

A REPORT UPON

TRANSPORTATION

*COLUMBUS
URBAN AREA*

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A Report Upon
TRANSPORTATION
Columbus Urban Area

Prepared for the
CITY PLANNING COMMISSION
and
FRANKLIN COUNTY REGIONAL PLANNING COMMISSION

By
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September, 1956

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September, 1956

City Planning Commission
Franklin County Regional Planning Commission
Columbus, Ohio

Gentlemen:

We are pleased to submit herewith our preliminary report on Transportation, which is the tenth in the series of reports comprised in the current planning program.

This report is concerned with the three major transportation media -- rail, motor and air -- and the channels and terminal facilities which they require in carrying commodities and people to and from metropolitan Columbus and other parts of the country. These have been examined and recommendations have been made both from the standpoint of meeting present and expected future transportation needs and with regard to their relationship to the other physical elements, including the land use and thoroughfare patterns.

During the preparation of this report we have had the cooperation of many officials, organizations and individuals. We particularly wish to acknowledge the assistance furnished by representatives of the Railroads, the Ohio Trucking Association, the Chamber of Commerce, the Bus Companies, the State Highway Department and the Civil Aeronautics Administration, as well as that of the Planning Commission Staffs, including data furnished by the City Planning Commission from its special grade crossing study.

Respectfully submitted,

HARLAND BARTHOLOMEW AND ASSOCIATES

By

Russell H. Riley

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TRANSPORTATION

Without transportation there would be no large city. The various forms of transport, from the early human or beast of burden to the animal-drawn vehicle, to the modern water, rail, motor and air carrier, have played decisive roles both in the development of civilization and in the concentration of population in cities. The connecting of each community with other cities and with supplies of agricultural and natural resources is required for the maintenance of these populations and for the flow of goods and materials which underlie, whether in industry or trade, the economy of the city.

Over the years the forms of transport have been constantly changing with scientific progress and with the growth and requirements of our urban economy. Pioneer American communities were established mainly on waterways to take advantage of the transportation afforded thereby, the existing streams being supplemented later by construction of a system of canals in many sections, including Ohio. For several decades before and following the turn of the century, development of the railroad and then of the inter-urban trolley played major roles in industrial expansion and city growth. Since 1920, motor transport by both truck and bus has increased steadily in importance, adding to mobility and demanding a wide network of interconnecting highways. More recently, air transportation has gathered momentum, particularly in the handling of passengers, and even of many kinds of freight.

While some of these media are still changing in importance, all of the modern forms of transport except water are still of concern in Columbus. Further, such facilities are important not only because they affect the over-all welfare and economy of the city but also because they influence the pattern and functioning of the urban structure itself. Thus, from the standpoint of the city plan, transportation facilities must be considered: (1) as to their adequacy in all respects to serve present and expected future transportation needs; and (2) with regard to the relationship of railroads, terminals, airports and other physical features to the over-all community structure, including the general land use and highway or thoroughfare patterns.

This report, therefore, is concerned with an analysis of existing transportation channels and terminals together with proposals for future adjustments and improvements throughout the metropolitan area. In considering such changes, it is recognized that existing facilities represent substantial investments in trackage and terminals - railroad yards, passenger and freight stations, truck and bus terminals - which cannot be ignored. Consequently, some adjustments which would involve considerable realignment and reconstruction of existing channels and structures, even though desirable, have not been included in the present recommendations due to the cost and the difficulty of making the change.

In particular, facilities for transportation should be related to the community in a manner to favor the functioning of industries, the distribution of goods, and inter-city travel without conflicts between these and other land uses or communication channels. Thus, interference between rail and vehicular traffic should be minimized, motor and bus terminals should have ready access to the major thoroughfare system; airports should be designed in appropriate relationship to their own environs as well as to needed traffic arteries and to the other transport media. These principles have been applied in the recommendations which follow. All proposals have been coordinated with other elements of the master plan described in preceding reports and the elimination of existing major conflicts - as between street traffic and railroads - has been included.

RAILROADS

Railroads provide transportation for passengers, freight, mail and express. For this function, they require not only extensive trackage but various kinds and types of yards, terminals and maintenance facilities. Unlike motor and air transport, rail transportation requires fixed channels which are relatively expensive to construct and, once established, not easily changed. Rail transport, also, is relatively old and present locations were set at a time when development of the community was immature so that conflicts and maladjustments with other facilities and with other land uses have tended to occur in parts of the city as these areas grew.

Columbus is served by five major railroads providing direct connections with other large cities in Ohio and connecting service to all parts of the country as a whole. These five lines move an average of more than 150,000 carloads of raw materials, fuels, food, finished manufactured products and other items to and from the city each year. While considerable passenger patronage has been lost to the airlines, motor buses and the private automobile, scheduled or special rail service still accounts for an average of nearly 90 passenger trains in and out of the city daily.

A brief description of the service afforded by each of the lines entering Columbus is given in the paragraphs below.

The Pennsylvania Railroad provides both passenger and freight service, operating through the city to termini at New York and St. Louis east and west respectively, as well as to Cincinnati and Chicago. Other major cities along this line include Pittsburgh, Philadelphia, Dayton and Indianapolis. In addition, freight service only is provided northward to Sandusky and to the Akron-Cleveland area.

The New York Central System operates between Toledo and points in West Virginia over its T. O. C. division and between Cleveland and Dayton-Cincinnati over its Big Four (C. C. C. & St. L.) division. The former is a freight line only but the latter provides both freight and passenger service.

The Chesapeake and Ohio Railway provides freight and passenger service to Toledo to the north and to various

cities, including Huntington, Charleston, Richmond and Newport News, in West Virginia and Virginia, to the south and east. In addition, the Hocking Valley branch of this line carries freight from Columbus to Athens and other southeastern Ohio communities.

The Baltimore and Ohio Railroad operates directly to Pittsburgh eastward and to Cincinnati, Louisville and St. Louis to the west. Both freight and passenger service are available.

The Norfolk and Western Railway, which terminates in the city, operates freight and passenger service southward to Portsmouth and thence to various eastern cities in West Virginia and Virginia, terminating at Norfolk.

Existing Railroad Facilities

Plate 1 shows the location of existing railroad lines in metropolitan Columbus, along with the location and extent of the various yards and operational facilities.

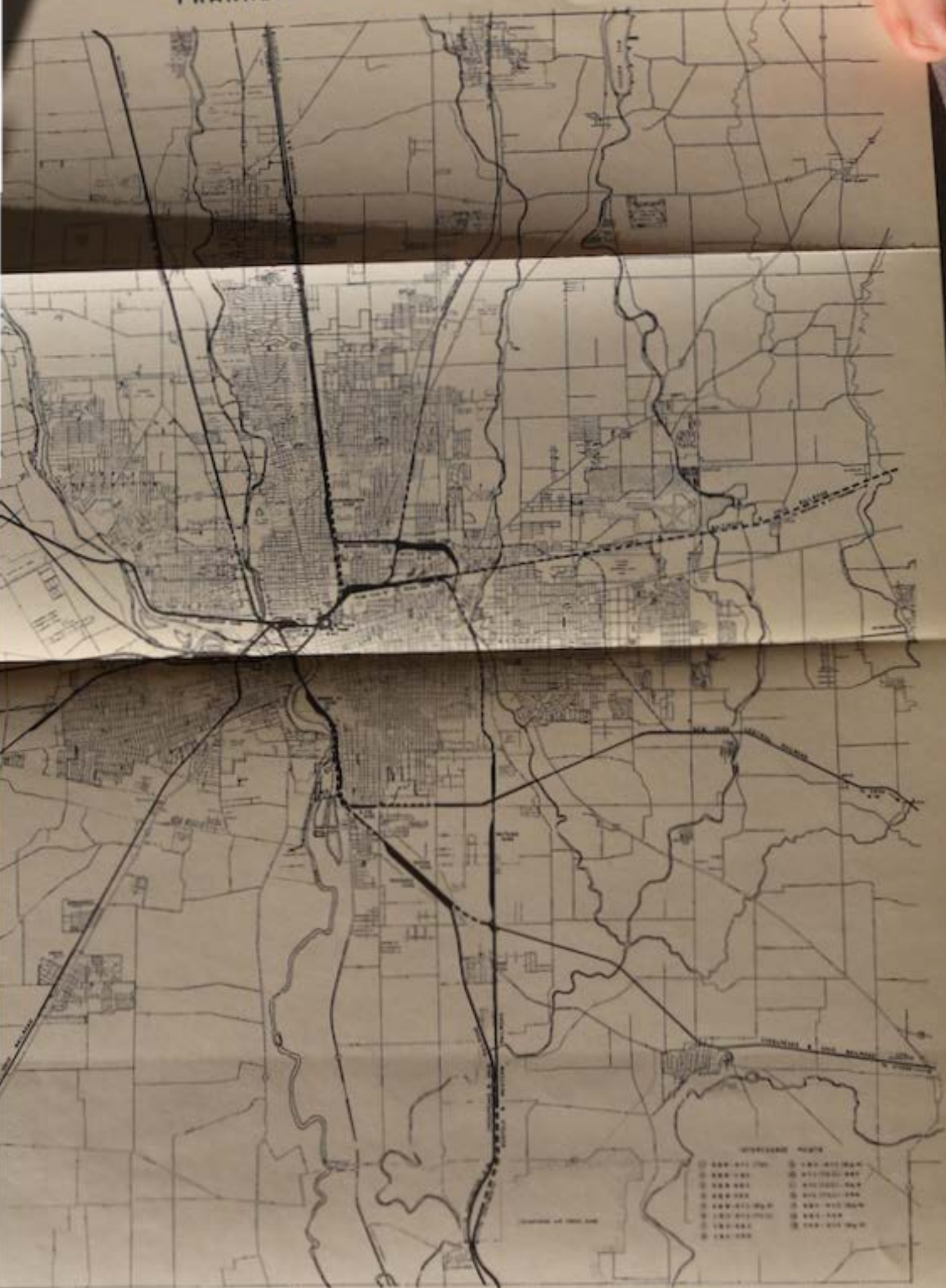
The most striking characteristic of the present railroad pattern is the manner in which these lines crisscross the community in all directions, no large sector except the northeast being completely free of such tracks. This extensive trackage not only creates the many conflicts with the street and thoroughfare pattern hereinafter described, but tends to militate against a rational arrangement of land uses. For example, the flat topography and extensive railroad trackage make so much of the Columbus area physically usable for industries of various kinds that these have begun to scatter and substantial areas along some of the lines have been taken over by junk yards, dilapidated buildings, weeds or other land misuse.

