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DOWNRIVER TRUCK STUDY

BY
WILBUR SMITH AND ASSOCIATES
LANSING, MICHIGAN
APRIL 1977

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Southeast
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Government

A Background Paper

DOWNRIVER TRUCK STUDY

April, 1977

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April 30, 1977

Mr. Michael Glusac, Director
Southeast Michigan Council of Governments
9th Floor - Book Building
Detroit, Michigan 48226

Dear Mr. Glusac:

We are pleased to transmit our Final Report, Downriver Truck Study, in accord with our agreement of July 1, 1976. The report represents the results of our observations, analyses, and discussions, including continuous dialogue with your staff, Downriver community representatives, public agencies and the affected railroads. The findings and recommendations are, in many respects, an outgrowth of this cooperative effort.

The environmental problems of heavy trucks traversing the centers of Downriver communities on Jefferson Avenue and other arterial streets have long been recognized. Their alleviation calls for innovative and cooperative approaches between the communities, state and county road agencies, and the impacted railroads. Accordingly, we have set forth a phased improvement program which includes:

1. Better truck route signing and delineation.

2. Additional railroad grade separations across arterial streets with priority given to Pennsylvania, King, and Sibley Roads.

3. Progressive future development of truckways subject to continuing reappraisal of need
   (a) in the River Rouge area initially,
   (b) in the Wyandotte-Riverview area, and
   (c) Trenton areas.

Each phase of this program will provide benefits to the impacted communities and will simultaneously improve truck travel. It will allow increased restriction of tractor trailer trucks on arterial streets in built-up areas as new truck access routes become available.

Many agencies, industries, and railroads contributed to the study. Our project Manager, Mr. Charles O. Pratt, and our Resident Planner, Mr. Robert R. Henry, especially appreciate the assistance received from Mr. Carmine Palombo, SEMCOG Transportation Planner. It has been a pleasure to have worked with you on this interesting and timely project.

Very truly yours,

WILBUR SMITH AND ASSOCIATES

Herbert S. Levinson
Senior Vice President

HSL/gp

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APPENDIX TABULATIONS

PRINCIPAL STUDY PARTICIPANTS

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Maurice Roach - Wayne County Planning Commission

Roy Chapman - Wayne County Road Commission

Ken Underwood - Michigan Department of State Highways and Transportation

William Sullivan - Wyandotte, Wayne County Commissioner

Robert Bovitz - Mayor Pro Tem, City of Trenton, Vice Chairperson, SEMCOG

Frank Lada - Mayor, Allen Park

George McClain - McLouth Steel Company

Herbert S. Levinson - Project Advisor

Charles O. Pratt - Project Director

Robert R. Henry - Transportation Planning

SUMMARY

Introduction

This report prepared for the Southeast Michigan Council of Governments (SEMCOG) analyzes the impacts of heavy trucks in the Downriver area of Wayne County. It analyzes existing travel and land use problems; identifies major problems and opportunities, presents alternatives for improving truck travel and reducing land-use conflicts, and suggests a staged improvement program. The objectives are to develop innovative concepts and solutions which are practical and actionable, and which respond to the mobility, environmental and economic needs of the impacted communities and industries.

Existing Problems

The Downriver area contains a mixture of major industries, residential areas, and commercial conters. It is traversed by a rail corridor which separates the Detroit Riverfront industries from residential areas. Interstate 75 also traverses the corridor, and serves as a major truck route.

The I-75 Freeway has re-oriented truck travel in the area. It has relieved north-south streets of intercity truck traffic, but has also brought about new circulation problems. There is increased use of east-west streets to reach I-75 from riverfront industries. Moreover, its location, some three miles west of the river, has discouraged its use by local trucks. Local truck movements tend to stay on Jefferson (Biddle) Avenue and traverse the central business districts of River Rouge, Ecorse, Wyandotte, and Trenton. These problems of truck intrusion have become a major community concern.

Salient truck-land use observations, problems and conflicts include the following:

1. The highest "heavy truck" volumes are found along Jefferson in River Rouge between Marion and Coolidge. Volumes exceed 1,000 per day. Volumes drop to about 700 in central Wyandotte and to about 200 at the southern end of the Study Area.

2. The heaviest east-west truck volumes, 1,400 heavy-trucks per day, are found along Schaefer Road. East-west truck volumes generally exceed 500 vehicles per day on other major streets with a gradual decline on streets further south in the Downriver area.

3. The heavier truck volumes in the northern part of the area reflect (1) higher densities of industrial activity, and (2) greater proximity to I-75.

4. During peak periods, sections of Schaefer and Southfield including their ramps with I-75, are often congested. Redistribution, or reorientation of existing truck volumes would relieve this congestion.

5. Major land-use-truck conflicts are found along many sections of Jefferson. These include the River Rouge, Ecorse, Wyandotte, and Trenton town centers, as well as several parks, residential areas, and a hospital.

6. Most east-west streets traverse built-up residential and commercial neighborhoods, especially in the northern half of the Study Area. Principal conflicts are found along Eureka, West and North Line. Pennsylvania Road, and to a lesser extent, King and Van Horn are relatively free from adjacent schools and residences.

7. Very few riverfront industries are located adjacent to east-west arterial streets. As a result, trucks entering or leaving these industries must traverse Jefferson to reach east-west routes to I-75 or Telegraph Road.

8. There is relatively little signing of preferred truck routes between Jefferson and I-75, nor are restrictions on east-west streets clearly posted. As a result, there is a tendency for trucks to filter onto many streets.

Development of Alternatives

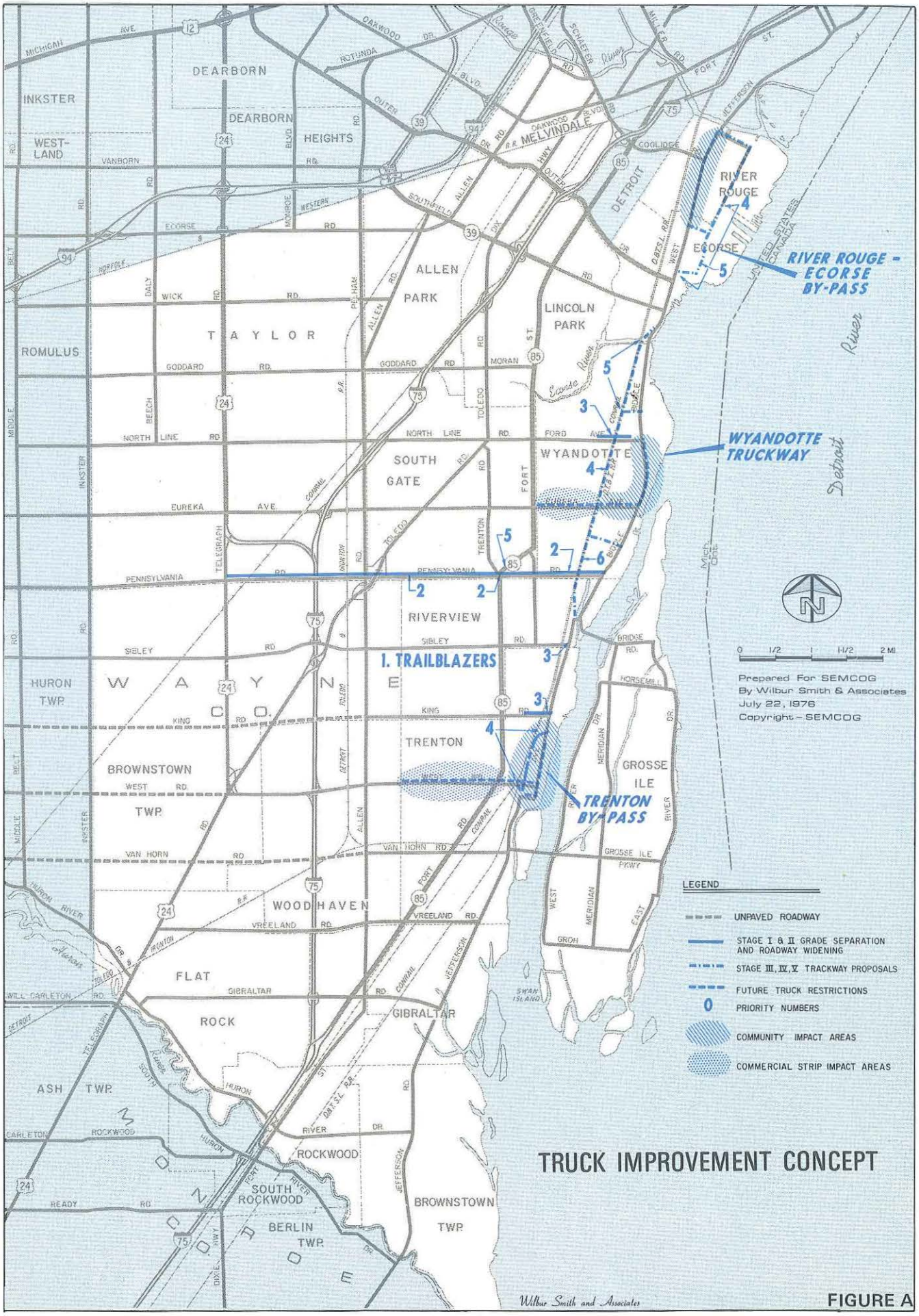
A variety of truck improvement concepts were developed in association with various study participants. Alternatives were developed, assessed, and discussed with participating public agencies and impacted communities. They were evaluated in terms of:

- Benefits to trucks and to general traffic flows;
- Reduced truck flows through environmentally sensitive areas - including noise and air consequences;
- Development and operating costs;
- Dislocations and displacements;
- Ease of Implementation (including railroads, etc.); and,
- Compatability with current roadway plans and with land use.

This cooperative analysis, review, and screening plan led to the formulation of a staged Downriver Truck Improvement concept.

Downriver Truck Improvement Concept

The staged Downriver Truck Improvement concept is shown in Figure A. This sequence of coordinated truck-improvements



TRUCK IMPROVEMENT CONCEPT

Wilbur Smith and Associates

FIGURE A

and measures was developed to:

- Minimize truck intrusion in residential and commercial areas; and,
- Provide improved service to major generators.

It reflects:

- Actual and demonstrated needs;
- Compatability with programmed improvements;
- Ease of implementation;
- Spreading out of total expenditures over several years to lessen financial impacts; and,
- Responsiveness to continued growth and change.

This concept includes the following:

- Special Designations of truck routes by trailblazer signs and enforced restriction of truck traffic on other roadways;

- Improved east-west access in the Downriver area by (a) constructing grade-separated rail crossings at Pennsylvania Road, Sibley Road, King Road, and North Line Road (Ford Avenue); (b) widening of Pennsylvania Avenue from Telegraph Road to Jefferson Avenue; and, (c) improving the intersection of Fort Street, Pennsylvania and Trenton Roads; and,

- Progressive Truckway Development, with timing contingent on continued need, available funding, and railroad cooperation.

  1. The River Rouge-Ecorse Bypass extension of the Marion Industrial Highway should be given precedence over truckway development which requires

railroad acceptance and participation, as well as inter-railroad operating agreements.

2. Subsequent development of the Wyandotte Truckway and Trenton Bypass results from the time, costs, impacts, and implementation complexity associated with these needs.

This staging of alternatives will allow the State, Region, County, and communities to fit expensive options into future budgets and spread their impact over many years. The railroad grade separations are given priority over truckways since their benefits will accrue to all road users, and their construction is necessary to preclude at-grade intersections with truckways. Truckway development will become desirable when daily heavy-truck volumes on Jefferson exceed 1,000-1,200 vehicles per day. Timing should be contingent upon continued monitoring of truck volumes and traffic conditions.

Table A sets forth anticipated development costs and staging. Costs would total nearly $45,000,000 over a 10 to 15 year period.

- Railroad grade separations would cost about $3.5 million at each of the proposed four crossings. The widening and reconstruction of five miles of Pennsylvania Road would cost about $6.5 million and improvement of the Fort-Pennsylvania-Trenton intersection would involve about $1.7 million in Phase 1 and $4.9 million in Phase 2.

- Costs for the River Rouge/Ecorse Bypass will range from $700,000 for the extension to Tecumseh, to $765,000 for the further extension to Westfield.

Table A

IMPLEMENTATION STAGING

SEMCOG Downriver Truck Study

ITEM	STAGE	ESTIMATED COSTS[1]	TIME PERIOD
Trailblazers and Restrictions	1	$ 15,000	1977-78
Pennsylvania Avenue Grade Separation @ Railroads	2	3,500,000	1978-
Widening 5 miles of highway	2	6,450,000	1980
Intersection-Phase 1	2	1,700,000	
Grade Separations at Railroads			
King Road	3	3,500,000	1981-
Sibley Road	3	4,200,000	1982
North Line	3	2,800,000	
Marion Industrial Highway Extension to Tecumseh	4	700,000[3]	1982-83
Wyandotte Truckway Option 1, Phase A	5	3,931,000[2]	1983-84
Marion Industrial Highway Extension to Westfield Ave.	5	765,000[3]	
Wyandotte Truckway Option 1, Phase B	6	2,444,000[2]	1985-86
Pennsylvania-Fort-Trenton Intersection - Phase 2	6	4,900,000	
Wyandotte Truckway Option 1, Phase C	7	8,422,000[2]	1987-90
Trenton Bypass	7	1,321,000	
TOTAL		$44,648,000	

(1) Estimates by Wilbur Smith and Associates (1976 dollars).
(2) Does not include right-of-way costs.
(3) Includes right-of-way costs of approximately $70,000 for each of these

Staged construction of the Wyandotte Truckway allows for the building of the Alkali/Grove Streets link for about $3.9 million in the D. T. and I. rail right-of-way as a possible first step in the process. The second stage would be an extension north to Ecorse, which if implemented would cost an additional $2.4 million. The third stage would include an extension from Grove Street to Jefferson Avenue in Riverview north of Sibley Road, via the New York Central Railroad right-of-way estimated to cost $8.4 million, making the total truckway development cost $15 million exclusive of rail right-of-way costs.

The Trenton Bypass would cost about $1,321,000-$821,000 for construction and $500,000 for right-of-way.

Each of the truckways would remove substantial percentages of heavy trucks from Jefferson and allow trucks to be restricted from many sections of this roadway, while the related earlier stage improvements would eliminate railroad-highway traffic conflicts and improve the circulation system throughout the Downriver area.

Next Steps

The study has outlined the general directions for improving truck operations and reducing truck-land use conflicts in the Downriver area. It provides the context for commitment and future actions. The next steps are to achieve consensus, secure funding, establish needed institutional arrangements, and thereby translate the plans into reality.

Continued monitoring of traffic and environmental conditions will enable projects and priorities to be adapted to

changing needs and values. In addition, the various proposals should be incorporated and adapted to overall County road improvement programs.

The study's innovative approaches have transferability to other parts of the Metropolitan Area, within the broader context of Metropolitan Detroit goods movement plan.

Chapter 1

INTRODUCTION

This report contains an analysis of truck routes and truck travel in the Downriver area of Wayne County, Michigan. It analyzes existing travel and land use problems; identifies major problems and opportunities, presents alternatives for improving truck travel and reducing land-use conflicts, and suggests a staged improvement program.

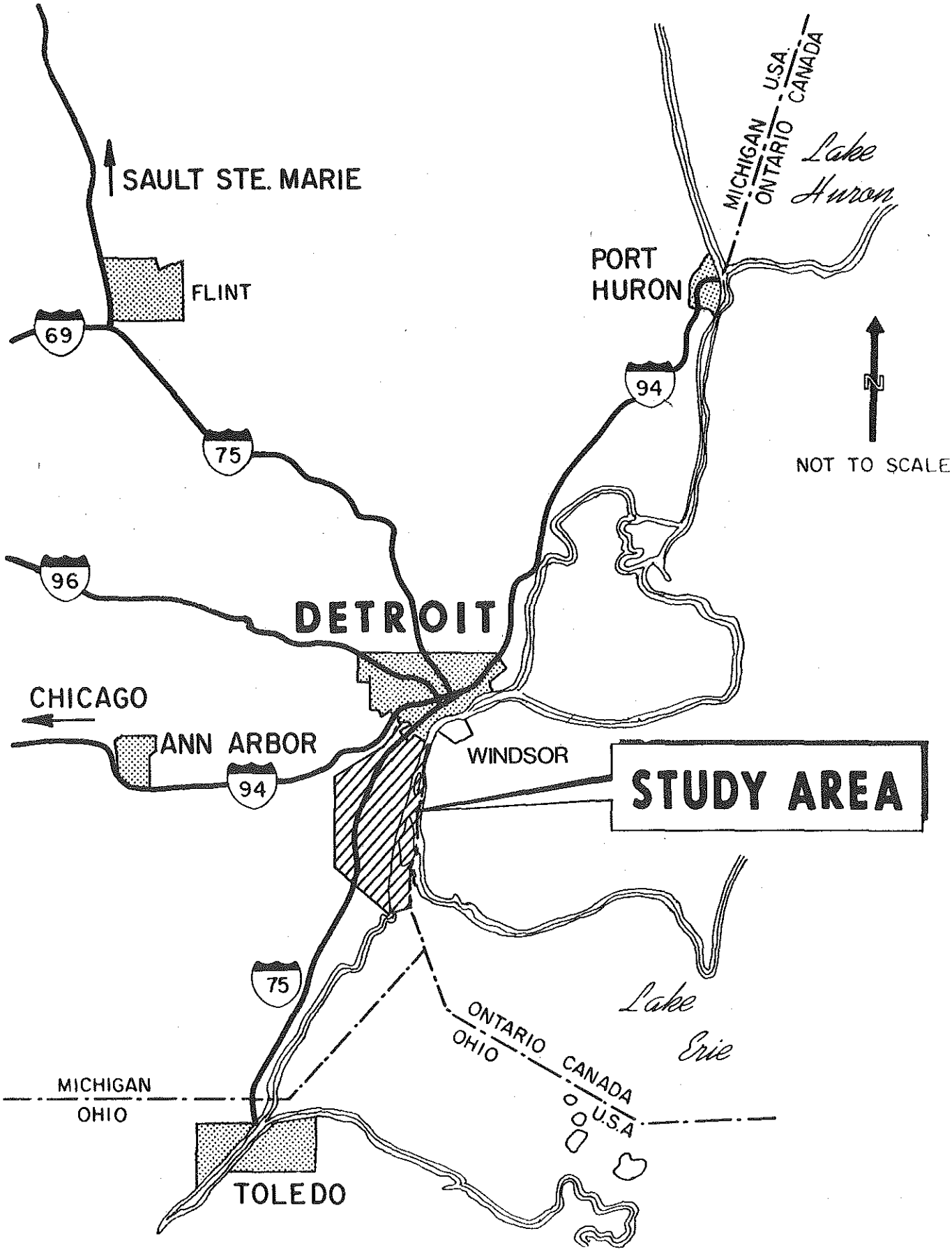
The objectives are to develop innovative concepts and solutions which are of a practical and actionable nature and which are responsive to the mobility, environmental and economic needs of the impacted communities and industries.

The Context

The Downriver area is located immediately south of the City of Detroit along the west bank of the Detroit River (Figure 1). Interstate 75 passes through the Downriver area and serves to link it with I-94, I-96, and other freeways in the metropolitan area.

The area's road pattern forms part of Metropolitan Detroit's grid (section line) network, over which radial highways--such as Jefferson Avenue, Fort Road, Telegraph Road, and, in recent years, I-75 have been superimposed.

The Downriver area contains a mixture of major industries, shops, and residences. It initially developed as an industrial area with major manufacturing plants fronting on the Detroit River. The river originally provided access for bulk raw products and processed goods. As the area grew, railroad lines and, in turn, highways provided additional access for people and goods.



REGIONAL SETTING

Wilbur Smith and Associates

FIGURE 1

For the more than 350,000 people living in the Downriver communities of Allen Park, Brownstown Township, Ecorse, Flat Rock, Gibraltar, Grosse Ile Township, Lincoln Park, Melvindale, River Rouge, Riverview, Rockwood, Soutngate, Taylor, Trenton, Woodnaven, and Wyandotte, the truck traffic is not new.

It arises from the 42 major and scores of smaller industrial plants, auto factories, chemical and power complexes, seaports and industry-related developments strung along the riverfront and along West Jefferson Avenue--developments which are interspersed between shops, homes, and parks.

Because of their close proximity to water and their accessibility to the railroads that parallel the riverfront, these plants and industries once used water and rail freightage as their primary mode of transportation. This situation changed as trucking grew in usage and I-75 was built.

A significant amount of commodities are now shipped via motor truck to and from the industries in the Downriver area. Trucks of all sizes form a major component of the traffic flow on the area's arterial streets, serving the commercial businesses in the area and hauling commodities to and from industries. Many of the businesses produce components for the motor vehicle industry in the region, which is reflected in local truck improvements.

The I-75 Freeway has served to re-orient truck travel in the area. It has relieved north-south streets of intercity truck traffic. But it has also brought about new circulation problems.

There is increased use of east-west streets to reach I-75 from riverfront industries. Moreover, the location of I-75, some three miles west of the river, has discouraged its use by

local trucks. Local truck movements tend to stay on Jefferson (Biddle) Avenue and traverse the central business districts of River Rouge, Ecorse, Wyandotte, and Trenton. These problems have become a major community concern.

Study Objectives

The 16 Downriver communities recognize the need for an objective assessment of their truck problem within the broader context of the contemporary urban issues of environment, economy, and energy.

This study of truck movements was initiated in response to the needs reflected by the communities and an Interagency Task Force on Detroit Riverfront Development during July, 1976.

The principal objectives are to:

1. Inventory existing major road systems in the study area in terms of geometry and traffic flow and identify major truck trip generator concentrations such as industrial and commercial areas.

2. Determine truck travel patterns and driving routes, in the context of general traffic flows and street capacities, and project these flows to a future year (1990).

3. Identify, evaluate, and estimate costs for alternative solutions--short range and long range--for truck routes in the area, recognizing overall transportation planning activities in the area and administrative constraints resulting from factors such as ordinances and funding.

4. Recommend one or more alternatives including, traffic management solutions and/or capital projects, and present an assessment of environmental and socioeconomic impacts.

The primary objective is to develop a coordinated actionable plan of truck priorities, routes, and restrictions which reflect economic, environmental and mobility needs of the Downriver area.

