Preliminary Draft

Chapters I through V

DeLEUW CATHER

De Leuw, Cather & Company
Consulting Engineers and Planners · Chicago

Report to
Linn County Regional Planning Commission
Rail Study Advisory Committee

Comprehensive Railroad Study
for
Linn County, Iowa

November 1979

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Forecasts

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Chapter I

INTRODUCTION

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 was considered as a part of these efforts, the main focus was on formulating a rail network improvement plan for the Cedar Rapids 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.

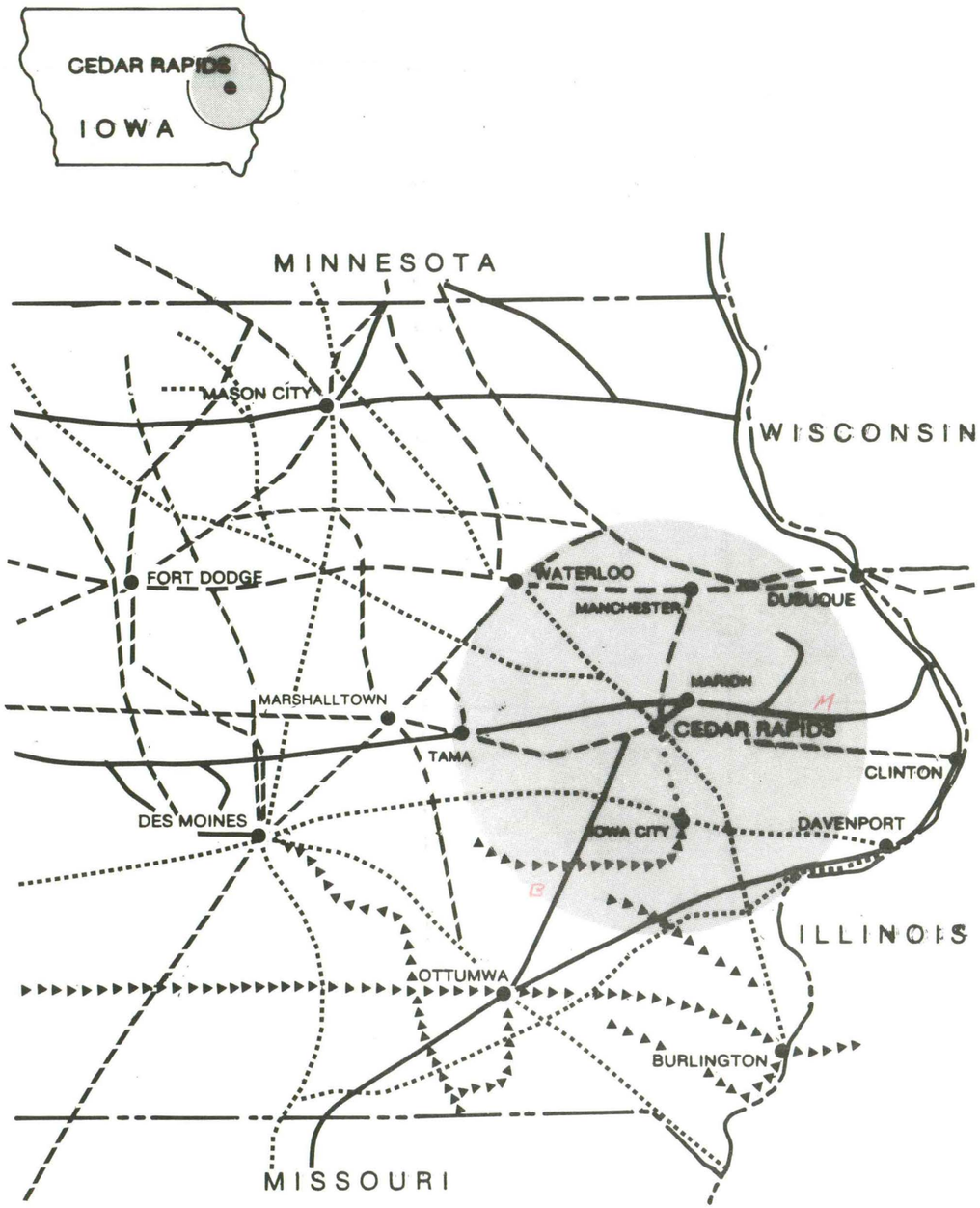
LINN COUNTY AND THE REGIONAL RAIL SYSTEM

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

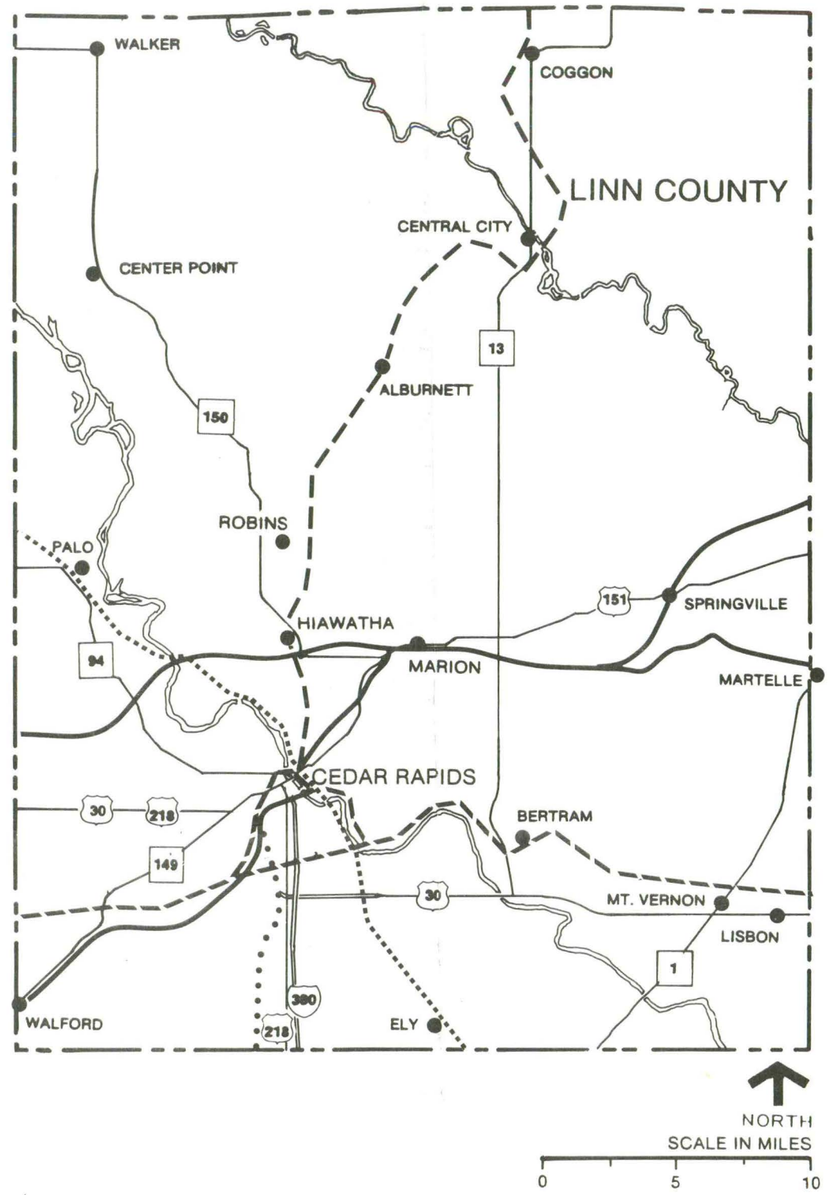
- Cedar Rapids and Iowa City Railway Company (CRANDIC)
- Chicago, Milwaukee, St. Paul and Pacific Railroad (MILW)
- Chicago and North Western Transportation Company (CNW)
- Chicago, Rock Island and Pacific Railroad Company (RI)
- Illinois Central Gulf Railroad Company (ICG)

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, but is now used only by one daily through freight in each direction between Savanna and Marion, and by way freights serving local customers. Chicago-Council Bluffs trains are now operated over the CNW between Clinton and Tama. The MILW has proposed abandoment of the line segment between Green Island and Council Bluffs. Locally, the MILW has a branch line extending from Marion through Cedar Rapids, and southwest to Ottumwa. The MILW has also proposed to abandon this entire branch line.



REGIONAL RAIL SYSTEM



LINN COUNTY 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

CEDAR RAPIDS METROPOLITAN AREA SETTINGS
THE REGIONAL AND COUNTY RAIL SYSTEMS
LINN COUNTY RAILROAD STUDY

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.

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.

Although Cedar Rapids rail-oriented business has access to five railroads, resulting in a highly competitive situation, service is seriously deficient. Also, two of the major carriers, the MILW and the RI, are bankrupt; whether they will continue to operate into Cedar Rapids, or continue to exist as separate entities, is questionable. Because of these circumstances, changes are probable in the corporate structure and routes of some of the railroads serving Cedar Rapids. In any event, substantial improvement over present conditions must be made if the railroads are to provide service adequate to retain or increase present traffic levels and satisfy demands of rail-oriented industry.

STUDY OBJECTIVES AND PROCEDURES

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 LCPRC 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.

Investigations were carried out in three interrelated phases:

Phase I: Inventory, Forecasts and Problem Identification

Phase II: Development and Evaluation of Improvement Alternatives

Phase III: Action Plan Development

Phase I efforts are documented in this report.

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. Although 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.

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.

