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Report to
Linn County Regional Planning Commission
Rail Study Advisory Committee

Comprehensive Railroad Study
for
Linn County, Iowa

November 1980

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De Leuw, Cather & Company
Engineers and Planners

165 West Wacker Drive
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Our Ref: 3097-01

November 25, 1980

Mr. Donald B. Salyer, Director
Planning and Redevelopment
Linn County Regional Planning Commission
6th Floor, City Hall
Cedar Rapids, Iowa 52401

Dear Mr. Salyer:

For nearly two years De Leuw, Cather has worked with the Linn County Regional Planning Commission to develop a suitable work scope for a comprehensive railroad improvement study and then to progress this study.

During this period there have been major developments in the railroad business including a wave of mergers and the enactment of Federal legislation that makes substantial changes in rail rate making procedures. Locally, one railroad that served Cedar Rapids when this study was started - the Rock Island - has terminated all operations and is now being liquidated. The Milwaukee Road has eliminated routes that formerly served the Cedar Rapids area in the process of shrinking the railroad to what is hoped to be a viable core system.

These developments, particularly the cessation of service in the Cedar Rapids metropolitan area by the Rock Island and the Milwaukee Road, created problems with respect to both the conduct of the study and potential solutions to identified problems. At the same time, however, the elimination of two railroads opened up new possibilities for improvements.

This study was unique in that it is probably the first conducted in a medium size city mainly for the purpose of improving rail operations and service to industries as opposed to relocation of rail lines to permit highway construction or urban development. Because it was a pilot project, it was a difficult but most interesting undertaking.

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This report documents the findings of the study, ending with specific recommendations for implementation of a number of improvement actions that can considerably enhance railroad operating efficiency and service to local industries.

During the course of this study, we have worked closely with, and received superb support from, the Linn County Regional Planning Commission and the members of the Rail Study Advisory Committee, the Iowa Department of Transportation, the railroads serving Cedar Rapids, and local industries. Without this assistance, this study could not have been successfully accomplished and we gratefully acknowledge the efforts extended by representatives of these organizations.

This project was made possible largely by funding from the Federal Railroad Administration, authorized and approved by the Iowa Department of Transportation. Thanks are due to both of these agencies for extending financial support to a rather unprecedented type of project.

Sincerely,

DE LEUW, CATHER & COMPANY

John L. Stanek
Project Manager

JLS/fvg

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Chapter I

INTRODUCTION AND SUMMARY

To support continued and orderly development of the Cedar Rapids metropolitan area, appropriate local, county, regional and state government agencies are jointly committed to the definition and implementation of transportation system improvements. Currently, attention is focused on developing an action plan for improving the railroad facilities and operations which are vital to supporting the local economic base.

This report documents a comprehensive rail system study sponsored by the Linn County Regional Planning Commission (LCRPC). Although all of Linn County (and to an extent, the entire state of Iowa) was considered as a part of these efforts, the main focus was on formulating a rail network improvement plan for the Cedar Rapids and Marion metropolitan area. This action plan was developed in a manner optimizing the joint interests of the rail carriers, rail service users, and the community at large.

BACKGROUND

The Cedar Rapids metropolitan area is located in the center of the eastern half of Iowa--a rich agricultural region. Cedar Rapids has one of the largest concentrations of cereal mills in the world. Other major industry includes the processing of corn and soybeans, meat packing, fabrication of heavy machinery and the assembly of electronics equipment. These industries rely on the local and regional rail systems for the import of raw materials and the export of finished goods to national and international markets.

The development of both the Cedar Rapids metropolitan area and its rail system followed the pattern typical of many American communities. The initial community evolved around a defined city center located near the Cedar River. Early commercial and industrial activities located within or near this city center, and rail lines were built connecting to it. Residential areas then grew and eventually surrounded the industrial concerns. Today, yards and numerous rail corridors run through Cedar Rapids, Marion, Robins and Hiawatha. Both railroad yards and downtown industries have no room for expansion due to the nearby river, commercial districts, and residential neighborhoods. New industrial concentrations have more recently developed on the urban

periphery. Today, operating personnel of the rail carriers serving Linn County are faced with a local railroad system tailored to service the former urban structure. Several problems have thus been inherited: railroad facilities considered inferior by today's rail standards, and reduced operating speeds and increased accident potential in congested urban areas. More current concerns include the lack of adequate rail cars during peak periods and slow, erratic movement of traffic. These problems are directly reflected in the level of service and transit times provided to local customers. Recent economic conditions within the rail industry have generally prevented most rail carriers from making significant improvements.

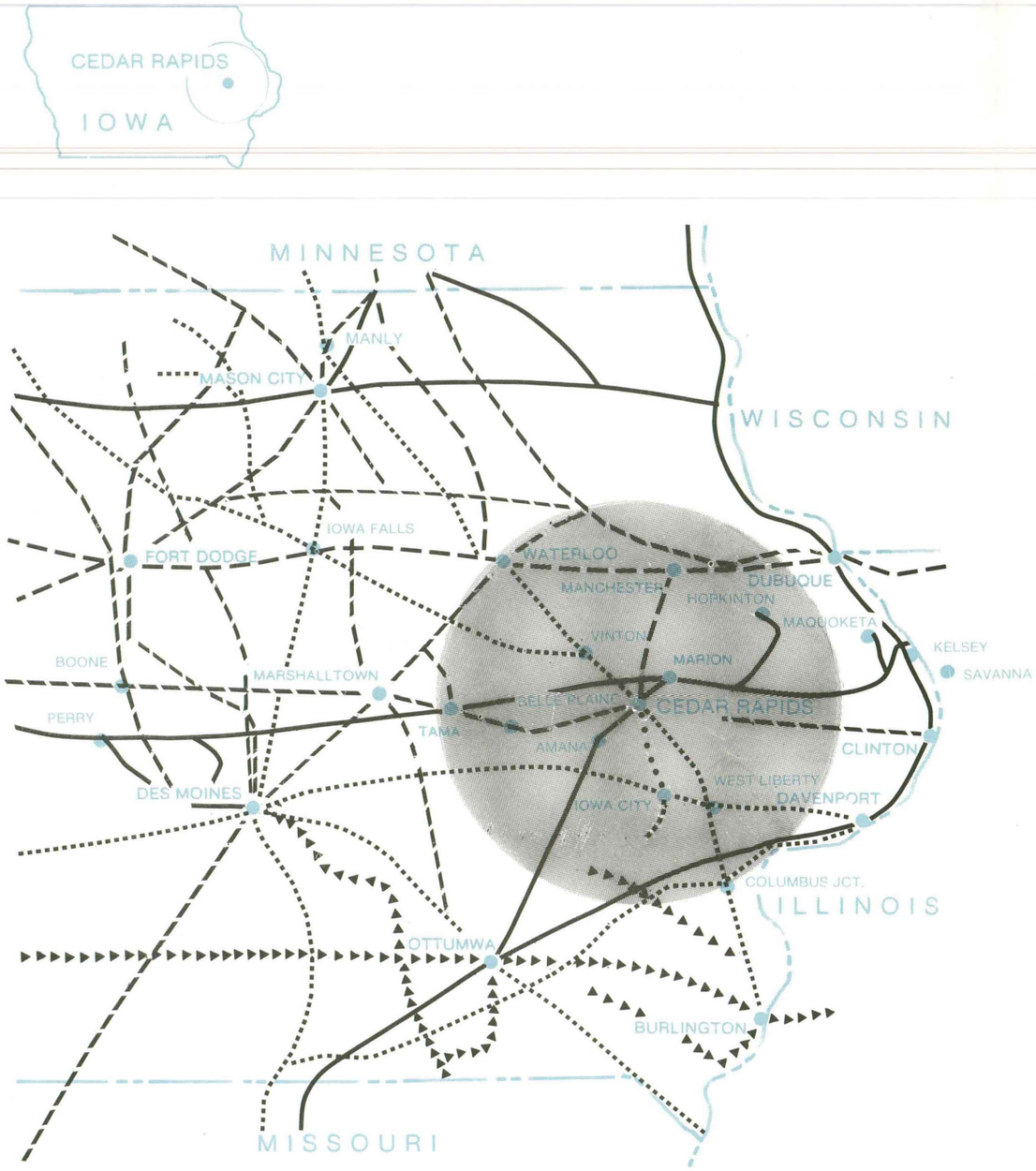
LINN COUNTY AND THE REGIONAL RAIL SYSTEM

The Cedar Rapids metropolitan area's setting in the regional and county rail systems is illustrated in Figure I-1. When this study was started, Cedar Rapids was served by five rail carriers:

- Cedar Rapids and Iowa City Railway Company (CRANDIC)
- Chicago, Milwaukee, St. Paul and Pacific Railroad Company (MILW)
- Chicago and North Western Transportation Company (CNW)
- Chicago, Rock Island and Pacific Railroad Company (RI)
- Illinois Central Gulf Railroad Company (ICG)

The CRANDIC is a short-line railroad operating between Cedar Rapids and Iowa City (25.4 miles to the south). The other four are major line haul carriers. A sixth railroad, the Waterloo Railroad Company, is a wholly owned subsidiary of the ICG, and has limited local facilities. The operations of the Waterloo are, for practical purposes, completely integrated with the ICG.

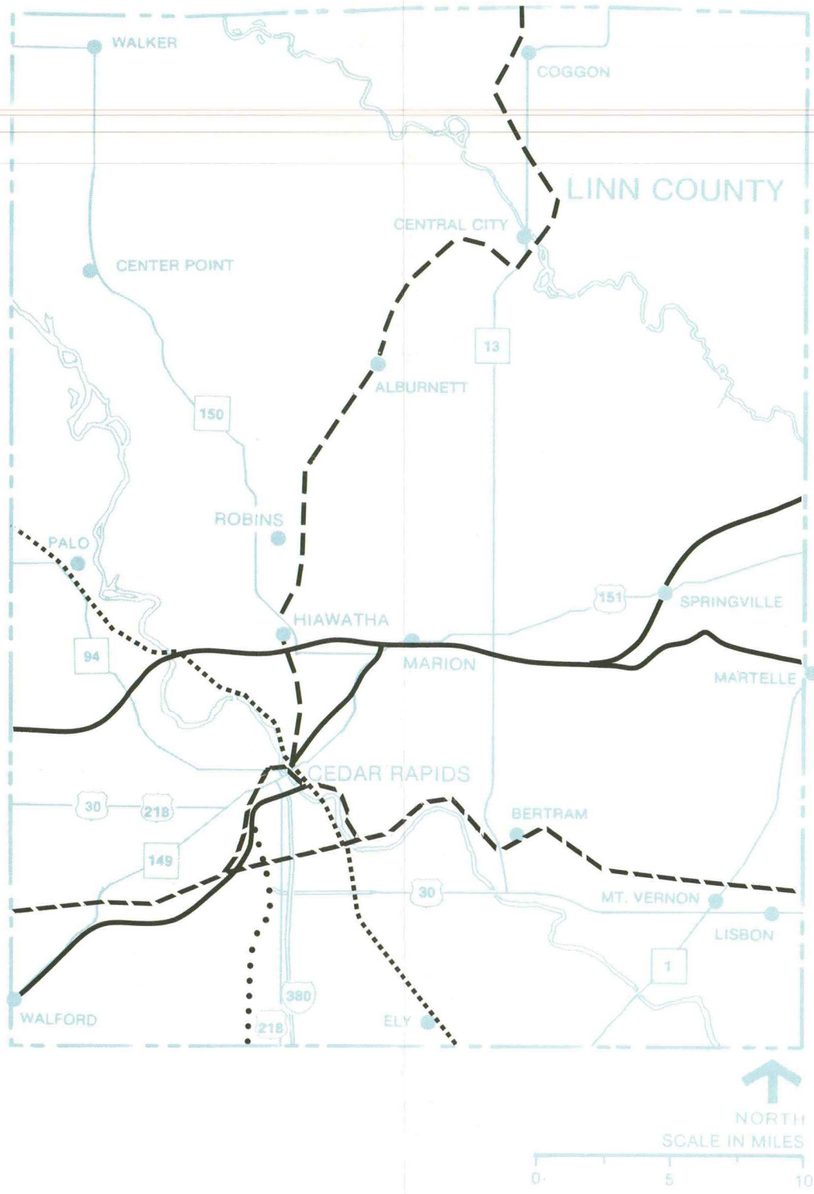
The MILW Chicago-Council Bluffs main line passes through Marion and a branch extends from Marion through Cedar Rapids and southwest to Ottumwa. While this study was in progress the MILW abandoned operations on these lines. Subsequently, the ICG and CRANDIC acquired temporary operating rights and are now providing service to former MILW customers in the Cedar Rapids metropolitan area and Amana.



REGIONAL RAIL SYSTEM

LEGEND

- CEDAR RAPIDS AND IOWA CITY
- CHICAGO AND NORTH WESTERN
- CHICAGO, MILWAUKEE, ST. PAUL AND PACIFIC
- CHICAGO, ROCK ISLAND AND PACIFIC
- ILLINOIS CENTRAL GULF
- OTHER



LINN COUNTY RAIL SYSTEM

FIGURE I-1

CEDAR RAPIDS METROPOLITAN AREA REGIONAL AND COUNTY RAIL SYSTEMS

The CNW's most important and heaviest traffic density route is between Chicago and Omaha and Fremont, Nebraska. This line crosses Iowa from Clinton to Council Bluffs and traverses the southern portion of the Cedar Rapids metropolitan area.

The RI line between Waterloo and Burlington passes through Cedar Rapids in a northwest-to-southeast direction. This line intersects the RI Chicago-Council Bluffs main line at West Liberty and the Chicago-Kansas City main line at Columbus Jct.

During the course of the study, the RI ceased all operations. The CNW was granted temporary authority by the ICC to take over RI facilities in the Cedar Rapids metropolitan area and is now serving local industries located on the RI.

The ICG's east-west main line through Iowa runs from Dubuque to Fort Dodge, where it splits into two lines--one running to Council Bluffs and the other to Sioux City and Sioux Falls. A 42.1-mile branch extends south from Manchester, through Robins and Hiawatha, to Cedar Rapids.

STUDY OBJECTIVES

In the last five years, the Linn County Regional Planning Commission (LCRPC) has been studying rail-service problems of existing industries, and deficiencies that must be corrected to support industrial expansion. As a part of these efforts, the LCRPC assembled a Rail Advisory Committee made up of railroad personnel, industrial representatives, city officials, and LCRPC staff.

In mid-1976, after itemizing major rail system operating and service deficiencies in preliminary form, it became apparent that a comprehensive study was required to formulate short-term and long-term solution alternatives. In late 1978 and early 1979, the LCRPC and De Leuw, Cather & Company determined a suitable scope for the required comprehensive investigations. This report documents the activities of De Leuw, Cather in carrying out that study program.

The objectives of this study were:

- To evaluate the adequacy of the existing Linn County rail system to meet present and anticipated service demands.

- To identify rail system problems and deficiencies.

- To develop a plan consisting of specific alternatives to correct present deficiencies and provide for an overall improvement in the rail network in terms of faster transit time, increased availability of cars, and dependability of service.

Although all elements of the community are affected by rail operations throughout the metropolitan area, the study was directed primarily toward devising a program to remedy deficiencies in rail service to industrial concerns. While such problems as delays to highway traffic exist at the numerous rail crossings in Linn County--and such problems are worthy of attention--it was not the primary objective of this study to reduce highway/rail interface conflicts. However, inventory activities were directed in part toward an understanding of present rail/highway conflicts and, wherever practical, suggested railroad plant and operational improvements were tailored to mitigate rail-caused highway delays.

The primary objective of the study was to develop and evaluate rail modification alternatives in sufficient detail to provide all agencies and citizens at interest with the information required to assess available opportunities and to agree on the most suitable program to upgrade the rail network and operations.

SUMMARY OF FINDINGS

During the initial phase of the study, field inspections were made of all railroad facilities and interviews were conducted with railroad, industry, and community representatives. This investigation identified nine major problem areas:

1. Insufficient supply of serviceable rail cars.

2. Inadequate or insufficient yards and connecting trackage.

3. Poor conditions of yards and connecting trackage.

4. Delays associated with interchange movements.

5. Lack of a disciplined program for switching, interchange and road movements.

6. Lack of, or inappropriate location of track scales and other support facilities.

7. Trackage at industries inadequate or in poor condition.

8. Car delays caused by industry operating practices.

9. Rail/highway conflicts in the 4th street corridor.

During the second phase of the study, over 40 improvement alternatives were developed to correct these problems and enhance rail service. In conjunction with the Rail Advisory Committee, the list of alternatives was narrowed down to those deemed economically and operationally feasible.

Early in 1980, when the study was nearly half complete,it became apparent that two of the four trunk line railroads serving Cedar Rapids, the Rock Island and the Milwaukee, might terminate operations in this area. Because of this possibility, contingency plans were developed to preserve adequate rail service in this event. The Milwaukee did, in fact, cease operations on March 1, 1980, followed by the Rock Island on April 1, 1980. The Chicago and North Western, Cedar Rapids and Iowa City, and the Illinois Central Gulf took over temporary operation of segments of the Milwaukee and Rock Island shortly thereafter.

The cessation of service in Linn County by the Milwaukee and Rock Island caused major changes in the course of the study, but it also offered new possibilities for consolidation of facilities and operations. Improvement alternatives under consideration were modified to conform to the drastically altered situation.

At the time of this writing, the surviving railroads are negotiating with the Trustees of the Milwaukee and Rock Island to purchase various line segments. Until these acquisitions are made, some improvement alternatives cannot be progressed. However, it does appear that the acquisitions proposed by the various railroads and the temporary operations now being conducted (which would be made permanent) fit quite well with the recommendations made in the contingency plan.

Because of the importance of the disposition of Milwaukee and Rock Island property and the resulting rail operations, an additional section was added to the action plan. This supplementary section includes recommended changes to preserve the best possible Linn County rail system even though the service of two carriers has been lost.

Some of the background information in the report is now obsolete because of the RI and MILW abandonment of service. However, this material has been retained to give the reader a better perspective as to the conditions that created the need for this study.

The last phase of the study was the formulation of the final rail improvement program. This program included the improvement alternatives jointly selected by the Rail Advisory Committee and De Leuw, Cather, and additional recommendations resulting from discontinuance of service by the Milwaukee and Rock Island.

Before completion of the study, four of the original improvement alternatives were put into operation. These were:

- Use of the Milwaukee Yard by other railroads. This is now being done by the CRANDIC and ICG and property purchases are nearly complete.

- CNW use of the RI yard. This has taken place on a temporary basis and will become permanent if the CNW acquires ownership.

- Establishment of direct interchange between the CRANDIC and ICG. This has been accomplished.

- Joint use of track scale at the MILW yard by the ICG and/or CNW. The ICG is now using this scale.

Because they are already accomplished, these four alternatives were removed from the final plan.

RECOMMENDED IMPROVEMENTS

In coordination with the Rail Advisory Committee, 26 improvement alternatives were selected to become part of the final improvement program. Each alternative was considered with regard to:

- Action required to achieve proposed physical improvements and operational or organizational changes.

- Responsibilities of all involved participants.

- Equitable capital and operating cost participation by the various railroads, industries, and governmental agencies.

- A control system to monitor progress and results where necessary.

Where possible, order-of-magnitude cost estimates were developed for improvements. It should be noted, however, that costs of additions to the rail car fleet and fixed plant modifications and improvements will require individual study by the industries and railroads involved.

Improvements are listed below in conjunction with the specific objective(s) they are proposed to implement.

Increase Supply of Serviceable Cars

Several complementary programs are proposed to increase the number of serviceable cars available for industry needs in Linn County:

- Industries evaluate car requirements, and purchase or lease additional cars based on individual needs.
- Railroads purchase or lease additional cars, with funding by individual carrier or with assistance under 4R Act provisions.
- Railroads repair/upgrade bad order cars, with internal or 4R Act funding, or with financing by industry to be repaid on a rebate basis.
- Railroads develop joint car cleaning and upgrading facilities and operations.
- Railroads and industry officials negotiate rates that are profitable to the railroads and competitive with other modes; railroads file for rate revisions through normal regulatory channels.

Increase Yard Capacity, with Adequate Connecting Trackage

The following programs are recommended to increase yard capacity:

- Industries finance storage tracks for their cars.
- Railroads store heavy bad-order cars outside Cedar Rapids.
- Based on industry forecasts of needs, railroads store industry-leased or assigned cars in enroute locations outside Cedar Rapids.

- CRANDIC and CNW use MILW main line between Beverly Tower and Vera for storage.

- CNW uses MILW route from Vera to 9th Avenue and RI yard.

Rehabilitate Yards and Connecting Trackage

Railroad and industry programs are proposed to rehabilitate yards:

- Railroads retire unnecessary trackage.

- Railroads rehabilitate terminal trackage, with individual funding, or 4R Act or other public funding assistance where available.

- Industries rehabilitate in-plant trackage.

Minimize Delays Associated with Interchange Movements

Better coordination of interchange movements on the part of the railroads is recommended.

Establish Disciplined Program for Switching, Interchange, and Road Movements

Three interrelated railroad improvements are recommended:

- Railroads provide schedules for traffic movements to customers.

- Railroads improve blocking of traffic and through train operations.

- Railroads establish a Terminal Steering Committee to improve communications and coordinate operations.

Improve Location of Track Scales

(ICG now using track scale at MILW yard.)

Improve Trackage at Industries

- Industries, assisted by railroads, revise or expand trackage to permit more efficient operations.

- Industries revise loading facilities to accommodate longer and higher capacity modern cars.

Minimize Car Delays Caused by Industry Operating Practices

- Industries unload inbound cars promptly and bill outbound cars when loaded or ordered out of plant.
- Industries furnish railroads with accurate advance forecasts of equipment requirements.
- Railroads, industries, and regulatory agencies explore methods to minimize delays due to grain inspection. Possibilities include improved inspection, scheduling, establishment of an acceptable system of origin point inspection, and at-plant inspection similar to that available to the trucking industry.

Minimize Rail/Highway Conflicts in the 4th Street Corridor

- Railroads improve the physical plant in the corridor.
- Railroads complete the connection between ICG and MILW yards.
- Railroads minimize rail movements during periods of peak vehicular traffic.

SUPPLEMENTARY PROGRAM - OPERATION OF MILW AND RI FACILITIES

Following further consultation with the Rail Advisory Committee and the remaining railroads regarding the operation of abandoned MILW and RI facilities, the following supplementary program is also recommended. A number of these items are in the process of implementation:

1. ICG acquires and operates MILW facilities between Louisa and Marion and between Indian Creek and the Menard Lumber Company.
2. CRANDIC acquires and operates MILW facilities from Amana through Cedar Rapids to the Iowa Manufacturing plant.
3. ICG acquires operating rights in the MILW Cedar Rapids Yard.
4. CNW acquires MILW trackage between Beverly Tower and Vera.
5. CNW acquires operating rights between Vera and 9th Avenue Tower.

6. CNW acquires all RI facilities and operations from the north end of the Cedar River Bridge to the north limits of Cedar Rapids Yard.

7. CRANDIC acquires RI facilities from the north end of North Yard to Palo, and has operating rights from 9th Avenue to the north end of North Yard.

8. CRANDIC takes over all switching operations at the Penick & Ford plant.

9. RI downtown trackage north of 9th Avenue and west of 4th Street are phased out.

CONCLUSION

Implementation of the various improvement alternatives will result in some or all of the following benefits:

- Provide additional rail cars and improve utilization.
- Expedite the movement of rail traffic.
- Effectively provide more yard space.
- Eliminate excess trackage.
- Reduce railroad operating expense.
- Minimize railroad-community conflicts.
- Permit urban development in areas now occupied by railroad facilities.

This report documents a many-faceted program for improving rail service in the Linn County area and, additionally offers a number of community benefits. For successful implementation of the plan there must be the continued cooperative and coordinated effort on the part of the railroads, industries and governmental agencies that was conspicuous during the study period.

Chapter II

RAILROAD FACILITIES AND OPERATIONS

To gain an understanding of the existing physical plant and operations of the five railroads serving Cedar Rapids, on-the-ground inspections of all lines were made and interviews conducted with officers of each carrier. The level of detail was sufficient for determination of improvement alternatives and critical analysis of such alternatives as the study progressed. Supplementary information was obtained as the need arose during the course of the study. The Cedar Rapids metropolitan rail system is shown in Figure II-1.

In addition to a description of the physical facilities and operations of each railroad, a section on interchange procedures has been included, because this activity is critically important in any restructuring of present operations. Another section outlines the operations of the Cedar Rapids Grain Inspection Service as they relate to the railroads.

CEDAR RAPIDS AND IOWA CITY RAILROAD COMPANY (CRANDIC)

The Cedar Rapids and Iowa City (CRANDIC), as shown on Figure II-2, is a short-line railroad, owned by Iowa Electric Light and Power Company. It operates between Cedar Rapids and Iowa City, Iowa, a distance of 25.4 miles. The CRANDIC owns 57 miles of track, including main line, yards, sidings and industry tracks. Maximum operating speed on the main line is 25 mph, with a 15-mph speed restriction in Cedar Rapids. Road train operation is governed by train orders with radio control from the chief dispatcher at the Uptown Yard in Cedar Rapids. The main line trackage consists of 90# and 100# jointed rail, which is in good condition, and crushed-rock ballast. Ties are generally in good condition (about 25 percent are defective), and the line and surface of the track has been adequately maintained. Operating and maintenance headquarters for the CRANDIC are at Uptown Yard.

Yards and Facilities

The CRANDIC's main yard is Uptown Yard, near Wilson Avenue on the southwest side of Cedar Rapids. In addition to facilitating the classification of cars, this yard serves as an interchange with the MILW and contains car and locomotive repair facilities.

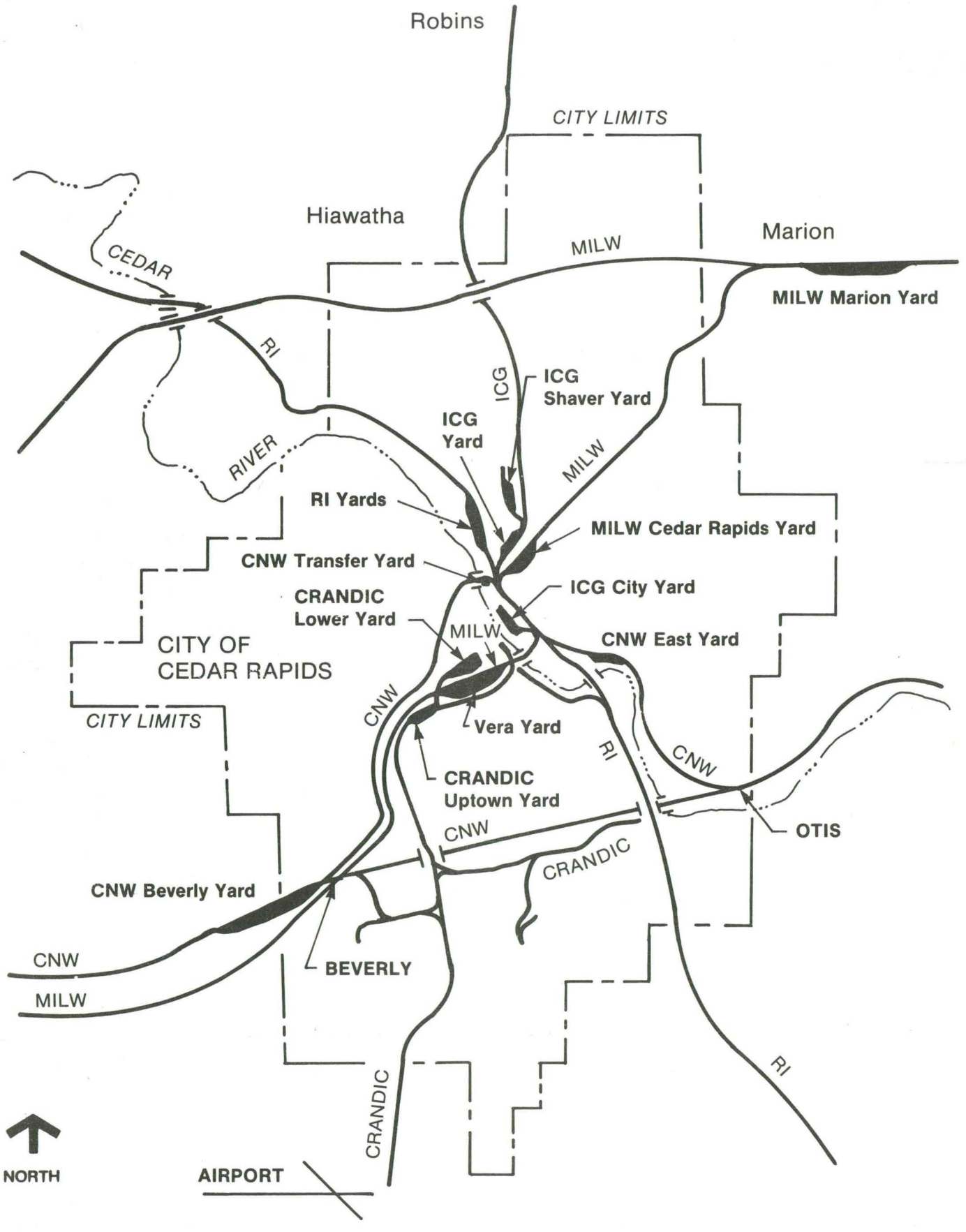
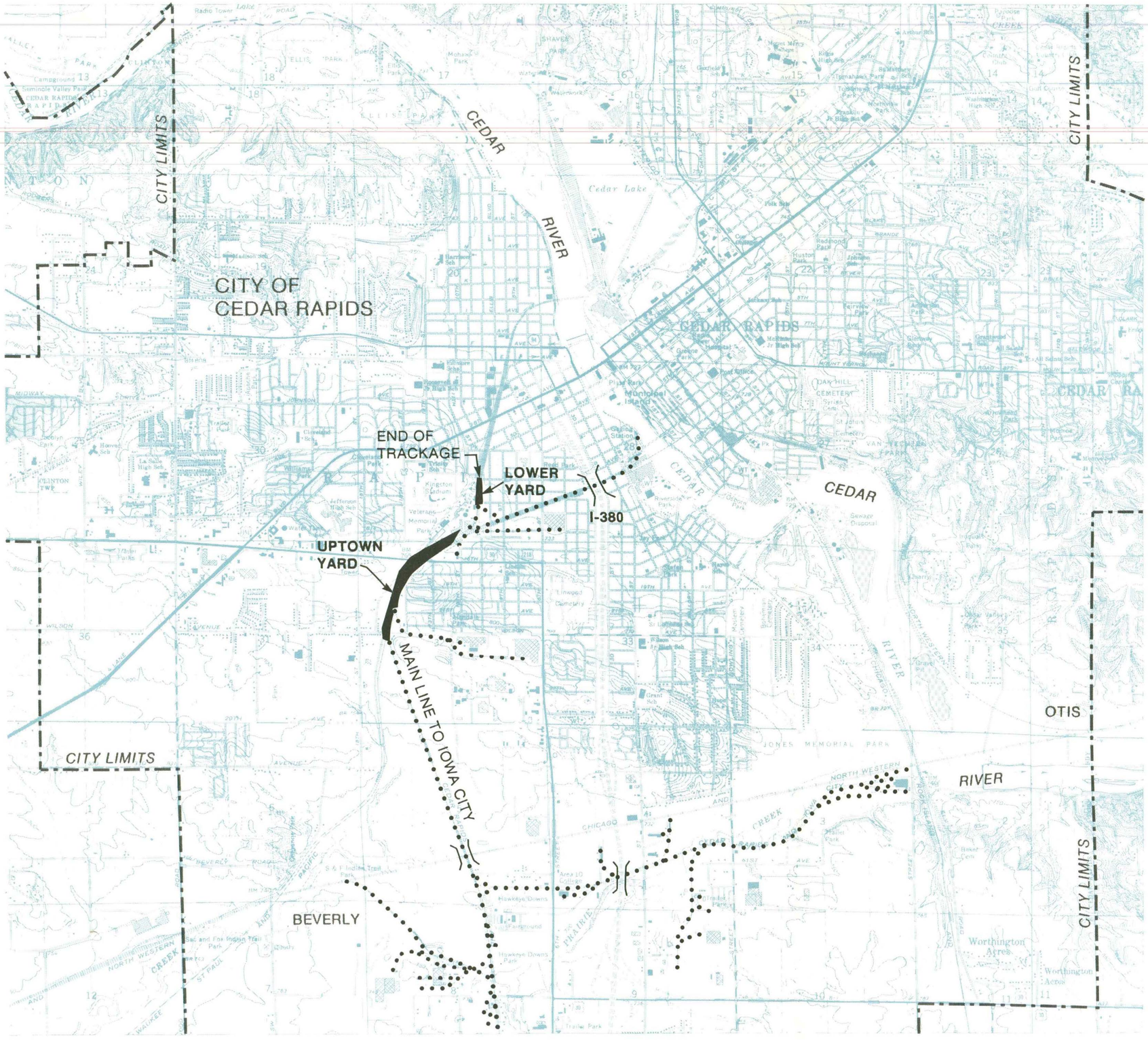
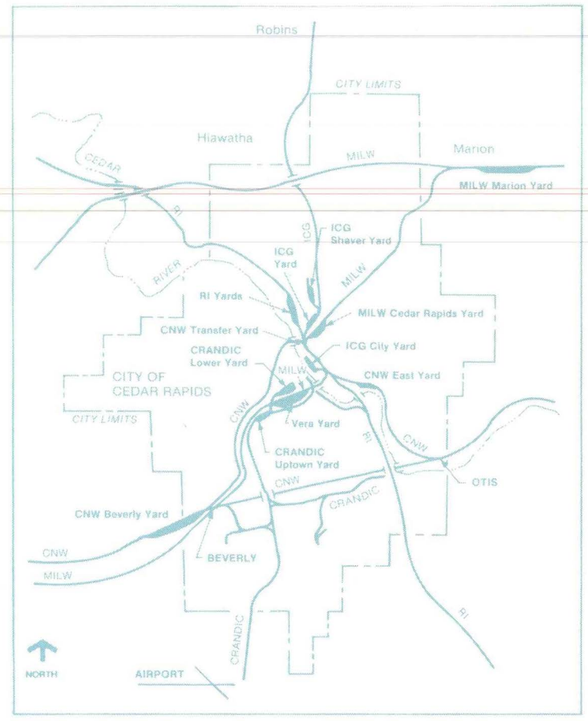


FIGURE II-1

METROPOLITAN RAIL SYSTEM





KEY MAP

FIGURE II-2

CRANDIC FACILITIES IN THE METROPOLITAN AREA

The yard has 12 tracks with a capacity of about 275 cars. Rail includes 70#, 80# and 90# sections, and ballast consists of crushed stone and cinders. Ties are becoming marginal on some tracks, but the overall condition of the yard is fair.

All of CRANDIC's car and locomotive maintenance is performed at Uptown Yard. The shop building, with three tracks (two used for locomotives and one for cars), is relatively modern. Mechanical department staff includes a master mechanic and eight car and locomotive repairmen working one shift daily. All maintenance and servicing work on the CRANDIC's seven locomotives, with the exception of heavy overhauls (which are done by outside contractors), is done here. Repairs are made on about five cars daily in the shop or on one outside repair track.

The yard also includes a track scale on which approximately five cars are weighed per day. A limited amount of car cleaning, mostly flatcars, is also performed at Uptown Yard.

A small materials department, manned by one store keeper, stocks and distributes all necessary parts and equipment. The maintenance-of-way department is headquartered at Uptown Yard, with a superintendent heading up a staff consisting of one roadmaster, one bridge foreman, one carpenter, and 15 trackmen. An additional 15 trackmen are usually added during the summer. Operating personnel at Uptown Yard include one assistant superintendent, one trainmaster, one chief dispatcher, three dispatchers, and five yard clerks.

Immediately northeast of Uptown Yard is Lower Yard, adjacent to the Cargill West plant. This yard consists of eight tracks with a capacity of about 130 cars. Lower Yard is used for switching and storage of cars originating or terminating at the Cargill West facility. Overall track condition is good.

Three industrial leads extend east from Uptown Yard; two extend to 6th Street, the other to the Cedar River. All three leads provide access to various industries along the respective routes.

The only other yard on the CRANDIC is adjacent to the Corn Sweeteners plant. This yard consists of eight tracks with a capacity of about 190 cars. It is used solely for servicing Corn Sweeteners. Immediately northwest of this yard

are three tracks with a capacity of about 120 cars, used for interchange with the CNW; and two storage tracks for Corn Sweeteners that hold 150 cars.

Train and Yard Operations

The CRANDIC normally operates one round trip to Iowa City daily except Saturday. When coal traffic is heavy, a second run is made. All of the Iowa City traffic is interchanged with the RI. The train delivers about 70 cars to the RI and picks up 35 to 40. The train leaves Cedar Rapids at 7:00 p.m. and returns about 2:00 a.m.

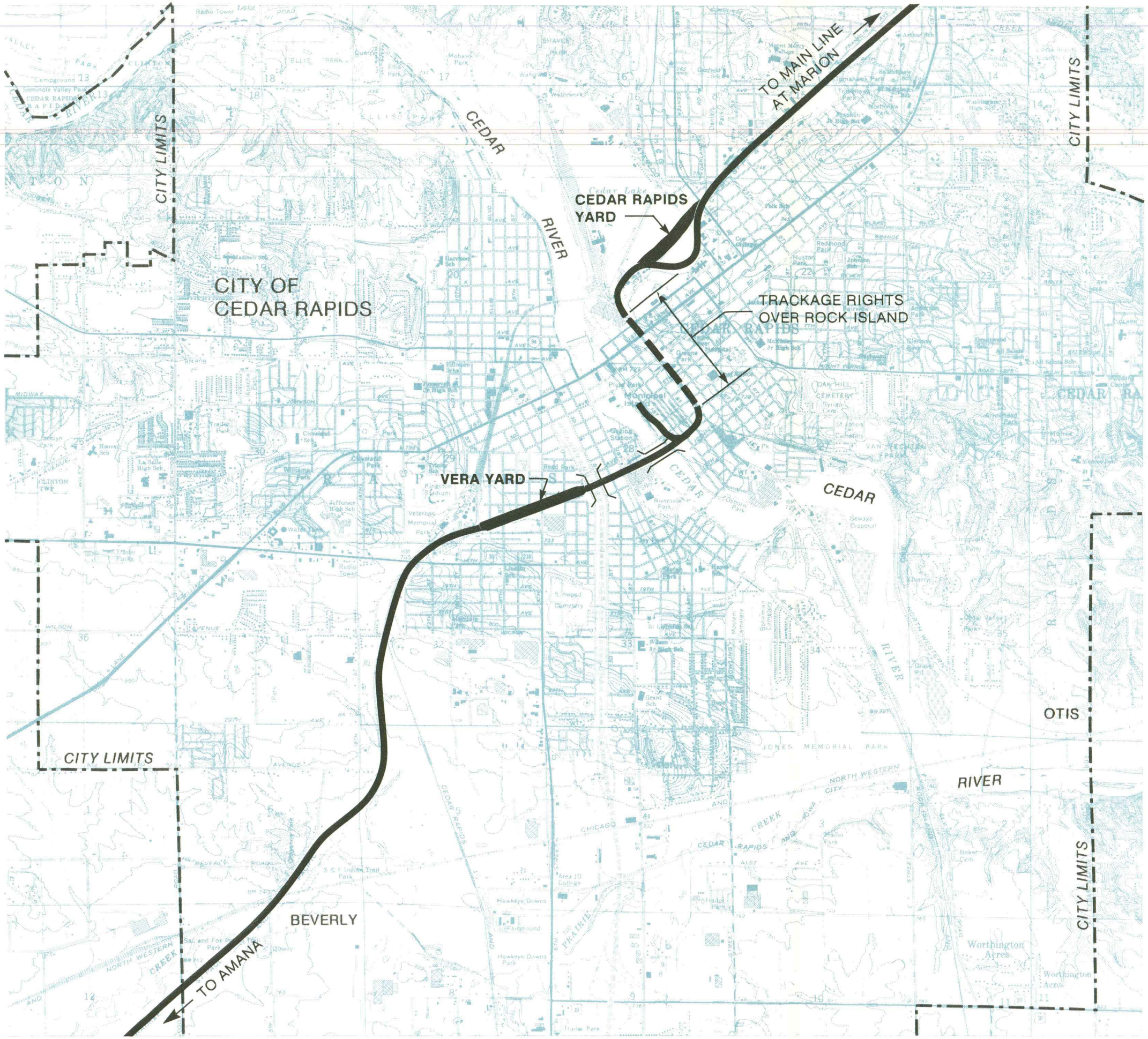
The CRANDIC has three switch engines assigned to Corn Sweeteners. They go on duty at 7:00 a.m., 3:00 p.m. and 11:00 p.m. daily except Saturday and Sunday. On Saturday and Sunday, two jobs are worked at Corn Sweeteners, going on duty at 7:00 a.m. and 7:00 p.m. In addition to switching Corn Sweeteners, these engines switch Harnischfeger and handle traffic to and from the CNW interchange.

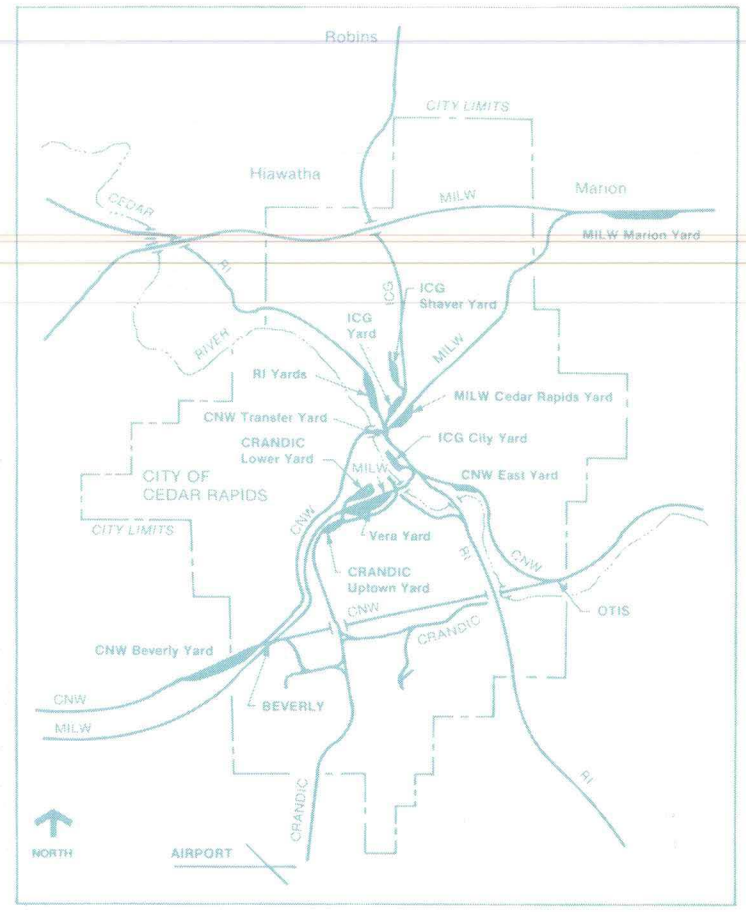
Monday through Friday, two engines are assigned at Uptown Yard, one going on duty at 6:30 a.m. and the other at 5:00 p.m. One 10:00 a.m. assignment operates Saturday and Sunday. These engines switch Uptown Yard, Lower Yard, handle MILW interchange, and switch all Cedar Rapids industries located on the CRANDIC except for Corn Sweeteners and Harnischfeger.

CHICAGO, MILWAUKEE, ST. PAUL AND PACIFIC RAILROAD COMPANY (MILW)

The Chicago, Milwaukee, St. Paul and Pacific Railroad Company (MILW), as shown on Figure II-3 and II-4, has two lines that pass through the Cedar Rapids area. One is the former main line between Chicago, Illinois and Council Bluffs, Iowa, which passes through Marion in an east-west direction. The other is a branch diverging from the main line at Indian Creek Interlocking, which is located on the west side of Marion, passing through Cedar Rapids, and extending to Ottumwa, Iowa.

The former main line to Council Bluffs runs from Savanna, Illinois through Marion and Perry, Iowa, and terminates in Council Bluffs, Iowa. Once a high-speed passenger and freight route, the track maintenance has been deferred for a number of years; consequently, its condition has severely deteriorated. Although the current timetable indicates maximum authorized speed to be 40 mph, the entire line is restricted to 10 mph because of poor track conditions. West





KEY MAP

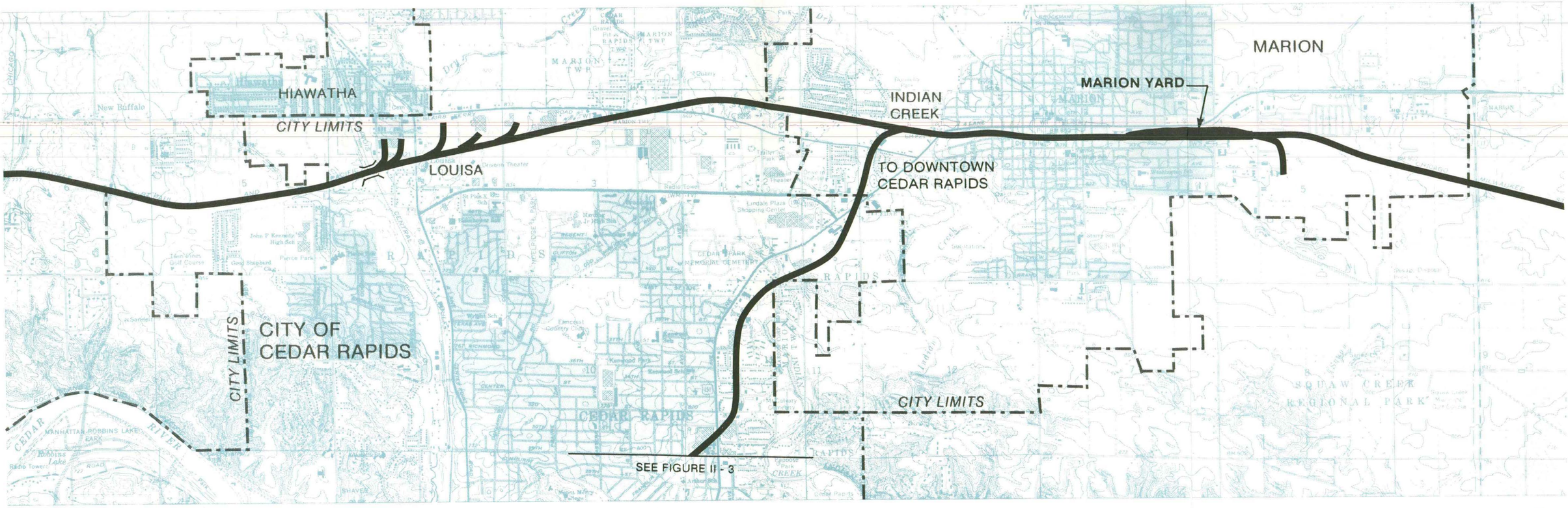
NORTH

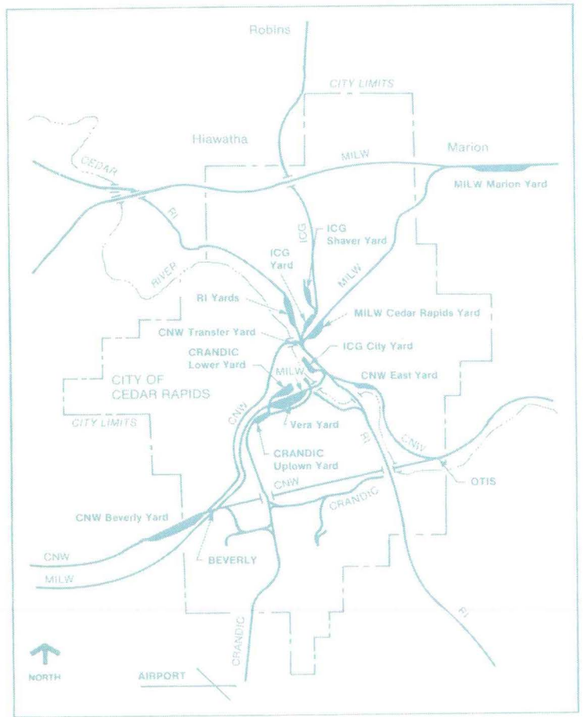
SCALE IN FEET

0 3000 6000

FIGURE II-3

MILW FACILITIES IN THE METROPOLITAN AREA





KEY MAP

FIGURE II-4

MILW FACILITIES IN THE METROPOLITAN AREA

of Indian Creek, the rail is 132#, while east of this point, it is 115# and 112#. In the Cedar Rapids area, the ballast consists of fouled pit-run gravel and the ties are in poor condition. Because of this, the line and surface are poor. Train movement is governed by a Centralized Traffic Control system between Kelsey and Tama, which is controlled by the train dispatcher in Perry. Currently, the MILW does not use this portion of the line for through-freight service between Chicago and Council Bluffs. Instead, between Tama and Clinton, Iowa, through freights are operated over the CNW. However, local service is maintained on this line.