Study Approach

The study represents a cooperative participatory approach with the Downriver communities, County and Regional agencies, and the impacted industries and railroads. At the outset of the study, an Advisory Committee was established which included representatives from most of these groups.

The Committee met on a monthly basis and served as a forum for the discussion of findings, analysis, concepts, and recommendations. In addition, special meetings were held with other impacted individuals, agencies, and industries.

The report completed in June, 1976, entitled "Partners for Progress, The Land and the River," expressed the concerns of the Downriver communities with the truck movement problem and recommended that "the alternatives selected by SEMCOG as a result of the truck traffic analysis be adopted as part of the 1990 Highway Plan."(1) The Michigan Department of State Highways and Transportation was an active participant on the task force and strongly supported the truck study along with the local planning and highway agencies.

(1) Report of the Interagency Task Force for Detroit/Wayne County Riverfront Development, "Partners for Progress, The Land and the River," Office of Economic Expansion, Michigan Department of Commerce, June, 1976, pp. 76-77.

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Extensive field observations and reconnaissance studies were made of traffic conditions during the peak periods of truck and automobile travel. These investigations identified travel lanes, traffic controls, truck routes, travel speeds, traffic operational problems and congestion points, locations of major truck traffic generators, and truck conflict points.

Members of SEMCOG staff, representatives of the Wayne County Road Commission and Planning Commission, and Michigan Department of State Highways and Transportation furnished base data on traffic volumes, road and land use inventory information, accident statistics, 1965 and 1970 data on truck trip ends in the study area, and lists of industrial land uses in the various study area communities so that a sample of major truck traffic generators could be identified. Communities furnished local ordinances that impact truck movements through the Downriver area.

A series of interviews were held with representatives of major truck traffic generators in the Downriver area and with operators of fleets of trucks which transport raw materials and finished products into and out of the area to support the manufacturing operations. These interviews furnished information on truck travel patterns, logs, and access requirements.

Interviews were conducted with approximately 15 industries which generate a substantial portion of the Downriver truck traffic. In most cases, the interviews did not obtain the detailed information which was initially sought, but in many cases sufficient data were obtained to provide an understanding of the patterns of travel developed from the studied sites.

In no case were logs of truck movements through the plant gates or to and from locations in the Downriver area obtained during the course of the initial interviews. However, there were many instances where data were developed which led to

estimates of average daily movements and in some cases to seasonal variability in the movement patterns.

Special counts were made of trucks and cars at key locations to further identify the dimensions and nature of truck travel. These included major east-west and north-south screenlines.

Analysis of observations, traffic flows, and truck travel patterns led to a clear understanding of the interactions and conflicts between trucks and land use. A variety of concepts were developed, assessed, and progressively screened with the Study Committee. This process led to the formulation of a staged improvement plan keyed to improved truck and car flow and to the area's broader environmental needs.

When preliminary concepts were developed they were reviewed in a series of meetings with affected railroad officials. Meetings were held with Conrail and the Detroit, Toledo and Ironton Railroad to inform them of plans and to obtain their reactions and/or suggestions. The truck roadway proposals set forth in the Wyandotte portion of the corridor will depend upon satisfactory arrangements for rail access and right-of-way adjustments. The functioning of the rail system in this corridor is important to the economy of the Downriver area; accordingly every consideration was given to rail needs and objectives in developing the truck plans.

The three chapters which follow detail the studies analyses, options, and recommendations, respectively.

Chapter 2

EXISTING CONDITIONS

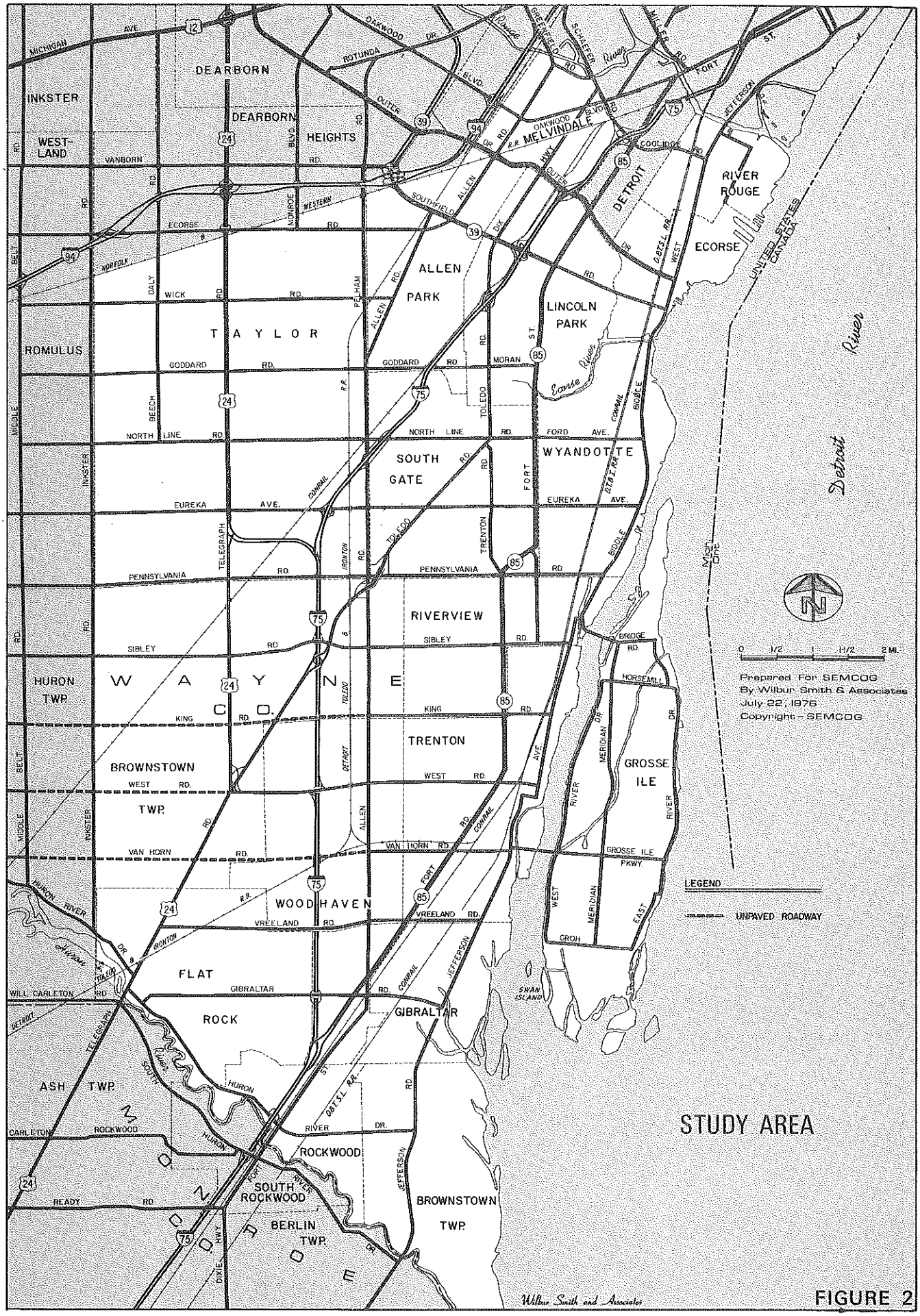
Existing travel patterns and traffic operations were developed from field reconnaissance investigations and the detailed analyses of the various land use and traffic data furnished by various agencies or especially obtained for this study. These analyses identified the major truck-related problems in the Downriver area and provided a basis for examining opportunities for improvement.

Study Area Overview

The Downriver Study Area, shown in Figure 2, contains 14 cities and 2 townships and encompasses nearly 110 square miles. Its population increased from 312,000 in 1960 to 353,000 in 1970--a 13 percent gain. It continues to grow at about the same rate and is expected to be a major growth corridor radiating from Detroit.

The area contains a mixture of mature cities with relatively high population densities--such as Ecorse, River Rouge, Wyandotte, Lincoln Park, Melvindale, and Allen Park--and newer communities with low population densities which are experiencing rapid population growth. They contain a major part of the labor pool for the motor vehicle industry and for other SEMCOG area industries.

Five of the 14 study area cities did not exist in 1960. Flat Rock, Gibraltar, Rockwood, and Woodhaven were incorporated in the period after 1960, having formerly been part of Brownstown Township. Similarly, the City of Taylor--now the largest city in the study area,with a 1970 population of more than 70,000--was formerly a township.


DEARBORN
INKSTER
DEARBORN HEIGHTS
WEST-LAND
VANBORN RD.
MICHIGAN AVE.
ROTUNDA DR.
OAKWOOD BLVD.
OUTER DR.
OAKWOOD BLVD.
MELVINDALE
COOLIDGE RD.
DETROIT
RIVER ROUGE
ECORSE
ECORSE RD.
NORFOLK & W. R.R.
SOUTHFIELD FWY.
ALLEN PARK
LINCOLN PARK
T A Y L O R
ROMULUS
GODDARD RD.
NORTH LINE RD.
SOUTH GATE
WYANDOTTE
EUREKA AVE.
FORD AVE.
PENNSYLVANIA RD.
RIVERVIEW
SIBLEY RD.
HURON TWP.
W A Y N E
C O.
KING RD.
TRENTON
BROWNSTOWN
WEST RD.
TWP.
VAN HORN RD.
GROSSE ILE
GROSSE ILE PKWY
WOOD HAVEN
VREELAND RD.
HURON RIVER
FLAT ROCK
GIBRALTAR RD.
GIBRALTAR
WILL CARLETON RD.
ASH TWP.
CARLETON ROCKWOOD RD.
ROCKWOOD
SOUTH ROCKWOOD
READY RD.
BERLIN TWP.
BROWNSTOWN TWP.
M O N R O E
Detroit River
Rouge River
Ecorse River
Huron River
Middle Huron River
South Huron River
Swan Island
UNITED STATES CANADA
0 1/2 1 1 1/2 2 MI
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LEGEND
UNPAVED ROADWAY
STUDY AREA
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FIGURE 2

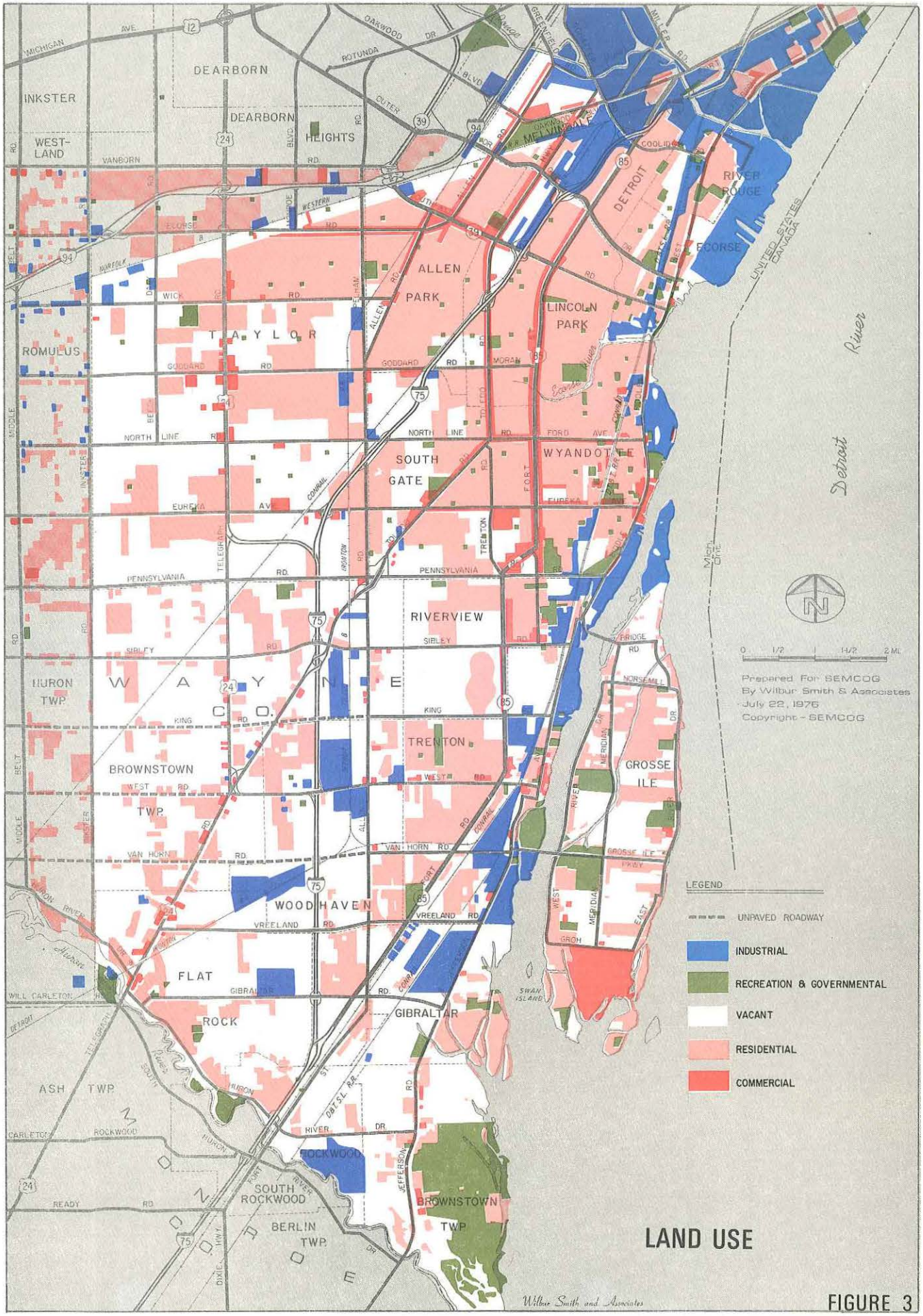
Riverfront access was extremely important in the early development of the Downriver area. This is apparent when observing the locations of major industries within the study area. Until the completion of Interstate 75, most industry was located along the riverfront on the eastern edge of the study area, due to its accessibility to the water, which provided for its major goods movement connections. Great Lakes freighters, unique to the lakes, traditionally carried raw materials in bulk such as iron ore, coal, limestone, sand, gravel, cement, or petro-chemicals. In recent years, the finished products have been increasingly shipped by truck. This has resulted in a rapid increase in truck usage within the Downriver area. The increased truck travel has been most significant on the I-75 corridor, where many large industries which have been developed realize the accessibility afforded by the Interstate road network.

Land Use - Land uses in the study area are shown in Figure 3. Commercial land is concentrated in the town centers, at major intersections, and along principal highways. Industrial land is concentrated along the Detroit River and I-75.

Industries along the River are often interspersed between town centers, residential areas, or parks. The truck-oriented industries along the I-75 axis have many features of modern industrial parks and are generally removed from built-up neighborhoods.

Among the major industrial and trucking companies involved in the movement of vehicles throughout the Downriver area, are the following:

TOWN	NAME
Allen Park	Whittaker Products
Ecorse	Dana Corp. Great Lakes Steel Co.
Flat Rock	Moynahan Bronze Co.
Gibraltar	McLouth Steel Co.


DEARBORN
INKSTER
DEARBORN HEIGHTS
WEST-LAND
ROMULUS
TAYLOR
ALLEN PARK
LINCOLN PARK
SOUTH GATE
WYANDOTTE
RIVERVIEW
TRENTON
BROWNSTOWN TWP.
HURON TWP.
WAYNE CO.
GROSSE ILE
WOODHAVEN
FLAT ROCK
GIBRALTAR
ASH TWP.
SOUTH ROCKWOOD
BERLIN TWP.
BROWNSTOWN TWP.
DETROIT
RIVER ROUGE
ECORSE
MELVINDALE
Detroit River
Main Channel
UNITED STATES CANADA
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0 1/2 1 1/2 2 MI
LEGEND
UNPAVED ROADWAY
INDUSTRIAL
RECREATION & GOVERNMENTAL
VACANT
RESIDENTIAL
COMMERCIAL
LAND USE
Wilbur Smith and Associates
FIGURE 3

TOWN	NAME
Lincoln Park	Wolverine Aluminum Corp.
Melvindale	Continental Corrugated Division Continental Container Corp.
River Rouge	Standard Oil Refiners Transport and Terminal Co. Whitehead and Kales
Riverview	Firestone Tire and Rubber Co.
South Gate	Gladwin Corp.
Taylor	Standard Oil Ray Molders
Trenton	Chrysler Chemical Division Edward Levy McLouth Steel Co.
Woodhaven	Ford Motor Co.
Wyandotte	BASF-Wyandotte Pennsylvania Salt Co.

Ford, Chrysler, and General Motors all have developed major new industrial and office facilities in the area. Other industries, notably steel, chemical, and automotive hardware companies, have been adding to or expanding existing facilities in the study area, particularly along the Detroit River. These include Great Lakes, Firestone and McLouth Steel Corporations, Wyandotte Chemical Corporation, and Pennsylvanis Salt Company.

This industrial development is stimulating new commercial and residential growth in the area, with major focus on locations having convenient access to the I-75 freeway--the high capacity route between Detroit to the north and Toledo and other points to the south. Interstate 94, which touches the northern part of the study area (in Taylor and Allen Park) is located west of I-75 and has influenced development of new industries west of the Detroit River.

Railroads - The Penn Central, Michigan Central, Detroit, Toledo and Ironton, and Detroit and Toledo Shoreline occupy a common right-of-way through a large part of the Downriver area. These railroads generally parallel the Detroit River about a half mile to the west. Several east-west spurs are provided to serve major riverfront industries. Railroads cross many major streets at grade.

Road System - Roadways in the Downriver area include the I-75 and I-94 Freeways, multi-lane radial routes such as Telegraph Road (U.S. 24), Fort Street (M-85), and Jefferson Avenue; and multi-lane crosstown routes such as Schaefer Highway, Outer Drive, and Southfield Road. A grid of "section-line" east-west streets and a random pattern of north-south streets complete the road pattern.

1. North-South Roadways - I-75, a six to eight lane freeway, is the major route through the Downriver area. It has substantially relieved north-south travel on parallel routes, although it has increased east-west movements.

Fort Street (M-85) was the principal north-south roadway through the study area before the opening of I-75. It is a multi-lane divided roadway which connects downtown Detroit with I-75 near Flat Rock and which parallels I-75 throughout the Downriver area. However, unlike I-75, it is lined with stores, businesses, and industries throughout much of the area. There is considerable residential development along the roadway toward the south end of the Downriver area. Roadway capacity is limited by the numerous signalized intersections.

Jefferson Avenue, closely paralleling the Detroit River, extends the full length of Wayne County's river frontage. This continuous north-south multi-lane arterial traverses the built-up central parts of River Rouge, Ecorse, Wyandotte, and Trenton.

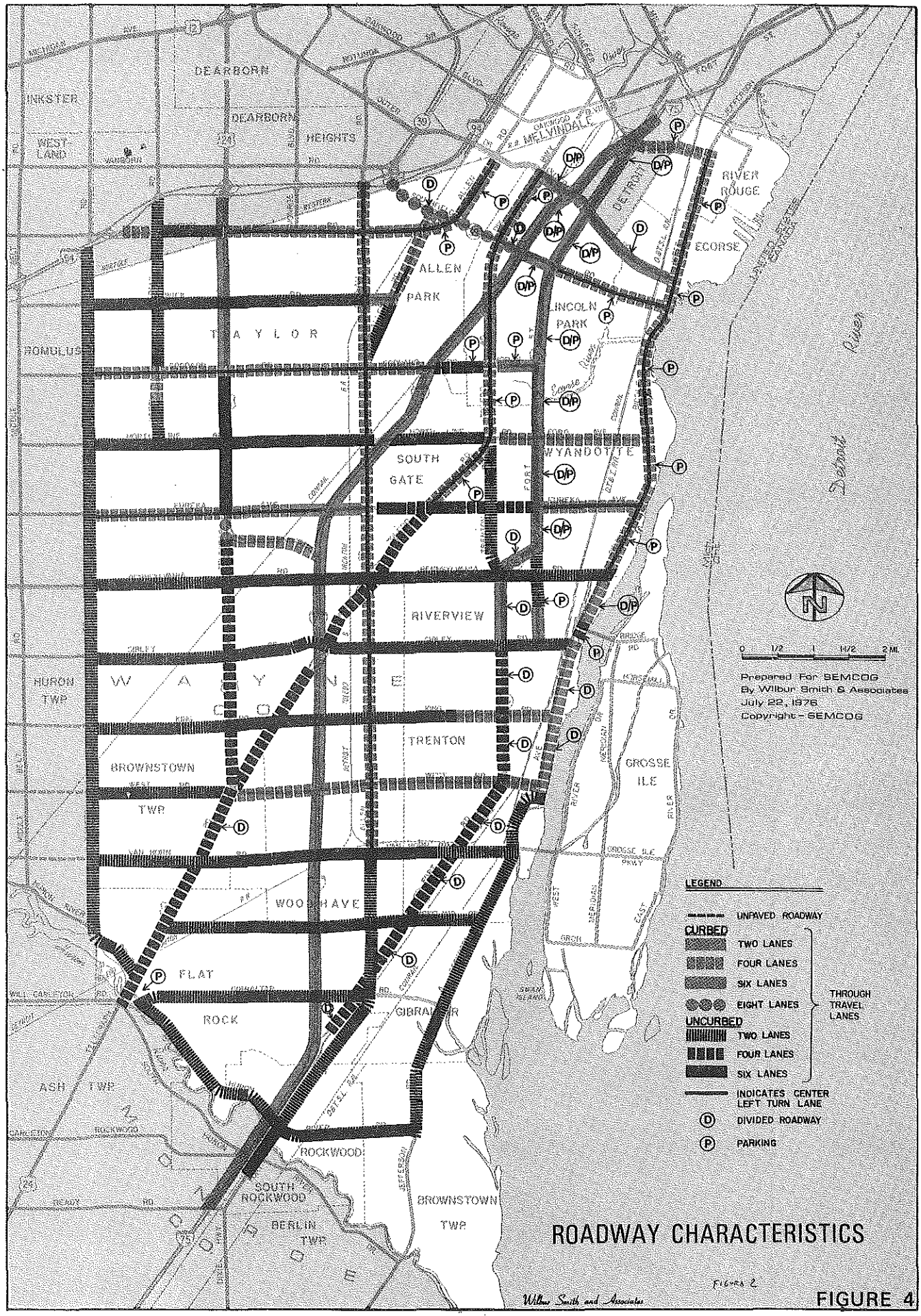
Between West Grand Boulevard and downtown Detroit, Jefferson is a narrow street running through warehouse and trucking terminal areas, with frequent traffic congestion during most daytime hours.

