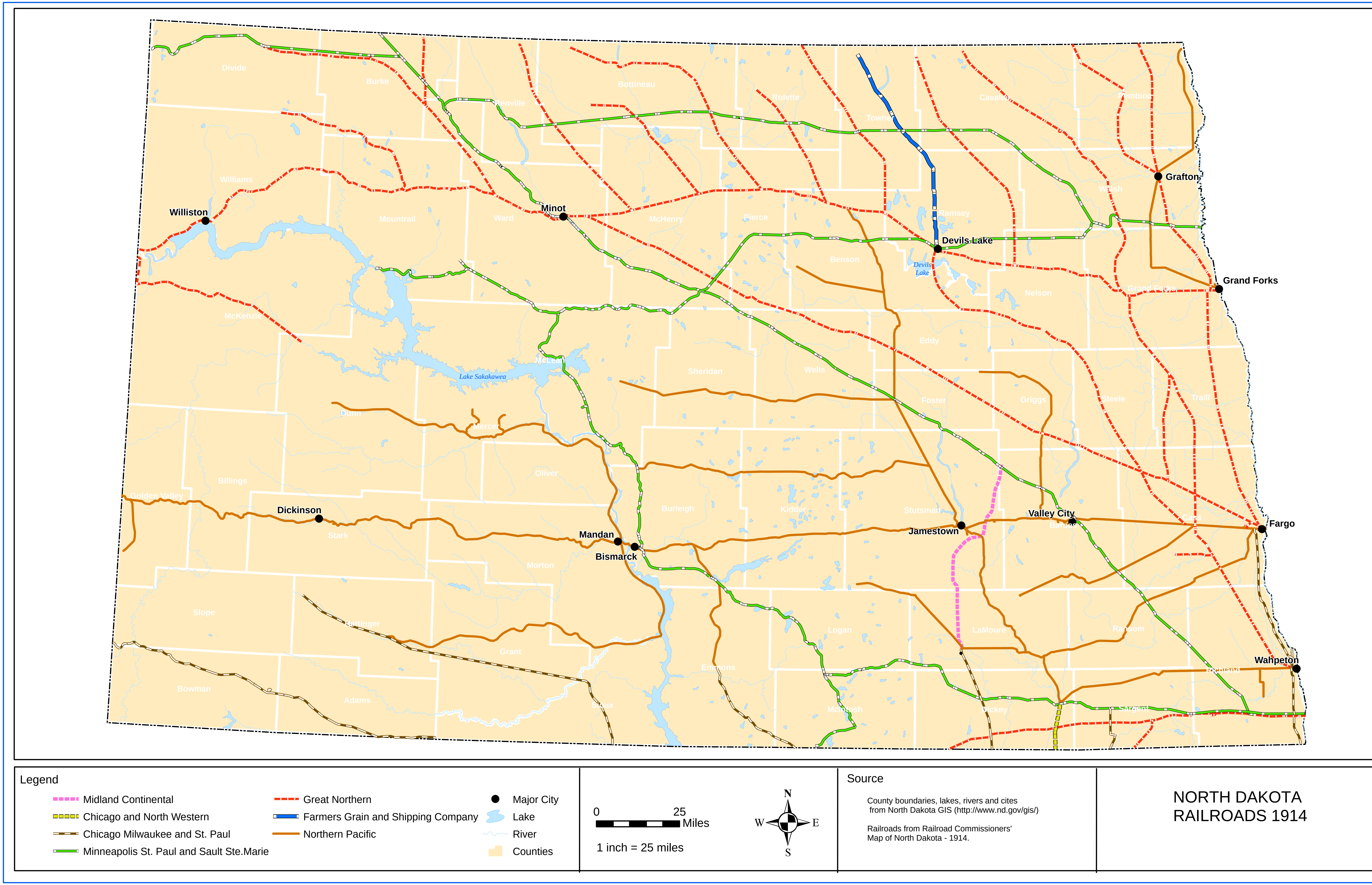
**Truss:** A geometric framework of iron or steel members in various states of tension or compression, used for railroad bridges.