A brief description of each of the lines serving metropolitan Columbus is given in the following:

Pennsylvania Railroad. The Pennsylvania has a number of main line branches through the city. The Pittsburgh branch enters from the east over tracks operated jointly with the B. & O. Railroad which are generally parallel to and about three-fourths of a mile north of East Broad Street. This line proceeds westward through the major yards extending some two miles between Cleveland and Taylor Avenues, and

COLUMBUS URBAN AREA

FRANKLIN COUNTY, OHIO



RAILROAD LINES

○	NEW YORK & OHIO	□	OHIO & WEST VIRGINIA
○	NEW YORK & OHIO	□	OHIO & WEST VIRGINIA
○	NEW YORK & OHIO	□	OHIO & WEST VIRGINIA
○	NEW YORK & OHIO	□	OHIO & WEST VIRGINIA
○	NEW YORK & OHIO	□	OHIO & WEST VIRGINIA
○	NEW YORK & OHIO	□	OHIO & WEST VIRGINIA
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○	NEW YORK & OHIO	□	OHIO & WEST VIRGINIA
○	NEW YORK & OHIO	□	OHIO & WEST VIRGINIA
○	NEW YORK & OHIO	□	OHIO & WEST VIRGINIA

EXISTING RAILROAD FACILITIES

then to and through the constricted area at Union Station. Immediately west of the Station, the Pennsylvania branches in two directions, one branch following a route almost directly westward across the Olentangy and around Grandview Heights and Marble Cliff whence it proceeds northwest through the Village of Hilliard and on to Chicago. The other branch traverses the northwest edge of the central business district, crosses the Scioto and then runs westward south of McKinley Avenue and on around Valleyview to a route paralleling, and nearly a mile north of, West Broad Street, leading to Dayton and Cincinnati. The Sandusky division to the north branches off east of Fourth Street and follows a virtually straight route only a few degrees removed from a true north direction, skirting the eastern edge of most of the existing North Columbus and Worthington developments. The Akron division branches off east of St. Clair and roughly parallels State Route 3 (which it crosses near Agler) to and through Westerville.

The main line comprises three tracks east of Taylor Avenue and two tracks along the west, northwest and most of the north (Sandusky) line. The latter has three or more tracks south of Duxberry Avenue. The Akron division is single-tracked beyond Hudson Street, but has two or more tracks to the south. All Pennsylvania freight movements through the Union Station area are handled by two main line tracks immediately south of the station.

New York Central. The New York Central has two divisions serving the Columbus area. The Big Four division enters the city from Cleveland to the north, using a right-of-way adjoining that of the Sandusky branch of the Pennsylvania Railroad, whence it proceeds through the constricted Union Station area (along its northern edge) under High Street and west and southwest across the Olentangy and Scioto Rivers to the New York Central's west yard. Beyond this yard it runs westward to Hague Avenue, thence southwestward toward Cincinnati. The T. O. C. (Toledo and Ohio Central) division enters the area through the district south of Livingston Avenue to a crossing of the N. & W. north of Refugee Road, thence follows the north edge of the latter to High Street and proceeds northward through the Mound Street yard and a crossing of the Scioto to a point north of Broad. Thereupon, turning westward it adjoins for a few blocks one branch of the Pennsylvania, passes through its west Columbus yard to Grandview Avenue and then proceeds northwestwardly through the remainder of the county, ultimately turning north to Toledo.

A local service branch of the New York Central (T.O.C.) runs from a point on the main line west of Hamilton Road to and around the west edge of Whitehall, through the Columbus General Depot and westward north of Fifth Avenue to the Pennor yard of the Pennsylvania Railroad.

The Big Four Railroad is double-tracked from its West Broad Street crossing to a point north of Oakland Park Avenue, except for the section between its Union Station and Fairgrounds yards where several tracks are used. (A double track for freight traffic runs immediately north of the Union Station passenger tracks.) The remainder of the Big Four main line consists of a single track. The T.O.C. branch is generally single-tracked east of Alum Creek and northwest of Fisher Avenue. The remainder is double-tracked except for the stretch between Lockbourne Avenue and a point north of Innis, which is triple-tracked.

Chesapeake and Ohio Railroad. The main line of the C. and O. enters the county from the south at a point west of Lockbourne Air Force Base, proceeding northward to its Parsons Avenue yard and then northwestward and northward through the rest of the city and county toward Toledo. There are two crossings of the Scioto River and one of the Olentangy in addition to crossings of several of the other lines in the district between Broad and Goodale Streets. Because of the location of the main tracks, passenger service into the Union Depot requires rather circuitous operations with backing into the station of trains from the north and backing out of those from the south. The Hocking Valley branch of the C. & O. enters the area from the southeast, skirting Groveport and joining the main line at the Parsons Avenue yard.

The main line is double-tracked throughout with additional tracks between the Mound Street and Parsons Avenue yards. The Hocking Valley branch operates over a single track east of its crossing with the Norfolk and Western.

Baltimore and Ohio Railroad. The B. & O. enters the area from the southwest on a route paralleling and only a few hundred feet west of State Highway 3. Near Sullivant Avenue it turns north between Yale and Glenwood, proceeds almost to the Pennsylvania main line and then veers northeastward along the edge of the New York Central's West Columbus yard via the same river crossings used by the Big Four, following the latter's tracks along the south side of Spruce Street and

along the north edge of the Union Station area. Beyond the latter the B. & O. operates eastward over the trackage maintained jointly with the Pennsylvania as described hereinbefore.

Three tracks are used on that part of the route shared with the Pennsylvania Railroad. The remainder is single-tracked except for the portion between Union Station and approximately Mound Street where two tracks are in use.

Norfolk and Western Railroad. The N. & W. terminates in Columbus, entering Franklin County from the south over a line immediately west of Lockbourne Air Base, whence it proceeds almost directly northward to a crossing of the Pennsylvania-Baltimore and Ohio main line west of Sunbury Road. The N. & W. main tracks then proceed northwest and west through the Joyce Avenue Yard, turn southwest along the PRR's Akron branch, pass under St. Clair Avenue and run west and southwest to Union Station and to the yards immediately east of the station.

The main line is double-tracked south of Frebis Avenue, but three tracks are available between Frebis and Main and four tracks from Main Street northward.

The Union Depot

The Union Depot consists of a T-shaped brick structure, housing service facilities - restaurants, lounges, restrooms, etc. - and ticket sales in the two-story main portion, and the principal passenger waiting room and train approaches in a single-story wing at right angles thereto. The second story of the main building is used partly for offices and partly for lockers and storage. The waiting room is located directly over the passenger tracks, four gates on either side of the building leading by way of stairs to the train loading platforms. Thus, eight tracks are available for passenger traffic at the depot, although freight trains occasionally pass over one or more of these tracks, due to the large number of freight operations through this area which must otherwise be accommodated by either the Big Four or Pennsylvania lines immediately north or south respectively of the passenger facilities.

From the standpoint of general location, the passenger depot is quite convenient to the central business district and the community as a whole. Neither the present setting nor the building itself is particularly attractive but in view of the serious inroads on passenger transport made by

airlines, buses and the private automobiles, the existing accommodations appear adequate for both present and future passenger volumes. However, the parking area is rather limited, being confined to spaces along parts of the approaches to the building from High Street and should be improved.

Freight Houses and Team Tracks

Shipment of less-than-carload lots requires the maintenance and operation of convenient freight terminals. From 150 to 200 cars per day are handled in the aggregate at the various freight houses despite the competition of motor freight carriers. The use of team tracks for the unloading of freight is generally declining with the increased use of industrial sidings for direct service to manufacturing plants and warehouses. Moreover, a substantial part of the freight unloaded at the team tracks in Columbus consists of produce, which would be handled at the new produce market if and when the latter is built, so that the use of team tracks is likely to continue to decline in the future.

The Pennsylvania freight station is located on the north side of Naghten Street east of Fourth. Access is provided on both sides of the structure, parallel to Fourth and Fifth, that on Fourth Street having a separator strip from the street proper so that no interference is created with the heavy traffic thereon. Access on the east side of the station is a little restricted due to a dilapidated frame structure at the edge of the property along Fifth. Removal of the latter would facilitate operations on this side. Team tracks lie at the rear or north of the freight house east of Fourth Street with access via the drive serving the freight house. Additional team tracks are located in the Little Miami Produce Yard south of Union Depot, with access off Naghten Street.

The New York Central freight house is situated on High Street, north of the passenger depot. Operations of both divisions are maintained therein, no separate station being provided for the Toledo and Central Ohio branch. Truck access is provided along the south side of the structure leading off High Street. Team tracks occupy an area generally east and south of the freight station, access to such tracks being via a separate driveway about 200 feet south of the station itself.

The freight house of the Chesapeake and Ohio is located on the north side of Maple Street west of Front. The loading platforms open directly on to Maple so that much of the street is taken over by these operations, interfering with normal use of the paving for vehicular traffic. Moreover, area now occupied by the building is part of a site under consideration by the Post Office Department for a new bulk mail headquarters to serve the Columbus area, and if acquired for this purpose, a new location will be necessary for the freight house. Team tracks occupy an area west of the station extending to Dennison Avenue or beyond and additional team tracks are located in West Street, which runs along the east side of the State Penitentiary. Because of these operations, relatively little of the street is available for moving traffic although such traffic is light.

The Baltimore and Ohio freight station is situated on the north side of Naghten Street west of the Pennsylvania freight house. Access drives off Naghten run along the two sides. The location is at approximately the end of Third Street, and extension of the latter to connect with Summit Street, as contemplated by the Major Street and Expressway Plans, will interfere with operation of this station as well as with part of the existing B. & O. Yard. Thus, it may be necessary to relocate the building in the near future, as described later. The team tracks east of the station will also be affected by the street improvement and will have to be re-established.

LCL operations of the Norfolk and Western are conducted in a building at Fifth and Mt. Vernon Streets east of the Pennsylvania freight house. The loading platforms are adjacent to Fifth which serves as access thereto. This street is very congested between Mt. Vernon and Naghten Streets due to the parking of trucks at right angles to the warehouse situated along its east side so that traffic through the area is somewhat laborious although the freight station itself appears to be adequate. Team tracks are located in areas to the rear as well as east of the station and additional team tracks are available out East Main Street.

Principal Yards

The handling of freight requires various yards for the breaking up of incoming trains, the classification and switching of cars, the assembly of outgoing trains, the interchange of traffic between the different railroads, and for maintenance and storage purposes. Because of their size and particularly their length, such yards frequently interfere with

local streets and traffic movements. On the other hand, rail operations may be cramped because of inadequate yard capacity and the lack of space for further expansion. Thus, the location of yards and the scheduling of operations require adjustment to the thoroughfare system and the arrangement of other land uses.

The Pennsylvania Railroad has a number of yards in the Columbus area. The largest of these are the Pennor-Grogan yards extending for a distance of approximately two miles in the district north of Fifth Avenue, and Yards "A" and "B" adjoining the Pennsylvania-Baltimore and Ohio main line between Cleveland and Taylor Avenues. Each of these combinations has a capacity of about 4500 cars. The Grogan-Pennor yards are used especially for interchange of traffic with the Norfolk and Western and the handling of traffic, such as coal, to and from the Lake region by way of the Sandusky and Akron divisions. Yards "A" and "B" serve primarily for the receipt and classification of freight to and from the east and west. A smaller yard (989 car capacity) in the vicinity of Grandview Avenue is used for interchange and service to the Marble Cliff quarries, which is substantial. The Little Miami yard provides for interchange with the New York Central. Facilities for passenger car and engine storage and repair are located in a yard south of Spruce Street which can handle up to 116 coaches and additional coach storage is available in the Pennsylvania's Union Depot Yard.

The largest yard of the New York Central is located on McKinley Avenue east of Grandview. This West Columbus yard, which has a capacity of over 1400 cars, accommodates most of the local freight operations - receipt, classification, make-up, etc. - of the line's Toledo and Central Ohio division and cannot easily be expanded. The South Columbus yard is small (205 car capacity) and is used for local service. Both the Mound Street (200 cars) and Watkins Yards (600 cars) are used for interchange. Yards of the Big Four division are all relatively small. The Fairgrounds Yard serves partly for interchange and partly for the make-up of eastbound trains. The East Yard is used for the break-up and classification of inbound trains while the West Yard (east of Dennison Avenue) provides accommodations for storage of both freight and passenger cars and some switching of passenger equipment. The additional trackage near General Motors constitutes a storage yard.

