Technical Work Paper
INDIANAPOLIS REGIONAL TRANSPORTATION AND DEVELOPMENT STUDY
ROOM 2360 CITY-COUNTY BUILDING INDIANAPOLIS, INDIANA 46204

JOB 4304

Rail and Terminal Analysis

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February, 1966

The preparation of this report was financed in part through planning funds from the U.S. Department of Commerce, Bureau of Public Roads, and through an urban planning grant from the Housing and Home Finance Agency, under the provisions of Section 701 of the Housing Act of 1954, as amended, in cooperation with the City of Indianapolis, the Metropolitan Plan Commission of Marion County, and the Indiana State Highway Commission.

Supervising Consultant: BARTON-ASCHMAN ASSOCIATES, CHICAGO, ILLINOIS

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FORWARD

This work paper is one of four principal types of publications produced by the Indianapolis Regional Transportation and Development Study. Other IRTADS publications include procedural manuals, major study reports, and study information bulletins.

The specific purpose of work papers is to provide a technical record of actual experience in the conduct of the study and to summarize significant findings and rationale. They are intended to serve as a prime basis for the preparation of major study reports and information bulletins and for limited use in technical and policy review. Major study recommendations and policies are detailed in the two primary study reports, while dissemination of pertinent findings to the general public is accomplished through the publication of the information bulletins.

SUMMARY

This analysis of railroads and truck terminals depicts the present and future patterns of operation for those two activities in the Study Area.

Railroads

While nineteeth century patterns of railroad land use have persisted in Indianapolis until relatively recent times, some flexibility now is possible due to mergers and technological advancements in railroading. The pattern for the future is expected to develop during the next few years. By 1970, or shortly thereafter, the specific short-range changes described in this work paper will have become effective.

In the long-range, a continuation of the trends identified in the short-range is expected. Freight yards, freight handling facilities, and transfer points will develop outside the congested areas of the city's center. Other land uses -- apartments, industrial, and commercial -- will be developed on land no longer required for rail operations. Such changes would appear to be mutually advantageous both to the railroads and the community-at-large. Care must be exercised in the designation of new uses for land taken out of railroad use.

Truck Terminals

This analysis has identified the locational concentration of truck terminals in the near-southwest portion of the Study Area. Recent relocations and planned future moves reinforce this pattern.

In weighing the relative importance of site selection factors, as a part of the Truck Terminal Survey, truck terminal managers gave highest ratings to nearness to other terminals, proximity to industry, and access to an Interstate Highway.

The local trucking industry has the potential for substantial growth. Completion of the Interstate Highway system in the Study Area will be a favorable factor. Interstate Route 70, the south leg of the Inner Belt, could be the key determinant of future truck terminal land use.

INTRODUCTION

Rail Traffic and Railroad Land Use

In this comprehensive Transportation and Development Study, all forms of transportation are considered. Among these, of course, is railway transportation. Railroad rights-of-way are "lineal" land use elements which provide channels for the flow of rail traffic. Associated with these lineal land use elements of the railroads are broader uses of land: railroad yards, shops, freight stations, passenger depots, truck-train ramp areas, etc. The operational flow of rail traffic and its relation to associated facilities is analyzed in this part of the Study.

The rail portion of this work paper aims at depicting the present and future pattern of railroad operations in the Study Area, and gauging possible changes in railroad land use. While it is recognized that railroads play other important economic roles in Indianapolis -- such as regional headquarters functions and industrial site ownership -- these are not treated in this portion of the Study.

Truck Terminals

Truck terminals also are analyzed in this section of the Study. The objective of the research is to depict the present and future locational distribution of truck terminals in the Study Area, and to estimate the impact of changes in terms of truck routes, land use, and traffic.

From the Truck-Taxi Survey, the External Survey, and the Volume Counting Program, data on the volume and characteristics of truck traffic were obtained. In the present analysis, these data are related to truck terminals, which are the land uses most directly associated with truck traffic. This portion of the Study does not treat industrial, wholesale, or retail truck docking facilities.

In contrast to other segments of the Indianapolis Regional Transportation and Development Study, which focus upon the movement of people, this rail and truck analysis treats the two major movers of goods.

Method of Study

Information on railroads was obtained principally through personal interviews and field survey. The interviews were with the chief local officials of the railroads operating in the Study Area, and, in addition, with many subordinate employees. Also utilized were data from Land Use Tabulations and pertinent published sources. Truck terminal information in the main was derived from responses to the mailed Truck Terminal Questionnaire, and from field survey. Also, data from the Truck-Taxi Survey, External Survey, Volume Counting Program, and relevant published sources were used.

We wish to acknowledge the excellent cooperation received from local railroad officials, from the Indiana Motor Truck Association, and from individual truck terminal operators.

RAIL TRAFFIC CHARACTERISTICS

Indianapolis is a major rail transportation center. On an average day, there are approximately 10,400 railroad cars crossing the Study Area cordon line. Two percent of this total number are passenger cars; the remainder freight. One daily passenger train originates in Indianapolis, and one terminates here (to and from Chicago). All other passenger trains serving Indianapolis are en route between the following major connection terminals: St. Louis-Cleveland, St. Louis-Pittsburgh, Cincinnati-Chicago, and Louisville-Chicago. The New York Central and the Pennsylvania are the only lines providing passenger service in Indianapolis.

Much more important are rail freight operations. Indianapolis has four major functions as a rail freight center:

1. As a point of origin, where products of Indianapolis industry and area agriculture are shipped to many points around the world.

2. As a terminating point, where raw materials and semi-finished products arrive at Indianapolis industries for further processing, converting, and storage; and where the finished goods of non-local industry are placed into this area's distribution system.

3. As an interchange point:

   A. Indianapolis serves as a point for transfer of rail cars from one railroad company to another on trips between external origins and destinations, and

   B. As a transfer point between separate lines or divisions of the same railroad.

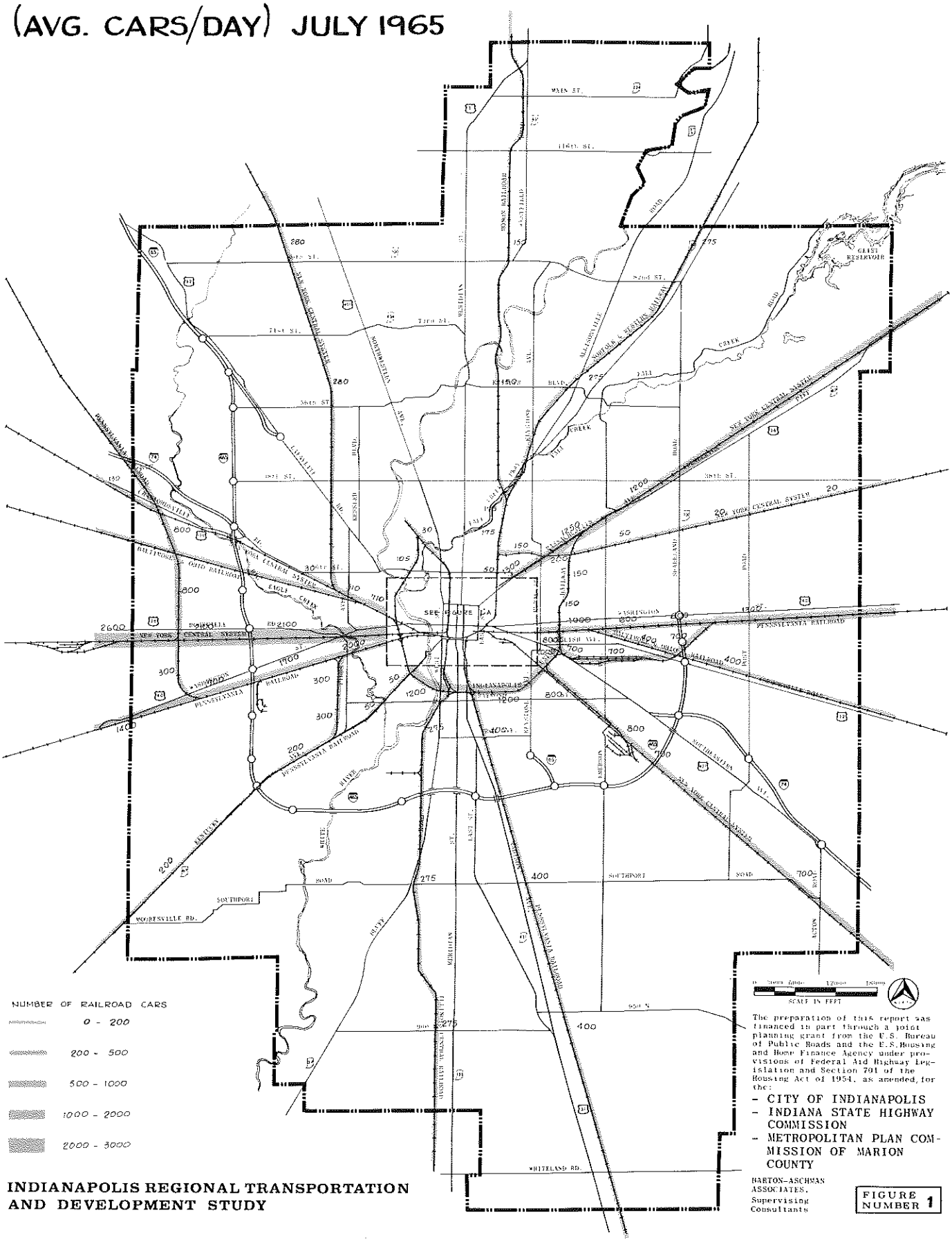
4. As a channel for <u>through</u> freight, Indianapolis merely is geographically located between origin and destination of through freight shipments.

<u>Existing Rail Traffic Volume</u>

Figures 1 and 1A show the number of rail cars flowing through the various segments of track on an average day. Included are locomotives, passenger cars, and freight cars -- loaded and empty. Through trains, local trains, transfer movements, and industrial switching operations have been considered.

The heaviest volumes are on east - west lines. The segment of trackage having heaviest traffic is the Union Tracks, with an average of 3,750 cars per day. The Union Tracks extend from East Washington Street and College Avenue to West Street, and are owned by the Indianapolis Union Railway Company. Union Passenger Depot is located on Union Tracks, and all passenger trains use these tracks. Passenger cars represent only seven percent of the average daily traffic on this segment, however.

COMBINED RAIL VOLUMES (AVG. CARS/DAY) JULY 1965



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- CITY OF INDIANAPOLIS
- INDIANA STATE HIGHWAY COMMISSION
- METROPOLITAN PLAN COMMISSION OF MARION COUNTY

INDIANAPOLIS REGIONAL TRANSPORTATION AND DEVELOPMENT STUDY

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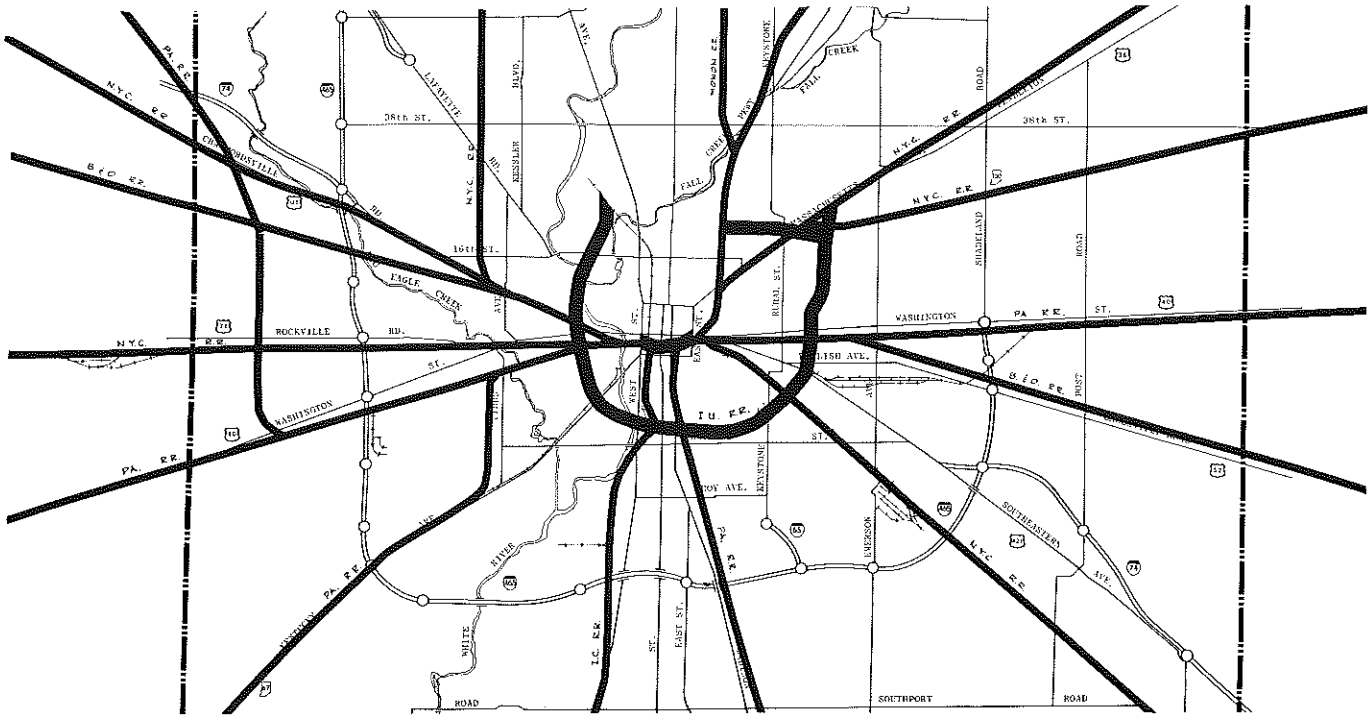
FIGURE NUMBER 1

COMBINED RAIL VOLUMES (AVG. CARS/DAY) IN THE CENTRAL AREA JULY 1965

FIGURE NUMBER 1-A

RADIAL AND BELT RAILROADS

FIGURE NUMBER 2



Upon deducting the 250 passenger cars and locomotives, mail, baggage and express cars, it is evident that some 3,500 freight cars pass over the Union Tracks in both directions on an average day.