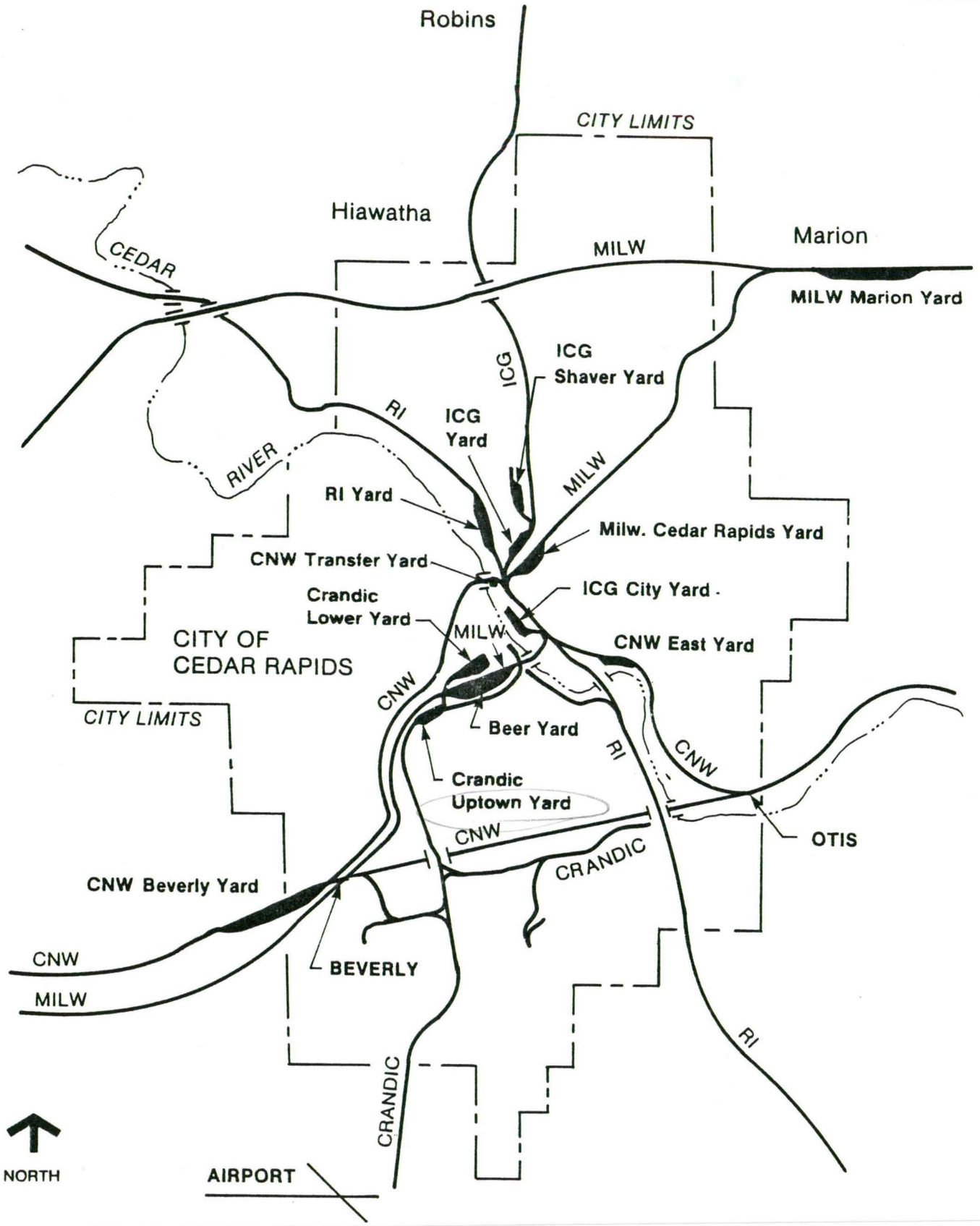
CEDAR RAPIDS AND IOWA CITY RAILROAD COMPANY (CRANDIC)

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 10-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

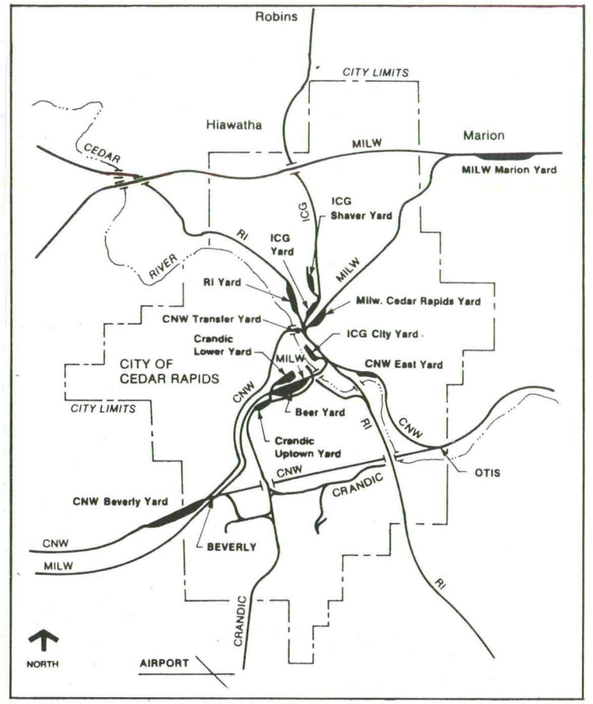
The CRANDIC's main yard is Uptown Yard, near Wilson Avenue on the southwest side of Cedar Rapids. In addition to facilitating the classification of cars, this yard serves as an interchange with the MILW and contains car and locomotive repair facilities.

FIGURE II-1



METROPOLITAN RAIL SYSTEM
LINN COUNTY RAILROAD STUDY

FIGURE II-2



KEY MAP

NORTH

SCALE IN FEET

0 3000 6000

CRANDIC FACILITIES IN THE METROPOLITAN AREA

LINN COUNTY RAILROAD STUDY

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 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 Sweetneners. 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.

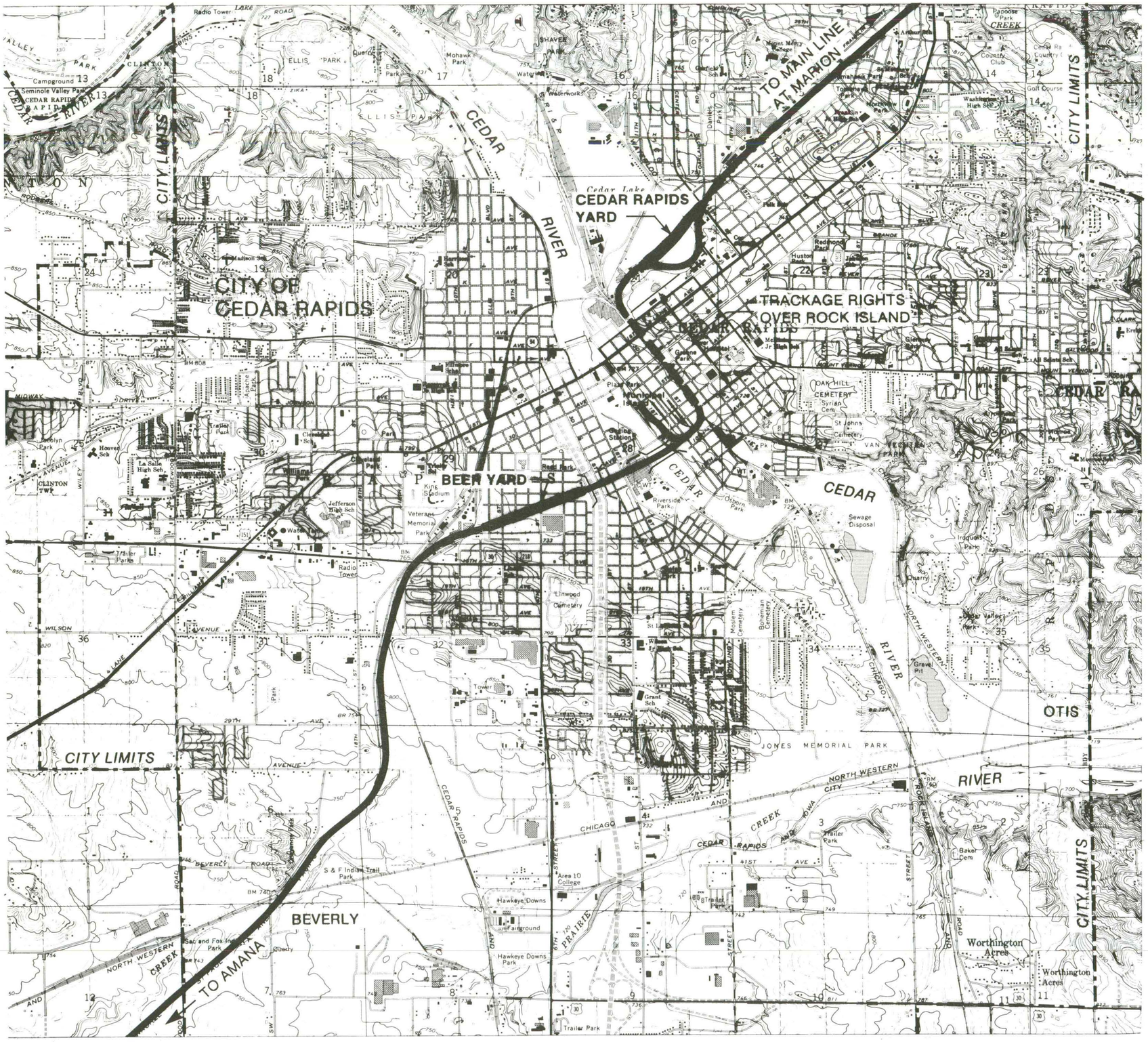
Monday through Friday, two engines are assigned at Uptown Yard, one going on duty at 6:30 a.m. and the other at 5:00 p.m. One 10:00 a.m. assignment operates Saturday and Sunday. These engines switch Uptown Yard, Lower Yard, and all Cedar Rapids industries located on the CRANDIC except for Corn Sweeteners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

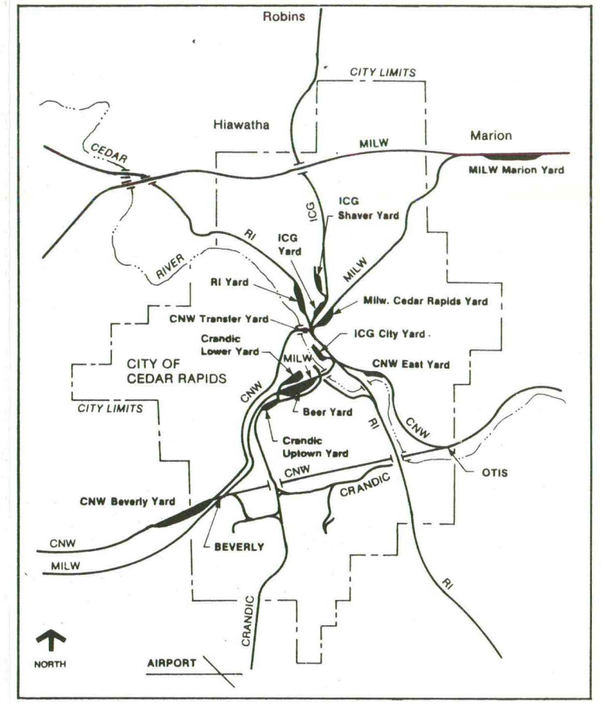
CHICAGO, MILWAUKEE, ST. PAUL AND PACIFIC (MILW)

The Chicago, Milwaukee, St. Paul and Pacific (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