The line between Indian Creek and Ottumwa passing through Cedar Rapids and Amana is laid with 90#, 100#, and 112# rail, much of which is surface-bent. Ties are deteriorated and the gravel ballast is badly fouled, resulting in overall poor track condition. Timetable speed is 25 mph, but the entire line is restricted to 10 mph because of track deficiencies. Train movement is governed by timetable and train orders.

Yards and Facilities

Marion Yard, on the east side of Marion, contains seven tracks with a total capacity of about 300 cars. Yard trackage is mostly 90# rail in fair condition. Ties are poor and the gravel ballast badly fouled. The overall condition is fair.

Facilities at Marion Yard includes a TOFC ramp, which handles about 12 trailers per month, and a locomotive fueling station. No car repair is work done at Marion. Personnel headquartered at Marion Yard include a trainmaster, roadmaster, assistant roadmaster, chief of police, district manager of adjustment services, a clerk, and five yard clerks at the yard office; a section foreman, and a laborer.

Marion Yard is used mainly as a termination and origin point for one daily through freight to and from Savanna, for locals operating east and west of Marion, and for transfer runs to and from Cedar Rapids.

Cedar Rapids Yard, on the east side of Cedar Lake, contains 19 tracks with a total capacity of about 500 cars. Yard trackage is mostly 80# and 90# rail in fair to poor condition. Ties are badly deteriorated (about 70 percent defective) and the gravel ballast is completely fouled and overgrown with weeds. The general condition of the yard is poor.

Cedar Rapids Yard is the focal point of MILW's operation in town and is used mainly as a service yard for industries in Cedar Rapids and for interchange with the RI, ICG, CNW, and CRANDIC. Transfers are operated between Cedar Rapids Yard and the Vera Yard.

Facilities at Cedar Rapids Yard include a track scale, a yard office, and an engine house. About 10 to 12 cars are weighed on the track scale each day. Locomotive service is limited to sanding and fueling, with occasional running repairs. Car repairs are handled on two repair tracks, which have a capacity of about 18 cars. Personnel headquartered at Cedar Rapids Yard include one general yardmaster, three yardmasters, and five clerks. One car foreman, two carmen, two mechanics, one section foreman, and three laborers make up the maintenance force at Cedar Rapids Yard.

MILW's third yard in the Cedar Rapids area is Vera Yard, which extends west from the Penick & Ford plant to 12th Street. The four tracks in this yard have a capacity of about 180 cars. Trackage is mainly 80# rail, in fair condition. Ties are fair to poor, and the gravel ballast is fouled and weed-covered. The yard is crossed at four locations by streets. The overall condition of the yard is fair.

Vera Yard is used to store interchange cars with the CRANDIC and serves as a termination and origin point for trains No. 398 and 399, which operate to and from Perry. There are no maintenance facilities or personnel at Vera Yard.

In addition to operating facilities and personnel, the MILW has a regional data processing office at the freight house in downtown Cedar Rapids. This office is staffed by about 25 clerks under the direction of a regional manager of accounting.

Train and Yard Operations

Between Marion and Savanna, the MILW currently runs one train daily except Sunday in each direction. These trains, No. 106 and 107, are routed over the old main line and do local switching, as well as handling through traffic along the way. No. 107 is scheduled to arrive in Marion at about 3:00 a.m. and No. 106 is scheduled to depart at about 3:00 p.m.

Between Cedar Rapids and Perry, three trains per week normally operate on an irregular schedule in each direction. These trains, No. 398 eastbound and No. 399 westbound, operate over the CNW between Vera and Tama. Train No. 398 usually terminates at Vera Yard and No. 399 originates there.

Between Cedar Rapids and Amana, one local freight going on duty at 9:00 a.m. makes a round trip daily except Sunday. This train carries 10 to 15 cars per trip, serves the industry in the Amana area, and does any necessary switching between Cedar Rapids and Amana.

A way freight, doing all enroute switching, works out of Marion five days a week. On Monday and Thursday, it makes a round trip between Marion and Hopkinton. On Tuesday and Friday, it makes a round trip between Marion and Maquoketa, and on Wednesday, it runs west to Tama and back.

Three yard engines (one each shift) operate out of Marion daily except Sunday. The crews are responsible for switching at Marion Yard, serving industries in Marion and Louisa, and moving cars to and from Cedar Rapids. One transfer move to Cedar Rapids is normally made each shift.

Interchange movements and industrial servicing in Cedar Rapids are handled by five yard engines assigned at Cedar Rapids Yard. Two engines work first and second shift, with one on third. These engines do all local industry work and make interchange deliveries to all other railroads.

CHICAGO AND NORTH WESTERN TRANSPORTATION COMPANY

The east-west main line of the Chicago and North Western (CNW) between Chicago and Council Bluffs/Fremont, as shown on Figure II-5, passes through the south edge of Cedar Rapids. The CNW has an 8.1-mile city track branching off the main line at a location known as "Otis" on the southeast edge of the city which makes a loop through Cedar Rapids. This city line follows the Cedar River north to the downtown area and follows 4th Street north to C Avenue, where it heads west and crosses the Cedar River. From there, the line runs southwest to the main line connection on the southwest edge of the city, just east of Beverly Yard. This spur was the main line until the early 1920's, when the Linn County Cutoff, the present main line, was built. The spur through the city was used by passenger trains until passenger service was discontinued. It is presently used for

access to local industries. Nearly all of the industries served by the CNW in Cedar Rapids are located on this line.

The Chicago-Council Bluffs/Fremont main line is the CNW's highest-density route connecting with the Union Pacific at Council Bluffs and Fremont.

The double track main line is currently being extensively rehabilitated. The eastward main track is being retied, undercut, and surfaced on granite ballast. New 136# continuously welded rail is being laid. The westward main consists of 112# and 115# jointed rail. Ballast is a mixture of slag and crushed rock, which is starting to become fouled in places, affecting the line and surface of the track. The ties are marginal, with 20 percent in need of replacement. The westward main track is also programmed for complete rehabilitation in the near future.

Train movements are governed by an automatic block system and cab signals. Maximum speeds are 70 mph for piggyback trains, 60 mph for manifest trains, and 40 and 50 mph for coal trains, loaded and empty, respectively. These speeds are permitted only on the rebuilt eastward main. Because of track conditions, the westward main is generally restricted to 30 or 40 mph.

The city spur track consists of 112# jointed rail with predominantly gravel and stone ballast. The ties are in fair condition, with approximately 30 percent in need of replacement. Train and engines must not exceed 10 mph except between the Wilson Avenue crossing and Beverly, where train movements are governed by yard limit rules, with a speed limit of 20 mph.

Yards and Facilities

The CNW has three yards in Cedar Rapids. The largest is Beverly Yard, just west of Edgewood Drive on the southwest side of Cedar Rapids. This yard is the focal point of the CNW's operations in Cedar Rapids. It contains 20 yard tracks, with tracks 1 through 14 on the north side of the main tracks and 15 through 20 on the south side. Tracks 1 through 9 are the main switching tracks in the yard; all cars from Cedar Rapids are normally classified there, and outbound traffic is switched and blocked on these tracks. Tracks 10, 11 and 12 are used for car repair. Tracks 13 and 14 are used for car cleaning, although this activity has been largely curtailed. Inbound cars are switched on tracks 15 through 20, with tracks 19 and 20 used as grain inspection tracks, when required. Through trains normally pick up

CITY LIMITS

CEDAR RIVER

CITY OF CEDAR RAPIDS

TRANSFER YARD

EAST YARD

CITY LIMITS

CITY LIMITS

SINGLE TRACK BRIDGE

OTIS

RIVER

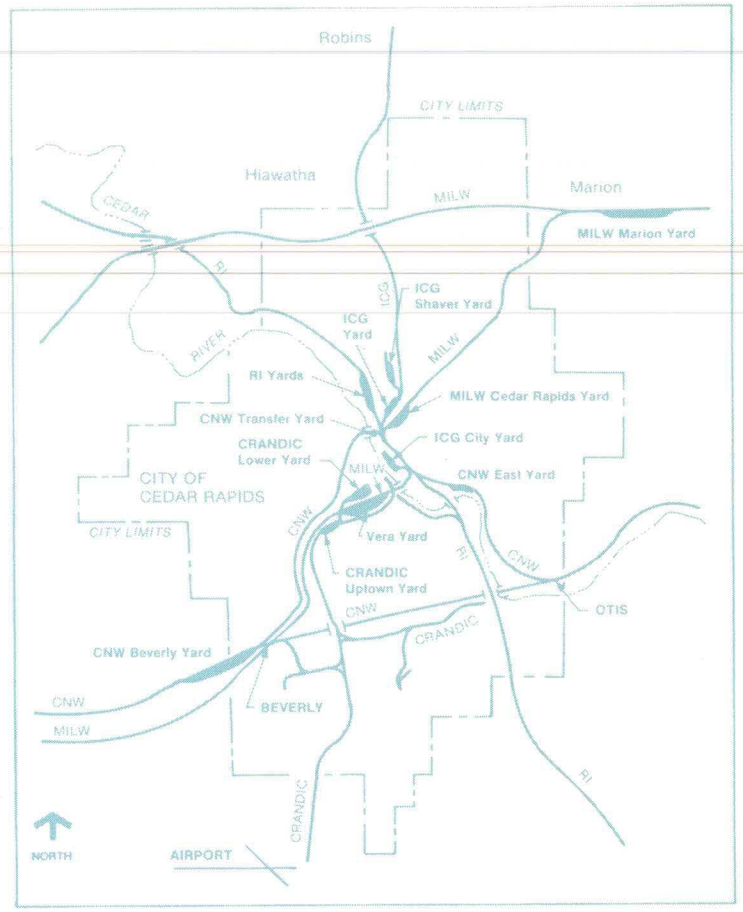
LINN COUNTY CUT OFF

DOUBLE TRACK

BEVERLY

BEVERLY YARD

CITY LIMITS



KEY MAP

NORTH

SCALE IN FEET

0 3000 6000

FIGURE II-5

CNW FACILITIES IN THE METROPOLITAN AREA

cars on the north side and set out on the south side. Capacity of the yard is approximately 750 cars.

The condition of Beverly Yard is generally fair. The north side (tracks 1 to 14) consists mainly of 80# and 90# rail, with some of the leads being 100# and 112#. Much of the rail in the body of the yard is surface-bent, with numerous end breaks. Ties are marginal, with about 50 percent defective. The ballast is basically gravel, which has become fouled. Turnouts are predominantly #8's with self-guarded frogs, and are in fair condition. The south side (Tracks 15 to 20) consists of 90# and 100# rail, #8 turnouts with self-guarded frogs, and crushed stone ballast. Ties are in good condition (20 percent defective), and the overall condition of this section of the yard is good, as it was constructed in 1968.

Car repair work is performed during two shifts Monday through Friday and one shift Saturday and Sunday. The car department force consists of a car foreman and 17 carmen. An average of 15 to 20 cars are repaired daily. Car cleaning is done by carmen, with one or two carmen cleaning an average of ten cars per day. All cars are cleaned, but not washed, and are destined for Cedar Rapids industries.

Locomotive maintenance work is limited to minor repairs and inspections performed by one mechanic in charge, working third shift. Engines are also fueled and sanded at Beverly, as required.

No other car and locomotive maintenance or servicing is performed in the Cedar Rapids area.

Other personnel at Beverly include a trainmaster, assistant trainmaster, eight administrative clerks, eleven yard clerks, and two operators. The maintenance-of-way staff consists of a roadmaster, two track inspectors, four signalmen, and a maintenance gang that includes a foreman and nine laborers.

In addition to the personnel at Beverly, an agent and six clerks are headquartered in the CNW's freight office in downtown Cedar Rapids.

The Transfer Yard, adjacent to the Quaker Oats plant just east of the Cedar River, consists of 15 tracks with a total length of approximately 8,000 feet. Both of the old main lines extending from the east end of the yard to the Cedar River bridge are also used as yard tracks, adding about

3,500 feet to the available yard space. Tracks are extremely short, and nearly all lay on curves, which results in a very inefficient configuration. Trackwork is mainly 80# and 90# rail in poor condition. Ties are badly deteriorated. Ballast is badly fouled gravel and cinders. The entire yard is in very poor condition.

The main function of the Transfer Yard is to service Quaker Oats. It is also used for interchange with the ICG, MILW and RI, and engines switching East Yard and other industries operate from here. Four yardmasters and five clerks, working three shifts, are assigned to this location.

There is a considerable amount of additional trackage within the Quaker Oats plant on both sides of the CNW yard. Most tracks have very sharp curvature, and the entire layout is cramped and operationally inefficient.

East Yard, near the Cargill Corn Plant on the southeast side of town, consists of three tracks outside the Cargill plant with a total length of about 5,900 feet. In addition, the running track east of East Yard is normally used for car storage. Cargill owns one track north of the main line, which has a capacity of 50 cars and is used to store inbound cars. East Yard is used mainly for switching the Cargill Corn Plant and for car storage. The CNW's only track scale in Cedar Rapids is located at East Yard, and all cars requiring weighing must be moved to and from East Yard. About 15 cars per day are weighed, most of them outbound cars from Cargill, Quaker Oats, and Diamond V Mills. The yard tracks are mostly 80# and 90# rail in fair condition, except that ties are becoming marginal. Five other tracks are located within the Cargill plant area. No CNW personnel are assigned at East Yard, and switching is performed by engines operating out of the Transfer Yard. Yard clerks from the Transfer Yard office are assigned to weigh cars.

Beverly Tower is located where the MILW branch line to Amana and Ottumwa crosses the CNW main line. The tower is operated on a call basis by the operator at Beverly Yard. The MILW must contact the CNW operator before leaving Cedar Rapids to line the crossing at Beverly for MILW moves to and from Amana.

The CNW has a connection with the MILW at "Vera," near Wilson Avenue on the southwest side of town. This interchange was built around 1970, mainly to eliminate the delays to Penick & Ford traffic that resulted when these cars were

handled through the Transfer Yard. Penick & Ford traffic has decreased, and the interchange facility is now used only by MILW trains operating between Perry and Cedar Rapids.

Train and Yard Operation

CNW main line operations through Cedar Rapids are extremely heavy, with about 30 through freights and one local run daily. In addition, an average of five MILW through freights and one Perry-Cedar Rapids train are run each day on a trackage rights arrangement. Cedar Rapids is an intermediate point, and no trains originate or terminate here. Generally, about 10 to 12 of the scheduled freights may pick up or set out cars at Beverly each day. Tonnage and traffic considerations govern what trains will do the work on any particular day.

Twelve blocks are classified at Beverly for pickup by through trains. The blocks are:

- Clinton
- Proviso
- Nelson
- Peoria
- St. Louis
- St. Louis, Alton and Southern
- Tama
- Marshalltown
- Boone and West
- Kansas City
- Union Pacific, North Platte and beyond
- Burlington Northern

Table II-1 presents approximate schedules of the trains normally performing pickup and setout work at Cedar Rapids, and the traffic handled.

The CNW normally operates 12 yard engines daily in Cedar Rapids; five go on and off duty at Beverly, and the remainder at the Transfer Yard. Certain assignments may be abolished or extra engines operated as traffic fluctuates. The regular complement of yard engines and the work performed by each are listed in Table II-2.

Table II-1

TRAIN SCHEDULES THROUGH CEDAR RAPIDS

Westbound

Train	Origin	Destination	Scheduled Time at Cedar Rapids	Pick Up Traffic Destined	Sets Out Traffic Originating
141	Chicago (Proviso)	Kansas City	6:00 p.m.	Kansas City	None
247	Chicago (Proviso)	Fremont	9:00 a.m.	Union Pacific, Burlington Northern	None
253	Chicago (Proviso)	Boone	8:00 p.m.	Boone, Marshalltown	Chicago
391	St. Louis (A&S)	Boone	12:00 Noon	Boone, Marshalltown	St. Louis
395	Madison, Illinois (St. Louis)	Boone	1:00 a.m.	Boone, Marshalltown	St. Louis
Local	Clinton	Belle Plaine	Bi-weekly M-Th	Local points between Cedar Rapids and Belle Plaine	Local points between Cedar Rapids and Belle Plaine

Eastbound

Train	Origin	Destination	Scheduled Time at Cedar Rapids	Pick Up Traffic Destined	Sets Out Traffic Originating
142	Kansas City	Chicago (Proviso)	10:00 p.m.	Proviso	None
258	Council Bluffs	Chicago (Wood St.)	6:00 a.m.	Clinton, Proviso	None
260	Council Bluffs	Chicago (Proviso)	9:00 a.m.	Clinton, Proviso	Council Bluffs, Boone, Marshalltown
384	Boone	St. Louis (A&S)	7:00 a.m.	St. Louis (A&S)	None
392	Boone	St. Louis	3:30 a.m.	Peoria, St. Louis	None
Local	Belle Plaine	Clinton	Bi-weekly T-Fri	Local points between Cedar Rapids and Clinton	Local points between Belle Plaine and Cedar Rapids

Table II-2

YARD ENGINES

Job No.	On Duty Location	On Duty Time	Frequency	Normal Work
01	Transfer Yard	7:00 a.m.	Daily	Interchange work, switches cars out of Quaker Oats, sets up cars for delivery to Beverly Yard
02	Beverly Yard	7:00 a.m.	Daily	Works north side of Beverly Yard, blocks outbound cars, runs cars to and from town, spots and pulls car repair tracks
03	Transfer Yard	7:00 a.m.	Monday-Friday	Switches Quaker Oats Plant
10	Beverly Yard	7:00 a.m.	Daily	Works south side of Beverly Yard, switches inbound traffic for interchange and local industries, delivers and pulls CRANDIC interchange
04	Transfer Yard	3:00 p.m.	Monday-Friday	Same as 03
05	Beverly Yard	3:00 p.m.	Daily	Same as 02
06	Transfer Yard	3:00 p.m.	Daily	Same as 01
11	Transfer Yard	3:00 p.m.	Daily	Works Cargill Corn Plant, weighs cars
12	Beverly Yard	3:00 p.m.	Monday-Friday	Same as 10
07	Transfer Yard	11:00 p.m.	Monday-Friday	Same as 01
08	Transfer Yard	11:00 p.m.	Monday-Friday	Same as 03
09	Beverly Yard	11:00 p.m.	Monday-Friday	Same as 02, also works industries along main line

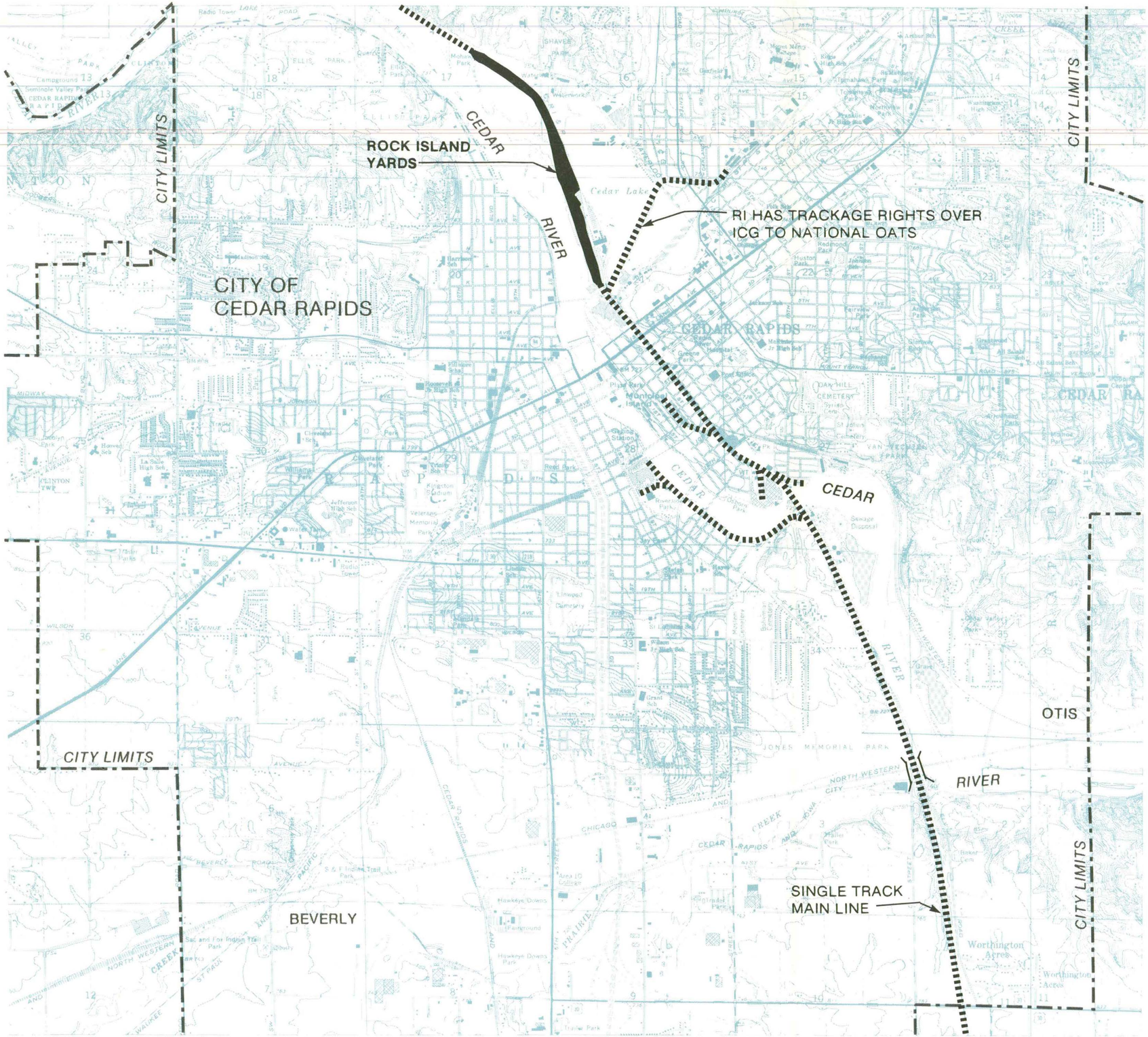
CHICAGO, ROCK ISLAND AND PACIFIC RAILROAD COMPANY (RI)

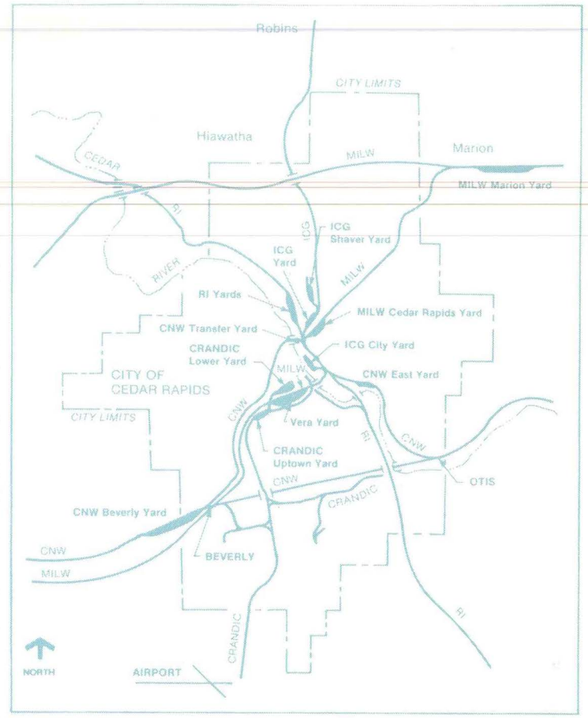
The main line of the Chicago, Rock Island and Pacific (RI), as shown on Figure II-6, runs generally north and south through Cedar Rapids, along the east side of the Cedar River, before crossing the river on the southeast side of town. The line runs south from Cedar Rapids to West Liberty, where it intersects the RI route between Chicago and Council Bluffs, through Columbus Jct., where it intersects the RI Chicago-Kansas City line, and then continues to Burlington, Iowa. North of the Cedar Rapids, the line extends to Manly and Iowa Falls, where it connects with routes to Minneapolis and Estherville. The single-track main line north and south of Cedar Rapids is mainly #110 and #112 jointed rail in good condition. The ties are in good condition, and the slag and rock ballast is fairly clean. The line and surface on the track is generally good. The section of main track through downtown Cedar Rapids, however, is in very poor condition; the 100# rail is worn and bent, the ballast is completely fouled, and the ties are badly deteriorated.

Timetable speed is 40 mph south of RI Cedar Rapids Yard and 30 mph to the north, with a speed restriction of 10 mph through downtown Cedar Rapids. Main line train movements are governed by an automatic block signal system, except in Cedar Rapids between the CNW crossing (9th Avenue) junction switch and B Avenue, where all train and engine movements are governed by the operator at 9th Avenue Tower.

Yards and Facilities

The RI has a yard complex, with four interconnected yards, between the Cedar River and Cedar Lake on the northeast side of Cedar Rapids. The main switching yard is divided into South Yard and North Yard. The South Yard is directly off the main line and has 11 tracks (tracks 2 to 12) with a capacity of about 336 cars. The South Yard is used for classification, with cars being blocked for outbound trains. The CNW also delivers interchange cars into this yard. The North Yard consists of nine tracks (tracks 13 to 21) with a capacity of about 500 cars. The North Yard is used for classification also. Grain is inspected either in the South Yard or the North Yard, depending on the availability of an open track. The condition of the South and North yards is generally good. The yard tracks consist of 80# and 90# rail in good condition; ties are fair, with 35 percent defective. Most of the ballast consists of cinders.





KEY MAP

NORTH

SCALE IN FEET

0 3000 6000

FIGURE II-6

RI FACILITIES IN THE METROPOLITAN AREA

The Grain Yard is used to store grain cars destined for Quaker Oats. The RI pulls the cars from the Grain Yard and places them at Quaker Oats' grain dump, where Quaker Oats has a track mobile spot the cars as needed. The Grain Yard consists of four tracks and can hold about 140 cars. The general condition of the yard is fair.

The City Yard is used mainly to hold cars going to industries in Cedar Rapids. Both the MILW and the ICG deliver their interchange cars to the RI at City Yard. The City Yard has nine tracks and a capacity of about 150 cars. The yard trackage is mainly 90# rail, with some 80#, in good condition. The turnouts, mostly #7's and #9's with self-guarded frogs, are also in good condition. The small-stone ballast is slightly fouled. The ties are in relatively good condition, with 35 percent defective. The overall condition of City Yard is good.

The RI facilities include a locomotive fueling and servicing station, a car repair shop, and a yard office and agency. A four-person engine house staff services locomotives and performs inspections and minor repairs. The eight-person car department makes inspections and repairs an average of four cars per day on the car repair tracks. The freight office has 15 clerical employees, under the supervision of the agent. A yardmaster is on duty 24 hours daily. The yard's TOFC ramp handles about 275 trailers monthly. The RI has a scale track opposite the yard office and along the lead to the South Yard. About 20 outbound cars are weighed per day. A clerk from the yard office is responsible for the weighing. All of these facilities are in or adjacent to the old shop area.

The maintenance-of-way force at Cedar Rapids includes two track inspectors, one section foreman, three laborers, one signal lineman, one signal maintainer, and one water service man.

Cedar Rapids is a home terminal for operating crews, and all trains originate or terminate; so, basically, there are no through trains. About 80 enginemen and trainmen are headquartered at Cedar Rapids.

The RI operates the 9th Avenue Tower on the east side of town. The 9th Avenue Tower controls all train and engine movements of the MILW, CNW, RI and ICG between the CNW crossing at 9th Avenue and the MILW junction switch at B Avenue. The tower operator also controls the grade crossing warning devices at 8th, 9th and 10th Avenues. RI operators

man the tower 24 hours daily. The Area Ambulance Service has a hot-line telephone connection with the Tower. Whenever an ambulance has a call on the opposite side of town, they call the 9th Avenue Tower to find out if trains are blocking any of the grade crossings. The tower operator will call the ambulance service if they have a train longer than 50 cars or if a train stops and blocks some crossings.

Train and Yard Operations

The RI's operations in the Cedar Rapids area have been completely disrupted by the recent strike and subsequent partial resumption of service under the management of the Kansas City Terminal by order of the Interstate Commerce Commission. In the Cedar Rapids vicinity, the route south of Columbus Jct. remains out of service because of track and bridge defects. Whether this line will be reopened is not known.

Road train operations are as follows:

Westbound

Train	Frequency	Origin	Destination	Traffic Handled
61	Daily	Silvis	Manly	Cedar Rapids and north
69	Triweekly	Silvis	Cedar Rapids	Cedar Rapids and north
195	Triweekly	Vinton	Iowa Falls	Local
197	Triweekly	Waterloo	Manly	Local
297	Triweekly	Cedar Rapids	Waterloo	Local

Eastbound

Train	Frequency	Origin	Destination	Traffic Handled
62	Daily	Manly	Silvis	Silvis
64	Triweekly	Cedar Rapids	Silvis	Silvis
194	Triweekly	Iowa Falls	Vinton	Local
196	Triweekly	Manly	Waterloo	Local
296	Triweekly	Waterloo	Cedar Rapids	Local

Some extra trains, including unit grain trains, were and continue to be operated.

All engines go on and off duty at the yard office. An average of two extra yard engines are operated weekly based on traffic requirements.

ILLINOIS CENTRAL GULF RAILROAD

The Illinois Central Gulf Railroad (ICG), as shown on Figure II-7, has a main line extending from Chicago, Illinois to Omaha, Nebraska. This line passes through Dubuque, Waterloo, and Fort Dodge, Iowa on its way to Omaha. At Manchester, Iowa, a branch line diverges from the main line and extends 42.1 miles, terminating in Cedar Rapids. This route is the ICG's only access to Cedar Rapids. The branch line is basically 100# jointed rail, with some 90# and 115#. The rail is in good condition for present operations. The ties are good, about 30 percent defective; and slag and stone ballast provides good line and surface for the track. The track is in good overall condition, and maximum authorized speed is 25 mph.

Yards and Facilities

In Cedar Rapids, the ICG has three yards: City Yard, Cedar Rapids Yard, and Shaver Yard. Shaver Yard is part of the Waterloo Railroad, which is a wholly-owned subsidiary of the ICG. City Yard and Cedar Rapids Yard are parts of the ICG Railroad proper.

Cedar Rapids Yard is the main switching yard for the ICG in Cedar Rapids. Situated between Cedar Lake and the Cedar River, the yard consists of seven tracks with a total capacity of about 250 cars. The yard trackage is mostly 90#, with some 100# rail, in good condition. Ties are in good condition (about 25 percent defective), and the small-stone ballast gives the track good line and surface. The overall condition of the yard is good. The yard contains a locomotive maintenance facility, a yard office, and a section headquarters. The yard office is staffed by five clerks and an agent/yardmaster.

A three-man section crew is responsible for track maintenance, and a mechanical foreman is responsible for daily locomotive maintenance. Any major locomotive repairs are done at other facilities. There are no car repair facilities in Cedar Rapids.

The Cedar Rapids Yard is the focal point for the ICG operations in the Cedar Rapids area. All ICG traffic entering and leaving the city passes through this yard. Outbound

traffic is blocked here for the following destinations: (1) Dubuque, (2) east of Dubuque, and (3) west of Manchester. Inbound traffic is sorted for movement to the appropriate local industries and interchanges.

City Yard is in the heart of Cedar Rapids, just south of the downtown region between 1st and 2nd Streets, and 5th and 8th Avenues. Access to the yard is over the RI and MILW tracks from D Avenue to 9th Avenue. The yard contains four tracks, which are crossed by roadways at two locations. The yard trackage is primarily 80# rail in fair to poor condition. Ties are in poor condition, with about 60 percent defective. The under-ballast is badly fouled. The overall condition of City Yard is poor. An average of 71 cars per month are weighed on the track scale in City Yard by a clerk from the yard office. This yard serves local industries, with one track serving as a team track.

Shaver Yard is north of the ICG's Cedar Rapids Yard. Comprised of six tracks, it can hold about 200 cars. The physical condition of Shaver Yard ranges from good to poor. The south and north ends of the yard have recently been supplied with 115# switches with self-guarded frogs. The south end of the yard consists of 115# rail, new ties, and small-stone ballast. The remainder of the yard consists of rail ranging between 70# and 112#. The lighter rail is in poor condition; the heavier rail is in good condition, and the ties are marginal. The overall condition of the yard is fair.

This facility is used primarily to store any overflow cars from Cedar Rapids Yard, and for grain inspection.

Yard and Train Operations

The ICG operates one 10:00 a.m. yard engine daily except Sunday. This assignment does all classification and industrial work, as well as interchange movements with other railroads.

One road train, No. 478, is scheduled to depart Cedar Rapids at 4:30 p.m. daily except Sunday. It makes a round trip to Manchester, returning as No. 477, scheduled to arrived in Cedar Rapids at 10:00 p.m. This train sets out outbound cars at Manchester, where they are picked up by other trains operating between Freeport, Illinois and Waterloo, Iowa. Traffic for Cedar Rapids is then picked up. Certain Dubuque

END OF WATERLOO RAILROAD

SHAVER YARD

ICG YARD

CITY YARD

TRACKAGE RIGHTS OVER THE ROCK ISLAND AND MILWAUKEE ROAD

CITY OF CEDAR RAPIDS

CITY LIMITS

CITY LIMITS

CITY LIMITS

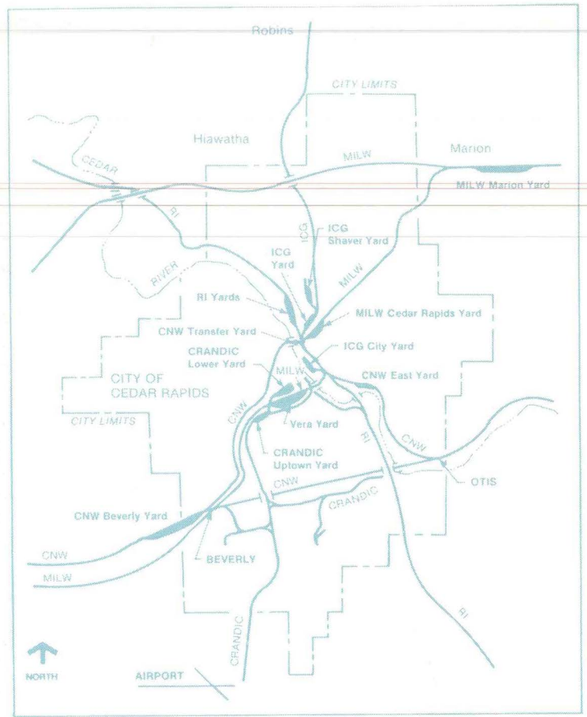
CITY LIMITS

CEDAR RIVER

CEDAR RIVER

OTIS

BEVERLY



KEY MAP

NORTH

SCALE IN FEET

0 3000 6000

FIGURE II-7

ICG FACILITIES IN THE METROPOLITAN AREA

District trains are normally scheduled to set out and pick up at Manchester; however, this varies from day to day because of traffic fluctuations.

INTERCHANGE OPERATIONS

For decades, the essentially unrestricted interchange of traffic between all railroads was regarded as a superior aspect of North American operations as compared to those in other areas of the world. In more recent years, interchange has been properly recognized as an all-too-frequent source of delay to car movement. Elimination of interchange between two railroads is nearly always one of the arguments cited in merger applications. Any terminal area served by two or more railroads usually has a considerable amount of interchange activity, and with few exceptions, traffic delays result.

With five railroads operating in the Cedar Rapids metropolitan area, all of which serve a number of industries, it is not surprising to find problems and delays caused by the interchange of cars. For this reason, interchange between the various railroads was given particular attention.

Interchange is either direct, in which two railroads deliver and pull from one another; or indirect, in which the interchange between two railroads is handled by an intermediate carrier.

In Cedar Rapids, all railroads have direct interchange with all others, except that the CRANDIC has an indirect interchange with the ICG and RI via the MILW. The CRANDIC has a direct interchange with the RI at Iowa City, which for various operational and competitive reasons is normally used rather than the bridge route over the MILW in Cedar Rapids.

With one exception, the delivering carrier is responsible for the movement of cars to the receiver carrier. The exception is the CNW-ICG interchange; in this case, the ICG both delivers and pulls.

Figure II-8 graphically indicates where interchanges occur in the Cedar Rapids area. Table II-3 summarizes these operations.

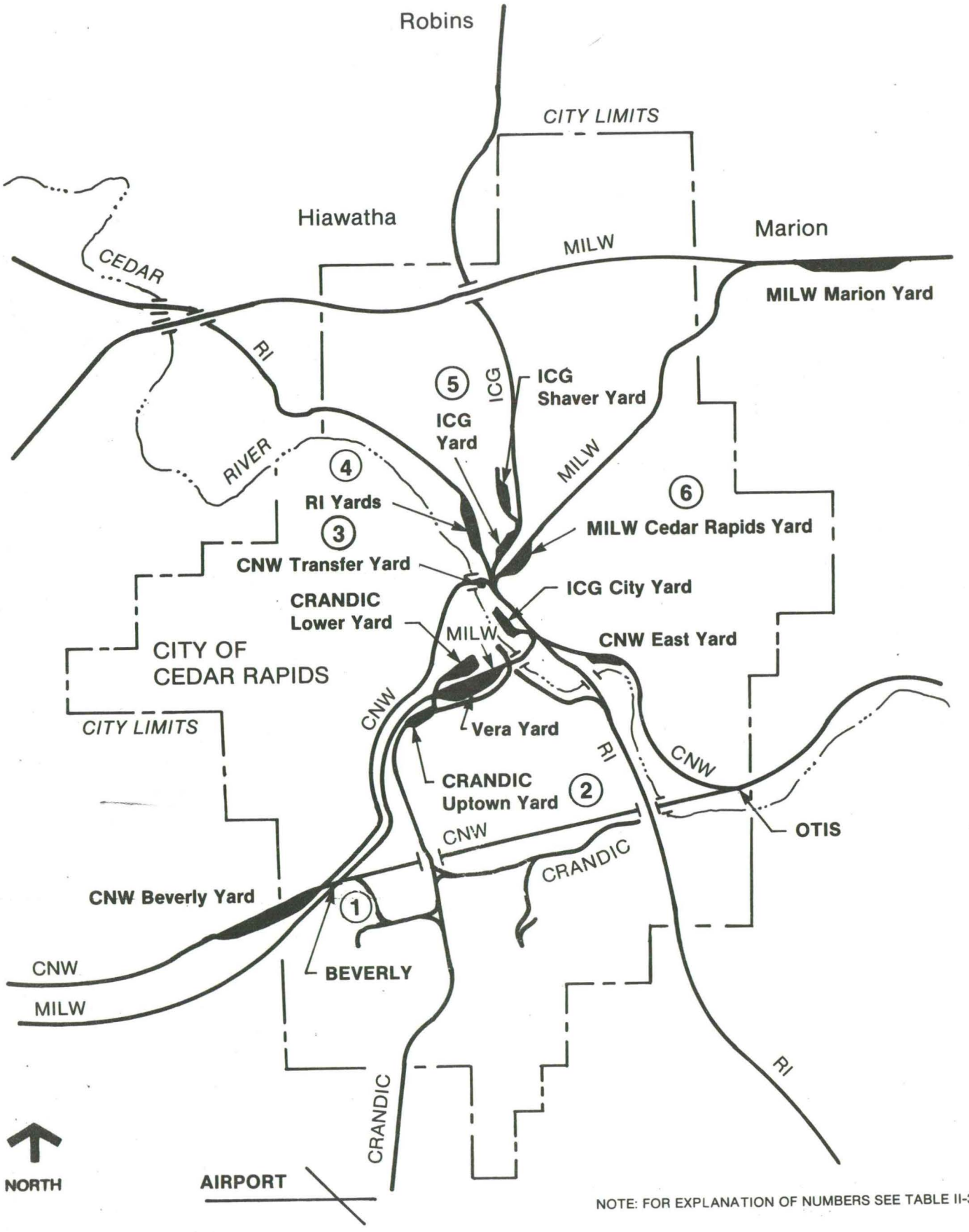


FIGURE II-8

INTERCHANGE LOCATIONS

Table II-3

INTERCHANGE TRAFFIC

FROM	TO CRANDIC	TO MILW	TO CNW	TO RI	TO ICG
CRANDIC		CRANDIC delivers to MILW on transfer tracks at CRANDIC Uptown Yard. (2)	CRANDIC delivers to transfer tracks near Beverly. (1)	CRANDIC delivers RI cars to transfer track at CRANDIC Uptown Yard. MILW pulls cars from CRANDIC to RI Yard Also delivers to RI at Iowa City. (2) (4)	CRANDIC delivers ICG cars to transfer track at CRANDIC Uptown Yard. MILW pulls cars and delivers to ICG Yard. (2) (5)
MILW	MILW delivers along with RI and ICG cars to CRANDIC Uptown Yard. (6) (2)		MILW delivers to CNW Transfer Yard. (3)	MILW delivers to RI City Yard (includes cars from CRANDIC). (4)	MILW delivers to ICG Yard. (5)
CNW	CNW delivers to transfer tracks near Beverly from Beverly Yard. (1)	CNW delivers to MILW Cedar Rapids from CNW Transfer Yard. (6)		CNW delivers to RI South Yard for CNW Transfer Yard. (4)	ICG pulls from CNW Transfer Yard. (3)
RI	RI delivers cars to MILW Cedar Rapids Yard. MILW delivers to CRANDIC at Uptown. Also delivers cars to CRANDIC at Iowa City. (6) (2)	Deliver to MILW Cedar Rapids Yard including cars destined for the CRANDIC. (6)	RI delivers to CNW Transfer Yard. (3)		RI delivers to ICG Yard. (5)
ICG	ICG delivers cars to MILW Cedar Rapids Yard. MILW delivers to CRANDIC Uptown Yard. (6) (2)	ICG delivers to MILW Cedar Rapids Yard including cars destined for the CRANDIC. (6)	ICG delivers to CNW Transfer Yard. (3)	ICG delivers to RI City Yard. (4)	

Table II-4 shows the average number of cars interchanged daily between railroads. It is interesting to note that, based on the daily average of 368 cars interchanged, 1.6 cars are handled between railroads for each load originated or terminated in Cedar Rapids. This would indicate that over 60 percent of the originating or terminating loads are interchanged between carriers in Cedar Rapids.

Table II-4

AVERAGE DAILY TOTAL CARS
INTERCHANGED BETWEEN RAILROADS

		And			
		MILW	RI	ICG	CNW
	CRANDIC	65	23 102*	34	69
Between	MILW		36	20	34
	RI			9	45
	ICG				33

* Interchanged at Iowa City

Total cars interchanged per day: 368

per year: 134,320

Briefly, interchange operations between railroads are conducted as follows:

CRANDIC-MILW

CRANDIC and MILW deliver to each other on various tracks in or adjacent to the CRANDIC's Uptown Yard. Normally, both roads deliver two or three times daily. Included in this interchange are bridge cars to and from the ICG and RI, which the MILW handles as an intermediate carrier.

CRANDIC-RI

CRANDIC-RI traffic interchanged in Cedar Rapids is bridged between these two roads by the MILW. The MILW pulls cars from the CRANDIC's Uptown Yard, moves them to the MILW yard

in downtown Cedar Rapids, and delivers them to the RI's City Yard.

RI-CRANDIC traffic is handled in reverse order; the RI delivers cars to the MILW yard, and the MILW then moves the cars to the CRANDIC's Uptown Yard.

The preponderance of CRANDIC-RI traffic, however, is interchanged in Iowa City. For a number of reasons, this has proven advantageous both for the two railroads and for the expeditious movement of cars.

CRANDIC-ICG

The CRANDIC-ICG interchange is also handled by the MILW as an intermediate carrier. The MILW pulls ICG cars (included in MILW delivers) from the CRANDIC's Uptown Yard, moves them to the MILW yard, switches them out, and delivers them to the ICG yard.

The ICG interchange to the CRANDIC is performed in the opposite fashion; the ICG delivers to the MILW; the MILW then switches out the CRANDIC cars and delivers them to the CRANDIC at Uptown Yard.

CRANDIC-CNW

The CRANDIC-CNW interchange is performed on interchange tracks south of the CNW main line east of Beverly yard. Both roads deliver to and from these tracks. The CRANDIC places and pulls cars at least three times daily; the CNW at least once and often twice daily.

MILW-RI

The MILW and RI deliver to each other at their downtown Cedar Rapids yards.

MILW-ICG

The MILW and RI deliver to each other at their downtown Cedar Rapids yards.

MILW-CNW

The MILW and CNW deliver to each other at their downtown Cedar Rapids yards.