The Chesapeake and Ohio Railroad has a yard of some 4000-car capacity south of the city. This Parsons Avenue Yard takes care of most of the line's local operations involving the receipt and classification of freight and the service to local industries. The smaller Mound Street Yard (800 cars) is used mostly for interchange with the New York Central but also serves certain local industries. Some local service is also provided from Yard "A" (200 cars), but the latter's main purpose is one of interchange with several other lines.

The Norfolk and Western Railroad uses two main yards, one of about 2300-car capacity on both sides of Watkins Road south of the city, the other accommodating approximately 4100 cars at a location adjoining the Pennsylvania's Pennor Yard north of Joyce Avenue. The latter is used principally for the breaking up, classification and reorganization of trains and cars, the former largely for interchange with the Chesapeake and Ohio and New York Central Railroads.

The Baltimore and Ohio Railroad has only one yard in the city - located on the north side of Naghten Street and east of Fourth. This yard is small (275 cars) and will be materially affected by the extension of Third Street, mentioned earlier. Provision will have to be made therefore, for the development of additional Baltimore and Ohio yard facilities in Columbus.

Interchange

The transfer of freight cars between the different railroads for transshipment to the localities which each serves necessitates connections and yards for this purpose. This is especially important in the Columbus area due to the handling of large amounts of coal at certain seasons for transfer to the Great Lakes communities.

Interchange between lines is accomplished at many different points in metropolitan Columbus. For example, transfer of cars between the Norfolk and Western and the New York Central and Chesapeake and Ohio Railroads is handled at the N. & W.'s Watkins Yard and interchange between the Norfolk and Western and Baltimore and Ohio lines is made on the trackage branching off the N. & W.'s main line south of Maryland Avenue. Traffic of the latter to and from the Pennsylvania and Big Four Routes is transferred in the Pennor-Joyce Avenue yards and to the south of the Ohio State Fairgrounds respectively.

The Chesapeake and Ohio has a major interchange with the New York Central (T.O.C.) along the east edge of the Mound Street Yard; cars to and from the Baltimore and Ohio and Pennsylvania Railroads are handled in Yard "A" along Maple Street and cars to and from the Big Four at the west of Yard "A".

The New York Central also exchanges traffic with the Baltimore and Ohio and its Big Four division at the edge of the West Columbus Yard and with the Pennsylvania at the latter's Little Miami trackage. In addition, the Baltimore and Ohio has an interchange with the Big Four northeast of Union Station and with the Pennsylvania in Yard "A" at Maple Street. Transfer of freight to and from the Big Four and Pennsylvania is made at the edge of the latter's Yard "B" east of Cleveland Avenue.

Volume of Rail Traffic

The number of freight and passenger trains moving over the various main tracks on an average day is graphically shown on Plate 2. No attempt has been made on this map to show the numerous yard cuts and switching movements from yard to yard which vary considerably in different areas, the trains shown representing normal scheduled operations on these lines.

The heaviest movement occurs on the east-west lines of the Pennsylvania Railroad, some 46 freight and 16 passenger trains (in addition to the B. & O. traffic) traversing this route to and from the east and some 48 freight and 22 passenger trains to and from the west. Of the latter most of the freights proceed over the Chicago branch leading through Hilliard and most of the passenger trains over the Cincinnati, Dayton and St. Louis branch paralleling West Broad Street. The six passenger trains between Columbus and Chicago begin or terminate here. While all of the passenger trains stop in Columbus, 14 of the freights in each direction (east and west) are through trains which do not provide local service. In addition to the Pennsylvania traffic, six freight and two passenger trains of the Baltimore and Ohio pass over the east branch, bringing the total volume on this part of the line to 52 freight and 18 passenger trains daily. Pennsylvania traffic to and from the north averages about 12 trains per day on the Akron branch and 18 on the Sandusky route. These provide local service, the outbound trains originating generally in the Grogan-Pennor yards but nearly half of the inbound trains, including all those on the Akron route, travel to the "A" and "B" yards.

Table 1
 FREIGHT CAR LOADINGS
 Metropolitan Columbus

<u>Year</u>	<u>Inbound</u>	<u>Outbound</u>	<u>Total</u>
1937	72,081	25,146	97,227
1938	55,746	18,126	73,872
1939	65,801	20,098	85,899
1940	73,450	23,991	97,441
1941	87,947	34,411	123,358
1942	116,618	51,060	167,678
1943	125,710	83,712	209,422
1944	138,734	84,601	223,335
1945	132,323	80,166	212,489
1946	101,990	49,094	151,084
1947	106,644	43,821	150,465
1948	109,037	46,607	155,644
1949	89,094	39,680	128,774
1950	96,410	42,492	138,902
1951	109,722	52,474	162,196
1952	100,808	43,223	144,031
1953	102,037	52,072	154,109
1954	99,012	53,636	152,648
1955	109,853	66,340	176,193

Information From Columbus Chamber of Commerce

Fairly large movements are to be found on the Chesapeake and Ohio Railroad. Only two of these are passenger trains (one in each direction per day), but some 36 freights - about half of which are through trains - use the main line in both directions and six additional trains provide local service by way of the Hocking Valley branch.

Traffic over the various other railroads is not particularly heavy. The New York Central (T.O.C. division) averages 16 trains - all freight - in both directions, including five through trains. The New York Central's Big Four division has 12 passenger trains daily to and from the south and 14 to and from the north plus four freight trains daily in both directions (all beginning or ending in Columbus). Movements over the Baltimore and Ohio are particularly light, with only two passenger* and six freight trains daily, and four of the latter are through trains. The Norfolk and Western terminates in Columbus. Only two passenger trains (one in each direction), and an average of 21 freight trains are operated per day. These are made up or broken up generally in the Joyce Avenue yard although cuts and switching movements must be made to the freight house and other yards as well as to industries served.

The Union Station handles some 74* scheduled arrivals and departures daily, counting the 32* through trains and the 10 passenger trains made up or terminating in Columbus. While this does not include the occasional special trains or additional sections on regular schedules, it should not tax the eight passenger tracks available. However, almost 60 freight movements daily are made through the Station area, either on the New York Central or Pennsylvania tracks north and south respectively of the station proper. This is high and requires carefully scheduling of all regular and switching movements to avoid interference between these movements as well as to facilitate general freight operations in the central area.

Trends in Car Loadings

Table 1 shows the trend in number of inbound and out-bound carloads handled by the railroads in metropolitan Columbus since 1937. Unlike that in many other communities, the trend in carloadings has been generally upward in Columbus even though considerable fluctuation has occurred. As might

*The B. & O. passenger trains were discontinued on July 21, 1956.

be expected, the volume of freight increased substantially during the war years and declined somewhat immediately following the war. However, while the number of cars has been slightly irregular in the past five years, the volume of inbound freight was approximately the same in 1955 as in 1951, and the volume of outbound freight was over 20 percent higher. This reflects at least in part the increased industrialization of the Columbus area and despite the increasing competition offered by trucking and airline transport, would seem to portend some further increases in railroad freight operations here - in contrast with the average community where little, if any, increase is expected.

Industries Served by Railroads

The location and extent of the industries presently served by sidings off the different railroads in the Columbus area are indicated on Plate 3. This plate does not show all of the industries to be found on the land use maps since some of these do not lie along railroad trackage or do not have railroad sidings for direct service and depend either on motor freight carriers or on local truck service to and from the freight houses and team tracks. A few industries which do have direct rail service were too small to be shown on this map.

As can be seen from comparison of Plate 3 with earlier drawings showing the distribution of industries by size, railroad transportation is of basic importance to industrial development in the Columbus area and therefore, to the economic welfare of the community itself. All of the larger plants have rail connections for the bringing in of raw materials and the shipment of finished products and most of the industries coming into this area in the future will desire convenient access to railroad facilities. Conversely, the number and size of industries served by each line are of vital importance to the railroad itself, the various lines, therefore, competing with each other as well as with motor freight operators and to a lesser degree the airlines. This factor of railroad competition is one of considerable concern to Columbus due to the numerous railroad lines and almost unlimited railroad frontage potentially usable for industry. While no individual line should be discriminated against, the most appropriate industrial pattern from the standpoint of the community as a whole and the proper interrelationship of industries to residential districts and other land uses should be the primary considerations in industrial planning if undue scattering and unbalanced, costly community growth are to be avoided.

In general, industries have tended to cluster along the main lines of the New York Central, Pennsylvania and Chesapeake and Ohio Railroads, most of those along the Norfolk and Western and Baltimore and Ohio lines being relatively small and scattered. Columbus has been fortunate so far in the establishment of the four or five major industrial groupings or concentrations in the center of the city and at the east, west and south edges of the urban area rather than the wide scattering of plants which the extensive railroad trackage could promote, although some scattering has occurred. In addition to those along the main lines, there are several groups of industries served by branches such as those at the south end along 20th Street and at the west of the Goodale area.

A major concentration of industries is found along the Chesapeake and Ohio Railroad at the east edge of Grandview Heights and extending also from Third Avenue to both sides of Kinnear Road. The industrial area on both sides of the railroad south of Mound Street consists mainly of coal yards and warehousing to the west and of breweries and other plants to the east; the area at the south end embraces Buckeye Steel and a number of other heavy industries.

Several of the largest plants are served by the Pennsylvania Railroad. These include North American and the Columbus General Depot in the vicinity of Port Columbus (the Depot is also served by a branch of the New York Central) as well as the sizable establishments along the Sandusky and Akron routes in central Columbus. Those industries, including Westinghouse, and industrial areas immediately outside the city and lying north of West Broad Street also adjoin the main Pennsylvania route, and the Marble Cliff Quarries lie on the northwest branch of the railroad.

Both the Big Four and the Toledo and Central Ohio divisions of the New York Central serve specific industrial sections, although operations along the former are much the greater in Columbus. The principal industries served by the T. O. C. lie along Marion Road and the industrial spur to its north, the few others being scattered. The branch line of the New York Central at the edge of Whitehall serves the Columbus General Depot and several other warehouses and industries. The Big Four line serves a major industrial concentration south of Fifth Avenue as well as the General Motors district south of West Broad Street. Several plants are scattered along the Big Four-Pennsylvania routes running northward from the Fairgrounds.

Industrial operations along the Baltimore and Ohio Railroad are somewhat limited except for a few plants served jointly by the B. & O. and Pennsylvania along the joint trackage to the east. Service along the southwest branch is confined to a few scattered industries in the vicinity of Mound and south of Broad Street. Industrial development along the Norfolk and Western is also relatively light, limited as it is almost entirely to parts of the frontage between Main Street and Frebis Avenue.

The recent industrial growth in metropolitan Columbus and the prospects for considerable future expansion have given rise to increasing demands for industrial zoning over and beyond that shown on Plate 3 and the additional areas allocated in the proposed zoning plan. There still remains, however, a considerable number of desirable industrial sites along the various railroads which are set aside for such purposes but not yet used and a substantial additional amount of desirable frontage which has been pre-empted by junk yards, dilapidated structures or other misuse. The recent inspection trip conducted by the Rail-Industry Special under auspices of the Columbus Chamber of Commerce and the Railroad Community Committee provided an excellent opportunity for examination of these conditions and the city's industrial potential. It is not only desirable but most essential from the standpoint of economy and the balanced growth of all parts of Columbus that appropriate close-in industrial frontage be developed or reclaimed - particularly for the small and medium-sized plants to which it is suited - before additional sites are encouraged to develop in outlying scattered districts, even though a few of the large plants will necessarily locate outside in order to secure the extensive tracts required. Most of the existing areas can be readily served by existing or easily constructed new sidings. A re-appraisal of this land by the railroads, the Chamber of Commerce, industrial realtors and others responsible for the city's industrial expansion for purposes of realizing its greatest potential would reap a valuable harvest not only in fine factory and warehouse sites but in promoting the best development of the whole Columbus community.