FIGURE II-3





KEY MAP

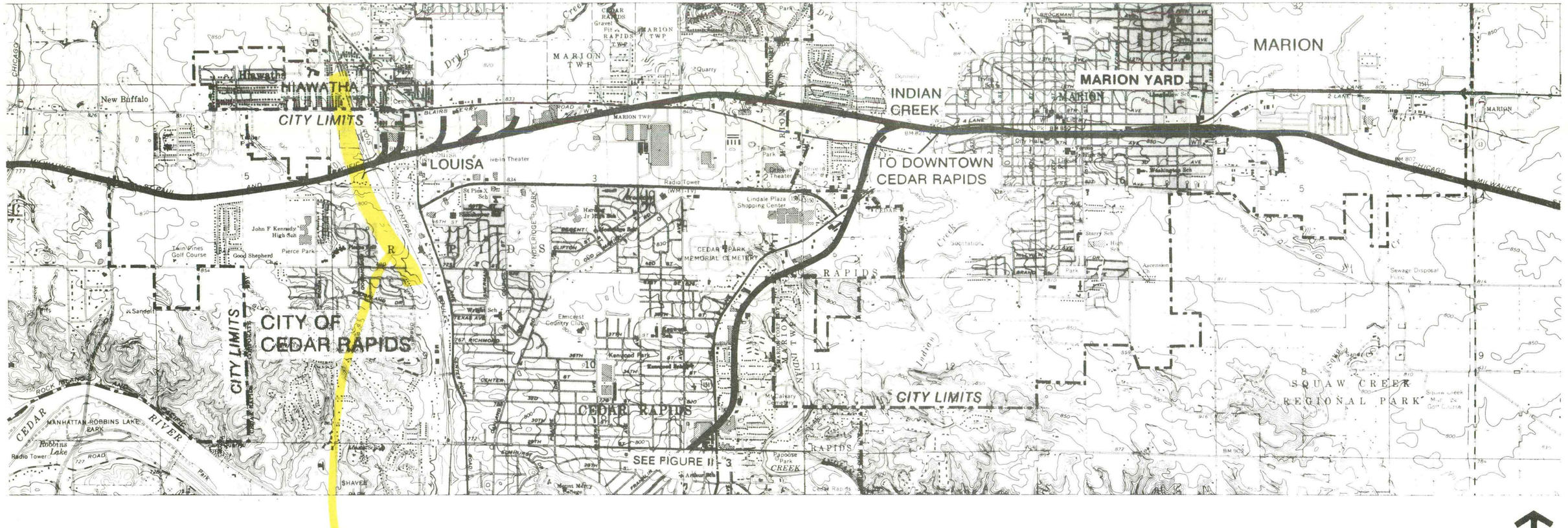
NORTH

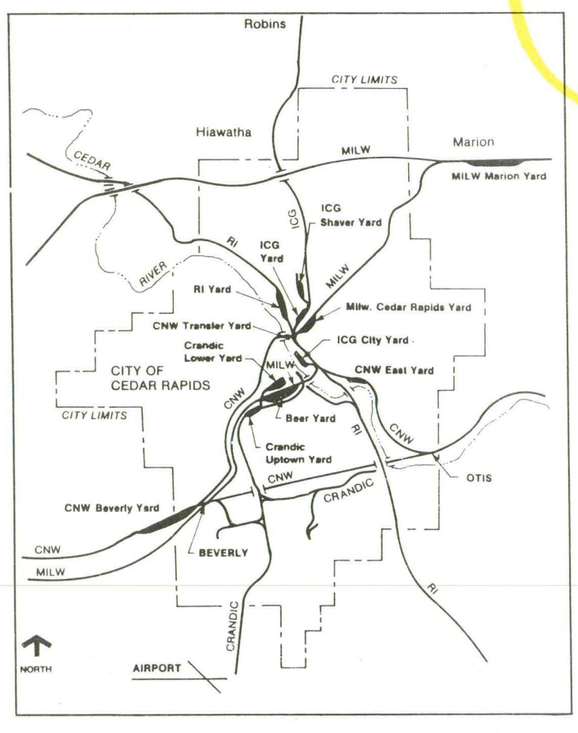
SCALE IN FEET

0 3000 6000

MILW FACILITIES IN THE METROPOLITAN AREA

LINN COUNTY RAILROAD STUDY





KEY MAP

MILW FACILITIES IN THE METROPOLITAN AREA
LINN COUNTY RAILROAD STUDY

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 to poor.

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 regional sales manager, 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 Beer 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 Beer 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.

Beer 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 Beer 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, pulling about 70 cars. 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 Beer 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 Hopkington. On Tuesday and Friday, it operates between Marion and Maquoketa, and on Wednesday, it runs west to Tama.

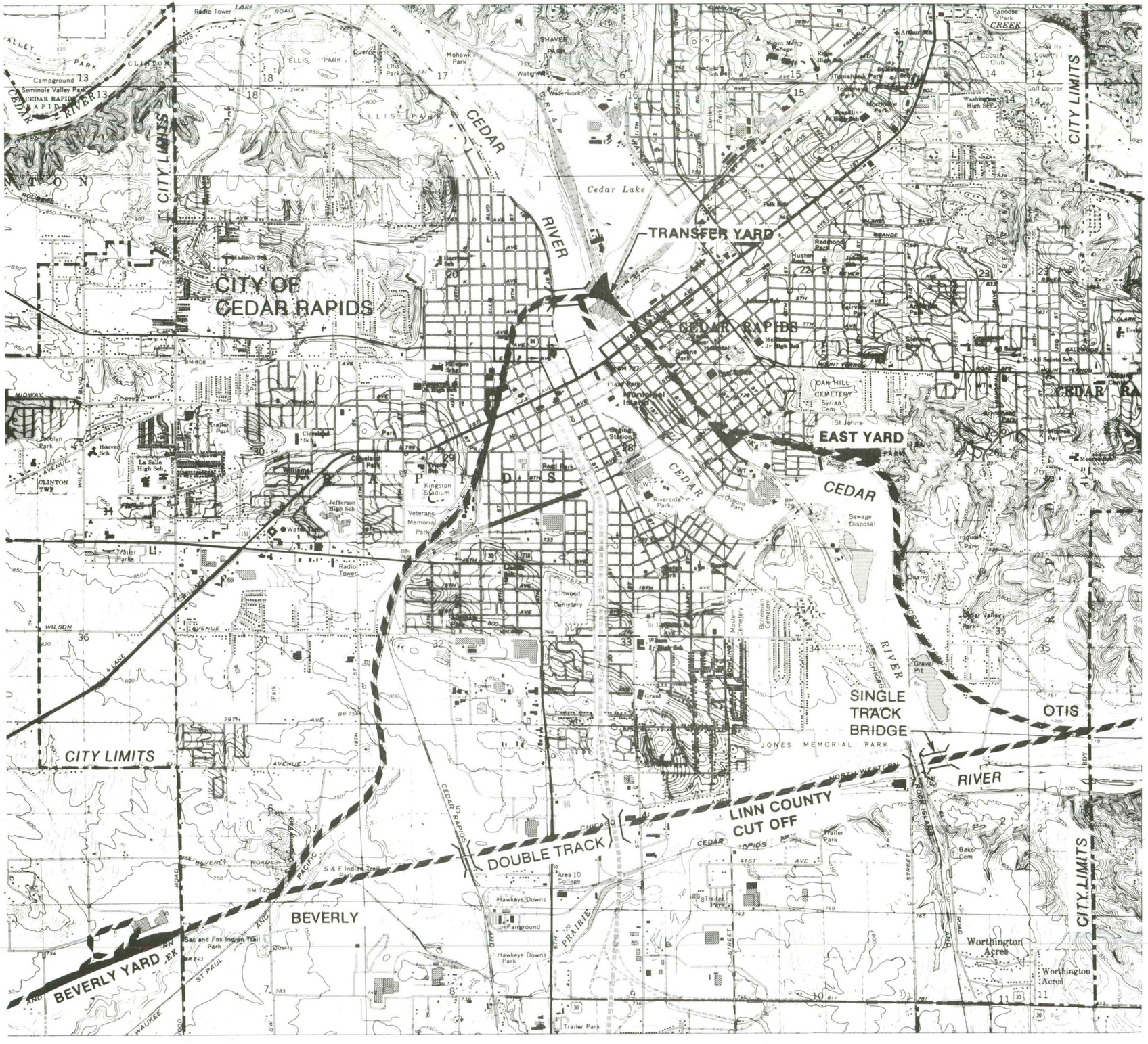
Three yard engines (one each shift) operate out of Marion daily except Sunday. The crews are responsible for switching at Marion Yard, serving industries in Marion and Louisa, and moving cars to and from Cedar Rapids. One transfer move to Cedar Rapids is normally made each shift.

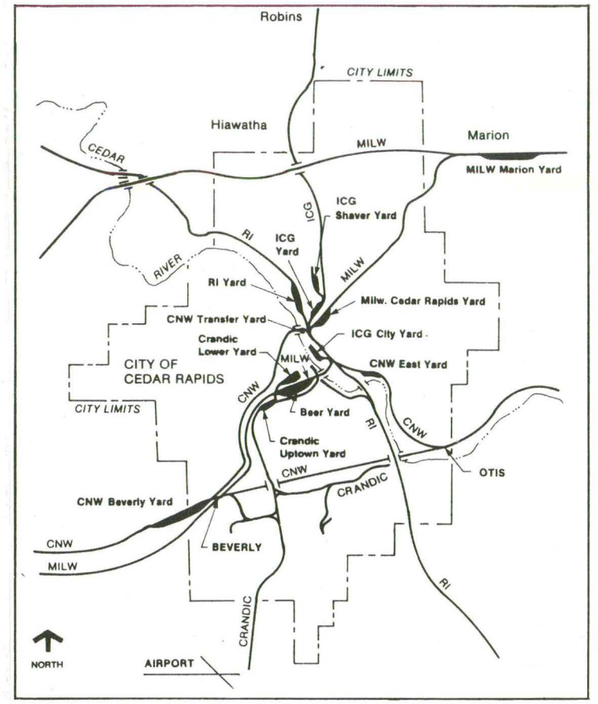
Interchange movements and industrial servicing in Cedar Rapids are handled by five yard engines assigned at Cedar Rapids Yard. Two engines work first and second shift, with one on third. These engines do all local industry work and make interchange deliveries to all other railroads.

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

FIGURE II-5





KEY MAP

NORTH

SCALE IN FEET

0 3000 6000

CNW FACILITIES IN THE METROPOLITAN AREA

LINN COUNTY RAILROAD STUDY

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 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 Road 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

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. Switches 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 switches 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.

2.) 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 for engine switching East Yard and other industries. 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.

3.) 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. 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 Transfer Yard. Yard clerks from the Transfer Yard office are assigned to weigh cars. This is usually done on the second shift.

Beverly Tower is located where the MILW branch line to Amana and Ottumma crosses the CNW main line. The tower is operated on a call basis by the operator at Beverly Yard. The MILW calls 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 symbol 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 there. 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
141	Proviso	Kansas City	6:00 p.m.	Kansas City	None
243	Chicago (Wood St.)	Fremont	5:30 p.m.	None	None
247	Proviso	Fremont	9:00 a.m.	U.P.	None
249	Proviso	Fremont	6:00 p.m.	None	None
253	Proviso	Boone	8:00 p.m.	Boone, Marshalltown	Chicago
273	Proviso	Fremont	11:00 p.m.	None	--
391	St. Louis (A&S)	Boone	12:00 Noon	Boone, Marshalltown	St. Louis
395	Madison (St. Louis)	Boone	1:00 a.m.	Boone, Marshalltown	St. Louis
Local	Clinton	Belle Plain	--	--	--

Eastbound

Train	Origin	Destination	Scheduled Time at Cedar Rapids	Pick Up Traffic Destined	Sets Out
142	Kansas City	Proviso	10:00 p.m.	Proviso	None
258	Council Bluffs	Chicago (Wood St.)	6:00 a.m.	Clinton, Proviso	None
260	Council Bluffs	Proviso	9:00 a.m.	Clinton, Proviso	Council Bluffs, Boone, Marshalltown
272	Fremont	Proviso	4:00 a.m.	None	None
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 Plain	Clinton	--	--	--

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, switches to and from Quaker Oats
02	Beverly Yard	7:00 a.m.	Daily	Works north side of Beverly Yard, blocks outbound cars, runs cars to and from town, spots cars on trip track once per shift
03	Quaker Oats	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 Quaker Oats, interchange with CRANDIC
04	Quaker Oats	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	Quaker Oats	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