RI-ICG

The MILW and ICG deliver to each other at their downtown Cedar Rapids yards.

RI-CNW

The RI delivers to the CNW in the Transfer Yard. The CNW delivers to the RI in the RI's South Yard.

ICG-CNW

ICG delivers and pulls from the CNW Transfer Yard.

A review of records indicates that in Cedar Rapids delays of 10 to 48 hours result when a car is interchanged. As might be expected, indirect interchanges normally result in the longest delays. To the extent that indirect interchanges can be eliminated, this problem can be minimized.

GRAIN INSPECTION

Grain inspection in the Cedar Rapids Metropolitan Area is performed by a local firm known as Cedar Rapids Grain Inspection Services (GIS), which is licensed by the United States Department of Agriculture.

The procedures of grain inspection in Cedar Rapids are similar to those at other locations in the country. Approximately 65 percent of all rail-inbound grain is inspected, with 75 percent of the inspections being performed at the CNW's Beverly Yard. Other inspection points are the MILW Cedar Rapids Yard, ICG Shaver Yard, and the RI South Yard.

Grain on hand for inspection is reported by the railroads to GIS by 9:00 a.m. daily. Inspection services commence at 7:00 a.m. at the MILW, RI and ICG. On the CNW, inspection services commence at 9:00 a.m. GIS reports test results to consignees at about 10:00 a.m. for grain on hand at the MILW, RI and ICG, and at about 2:00 p.m. for grain held by the CNW. The consignees can then give the railroad's disposition on the cars. Inspections are normally performed Monday through Friday, but will be made on weekends during peak-demand periods.

Inspection services in Cedar Rapids are relatively efficient, but many problems inherent to grain inspection points are evident. Some of these problems are:

- Yard congestion and inadequate capacity.
- Delays caused by railroads not switching cars to inspection tracts promptly.
- Double handling of cars because of reconsignments.
- Cars arriving early during the weekend to wait for a Monday inspection.
- Cars to be inspected in four different yards, and perhaps on various tracks within the yard.
- Delays in reporting the cars available for inspection.
- Failure of consignees to give railroads disposition promptly.

None of these problems are unique to the Cedar Rapids Grain Inspection Service, nor can they be attributable solely to the railroads, inspection service, or the consignees. Nevertheless, these problems contribute to transit time delays and car delays, and are directly related to poor car utilization and car supply.

LABOR CONSIDERATIONS

All employees of railroads operating in Linn County are represented by the customary unions in the industry. The contracts between these carriers and the unions are basically the same as those in effect throughout the entire country.

Several typical characteristics of these agreements could have an important bearing on this study:

- Work is rigidly divided along craft lines.
- Operating crews are restricted territorially.
- Combining work previously done by two or more crafts, change or extension of territory, or joint operations between two carriers usually requires negotiation of an agreement with the unions involved.

Although its employees are represented by the United Transportation Union, the CRANDIC has a great deal more latitude than the major carriers with respect to changes in job assignments or territories, but in some cases, changes may require negotiation.

Certain protective conditions for employees of the Milwaukee have already been enacted and, in all probability, similar protection for Rock Island employees will be forthcoming. The provisions of the protective agreements could have an effect on the disposition of the Milwaukee and Rock Island property.

In general, each specific improvement alternative must be examined to determine the effects on labor. If necessary, working conditions can be changed to avoid potential labor problems. This will be noted in the discussion and evaluation of each individual alternative.

Chapter III

COMMUNITY PROFILE

The study of rail operations in the Cedar Rapids area took place within the context of the entire community environment. This perspective made it possible to devise rail service improvements that will be compatible with surrounding community activities and, where possible, contribute toward the improvement of the metropolitan area.

A community profile is presented in this chapter. The existing land use patterns, highway transportation network, and other community resources are described in relation to the rail network.

LAND USE

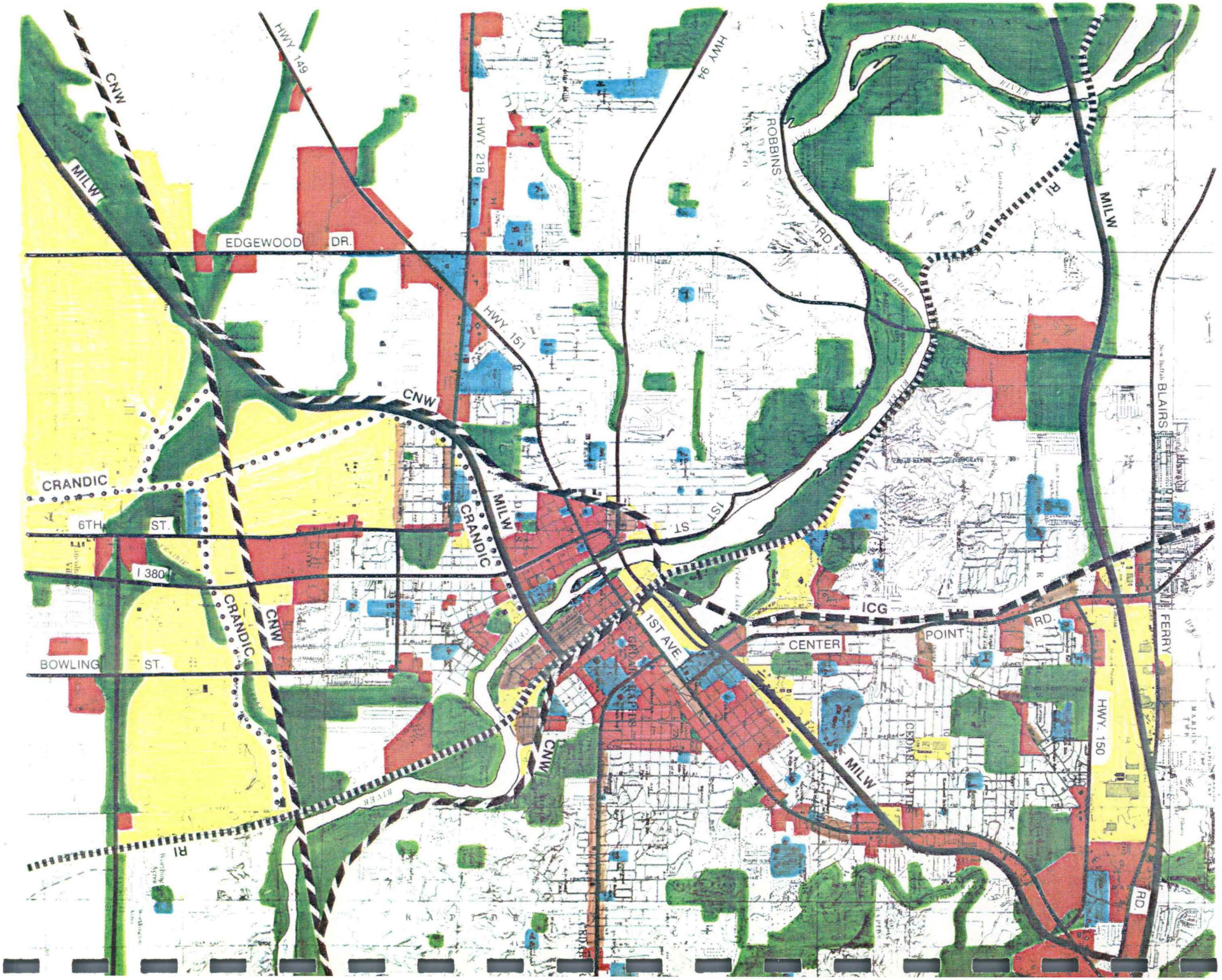
The land-use policy plan for the Cedar Rapids Metropolitan Area is shown in Figure III-1. The policy plan is generally consistent with existing land uses (particularly in the inner developed core) or reflective of present land use trends.

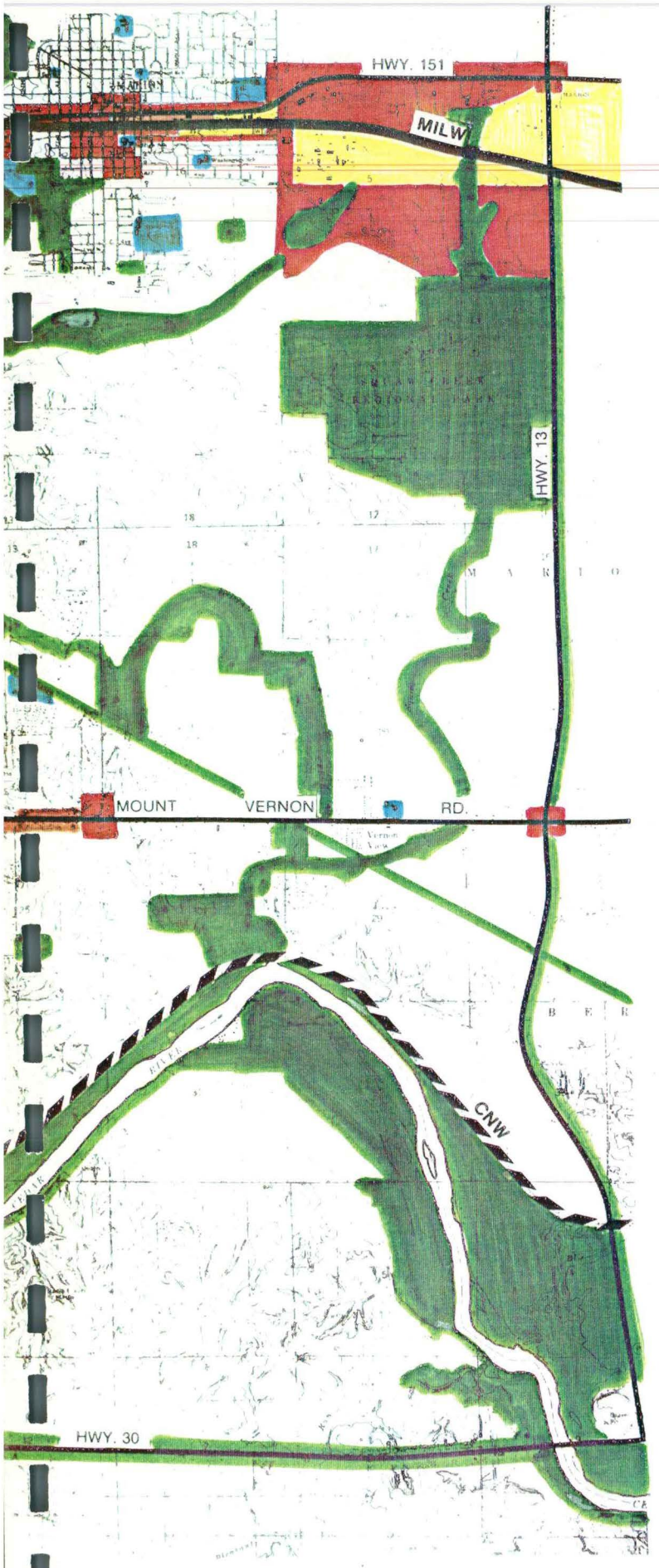
The pattern of land use is characterized by a core of commercial development in the center of Cedar Rapids. This is surrounded by a ring of residential development, one to two miles wide, broken by open space contiguous to the Cedar River. The river bisects the core in a generally northwest-southeast direction.

Several large industrial sites are located within the central commercial area; however, the primary industrial land use area lies about two miles south of the center of Cedar Rapids development.

About four miles north of the central core, an east-west linear industrial/commercial development pattern extends east along Blairs Ferry Road from Hiawatha through Marion. Additional narrow bands of commercial development lie along Mount Vernon Road, First Avenue and Center Point Road.

Land uses bordering the existing railroad trackage are, with few exceptions, either commercial, industrial or open space. Most of the open space is not structured park land, but rather unimproved area and floodplain areas bordering the Cedar River and tributaries. As such, they are compatible


CNW
MILW
HWY 149
HWY 218
HWY 94
ROBBINS
RD.
RI
MILW
EDGEWOOD DR.
HWY 151
CNW
BLAIRS
CRANDIC
6TH ST.
MILW
CRANDIC
1ST ST
I 380
CRANDIC
CNW
ICG
1ST AVE
CENTER POINT
RD.
FERRY
BOWLING ST.
CNW
MILW
HWY. 150
RI
RD.



LEGEND

- TRANSITIONAL
- OPEN SPACE
- PUBLIC/SEMI PUBLIC
- WAREHOUSE AND INDUSTRY
- COMMERCIAL AND OFFICE
- RESIDENCE

RAILROAD LEGEND

- CHICAGO, MILWAUKEE, ST. PAUL AND PACIFIC
- ILLINOIS CENTRAL GULF
- CHICAGO AND NORTH WESTERN
- CEDAR RAPIDS AND IOWA CITY
- CHICAGO, ROCK ISLAND AND PACIFIC

NORTH

SCALE IN FEET

0 4750 9500

FIGURE III-1

LAND USE POLICY MAP

LINN COUNTY RAILROAD STUDY

with rail corridor use. Industrial areas are, of course, compatible with all levels of rail operations. Commercial development can serve as a buffer between residential land uses and rail uses. However, where rail trackage runs through areas of heavy commercial activity, conflicts can arise between rail and street traffic. This conflict now exists most noticeably in the central business district of Cedar Rapids at street crossings along the Fourth Street rail corridor.

Rail tracks passing through residential areas may cause noise and general safety hazards. Generally, rail lines in the Cedar Rapids metropolitan area do not traverse any high-density residential zones; however, some residential use borders the MILW between Cedar Rapids and Marion and the CNW west of the downtown area.

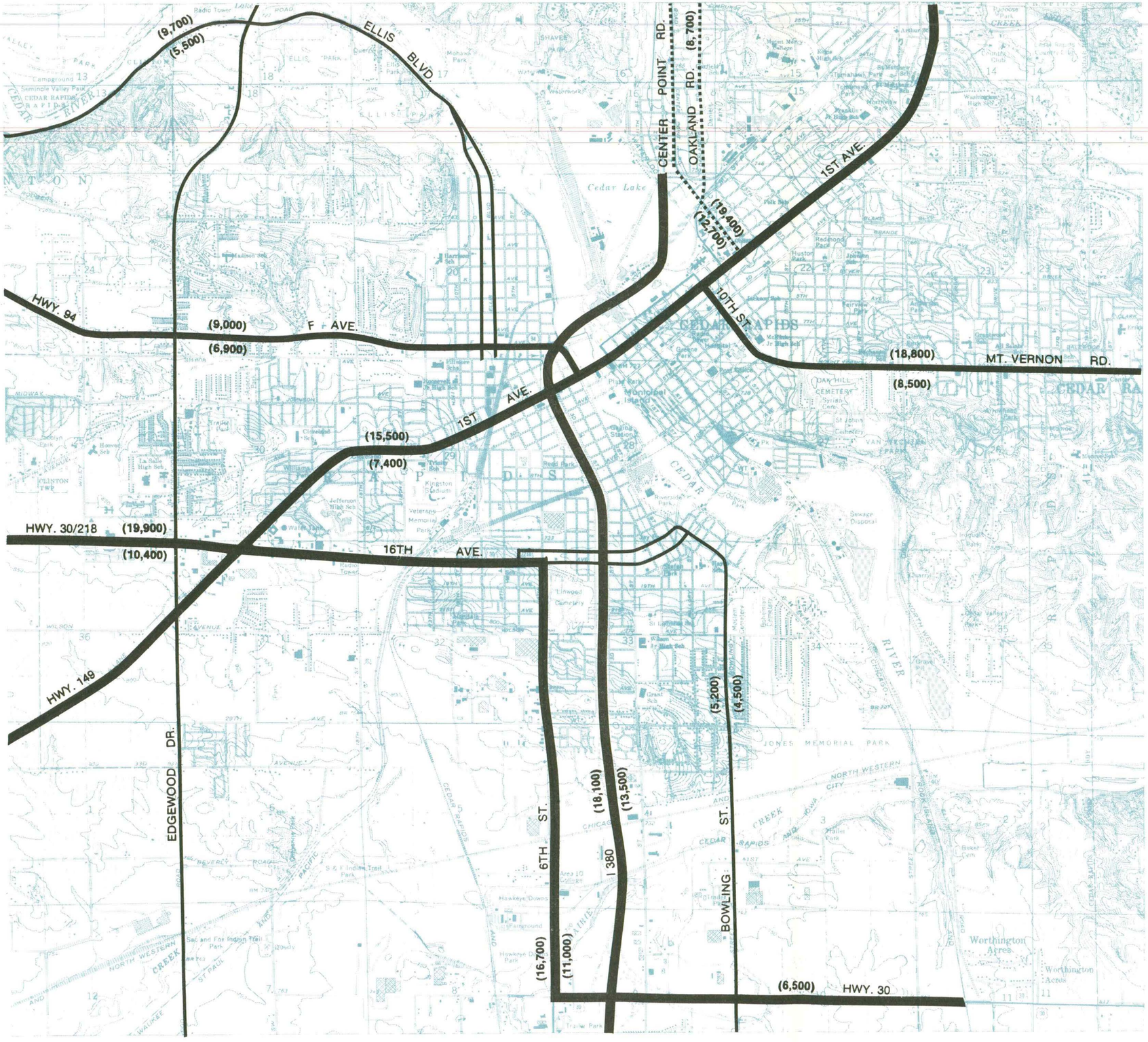
HIGHWAY SYSTEM

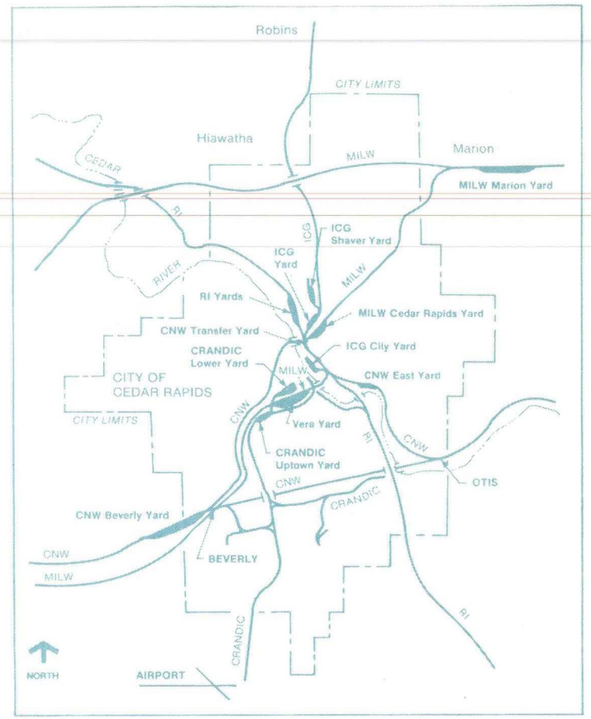
Figures III-2 and III-3 show the principal streets and highways serving the Cedar Rapids metropolitan area. The community core (central Cedar Rapids) was laid out with streets parallel and perpendicular to the Cedar River, which runs northwest to southeast. Major streets entering from the surrounding areas, oriented in the more common north-south or east-west directions, combine to form a radial pattern of streets emanating from central Cedar Rapids. Table III-1 lists the principal streets by location relative to central Cedar Rapids, their 1977 functional classifications, and their 1977 traffic volumes.

Travel between the Cedar Rapids area and other parts of Iowa is by three U.S. highways, one major state highway, two minor state highways, and an interstate connector. East-west access is provided directly by Highway U.S. 30 and indirectly from Interstate 80 (located 20 miles south) via the Interstate 380 connector. Highway 151 serves travel to the northeast of Cedar Rapids, and Iowa Highway 149 extends to the southwest. The principal north-south roadways are U.S. Highway 218 and I-380. Iowa Highway 150 also serves the area north of Cedar Rapids.

AT-GRADE CROSSINGS

An inventory of at-grade crossings was conducted for the City of Cedar Rapids by city personnel in 1977. Additional field inventories were made in Marion, Hiawatha, Robbins, and the surrounding study area to supplement the Cedar Rapids data.





KEY MAP

LEGEND

- FREEWAY/EXPRESSWAY
- ARTERIAL CONNECTOR
- TRUNK
- MINOR ARTERIAL*
- ( ) HIGHEST AND LOWEST DAILY TRAFFIC VOLUMES (1977)

*SHOWN BECAUSE OF HIGH TRAFFIC VOLUME AND SERVICE AREA; OTHER MINOR ARTERIALS OMITTED.

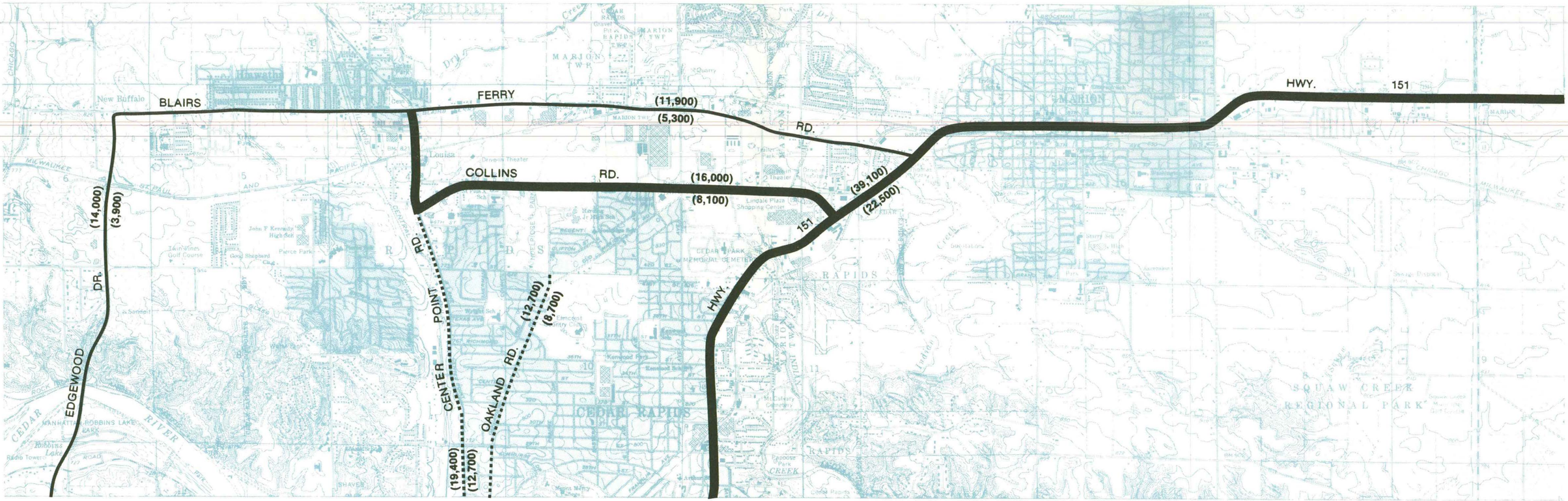
NORTH

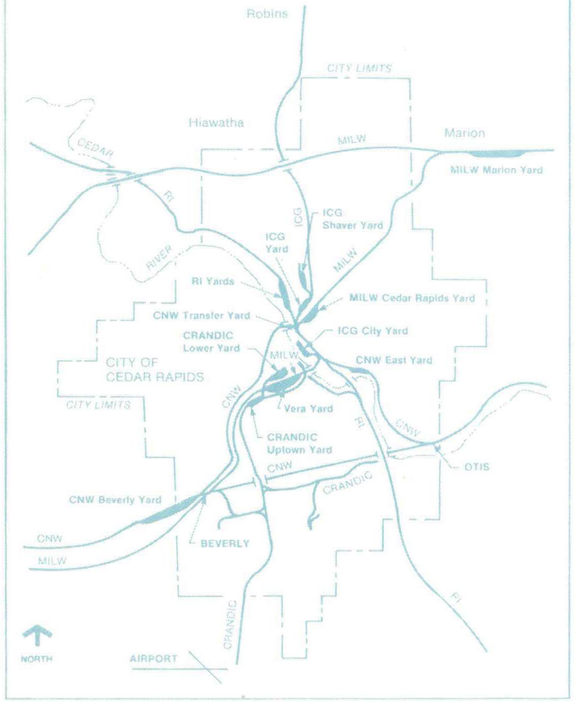
SCALE IN FEET

0 3000 6000

FIGURE III-2

PRIMARY ROADWAY SYSTEM





KEY MAP

LEGEND

- FREEWAY/EXPRESSWAY
- ARTERIAL CONNECTOR
- TRUNK
- MINOR ARTERIAL*
- ( ) HIGHEST AND LOWEST DAILY TRAFFIC VOLUMES (1977)

*SHOWN BECAUSE OF HIGH TRAFFIC VOLUME AND SERVICE AREA; OTHER MINOR ARTERIALS OMITTED.

FIGURE III-3

PRIMARY ROADWAY SYSTEM

Table III-1

PRIMARY ROADWAYS IN CEDAR RAPIDS METROPOLITAN AREA
LINN COUNTY RAILROAD STUDY

Roadway	General Location[a]	Service Direction	1977 Functional Classification	1977 Traffic Volume Range[b] Low	High
Hwy. 149 - 1st Ave.	West	NE/SW	Expressway	7,400	15,500
Hwy. 30/218 - 16th Ave.	West	E-W	Expressway	10,400	19,900
Hwy. 94 - F Ave.	West	E-W	Arterial Connector	6,900	9,000
Ellis Blvd.	North	N-S/E-W	Trunk	5,500	9,700
Edgewood Rd.	West	N-S	Trunk	3,900	14,600
Blairs Ferry Rd.	North	E-W	Trunk	5,300	11,900
Collins Rd.	North	E-W	Expressway	8,100	16,000
Center Point Rd.	North	S-bound	Minor Arterial	12,700	19,400
Oakland Rd.	North	N-bound	Minor Arterial	8,700	12,700
1st Ave. - Hwy. 151	East	NE-SW	Expressway	22,500	39,100
Mt. Vernon Rd.	East	E-W	Arterial Connector	8,500	16,500
Kirkwood Blvd. - Bowling St.	South	N-S	Trunk	2,200	5,200
I-380	South	N-S	Freeway	13,500	18,100
6th St.	South	N-S	Arterial Connector	5,800	16,700
Hwy. 30	South	E-W	Expressway	6,500	6,500

Source: 1978 Traffic Engineering Data Bank, City of Cedar Rapids.

[a] Location relative to central Cedar Rapids.

[b] Range indicates low- and high-volume segments within community.

The inventory shows a total of 144 at-grade crossings in the study area, as shown on Figures III-4 and III-5. These are distributed as shown below:

City Area	Number of Crossings
Cedar Rapids	118
Marion	11
Hiawatha	4
Surrounding study area	11
Total	144

RAIL/ROADWAY CONFLICT

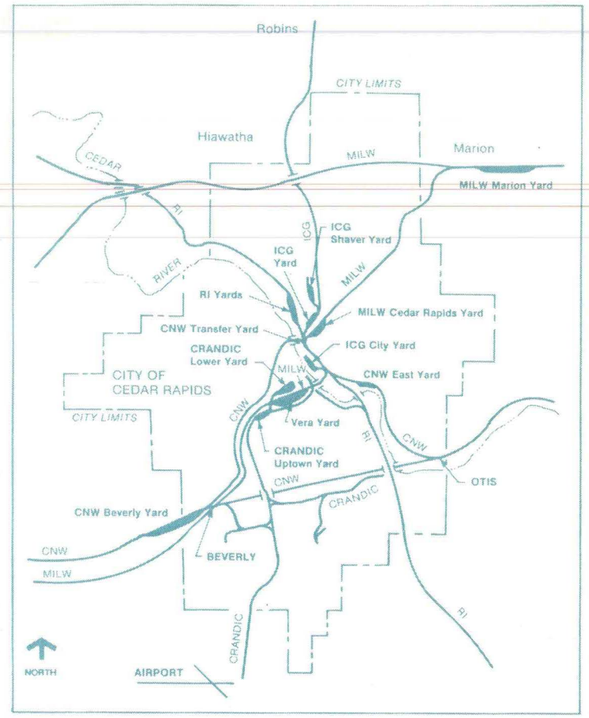
Conflicts between rail traffic and roadway traffic occur daily throughout the area. The magnitude of conflict at any location depends on a number of factors, including:

- Rail traffic volume
- Duration of rail movements at crossings
- Roadway traffic volume
- Timing of rail traffic relative to peak roadway traffic periods
- Effects on emergency service

Even when these factors are quantified, and resulting vehicle delays computed, the severity of the conflict at any location remains to be judged subjectively by people within a community, rather than by any rigidly applied standards. The same amount of delay can be considered simply annoying at one location and intolerable at another. Effects on emergency vehicles are often considered a major factor in the magnitude of conflict.

Accident experience at rail crossings is a function of the same elements, and is also judged relative to accident experience at other rail crossings and non-rail crossing locations throughout the area.

Thus, an extensive review of traffic planning documents, combined with interviews with traffic department personnel and other representatives of the study area communities, was



KEY MAP

LEGEND

- ● CROSSING SIGNALIZED WITH EITHER FLASHERS, GATES, OR BOTH
- ✕ NON-SIGNALIZED CROSSING
- 0 REPRESENTS NUMBER OF CROSSINGS - TOO MANY TO SHOW

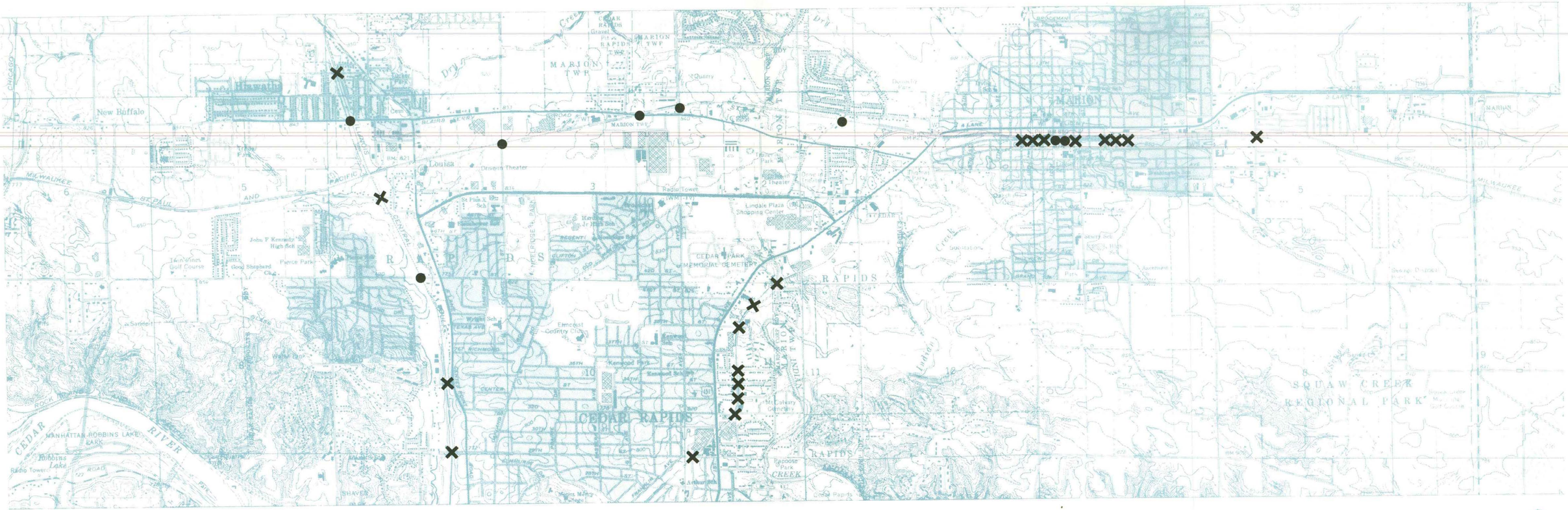
NORTH

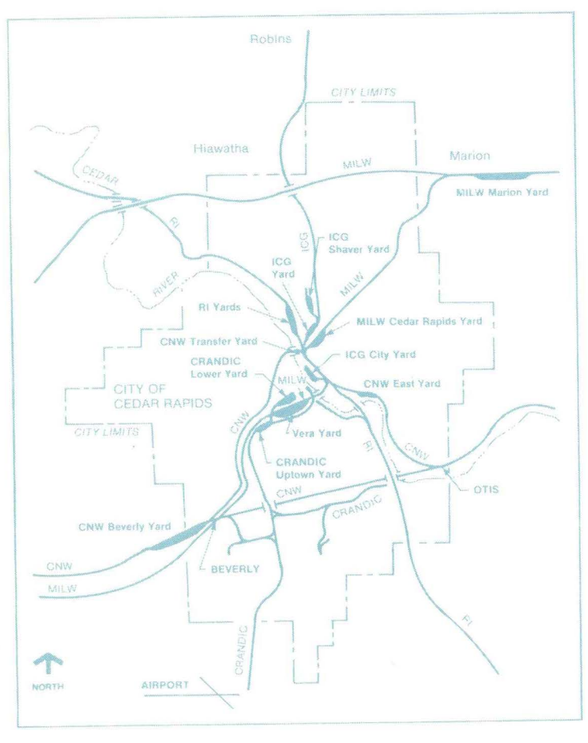
SCALE IN FEET

0 3000 6000

FIGURE III-4

LOCATION OF AT GRADE CROSSINGS





KEY MAP

LEGEND

- ● CROSSING SIGNALIZED WITH EITHER FLASHERS, GATES, OR BOTH
- ✕ NON-SIGNALIZED CROSSING

FIGURE III-5

LOCATION OF AT GRADE CROSSINGS

undertaken to identify locations where rail/roadway conflicts are now considered a problem, and where future problems may arise. The prelimary results of this effort are summarized below. A detailed record of all comments made by representatives of local agencies is included in Appendix A.

The Transportation System Management Plan* (TSM) is charged with a review of all forms of traffic and transportation needs within the urbanized area. In formulating this plan, comments pertaining to traffic problems were obtained from each city in the study area.

The City of Cedar Rapids cited seven railroad crossings as candidates for signalization due to accident potential. Comments from the City of Marion cited four crossings for roughness and three crossings as "confusing" and in need of signalization.

The TSM also lists accident locations in the Cedar Rapids area. No railroad crossings were included on this list, which includes all locations where ten or more accidents occurred during 1978.

Interviews with representatives of each city called attention to two problem areas. Signals at the Wilson Avenue crossing of the CRANDIC tracks are often activated by rail-switching activity in the CRANDIC yard, often with no train passing. This causes unnecessary traffic delay and eventual disregard of the signals.

The most serious delay problems are associated with the 4th Street rail corridor in Cedar Rapids. This has been the subject of one study (CBD Railroad Crossing Study, Traffic Engineering Department, Department of Public Safety, City of Cedar Rapids, December 1972) and a subsequent update (August 1974). The major findings of the report are summarized below:

- The 4th Street corridor contains up to three tracks used by all railroads (except the CRANDIC) operating in Cedar Rapids. Five CBD arterial streets (1st through 5th Avenues) carry more than 90,000 vehicles per day (1972) over the 4th Street tracks on at-grade crossings.

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* Transportation System Management Plan, FY 80-84, Preliminary Copy, August 1979, Linn County Regional Planning Commission.

- Traffic movements were interrupted between 66 and 23 times per day (decreasing from 1st Avenue to 5th Avenue) by train movements or crossing signal activation between 6:00 a.m. and 6:00 p.m. on the days surveys were made.

- At the worst crossing (1st Avenue), signals were activated 15 percent of the 12-hour period, but the tracks were actually blocked by train movements only seven percent of the time. This pattern was also observed at other crossings.

- Based on traffic volume and train crossing data, a total annual delay cost of $102,000 was computed. To minimize the delay, the report recommended upgrading the signal system to eliminate signal activation when trains would not occupy crossings, and minimizing movements during peak traffic periods.

The TSM also reported street sections having volume/capacity ratios exceeding 1.00. Rail crossings where these conditions exist may slow traffic and thus aggravate the capacity deficiencies. This situation exists at:

- 1st Avenue and 4th Street (part of the above-mentioned 4th Street corridor)

- Center Point Road at the crossing with the MILW tracks

- Wilson Avenue at the crossing with the CNW, MILW, and CRANDIC tracks.

One site, the Edgewood Dr. crossing at the CNW's Beverly Yard, was mentioned as a potential problem as additional traffic is generated by the opening of the Westdale Shopping Mall. Anticipated expansion of residential development west of Cedar Rapids and the industrial areas south of Cedar Rapids is also expected to increase highway traffic at this crossing. Grade crossing warning signals are often activated during yard-switching operations without a physical blockage. This is particularly a problem at this location because of the short arm gates.

CONTEMPLATED HIGHWAY IMPROVEMENTS

The data inventory generated information on several planned or programmed improvements to the highway system that could directly affect the flexibility of rail operations. They were:

- The extension of I-380 northward, utilizing abandoned Waterloo Railroad right-of-way.

- The proposed construction of the Northwest Bypass, which would utilize the existing MILW east-west line right-of-way south of Hiawatha, if this trackage were to be abandoned. If this track is not abandoned, the highway would parallel the right-of-way.

- The proposed one-way couple in Marion (10th and 11th Streets), which may focus traffic on these streets, causing increased delays and increased concern over train blockages on the MILW line through Marion.

- Improvement of the junction of Iowa 150 and U.S. 151 west of Marion, which may require a new grade separation over the MILW track.

In addition to the above specific plans, the adapted 1995 traffic network shows roadway projects that will require seven additional rail-highway intersections. Five of these would be on the Northwest Bypass and presumably would be grade-separated crossings. Also, roadway rebuilding and widening included in the plan would affect ten existing crossings, although the improvements are not directly related to the presence of the railroad crossings.

Finally, it is anticipated in the 1995 traffic plan that person-trips will increase by 58 percent between 1970 and 1995. This will increase delays at rail crossings unless offset by a significant reduction in rail traffic. While it is not the intent of this study to examine this subject in great detail, analysis was made on a case-by-case basis relative to proposed rail operational changes, using the projected traffic information obtained during the inventory.

OTHER COMMUNITY SEGMENTS

During the interviews with representatives of the communities within the study area, impacts were examined, of rail facilities and operations on various other community segments, including parks, ambulances, fire services and schools. As part of this effort, the 1975 Park and Outdoor Recreation Plan* was analyzed.

Review of the Park and Outdoor Recreation Plan showed that continued improvement and expansion were planned for parks and open space along and near rail trackage, indicating compatibility of uses. The present low number of trains passing through Robins and Marion do not present obstacles to school- or emergency-related travel.

In Cedar Rapids, ambulance vehicles are routed around track blockages through communication between vehicle dispatchers and the RI operator at the 9th Avenue tower. Ambulance services responding to traffic improvement surveys in the TSM mentioned only rough crossing surfaces as a problem.

The Cedar Rapids Police Department indicated that rail operations in the city do not interfere with police operations.

Representatives of the Cedar Rapids Fire Department cited the 4th Street corridor as a problem when it is necessary to move special equipment (such as the 100-foot ladder unit) from one side of the city to the other. Most calls do not require this. In addition, access to central business district buildings is reduced due to other traffic clogging streets blocked by passing trains.

SUMMARY

The existing land use plans, highway system, highway/rail interface, and future highway plans have been examined and presented to serve as a community profile within which the rail operations planning can take place. Although no serious rail-related conflicts were noted (with the major exception of the 4th Street corridor), various rail operational changes will be analyzed with respect to their effects on other segments of the community.

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* Linn County Regional Planning Commission, June 1975.

Chapter IV

INDUSTRIAL CONSIDERATIONS

All businesses with access to rail service were initially identified by means of a field inventory. Representatives of these firms were interviewed to determine whether the firms were active rail users and, if so, to compile information on the volume and character of rail traffic.

Representatives of 109 firms were interviewed; of these firms, 71 presently use rail service. The 38 businesses not utilizing railroad transportation were asked if they might do so in the future and, if so, under what conditions.

Information obtained from active rail customers included:

- Traffic volume and commodities
- Switching service provided
- Routing of traffic and transit times
- Special requirements, such as weighing
- Plant rail-related facilities
- Traffic split between rail and truck
- Traffic forecast
- Deficiencies or problems with present rail service.

Figures IV-1 and IV-2 show the locations of all firms with rail access and, in the case of active rail users, the approximate traffic volume for each.

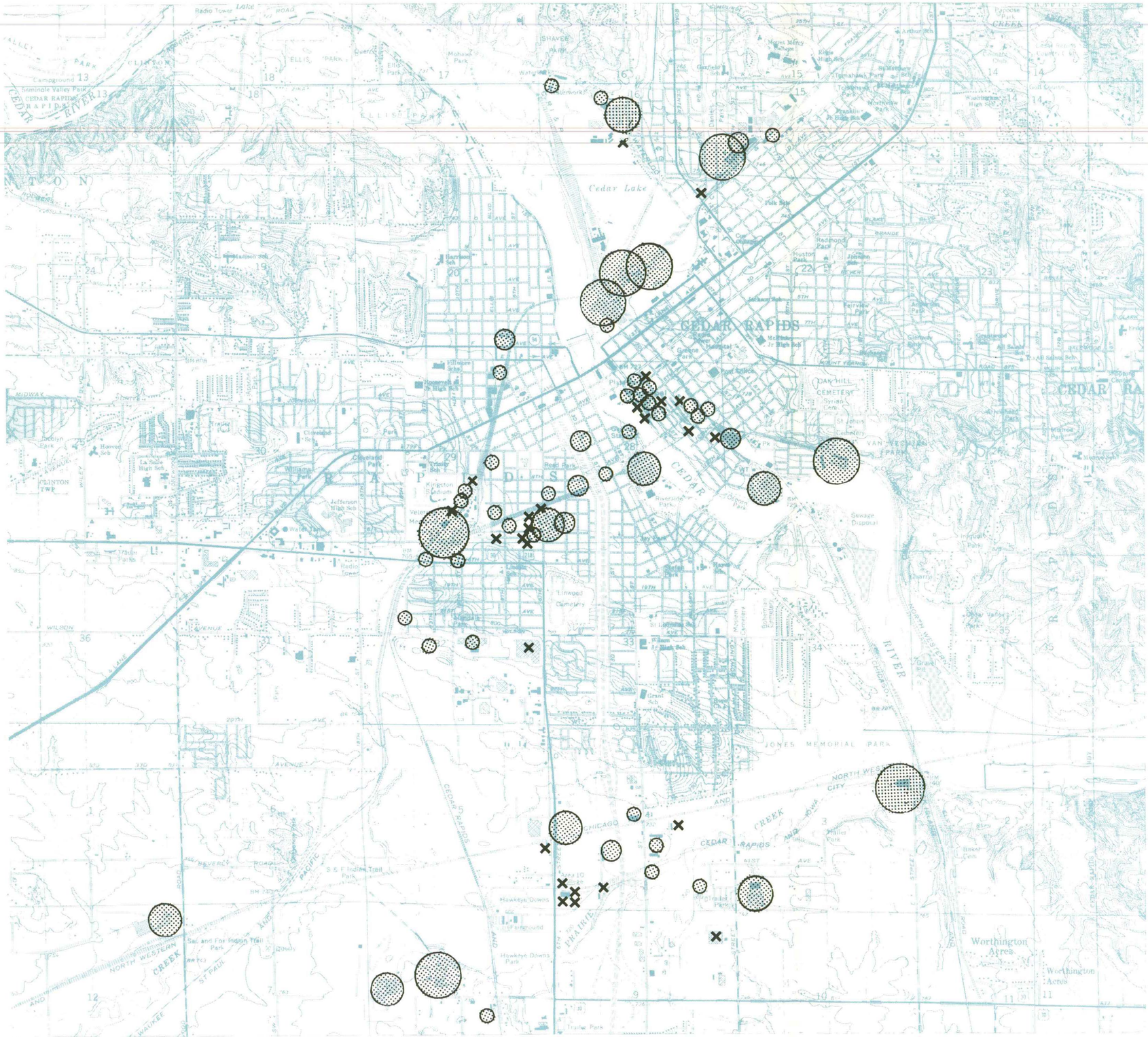
Traffic figures supplied by firms indicated weekly average inbound and outbound carloads of 860 and 1,010, respectively. These figures compare fairly closely with the actual 10-year average compiled by the Western Weighing and Inspection Bureau. Inbound and outbound carloads for the years 1969-1979 are shown in Table IV-1 and displayed graphically in Figure IV-3.