Grade Crossings and Separations

The interference between railroads and railroad operations and local vehicular traffic is a major problem

in many American cities. Columbus is particularly plagued by the numerous railroad lines traversing this area in all directions, but the city is fortunate in the substantial number of grade separations that have already been made. Nonetheless, interference along several lines is still vexing and costly to motorists, as well as dangerous, as indicated by the 28 fatalities occurring at grade crossings in the city alone during the past thirty years. (Accident records were not kept in the rest of the County.)

Existing Grade Separations and Crossings

The locations of existing grade separations and grade crossings, together with the type of warning device or other control and the type of separation structure, are shown on Plate 4. Major traffic arteries and a few of the more important secondary streets, where these cross railroad lines, are also indicated on this map.

A relatively large number of the more important street and railroad crossings, have already been separated in the city and in Franklin County south of the city, even though many hazardous and annoying grade crossings still exist. In addition, separation of the existing Lane Avenue crossing of the Chesapeake and Ohio Railroad is currently under construction, the street to pass under these tracks, and two other separation projects are in the design stage. The Lane Avenue project is being financed by the County and the railroad; the other two - Hudson Street and the New York Central-Pennsylvania, and Fifth Avenue and the Pennsylvania - are to be accomplished by means of funds from a \$2,000,000 bond issue approved by the electorate in the fall of 1954. In each case, 15 per cent of the total cost will be paid by the affected railroads in compliance with Ohio laws.

Practically all of the railroad crossings in the central portions of the city have been eliminated. Thus, the elevation of the main lines of the C. & O. and New York Central Railroads west of the business district, with underpasses at Broad, State, Town and Rich Streets, permits the free flow of traffic under these routes, and the additional elevation and underpassing of the B. & O. Railroad still farther west has largely removed this barrier so that traffic to and from West Columbus is generally free from interference. All other crossings of the Main Line of the C. & O. between downtown Columbus and King Avenue and the several crossings of the New York Central between Broad Street and the West Columbus yard have also been eliminated. Street overpasses of the extensive tracks and yards to the west, northeast



EXISTING GRADE CROSSINGS AND SEPARATIONS

PLANNING COMMISSION

LEGEND	
GRADE	
—	STREET UNDERPASS
—	GRADE
SEPARATIONS	
—	STREET OVERPASS
—	SEPARATION

SCALE: 1" = 1000'

and east of the Union Station are to be found at Dennison, Front, High, Fourth, Cleveland, St. Clair, Leonard and Taylor Avenues, thereby facilitating traffic circulation over this trackage to and from the north, although a few additional crossings are needed, as at Third Street. The elevation of the main line of the Norfolk and Western Railroad through much of the city and the numerous underpasses between Maryland Avenue and Livingston have removed the barrier to traffic between downtown Columbus and the east which this line would otherwise have created.

A number of important railroad crossings in the more outlying districts have also been separated. These include West Broad Street and the New York Central, State Route 161 at the east edge of Worthington (NYC-Pennsylvania Railroads), James Road and the Pennsylvania, U.S. 33 and the New York Central, and the South High and the Parsons Avenue crossings of the lines at the south edge of Columbus. Virtually all of the other crossings of both the C. & O. and the Norfolk and Western Railroads in southern portions of the county have been separated also.

Despite these separations, numerous crossings at grade still exist. The majority of the latter, however, are at the edge of the urban area or in rural parts of the county where present traffic is not extremely heavy although there are also certain crossings, particularly in the city, that need early removal. These include several of the crossings of the New York Central-Pennsylvania tracks to the north and five or six other grade crossings at scattered locations. The various crossings of the Baltimore and Ohio line paralleling U. S. 62 and of the Hocking Valley branch of the C. & O. are not particularly bothersome due to the relatively low volume of rail traffic over these routes, and the crossings of the New York Central service lead along Whitehall are virtually negligible under present operations on this branch. However, the majority of the other grade crossings, particularly along the Pennsylvania tracks, are current or potential traffic hazards and will require elimination, either through grade separations or the closing of minor streets.

From the standpoint of their type and general importance, the various grade crossings and separations shown on Plate 4 are tabulated below:

Type of Grade Crossing or Separation	Major Street	Secondary Street	Minor Street	Total
Warning Sign	14	16	56	86
Flashing Signal	20	13	4	37
Gate Controlled	5	0	1	6
Watchman	<u>2</u>	<u>0</u>	<u>0</u>	<u>2</u>
	41	29	61	131
Street Underpass	28	17	12	57
Street Overpass	<u>8</u>	<u>9</u>	<u>2</u>	<u>19</u>
	36	26	14	76

While more than 40 per cent of all the crossings of major streets and railroads have already been separated, there are still more than 40 such crossings at grade in metropolitan Columbus and another 29 grade crossings of railroads and secondary streets. Protection of some of these crossings is none too good, with only the cross-arm warning signs at one third of the major street and more than half of the secondary street locations. Even though warning signs may be adequate at lightly travelled local street railroad intersections, the more ample notice afforded by flashing lights is desirable where vehicular traffic is substantial or speeds relatively high as in districts immediately outside the city. Almost one-half of the existing grade crossings are to be found on minor streets. Most of the control devices thereon consist of warning signs, a few of the more hazardous having flashing lights where local or other physical conditions require the additional warning.

It is to the community's credit that so many railroad separations have been constructed. Over one-third of all the existing crossings indicated on Plate 4 have already been separated mostly by means of a street underpass, which is high in comparison with many other communities and particularly good from the standpoint of the number of separations in central sections of the city where traffic and railroad conflicts are most marked. Thus, 62 of the total of 132 major and secondary street crossings - or approximately 45 per cent - have been separated now and several others are in the construction or planning stage for early removal.

Potential Hazards and Delays at Grade Crossings

It was not possible to make a complete survey of the actual times the various grade crossings in the Columbus area were closed by trains and of the traffic impeded thereby. However, from traffic counts made for the City by its Traffic Engineer and from a number of additional counts at strategic crossings conducted by the State Highway Department plus information on train movements (including switching) supplied by the railroads, Plate 5 was prepared to show the volume of train movements and total vehicular traffic during an average day at the more important grade crossings - which provides some index to the active or potential dangers and delay occasioned thereby. Both the Lane Avenue and Fifth Avenue crossings, separation of which is presently under construction or consideration have been omitted from this map but the Hudson Street crossing was included since recent traffic information was readily available on the latter. Vehicular traffic on Hague Avenue near the Pennsylvania was estimated from earlier traffic counts and known changes on nearby arteries.

The worst combined conditions are to be found on Grandview Avenue at the crossings of both the New York Central and Pennsylvania lines. More than 100 train movements daily occur on each of these routes and the vehicular traffic on Grandview is also heavy, with more than 11,000 cars per day south and more than 12,000 per day north of the two railroads. Observation of these conditions during peak periods corroborates the operational data. Vehicles were observed to pile up along McKinley Avenue in particular for the equivalent of several city blocks, and the heavy turning into Grandview caused by its importance as a connector between west Columbus and Grandview Heights-Upper Arlington created an almost intolerable situation until the condition was finally relieved.

Heavy traffic movements are also to be found on West Mound Street and along several of the east-west arteries north of the University and the State Fairgrounds. While the rail operations on the B. & O. over Mound are comparatively light, the angle of crossing and consequent sight distances are so poor that the crossing is most hazardous. With 9 fatalities since 1925, Mound Street places first in this respect and consequently is generally considered the most perilous crossing in the city.



DAILY TRAFFIC AND TRAIN MOVEMENTS AT MAJOR GRADE CROSSINGS

COMMISSION
OF
1940: 100-100-100-100-100-100

L E G E N D

EARL AND BARTHOLOMEW AND ASSOCIATES
NAVY CROSSING CITY ENGINEERS

The Hudson Street grade intersection is to be eliminated, as noted earlier. Weber Road to its north also carries a substantial volume of traffic across the New York Central-Pennsylvania tracks and the Oakland Park Avenue crossing still farther north is the most heavily used in the city. Traffic over the other two crossings of the adjoining rail lines at Cooke and at Morse Road is comparatively lighter, the former street carrying some 2,100 cars per day, the latter slightly over 5,000. The Morse Road crossing will become more serious as this traffic grows, particularly after construction of the north freeway. Operations on the two rail lines aggregate between 30 and 40 trains per day.

Train movements over the Akron branch of the Pennsylvania are relatively light, with an average of only 12 trains daily. Vehicular traffic at the major crossings, however, is fairly heavy, that on Westerville Road (State Route 3) amounting to well over 10,000 vehicles per day. The angle of crossing is bad so that this intersection is potentially quite hazardous in addition to causing traffic delay. Both Hudson Street and Seventeenth Avenue to its south carry more than 7500 vehicles each 24 hours. Except for State Route 3 at the edge of Westerville, other crossings of this line are not yet heavily used. State Route 3, however, averages daily some 9,000 cars and is at a bad angle, which increases the potential danger. While movements along State Route 161 and along Morse Road are at fairly high speeds, both crossings are now protected by flashing lights.

Only a few grade crossings remain along the combined Pennsylvania-Baltimore and Ohio tracks to the east. The most serious of these is the crossing at Cassady Avenue where the combination of heavy rail movements and traffic has resulted in both accidents and traffic delay. Six fatalities have occurred at this point during the past thirty years, placing it second in the city in this respect. The Cassady Avenue crossing is also the only one at grade along this route between Union Station and Bagshaw Road - a distance of some six miles.

Only one crossing of the New York Central to the southeast - that at Lockbourne Road - is presently serious. Traffic on Lockbourne amounts to more than 9,000 vehicles per day and the movements over the railroad to more than 30 trains daily, including those used in interchange to and from the Norfolk and Western's Watkins

Yard. The Alum Road crossing is not yet important from the standpoint of either rail or automobile traffic and conditions at Hamilton Road where vehicular traffic is fairly heavy, are somewhat balanced by the comparatively light rail operations (some 16 trains per day).

Except for those at Whittier Street and at various points north of King, crossings of the main line of the Chesapeake and Ohio have been generally eliminated. The combined C. & O. - New York Central rail operations at Whittier Street are very heavy but the vehicular traffic across these tracks is so small as to be virtually inconsequential. Train movements over the C. & O. to the north are also reasonably large but the traffic at Henderson Road, while growing, is not yet heavy, and the volume on State Route 161 is not so heavy as that on many of the closer-in arteries even though it amounts to 4,500 cars per day.

There is considerable conflict at several crossings to the west of Columbus. The most serious of these is at Philippi Road where traffic generated by the existing plants averages more than 9,000 cars daily. Rail operations on the Pennsylvania north of West Broad Street are fairly heavy, averaging about 30 trains per day, and traffic on the north-south cross streets is gradually increasing. Volumes on Hague and Wilson Avenues already exceed 5,000 to 6,000 vehicles daily although traffic on the other two streets to the west is much lighter.

