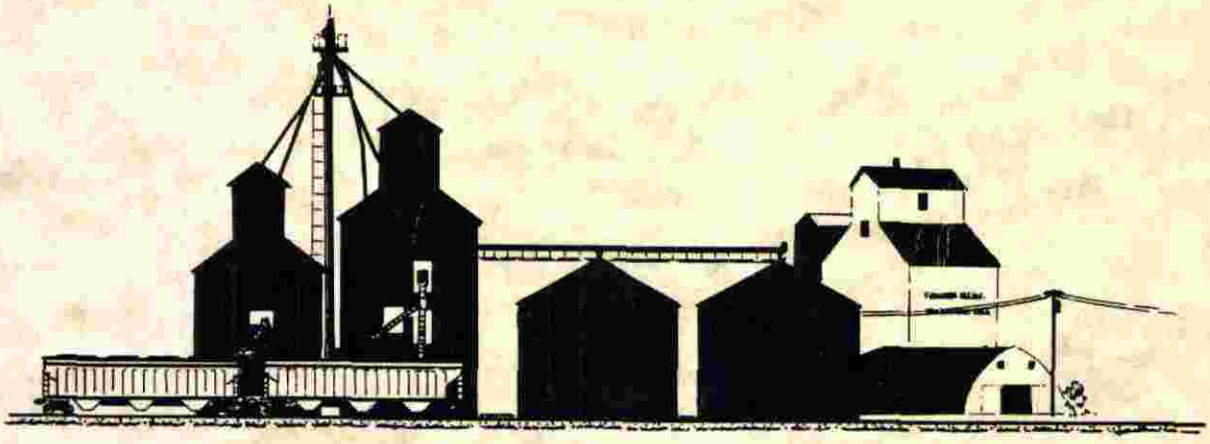
ADDENDUM TO
RAILPLAN
SOUTH DAKOTA
-1983-



WATERTOWN AREA
FREIGHT TRANSPORTATION STUDY

SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
DIVISION OF RAILROADS
PIERRE, S. D. 57501

JUNE 1983

ABSTRACT

This report presents the findings of the Study on the Watertown area freight transportation system. Undertaken at the request of the Watertown Area Chamber of Commerce, the study explores the traffic characteristics of the local rail lines, general freight movements on the local highway network, the industrial traffic distribution of freight shipments, and Watertown's place in the entire transportation picture.

Several basic conclusions have been reached:

1) Agricultural production (grain) has been, and will continue to be, the largest single component of local freight traffic. It sustains rail operations, can cause significant impacts on highways, and is the main factor in the economic vitality of the area.

2) The Burlington Northern Railroad currently has 87% of the grain marketed by rail in the Watertown area and 82% of all recurring rail traffic on both branch lines serving Watertown. Prospects for future traffic development are not positive on the Chicago & North Western Railroad's branch line.

3) Top local priority for highways should lie with US-212 and I-29. These two routes hold the highest development potential for Watertown as well as providing high volume traffic flows for interstate travel through the area.

4) Industrial development in Watertown that uses rail service should locate near the existing industries in the southwestern section of the City. Siding extensions are the most feasible here, and the area could be easily served by either carrier.

Currently, rail service characteristics appear to be generally appropriate for the needs of the Watertown area rail users. The top priority highways are being addressed in the present construction plans of the State. With a properly designed system of local roads and streets, the surface transportation system will support the anticipated freight shipping needs of the Watertown area.

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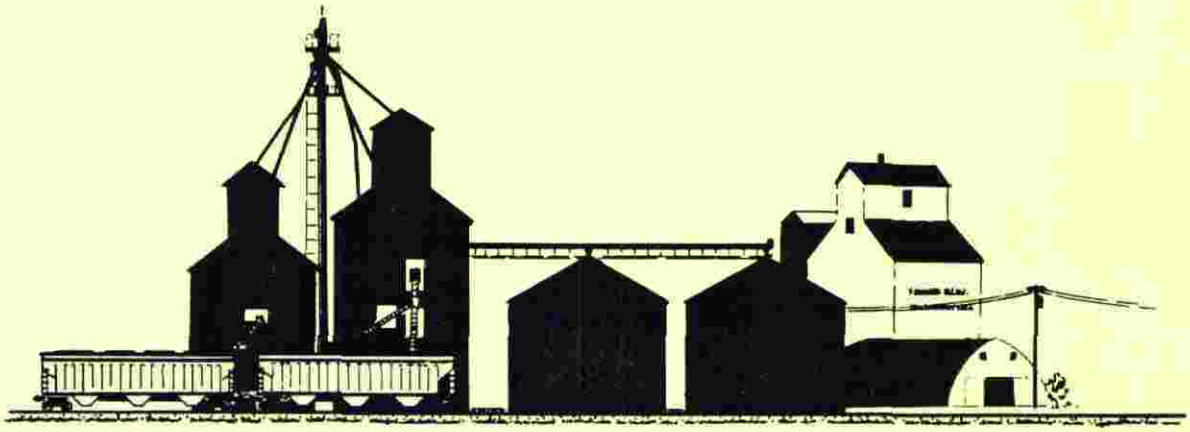
SOUTH DAKOTA
-1983-



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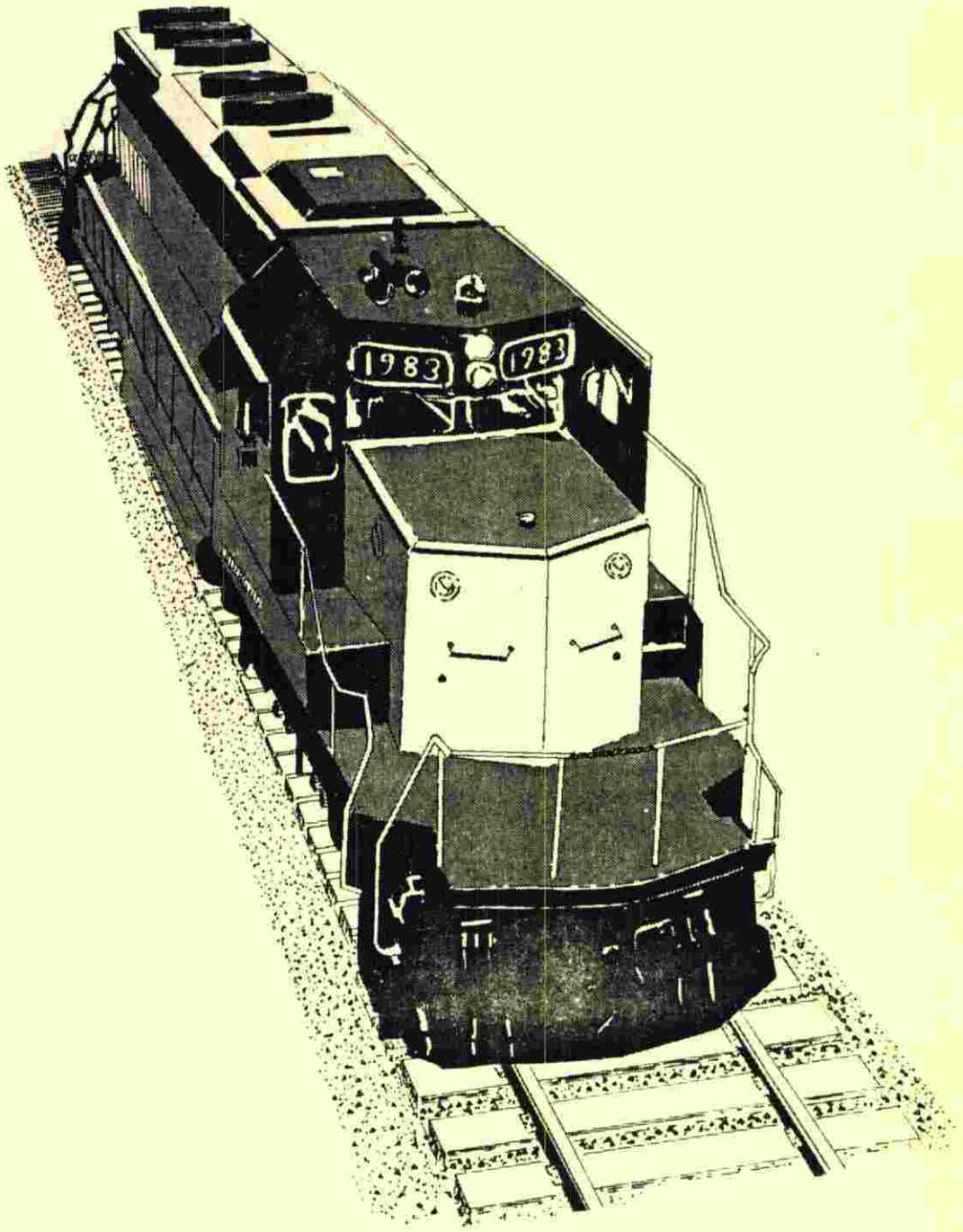


SECTION I

SECTION I

INTRODUCTION

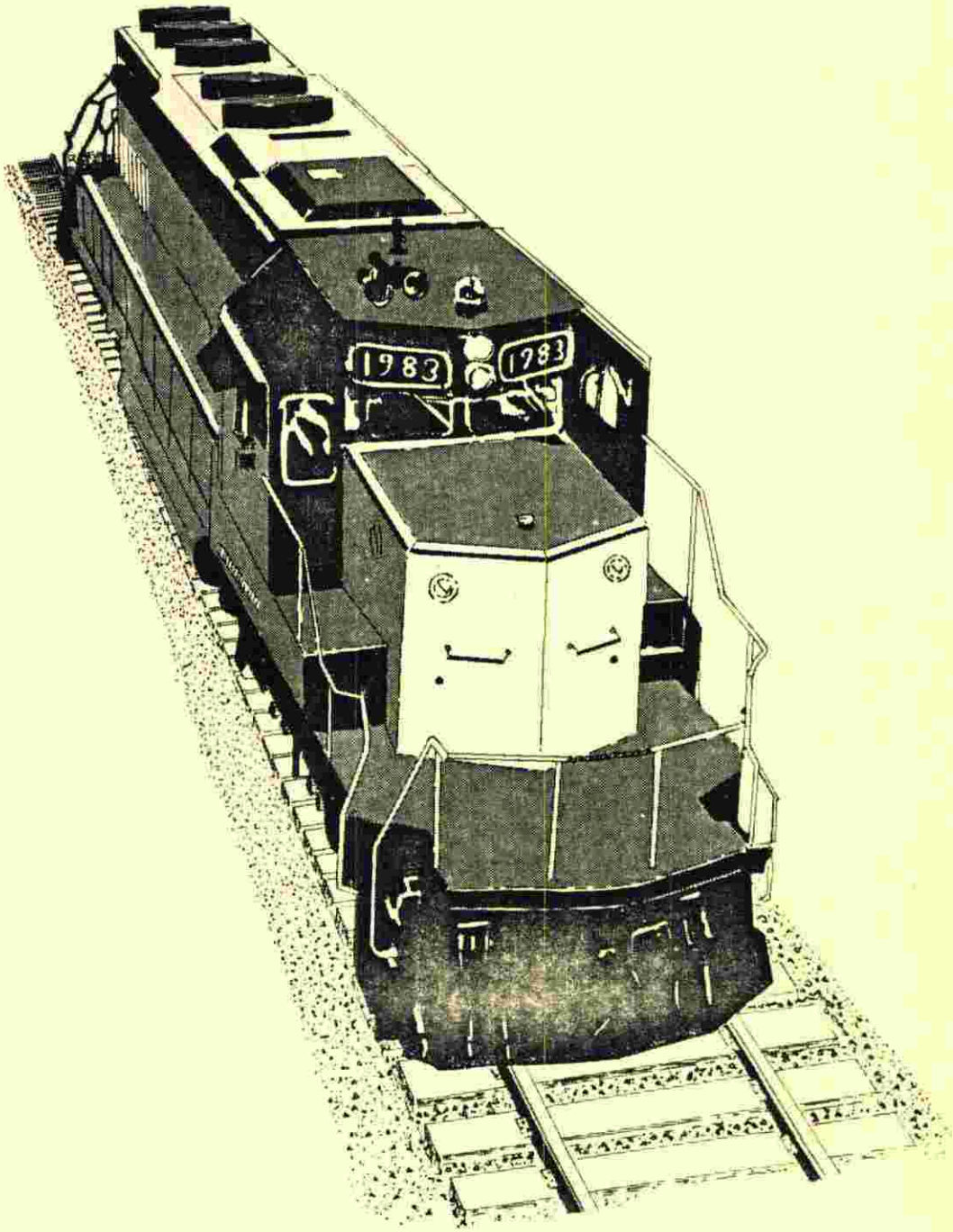
This document, the Watertown Area Freight Transportation Study, is an addendum to RAILPLAN SOUTH DAKOTA 1983. It is intended, as a regional transportation analysis, to assist the involved communities in understanding the freight transportation system. Freight shipping needs, especially for rail, form the basis for the Study. Since the highway system must also consider passenger needs, local roads have not been addressed to the same degree.

In January 1981, the Watertown Area Chamber of Commerce established a Rail Task Force to assess the area's freight shipping from a rail service perspective. Throughout 1981, the Task Force gathered shipping data and focused community attention on the relationship between adequate rail service and the potential for continued development of the community. This group was vitally important to the development of the Study.

The Study has been organized into several basic sections. The first section addresses the rail network, highway system, and freight movements from a historical perspective. Next, the economics of local transportation are detailed, including a freight user survey, to illustrate the basis for traffic decisions. The transportation of the area is then assessed in view of the current highway and rail status. The final section explores opportunities for improving the surface transportation system in the Watertown area.

A thorough knowledge of the transportation system is vital for local development decisions. This document provides necessary background information which the community should use in its ongoing analysis of the local transportation network.

HISTORICAL PERSPECTIVE



SECTION II

SECTION II

HISTORICAL PERSPECTIVE

On March 3, 1857, the Congress of the United States passed the Land Grant Act to encourage development west of the Mississippi River. A provision of the Act granted in trust every odd section of land in a strip forty miles wide to any railroad company that would construct a track to the Big Sioux River south of the 45th parallel. Since the 45th parallel runs through the northern portion of Lake Kampeska in present day Codington County, and since the Big Sioux River is farther west here than at any point downstream, this location represented the largest land grant obtainable under this provision.[1]

The Winona & St. Peter Railroad Company began extending a line from Minnesota near Gary, South Dakota in 1872 and had completed work beyond the Big Sioux River to Lake Kampeska one year later. (Unlike other areas in the developing West, this 35-mile line was the only track segment in South Dakota built with the benefit of the Land Grant Act.) In 1879, in response to a Department of Interior stipulation that the land grant extended west only to the Big Sioux River, the railroad removed its trackage west of the Big Sioux and platted the town of Watertown on its eastern bank. Watertown received 31,000 pounds of freight via this line in 1880.[2]

By 1890, four other railroad companies had built lines to Watertown. Three of these four companies later extended their lines from Watertown into new market areas. Figure II-1 illustrates the lines that were built through Watertown.

Watertown was the headquarters for the Duluth, Watertown, & Pacific Railway, a corporation established in 1899 to construct and operate a line from Duluth, Minnesota through Watertown, into Nebraska, and on to Cheyenne, Wyoming. The

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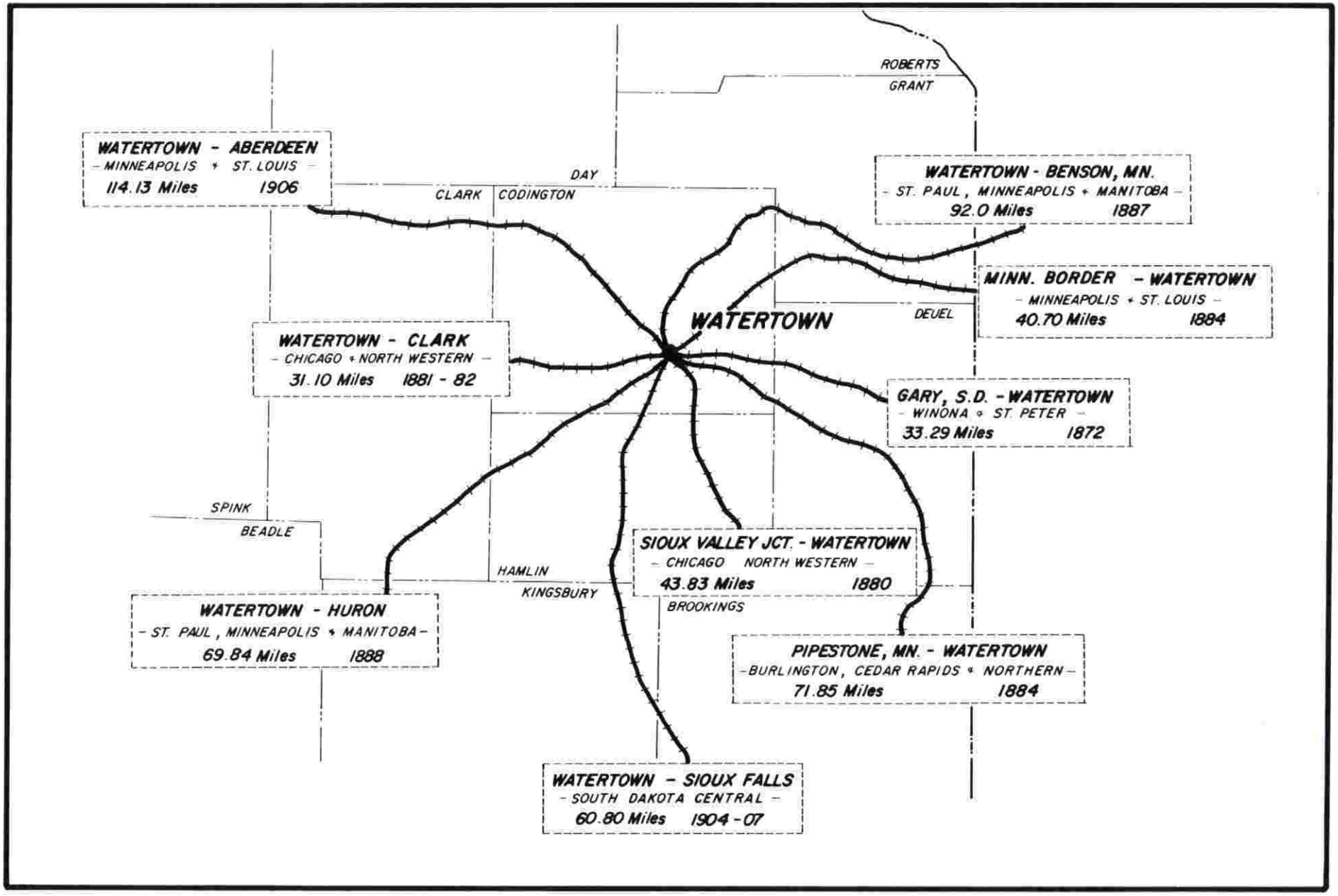
[1] Donald Dean Parker, History of Our County and State: Codington County, South Dakota State College, 1960.

[2] (Watertown) Dakota News, January 24, 1881.

FIGURE II·1

RAIL LINES CONSTRUCTED IN THE WATERTOWN AREA



original effort to finance the company through the issuance of bonds failed; consequently all capital stock in the company was transferred to the St. Paul, Minneapolis, & Manitoba Railway headed by James J. Hill. The transfer paved the way for the subsequent construction of a line from Watertown to Huron.[3]

Roads (highways) did not play an important role in the early development of Watertown, as only Indian trails guided the early settlers to this area. The Abercrombie Trail extended from Minnesota, through present-day Codington County, to the Missouri River near Pierre. Settlers wishing to travel to Lake Kampeska from the Dakota Territorial Capital at Yankton would take a road that ran between Yankton and Breckenridge, Minnesota. The road was built in 1872, and was the first territorial highway in Dakota Territory. No formal road ran west from the territorial highway; therefore, settlers had to travel overland to Lake Kampeska.[4]

One of the first official acts of the Codington County commissioners was to establish a road. As listed in the Road and Bridge record of the county, in May 1881 a road four rods wide was constructed from Watertown to the southern point of the Sisseton-Wahpeton Indian reservation, a distance of approximately three miles. The road cost the county a sum of ten dollars and eighty cents.[5]

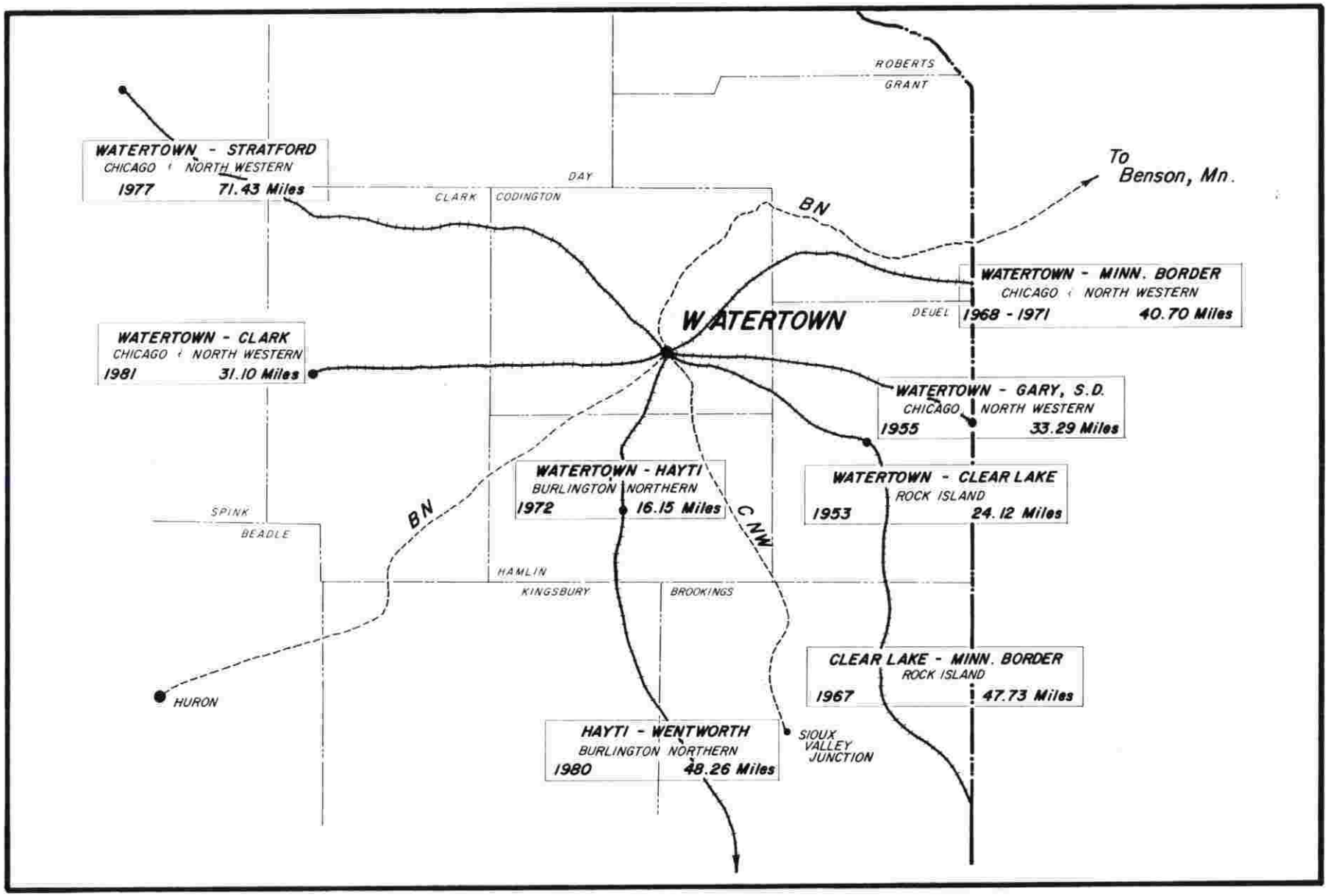
The first hard surface road in South Dakota was constructed in 1923 and work gradually accelerated across the state thereafter. The road-building peak occurred during the 1950s. During this time, railroads were also undergoing massive changes. Diesel engines replaced steam power in the early 1950s. Shortly thereafter, passenger service waned as the private motor vehicle created a new era of transportation. The first rail line abandonment in the Watertown area occurred in 1953, to be followed by several other abandonments that eliminated the majority of lines serving Watertown. Figure II-2 shows the historical sequence of rail abandonments in the Watertown area.