**Viaduct:** A structure used to cross a deep river valley or to cross minor streams and gullies; usually a structure of iron or steel members.

**Water tank:** A wood or metal tank used to fill locomotive steam boilers, generally located near or within to railroad stations and yards, and accompanied by a pump house.

**Worker shelter:** Small structure in which watchmen, flagmen shanties, and signal maintainers could take shelter.

# MAPS


Divide
Burke
Renville
Bottineau
Rolette
Towner
Cavalier
Pembina
Williams
Mountrail
Ward
McHenry
Pierce
Ramsey
Walsh
Williston
Minot
Devils Lake
Grafton
Grand Forks
Benson
Devils Lake
Nelson
McKenzie
Eddy
McLean
Lake Sakakawea
Sheridan
Wells
Foster
Griggs
Steele
Traill
Dunn
Mercer
Oliver
Billings
Golden Valley
Dickinson
Stark
Mandan
Bismarck
Morton
Burleigh
Kidder
Stutsman
Jamestown
Valley City
Barnes
Cass
Fargo
Slope
Hettinger
Grant
Logan
LaMoure
Ransom
Wahpeton
Richland
Bowman
Adams
Sioux
Emmons
McIntosh
Dickey
Sargent
Legend
Midland Continental
Chicago and North Western
Chicago Milwaukee and St. Paul
Minneapolis St. Paul and Sault Ste.Marie
Great Northern
Farmers Grain and Shipping Company
Northern Pacific
Major City
Lake
River
Counties
0
25
Miles
1 inch = 25 miles
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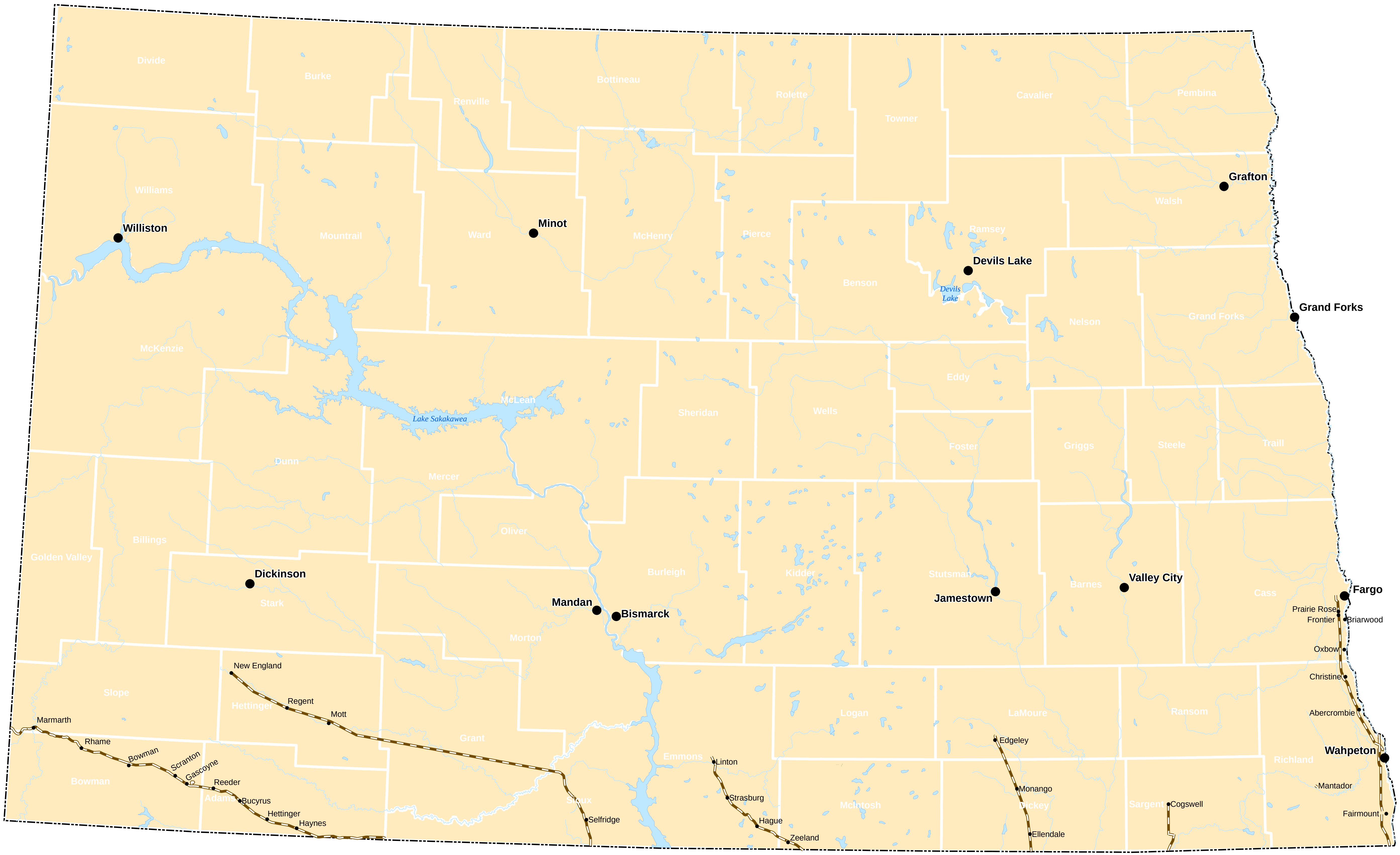
Source
County boundaries, lakes, rivers and cites from North Dakota GIS (http://www.nd.gov/gis/)
Railroads from Railroad Commissioners' Map of North Dakota - 1914.
NORTH DAKOTA RAILROADS 1914