As noted earlier, some 28 fatalities have been recorded at grade crossing accidents inside the city during the past thirty years. With the exception of nine killed at the Mound Street crossing and six at Cassady Avenue and the Pennsylvania Railroad, these have been generally scattered with four at Weber Road (at the NYC-Pennsylvania), two at Hague Avenue and at Genessee and one each at crossings on State Route 3, Sylvan Avenue, Denune Avenue, Chestnut Street and on Oakland Park Avenue (at the Pennsylvania-New York Central). It will be noted that several of these accidents occurred at minor streets, some of which could be closed without grade separations.

Proposed Railroad Facilities and Grade Separations

The proposed railroad facilities and grade separations are shown on Plate 6. Relatively few changes have been suggested in the existing railroad arrangement

even though all of the facilities are not now ideal. As stated in the beginning of this report, the present tracks, yards and other facilities represent such substantial investments that major changes are difficult to justify. While such modification might be desirable, it is not easily warranted economically unless it would materially improve railroad operations or unless due to interference with other urban development or with circulation, there is a compelling physical reason for making the change.

Proposed Main Line Change

One of the main lines of the Pennsylvania Railroad now passes through the northwest edge of the central business district, crossing the Scioto River behind the Veterans Memorial and proceeding westward north of West Broad Street. This track crosses Marconi and Chestnut Streets at grade. It is proposed to eliminate these crossings and the trackage in the edge of the business district generally by connecting the Pennsylvania with the Baltimore and Ohio railroad at their intersection east of Yale Avenue and thereupon routing Pennsylvania traffic eastward from this point by way of the B. & O. line. These railroads already operate jointly over the Newark branch to the east. Field investigation of the B. & O.-Pennsylvania intersection (both railroads are elevated at this point, with their crossing at the same grade) indicates that a connection between the lines could be made without great difficulty and without seriously affecting the existing industry facing McKinley Avenue. An additional track would be required for a short distance, although most of the line is already doubletracked, and some adjustments of cables and other equipment would be needed.

Since the Pennsylvania Railroad's Little Miami yard for interchange with the New York Central lies east of the Baltimore and Ohio line, use of tracks to this yard would be continued but need not be extended beyond its edge.

The proposed re-routing would eliminate the Pennsylvania crossing of both the Chesapeake and Ohio and New York Central main tracks west of the Veterans Memorial, which is now something of an operational "hot spot", although it would increase the railroad traffic at a somewhat similar triangular crossing north of

Dublin Road. Observation of the latter, however, indicates that the present facilities are not taxed and that the additional trains could be handled by the operators and signal equipment available.

While it is not shown on the plan, a connection between the two main line branches of the Pennsylvania west of the city might be desired in the future. Such a connection could be made without difficulty in the general area between Lincoln Village and Hilliard. This would not be objectionable if kept near or beyond the edge of the expected future urban area, but separation of grades would be necessary at all major thoroughfare crossings.

Belt Lines

It has been suggested that the throat of the existing railroad layout, located in the vicinity of Union Station, could be materially relieved and the City and railroads greatly benefitted by construction of a railroad belt line or detour, particularly for freight operations, running around and to the south of the present city. Recognizing the desirability of such a belt line, if economically and physically feasible, consideration was given to these past suggestions and certain specific alignments for a possible route were selected and investigated in the field. These were:

1. A route starting from a turnout of the Pennsylvania Railroad in the vicinity of the Army Depot; thence south along the existing right-of-way of the New York Central connection along Whitehall, extending this line southward to connect with the main track of the New York Central west of the grain elevators; thence westwardly, following the New York Central right-of-way, crossing the Norfolk and Western and continuing to and along the Chesapeake and Ohio route northward across the Scioto and West Broad Street to new connections with both lines of the Pennsylvania.

2. A route starting from a turnout of the Pennsylvania Railroad in the vicinity of Taylor Station; thence running due south and west to line up with the New York Central main line; thence traversing the same route as No. 1.

3. A route turning off the Pennsylvania near Taylor Station, as in Route 2, then running due south to about the New York Central; thence swinging southwest and west, passing just north of Obetz and just south of the Beacon Light Golf Course; thence continuing northwestwardly and north to connections with both Pennsylvania Railroad main lines. Necessary connections to the railroad main lines crossed would also be installed.

While Route 1 would be probably the cheapest route, it has certain disadvantages as a high-speed main line railroad detour. With a turnout from the Pennsylvania at the Army Depot, considerable alteration of existing buildings and depot yard tracks would be required, which would sever part of the depot property with a double track high-speed line and it is questionable, therefore, whether Army approval could be secured. Since the existing New York Central connecting line is of light-rail, single track design on a narrow right-of-way, both additional right-of-way and new heavy double-track construction would be required also. The existing grade crossings at Broad, Main and Livingston would no longer be negligible and separation of each would become imperative. Paralleling the NYC and C. & O. main lines, right-of-way widening and construction of new track would be needed. Grade crossings of main line tracks are disadvantages requiring expensive signal controls as well as slower operation and occasional stops; the introduction of additional crossings and connections of the several lines, especially those in the vicinity of the two Pennsylvania main lines to the west of the business district, would add to an already complex situation, requiring the installation of additional signals and interlocking devices. It is roughly estimated that construction of this belt route would cost in the neighborhood of \$5,500,000.

Route 2, while avoiding conflict with the Army Depot, would otherwise have all the disadvantages of Route 1, and in addition would cost somewhat more, which on the basis of the total length and rough estimates of property values of grading, separation structures, etcetera, would be expected to run as high as \$7,000,000.

Route 3 would avoid some of the conflicts with other railroads but still would have numerous grade crossings with existing and proposed major highways and because of its length, in particular, is estimated to cost some \$13,000,000. In order to overcome the disadvantage of

other railroad and of highway grade crossings, the route could be elevated on earth fill, with bridges across the railroads and highways. Long but expensive connections to the other railroads (where necessary) could be constructed also. A rough estimate of the cost of such an elevated line indicates that it would run in excess of \$30,000,000.

Still another route - for which no cost estimate was made - involves following Routes 1 or 2 to the point where the New York Central joins the Chesapeake and Ohio line at the south edge of Columbus and then proceeding directly west, northwest and north to connections with the Pennsylvania main lines. This route also would be forced to cross the main lines of the N. & W. and C. & O. with the disadvantages in operation described under Route 1, which would be particularly disadvantageous because of the yard movements and switching (between the Mound and Parsons yards) in addition to direct rail traffic over the C. & O. tracks. Such a route would also introduce a number of major highway crossings and would be forced to span the small lakes and the Scioto River north of Frank Road.

Thus, now that the whole railroad pattern in metropolitan Columbus has become so firmly fixed, construction of any belt line detour is fraught with many difficulties, from the standpoint of operation, as well as that of expense. Due to existing industries and to other commercial users of railroad services and to the advisability of retaining the passenger station in its present location, some railroad tracks would have to remain in their present locations in order to provide the necessary railroad service, and the major yards would have to remain about as they are unless additional millions of dollars were to be spent in abandoning and rebuilding these facilities - over and above the \$5,500,000 to \$30,000,000 for a new railroad belt.

Accordingly, basically only the through freight trains, would be detoured around the city and the busy Union Station area. For this purpose such through trains would have to traverse a considerably greater distance, at a higher operating cost. If these trains caused serious congestion or interference with other local operations or inflicted on local users inconvenience or loss of time, removal of the through traffic might be justified. However, investigation of operations and conversations with several railroad officials have indicated that present traffic can be accommodated even

though close and careful scheduling is required. Considering the costs of each of the belt line routes investigated, the increased operating expense, the necessity of retaining existing service tracks and major yards, and the specific disadvantages from certain standpoints of each of the possible detours, and further considering the number of grade separations already accomplished along most of the main lines, it is not believed that a belt line route for freight operation can now be justified in Columbus.

Yards

The various yards of the different railroads in the Columbus area appear to be satisfactory for present and expected future operations except for the Baltimore and Ohio Railroad. Facilities of the Pennsylvania, Norfolk and Western, and Chesapeake and Ohio Railroads, all of which have large yards, should be ample and due to the number of street overpasses of these tracks, interference with traffic is almost entirely avoided. The New York Central facilities are more limited, but additional yard space could be developed south of the city by acquiring property and constructing new tracks along the south side of the line between Parsons Avenue and Lockbourne Road in a proposed industrial district.

Additional yard space will be needed by the B. & O. to supplant trackage affected by the extension of Third Street north of Naghten as well as to accommodate local operations should these increase in the future. It would be logical to provide such facilities along the southwest line of this railroad in one of the industrial areas designated on the zoning plan, but no attempt has been made to pinpoint such a yard on Plate 6.

The Union Depot

The existing passenger station appears to be adequate in size, but many of its appointments are antiquated. Visitors to Columbus would get a more favorable first impression of the city if the station inside and out were completely redecorated and remodelled with new trimmings, new stands and counters, new toilet rooms and plumbing fixtures, an entirely new restaurant with new fixtures and equipment, and with the installation of escalators from the track level to the main concourse. The latter would add materially to the comfort and convenience of passengers, particularly the elderly, who are forced to climb the existing stairs. Escalators are presently in use in the Grand Central and Pennsylvania stations in New York

City, at the Tower Grove and Delmar stations in St. Louis, at the Union Station in Kansas City, at the new Lambert Field airport in St. Louis and at a number of other through-type passenger stations where the waiting rooms must be located above or below the track elevations.

The general appearance and setting of the station itself and its approaches from High Street could also be improved considerably. For example, the truck ramp leading to ground level at the rear of the depot cuts into the approach proper and should be removed or relocated, even if this required the use of truck elevators to reach the ground level loading platforms. These Railway Express facilities are extremely cramped, requiring excessive maneuvering into and out the narrow spaces between the structure and a concrete wall adjoining the main tracks. It is suggested that the approach to the station be enlarged by removing the existing dirty and unattractive store room structures located along High Street and slabbing over the center portion of the approach, such enlargement to include additional property at the rear of the High Street structures, south of the station, now used mostly for private parking. The truck driveway could then be relocated along the edge of the approach area to lead to truck or freight elevators at the rear of the depot, which would obviate the necessity for maneuvering at the lower level. The railings around the approaches to the station should also be replaced with new and more attractive rails and at least some greenery should be provided; planting boxes for shrubs, flowers and lawn patches would enhance the station setting. Furthermore, on opening up the station view at least the front elevation of the station structure should be modernized, so that Ohio's capital might have a passenger depot more modern and pleasing in appearance and setting, one that would at least tend to encourage wider use of railroad passenger facilities.

Enlargement of the station site by opening up the approach area would also provide additional space for off-street parking, which is now badly deficient. The property behind the existing store rooms is already used in part for the parking of private automobiles and could be more efficiently developed and attractively landscaped to provide many more spaces as well as to augment and embellish the station setting.



There have been suggestions in the past for complete reconstruction of the present passenger depot, either at the same location or on a new site such as that now occupied by the Ohio Penitentiary. While a completely new station would be a civic asset, it would be difficult to justify from the operators' standpoint in view of the present passenger patronage, and consequently no recommendation with respect thereto has been made. This is not to say, however, that such an improvement should be completely ignored. If a means can be found through conversion to the more comfortable and attractive cars now being designed and through faster operating schedules to increase rail patronage in the future, a new terminal could be a matter of further consideration, but in the meantime at least the modernization and over-all improvement of the station described above is believed to be justified. Moreover, so long as freight operations continue high, at least a small subsidy from the latter would be warranted in helping to improve passenger facilities in the city.