Figure 2 shows the Union Tracks and how they tie together radial rail lines from all points of the compass. This figure also emphasizes the Belt Railroad, a nearly circumferential route, which connects all main rail lines radiating from Indianapolis. The Belt Railroad, at its closest approach to the Washington and Meridian Streets intersection, is about 20 blocks from the Central Business District. Throughout its entire length, the Belt is well within the long-developed portions of the City.

Some of the New York Central and Pennsylvania Railroad freight trains operating through Indianapolis have an option to use the Belt Railroad or the Union Tracks in passage. This option is the key to understanding existing operational flow of rail traffic in Indianapolis, as these two railroads in combination account for 8,900 of the total 10,400 rail-car crossings in the Study Area cordon on an average day.

The Pennsylvania Railroad and the New York Central jointly own the Indianapolis Union Railway Company. The Indianapolis Union Railway Company operates both the Belt Railroad and the Union Tracks. The merger of the New York Central and Pennsylvania systems has received preliminary approval from the Interstate Commerce Commission, and final approval is expected in 1966.

To evaluate fully the impact of this merger on rail operations in the Study Area, and its effect on the key Union Tracks - Belt option, it is first necessary to have knowledge of the rail yards, terminals, repair shops, etc., which are associated with the operations. The next section presents information on those facilities.

EXISTING RAILROAD OPERATIONS

Figure 3 shows the location of major existing railroad facilities in the Indianapolis area. Information on the individual rail yards is summarized in Table 1. There begins below a company-by-company discussion of the characteristics of each railroad operation in the Study Area.

Since facilities for minor repairs are associated with the principal yards of each railroad operating in Indianapolis, the presence of such "running repair" facilities will not be noted in the company-by-company descriptions. Major repair facilities will be discussed, however.

Baltimore & Ohio

In Table 2, B & O train movements are divided into two parts: 1) from Moorefield Yard to the west, and 2) from State Street Yard to the east. This is done because B & O through-train schedules allow time for reclassification at Indianapolis. Transfer movement between the two B & O yards average 200 cars per day, and is via the Union Tracks.

The B & O trailer service facility is at 1524 Southeastern Avenue, near the State Street Yard. The two ramps existing at that location will soon be expanded to four, due to the increase in B & O's local truck-train business. Capacity will be increased to 32 trailers daily, up from the present 16.

The B & O has district general offices at 220 Virginia Avenue in a four-floor building. Part of the structure formerly served as the B & O freight house. Much of that area is now leased to a motor truck and rail freight forwarding company. Other space in the office building has been leased to several food brokers.

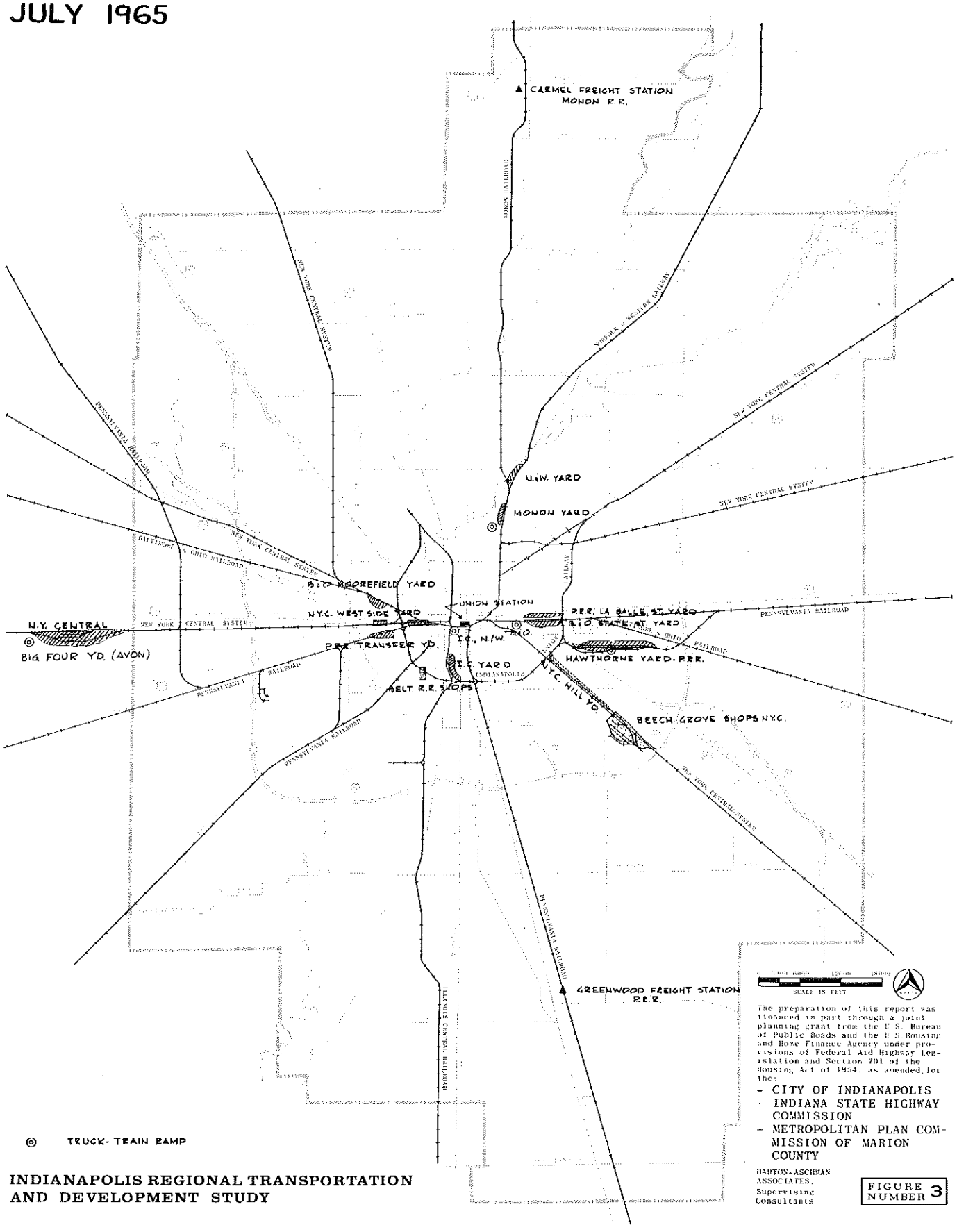
Illinois Central

The Wisconsin Street Yard of the Illinois Central is located south of Wisconsin Street and extends to the Belt Railroad. It is to the east of South West Street. I.C. owns adjacent land which could be used for expansion of the yard. Other facilities include a sales office in a downtown office building, and the freight house and truck-train ramp at 301 West South Street, which are joint operations with the N & W. Illinois Central personnel operate the South Street freight house, with the N & W sharing in costs under contractural arrangement.

One regularly scheduled through freight leaves the Wisconsin Street Yard daily. This is a southbound, or outbound train. A northbound (inbound) through freight arrives at the Yard each day, also. Each second day, a local freight departs southbound. On the alternate day, an inbound local freight arrives. The regular pattern, then, is three trains daily (See Table 2).

Between the north end of Wisconsin Street Yard and the South Street Freight Station, I.C. rail traffic is relatively small, representing industrial service and shuttle service only.

EXISTING MAJOR RAIL FACILITIES
JULY 1965



◎ TRUCK-TRAIN RAMP

INDIANAPOLIS REGIONAL TRANSPORTATION AND DEVELOPMENT STUDY

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FIGURE NUMBER 3

Table 1

ACREAGE AND CAPACITY OF PRINCIPAL RAILROAD YARDS IN THE INDIANAPOLIS AREA, 1965

Railroad	Yard	Capacity, in Rail Cars [1]	Acres
Baltimore & Ohio	Moorefield	288	21
Baltimore & Ohio	State Street	358	20
Illinois Central	Wisconsin Street	950	25
Monon	Monon	234	8
New York Central	Big Four (Avon)	5500 [2]	550
New York Central	Hill	3500	87
New York Central	West Side	600	24
Norfolk & Western	Nickel Plate	240	8
Pennsylvania	Hawthorne	3000	316
Pennsylvania	LaSalle Street	300	24
Pennsylvania	Transfer	350	12

(1) In terms of 50-foot cars.

(2) Total storage capacity; if required. Big Four Yard is designed to classify 3000 cars per day.

Table 2

SUMMARY OF REGULARLY-SCHEDULED FREIGHT TRAIN OPERATIONS IN INDIANAPOLIS; JULY, 1965; B & O, I.C., MONON, AND N & W RAILROADS

B & O Moorefield Yard

Arrivals from west

One train daily between 8:30 A.M. and 10:30 A.M. (1)
One train daily between 8:00 P.M. and 10:00 P.M.

Departures to west

One train daily between Midnight and 2:00 A.M.
One train daily between 11:30 A.M. and 12:30 P.M.

B & O State Street Yard

Arrivals from east

One train daily between 4:30 A.M. and 6:30 A.M.
One train daily between 8:00 P.M. and 10:00 P.M.

Departures to east

One train daily between 12:30 A.M. and 2:30 A.M.
One train daily between 7:00 P.M. and 8:00 P.M.

Illinois Central Yard

Arrivals

One train daily between 7:00 A.M. and 11:00 A.M.
One train Monday, Wednesday, and Friday at 4:00 P.M., approximately.

Departures

One train daily at 9:00 P.M.
One train Tuesday, Thursday, and Saturday between 9:00 A.M. and 10:00 A.M.

Monon Yard

Arrival

One train daily between 6:00 A.M. and 2:00 P.M.

Departure

One train daily at 10:00 P.M.

N & W Nickel Plate Yard

Arrivals

One train daily between 8:00 A.M. and 10:00 A.M.
One train daily between 6:00 P.M. and 10:00 P.M.

Departures

One train daily between 9:00 A.M. and 9:45 A.M.
One train daily between 10:00 P.M. and 10:30 P.M.

(1) All times are Eastern Standard Time.

Monon Railroad

Local operations for this railroad are centered in the Monon Yard area, which extends from 25th to 30th Streets along the railroad. Within the yard area are the Monon's Indianapolis operations and sales offices, which are housed in a new building at 1100 East 28th Street, and a ramp for truck-train service.

Monon train operations appear as a part of Table 2. One outbound (northbound) freight originates daily from the Monon Yard, and one inbound freight terminates there each day. Switch operations proceed from the yard, both north and south.

The former Monon Freight House in downtown Indianapolis is now leased by a newspaper publisher for a newsprint warehouse. Such a change in activity is common to most downtown freight houses; their space being leased to truck companies, or used for other operations by the owning railroads. This situation stems from the decline, and in many instances the complete stoppage, of rail handling of L.C.L. (less-than-carload) freight.

The Monon's former passenger station and freight depot in the Broad Ripple shopping area, both of which had been unused by the railroad for some time, now are leased to a sausage and cheese retailer and a custom dress shop. The former Boulevard Passenger Station on East 38th Street is now vacant.

The Monon Yard was established at its present location 100 years ago at a time when rail operations differed considerably from today. Under present conditions there is little room for expansion.