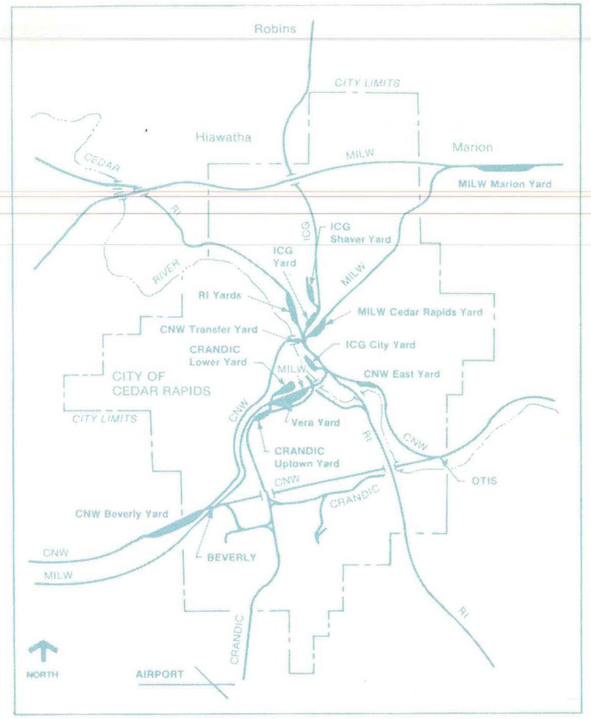
The volume ranges shown in Table IV-2, in addition to segmenting firms by amount of traffic, also roughly indicate switching requirements. Businesses in the various volume ranges probably require the following service:

Table IV-1

CEDAR RAPIDS CARLOADING BY YEAR

Year	In	Out	Total
1969	50,244	49,017	99,261
1970	51,541	48,177	99,718
1971	47,929	45,282	93,282
1972	49,550	49,900	99,450
1973	48,525	53,949	102,474
1974	48,378	54,175	102,553
1975	47,879	51,197	99,076
1976	45,161	52,669	97,830
1977	37,854	49,288	87,142
1978	33,721	50,687	84,408
1979	25,369	47,952	73,321
Average Per Year	44,196	50,208	94,410
Average Per Week	850	966	1,816





KEY MAP

LEGEND

× HAS RAIL SIDING BUT DOES NOT USE

AVERAGE NUMBER OF INBOUND AND OUTBOUND CARS PER WEEK

- 0 TO 4
- 5 TO 19
- 20 TO 74
- 75 AND UP

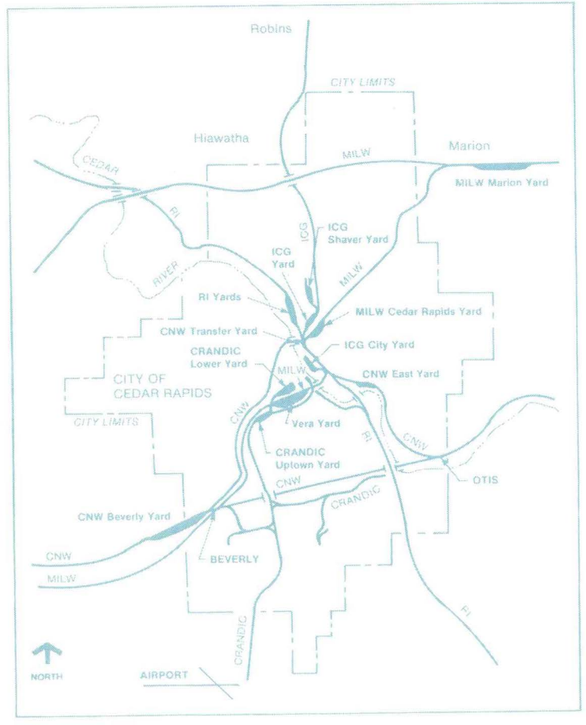
NORTH

SCALE IN FEET

0 3000 6000

FIGURE IV-1

LOCATION OF RAIL USERS



KEY MAP

LEGEND

× HAS RAIL SIDING BUT DOES NOT USE

AVERAGE NUMBER OF INBOUND AND OUTBOUND CARS PER WEEK

- 0 TO 4
- 5 TO 19
- 20 TO 74
- 75 AND UP

FIGURE IV-2

LOCATION OF RAIL USERS

LINN COUNTY RAILROAD STUDY

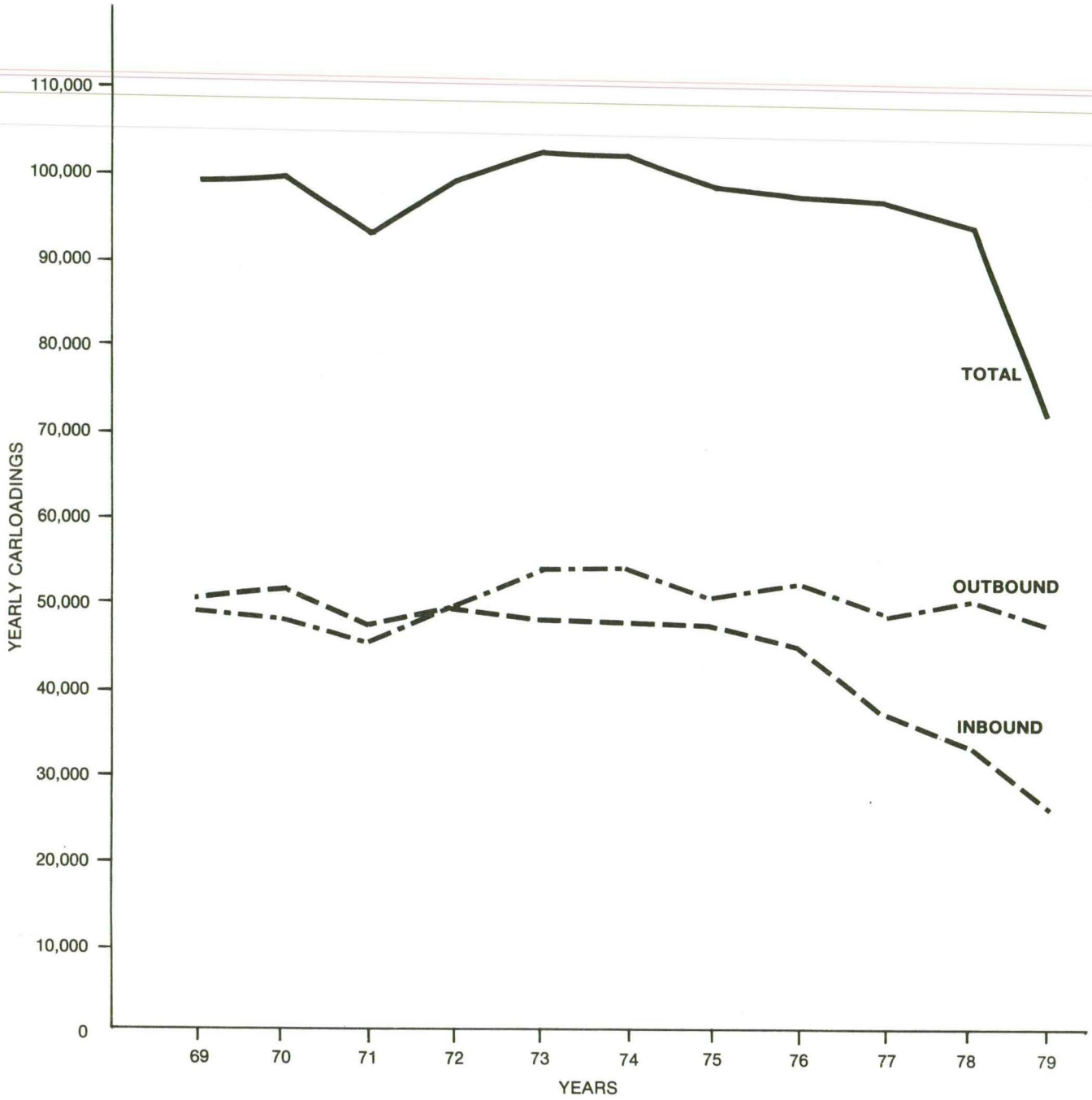


FIGURE IV-3

YEARLY CARLOADINGS

Table IV-2

DISTRIBUTION OF TRAFFIC BY VOLUME

	Average Loads In and Out Per Week			
	0-4	5-19	20-74	75 or Greater
Number of Industries	43	10	10	8
Percent of Total	61	14	14	11
Total Weekly Loads	45	113	307	1,405
Percent of Total	3	6	16	75
Average Weekly Loads Per Industry	1	11	31	176

Weekly Volume	Average Daily Switches
0-4 cars	Less than 1
5-19	1
20-74	2
Over 75	Over 3

Table IV-2 also illustrates a typical situation in the railroad industry--a limited number of firms frequently account for a disproportionate share of traffic. In Cedar Rapids, eight businesses generate 75 percent of total traffic. On the other end of the scale, the 43 Cedar Rapids firms using 0-4 cars per week account for only three percent of total carloads.

Figure IV-4 denotes the volume of major rail-shipped commodities in the Cedar Rapids area. As would be expected, grain and grain products are by far the largest groups, comprising about 69 percent of all carloadings. Even though inbound transportation of grain has largely shifted to truck, this commodity is still an important source of railroad traffic.

According to the estimates supplied by firms, trucks account for about 61 percent of inbound and 51 percent of outbound traffic for active rail users. In most cases, industrial representatives indicated that they would prefer to use trucks less and rail more if rail equipment availability, service and/or transit time were improved.

Six firms have their own switch engines or track mobiles for spotting cars. All others depend on the various railroads for switching service. Two other firms are served by engines assigned specifically to them. All other businesses are switched by engines that serve a number of customers, in addition to doing other classification and interchange work. Except for some comments about irregularity, switching, per se was not mentioned as a serious problem. Interyard movement and interchange, however, were a matter of concern.

In general, special service requirements are limited to car cleaning, weighing, and inspection and measurement of excess dimension loads. All these functions create certain problems, which will be discussed later.

One area frequently cited as a problem was the chronic shortage of suitable rail cars. Although some major shippers lease cars (particularly tank cars and covered hoppers), all

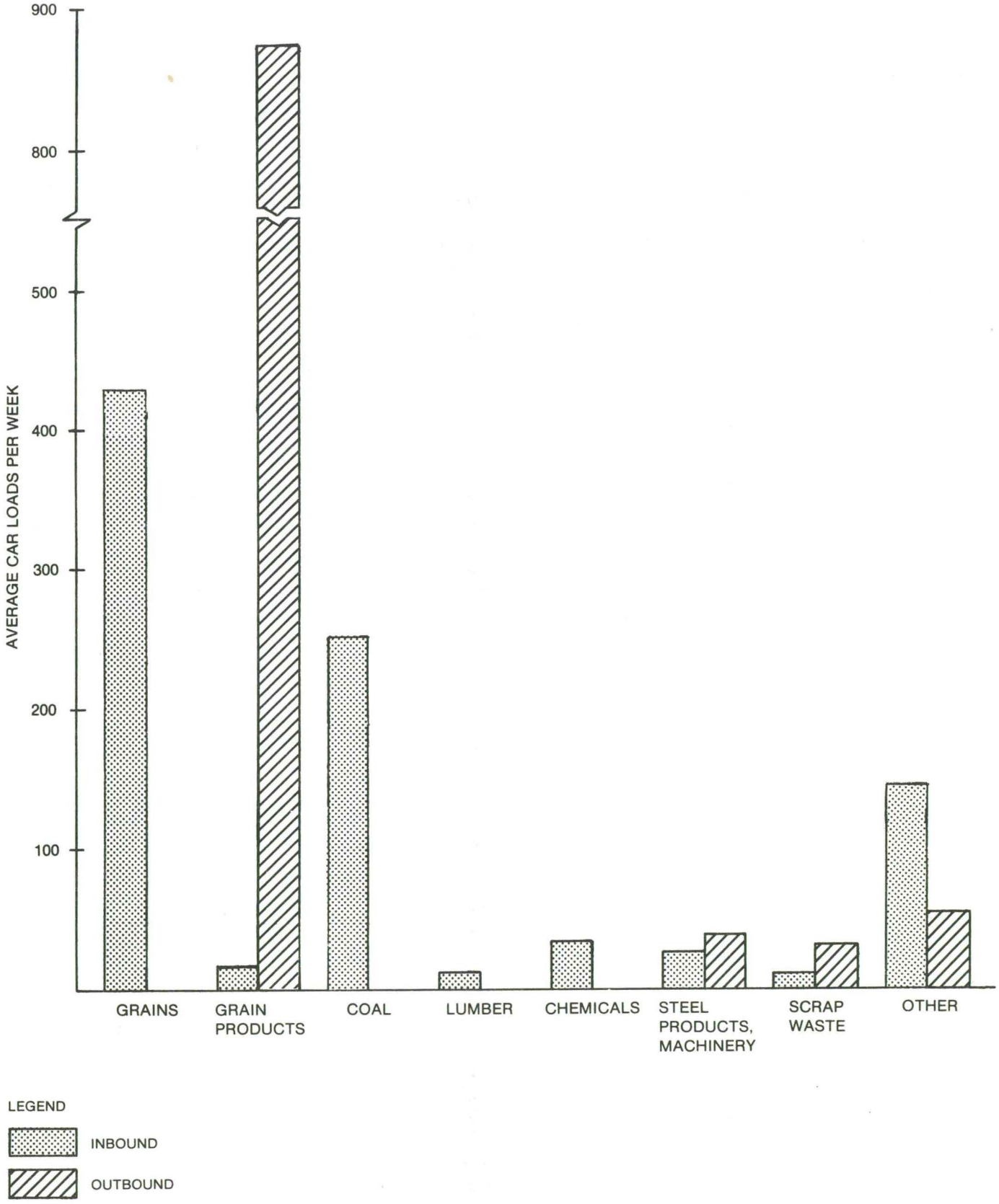


FIGURE IV-4

VOLUME OF RAIL CARS BY COMMODITY TYPE
AVERAGE WEEKLY VOLUMES

largely depend on the serving railroads to meet their requirements for both outbound and inbound shipments. Although only a few firms felt that track layouts and physical conditions within plant areas caused rail service problems, such problems were apparent at several locations. Also, because of the nature of traffic, certain large firms frequently have a considerable number of cars on hand and do not have adequate track space available. Serving railroads must store these cars, causing congestion in the terminal area.

Table IV-3 summarizes pertinent information from businesses relating to rail service.

For the most part, established rail shippers are located either in the central area of Cedar Rapids, where significant expansion is unlikely, or in industrial zoned belts on the southwest or north sides of the metropolitan area. Most of these areas of potential industrial growth are on the CNW and CRANDIC on the southwest and the MILW on the north. While access to immediate rail service is excellent in these areas, problems result when traffic must be interchanged to another carrier, because such traffic must generally be routed into central Cedar Rapids. The one exception is traffic originating or terminating on the CRANDIC that is interchanged with the RI at Iowa City.

In the United States as a whole, rail carloadings declined 17 percent between 1969 and 1978. For the Western District, the decline was 10 percent.

Carloadings, however, are somewhat deceiving, as car capacity over the past ten years has steadily increased. The average freight carload in the United States in 1969 was 53.1 tons compared to 62.1 tons in 1978--an increased capacity of 17 percent. In the Western District, the comparable figures are 52.2 tons for 1969 and 64.3 tons for 1978. This amounts to an increased capacity of 23 percent. The increase is directly attributable to the general increase in car size and particularly to utilization of 100-ton covered hoppers.

Total carloadings in the Cedar Rapids Metropolitan Area has generally followed the national trend of the past decade. Total loadings in 1969 were 99,261. The peak for the decade was 102,553 in 1974, and the low was 73,321 in 1979. Carloadings in the past two years have been less than 90,000, or about ten percent less than the preceding eight years. Generally, outbound carloadings have remained stable. In 1969, outbound loads amounted to 49,017; 47,952 were shipped in 1979. The peak number of outbound loads was 54,175 in 1974. Inbound

Table IV-3

SUMMARY OF INFORMATION FURNISHED BY INDUSTRIES

Number of Firms with Direct Rail Access	109
Number of Firms that Presently Use Rail	71
Active Rail Users Served by Each Railroad	
CRANDIC	26
MILW	25
CNW	9
RI	12
ICG	6
Average Weekly Carload Traffic	
Inbound	860
Outbound	1,010
Estimated Division of Traffic Between Rail and Truck	
Inbound Rail	39%
Outbound Rail	49%
Inbound Truck	61%
Outbound Truck	51%
Rail Traffic Interchanged in Cedar Rapids Area	
Inbound	61%
Outbound	54%
Firms Requiring Special Services	
Weighing	23
Cleaning	10
Inspection	5
Number of Firms with Switching Capability (Engines, Trackmobiles, Car Pullers)	9

Table IV-3 (Concluded)

SUMMARY OF INFORMATION FURNISHED BY INDUSTRIES

Number of Firms with Rail Switch Engines Assigned	2
Number of Firms Receiving Daily (or More Frequent) Switches	17
Number of Firms Having Expansion Plans that would Increase Rail Traffic	19
Number of Firms Indicating that Lack of Satisfactory Rail Service is Discouraging Expansion	8
Number of Firms that would Increase Percentage of Rail Traffic if Service were Improved	39

shipments, however, have shown a steady decline. Inbound shipments for 1969 amounted to 50,244. They peaked at 51,541 in 1970. The low for the decade was 25,369 in 1979.

The substantial decrease of inbound traffic over the past decade appears to be caused largely by the diversion of grain traffic from rail to truck. Lack of rail cars and erratic movement have contributed to this decline. Also, the increase in export traffic and the concentration by both railroads and shippers on 25- to 75- car unit movements have had an effect. Cars are committed to high-volume, long-haul unit movements and traditional single-car, short-haul movements have largely been taken over by trucks. Although several Cedar Rapids firms receive unit train grain shipments, the preponderance of grain has for some time been trucked. Table IV-4 shows the number of inbound rail cars and trucks of grain inspected at Cedar Rapids from 1971 to 1979. An approximate comparison, based on 3.7 trucks per rail car, is also shown. Figure IV-5 compares the number of inbound rail cars and trucks of grain inspected in Cedar Rapids for the same period of time. Two points are obvious: first, inbound grain to Cedar Rapids has shown a fairly steady increase; second, in eight years the truck share of this traffic has gone from 4.9 to 79.8 percent.

With respect to traffic vlumes, periodic fluctuations must be considered. The physical and operational characteristics of any railroad terminal area determine a practical car handling limit. When traffic exceeds this limit, efficiency is lost and car movement becomes slow and erratic. The volume handled in a typical terminal is normally well within the efficient limit, but because of seasonal movements of certain commodities, peak production periods, and other factors, traffic tends to peak at times and overload the system.

Car movement in the Cedar Rapids area follows this pattern. Figure IV-6 denotes total inbound and outbound loads by month for the years 1977-1979. The monthly average for each year is also plotted. Peak periods for 1977 and 1978 exceed the average by about 16 percent. The 1979 peak is over 30 percent above the norm, but the extreme fluctuations in 1979 were caused to a large extent by the Rock Island strike.

Table IV-5 lists the peak carload month for each year from 1969 to 1979 and compares this figure to the yearly average. Figure IV-7 compares inbound and outbound peaks to average by months for the same years.

Table IV-4

INBOUND GRAIN 1971-1979

Year	Number of Rail Cars	Number of Trucks	Number of Trucks Equivalent to Rail Cars	Total Equivalent Rail Cars	Percent Truck
71	24,286	4,616	1,248	25,534	4.9
72	16,711	7,387	1,997	18,708	10.7
73	21,904	23,717	6,410	28,314	22.6
74	19,036	39,184	10,590	29,626	35.7
75	16,722	41,705	11,272	27,994	40.3
76	20,273	46,553	12,582	32,855	38.3
77	15,967	59,008	15,948	31,915	50.0
78	10,533	96,709	26,138	36,671	71.3
79	7,351	107,289	28,997	36,348	79.8

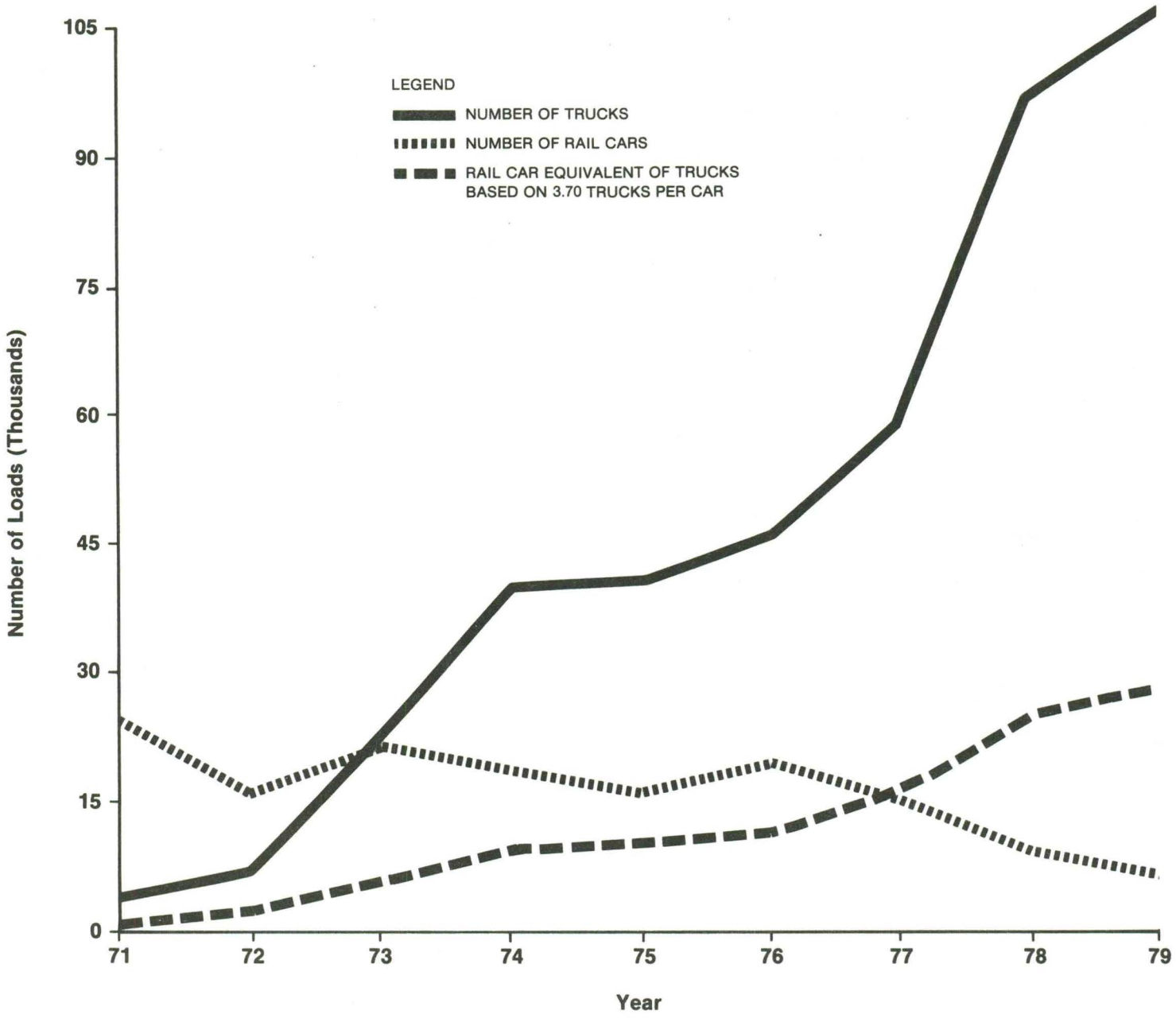


FIGURE IV-5

GRAIN INSPECTED – RAIL VS. TRUCK

Table IV-5

PEAK CARLOAD MONTH FOR EACH YEAR 1969-1979

Year	Inbound		Outbound		Total		Percent Above Average
	Peak	Average	Peak	Average	Peak	Average	
1969	4813	4187	4680	4085	9493	8272	14.76
70	4900	4295	4328	4015	9228	8310	11.05
71	5088	3994	4100	3774	9188	7768	18.28
72	4833	4129	4788	4158	9621	8287	16.10
73	4907	4044	4853	4496	9760	8540	14.29
74	5095	4032	4881	4515	9976	8547	16.72
75	4463	3990	5282	4266	9745	8256	18.04
76	4585	3763	5118	4389	9703	8152	19.03
77	3849	3155	4655	4107	8504	7262	17.10
78	3719	2810	4700	4224	8419	7054	19.35
79	3132	2114	4828	3996	7960	6110	30.28
Average 1969-1979	4489	3683	4747	4184	9236	7869	17.73

Monthly averages for total cars have ranged from seven to nine thousand and the trend has been slightly down. Inbound peaks and average figures have both shown a decline. Outbound carload averages have gone up slightly and there has been an increasing spread between the average and peak.

Based on this data it would appear that any planning should contemplate peaking of approximately 20 percent above average traffic. The only factor that might cause peaks in excess of this figure would be a reversal in the trend for inbound grain to be hauled by truck. This possibility will be discussed in Chapter V.

Overall, the physical rail facilities in Cedar Rapids should be able to accommodate anticipated peak traffic with proper operational adjustments as conditions require. There are specific problem areas and these will be examined in Phase II.

Chapter V

EVALUATION OF EXISTING CONDITIONS AND DEFICIENCIES

RAILROADS

The railroad system radiating from the Cedar Rapids metropolitan area offers potential routes for efficient movement of traffic through all major gateways in the Midwest. The important rail gateways and the railroads having reasonably direct routes from Cedar Rapids are:

Gateway City	Served from Cedar Rapids by
Chicago	MILW CNW RI ICG
St. Louis	CNW ICG
Kansas City	MILW CNW RI
Omaha/Council Bluffs	MILW CNW RI ICG
Minneapolis/St. Paul	CNW RI

Additionally, all carriers offer service from local points both within the area circumscribed by the gateways and beyond.

Although two or more railroads connect Cedar Rapids with all important gateways, service is not necessarily competitive because deteriorated track conditions on some routes prevent expeditious train movement. Also, the future of some routes is in doubt. For example, all MILW lines serving the Cedar Rapids area are to be abandoned according to current reorganization plans. Some of this trackage might be taken over and operated by another carrier, but to what extent and by which railroad is unknown at this time.

RI main line trackage into Cedar Rapids is in poor condition and no significant rehabilitation work is planned because the RI, as well as the MILW, is in bankruptcy.

Only the CNW and ICG have routes into Cedar Rapids with track in reasonably good condition. The CNW is in the midst of a large main line track upgrading and signaling program and, barring any unforeseen developments, should have the route through Cedar Rapids in excellent condition within the next few years. The ICG line into Cedar Rapids should remain adequate with reasonable routine maintenance.

Given the financial condition of the MILW and RI, it is distinctly possible that Cedar Rapids, in the not-too-distant future, might be served by only two Class I railroads, plus the CRANDIC. This could considerably alter the competitive situation, as well as the traffic share handled by each railroad. These factors, though not strictly within the scope of this study, must be considered as well as physical facilities and operations within the Cedar Rapids metropolitan area.

As noted, deferred maintenance on certain routes into Cedar Rapids has created some major problems. However, line capacity, as such, is ample for any realistic increased traffic volumes, with one exception. The exception is the CNW, which now operates at a traffic level that sometimes exceeds efficient capacity of the line. Until the track is rehabilitated and an improved signal system is installed, this condition will continue. Although all railroads periodically delay cars because of tonnage, restrictive traffic patterns, or power shortages, these problems have been most acute on the CNW.

Within the study area, rail lines linking the various yards and industries are satisfactory from a volume standpoint, but track conditions range from fair to very poor and, in general, the maximum permissible speed on all routes is 10 mph. Figure V-1 denotes graphically the current mainline track speeds within the study area. Another factor reducing prompt movement of traffic is the practice of some carriers to use main tracks for car storage and switching operations. The CNW, particularly, nearly always has cars stored between Otis and East Yard and frequently on the track west of the Quaker Oats plant.

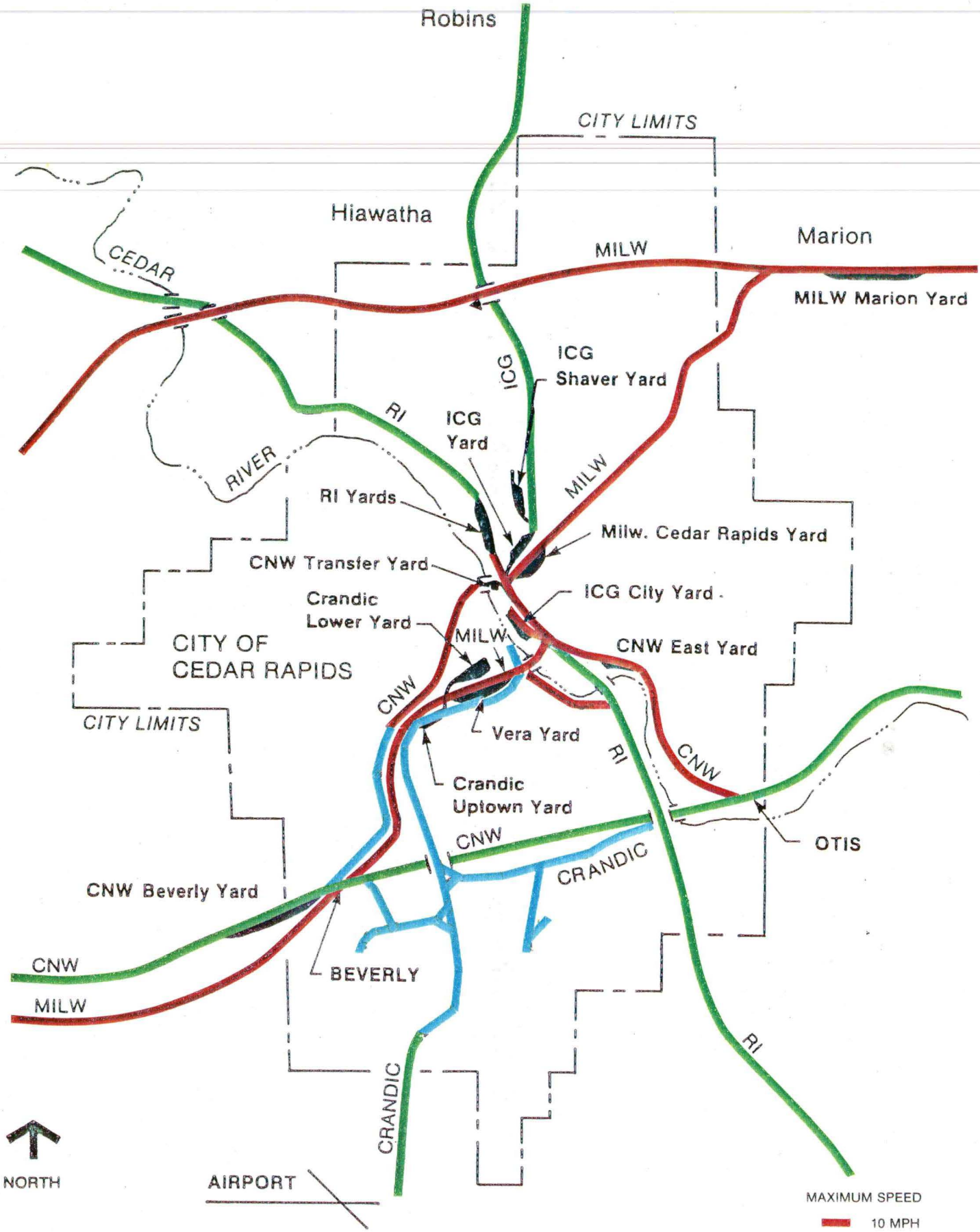


FIGURE V-1
MAINLINE TRACK CONDITIONS
LINN COUNTY RAILROAD STUDY

Historically, there has been an apparent lack of yard capacity in the Cedar Rapids area during peak traffic periods. To a large extent congestion was caused by heavy seasonal movement of grain. Delays associated with interchange movements cause car delays that in effect create the need for more yard trackage. In addition, certain operating practices on the part of both the railroads and industries result in cars occupying yard trackage because they are not dispatched promptly.

It is highly unlikely that grain movements will ever be the major problem they once were because:

- Tracks now transport over 80 percent of the grain destined to Cedar Rapids industries and rail is not competitive, nor are railroads willing to commit equipment for the relatively short hauls over which this traffic moves.

- There is no longer a significant amount of grain moved into Cedar Rapids for inspection and re-billing to other locations.

- There has been a trend toward origin point inspection which reduces the holding of cars.

- Increases in grain traffic today are nearly all in multiple car shipments and such movements normally have tariff provisions that require prompt unloading to avoid penalty charges.

There should be a considerable decrease in delays caused by the interchange of cars, hence, improved use of existing yard trackage. First, there are two less railroads involved and second, the indirect interchanges between the ICG and CRANDIC, and RI and CRANDIC have been eliminated.

Transfer moves have been reduced because the CNW is now running direct into the RI yard and the CRANDIC is delivering cars directly to the Sixth Street power plant.

While overall trackage in the terminal area will be reduced somewhat because of retirements, the three surviving railroads will all have greatly increased capacity because of having taken over RI and MILW facilities. The yard space available to the CNW and ICG will nearly double and the CRANDIC will have a smaller increase.

One further factor is that new or expanded rail oriented industries will tend to locate on the outskirts of the Cedar Rapids and Marion metropolitan area. Generally there is space

in these areas for rail facilities to be enlarged as new traffic develops.

Given the new configuration of rail operations in the Linn County area, it would appear that yard space will be adequate for the forseeable future and if some or all improvement alternatives are put in effect, the functional capacity will become even greater.

The condition of yard trackage in general is fair to extremely poor. Figure V-2 denotes the general condition of yards within the study area. The layout of many local yards is inefficient because of curvature, short tracks, and streets crossing through the body or leads of the yard. In some cases, the yards are confined to the extent that expansion or modification is impossible.

The lack or poor location of such support facilities as track scales, car cleaning tracks, and repair and maintenance installations also cause delays due to extra handling of cars.

One problem area, and a source of many complaints, is the lack of suitable and sufficient rail cars. This is a chronic nationwide problem that, in the final analysis, cannot be corrected by local action. However, some improvement can be made, and the means will be explored.

In some cases, the scheduling of road train movement, industrial switching, and interchange permits optimum speed of car movement. On the other hand, many examples of loose scheduling (or none at all) result in delayed traffic. The whole area of scheduling of movements by individual railroads, and liaison between railroads, will be further examined so as to devise a more disciplined, more efficient overall movement of traffic.

A number of possibilities seem to exist for joint use by the various railroads of physical facilities (either existing, new, or modified) within the terminal area. Also, some service improvement may be possible through better liaison among railroads and between railroads and industry.

INDUSTRIES

With several notable exceptions, industrial firms in Cedar Rapids have reasonably adequate trackage for efficient service. A fairly large proportion of this trackage is in poor condition, which ultimately causes derailments and

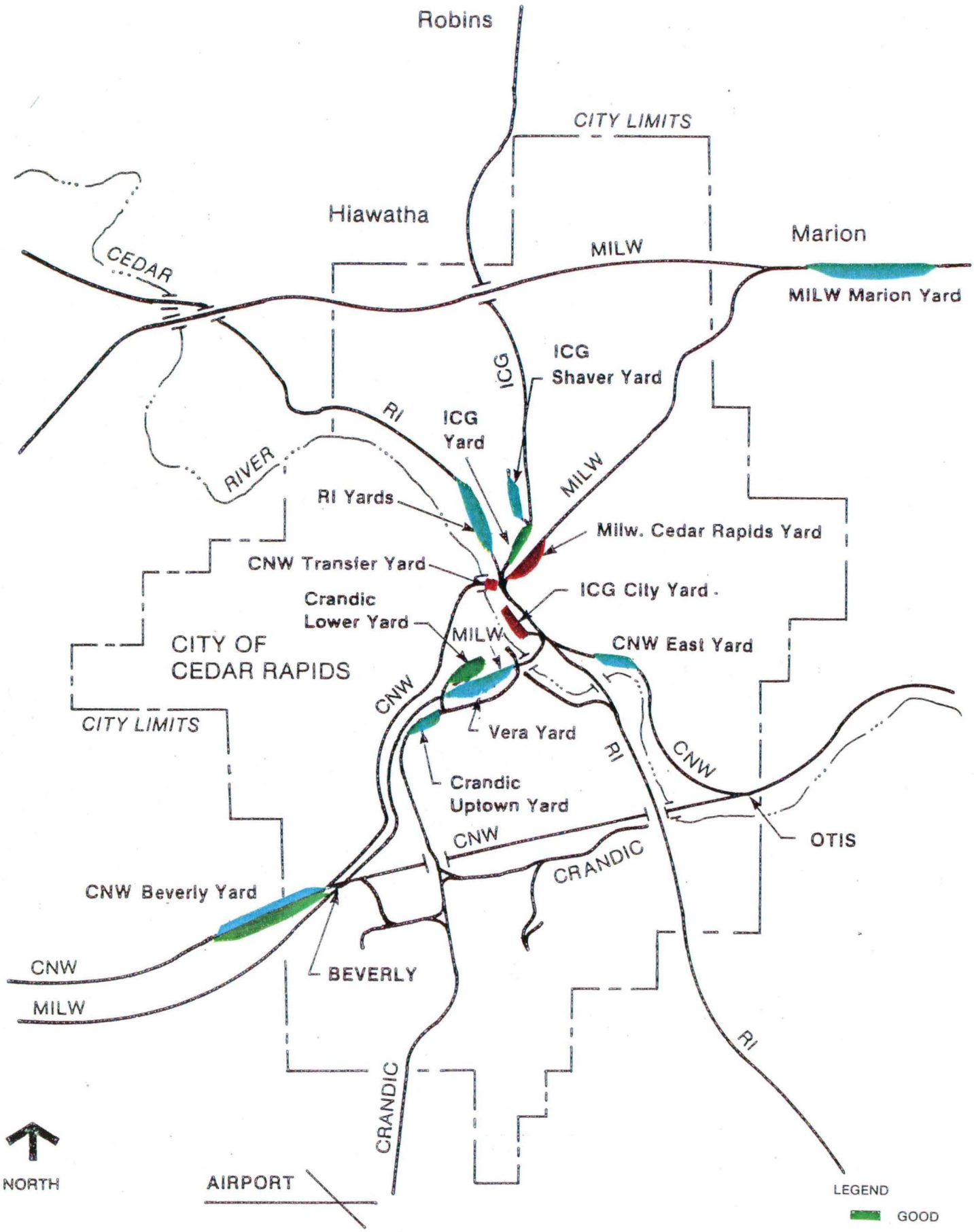


FIGURE V-2
YARD CONDITIONS
LINN COUNTY RAILROAD STUDY

traffic delays. This is at least partially a railroad rather than industrial problem because much of this track is owned and maintained by the railroads. As the study progresses, specific shortcomings will be pointed out and, where possible, improvements suggested.

Operating procedures of various industries seem to be responsible for more problems than inadequate physical facilities. One example is giving priority to the unloading of trucks rather than rail cars. This not only delays cars, but creates congestion in yards. Another is the failure, in some cases, to promptly bill outbound cars.

Grain inspection does not now appear to be a major cause of car delay, though a certain amount of delay is inherent in switching out the cars, holding them for inspection, and moving them to the consignee. These procedures will be further examined to determine possible improvements.

Liaison between railroads and industries are critical to a smooth operation. In many cases, better communications can eliminate problems with little or no change in operations or physical plant. Such possibilities will be studied.

COMMUNITY

Except for rail-highway conflicts within the 4th Street corridor area and at several other crossings, no serious incompatibility exists between the present rail network and the community. Solutions to rail-highway conflicts, such as modified signaling or changes in railroad operating procedures or scheduling, will be examined.

SUMMARY OF IDENTIFIED PROBLEMS

Railroad-Related

- Inadequate or inefficient yards
- Poor condition of yards and connecting trackage
- Lack of or inappropriate location of track scales and other support facilities
- Insufficient supply of serviceable rail cars
- Traffic and tonnage restrictions

- Power shortages
- Lack of disciplined and coordinated program for industrial switching, interchange and road movement of traffic
- Inappropriate blocking of cars and scheduling of trains for optimum movement of traffic
- Interchange operations between railroads not coordinated

Industry-Related

- Inadequate and inefficient configuration of plant trackage
- Poor condition of plant trackage
- Inbound cars not unloaded promptly
- Outbound cars not billed promptly
- Inadequate communications between industries and railroads
- Delays associated with grain inspection

Community-Related

- Rail-highway conflicts, especially in the 4th Street corridor

Chapter VI

DEVELOPMENT AND EVALUATION OF IMPROVEMENT ALTERNATIVES

OVERVIEW

At the conclusion of Chapter V, the deficiencies in the existing rail system were summarized. The next process in the study was to analyze each individual problem and develop possible solutions. This analysis included review of previous reports, numerous interviews with railroad, shipper and community representatives, and field inspections and surveys. Forty potential improvement alternatives were identified. Of these, 13 were, for various reasons, eliminated from consideration after a preliminary screening.

The remaining 27 were studied in depth and evaluated based on these criteria:

1. Capital costs
2. Operating expense
3. Improvements in service expected
4. Feasibility of physical plant or operational changes
5. Savings generated
6. Funding availability
7. Cost benefit comparison
8. Compatibility with overall plan.

To the extent possible, costs and benefits were quantified; however, certain alternatives either could not be quantified or are dependent on so many variables that only very general estimates could be made.

Nine major problem areas were identified in Phase I of the study and, in Phase II, a number of possible solutions were developed to eliminate or minimize each problem. De Leuw, Cather and the Rail Study Advisory Committee made a preliminary evaluation of these alternatives and some were dropped from further consideration. In the following discussion, the improvement alternatives that were eliminated in the initial screening are marked with an asterisk (*).

Some of the improvement alternatives are connected closely to the specific requirements of an individual railroad or an industry, from either an economic or a competitive standpoint. These alternatives do not lend themselves to evaluation by the Advisory Committee or De Leuw, Cather; they must be independently

evaluated by the railroad or industry involved. Their salient features, including the service advantages, costs and savings, are described below in general terms but no specific recommendations have been made. Improvement alternatives in this category are marked with a double asterisk (**).

A third group of alternatives was put into effect while this study was still in progress. These alternatives are indicated by a dagger (†).

PROBLEM I - INSUFFICIENT SUPPLY OF SERVICEABLE RAIL CARS

**I-1: Industries Buy or Lease Cars

Discussion: The major industries in Cedar Rapids presently own or lease a total of 3,120 rail cars, as follows:

Air Slides	200
Tank Cars	2,350
Flat Cars	20
Covered Hoppers	50
Boxcars	500
Total	3,120

In spite of the number of cars owned or leased, there is an identified need for at least an additional 50 air slides, 250 boxcars, and 250 covered hoppers in the Cedar Rapids area.

One possible solution would be that the industries buy or lease sufficient cars for their transportation requirements.

Each industry would determine the number of cars needed in addition to the cars assigned by railroads and the free running cars it could realistically expect to receive from the railroads in Cedar Rapids. Once the number was determined, the industry would decide whether to buy or lease the needed rail cars. The purchase of cars would involve a large initial investment; moreover, there is presently a 12- to 15-month backlog on car orders. The industry would also have the added expense of maintenance if it owned its cars.

Implementation: The actions required to implement this solution are:

. Industries determine the number and type of rail cars needed

- Industries decide, based on economics, whether to buy or lease cars
- Industries either purchase the necessary cars, or
- Industries enter into an agreement with a car-leasing company.

Costs/Benefits:

Capital Investment:

- Price of cars, if cars are purchased: typically, $35,000 to $45,000 for boxcars or covered hoppers.

Operating Expense:

- Lease costs, if cars are leased: $300 to $500 per car per month depending on specific contractual terms
- Maintenance of cars.

Operating and Capital Benefits:

- Industry would reduce need for higher-cost alternate transportation
- Industry might avoid in-plant down time caused by lack of rail cars for loading
- Industry would be better able to meet shipment schedules
- Shipping costs would normally be lower with industry-owned or leased cars, because of mileage allowances paid by railroads.

Funding: The funding for rail car purchase or leasing would have to come from the industry itself. The operating and capital benefits would, to an extent, offset capital investment or operating expense.

General Evaluation: The acquisition of cars by an industry, either by lease or by purchase, is an action normally taken because special equipment is required or the serving railroad simply does not supply enough cars for the traffic. If alternate transportation--usually truck--is too expensive

when total distribution costs are considered, then the purchase or lease of rail cars should be examined. The decision must be made on an individual basis by an industry and is strictly economic. If an industry does not get a reliable and adequate car supply from the serving railroad, it should compare the cost of a private car fleet with the expense of alternate modes of transportation.

** I-2: Railroads Acquire Cars

Discussion: Another possible solution to the car shortage problem is for the railroads to acquire more cars. Over the past decade, the total number of rail cars has decreased by 148,000 although the tonnage capacity of the freight car fleet has increased by 9.5 percent. This reflects the trend to larger cars. During this same period, the percentage of railroad-owned cars has decreased from 82.9 percent to 78.4 percent. The decrease in both the total number of cars and the percent owned by the railroads has made it increasingly difficult for industries using railroad-owned equipment to obtain an adequate supply. Obviously, the railroads could solve the problem by purchasing or leasing more cars. There are two problems, however; first, most railroads do not have adequate capital; second, the return on investment of general service equipment often does not justify the purchase of cars compared to other uses of available funds. Whether or not railroads increase car acquisition will be governed by their general economic condition and the anticipated rate of return on specific types of cars.

Implementation: The actions required to implement this solution are:

. Railroads determine the type and number of cars needed

. Railroads decide, based on economics, whether to lease or purchase needed cars.

Costs/Benefits:

Capital Investment:

. Purchase price of rail cars.

Operating Expense:

. Lease payments, if cars are leased

. Maintenance of cars.

Operating and Capital Benefits:

. Railroads would receive increased revenue because of the availability of additional cars

. Transportation costs for industries would be less because of improved car supply

. Railroads would reduce car hire expense with less use of foreign line cars

. A reliable car supply could promote industrial expansion.

Funding: The railroad would finance the purchase of new equipment. Possibly, federal loans or 4R Act funds could be obtained by the railroad for purchase. No cash outlay would be needed by the railroad if it leased cars. In either case, the added revenue should offset the increased costs.

General Evaluation: Before acquiring freight cars, a railroad normally determines the need, cost, and return on investment that can be realized from the additional cars. If the return on investment is favorable compared to other projects, the cars will be leased or purchased. This is an investment decision similar to that made by all industries before committing funds.

Each railroad has its own financial constraints and standards for determining whether or not it should acquire more freight cars. While one of the facts brought out by this study is a shortage of cars, only the railroads and the affected industries can determine the advisability of car lease or purchase. It is suggested that the railroads and industries make a concerted effort to examine freight rates, car ownership expense, and overall transportation costs to determine where railroads can profitably furnish more cars.

** I-3: Railroads Repair or Upgrade Bad Order Cars

Discussion: Bad ordered cars have been a major cause of car shortages. This is particularly true in the case of boxcars; currently about 13 percent of the nationwide fleet is out of service. Also, some railroads have made a practice of storing or scrapping cars requiring repairs exceeding a

specified amount. Because of the economic condition of many railroads, repair programs have been curtailed and, as cars are bad ordered, they are taken out of service and the fleet size decreases. This makes it increasingly difficult for industries to get the needed cars for loading.

While both industry and the railroads would benefit from car rehabilitation programs, the major problem has been the financial inability of the railroads to maintain such programs. Car repair and upgrading is often more cost effective than purchasing new cars; moreover, the long lead time required for new cars is avoided.

To make car rehabilitation programs attractive to railroads, they must anticipate a reasonable profit on the equipment after it is returned to service. Also, money must be available at a fairly low rate. Preference share or guaranteed loan financing under the 4R Act is one possibility. Another recent development is the effort of several railroads to set up an organization which would finance the rehabilitation of cars, with member railroads paying off the costs on a usage basis. Essentially, these plans provide the railroads with a means of returning bad order cars to productive use with minimal initial cash outlay.

Implementation: The actions required to implement this solution are:

- Railroads obtain financing for car repair programs
- Railroads institute programs to repair and return needed cars to service.

Costs/Benefits

Capital Investment:

- Partial cost of car rehabilitation
- Costs to initiate repair program.

Operating Expense:

- Costs involved in operating a car repair facility
- Maintenance cost of cars after return to service.

Operating and Capital Benefits:

- Avoids costs of purchase or lease of new cars
- Added revenue is received from use of additional serviceable cars
- Car hire costs are less because of less dependence on foreign line cars
- Industries could reduce use of higher-cost alternate transporation with adequate car availability.

Funding: Since many railroads do not have adequate cash for large car repair programs, financing would, for the most part, probably have to be obtained through outside sources - either through the provisions of the 4R Act or some other means. For example, the CNW presently has a car repair program at its Clinton, Iowa, shops financed by 4R loan guarantees and the ICG is involved in efforts to establish a cooperative program among a number of railroads to rehabilitate cars. These are two possible ways bad order cars can be returned to productive service with minimal cash outlay by railroads.

General Evaluation: Railroad programs for heavy repair or upgrading of freight cars fall into the same category as buying new cars: if an adequate return on investment can be realized the work will be authorized. This decision must be made by each individual railroad; no action can be proposed in this study beyond suggesting that the railroads and industries work together in an effort to establish areas where it is mutually beneficial for car repair programs to be progressed. In addition, innovative financing methods should be considered to fund repair programs so as to minimize front-end cash outlays by railroads.