Proposed Freight Houses

The existing freight handling facilities - freight houses and team tracks - are generally conveniently located near the edge of the central business district. However, the station used by the Chesapeake and Ohio Railroad on Maple Street is located within the area under consideration by the United States Government for a new bulk mail station and should the property be acquired for this purpose, the freight house must be moved. It is suggested that the new depot be relocated a few blocks to the west of the existing structure on property already owned by the railroad north of Dublin Avenue. This is a large triangular shaped tract situated between the two lines of the C & O and Pennsylvania Railroad. An existing driveway furnishes access from the property to Dublin Avenue through an underpass near its south corner immediately east of the C & O's main line, and rail leads into the property are also in existence. The present team tracks to the west of the existing station are located east of the proposed new station site and could continue in use.

Operation of the Baltimore and Ohio freight depot, now located west of Fourth Street, will be seriously affected by the projected Third Street extension, and

consequently will have to be moved. A possible new location for this building would be west of the existing structure and of the new Third Street overpass on property now occupied along Naghten Street by the Pennsylvania's Little Miami produce yard. There will be little need for the latter should the present wholesale market be moved from downtown Columbus to the Joyce Avenue or some other site already considered for the purpose - and it is most desirable from the standpoint of traffic as well as the best use of downtown property that the produce market be moved, as discussed in the Central Business District report. The Little Miami yard is immediately south and east of the Union Station and the enlarged station area and a new freight depot at this location along Naghten Street would be only slightly west of the present freight building. The Baltimore and Ohio and Pennsylvania Railroads already have a joint operating agreement on part of their trackage and a similar agreement could no doubt be made with respect to this downtown yard.

Another possible location for a new B. & O. freight station would be along the west side of Neilston Avenue north of Mt. Vernon on property now occupied by coal or other storage yards. Such a site would be readily accessible to downtown Columbus and other sections but it would require additional rail leads and operating agreements to cross the Norfolk and Western tracks, in addition to replacing existing land uses, although these do not involve substantial structures. It would also have the administrative disadvantage of separating the freight house from the existing team tracks west of Fourth Street, in contrast with the continued proximity of these facilities with a new station on Naghten Street.

Proposed Grade Separations

In order to resolve all, or at least the most serious, of the conflicts between rail and vehicular traffic in the Columbus area, it will be necessary to separate grades at many more crossings of the various railroad lines. The proposed grade separation plan indicated on Plate 6 anticipates the ultimate elimination of all grade crossings at major traffic arteries except in a few instances where the rail traffic is so small as to be negligible - as along the New York Central lead to the Army Depot. A field inspection was made of

all existing grade crossings to determine what type of separation structure was most appropriate, as shown, and differentiation is made between the most urgently needed eliminations, which are designated for early consideration - say the next five to ten years - and those projects which may be deferred to later periods, in a few cases for many years.

The three grade separation projects involving Lane, Hudson and Fifth Avenues, are presently under construction or in the design stage. The extension of Long Street to the Sandusky interchange, now under way, while not primarily a grade separation project, will accomplish this also, and the Third Street extension to be constructed in the near future will amount to an overpass of the tracks northeast of Union Station. All of these are projects which are needed and which will materially improve circulation in Columbus and reduce potential hazards.

In addition, however, there are eight or ten other crossings which should be considered for elimination within the next five to ten years. The most serious of these are the two crossings of the New York Central and Pennsylvania Railroads at Grandview Avenue. Due to the strategic importance of this artery, the heavy traffic flow and frequent traffic delays caused by railroad operations, separation should be accomplished as soon as possible and the two crossings might be considered as basically a single project. Even though Grandview Avenue rises slightly as it approaches the railroad from McKinley, it will be necessary to overpass the New York Central tracks in order to obviate any danger of flooding - an underpass at this point, while clear of the normal river level, would be subject to inundation by the Scioto during a high-water period. In order to secure adequate clearance of both branches of the railroad without an excessive street grade, it may be necessary to change the alignment of McKinley Avenue slightly by curving it to the south (so as to lengthen the Grandview Avenue approach to the tracks).

The two grade crossings with the highest accident records - Mound Street and Cassady Avenue - should also be separated in the very near future. With completion of the Mound Street interchange, this will become even more important as a traffic artery; Cassady is the only street west of Port Columbus which now crosses the heavily used Pennsylvania - B. & O. tracks at grade. Both of these

separations would involve street underpasses.

Even though elimination of the Hudson Street crossings of the New York Central-Pennsylvania Railroads is already programmed, at least one other grade separation should be carried out to the north of Hudson since both Oakland Park and Weber Road are also major traffic carriers. Due to the plan for ultimate use of North Broadway, rather than Oakland Park Avenue, as the major artery and the need for certain connections between North Broadway and Mecca Road before this can be realized, it is proposed to give early priority to the Weber Road separation, which like most of those on the plan would be accomplished by going under the railroads.

Three existing grade crossings of the Akron branch of the Pennsylvania are indicated for early consideration. The most important of these is the intersection of Westerville Road (State Route 3) which carries a substantial volume of inter-city as well as local traffic. The other two are at Hudson and at 17th Avenue. All three streets would underpass the existing railroad.

Two grade separations in more outlying locations are proposed for early programming. The Georgesville Road crossing of the New York Central (Big Four) is growing in importance due to its location on an accessway and approach to the General Motors and Westinghouse plants on West Broad. This is one of the prime industrial districts and separation of grades at the railroad intersection may become most urgent should one or more additional large plants locate in the area, particularly since the peak traffic flow is proportionately heavy during changes of work shifts. Elimination of the Lockbourne Road crossing of the New York Central would free an additional thoroughfare from railroad interference in a sector of the community where present access is none too good. Both the Georgesville Road and Lockbourne projects involve street underpasses.

Several grade separation structures have recently been completed as a part of the Sandusky Street interchange. Others are projected, as shown on Plate 6, in the development of the proposed expressway system, which will be covered in the designs of the individual freeways some of which are now in progress, and these need not be discussed here except to point out the number of such projects needed to eliminate railroad

conflicts and to provide adequately for traffic circulation in the future. The majority of such expressway separations will involve overpassing the railroads.

Grade separations indicated for ultimate consideration include some that should be given priorities only a little lower than those described above for early programming while others may be deferred for many years. Among the more important are the crossings of the New York Central and Pennsylvania Railroads on Hague Avenue, the Morse Road intersection of the New York Central-Pennsylvania lines, the C. & O. crossing of State Route 161, the intersection of Hamilton Road and the New York Central, the Wilson Avenue, Phillipi Road and Rome-Hilliard Road crossings of the Pennsylvania, and the Henderson Road crossing of the C. & O.

Hague Avenue carries a gradually growing volume of traffic which is exposed to the hazards and delay of two separate railroad crossings at grade. Due to growth in the west and northwest, these crossings may soon rival those listed in the initial stage, and elimination of both should be carried out as a single project, if possible, because of their proximity. Construction of a roadway under the railroad appears easier at the New York Central but an overpass is suggested across the Pennsylvania tracks.

The Morse Road crossings of the railroads at the southeast corner of the State School for the Deaf and Blind is another of growing movement, which should be eliminated in the not too distant future, particularly if and when the north freeway is constructed. It would be desirable to carry out the separation in conjunction with the expressway construction in order to facilitate the interchange of traffic to and from Morse Road. Underpassing the railroad appears to be the logical treatment.

Elimination of the Chesapeake and Ohio crossing of State Route 161 (at Linworth) will depend somewhat on what is accomplished with respect to relieving this highway, either by way of a by-pass over Wilson Bridge Road, as proposed in the Major Street Plan, or by some other route, which is to be investigated by the State Highway Department. While the present highway will no doubt continue as a major street - which would make ultimate separation of the crossing desirable - elimination would be less urgent on the existing highway than on the new route.

Hamilton Road constitutes part of the outer belt designated on the Major Street Plan. While rail traffic is not as heavy on the New York Central as on some of the other lines, this is a growing section of the community and vehicular traffic increases will warrant separation of grades within the next ten to fifteen years. The present railroad gradient is adapted to construction of a highway underpass at this point.

The several crossings of the Pennsylvania to the west of the city should be eliminated insofar as possible in conjunction with the west freeway improvement so that traffic may be handled at the proposed interchanges without interference from railroad operations. Wilson Avenue already carries a substantial traffic volume and Rome-Hilliard Road is an element in the planned intermediate circumferential route which would be one of the most important arteries in the community. Underpasses have been indicated at each intersection.

The Henderson Road grade crossing is located on one of the few crossings of the Olentangy River near the north edge of the city. Its elimination could be deferred, however, if North Broadway were extended westward as part of the north leg of the intermediate circumferential, at which time this extension could provide for separation of grades by means of an underpass at the C. & O.

The remainder of the crossings proposed for ultimate elimination on Plate 6 include some additional existing intersections but comprise mainly crossings which would be created in the future by carrying out the various proposals of the Major Street Plan. Practically all of the Major Street crossings have been included, the main exceptions being at certain streets intersecting the Baltimore and Ohio line to the southwest, which now carries only eight scheduled trains per day. Many of the existing crossings will become more critical in the future, separations of others may be deferred for years. However, the carrying out of grade separations should be made a part of all new arterial street extensions or connections where these cross rail lines. While priorities have been indicated, in general, for many of the more critical intersections, some of these - particularly in the later group - may change due to unforeseeable developments and traffic volumes in future years, and

reappraisal of the elimination program will be necessary from time to time to make any adjustments indicated by the specific situation at that moment.

As a corollary to the program, consideration should be given also to the closing of minor street crossings, wherever possible, to remove the hazards always present at grade intersections. The City Planning Commission has already prepared a program for such eliminations within the city, which includes most of those now existing, and a similar program of closure, where feasible, should be followed in the remainder of the county.

TRUCK TRANSPORT

With the development of the motor vehicle, a whole new industry came into being for the transportation of commodities within and between cities. Because of their flexibility in operation, enabling direct door-to-door pick up and delivery without the necessity for transfer - as in much railroad freight handling - and their simpler and cheaper terminal requirements, motor freight carriers have become formidable competitors of the railroads, now transporting many kinds of heavy freight in addition to the lighter or less bulky commodities. Motor carriers have also tended to increase gradually in size and weight, creating problems of highway design and their appropriate integration with or separation from other traffic, particularly in urban areas. From the standpoint of the physical community and their own operating efficiency, the locations of truck routes and terminals are dependent on the over-all thoroughfare system as well as on the arrangement of industries and business establishments. Thus, the establishment of truck routes and the siting of terminal facilities should be related to the other elements of the over-all Master Plan.