---

[3] "A Condensed History of the Great Northern Railway" Watertown Library.
[4] Early map of Territorial Highways in South Dakota (Yankton, 1881), 1.
[5] (Watertown) Public Opinion, January 16, 1952.

FIGURE II-2

RAIL LINE ABANDONMENTS IN THE WATERTOWN AREA



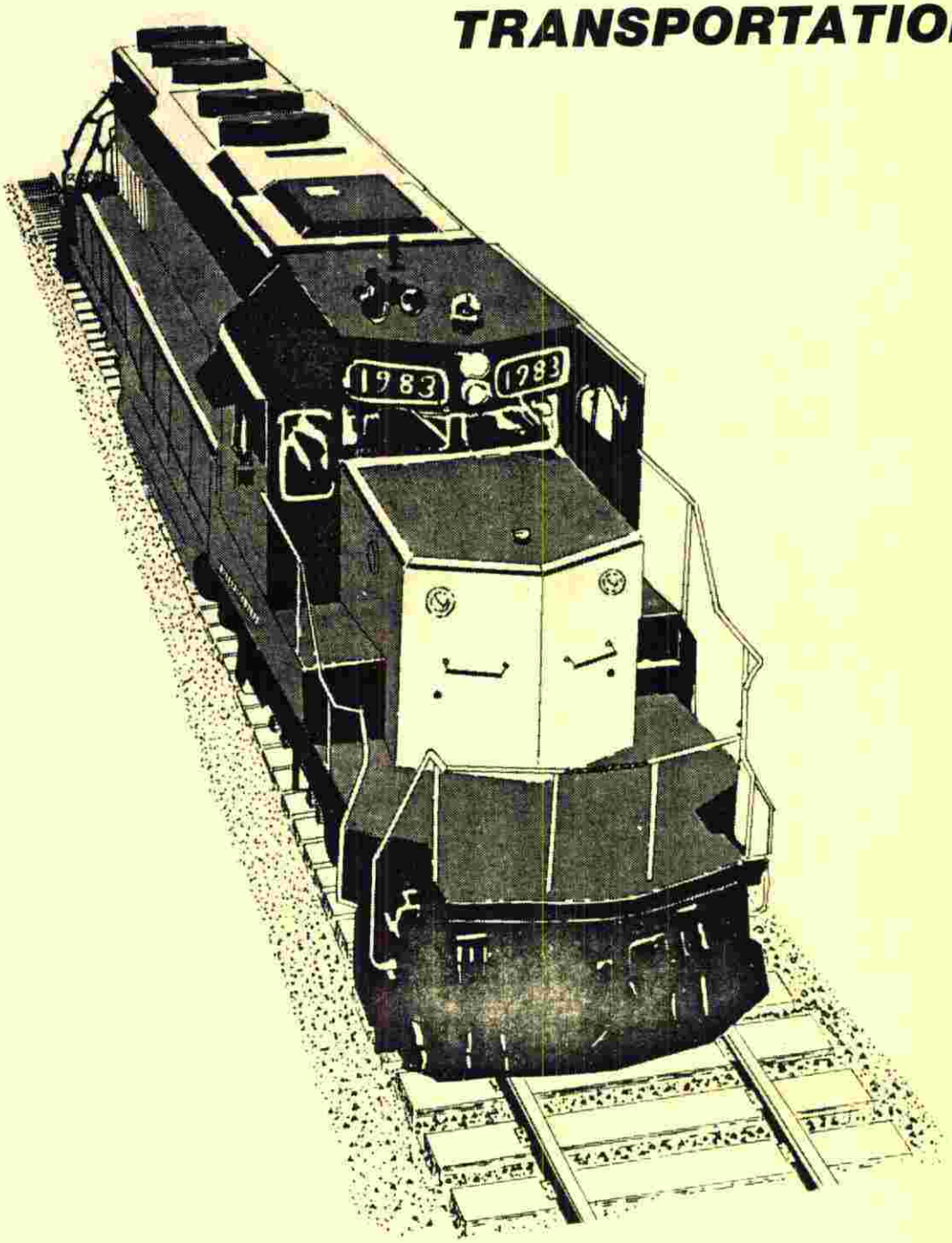
The 1970s brought several significant railroad restructuring events. In 1970 the Great Northern, the Northern Pacific, and the Chicago, Burlington, & Quincy merged to form the Burlington Northern Railroad Company (BN). A decade later, the BN engaged in another successful merger with the St. Louis-San Francisco Railway Company (Frisco) to offer one-line service between Washington and Florida. In 1972, company employees bought the struggling Chicago & North Western Transportation Company (C&NW). The Chicago, Milwaukee, St. Paul, and Pacific Railroad Company (Milwaukee Road) filed for bankruptcy in 1977 and embargoed all of their trackage in South Dakota in 1980 and 1982.

During this period, several significant changes occurred in agricultural transportation. Large semi trucks, specially designed for hauling bulk commodities, became a more common transportation mode to regional markets. The 100-ton hopper car replaced the 40-foot boxcar for most grain movements by rail. The majority of South Dakota rail lines could not accommodate the larger hopper cars because of lightweight rail and a poorly maintained track system.

Also during the 1970s, grain export to Pacific rim countries expanded tremendously. Deep water ports in California, Oregon, and Washington are now primary grain transfer points from railcar to ship. Corn is the major export commodity from South Dakota, although wheat and soybeans also constitute significant export movements. A method that is commonly used to move large volumes of grain is the unit train, a group of cars carrying one commodity to one market from one location.

The transportation system of today is continuing to undergo structural adjustments. Uneconomical rail system segments are being eliminated while highway construction is being reduced. The next section explores the modern economics of local transportation.

ECONOMICS OF LOCAL TRANSPORTATION



SECTION III

SECTION III

ECONOMICS OF LOCAL TRANSPORTATION

The capability of the local transportation network to accommodate the freight shipping needs of the Watertown area can be assessed by analyzing the supply and demand characteristics of freight movements. General freight service is a function of a carrier's ability to supply dependable and competitive access to the customer's market or supply source. Freight demand is derived from the volume of goods which needs to be moved and the quality of service desired. Freight movements are constrained by the physical limitations of the road, rail, and where applicable, waterway systems and their interfaces.

This section analyzes the supply and demand relationships between heavy commodities and the surface modes of travel. Air freight traffic, while available in Watertown. is not considered in this Study because its usage is not comparable to the surface modes. Water transportation (barges) is available at Sioux City or along the Mississippi River, but is generally not used because of more cost-efficient freight choices available locally.

The regional surface transportation system serving the Watertown area is graphically illustrated on Figure III-1.

SUPPLY

Railroads

The physical description of a line segment offers a valuable insight into its freight-hauling capabilities. Figure III-2 presents the current conditions of the lines serving Watertown. The important factors to note are:

1) Both lines are in ICC Category 5, meaning the railroad has no current plans to abandon the line.
2) Both lines are branch lines with comparable service frequencies and rail weights.

FIGURE III-1

REGIONAL TRANSPORTATION SYSTEM

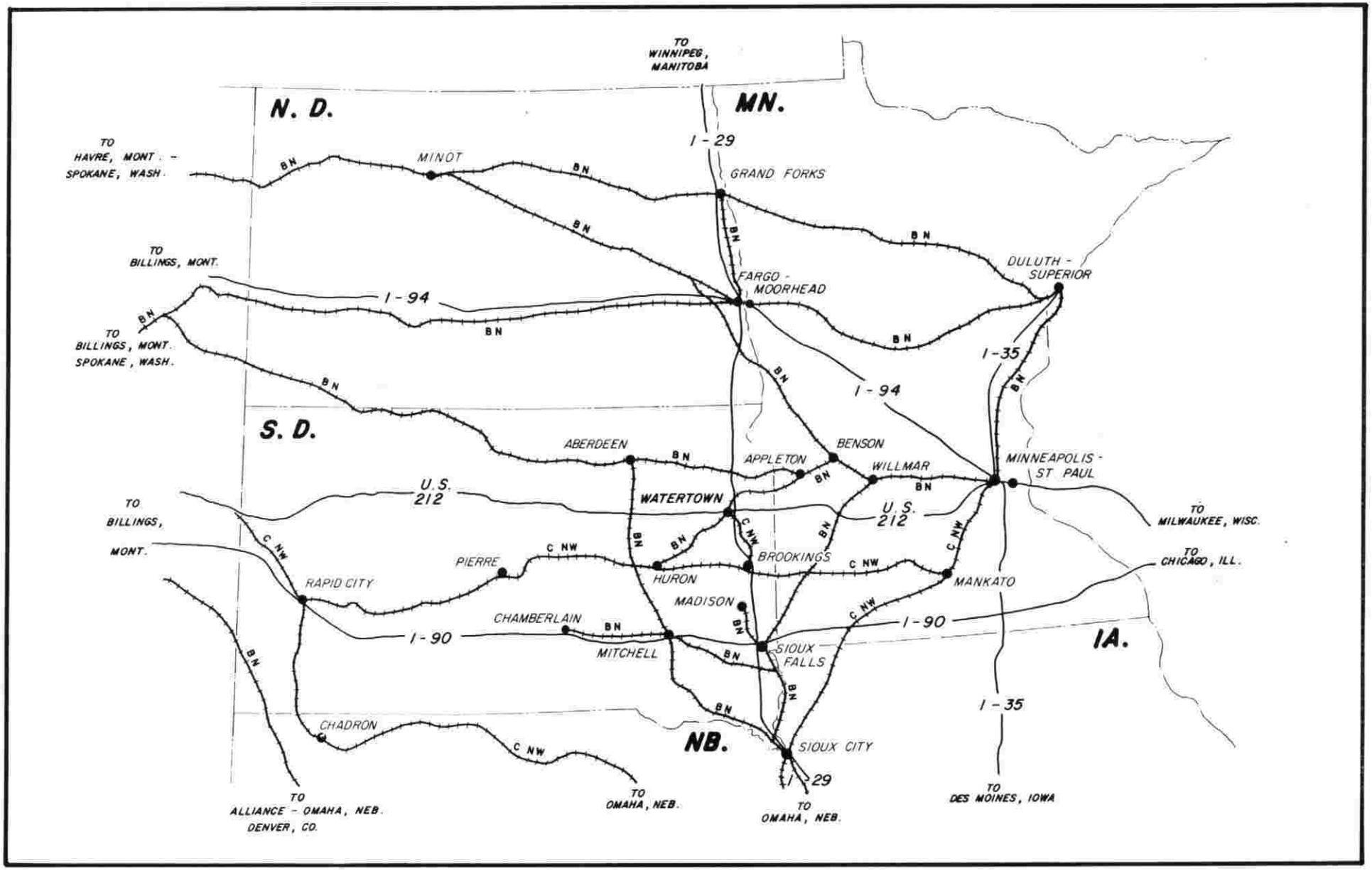
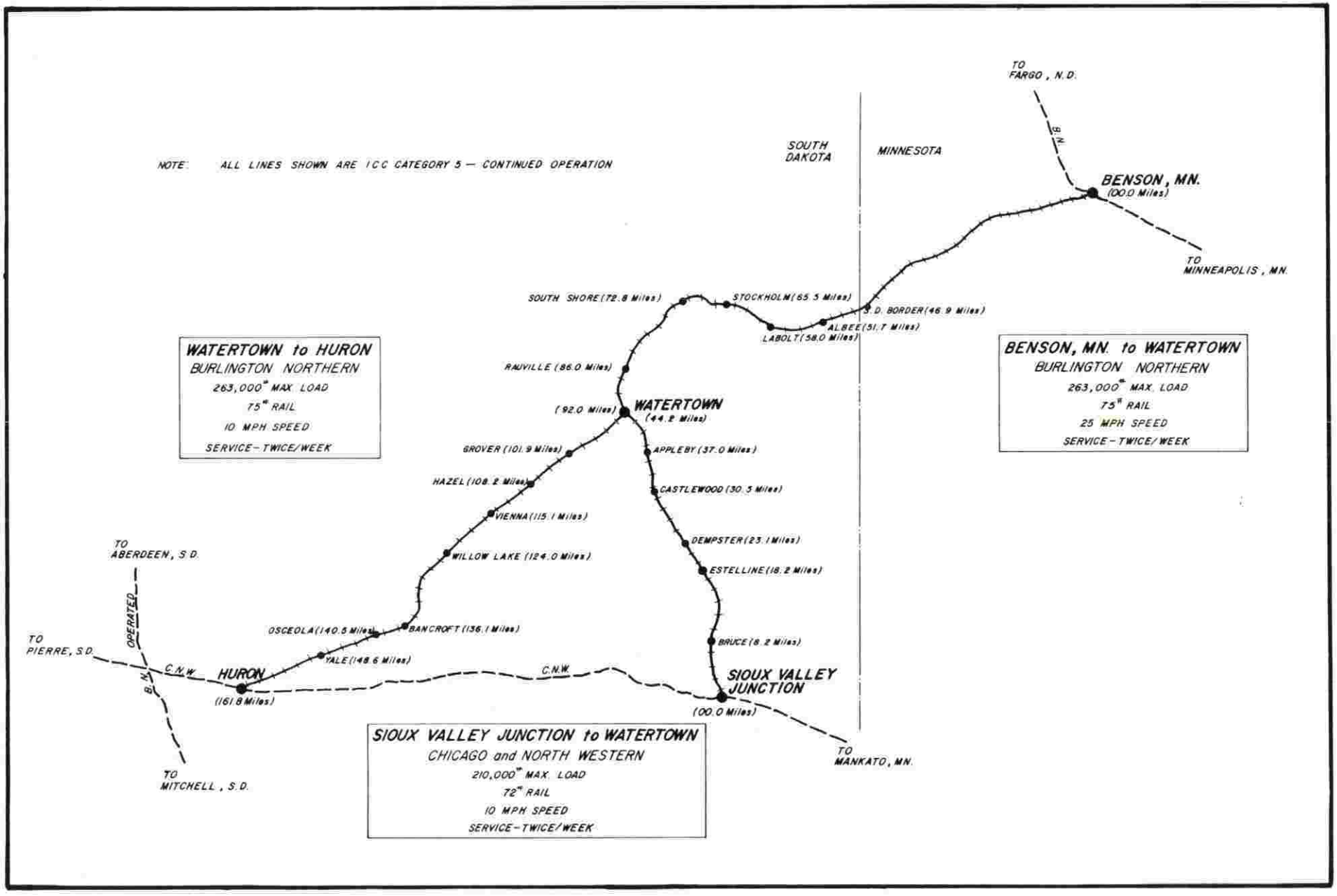


FIGURE III-2

WATERTOWN BRANCH LINE CHARACTERISTICS



3) The Chicago & North Western (C&NW) has a 210,000 pound load limit because of poor bridge conditions on the line. This limit confines bulk commodity shipping to boxcars or small hopper cars. The Burlington Northern (BN) has a 263,000 pound load limit which will accommodate fully loaded 100-ton hopper cars, the modern grain-hauling vehicle.

A better understanding of the local branch lines is gained by understanding each carrier's operating system. The C&NW acts as a regional carrier serving the north central region of the United States, as is illustrated on Figure III-3. South Dakota freight that is hauled to or from points outside of this region, especially to and from the Coasts, must be interchanged with another carrier, incurring an additional cost for the user. For movements within the region, however, the C&NW provides competitive single line service.

On the other hand, the Burlington Northern, as shown on Figure III-4, is a transcontinental carrier running from the Pacific Coast in Washington to the Gulf Coast in Florida. The presence of the BN in Watertown, which serves several regions of the country, permits local industries to make additional marketing decisions within this carrier's service area. It also allows the railroad to create incentives to attract additional business.

As can be noted on the Chicago & North Western's map, (Figure III-3) the Watertown line is a dead-end branch line. Overhead traffic, freight that uses the line as a connector to other parts of the C&NW system, does not exist on the line. Therefore, the economic viability of the line, as determined by the traffic characteristics, depends solely on the ability of local shippers to provide adequate traffic and revenue, which is the carrier's only method of achieving a return on investment.

The Burlington Northern has a similar circumstance with their local branch line, but with one significant difference. A trackage rights agreement exists

FIGURE III·3

CHICAGO AND NORTH WESTERN
MAIN LINES WITH SOUTH DAKOTA BRANCH LINES

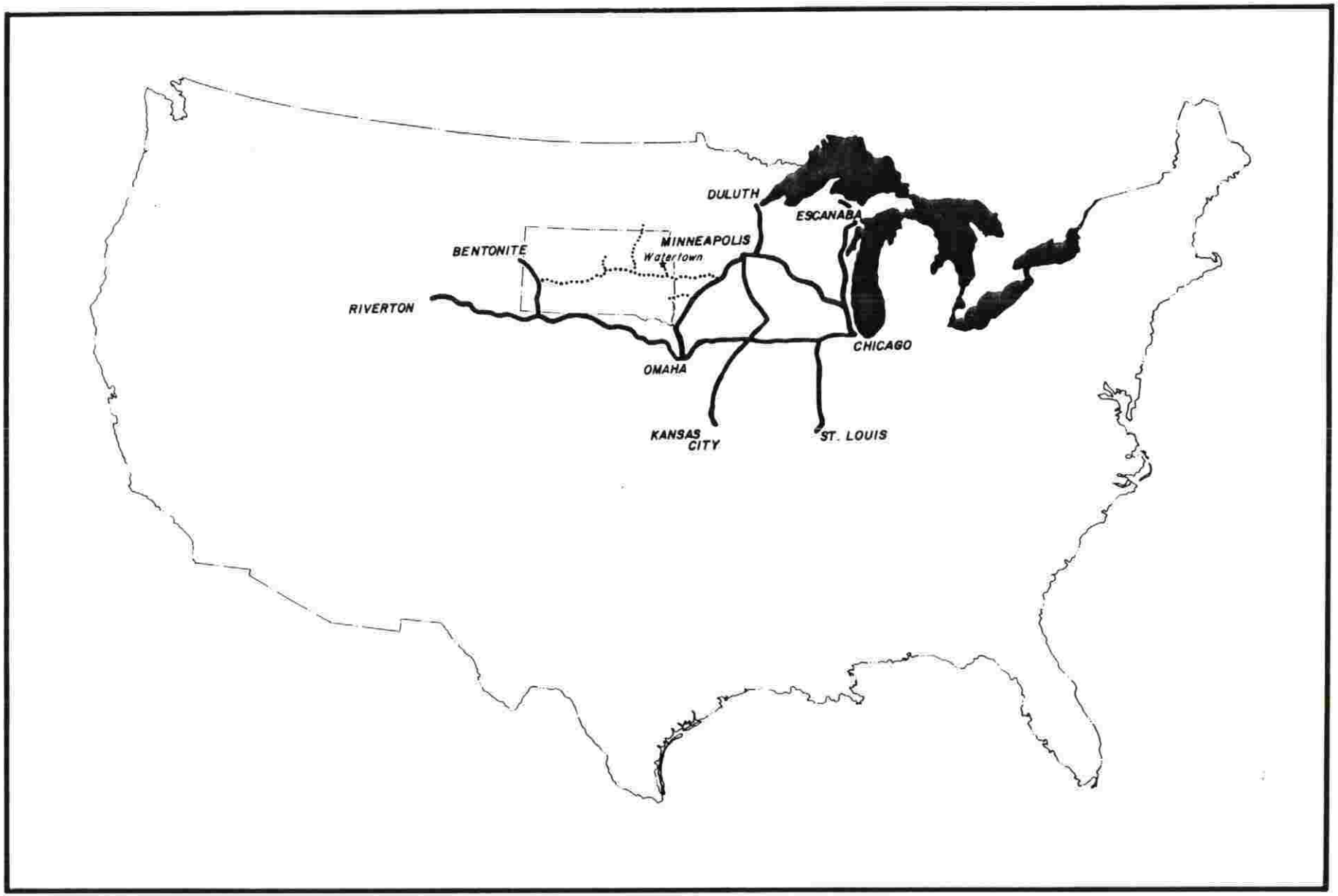
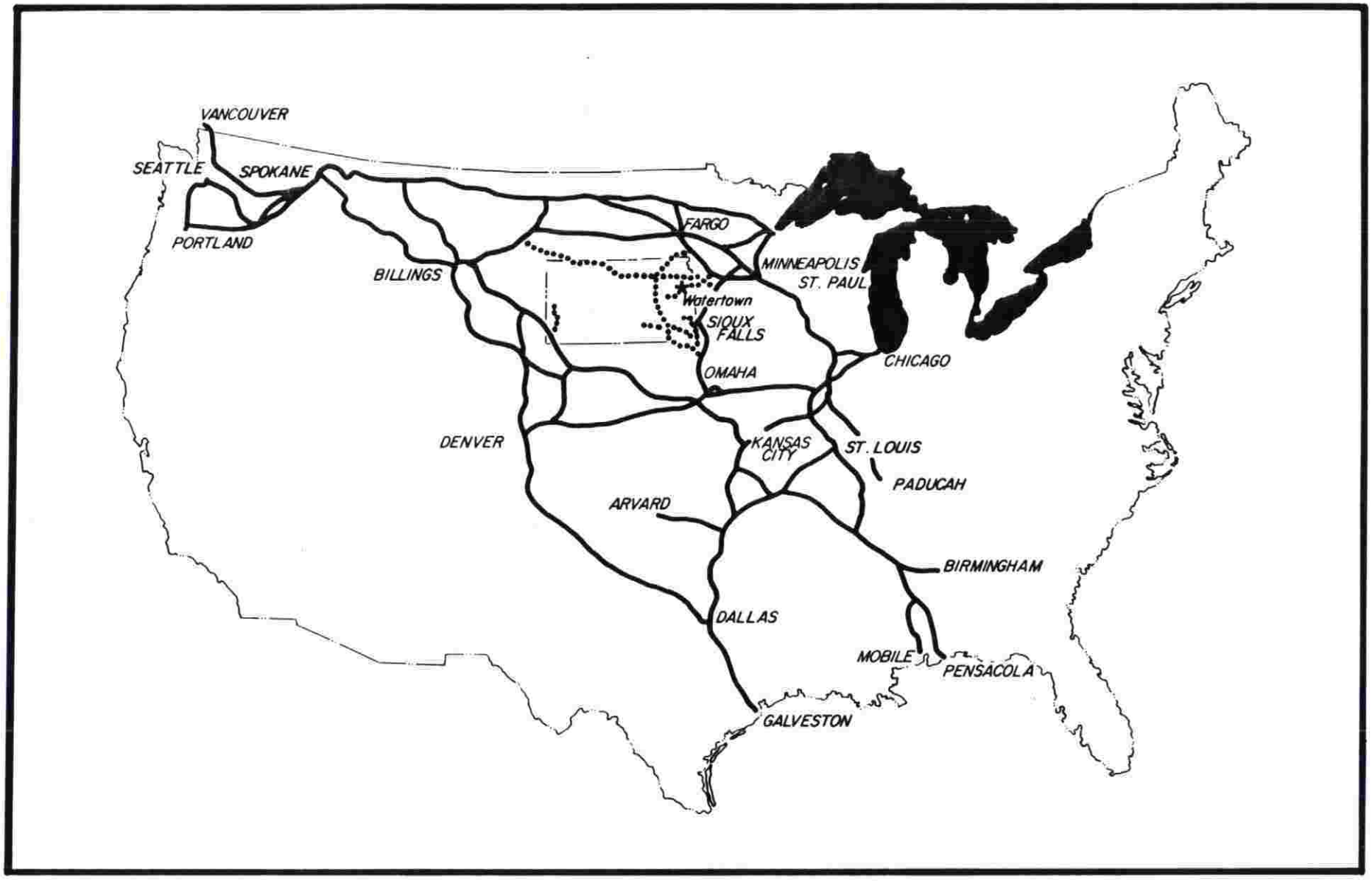