I-4: Industries Finance Railroad Rehabilitation of Cars and Are Repaid on a Rebate Basis

Discussion: The RI, in conjunction with several Cedar Rapids industries, participated in a program whereby the industries financed rehabilitation of cars. The RI then assigned these cars to the participating industries who were repaid by the RI on either a monthly or a per-car-shipped basis.

This type of program is beneficial to both the railroads and industries. The railroads have cars rehabilitated with no cash outlay while the industries have cars assigned without purchase or lease. Once the industry has been completely repaid, the agreement is renegotiated or terminated. This type of program has the added advantage of making productive use of railroad car shop facilities and personnel that might otherwise remain idle.

Implementation: The actions required to implement this solution are:

- Industry determines the type and number of cars needed for its service
- Railroad determines the availability of bad order cars of the type required and the extent and costs of necessary rehabilitation
- Railroad and industry negotiate an agreement covering the rehabilitation program and financial terms
- Railroad develops a schedule and proceeds with the work
- Railroad assigns rehabilitated cars to industry.

Costs/Benefits:

Capital Investment:

- Partial cost of rehabilitation.

Operating Expense:

- Most car rehabilitation expense.

Operating and Capital Benefits:

- Railroad car hire expense reduced because of less dependence on foreign cars
- Normally, less expensive for industries than purchasing or leasing cars
- Increased revenue for railroads because of more traffic resulting from a better car supply

- With adequate cars available, industries should have less need to use higher-cost alternate transportation.

Funding: The industries would fund car rehabilitation programs and be repaid by the railroads on a negotiated basis.

General Evaluation: This type of industry-financed car repair program is relatively new but has been utilized successfully by a number of industries, including several in Cedar Rapids. A careful analysis must be made by the industry and railroad involved in each specific set of circumstances. This plan provides railroads with a means to return cars to revenue service with no initial cash outlay. It offers participating industries a guaranteed supply of cars. To the extent that railroads have shop capacity available and out of service cars of types needed by industries, this plan warrants serious consideration.

I-5: Implement a Car Cleaning and Upgrading Program

Discussion: The rejection of available empty cars because they are unfit for loading causes car supply problems in Cedar Rapids as it does elsewhere. Cedar Rapids industries require relatively high class rail cars for loading and the major industries surveyed indicated a rejection rate ranging from 3 percent to 65 percent. Some industries will clean or upgrade unfit cars themselves or load marginal cars to meet shipping schedules.

At present, no car cleaning or upgrading is done in Cedar Rapids with the exception of a limited amount of cleaning by the CRANDIC at Uptown Yard. The CNW has a cleaning and washing facility at Beverly Yard, but it was closed in 1979. The nearest active car cleaning facility is on the ICG in Waterloo, Iowa.

A car cleaning and upgrading facility in Cedar Rapids would help reduce the number of cars rejected and effectively increase the car supply. Possible locations for this facility could be in either the MILW or RI yard or the reactivated CNW facility at Beverly. A cleaning track in either the RI or MILW yard would have the advantage of being near the major car users. At Beverly, the advantage would lie in the use of an existing facility. A cleaning and upgrading facility could be operated jointly by all carriers in Cedar Rapids, possibly with an outside contractor performing the work. This type of joint effort would avoid duplication of facilities and provide for a more efficient and cheaper operation.

Implementation: The actions required to implement this solution are:

- Railroads make an analysis to determine costs and savings that would result from the operation of a cleaning and upgrading facility
- Railroads negotiate an agreement covering the operation and cost divisions, if a joint cleaning and upgrading facility is planned
- Physical changes are made to accommodate a cleaning and upgrading operation (if a new facility is established)
- Railroads enter into an agreement with a contractor for the necessary service if railroad forces are not used.

Costs/Benefits:

Capital Investment

- The cost to set up cleaning, washing and/or upgrading facilities. This could range from minimal expense if the existing cleaning track at Beverly were used to possibly $100,000 if an entirely new facility were established at some other location.

  One aspect - pollution control - could increase costs, particularly if cars were washed and not dry cleaned.

Operating Expense: Operating costs of a car cleaning and upgrading facility consist of three elements:

- Labor, which generally runs from $5 to $20 per car cleaned and/or upgraded
- Material costs for upgrading. The type of operation contemplated here would be limited to patching floors, wall lining and car roofs. Costs should not exceed $20 per car for material.
- Miscellaneous expenses including utilities and maintenance of facilities. For a small cleaning and upgrading operation this cost should not exceed 10 percent of the labor and material costs.

Operating and Capital Benefits:

- Increase equipment utilization by reducing the number of cars rejected. A rough (and probably conservative) estimate is that an empty car coming into Cedar Rapids that is rejected for loading will be detained three days before either being used for lower grade freight or dispatched to some other location. At an average car hire cost of $8.00 per day, a reject will cost a railroad $24.00 in time lost in the terminal area alone, not including mileage charges if the car must be moved to another loading point.

- Increase revenue to railroads because more fit cars will be available for loading. The revenue now lost by railroads because of lack of cars is nearly impossible to estimate but is sizeable, since one Cedar Rapids industry alone frequently experiences shortages of 20 to 30 cars per day during peak loading periods.

- Extra switching and mileage payments for rejected cars will be avoided. These costs vary on a car by car basis but can become significant.

- Loss and damage claims will be reduced because of availability of more clean and fit cars. This again is a factor difficult to quantify but is substantial.

Estimated costs and savings associated with a small cleaning track operation are shown in Table VI-1.

Based on the estimated volume of cars, a cleaning track operation would show a profit even without considering reduced switching, car miles and potential revenue gains.

Funding: The railroads involved in the car cleaning and upgrading facility would fund the initial investment to set up the facility. The savings realized from this facility should offset the initial cost and operating expense of the facility. It is possible that local industries would be willing to participate in the initial costs.

Table VI-1

ESTIMATED COSTS AND SAVINGS:
SMALL CLEANING TRACK OPERATION*

Operating Expense	Annual Cost
Labor	
1 Foreman @ $9.00/hour	$ 18,720.00
4 Laborers @ $7.00/hour	58,240.00
Overhead @ 40%	30,780.00
Total Labor	$107,740.00
Material for upgrading @ $20.00 per car	52,000.00
Miscellaneous Expense @ $500.00 per month	6,000.00
Ownership cost of facility @ 10% of $75,000	7,500.00
Total annual expense	$173,240.00
Cost per car based on 7,800 cleaned and 2,600 upgraded per year	$ 22.21
Savings	
Car hire 3 days per car @ $8.00 per day	$ 24.00
Net savings per car	$ 1.79

* Assumptions:

1. 30 cars a day 5 days per week would be cleaned and 10 of these would require light upgrading (patch floors, wall linings and roofs).

2. Value of fixed facilities estimated to be $75,000.00.

3. Labor would be furnished by a contractor.

General Evaluation: Depending on size, location, facilities and volume, actual costs at existing railroad cleaning tracks range from $5 to $25 per car; this indicates that the costs cited in Table VI-1 are, if anything, on the high side. It would appear that a cleaning and upgrading facility would be financially attractive, particularly when factors such as reduced switching, reduced unnecessary car mileage and additional car supply and revenue are considered. Once a potential site for a cleaning track and the type of facilities desired are selected, costs can be developed more accurately.

*I-6: Establish Cedar Rapids Car Pool with Cars Furnished by Industries or Railroads

Discussion: Another possible solution to the car supply problem could be the formation of a Cedar Rapids car pool. The cars for the pool could be assigned by the industries, railroads or a combination of both. The first step would be to determine the number and type of cars needed by the industries involved in the pool and to acquire these cars.

An administrative staff would have to be organized to manage the Cedar Rapids car pool. This staff would be in charge of the day-to-day operations handling the distribution of cars to industries.

A procedure for filling car orders would need to be developed and agreed to by all participants. This could present a problem at times when there is an insufficient supply of cars. The cost of the administrative staff and the maintenance of the rail cars for the Cedar Rapids car pool would be shared by the railroads and the industries.

Implementation: The actions required to implement this solution are:

- Determine the number and type of cars needed by major Cedar Rapids industries
- Determine source of funding for car pool
- Organize a Cedar Rapids car pool administrative staff
- Enter into an agreement covering operation and division of expenses of the car pool
- Acquire the necessary cars and put pool into operation.

Costs/Benefits:

Capital Investment:

- Cost of equipment necessary to set up car pool.

Operating Expense:

- Salaries for car pool staff
- Maintenance of cars

Operating and Capital Benefits:

- Increased revenue for railroads
- Availability of more cars for industries
- Possible reduction of freight rates for industries
- Reduced car hire for railroads because of less dependence on foreign line cars.

Funding: A Cedar Rapids car pool should be funded as a joint venture between the industries and railroads. The savings realized from a car pool should help to offset the costs of operations.

General Evaluation: It would be extremely difficult to develop an equitable plan for cost sharing and use of equipment. There was no interest expressed by committee members and, as there are several other better methods available to improve car supply, this alternative was eliminated in the initial screening.

I-7: Review and Modify Tariffs

Discussion: Railroads commonly attempt to maximize income by furnishing cars of types that are in short supply wherever the greatest revenue will be generated. When a railroad concludes that, either because of a low freight rate, high car hire costs for the equipment required, or a combination of both, the traffic is not profitable, it may be reluctant to furnish cars. A favorable rail rate may be in effect that is practically meaningless because cars are not furnished and alternate, more expensive modes of transportation must be used.

Rates and tariff provisions have been a contentious subject since the first railroad was built. More recently, applicable car hire costs have become a matter of controversy as well. Also, Congress is now considering legislation that will eventually deregulate rate making to some extent. Certain rates (such as some transit rates) are outmoded and should be revised or eliminated.

Amidst all this confusion two things seem clear; first, railroads should not be expected to haul freight at break-even or losing rates; second, industries should have a clear choice between a reasonable rail rate and the cost of transportation by other modes. If, for example, the overall costs of moving a product by truck are below comparable rail costs (with rates at realistic levels), then the correct economic choice would be shipment by truck. Both railroads and shippers would have a solid basis on which to plan future transportation, equipment requirements, yard capacity, etc.

All questionable rates involved with the movement of freight in or out of Cedar Rapids should be examined jointly by industry and railroad personnel to determine what adjustments should or could be made. Possible modifications would be affected by such elements as whether cars are railroad or shipper owned and whether or not transit privileges are involved.

Implementation: The actions required to implement this solution are:

- Railroads and affected industries agree to undertake a comprehensive rate review
- Railroads and industries designate personnel to perform this study
- Following review, railroads file for rate revisions through normal regulatory channels.

Costs/Benefits:

Capital Investment:

None

Operating Expense:

- Cost of industry and railroad personnel committed to the project.

Operating and Capital Benefits:

- Difficult to ascertain but railroads might eliminate unprofitable traffic or gain some additional, profitable traffic and industries might experience lower overall transportation costs.

Funding: This program would be mutually beneficial to railroads and industries and they should share the expense.

General Evaluation: This alternative would be difficult and time consuming and results would come slowly. However, it is an extremely important area that warrants thorough study by both railroads and shippers because of potential mutual benefits. The railroads could possibly gain profitable traffic (or eliminate some presently not profitable) and the problems related to an uncertain car supply would be reduced for industries. A start should be made toward rationalizing questionable rates.

PROBLEM II - INADEQUATE OR INSUFFICIENT YARDS AND CONNECTING TRACKAGE

†II-1: Some or All Railroads Use MILW Yard

Discussion: The MILW intends to cease all operations in Cedar Rapids area and its facilities will be available for acquisition by other railroads. It is proposed that the CRANDIC, ICG and possibly the CNW share the use of the MILW Cedar Rapids Yard. At a minimum the CRANDIC would need access to the 6th Street power plant and possibly trackage to store cars for this facility; also, sufficient space would be required to permit direct interchange with the ICG. The ICG should have use of enough trackage to relieve the congestion in its yard and for access to the track scale. Provision should also be made for team track facilities at this yard to permit eventual retirement of the ICG City Yard.

In the event the CNW does not acquire all of the RI yard, it should have access to the MILW track scale.

The MILW main track extending as far north as Iowa Manufacturing should probably be acquired in conjunction with the yard by whatever carrier purchases the yard.

Implementation: The actions required to implement the solution are:

- CRANDIC, ICG and/or CNW agree, if possible, to sole or joint ownership of the yard
- An individual or joint purchase offer is made to the Trustee of the MILW and a sale price negotiated
- CRANDIC, ICG and CNW agree to a joint operating plan, access to industries and division of expenses
- Necessary revision and upgrading of trackage are performed.

Costs/Benefits:

Capital Investment:

- Purchase price
- Upgrading and revisions of trackage.

Operating Expense:

- Maintenance of trackage.

Operating and Capital Benefits:

- ICG and CRANDIC would save intermediate switch charges on interchange traffic
- ICG and CNW would save yard engine time weighing cars because of a better scale location
- BOTH ICG and CRANDIC should save car hire cost because of direct interchange
- CNW would avoid the cost of installing a track scale at Beverly.

Funding: The acquiring railroad(s) should obtain financing for purchase, track revisions and upgrading, possibly through 4R Act provisions. The operating and capital benefits would, to an extent, offset initial costs.

General Evaluation: This alternative has basically been put into effect on an interim basis. The ICG and CRANDIC have taken over former MILW property and operations and are negotiating a purchase agreement with the MILW Trustee.

†II-2: CNW Uses Some or All of RI Yard

Discussion: The CNW at present lacks adequate yard capacity in Cedar Rapids. This situation will become even more acute when the MILW and RI cease operations, since the CNW can reasonably be expected to pick up a large share of the traffic formerly handled by these carriers. From a location standpoint, the RI Yard would be nearly ideal for use by the CNW and would not only correct the inadequacy of the Transfer Yard but would also relieve the frequent congestion at Beverly Yard. Use of the track scale at the RI Yard would eliminate moving cars to East Yard for weighing and would allow the CNW to avoid constructing a scale at Beverly. Part of the Transfer Yard could be retired and the property released for sale.

While some rearrangement of trackage in the RI yard would be desirable to permit a better operation, the general condition of the yard is good. By acquiring the RI yard, the CNW would have a downtown yard of sufficient size to permit

direct through train operation in and out of Cedar Rapids without an intermediate transfer move as is now required.

If another railroad does not acquire the RI main line, the CNW should purchase all RI trackage from the Cedar River bridge on the south to the north end of the RI yard. If another railroad acquires the RI through Cedar Rapids, the CNW should negotiate for purchase or rental of a section of the RI Yard. Even partial use of the RI Yard would permit substantial operating improvements by the CNW.

Implementation: The actions required to implement this solution are:

- CNW negotiates with the Trustee of the RI for purchase of the RI Yard and other trackage within the terminal area
- If another carrier acquires the RI route through Cedar Rapids, the CNW should work out an agreement with that carrier to use part of the RI Yard
- Yard trackage is revised and upgraded as required.

Costs/Benefits:

Capital Investment:

- Purchase price of RI property
- Upgrading and revisions of trackage.

Operating Expense:

- Maintenance of trackage.

Operating and Capital Benefits:

- Avoids costs of upgrading the Transfer Yard
- Avoids costs of expanding Beverly Yard
- Avoids costs of installing a track scale at Beverly Yard
- Saves yard engine time and car hire costs associated with moving cars to East Yard for weighing

- Saves yard and transfer engine time by reducing movements between Beverly and the Transfer Yard

- Permits possible gain from sale of property in the Transfer Yard area.

Funding: The CNW would obtain financing for purchasing, track revisions and upgrading, possibly through 4R Act provisions. The savings noted above would offset initial costs, and sale of released Transfer Yard property could give CNW a one-time gain.

General Evaluation: This alternative has been put into effect and the CNW has taken over temporary operation of all RI property in Cedar Rapids. If the Kansas City Southern (KCS) eventually acquires the RI property, this alternative should be reconsidered.

*II-3: Expand Beverly Yard

Discussion: A possible way to provide the CNW with more track space would be to expand Beverly Yard. From a physical standpoint, this is feasible since space is available and the terrain presents no particular obstacles. Financing, however, would be a problem. Since there appear to be no existing government programs that would fund a yard expansion, the CNW would probably have to finance this project with money generated internally or obtained through FRA-guaranteed loans or preference share financing.

Implementation: The actions required to implement this solution are:

- CNW makes a determination that expansion of Beverly is necessary and warranted

- CNW constructs additional trackage.

Costs/Benefits:

Capital Investments:

- Cost of constructing new trackage: on the order of $1.2 million for five additional tracks with a total length of approximately 10,000 feet.

Operating Expense:

- Additional ongoing track maintenance.

Operating and Capital Benefits:

- Yard and transfer engine savings with reduction of delays and extra switching caused by lack of yard room
- Car hire savings generated by faster and more efficient movement of traffic.

Funding: It appears that any expansion of Beverly Yard would have to be funded by the CNW, possibly with 4R Act financing.

General Evaluation: If the CNW is successful in negotiating a permanent purchase or lease of all or part of the RI Yard, thus increasing available trackage, this alternative will be unnecessary.

*II-4: Use Marion Yard for Car Storage

Discussion: A common railroad problem is storage area for inactive cars--frequently bad orders awaiting disposition or repairs. At times, there is no demand for certain types of serviceable equipment and these cars must also be stored. Stored cars congest yards and create operating inefficiencies. Periodically, the Cedar Rapids yards of the various railroads contain sizeable numbers of such cars. To the extent possible, inactive cars should be stored outside of busy yards.

One way to relieve the car storage problem in the Cedar Rapids area would be to use the present MILW Marion Yard for storage as it will no longer be an active yard. Two possibilities exist; the road taking over the MILW's operation in Marion could use the yard exclusively, or joint use might be made of the yard by several railroads. In the latter case, equitable car handling costs would have to be worked out by the participating railroads.

Implementation: The actions required to implement this solution are:

- A sales agreement is negotiated between the acquiring railroad(s) and the Trustee of the MILW
- If more than one railroad are to use Marion yard, a joint operating agreement is worked out.

Costs/Benefits:

Capital Investment

- Purchase price of yard trackage.

Operating Expense:

- Maintenance of yard trackage
- Car movement to and from Marion for storage.

Operating and Capital Benefits:

- Avoids costs of constructing trackage at some other location
- Saves yard engine time in active yards because of more efficient operations
- Reduces car hire costs because of faster car movement resulting from less yard congestion.

Funding: The acquiring railroad(s) would obtain financing for purchase either internally or through 4R Act provisions.

General Evaluation: This alternative was eliminated in the initial screening because the location of Marion Yard prevents easy access and its use for car storage appears to be impractical.

**II-5: Industries Finance Storage Tracks for Their Cars

Discussion: Some major Cedar Rapids industries have substantial numbers of owned or leased cars. Historically, the railroads have provided trackage for storing these cars. Even though industries in some cases lease railroad trackage, the return to the carriers is usually less than the ownership costs of the trackage used. Annual rental rates seldom exceed $2.00 per foot of track compared to a replacement value of $50.00 to $80.00 per foot.

To provide the necessary storage space, it would appear that industries with large fleets of leased cars should participate to a greater extent in providing trackage.

The problem of holding leased cars could become even more acute in Cedar Rapids as planned expansion of certain key industries takes place and the trend to more industry leasing of cars continues.

Implementation: The actions required to implement this solution are:

- Each industry that leases cars analyzes its storage needs in conjunction with the serving railroad
- Industry and railroad determine the most efficient and practical location for the necessary trackage
- An equitable arrangement is negotiated for construction and maintenance of the proposed trackage.

Costs/Benefits:

Capital Investment:

- Cost of constructing new trackage or purchasing existing trackage: current costs of new trackage are approximately $50 per foot plus grading.

Operating Expense:

- Maintenance of owned or leased trackage

Operating and Capital Benefits:

- Possible reduction in demurrage charges to industries
- Yard engine savings to railroads because of increased efficiency made possible by more space or better location of storage tracks.

Funding: Industries with a leased car fleet would assume the costs associated with the ownership and maintenance of adequate storage trackage.

General Evaluation: To a limited extent, industries with a private car fleet have leased or purchased trackage for storage purposes. The cost of track might be partially offset by reduced demurrage charges. If the holding of an industry's cars creates an operational problem and added expense for the serving railroads, the basic question is whether the industry is willing to assist financially in the provision of adequate trackage. This alternative is one that must be decided on an individual basis by each industry.

**II-6: Store Heavy Bad Orders at Locations Outside Cedar Rapids

Discussion: All railroads require some storage space for bad order cars that will eventually be repaired or scrapped. However, when these cars are held in terminals where track space is limited, as is the case in Cedar Rapids, operating problems are created. To the extent possible, bad order cars should be stored at points other than active yards.

Implementation: The action required to implement this solution is:

- Railroads move heavy bad order cars to storage points outside the Cedar Rapids area.

Costs/Benefits:

Capital Investments: None.

Operating Expense: Minimal.

Operating and Capital Benefits:

- Some yard engine time should be saved because of more efficient operations resulting from less congested yards
- Some car hire cost savings should result from faster movement of traffic.

Funding: None required.

General Evaluation: This alternative must be considered and implemented on an individual basis by each railroad. The magnitude of the problem created by stored cars in the Cedar Rapids area and the availability of other storage sites will determine the desirability of this proposal.

II-7: Industries Assist Railroads in Efforts to Store Leased or Assigned Cars Outside Cedar Rapids

Discussion: As industries are assigned or lease increased numbers of cars, the storage of empties can become a serious problem at traffic origin points. This is particularly true if shipping volume tends to fluctuate a great deal. One method to minimize congestion at origin points is for shippers to keep serving railroads advised of car require-

ments. This will often permit the railroad to hold surplus cars enroute rather than congesting the terminal.

Implementation: The actions required to implement this solution are:

- Communications are established between each industry and the serving railroad so that the railroad has accurate information on car requirements

- Enroute holding points for surplus cars are designated by the railroad and excess cars held at these locations.

Costs/Benefits:

Capital Investment: None.

Operating Expense: Possibly some extra enroute handling of cars.

Operating and Capital Benefits:

- Some yard engine time should be saved because of more efficient operations resulting from less congested yards

- Some car hire cost savings should result from faster movement of trains throughless congested yards.

Funding: None required.

General Evaluation: This alternative requires only accurate forecasting of car requirements by shippers and adequate communications between shippers and the serving railroads. The importance of implementing this improvement would be determined by the extent to which cars held for loading create a problem.

II-8: Use of MILW Main Line Between Beverly Tower and Vera for Car Storage

Discussion: When the MILW ceases operations in the Cedar Rapids area, a new connection to the Amana line could be made from either the CNW or CRANDIC on the south side of the CNW main line. If this connection is installed, the present MILW main track north of Beverly Tower could be used for car storage by either the CNW or CRANDIC. If the CNW acquires

this track, a connection from the CNW running track just north of Beverly Tower could be constructed. If the CRANDIC buys the track, no connection would be needed as the CRANDIC already has access near Wilson Avenue. In either case, approximately 15,000 feet of trackage would be available for car storage and the railroad crossing at Beverly Tower could be retired.

If both the CRANDIC and CNW are interested in acquiring this particular segment of the MILW, it would simplify matters if a mutually satisfactory plan and division of ownership could be worked out between them. The important factor is that the trackage be available for storage; it does not make a great deal of difference to the project which railroad is actually the owner.

Implementation: The actions required to implement this solution are:

- CNW or CRANDIC negotiates purchase with the Trustee of the MILW
- A connection is built from the CRANDIC to provide access to the Amana line
- If the CNW acquires the trackage north of Beverly, a connection is installed from the CNW to the MILW.

Costs/Benefits:

Capital Investments:

- Purchase price of trackage
- Cost of connection from the CRANDIC to the Amana line of the MILW
- Cost of connection between CNW and MILW.

Operating Expense:

- Maintenance of trackage by new owner.

Operating and Capital Benefits:

- Avoidance of cost to either CNW or CRANDIC to build trackage elsewhere

- Maintenance and operating savings resulting from retirement of Beverly Interlocking

- Possible rental income if track is leased to an industry for storage of cars

- Yard engine time should be reduced because of less yard congestion and a relatively convenient track on which to store cars

- CRANDIC would not be subject to delays crossing the CNW at Beverly Tower.

Figure VI-1 indicates proposed track changes that would be required to implement this alternative. Table VI-2 summarizes a preliminary estimate of the costs and benefits associated with this plan.

Funding: The acquiring railroad would obtain internal or 4R Act financing for purchase and the necessary connections. There is a possibility that one or more industries might be interested in leasing some of this trackage and might consider partial funding. The above mentioned savings would at least partially offset the initial costs.

General Evaluation: This alternative would provide approximately 300 car lengths of car storage capacity at a fraction of the cost of constructing new trackage. Aside from additional track space, there are operational and maintenance savings that would accrue to both CNW and CRANDIC.

II-9: CNW Uses MILW Route from Vera to 9th Avenue and RI Yard

Discussion: In the event that the CNW acquires all or part of the RI Yard, it should have operating rights from Vera to 9th Avenue over the present MILW route. This would permit straight movements from Beverly to the RI Yard. It would also make eventual operation of through trains between Boone and the RI Yard much more feasible. If the existing CNW route is used, back up moves will be required to enter the RI Yard. The same would be true for movements from the RI Yard to Beverly. The proposed route would permit faster, more efficient moves between these two yards and also reduce crossing blockage in the 4th Street corridor. It is also possible that if this is done, parts of the CNW line west of the Cedar River could be abandoned and some grade crossings eliminated.

Table VI-2

ESTIMATED COSTS AND SAVINGS OF TRACK REVISION AT BEVERLY TOWER

Cost Item		Estimated Cost
Construct 3,300 feet of track		$137,000
Grading		205,100
Construct highway crossing		3,000
Property acquisition		25,700
Remove 2,930 feet of track		24,900
Net salvage		(14,800)
	Subtotal	$380,900
	Contingencies 10%	38,100
	TOTAL	$419,000

Savings Item	Costs Saved	
	Initial Cost	Annual Expense
Normalized maintenance		$23,000
Operators wages (2 hours per day, 4 days per week)		4,400
Delays to CRANDIC movements (0.5 hours per day, 4 days per week)		5,700
Cost of controlled interlocking when CTC is installed	$140,000	
Annual cost at 10%		14,000
Value of 15,000 feet of storage track	150,000	
Annual cost at 10%		15,000
		$62,100
Rate of return on project = $\frac{62,100}{419,000}$		14.8%

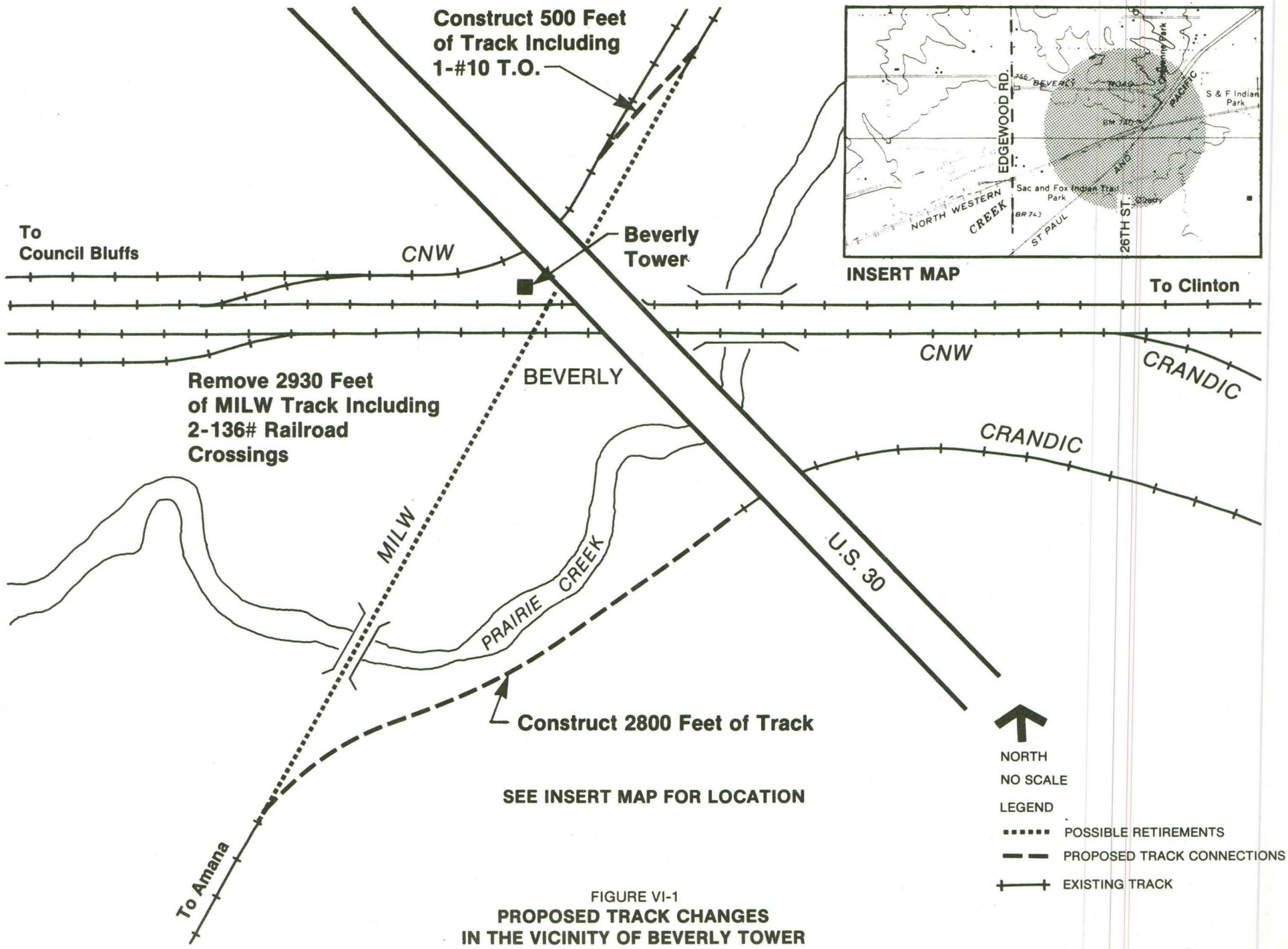


FIGURE VI-1
PROPOSED TRACK CHANGES
IN THE VICINITY OF BEVERLY TOWER

While the study was being conducted, Penick & Ford announced that they would start corn grinding operations in the near future. Grinding had been discontinued about three years ago. If all inbound corn is shipped by rail this would amount to 10 to 15 cars per day (based on the estimated 30-35,000 bushel per day milling rate).

This will create additional switching at the Penick & Ford plant but not to the extent that there would be substantial interference with the proposed movements between Vera and 9th Avenue tower.

Implementation: This alternative would require the following actions:

- CNW negotiates a trackage rights agreement with the eventual owner of the MILW between Vera and 9th Avenue
- Connection is improved between the CNW and MILW at Vera
- MILW line is upgraded from Vera to 9th Avenue Tower.

Costs/Benefits:

Capital Investment:

- Cost of connection at Vera. This is not absolutely essential but would provide for a better operation than that possible using the existing connection
- Upgrade MILW line from Vera to 9th Avenue Tower.

Operating Expense:

- Payment of trackage rights rental by CNW.

Operating and Capital Benefits:

- Yard engine time would be saved because of faster moves between Beverly and the RI yard
- If part of existing CNW route west of the Cedar River is abandoned, maintenance costs would be reduced

- CNW would have a feasible route for through train movements between the RI Yard and Boone. This would eliminate some double handling of traffic at Cedar Rapids and result in savings in yard engine expense and car hire

- Car hire costs would be reduced because of faster movements and less delay.

Figure VI-2 shows schematically the operation proposed in this alternative. A preliminary estimate of the cost of the new connection at Vera and upgrading of the MILW line between Vera and 9th Avenue Tower and operational benefits are summarized in Table VI-3. Possible track retirements on the CNW route between the Cedar River and Beverly are included under Improvement Alternative III-1.

Funding: The only capital cost involved would be the expense of building a new connection at Vera; the CNW would be expected to finance this. Truck upgrading expense would be mainly an operating cost and passed on to the CNW as a portion of the trackage rights charge. The increase in CNW operating costs due to track rental charges would be offset by the operating and capital benefits.

If part of the CNW route is abandoned and some grade crossings eliminated, there is a possibility that the cost of the connection could be funded with Federal grade crossing money.

General Evaluation: This alternative would afford the CNW a more efficient route between Beverly and the RI Yard and permit establishment of direct train service to and from Boone. Direct train service would reduce congestion at Beverly, eliminate some transfer moves and expedite the overall movement of traffic. Some track retirements on the existing CNW line west of the Cedar River should also be made possible.

*II-10: Construct a New Joint Yard

Discussion: Possible locations for construction of a new yard in Linn County are limited. The four most likely sites would be north or south of Cedar Rapids on the RI and west of Beverly or east of Otis on the CNW. All of these sites have two basic shortcomings. First, they are all a considerable distance from the traffic center of Cedar Rapids. Second, no site would be reasonably accessible to all railroads. In addition, a yard of adequate size would cost a minimum of $14 to $16 million.

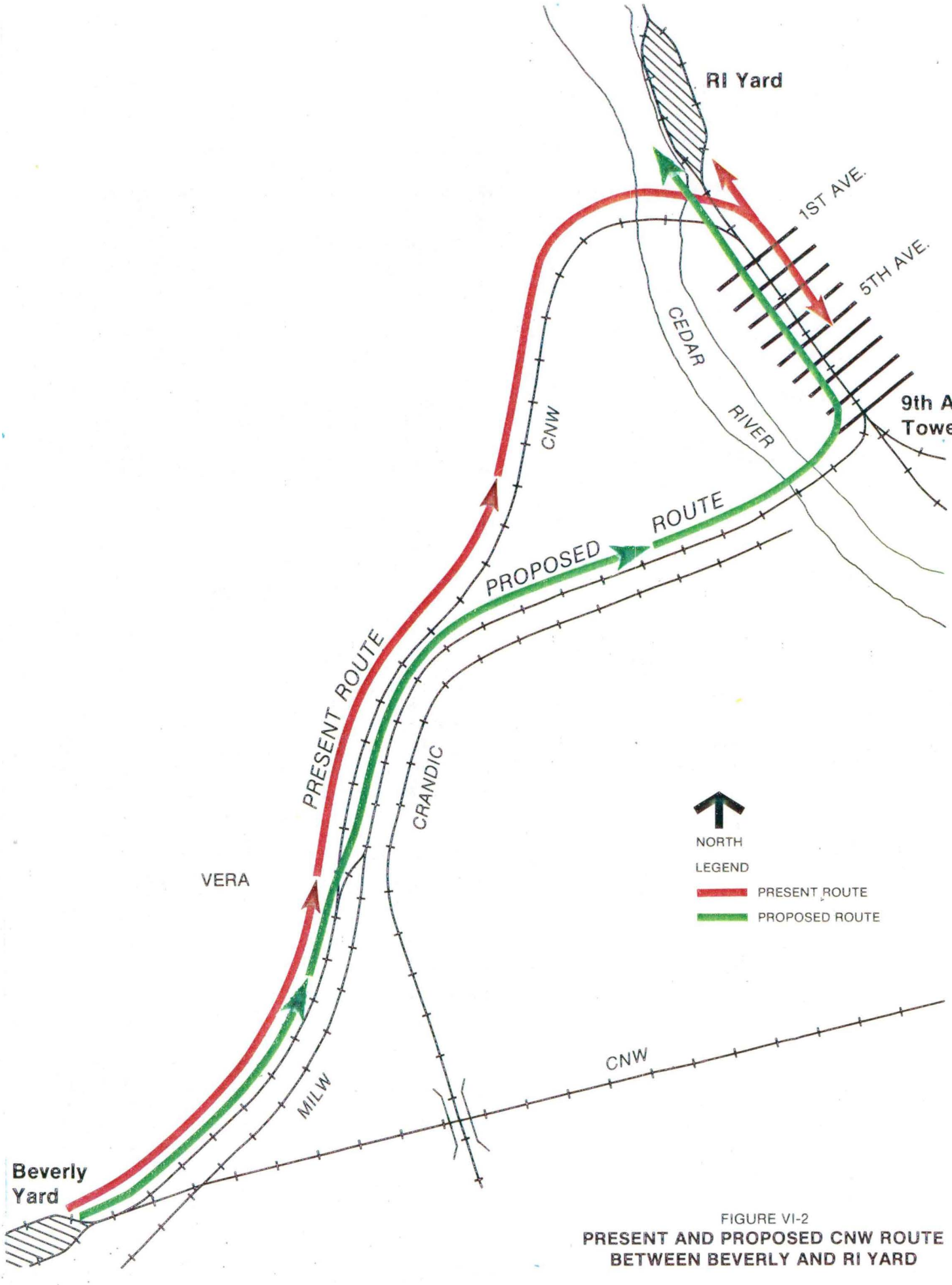


FIGURE VI-2
PRESENT AND PROPOSED CNW ROUTE BETWEEN BEVERLY AND RI YARD

Table VI-3

ESTIMATED COSTS AND SAVINGS ASSOCIATED WITH CNW OPERATION OVER MILW TRACKAGE BETWEEN VERA AND 9th AVENUE TOWERS

Capital Cost Item		Estimated Annual Cost
Construct Connection at Vera	$ 56,900	
Upgrade MILW trackage (CNW assumed to pay 50%)	112,900	
	$169,800	
Annual Expense @ 10%		$ 17,000
Operating Expense		
Trackage right charges @ $10/train mile		35,000
TOTAL		$ 52,000

Savings Item	Costs Saved
Yard engines	$ 39,700
Car hire	7,500
Track maintenance (west side)	46,000
	$ 93,200
Rate of return on project	179.2%

NOTE: Benefits of possible through train operation between Boone and Cedar Rapids not quantified.

The liquidations of the MILW and RI have made yard space available for surviving railroads in the center of Cedar Rapids. By rearrangement and upgrading of trackage in the downtown yards of the MILW and RI, adequate facilities can be provided for the ICG, CNW and CRANDIC (and possibly KCS). These locations would be operationally superior and the necessary trackwork could be done for a fraction of the cost of a new yard.

General Evaluation: A new joint yard was considered by the Cedar Rapids Terminal Railroad Study Group in 1976. At that time it was concluded that a joint yard had operational potential but the expense of construction was prohibitive. Today, the construction expense for a totally new yard is even higher and possible operating improvements lessened with the MILW and RI out of service. A new joint yard cannot be justified on the basis of reduced expenses or service improvements. Additionally, there is no available financing. For these reasons, this alternative was eliminated in the early stages of the study.

PROBLEM III - POOR CONDITION OF YARDS AND CONNECTING TRACKAGE

III-I: Retire Unnecessary Trackage

Discussion: A survey of the Cedar Rapids Metropolitan Area indicates that there is a considerable amount of trackage that is no longer needed and should be retired. The discontinuance of operations by the RI and the MILW has made more trackage redundant. One of the first steps that should be taken to improve a terminal is to eliminate all unnecessary track. Excess trackage requires some maintenance expenditure but, more importantly, represents a source of material for upgrading other, necessary, trackage. Since the sale of scrap or property released following track retirements is a source of cash for the railroads, to a certain extent track retirements can provide both material and cash for upgrading other trackage that is essential.

Track retirements also may eliminate grade crossings (or reduce the number of tracks through a crossing), make grade separations unnecessary, minimize cost and maintenance of crossing signalization and make property available for uses more beneficial to the community.

The entire terminal area should be carefully examined to determine what trackage can be retired and what must be retained for efficient future operations.

Implementation: The actions required to implement this solution are:

- Each railroad makes a thorough survey of its property to determine what trackage can be retired and what must be upgraded
- Railroad estimates salvage costs and credits
- Railroad prepares a work program and schedule, and proceeds with the work.

Costs/Benefits:

Capital Investment: None.

Operating Expense: None. (Normally, salvage credits exceed the cost of retirement work.)

Operating and Capital Benefits:

- Reduced maintenance expense because of less trackage
- Possible one time cash benefit from sale of salvaged material or released property
- Reduced signal maintenance expense where trackage at signalized street crossings is removed.

Funding: For the most part, track retirements are profitable to railroads because reusable material is made available and scrap and released property can be sold. For these reasons, no funding should be required for this action.

Major Potential Retirements: A number of potential retirements have been identified and preliminary estimates made of costs, benefits and funding possibilities. Table VI-4 summarizes each major area and Figure VI-3 identifies the locations involved. There are substantial retirements possible in the 4th Street corridor; these are discussed in connection with Problem IX as part of the overall plan for this area.

General Evaluation: The elimination of redundant trackage will reduce maintenance expense, provide reusable material, generate cash from scrap sales and permit property to be used for more beneficial community and industrial purposes. The specific retirements already noted, as well as others that may be identified, should be considered and progressed by the railroad involved.

III-2: Railroads Rehabilitate Terminal Trackage

Discussion: The condition of yards and connecting trackage within the study area ranges from fairly good to below FRA Class 1 standards. For a number of years there has been little, if any, systematic rehabilitation; maintenance generally has been limited to the minimum needed to keep trackage in service. To provide for safe, efficient movement of traffic without disruptions due to derailments, track should be brought to at least FRA Class 1 standards and maintained at these standards. Each railroad should institute a rehabilitation program for yards and connecting trackage once all unnecessary trackage is retired.

Table VI-4

MAJOR AREAS WITH TRACK RETIREMENT POTENTIAL

Railroad	Location	Feet of Track	Number of Turnouts	Number of Grade Crossings	Number of Railroad Crossings	Net Cost	Annual Maintenance Savings	Notes
CNW	Beverly to Transfer Yard	17,323	18	26	0	$96,100	$46,000	Requires CNW acquisition of part or all of the RI yard.
CNW	Transfer Yard	6,565	15	0	0	17,650	6,500	
MILW	North end of MILW yard to National Oats	6,040	4	4	0	3,000	8,100	The connection from the ICG National Oats lead to the MILW would have to be upgraded.
MILW	Amana line from Iowa Manufacturing to Menard Lumber Company	14,700	4	8	0	2,900cr	19,800	Connection from ICG to MILW at Louisa required.
MILW	Marion Yard area	32,685	29	25	0	51,000cr	52,100	
MILW	Crossings at Beverly including a portion of the main line	3,000	0	2	2	10,200	23,000	See discussion of Improvement Alternative II-8 for complete details.
RI	Penick and Ford lead	6,000	1	2	0	7,000	6,100	
ICG-MILW-RI	Downtown trackage between 4th Street and Cedar River	16,245	17	27	1	52,000	12,800	Several industries would have to be relocated.
CNW-RI	4th Street Corridor	3,735	5	13	4	18,300cr	16,600	See Improvement Alternative IX-1 for complete details.