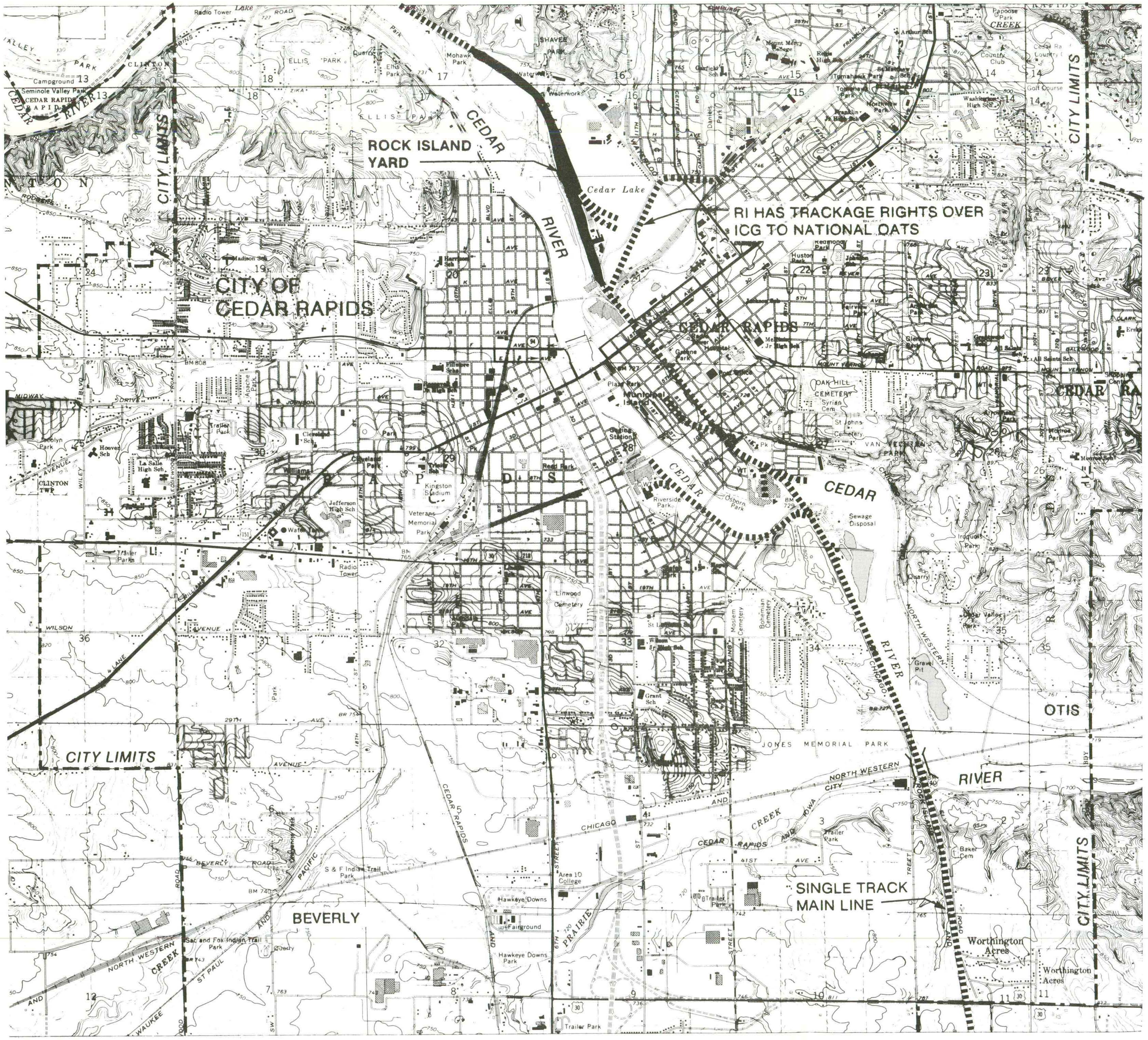
CHICAGO, ROCK ISLAND AND PACIFIC RAILROAD COMPANY (RI)

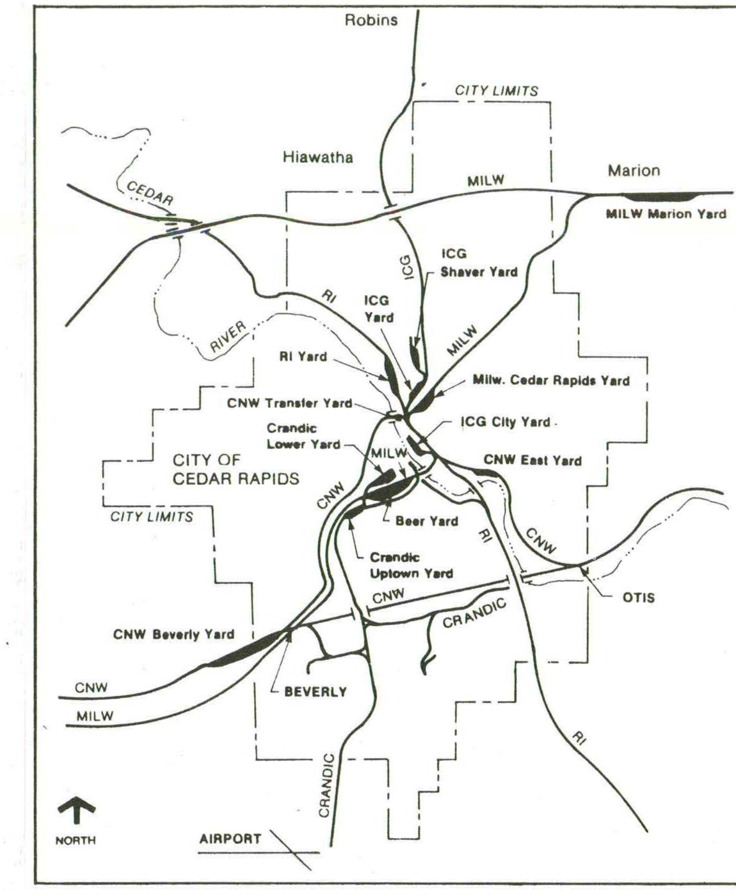
The main line of the Chicago, Rock Island and Pacific (RI), as shown on Figure II-6, runs generally north and south through Cedar Rapids, along the east side of the Cedar River, before crossing the river on the southeast side of town. The line runs south from Cedar Rapids to West Liberty, where it intersects the RI route between Chicago and Council Bluffs, 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 east of 7th Avenue and B Avenue, where all train and engine movements are governed by the operator at 9th Avenue Tower.

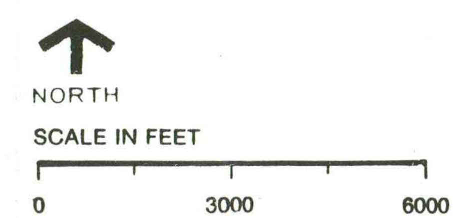
Yards and Facilities

The RI has a yard complex, with four separate 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 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 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



RI FACILITIES IN THE METROPOLITAN AREA

LINN COUNTY RAILROAD STUDY

3) The Grain Yard is used to store grain cars destined for Quaker Oats. The RI pulls the cars from the Grain Yard and spots 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.

4) The City Yard holds cars going to industries in Cedar Rapids. Both the MILW and the ICG deliver their interchange cars to the RI at the City Yard. The City Yard has nine tracks and a capacity of about 150 cars. The yard tracks consist of 90# rail, with some 80#, in good condition. The switches, 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 six-person car department makes inspections and repairs an average of four cars per day on the car repair tracks. The yard and agent's 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 jointly with the ICG, CNW, and MILW. The 9th Avenue Tower controls all train and engine movements between the CNW crossing, 9th Avenue, junction switch east of 7th Avenue, and 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 has trouble and has to stop.

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, routes north of Waterloo and south of West Liberty remain out of service because of track and bridge defects. Whether these lines, which affect operations through Cedar Rapids, will be reopened is not known.

Prior to the shut down, normal road train operation was as follows:

Westbound

Train	Frequency	Origin	Destination	Traffic Handled
61	Daily	Silvis	Manly	-
69	Triweekly	Silvis	Cedar Rapids	-
Local	Triweekly	Cedar Rapids	Manly	-
Local	Triweekly	Cedar Rapids	Iowa Falls	-

Eastbound

Train	Frequency	Origin	Destination	Traffic Handled
62	Daily	Manly	Silvis	-
64	Triweekly	Cedar Rapids	Silvis	-
Local	Triweekly	Cedar Rapids	Columbus Jct.	-

Since resumption of service, one daily through train in each direction has been operating between Cedar Rapids and Silvis. Local service has been reduced to a twice-weekly round trip to Waterloo, Iowa Falls and West Liberty. Some extra trains, including unit grain trains, were and continue to be operated.

The normal complement of yard engines is two each shift, seven days a week. All engines go on and off duty at the yard office. Before the strike, an average of two extra yard engines were operated as traffic required.

ILLINOIS CENTRAL GULF RAILROAD

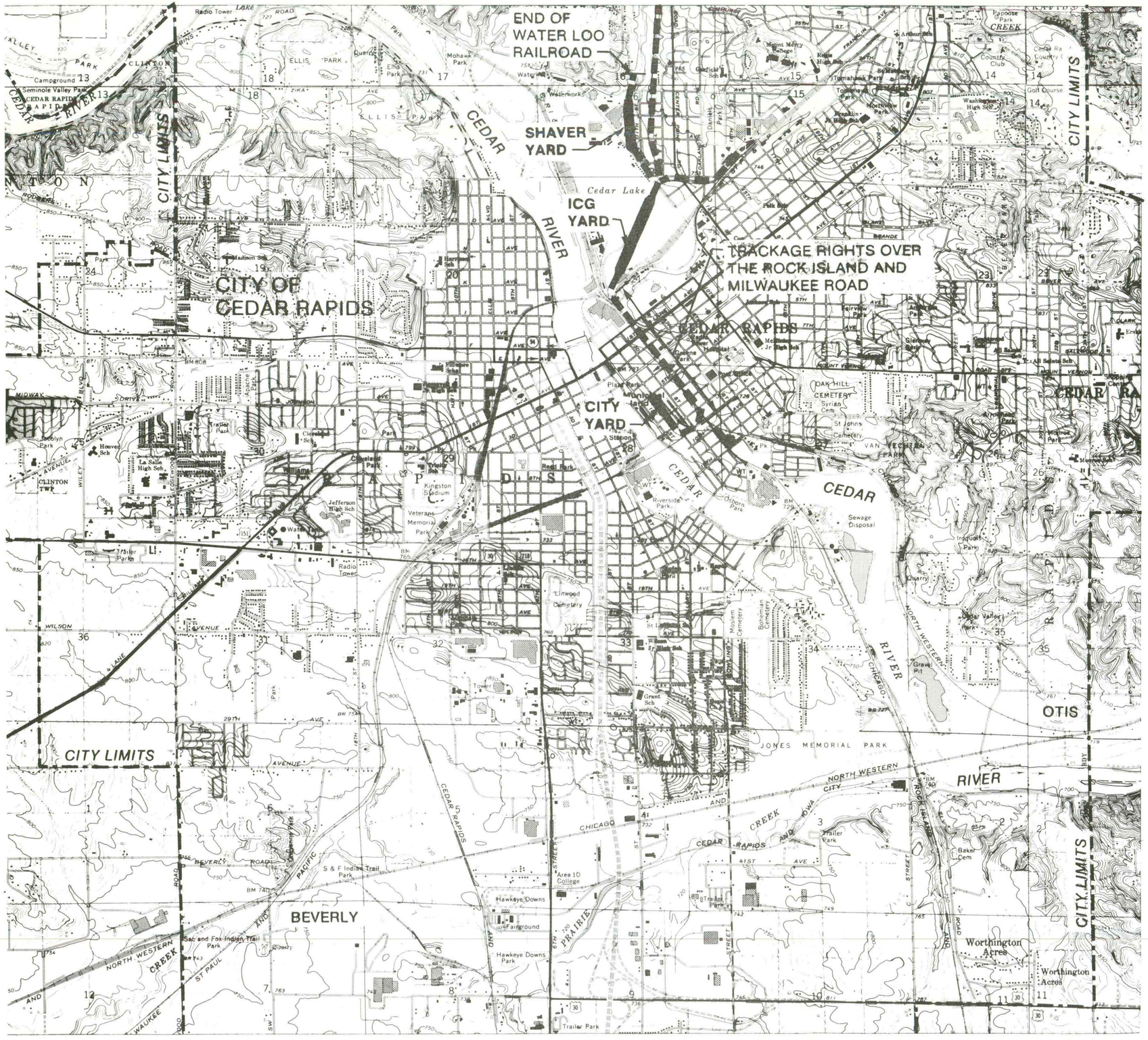
The Illinois Central Gulf Railroad (ICG), as shown on Figure II-7, has a main line extending from Chicago, Illinois to Omaha, Nebraska. This line passes through Dubuque, Waterloo, and Fort Dodge, Iowa on its way to Omaha. At Manchester, Iowa, a branch line diverges from the main line and extends 42.1 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 has an operating timetable speed of 25 mph.