FIGURE III-4

BURLINGTON NORTHERN

MAIN LINES WITH SOUTH DAKOTA BRANCH LINES and SOUTH DAKOTA CORE SYSTEM



between Huron and Wolsey for operation on Chicago & North Western's track, a distance of 13.3 miles. Traffic is now able to flow from the branch line serving Watertown to the South Dakota-owned trackage being operated by the BN. Mileage that will be traveled for shipments going south or west is significantly reduced, with a commensurate reduction in operating costs. Operating specifics are not known at publication time, but several alternatives are anticipated that could extend the viability of continued BN freight service to the Watertown area.

Highways

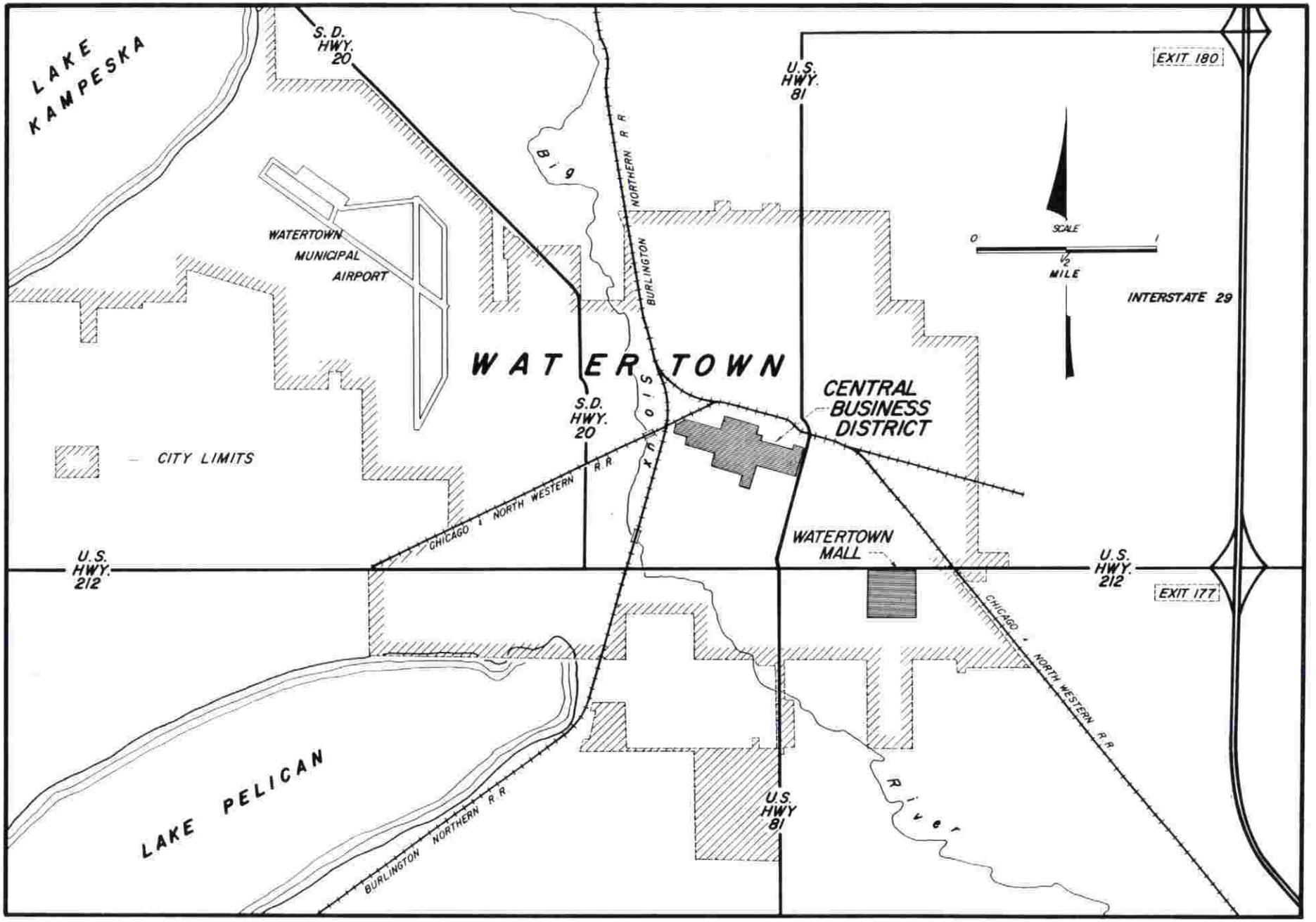
In contrast with the railroads, the highway mode has always been a governmental responsibility. Public funds are raised at all levels of government to maintain road systems. Public ownership is appropriate because of the general public's use of the right-of-way for transportation purposes.

A major area of concern in recent years has been the distribution of highway construction and maintenance dollars. In the 1950's and 1960's, the availability of funds enabled a high level of highway needs to be met yearly. Within the last decade, however, needs have exceeded available funds. While South Dakota highway revenues increased 178% from 1971 to 1981, the state highway construction cost index rose 278% during the same period. This has effectively reduced the "buying power" of the highway maintenance dollar by 36%. This economic decline dictates that improvements must be programmed on a system-wide basis using accurate traffic data and an appropriate design technique.

Figure III-5 shows the local highway system in the Watertown area, along with rail trackage. Besides the recently constructed Interstate 29 one mile east of the city, US 81, US 212, and SD 20 are Federal-aid primary highways serving Watertown. In addition, the State maintains SD 22 and SD 139 in the immediate Watertown area. The counties also maintain several hard surface roads around Watertown.

FIGURE III·5

WATERTOWN AREA HIGHWAY AND RAIL SYSTEM



With the gradual decline of the railroads in the State over the last twenty years, motor carriers have been used in ever-increasing numbers to transport both agricultural and industrial production. Through their flexibility in routing and scheduling, they have been able to maintain a level of freight transportation that is constrained only by their hauling capacity. During periods of poor rail service, agricultural shippers tend to shift from the rail to the truck mode. The large number of trucks that are necessary to accommodate these shifts, however, has had an adverse impact on heavily-traveled routes that were not originally designed for heavy truck traffic levels.

The highway funding needs are now at a level where important decisions must be made on the state trunk highway system. The approach that is now being taken involves an identification of route segments by volume of use and a prioritization of those routes by load and stress factors which relate to current and projected traffic levels. With the solution of the State's railroad crisis and the subsequent construction of large grain subterminals, new trucking patterns are evolving in locations where large volumes of trucks had not been anticipated. In the area surrounding Watertown, these truck volumes are now occurring. The community and the State alike must identify these loading factors now before highways deteriorate further.

DEMAND

The selection of a freight shipping mode is affected by many factors, including competitive rates, equipment availability, shipping distances, and handling considerations. Since Watertown is in the heart of a strong agricultural area, the transportation demands made by the agricultural sector are of major significance. An identification of transported products, along with their originating and terminating points, assists in analyzing current freight utilization.

The major agricultural commodity requiring transportation is grain. To compute the local demand for grain transportation, the market area for the grain facilities in Watertown must be determined. The volume of grain produced and marketed by crop type can then be assessed. Because the Watertown grain warehouses serve as unit train shipping locations, their market areas are larger than other elevators that are not unit train shippers.

Concurrent with this Study, a separate project investigated the localized increases in highway loading caused by grain trucks going to unit train terminals. A side benefit of the project was the identification of the market area of the grain facilities in Watertown. This area has been generalized and is depicted on Figure III-6.

County crop data was collected from the Crop and Livestock Reporting Service, United States Department of Agriculture for analysis. The production values for Codington County, Hamlin County, Clark County, 50% of Deuel County, 50% of Grant County, 50% of Day County, and 10% of Kingsbury County offer the best approximation of the total market area production. The five year average crop production (1977-1981) within the Watertown market area is shown on Figure III-7.

Also shown on Figure III-7 is the approximate volume of grain that is marketed. Depending on the crop type, a varying amount is kept on the farm for feed, seed, or other producer uses. The remainder of the grain is marketed and provides the basis for an analysis of grain transportation.

Corn and wheat represent 54% of the total amount of grain marketed from the Watertown area in the five-year period. The volume of corn and wheat produced in 1981 is a 114% increase over the 1966-1970 annual average. As production of these two major crops has increased, local transportation demand has increased proportionately. The expansion of corn and wheat production is shown on Figure III-8.

FIGURE III·6

GRAIN MARKET AREA - WATERTOWN

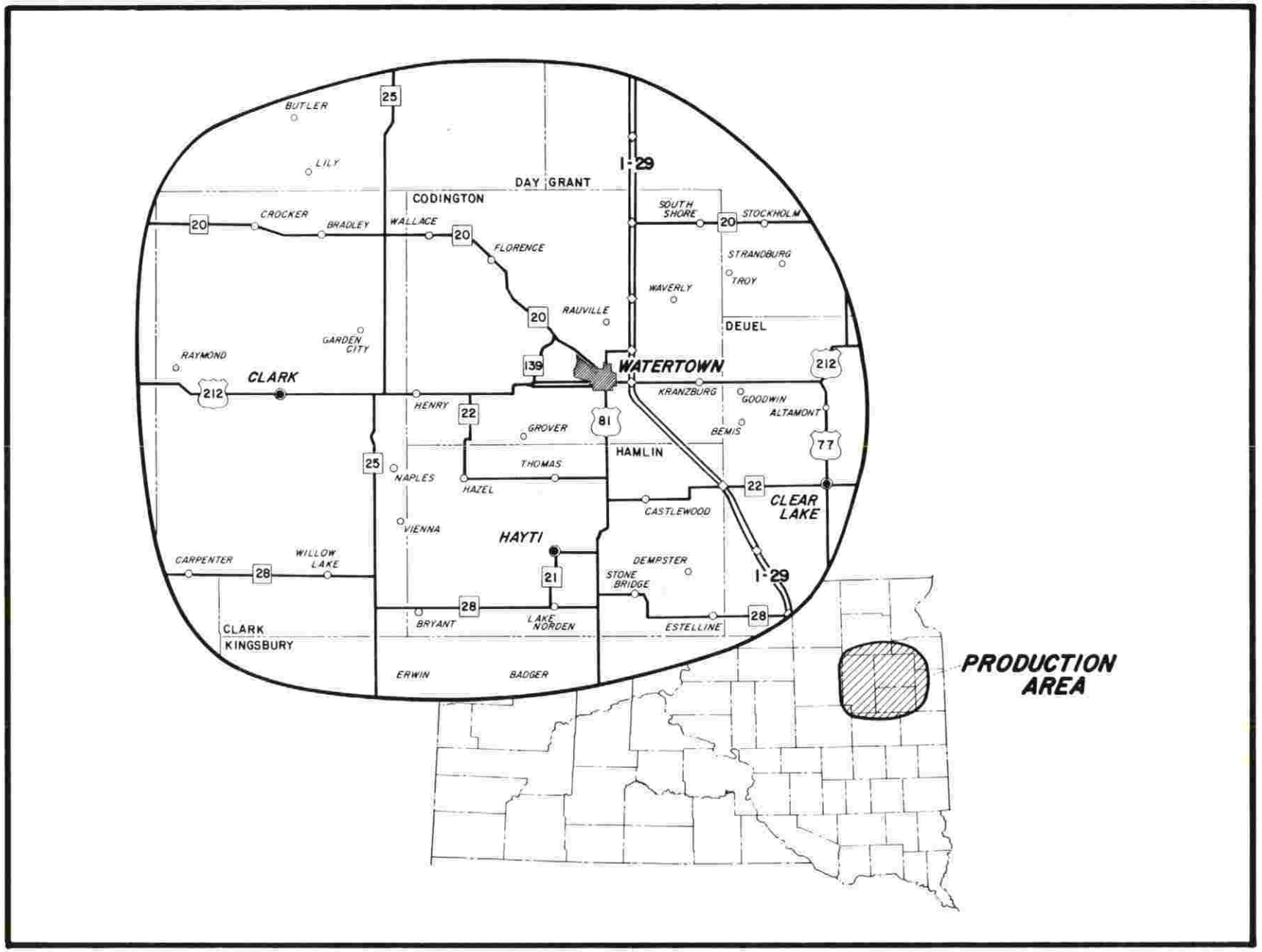


FIGURE III · 7

WATERTOWN AREA
AVERAGE ANNUAL CROP PRODUCTION
(1977 - 1981)

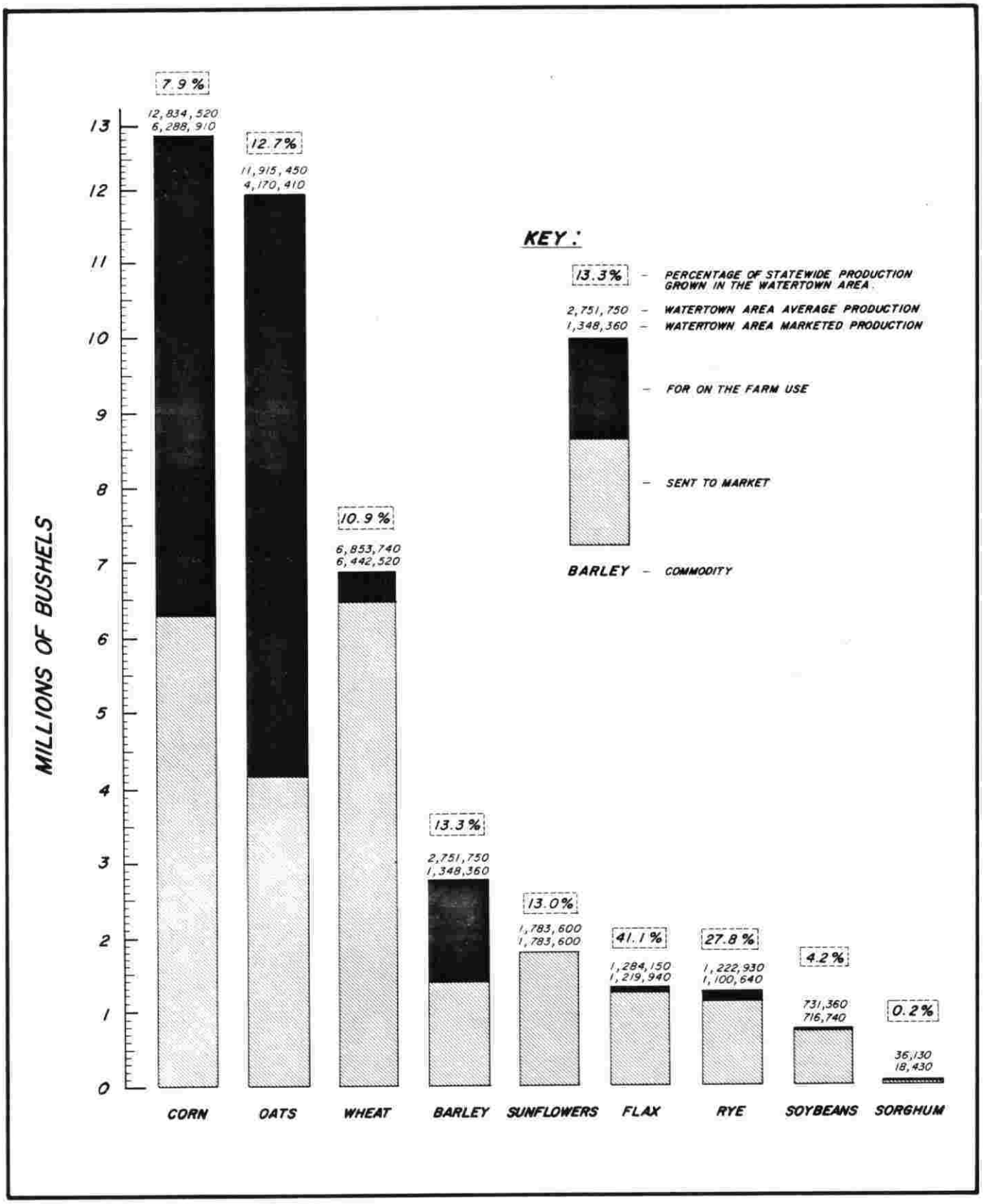
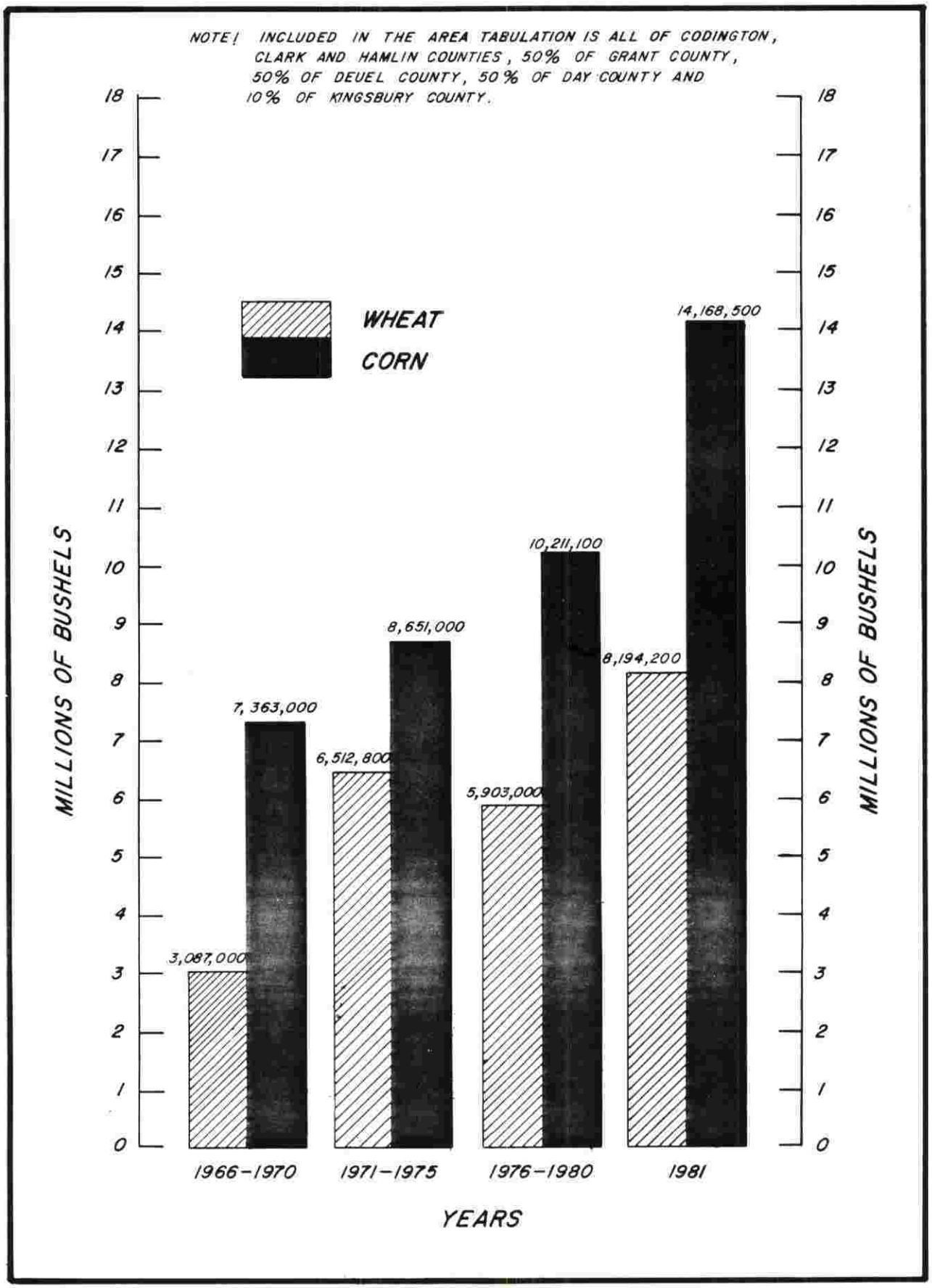


FIGURE III·8

GROWTH IN AVERAGE ANNUAL CORN AND WHEAT PRODUCTION

- WATERTOWN MARKET AREA -



The total volume of grain marketed from the Watertown area is either moved by rail, trucked out of the area, or placed in storage. Of the 624,830 tons marketed in 1981,

- o 328,963 tons were moved by rail (53%)
- o 139,085 tons were moved by truck (22%) and
- o 156,785 tons were stored (25%).