Other continuous north-south routes through the Downriver area and its environs include the Allen Road-Pelham Road-Southfield Road combination; the Dix Road-Toledo Road route; and Telegraph Road. These provide direct access between the study area and western parts of the Detroit metropolitan area.

2. East-West Roadways. A fairly regular street grid is created by the intersection of east-west and north-south routes. The east-west streets are located at intervals of one to two miles and provide access between industries along the Detroit River, I-75, and Telegraph Road. East-west routes which directly connect with I-75 include Schaefer Road (Coolidge Road), Outer Drive, Southfield Road, North Line Road (Ford Avenue), Eureka Avenue, West Road, Gibraltar Road, and Huron River Drive. Other east-west streets include Pennsylvania Avenue, Sibley Road, King Road, Van Horn Road, and Vreeland Road. Sibley Road currently has access to and from I-75 south via Toledo Road. The Michigan Department of State Highways and Transportation plans call for inclusion of ramps giving access to and from the north on I-75.

Land use along east-west routes vary. Most east-west routes contain a mixture of residential and commercial uses. There is considerable residential frontage in the more mature communities and comparatively few routes are suitable for truck travel from an environmental standpoint. Capacities are limited by frequent traffic signals, single lane operations, curb parking, at-grade railroad crossings, and indirect access to I-75 or a combination of these factors.

For example, Eureka Avenue connects with I-75 and is grade-separated under the railroads, but traverses residential



ROADWAY CHARACTERISTICS

Wilbur Smith and Associates

FIGURE 4

Parking is permitted in several areas along Jefferson Avenue north of Sibley Road, where it passes through the business districts of Wyandotte, Ecorse and River Rouge. Parking is also allowed on segments of Fort Street, north of Pennsylvania Road, as a result of the heavy concentrations of commercial land use. However, multi-lane operations continue with little interference. A major east-west connection, Southfield Road, allows curb parking from I-75 to its terminus point on Jefferson Avenue in Ecorse.

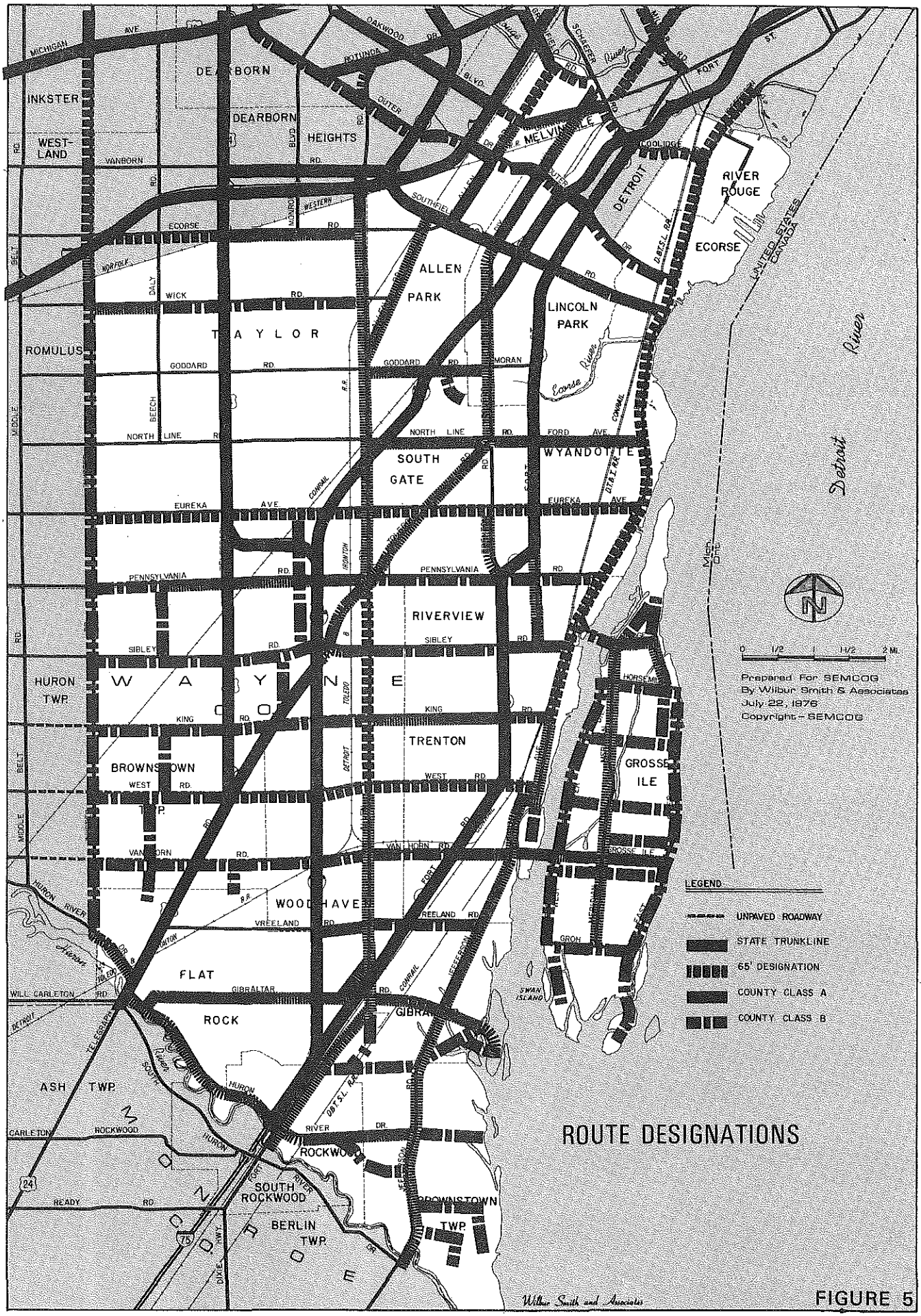
Many roadways within the area have exclusive left-turn lanes which allow through movements to be unhampered. The north-south routes, Jefferson Street, Toledo Road and Allen-Pelham Road, as well as the east-west portions of Eureka Avenue, Goddard Road, Ecorse Road, and Southfield Road also have exclusive left-turn lanes.

Route Designations - Route designations in the study area are shown in Figure 5. Major routes are classified into three groups:

- State Trunk Line - These roadways handle the bulk of the heavy truck traffic travelling through the area;
- 65-Foot Designation - These roadways allow 65-foot double tandem trailers to be carried on their roadways;
- County Class A - These roadways allow trucks up to 55 feet long although they have the same structural capability as the "65-foot" roads; and,
- County Class B - Roadways in this class are not especially designed as tandem routes for use by tandem trucks.

Interstate 75, Fort Street, and Telegraph Road have been designated State trunk lines, running north and south within the study area environs. East-west routes so designated include Southfield Road north of I-75 and I-94.

Jefferson Avenue from King Road north to the Detroit city limits is designated for use by 65-foot double tandem trucks.



ROUTE DESIGNATIONS

Wilbur Smith and Associates

FIGURE 5

Allen Road from West Road north to Pennsylvania Road is the only other north-south roadway sharing this designation.

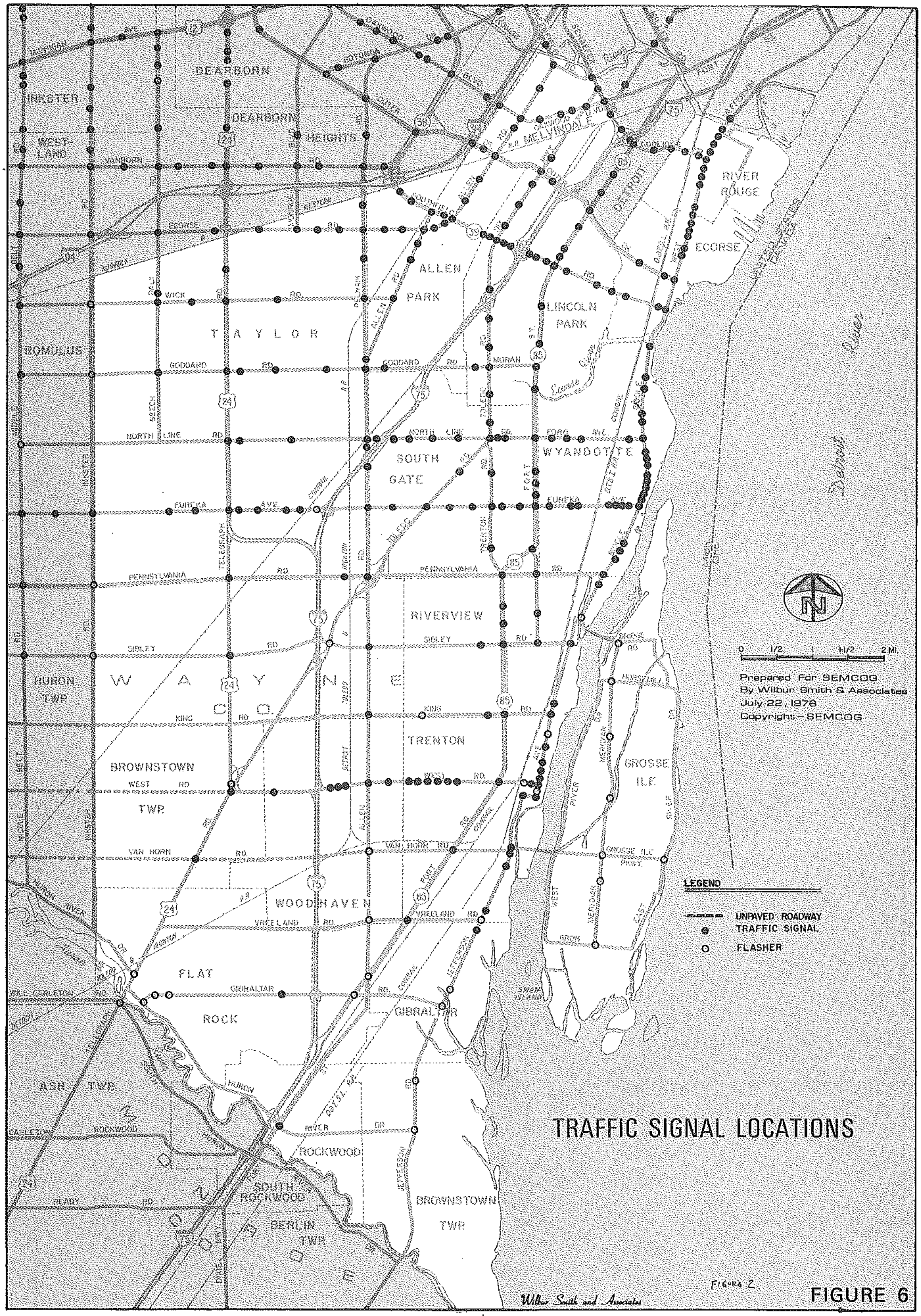
Most other major roads are designated as County Class A roads, or the non-tandem Class B roads.

Traffic Signals - The locations of existing traffic signals and flashers as of July, 1976 are shown in Figure 6. Approximately 250 traffic signals are located throughout the Downriver Study Area. These include about 33 flashing signals at intersections where volumes are not sufficient for full traffic control. These flashing signals are mainly in the southern or western portions of the area and on Grosse Ile. The highest concentrations of signals are found in the commercial areas in Trenton, Wyandotte, Ecorse, and River Rouge. Other concentrations occur along the east-west routes between these municipalities and I-75 such as West Road in Trenton, Eureka Avenue and North Line (Ford Avenue) in Wyandotte, and Southfield Road, Ecorse and Lincoln Park.

While signal coordination appears to have been implemented along several of the major arteries, it has been handicapped by the excessive numbers of signals on some routes, notably Jefferson Avenue, in achieving delay-free operation. Fort Street is an example of a route where signal spacing has been controlled and traffic flow is expedited by coordinated signals.

Traffic Volumes

Automobile and truck traffic flow patterns were developed from information obtained from State, Wayne County, and Regional Agencies, and from specially conducted counts. Traffic counts of various durations were conducted at the locations shown in Figure 7 to supplement and verify available data. Results are


TRAFFIC SIGNAL LOCATIONS
Prepared For SEMCOG
By Wilbur Smith & Associates
July 22, 1976
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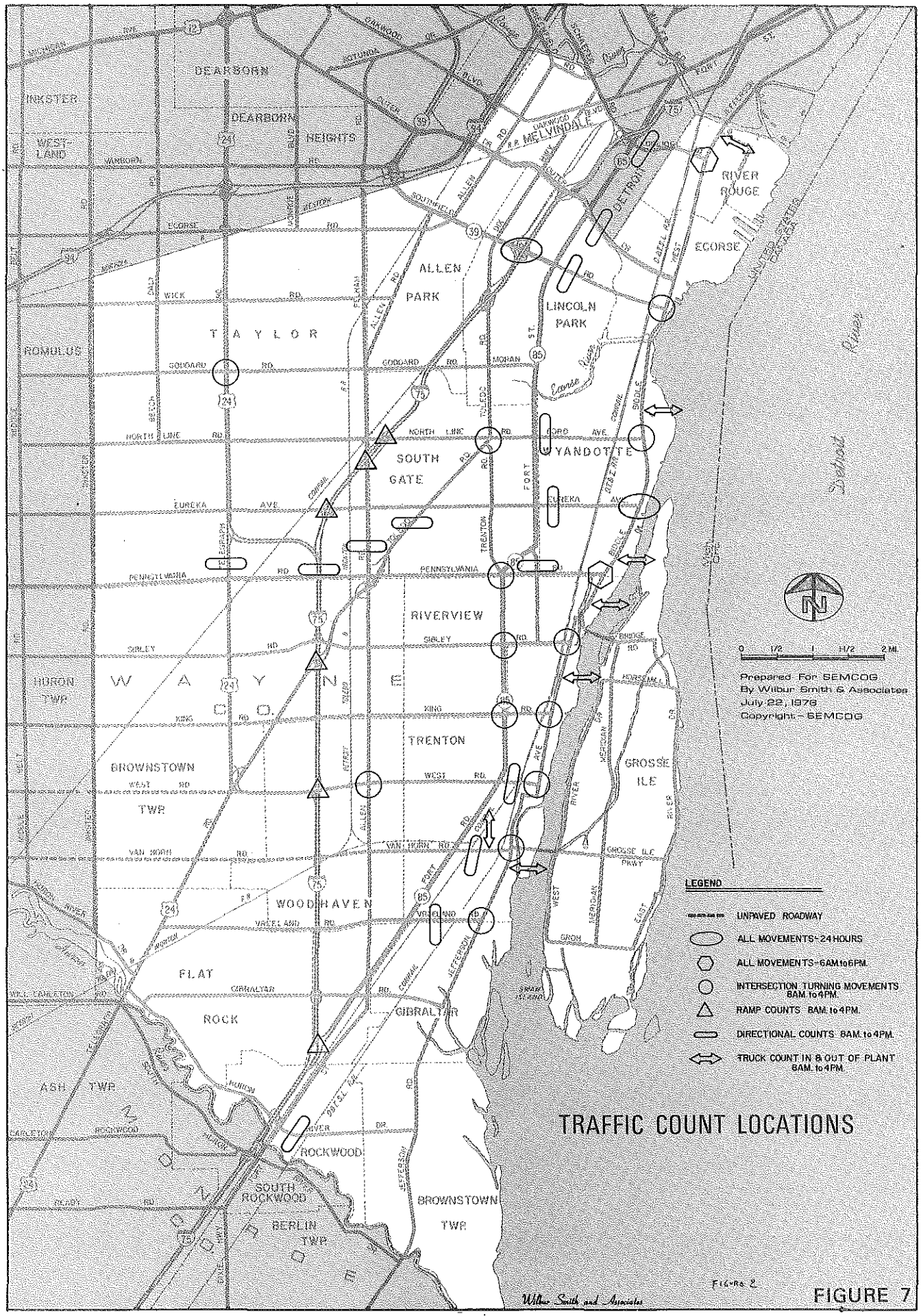
LEGEND
UNPAVED ROADWAY
TRAFFIC SIGNAL
FLASHER
0 1/2 1 1-1/2 2 MI.
DEARBORN
INKSTER
DEARBORN HEIGHTS
WESTLAND
RIVER ROUGE
ECORSE
ALLEN PARK
LINCOLN PARK
TAYLOR
ROMULUS
SOUTH GATE
WYANDOTTE
RIVERVIEW
HURON TWP
WAYNE CO.
TRENTON
BROWNSTOWN TWP.
GROSSE ILE
WOODHAVEN
FLAT ROCK
GIBRALTAR
ASH TWP.
ROCKWOOD
SOUTH ROCKWOOD
BERLIN TWP.
BROWNSTOWN TWP.
MONROE CO.
Detroit River
UNITED STATES
CANADA
Wilbur Smith and Associates

FIGURE 6


DEARBORN
INKSTER
DEARBORN HEIGHTS
WEST-LAND
MELVINDALE
RIVER ROUGE
ECORSE
ALLEN PARK
LINCOLN PARK
TAYLOR
ROMULUS
SOUTH GATE
WYANDOTTE
RIVERVIEW
HURON TWP
WAYNE COUNTY
TRENTON
BROWNSTOWN TWP
GROSSE ILE
WOODHAVEN
FLAT ROCK
GIBRALTAR
ASH TWP
ROCKWOOD
SOUTH ROCKWOOD
BERLIN TWP
Detroit River
Ecorse River
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LEGEND
UNPAVED ROADWAY
ALL MOVEMENTS-24 HOURS
ALL MOVEMENTS-6AM to 6PM.
INTERSECTION TURNING MOVEMENTS 6AM. to 6PM.
RAMP COUNTS 6AM. to 4PM.
DIRECTIONAL COUNTS 6AM. to 4PM.
TRUCK COUNT IN & OUT OF PLANT 6AM. to 4PM.
TRAFFIC COUNT LOCATIONS
Wilbur Smith and Associates
FIGURE 7

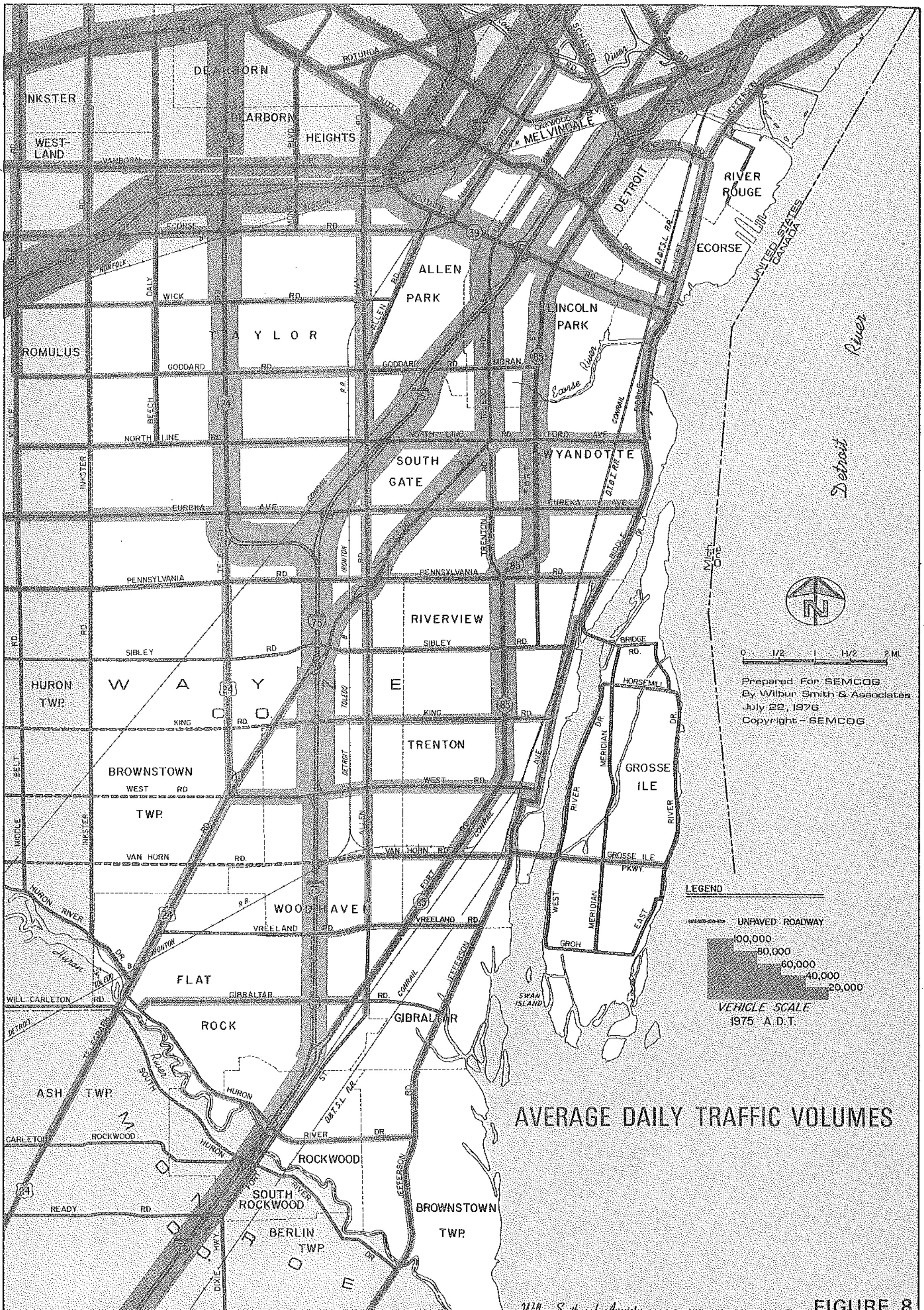
graphically portrayed in Figures 8, 10, 11, and 12. Tabulations of Manual Vehicle Classification Counts are found in Appendix Table 3 for various intersections along Jefferson Avenue, Fort Street, Pennsylvania Road, Dix/Toledo Road, Allen Road, Telegraph Road, and I-75.

Average Daily Traffic Volumes - Average 1975 daily traffic volumes (car and truck) are shown in Figure 8. This figure represents a composite of Average Daily Traffic (ADT) information supplied by the Michigan Department of Highways and Transportation, and the field surveys.