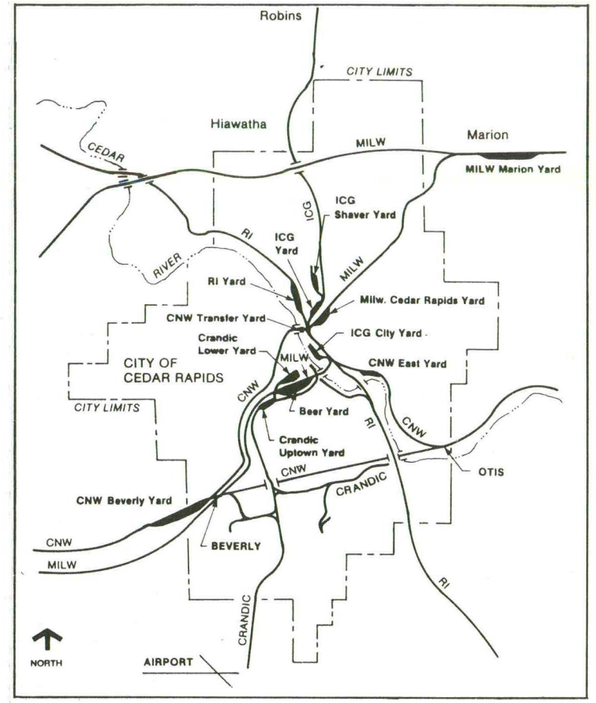
In Cedar Rapids, the ICG has three yards: City Yard, Cedar Rapids Yard, and Shaver Yard. Shaver Yard is part of the Waterloo Railroad, which is a wholly owned subsidiary of the ICG. City Yard and Cedar Rapids Yard are parts of the ICG Railroad proper.

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 very 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-person section crew is responsible for track maintenance, and a mechanic 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





KEY MAP

NORTH

SCALE IN FEET

0 3000 6000

ICG FACILITIES IN THE METROPOLITAN AREA

LINN COUNTY RAILROAD STUDY

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

2.) 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.

Capacity ?

3.) 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. The ties are poor and the under-ballast is fouled on the first, third and fourth yard tracks. On the second, fifth, and sixth yard tracks, the ties are in good condition and track has recently been reballasted on small-stone ballast. The overall condition of the yard is fair to good.

This facility is used primarily to store any overflow from Cedar Rapids Yard, and for grain inspection. Due to an agreement between the ICG and the Waterloo RR, only the day switching crew is allowed to switch Shaver Yard.

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 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.

Table II-3

INTERCHANGE TRAFFIC

FROM \ TO	CRANDIC	MILW	CNW	RI	ICG
CRANDIC		CRANDIC delivers MILW to transfer track at CRANDIC Uptown Yard. (2)	CRANDIC delivers to IC track 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 IC 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

Between	MILW	RI	ICG	CNW
CRANDIC	65	23 102*	34	69
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 delivers and pulls 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.

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 tracks 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.

Need 1990 Transp Plan

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

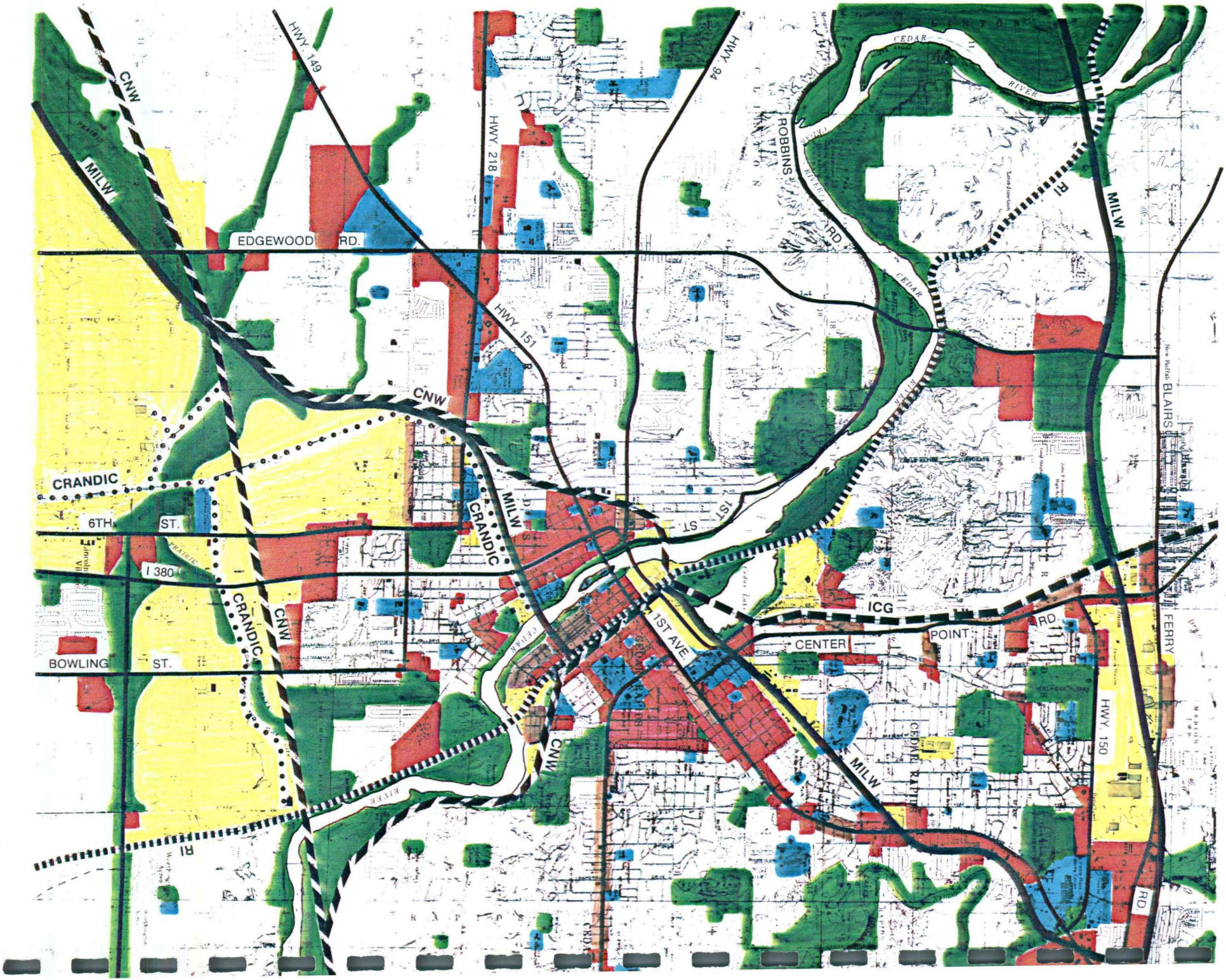
The land-use policy plan for the Cedar Rapids Metropolitan Area is shown in Figure III-1. The policy plan is generally consistent with existing land uses (particularly in the inner developed core) or reflective of present land use trends.

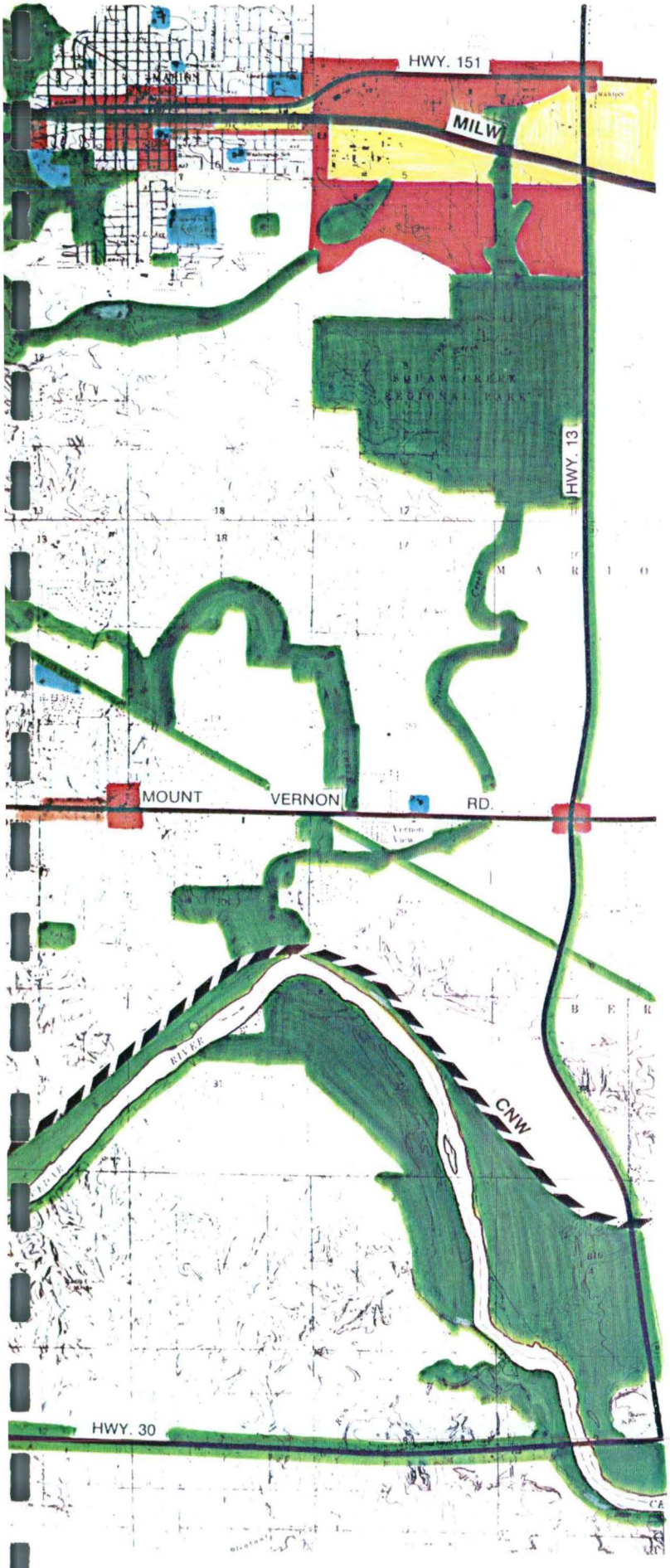
The pattern of land use is characterized by a core of commercial development in the center of Cedar Rapids. This is surrounded by a ring of residential development, one to two miles wide, broken by open space contiguous to the Cedar River. The river bisects the core in a generally northwest-southeast 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
HWY. 151
EDGEWOOD RD.
ROBBINS RD
CEDAR RIVER
RI
MILW
CRANDIC
6TH ST.
I 380
CRANDIC
CNW
MILW
CRANDIC
1ST ST
1ST AVE
ICG
CENTER POINT RD
BOWLING ST.
CNW
MILW
CEDAR RAPIDS
HWY. 150
FERRY RD
BLAIRS FERRY
RI
CNW