These statistics reveal that the rail carriers have secured a strong market share of the local grain market. In fact, three out of every four bushels shipped out of the Watertown market area were on rail. The potential for increasing grain shipments by rail from the Watertown market area is therefore quite small because of the current rail market share.

The Burlington Northern moved 272,395 tons of grain, or 83% of the total rail movements of grain, from the Watertown area in 1981. Since both branch lines extend beyond the Watertown area, additional grain traffic is available to the carriers. The BN originated 252,473 tons of grain beyond the Watertown grain market area, while the C&NW hauled only 349 tons. The C&NW, therefore, transported only 10% of the total grain moved on the two branch lines in 1981.

Grain movements on both branch rail lines serving Watertown reflect the dominance of corn and wheat in rail movements of grain. Corn accounted for 58% of the grain moved by rail in 1981. Wheat was 21% of the branch lines' grain traffic. The total grain traffic in 1981 on both local branch lines is shown on Figure III-9.

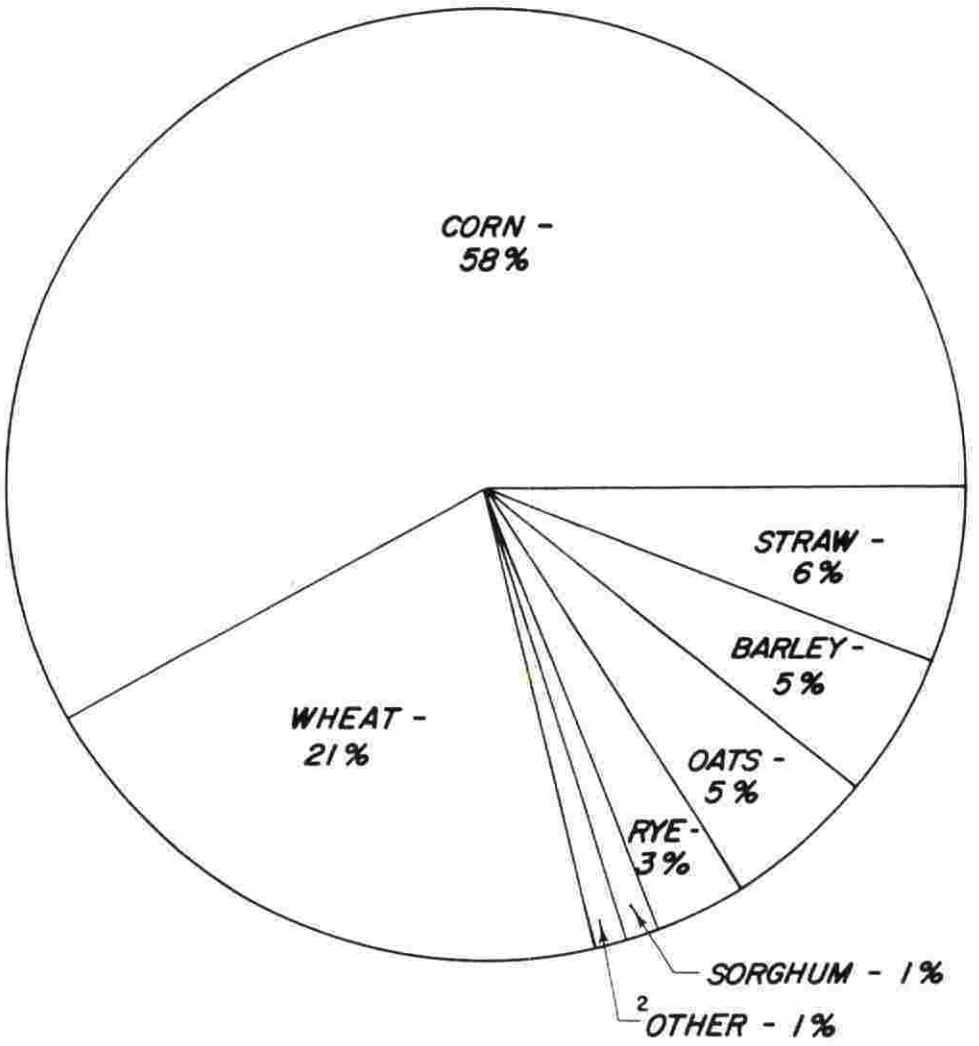
The Burlington Northern accounts for more than 90% of the grain hauled by rail. Almost all of the corn and 90% of the wheat were BN hauls. The Chicago & North Western dominated only in barley traffic, where it had 96% of the traffic. Grain tonnage by carrier is graphically illustrated on Figure III-10.

FIGURE III·9

- 1981 -

TOTAL GRAIN TRAFFIC[1]

HURON TO BENSON (BN) AND SIOUX VALLEY JNCT. TO WATERTOWN (C + NW)



[1] TOTAL GRAIN TRAFFIC IN 1981 WAS 581,785 TONS.

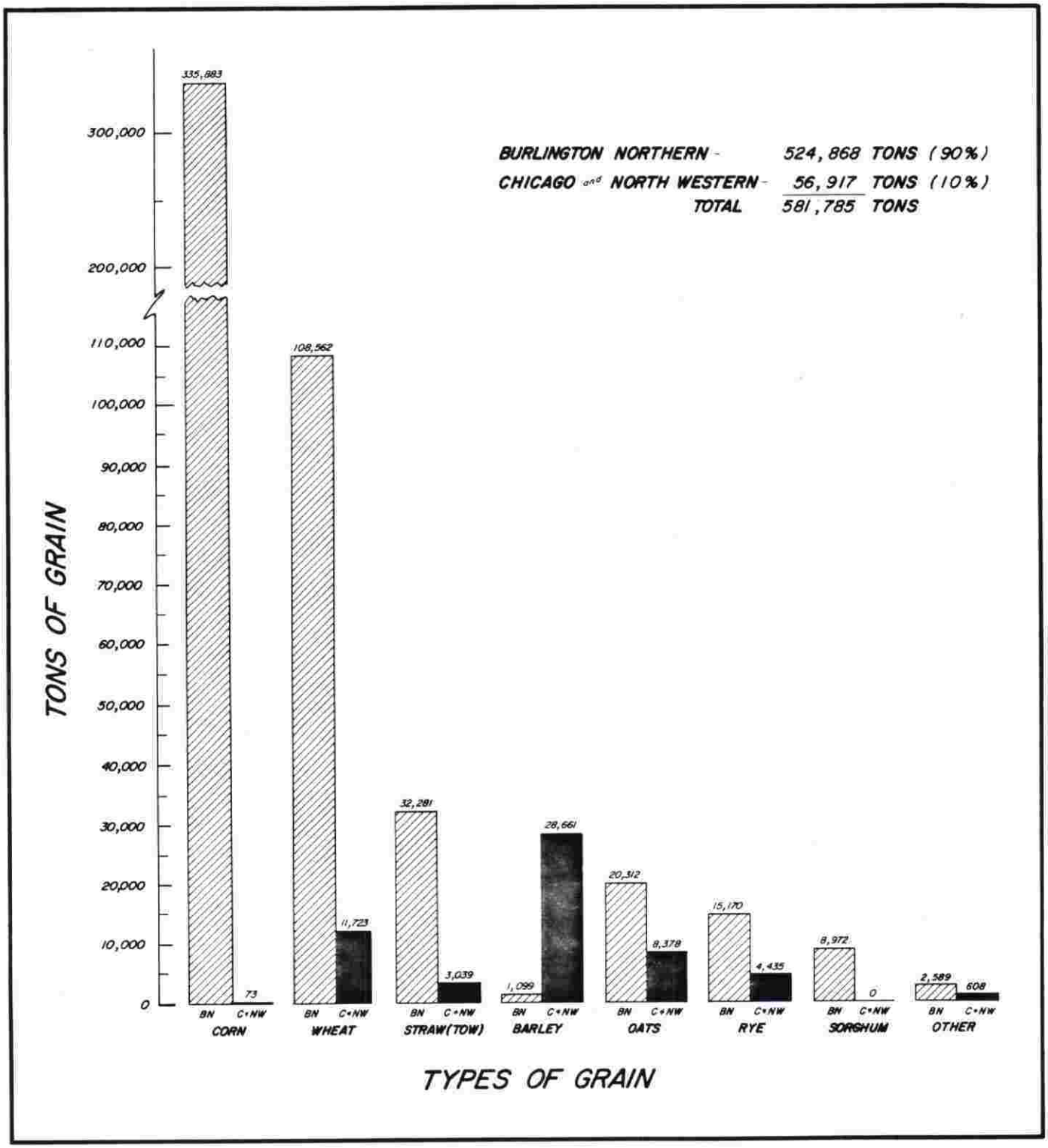
APPROXIMATELY 90% OF THE TOTAL GRAIN TONNAGE HAULED FROM THESE LINES WAS ON THE HURON TO BENSON (BURLINGTON NORTHERN) LINE.

[2] "OTHER" GRAIN IS COMPOSED OF SOYBEANS, SUNFLOWERS, AND FLAXSEED.

FIGURE III·10

- 1981 -

GRAIN TONNAGES BY CARRIER



A unique farm product transported from the Watertown area is flax tow. This product is a fiber derived from flax straw for twine production and is shipped to the East Coast in 50' boxcars. The industry is closely tied to rail service, without which the plants would close. Trucks are used only to transport a small volume of incoming supplies arriving at Sioux Falls, South Dakota via a railcar hauling a truck trailer. The tow shipments are the third largest farm product, following corn and wheat, on the rail lines serving Watertown.

As a general rule, railroads are the most efficient at long haul, bulk commodity movements. For this reason, specific railroads have instituted a shipping method known as the unit train; cars that are loaded with the same commodity going to the same market. Unit train lengths vary considerably depending on the rail carrier and the region, but a local example is the 54-car unit train for corn on the Burlington Northern.

Since the agricultural traffic base is diverse, and unit train volumes of grain are not initially accumulated on a rail siding, a collection method must be found before rail traffic is realized. For this purpose, the truck becomes extremely important in gathering grain from Watertown area producers and elevators for delivery to subterminals. Thus, a circuit is developed that utilizes the short haul flexibility of trucks with the long haul efficiency of railroads.

On a volume basis, one 54-car unit train of corn holds approximately 3,500 bushels per car, or 189,000 bushels per train. If the average semi truck carries 900 bushels of corn, 210 truckloads are necessary to load a unit train. Assuming a 540 bushel tandem axle truck, 350 trips are needed to supply the unit train volume.

Associated with grain production, chemical compounds (fertilizer) are the second major local rail commodity. Since its origin is usually Canada or the southern United States, and it is a bulk commodity, a rail carrier is often used.

Trucks are used mainly for regional distribution to retail outlets. Both fertilizer and grain movements are determined by annual agricultural production needs. Although these needs generally occur only twice a year, at planting and harvest time, agricultural demand for transportation varies over the full year, depending on market conditions.

Watertown also serves as the regional distribution center for the South Dakota Cement Plant, which is the third major rail commodity on the lines serving Watertown in 1981. The production plant in Rapid City generates a massive transportation need for distribution purposes to several regional markets. If transported by rail, 77-ton hopper cars are utilized. After cement shipments arrive in Watertown, trucks distribute smaller quantities to local markets. In periods of high cement demand, uncompetitive rail rates, or inadequate rail service, trucks can be used to deliver cement to the terminal. Both the Rapid City plant and the Watertown terminal are served by the Chicago and North Western Railroad.

Nonmetallic minerals are the fourth major commodity hauled on rail in the Watertown area. This includes quarry stone, crushed rock, sand, and gravel. Quarry stone consists mainly of material for monument construction, while crushed rock serves several purposes. Trucks are used for local traffic that may peak during construction season.

The last major commodity grouping moved by rail in the Watertown area is food and kindred products. This includes many individual commodities, but the majority of the traffic is associated with a local baking company. Incoming traffic can be transported by truck but generally at a higher cost. Outgoing traffic is always a truck haul because of the low density product that requires regional distribution.

The total branch line traffic handled by the two carriers is shown on Figure III-11. This pie chart segments the traffic base by the same commodity groupings that are used by the railroads. The crosshatched area denotes significant nonrecurring traffic that appeared in 1981, specifically a series of pipe shipments for the Northern Border Gas Pipeline Project. Since the nonrecurring pipe shipments distort the true characteristics of the typical shipping profile, the analysis excludes the pipe to offer an accurate representation of the current branch line shipping profile.

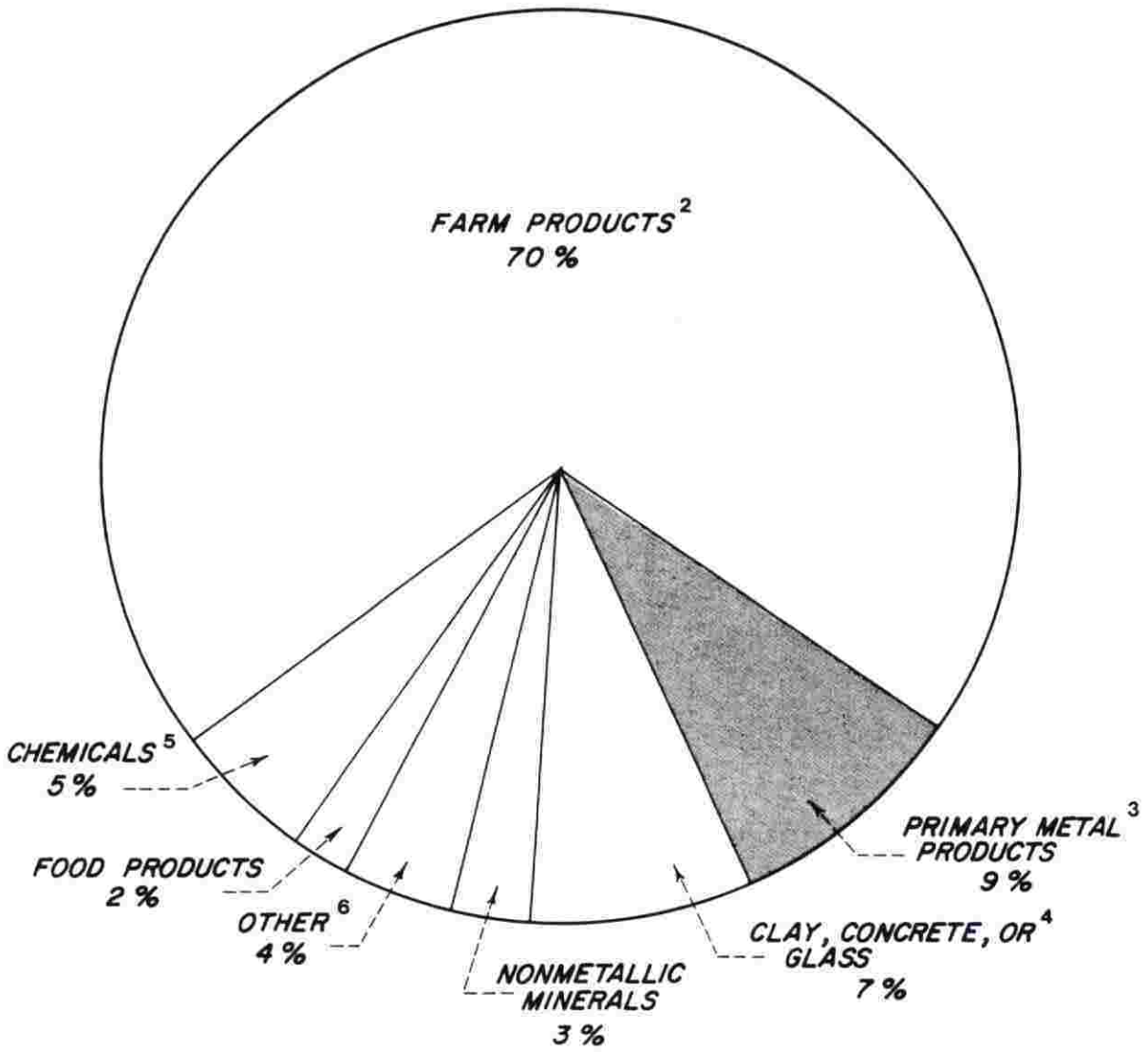
The bar chart on Figure III-12 divides the rail commodities between the two carriers. The BN's traffic strength lies in farm products while the C&NW relies on cement. In 1981, BN hauled more than 82% of the total recurring traffic volume of 834,422 tons on the two branch lines. The rail traffic volume for the Watertown area was 419,254 tons. Of this amount, BN carried 67%, or 282,776 tons.

FIGURE III-1

- 1981 -

TOTAL RAIL TRAFFIC[1]

HURON TO BENSON (BN) AND SIOUX VALLEY JNCT. TO WATERTOWN (C+NW)



1 TOTAL RAIL TRAFFIC IN 1981 WAS 834,322 TONS.

2 ALMOST EXCLUSIVELY GRAIN.

3 SHIPMENTS OF PIPE USED TO COMPLETE THE NORTHERN BORDER GAS DISTRIBUTION PIPELINE PROJECT. (NONRECURRING TRAFFIC - EXCLUDED FROM ANALYSIS)

4 MAINLY CEMENT MOVEMENTS TO SOUTH DAKOTA CEMENT DISTRIBUTION CENTER IN WATERTOWN.

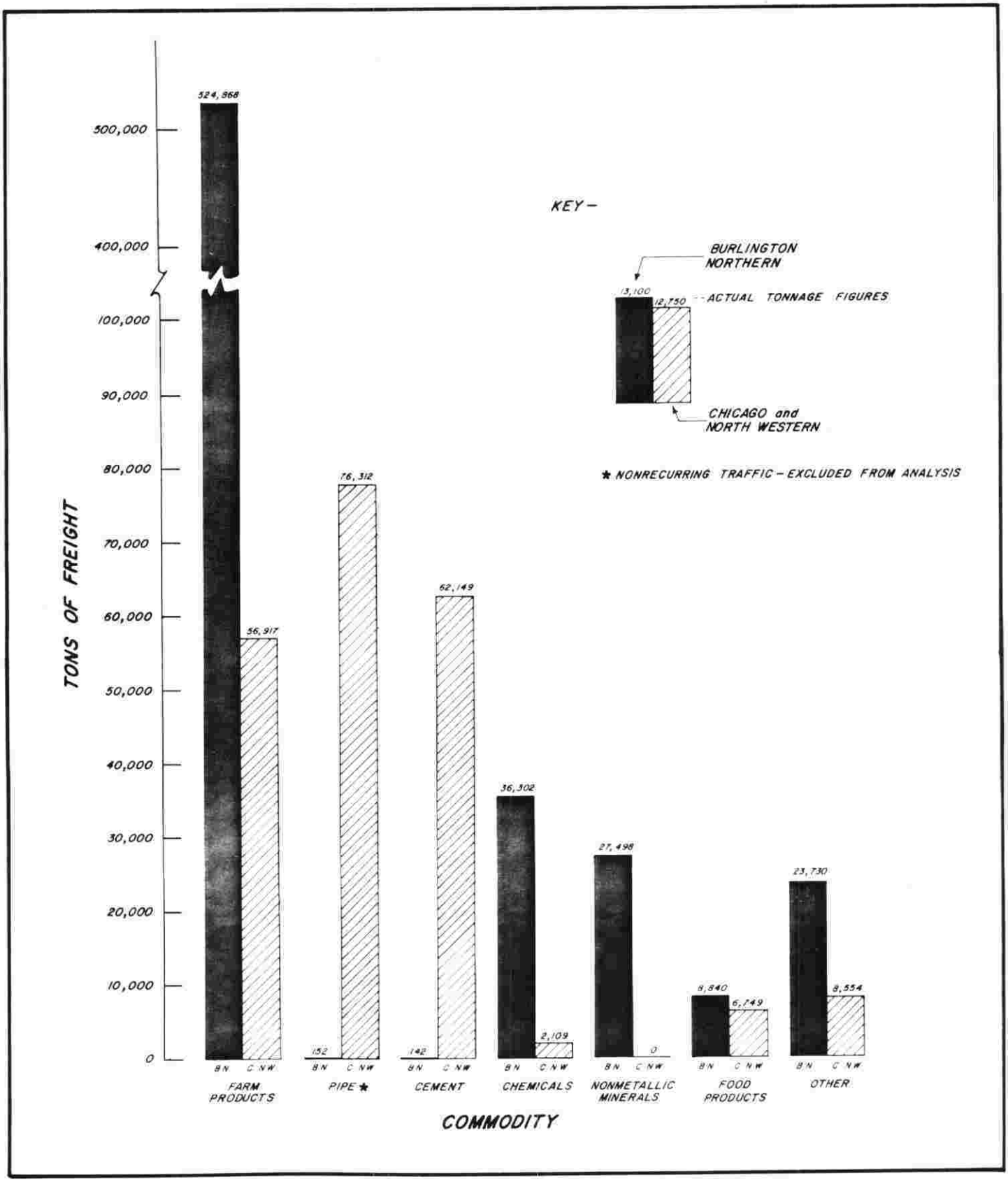
5 MAINLY AGRICULTURAL FERTILIZERS.