Norfolk & Western

In 1964, the former Nickel Plate Road was merged into the Norfolk & Western system. In Indianapolis, the N & W operations include: 1) the NKP yards located between Fall Creek and Sutherland and extending from 33rd to 38th Streets, 2) a freight sales office in a downtown office building, 3) a joint freight house operation with the Illinois Central, located at 301 West South Street, which is also the location of the N & W and I.C. joint truck-train ramp, and, 4) an old roundhouse at 27th and Yandes, now used for storage, and the adjacent office to which engine crews report. Locomotives originate and terminate operations at this location.

Northbound, or outbound, one through freight and one local freight originate daily from the Sutherland Avenue Yards. Inbound, or southbound, one through freight and one local freight terminate there each day.

The Sutherland Avenue Yard is constricted at its present level of operations. There is a need for expansion.

Indianapolis Union Railway (Belt)

All interchange of cars between different railroad companies must be via the Belt Railroad. The Indianapolis Union Railway Company operates

the Belt Railroad, the Union Tracks (previously described), and Union Station for passengers. Although the Indianapolis Union Railway Company is a separate corporation, it is owned in entirety by the Pennsylvania and New York Central.

General offices of the I.U.R.R. are in Union Station. Focal point for train operations is the Belt Shops which are adjacent to and northeast of Union Livestock Yards. The Union R.R. locomotives operate to and from this area.

The Indianapolis Union owns no boxcars, flatcars, hoppers, etc. Equipment on rail is limited to 12 locomotives, 11 cabooses, and one tool car which is used in wreck situations. Servicing and repair of I.U.R.R. locomotives is done at the Belt Shops. Major overhaul of locomotives is performed out of state.

Main functions of the Indianapolis Union Railway are: 1) interchange of cars among other railroads operating in Indianapolis, and 2) service to industries located along the Belt R.R. and the Union Tracks.

Pennsylvania Railroad

In delineating the present operations of the Pennsylvania Railroad in Indianapolis, it is necessary to consider separately the several main lines of the railroad. These are the lines extending from Indianapolis to Pittsburgh, Louisville, Vincennes, St. Louis, and Chicago (Figure 4). The

railroad provides passenger service on all main lines shown in Figure 4, excepting the Vincennes line. All passenger trains use the Union Tracks to Union Station.

Figure 4 shows a number of junctions (Thorne, Dale, Woods). Since trains cannot make right-angle turns, curved sections of track joining two lines are necessary. These are called junction tracks and are controlled by switches.

Pennsylvania freight train operations in Indianapolis are complex. The option between operating via the Belt RR or via the Union Tracks represents a part of this complexity. A summary of freight operations is presented in Appendix A, which together with Figure 4 depicts the operational characteristics of Pennsylvania freight traffic.

Not shown on Figure 4 are two industrial service yards and spurs which serve Indianapolis' southwestern industrial corridor. Located between White River and West Street, and between Georgia Street and Gardner Lane is the small West Yard. Extending south from West Yard is the Starch Plant Line, an industrial service spur. Part of this spur is located in the west right-of-way of Kentucky Avenue. The Starch Plant Line crosses Kentucky at Merrill and extends south to Wisconsin Street.

Serving industry somewhat farther southwest is Caven Yard, located between Minnesota and Belmont Streets on the old Vincennes main line. Industrial service from Caven extends from the junction with the Belt RR to the north, and to Allison's Maywood plants to the south. Between the southern-most Allison siding and the new Vincennes main line at Maywood Junction, the old Vincennes main line is unused except for rail car storage.

Regional offices for the Pennsylvania are located in Union Station, as is the Indianapolis freight sales office. A new building at Hawthorne Yards houses the Trainmaster's office, which is responsible for local operation of trains, and the freight billing department. The latter department was moved from the old freight house at Delaware and South Streets. The space in the old freight house has been leased by other companies, excepting a small amount required for the minimal Pennsylvania Railroad operations yet conducted from that station.

At Emerson Avenue and Prospect Streets, near the new office building mentioned above, is the truck-train ramp area of the Pennsylvania.

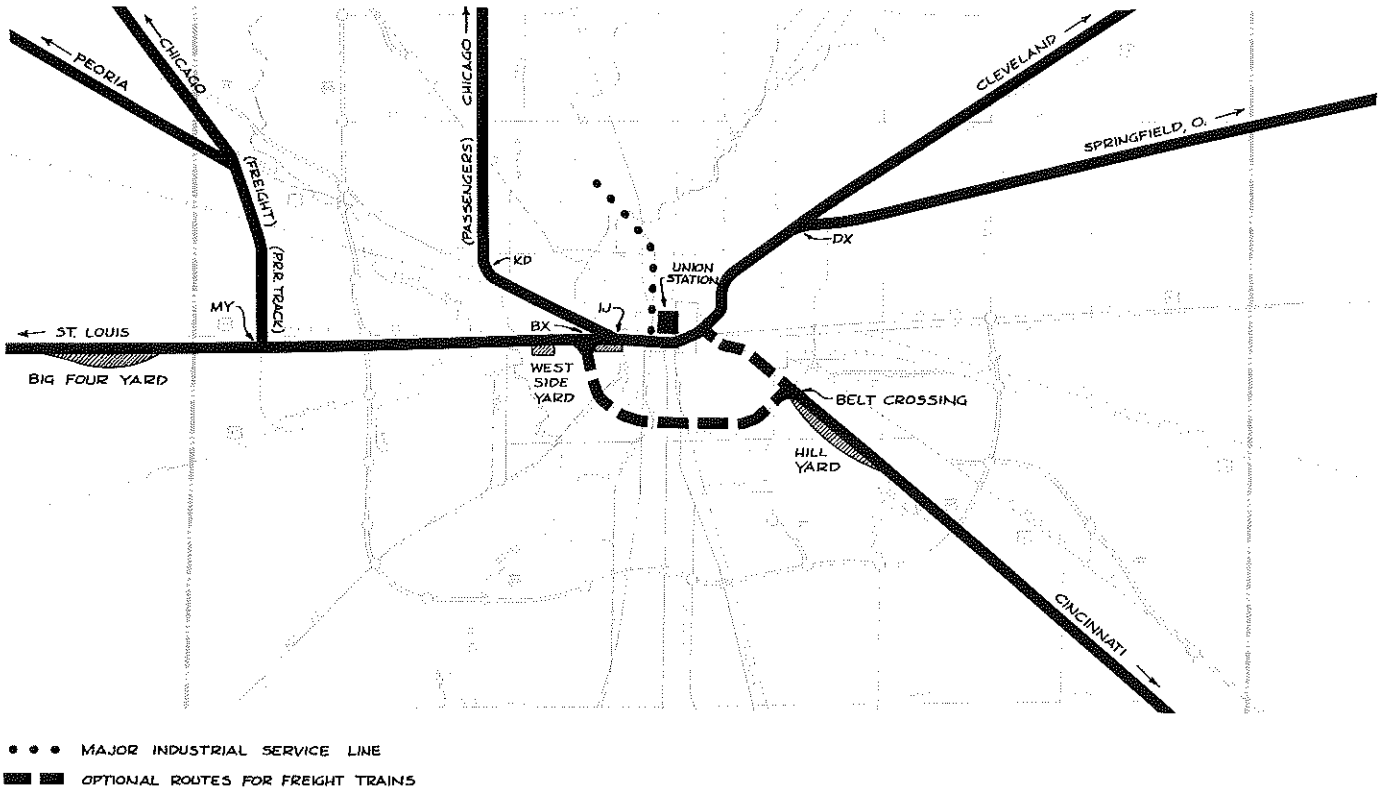
New York Central

Figure 5 portrays major elements of the New York Central System in Indianapolis. Main lines of the NYC radiate from Indianapolis toward these points: Cleveland, Springfield (Ohio), Cincinnati, St. Louis, Peoria, and Chicago. Passenger service is provided on the Cleveland, Cincinnati, St. Louis, and Chicago lines. All passenger trains use the Union Tracks to Union Station.

Freight operations are summarized in Appendix B. Use of the Belt RR

NEW YORK CENTRAL RAILROAD FACILITIES JULY 1965

FIGURE NUMBER 5



option rather than Union Tracks is of lesser magnitude than that of the Pennsylvania. On either railroad, the option to use the Belt RR or Union Tracks depends on the immediate situation as a train approaches or departs from Indianapolis. The degree of congestion of rail traffic, time of day, automotive traffic at grade crossings, and contractural charges for use of the Belt, are factors that dispatchers consider in deciding whether or not to use the Belt.

Since its opening in 1960, the Central's Big Four Yard, near Avon in Hendricks County, has substantially changed the pattern of operations for the NYCRR in Indianapolis. Although this large electronic classification yard is actually outside the Study Area, a discussion of New York Central's local operations would be meaningless unless the Big Four Yard were included.

The Big Four Yard is one of the five regional classification yards of the entire New York Central System. It classifies between 2,000 and 3,000 rail cars during a 24-hour day. Locally, the Big Four Yard has assumed the functions formerly performed at the old Brightwood Yard (Massachusetts Avenue and North Sherman Drive at East 25th), and the NYC Moorefield Yard, located adjacent to and north of B & O's Moorefield Yard. Also, activities at Hill Yard on the southeast have diminished considerably since opening of the Big Four Yard. In addition, the Avon Yard is the location of NYC's Indianapolis truck-train ramp facilities.

Freight service operations to and from Chicago and Peoria have changed significantly since the opening of the Big Four Yard. The NYC

Chicago line, which runs roughly parallel to Guion Road and joins the NYC Peoria Line near West 10th and Luett, is no longer used for freight trains (a unit coal train is an exception). Freight trains to and from Chicago now use the Pennsylvania Railroad's Chicago line from Lebanon, Indiana, south to the junction with the NYC St. Louis main line which leads to the Big Four Yard.

Freight trains to and from the NYC Peoria line also use the Pennsylvania Chicago line between Clermont and the junction with NYC St. Louis main line. This means that road trains no longer use the segment of the Peoria line between Clermont and Speedway. This segment of track is used for rail car storage, at present.

The Chicago main line (Guion Road) is still used for all Indianapolis-Chicago passenger trains. Also, it is used by a unit coal train operating between Cincinnati and the Calumet region. This is an integral train averaging 110 cars, each of which is an identical orange hopper car. The unit train is loaded with coal on its northbound run. Empties are returned southbound. This train uses the Union Tracks and stops at Hill yard only long enough to change crews.

In addition, the Central operates yet another "Chicago" track. This is the Old Chicago Main, which is parallel to the Water Company Canal, and was replaced by the Guion Road line for road traffic. Now operating as an industrial service line, the Old Chicago Main ends at West 31st Street. At its south end, this line joins the Union Tracks. Two small industrial service yards are located on the Old Chicago Main: one at North Street, and one at West 17th Street. This line is mentioned because it illustrates the fact that a change in main line operation does not necessarily result in the taking-up of all tracks on the old main line. Service to industries located on the former main line must continue.

In the Central Business District, the Central leases a major portion of the Big Four Building at 105 South Meridian for its district general offices. The old freight house at Delaware and South Streets is now used by New York Central as a regional Freight Service Center. All billing for freight traffic originating at Indianapolis and in its hinterland is handled at that location. Some other space in the old freight house has been leased by a motor trucking company.

Trucks have been removed for a number of years from the old City Perishables Yard at Alabama and Maryland. The Central has leased this land to a commercial parking lot operator. A similar situation exists one block west at the former city produce yard of the Pennsylvania.

The Beech Grove Shops of NYCRR constitute one of the railroad's major repair shop operations. All passenger car repair, refurbishing, and rebuilding for the entire NYC System is done at Beech Grove. To put this in perspective, the Central had 2,857 passenger and passenger-service (baggage, mail, express) cars in service at the end of 1963.[1] This represents the total potential "market" for that portion of the Beech Grove Shops' services. Also, Beech Grove is one of the Central's locations for major repairs to freight cars. The Beech Grove Shops are a significant employment location in the Study Area, with 1,600 persons working there.

[1] Moody's Transportation Manual, 1964.

FUTURE RAIL OPERATIONS

This section of the Rail and Terminal Analysis aims at depicting the future pattern of rail operations in the Indianapolis area. Two time periods are used: the short-range, 1965-1970, and the long-range, to 1985 and beyond. In common with other predictions of this kind, the short-range portrayal is more specific; the long-range more general.

This look into the future takes place at a time when mergers and merger proposals are affecting railroads which operate in Indianapolis. Some local effects already are evident from the merger of the Nickel Plate Road into the N & W System. Since 1963, the B & O has been under the full control of the Chesapeake and Ohio. This arrangement, which is important nationally, probably will have little effect upon B & O operations in Indianapolis, however. At present, the Illinois Central and the Monon do not figure in any merger proposals which would directly affect their Indianapolis operations.