The heaviest volumes traverse Interstate Routes 75 and 94 with substantial volumes also recorded on roads connecting these two facilities, such as Southfield and Telegraph Roads. Heavy volumes are also carried on Michigan Avenue (U.S. Route 12) north of the study area and on Fort Street (Michigan Route 85) running north-south within the study area.

1. Interstate Roadways - Approximately 68,000 vehicles traverse the busiest portion of Interstate 75 between Pennsylvania Road and Goddard Road during a 24-hour period as compared with 43,800 vehicles per day (VPD) using a portion of I-75 between Fort Street and South Huron River Road. The other major Interstate route in the study area environs, I-94, carries approximately 84,000 vehicles per day. Michigan Avenue, which parallels Interstate 94, carries 56,000 VPD on several short sections.

2. Other Roadways - Two major roadways connect Interstates 94 and 75. Telegraph Road, in the northwest portion of the study area, (U.S. Route 24) carries approximately 56,000 VPD. The second major link is Southfield Road in the north central region which carries approximately 60,000 vehicles per day.



AVERAGE DAILY TRAFFIC VOLUMES

FIGURE 8

Several north-south routes which pass through the Downriver Area in addition to Interstate 75, are Telegraph Road, Fort Street, Toledo Road, and Jefferson Avenue, each carrying substantial volumes.

Telegraph Road north of its link to I-75 carries an average of 60,000 vehicles per day. Fort Street carries an average of 42,000 vehicles per day over its business sections between Pennsylvania Road and Southfield Road, with volumes as high as 54,000 vehicles per day. The section of Toledo Road between its two crossings of I-75 carries an average of 50,000 vehicles per day. Jefferson Avenue, the easternmost arterial in the study area, carries an average of 16,000 vehicles per day. This volume increases to almost 25,000 north of Ford Avenue and volumes continue on Jefferson to the intersection of Schaefer Road, where the volumes drop back to approximately 16,000, as Jefferson Avenue enters the City of Detroit.

East-West Volumes

Heaviest ADT volumes occur in the northern portion of the study area and are in the vicinity of Southfield Road. Southfield serves as a connector for the River Rouge/Ecorse area and Interstates 75 and 94 with an ADT of approximately 50,000 vehicles. Volumes are slightly higher on the section between the Interstates.

East-west roads carrying over 20,000 vehicles per day between the riverfront road (Jefferson-Biddle) and I-75 include:

- Schaefer Road (Coolidge Road);
- Outer Drive;
- North Line Road (Ford Avenue);
- Eureka Avenue; and,
- West Road.

Traffic drops off significantly as the routes continue west past I-75. The only major exceptions are West Road - 26,000 ADT; and Eureka Avenue - 20,000 ADT.

Truck Volumes

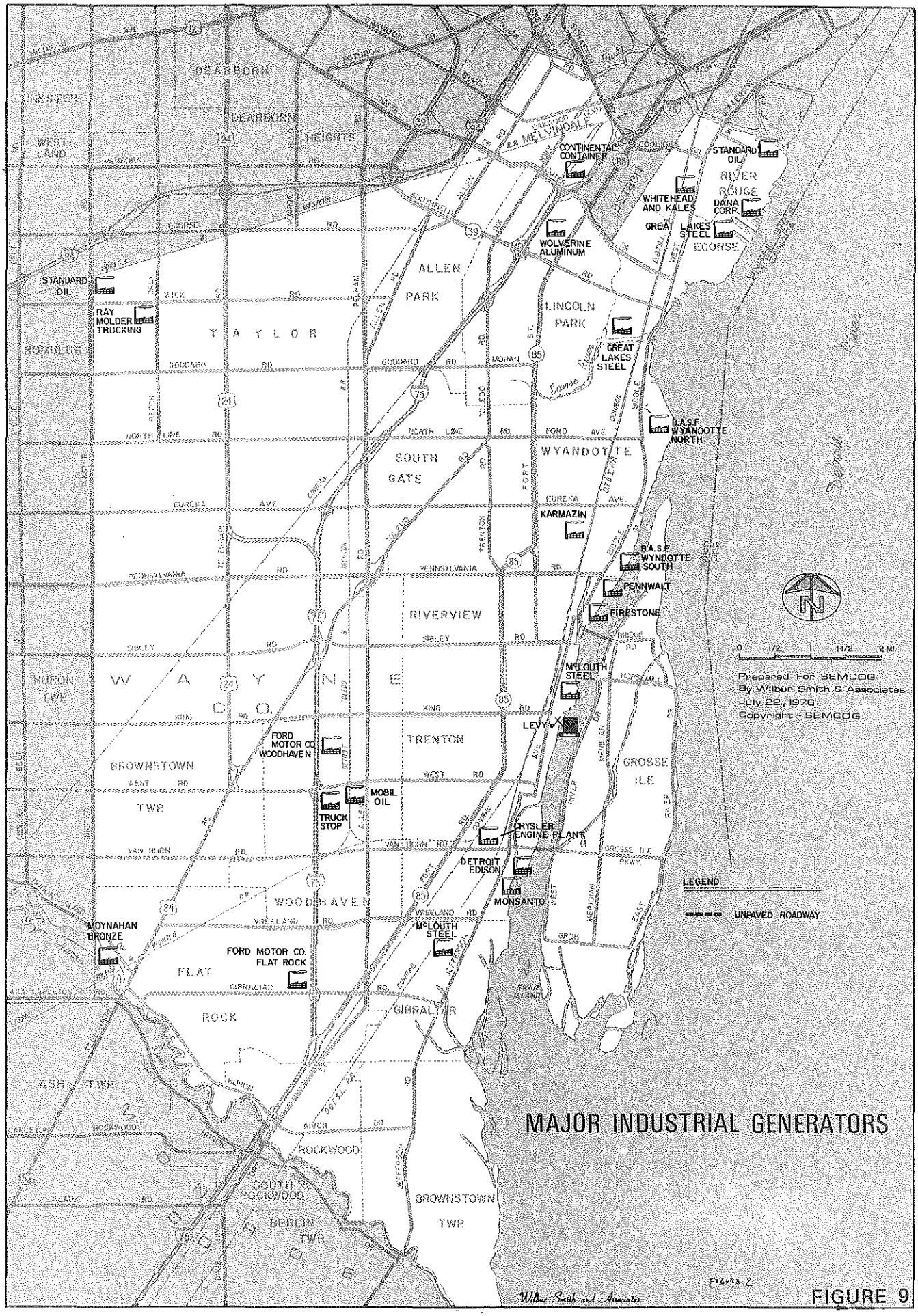
Truck volumes in the Downriver Area reflect industrial locations and street patterns. The major industrial generators are graphically depicted in Figure 9. Appendix Table 1 further details industry by type and employment by locality.

Twenty-four hour 1976 "heavy-truck" volumes (i.e., for tractor-trailer units) are shown in Figures 10, 11, and 12.

- Figure 10 depicts areawide flows;
- Figure 11 presents mainline and ramp movements along I-75; and,
- Figure 12 portrays volumes along Jefferson Avenue and intersecting streets.

The major "heavy-truck" volumes traverse I-75 in the Downriver Area. North and southbound operations are almost balanced in magnitude with an average of 4,000 heavy trucks per day in each direction. Several interchanges have ramps carrying heavy-truck traffic which exceed 300 trucks per day including the following:

- West Road/I-75 - all approaches.
- Telegraph Road Connector/I-75 - all approaches.
- Pelham-Allen Road/I-75 - northbound off-ramp and southbound on-ramp from I-75.
- North Line Road/I-75 - northbound on-ramp and southbound off-ramp from I-75.
- Southfield Road/I-75 - all ramps except northbound on-ramp to I-75.
- Schaefer Road/I-75 - all ramps.


DEARBORN
INKSTER
DEARBORN HEIGHTS
WEST-LAND
McLVINDALE
CONTINENTAL CONTAINER
STANDARD OIL
RIVER ROUGE
WHITEHEAD AND KALES
DANA CORP.
GREAT LAKES STEEL
ECORSE
WOLVERINE ALUMINUM
ALLEN PARK
LINCOLN PARK
STANDARD OIL
RAY MOLDER TRUCKING
TAYLOR
ROMULUS
GREAT LAKES STEEL
B.A.S.F WYANDOTTE NORTH
SOUTH GATE
WYANDOTTE
KARMAZIN
B.A.S.F WYANDOTTE SOUTH
PENNWALT
FIRESTONE
RIVERVIEW
HURON TWP
WAYNE COUNTY
McLOUTH STEEL
LEVY
FORD MOTOR CO. WOODHAVEN
TRENTON
GROSSE ILE
BROWNSTOWN TWP
MOBIL OIL
TRUCK STOP
CHRYSLER ENGINE PLANT
DETROIT EDISON
MONSANTO
WOODHAVEN
MOYNAHAN BRONZE
FORD MOTOR CO. FLAT ROCK
McLOUTH STEEL
FLAT ROCK
GIBRALTAR
ASH TWP
ROCKWOOD
SOUTH ROCKWOOD
BERLIN TWP
BROWNSTOWN TWP
0 1/2 1 1½ 2 MI.
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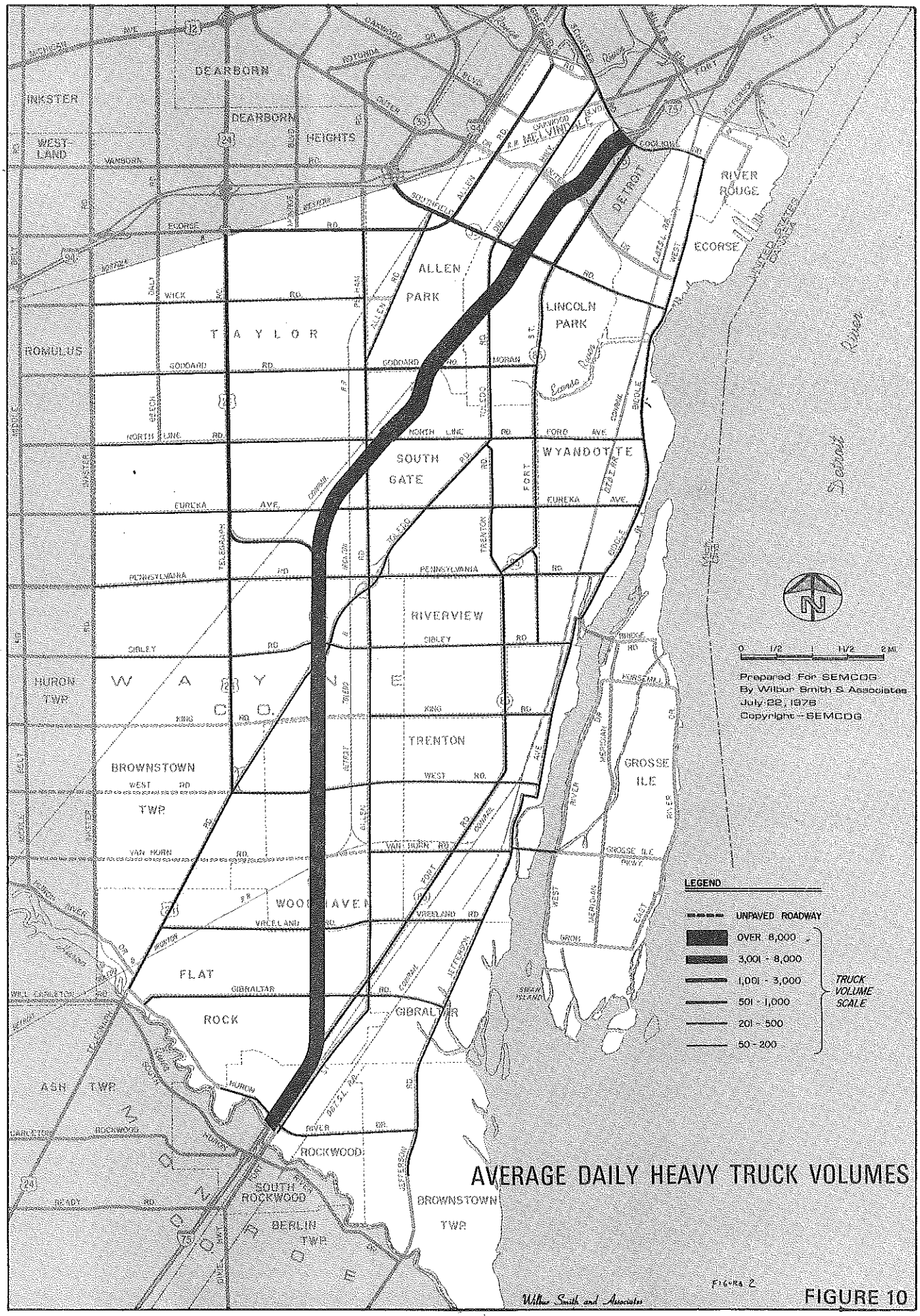
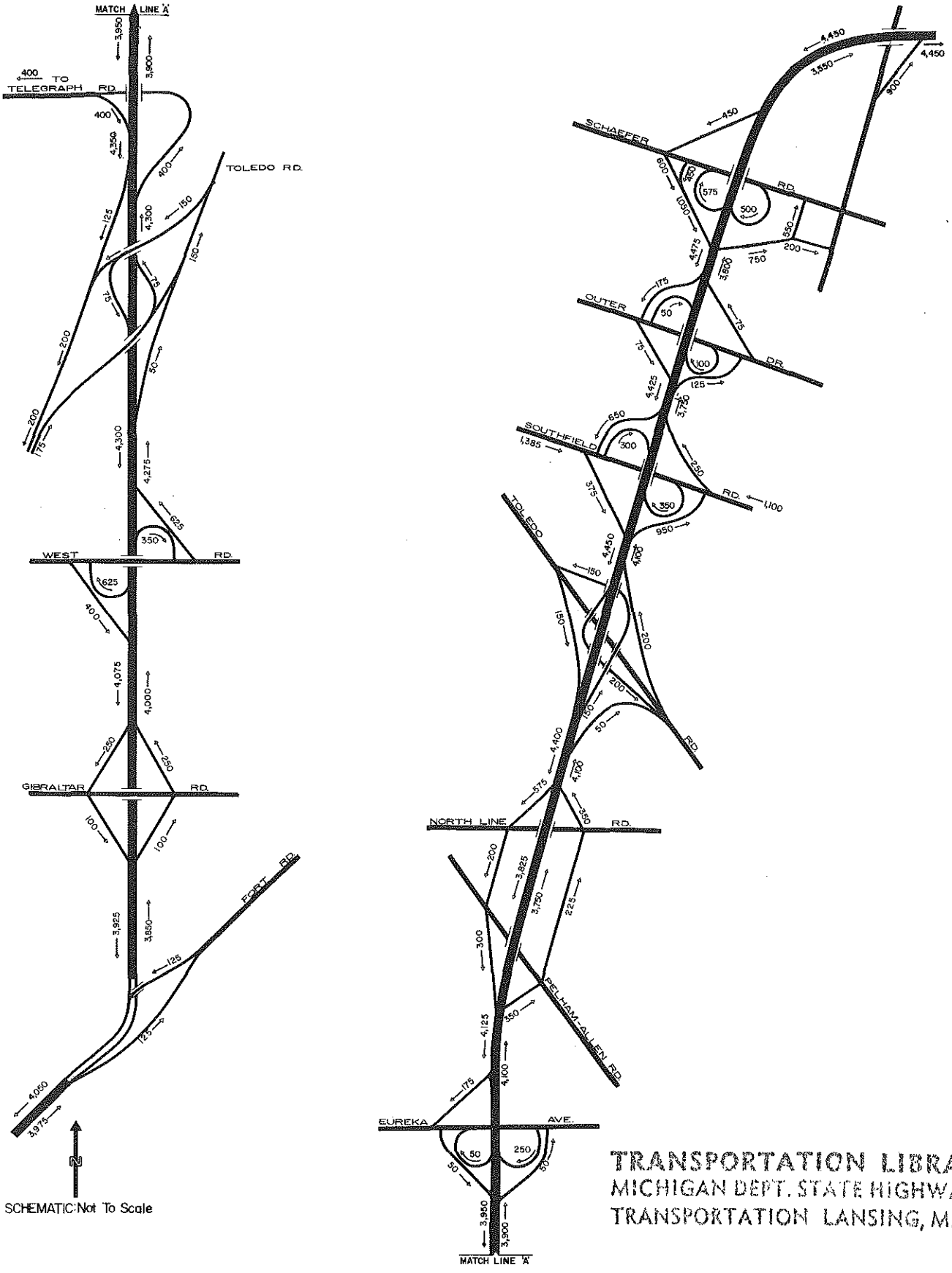
LEGEND
UNPAVED ROADWAY
MAJOR INDUSTRIAL GENERATORS
Wilbur Smith and Associates
FIGURE 2
FIGURE 9



AVERAGE DAILY HEAVY TRUCK VOLUMES

Wilbur Smith and Associates

FIGURE 10

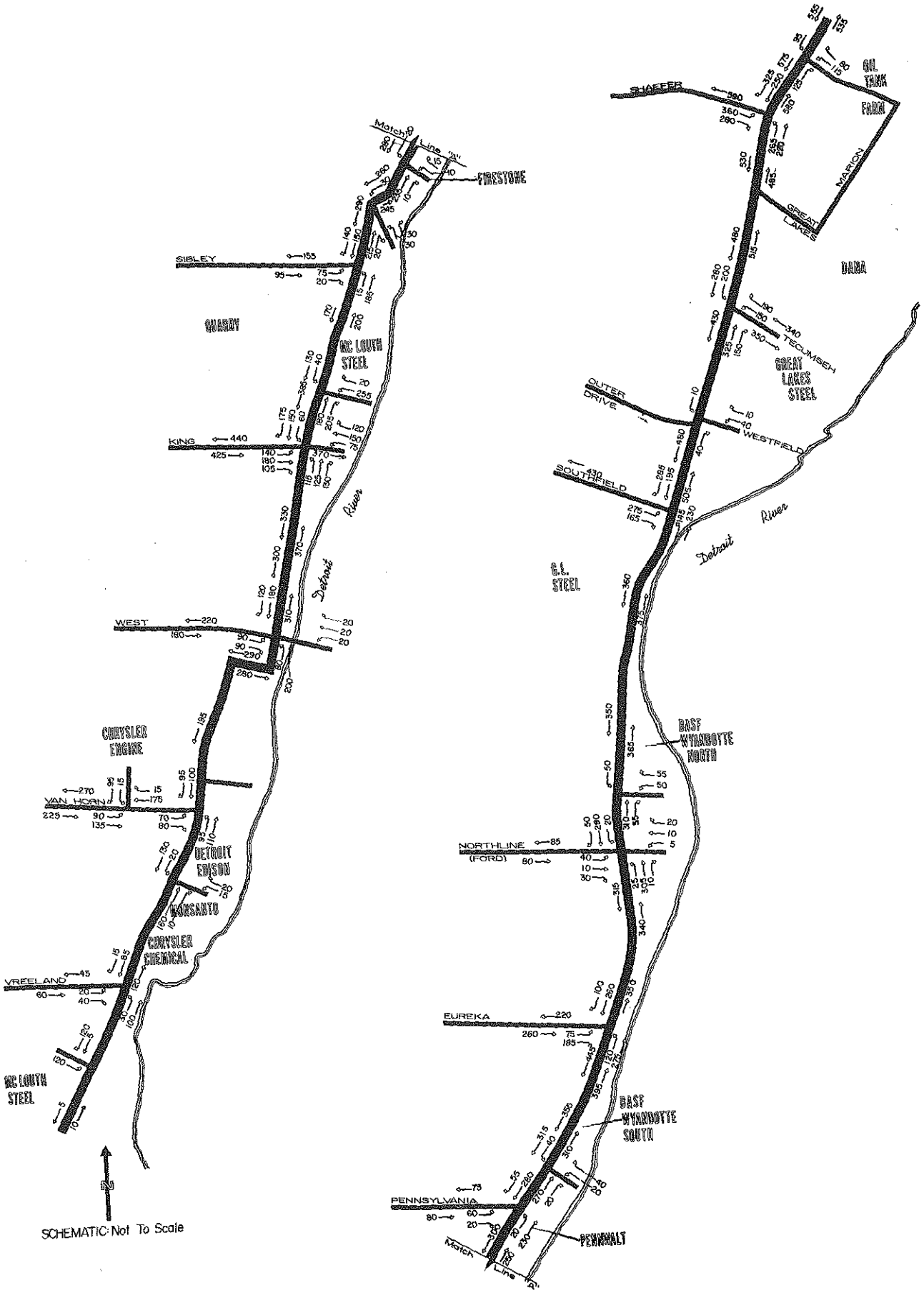


TRANSPORTATION LIBRARY
MICHIGAN DEPT. STATE HIGHWAYS & TRANSPORTATION LANSING, MICH.

AVERAGE DAILY HEAVY TRUCK VOLUMES
ALONG I-75, 1976

Wilbur Smith and Associates

FIGURE 11



AVERAGE DAILY HEAVY TRUCK VOLUMES
ALONG JEFFERSON AVENUE, 1976

FIGURE 12

Wilbur Smith and Associates

The heaviest volume handled by any one ramp in the I-75 corridor is the southbound on-ramp from Schaefer Road, which carries 1,050 heavy trucks per day. Its counterpart, the northbound off-ramp, carries 750 vehicles per day. Approximately 950 trucks per day use the northbound off-ramp from I-75 to Southfield Road. The high volume locations at Southfield and Schaefer Roads are a result of trucks desiring to make interconnections with industry in the northern portion of the Downriver area and the Interstate connection with I-94 to the west.

Jefferson Avenue heavy-truck volumes are depicted on Figure 12. These volumes can be broken up into three basic regions:

- South - carries approximately 200 trucks each way extending from the southern edge of the study area to approximately West Road in the City of Trenton.

- Central - throughout Trenton, north to Southfield Road in the City of Ecorse with volumes up to approximately 400 vehicles per day in each direction.

- North - From Southfield Road to River Rouge, truck usage increased to over 500 truck trips in each direction per day.

Several east-west streets carry more than 200 trucks per day in each direction including Eureka Avenue, King Road, West Road and Van Horn Road. Two major east-west roads, Schaefer and Southfield, carry 800 and 1,000 trucks per day, respectively, and serve as connectors from the riverfront industries to Interstates 75 and 94.