# CHICAGO MILWAUKEE AND ST. PAUL




Legend

- Places Adjacent to Railroad Corridors
- Chicago Milwaukee and St. Paul
- Major City
- Lake
- River
- Counties

0 25 Miles

1 inch = 25 miles

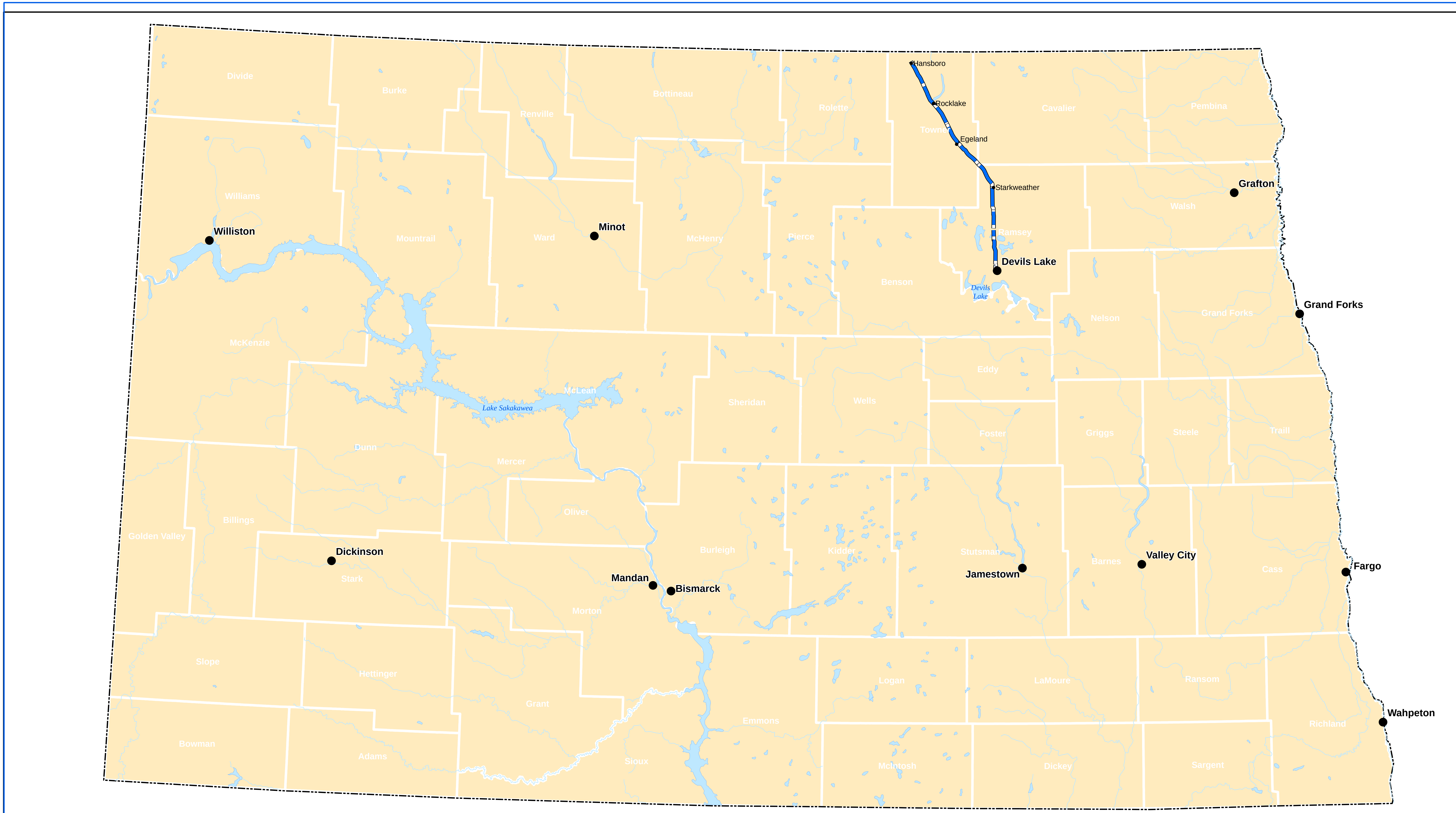
N W E S

Source

County boundaries, lakes, rivers and cites from North Dakota GIS (http://www.nd.gov/gis/)

Railroads from Railroad Commissioners' Map of North Dakota - 1914.

CHICAGO MILWAUKEE AND ST. PAUL




Legend

- Places Adjacent to Railroad Corridors
- Farmers Grain and Shipping Company
- Major City
- Lake
- River
- Counties