The merger of the New York Central and the Pennsylvania could result in significant changes in local rail operations. The Indianapolis Union Railway Company figures prominently in these changes. These merger-induced changes, and changes resulting from other causes are discussed below on a company-by-company basis. This represents the short-range forecast of rail operations, and it is summarized graphically in Figure 6.

The recently announced proposal for a merger between the already-merged N & W System and the consolidated C & O - B & O System further complicates the depiction of future railroad operations. At this writing, that proposal is only in the most preliminary stages.

Baltimore & Ohio

In Indianapolis, the assumption of full control of the B & O by the Chesapeake and Ohio has had little direct effect on operations. There are no C & O lines which are close to B & O's west line from Indianapolis (to Springfield, Illinois). At the eastern end of B & O's east line from Indianapolis (to Hamilton, Ohio, and Cincinnati) there is a C & O line in some proximity, but this should not greatly affect operations at Indianapolis. The picture for B & O in Indianapolis is one of apparent stability.

The expansion of trailer service facilities at Southeastern Avenue previously has been discussed. Perhaps the most significant problem facing B & O in Indianapolis is the limited capacity of the Moorefield Yard. Land for expansion at Moorefield might possibly be obtained from the old New York Central Moorefield area north of the B & O. The Central has only two tracks in the area now.

Illinois Central

The I.C. branch line to Indianapolis apparently is a profitable operation. Its future seems one of stability. The railroad owns land adjacent to the Wisconsin Street Yard which could be used for expansion

FUTURE MAJOR RAIL FACILITIES (1970)

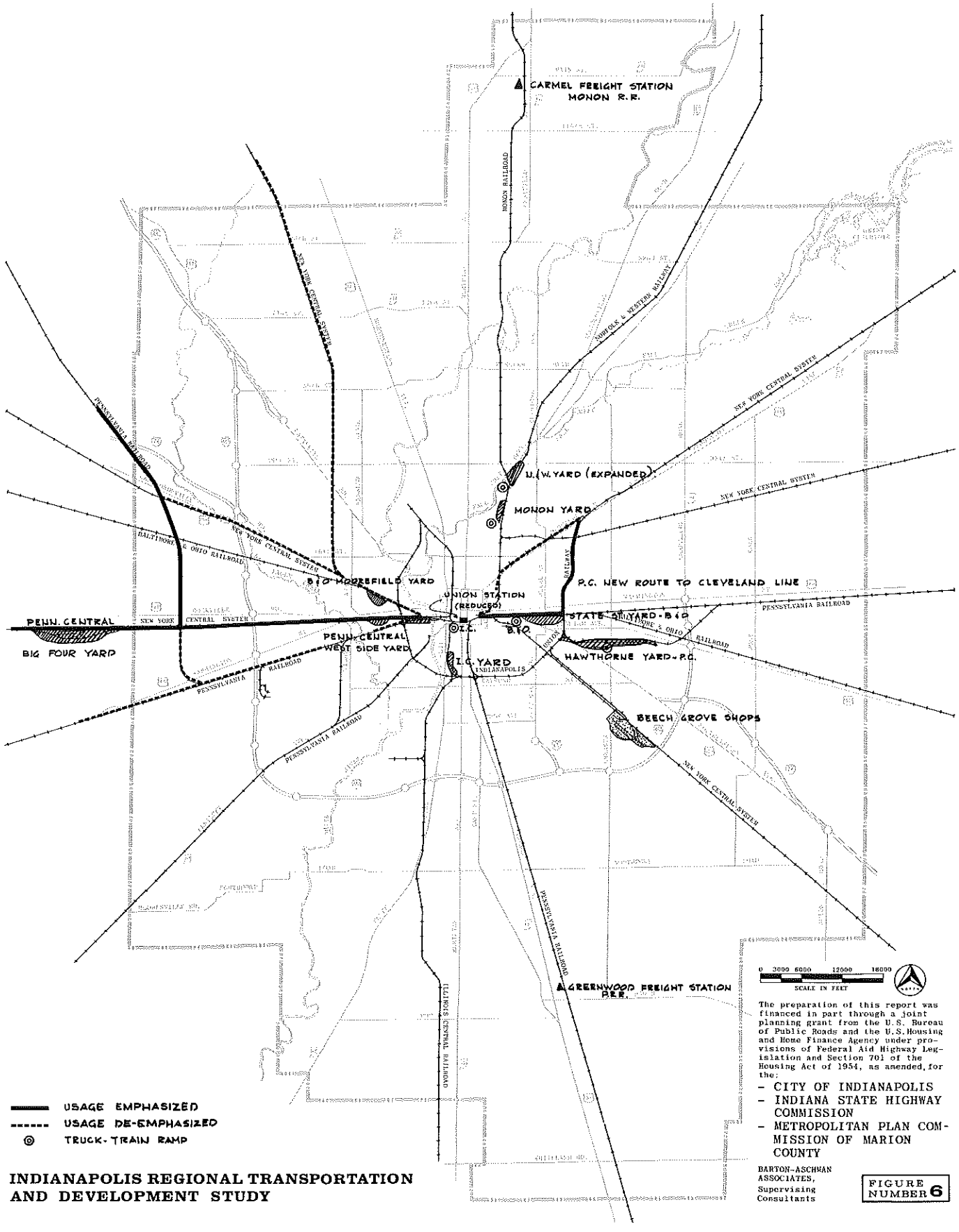


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FIGURE NUMBER 6

of the yard. However, as that yard presently has large capacity relative to operations, the I.C. may well prefer to sell the adjacent land for industrial use.

Monon

A second new building recently has been completed by the Monon at 1100 East 28th Street. With the old roundhouse already razed, Monon building structures adjacent to the yard are all of recent vintage. A new food specialty retail operation is expected to lease the old Boulevard Passenger Station on East 38th Street.

The Monon Yard itself is constricted. One possibility for yard expansion would be moving eastward across the N & W into the old Nickel Plate roundhouse area when the N & W operations there are consolidated at the N & W Sutherland Avenue yard. Another possibility would involve the coordination of urban renewal and freeway construction. The proposed Northeast Expressway, or extension of I-69, would run parallel to the Monon tracks from 32nd Street to the northeast interchange of the inner Loop. The east right-of-way line for the Expressway, as generally located, would be only one block or less from the Monon in that segment. Construction of the expressway at that location would leave a long, very narrow strip of land between it and the railroad. This strip would be cut-off from the west by the expressway and access to the east would be limited by the railroad operations. Present land use is a mixture of residential and industrial. It would seem that a properly coordinated program could make this land available for expansion of industries already in existence along that strip. Expansion of the Monon Yard could be accomplished under such a program, also.

Norfolk & Western

With the former Nickel Plate Road now part of the financially strong N & W System, it seems probable that a program of consolidation and expansion will take place at the Sutherland Avenue Yard. Additional capacity for the yard could be provided through expansion to the west, on railroad-owned land which extends to Fall Creek. Truck-train ramp facilities can be constructed in the same area. With truck-train ramps in its own yard, the N & W no longer would participate with the Illinois Central in the joint ramp operation at the South Street freight house.

As was indicated above, the functions at the old roundhouse and the engine crew office, both presently located at 27th and Yandes, would be moved to the Sutherland Avenue Yard in such a consolidation program.

Pennsylvania Railroad
New York Central
Indianapolis Union Railway

Upon final ICC approval, the merged Penn Central Transportation Company (as the new entity is to be called) would have opportunities for making significant changes in Indianapolis rail operations. As presently foreseen, activity at the Big Four Yard at Avon would be even further

increased. Operations connected with industrial service to east-side industry are to be concentrated at Hawthorne Yard. The Central's West Side Yard is proposed as the chief yard for industrial service to west-side industry. Avon, Hawthorne, and West Side Yards, then, would be the principal local yards under the merged operation. Operations at the other existing yards of both the PRR and NYC would be relatively less important after effectuation of such changes (compare Figure 6 and Figure 3). It is anticipated that Indianapolis-Terre Haute traffic on the merged system will use the present New York Central line, with consequent de-emphasis on the existing Pennsylvania line to Terre Haute.

The Belt Railway tracks of the Indianapolis Union would provide opportunities for the merged company to by-pass parts of the more-congested areas of Indianapolis in freight operations. As grade separations are in place in a majority of the Belt's crossings of the arterial street system, the Belt-routing of additional freight traffic holds promise as a means for alleviating some crossing delays.

There would be problems in effecting such routing, however. Operations on the Belt Railway now have a maximum top speed of 15 miles per hour. To increase the speed of operation, some re-working of present trackage and roadbed would be required, along with the re-laying of some tracks recently removed.

The segment of the Belt Railroad which well may have first priority for through freight re-routing is that extending from the Belt junction with the Pennsylvania main line near LaSalle Street (Panhandle Junction) to the junction with the New York Central Cleveland line in the Brightwood area. Indianapolis-Cleveland freight trains could use the Pennsylvania's Pittsburgh line from Union Tracks to Panhandle and the Belt from there to Brightwood. As far as grade crossings are concerned, this re-routing would represent a great reduction of rail traffic at a number of crossings, and an increase at some others. Rail volume would be reduced at the NYC crossings at North Sherman, North Rural, East Michigan and East New York. Increases would occur on the Belt RR crossings of Massachusetts (east of Sherman), Sherman (south of 21st), East 21st (east of Sherman), East 16th Street; and the Pennsylvania crossings at State Street, and at Southeastern Avenue. The two crossings near 21st and Sherman would be subject to the influence of Interstate Route 70 which is to be located approximately one-half block north of the intersection.

Another reason why this particular segment of the Belt RR might be used for handling more freight traffic is that the Belt's own interchange and industrial traffic is relatively low there. It should be noted that such interchange functions of the Belt would be continued despite the increased traffic.

In this Transportation and Development Study, data on vehicular traffic volumes have been organized and are available for each of the crossings named above (and for many others). Detailed data on rail volumes - which are summarized in Figure I presented previously - also are available.

This analysis attempts to present such information on future operations as is presently known. The suggestion for the use of the Belt RR for by-pass freight operations has been made as one portending possible benefits both to the community-at-large and to the local railroad industry. The use of the Belt might eliminate need for new right-of-way for a rail by-pass farther east. The Indianapolis Union RR now has a 999-year lease on the present Belt right-of-way.

Union Station. Present, and foreseeable future, passenger operations could be accommodated in a structure much smaller than the existing Union Station. Offices of the Pennsylvania and the Indianapolis Union now located in Union Station could be moved to another office building. This would release the north portion of Union Station for other land use.

Beech Grove Shops. After final approval of the NYC-PRR merger, the "market" for Beech Grove passenger service car repair operations might well be increased by the addition of a substantial portion, or all, of the Pennsylvania passenger fleet, which numbers 3,417 cars.[2] In freight car repairs, Beech Grove will concentrate on specially-equipped cars: DF cars, 3-rack auto cars, etc. In any event, the Beech Grove Shops are expected to be continued as a major facility within the merged system.

[2] As of December 31, 1963; as reported in Moody's Transportation Manual, 1964.

LONG-RANGE TRENDS

After the short-range changes described in the previous sections take effect, the picture concerning additional changes in the long-range becomes less clear. In general, trends in rail traffic in the Study Area can be expected to follow national trends. In the same manner, long-range changes in railroad land use can be expected to follow emerging national patterns.

Freight Traffic

In each of the five years from 1960 through 1964, railroads handled approximately 43 percent of total intercity freight traffic in the U.S. By maintaining a stable share of an expanding market, total freight ton-miles carried by rail generally increased during that period. The table below presents railroad freight ton-miles and the estimated railroad share of total intercity freight traffic.[3]

Year	Freight Ton-Miles by Rail	Per cent of Total Intercity Freight
1960	579,130,000	43.7
1961	569,997,000	42.9
1962	599,977,000	43.1
1963	629,337,000	43.0
1964	667,200,000	42.9

To place this in perspective, here are the percentages of total intercity freight hauled by other transportation forms in 1964: trucks, 23.8%; Great Lakes shipping, 6.6%; rivers and canals, 9.4%; oil pipelines, 17.2%; and, air, 0.1%.[4]

The extension of the five-year trend indicates increasing ton-miles to be carried by rail. Locally, this would result in increasing rail traffic. Such local data as are available corroborate this in the short-range. Local rail business in 1964 was slightly above 1963, and the first half of 1965 showed a significant increase over the first half of 1964.