Truck Travel Patterns and Operations

Two basic categories of truck operation exist in the study area. They are as follows:

1. Interplant Traffic - This traffic links two separate plants of the same company. One plant manufactures a portion of the other plant's finished product or one refines raw materials for use by the other.

2. External Traffic - Traffic in this category leaves the industry with the finished product or a partially finished product, taking it either to a central dispatching area, where the goods are then moved by truck to another region possibly outside of the study area, or taking it directly to an internal or external destination if company trucks are used.

The major differences between the two categories of truck traffic are length of trip and type of goods. Interplant traffic operates on a more concentrated time schedule usually carrying bulky raw materials or unfinished goods. External truck traffic occurs in a more variable pattern, with loaded trucks leaving the Downriver plants for both internal, Detroit-area, and external, other Michigan, and out-of-state destinations. These movements may be made by both company trucks in which case the loaded trucks move directly from their origins to either near or far destinations, and by for-hire carriers (LTC shipments) which will be routed to the carrier's local terminal for consolidation with other loads to either internal or external destinations. The resulting patterns of truck movement reflect this diversity, which relates directly to the operation of the originating plant, whether their shipments are made primarily with their own trucks or with for-hire trucks and whether their shipments are primarily local or long-distance.

Plant Traffic - Truck origins and destinations were compiled from field observations, industry-supplied information, and truck dispatch logs. Patterns for selected industries are summarized in Table 1 and Figures 13 through 16. Detailed patterns for the following industries are presented in Appendix Table 2.[1]

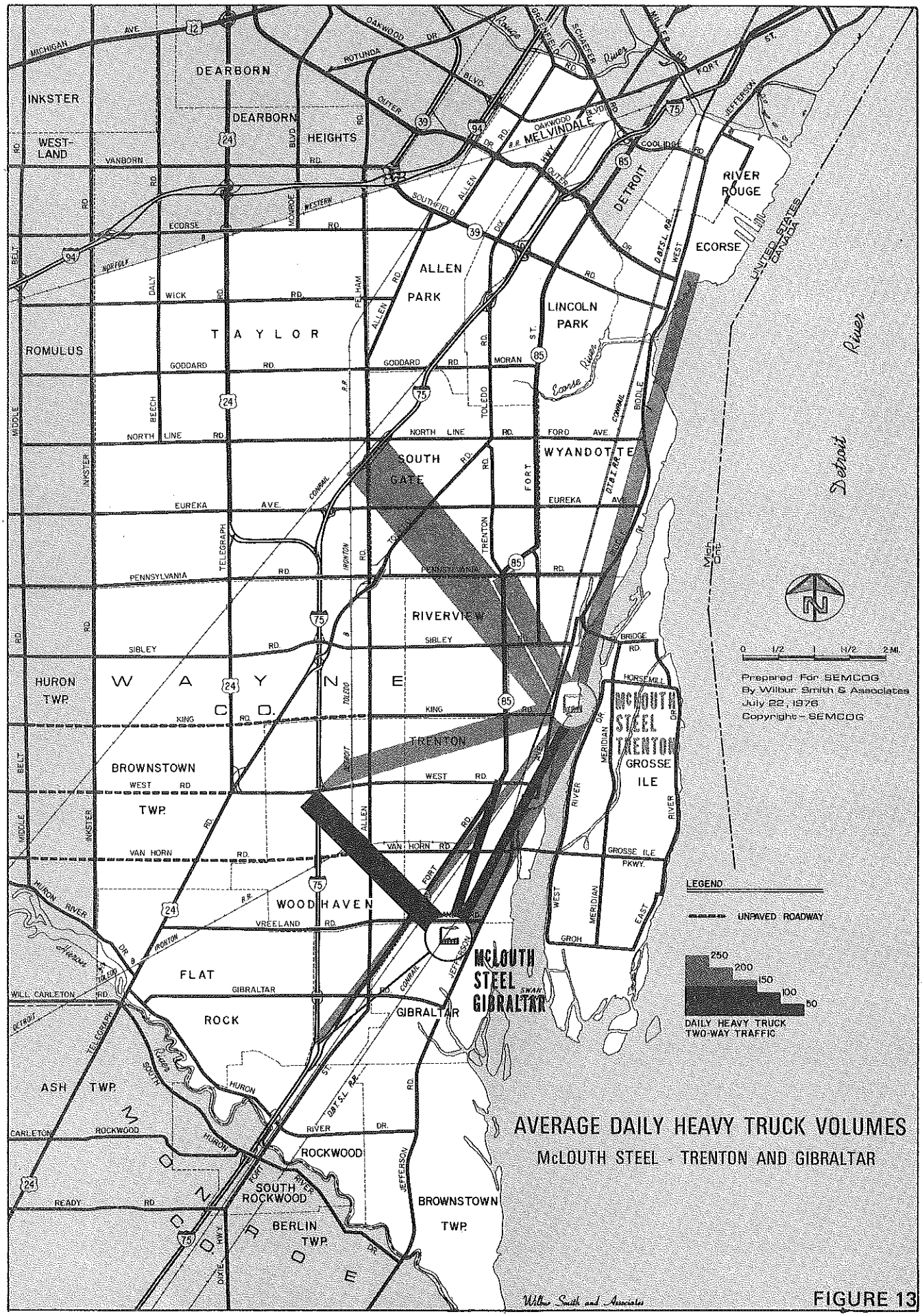
- Ford Motor Company - Woodhaven Stamping Plant;
- Firestone Steel Products Company - Riverview;
- Moynahan Bronze Company - Flat Rock;
- Chrysler Engine Plant - Trenton.

The travel pattern surveys indicate that most of the truck trips within or leaving the Downriver area tend to use I-75. The sample industries surveyed show a relatively smaller use of Jefferson, Table 1. These figures, however, understate the use of Jefferson since many of the I-75-bound trucks use the roadway for a portion of their trip.

1. McLouth Steel - Daily two-way heavy-truck traffic generated by McLouth Steel operations are illustrated on Figure 13 for the Trenton and Gibraltar plants. The predominant movement from the McLouth-Gibraltar plant is to Interstate 75 north. Daily movements between the Trenton and Gibraltar plants approximate 40 heavy-truck two-way trips originating in Gibraltar.

Major movements from the Trenton plant are to the northwest with approximately 220 daily two-way trips recorded. Other movements are from the plant to Trenton Road, West Road, and north and south along Jefferson Avenue. To the north on

(1) Full compilation of data was restricted by the lack of access to certain operational information by several industries within the area, although data in modified format were obtained from several additional shippers.



AVERAGE DAILY HEAVY TRUCK VOLUMES

McLOUTH STEEL - TRENTON AND GIBRALTAR

Wilbur Smith and Associates

FIGURE 13

Table 1

ORIENTATION OF HEAVY-TRUCK TRAFFIC IN DOWNRIVER AREA

PLANT	NO. OF TRUCKS	PERCENTAGE DISTRIBUTION			
		I-75	Jefferson	Other	Total
Ford Motor Co. Woodhaven	137	94	4	2	100
Firestone Steel Products Riverview	89	68	3	29	100
Moynahan Bronze	7	14	--	86	100
Chrysler Engine Plant	114	85	2	13	100

SOURCE: Trade trip surveys by industries.

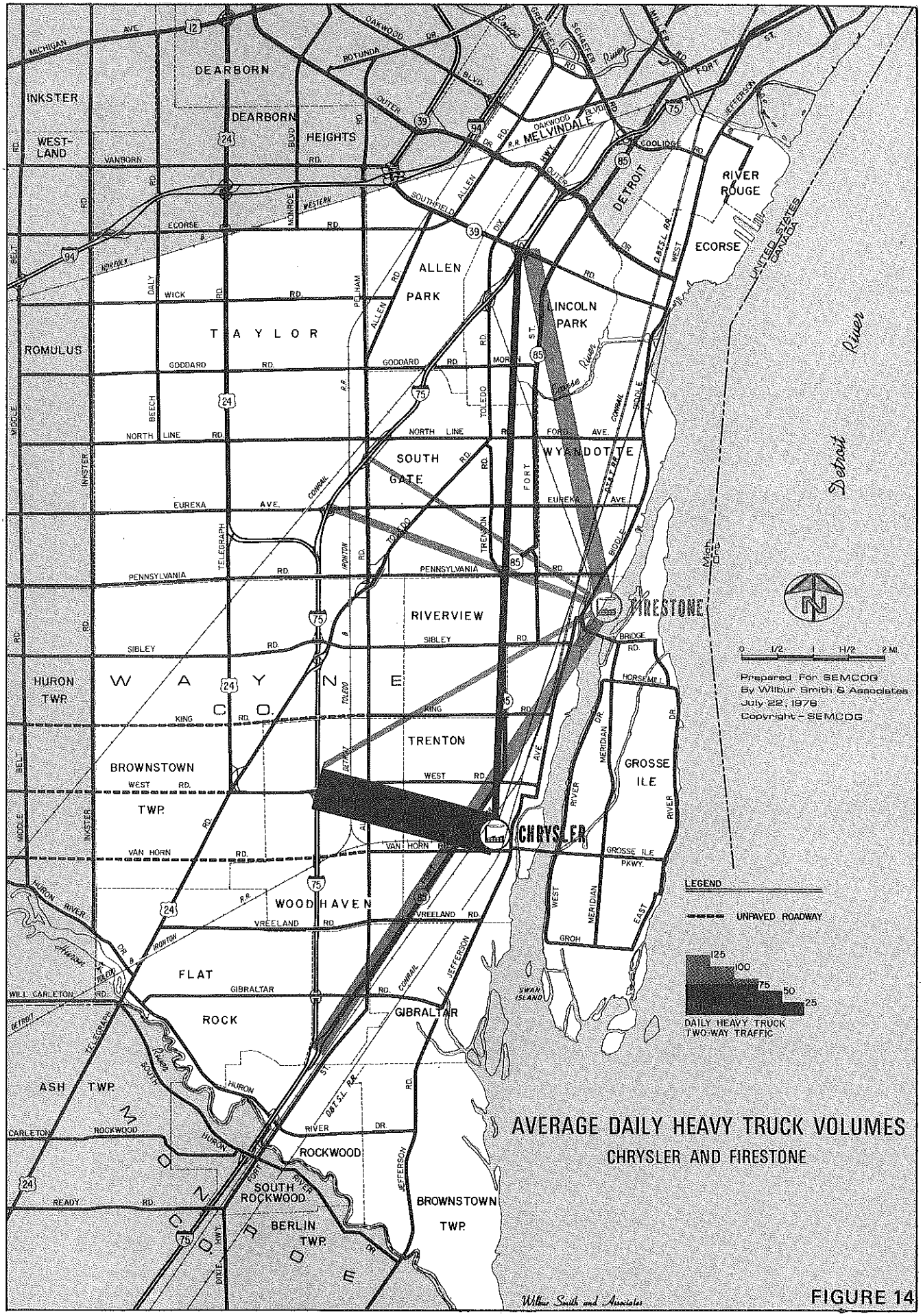
Jefferson, 70 two-way truck movements are noted. South on Jefferson, to the Gibraltar Plant, 60 two-way trips are made.

2. Firestone and Chrysler - Chrysler Engine and Firestone Tire and Rubber Company truck travel patterns are shown in Figure 14.

- The Chrysler Engine plant, located in Trenton, generates 85 heavy-truck two-way trips west to Interstate 75 each day. All other movements are north along Jefferson and Fort Street.

- Firestone Tire and Rubber Company, whose wheel and rim plant is located in Riverview, has two predominant movements: to the south for connections with Interstate 75 via Fort Street, and to the north via Trenton and Fort Street to I-75. Both directions handle more than 30 daily heavy truck two-way movements each with the movement to the south reflecting out-of-state traffic to Ohio and the east.

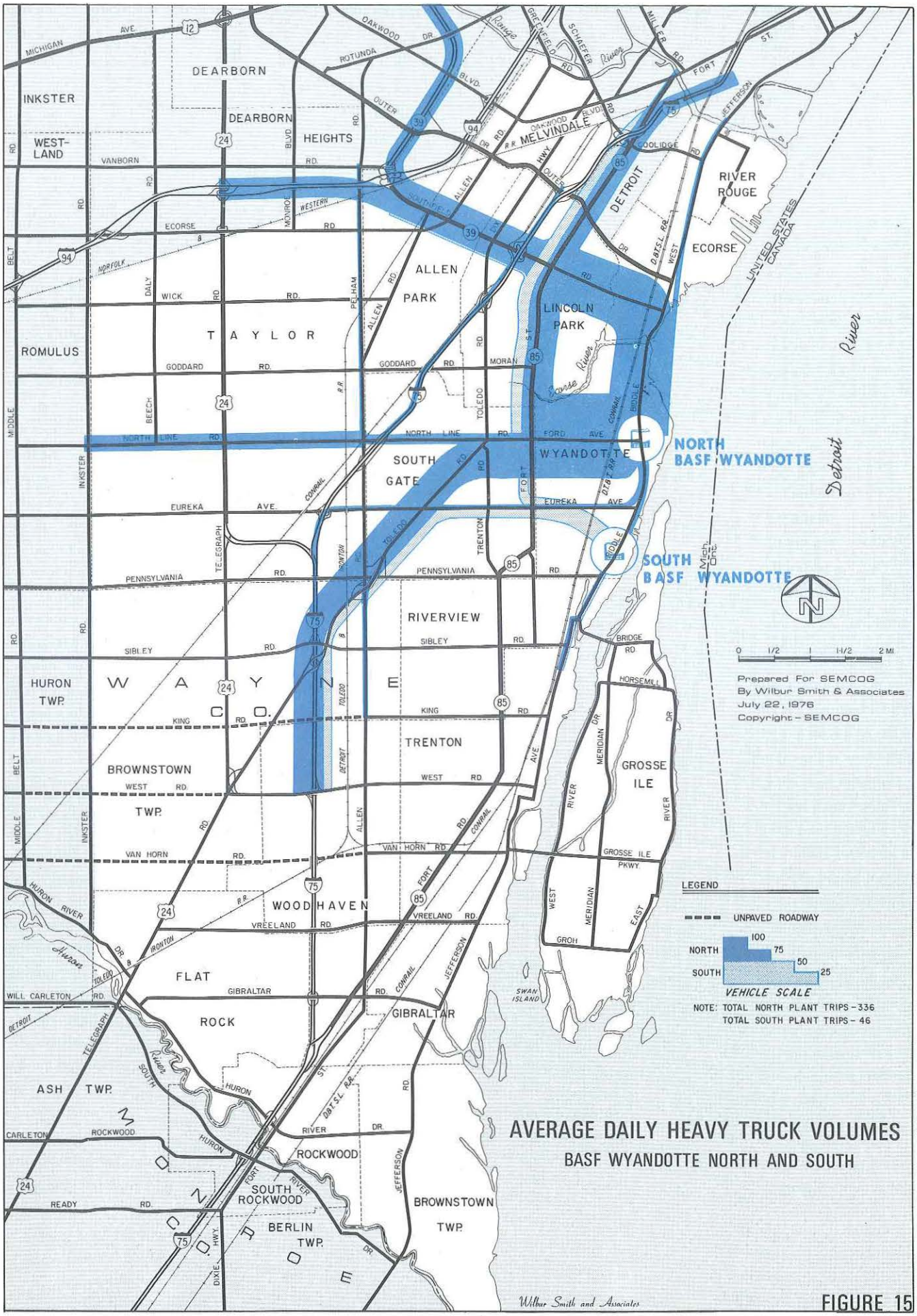
3. BASF - Wyandotte - Truck travel patterns for BASF's two Wyandotte plants are shown in Figure 15. The North plant generates the heaviest truck volume, approximately 125 plant trips to the north along Jefferson and 175 plant trips generated going west along Ford Avenue. Traffic to the north along Jefferson generally turns to Southfield Road and to the north along Fort or continues to Interstate 94 and on Southfield north out of the study area. Traffic to the west along Ford Avenue splits at Fort Street, with part continuing along Ford (North Line) Road and part to the north on Fort Street. Most traffic on Ford (North Line) Road is split with the bulk continuing southwest along Toledo Road for connections to Interstate 75 south. Minor movements along Jefferson to the north, Jefferson to the south, and Eureka Avenue to the west are also noted.



AVERAGE DAILY HEAVY TRUCK VOLUMES
CHRYSLER AND FIRESTONE

Wilbur Smith and Associates

FIGURE 14


DEARBORN
INKSTER
DEARBORN HEIGHTS
WEST-LAND
MELVINDALE
DETROIT
RIVER ROUGE
ECORSE
ALLEN PARK
LINCOLN PARK
ROMULUS
TAYLOR
SOUTH GATE
WYANDOTTE
NORTH BASF WYANDOTTE
SOUTH BASF WYANDOTTE
RIVERVIEW
HURON TWP.
WAYNE CO.
TRENTON
BROWNSTOWN TWP.
GROSSE ILE
WOODHAVEN
FLAT ROCK
GIBRALTAR
ASH TWP.
ROCKWOOD
SOUTH ROCKWOOD
BERLIN TWP.
BROWNSTOWN TWP.
MONROE CO.
Detroit River
Rouge River
Huron River
South River
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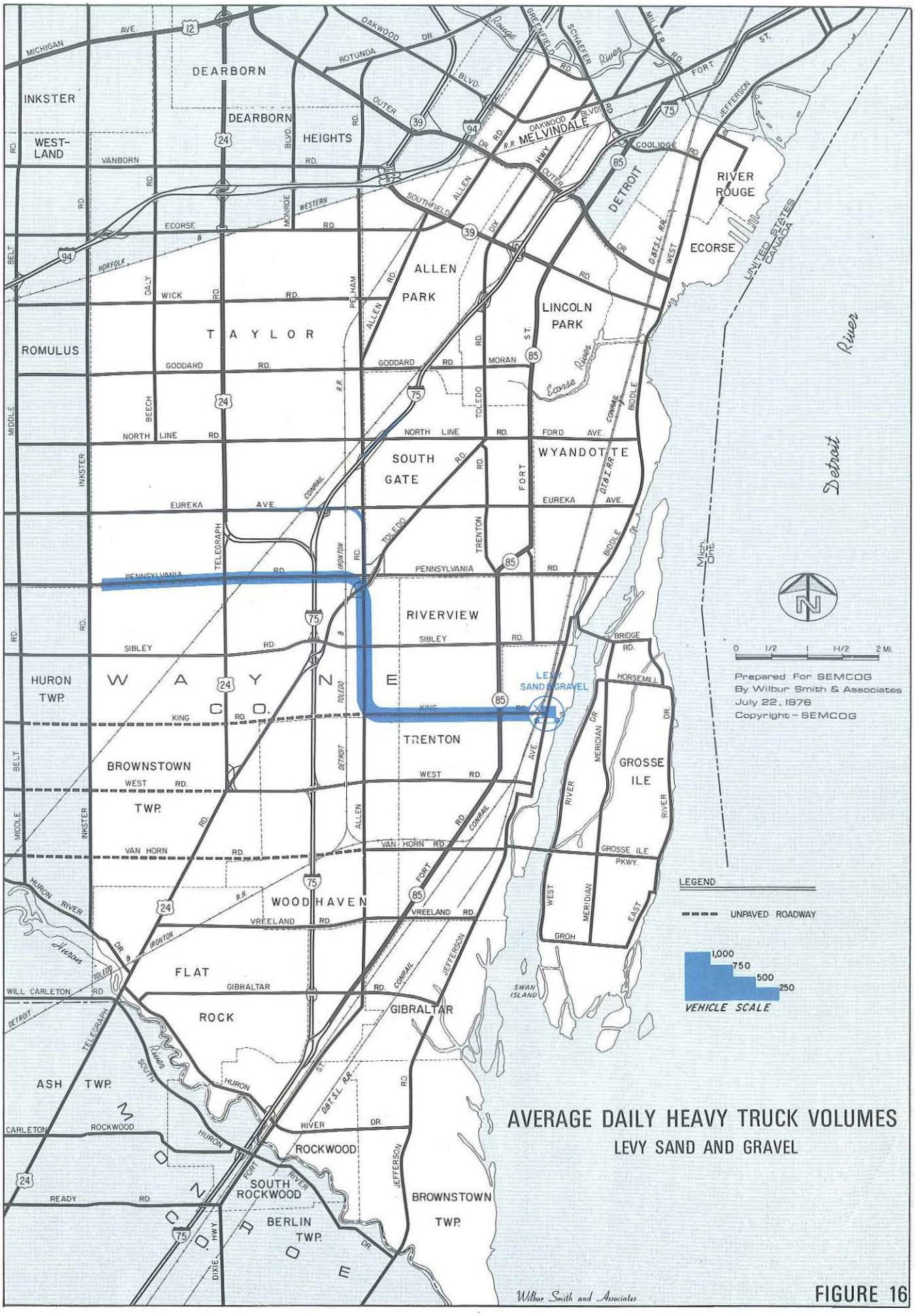
LEGEND
UNPAVED ROADWAY
NORTH
SOUTH
VEHICLE SCALE
NOTE: TOTAL NORTH PLANT TRIPS - 336
TOTAL SOUTH PLANT TRIPS - 46
AVERAGE DAILY HEAVY TRUCK VOLUMES
BASF WYANDOTTE NORTH AND SOUTH
Wilbur Smith and Associates
FIGURE 15

Truck trips from the south plant of BASF Wyandotte are only a fraction of the North Plant volume and generally proceed northwest to the Eureka Avenue-Fort Street intersection where they split to proceed north on Fort Street toward Detroit and south via Eureka Avenue-Toledo Road to Interstate 75.

4. Levy Sand and Gravel - Truck movements on a 24-hour basis for Levy Sand and Gravel are depicted on Figure 16. The bulk of Levy's truck traffic within the 24-hour period travels west on King Road from their yard at Jefferson and King, north on Allen Road to the interchange with Toledo Road and Pennsylvania Road. Trucks disperse at this intersection with the majority of traffic going west along Pennsylvania Road and smaller volume continuing along Allen Road northbound to connections with Eureka Avenue and Interstate 75 to the north. The total number of vehicle trips attributed to the Levy operation are 300 truck trips per day for a typical August, 1976, day.

Through Truck Traffic (Out-of-Area) - Much truck traffic within the Downriver area, particularly along I-75, involves goods movement through the Downriver area. These trucks only use the Downriver corridor as a travelway passing between external origins and destinations.