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

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

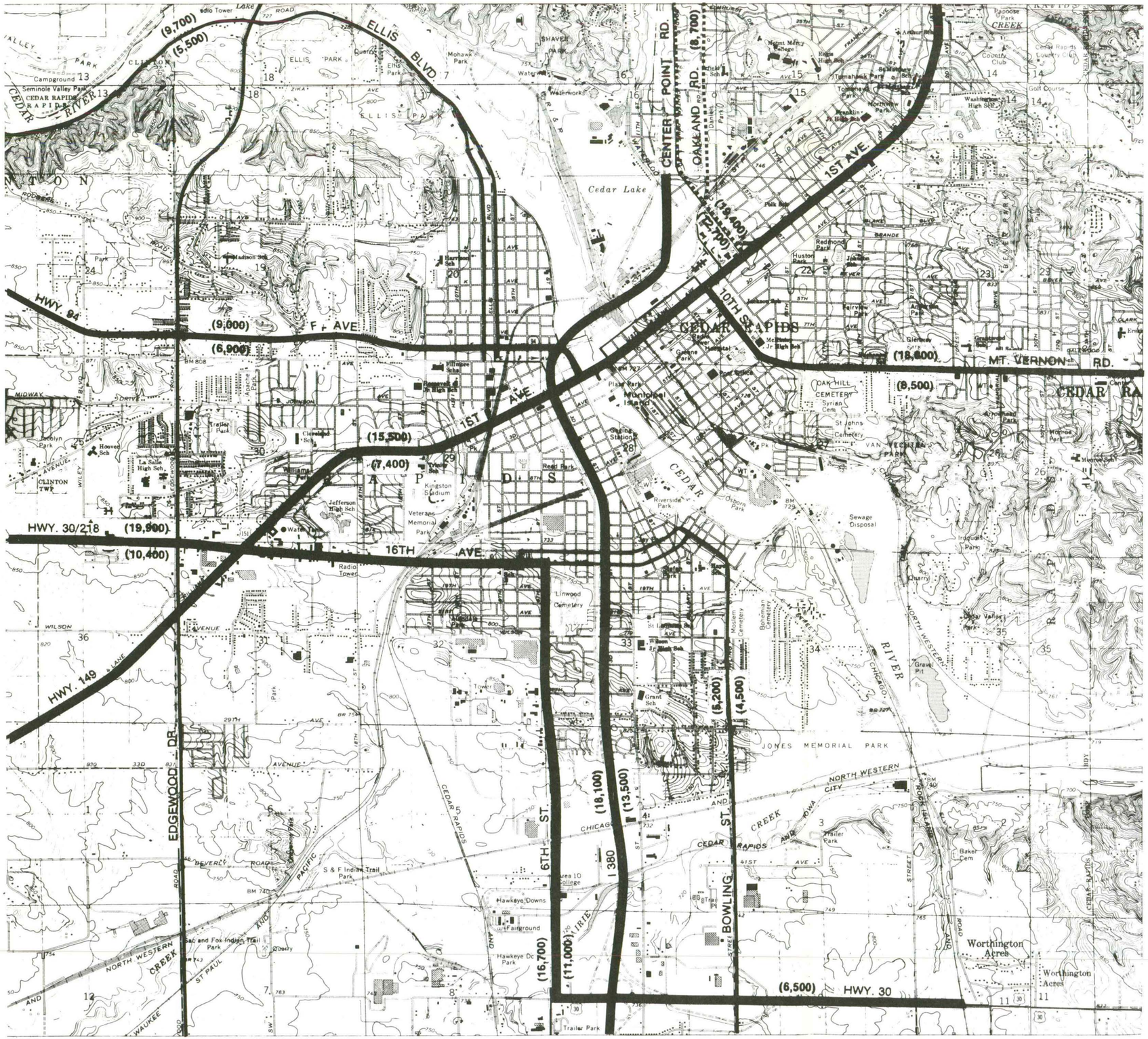
Figures III-2 and III-3 show the principal streets and highways serving the Cedar Rapids metropolitan area. The community core (central Cedar Rapids) was laid out with streets parallel and perpendicular to the Cedar River, which runs northwest to southeast. Major streets entering from the surrounding 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.

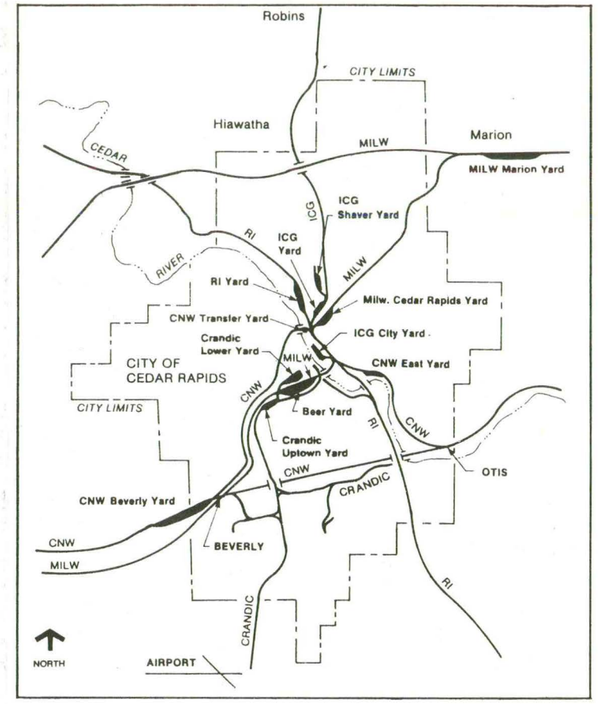
Travel between the Cedar Rapids area and other parts of Iowa is by three U.S. highways, one major state highway, two minor state highways, and an interstate connector. East-west access is provided directly by Highway U.S. 30 and indirectly from Interstate 80 (located 20 miles south) via the Interstate 380 connector. Highway 51 serves travel to the northeast of Cedar Rapids, and Iowa Highway 149 extends to the southwest. The principal north-south roadway is U.S. Highway 218. 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.

FIGURE III-2





KEY MAP

LEGEND

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

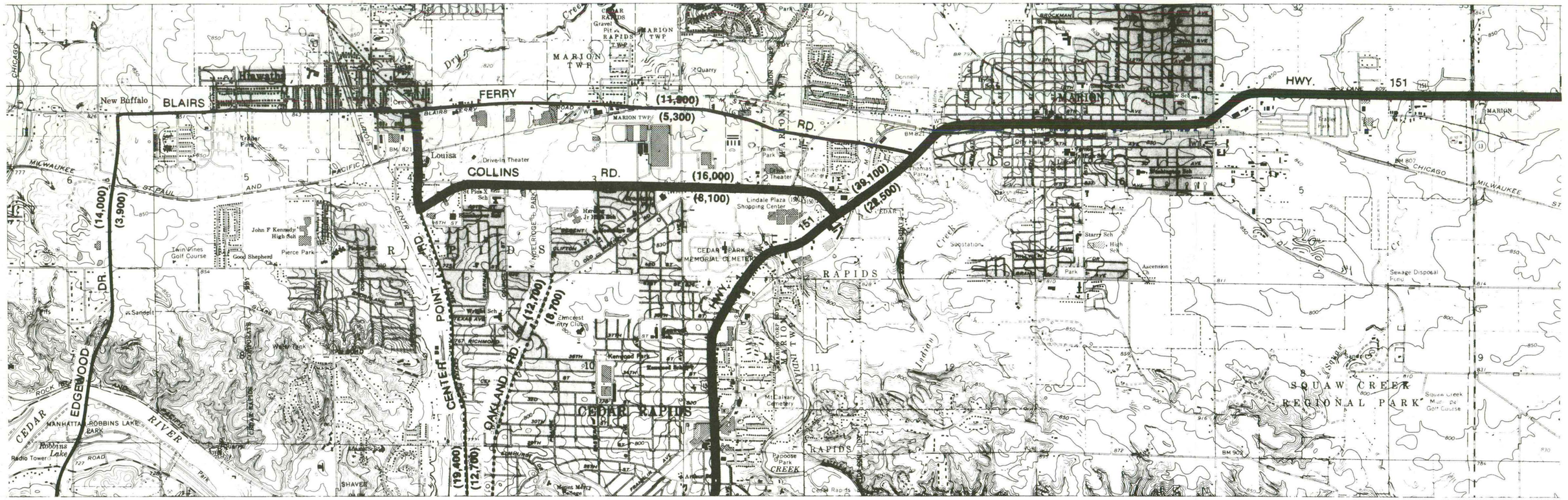
*SHOWN BECAUSE OF HIGH TRAFFIC VOLUME AND SERVICE AREA; OTHER MINOR ARTERIALS OMITTED.

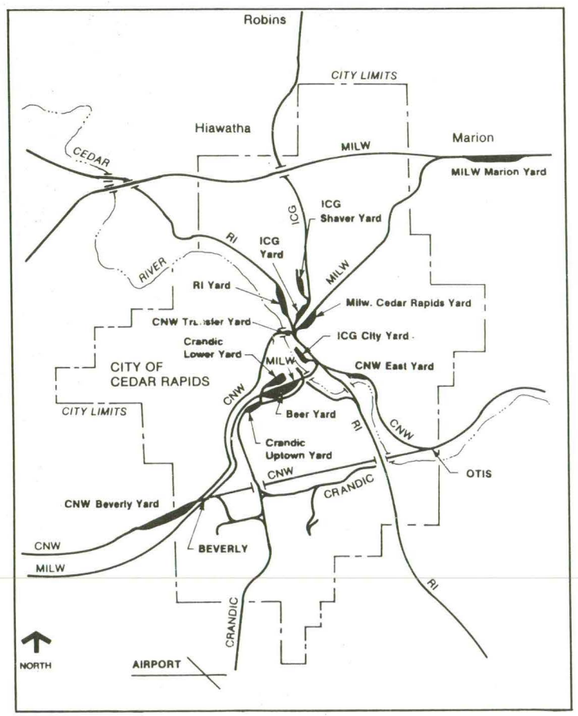
NORTH

SCALE IN FEET

0 3000 6000

PRIMARY ROADWAY SYSTEM
LINN COUNTY RAILROAD STUDY





KEY MAP

NORTH

SCALE IN FEET

0 3000 6000

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.