Passenger Traffic

A succinct summarization of the 1964 record for rail passenger traffic is made in the 1965 Yearbook of Railroad Facts of the A.A.R. -- "On the passenger side, commutation travel increased by 2 per cent, but intercity passenger-miles declined about 1 per cent in coaches and 7 per cent in sleeping and parlor cars." The decline in intercity passenger miles is a continuation of a long-range trend going back to the end of World War II.

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[3] Source: Association of American Railroads, Yearbook of Railroad Facts, 1965 and 1964. (Figures include mail and express.)

[4] Loc. Cit.

it may be that this decline in long-haul passenger traffic is levelling-off. A recent survey of intercity passenger operations reported "modest grounds for optimism", despite perennial problems.[5] Continuation of intercity passenger travel at or near its present level of service to Indianapolis is the prospect for the future.

An imponderable which conceivably could affect the future of intercity rail passenger traffic is the development of highspeed, technologically advanced passenger equipment combined with automated operations. As corridors between metropolises become more congested, and as ground time from airports to central business districts increases, medium-distance passenger traffic may revert to rail.

The national increase in rail passenger commutation traffic in 1964 may have long-range significance for Indianapolis. It has been surmised that Indianapolis in the long range may require rail rapid transit. In this present analysis of railroad operations and land use, no attempt is made to assess the need for future rail rapid transit in the Study Area. However, it should be noted that the skeletal framework for a rapid transit system is even now present in the form of Indianapolis' existing rail lines.

Trailer on Flat Car Traffic

Because of its potential for future growth, piggyback traffic deserves individual discussion. A relatively new class of service, the trailer-on-flat-car business has experienced a remarkable growth in the past decade. The number of rail cars loaded with highway trailers and containers and handled by all Class I railroads in the United States for the years 1955-1964 is shown below.[6]

Year	Total Piggyback Loading
1955	168,150
1956	207,783
1957	249,065
1958	278,071
1959	416,508
1960	554,115
1961	591,246
1962	706,441
1963	797,474
1964	890,216

While even the 1964 piggyback total comprises only a minor portion

5 "Passenger Market: The Long-Haul Picture", Railway Age, May 17, 1965, p.32.
6 American Association of Railroads, Yearbook of Railroad Facts, 1965 Edition.

of the 29,000,000 total carloadings for that year, it does represent a doubling for this class of service in the past five years. Furthermore, prospects for the future appear bright. Locally, the importance of piggyback service has been recognized in the planned expansion of the B & O ramps, the proposed new N & W ramps, and possible relocation of the New York Central loading facilities from Avon to Hawthorne after completion of the NYC-PRR merger.

New Uses For Railroad Land

As the function of some rail yards is eliminated, and as activities at others decrease, land becomes available for other uses. The former Brightwood Yard of the New York Central has been completely developed in non-railroad uses, including a shopping center and a drive-in theater. The downtown commercial parking lot operations on the old city produce yards are another example of such change in use. It is anticipated that industrial and commercial land uses will be developed on unused rail yard areas.

In many respects, there is mutual advantage both to the railroads and to the community in the developing pattern of railroad-related land uses in the long range. Arthur E. Baylis, Vice President - Marketing of the New York Central System, has expressed this mutuality in these terms:

> "To the fullest extent possible, railroad plans call for the by-passing of metropolitan areas with their freight services; the selling off of their freight facilities and the moving to the outskirts. Through the methods now being employed and planned, freight yards, freight handling facilities and transfer points will develop outside the congested areas. This should be helpful to these metropolitan areas as it will enable the redevelopment of the 'other side of the tracks' into more attractive usage."[7]

In recent years, greater Indianapolis has witnessed features of the trends described by Mr. Baylis. Non-railroad land uses now exist on former rail yards. Activities at downtown freight houses have diminished or changed entirely. As such changes continue, it is well to remember that they are establishing the pattern for the future.

Nineteenth century patterns of railroad land use have persisted in Indianapolis with relative inflexibility until quite recent times. Today, some flexibility is possible, mainly due to changes resulting from mergers of railroad companies, and from recent technological advancements in railroading. The pattern for the future will derive from decisions to be made in the next few years. Chief among the decisions will be the designation of appropriate new uses for land to be released from its present railroad use. Whatever its other characteristics, land possessing rail access does have the additional special feature of that access. While such land is not scarce in the Study Area, neither is it unlimited.

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[7] Arthur E. Baylis, "Changing Technology and Land Requirements In Urban Rail Freight Distribution", Proceedings of the National Synposium on the Dynamics of Urban Transportation, Automobile Manufactures Association, Detroit, 1962.

TRUCK TERMINALS

At mid-year, 1965, slightly more than 7,000 persons were employed in the local and long distance trucking industry in the Study Area. About 4,400 of these people were employed by firms operating the 107 truck terminals which are examined in this portion of the Rail and Terminal Analysis. Included among these terminals are all local terminals for "over-the-road" motor freight carriers, and the terminals of major local freight forwarders. Not included are household goods movers, parcel delivery services, and leased trucking operations.

Truck Terminal Survey

With the cooperation of the Indiana Motor Truck Association in the mailing process, each of the 107 terminals included in this analysis received a questionnaire in mid-March, 1965. A copy of the Truck Terminal Survey Questionnaire appears in Appendix C.

By mid-May, 56 responses to the Survey were received. Terminals responding comprise 52 per cent of the total. Subsequent discussion of the characteristics of truck terminals generally is based upon these 56 responses. Of the 4,400 employed locally by the firms operating the 107 terminals, 3,000, or 68 per cent, are employed by the 56 firms responding to the Survey. Truck drivers comprise 42 percent of the 3,000 employees of the terminals, with managerial, clerical, and miscellaneous occupations accounting for the balance.

Location of Truck Terminals

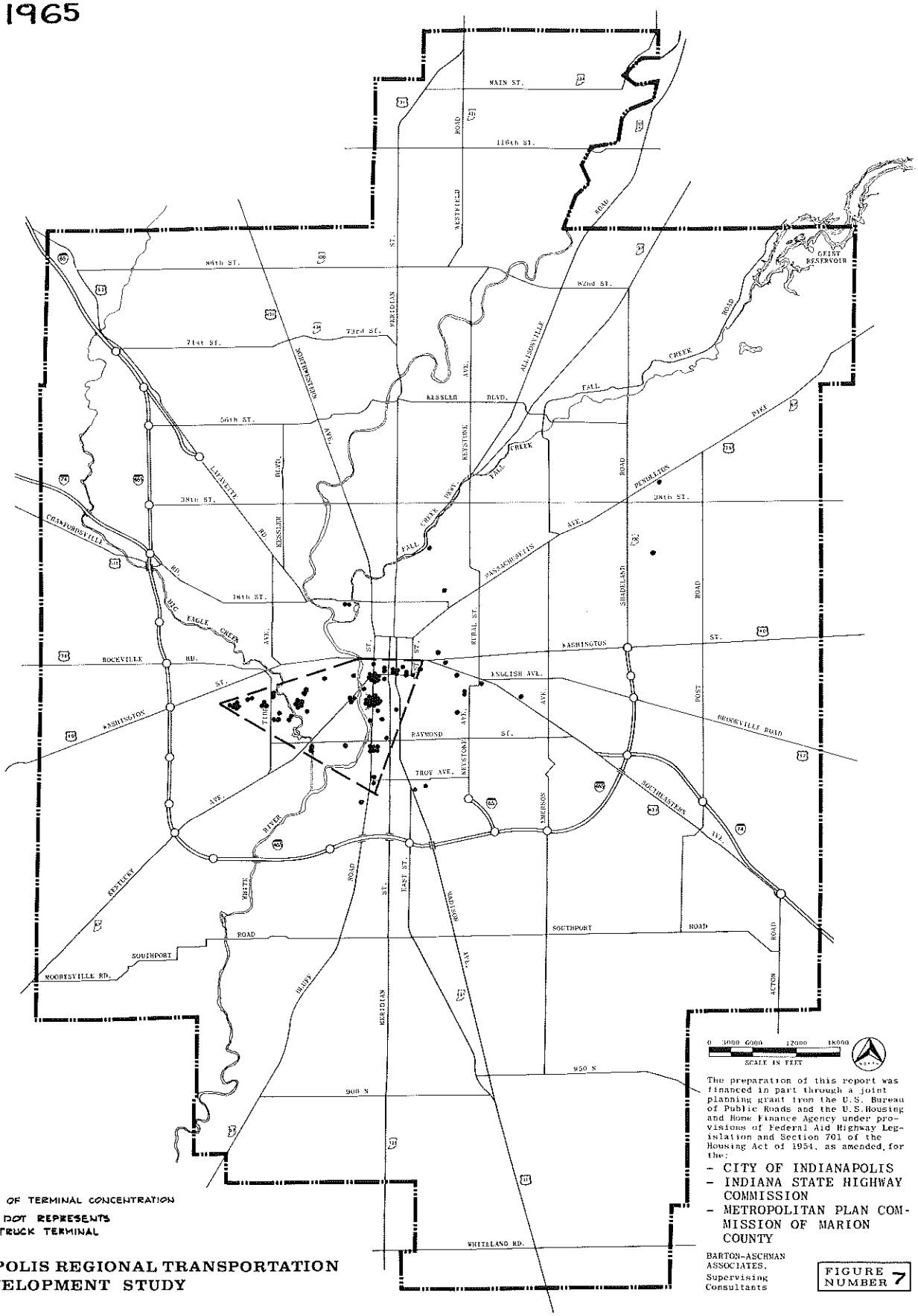
The locations of the 107 truck terminals to which questionnaires were sent are shown in Figure 7. The locations of the 56 terminals responding to the Survey are geographically representative of the total number of terminals.

Two clusters of truck terminals are noticeable on Figure 7. The larger is centered on the intersection of West Morris and South West Streets. From this cluster, concentrated terminal activities extend west along Morris to the 4500 block, and south along West Street to Troy Avenue. The smaller cluster is centered on the intersection of West South Street, Kentucky Avenue, and South West Street. From it, terminal activities extend east along South Street to South East Street.

Ninety-three of the 107 terminals are located in these two clusters and the extensions described. Within this area (outlined by the triangle on Figure 7) are found 87 per cent of the Study Area's truck terminals.

Traffic volumes for the major streets in the area of truck terminal concentration are shown in Figure 8. A good portion of this traffic is directly generated by the truck terminals. Of the 52 terminals responding to Survey Question G on truck arrivals and departures on an average day, four handled between 100 and 185 arrivals and departures. Another 20 terminals handled between 30 and 70 trucks daily, and the remainder less than 30. There were no respondents which handled 71 to 99 truck arrivals and

TRUCK TERMINAL LOCATIONS
JULY 1965



——— AREA OF TERMINAL CONCENTRATION

• EACH DOT REPRESENTS ONE TRUCK TERMINAL

INDIANAPOLIS REGIONAL TRANSPORTATION AND DEVELOPMENT STUDY

The preparation of this report was financed in part through a joint planning grant from the U.S. Bureau of Public Roads and the U.S. Housing and Home Finance Agency under provisions of Federal Aid Highway Legislation and Section 701 of the Housing Act of 1954, as amended, for the:

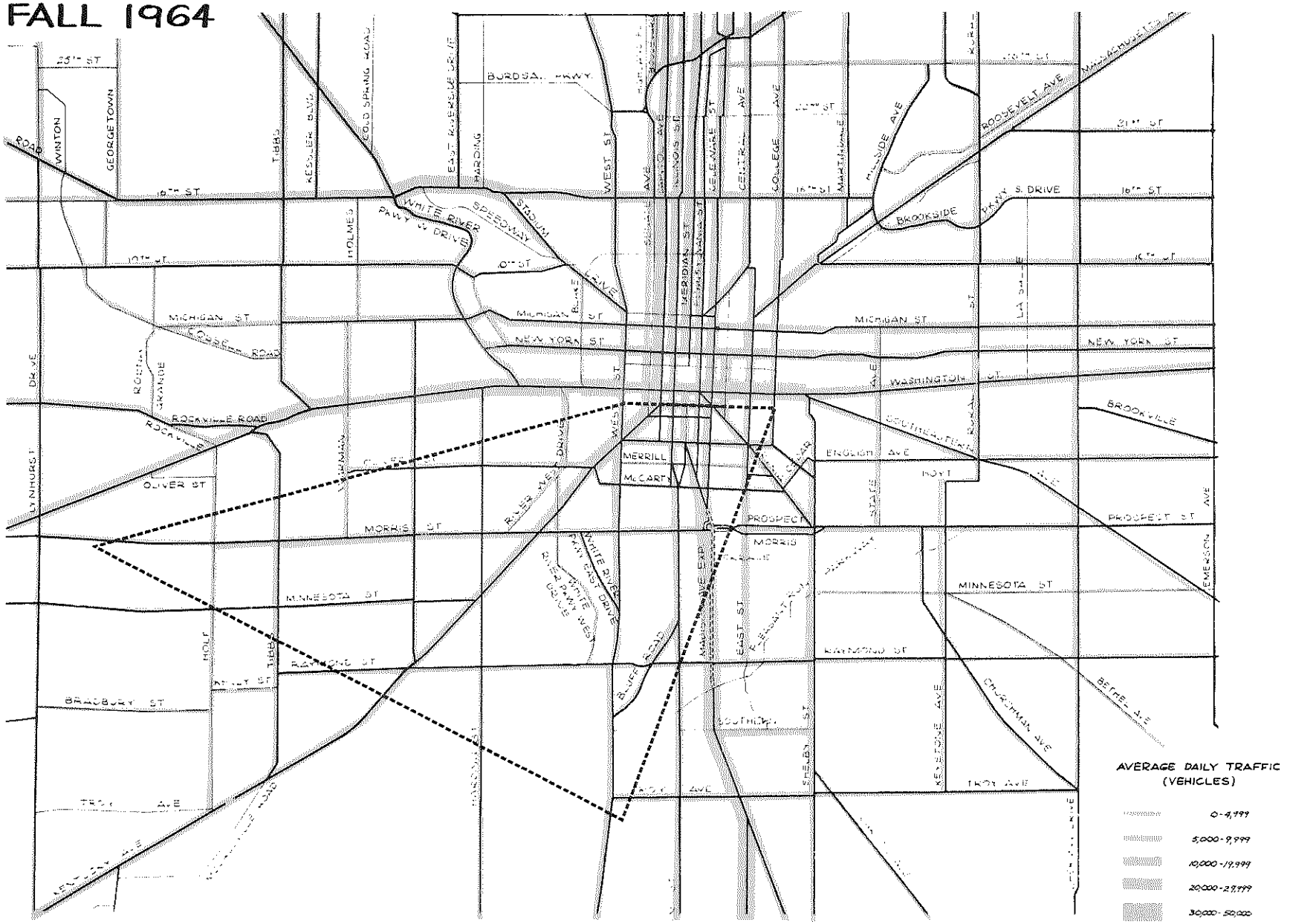
- CITY OF INDIANAPOLIS
- INDIANA STATE HIGHWAY COMMISSION
- METROPOLITAN PLAN COMMISSION OF MARION COUNTY

BARTON-ASCHMAN ASSOCIATES, Supervising Consultants

FIGURE NUMBER 7

STREET TRAFFIC VOLUMES IN TRUCK TERMINAL CONCENTRATION AREA FALL 1964

FIGURE NUMBER 8



departures on an average day. Three of the four terminals handling 100 or more trucks are in the triangular area of terminal concentration, as are 18 of the 20 handling between 30 and 70 trucks daily.

On a typical day, the 52 terminals handle a total of 1,540 truck arrivals and departures. Four large terminals handle 32 per cent of the daily total. The 26 terminals which handle less than 20 arrivals and departures daily altogether account for 17 per cent of the 1,540 total. The remaining 51per cent of the total is handled by the 22 terminals which handle from 20 to 69 arrivals and departures daily.

Terminal Land Area and Floor Area

For the 44 terminals providing usable responses on the question concerning terminal acreage, total land areas range from 0.2 acres to 20.0 acres. Median size is 4.3 acres. Five of the terminals have sites of 2.0 acres, and another five terminals are 5.0 acres in area. These are the most frequently occurring sizes.

Twenty-one, or nearly one-half, of the 44 terminals have land available for terminal expansion on their present sites. One terminal reports that it has 10.0 acres set aside for growth at its existing location. This is the largest acreage reported available for future expansion on present sites. Another four terminals have 5.0 to 9.9 acres designated for possible enlargement of operations. At the other end of the spectrum, five firms each have less than 1.0 acre. Eleven other terminals can meet possible needs for future increases in operations through expansion areas ranging from 1.0 to 4.9 acres. In total, the 21 firms have 70 acres available for expansion at present locations.

Floor areas of the responding terminals vary from 600 square feet to 120,000 square feet, reflecting wide differentials of levels of operation among the firms. Median floor area is 11,100 square feet. Total floor area for all responding terminals is 700,000 square feet. Of this total 450,000 square feet, or 65 per cent, is in dock area.

For two-thirds of the terminals, total floor area in buildings represents less than 10 per cent of total land area of the site. The larger portions of terminal sites are used for truck and trailer parking, maneuvering and circulation, and as previously indicated, in land held for future expansion. Total land area for all responding terminals is 253 acres. Total floor area of these terminals represents only seven per cent of the land area.

Capacities of the terminals, in terms of number of loading doors, varies greatly. This determines the number of trucks which can be loaded or unloaded at one time. Two of the 46 responding terminals can each handle only two trucks at one time. The largest terminal can accommodate 86 trucks simultaneously. Five of the terminals have 12 loading doors, and another five have 20. Twenty is also the median number of loading doors for the 46 terminals.

Eighty-two per cent of respondent firms are cross-dock terminals.

In a cross-dock operation, over-the-road trucks can be loaded and unloaded on one side of the dock, while local trucks are handled on the other side. Cross-dock operation is deemed an effecient method. Of the eight terminals not having cross-docks, five are planning to move to new locations in metropolitan Indianapolis within the next five years. The remaining three, which report no plans for relocating or expanding, are smaller operations. Two of the three have terminals constructed from 1941 to 1950, and the third has a terminal dating from the period 1951 - 1959.

Age of Terminals

Nine of the 48 terminals responding to this question reported that the major portion of their terminal structure was built since January 1, 1960. During the years 1951 through 1959, the major portions of another 22 terminals were constructed. Seventeen of the terminals date from 1950 or earlier, with eleven of these constructed prior to 1941.

In percentages, 19 per cent of these terminals have recently-constructed terminals dating from 1960 through to the present, 46 per cent of the firms operate from terminals built during the 1951-1959 period, 12 per cent have structures dating from 1941 to 1950, and buildings of 1940 or earlier vintage house the operations of the remaining 23 per cent of the terminals.

Composite of Existing Terminals

Through analysis of responses to the Truck Terminal Survey, a portrayal of the typical Indianapolis truck terminal can be made. This typical terminal is located in the southwestern portion of the Study Area, in a triangular area with one apex at 4500 West Morris Street near the Pennsylvania Railroad St. Louis line, another apex at Bluff Road and Troy Avenue, and the third near the intersection of South East Street and East South Street.

The terminal is on a site of 4.3 acres. There is a fifty-fifty chance that part of the site is available for future expansion. Floor area of this typical operation totals 11,100 square feet, with dock area constituting 65 per cent of that total. It is a cross-dock terminal with 20 loading doors. The major portion of the terminal was built in the 1950's, and it presently handles, on the average, 30 truck arrivals and departures daily.

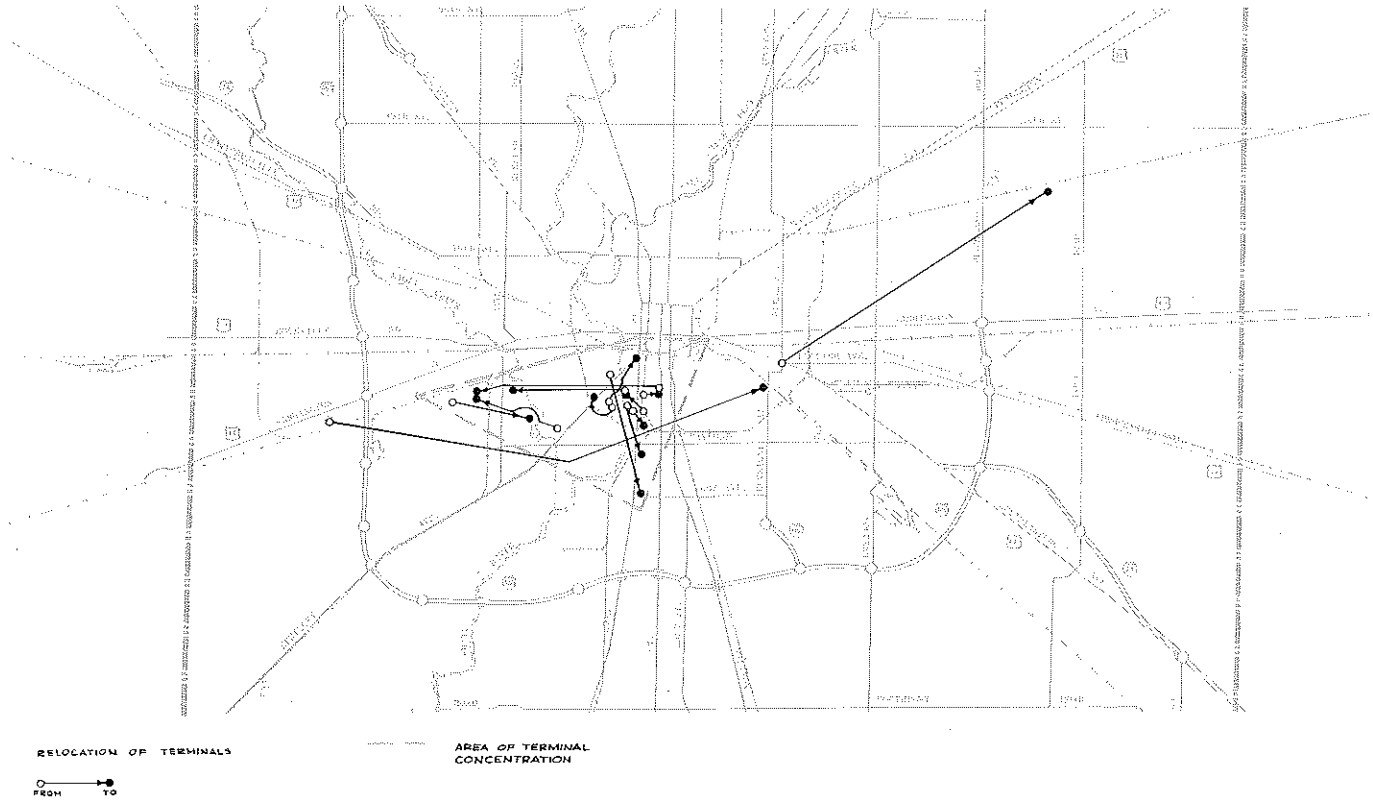
Recent Changes in Terminal Locations

Figure 9 shows both the former and the present locations for 13 respondent terminals which have moved to their present locations since the beginning of 1960. Generally, the moves have been outward, with the southwestern triangle of terminal concentration favored.

Not all these moves were to newly constructed terminals, of course. In four cases, the relocation was to an existing vacant terminal. For the nine that did move to newly-built terminals, there is notable similarity in the land area of the new sites. Seven of the nine terminals have land

RELOCATION OF TRUCK TERMINALS: 1960-1965

FIGURE NUMBER 9



areas ranging from 5.0 to 7.0 acres. One small operation is less than one acre in size, and the remaining terminal of these nine is on a site of 15.0 acres.

Terminals' Plans for Future

Twenty terminals report plans for expansion or relocation to another site in the Study Area by 1970. These terminals represent 36 per cent of the 56 terminals responding to the survey. Following is a breakdown of the plans of the 20 terminals:

Planning to expand at present location by 1970.....4 terminals.

Planning to relocate within Indianapolis area by 1970; future site already chosen.....6 terminals.

Planning to relocate within Indianapolis area by 1970; future site not yet chosen.....10 terminals.

Figure 10 shows the present locations -- and future locations where known -- of these 20 terminals. For the six firms having a future site already chosen, the direction of the forthcoming move will be outward in every instance.

These short-range future relocation plans reinforce the pattern shown by Figure 9. The direction of relocation is outward, and generally within the southwestern triangle of truck terminal concentration.

TERMINALS PLANNING NEW OR EXPANDED FACILITIES WITHIN THE NEXT FIVE YEARS

FIGURE NUMBER 10

PRESENT — FUTURE PLAN TO MOVE

△ PLAN TO MOVE - TIME & LOCATION UNKNOWN

□ PLAN TO EXPAND AT PRESENT LOCATION

AREA OF TERMINAL CONCENTRATION

NEW SITE FACTORS

In the Survey, terminals were asked:

In what order of importance would you rate the following factors in choosing a new site for your terminal?

Convenient access to an Interstate Highway (expressway)

Convenient access to a rail line

Proximity to downtown Indianapolis

Proximity to major industrial areas

Proximity to other terminals

Land costs

Other _____
(specify)

Sixteen of 46 responding firms reported that proximity to other terminals is the most important factor in selecting a new site. Rated as first choice by 12 terminals was proximity to major industrial areas. Eleven terminals gave first importance to convenient access to an Interstate Highway. Of the remaining seven respondent firms, five reported land costs as the factor of greatest importance and two chose proximity to downtown Indianapolis. None of the terminals gave first rating to convenient access to a rail line.