6 "OTHER" IS COMPOSED OF WOOD, PAPER, PETROLEUM PRODUCTS, WASTE MATERIALS, AND OTHER SMALLER SHIPMENTS.

FIGURE III · 12

RAIL FREIGHT TONNAGE BY COMMODITY & CARRIER

BRANCH LINES SERVING WATERTOWN



Demand Survey

To further define the freight transportation needs of Watertown, the historic shipping tendencies of industries must be identified. To achieve this purpose, a user survey was conducted of industries located in Watertown and along the two rail lines serving Watertown. The emphasis of the survey was placed on rail users, because of the tonnage hauled on rail. The format included questions pertaining to frequency of use, type of vehicle, handling time, advantages and disadvantages of rail shipping, as well as an attitude section and an impact section. The most important section, however, dealt with the actual shipping history of the industry in terms of commodity, origin or destination, and volumes by mode. The survey form is included as an Appendix to this Study.

The survey serves four purposes in this study:

1) a traffic volume analysis, including directional flow and seasonality;

2) a tabulation of problems and concerns with freight shipping;

3) the impact of the elimination of a problem, if feasible; and

4) the cumulative effect of specific transportation improvements.

Through this survey a clear picture is derived as to the intent of shippers to utilize the transportation system.

The cumulative results of the survey were not unlike the results of similar surveys conducted elsewhere in the State as part of the South Dakota rail planning process. The rail traffic volume on the survey was smaller than that reported by the railroads, which is typically due to incomplete shipper data. Many comments were made about the inherent characteristics of the rail mode rather than a characteristic that was specifically associated with a carrier. Finally, the unique aspects of grain movements from elevators (i.e. car supply, seasonality, varying production levels and prices, and changing markets) tend to make the

survey a picture of recent transportation variables, not an evaluation of future trends.

Surveys were distributed to all industries that appeared to have freight shipping potential, regardless of their volume. A number of survey were not completed because the industry showed an insignificant transportation need. A total of 47 questionnaires were completed with 25 industries served by the BN and 22 served by the C&NW. Thirty-three of the 47 responses to the survey were current rail users, eight industries had used rail service at an earlier date, and six industries had never used rail service.

The majority of industries are being adequately served by their rail carrier, as evidenced by responses to question 3, Part A. Of the thirty-three industries that responded to the question of service frequency, twenty-four (73%) said that the current twice per week service is sufficient. Most rail users did not need more than three cars per week. General service car types, including hoppers, box cars, and flat cars, were the most common car type.

Part B, the section that pertains to current rail users, addressed the rail carrier/shipper interface, attitudes towards current rail service, and freight alternatives. Question 1 revealed that the industries in Watertown could handle a varied number of cars. Thirteen industries wanted no more than three cars at one time, while eight companies desired at least 10 cars per service. Virtually all industries could handle their specified number of cars within one day. The main reason given for not being able to handle more cars, as given in question 2, was the production level of the industry, which is a positive reflection on the current rail service level. Eleven industries were limited by the size of the rail siding. Three industries cited inadequate rail accessibility, either in Watertown itself or at the opposite end of the rail movement. One industry identified the extended period of time associated with local branch line shipping. Question 3

revealed that three rail users did not have their own sidings, but were accommodated by a loading dock in a rail yard. One industry mentioned excessive switching delays as a problem in Watertown.

Question 4 dealt with the reasons that an industry uses rail service by asking what advantages the mode had to offer. Twenty industries (almost 50%) said the "lower overall cost" was the major advantage of rail shipping. This reflects on the ability of a rail carrier to provide efficient long hauls for bulk commodities, especially grain. Thirteen shippers (30%) utilized the box marked "Other" to cite the market access offered by rail. This again emphasizes the long distances that commodities must travel to reach the primary markets. Finally, approximately eight rail users (18%) surveyed stated that the high volume capacity of rail was the major advantage to rail shipping.

On question 5, the freight user was asked to rate the rail service presently being provided. For all service characteristics, the majority of responses was at least "good". Car supply was rated the best, with 20 shippers answering "excellent". Reasonable rates, local service frequency, and service reliability had at least six responses below an "adequate" rating.

The major disadvantage with rail service, as seen by users on question 6, dealt with the slow service of the railroad. The basic problem of slow carrier response to shipping demand was indicated for 15 industries (42%) that responded to that question. Eight shippers (22%) expressed problems with rates, while the same number (22%) mentioned limited loading capacity, lack of communication, or improper handling. Five responses (14%) dealt with problems of the railroad's physical plant.

Question 7 dealt with the impact of rail service on the user. Three users said that without rail they would shut down operations entirely, while another four said that plant production would be reduced. Seven industries said that rail

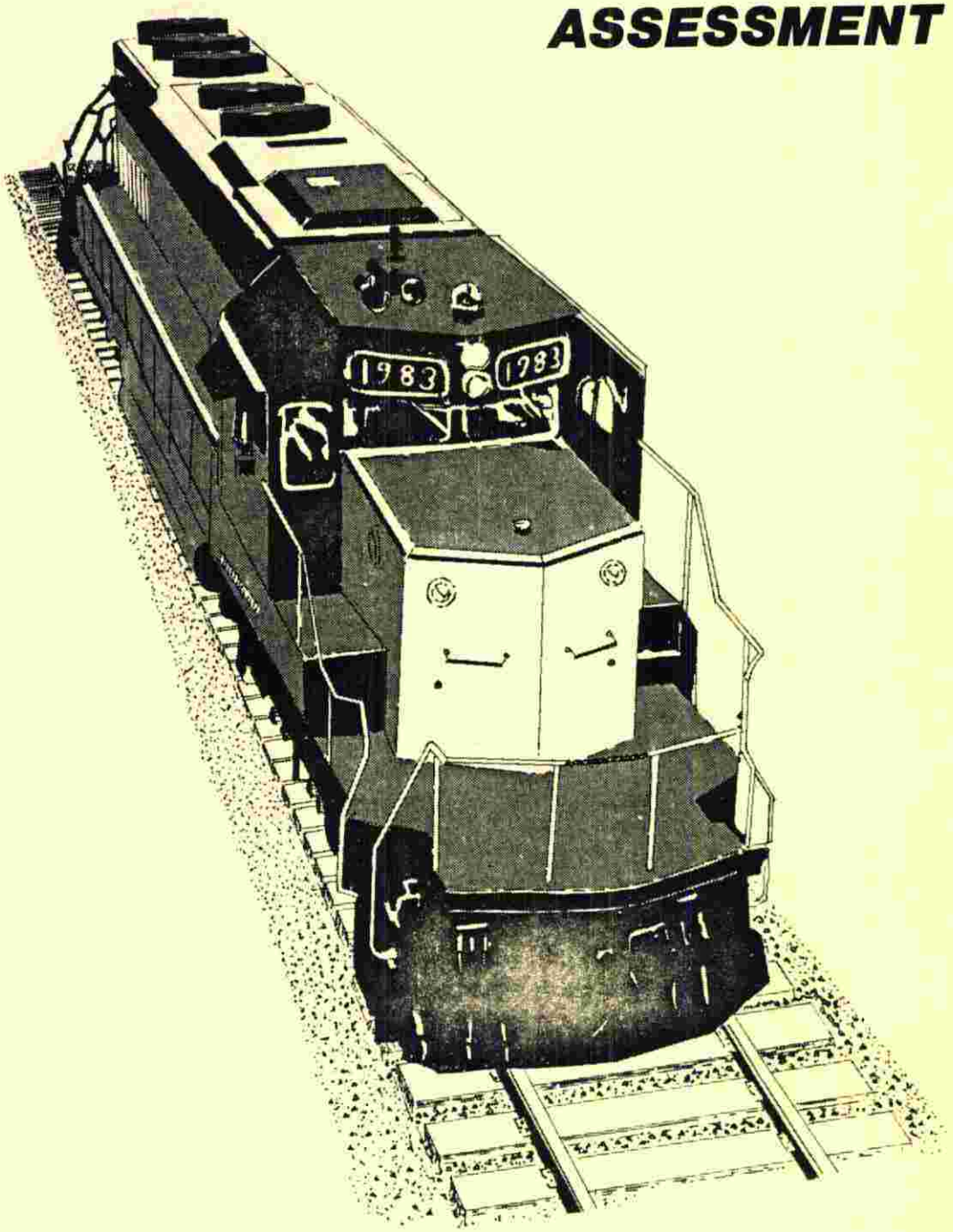
has lower transportation costs than trucks and that shipping costs would therefore rise. One industry said that the opposite was true. Two industries responding to question 8 said that no other method of transport is available.

Questions 9 and 10 explored the alternatives available to an industry faced with the loss of rail service and the methods used to retain rail service. The main response (31% of the industries) to question 9 was that the industry surveyed would be forced to reduce operations. The percentage of reduction varied from 20% to 65%, averaging about 40%. "Maintain present operations" was given by seven shippers (22%), which means that rail service loss would not affect them.

Only 25% of the industries responded to question 10, which dealt with potential actions of a shipper group to retain rail service. Responses were so evenly split among the choices that if the first response is omitted (purchase the line and operate it, which only one industry supported), each response represented 6% of the industries surveyed. Those responses were to assist the railroad company by supporting annual maintenance costs, assist by supporting annual operating costs, guarantee an annual shipment level, and allow the other railroad in Watertown to provide service. For both questions 9 and 10, however, an important factor to be considered is that 34% did not respond to question 9 and 75% did not respond to question 10.

In Part C, past users and non-users were nearly evenly split on why they don't use rail service. Two industries responded to "long transit times" and two others listed "poor customer service". No other response was listed by more than one industry.

WATERTOWN AREA TRANSPORTATION ASSESSMENT



SECTION IV

SECTION IV

WATERTOWN AREA TRANSPORTATION ASSESSMENT

The needs of the Watertown area for freight transportation can be divided into four distinct subsets: railroad, highway, industry, and community. Each subset represents a different perspective within the transportation system, which can lead to different priorities for freight service. To recognize the different priorities of each of these perspectives, individual characteristics must be understood. Each subset is therefore discussed in detail with individual local needs highlighted in boxes.

RAILROAD

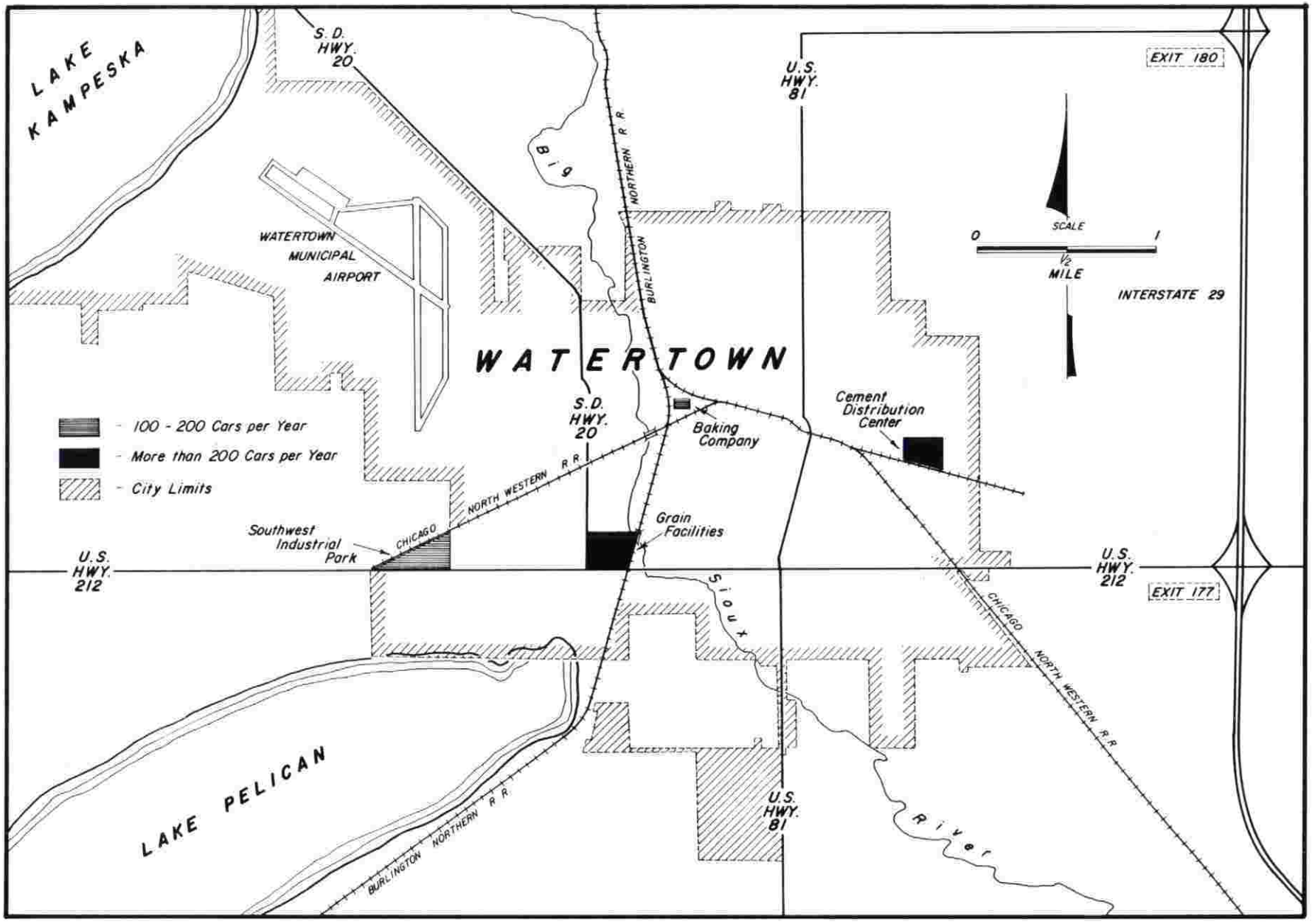
The nature of the two lines serving Watertown reveals that rail operations depend solely on local traffic, since no overhead traffic is available on dead-end branch lines. The carrier and the local rail user must, therefore, provide mutually attractive freight service and revenue. If either party cannot generate sufficient revenue-producing carloadings, the line will probably not continue in operation. Major rail shipping locations in Watertown are shown on Figure IV-1.

An excellent example of ongoing changes in the rail economy is the Chicago & North Western's local branch line in 1981. The Northern Border Gas Pipeline construction project required large amounts of pipe that were transported by rail. The revenue generated from the pipe accounted for more than 38% of the total revenue on the entire branch line. Since this project was virtually completed in 1981, that revenue is no longer available to the C&NW.

Another common example deals with concrete highway construction. Since the cement required for concrete is a C&NW haul from the South Dakota Cement Plant at Rapid City, the total rail revenue is affected by the amount of cement used. In 1981, approximately 43% of the cement hauled to Watertown was for Interstate 29 construction. This construction project accounted for 11% of the total branch

FIGURE IV·1

LOCATIONS OF MAJOR RAIL USERS



line revenue for the C&NW. When these two traffic sources are no longer available, almost one-half of the revenue that supported branch line operations and maintenance for the C&NW in 1981 will disappear.

> A STRONG RAILROAD IS NEEDED THAT NOT ONLY SERVES EXISTING INDUSTRIES BUT ALSO ALLOWS FOR FUTURE DEVELOPMENT.

Branch line operations require dedicated, continuous shipping to cover expenses. At shipping levels that can be predicted from current data, Watertown will probably be unable to provide sufficient carloadings to support two rail carriers. The community must be prepared for an abandonment by defining what level of industrial traffic is necessary to support a rail carrier. When an abandonment does occur, the community can then direct its entire attention to upgrading the quality of rail service that remains.

> WHERE NECESSARY, THE COMMUNITY SHOULD IDENTIFY WHAT USERS ARE SEVERELY IMPACTED BY RAIL ABANDONMENT AND WHAT COMMUNITY ASSISTANCE IS FEASIBLE.

In most instances, rail users will have at their disposal a method to survive the loss of rail service, either through the other rail carrier or a trucker. By eliminating the users that will make their own adjustments, the impact of abandonment diminishes.

To correctly correlate the real impact of rail abandonment on the community, the first step is to make real economic measurements. Employment and production are the only two economic indicators that are useful to measure the impact of abandonment. Potential production and employment are not definitive impact factors.

The second step is to categorically identify the improvements that assistance would provide in terms of production and employment. The type and amount of assistance should be directly related to the overall community impact in a manner that will return funds through money spent in the community.

THE COMMUNITY NEEDS TO MAINTAIN COMMUNICATIONS WITH RAIL CARRIERS TO INSURE COORDINATED EFFORTS FOR LOCAL RAIL IMPROVEMENTS.

Frequently, a rail carrier will not install a siding where a prospective industry has not made substantial shipping commitments. In order to avoid an impasse between prospective industries and the rail companies, the community may be able to provide assistance in the location, construction, or extension of sidings and other structures necessary for rail access. This situation is especially applicable for new industrial areas, where a proper highway interface and a good surface structure are necessary to maximize the utility of a siding.

IN THE EVENT OF A RAIL ABANDONMENT, THE WATERTOWN AREA SHOULD IDENTIFY SHIPPING ALTERNATIVES FOR AFFECTED INDUSTRIES OUTSIDE OF WATERTOWN.

Since Watertown is on branch lines that are a significant distance from main lines, the revenue generated from branch line carloadings must support operations and maintenance expenses for many miles. Although Watertown is the major shipping location on these lines, the volume is insufficient by itself to achieve carrier revenue adequacy. Additional traffic volume must be available from shippers outside of Watertown.

In the event that an abandonment would occur, shipping alternatives must be found for rail users outside of Watertown. In some cases, trucks will have the capability to accommodate these needs. In other cases, the shipper could use the rail mode by trucking commodities to or from Watertown, or another community with rail service. Facilities that are capable of handling intermodal traffic could be essential for some commodities.

HIGHWAY

The highway network is a publicly financed, managed, and maintained transportation network that handles both freight and passenger traffic. The federal government distributes construction funds collected from a gas tax to the states

and local governments. This fund, known as the Highway Trust Fund, is based on a complex formula that involves route mileage, rural population, and total area. Within broad limitations, the states utilize the funds for construction projects, based on their prioritized needs within that particular state. At best, the Trust Fund will address a minimum set of state highway routes. Because of the extensive highway network, funds are not available to systematically improve all route segments.

As Watertown is commonly identified as a regional trade center, its highway needs are more complex than neighboring communities. Its role in grain collection, product manufacturing and distribution, and general retail trade is the basis for the significant volume of traffic that is not limited to the community itself. Given the nature of highway funding, however, the Watertown area cannot create additional dollars for the local area. The highway network must support the collection and distribution functions of Watertown within present funding limits.

WATERTOWN NEEDS A STRONG HIGHWAY ROUTE IN EACH DIRECTION.

In order to serve the total transportation need of the community, the directional flow of traffic must be maintained on through routes. This need is addressed by Interstate 29 and United States Highway 212. These highways function as main thoroughfares for multi-state travel, which is in addition to local transportation needs. This is not true of any other route serving Watertown.

To promote the use of US212 and I29 as through routes, the improvement of route segments that are not in the immediate Watertown area may prove to be a valuable asset. US212 is one of the most direct routes for freight shipments through Minneapolis-St. Paul. In addition, Interstate 29 provides an excellent north-south distribution route between Omaha and Grand Forks.

Local highway construction and maintenance priorities should, therefore, lie with Interstate 29 and United States Highway 212. Because the Interstate is a recently constructed, divided highway, state maintenance work should not be excessively burdensome. For US212, however, the process of rebuilding or maintaining this two-lane route may require a large amount of time and dollars. As other high-volume highways deteriorate in the state, funds must also be directed towards those routes at the same time as US212 is addressed. To avoid potential substate disagreements over construction projects, statewide highway sufficiency data should be used to prioritize the need for highway expenditures.

A COLLECTOR SYSTEM BASED ON LIGHT DUTY STATE HIGHWAYS AND COUNTY ROADS IS NEEDED.

The collector system, by definition, serves the regional distribution needs of Watertown. The majority of the traffic on these routes probably originates and terminates within the commercial service area of Watertown, about a 50 mile radius. Main routes serving several states are not necessary to fulfill these needs. United States Highway 81 is placed in this category because it loses its individual identity north of Watertown. South Dakota Highway 20, while also losing its individual route designation, doesn't connect major cities and doesn't serve Codington County in a linear fashion from east to west.

County highways are also local collector roads for two reasons: 1) they are farm-to-market roads, and 2) they are managed by the local unit of government. In some instances around Watertown, they provide direct access to grain elevators on rail lines. These specific routes, while vital to the agricultural economy, were not designed to handle large volumes of heavy trucks.

Once highway construction and maintenance of regional significance has been addressed, the local collector system of roads is the next priority. As all other roads in the area do not hold the same development potential or traffic levels for

Watertown as US212 and I29, the need for collector system rehabilitation from a community perspective is not as great. The importance of local highway routes is graphically illustrated on Figure IV-2.

THE COMMUNITY MUST UNDERSTAND THE METHOD OF FINANCING HIGHWAY CONSTRUCTION AND ASSIST IN ESTABLISHING PRIORITIES.

The essential element for local involvement in establishing highway construction priorities is a knowledge of the South Dakota highway analysis process. The Department of Transportation maintains a large data bank of information that is used to place local highways in a statewide perspective. In this respect, comparisons must be made of the Watertown area to the rest of the state to relate route needs to the funding base. Information exchanges for this purpose will orient state officials to community concerns and minimize unproductive discussions of misunderstood state highway plans. Through this effort, knowledgeable discussions can begin with officials involved in project planning to properly integrate local concerns into the analysis process.