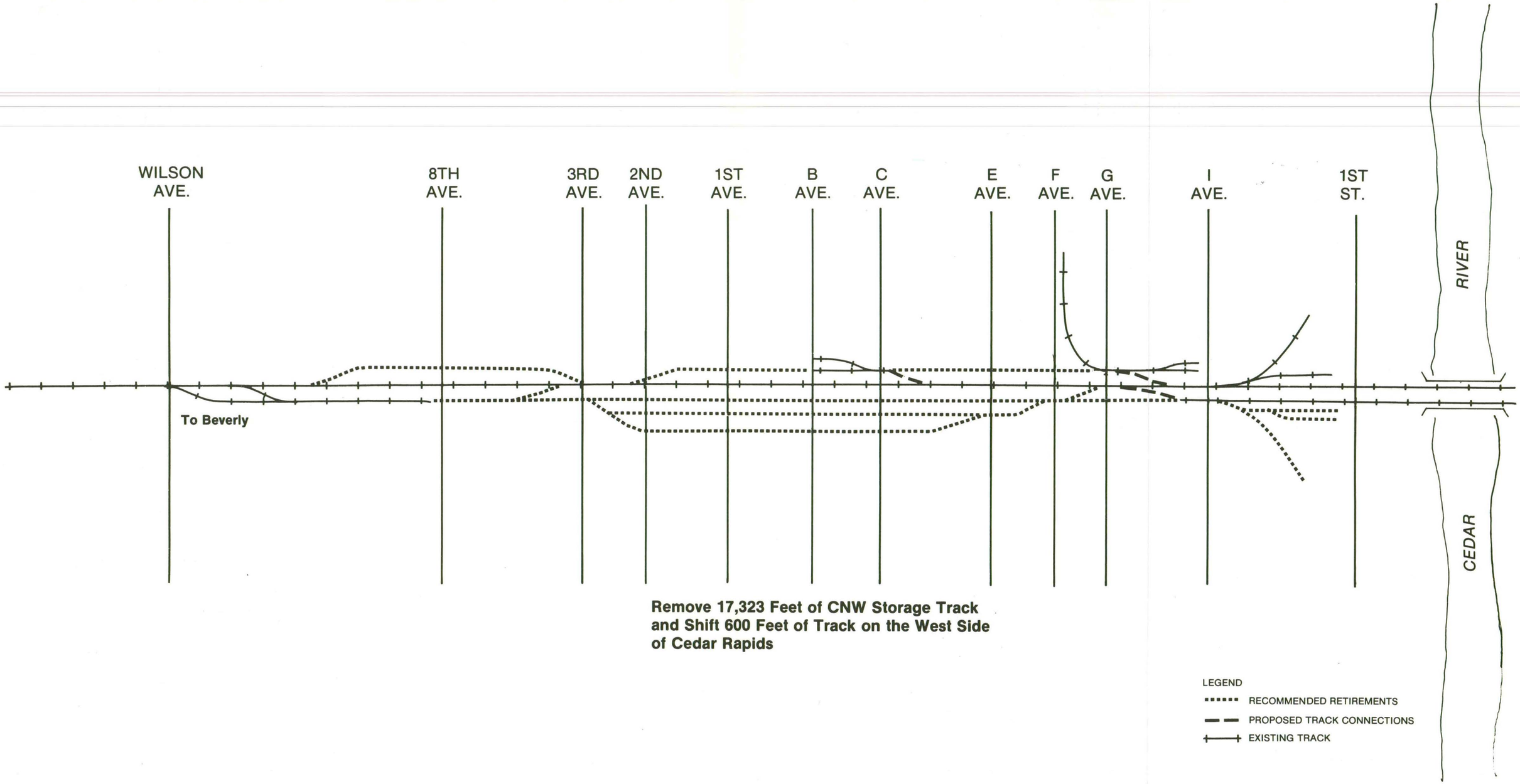


FIGURE VI-3(a)
PROPOSED TRACK RETIREMENTS
CNW - BEVERLY TO TRANSFER YARD

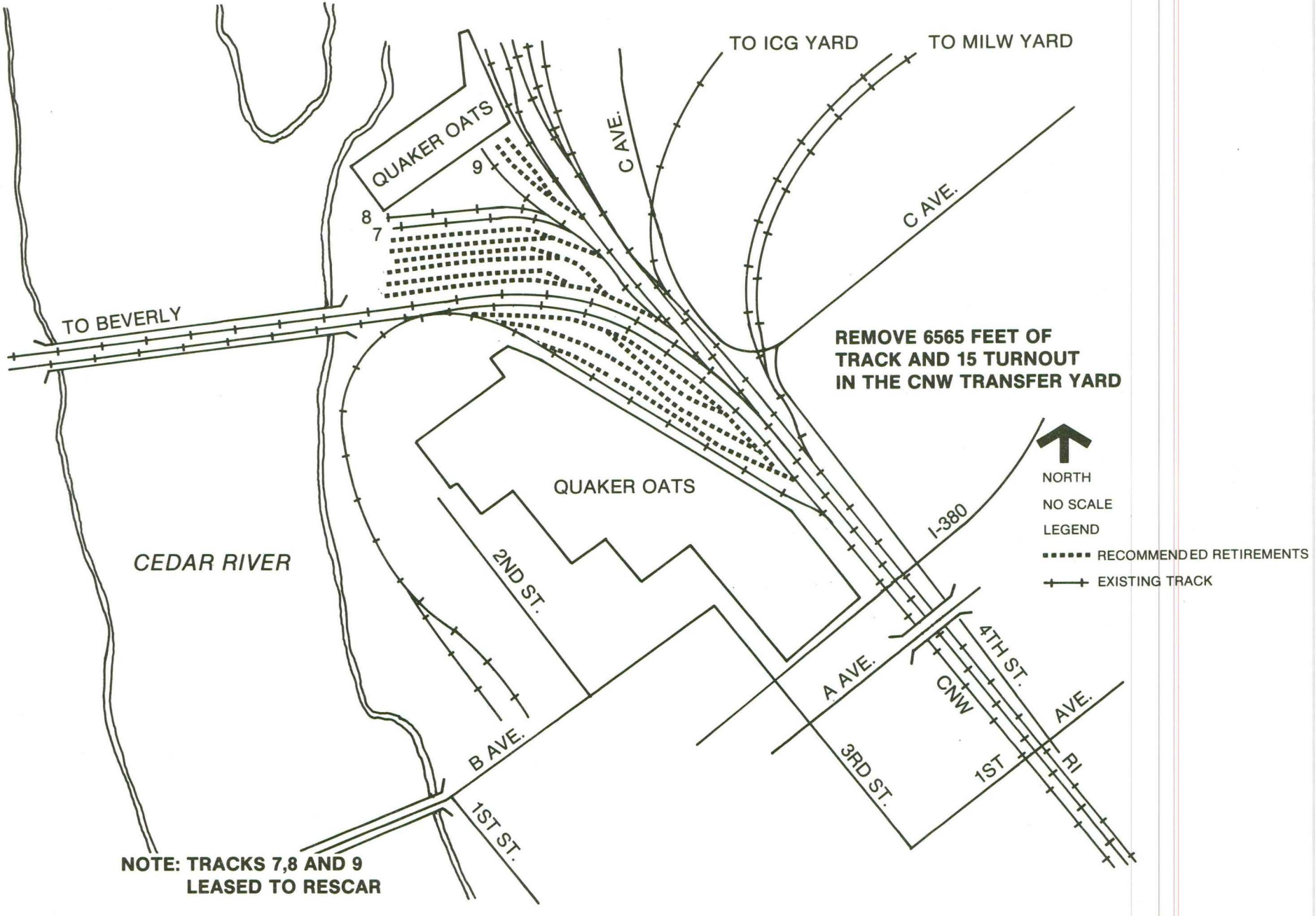


FIGURE VI-3 (b)
PROPOSED TRACK RETIREMENTS
CNW-TRANSFER YARD AREA

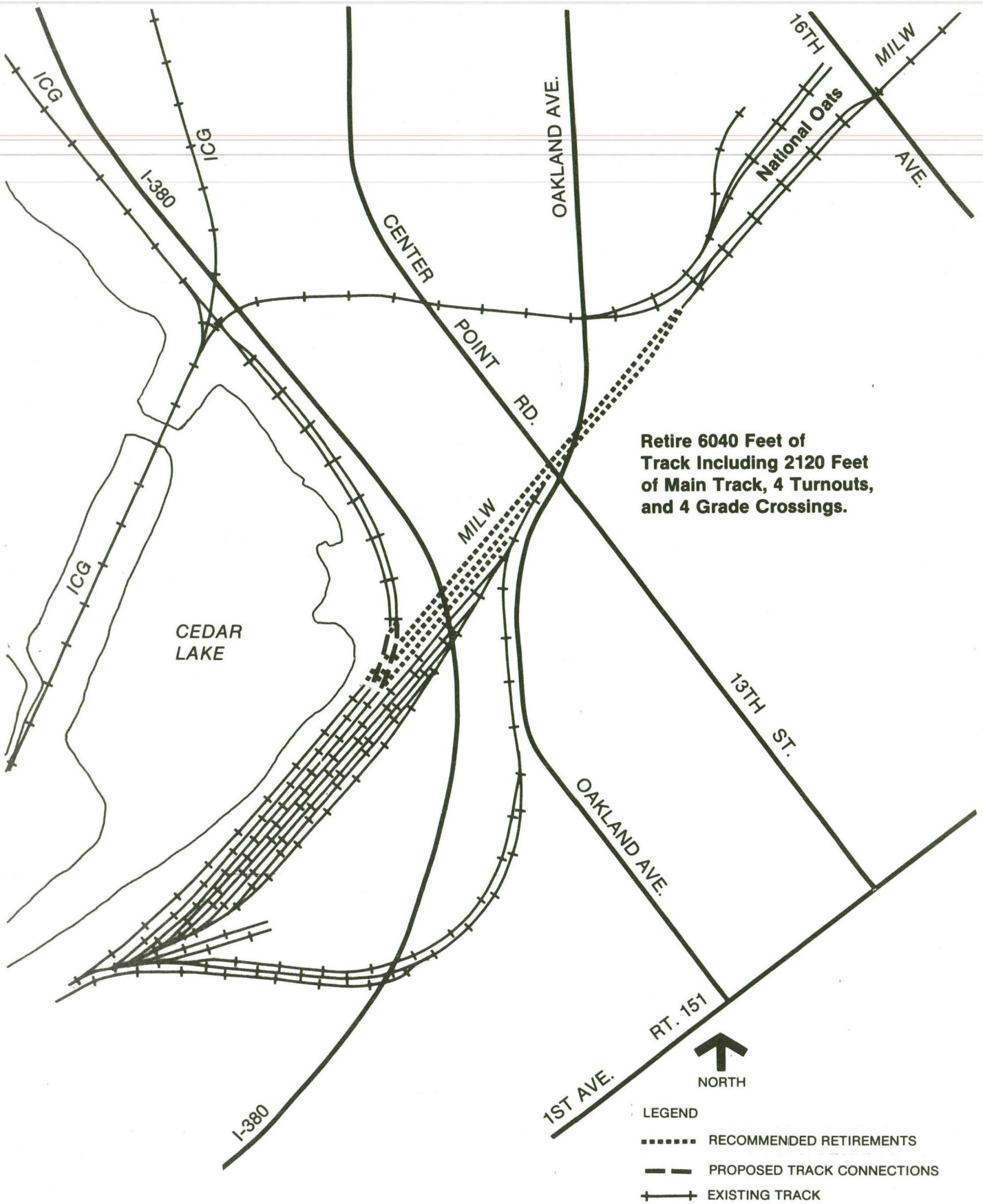


FIGURE VI-3(c)

PROPOSED TRACK RETIREMENTS
MILW-NORTH END OF YARD TO NATIONAL OATS

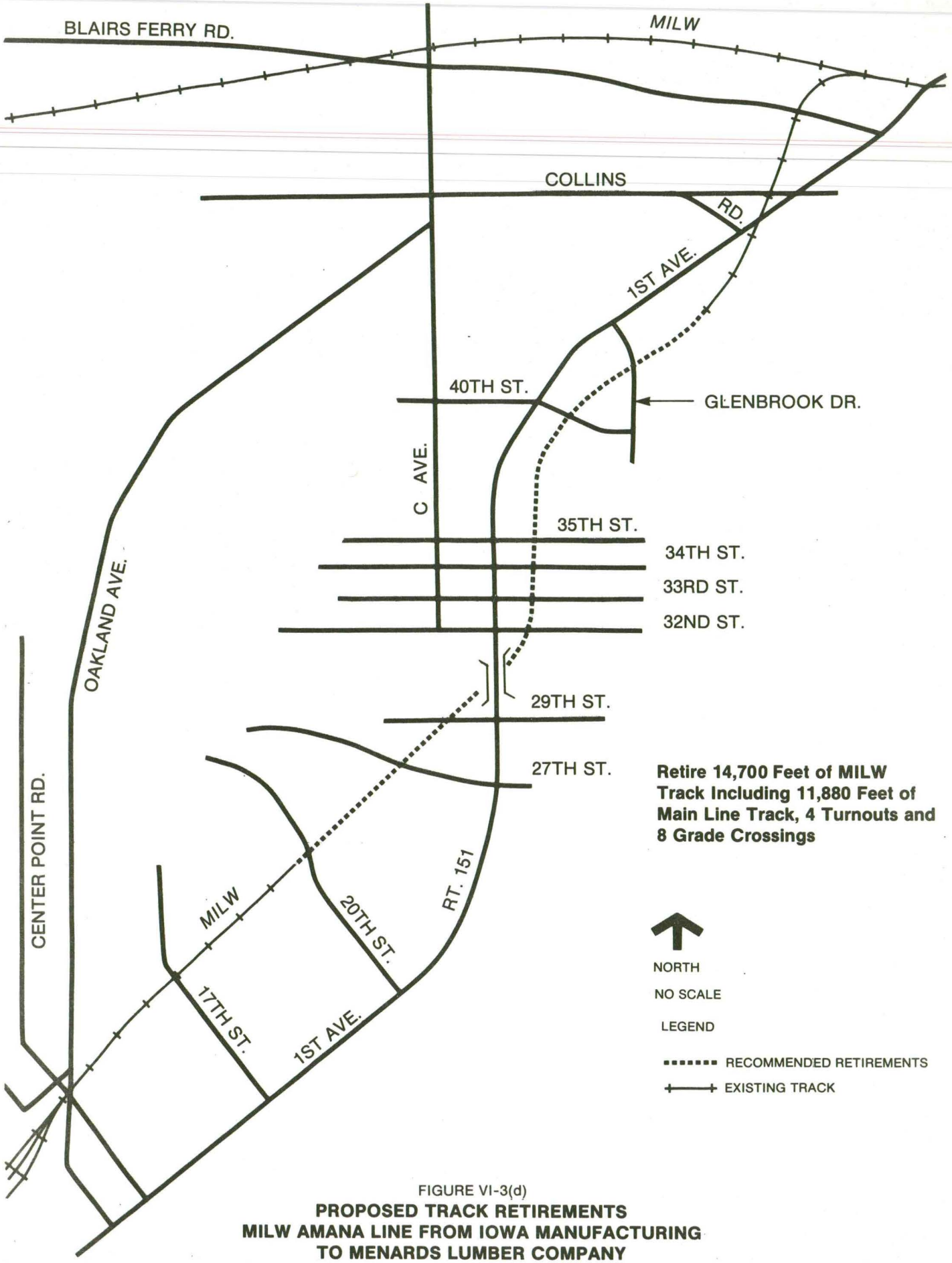


FIGURE VI-3(d)

PROPOSED TRACK RETIREMENTS
MILW AMANA LINE FROM IOWA MANUFACTURING
TO MENARDS LUMBER COMPANY

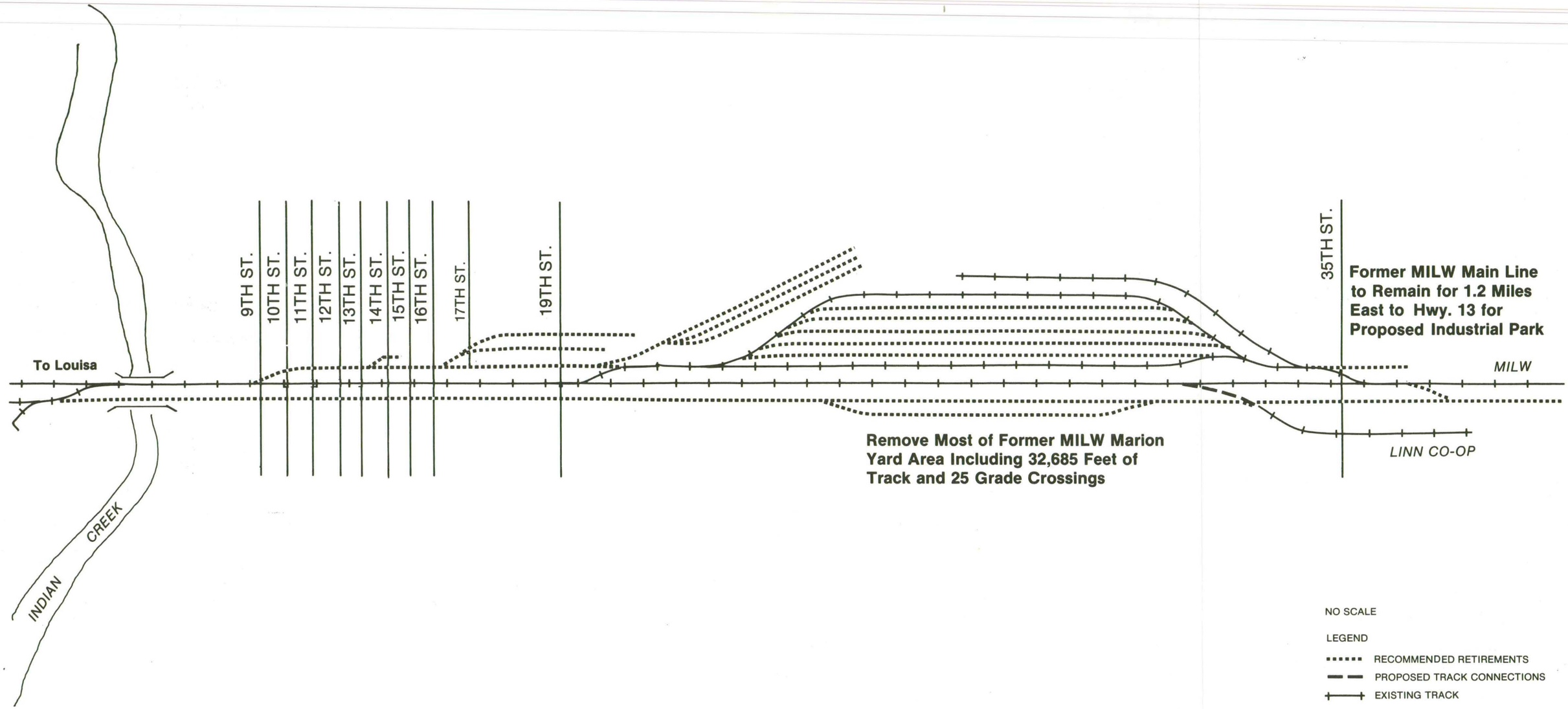
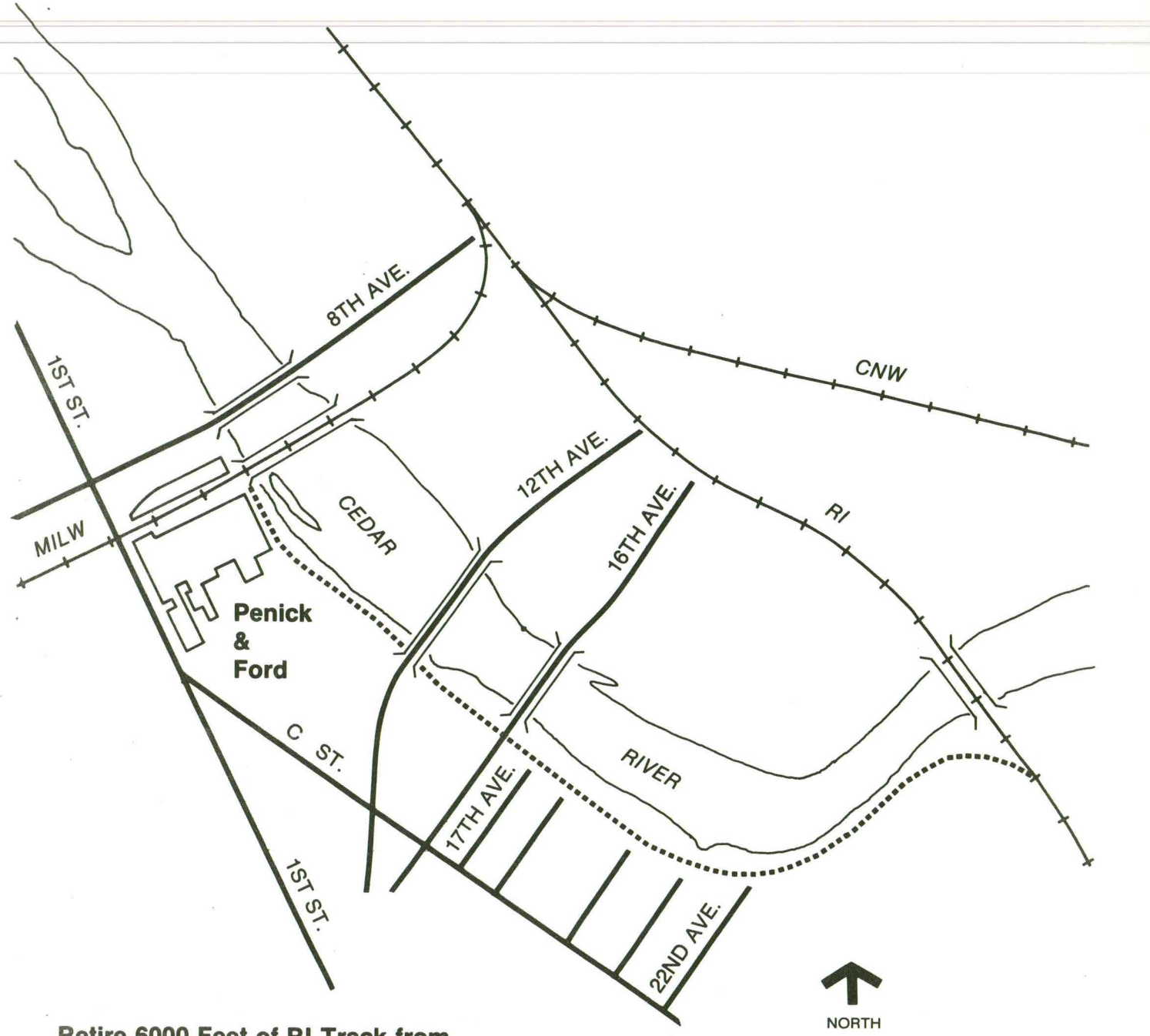


FIGURE VI-3(e)
PROPOSED TRACK RETIREMENTS
MILW - MARION YARD AREA



Retire 6000 Feet of RI Track from the Main Line to the Penick & Ford Plant

FIGURE VI-3(f)
PROPOSED TRACK RETIREMENTS
RI PENICK & FORD LEAD

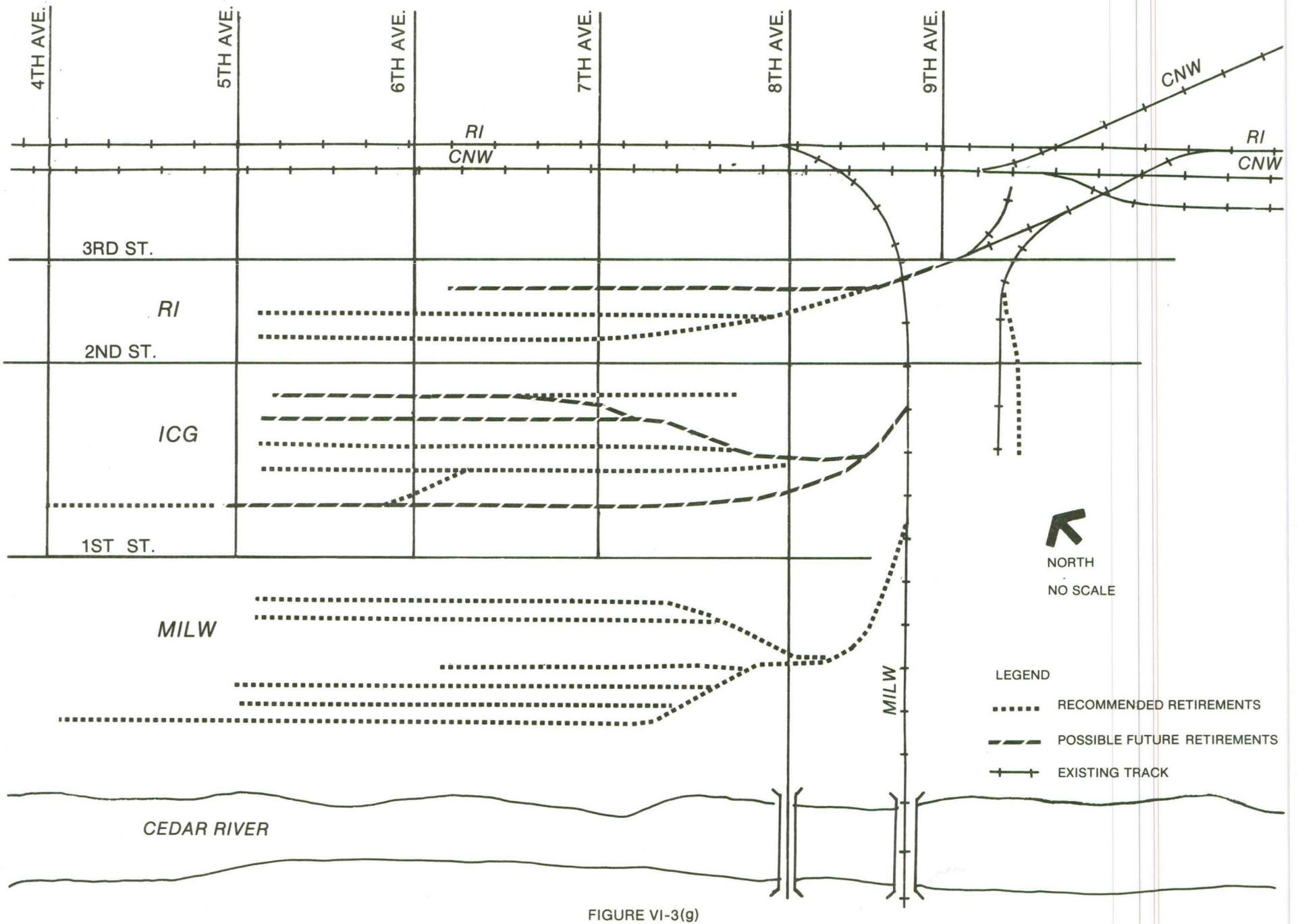


FIGURE VI-3(g)

PROPOSED TRACK RETIREMENTS
MILW - RI - ICG DOWNTOWN TRACKAGE

Implementation: The actions required to implement this solution are:

- Following a decision as to what trackage can be retired, each railroad surveys all essential yards and lines and determines what rehabilitation is required
- A work program and schedule are developed that are realistic considering the availability of manpower, material and funds.

Costs/Benefits:

Capital Investment:

- Partial costs of track upgrading.

Operating Expense:

- Partial costs of track upgrading
- Normal maintenance of trackage.

Operating and Capital Benefits:

- Reduced maintenance expense following major upgrading
- Less derailment expense
- Possible reduction in yard engine time because of increased permissible speeds in certain areas.

Funding: Possible sources of funding are:

- Railroads finance internally or with money available through the 4R Act
- Material salvaged from retirements may be used to reduce cost of rehabilitation
- Funds may be available from State assistance programs
- Where grade crossings are involved, Federal crossing improvement funds may be available and/or the City might participate.

General Evaluation: Assuming that railroads are to stay in business, trackage cannot be allowed to deteriorate beyond a certain level. Some trackage has now reached this minimum level. A systematic terminal rehabilitation and maintenance program does not, perhaps, get the attention from railroad management that main line upgrading does but it is nearly as important in the overall performance and profitability of the company.

**III-3: Industries Rehabilitate and Maintain Their Own In-plant Trackage

Discussion: With one exception, the railroads serving the Cedar Rapids area have not adequately maintained industrial trackage that they own and for which they are responsible. A chronic shortage of funds has resulted in deferral of low priority work (such as maintenance of industrial trackage). In recent years the trend has been for industries to assume ownership and/or maintenance responsiblity for trackage within their plants. To the extent that industries want and need rail service, they should assume this obligation since there is little likelihood the railroads will be able to afford the expense of adequate maintenance in the foreseeable future.

Implementation: The actions required to implement this solution are:

- Each industry decides if continued rail service will justify the expense of maintaining in-plant trackage
- Each industry makes the necessary arrangements for upgrading and periodic maintenance of in-plant trackage.

Costs/Benefits:

Capital Investment: In most cases, none.

Operating Expense:

- Cost of periodic track maintenance.

Operating and Capital Benefits:

- Reduced derailment expense and costs of service interruptions.

Funding: No capital costs are involved but industries would absorb future track maintenance costs.

General Evaluation: Adequate maintenance of in-plant trackage is necessary for efficient and uninterrupted service as well as safety. Barring a dramatic improvement in the railroads' financial position, maintenance of industrial trackage will continue to be neglected. Industries that need continued rail service should accept the expense of track maintenance as part of overall transportation costs.

PROBLEM IV - DELAYS ASSOCIATED WITH INTERCHANGE MOVEMENTS

† IV-1: Establish Direct Interchange Between CRANDIC and ICG

Discussion: At present there is no direct interchange between the CRANDIC and ICG; traffic between these two carriers is handled by the MILW. A review of records indicates that the intermediate movement on the MILW delays cars 10 to 35 hours. Also, an intermediate switch charge of $47.00 per load is assessed. When the MILW ceases operation, a direct interchange should be established. The interchange point could be in the MILW yard or the CRANDIC could deliver and pull from the ICG yard. No physical plant changes are required for this plan, although some track upgrading should probably be done.

Implementation: The actions required to implement this solution are:

- CRANDIC obtains operating rights on the MILW and RI between Uptown Yard and the MILW and ICG yard. Alternatively, CRANDIC buys the MILW portion of the route
- CRANDIC and ICG establish a new interchange arrangement and division of costs.

Costs/Benefits:

Capital Investment:

- Purchase price of MILW trackage (if CRANDIC and/or ICG buys trackage)
- Upgrading the trackage.

Operating Expense:

- Trackage rights charges
- Maintenance of purchased trackage
- Minimal additional yard engine time for direct interchange.

Operating and Capital Savings:

- ICG and CRANDIC would save intermediate switch charge now paid to MILW

- ICG and CRANDIC would save car hire costs by eliminating delays to traffic

Funding: The CRANDIC and ICG should finance the purchase of necessary MILW trackage if this course of action is taken. With an operating rights arrangement, no cash outlay would be required. In either case, savings on intermediate switch charges and car hire now incurred would offset these costs.

General Evaluation: This alternative is now in operation on an interim basis and will become permanent if negotiations between the CRANDIC, ICG and the Trustees of the MILW and RI for property purchase are successful.

* IV-2: Establish Direct Interchange Between CRANDIC and RI

Discussion: Interchange traffic between the CRANDIC and RI is now handled by the MILW. A car movement check shows that this intermediate move delays traffic from 8 to 25 hours. In addition, there is a $47 per load intermediate switch charge for this service. When the MILW ceases operations in the Cedar Rapids area, a direct CRANDIC-RI interchange should be established. The most efficient operation appears to be for the CRANDIC to move cars both ways over RI and MILW trackage and for the interchange point to be the RI yard. No physical plant changes would be needed but some track upgrading would be desireable.

Implementation: The actions required to implement this solution are:

- CRANDIC obtains operating rights over the MILW or purchases this line
- CRANDIC and RI agree to a new interchange arrangement under which CRANDIC would get the necessary trackage rights and the division of cost would be established.

Costs/Benefits:

Capital Investment:

- Purchase price of MILW trackage (if CRANDIC buys)
- Upgrading of track.

Operating Expense:

- Trackage rights charges
- Maintenance of purchased trackage
- Additional yard engine time required to make direct interchanges.

Operating and Capital Benefits:

- RI and CRANDIC would save intermediate switch charges now paid to MILW
- RI and CRANDIC would reduce car hire costs by eliminating delays to traffic now incurred.

Funding: The CRANDIC would finance the purchase of required MILW trackage if this alternative is followed. Otherwise, if trackage rights are obtained, no initial investment would be required. In either case, the elimination of intermediate switch charges would offset the costs for purchase of property, trackage rights or increased yard engine expense.

General Evaluation: This alternative is no longer necessary because the RI has terminated all operations in the Cedar Rapids area. If, however, the KCS should become the operator of the former RI line through Cedar Rapids, a direct interchange between the CRANDIC and KCS should be considered.

* IV-3: Establish Pool Interchange Yard

Discussion: One method of speeding up interchange movements would be to establish a common interchange location where all railroads would deliver and pull. Since the MILW has now ceased operations in the Cedar Rapids area, the MILW yard could be used for this purpose. The advantage of a pool yard would be that traffic for two or more railroads could be delivered in one trip and, conversely, cars from two or more pulled. The disadvantage is that, where there is now a reasonably efficient direct interchange between two carriers, an extra transfer move would result from a pool yard arrangement.

Implementation: The actions required to implement this solution are:

- All railroads agree to a pool interchange yard arrangement and work out an equitable division of costs

. The participants purchase the MILW yard for this purpose.

Costs/Benefits:

Capital Investment:

. Purchase of MILW yard

Operating Expense:

. Trackage rights charges over foreign line tracks to MILW yard as required

. Maintenance of pool yard

. Possible additional yard engine time

. Possible increase in car hire costs

Operating and Capital Savings:

. Elimination of intermediate switch charges

. Possible savings in yard engine time

. Possible decrease in car hire costs.

Funding: The participating railroads would finance purchase of the MILW yard for use as a pool yard. Overall, it is doubtful if there would be sufficient yard engine or car hire savings to offset the capital investment.

General Evaluation: Because two railroads, the MILW and RI, no longer operate in Cedar Rapids and because there are now direct interchanges between the remaining three carriers, there would be no advantage in the establishment of a pool interchange yard. This alternative was therefore eliminated from consideration.

IV-4: Better Coordination of Interchange Movements Between Railroads

Discussion: Faster overall movement of traffic can result when interchanges are made on a regular basis, with established cut-off times for delivery to industries or dispatchment in outbound trains. For example, the CNW would guarantee that all outbound traffic received from the CRANDIC by a

designated time would depart on certain trains. Conversely, the CRANDIC might make a commitment that all cars received from the CNW by a specified time would be spotted at the consignee within a certain number of hours. Scheduled interchanges assist in creating a systematic and disciplined operation. Each railroad knows what it is expected to do and customers can readily ascertain the responsibility for service failures. This is entirely an operating arrangement and can be implemented by mutual agreement among the railroads.

Implementation: The action required to implement this solution is:

- All carriers participate in the development of realistic scheduling of interchange.

Costs/Benefits:

Capital Investment: None.

Operating Expense: Minimal, if any.

Operating and Capital Benefits:

- Reduced car hire cost because of faster movement of traffic
- Increased revenue if better service generates more traffic
- Reduced shipping costs to industries to the extent that improved rail reliability precludes use of alternate modes of transportation.

Funding: No capital investment is required and operating expense, if any, would be minimal.

General Evaluation: For most traffic moving in and out of the Linn County area, railroads are the low cost mode of transportation. However, the unreliability of service ranks next to the shortage of cars as the major reason traffic often moves by truck rather than rail. Railroads have made substantial improvements in transit time and reliability of service in selected movements; unit grain and coal trains and piggy-back trains being the most common examples. Unfortunately, there has been little done to program the

movement of general freight.[1] Improvements in expediting cars in and out of Cedar would not solve the whole problem but would certainly help. Coordination of interchange activities would be a significant step in the right direction.

(1) Automobile industry traffic is an exception. Nearly all auto parts and finished automobiles move on schedules agreed to by manufacturers and the railroads. Railroads have generally provided acceptable levels of performance. To an extent, this indicates that railroads can, when committed, provide service within reasonable transit timeframes.

PROBLEM V - LACK OF DISCIPLINED PROGRAM FOR SWITCHING, INTERCHANGE AND ROAD MOVEMENTS

V-1: Railroads Provide Schedules for Movement of Traffic

Discussion: As a starting point in developing systematic and reliable rail service, each railroad should establish schedules for the movement of traffic to and from major gateways and local points. When schedules exist, railroad personnel know their company is committed to a certain level of service which can and should be monitored. Also, customers not only have specified transit times for shipment but can readily determine whether or not the railroads are meeting the established goals.

Movement schedules should be as fast as possible but must be realistic. While it is probably impractical to schedule traffic from small or infrequent shippers, schedules should be provided for all major shippers. However, as movement of traffic of major industries becomes more systematic and disciplined, the traffic of smaller shippers should benefit as well.

Implementation: The actions required to implement this solution are:

- Each railroad develops schedules for outbound traffic from major shippers. These schedules provide that, based on a certain cut-off time for shipments or receipt of interchange cars from other carriers, shipments depart from Cedar Rapids on specified trains

- For inbound traffic, each railroad establishes schedules that guarantee availability of cars to industries or interchange to other carriers within a certain number of hours following arrival

- Schedules are circulated to railroad operating personnel so that all involved are fully aware of the goals.

Costs/Benefits:

Capital Investment: None.

Operating Expense:

- A relatively minor cost for personnel to develop and publish schedules

Operating and Capital Benefits:

- To the extent car movement is improved, car hire costs will decrease

- Rail movement will become more attractive to shippers as a result of scheduled service and demonstrated ability of railroads to perform.

Funding: No capital costs are involved; preparation of schedules would require only a modest amount of labor expense.

General Evaluation: Establishing schedules for traffic does not cause cars to move faster; this action is simply a commitment by a railroad to provide a certain level of service to customers. Car movement is improved because railroad employees at all levels have the physical means and personal dedication necessary to deliver as promised. Schedules are a tool to build discipline into the system and are useful to shippers as a guide to transit times that may be expected. Schedules are important to both shippers and railroads as a yardstick by which to measure actual performance.

This alternative is relatively simple and inexpensive to implement but could result in sizable improvements in the movement of traffic.

A sample of the type of schedule proposed is shown in Table VI-5.

V-2: Improve Blocking of Traffic and Through Train Operation

Discussion: To provide the fastest and most efficient movement of traffic, trains must be blocked to minimize enroute handling. Schedules of assigned trains are normally designed to move the most cars as rapidly as possible with the least handling. Nearly all railroads develop blocking and scheduling patterns to attain these goals. However, over a period of time, these patterns often become obsolete because of changes in traffic volume, service requirements or other factors. With the elimination of RI and MILW operations in the Cedar Rapids area, there will be substantial

Table VI-5

SAMPLE SCHEDULES

Outbound

1. Single Line

Shipper	Quaker Oats
Routing	CNW
Destination	Milwaukee, WI

Movement:

Cars pulled by -		8:00 P.M.	Day 0
Depart Cedar Rapids	Train #254	11:45 A.M.	1
Arrive Proviso	Train #254	12:30 A.M.	2
Depart Proviso	Train #289	7:45 A.M.	2
Arrive Milwaukee	Train #289	3:00 P.M.	2
Spotted at Consignee by -		11:00 A.M.	3

2. Interchanged at Cedar Rapids

Shipper	Corn Sweeteners
Routing	CRANDIC-ICG
Destination	Freeport, IL

Movement:

Cars pulled by -		3:00 P.M.	Day 0
Interchanged to ICG by -		7:00 A.M.	1
Depart Cedar Rapids	Train #478	4:30 P.M.	1
Arrive Manchester	Train #478	6:30 P.M.	1
Depart Manchester	Train # 78	12:01 A.M.	2
Arrive Freeport	Train # 78	4:00 A.M.	2
Spotted at Consignee by -		5:00 P.M.	2

3. Interchanged at Enroute Location

Shipper	General Mills
Routing	CNW-Chicago-Conrail-Buffalo, N.Y.

Movement:

Cars pulled by -		12:01 A.M.	Day 0
Depart Cedar Rapids	Train #254	11:45 A.M.	0
Arrive Chicago	Train #254	12:30 A.M.	1
Interchanged to Conrail by -		11:00 P.M.	1

Table VI-5 (Concluded)

SAMPLE SCHEDULES

Inbound

1. Consignee Served by Road Haul Carrier

Consignee	Cargill		
Inbound Carrier	CNW		
Movement:			
Arrive Cedar Rapids	Train #259	9:45 A.M.	Day 0
Spotted at Cargill by -		5:00 P.M.	1

2. Interchanged at Cedar Rapids

Consignee	National Oats		
Inbound Carrier	CNW		
Movement:			
Arrive Cedar Rapids	Train #260	9:00 A.M.	Day 0
Interchanged to ICG by -		7:00 A.M.	1
Spotted at National Oats by -		11:00 P.M.	1

changes in the traffic handled by the remaining railroads. Each carrier should make a thorough analysis of traffic and determine what changes in blocking and/or train operation are needed to provide optimum service.

Implementation: The actions required to implement this solution are:

- Each railroad examines traffic flow to determine volumes, routing, and any inadequacies in present train scheduling and blocking
- Where problems are noted (for example, cars not being moved because scheduled trains are consistently overloaded), railroads change or add service as required
- Each railroad commits adequate power to trains serving Cedar Rapids to ensure scheduled movement of traffic
- Each railroad periodically on a systematic basis reviews scheduling and blocking so that service can be adjusted to match changes in traffic patterns.

Costs/Benefits:

Capital Investment: None.

Operating Expense:

- Initially, limited labor costs to analyze car movement and develop improved blocking and scheduling
- A possible increase in operating expense to the extent that additional train service is added.

Operating and Capital Benefits:

- Improved blocking and train scheduling may reduce switching at terminals, thus reducing yard engine expense
- More appropriate blocking and scheduling may reduce terminal congestion, thus reducing car hire and yard engine expense

- Faster overall movement of traffic will reduce car hire costs

- Improved service may result in increased traffic and revenue.

Funding: No capital costs are involved and initial expense would be limited to labor costs required to make traffic studies and revise blocking and scheduling. The railroads should absorb these costs.

General Evaluation: With the major changes in traffic flow that have resulted from the end of MILW and RI service in the Cedar Rapids area, it is necessary that the surviving road haul carriers analyze their operations and make adjustments as required. This is already being done; for example, the CNW has established daily service between Proviso (Chicago) and Cedar Rapids, and the ICG has assigned more units and is running frequent extra trains in and out of Cedar Rapids. These efforts should be continued.

* V-3: Establish a Coordinated Operating Control System for the Entire Terminal Area

Discussion: One method to improve the movement of traffic within a terminal area is to establish a centralized control system. A joint terminal dispatcher or general yardmaster can be given authority to govern all terminal movements, particularly interchanges and operations over trackage used by more than one railroad. With centralized control, more efficient operations are possible, resulting in faster transit time and reductions in delays caused by conflicting movements. To maximize benefits, a terminal operating plan should be developed with scheduled movements for interchanges, connections to in- and outbound trains and switching of industries. To make such a plan work, cooperation between railroads is critical.

Implementation: The actions required to implement this solution are:

- The railroads agree that centralized control would be beneficial and cost effective

- A plan is developed which would include manning requirements, headquarters location, communications, division of costs and operating procedures

- The plan is put in operation for a trial period
- If the trial operation is successful, a centralized control system is put in effect on a permanent basis.

Costs/Benefits:

Capital Investment:

- Costs to set up an office and provide communications.

Operating Expense:

- Minor labor cost to develop the system
- Cost of manning the control center.

Operating and Capital Benefits:

- Reduced yard engine expense because a better coordinated overall operation would result in fewer delays
- Reduced car hire expense because of faster movement of traffic
- Possible increase in traffic and revenue with improved service.

Funding: Capital costs would be minor; the major expense would be labor costs for staffing the control center. This plan would be feasible only if the possible savings exceeded operating expense or, as a result of improved service, additional traffic and revenues were generated.

General Evaluation: With only three railroads remaining in the Cedar Rapids area, operating conflicts between carriers should be reduced considerably. It is unlikely that a centralized control system imposing another layer of management would be warranted. Reasonable cooperation between the railroads should provide many of the benefits possible with a formal control system.

V-4: Establish a Terminal Steering Committee

Discussion: To facilitate well coordinated terminal operations, a committee made up of local railroad supervisory personnel

should be established. To be effective, this committee should meet regularly to discuss mutual problems, changes in traffic patterns, and any other appropriate subjects relating to overall terminal operations. The members of the committee should be able to make commitments on the part of their respective companies, or at least be in a position to make recommendation to higher levels of management. The committee could be supplemented on an ad hoc basis by representatives of industries and the community at large.

Implementation: The actions required to implement this solution are:

- Railroads agree that such a program would be mutually advantageous
- Railroads establish meeting format and frequency, and designate representatives
- Railroads establish the purpose and specific goals of the steering committee.

Costs/Benefits:

Capital Investments: None.

Operating Expense:

- Minimal since participants would probably be salaried personnel.

Operating and Capital Benefits:

- Difficult to ascertain but as the program proceeds, tangible results should be evident.

Funding: None required.

General Evaluation: A valid criticism of this proposal is that there already is an organization in existence that, in general, is concerned with the same problems as would be a terminal steering committee. This organization, in various forms and under various names, has, in fact, been in sporadic operation for many years. Accomplishments have likewise been sporadic and sometimes short-lived.

What is needed is a small, active group of railroad people that have defined goals and the authority to make decisions

on the part of their respective companies in a timely manner to provide a better overall level of service to shippers.

*V-5: Establish a Joint Agency and Yard Office

Discussion: At present, each railroad operating in Cedar Rapids maintains a separate agency and clerical force. Consolidation of these activities would result in a more unified organization and should permit some reduction in total personnel. With the elimination of the MILW and RI, some of this consolidation will take place more or less automatically. However, even more could be done by agreement among the surviving railroads. The major problems that would be encountered in setting up this program would be gaining acceptance on the part of the labor unions and overcoming the normal reluctance of railroads to joint ventures. However, the possibilities of operating improvements and reduction of costs by eliminating duplication of functions are important enough to warrant exploration of this idea.

Implementation: The actions required to implement this solution are:

- The railroads agree that a joint agency and yard office arrangement would be feasible
- A study of all clerical functions in the terminal is made and the physical location of offices, staffing and work assignments is developed
- The necessary labor agreements are negotiated
- Equitable division of expense among the participating railroads is developed.

Costs/Benefits:

Capital Investment:

- Construction or modifications of agency and yard offices
- Installation of required communications and data processing equipment.

Operating Expense:

- Labor expense of joint personnel
- Costs associated with utilities, maintenance of structures, provision of communications and data processing equipment, etc.

Operating and Capital Benefits:

- Labor savings resulting from consolidation
- Possible reduction in number of offices required
- Possible avoidance of costs of space now rented or leased
- Consolidation may release space and permit sale of structures or property.

Funding: Major capital costs would be for office space, communications, and data processing equipment. These costs would be offset to some extent by the elimination of duplicate facilities. Other than operational improvements that should result, the largest benefit of a consolidation would be labor savings resulting from elimination of duplicative functions. These savings should be sufficient to make the project self-supporting.

General Evaluation: The departure of the MILW and RI from the Cedar Rapids metropolitan area has resulted in yard office and agency functions being consolidated within the organizations of the three surviving carriers. Reductions in expense are already being realized and shippers have benefitted to the extent that they deal with fewer carriers and people. Any joint efforts on the part of the railroads to further consolidate agencies and/or yard offices should be done quickly before patterns become firmly established. If fast action is not taken, it is very unlikely that any joint arrangement will be forthcoming in spite of the cost savings or operational benefits.

* V-6: Establish a Terminal Railroad

Discussion: The possible improvements in car movement that a Terminal Railroad could offer were suggested in the Report of the Cedar Rapids Terminal Railroad Study Group in 1976. A terminal railroad could offer certain advantages, principally:

- Crew savings, since with one railroad serving all industries, more efficient use of yard engines should be possible

- Clerical and maintenance savings since such activities could be centralized to a considerable extent

- Better coordination of intraterminal car movement with all operations controlled by one railroad.

On the other hand, the disadvantages of a terminal railroad would be:

- Every in- and outbound car would have to be interchanged in the terminal

- The process of establishing a terminal railroad and working out divisions of ownership and operating expenses would be extremely difficult

- Railroads are reluctant for both operating and competitive reasons to become involved in new terminal railroad arrangements

- Labor agreements would have to be negotiated and it is highly unlikely that the unions involved would agree to the changes necessary to permit an efficient terminal railroad operation.

Since some of the operational advantages can be achieved without actually establishing a terminal railroad, it is our opinion that this approach is not feasible, particularly considering the negative aspects. In addition, a considerable degree of consolidation will result as RI and MILW operations are absorbed by the three remaining railroads.

PROBLEM VI - LACK OF OR INAPPROPRIATE LOCATION OF TRACK SCALES AND OTHER SUPPORT FACILITIES

*VI-1: CNW Installs Track Scale at Beverly

Discussion: The CNW's only track scale is at East Yard and all cars that require weighing must be moved to and from that location. A review of car records indicates that weighers incur at least 24 hours additional delay because of this move. If a scale were installed at Beverly, this delay could be avoided. At various times in the past the CNW has considered installing a scale but, for economic reasons, has never done so.

Implementation: The actions required to implement this solution are:

- CNW makes a determination that the installation of a scale is necessary and the cost justified by savings
- CNW installs scale.

Costs/Benefits:

Capital Investment:

- Cost of scale installation: from $60,000 to $200,000, depending on the type.

Operating Expense: Scale maintenance.

Operating and Capital Benefits:

- Reduced yard engine time because it would no longer be necessary to move cars to East Yard for weighing
- Reduced car hire costs because delays associated with movement to East Yard would be eliminated. Based on an average of 15 cars weighed per day at $8.00 car hire cost per day and a minimum of 24 hours saved, annual savings from this item alone would be approximately $43,800.

Funding: The CNW should finance the installation of the scale; preliminary calculations indicate that the cost could be recovered by the operating savings noted above in three to five years.

General Evaluation: This alternative is no longer necessary; the CNW has used the RI scale since taking over operation of RI property in Cedar Rapids and the operating benefits are being realized.

†VI-2 Joint Use of Scale at MILW Yard

Discussion: Both the CNW and ICG could save yard engine and car time if they had the use of the scale at the MILW yard. The CNW would avoid taking cars to East Yard and the ICG would no longer have to move cars to their City Yard for weighing. This would require no capital investment; it would require only the negotiation of an operating agreement with whatever railroad acquires the MILW Yard.