0 25 Miles

1 inch = 25 miles

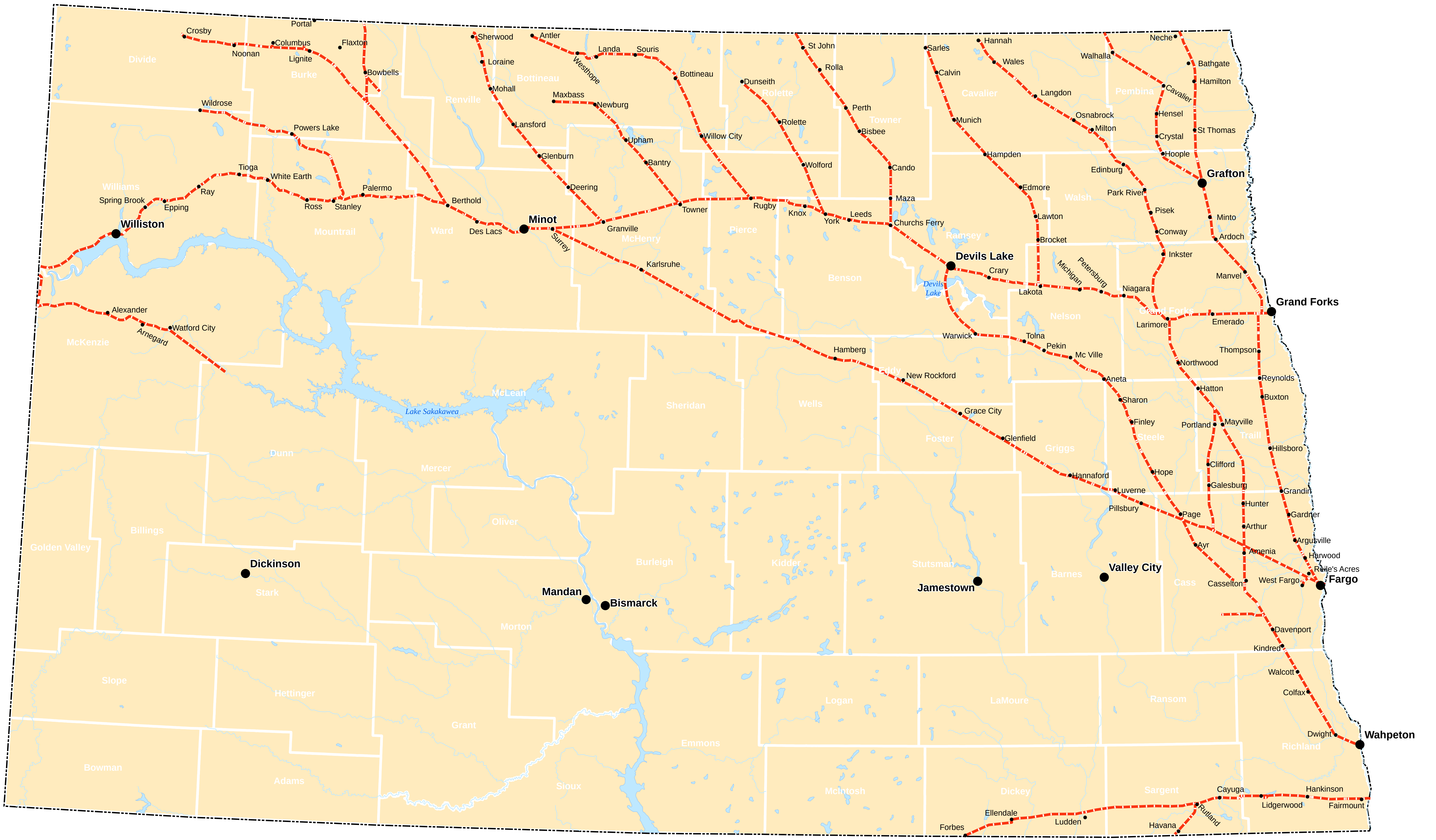
N W E S

Source

County boundaries, lakes, rivers and cites from North Dakota GIS (http://www.nd.gov/gis/)

Railroads from Railroad Commissioners' Map of North Dakota - 1914.

FARMERS GRAIN AND SHIPPING COMPANY




Legend

- Places Adjacent to Railroad Corridors
- Great Northern
- Major City
- Lake
- River
- Counties

0 25 Miles

1 inch = 25 miles

N S E W

Source

County boundaries, lakes, rivers and cites from North Dakota GIS (http://www.nd.gov/gis/)