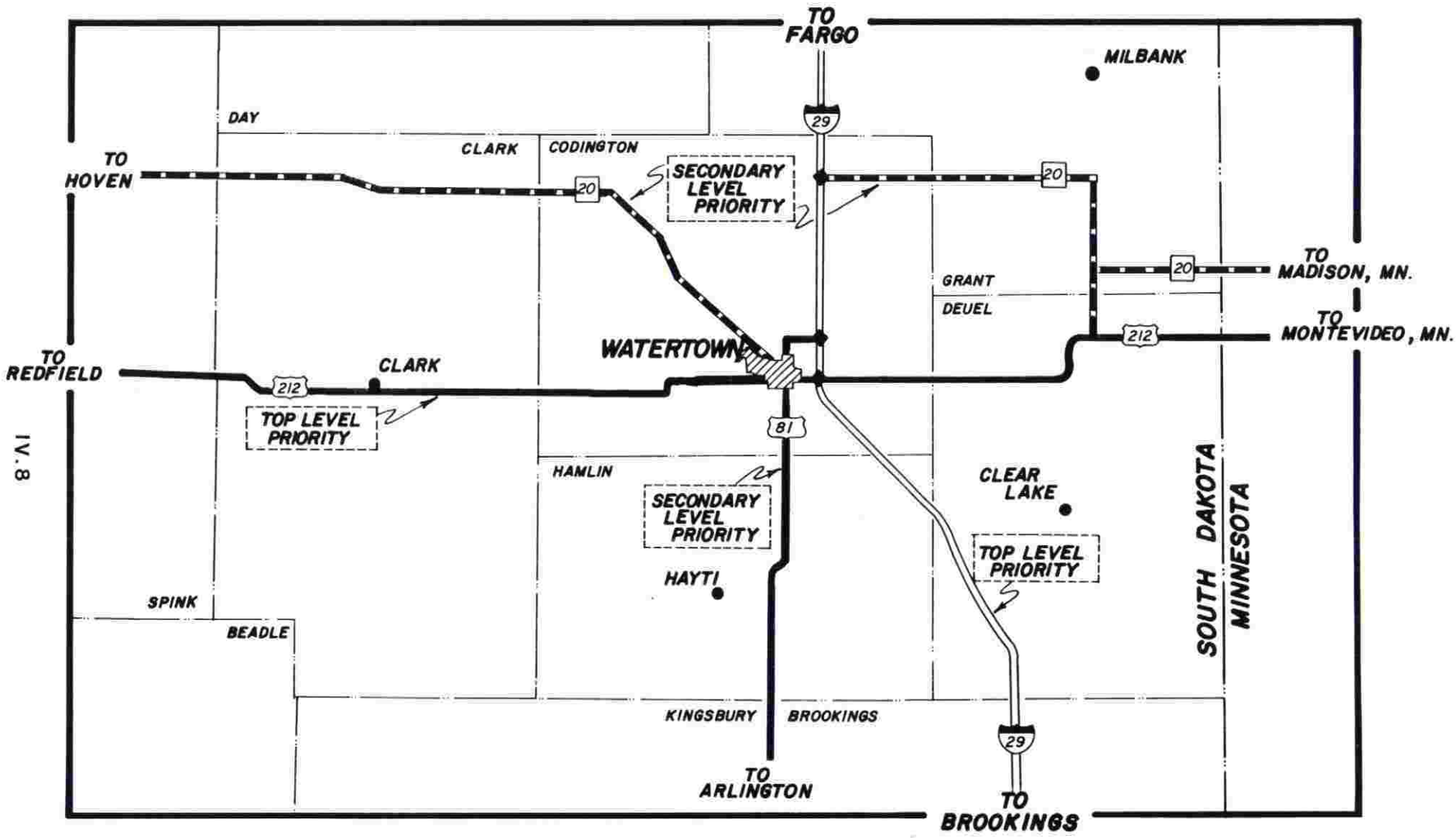
WORKING IN CONJUNCTION WITH THE RAIL COMPANIES, THE COMMUNITY SHOULD ELIMINATE UNNECESSARY RAIL-HIGHWAY CROSSINGS AND MINIMIZE THE PROBLEMS ASSOCIATED WITH OTHER CROSSINGS.

A huge hidden expense in the transportation field is concerned with rail-highway grade crossings. These facilities are not only expensive to install and maintain, but can also hinder normal traffic flow. As late as 1980 the community had more than 70 rail-highway crossings. If this number of crossings could be lowered, it would significantly reduce the annual maintenance for both highway and rail modes.

The community can initially establish a strong working relationship with the rail carrier by exchanging information on the importance of sidings and crossings in the community. At the same time, motor vehicle traffic levels may require that

FIGURE IV·2

LOCAL HIGHWAY IMPORTANCE



major improvements be made on selected crossings. The rail carrier can assist in developing priorities for these important crossings.

> IF LOCAL SHIPPING POTENTIAL EXISTS FOR THE USE OF A "TEAM TRACK" OR FOR INTERMODAL (PIGGYBACK) SHIPMENTS, THE COMMUNITY CAN PROMOTE THESE FACILITIES.

A team track is a facility designated by the railroad as a location that anybody without a rail siding can use. Usually it is located near a rail yard and is composed of a siding and loading docks. The small shipper finds it advantageous because he only needs rail service on a small scale and doesn't desire to make an investment in siding. New industries also find that the ability to utilize rail service while not having their own individual siding is an attractive incentive for plant site selection.

Intermodal freight (piggyback) is one of the fastest growing methods of freight transportation. Typically, it involves a truck trailer, loaded on a specially designed railcar, transported over a long distance to another intermodal terminal with eventual truck delivery to a final destination. For long-distance rapid transit between distribution centers, it is an extremely competitive method of transport. It also provides an additional asset for small shippers, especially those that handle perishable goods. Recognizing the fact that few local industries are familiar with piggyback transportation, rail marketing specialists can provide information so that industries can readily identify their intermodal shipping potential. If a rail line abandonment should occur in the area, this type of facility may also attract traffic from the area around Watertown.

INDUSTRY

Local industries are continually faced with decisions involving transportation-related investments. These decisions, which vary from short term marketing strategies to long term construction projects, require knowledgable

personnel to analyze the relative capacity of the transportation system to handle their freight. As traffic adjustments occur in the local industrial picture, the community should be able to identify the impacts of these changes on areawide transportation.

THE COMMUNITY MUST HAVE AN EFFICIENT MANNER OF HANDLING AND TRANSPORTING AGRICULTURAL PRODUCTION.

Since the volume of grain transported by rail far exceeds the volume of all other commodities, the intensity of traffic is concentrated in the area around the grain elevators. Significantly, the grain truck is also often the heaviest truck on local highways.

The elevator facilities that are currently being used in Watertown are excellent examples of an efficient grain transfer mechanism between highway and rail. The Northeast Terminal and the Watertown Cooperative Elevator have sufficient storage and handling capabilities to utilize the most modern rail shipping technique, the unit train. The only noticeable lack of proper equipment is the length of the sidings, which hinders unit train loading. The optimum unit train siding would permit the entire train to pass beneath the loading spouts in one unit. The present siding configuration is limited by South Dakota Highway 20, which is the only access to the elevators.

Federal legislation now permits rail service contracts to be enacted that may include items such as freight volume, car type and supply, and service frequency. If correctly utilized, this could mean additional freight savings to the shipper while maintaining or improving the rail carrier's carloadings. The elevators should be continually aware of developments dealing with freight contracts, even if they do not desire to contract themselves.

Finally, the volume of trucks that will continue to move on area highways may create the need for an identification of truck traffic. The elevators can assist

the SDDOT by providing information concerning the relative volume of grain being delivered on each highway. Future highway construction projects must be planned to accommodate these truck volumes. If properly done, the useful life of several local roads could be dramatically increased.

INDUSTRIAL DEVELOPMENT SITES SHOULD BE CATEGORIZED BY TRANSPORTATION AND MODAL USE.

The City of Watertown has excellent industrial parks suitable for many diverse types of industries. Industrially zoned areas are denoted on Figure IV-3. The community is currently in a position to assist in industrial site selection by identifying available industrial locations by their transportation access. For instance, the industrial park southwest of the city has several tracts of land available with good rail and highway access. Medium volume manufacturing plants with multimodal needs are excellent examples of an industry that should be sited here. Obviously, the airport industrial park is well-suited for light industrial purposes with air and highway access.

Land suitable for industrial expansion is indicated on Figure IV-4. A critical lack of any industrial development land near existing BN trackage is apparent. This may be discouraging to potential industries, as well as the carrier.

COMMUNITY

Besides the needs that have been expressed for the rail and highway modes and industries, the community itself has several identifiable needs in the transportation field. Although not necessarily a participant in freight shipping, the community at-large nonetheless represents a major impact sector of freight transport decisions. Therefore the Watertown community, in general, and leadership of the city, in particular, should understand and be able to communicate the transportation needs of the area.

FIGURE IV·3

INDUSTRIALLY ZONED AREAS

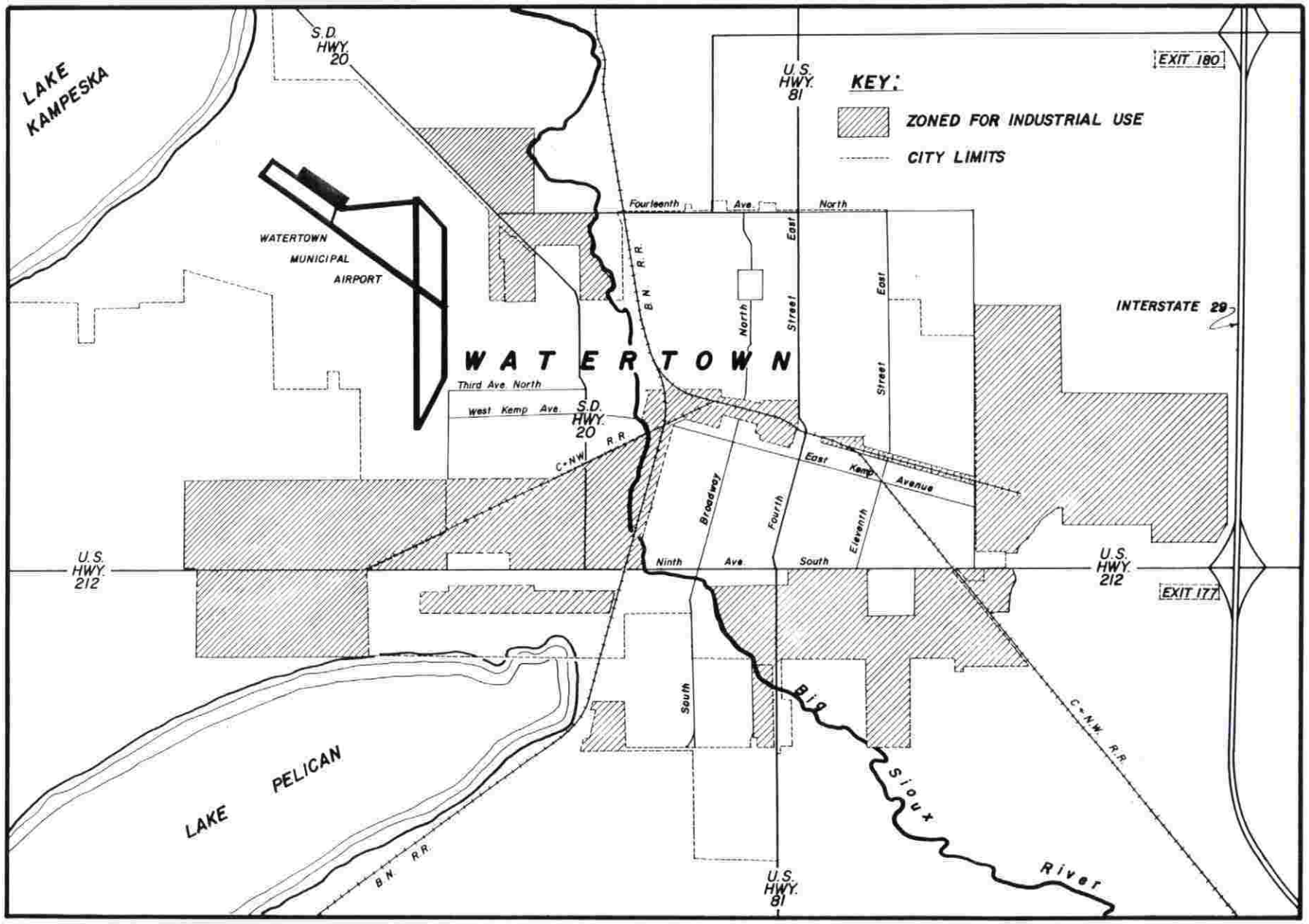
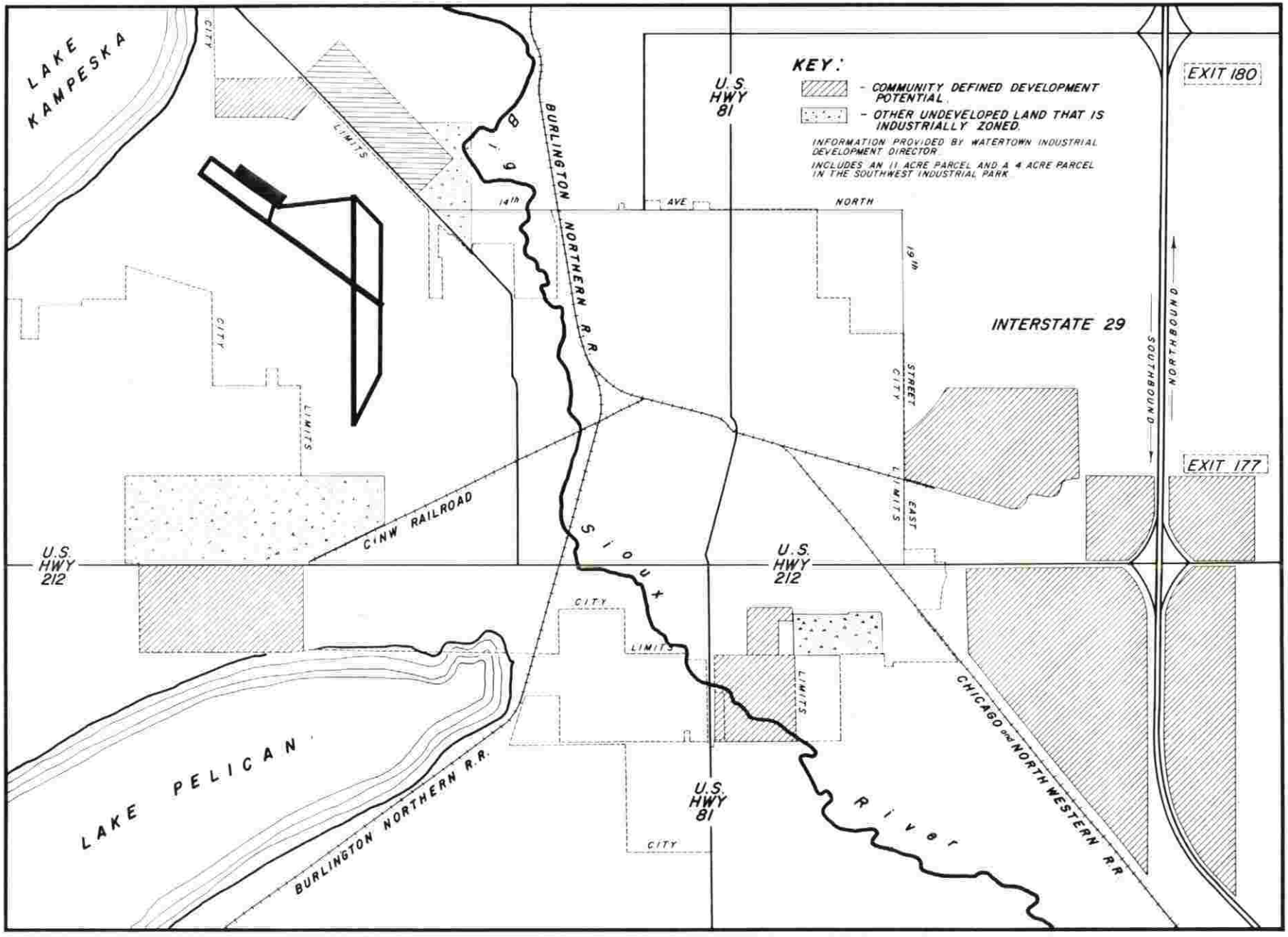


FIGURE IV·4

LAND SUITABLE FOR INDUSTRIAL EXPANSION



THE COMMUNITY SHOULD PLAN AND COORDINATE TRANSPORTATION PRIORITIES ON THE LOCAL SCALE.

An acute need exists for an identification of transportation service priorities for the Watertown area. This need extends beyond the relative importance of the state and federal highways to the community. Also necessary is an ongoing analysis of the city street system, the county and township roads, the local railroad structures, and the relationships among all of these systems. Business and civic groups could be a valuable advisory tool for determining community needs and their impact on the transportation system.

With the exception of some industries, transportation investment decisions are not made in Watertown. For the railroad companies, whose large corporate offices are faced with complex daily decisions on a system thousands of miles long, local input and commitments are vital. As a private company, corporate funds are placed where the return on investment is the greatest. Without extensive communication with the railroads concerning potential industrial expansion, necessary local transportation services may never be present.

With highway construction reaching new cost plateaus annually, Watertown's regional highway needs, similar to regional needs elsewhere, are being squeezed into increasingly tighter budgets. The highway segments that facilitate interstate travel provide the greatest development potential for Watertown while continuing to meet local needs. The community should, therefore, emphasize these routes as local priorities while de-emphasizing the routes of lesser importance.

THE COMMUNITY SHOULD MAINTAIN COMPREHENSIVE GUIDELINES THAT DEFINE THE INTERACTIONS WITH THE TRANSPORTATION SYSTEM, IN GENERAL, AND INDUSTRIAL ACTIVITY, IN PARTICULAR.

As long as definitive development guidelines are in place prior to industrial siting, Watertown should not experience problems in adapting to new transportation

demands. In most cases, industries try to follow community standards that will protect the area from undesirable side effects. By classifying the industrial areas for different uses, the community will make the first step in implementing these standards. Although flexibility is naturally required in these guidelines for items such as utilities, street access, and environmental safeguards, the mere presence of a written and adopted set of community principles for industrial development gives the community a simple yet direct presentation to prospective industries.

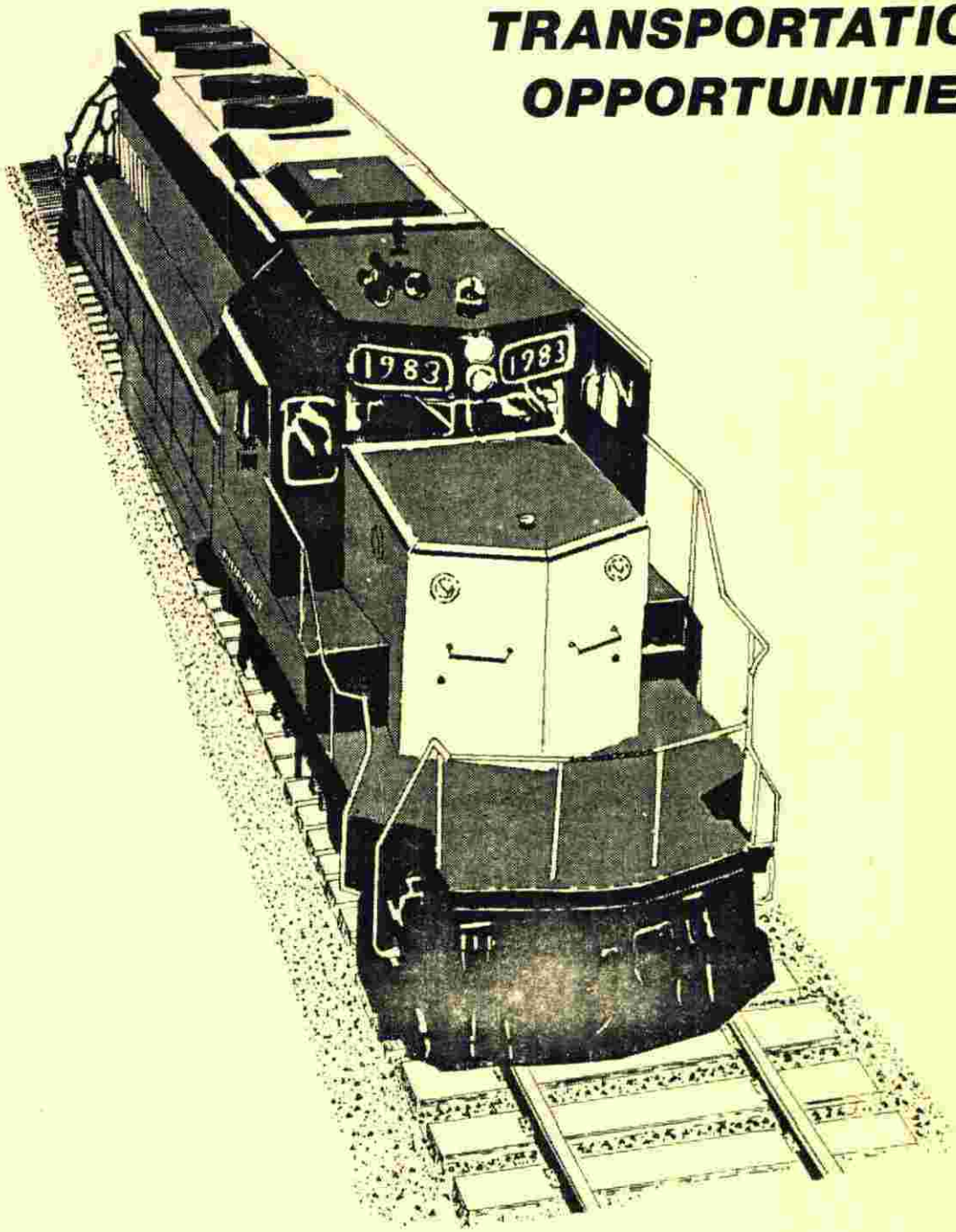
THE COMMUNITY SHOULD MAKE EVERY EFFORT TO COMMUNICATE TRANSPORTATION NEEDS AND RESOURCES TO ITS RESIDENTS.

Watertown must be able to understand where its demands for transportation service exist, so that steps may be taken to fulfill the needs not only of the community itself, but also for services that are necessary in the surrounding area. The communication of identified needs and resources allows residents to make knowledgable inputs into the community's transportation responsibilities. In some cases, simply the effort to communicate will eliminate false concepts from the residents and replace it with the sense of confidence in the community.

SYNOPSIS

Opportunities exist for the Watertown area to improve the local transportation system. The basis for these opportunities lies with a knowledge and understanding of the freight system, including users, carriers, and routes. Since many decisions affecting transportation are not made locally, the proper local input involves information exchanges, community involvement, and constructive discussions. The consideration of local traffic issues must, therefore, be viewed from the perspective of the system, because transportation investments are made where significant system benefits accrue.