ADT volumes for truck traffic on these regional highways at the fringe of the Downriver area are shown in Figure 17. Four basic directions of truck operation to and from the study area are noted. From the south, nearly 10,000 trucks per day use U.S. Route 24 (Telegraph Road) and Interstate 75. From the west, on State Route 153 (Ford Road), U. S. Route 12 (Michigan Avenue), and I-94 (Detroit Industrial Expressway), a total of nearly 15,000 trucks per day was counted with the predominant traffic being handled by Interstate 94. Two highways from the north State Route 39 (Southfield Freeway), and U.S. Route 24 (Telegraph Road) contribute nearly 12,000 trucks per day to the roadway network. To the northeast, a


DEARBORN
INKSTER
DEARBORN HEIGHTS
WEST-LAND
MELVINDALE
RIVER ROUGE
ECORSE
ALLEN PARK
LINCOLN PARK
DETROIT
TAYLOR
ROMULUS
SOUTH GATE
WYANDOTTE
RIVERVIEW
HURON TWP.
WAYNE CO.
TRENTON
BROWNSTOWN TWP.
GROSSE ILE
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GIBRALTAR
ASH TWP.
ROCKWOOD
SOUTH ROCKWOOD
BERLIN TWP.
BROWNSTOWN TWP.
SWAN ISLAND
LEVY SAND & GRAVEL
Detroit River
Rouge River
Ecorse River
Huron River
South River
Michigan
Ohio
LEGEND
UNPAVED ROADWAY
1,000
750
500
250
VEHICLE SCALE
0 1/2 1 1/2 2 MI.
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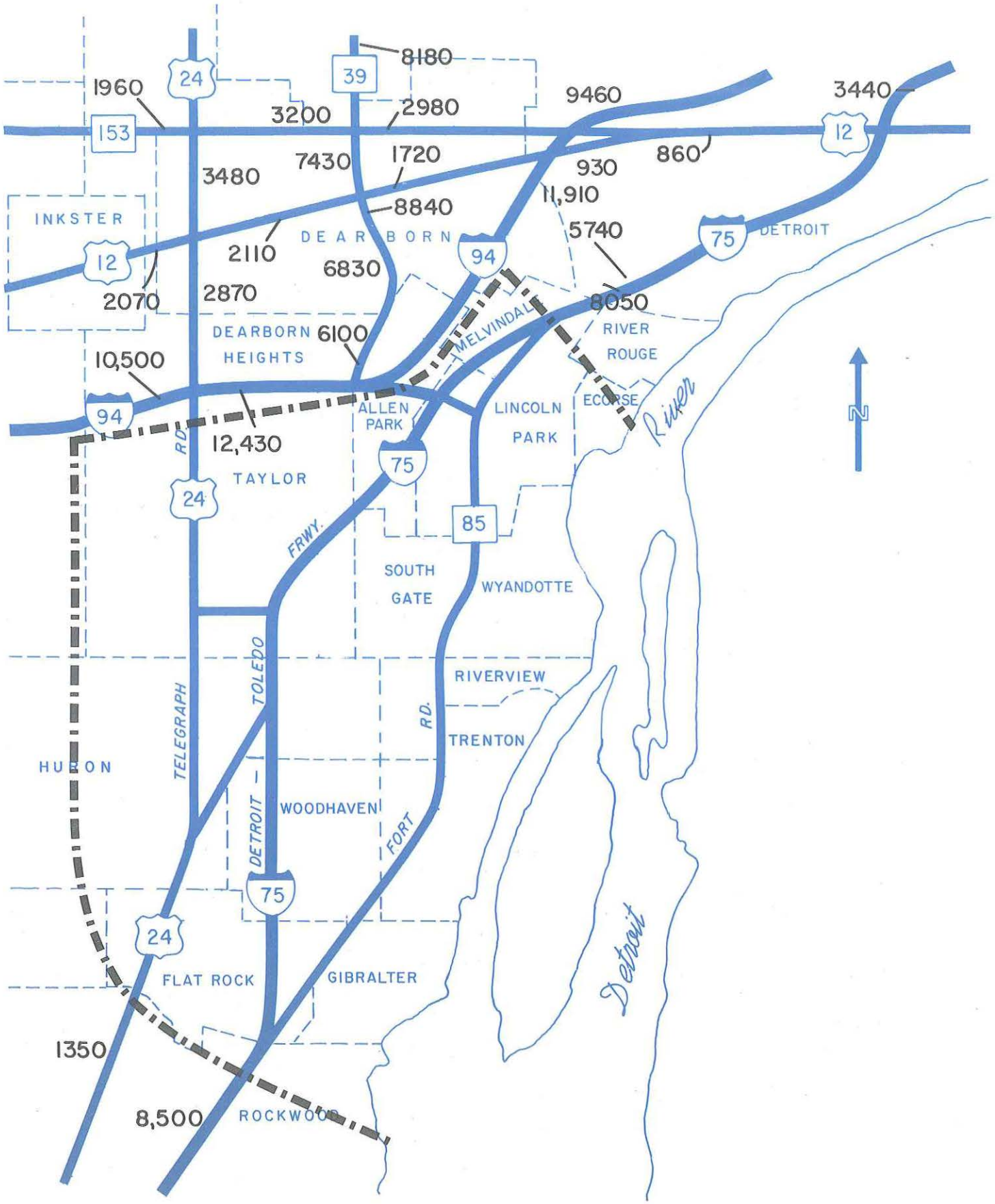
AVERAGE DAILY HEAVY TRUCK VOLUMES
LEVY SAND AND GRAVEL
Wilbur Smith and Associates
FIGURE 16



THROUGH (OUT-OF-AREA) TRUCK TRAFFIC – 1976

Wilbur Smith and Associates

FIGURE 17

total of nearly 19,000 truck movements per day use Interstate Routes 94 and 75 with a minor portion being carried by U.S. Route 12 (Michigan Avenue).

Truck Routing Ordinances

Requests were made of the local municipalities to obtain copies of existing truck ordinances in an effort to identify the level of regulation currently imposed on truck operations in the study area. Many communities advised that they had no truck ordinances per se and some that the only ordinances on truck operations were those dealing with truck weight limits and parking restrictions.

Basic truck route regulations have been developed by Wayne County and the State of Michigan since roads maintained by State and County are those responsible in nearly every instance for carrying heavy trucks to, from, and through the study area communities.

Wyandotte passed an amended truck ordinance in November, 1975, which modified, in only minor details, the provisions of an ordinance which had been in effect over ten years. This ordinance lists the streets designated "permissible truck routes" which include:

Biddle Avenue (West Jefferson),
Fort Road (M-85),
Ford Avenue (North Line),
Eureka Road,
Pennsylvania Road, and,
Quarry Road.

These are chiefly the truck routes previously indicated in Figure 5 for Wyandotte, but Pennsylvania is not included on the Wayne County map of designated truck routes as a county Class A route.

Ecorse has a truck ordinance which dates back to 1954, in which the following truck routes are identified:

West Jefferson Avenue,
Southfield Road,
Outer Drive,
High Street,
South side of Visger Road,
Fourth Street, Southfield to Mill,
East Westfield Street, and,
Mill Street.

The Ecorse ordinances deals extensively with procedures to permit "extraordinarily heavy loads"to operate on their streets, which is a different provision than any included in the Wyandotte ordinance. The only roads in the Ecorse list which have been similarly designated by Wayne County are West Jefferson Avenue and Southfield.

Review of a more extensive Michigan municipal truck ordinance, for Lansing, suggests the following matters subject to muncipal regulation:

Truck routes;
Size restriction, use of truck routes required, miscellaneous regulations;
Restrictions as to use of certain commercial vehicles in the central business district;
Spilling loads on streets prohibited; and,
Size, weight, and load restrictions.

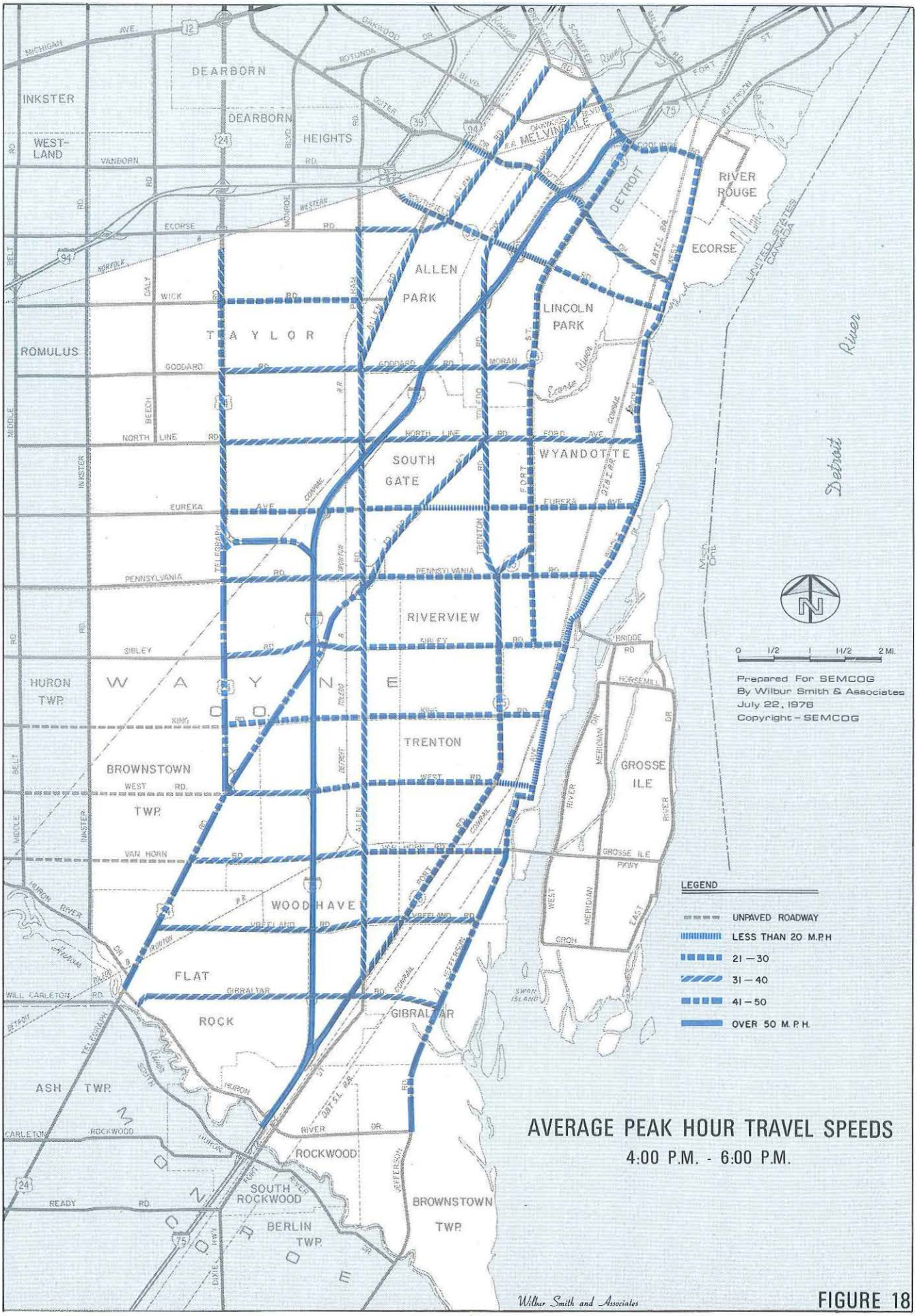
This last item takes nine pages of the Lansing traffic ordinance. Under the "truck route" heading, all state truck lines within the city limits are designated as truck routes.

In summary, it appears that Downriver communities have not attempted to tightly regulate track operations, based on the status of municipal truck ordinances in area communities. Some of the impacts of trucks operating in residential areas may be addressed through imposition of a restrictive truck ordinance. The need for additional local truck ordinances in most Downriver communities is apparent.

Traffic Conditions

Travel speeds and volume-capacity ratios were analyzed to assess truck and car operating conditions in the Downriver area.

Travel Speeds - Peak hour travel speeds are shown in Figure 18. Speeds over 50 miles per hour occur only on the I-75 roadway section within the Downriver area. Most other major roadways in the corridor have average speeds between 20 and 50 miles per hour. However, a few roadway segments have speeds averaging less than 20 miles per hour. Segments of Jefferson, near Trenton, Riverview and Wyandotte, carry traffic at reduced speeds ranging from 20 to 30 miles per hour. Other roadway segments exhibiting reduced operating speeds are portions of Eureka Avenue, Southfield Road, and Outer Drive. The roadway segments on Southfield and Outer Drive experiencing the reduced speed operations are those segments immediately adjacent to I-75 and I-94. The large number of turning vehicles in these areas contributes to the low travel speeds. Eureka Avenue between Toledo Road and Trenton Road is also restricted by large numbers of turning and parking vehicles entering a relatively dense commercial district.



AVERAGE PEAK HOUR TRAVEL SPEEDS

4:00 P.M. - 6:00 P.M.

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FIGURE 18

Volume-Capacity Comparisons - The adequacy of the road system was tested using the basic techniques developed in the 1965 Highway Capacity Manual.(2)

Level of service, with regard to intersection capacity, describes the quality of traffic flow, as perceived by the driver, and relates to a number of factors influencing the degree of traffic congestion. These factors include traffic interruption, freedom to maneuver, safety, driving comfort, and delays. On a scale of level 'A' to 'F' (free flow to forced flow), level of service 'C' describes the stable condition of traffic operation where drivers occasionally may be restricted in their freedom to select their own speeds or pass other vehicles, and delays may occur due to turning vehicles, but a relatively satisfactory operating speed is still obtained. Level of service 'C' usually represents the level of service the roadway is designed for using peak hour traffic volumes as a guide. This insures that during other periods of the day, levels of service better than 'C' will be realized by drivers using the roadway.

The calculated service volumes for level of service 'C' are presented in Figure 19. As a guide to interpreting this table, volume-capacity relationships having values equal to or less than 1.00 indicate traffic operating at level of service 'C' or better. Values generally exceeding 1.00 on intersection approaches represent a level of service 'D'.

Volume/capacity ratios at selected intersections indicate very few problems at the ramps leading to and from I-75. One entire interchange and one ramp at another interchange are

(2) 1965 Highway Capacity Manual, Special Report 87, issued by the Highway Research Board, National Academy of Sciences.

VOLUME/CAPACITY COMPARISONS – SELECTED LOCATIONS

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FIGURE 19

recorded in Level of Service 'B'. In short, no major problems are apparent on I-75 or its ramps in the study corridor.

Jefferson has few capacity problems in the corridor. Probably the major deficiency along Jefferson occurs in the center of River Rouge at its intersection with Coolidge. At this intersection, the level of service for the left turns onto westbound Coolidge falls to Level of Service 'E'. Eastbound on Coolidge from the Interstate, a slightly reduced level of service occurs.

Slight decreases in the level of service are apparent on the west approach of Pennsylvania Road and the south approach of Jefferson in the southern portion of the City of Wyandotte. Jefferson, in the City of Ecorse as it intersects with Southfield Road, produces a slight reduction in the level of service on the north approach of Jefferson.

Several other intersections within the study area have deficiencies which range from minor to major in nature. The intersection of Allen Road and West Road suffers from only minor reduction in the level of service along both approaches of West Road.

The intersection of Toledo Road, Trenton Road, and North Line Road has major deficiencies on northbound Toledo Road, westbound North Line Road and southbound Toledo Road. Deficiencies at Fort, Pennsylvania, and Trenton appear to occur primarily along Pennsylvania Road due to limited lanes in this area.

Problems in Perspective

The reconnaissance studies and truck travel analysis show that heavy trucks represent five to six percent of the total traffic in the area. No major truck traffic capacity or congestion points were observed; and peak-hour speeds were generally good. Speeds of

less than 20 miles per hour are reported on the following sections of West Jefferson Road: North Line Road to Eureka Road, Pennsylvania Road to Sibley Road, and King Road to West Road. The North Line Road to Eureka Road section is in the Wyandotte CBD and the King Road to West Road section contains the Trenton CBD. Traffic signals, rather than truck-induced delays, are likely to be the prime cause for reduced travel time on these sections of West Jefferson Road.

In sum, from a traffic engineering perspective, no major capacity or congestion problems have been observed. However, the impacts of truck movements extend beyond the physical limits of a given section of roadway. The effects of truck noise, vibration, and air pollution extend into neighboring communities. The studies and analyses indicate that the key problem is the intrusion of large tractor-semi-trailer or full trailer combinations with as many as eleven axles into commercial and residential areas. These vehicles with their heavy loads are not legal in most other states, and are out of scale with the Downriver residential and commercial environment.

The interposition of riverfront industrial and residential-commercial land uses and the orientation of trucks between the Riverfront and I-75, or north-south between adjacent developments, requires trucks to circulate through residential and commercial areas.

Following construction of I-75, a number of major industrial facilities have located along that corridor which provides the major truck traffic linkage from the Detroit area to the south and to the east-west routes such as the Ohio Turnpike, affording the major link to the East from the Detroit area.

In addition to the movement of truck traffic into and out of the Downriver area via the Interstate highway network, there are heavy internal truck movements between various industrial complexes

along the riverfront and also between these individual industrial centers and other industrial sites throughout the Detroit area. The result of this mix of internal and external truck traffic creates both north-south and east-west truck travel demands through the Downriver communities between West Jefferson Street, the major commercial route along the river, and I-75, running along the westerly fringe of the Downriver corridor.

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Chapter 3

DEVELOPMENT OF ALTERNATIVES

The "Downriver Truck Problem" is one of environmental intrusion rather than traffic congestion. It is in this context that the needs for improvement have been recognized by the community. And, it is in this context that improvement concepts have been formulated, evaluated, and refined.

Planning Context

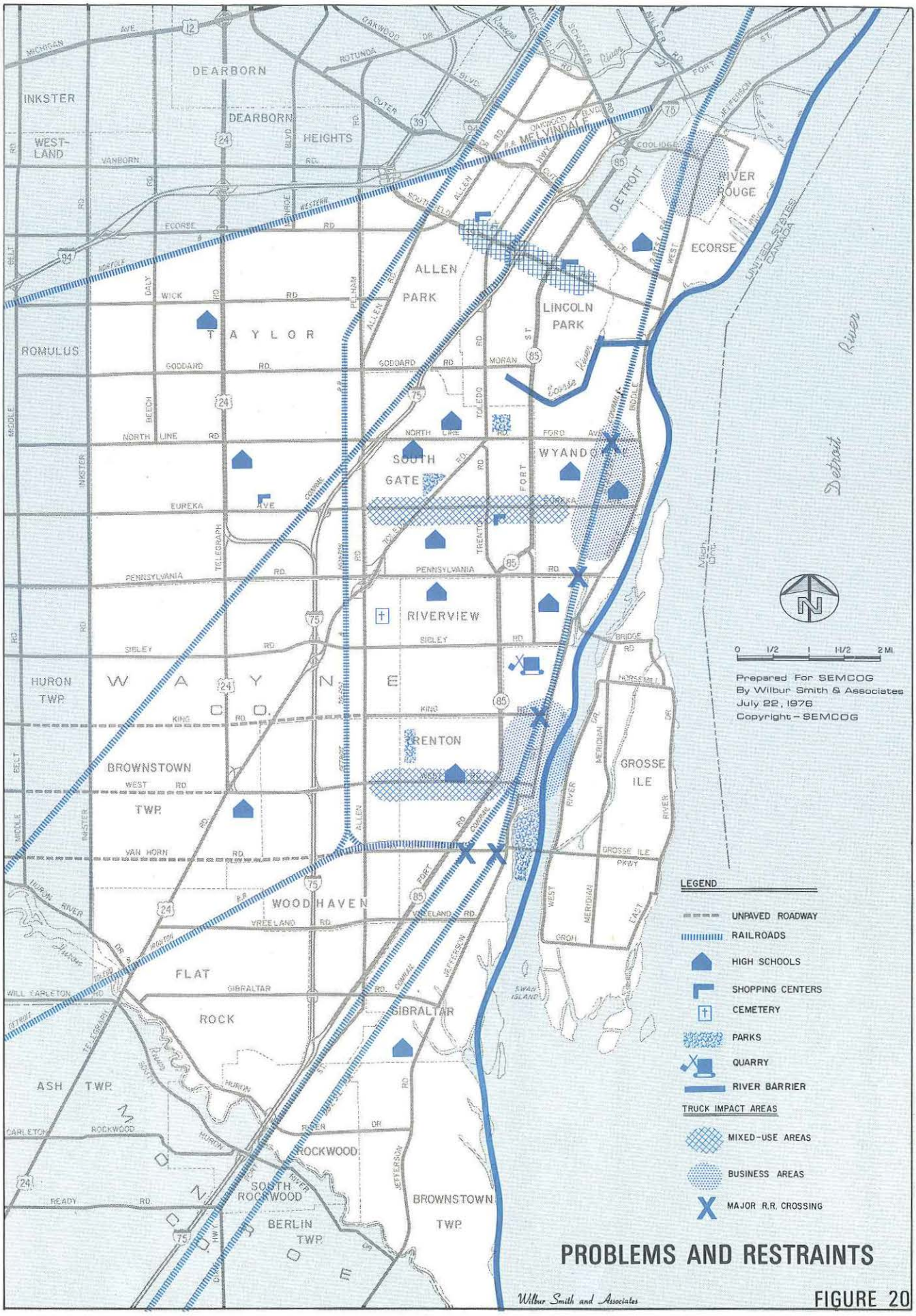
The need to reduce the intrusion of motor trucks in the Downriver area has been long recognized. The truck travel pattern surveys conducted as part of this study, quantified the dimensions of the problem, and provide an objective basis for formulating and assessing options.

Traffic and Environmental Problems - The major truck-land use problems are highlighted in Figure 20. Salient observations, problems and conflicts include the following:

1. The highest "heavy-truck" volumes are found along Jefferson in River Rouge between Marion and Coolidge. Volumes exceed 1,000 per day. Volumes reduce to about 700 in central Wyandotte and to about 200 at the southern end of the Study Area.

2. The heaviest east-west truck volumes, 1,400 heavy-trucks per day, are found along Schaefer Road. East-west truck volumes generally exceed 500 vehicles per day on other major streets with a gradual decline on streets further south in the Downriver area.