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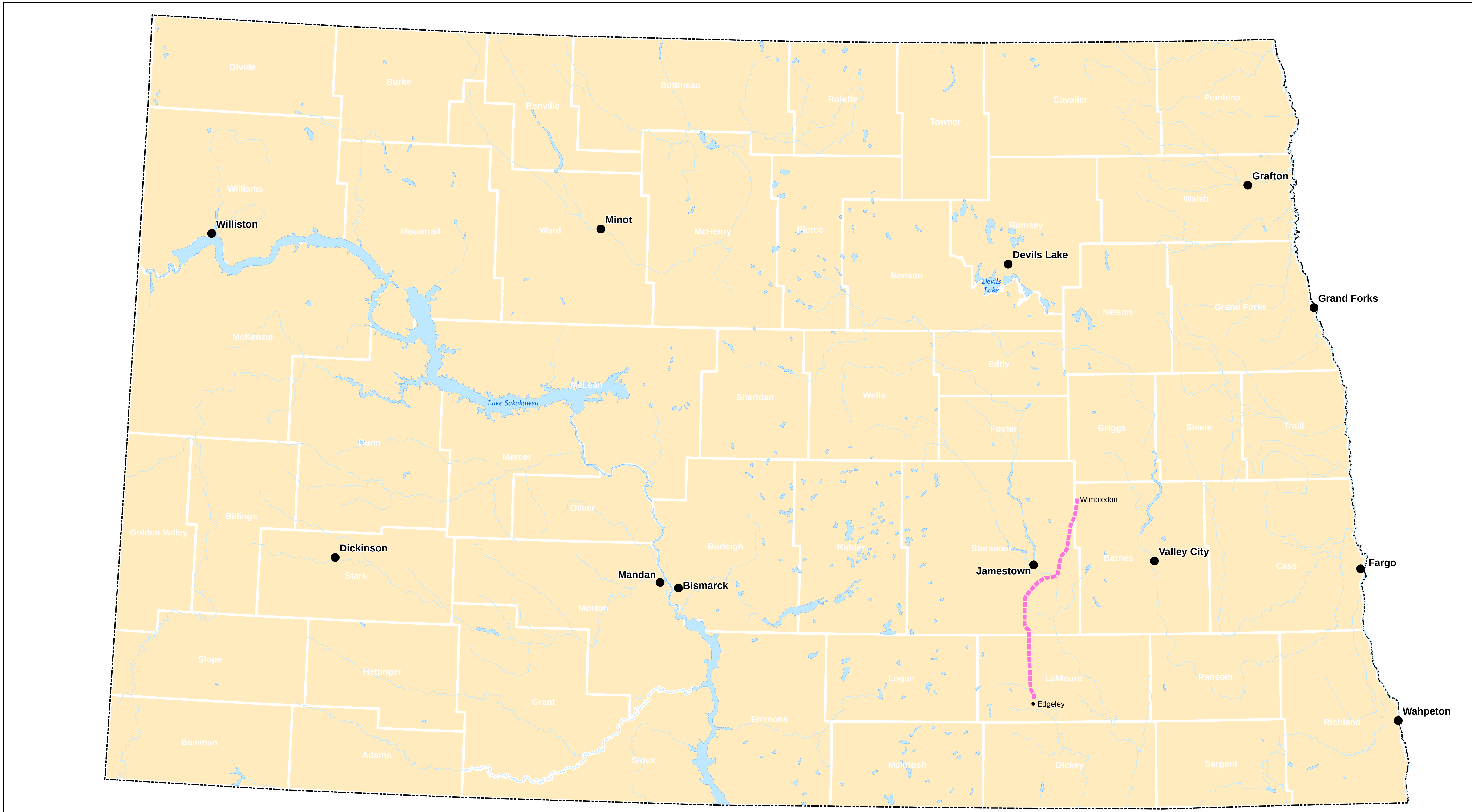
GREAT NORTHERN




Legend
- Places Adjacent to Railroad Corridors
- Midland Continental
- Major City
- Lake
- River
- Counties