A summarization of the factors rated as first, second, and third importance appears in Table 3.

Table 3

SITE SELECTION FACTORS

Factor	Importance Rated As: First	Second	Third
Proximity to other terminals	16	12	6
Proximity to major industrial areas	12	16	10
Convenient access to an Interstate Highway	11	7	7
Land costs	5	4	4
Proximity to downtown Indianapolis	2	2	12
Convenient access to a rail line	0	1	0

The number one ratings of proximity to other terminals and of proximity to industrial areas show a direct relationship to responses to Questions K and L which concern the land uses to which local deliveries are made, and the land uses from which shipments are picked up. Seventeen of 38 respondents made 50 per cent or more of their local deliveries to other terminals. Another 12 terminals made 50 per cent or more of their local deliveries to manufacturing plants. On source of shipments, 23 of the firms picked up 50 per cent or more of their shipments from other terminals, and 12 from manufacturing plants. Considering these relationships, the concentration of terminals in the southwest industrial corridor seems logical. In addition, the triangular area of terminal concentration will contain Interstate Route 70 -- the south leg of the Inner Belt -- which well may be the key factor in determining the future pattern of truck terminal land use.

As proximity to downtown Indianapolis is one of the factors in the ratings, it is interesting to examine the responses to the question concerning shipment pick-ups from and deliveries to Indianapolis' "Mile Square" (Question R). Only three terminals reported that more than 25 per cent of their pick-ups or deliveries originated from or were destined for the Mile Square.

Present Zoning for Truck Terminals

Zoning for truck terminals in all parts of Marion County is regulated by a metropolitan area industrial zoning ordinance. Truck terminals are permitted in four industrial categories and are subject to the same development standards and performance standards as the other uses permitted in those categories. In addition, there are special regulations which apply only to truck terminals. These are summarized in Table 4.

Table 4

ZONING DISTRICTS FOR TRUCK TERMINALS, MARION COUNTY

Zoning District	Name	Terminal Size Restriction	Special Regulation
I-3-S	Medium Industrial Suburban	Less than ten acres	(applicable to all four districts) "The parking of trucks and/or trailers shall not be defined or construed as outside storage in computing permited outside storage and operation within said districts."
I-3-U	Medium Industrial Urban	Less than ten acres	
I-4-S	Heavy Industrial Suburban	None	
I-4-U	Heavy Industrial Urban	None	

Source: Industrial Zoning Ordinance of Marion County, Indiana, Metropolitan Planning Department, 1963.

In that portion of the Study Area in Hamilton County (Carmel and Clay Township), truck terminals are placed in the zoning category I-1 (Industrial).[8] In Johnson County (part of which is in the Study Area), truck terminals are permitted in the following five zoning districts, provided that the terminals meet the specific performance standards applicable: A (Agricultural), B-2 (General Business), RS-2 (Suburban Residence - 2), I (Industry), and IR (Industry Reserve).[9] The City of Greenwood, which is in the Johnson County part of the Study Area, has a city zoning ordinance separate from that of the county. The Greenwood Ordinance lists "Carting, express, hauling or storage yards," among the uses permitted in a General Commercial District.[10]

8 Master Plan, Carmel, Indiana, 1961.
9 Master Plan, Johnson County, Indiana, 1961.
10 Zoning Plan, City of Greenwood, Indiana, 1962.

TRUCK ROUTES

Figure 11 shows truck routes in the Study Area. All federal and state highways legally are truck routes. Local governmental units must have the permission of the Indiana State Highway Commission to prohibit trucks from using state and federal routes within the local unit's jurisdiction. Obviously, a satisfactory alternate route must be provided.

In addition to the arterial framework of the state and federal routes, Figure 11 shows truck routes established by city and county authority. Trucks are prohibited from some streets and segments of certain other streets by specific ordinances, usually covering arterials in residential areas. However, in some cases special permits are obtained for individual vehicles.

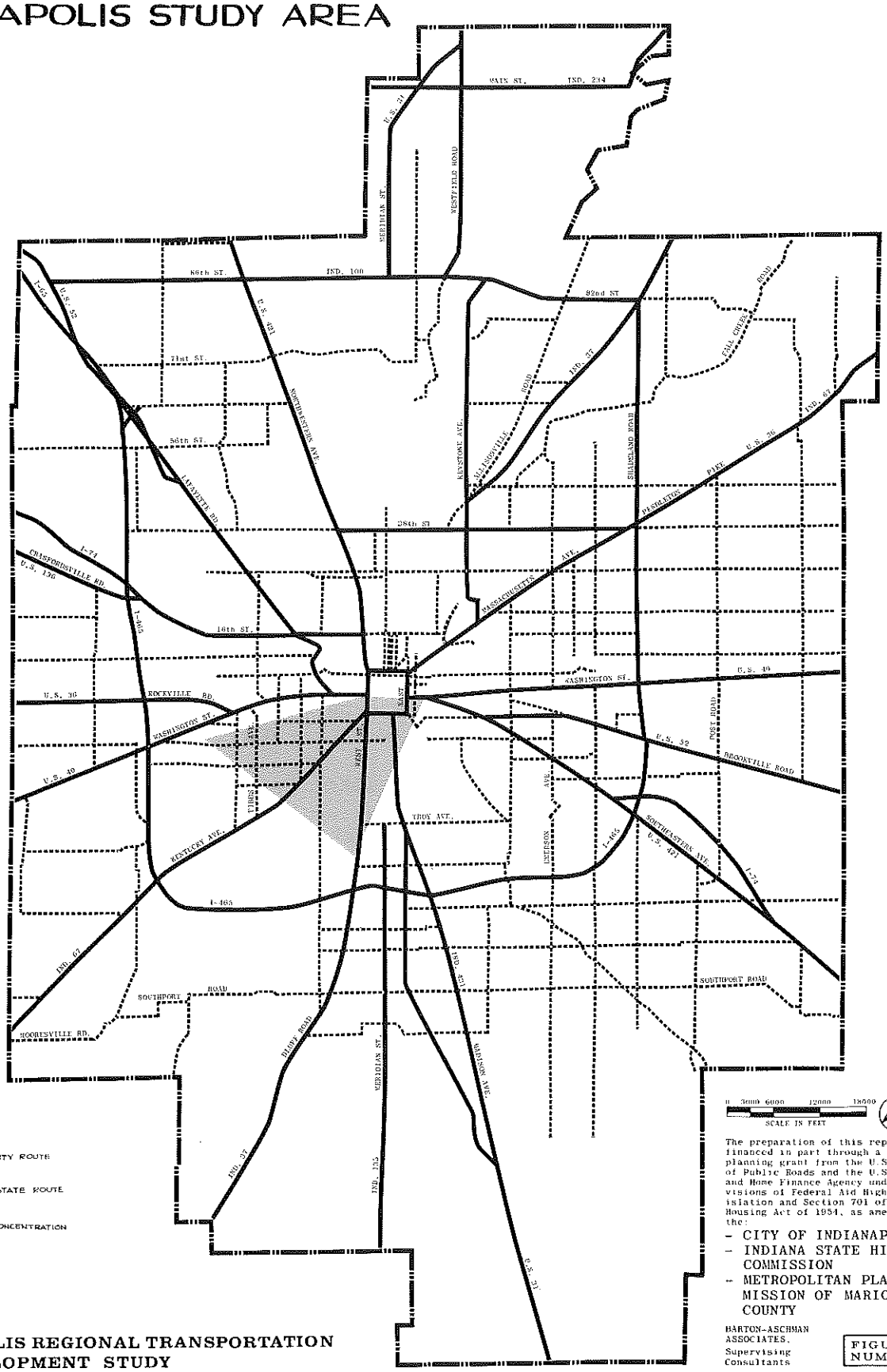
The Study Area's network of truck routes must provide efficient channels for both through trucks and local deliveries. As depicted in Figure 11, the present network does provide for truck access to most parts of the Study Area. Notably, the triangular area of truck terminal concentration to the southwest does have a lattice of truck routes which is important to its terminal functions.

There are problems, however. Gaps in continuity on local arterials open to truck traffic comprise one set of problems. To cite one example, there is a gap on East 10th Street between Emerson and Arlington. Trucks are permitted on East 10th Street to the west of Emerson and east of Arlington, but not between.

Another problem is that of low clearances. Underpasses that do not provide sufficient clearance for trucks can prohibit trucks as effectively as ordinances. It seems illogical that streets having low clearance points should be designated as truck routes, but some are.

Indiana state law allows a maximum truck height of 13 feet, 6 inches. In a study of railroad grade separations, the Indianapolis Regional Transportation and Development Study found fourteen that are on designated truck routes and which have clearance height of less than 13 feet, 6 inches. One of these grade separations has a clearance height of only 10 feet 5 inches.

PRESENT TRUCK ROUTES IN THE INDIANAPOLIS STUDY AREA



CITY & COUNTY ROUTE

FEDERAL & STATE ROUTE

TERMINAL CONCENTRATION

0 3000 6000 12000 18000

SCALE IN FEET

The preparation of this report was financed in part through a joint planning grant from the U.S. Bureau of Public Roads and the U.S. Housing and Home Finance Agency under provisions of Federal Aid Highway Legislation and Section 701 of the Housing Act of 1954, as amended, for the:

- CITY OF INDIANAPOLIS
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- METROPOLITAN PLAN COMMISSION OF MARION COUNTY

INDIANAPOLIS REGIONAL TRANSPORTATION AND DEVELOPMENT STUDY

BARTON-ASCHMAN ASSOCIATES, Supervising Consultants

FIGURE NUMBER 11

POTENTIAL GROWTH OF TRUCKING INDUSTRY IN INDIANAPOLIS

Judging from the performance of responding terminals during the past four years, prospects for the Indianapolis trucking industry are bright indeed. For the year 1960, these terminals handled a total of 1.3 million tons of freight. These same terminals handled total freight of 1.9 million tons in 1964. This is an increase of 46 percent in tonnage handled.

Growth of the Indianapolis trucking industry also will be keyed to trends in the trucking industry nationally. Innovation and technological advancement are playing roles in the national picture. As an example, one innovative procedure involves the combination of railroads and local short-haul truckers in a new piggy-back plan. Arthur Baylis describes the new plan in these terms:

> "This new innovation, which works very successfully for terminal hauls up to 75 to 100 miles, embraces the short-haul truckers' service on one or both ends of the railroad haul. The trucker acts as agent for the railroad and using the short-haul 'know how' and adequate truck terminal facilities expedites movement from shipper to railhead or from rail terminal to final customer distination or both. It is quite possible that during the coming decade this type of combination service will be the main means of performing urban freight transportation work."[1]

In a program such as this, there are obvious implications concerning land use relationships between truck terminals and railroads.

National trends in the trucking industry have an effect upon that industry in Indianapolis, of course. One broad measure of national trends is truck registrations. Total truck registrations in the United States for the past ten years are shown in Table 5. While maintaining a stable percentage to total motor vehicle registrations, truck registrations have increased 27per cent during the ten-year period.

Local truck registration data are not strictly comparable to the national data presented below. Upon the basis of those data which are available, it appears that truck registrations in the Study Area have grown at a rate comparable to that of the nation.

Indianapolis possesses central geographic location in the nation. In the coming decade, the completion of the Interstate Highway System should emphasize indianapolis' advantages as a location for truck terminals.

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[1] Arthur E. Baylis, op. cit., p. 3.

Table 5

TRUCK REGISTRATIONS, U.S., 1955-1964

Year	Total Trucks	Per cent of Total Motor Vehicles
1955	10,302,987	16.4
1956	10,694,262	16.4
1957	10,960,814	16.3
1958	11,158,561	16.3
1959	11,659,717	16.3
1960	11,937,589	16.2
1961	12,286,430	16.2
1962	12,809,150	16.2
1963	13,423,327	16.2
1964	14,041,445	16.3

Source: Automobile Manufacturers Association, Inc., Motor Truck Facts, 1965 Edition.