Implementation: The action required to implement this solution is:

- CNW and/or ICG negotiate with the eventual owner of the MILW for use of the scale.

Costs/Benefits:

Capital Investment: None.

Operating Expense:

- Rental for access to and use of scale.

Operating and Capital Benefits:

- Reduced yard engine time
- Reduced car hire expense
- Avoidance by CNW of the cost of installing a scale at Beverly
- Avoidance by ICG of the cost of relocating a scale if City Yard is abandoned.

Funding: No capital investment would be required.

General Evaluation: This alternative is already partially in effect; the ICG is using the MILW scale. If the CNW continues to operate the RI property, this road will not need the use of the MILW scale. If the KCS should take over the RI yard and the CNW is deprived of the use of the scale there, provision should be made for CNW use of the MILW scale.

PROBLEM VII - TRACKAGE AT INDUSTRIES INADEQUATE OR IN POOR CONDITION

**VII-1 Expand or Revise Industry Trackage to Permit More Efficient Operations

Discussion: To provide for efficient operations, the trackage at industrial locations must be able to accommodate the types of cars normally used, be laid out in a configuration that minimizes switching, and be in reasonably good condition. The trackage at some Cedar Rapids industries does not meet these criteria. For example, sharp curvature at some locations prevents the loading of 60-foot cars that might otherwise be utilized. Also, sharp curvature and deteriorated track conditions are major causes of derailments which disrupt both railroad and industry operations. All industrial locations should be surveyed to determine what improvements can be made.

Implementation: The actions required to implement this solution are:

- Each industry, in conjunction with the serving railroad, examines in-plant trackage to determine adequacy of layout and condition
- Plans are developed for upgrading, revising or adding trackage as is necessary
- Cost estimates are evaluated to determine what improvements are economically justified
- A work program and schedule are established and costs are allocated for improvements.

Costs/Benefits:

Capital Investment:

- Costs associated with major track revisions, additions, and some upgrading expense.

Operating Expense:

- Track upgrading.

Operating and Capital Benefits:

- Reduced yard engine time as a result of more efficient switching arrangements
- Less expense to industries for loading or unloading operations
- Reduced derailment-related expense
- Reduced track maintenance costs following major upgrading
- Possible improved car utilization where track changes will permit use of certain types or sizes now precluded.

Funding: While serving railroads might participate in financing improvements, as a practical matter the industries involved will probably have to be the major source of funds. Each industrial location should be examined on a case-by-case basis and the costs negotiated between the industry and the serving railroad.

General Evaluation: Trackage at industrial locations is frequently constrained by structures and other plant facilities that make revision or expansion difficult and costly. In spite of this, track improvement programs sometimes offer substantial operating benefits to both railroads and shippers. This is an ideal time to examine the possibilities of track revisions because, with the changes that are taking place following termination of service by the MILW and RI, there is property adjacent to some industries that could be made available. Each individual shipper should investigate its rail facilities and the costs and benefits associated with trackage improvements.

**VII-2: Revise Loading and Unloading Facilities to Accommodate Modern Cars

Discussion: Many older industrial complexes have loading and unloading facilities designed to handle rail equipment in service when the plant was built. Until the 1950's, 40-foot box cars were universally used for both packaged and bulk commodities. Today, however, 50- and 60-foot boxcars and covered hoppers predominate. Frequently, these types of rolling stock cannot be accommodated by existing plant facilities. For example, excessive curvature may prohibit

the use of cars longer than 40 feet or loading docks may be built for 40-foot cars. The result is that either the use of some cars is excluded entirely or certain equipment can be utilized only by sacrificing operating efficiency. If loading and unloading facilities are revised, modern cars can be used without restriction and both railroads and industries may improve operating efficiency.

Implementation: The actions required to implement this solution are:

- At each industrial location where car restrictions currently exist, the industry and serving railroad determine what modifications to facilities are required to permit use of modern equipment
- Costs are estimated and evaluated to determine if operational benefits or reduction of expenses justify such expenditure
- A work program and schedule are established and selected modifications are executed.

Costs/Benefits:

Capital Investment:

- Costs of revisions or additions to facilities.

Operating Expense: None.

Operating and Capital Benefits:

- Possible reduced switching resulting from more efficient layout of facilities
- Possible lower cost to industries for loading and unloading operations
- Better utilization of cars and availability of more cars if types presently restricted can be used.

Funding: This type of facility improvement would normally be paid for by the industry involved.

General Evaluation: Improvements in loading and unloading facilities are projects that each industry must evaluate individually. Costs and benefits will vary widely. These types of projects should be considered, however.

PROBLEM VIII - CAR DELAYS CAUSED BY INDUSTRY OPERATING PRACTICES

** VIII-1: Industries Unload Cars Promptly and Bill Outbound Cars When Loaded or Ordered Out of Plant

Discussion: Inbound cars that are not unloaded promptly on arrival or outbound cars held for billing after being loaded create two problems: first, the cars take up track room and create the need for double handling by the railroads, and second, car utilization suffers. Ideally, all inbound cars would be unloaded immediately on arrival in a terminal and outbound cars billed when loaded. There are valid reasons why this cannot always be accomplished. Erratic service by railroads may require industries to allow some slack in transit time and cars may bunch up en route. A production process may be such that it has to be run continuously and the product loaded into cars before shipping orders are received. To the extent that industries can minimize the holding of cars, however, overall terminal operations and car utilization can be improved.

Implementation: The action required to implement this solution is:

- Each industry examines its practices regarding ordering of inbound material and outbound shipping and makes whatever modifications are possible to avoid delaying cars.

Costs/Benefits:

Capital Investment: None.

Operating Expense:

- Possibly none, but would have to be determined on a case-by-case basis.

Operating and Capital Benefits:

- Reduced demurrage charges to industries
- Reduced switching costs to railroads and industries
- Improved car utilization

- Possible avoidance of need to maintain or construct storage trackage.

Funding: None required.

General Evaluation: Changes in loading and unloading procedures to release cars quickly may be possible at little cost or the costs may be more than offset by reductions in demurrage. Industries should examine their operations to determine how detention of rail cars could be reduced and what the cost trade-offs would be.

** VIII-2: Industries Furnish Railroads with Accurate Advance Forecasts of Equipment Requirements

Discussion: Although forecasting car requirements and keeping serving railroads advised in advance will not guarantee an adequate supply of equipment, it helps to do so. Nearly all major railroads now have some form of centralized car distribution and, if future requirements are known sufficiently in advance, there is lead time to move equipment in from outlying points and the dependence on locally available cars is reduced. To be effective, there must be good communication between shippers and the local railroad car distributors. There must also be close liaison between local railroad personnel and the car distribution center.

Implementation: The action required to implement this solution is:

- Lines of communication are established between the industry and the serving railroad and a systematic procedure is agreed to for furnishing forecasts of car requirements.

Costs/Benefits:

Capital Investment: None required.

Operating Expense: Minimal.

Operating and Capital Benefits:

- To the extent that industries get improved car supply, the expense of alternate transportation is reduced
- Car utilization should be improved.

Funding: None required.

General Evaluation: Normally, when industries furnish railroads with accurate forecasts of car requirements, the odds that the equipment will be supplied when needed are improved considerably. It is virtually a no-cost method for improving car supply and well worth the limited effort required.

VIII-3: Minimize Grain Inspection at Cedar Rapids

Discussion: Car detention, yard congestion, extra switching and the associated expense caused by grain inspection have been chronic problems in the Cedar Rapids area. In the past decade, however, there has been a dramatic shift of grain traffic from rail to truck (the rail share is now less than 20 percent) and the problem has now become relatively minor. It is still a problem, however, and could again grow to major proportions if there is a substantial increase in the rail share of grain traffic. Several relatively recent developments - unit train rail movements and the rapidly escalating price of diesel fuel - could cause this to occur. Even at the present level of traffic, rail operations in Cedar Rapids would be improved to the extent that grain inspections are reduced or eliminated. If rail tonnage of grain increases, the efficiencies from these improvements will be compounded.

One means to eliminate or reduce grain inspection at Cedar Rapids is adequate inspection at the point of origin.

Another method would be to increase the use of automatic samplers that collect grain for testing as cars are being unloaded.

A third possibility would be to advance the grain bulletin time to, perhaps, 7:00 A.M., which should result in grain being inspected and released earlier and the cars switched to consignees sooner.

None of these procedures has been totally accepted within the grain industry but substantial cost reductions might be possible if any or all could be implemented.

Implementation: The actions required to implement this solution are:

- All participants in the grain industry, from country elevators and brokers to the processors and the USDA, make a concerted effort to establish an acceptable system of origin-point inspection
- Railroads participate to the extent that clean, non-infested cars are furnished for the movement of grain
- Examine the possibility of grain inspection being performed at the consignees' plant (as is done with trucks) so that cars can move directly to these locations, thus reducing switching
- Explore more widespread use of automatic samplers
- Study the possibility of an earlier grain bulletin time
- Examine the feasibility of grain being bulletined and inspection conducted regularly on a seven-days-a-week basis to avoid weekend delays.

Costs/Benefits:

Capital Investment: Might require expenditures to develop an acceptable system of origin-point inspection of grain.

Operating Expense: Possible increase in cost of providing local grain inspection services daily rather than Monday through Friday.

Operating and Capital Benefits:

- Reduced switching expense for railroads
- Improved car utilization
- Possible reduction in demurrage charges
- Possible reduction in storage track requirements
- Reduction in costs of grain inspection if extra inspections are eliminated
- Improved transit time for grain shipments.

Funding: The only initial funding required would be that associated with a study to develop a satisfactory system of origin-point inspection of grain. This would appear to be a project that the USDA might participate in.

General Evaluation: More widespread use of automatic grain samplers would offer the best short-term improvement in grain inspection procedures. Changes in bulletin time (which would require tariff modifications) and increased use of origin point inspection would need study and establishment of standards acceptable to the grain industry.

PROBLEM IX - RAIL/HIGHWAY CONFLICTS IN THE 4TH STREET CORRIDOR

IX-1: Improve the Railroad Physical Plant in the 4th Street Corridor to Expedite Movements

Discussion: From a community standpoint the 4th Street rail corridor, extending from north of 1st Avenue to 12th Avenue, constitutes the worst rail-related problem in the study area. There are 12 grade crossings over two running tracks south of 3rd Avenue and over two running tracks and a switching lead north of 3rd Avenue. Industrial spurs also cross several of the streets in this area. The most serious rail-highway conflicts occur at the 1st Avenue through 5th Avenue crossings. These five arterial streets carry over 53,000 vehicles per day, based on the latest available (1979) traffic count.

Rail movements over these crossings were frequent when the MILW and RI were still operating and averaged about 75 per day over 1st Avenue, 40 per day over 2nd Avenue and 25 per day from 3rd Avenue south. Since the demise of the MILW and RI there has been a slight reduction from 3rd Avenue south. The movements over 1st and 2nd Avenues are essentially unchanged, however, since the preponderance of these moves are required for interchange between the four yards north of 1st Avenue and switching at the Quaker Oats plant.

The situation is made even worse by poor track conditions that restrict the speed of rail movements to 10 mph, and by out-of-date crossing warning signals that operate for an excessive length of time before trains actually occupy crossings. With respect to the latter point, a study made in 1972 noted:(1)

> At the 1st Avenue crossing, the signals were activated 66 times between 6 A.M. and 6 P.M. for a total time of 1 hour 50 minutes, or 15.3 percent of the 12-hour period. The tracks were actually blocked for 52 minutes 53 seconds, or 7.3 percent of the 12 hour period. Twenty-six of the 66 times that the signals were activated, the train or switch engine failed to block 1st Avenue. These 26 occasions accounted for 22 minutes 50 seconds of what appeared unnecessary "on" signal time.

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(1) CBD Railroad Crossing Study, Traffic Engineering Department of Public Safety, City of Cedar Rapids, December, 1972.

A further undesirable aspect is that the roadway surfaces of the crossings are generally in poor condition.

To resolve this problem, consideration was given to the possibility of removing part or all of the trackage through the corridor. With RI through train movements eliminated, this vacation was conceivable, but only from 3rd Avenue to 8th Avenue. And, possible reroutings of rail traffic would result in even more movements over 1st and 2nd Avenues. In any event, the 1st Avenue and 2nd Avenue crossings could not be eliminated because interchange activity and service to Quaker Oats would continue. Since these two crossings are the most critical it was decided that track removal was impractical.

It was concluded that a rail line must be maintained through the corridor and the best approach would be to determine how efficient railroad operations could be continued with the least adverse effects to the community. Four basic elements were eventually included in the plan:

- Reduce the number of rail movements to the extent possible, particularly during peak highway traffic periods.

- Increase the speed of rail movements to minimize the time crossings are actually blocked.

- Remove all excess track through the corridor to eliminate as many crossings as possible and rebuild all remaining crossings to provide a smooth roadway surface.

- Improve crossing signalization to prevent actuation too far in advance of rail movements over crossings or when movements are stopped short of crossings.

The reduction of rail movements is primarily an operational matter and is discussed in detail in item IX-3.

To increase train speed through the corridor the track which is now in poor condition must be upgraded. This upgrading should be done in conjunction with the retirement of excess trackage and the rebuilding of crossings. Remote control power switches at junctions north of 1st Avenue and south of 7th Avenue would be installed to minimize trains stopping for crew members to align hand-thrown switches.

There is substantial excess trackage that can be retired, permitting elimination of a number of crossings. After

redundant trackage is retired, all crossing signal circuits should be modified and motion sensing or predictor type control equipment installed to prevent unnecessary actuation of signals.

Table VI-6 summarizes the proposed improvements, with preliminary estimates of costs. Figure VI-4 shows graphically the corridor modifications that are included.

Implementation: The actions required to implement this solution are:

- The CNW, ICG and CRANDIC agree on the program of physical improvements noted in Table VI-6, or a modified version thereof
- An equitable division of costs among the railroads, the City, and appropriate State and Federal agencies is developed
- Final costs estimates are prepared
- Necessary contracts are executed
- A schedule is developed and work proceeds.

Costs/Benefits:

Capital Investment:

- Costs associated with track, signal, and grade crossing revisions and upgrading.

Operating Expenses:

- Should be reduced overall because of elimination of some trackage and improvement of remaining tracks.

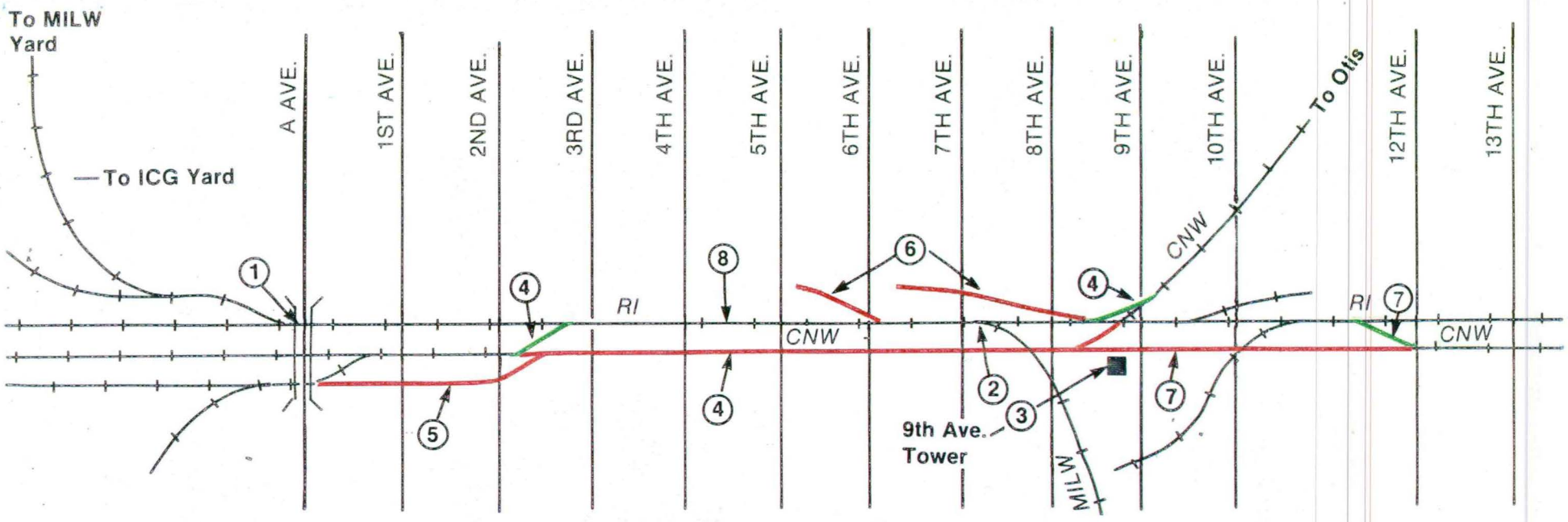
Operating and Capital Benefits:

- Reduced yard engine time because of higher track speed and less stopping to line switches
- Reduced track maintenance expense following major upgrading

Table VI-6

PROPOSED IMPROVEMENTS IN 4TH STREET CORRIDOR

Item	Cost
Upgrade running track between A Avenue and 10th Avenue including ties, surfacing and 115# SH CWR	$ 336,400
Retire unneeded trackage and facilities	5,500
Install #15 turnouts at junction points at A Avenue and 8th Avenue	49,100
Install remote control signal equipment for junction switches at A Avenue and 8th Avenue	231,500
Subtotal	$ 622,500
Modernize grade crossing warning device control circuits at 1st, 2nd, 3rd, 4th, 5th and 6th Avenues	$ 110,700
Install new crossing warning device at 8th Avenue	64,000
Subtotal	$ 174,700
Rebuild grade crossings at 1st, 2nd, 3rd and 8th Avenues with rubber crossing surface	$ 215,900
Rebuild grade crossings at 4th, 5th, 6th, and 10th Avenues with flange rail and asphalt surface	56,774
Subtotal	$ 272,674
Grand Total	$1,069,874



1. INSTALL #15 - #115 POWER SWITCH AT MILW—RI CONNECTION AT "A" AVENUE TO BE REMOTE CONTROLLED
2. INSTALL #15 - #115 POWER SWITCH AT MILW—RI CONNECTION AT 8TH AVENUE TO BE REMOTE CONTROLLED
3. RETIRE 9TH AVENUE TOWER
4. RETIRE CNW MAIN TRACK BETWEEN 2ND AVENUE AND 9TH AVENUE AND CONSTRUCT CONNECTIONS FROM RI TO CNW AT 2ND AVENUE AND 9TH AVENUE
5. RETIRE CNW SWITCHING LEAD BETWEEN "A" AVENUE AND 3RD AVENUE
6. RETIRE INDUSTRY TRACKS AT 6TH AND 8TH AVENUES
7. RETIRE CNW SPUR TO WILSON & CO. FROM 8TH AVENUE TO 12TH AVENUE AND CONSTRUCT CONNECTION BETWEEN RI AND CNW AT 12TH AVENUE
8. UPGRADE RI MAIN FROM "A" AVENUE TO 10TH AVENUE
9. REBUILD CROSSINGS WITH IMPROVED ROADWAY SURFACE. MODERNIZE CROSSING WARNING DEVICES AND ADD MOTION SENSING OR CONSTANT TIME WARNING EQUIPMENT AT CROSSINGS FROM 1ST AVENUE TO 10TH AVENUE.

NORTH

NO SCALE

LEGEND

- RECOMMENDED RETIREMENTS
- PROPOSED TRACK CONNECTIONS
- EXISTING TRACK

FIGURE VI-4

PROPOSED TRACK IMPROVEMENTS ON THE FOURTH STREET CORRIDOR

- Reduced grade crossing maintenance
- Reduced derailment-related expense
- Elimination of 9th Avenue Tower
- Reduced vehicular traffic delay and associated expense.

An estimate of these savings is summarized in Table VI-7.

Funding: There are four potential sources of funds for this project:

- The railroads should be expected to participate, at least to the extent that operating savings are realized.
- Federal funding under the Highway Safety Act could finance up to 90 percent of grade crossing improvements.
- The State may partially fund grade crossing improvements.
- The City might be willing to participate in grade crossing improvements or general improvements in the corridor.

As plans are further developed, the financing arrangements would be determined.

General Evaluation: The physical improvements proposed in this alternative will considerably reduce delays to vehicular traffic in the 4th Street corridor and provide smooth roadway surfaces at grade crossings. Retirement of trackage would give the City an opportunity to eliminate an eyesore and improve the esthetics of the area. The railroads would benefit by having an upgraded segment of line allowing faster, more efficient movements. The cost is not small but the potential benefits to the railroads, rail users, and the community are great.

IX-2: Complete Connection Between ICG and MILW Yards

Discussion: In connection with the construction of I-380 through the MILW and ICG Cedar Rapids yard area, the Federal Highway Administration agreed to finance a connection between the north end of the ICG's yard and the north end of the MILW yard. See Figure VI-5. The ICG has constructed

Table VI-7

SAVINGS RESULTING FROM IMPROVEMENTS IN THE 4TH STREET CORRIDOR

Item	Estimated Annual Savings
Track and crossing maintenance	$ 16,600
Close 9th Avenue Tower	117,200
Reduction in motor vehicle delay costs[1]	1,227,000
Total	$1,360,800

[1] Based on methodology denoted in "Guidebook for Planning to Alleviate Urban Railroad Problems," Standford Research Institute, 1974.

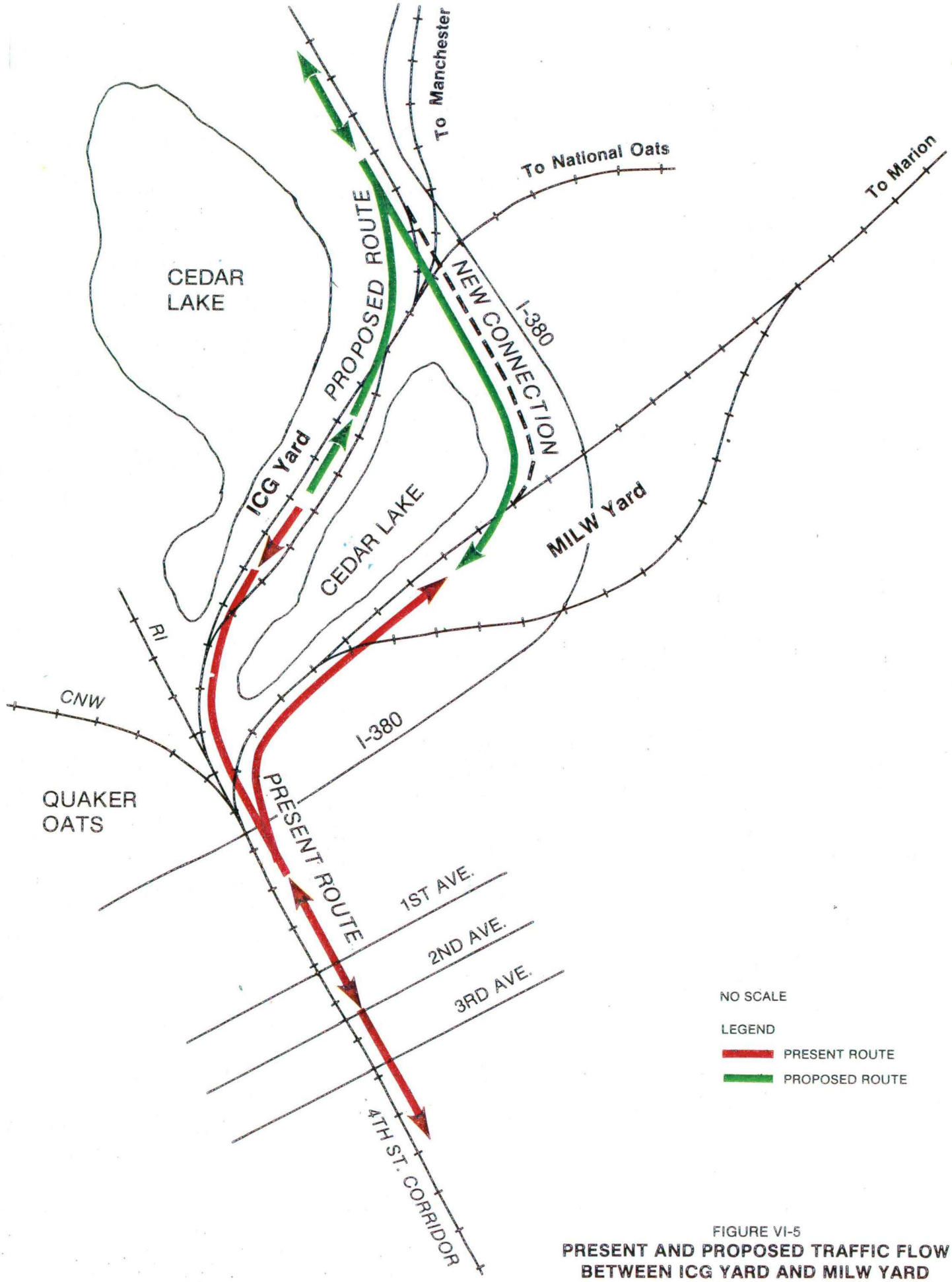


FIGURE VI-5
PRESENT AND PROPOSED TRAFFIC FLOW BETWEEN ICG YARD AND MILW YARD

the segment from the ICG yard to the MILW right-of-way line. The MILW did not build its portion of the connection prior to ceasing operations in Cedar Rapids. The ICG is now negotiating with the FHWA to complete this connection.

When the connection is completed, movements between the ICG yard and the MILW yard can be made without entering the 4th Street corridor. This would eliminate four to six movements per day over 1st and 2nd Avenues.

Implementation: The actions required to implement this solution are:

- The ICG secures FHWA approval to complete the connection
- ICG finishes construction of the connection and puts it in service.

Costs/Benefits:

Capital Investment:

- Cost of completing connection.

Operating Costs:

- Maintenance of new connection.

Operating and Capital Benefits:

- Yard engine time would be saved because of faster moves between yards
- Would permit the ICG to make greater use of the MILW yard, relieving present congestion in the ICG yard
- Would reduce delays to vehicular traffic along the 4th Street Corridor
- Less rail traffic in the 4th Street corridor would reduce interference between movements.

Funding: The money has already been authorized by the FHWA. An agreement for the ICG rather than the MILW to do the work is all that is required.

General Evaluation: This alternative would offer operating benefits to the ICG and, to a lesser extent, to other railroads, by eliminating some train movements in the north end of the 4th Street corridor. It would also reduce rail-highway conflicts in the same area. Since the funds are already allocated by the FHWA, the project should be completed quickly.

IX-3: Minimize Rail Movements During Peak Vehicular Traffic Periods

Discussion: The volume of vehicular traffic over the 4th Street corridor crossings varies a great deal during a typical day. Normally traffic is relatively light from about 7 P.M. to 6 A.M. and considerably heavier during the day. The peak traffic periods are from approximately 7 A.M. to 10 A.M. and 3 P.M. to 6 P.M.(1)

From the viewpoint of the average citizen, the best solution to the crossing blockage problem in the corridor might be to ban all rail movements during peak traffic periods. In a broader sense however, efficient rail operation and service to industries are extremely important to the community. Aside from the doubtful legality of any attempt to statutorily impose severe restrictions on rail movements, a better approach would be for the City and railroads to cooperatively work out a plan to minimize rail movements during periods of peak vehicular flow.

Implementation: The actions required to implement this solution are:

- The City takes traffic counts at all corridor grade crossings to determine peak traffic periods
- The railroads determine what operating modifications can be made to minimize movements during peak traffic periods
- Guidelines are established to minimize crossing blockage during peak traffic periods
- Guidelines are circulated to railroad employees and enforced by railroad management.

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(1) This information is based on data gathered in the 1972 CBD Railroad Crossing Study but is estimated to give a reliable comparison of current traffic volumes at different times of day.

Costs/Benefits:

Capital Investment: None.

Operating Expense: Minimal, if any.

Operating and Capital Benefits:

- No savings to railroads
- Savings to the community to the extent that vehicle delay costs are reduced from the 1972 estimate of $341,000 annually.

Funding: No funding would be necessary to implement this solution, other than relatively minor expense to the City and railroads to develop guidelines.

General Evaluation: The timing of railroad movements is governed by many factors that are beyond the control of local railroad personnel; for example, road train schedules are frequently determined by arrivals and departures at terminals hundreds of miles away. Also, industries may require switching at certain times to maintain production. In spite of these restrictions, many localized rail movements are discretionary and with conscientious effort on the part of railroad operating personnel, these movements can be made so as to avoid peak vehicular traffic periods. To the extent that this is accomplished, efficient rail operations can continue with reduced interference to vehicular traffic in the 4th Street corridor.

SUMMARY

Of the final 27 improvement alternatives, the Advisory Committee and DeLeuw, Cather decided that 26 should be included in the final program. The one exception was V-5, involving establishment of joint agency and yard office. Elimination of the MILW and RI reduced the benefits that could result from such a consolidation, and it was concluded that labor complications would make successful implementation highly unlikely.

A tabulation of the salient features of the 26 improvements selected is shown in Table VI-8. The final column of this table denotes the overall importance of each particular alternative based on input from members of the Advisory Committee and evaluation of DeLeuw, Cather.

TABLE VI-8

TABULATION OF IMPROVEMENT ALTERNATIVES

	Type of Improvement		Cost Participation			Cost (for those items where estimate can be made)	Implementation Time Frame		Anticipated Results						Overall Priority Rating
	Physical	Operational	Railroad	Industry	Government Agency		Short Term Under 12 Months	Long Term Over 12 Months	Improved Railroad Operating Efficiency	Faster Transit Time and or Better Service to Industries	Increased Rail Capacity	Increased Car Supply	Improved Railroad Interface with Community		
Increase Supply of Serviceable Rail Cars															
I-1 Industries Buy or Lease Cars	●			●			●					●		Medium	
I-2 Railroads Acquire Cars	●		●				●					●		Medium	
I-3 Railroads Repair or Upgrade Cars	●		●				●					●		Medium	
I-4 Industries Finance Rehabilitation of Cars	●		●	●				●				●		Medium	
I-5 Implement a Car Cleaning and Upgrading Program	●	●	●			$75 - 100,000	●		●			●		Medium	
I-7 Review and Modify Tariffs		●	●	●				●	●	●				Medium	
Improve Yards and Connecting Trackage															
II-5 Industries Finance Construction of Storage Tanks	●			●				●	●		●			Low	
II-6 Store Heavy Bad Order Cars Outside of Cedar Rapids		●					●				●			Medium	
II-7 Store Surplus Cars Outside of Cedar Rapids		●					●				●			Low	
II-8 Use MILW Trackage Between Beverly Tower and Vera for Car Storage	●	●	●			$419,000		●	●		●			High	
II-9 CNW Use MILW Route Between Vera and 9th Avenue	●	●	●			$179,000		●	●	●			●	High	
Improve Condition of Yards and Connecting Trackage															
III-1 Retire Unnecessary Trackage	●						●		●				●	High	
III-2 Rehabilate Terminal Trackage	●		●		●			●	●	●	●		●	High	
III-3 Rehabilate Industrial In-Plant Trackage	●			●				●	●	●				High	
Improve Interchange Operations															
IV-4 Coordinate Interchange Movement Between Railroads		●					●		●	●				High	
Establish More Disciplined Program of Switching, Interchange and Road Movements															
V-1 Railroads Provide Movement Schedules		●	●				●		●	●				Medium	
V-2 Railroad Improve Blocking of Traffic and Through Train Operation		●	●				●		●	●				High	
V-4 Establish Terminal Steering Committee		●					●		●	●			●	Medium	
Improve Configuration and Condition of Industry Trackage															
VII-1 Expand or Revise Industry Trackage	●			●				●	●	●				Low	
VII-2 Revise Loading and Unloading Facilities to Accomodate Modern Cars	●			●				●	●	●		●		Low	
Improve Industry Operating Practices															
VIII-1 Industries Unload Inbound and Bill Outbound Cars Promptly		●					●		●	●	●	●		High	
VIII-2 Industries Furnish Advance Forecast of Equipment Requirements		●					●		●	●		●		High	
VIII-3 Minimize Grain Inspection at Cedar Rapids		●		●	●			●	●	●	●	●		Medium	
Reduce Rail/Highway Conflicts in the 4th Street Corridor															
IX-1 Improve Railroad Physical Plant in the Corridor	●		●		●	$1,070,000		●	●	●			●	High	
IX-2 Complete Connection Between ICG and MILW Yards	●				●	Funds Already Committed by FHWA	●		●	●			●	High	
IX-3 Minimize Rail Movements During Peak Vehicular Traffic Periods		●					●						●	High	

Chapter VII

EFFECTS OF MILWAUKEE ROAD AND ROCK ISLAND TERMINATION OF OPERATIONS

BACKGROUND

When this study was started in September 1979, both the Milwaukee Road and the Rock Island were in bankruptcy and the future of both lines was in doubt. Shortly after January 1, 1980, it became apparent that it was quite likely that both roads would cease operations in the Cedar Rapids area; accordingly, efforts were directed toward developing contingency plans that would:

- Generally coincide with acquisition proposals of railroads that had expressed an interest in MILW and RI property.
- Permit implementation of the improvement plans already being considered.
- Provide the best overall rail system for Linn County.

The acquisition offers made to the Federal Railroad Administration on February 1, 1980, by the CNW, CRANDIC, ICG and Kansas City Southern (KCS) were the basis of these contingency plans.

The two general alternatives for acquisition and operation of MILW and RI facilities in the Linn County area were:

Alternative I - This plan would result in abandonment of MILW and RI main lines through Linn County and retention of only the trackage necessary to serve industries in the Cedar Rapids-Marion metropolitan area. This is basically similar to the "Chicago and North Western Proposal." Figure VII-1 denotes the rail system that would result.

Alternative II - This plan contemplates abandonment of the MILW main line through Linn County, but would continue operation of the RI's route from West Liberty through Cedar Rapids to Iowa Falls. This conforms approximately to the "Kansas City Southern Proposal." A map of this system is shown in Figure VII-2.

An analysis was made to determine how each alternative could be made to fit with the goals of the Linn County Railroad Improvement Study. A recommended plan for each alternative was developed that adhered as closely as possible to the acquisition offers of the respective railroads.

The main provisions of the two alternatives are as follows:

ALTERNATIVE I: "CHICAGO AND NORTH WESTERN PROPOSAL"

Assumptions:

- MILW would cease all operations into Cedar Rapids and Marion.
- RI would cease all operations into Cedar Rapids and no other road would use existing main tracks.
- All MILW and RI trackage and facilities within the metropolitan Cedar Rapids area, and the MILW line to Amana, would be available for acquisition by the CNW, CRANDIC and/or the ICG.
- All existing industries that have rail access would continue to be served by one of the surviving railroads.

Recommended Plan Under Alternative I:

1. ICG would acquire and operate MILW facilities between Louisa and Marion, and between Indian Creek and Menard Lumber Co.

   Discussion: ICG is well located to serve this area. By constructing a connection between ICG and MILW at Louisa, a portion of the MILW line from Indian Creek to Cedar Rapids could be abandoned. Table VII-1 summarizes the estimated cost of the connection and a map of the area is shown in Figure VII-3.

   If CNW or CRANDIC were to operate this portion of MILW, a considerable amount of track rehabilitation would be required between Cedar Rapids and Indian Creek, and there would be additional rail traffic in the 4th Street corridor.

2. CRANDIC would acquire MILW facilities from Amana through downtown Cedar Rapids to Iowa Manufacturing, except between Beverly Tower and Vera.

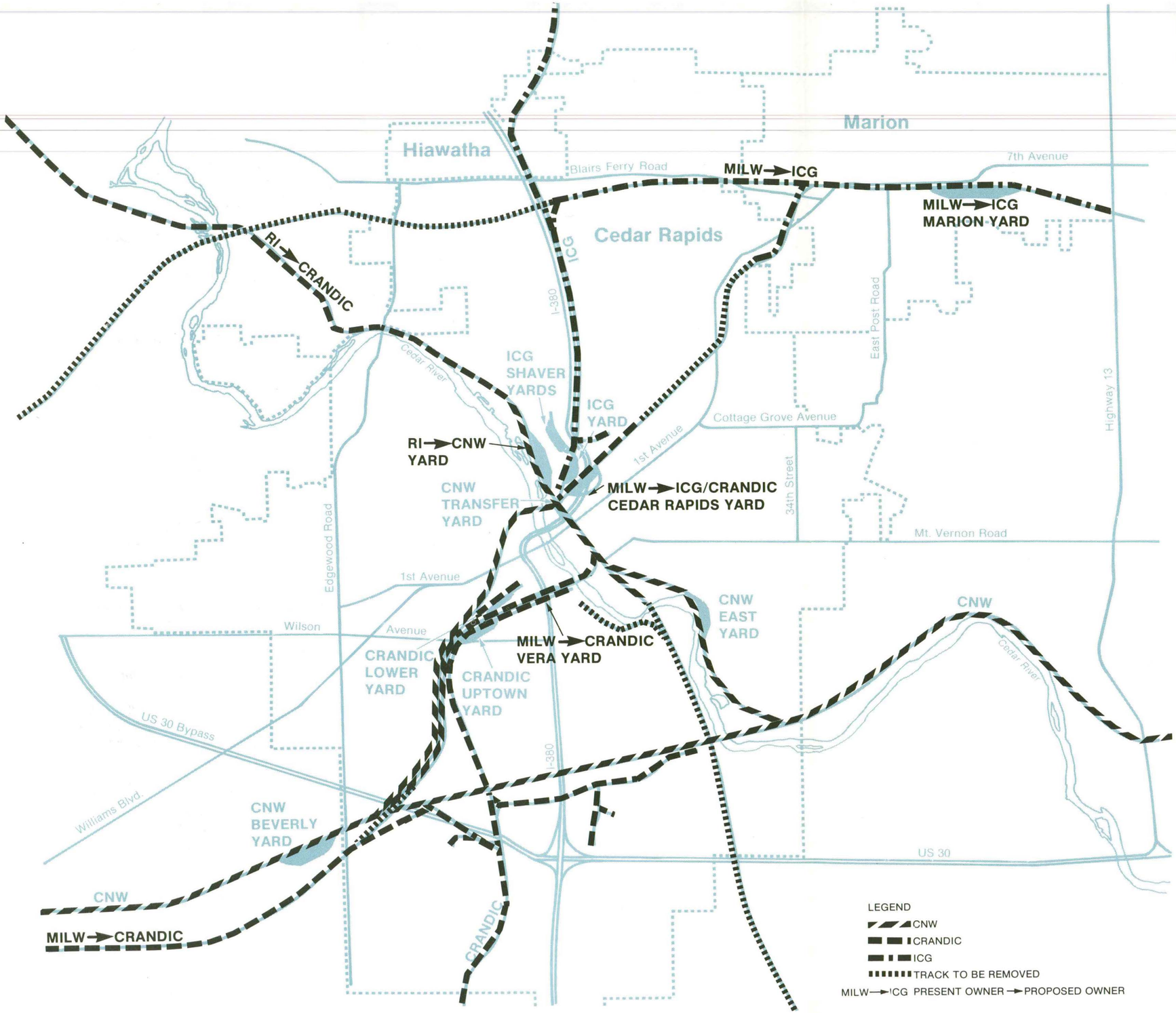

FIGURE VII-1

ALTERNATIVE I
CHICAGO AND NORTH WESTERN PROPOSAL

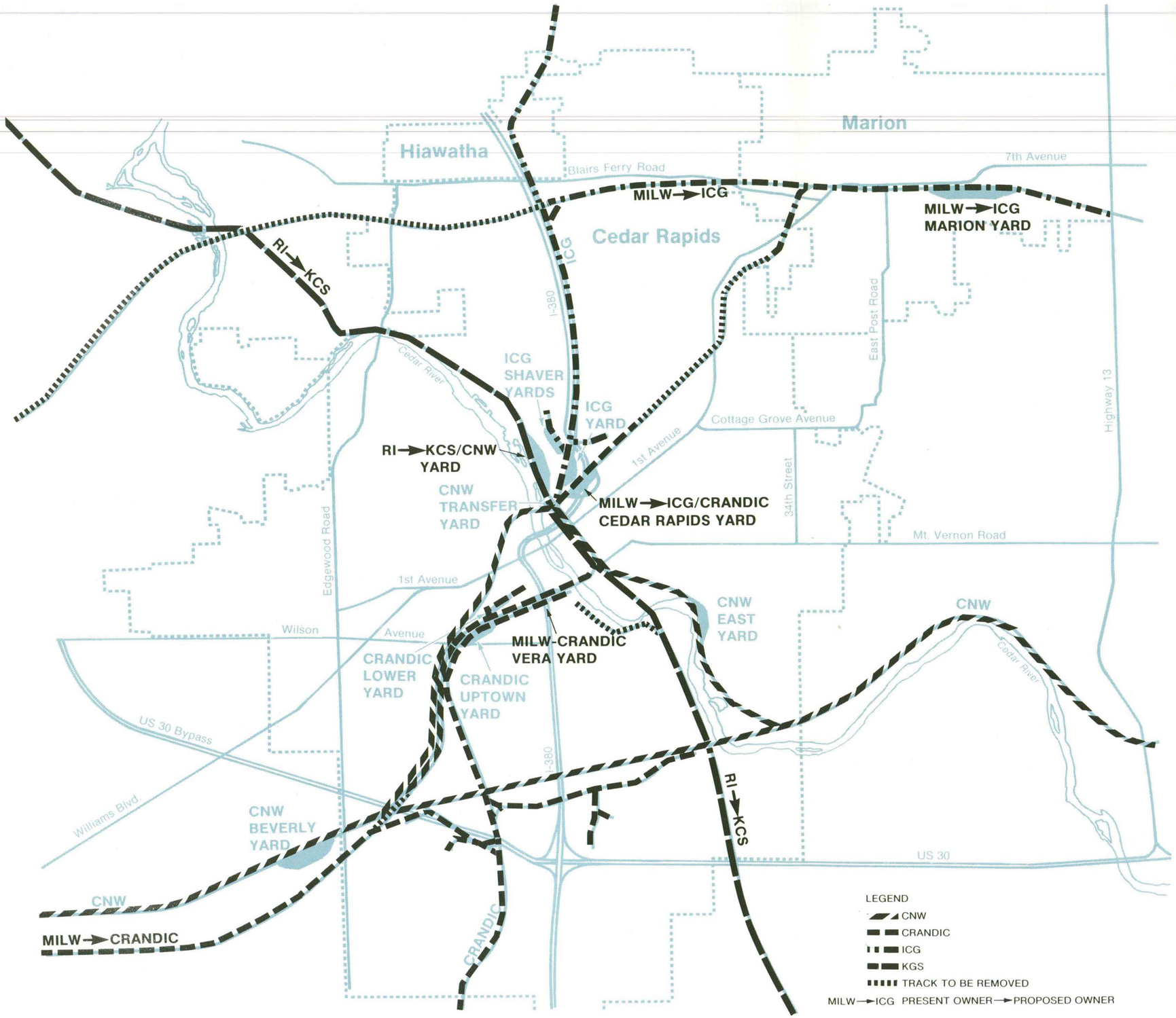

FIGURE VII-2
ALTERNATIVE II
KANSAS CITY SOUTHERN PROPOSAL

Table VII-1

ESTIMATED COSTS AND SAVINGS OF NEW
CONNECTION FROM ICG TO MILW AT LOUISA

Cost Item		Estimated Cost
Construct 2,300 feet of track including 3 turnouts		$142,400
Grading		250,600
Property acquisition (1 acre @ $10,000)		10,000
Remove 2,400 feet of track including 2 turnouts		14,200
Salvage		(5,300)
	TOTAL	$411,900

Savings Item	Costs Saved
Construction of I-380 Grade Separation	$4,000,000

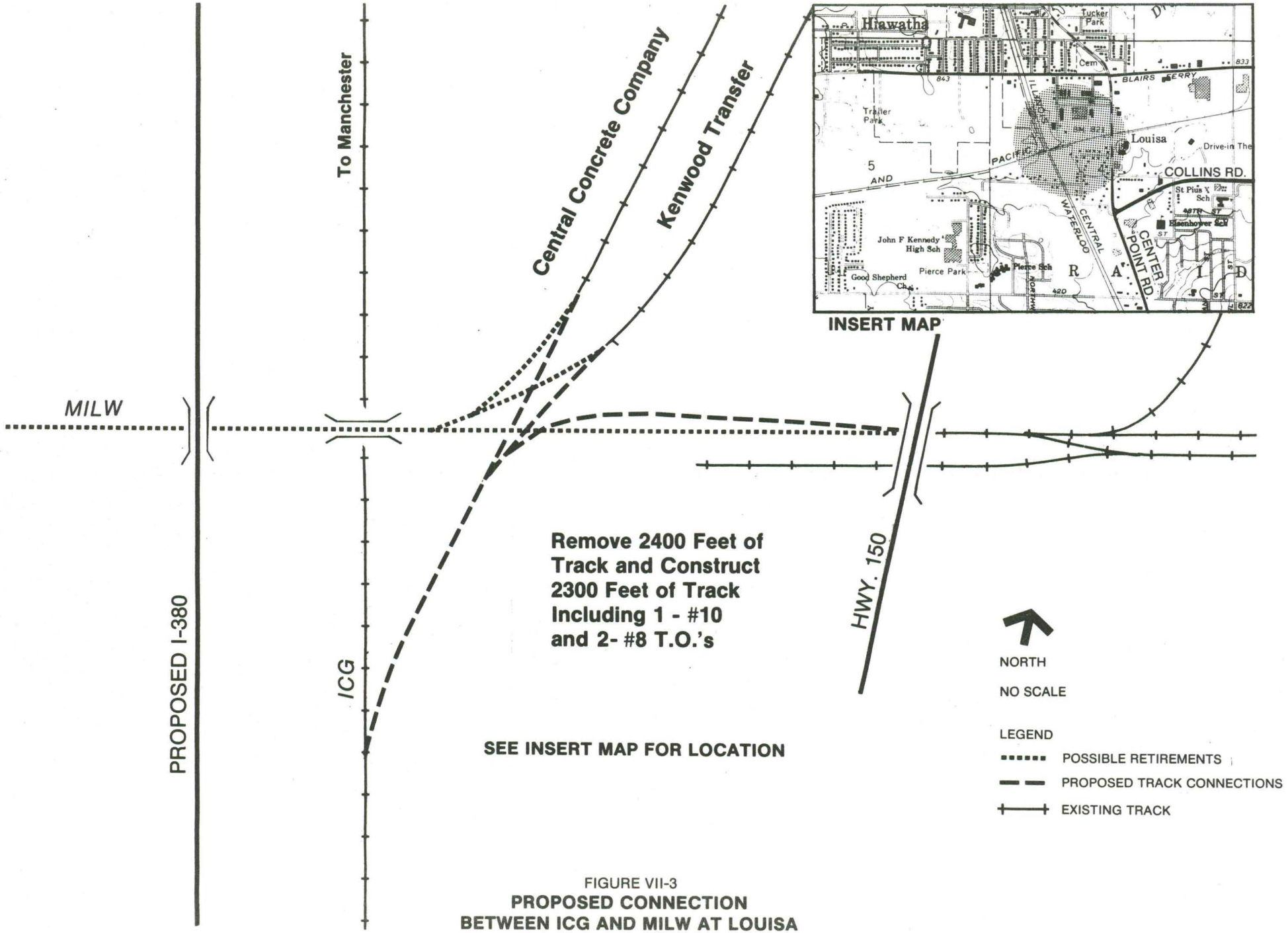

FIGURE VII-3
PROPOSED CONNECTION BETWEEN ICG AND MILW AT LOUISA

Discussion: This acquisition would give CRANDIC direct access to the 6th Street power plant and a direct interchange with ICG. CRANDIC could serve Amana more economically than any other carrier.