METHODS TO IMPLEMENT WATERTOWN'S TRANSPORTATION OPPORTUNITIES



SECTION V

SECTION V

METHODS TO IMPLEMENT WATERTOWN'S TRANSPORTATION OPPORTUNITIES

An important consideration in the local transportation environment as it pertains to industrial development is the position of Watertown in the national rail system. The ability of a rail user to directly access distant markets in an economical manner is paramount to industrial siting decisions. Figure V-1 illustrates the rail distances to several metropolitan markets from Watertown. As this Figure shows, seven major cities, including Chicago, St. Louis, Kansas City, and Denver, are within 1,000 rail miles of Watertown. Beyond the 1,000 mile distance, the Chicago and North Western (C&NW) must interchange traffic, whereas the Burlington Northern (BN) directly serves a larger market area.

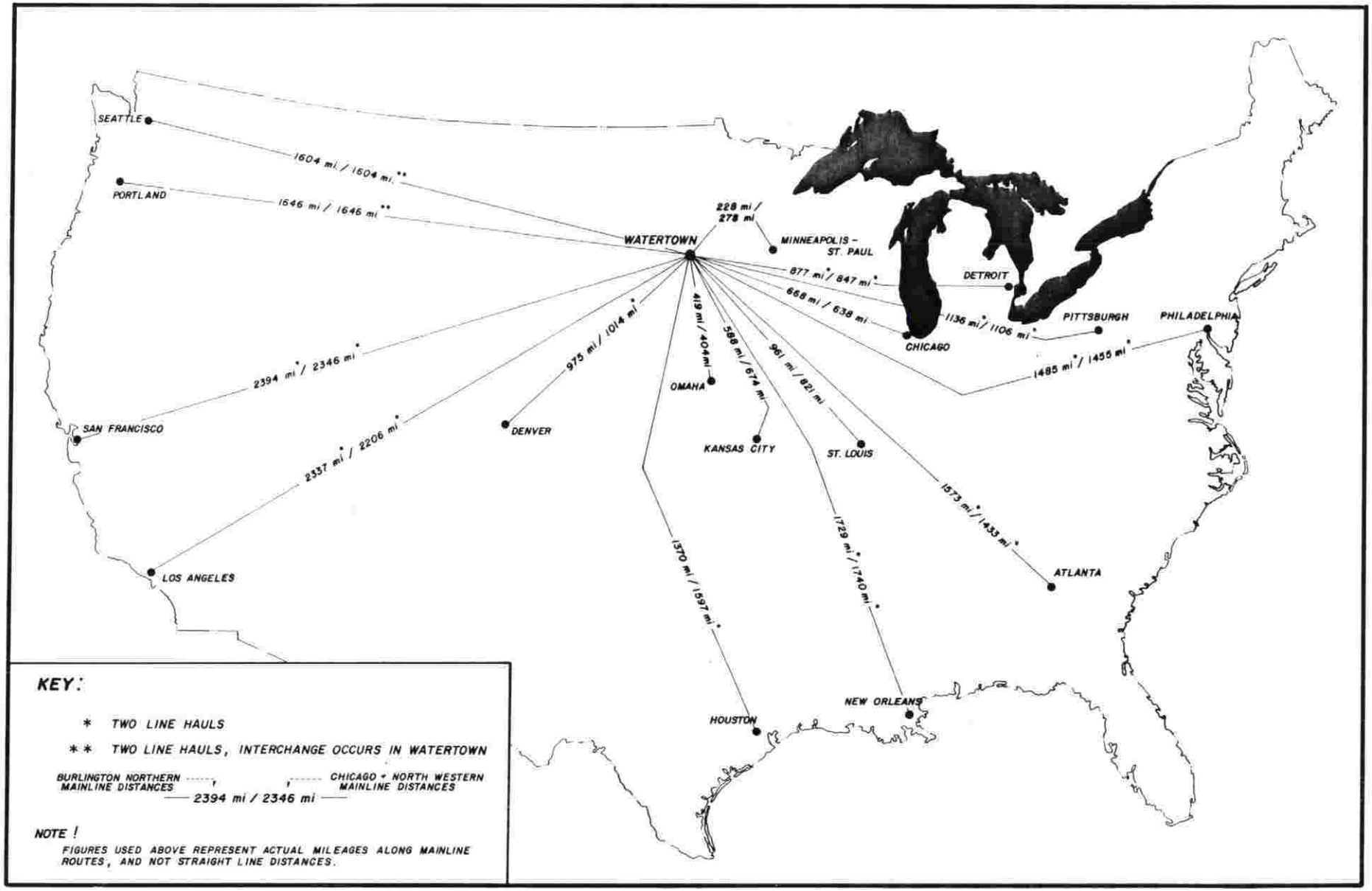
Another factor to be addressed for development purposes can be summed up in one word, compatibility. From an industry's standpoint, compatibility with rail means market access, car availability, adequate service characteristics, and competitive rates. From a railroad standpoint, carloadings must generate sufficient revenue to cover operating expenses, including maintenance-of-way costs, and a reasonable profit. When both rail user and rail carrier meet these criteria, a mutually beneficial freight shipping system can usually be derived.

The usage of existing trackage in the City indicates that new rail users should be located west of US81 and preferably west of the downtown commercial district. Realizing that both carriers may not remain in Watertown, the concentration of traffic in this area would add an inducement for the remaining carrier to serve the industries of the departing carrier.

The industrial park area on the southwest edge of the City offers the finest industrial traffic potential in the community. Additional land is available near existing rail trackage that would permit new sidings to be constructed. In a transportation sense, this location is a more cost-effective site than the land

FIGURE V·1

RAIL MILEAGES FROM WATERTOWN TO SELECTED U.S. CITIES



area south of US212 and adjacent to the abandoned rail line to Clark. Besides the normal costs for maintenance of the highway crossing, track reconstruction, including ties, ballast, and rail, decreases the desireability of this area when compared to the costs within the existing park. If an industry is to locate near the airport, however, clearance restrictions for the airport must be considered. Figure V-2 illustrates the height limitations for buildings in this area.

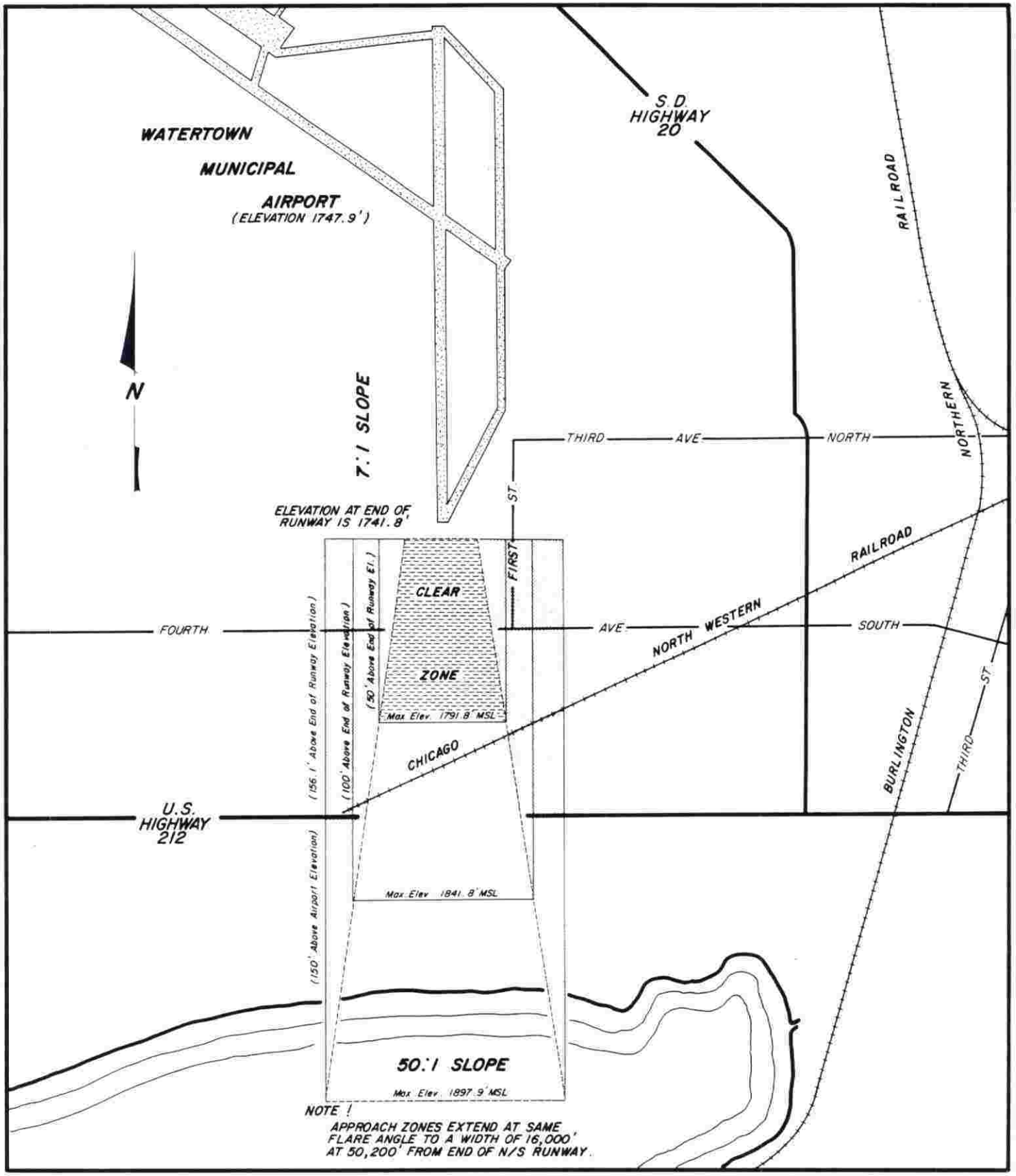
A urgent need that the community should attempt to address is the lack of industrial development land adjacent to BN trackage. While recognizing the physical limitations of some locations, local development efforts would be advanced by providing sites to industries that may require BN access. If a company could be located in this area, the carrier would also be encouraged to continue local rail service.

A type of industry that would benefit both the community and the rail system is one that would use local labor to refine raw products, whether local or imported, into a finished commodity, and use rail to ship the manufactured goods to the final destination. Industries that have a large national distribution network frequently seek to minimize transportation costs by finding a manufacturing location close to their market area. With the added advantage of an educated, productive labor market, Watertown becomes an excellent location for large processing industries.

Furniture construction is an example of this type of industry. The raw wood product is found in remote forest areas and must be transported to a production plant, where knowledgable workers assemble the furniture from the wood and other raw products. The finished product must then be distributed throughout a vast market area. The availability of a strong carrier serving several major metropolitan markets is a major asset.

FIGURE V-2

GLIDE PATH - WATERTOWN AIRPORT



South Dakota is a main production source for racehorse oats. Processing plants, most of which are located out-of-state, simply refine the commodity by removing the pointed ends of the seed. The method of rail transport frequently is done intermodally; that is, a truck trailer placed on a special rail flatcar. This would also provide an excellent opportunity to further develop piggyback traffic if a plant were located in Watertown. Other agriculturally related industries could include other processed grain products, a fertilizer plant, and a regional distribution plant for farm machinery.

According to the freight user survey conducted in Watertown, about 16 industries show potential for becoming intermodal freight users. Although the volume of piggyback shipping probably is not sufficient to generate an investment in a complete intermodal facility, it nevertheless provides a base traffic level from which a trailer loading platform could be utilized. The potential is further enhanced by industries in the surrounding area that may have freight suitable for intermodal handling. An example of this industry is Chef-Reddy Foods of Clark which ships processed potato products to regional markets. If rail delivery times and rates were competitive with truck, and intermodal facilities were available on the receiving end, piggyback shipping could be a realistic option.

Rail Preservation Alternatives

The prospects for reassembling an abandoned line segment are minimal. Provided that the right-of-way is still in railroad ownership, track material including ties, tie plates, spikes, rail, and ballast are required. Even if the track structure is intact, renewal and maintenance activities on the track structure must still be conducted. Unless a major traffic base is available, revenue from potential carloadings will probably not justify the high costs of reestablishing a rail line.

The construction of a new line segment connecting Watertown with the main line to the north has also been mentioned. In addition to the labor and materials involved with track construction, the right-of-way must be purchased from landowners and modified to improve grade. These factors combine to eliminate the possibility of a direct connection between the line serving Watertown and the main line, a minimum distance of seven miles.

Watertown must capitalize on its current rail service now to remain a community with growth potential. In order to achieve this goal, more traffic is needed to support operations. A railroad must be profitable to make necessary plant improvements and to efficiently serve shippers. Once a rail line has deterioriated to a point where it is unable to support modern equipment, the cost to overcome this condition is beyond realistic funding limitations. The line will then be abandoned by either the shipper, the railroad, or both.

A major factor involved in rail line preservation is the status of the rail lines that connect the branch lines serving Watertown to the national rail system. The Chicago & North Western's (C&NW) local branch line joins their "secondary main line" that runs from Mankato to Rapid City. The C&NW has designated the Pierre and Rapid City portion of this line as being a candidate for abandonment, and they are studying the Wolsey to Pierre segment. If the connection to Rapid City is actually severed, a significant volume of branch line traffic will be lost. Cement and flour shipments from Rapid City will then be unavailable to contribute to local branch line revenue. This will further weaken the feasibility of maintaining local operations on the C&NW.

Unless a large revenue source can be found along the C&NW branch line, attempts by the community to retain or restore service will not return sufficient benefits to cover the costs of the investment. As was discussed earlier, almost one-half of the 1981 traffic on the C&NW line was not available in 1982.

The local Burlington Northern branch line has had significant traffic changes occur in the last two years. The institution of unit train rates has spurred the construction and operations of several grain subterminals. The trackage rights agreement allowing BN traffic between Wolsey and Huron now provides a shorter path to the West Coast. The recent merger of the St. Louis-San Francisco Railway into the BN system and the completion of a new, structurally superior bridge at Sioux City have enhanced traffic movements to the Gulf Coast area.

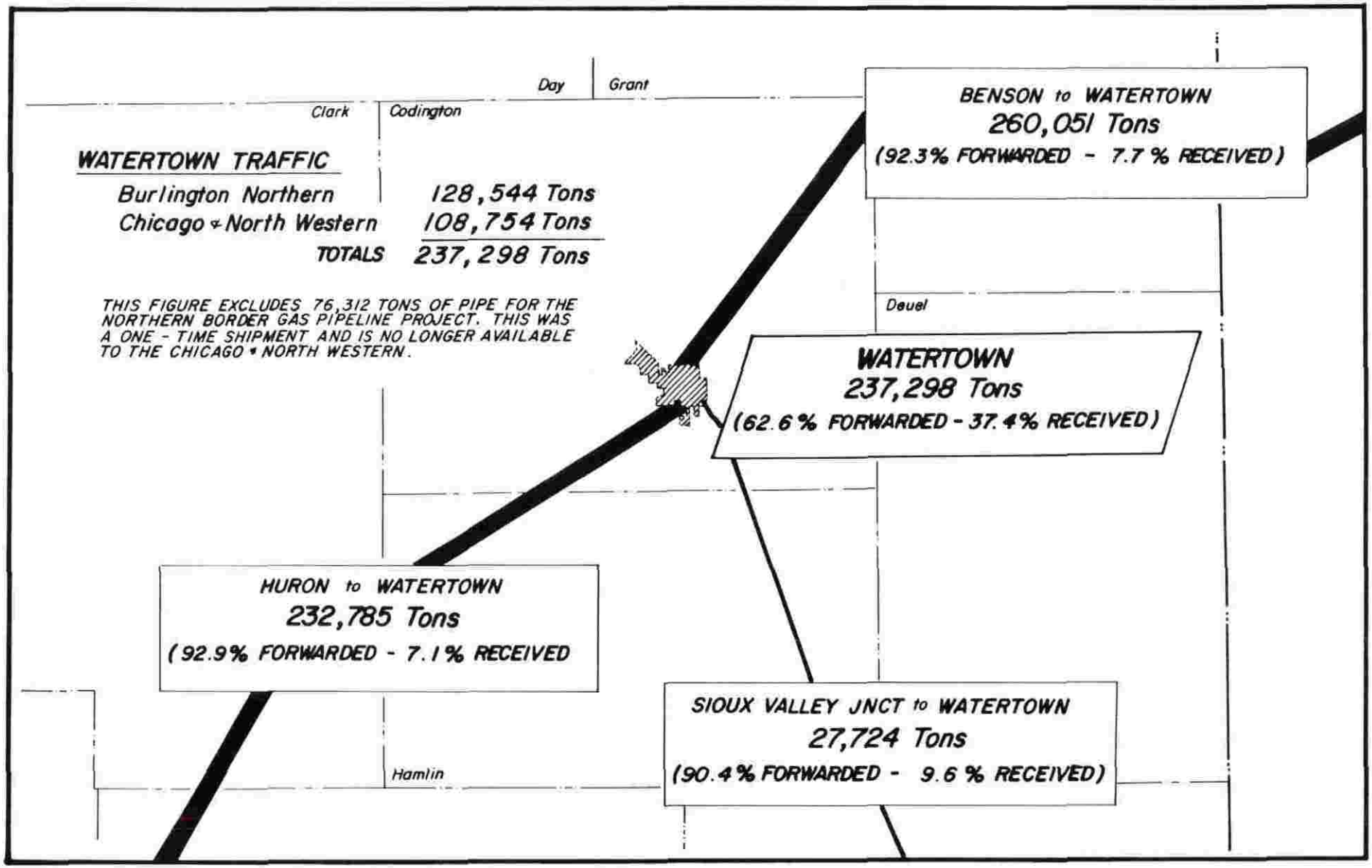
To analyze the Huron to Benson branch line, the line must be split into two segments, Huron to Watertown and Watertown to Benson. Since Watertown can now be served from either direction on the BN system, hypothetically one direction can be removed and the city will remain a part of the rail system. According to 1981 figures, Watertown accounted for 20.7% of the branch line traffic, 37.5% came from south of Watertown, and 41.8% from north of Watertown. The traffic volume by direction from Watertown is shown on Figure V-3.

The Watertown to Huron segment carries mainly farm products and other commodities involved in agricultural production. Nine grain elevators are located on the line, two of which have loaded unit trains. The traffic that is presently on this segment would probably be only partially diverted to a comparable shipping location if an abandonment would occur. Mileages for West Coast hauls from Watertown would have to be routed through Minnesota and increase by 40 miles, while Gulf Coast mileage would increase by about 80 miles.

Although the Watertown to Benson segment had more tonnage than the segment south of Watertown (260,051 tons north of Watertown, 232,785 tons south), the tons per mile is lower to the north because the segment is longer (2827 tons/mile north of Watertown, 3335 tons/mile south). Eleven elevators are found on this segment, six of which are in Minnesota. This segment is again almost exclusively dependent on seasonal agricultural needs for traffic. The close proximity of the line north

FIGURE V·3

WATERTOWN AREA RAIL TRAFFIC BY LOCATION



of South Shore to the main line running through Milbank could attract some potential shipping away from the Watertown line.

If a decision would be made to abandon a portion of the BN line either north or south of Watertown, changes would probably occur in traffic volumes which would crystallize which segment maintains the best traffic level. Although the grain production potential is probably greater north of Watertown into Minnesota, more BN lines compete with each other for traffic in this area.

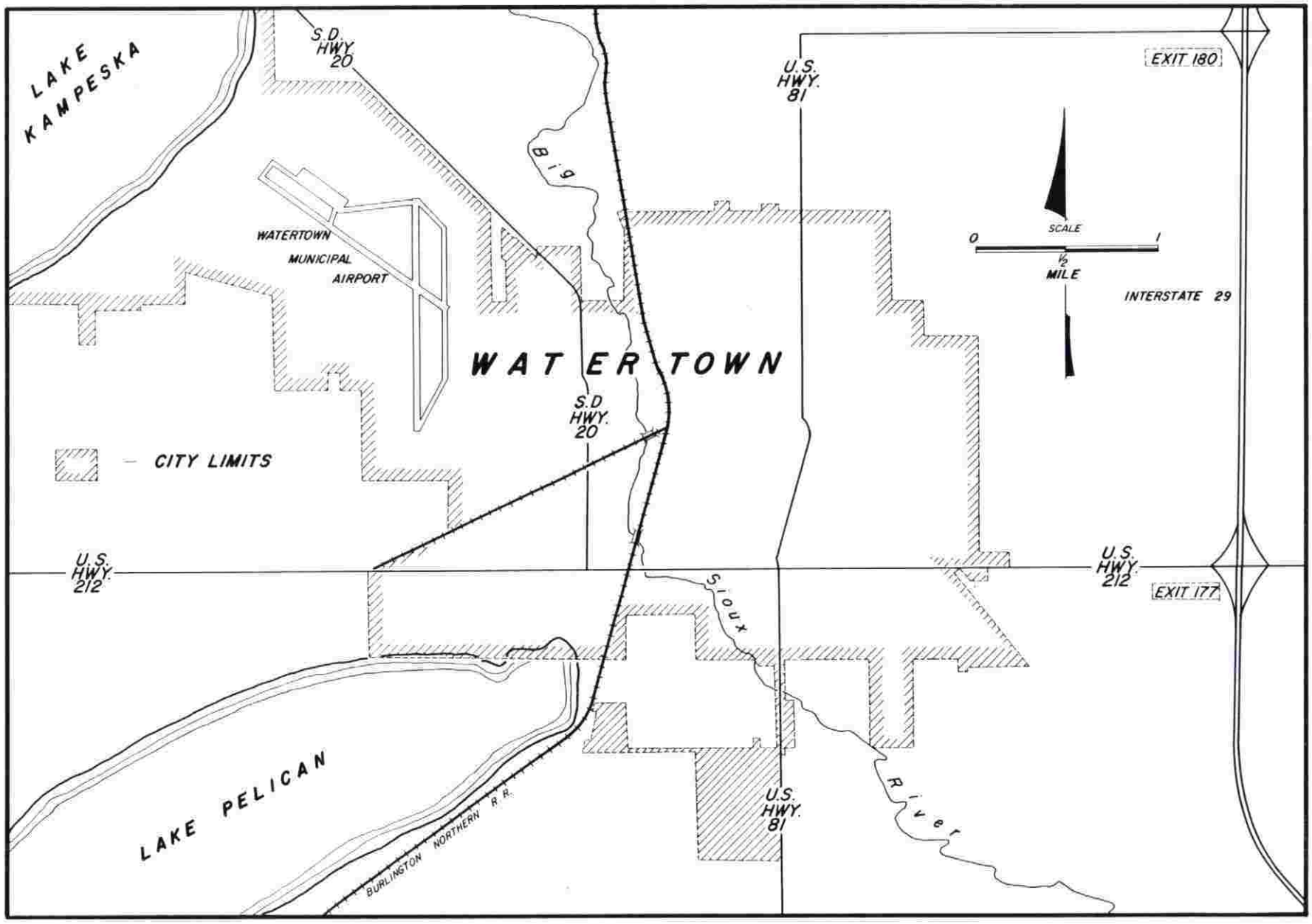
In considering whether or not to preserve a line segment, a basic premise from Section IV must be remembered. Given current traffic levels, Watertown will be able to strongly support only one carrier. In this respect, an abandonment may benefit the community by transferring some additional traffic to the remaining carrier. In the interim period, while the rail lines serving Watertown are not jeopardized by abandonment, the community and shippers should support both carriers, promote rail usage, and actively work to attract additional traffic.