PRIMARY ROADWAY SYSTEM
LINN COUNTY RAILROAD STUDY

Table III-1

PRIMARY ROADWAYS IN CEDAR RAPIDS METROPOLITAN AREA
LINN COUNTY RAILROAD STUDY

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

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

[a] See Figure ____.
[b] Location relative to central Cedar Rapids.
[c] 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

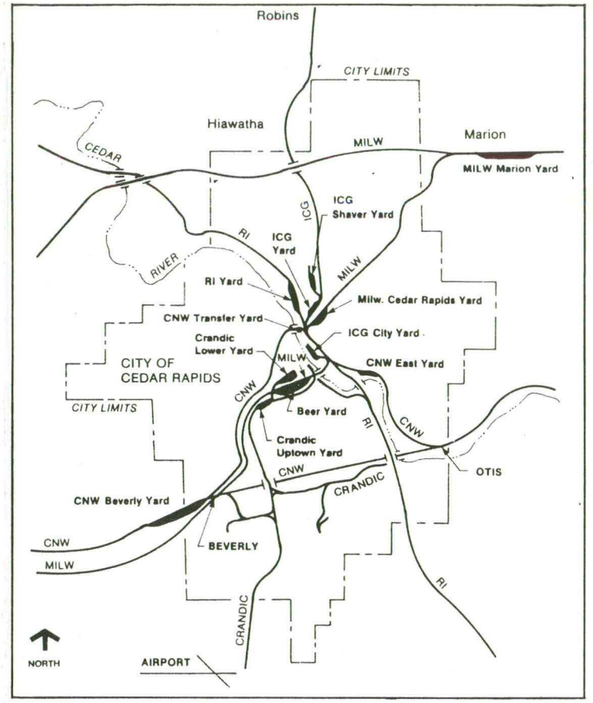
Even when these factors are quantified, and resulting vehicle delays computed, the severity of the conflict at any location remains to be judged subjectively by people within a community, rather than by any rigidly applied standards. The same amount of delay can be considered simply annoying at one location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

Function Classification

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

FIGURE III-4



KEY MAP

LEGEND

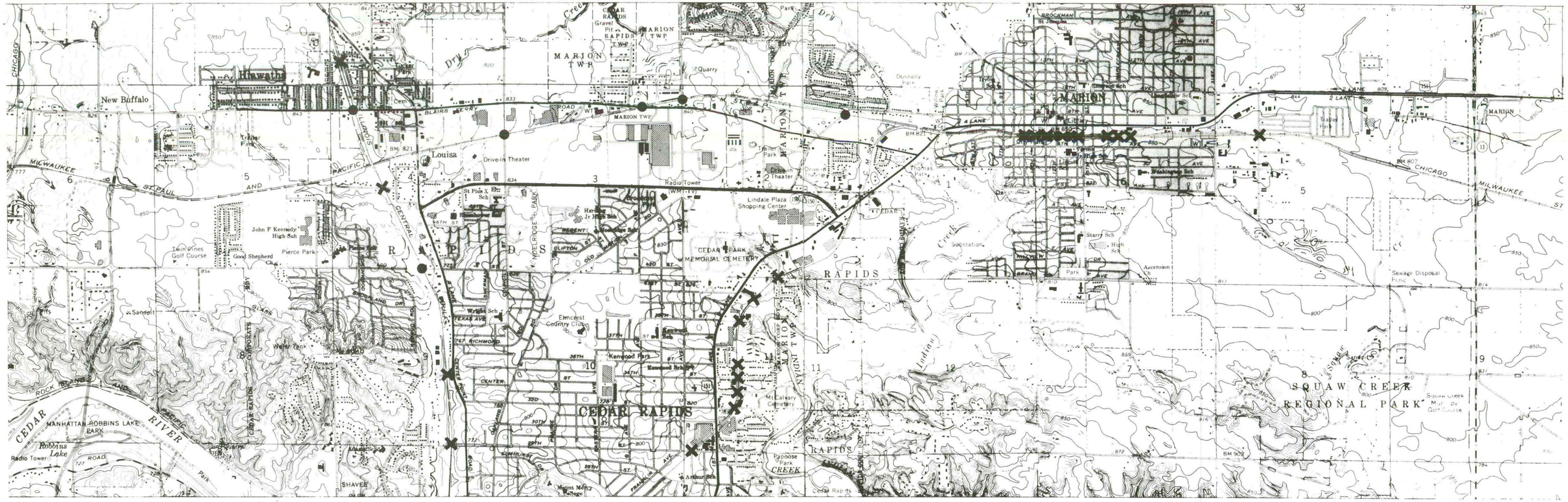
- ● CROSSING SIGNALIZED WITH EITHER FLASHERS, GATES, OR BOTH
- × NON-SIGNALIZED CROSSING
- 0 REPRESENTS NUMBER OF CROSSINGS - TOO MANY TO SHOW

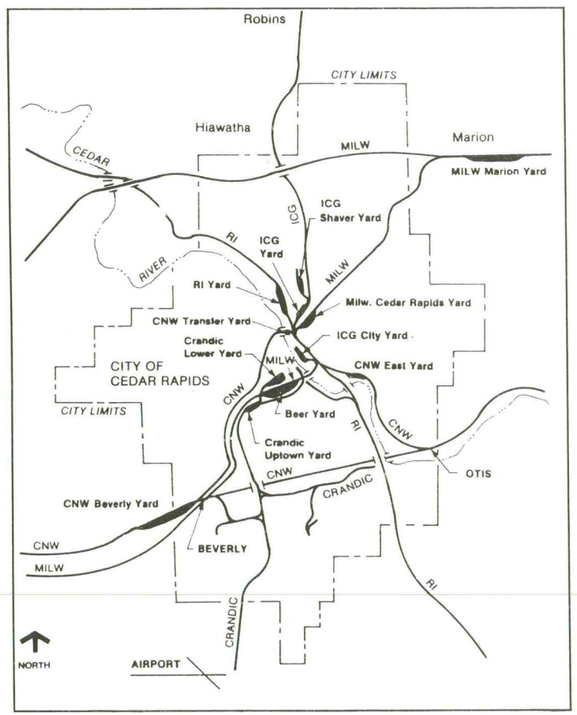
NORTH

SCALE IN FEET

0 3000 6000

LOCATION OF AT GRADE CROSSINGS
LINN COUNTY RAILROAD STUDY





KEY MAP

NORTH

SCALE IN FEET

0 3000 6000

LEGEND

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

LOCATION OF AT GRADE CROSSINGS
LINN COUNTY RAILROAD STUDY

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 Fourth 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 Fourth Street corridor contains up to three tracks used by all railroads (except the CRANDIC) operating in Cedar Rapids. Five CBD arterial streets (First through Fifth Avenues) carry more than 90,000 vehicles per day (1972) over the Fourth 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 First Avenue to Fifth 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 (First 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.

Accidents?

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:

- First Avenue and Fourth Street (part of the above-mentioned Fourth Street corridor)

- Center Point Road at the crossing with the Milwaukee Road tracks

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

One site, the Edgewood Road 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 Milwaukee Road 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 (Tenth and 11th Streets), which may focus traffic on these streets, causing increased delays and increased concern over train blockages on the Milwaukee Road 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 Milwaukee Road 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 Rock Island operator at the Ninth 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 Fourth Street corridor as a problem when it is necessary to move special equipment (and 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 Fourth Street corridor), various rail operational changes will be analyzed with respect to their effects on other segments of the community.

what about future volumes?

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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.

Representations 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:

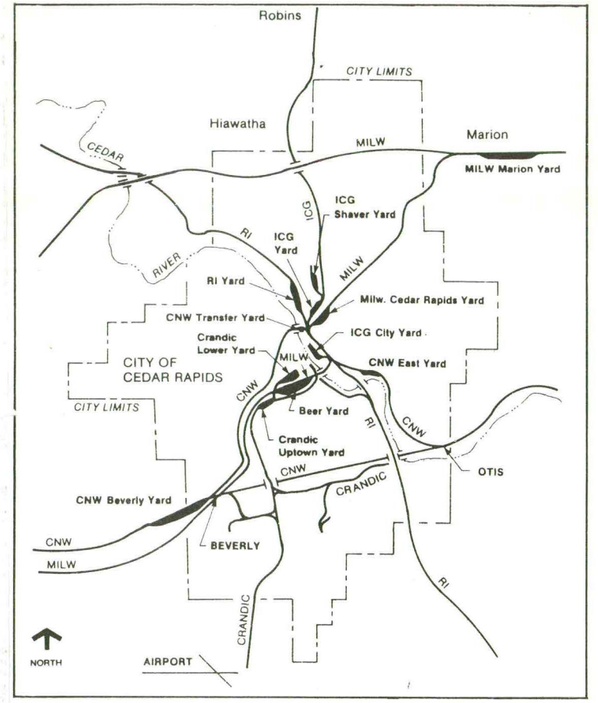
- Traffic volume and commodities
- Switching service provided
- Routing of traffic and transit times
- Special requirements, such as weighing
- Plant rail-related facilities
- Traffic split between rail and truck
- Traffic forecast
- Deficiencies or problems with present rail service.

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 1969-1978 are shown in Table IV-1.

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:

FIGURE IV-1



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

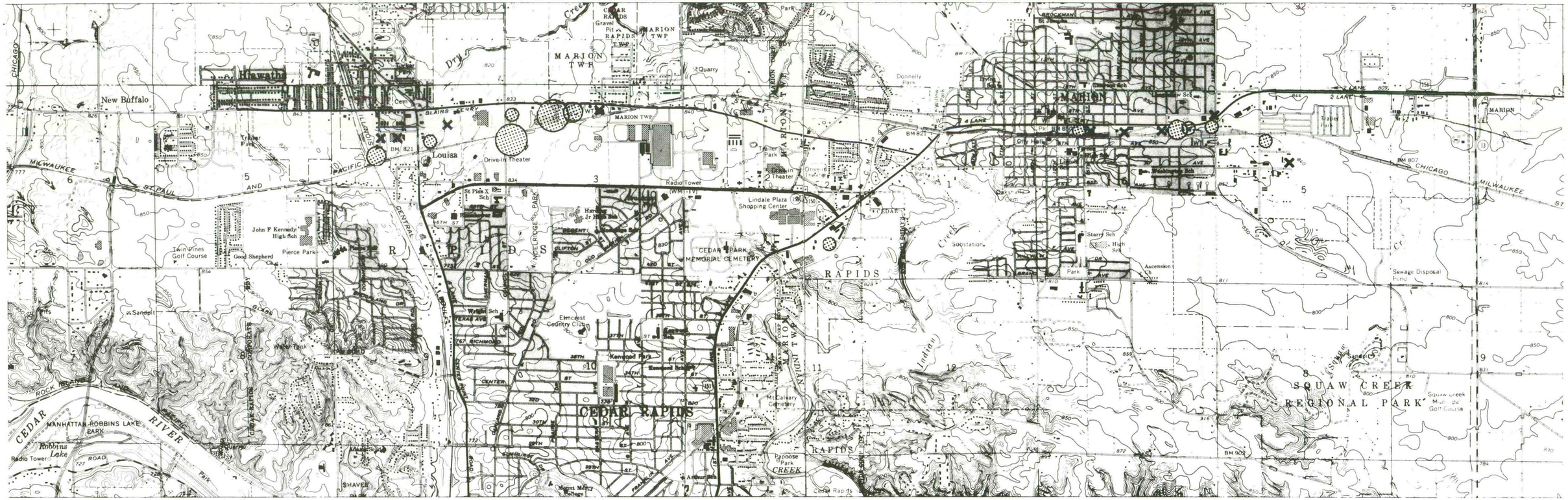
NORTH

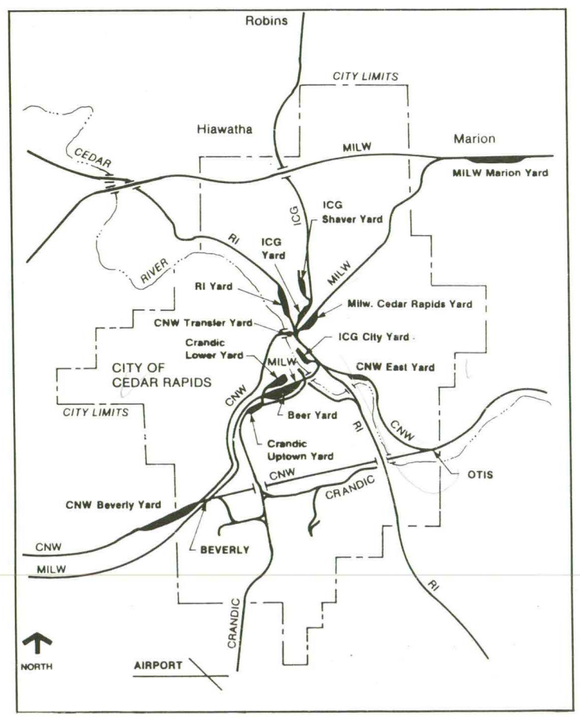
SCALE IN FEET

0 3000 6000

LOCATION OF RAIL USERS
LINN COUNTY RAILROAD STUDY

FIGURE IV-2





KEY MAP

NORTH

SCALE IN FEET

0 3000 6000

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

LOCATION OF RAIL USERS
LINN COUNTY RAILROAD STUDY

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
Average Per Year	46,078	50,434	96,520
Average Per Week	886	970	1,856

Table IV-2

DISTRIBUTION OF TRAFFIC BY VOLUME

	Average Loads In and Out Per Week			
	0-4	5-14	20-74	75 of Greater
Number of Industries	43	10	10	8
Percent of Total	60	14	14	11
Total Weekly Loads	45	113	299	1,405
Percent of Total	3	6	16	75
Average Weekly Loads Per Industry	1	11	30	165

List actual + names

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-3 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.

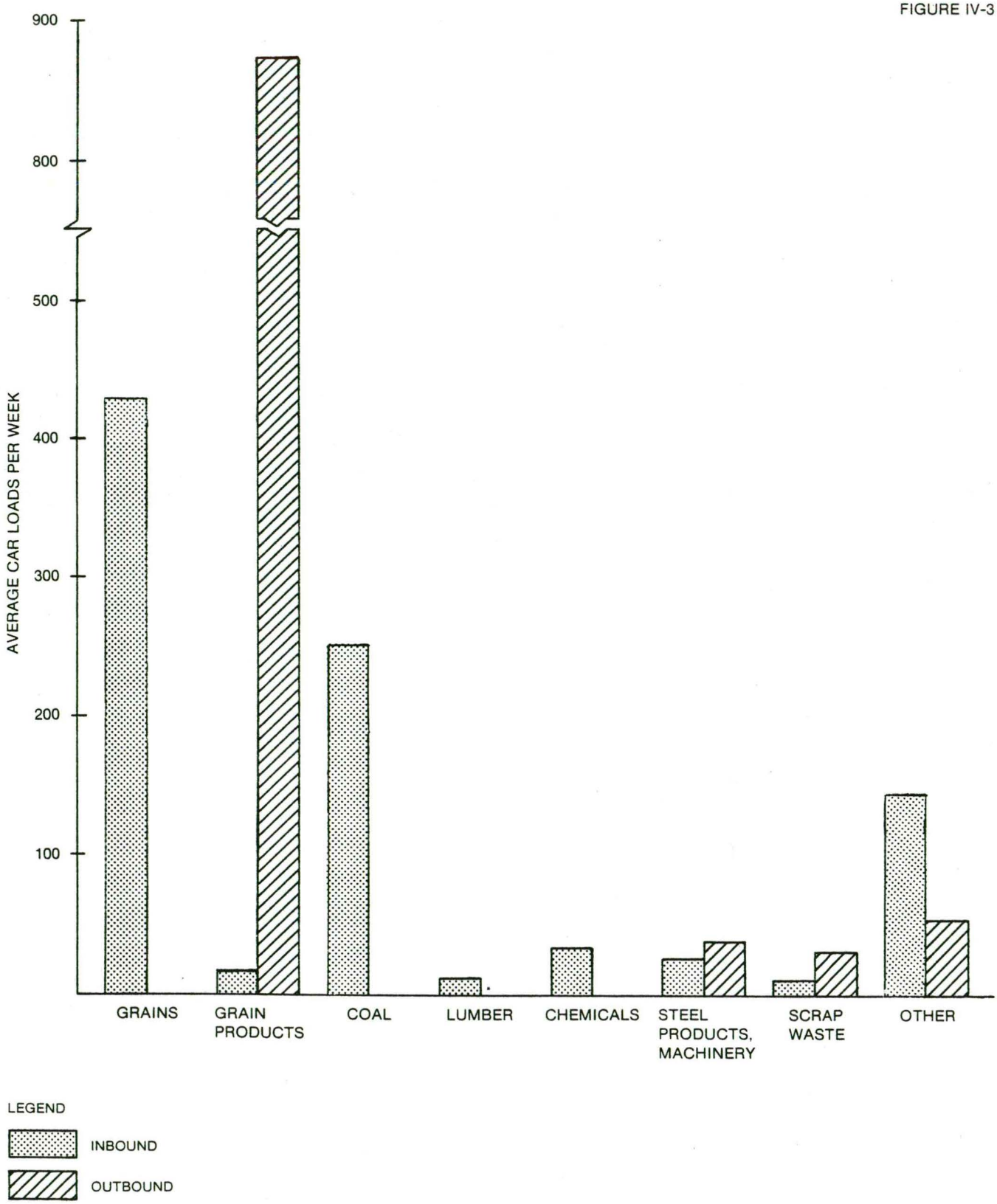
According to the estimates supplied by firms, trucks account for about 61 percent of inbound and 51 percent of outbound traffic for active rail users. In most cases, industrial representatives indicated that they would prefer to use trucks less and rail more if rail equipment availability, service and/or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

Two 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-3



VOLUME OF RAIL CARS BY COMMODITY TYPE
AVERAGE WEEKLY VOLUMES
LINN COUNTY RAILROAD STUDY

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.

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 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 84,408 in 1978. 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; 50,687 were shipped in 1978. 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
MILWAUKEE	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
Clearing	10
Inspection	5
Number of Firms with Switching Capability (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 33,721 in 1978.

Utilizing the Western District tonnage figures, carloadings in the Cedar Rapids Metropolitan Area can be converted as follows:

Year	Tons In	Tons Out	Total Tons
1978	2,168,260	3,259,174	5,427,434
1974	2,834,951	2,174,655	6,009,606
1970	2,788,368	2,606,376	5,394,744
1969	2,622,737	2,558,687	5,181,424

These figures reflect a general increase in the shipments of outbound tonnage over the past ten years. Inbound tonnage for 1969 through 1975 were fairly stable but major reductions occurred in 1977 and 1978.

The decrease in inbound tonnage can be directly related to car supply and unreliability of rail service. Grain shipments over the past few years have been concentrating more and more on multiple-car shipments of 25-, 50-, and 75-car units. A great percentage of these units originating in the grain-producing areas of the nation are destined to either Great Lakes or Gulf ports for export shipments. The movement of grain to these ports in multiple shipments keeps cars somewhat in captive service. Also, though the freight rates per ton are lower than for single-car shipments, the overall revenue to the railroad is greater because of increased length of haul and improved turnaround time.

Also, in recent years many cars have been purchased by private industry, particularly by large grain companies. These cars are strictly in captive service.

In 1978, Class I railroads made a record capital outlay of $2.8 billion (compared to $2.3 billion in 1977). Of this $2.8 billion, more than $1.9 billion went into equipment. Leasing companies and private companies, including railroad subsidiaries classified as private car lines, spent an additional $1.3 billion for railroad equipment.

In 1978, railroads and private car lines ordered 128,940 cars. Nearly 75 percent of these were all-purpose box cars, open-top hoppers, and covered hoppers. In addition, 68,408 rebuilt and new cars were placed in service in 1978. This

compares to 53,817 in 1977, for an increase of 27 percent. Box cars, open hoppers, and covered hoppers accounted for 69 percent of the 1978 installations. At year end, 1978, there were 95,942 freight cars on order. This was the largest backlog since June 1957.

At the end of 1978, the nation's freight car fleet totaled 1,652,774. This is down 0.8 percent from 1977, a result of retiring older and smaller cars and cars destroyed in derailments. Although the size of the nation's car fleet has diminished, the capacity has increased by 0.8 percent, from 125.8 million tons in 1977 to 126.8 million tons in 1978. Average freight car capacity was 76.7 tons at the end of 1978. This was an increase of 12.4 tons, or 19 percent greater than the car capacity in 1969.

The national average daily freight car mileage was 59.5 miles per serviceable car on line in 1978. The movement of 59.5 miles at an average freight train speed of 19.3 mph, including stops, would consume three hours, five minutes; which indicates that the average serviceable car in 1978 spent about 13 percent of its time in road trains, loaded or empty. Assuming, then, that the average freight car is loaded 50 percent of the time or less, it is moving in road trains somewhat less than 6.5 percent of the time as a viable load. The remainder of freight car time is consumed mainly in loading and unloading at shippers' plants, moving within terminals, being classified and assembled into trains, standing idle during seasonal lulls in car demand, or awaiting prospective loading.

The 59.5 average daily car mileage in 1978 is the highest in history for the industry. Compared to 54.9 miles in 1969, it indicates an increased efficiency of eight percent. Even though the efficiency has increased, many cars are still idle a great percentage of the time, leading to poor car utilization. In peak-demand periods, this results in poor car supply. This problem cannot be totally attributed to either the rail carriers or the general industry, but both are contributors in various degrees.

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. 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 on the main tracks west of the Quaker Oats plant.

The capacity of all yards appears inadequate or, at best, marginal, except for the RI yard complex, which is probably sufficient to handle normal traffic. However, because of recent service disruptions, a "typical" operating pattern is difficult to determine for the RI.

In addition, certain operating practice on the part of both the railroads and the industries result in cars being held or not moving promptly, which, in effect, creates the need for more yard trackage.

The condition of yard trackage in general is fair to extremely poor. 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 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 conflects 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