APPENDIX A

SUMMARY OF REGULARLY-SCHEDULED FREIGHT TRAINS IN INDIANAPOLIS, PENNSYLVANIA RAILROAD, AUGUST, 1965

Train	Direction	Days (D=Daily)	Originates	Terminates	Indianapolis Operations	Time (approx.) (E.S.T.)
Chicago - Louisville Lines						
IL - 1	N	D, except Sunday	Hawthorne Yard	Logansport	Belt RR to Woods, pick-up cars at Transfer Yard, then to Davis and north.	Leave Hawthorne 9:00 A.M.
IL - 2	S	D, exc. Mon.	Logansport	Hawthorne Yard	From north to Davis, then east to Woods. From Woods to Hawthorne via Belt RR.	Arrive Hawthorne 6:00 P.M.
IL - 3	N	D, exc. Sun.	Louisville	Hawthorne Yard	From south to Belt at Dale, then to Hawthorne.	Ar. Hawthorne 6:30 A.M.
IL - 4	S	D, exc. Sat.	Hawthorne Yard	Louisville	Hawthorne to Dale via Belt, then south.	Lv. Hawthorne 4:00 P.M.
IS - 5	N	T-Th-F	Columbus, Ind.	Hawthorne Yard	From south to Belt at Dale, then to Hawthorne	Ar. Hawthorne 5:00 P.M.
IS - 6	S	M-W-F	Hawthorne Yard	Columbus, Ind.	Hawthorne to Dale via Belt, then south.	Lv. Hawthorne 8:30 A.M.
NS - 7	N	D, exc. Sun.	Louisville	Chicago	From south to PRR Freight House to set-off piggy back cars for east points; then by Union Tracks to Transfer Yd. Sets-off and picks-up cars at Transfer, then on to Logansport via Davis.	Lv. Transfer 11:45 P.M.

NS - 8	S	D	Chicago	Louisville	From north to Transfer Yd., via Davis. Sets-off at Transfer. Proceeds to Hawthorne Yd. with option to use Belt or Union Tracks. New NS-8 made up at Hawthorne. Proceeds to Dale via Belt, and then south.	Ar. Hawthorne 5:30 A.M. Lv. 6:30 A.M.

Indianapolis - Vincennes Line

IS - 16	SW	D, exc. Sun.	Hawthorne Yard	Martinsville	Via Belt to Woods, pick-up cars at Transfer Yard, then to Kraft and Maywood and southwest.	Lv. Hawthorne 8:00 A.M.
IS - 15	NE	D, exc. Sun.	Martinsville	Hawthorne Yard	From southwest to Maywood, then to Transfer via Kraft. Set-off at Transfer, then to Belt at Woods and on to Hawthorne.	Ar. Hawthorne 6:30 P.M.

Pittsburgh - St. Louis Lines

TT - 3	W	D, exc. Mon.	New York	St. Louis	Via Union Tracks. Stops only to change crews at Pine.	Ar. Davis 9:50 P.M. "Trailer Train."
TT - 4	E	D, exc. Sun.	St. Louis	Harrisburg, Pa.	Via Union Tracks. Stops only to change crews at Pine.	"Trailer - Train" Ar. Thorne 3:00 A.M.
APS - 1	W	D	Columbus, Ohio	St. Louis	Change crews at Pine. Via Union Tracks to Transfer Yd. Picks-up cars and proceeds west.	"Auto Parts Special" Ar. Davis 10:15 P.M.
LCL - 3	W	D, exc. Mon.	New York	St. Louis	From east to Hawthorne via Thorne. Cuts-off and picks-up. Then by Belt to Woods and west.	Ar. Davis 3:00 A.M.

CC - 2	E	D	St. Louis	Columbus, Ohio	From west to Transfer Yd.; sets-off, then to Hawthorne Yd. via Belt; then to Thorne and east.	Lv. Thorne 11:45 P.M.
CL - 1	W	T-Th-Sat	Richmond, Ind.	Hawthorne Yd.	Thorne to Hawthorne.	Ar. Thorne 3:00 P.M.
CL - 2	E	M-W-F	Hawthorne Yd.	Richmond, Ind.	Hawthorne to Thorne and east	Lv. Thorne 8:00 A.M.
CI - 3	W	D	Cincinnati	Hawthorne Yd.	Via Richmond, Ind. to Thorne.	Ar. Thorne 3:00 P.M.
CI - 4	E	D	Hawthorne Yd.	Cincinnati	Via Thorne and Richmond, Ind.	Lv. Thorne 7:00 A.M.
SW - 1	W	D	Pittsburgh	St. Louis	Thorne to Hawthorne, sets-off and picks-up. Then via Belt to Transfer Yd. for pick-up, and then west.	Lv. Davis 4:30 A.M.
SW - 2	E	D	Hawthorne Yd.	Pittsburgh	Via Thorne.	Lv. Thorne, 2:00 P.M.
SW - 6	E	D	St. Louis	Harrisburg, Pa.	Via Union Tracks. Drops Indianapolis perishables at Pine.	Lv. Thorne 11:15 A.M.
SW - 8	E	D	St. Louis	Pittsburgh	Via Union Tracks. Change crews at Pine.	Lv. Thorne 12.45 A.M.
SW - 9	E	D	Columbus, Ohio	Hawthorne Yd.	Via Thorne.	Ar. Thorne, 1:00 P.M.
SW - 10	E	D	St. Louis	Harrisburg, Pa.	From west to Woods, then to Hawthorne via Belt. Sets-off and adds at Hawthorne, then to east via thorne.	Lv. Thorne 3:25 A.M.
SW - 30	E	D	Terre Haute	Hawthorne Yd.	From west to Transfer Yd. then to Hawthorne via Belt.	Ar. Hawthorne 11:00 A.M.

SW - 31	W	D	Hawthorne Yd.	Terre Haute	From Hawthorne to Transfer Yd. Via Belt, picks-up at Transfer, then west.	Lv. Davis 3:00 P.M.
SL - 23	E	D, exc. Sat., Sun.	Greencastle	Transfer Yd.	From west to Transfer Yd.	Ar. Davis 9:00 P.M.
SL - 24	W	D, exc. Sat., Sun.	Transfer Yd.	Greencastle	From Transfer to west.	Lv. Transfer 10:00 A.M.

APPENDIX B

SUMMARY OF REGULARLY-SCHEDULED FREIGHT TRAINS IN GREATER INDIANAPOLIS, NEW YORK CENTRAL RAILROAD, JULY, 1965

Train	Direction	Days (D=Daily)	Originates	Terminates	Indianapolis Operations	Approx. Time Big Four Yard
Chicago - Cincinnati Lines						
CC - 3	N	D	Cincinnati	Big Four Yard	From S. to Belt Crossing at N. end of Hill Yd. then, optionally, by Belt or Union Tracks to Big Four Yd.	Arrive 5:00 P.M.
CC - 3: SF - 3	N	D	Big Four Yard	Chicago	From Big Four Yd. E. to Penn. RR Chicago line, then N. to Lebanon, Ind. to return to NYC tracks for Chicago.	Leave 10:00 P.M.
SY - 2	S	D	Chicago	Cincinnati	From Lebanon, Ind., via Penn. RR Chicago line to NYC St. Louis line; then W. to Big Four. Set-off and add cars. Proceed E. from Avon to BX. Optionally via Belt or Union Tracks to Cincinnati main line and S.	Ar. from N. at 7:30 P.M. Lv. Big Four Yd. for S. at 4:00 A.M.
SV - 8	N	D	Cincinnati	Big Four Yard	Via Union Tracks	Ar. 11:00 P.M. "Flexi - Van" Train.
Kankakee Local	N	D	Big Four Yard	Kankakee, Ill.	Same as CC - 3: SF - 3, above.	Lv. 10:00 A.M.
Kankakee Local	S	D	Kankakee, Ill.	Big Four Yard	From Lebanon, Ind., via Penn. RR Chicago line to NYC St. Louis line; then W. to Big Four Yd.	Ar. 5:00 to 6:00 P.M.

Valley N Jct. Turn	D	Cincinnati	Big Four Yard	E. from Big Four Yd. to BX, then optionally by Belt or Union Tracks to Cincinnati main line and S.	Ar. 5:00 P.M.
Valley S Jct. Turn	D	Big Four Yard	Cincinnati	From Cincinnati main line to Belt Crossing, then optionally by Belt or Union Tracks to Big Four Yd.	Lv. 4:00 A.M.
Peoria Line					
PE - 4 E	D	Peoria	Big Four Yard	From W. to Penn. Chicago line, S. to NYC St. Louis line, then W. to Big Four Yd.	Ar. 5:00 P.M.
PE - 5 W	D	Big Four Yard	Peoria	Big Four Yd. E. to Penn. Chicago line, N. to NYC Peoria line, then W.	Lv. 1:30 A.M.
Springfield, Ohio Line					
Springfield E Local	D, except Sun.	Big Four Yard	Springfield, O.	Via Union Tracks and Cleveland Line to DX, then E.	Lv. 10:00 A.M.
Springfield W Local	D, except Sun.	Springfield, O.	Big Four Yard	From E. to DX then via Cleveland Line and Union Tracks to Big Four Yd.	Ar. 9:00 P.M.
Cleveland Line					
NY - 6 E	D	St. Louis	Cleveland and Eastern points.	From W. to Big Four Yd. Then, via Union Tracks to Cleveland main line.	Lv. 10:30 A.M.
BF - 2 E	D	Same as above	Same as above	Same as above	Lv. 1:30 P.M.
2BF - 2 E	M, T, W, Th, F.	See above	See above	See above	Lv. 5:00 P.M.

SLD - 2	E	D	St. Louis	Detroit	From W. to Big Four Yd. Then, via Union Tracks to Cleveland main line.	Lv. 6:00 A.M. to 7:00 A.M.
NY - 8	E	D	Same as above	Cleveland and East.	Same as above	Lv. 10:15 P.M.
MD - 4	E	D	Big Four Yard	Elkhart, Ind.	As above to Anderson, Ind., then to Elkhart	Lv. 6:00 P.M.
Ansonia Turn	E	D	Big Four Yard	Ansonia, Ohio	Big Four Yd. to Cleveland line via Union Tracks.	Lv. 7:00 P.M.
SV - 6	E	D	St. Louis	Cleveland and East	From W. to Big Four Yd. add cars. Proceed E. via Union Tracks to Cleveland Line.	"Flexi-Van" Train Ar. 11:45 P.M. Lv. 1:20 A.M.
SV - 5	W	D	Cleveland and East	St. Louis	Stops at Big Four Yd. only to change crews.	"Flexi - Van" Train Lv. 10:00 P.M.
Ansonia Turn	W	D	Ansonia, Ohio	Big Four Yard	Via Cleveland line and Union Tracks	Ar. 7:00 A.M.
MD - 5	W	D	Elkhart, Ind.	Big Four Yard	Elkhart to Anderson, then via Cleveland line and Union Tracks to Big Four Yd.	Ar. 8:00 P.M.
DSL - 1	W	D	Detroit	St. Louis	From E. via Cleveland line and Union Tracks to Big Four Yd.	Ar. 10:30 P.M.
SLX - 1	W	D	Cleveland and East	St. Louis	Same as above	Ar. 3:30 A.M.
Advance BF - 3	W	T,W,Th, F, Sat.	As above	As above	As above	Ar. 9:30 P.M.
BF - 3	W	D	As above	As above	As above	Ar. 11:30 P.M.
2BF - 3		W,Th,F, Sat.	As above	As above	As above	Ar. 2:00 A.M.

APPENDIX C

CONFIDENTIAL

TRUCK TERMINAL SURVEY QUESTIONNAIRE

Indianapolis Regional Transportation and Development Study

2360 City-County Building, Indianapolis, Indiana

A. Name of Terminal _____

B. Address _____

C. How many people are employed at this terminal? _____. Of these, how many are drivers? _____

D. What is the total land area of this property? _____acres.
Of this, how much is available for future expansion? _____acres.

E. What is the total floor area in the building? _____square feet.
Of this, how much is dock area? _____square feet.

F. How many trucks can be loaded or unloaded at this terminal at one time? (i.e.--number of loading doors) _____
Is this a cross-dock terminal? Yes _____ No_____

G. On the average, how many truck arrivals and departures are handled daily by this terminal? _____

H. Indicate the amount of equipment stationed at this terminal:

1. City pickup and delivery fleet:
   _____ Tractors
   _____ Straight trucks
   _____ Trailers
2. Over-the-road fleet:
   _____ Tractors
   _____ Straight trucks
   _____ Trailers

I. Estimate the number of trucks in each category which call at this terminal on a typical day:

1. _____ Over-the-road, for-hire carriers
2. _____ Local cartage for-hire trucks (transfer)
3. _____ Railroad, freight forwarder and express trucks
4. _____ Private carriers

J. What was the total poundage handled by this terminal in:

1960 _____pounds
1964 _____pounds

K. Estimate the approximate percentage of your total local deliveries in a typical week to the following businesses or land uses:

1. _____% to manufacturing plants
2. _____% to retail stores and service shops
3. _____% to wholesale trade
4. _____% to other terminals (including rail)
5. _____% to farms
6. _____% to other _____ (specify)
7. 100 % Total