0 25 Miles

1 inch = 25 miles

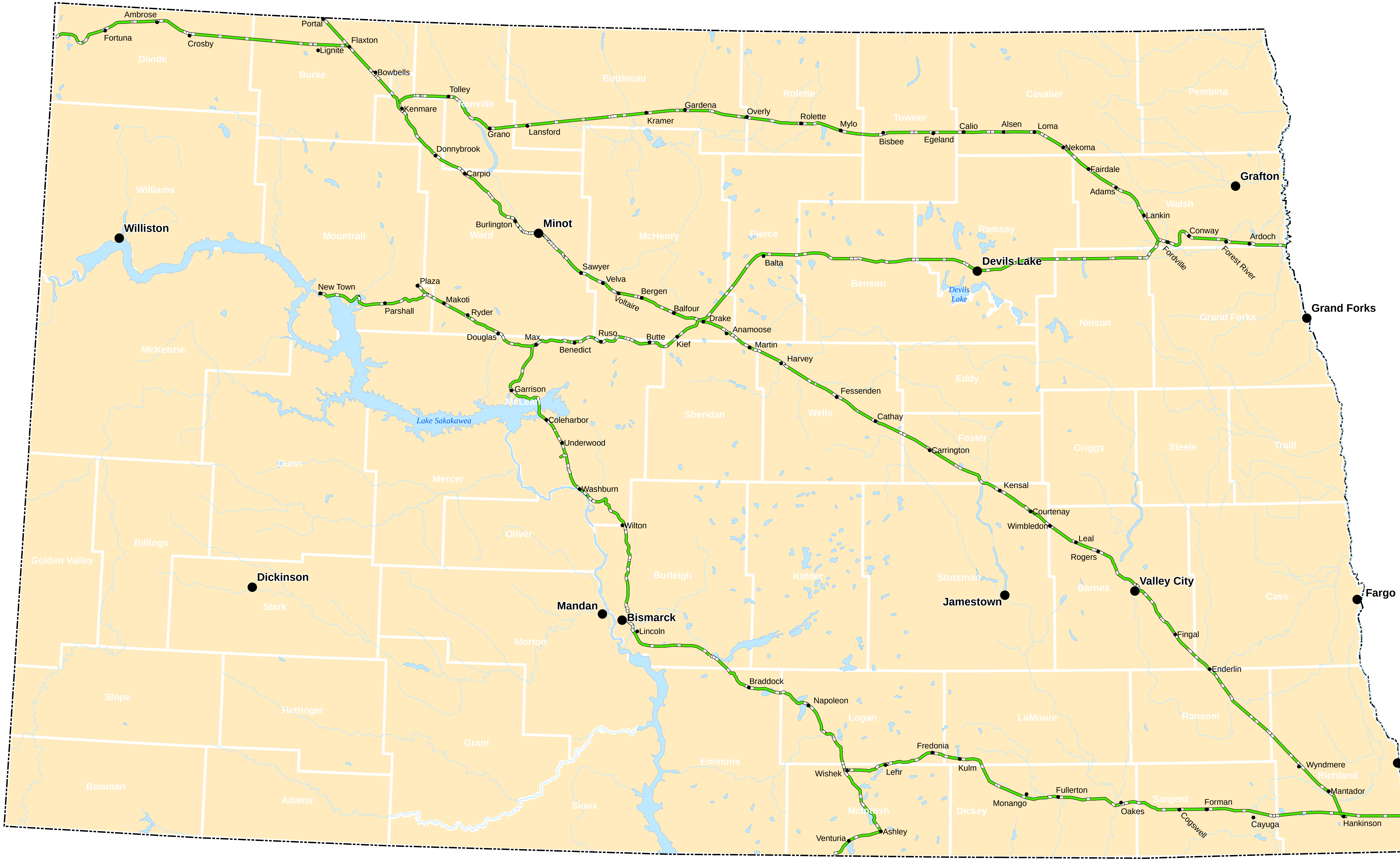
N W E S

Source

County boundaries, lakes, rivers and cites from North Dakota GIS (http://www.nd.gov/gis/)

Railroads from Railroad Commissioners' Map of North Dakota - 1914.