3. The heavier truck volumes in the northern part of the area reflect (1) higher densities of industrial activity, and (2) greater proximity to I-75.



PROBLEMS AND RESTRAINTS

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FIGURE 20

4. During peak periods, sections of Schaefer and Southfield, including their ramps with I-75, are often congested. Redistribution, or reorientation of existing truck volumes would help reduce this congestion.

5. Major land-use-truck conflicts are found along many sections of Jefferson. These include the River Rouge, Ecorse, Wyandotte, and Trenton town centers, as well as several parks, shopping areas, residential areas, and a hospital.

6. Most east-west streets traverse built-up residential and commercial neighborhoods, especially in the northern half of the Study Area. Principal environmental conflicts are found along Eureka Avenue, West and North Line Roads, Pennsylvania Road, and to a lesser extent, King and Van Horn Roads are relatively free from adjacent schools and residences.

7. Truck drivers seek to avoid crossing the railroads at grades. This has the effect of discouraging use of Pennsylvania and King by trucks, although King Road, because of its location carries a heavy flow of heavy trucks.

8. Very few riverfront industries are located adjacent to east-west arterial streets. As a result, trucks entering or leaving these industries must traverse Jefferson to reach east-west routes to I-75 or Telegraph Road.

9. There is relatively little signing of preferred truck routes between Jefferson and I-75, nor are restrictions on east-west streets clearly posted. As a result, there is a tendency for trucks to filter onto many streets.

Traffic Growth Considerations - The rapid growth of traffic volumes that has occurred over much of the study corridor during the last few years is of critical importance in these evaluations. Traffic volume comparisons from 1960 to 1975 are presented

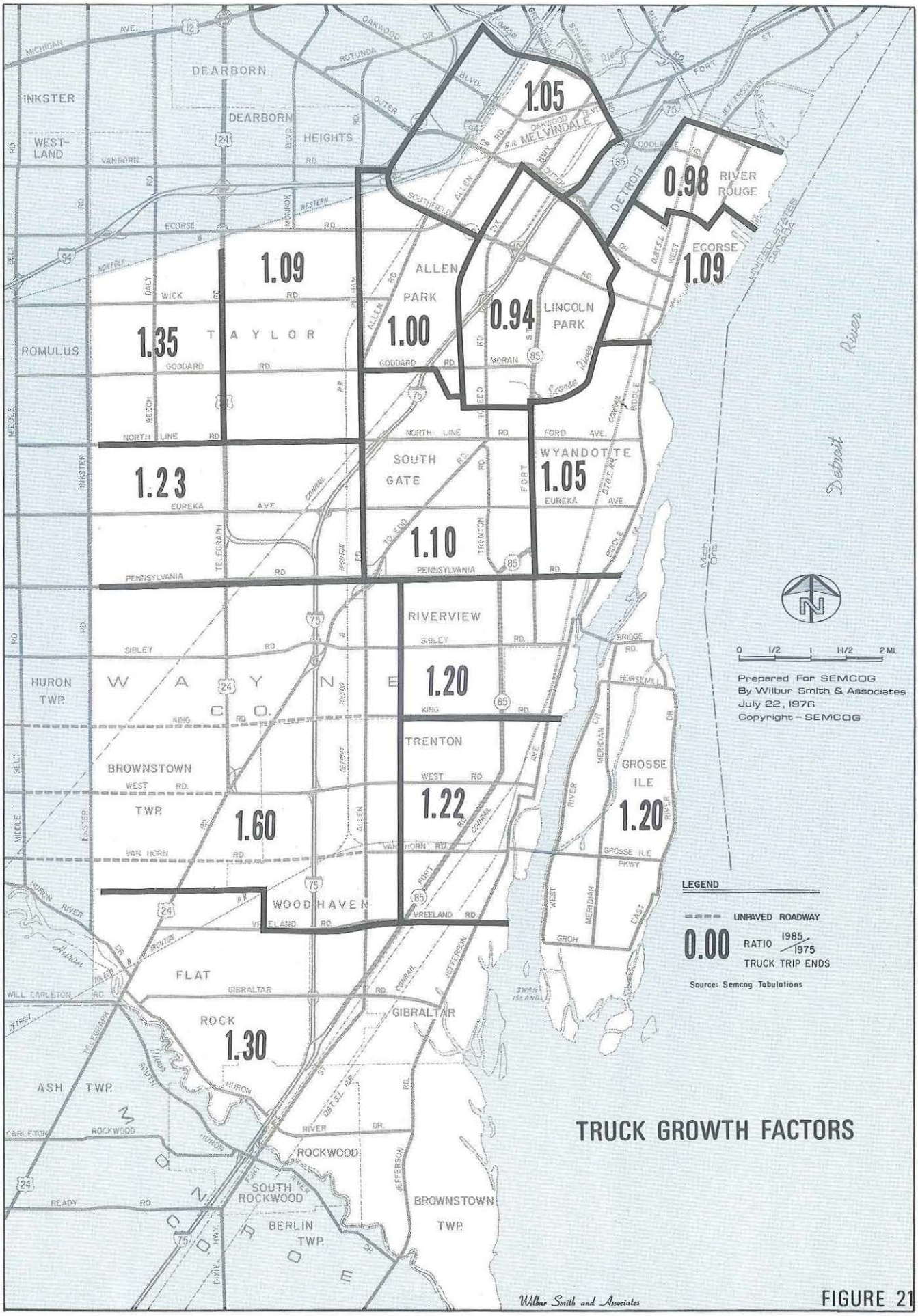
in Table 2. Percentage change has been noted for each location. Jefferson Avenue north of Eureka has shown very little change in the last 15 years, while increases of around 300 percent have occurred at North Line Road, east of Telegraph Road, and Pennsylvania Road, east of Allen Road. These increases, along with increases on several other routes in the area, can be attributed to the added east-west movement from Interstate 75 to residential areas and industrial plant locations between I-75 and the river.

More detailed analysis of projected growth in the area had led to establishment of truck traffic growth rates based on 1985 traffic projections by SEMCOG. These growths in truck trip generation have been based on the projection of total activity forecasts for the region as part of the continuing, comprehensive and coordinated transportation planning process which is administered by SEMCOG. Using this data, new truck growth rates have been estimated based on traffic volumes, land use, and projected future patterns of population and land development.
Truck traffic growth rates depicted in Figure 21 show the anticipated change in truck trip ends in various communities within the Study Area between 1975 and 1985. Heaviest growth is projected in the southern tier of communities--Trenton, Brownstown, Flat Rock, and Gibraltar--with the greatest growth apparently occurring in the Brownstown area, adjacent to Interstate 75.

Identification of Alternatives - A broad range of alternative actions was formulated which would generally be expected to relieve truck volumes and the intrusion of heavy trucks in residential and commercial portions of the Downriver area.

These included:

- Status quo;
- Better truck route delineation;
- Increased truck restrictions;


1.05
0.98
RIVER ROUGE
1.09
ECORSE
1.09
ALLEN PARK
1.00
0.94
LINCOLN PARK
1.35
1.23
1.10
SOUTH GATE
WYANDOTTE
1.05
RIVERVIEW
1.20
TRENTON
1.22
GROSSE ILE
1.20
1.60
WOODHAVEN
FLAT
ROCK
1.30
GIBRALTAR
DEARBORN
INKSTER
DEARBORN HEIGHTS
WEST-LAND
MELVINDALE
DETROIT
ROMULUS
TAYLOR
HURON TWP.
WAYNE CO.
BROWNSTOWN TWP.
ASH TWP.
ROCKWOOD
SOUTH ROCKWOOD
BERLIN TWP.
BROWNSTOWN TWP.
0 1/2 1 1 1/2 2 MI.
Prepared For SEMCOG
By Wilbur Smith & Associates
July 22, 1976
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LEGEND
UNPAVED ROADWAY
0.00 RATIO 1985/1975 TRUCK TRIP ENDS
Source: Semcog Tabulations
TRUCK GROWTH FACTORS
Wilbur Smith and Associates

FIGURE 21

Table 2

TRAFFIC VOLUME COMPARISONS, 1960-1975
SEMCOG Downriver Truck Study

LOCATION	AVERAGE DAILY TRAFFIC VOLUMES 1960	1965	1970	1975	PER CENT CHANGE 1960-1975
Jefferson, N. of Southfield	28,930	-	--	24,000	- 17%
Jefferson, N. of Eureka	18,500	-	20,100	20,000	- 8%
Jefferson, N. of Sibley	9,700	-	11,400	20,000	+106%
Fort, S. of West	14,000	-	14,300	26,800	+181%
Fort, S. of North Line	46,000	-	-	50,650	+ 10%
Fort, N. of Southfield	36,400	48,700	-	54,400	+ 49%
Southfield, E. of Toledo	34,200	44,400	-	76,300	+123%
Schaefer, E. of Fort	31,000	-	36,200	40,000	+ 29%
North Line, E. of Telegraph	3,400	-	-	13,000	+282%
Pennsylvania, E. of Allen	3,600	4,800	-	15,000	+317%
Van Horn, E. of Allen	3,100	-	2,950	7,150	+131%
Eureka, W. of Fort	12,400	-	-	24,700	+ 99%

SOURCE: Wayne County Road Commission and Michigan Department of State Highways and Transportation.

- Improved east-west access - including additional railroad grade separations; and,
- Special truckroads or truckways.

Each alternative was evaluated in terms of:

- Benefits to trucks and general traffic flows;
- Reduced truck flows through environmentally sensitive areas - including noise and air consequences;
- Development and operating costs;
- Dislocations and displacements;
- Ease of implementation (including railroads, etc.), and,
- Compatability with current roadway plans and with land use.

Their consequences were discussed with the impacted communities and the Advisory Committee. Modifications and refinements were made to respond to concerns of the committee.

Status Quo

This alternative, also known as a "do nothing phase" must be oonsidered as an option for future action. It asks questions like: How series is this problem? Does it require action now? How will future actions be affected by our present treatment of this question? The environmental intrusion of heavy-truck movement in the Downriver Corridor has been identified, and it appears likely that support can be developed for positive programs aimed at minimizing this intrusion of heavy truck-trailer combinations on streets in the Downriver area. Recent efforts to revitalize community centers in Wyandotte and Trenton as well as in other adjacent communities, suggest a desire to scale the size and frequency of heavy truck movements to a level better able to "fit in" to the communities. In view of these community desires, the "status quo" approach to heavy trucks in the Downriver area does not represent a viable option at this time.

Improved Truck Route Delineation

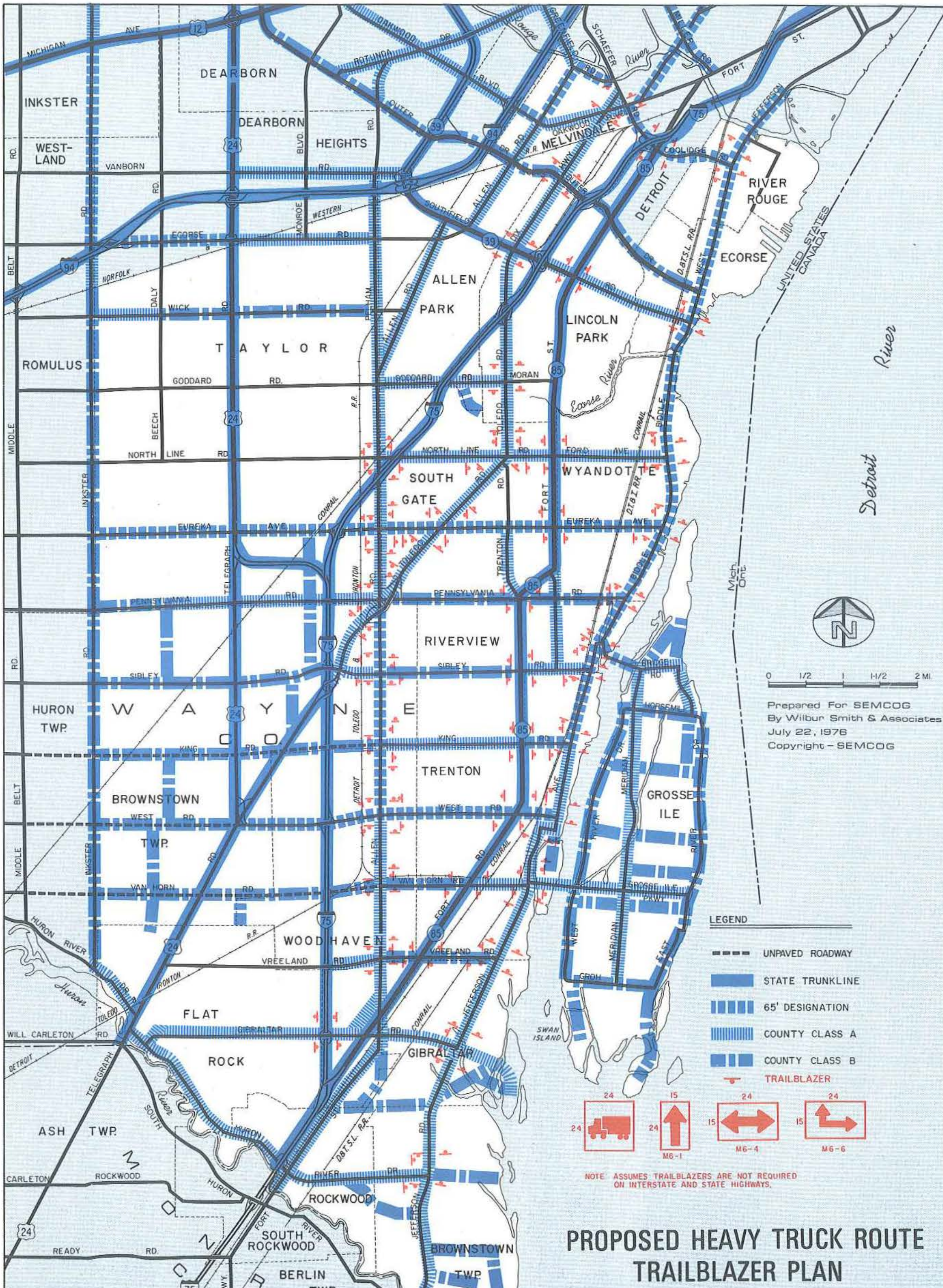
As depicted in Chapter 2, a series of specially designated routes for heavy truck traffic has been established in the Downriver area as well as throughout the balance of Wayne County. These routes are boldly marked on truckers' maps of Wayne County but are not generally delineated with truck route signs to guide out-of-area drivers to their destinations.

The bypass routes currently designated for heavy-truck utilization, (shown in Figure 5), provide broad coverage of the Downriver area. As in virtually all such networks, however, there are industrial locations which are not immediately adjacent to the heavy-truck facilities. Movement between the designated routes and specific destinations is permitted by the most direct route over the best available facility. To ensure that this type of exception is not taken advantage of to permit scattered movement of heavy trucks through business or residential areas, the truck routes should be signed with distinctive trailblazers to be used by the unfamiliar driver and to confirm the existence of designated routes in questionable areas.

This program is considered a first stage or immediate action program for informing interested motorists, including heavy truckers, of the routes to be followed in moving through the Downriver communities. Figure 22 presents proposed locations and typical details for a heavy-truck trailblazer. They are keyed to the existing system of truck routes. Trailblazers are a low cost investment designed to ensure that appropriate use is being made of truck routes throughout the Study Area. An estimated 250 locations at a cost of $60 per installation would total $15,000 for these signs.

Increased Truck Restrictions

With a system of truck routes in operation, the basis for spatial control of truck operations is established. Restrictions



PROPOSED HEAVY TRUCK ROUTE TRAILBLAZER PLAN

FIGURE 22

of truck movements, however, can be temporal as well as spatial, outlining limited hours of service or days of the week when truck movements are permitted, even over designated routes.

There has been no clear indication of a need for time restrictions on truck operations in the Downriver area, however, and the designation of specific facilities for the operation of heavy vehicles appears to have alleviated many of the problems which truck operations have created in the recent past. Reconnaissance studies, supplemented by classification counts, appear to indicate that the movement of heavy trucks outside of the basic "first shift" (8:00 A.M. to 4:00 P.M.), is very light and not a cause for community concern. There are a limited number of heavy-truck movements made during evening and early morning hours, but these movements generally utilize designated heavy truck routes and are not of sufficient volume to cause concern.

There is need for a monitoring program to maintain continuing surveillance of truck operations during late evening and early morning hours and alert officials to changes in trip patterns which may, if not reviewed, gradually develop into a volume which could become objectionable.

Major changes in restrictions of truck operations would require new facilities capable of accommodating the oversized vehicles. It is anticipated that, as physical improvements are made in the truck network for the Downriver area, existing restrictions may be modified to make maximum use of the improved system.

Improved East-West Access

The basic problem posed by the construction of I-75 in the Downriver corridor was the resultant change in orientation of truck traffic from the north-south flow oriented toward Detroit to a local east-west flow between the Interstate facility and

the major industrial generators principally along the Detroit River. Many of the Downriver communities have developed around the east-west arterial facilities such as Southfield, North Line, Eureka, and West Road as they have grown during recent years. The resultant mix of commercial and residential traffic and land uses with the heavy trucks hauling raw materials and finished products in and out of the Downriver industrial sites has posed a significant concern as the communities have grown.

The major east-west arteries are the basic mile-square grid system of roads. In addition to those roads which have heavy commercial orientation listed above, other major arteries include:

Schaefer-Coolidge,
Outer Drive,
Goddard,
Pennsylvania,
Sibley,
King,
Van Horn,
Vreeland,
Gibraltar Road, and
Huron River Drive.

Five east-west arterial roadways have grade separation structures at the four-track mainline rail crossing which parallels Jefferson Avenue throughout the Downriver area. The grade separations are at Schaefer , Outer Drive, Southfield, Eureka and West Road. All other crossings of the railroad are at-grade, with signals and gates controlling crossing traffic.

The frequency of train movements in this heavily travelled rail corridor dictates that grade separations be provided to eliminate delays at key crossings. The impact of long slow-moving freight trains blocking grade crossings at peak periods is severe on traffic circulation around the blocked crossing.

Accordingly, it appears essential to provide additional grade separation structures in areas where the east-west traffic in the Downriver area can be aided significantly and improved relationships between traffic and land use can be achieved.

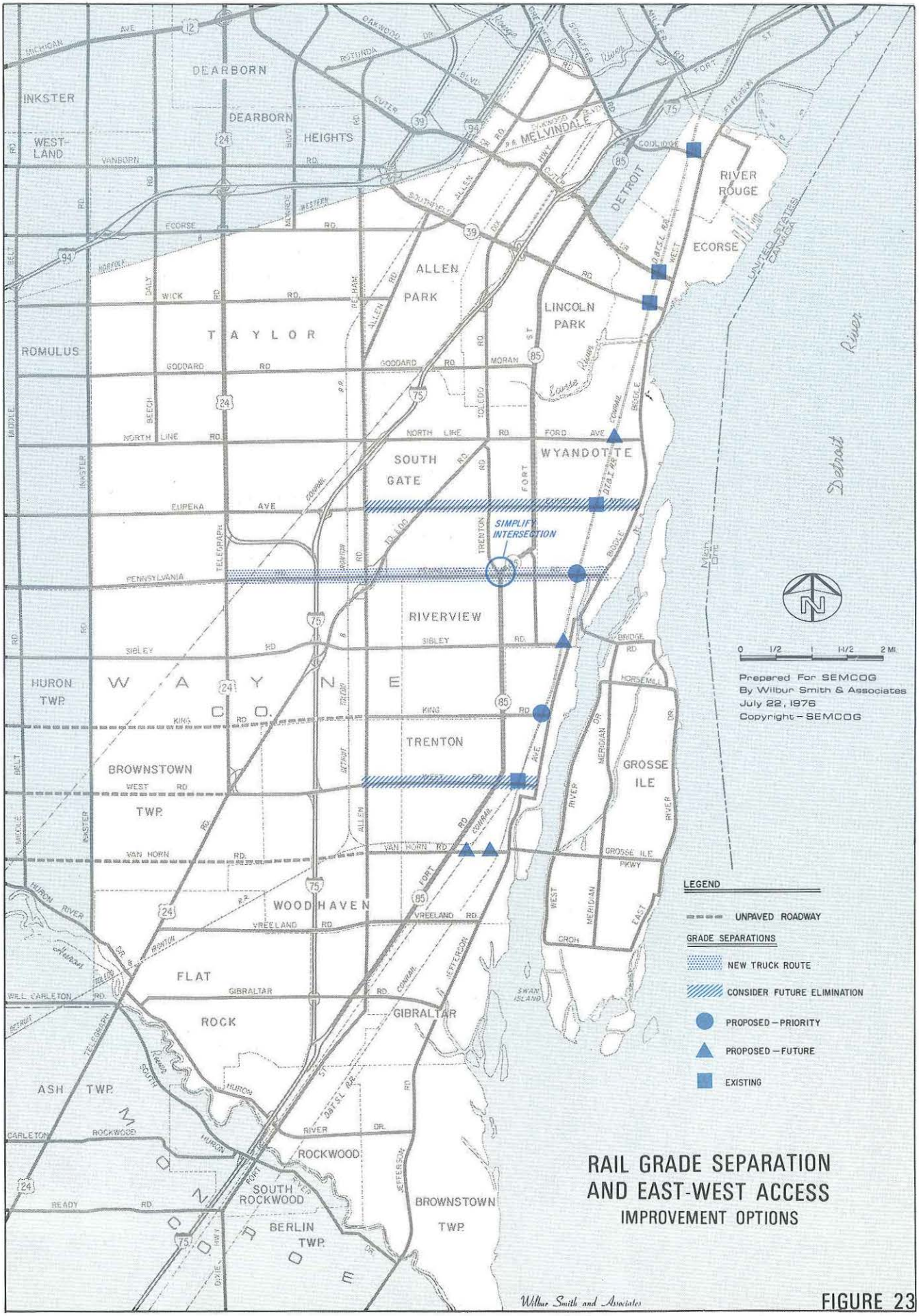
Figure 23 shows rail grade separation projects proposed and east-west access improvements including the widening of Pennsylvania Road and the modification of the Pennsylvania-Fort-Trenton intersection. These improvements are key to the provision of early action elements in the planning process. It also shows suggested truck route designations.