If the C&NW should file for abandonment, the community should assess its relative industrial importance by identifying what shippers are affected and, more importantly, what alternatives they have within themselves to accommodate the loss of rail service. Depending on the location of the business, the community may observe that the abandonment of C&NW trackage through town actually serves the public welfare better than if it continues to operate. The industrial park west of town could be maintained and operated by the BN to serve both existing businesses and potential industrial sites. The trackage must be purchased by the BN or local interests, however, before operations could continue. Figure V-4 shows the layout of the BN as the sole remaining carrier in Watertown.

A decision concerning the preservation of a portion of the BN line, if it were proposed for abandonment, is currently much more difficult to assess. Present shipping volumes on the line make the segment north of Watertown almost equal to

FIGURE V-4

BURLINGTON NORTHERN - SOLE REMAINING CARRIER



the segment south of Watertown. The trends toward unit train shipping, contract rates, and corporate mergers have made shipping alternatives available today that weren't even imagined two years ago. The long term potential for the BN line through Watertown could be as a route to divert regional traffic to avoid transcontinental main lines that may be operating at capacity levels. For that to be true, however, the line must be kept intact from Huron to Benson and traffic volumes must increase accordingly to sustain profitable operations.

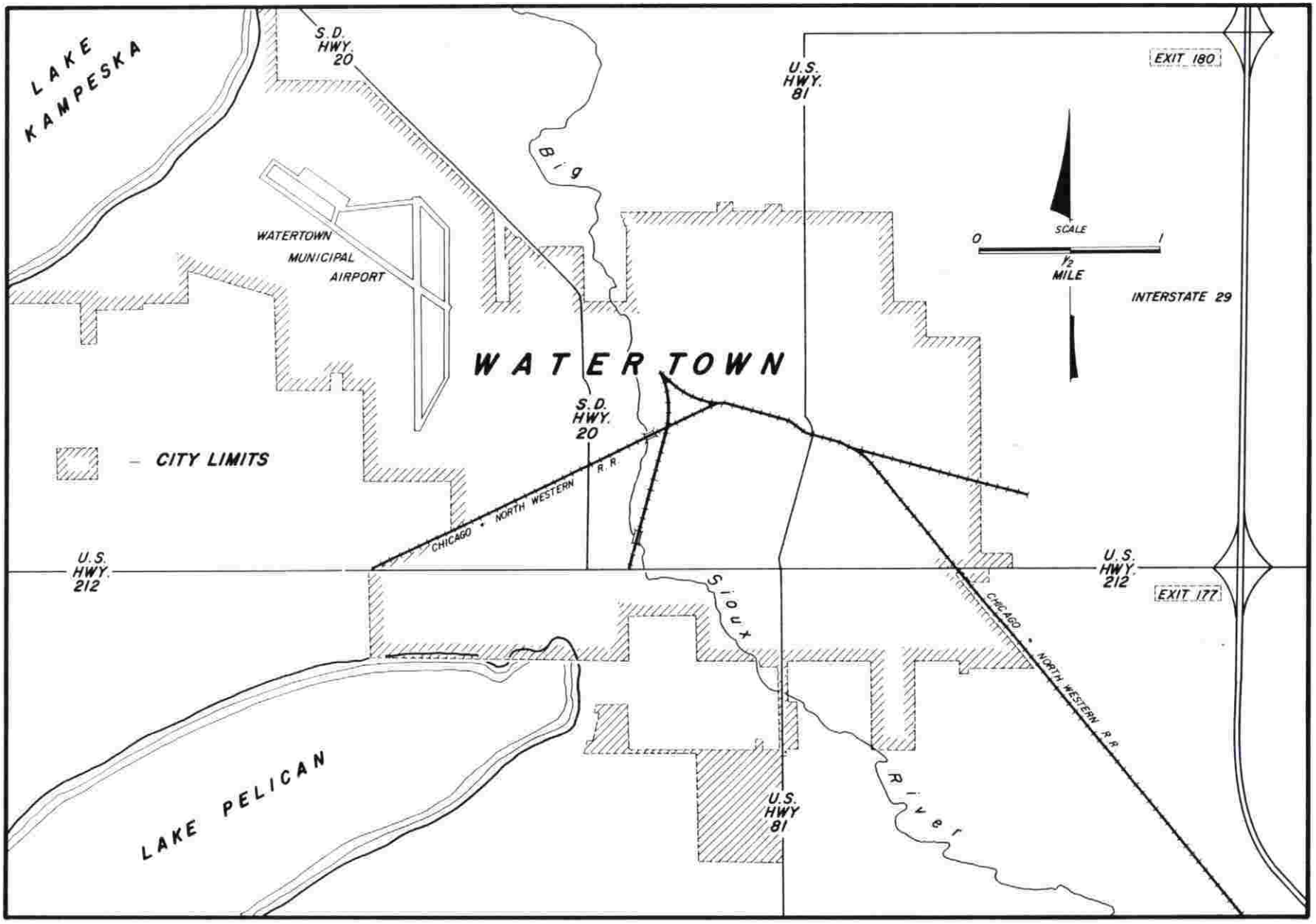
If the BN abandoned service to Watertown, Figure V-5 illustrates the operation of the C&NW as Watertown's sole remaining carrier. Once again, however, local interests may be faced with the purchase of important trackage if the C&NW could not make the investment.

SYNOPSIS

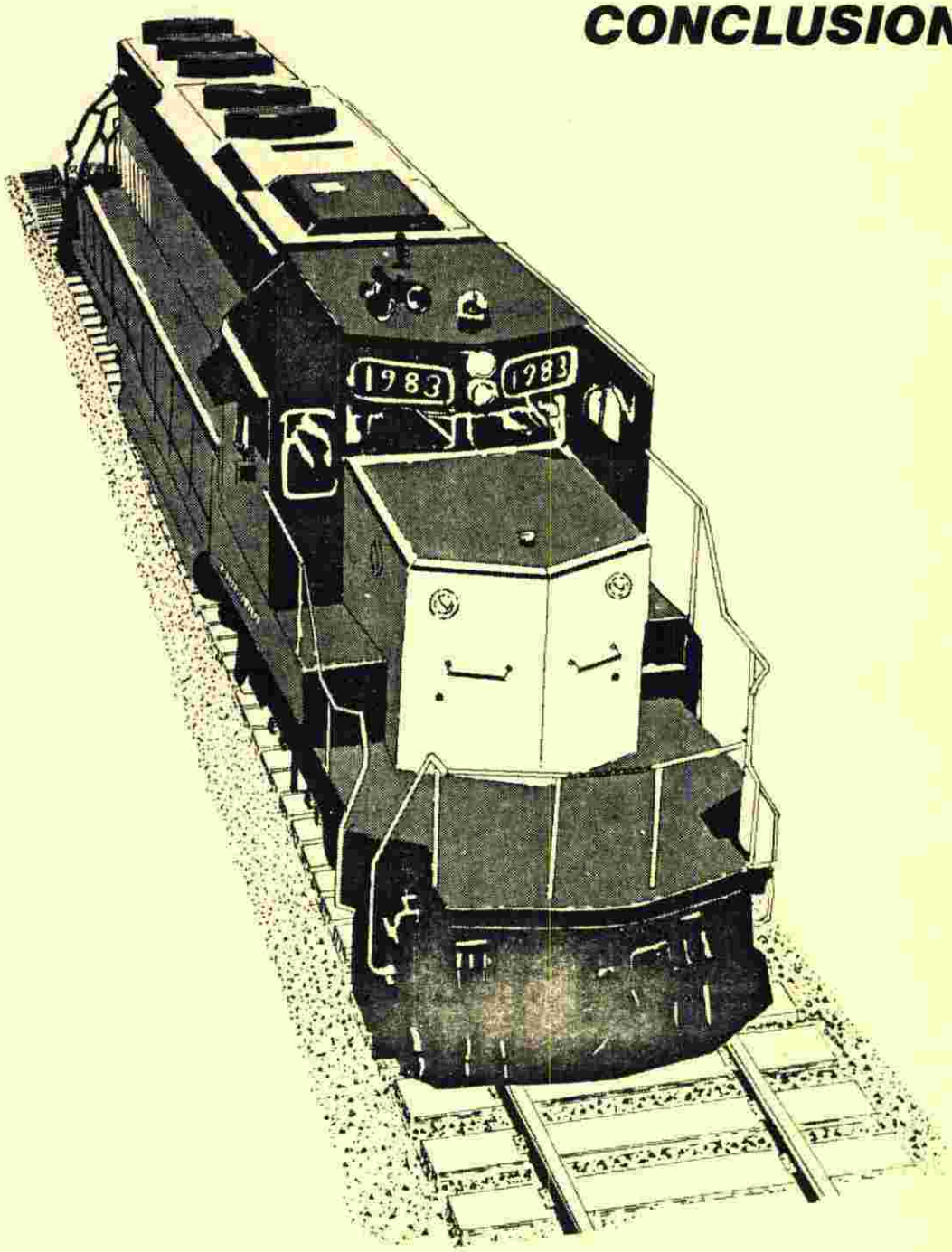
With a strong rail carrier and a comparably strong highway route in each direction, Watertown's potential as a manufacturing and distribution center is greatly enhanced. The ability to route rail traffic efficiently will keep Watertown recognized as a desirable site for industrial development. With a productive labor force and superb development land available, one of the few concerns that Watertown may have is what type of industry will best complement the community itself.

FIGURE V·5

CHICAGO & NORTH WESTERN - SOLE REMAINING CARRIER



SUMMARY, OBSERVATIONS and CONCLUSIONS



SECTION VI

SECTION VI

SUMMARY, OBSERVATIONS, AND CONCLUSIONS

The Watertown Area Freight Transportation Study was initiated because of the local interest in improving rail service. The Watertown Area Chamber of Commerce spearheaded the local effort and assisted in establishing the parameters of the Study. Area freight users and the railroads contributed data necessary for the analysis.

The emphasis of local transportation has shifted from the overland trails of the late 1800s, to the railroads of the early 1900s, to the highways of the mid-1900s. Today's freight transportation is an integrated system that relies on competitive forces to support the economic balance of the total system. The agricultural industry of the area creates the bulk of current traffic flows, especially the crop production sector.

The Burlington Northern Railroad and the Chicago & North Western Railroad operate the two remaining rail lines serving Watertown. The BN hauls 82% of the total recurring traffic on the lines and 90% of the grain on the two lines. The two carriers combined capture three of every four bushels of grain moved out of the Watertown grain market area. Since grain is the main source of railroad traffic, the area should continue to maximize the use of the rail system for this purpose. Other major traffic commodities consist of chemical compounds,cement, nonmetallic minerals, and food products.

The local C&NW line is limited to boxcars or small hoppers for grain because of the load limit. Trends show that the C&NW has been steadily losing important traffic to the point that continuing operations is questionable. The cost to remedy deferred maintenance problems is extremely high, while the market accessibility directly supplied by the carrier is limited.

Highways and local roads provide the mode of travel to initially market grain. Because of their number and weight, they can cause a significant structural impact on the road. Other truck traffic is a minor impact factor in comparison.

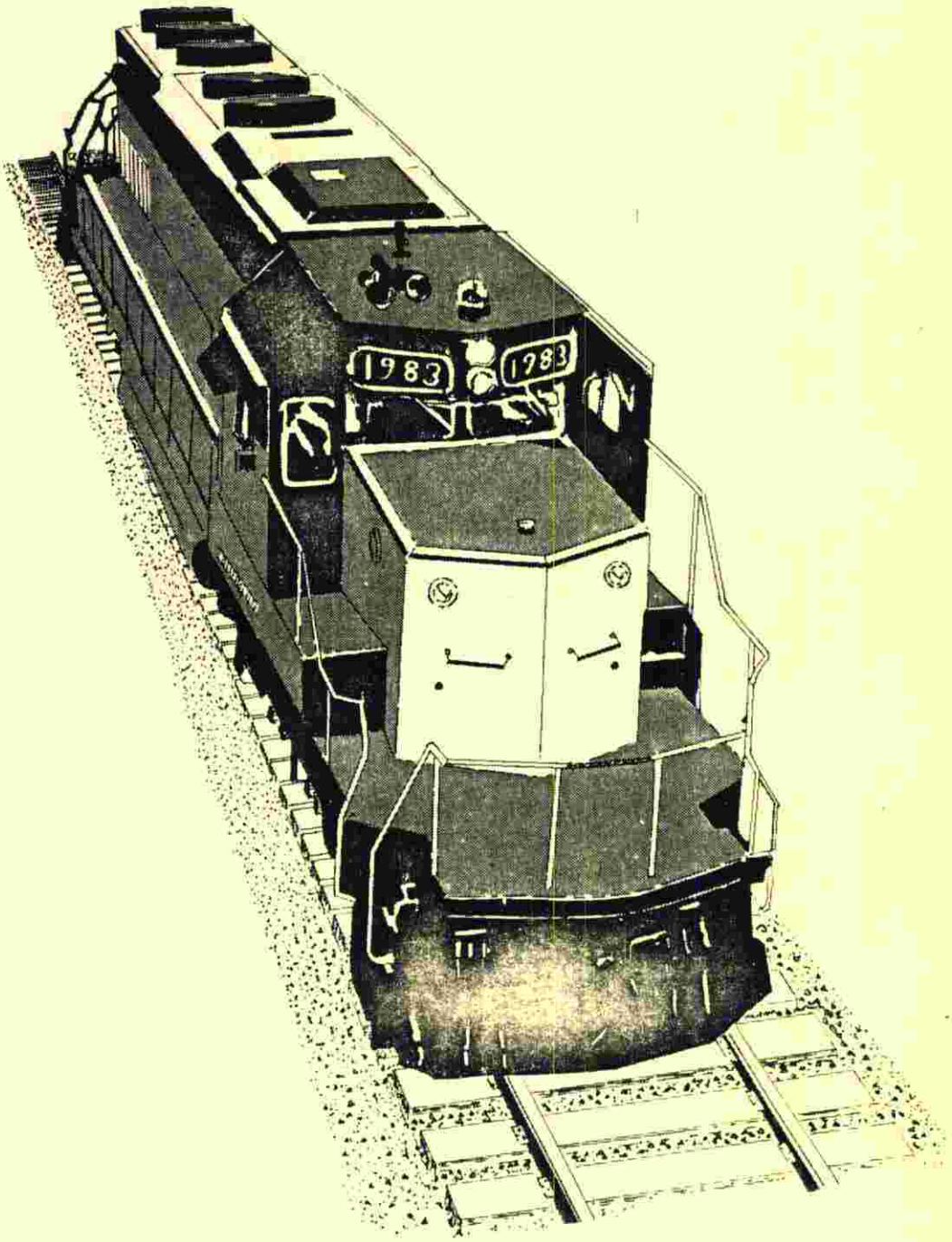
Industrial freight hauled by motor carrier is best served by the top priority routes, Interstate 29 and United States Highway 212. These routes provide the most direct connections to several major markets. After projects east and west of Watertown on Highway 212 are completed in the next three to five years, both routes will be relatively new, low maintenance segments.

Local highway traffic originating from outside of the Watertown area will probably not change significantly, at least not until the highway projects are completed. Watertown area traffic, greatly influenced by local grain marketing, will fluctuate depending on grain prices. County roads may need attention if extensively used for farm-to-market purposes.

Industrial expansion will be the most compatible with the community and the transportation system if located in the industrial park at the southwest edge of the City. The area offers excellent access to both modes of surface transportation. Rail siding extensions are the most feasible here, with only a limited number of highway crossings and environmental concerns.

Finally, the transportation system is a dynamic part of the Watertown area. Just as a highway or railroad structure changes, so also does the traffic that contributes revenue to support a route. The transportation system should be able to adapt to these changes while continuing to supply the freight services that are necessary for economic growth. The ability of the Watertown area to recognize these changes as they are occurring will facilitate an improved correlation between freight services and area shipping needs.

SHIPPER SURVEY



APPENDIX A

APPENDIX A

SHIPPER SURVEY

PART A: GENERAL INFORMATION

1. Name and address of firm: Carrier Serving

(Total Questionnaires Returned = 47) (25) BN (22) CNW

Contact: _____

Phone: _____

2. Are you, or have you ever been, a rail user?

(33) Yes, currently (8) Yes, at one time (6) No

3. What level of rail service would you need to optimally use rail?

Total Responses

(33) Service frequency (Daily = 2, 3X/wk = 7, 2X/wk = 10, Weekly = 5, Bimonthly = 4 Monthly = 5)

(21) Cars per (1 to 3 = 13, 4 to 6 = 4, 7 to 9 = 2, Unit = 2)

(27) Car Type (Box = 11, Hopper = 9, Flat = 5, Gondola = 1, Tank = 1)

(0) Other _____

(33) Is this currently being provided? (24) Yes (9) No

PART B: USERS

(33) 1. How many cars can you load/unload at one time? (1 to 3 = 13, 4 to 6 = 7, 7 to 9 = 5, 10 to 15 = 6)

(33) How long do you need to load/unload this amount? (Less than a day = 20, 1 day = 11, 2 days = 2)

(35) 2. What is the limiting factor?

(11) Siding size (17) Production levels

(3) Inadequate access-ibility (4) Other

(33) 3. Do you have a siding for your own use? (30) Yes (3) No

If not, a team track? (0) Yes (0) No

Do you need a loading platform/dock? (4) Yes (29) No

Are you aware of any terminal problems in Watertown, i.e., switching? (1) Yes (32) No

(43) 4. What is the major advantage that rail service offers you?

(1) Only appropriate mode
(20) Lower overall cost
(8) High volume capacity
(1) Good service
(0) Traditional mode used
(13) Other

5. How would you rate the rail service presently being provided?

		Excellent	Good	Adequate	Poor	Unsatisfactory
(30)	Reasonable Rates	(11)	(8)	(5)	(3)	(3)
(29)	Local service frequency	(11)	(7)	(4)	(4)	(3)
(33)	Service reliability	(13)	(6)	(6)	(5)	(3)
(32)	Car supply	(20)	(5)	(5)	(1)	(1)
(31)	Loss or damage frequency	(19)	(7)	(5)	(0)	(0)
(26)	Customer service	(12)	(5)	(5)	(3)	(1)
(3)	Other	(0)	(0)	(0)	(3)	(0)
		(86)	(38)	(30)	(19)	(11)

(36) 6. Is there one major disavantage with your rail service?

(Service = 15, Rates = 8, Operating Problems = 8, Physical Plant Problems = 5)

7. What effect does rail service have on your firm in terms of:

Employment (Shutdown = 3, Relocate = 1) (Balance did not respond)

Production (Shutdown = 3, Relocate = 1, Reduce Operations = 4)

Transportation Costs Shutdown = 3, Relocate = 1, Cost up = 7, Cost down = 1)

8. Is there any product that simply cannot be transported other than by rail? (Yes = 3)

Total Responses

9. If rail service was discontinued, what action would your firm take?

(32)

(7) Maintain present operations
(10) Reduce operations by 10-65%
(4) Close plant
(0) Relocate plant to rail line in Watertown
(5) Convert completely to trucks
(5) Truck to nearest rail loading facility
(0) Ship on the other carrier's line
(1) Relocate plant to rail line outside Watertown

10. If your firm was threatened with the loss of direct rail service, would it be willing to participate with others in any of the following?

(13)

(1) Purchase the line and operate it
(3) Assist the railroad company by supporting annual maintenance costs
(3) Assist the railroad company by supporting annual operating costs.
(3) Guarantee an annual shipment level
(3) Allow the other railroad in Watertown to serve you

PART C: PAST USERS & NONUSERS

1. Why have you eliminated the use of rail service? Why don't you use rail service?

(10)

(1) Inadequate service frequency
(2) Long transit times
(0) Terminal delays
(1) Low reliability
(1) Poor car supply
(0) Excess freight damage
(2) Poor customer service
(1) Trucks cheaper
(0) Incompatible service areas
(1) Shipment size too small
(1) Loss of direct rail service

2. Is there anything, besides the remedy of the above problems, that would get you to use rail service (again)?

GOODS SHIPPED
MOST RECENT AVAILABLE YEAR

From _____ to _____
(month, yr) (month, yr)

PRODUCT SHIPPED			DESTINATION	MODE OF TRANSPORTATION									SEASONALITY
				RAIL		TRUCK							
						Reg. Carrier		Private Fl.		Own/Oper/Cont		Type Used	
Products or Commodities	Annual Volume Tons/Bu.	Est. Shipment Value		Tons Bu. or Cars	Rate	Tons Bu.	Rate	Tons Bu.	Rate	Tons Bu.	Rate	Capacity (Bushels)	During which months is service used

GOODS RECEIVED
MOST RECENT AVAILABLE YEAR

From _____ to _____
(month, yr) (month, yr)

PRODUCT SHIPPED			DESTINATION	MODE OF TRANSPORTATION									SEASONALITY
				RAIL		TRUCK							
						Reg. Carrier		Private Fl.		Own/Oper/Cont		Type Used	
Products or Commodities	Annual Volume Tons/Bu.	Est. Shipment Value		Tons Bu. or Cars	Rate	Tons Bu.	Rate	Tons Bu.	Rate	Tons Bu.	Rate	Capacity (Bushels)	During which months is service used