# MIDLAND CONTINENTAL




Legend

Places Adjacent to Railroad Corridors

Minneapolis St. Paul and Sault Ste.Marie

Major City

Lake

River

Counties

0 25 Miles

1 inch = 25 miles

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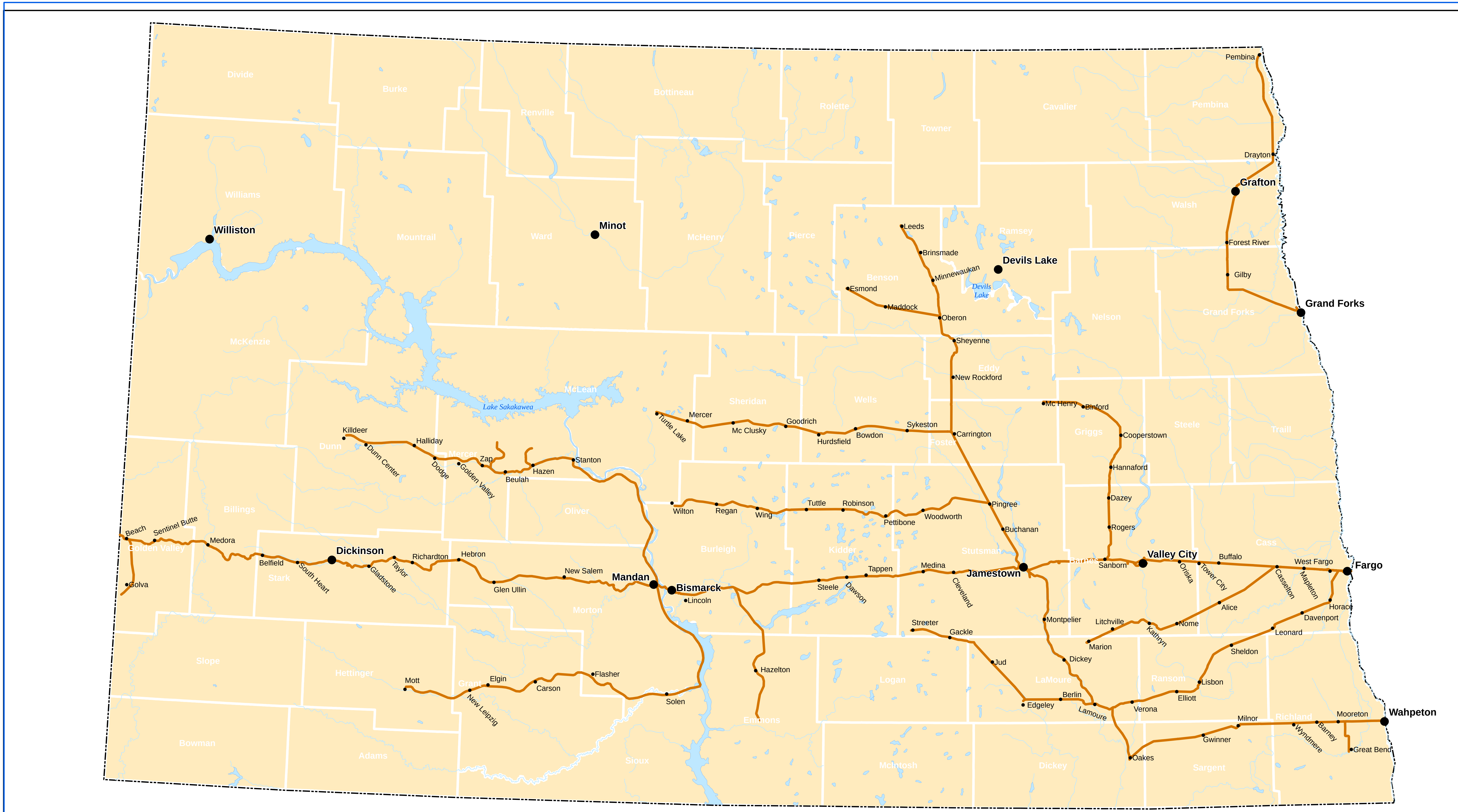
Source

County boundaries, lakes, rivers and cites from North Dakota GIS (http://www.nd.gov/gis/)

Railroads from Railroad Commissioners' Map of North Dakota - 1914.

# MINNEAPOLIS ST. PAUL AND SAULT STE. MARIE




Legend

- Places Adjacent to Railroad Corridors
- Northern Pacific
- Major City
- Lake
- River
- Counties

0 25 Miles

1 inch = 25 miles

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Source

County boundaries, lakes, rivers and cites
from North Dakota GIS (http://www.nd.gov/gis/)

Railroads from Railroad
Commissioners' Map of North Dakota - 1914.

NORTHERN PACIFIC