Existing Truck Terminals and Routes

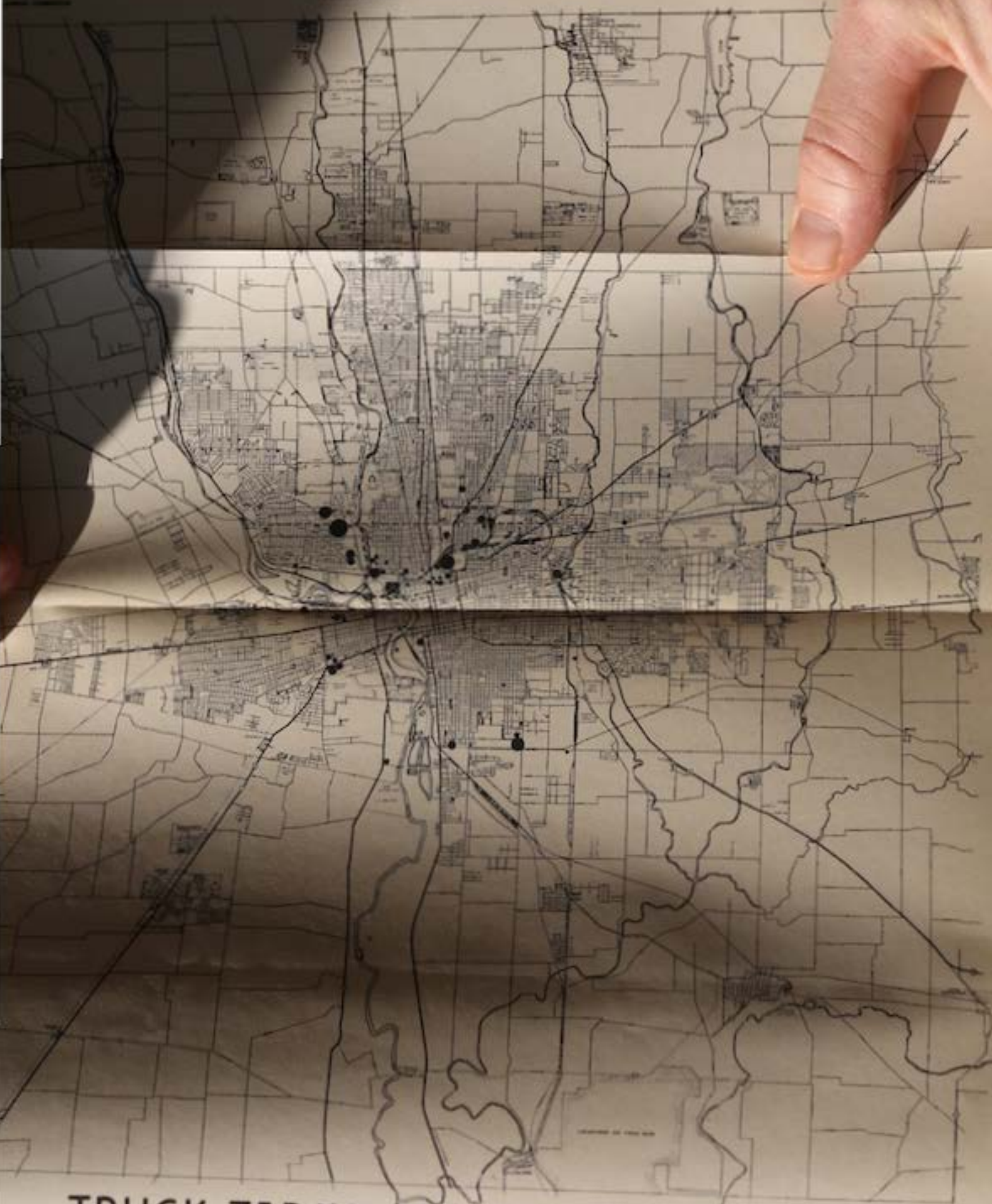
The locations of existing truck terminals in the Columbus area, together with the present and proposed intermediate truck routes, are shown on Plate 7. The size of circle indicates the approximate number of inter-city truck movements to and from each terminal. The five railroad freight houses are also shown on this map.

Truck Terminals

Of all the inter-city cargo carried by trucks, it is estimated that roughly one-half passes through truck terminals. The use of such terminals for consolidation and distribution of mixed freight is designed to overcome the inefficiency of pick up or delivery of less than truck load lots in large tractor-trailer units. These terminals are usually individual establishments - often small and scattered in different parts of the city. Such scattering brings about duplicate collection and delivery service which results in a disproportionate terminal cost as well as delay, and adds materially to street congestion.

COLUMBUS URBAN AREA

FRANKLIN COUNTY, OHIO



TRUCK TERMINALS AND ROUTES

LEGEND

- EXISTING TRUCK TERMINAL
- EXISTING FREIGHT HOUSE
- EXISTING TRUCK ROUTE
- - - PROPOSED TRUCK ROUTE

There are nearly 60 motor truck terminals in metropolitan Columbus, housing some 90 separate motor carriers. These terminals have scattered in parts of the central, near west and near north sections, but they have also tended to cluster in groups within some of these districts. For example, five terminals are located in the area between Spring and Maple Street west of the penitentiary and a number of others in the general area along Goodale Street east of the Olentangy. Several of these accommodate more than one freight carrier. Nearly 200 trips per day are made inbound and outbound at the terminals west of the penitentiary, over 150 trips per day to and from those in the other area.

Terminals adjacent to the central business district are conveniently related for service to the wholesale and retail stores and to distributors within this area. There are seven truck terminals at the northeast edge of the district beyond Naghten Street and east of the railroad freight houses, one of these terminals serving three separate operators. In the aggregate more than 250 inbound and outbound inter-city trips are made daily by the nine individual lines.

Within the general area tributary to Cleveland and Fifth Avenues, there are seven truck terminals, most of these along Fifth, which provide for fourteen separate carriers. More than 200 inbound and outbound trips are made to and from this area on an average day.

A number of large terminals are located in Grandview Heights and the section of Columbus to its north along King and Fifth Avenues west of Olentangy River Road. That on West Fifth Street is the largest in the Columbus area, and all of these truckers combined account for nearly 600 inbound and outbound inter-city trips per day.

Smaller concentrations of terminals are found along Glenwood Avenue north of Broad Street and in the vicinity of Mound and Central. While some of the former are small, they average nearly 100 inter-city movements daily, and those along West Mound Street and Central Avenue, nearly 200 trips per day. The two terminals on McKinley Avenue are not included in these figures; the larger terminal on McKinley houses a single operator, but the other is used jointly by some five or six separate lines.

Industries without direct rail connections must rely entirely on truck transportation, and while these were omitted from Plate 3, they are found in the same general areas, with the other plants, and are relatively few in number.

Truck Routes

Due to the requirement of heavier street paving to accommodate large trucks, the noise and vibration frequently created, and the need for the most expeditious movement of all types of vehicles, including motor carriers, it is obviously advantageous to establish definite truck routes in appropriate relationship to the principal terminals and industrial areas and to encourage the locating of future terminals in districts served by these routes. Moreover, it is becoming increasingly evident that the modern thoroughfare system must recognize the requirements of all types of vehicles, and make suitable provision for each if traffic congestion is to be avoided or even substantially lessened.

Truck routes have been established in Columbus and are essentially the same as those delineated on Plate 7 except that several changes, additions, and cross connections have been made to take advantage of street improvements to be constructed in the very near future and to relate a little more closely to the pattern of trucking terminals.

Being inter-city in character, truck routes naturally follow the major radial highways leading to and from the city. Thus, West Broad Street, East Main Street, U.S. 62, U.S. 33, and State Routes 104 and 3 are all part of the present and future system. Some of these, such as Cleveland Avenue (State Route 3) and East Main Street are far from adequate to handle the present-day volume of motor carriers in addition to local and other inter-city traffic - but will have to suffice until additional arteries and especially the expressways can be built. The improvement of Mound Street, now in its initial stage, including the improvement of the present crossing of the railroad and the Scioto, will improve conditions along this principal truck route for both local and inter-city traffic.

Except for the limitations of width and consequently of traffic capacities, the majority of the radial thoroughfares now designated for trucks are well located for this

purpose and the frontage is used either for commercial or industrial purposes or is of a character that is not seriously affected by the truck movements. The latter is not true, however, to the north where the thoroughfare pattern has forced the designation of Fourth and Summit Streets as truck routes, as well as principal local traffic arteries. The volumes of current vehicular movements, and especially of trucks with their noise and vibration, on these predominantly residential streets cannot help but adversely affect such property. Trucks, like other traffic, are routed one-way north and south-bound on Fourth and Summit respectively as far as Chittenden, whence they proceed in both directions on Summit Street to Hudson, Indianola and Arcadia, branching at the latter over alternate routes by way of North High directly or by Indianola and Morse to North High at the edge of the city. This current routing, unfortunate as it is, is dictated by the exigencies of traffic and the existing widths of the various streets followed. The only alternative would be designation of Olentangy River Road as a truck route beginning at North Broadway (where the existing bridge over the Olentangy could accommodate such traffic), or starting at Wilson Bridge Road or at State Route 161. In either case trucks would be routed through residential sections in part - which would generate considerable opposition thereto - and Olentangy River Road north of Henderson is now only two lanes in width. Routing of trucks on Olentangy River Road would also require completion of the Sandusky leg of the innerbelt in order to handle movements at the edge of the business district. Thus, construction of the north freeway will provide the only completely satisfactory and permanent routing for trucks to and from the north. While the extension of Third Street to Summit and the extension of one-way movements on both Summit and Fourth Streets to Hudson Street will improve conditions somewhat for trucking as well as for other traffic, this will tend further to depreciate property along the extended routes and consequently, the north freeway should provide for trucking as soon as possible.

It is not desirable to route large trucks through the downtown section. The existing routes on Third and Fourth are made necessary, nevertheless, by the lack of a by-pass, which would be provided by the innerbelt expressway. The volume of trucks on Mound and Fulton Streets, especially the former, is fairly high but this is at the edge of the district. While Main Street is designated a truck route, the volume of trucks is not high.

Proposed Truck Facilities and Routes

The motor carrier is a useful medium of transportation which should be coordinated with and complement or supplement the other transport media, particularly the railroads, although unfortunately except in a very few instances there is little evidence of such operational coordination now in American cities. Because of its flexibility in pick-up and delivery, the truck will probably continue to increase in the handling of LCL shipments and it would be to the advantage of both if rail and truck facilities could be coordinated so that the most efficient medium might be used in each case. Failing this, at least truck routes should be developed to minimize interference with local automobile traffic and to facilitate truck movements and terminal operations - in addition to protecting residential neighborhoods.

Proposed Truck Routes

The proposed ultimate inter-city truck routes are shown on Plate 8. Basically, the movement of trucks would be confined to the projected expressway system, supplemented by certain other major streets, including the outer belt, to facilitate communication between the major terminals and the principal industrial and commercial districts. For example, movements over U.S. 40 to and from Springfield, Dayton, and beyond would be handled by the west freeway instead of West Broad Street, which would free the latter for local traffic. Truck traffic to Cincinnati would use the southwest freeway, connecting to the present U.S. 62 at the south edge of Franklin County. Motor carriers to and from the east over U.S. 40 would use the east freeway, rejoining the present route east of Reynoldsburg - the connection to East Broad Street (State Route 16) could be made over part of the outer belt or by another route at some distance east of Reynoldsburg.

The north freeway would be especially useful for truck traffic, supplanting both the existing Cleveland Avenue and the Fourth-Summit-Indianola-High Street routing. This would substantially increase the traffic capacity of Cleveland Avenue and the other nearby streets for local vehicular movements and at the same time would expedite trucking through and beyond north Columbus. Trucks destined for the Toledo-Detroit districts would rejoin U.S. 23 by way of a connection from the expressway at the north edge of the county; traffic to Cleveland would likewise follow a route from the freeway to State Route 3 north of Westerville.