By building a new connection south of Beverly Tower, the existing CNW-MILW interlocking, including rail crossings, could be retired. This connection was discussed under improvement alternative II-8. If MILW City Yard team track facilities were relocated to CRANDIC's Uptown Yard, MILW property would be released for redevelopment.

3. ICG would have operating rights in the MILW Cedar Rapids Yard for interchange with CRANDIC, access to and use of the MILW scale, access to National Oats via MILW, and whatever other track usage is required. For access to the MILW Yard, the connection between the ICG Yard and the MILW Yard presently under construction would be completed.

   Discussion: This action would give ICG needed direct interchange with CRANDIC. ICG use of the MILW scale would eliminate the need for a scale in ICG's City Yard. With use of additional trackage in the MILW Cedar Rapids Yard, ICG team tracks and other trackage in City Yard could eventually be retired and this land made available for redevelopment. Rail traffic would be reduced through the 4th Street corridor.

4. CNW would acquire MILW trackage between Beverly Tower and Vera.

   Discussion: CNW would gain storage tracks through this acquisition. This section of former MILW main line could be used for storage purposes once the connection between the CRANDIC and MILW was constructed south of Beverly Tower.

5. CNW would have operating rights between Vera and 9th Avenue Tower.

   Discussion: This action would permit straight movements between the RI Yard and Beverly Yard, and allow the eventual retirement of some CNW trackage between Beverly Yard and the Transfer Yard. It would give the CNW more operational flexibility because a second route between Beverly and downtown Cedar Rapids would be available.

6. CNW would acquire all RI facilities and operations from the north end of the Cedar River bridge to the north limits of Cedar Rapids Yard.

   Discussion: This acquisition would have the following advantages:

   - It would give CNW needed yard space and improve the CNW trackage layout in the downtown area.
   - It would give CNW access to a scale in the downtown area and eliminate movement of cars to East Yard for weighing; it would also eliminate the need for a scale at Beverly.
   - It would permit CNW operation of road trains directly into and out of RI Yard rather than to Beverly Yard for subsequent transfer moves.
   - Trackage in Mill and Transfer Yards could be retired, releasing property for possible use by Quaker Oats.
   - Rehabilitation of Transfer and Mill Yard trackage would no longer be necessary.
   - Most grain inspection could be performed in RI Yard, releasing track space at Beverly Yard.
   - Expansion of Beverly Yard could be avoided.

7. CRANDIC would acquire RI facilities from the north end of North Yard to Palo (for access to the power plant) and have operating rights from Transfer Yard to North Yard limits.

   Discussion: Rail access to the power plant at Palo must be maintained. The CNW has indicated that it does not want to take over this portion of the RI main line but the CRANDIC is willing to do so.

8. CRANDIC would acquire switching from RI at the Penick & Ford plant. A new connection would be required within the plant complex and is already under construction.

   Discussion: This transfer of work would permit abandonment of approximately 1.25 miles of lead track that is presently in poor condition. CRANDIC could more efficiently handle the volume of inbound RI traffic involved,

and since Penick & Ford is open to reciprocal switching, all carriers could compete for the road haul.

9. RI downtown trackage north of 9th Avenue and west of 4th Street would be phased out and facilities relocated.

   Discussion: Placing rail facilities closer to the yard would minimize engine yard time and release downtown property for redevelopment.

ALTERNATIVE II: "KANSAS CITY SOUTHERN PROPOSAL"

Assumptions:

- MILW would cease all operations into Cedar Rapids and Marion.
- KCS would acquire RI facilities and operations.
- All MILW trackage and facilities within the metropolitan Cedar Rapids area as well as the line to Amana would be available for acquisition by the CNW, CRANDIC, KCS, and/or the ICG.
- All industries with rail access would continue to be served by one of the surviving railroads.

Recommended Plan Under Alternative II:

1. ICG would acquire and operate MILW facilities between Louisa and Marion and between Indian Creek and Menard Lumber Co.

   Discussion: See Alternative I, Item 1.

2. CRANDIC would acquire MILW facilities from Amana through downtown Cedar Rapids to Iowa Manufacturing, except between Beverly Tower and Vera.

   Discussion: See Alternative I, Item 2.

3. ICG would have operating rights in the MILW Cedar Rapids Yard for interchange with CRANDIC, access to and use of the MILW scale, access to National Oats via MILW, and whatever other track usage is required. For access to the MILW Yard, the transfer track from the

ICG Yard to the MILW Yard presently under construction would be completed.

Discussion: See Alternative I, Item 3.

4. CNW would acquire MILW trackage between Beverly Tower and Vera.

   Discussion: See Alternative I, Item 4.

5. CNW would have operating rights between Vera and the 9th Avenue Tower.

   Discussion: See Alternative I, Item 5.

6. CNW would acquire RI City Yard and two tracks in Grain Yard.

   Discussion: This acquisition would have the following advantages:

   - It would give the CNW needed yard space and improve the trackage layout in the Transfer Yard area.
   - Some trackage in Transfer Yard and Mill Yard could be retired, releasing property for possible use by Quaker Oats.
   - Rehabilitation of some Transfer and Mill Yard trackage would no longer be necessary.
   - KCS would still have adequate yard space in the remaining RI yards.

7. CRANDIC would acquire switching from RI at the Pennick & Ford plant.

   Discussion: See Alternative I, Item 8.

8. RI downtown trackage north of 9th Avenue and west of 4th Street would be phased out.

   Discussion: See Alternative I, Item 9.

9. CNW would have access to the MILW scale in the Cedar Rapids yard.

   Discussion: This action would eliminate the need to move cars to East Yard for weighing, and the need for a scale at Beverly.

CURRENT STATUS

On March 1, 1980, the Milwaukee ceased operations in the Cedar Rapids area, followed by the termination of Rock Island service on April 1, 1980. The ICG, CRANDIC and CNW took over temporary operation of various segments of MILW and RI facilities.

The results of the intervening operation to date indicate that the following improvements can be implemented regardless of which alternative eventually becomes permanent:

1. The route through the 4th Street corridor should be reduced to one main track and street crossings upgraded, crossing warning devices modernized, and signalling and power switches added to permit train movements at higher speed. These improvements would greatly reduce interference with street traffic.

2. A segment of the Milwaukee line between Cedar Rapids and Marion could be removed, eliminating the need to rebuild a highway overpass in this area.

3. All surviving railroads could acquire additional yard trackage, badly needed for efficient operations and anticipated increased traffic from key industries.

4. Direct interchange of traffic between all railroads would be possible, eliminating the intermediate handling that now takes place.

5. Because trackage and other facilities will be available elsewhere, the yards now located between 4th Street and the Cedar River will no longer be needed and this area could be redeveloped, as is now being planned by the city.

6. The railroads could retire a considerable amount of track, reducing maintenance costs and avoiding the expense of rehabilitation.

These points are all important elements in the rail system improvement plan. Whether or not they are implemented is now largely dependent on the ability of the CNW, CRANDIC, and ICG to negotiate an equitable division of former MILW and RI property, negotiate acquisition from the owners, and work out mutually satisfactory operating agreements.

Chapter VIII

ACTION PLAN

In Chapter VI, the 26 improvement alternatives selected to become part of the final program were identified. In this chapter, the requirements for implementation of each will be discussed.

There are four elements in the implementation program:

- Determination of action required to achieve proposed physical improvements and operational or organizational changes.
- Delineation of responsibilities of all involved participants.
- Recommendations for equitable capital and operating cost participation by the various railroads, industries, and governmental agencies.
- Establishment of a control system to monitor progress and results.

The requirements for successful implementation of each specific improvement alternative considering the above elements follows.

PROBLEM I: INSUFFICIENT SUPPLY OF SERVICEABLE RAIL CARS

I-1 INDUSTRIES BUY OR LEASE CARS

Implementation Action

- Industries determine the number and type of rail cars needed to handle their traffic.
- Industries make an economic analysis to establish the feasibility of buying or leasing cars.
- Industries enter into purchase or lease agreements for the required cars.

Participants and Responsibilities

. Each individual industry would examine its own needs to determine the need for cars and the economic benefits of acquisition.

Cost Participation

. Each industry would absorb costs of cars.

Control and Monitoring Procedures

. None needed except that industries might, at their discretion, advise interested parties of their actions.

. Industries acquiring cars should maintain running records to assure that anticipated utilization is achieved.

I-2 RAILROADS ACQUIRE CARS

Implementation Action

. Each railroad determines the number and type of cars needed to handle present and anticipated traffic of local industries.

. Railroads make an economic analysis to establish justification for acquisition of additional cars.

. Each railroad purchases or leases the necessary cars.

Participants and Responsibilities

. Local industries would furnish the railroads with traffic forecasts based on availability of additional cars.

. Each railroad would examine the estimated costs and benefits of an increased car fleet to determine potential profitability.

Cost Participation

. Each railroad would be expected to finance the cost of additional cars either internally or possibly through 4R Act funding.

Control and Monitoring Procedures

- None is required except that railroads would probably advise industries and other interested parties of proposed and actual increases in their car fleets.

- Railroads should monitor utilization of cars (if they do not already do so) to verify estimated revenue gains and profitability.

I-3 RAILROADS REPAIR OR UPGRADE BAD-ORDER CARS

Implementation Action

- Each railroad determines the availability of cars currently in bad order status that are types normally in short supply.

- Railroads make an economic evaluation based on repair costs and potential revenue if cars are returned to service.

- Railroads determine if and where shop capacity exists for a repair program.

- Railroads examine sources of funding, either internal or possibly through 4R Act provisions.

- Where economic feasibility is indicated, railroads arrange funding and institute a repair program.

Participants and Responsibilities

- Local industries would furnish railroads with traffic forecasts so that the carriers could estimate the revenue potential of additional cars.

- Each railroad, individually, would then carry out the implementation actions outlined above.

Cost Participation

- Each railroad would be responsible for the costs of repairing and upgrading equipment, but cash outlay and long-term costs could be kept relatively low if 4R Act financing provisions were utilized.

Control and Monitoring Procedures

- None is required except that railroads would probably advise industries and other interested parties of proposed and actual increases in their car fleets.
- Railroads should monitor utilization of cars (if they do not already do so) to verify estimated revenue gains and profitability.

I-4 INDUSTRIES FINANCE RAILROAD REHABILITATION OF CARS AND ARE REPAID ON A REBATE BASIS

Implementation Action

- Each industry determines the type and number of additional cars needed to adequately handle its traffic.
- Serving railroads determine the availability of bad-order cars of the required types and the estimated rehabilitation costs.
- Railroads and industries negotiate agreements covering repair costs and payback arrangements that are mutually beneficial.
- Following negotiation of necessary agreements, the railroads would proceed with the repair program and would assign the cars to the participating industry's service.

Participants and Responsibilities

- Either a railroad or industry could take the lead in identifying the need for additional cars.
- A railroad would have to establish availability of cars that would be suitable candidates for rehabilitation and the costs involved.
- Railroads and industries interested in such a program would have to work jointly to negotiate financial terms and scheduling of repair work.

Cost Participation

- Each involved industry would fund the initial rehabilitation program.

- The participating railroad would pay back the initial costs financed by an industry on either a periodic rental or per-car-shipped basis. In effect, the railroad would get a no- or low-interest loan to return cars to revenue service, and an industry would be guaranteed a captive car fleet.

Control and Monitoring Procedures

- Procedures would be set up to maintain a check on costs of initial rehabilitation work and to provide the basis for agreed-to payback arrangements.

- Participating railroads and industries should establish a method to continually control car usage and also verify that originally anticipated utilization is achieved.

1-5 IMPLEMENT A CAR CLEANING AND UPGRADING PROGRAM*

Implementation Action

- Each railroad makes an economic analysis to determine costs and savings from the operation of a car cleaning and upgrading facility, and whether the work should be contracted or done with railroad forces.

- Railroads negotiate an agreement, if a joint cleaning and upgrading facility is planned, to cover the operation and cost divisions.

- Railroads determine a location for the facility, easily accessible for railroads and close to major car users.

- Railroads construct new facilities or upgrade an existing facility, depending on which location is chosen.

- Railroads negotiate an agreement with a contractor to perform work and establish procedures for doing the work.

Participants and Responsibilities

- Each railroad should determine the number and type of cars rejected due to need for cleaning or upgrading.

- Each railroad would examine the estimated costs and benefits of a joint car cleaning and upgrading facility to determine the potential profitability.

*See Table VI-1, Page VI-12.

- Contractor will be responsible for performing the necessary work as specified by the railroads.

Cost Participation

- Each participating railroad would pay a share of the initial cost of setting up the cleaning and upgrading facility.

- Railroads would share operating expenses on a per-car basis.

Control and Monitoring Procedure

- Each railroad should check rejection rate of cars by industries to determine if cars are properly cleaned and upgraded.

- Each railroad should monitor the cost of operating the facility to determine if the anticipated savings are realized.

- Railroads should check with industry officials to see if the cleaning and upgrading facility is improving the car supply problem.

I-7 REVIEW AND MODIFY TARIFFS

Implementation Action

- Each railroad should review rates to see if they are compensatory, and each industry should review the rates to see if they are competitive with other modes of transporation.

- Railroad and industry officials should negotiate rates that are profitable to the railroads and competitive with other modes.

- Railroads file for rate revisions through normal regulatory channels.

- Rate negotiations and adjustments would have to be carefully handled because of regulatory and rate-making legislation now being enacted.

Participants and Responsibilities

. Both industries and railroads would participate in rate reviews.

. Railroads would apply for rate revisions in the normal manner.

Cost Participants

. Railroads and industries would absorb costs of personnel involved in the project.

Control and Monitoring Procedures

. None is required.

PROBLEM II: INADEQUATE OR INSUFFICIENT YARDS AND CONNECTING TRACKAGE

II-5 INDUSTRIES FINANCE STORAGE TRACKS FOR THEIR CARS

Implementation Actions

- Each industry and the serving railroad should determine the amount of storage needed for industry-owned or leased cars.
- Each industry, in conjunction with the serving railroad, should determine the best location for a storage track(s).
- Each industry should enter into an agreement with the serving railroad for construction and maintenance of the storage track.

Participants and Responsibilities

- Each industry would determine the amount of trackage needed for storing its own rail cars.
- Serving railroads would assist in determination of capacity required, location, and design.
- Each industry would be responsible for the construction of its track.

Cost Participation

- Each industry would be expected to finance the cost of construction and maintenance of their storage tracks.

Control and Monitoring Procedures

- None required.

II-6 STORE HEAVY BAD ORDERS AT LOCATIONS OUTSIDE OF CEDAR RAPIDS

Implementation Action

- Each railroad finds an adequate location outside of Cedar Rapids to store bad-order cars.

Participants and Responsibilities

. Each railroad would be responsible for keeping heavy bad-order cars out of active yards in Cedar Rapids.

Cost Participation

. None required.

Control and Monitoring Procedures

. None required.

II-7 INDUSTRIES ASSIST RAILROADS IN EFFORTS TO STORE LEASED OR ASSIGNED CARS OUTSIDE CEDAR RAPIDS

Implementation Action

. Railroad determines convenient locations outside Cedar Rapids to store industry-leased or assigned cars.

. Communications are established between railroads and industries so that surplus cars can be stored enroute.

Participants and Responsibilities

. Each railroad would identify enroute storage locations.

. Each industry provide serving railroad with a forecast of cars needed so surplus cars can be held at storage points outside of Cedar Rapids.

Cost Participation

. None required.

Control and Monitoring Procedures

. None required.

II-8 USE OF MILW MAIN LINE BETWEEN BEVERLY TOWER AND VERA FOR CAR STORAGE*

Implementation Action

. CRANDIC and CNW agree to work scope and division of ownership of MILW trackage involved.

*See Table VI-2, Page VI-28 and Figure VI-1, Page VI-29.

- Negotiate purchase agreement with the MILW Trustee.

- Construct necessary connections and retire unneeded trackage.

Participants and Responsibilities

- CRANDIC and CNW would be jointly responsible for developing a mutually acceptable final plan, division of ownership, and sharing of costs.

- CRANDIC and CNW would be responsible for negotiating a purchase agreement with the MILW for the property each would acquire.

Cost Participation

- The division of costs should be related to operating benefits and savings that would accrue to each carrier and would be dependent, to some extent, on which road gets use of the storage capacity. At present, CNW pays 80 percent of the Beverly Interlocking maintenance and operating expense, with the MILW share being 20 percent. It is suggested that, as a starting point in negotiating a final agreement, the CNW share of track revision costs be 80 percent and the CRANDIC 20 percent.

Control and Monitoring Procedures

- None required.

II-9 CNW USE MILW ROUTE FROM VERA TO 9TH AVENUE AND RI YARD*

Implementation Action

- CRANDIC purchases MILW trackage between Vera and 9th Avenue Tower.

- CNW negotiates a trackage rights agreement with the CRANDIC to permit operation between Vera and 9th Avenue Tower.

- Connection is improved between the CNW and MILW at Vera.

- The MILW route is upgraded from Vera to 9th Avenue to handle increased traffic.

*See Table VI-3, Page VI-33 and Figure VI-2, Page VI-32.

Participants and Responsibilities

- CRANDIC would be responsible for negotiating a purchase of the property involved from the MILW.
- CNW and CRANDIC would be jointly responsible for negotiating the necessary trackage rights agreement.
- CNW would handle improvement of the connection at Vera.
- CRANDIC would upgrade trackage between Vera and 9th Avenue Tower.

Cost Participation

- CNW would pay for the improved connection at Vera.
- CRANDIC and CNW would share the cost of track upgrading between Vera and 9th Avenue Tower. The proportion paid by each could be based on estimated usage or some other equitable basis, but, in any event, would have to be negotiated.

Control and Monitoring Procedures

- None required other than standard railroad accounting to determine costs of upgrading and operating expense and the share to be borne by each carrier.

PROBLEM III: POOR CONDITION OF YARDS AND CONNECTING TRACKAGE

III-1 RETIRE UNNECESSARY TRACKAGE*

Implementation Action

- Each railroad surveys property and determines what trackage is no longer needed.
- Railroads determine removal cost, salvage credit, and annual maintenance savings.
- Each railroad prepares a work program and performs work when labor force becomes available.

Participants and Responsibilities

- Individual railroad would be responsible for developing retirement programs and progressing the work.

Cost Participation

- Because of salvage credits and release of property for sale, most retirements are profitable and no funding should be required.

Control and Monitoring Procedures

- None required.

III-2 RAILROADS REHABILITATE TERMINAL TRACKAGE

Implementation Action

- Survey all essential yards and lines to determine what rehabilitation is required.
- Determine cost to rehabilitate trackage and submit authority for expenditure for approval.
- Develop a work program and schedule that is realistic, considering the availability of funds and manpower.

Participants and Responsibilities

- Each railroad would be responsible for developing and progressing a rehabilitation program for essential yards and running tracks on its own property.

*See Table VI-4, Page VI-37 and Figure VI-3, Page VI-39.

Cost Participation

- Each railroad would be responsible for funding rehabilitation projects, but could utilize 4R Act provisions for low-cost financing. Also, retirement credits could offset rehabilitation costs.

- Depending on the location and nature of work, outside financing may be available, including state and federal grade crossing funds, state assistance programs, or city participation in specific projects.

Control and Monitoring Procedures

- None required other than normal accounting procedures to verify expenditures.

III-3 INDUSTRIES REHABILITATE AND MAINTAIN THEIR OWN IN-PLANT TRACKAGE

Implementation Action

- Each industry determines if rail service is important enough to assume ownership and maintenance of trackage in plant.

- Railroads and industries enter into an agreement whereby industries assume ownership and maintenance of in-plant trackage.

- Each industry determines rehabilitation needed and arranges for work to be done.

- Each industry arranges for periodic maintenance.

Participants and Responsibilities

- Industries must make a determination that ownership and maintenance of trackage is economically justifiable.

- Industries would thereafter be responsible for maintenance of in-plant trackage.

Cost Participation

- Each participating industry would be responsible for the initial rehabilitation cost and the subsequent maintenance expense.

Control and Monitoring Procedures

. None needed.

PROBLEM IV: DELAYS ASSOCIATED WITH INTERCHANGE MOVEMENTS

IV-4 BETTER COORDINATION OF INTERCHANGE MOVEMENTS BETWEEN RAILROADS

Implementation Action

- Develop regular schedules for interchange of traffic between railroads. These interchange movements would be tailored to inbound and outbound road train schedules, as well as spot and pull times at industries.

- Publish and circulate schedules to all railroads and shippers.

Participants and Responsibilities

- CRANDIC, CNW, ICG would jointly develop the interchange schedules.

Cost Participation

- These schedules could be developed at minimal cost to the carriers.

Control and Monitoring Procedures

- A representative of one railroad should be designated to coordinate schedule development and ensure that the project is accomplished.

- Following establishment of schedules, sample car movements should be checked on a regular periodic basis to verify conformance. Railroads and industries should both do this so that action can be taken to correct deviations.

- Typical current movement times for interchange cars were tabulated during this study, and these can be used as a baseline to measure results.

PROBLEM V: LACK OF DISCIPLINED PROGRAM FOR SWITCHING, INTERCHANGE, AND ROAD MOVEMENTS

V-1 RAILROADS PROVIDE SCHEDULES FOR MOVEMENTS OF TRAFFIC*

Implementation Action

- Develop schedules for outbound traffic from major shippers. These schedules should provide that, based on a certain cut-off time for shipments or receipt of interchange from other carriers, cars would depart Cedar Rapids on specified trains.

- Establish schedules that guarantee availability of inbound cars to industries within a specified time following arrival in road trains or after being interchanged from another carrier.

- Circulate schedules to industries and railroad operating personnel.

Participants and Responsibilities

- Each railroad should designate personnel to work up schedules for movements solely under its control.

- Key representatives from all railroads would work jointly to formulate schedules involving interchange movements and final preparation and circulation of schedules.

Control and Monitoring Procedures

- A representative of one railroad should be designated to coordinate schedule development and ensure that the project is accomplished.

- Following establishment of schedules, sample car movements should be checked on a regular periodic basis to verify conformance. Railroads and industries should both do this so that correct action can be taken to correct deviations.

- Current transit times for movement of cars in and out of Cedar Rapids were compiled during the study. These can be used to determine improvements resulting from implementation of this alternative.

*See Table VI-5, Page VI-60.

V-2 IMPROVE BLOCKING OF TRAFFIC AND THROUGH TRAIN OPERATION

Implementation Action

- Railroads examine traffic flow to determine volumes, routing, and any inadequacies in present train scheduling and blocking.
- Railroads change or add service as required to move traffic on the scheduled basis.
- Railroads commit adequate power to trains serving Cedar Rapids to ensure outbound cars are not delayed because of tonnage restrictions.
- Operations should be examined periodically to identify changes necessary to accommodate any changes in traffic.

Participation and Responsibilities

- Road haul carriers (CNW and ICG) would be responsible for analyzing traffic movement and developing improved blocking and movement of traffic.
- Local industries should provide input so that the railroads are aware of the transit time that is required to retain or attract more traffic.

Cost Participation

- The minor cost involved should be absorbed by the railroads.

Control and Monitoring Procedures

- Both railroads and industries should make periodic checks to ensure that traffic moves as scheduled.
- Data developed during this study can be used to determine improvements in transit time resulting from this alternative.

V-4 ESTABLISH A TERMINAL STEERING COMMITTEE

Implementation Action

. Designate representatives of the steering committee. Present railroad members of the Rail Advisory Committee would be likely candiates.

. Develop purpose and specific goals.

. Agree on meeting frequency, format, and precedures.

Participation and Responsibilities

. Each railroad should designate a representative with authority to make commitments on the part of his company.

Cost Participation

. Minimal, if any.

Control and Monitoring Procedures

. None required.

V-5 ESTABLISH JOINT AGENCY AND YARD OFFICE

Note: Considered impractical by Committee and eliminated in final screening.

PROBLEM VII: TRACKAGE AT INDUSTRIES INADEQUATE OR IN POOR CONDITION

VII-1 EXPAND OR REVISE INDUSTRY TRACKAGE TO PERMIT MORE EFFICIENT OPERATIONS

Implementation Action

- Each industry examine in-plant trackage to determine adequacy of layout.
- Develop plans for upgrading, revising, or adding trackage as necessary and determine cost of work. The industry would then make an economic analysis to determine if project is economically justifiable.
- Establish a final program and schedule and proceed with work.

Participants and Responsibilities

- Railroads would assist industries in determining improvements to the physical layout needed.
- Each industry must make the decision (after economic analysis) whether or not revisions in the physical layout are worthwhile.
- Each industry would be responsible for funding and progressing the necessary work.

Cost Participation

- Each industry would finance the physical revisions of its trackage.

Control and Monitoring Procedures

None required.

VII-2 REVISE LOADING AND UNLOADING FACILITIES TO ACCOMMODATE MODERN CARS

Implementation Action

- Industries determine if use of presently restricted cars is economically desirable..

- Industries survey loading and unloading facilities to determine compatability with desired car sizes.

- Each industry modifies loading and unloading facilities to accommodate modern cars.

Participants and Responsibilities

- Each industry would survey loading facilities and make the necessary alterations to accommodate modern cars.

Cost Participation

- Industries would finance revisions within their own facilities.

Control and Monitoring Procedures

- None required.

PROBLEM VIII: CAR DELAYS CAUSED BY INDUSTRY OPERATING PRACTICES

VIII-1 INDUSTRIES UNLOAD CARS PROMPTLY AND BILL OUTBOUND CARS WHEN LOADED OR ORDERED OUT OF PLANT

Implementation Action

- Each industry examines its operations to determine the cause of car detention.
- Each industry makes modifications in their operating procedures to avoid excessive delay of cars.

Participants and Responsibilities

- Each industry would be responsible for making modifications in their operating procedure to alleviate car delays.
- Serving railroads should assist industries in identifying reasons for car delay and developing improved operating procedures.

Cost Participation

- The only cost involved is the time required for industry personnel to examine operational procedures, which should be absorbed by the industries.

Control and Monitoring Procedures

- Each industry periodically examines their operating procedure to ensure they are not unduly delaying cars.
- Industries should monitor their demurrage charges to measure car delay.

VIII-2 INDUSTRIES FURNISH RAILROADS WITH ACCURATE ADVANCE FORECASTS OF EQUIPMENT REQUIREMENTS

Implementation Action

- Each industry establish internal procedures for forecasting rail car needs.
- Industries and serving railroads jointly establish lines of communication for the transmission of car requirement forecasts.

Participants and Responsibilities

- Each industry would be responsible for establishing an accurate forecasting system.
- Serving railroads must make every effort to effectively utilize the advance requests for cars and furnish as required.

Cost Participation

- Minimal expense, if any, would be involved.

Control and Monitoring Procedures

- Industries should compare the percentage of requested cars supplied before and after implementation of an advance forecast system to determine effectiveness.
- Industries compare advance forecasts with actual car loadings to determine accuracy.

VIII-3 MINIMIZE GRAIN INSPECTION AT CEDAR RAPIDS

Implementation Action

- Make a concerted effort to establish an acceptable system of origin-point inspection.
- Railroads take action to ensure that clean, noninfested cars are furnished for the movement of grain.
- Examine the possibility of grain inspection being performed at the consignees' plants (as is done with trucks) so that cars can move directly to these locations, thus reducing switching.
- Explore more widespread use of automatic samplers.
- Study the possibility of an earlier grain bulletin time.
- Examine the feasibility of grain being bulletined and inspection conducted regularly on a seven-days-a-week basis to avoid weekend delays.

Participants and Responsibilities

- Development of an acceptable system of origin point inspection would require a cooperative study with the participation of elevator operators, brokers, processors, railroads and the U.S. Department of Agriculture.

- The other possibilities mentioned above could be accomplished on a local basis. The railroads, processors, and the Cedar Rapids Grain Inspection Service should work jointly to make improvements in local procedures.

Cost Participation

- Origin-point inspection would have a nationwide impact and, possibly, the USDA could be the funding agency for a study if widespread support of such a program were evident.

- The cost of studying local procedural improvements would not be great and should be borne by all participants.

Control and Monitoring Procedures

- If it is decided to pursue this alternative, a committee of local industrial and railroad representatives should be set up to actively address the problem.

PROBLEM IX: RAIL/HIGHWAY CONFLICTS IN THE 4TH STREET CORRIDOR

IX-1 IMPROVE THE RAILROAD PHYSICAL PLANT IN THE 4TH STREET CORRIDOR TO EXPEDITE MOVEMENTS*

Implementation Action

- Disposition of RI trackage in the 4th Street Corridor would be resolved.
- Eventual owner of corridor trackage (which at this time would most likely be the CNW) agrees on the program of improvements suggested or a modified version thereof.
- Prepare final cost estimates.
- Determine sharing of costs among the railroad, the City of Cedar Rapids, and state and federal agencies.
- Execute required contracts.
- Establish a schedule and proceed with the work.

Participants and Responsibilities

- The CNW (assuming it acquires ownership of RI property in the corridor) should assume the lead in developing plans for improvements and negotiating funding participation with city and state agencies.
- Cedar Rapids and Linn County Regional Planning Commission personnel should explore benefits that can be derived from the proposed corridor improvements and actively assist the CNW in obtaining funding from city, state, and federal sources.
- Iowa State DOT should assist in planning and funding of improvements.

Cost Participation

1. The total estimated costs of corridor improvements described in the report are $1,069,900. On a preliminary basis, recommended cost divisions would be as follows:

* See Table VI-6, page VI-82; Table VI-7, page VI-85; and Figure VI-4, page VI-83.

.	Federal programs	$ 157,200
.	State programs	151,400
.	City of Cedar Rapids	104,000
.	CNW	657,300
	Total	$1,069,900

Table VIII-1 shows the proposed cost-sharing for specific elements of the work.

2. The CNW will realize savings of $134,000 annually because of closing 9th Avenue Tower and reduction of maintenance expense, which can be applied toward amortization of the initial costs.

3. An attempt should be made to get partial funding from the newly created Iowa Railway Finance Authority Act. Possibly, money could be advanced to the CNW to perform the required work and be repaid on the basis of annual savings.

Control and Monitoring Procedures

. The Linn County Planning Commission is the most logical agency to coordinate the progress of this improvement alternative.

IX-2 COMPLETE CONNECTION BETWEEN ICG AND MILW YARDS*

Implementation Action

. A necessary prerequisite to implementation of this alternative is ICG purchase of the MILW yard. This purchase is now close to a final agreement.

. ICG negotiate with FHWA to assume MILW portion of contract to build the connection between MILW and ICG yards.

. ICG obtain material, finish construction, and put track in service.

Participants and Responsibilities

. The FHWA in conjunction with the State and ICG should jointly arrange ICG assumption of the MILW contract.

. The ICG would be responsible for the construction of the trackage.

Table VIII-1

BREAKDOWN OF 4TH STREET IMPROVEMENT COSTS AND PROPOSED FUNDING PARTICIPATION

	Total Cost	Cost Participation			
		CNW	Federal Programs	State Programs	City of Cedar Rapids
1. Upgrade running track between A Avenue and 10th Avenue	$ 252,300	$252,300			
2. Track retirements	5,500	5,500			
3. Install power turn-outs and remote control signal equipment	280,600	280,600			
4. Modernize crossing warning circuits	174,700		$157,200		$ 17,500
5. Rebuild 1st Avenue Crossing	97,300	32,400		$ 64,900	
6. Rebuild 2nd through 10th Avenue Crossings	259,500	86,500		86,500	86,500
	$1,069,900	$657,300	$157,200	$151,400	$104,000

Cost Participants

. The cost of the project would be funded by the FHWA in conjunction with the State; the funds have already been authorized.

Control and Monitoring Procedures

. None required.

IX-3 MINIMIZE RAIL MOVEMENTS DURING PEAK VEHICULAR TRAFFIC PERIODS

Implementation Action

. Make updated hourly traffic counts at all crossings to determine peak times.

. City and railroad officials agree on guidelines to minimize crossing blockages during peak traffic periods.

. Railroads determine what modifications can be made in operations to minimize rail movements during peak traffic periods.

. Railroads enforce compliance by all employees to agreed guidelines.

Participants and Responsibilities

. Railroads will make a concerted effort to curtail rail movements during peak vehicular traffic times.

. Industries can assist railroads by minimizing switching requirements during peak traffic periods.

Cost Participation

. None required.

Control and Monitoring Procedures

. City should compare traffic delays before and after initiation of this alternative.

. Monitor train movements periodically during peak periods to ensure compliance.

. Periodically review guidelines to accommodate any changes in vehicle or rail movements.

SUPPLEMENTARY PROGRAM - OPERATION OF MILW AND RI FACILITIES

The following supplementary program should be progressed because of MILW and RI abandonment of service in Linn County:

1. ICG ACQUIRES AND OPERATES MILW FACILITIES BETWEEN LOUISA AND MARION AND BETWEEN INDIAN CREEK AND MENARD LUMBER CO.

Implementation Action

. ICG purchases this property from the MILW.

. ICG designs and constructs a connection between the MILW and ICG at Louisa.

Participants and Responsibilities

. ICG would negotiate with the Trustee of the MILW to acquire the facilities noted.

. ICG and FHWA in conjunction with the State would negotiate any agreement covering costs of the connection at Louisa.

Cost Participation

. ICG would fund the purchase of MILW property either internally or from outside sources, possibly by means of 4R Act financing.

. FHWA should fund the proposed connection at Louisa because it will eliminate the need for a grade separation at about one tenth the cost.

Control and Monitoring Procedures

. None required.

Comments

. ICG and the MILW have agreed to the sale of most of the property involved, subject to court approval, and it is likely that this element of the program will become final in the near future.

2. CRANDIC ACQUIRES AND OPERATES MILW FACILITIES FROM AMANA THROUGH CEDAR RAPIDS TO IOWA MANUFACTURING.

Implementation Action

. CRANDIC purchases this property from the MILW.

Participants and Responsibilities

. CRANDIC would negotiate with the Trustee of the MILW to acquire the facilities noted.

Cost Participation

. CRANDIC would fund the purchase of this property.

Control and Monitoring Procedures

. None required.

Comments

. CRANDIC is actively negotiating for the purchase of this property from Amana to 9th Avenue Tower. The ICG will probably acquire the MILW yard and trackage to Iowa Manufacturing. Since the ICG and CRANDIC have agreed to CRANDIC access to the 6th Street power plant and direct interchange arrangements, the operating benefits proposed will be made.

. Providing an agreement can be reached between the CRANDIC and CNW, the benefits noted in improvement alternative II-8 can still be realized.

3. ICG ACQUIRES OPERATING RIGHTS IN THE MILW CEDAR RAPIDS YARD.

Comments

. Because ICG is in the process of buying the MILW Yard, the benefits contemplated in this proposal, including additional ICG yard space and direct ICG-CRANDIC interchange, are now taking place and should become permanent.

4. CNW ACQUIRES MILW TRACKAGE BETWEEN BEVERLY TOWER AND VERA.

Comments

. The purpose of this proposal was to provide car storage space for the CNW and is basically the same as improvement alternative II-8. Since the CRANDIC is negotiating for the purchase of this trackage from the MILW and, as noted in the discussion of II-8, it makes little difference whether the CRANDIC or CNW has ownership and use, the benefits should be achieved.

5. CNW ACQUIRES OPERATING RIGHTS BETWEEN VERA AND 9TH AVENUE TOWER.

Comments

. This is exactly what is proposed in improvement alternative II-9, and implementation is discussed under that item.

6. CNW ACQUIRES ALL RI FACILITIES AND OPERATIONS FROM THE NORTH END OF THE CEDAR RIVER BRIDGE TO THE NORTH LIMITS OF CEDAR RAPIDS YARD.

Implementation Action

. CNW negotiates with the RI Trustee for purchase of trackage and facilities.

. Negotiate trackage rights agreement with ICG and CRANDIC for their use of tracks in the 4th St. Corridor.

. CNW upgrades main track through 4th St. Corridor to accommodate road train operation into and out of RI Yard.

Participants and Responsibilities

. The CNW would be responsible for negotiating the purchase.

. ICG, CRANDIC, and CNW would jointly negotiate trackage rights agreement for ICG and CRANDIC use of trackage in the 4th St. Corridor.

Cost Participation

. CNW would fund the purchase of RI property either internally or from outside sources, possibly by means of 4R Act financing.

Control and Monitoring Precedures

. None required.

Comments

. The CNW has been operating the RI facilites identified in this proposal on a temporary basis and is negotiating a purchase agreement with the Trustee of the RI. If these negotiations are successful, this particular proposal will be accomplished.

7. CRANDIC ACQUIRES RI FACILITIES FROM THE NORTH END OF NORTH YARD TO PALO, AND HAS OPERATING RIGHTS FORM TRANSFER YARD TO NORTH YARD LIMITS.

Implementation Action

. CRANDIC negotiates with the RI Trustee for purchase of the trackage from the north end of North Yard to Palo.

. Negotiate trackage rights with owner of trackage (CNW or RI) from Transfer Yard to North Yard limits.

Participants and Responsibilities

. CRANDIC would be responsible for negotiating purchase of this trackage.

. CRANDIC and CNW (or other eventual owner of 4th Street Corridor trackage and RI North Yard) would be jointly responsible for the negotiation of the required trackage rights agreement.

Cost Participation

. CRANDIC would fund the proposed purchase internally.

Control and Monitoring Procedures

. None required.

Comments

. This proposal is necessary only to maintain rail access to the power plant at Palo in the event the RI main line north of Cedar Rapids is abandoned. CRANDIC has indicated its willingness to purchase and operate this line.

8. CRANDIC ACQUIRES SWITCHING FROM RI AT THE PENICK & FORD PLANT.

Implementation Action

. A prerequisite to this alternative would be the CRANDIC acquiring the MILW facilities from Amana through downtown Cedar Rapids to 9th Avenue Tower.

. Penick & Ford and CRANDIC agree on plant switching arrangements.

. Penick & Ford construct a connection between RI and MILW trackage within the plant.

Participants and Responsibilities

. Penick & Ford would be responsible for construction of the in-plant connection.

Cost Participants

. Penick & Ford would fund the construction and subsequent maintenance of the in-plant connections.

Control and Monitoring Procedures

. None required.

Comments

. This alternative has already been accomplished.

9. RI DOWNTOWN TRACKAGE NORTH OF 9TH AVENUE AND WEST OF 4TH STREET BE PHASED OUT AND FACILITIES RELOCATED.

Comments

. Possible track retirements in this particular area were included in improvement alternative III-1.

APPENDIX A

COMMENTS RELATIVE TO RAIL/ROADWAY CONFLICT

. The Transportation System Management Plan* (TSM) for fiscal years 1980 through 1984 lists the highest 54 accident locations in the Cedar Rapids area. No railroad crossings were included on this list. (The list includes all locations with ten or more accidents during 1978.)

. The TSM also surveyed city officials regarding traffic problems within their communities. Responses to these surveys relative to railroad crossings were the following:

From Area Ambulance Service: 8th Avenue track crossings from 1st Street to 4th Street in bad (rough) condition, creating potential to damage equipment when crossing.

From Cedar Rapids: Seven crossings cited for accident potential requiring crossing signals. These were:

- 9th Street S.W. railroad crossing
- B Avenue and 29th Street N.E. railroad crossing
- Oakland at G Avenue N.E. railroad crossing
- Center Point Road N.E. at G Avenue railroad crossing
- 10th Street southwest railroad crossing
- 24th Street S.W. railroad crossing
- C Street S.W. railroad crossing.

From Hiawatha: No rail-related comments.

From Linn County: No rail-related comments.

From Marion: Rail crossings at 10th, 12th, 35th and Lindale Streets were cited for roughness. The crossings at 10th, 12th and 35th Streets were termed "confusing" and signalization was recommended.

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* Transportation System Management Plan, FY 80-84, Preliminary Copy, August 1979, Linn County Regional Planning Commission.

From Robins: No rail-related comments.

Interviews were held with representatives of municipalities and other agencies to receive comments relative to this study. The comments included:

From Cedar Rapids: The 4th Street problem was identified. No other particular rail-related problems were mentioned. A pin map showing accident locations was examined. No rail crossings had a significantly large number of accidents.

From Iowa Department of Transportation District 6: No current rail-related traffic problems were mentioned.

From Hiawatha: Three crossings on a now abandoned rail line were mentioned as being rough. Flashers, on a paralleling active track, installed within the last two years at Blairs Ferry Road have reduced accidents. Due to the low number of trains (two per day), delay is not a problem.

From Marion: At the present time, there are no significant accident or delay problems. The City has been negotiating with the MILW to get more crossings signalized in return for closing some of the crossings.

From Linn County Sheriff's Department: There are no unique problems in the surrounding Linn County.

GLOSSARY OF TERMS

Ballast:	Selected material placed on the roadbed for purpose of holding the track in line and surface.
Branch Line:	The secondary line or lines of a railway.
Carrier:	An individual or company engaged in the operation of a transportation service for hire, classified as a common carrier if serving the public and as a private or contract carrier if not serving the public.
Cinders:	The fused residue from coal burned in locomotives and other furnaces.
Continuous Welded Rail (CWR):	A number of rails welded together in lengths of 400 feet or longer.
Crossing (track):	A structure, used where one track crosses another at grade, and consisting of four connected frogs.
Crossover:	Two turnouts with the track between the frogs arranged to form a continuous passage between two nearby and generally parallel tracks.
Cross Tie:	The transverse member of the track structure to which the rails are spiked or otherwise fastened to provide proper gage and to cushion, distribute, and transmit the stresses of traffic through the ballast to the roadbed.
Derail:	A track structure for derailing rolling stock in case of an emergency.
Flangeway:	The open way through a track structure which provides a passageway for wheel flanges.
Frog:	A track structure used at the intersection of two running rails to provide support for wheels and passageways for their flanges, thus permitting wheels on either rail to cross the other.

Bolted rigid: A frog built essentially of rolled rails, with fillers between the rails, and held together with bolts.

Spring rail: A frog having a movable wing rail which is normally held against the point rail by springs, thus making an unbroken running service for wheels using one track, whereas the flanges of wheels on the other track force the movable wing rail away from the point rail to provide a passageway.

Solid manganese steel: A frog consisting essentially of a single manganese steel casting.

Self-guarded: A frog provided with guides or flanges above its running surface, which contact the tread rims of wheels for the purpose of safely guiding their flanges past the point of frog.

Frog Angle: The angle formed by the intersecting gage lines of a frog.

Frog Number: One-half the cotangent of one-half the frog angle, or the number of units of center line length in which the spread is one unit.

Gage (of track): The distance between the gage lines, measured at right angles thereto. (Standard gage is 4 feet, 8 1/2 inches.)

Guard Rail: A rail or other structure laid parallel to the running rails of a track to prevent wheels from being derailed or to hold wheels in correct alignment to prevent their flanges from stiking the points of turnout or crossing frogs or the points of switches.

Guard Timber: A longitudinal timber placed outside the track rail, to maintain the spacing of ties.

Joint Bar: A steel member embodying beam-strength and stiffness in its structural shape and material, commonly used in pairs for the purpose of

joining rail ends together, and holding them accurately, evenly, and firmly in position with reference to surface and gage-side alignment.

Lead: The length between the actual point of switch and the one-half point of the frog measured on the line of the parent track.

Level: The condition of the track in which the elevation of the two rails transversely is the same.

Line: The condition of the track in regard to uniformity in direction over short distances on tangents, or uniformity in variation in direction over short distance on curves.

Rail: A rolled steel shape, commonly a T-section designed to be laid end-to-end in two parallel lines on cross ties or other suitable supports to form a track for railway rolling stock.

Railway Track Scale: A scale especially designed for weighing railway equipment.

Salvage: Material and its value recovered from property retired or from material used as a construction aid.

Siding: A track auxiliary to the main track for meeting or passing trains.

Slag: A nonmetallic fused product resulting from the reduction of ores in furnaces.

Switch Tie: The transverse member of the track structure which is longer than, but functions as does the cross tie and, in addition, supports a crossover or turnout.

Terminal: An assemblage of facilities provided by a railway at a terminus or at an intermediate point for the handling of passengers or freight and the receiving, classifying, assembling and dispatching of trains.

Tie Plate: A plate interposed between a rail or other track structure and a tie.

Track: An assembly of rails, ties and fastenings over which cars, locomotives and trains are moved.

Classification Track: One of the body tracks in a classification yard, or a track used for classification purposes.

Departure Track: One of the tracks in a departure yard on which outgoing cars are placed.

Hold Track: One of the body tracks in a hold yard or a track used for hold purposes.

House Track: A track alongside or entering a freight house, and used for cars receiving or delivering freight at the house.

Interchange Track: A track on which cars are delivered or received, as between railways.

Ladder Track: A track connecting successively the body tracks of a yard.

Lead Track: An extended track connecting either end of a yard with the main track.

Main Track: A track extending through yards and between stations, upon which trains are operated by time table or train order, or both, or the use of which is governed by block signals.

Passing Track: A track auxiliary to the main track for meeting or passing trains.

Receiving Track: One of the body tracks in a receiving yard or a track used for receiving trains.

Repair Track: A track on which cars are placed for repairs.

Scale Track: A track leading to and from and passing over a track scale.

Spur Track: A stub track diverging from a main or other track.

Team Track: A track on which cars are placed for transfer of freight between cars and highway vehicles.

Transfer Track: A track so located with respect to other tracks and to transferring facilities as to facilitate the transfer of lading from one car to another.

Wye Track: A triangular arrangement of tracks on which locomotives, cars and trains may be turned.

Track Capacity: The number of cars that can stand in the clear on a track.

Turnout: An arrangement of a switch and a frog with closure rails, by means of which rolling stock may be diverted from one track to another. The turnout number corresponds to the frog number of the frog used in the turnout.

Yard: A system of tracks within limits provided for making up trains, storing cars, and other purposes, over which movements not authorized by time table or by train order may be made, subject to prescribed signals and rules or special instructions.

Track Conditions:

Good: Adequate for continued service with routine maintenance.

Fair: Adequate for continued service but routine maintenance must soon be supplemented with a rehabilitation program.

Poor: In immediate need of rehabilitation.