Several of the other existing state and federal routes would be able to utilize the expressway system at least in part. Thus, truck traffic on U.S. 33 to and from the south would be routed on the east freeway through an interchange south of Berwick, and traffic on U.S. 33 northward would connect with the expressways west of the Sandusky interchange. However, this section of U.S. 33 is proposed to be rerouted in part in the future by way of a new thoroughfare west of Dublin Road (as described in the Major Streets report) and consequently the proposed truck route would follow this new alignment beginning at the edge of Upper Arlington, which would relieve the latter and the fine residential property along the present U.S. 33 to its north from the effects of trucking.

Truck movements to the south on U.S. 23 and State Route 104 could utilize the southwest freeway as far as the outer belt. By way of the latter, connections would be afforded between the expressway and the two highways south of the city. Through movements, which are expected to be substantial between the burgeoning industrial developments along the Ohio and the Toledo-Detroit areas, could by-pass the city completely via the proposed outer belt.

A major advantage of the proposed expressway routing would be the removal of all inter-city trucking from the central business district by use of the various freeways and the inner belt around the central area. These and the several connecting arteries would considerably facilitate trucking in general by expediting traffic into and out of the community, while improving circulation between the truck terminals and industrial and commercial establishments.

Terminal Areas

A few areas have been indicated on Plate 8 for possible future truck terminals. There are advantages in the operation of joint terminals by a number of different lines, which permits both centralized operations and better over-all terminal design, and joint facilities should be maintained wherever possible in the future. Many companies are beginning to recognize the benefits from unified operation, as indicated by the eight existing terminals in Columbus used by three or more lines.

The suggested future locations are all on or within easy reach of the proposed truck routes and adjoin railroad lines so that coordination of the two types of facilities would be possible. The area indicated on East Fifth includes several existing terminals and is well related to industrial development in the central sector of the city. The area west of the penitentiary also includes several existing terminals; this district is advantageous from the standpoint of serving commercial as well as industrial establishments in central Columbus and could be coordinated with warehousing on the penitentiary site, should the latter be made available for other development. A union terminal in the vicinity of Phillipi and the Pennsylvania Railroad would be readily accessible to the west freeway and convenient for service to present and future industries in what is expected to be one of the major industrial centers of the community. The freeway is removed slightly from the railroad at this point to avoid existing large-scale oil storage facilities. The suggested union terminal area along East Livingston is close to the east freeway and adjoins a number of existing industries. The location near the south end is within an area proposed for redevelopment and lies near the edge of the existing and potential large industrial district to the south of the city.

INTER-CITY BUSES

Buses are now a popular medium for passenger transport between cities. They concern the city plan from the standpoint of the location and physical adequacy of the terminals and their relation to bus routing and the over-all thoroughfare and highway systems.

Inter-city service in Columbus is provided by eight bus lines, the majority of which operate generally to other Ohio communities, only the Continental Trailways and certain of the Greyhound lines providing direct routing to communities outside the state.

Existing Bus Terminals and Routing

The preponderance of bus operations in Columbus are conducted from the Greyhound Terminal at the southwest corner of Town and Third Streets, the Red Star Way and Lake Shore lines using this station in addition to the Atlantic, Eastern and Great Lakes Greyhound lines. The station is conveniently located and existing loading bays are reasonably satisfactory for current operations but additional space is needed for the standby parking of buses as well as for the loading and unloading of passenger vehicles, which now interfere with traffic, particularly on Third Street. Two smaller terminals are used by the other bus lines. One of these, located on the east side of Third street, slightly north of Rich, provides for the Continental Trailways, which operates nationwide, and the other -- on Town Street east of Fourth -- for the Columbus-Celina and Columbus-Marysville systems operating to nearby Ohio communities.

The present routing of inter-city buses in the Columbus urban area and the volumes of scheduled movements over these routes are shown on Plate 9. The destinations of the various routes are also indicated on this plate.

While the volumes vary somewhat, one or more lines are routed over each of the major radial highways entering the city, the heaviest traffic occurring on Cleveland Avenue, West Broad and East Main Streets. A total of 57 buses operate during an average day on Cleveland Avenue, but more than half of these terminate at Westerville and hence provide commuter service between that city and Columbus. The 46 buses routed to and from the east over East Main Street also provide a substantial

at of commuter service between the city and
oldsburg, although the majority of these vehicles
operate to and from Zanesville. The West Broad Street
routes are all inter-city, providing connections with
Springfield, Dayton and other communities.

Present Service and Bus Volumes

As afore noted, most of the present bus service is intra-state rather than inter-state in scope. However, the Continental system does operate nationwide, the two buses in each direction daily proceeding through the city to and from the west over West Town, Central and West Broad Street and to and from the east over Main Street (U.S. 40). Service to Pittsburgh is supplied by the Eastern Greyhound line which operates five buses in each direction daily by way of East Main Street. Service to Charleston, West Virginia, is provided by the Atlantic Greyhound which furnishes 11 buses per day each way over a route following West Mound Street, Harmon Avenue and State Highway 104. The Great Lakes Greyhound operates 11 buses daily in each direction to and from Toledo and Detroit. The latter are routed on North Fourth Street, Chittenden Avenue, Summit Street, Hudson, Indianola, Arcadia and North High Street (U.S. 23), splitting operation on Fourth and Summit Streets where these are one-way south of Chittenden.

In addition to the Pittsburgh route, the Eastern Greyhound lines supply service to Canton, Akron and Youngstown, Cleveland, Springfield and Dayton, Cincinnati and smaller way points. The Canton route consists of 5 buses in each direction per day via East Broad Street, Nelson Road, and U.S. Highway 62. Service to Akron, Youngstown and Cleveland is operated over Cleveland Avenue and State Route 3 with 11 trips each way in addition to the 17 local commuter round trip buses daily to and from Westerville. Four buses to Cleveland and three buses therefrom are routed on a separate branch of the Eastern Greyhound System by way of the same route (North Fourth, Summit, Indianola and North High) followed by the Great Lakes line described earlier. Service to Springfield and Dayton consists of 20 buses each way using West Town, Central and West Broad Street. The Cincinnati branch furnishes some 10 buses each way via West Town Street, Central Avenue and State Highway 3.

The Lake Shore System supplies local commuter and regular service to Reynoldsburg, Hebron, Zanesville, Pomeroy, Chillicothe, Newark and other communities. One branch, comprising 11 buses each way, operates to Granville and Newark over East Broad Street (State Route 16). Some 13 buses each way are routed on East Main Street and U.S. 40 through Reynoldsburg to Hebron, Buckeye Lake, and Zanesville. Service to Athens and Pomeroy is split with 13 buses in each direction routed through Obetz and Groveport via Parsons Avenue and Groveport Road and 6 buses each way over East Main Street and U.S. 33. The Chillicothe line uses Third Street, Whittier and South High, with 14 buses daily in each direction.

Only three buses per day into and out of Columbus are operated by the Red Star Way. This line proceeds to Zanesville using the East Main-U.S. 40 routing and provides local service to intermediate Ohio communities.

The two lines terminating at the Columbus Bus Station on East Town Street are entirely intra-state, furnishing service to Marysville, Celina, Bellefontaine, Lima, Urbana, Piqua, Sidney and other Ohio communities. The Marysville line with 7 trips in each direction daily uses Spring Street and U.S. 33 through Dublin; the Celina branch out West Broad Street comprises only one bus per day each way.

Routing and Volumes in Central Business District

The routing of the different inter-city lines in the vicinity of the bus terminals and volumes of each are indicated on the insert on Plate 9.

The large number of buses using the Greyhound terminal each day and the volume of traffic on Third and on Town Streets in the vicinity thereof are immediately obvious. These vehicles enter the station on Third and emerge on Town Street. More than 150 buses use the station daily, which is not excessive and should not interfere particularly with other traffic except that on occasion the parking or double parking of private automobiles to load or discharge passengers, mainly on Third Street, interferes both with entering buses and with other traffic.

Third Street between Town and Rich Street accommodates 110 buses per day. Some 63 buses are routed on Fourth Street and 54 on High Street. None of these volumes is sufficiently high, even with the turning movements involved, to impede seriously other local traffic. The present routing is dictated largely by the pattern of one-way traffic on Third, Fourth, Long and Spring Streets and the prohibition of certain turns at particular intersections. Nonetheless, the movements could be simplified and facilitated by use of portions of the proposed expressway system described in the Major Street report, as discussed in the following section.

Proposed Inter-City Bus Routing and Improvements

Terminals

A proposal to enlarge the existing Greyhound bus terminal at Town and Third Streets was included in the Central Business District Report. This could be done initially by acquiring the property now used as a commercial parking lot immediately west of the station. Ultimately, if patronage and operations warranted, the property now occupied by a supermarket south of the existing depot could also be acquired. Adequate area should be provided for waiting passenger cars and taxis as well as for additional stand-by buses which may be needed in the future. The existing bus station used for the four Continental Trailways trips daily is quite small both with respect to waiting room space and bus loading area, the latter consisting of a drive around the building (and the adjoining supermarket) from Rich to Third Street. Any substantial increase in bus operations or patronage of this line would require either expansion of the existing depot or its relocation. It is suggested that such operations could be better conducted at the nearby Greyhound Terminal provided the latter is enlarged and an amicable arrangement between the lines could be made.

The existing Columbus Bus Station on East Town Street appears to be adequate for present purposes. This station is also used now for the Grove City buses which were treated as part of the local services described in the Transit Report and are expected to be a part of the over-all Columbus transit system in the future. The present station appears adequate for the inter-city routes, including likely expansion.

Future Bus Routes

Construction of the projected expressway system, including the innerbelt, and of certain other thoroughfare improvements described in the Major Street Report, would greatly facilitate inter-city bus routing through metropolitan Columbus in the future. Thus, most of the present lines would be able to use the expressways, at least in part, thereby maintaining higher speeds and avoiding much local traffic congestion.

Specifically, all lines now routed to or from the west over West Town and Broad Streets would utilize the west freeway in its entirety entering or leaving downtown Columbus via the Sandusky interchange and Long-Spring Streets. Lines presently routed to Cincinnati, Chillicothe, and Charleston could use the southwest freeway, the buses to Chillicothe and Charleston branching off at the proposed outerbelt connection to the present routes following South High (U.S. 23) and State Route 104 respectively. Routes to the east and southeast now traversing Main Street and U.S. 33 would be able to use the east freeway, at least in part, and express buses over U.S. 40 could use the freeway in its entirety. Except for the commuter service to Westerville, buses to the north - both to the Cleveland and to the Toledo-Detroit areas - would be expedited over the north freeway and the connections to State Route 3 and to U.S. 23 north of the city.

A few lines would continue to follow essentially the present routing. These include the Columbus-Marysville buses out Dublin Road and the service to Granville and Newark via East Broad Street. Some local commuter service to Obetz and Groveport over the Parsons Avenue-Groveport Road Branch of the Pomeroy line may be needed, but the majority of these buses could be expedited by way of the east freeway and U.S. 33. Commuter service to Westerville would be facilitated by following the north freeway between downtown Columbus and 17th Avenue to the present routing out Cleveland Avenue and Westerville Road and commuter service to Reynoldsburg and beyond would be speeded through utilization of the east freeway west of Fairwood Avenue. Completion of the contemplated extensions of Leonard Avenue to the Fort Hayes interchange would provide a more direct routing to the northeast for the line now operating over Broad Street and Nelson Road.

Inter-city bus operations within downtown Columbus would be greatly simplified by the expressway routings also, most lines utilizing the inner belt to entries or exits at Third, Fourth, Long and Spring Streets. Thus, these lines would be confined almost entirely to the forenamed one-way arteries and Broad Street.