Development of railroad grade separations on east-west streets will permit each section-line street to accommodate trucks. This will reduce truck volumes on most east-west streets, and on Jefferson as well. It will also permit each Downriver Community, in cooperation with the County, to selectively restrict truck traffic in future years in response to specific environmental concerns.

Factors considered in selection of Pennsylvania Road as a truck route include the following:

1. Available right-of-way for widening over most of length;
2. Reduced intensity of development, with nearly 40 percent of land fronting on the road between Jefferson and I-75, vacant or undeveloped, compared to 34 percent residential and commercial;
3. Heavy concentration of residential, commercial and mixed use development (84 percent) in Eureka; and,
4. Location of Pennsylvania along the town line between Wyandotte and Riverview and between South Gate and Riverview and further west between Taylor and Brownstown.

For substantially the same reasons, King Road is favored for truck route designation to provide relief for West Road between



RAIL GRADE SEPARATION AND EAST-WEST ACCESS IMPROVEMENT OPTIONS

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FIGURE 23

Jefferson and I-75. About 70 percent of King Road frontage is undeveloped, while residential-commercial uses occupy only 25 percent.

As the distance between Jefferson and I-75 is reduced to the south in the corridor, Fort Street (M-85) becomes a viable alternate routing for traffic destined to the south on I-75. This becomes a factor at King Street and for east-west streets south thereof.

The improvement of Pennsylvania Avenue will provide a truck route which is removed from major concentrations of residential and commercial uses. Accordingly, Pennsylvania Avenue should be designated as a truck route. Simultaneously, it may be desirable to eliminate portions of existing truck routes which traverse built-up areas (i.e., Eureka Road in Central Wyandotte).

- Access between Pennsylvania Road and I-75 south would be via Allen and West Roads or Toledo Road.
- Access between Pennsylvania Avenue and I-75 North would be via Allen Road and the North Line entrance ramps.

Changes in the truck route designations would have to be affected as the facilities for the replacement routes, grade-separation structures and widenings became available. Final decisions on possible removing truck route designations would be made when a date for the changeover can be anticipated.

Grade Crossing Separations - Pennsylvania, King, Sibley, and North Line Roads - These grade crossing separations entail reconstruction of roads over or under the entire rail right-of-way and back to grade on the far side.

First priority should be given to the Pennsylvania Road grade crossing. The Sibley and King Road grade separations are also important and should rank next in priority. The Sibley Road separation becomes important since access to I-75 in both directions will be made available in the future. The North Line Road (Ford Avenue) grade separation structure is not afforded a high priority because of the narrow right-of-way that limits the potential improvement of Ford Avenue in the vicinity of the crossing and the density of development, and the desire to discourage its use as a major artery. It is apparent that major upgrading of Ford Avenue will not be possible without drastic impacts to the adjoining land development.

Pennsylvania Road Widening - Pennsylvania Road between the railroad crossing and the intersection of Fort Street and Trenton Road will need to be upgraded and expanded to handle increasing volumes of vehicular traffic. This roadway section should be improved from its present two-lane operation to a five-lane 62-foot wide divided roadway. Similar improvements will also be necessary on the segment of Pennsylvania Road between the railroad right-of-way and Jefferson Avenue.

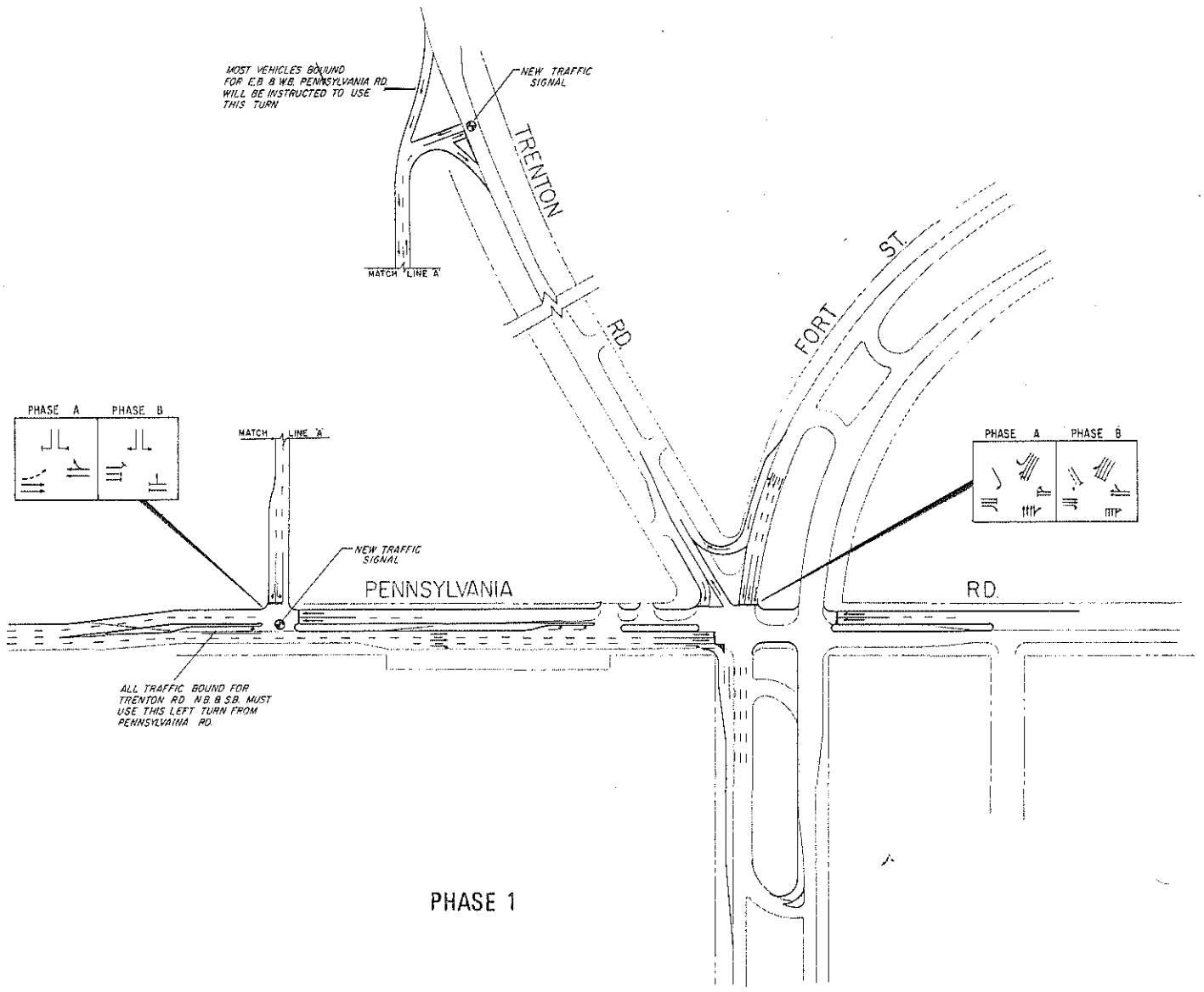
Pennsylvania Road, Fort Street, and Trenton Road Intersection Improvements - Development of Pennsylvania Road as a major east-west arterial connecting the riverfront area with the western portion of the Downriver area will require improvements at the intersection of Pennsylvania with Fort Street and Trenton Road. This three-phase signal-controlled intersection experiences traffic congestion during peak travel periods.

Two concepts are presented to improve traffic flow, reduce delays, and minimize vehicle conflicts at this intersection. The first concept is for immediate implementation. A more costly long-range or future concept is also outlined.

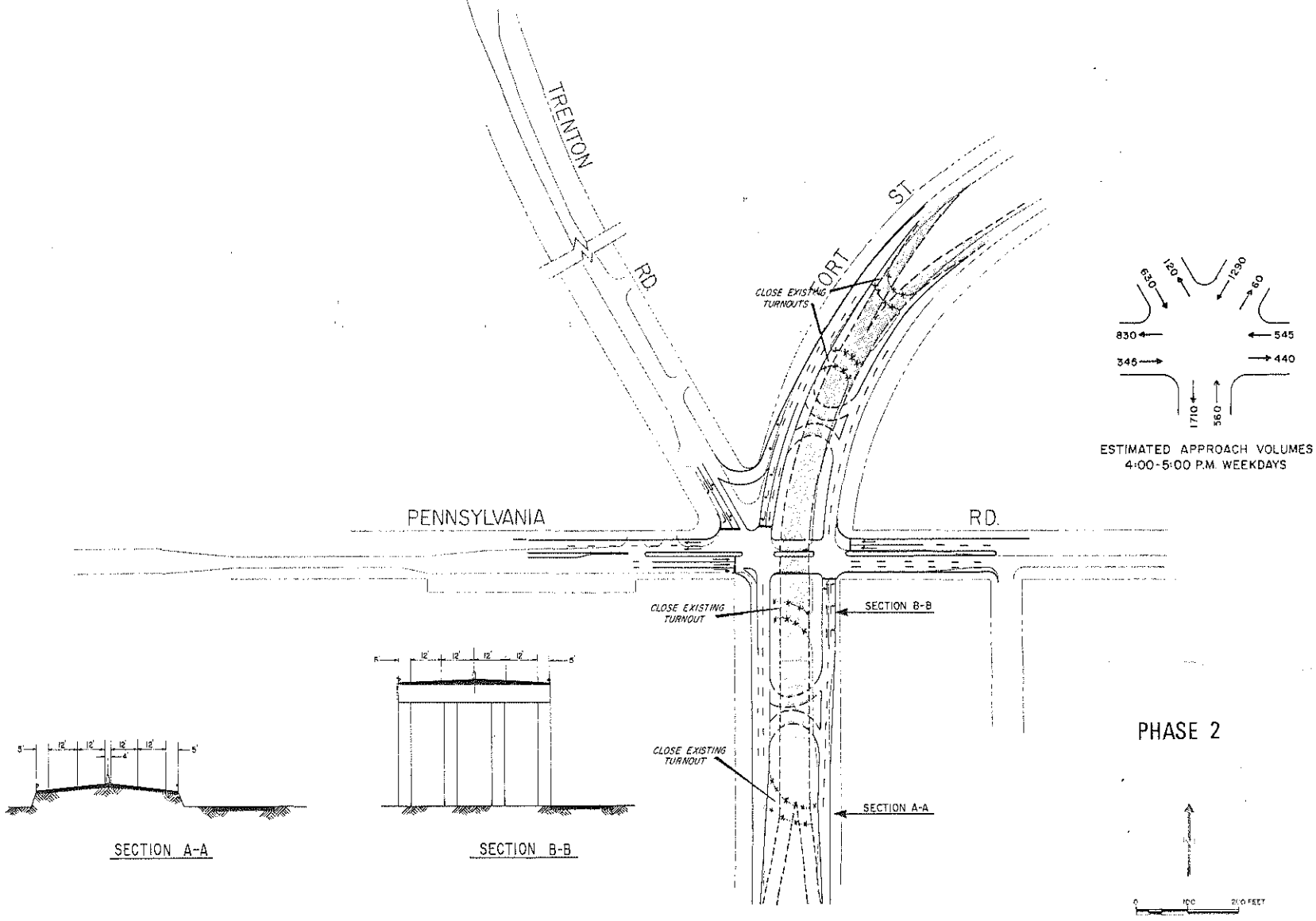
Phase 1 - This first phase involves minor construction in certain areas and new roadway construction in others to allow two-phase signal operations. Changes which should be accomplished include:

- Removing several turn movements from the central intersection.
- Increasing radius on the northwest corner between Trenton Road and Fort Street.
- Adding a separate right-turn lane for eastbound Pennsylvania Road onto Fort Street.
- Widening of all approaches to the intersection and carrying them through the intersection.
- Providing for protected lane movements for southbound Trenton Road and Fort Street traffic continuing south on Fort Street.
- Encouraging the use of Quarry Road to the east and north of the intersection as a route for diverting southbound Fort Street traffic desiring east and west movement on Pennsylvania Road.
- Constructing a new road perpendicular to Pennsylvania Road just west of the intersection connecting Pennsylvania and Trenton Roads to divert southbound Trenton Road traffic desiring east and west movements on Pennsylvania Road. The proposed road will carry east and westbound Pennsylvania Road traffic destined to the north on Trenton Road.

Turn restrictions proposed at the intersection as shown in Figure 24 will permit two-phase signal operations. Turns can be made via turnouts provided a short distance beyond the intersection in both directions on Fort Street and by right turns only from the Pennsylvania Road approaches. Quarry Road and the



PHASE 1



PENNSYLVANIA ROAD-FORT STREET-TRENTON ROAD INTERSECTION

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FIGURE 24

proposed Trenton Road-Pennsylvania Road connector will also be available. A channelized right-turn lane from southbound Fort Street to northbound Trenton Road can be added within the existing right-of-way limits.

Construction of the new road can be accomplished within an existing public right-of-way. Its width would allow four through lanes and provisions for protected left-turn lanes. Anticipated traffic volumes do not justify construction to this level at this time. A partial construction of one two-lane direction with addition of the opposite direction lanes and the median in the future as development and volumes warrant can be considered for this improvement.

New signals will be required at both ends of the new road. Existing signals can be used at other intersections affected with minor phasing changes. Minor signal head revisions will be needed at the intersections of Fort Street and Quarry Road and at Quarry Road and Pennsylvania Road.

Expansion of Pennsylvania Road to a five-lane roadway will aid through movements and turning vehicles.

The proposed changes should be considered as the initial phase of the improvement of this intersection; with its timing established to coincide with the widening of Pennsylvania. Subsequent construction of Phase 2, which follows, would be decided upon based on review of operating conditions under Phase 1. Costs are estimated at $1.7 million for Phase 1.

Phase 2 - This treatment provides a long-range solution which would be more costly, but would reduce congestion and further minimize delays. This concept allows the through traffic on Fort Street be grade-separated at Pennsylvania Road and Trenton Road. This can be accomplished

by a four-lane "flyover" which carries both northbound and southbound traffic over the intersection within the median strip on Fort Street. A separate right turn lane and increased radius provided for in Phase 1 from southbound Fort Street to Trenton Road, would be retained. Operational changes and new construction are noted on Figure 24.

Fort Street is constructed within a 204-foot right-of-way with the distance across the intersection along Pennsylvania Road being 165 feet. A 90-foot median width is available along Fort Street where Pennsylvania crosses.

Maximum vertical clearance over Pennsylvania Road and the U-turn channels of 26 feet can be accomplished by a grade difference of 3.5 percent on each approach. This will allow for complete transition back to grade within 700 feet of the U-turn roadways. The majority of the grade elevation can be accomplished by fills, since the expanded median width will allow for embankments that normally would not be possible. It will be possible, by use of center-supported piers, to provide for adequate visibility on all intersection approaches. Operation on the elevated section of roadway would utilize two lanes with a five-foot shoulder in each direction and a four-foot G - M type barrier running the entire length of the elevated roadway and bridge section.

The removal of through traffic along Fort Street should substantially increase total traffic passed through the intersection. The intersection improvements and related improvements planned along the section of Pennsylvania Road between Fort Street and Jefferson Avenue will provide major additional capacity for trucks destined to the commercial district along the riverfront.

Truckways in the Downriver Area

The concept of truckways as a possible source of relief from the steady flow of heavy trucks through the commercial areas of several Downriver communities was introduced early in this study with regard to the potential provided by the wide four-line railroad right-of-way paralleling Jefferson Avenue through the study area. Anticipated reduced activity in the rail lines, particularly with the Conrail takeover of the old Michigan Central and New York Central tracks of the Penn Central portion of the right-of-way, gave some impetus to the possibility of available right-of-way for a truck facility. Other rights-of way also existed where truckway design might be considered.

Planning Factors - Specific policy objectives may require modification of planning considerations in truckway design, but the following factors suggest where truckways may prove desirable:[1]

1. High volumes of heavy trucks on surface streets;
2. High incidence of truck congestion and truck-induced general traffic congestion; and,
3. Unavailability of freeways, existing or proposed.

Land use conditions which are conducive to truckways include:

1. Available right-of-way;
2. Minimum residential-commercial displacement;
3. Compatability of adjacent land use;(i.e.industrial uses); and,
4. Opportunities for intermodal interchange.

(1) "Urban Truck Road Systems and Travel Restrictions", for U.S. Department of Transportation, September, 1975, page 8, op. cit.

These factors are found in varying degree throughout the Downriver Corridor. Accordingly, an integral part of the study from its outset was to investigate the potential for truckways in the Downriver Corridor. Analyses focused on questions such as:

- Where should truckways be located?
- How should they be designed?
- Who will use them?
- What will be their costs and benefits?

Options Considered

Initial investigations centered on the railroad right-of-way because it appeared there might be sufficient space between the tracks to construct and operate a truckway facility. However, as investigation into the detailed alignment of tracks, spurs, storage tracks and yard facilities proceeded, and in consideration of the developing data on truck traffic and other traffic in the corridor, the number of options was reduced to a comparative few.

It is assumed that railroad grade separations of major east-west streets would be completed prior to Truckway development. This is essential to preclude major intersection conflicts which would otherwise occur.

The options which are discussed in the analysis which follows, are shown in Figure 25. In the Wyandotte area, these include:

- Option 1 - D.T. and I. Right-of-Way

  Phase A - Alkali-Grove Streets
  Phase B - Alkali-Ecorse
  Phase C - Grove Street-Jefferson Avenue north of Sibley in Riverview via New York Central Right-of-Way
  Phase A, B, and C - Ecorse - Riverview

- Option 2 - New York Central Right-of-Way

  Phase A - Alkali-Grove Streets
  Phase B - Alkali-Ecorse and Grove Streets (Jefferson Avenue north of Sibley in Riverview)
  Phases A and B - Ecorse to Riverview

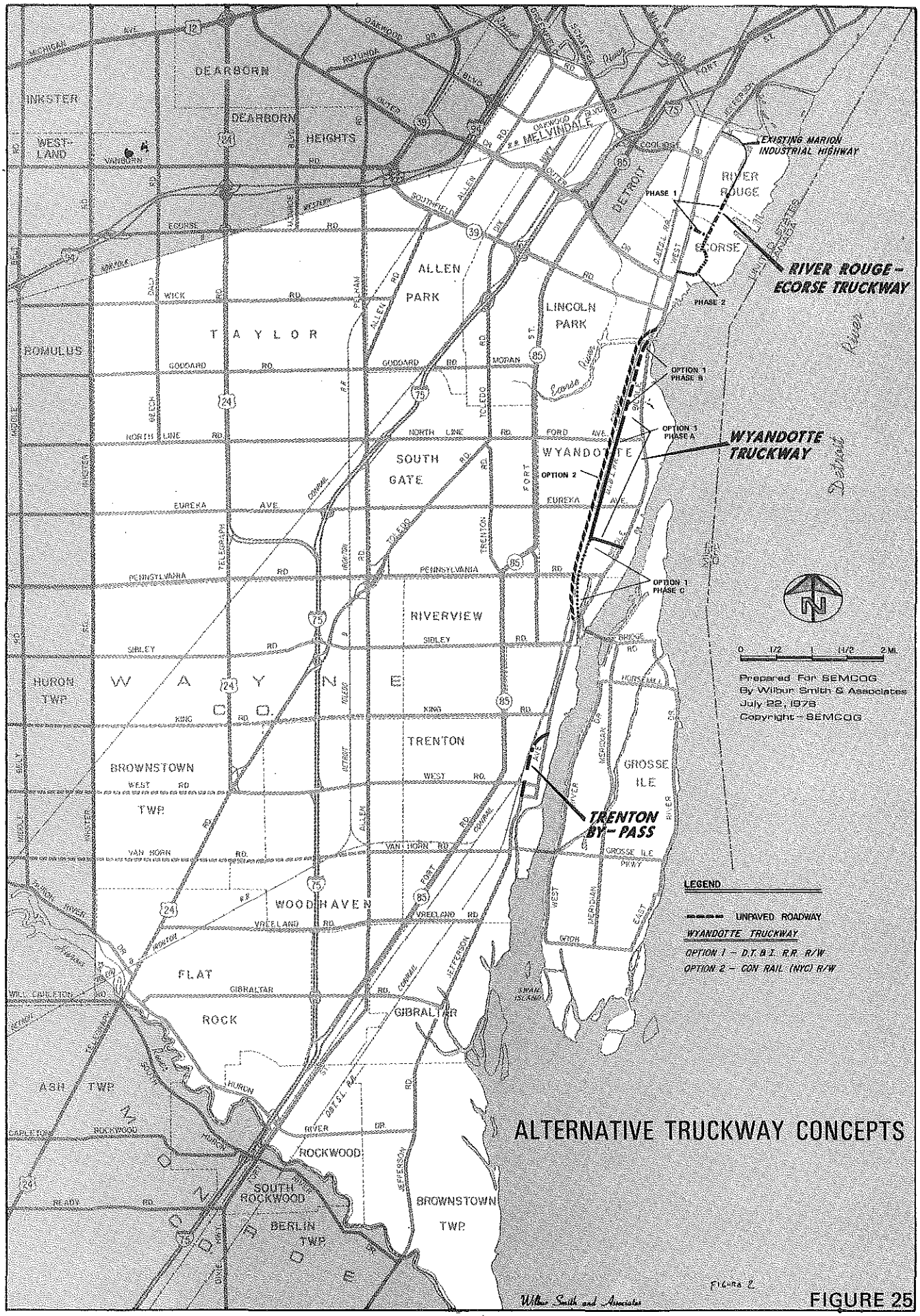

DEARBORN
INKSTER
DEARBORN HEIGHTS
WEST-LAND
MELVINDALE
RIVER ROUGE
ECORSE
ALLEN PARK
LINCOLN PARK
TAYLOR
ROMULUS
SOUTH GATE
WYANDOTTE
RIVERVIEW
HURON TWP
TRENTON
BROWNSTOWN TWP
GROSSE ILE
WOODHAVEN
FLAT ROCK
GIBRALTAR
ASH TWP
ROCKWOOD
SOUTH ROCKWOOD
BERLIN TWP
BROWNSTOWN TWP
WAYNE CO.
EXISTING MARION INDUSTRIAL HIGHWAY
PHASE 1
PHASE 2
RIVER ROUGE – ECORSE TRUCKWAY
OPTION 1 PHASE B
OPTION 1 PHASE A
WYANDOTTE TRUCKWAY
OPTION 2
OPTION 1 PHASE C
TRENTON BY-PASS
0 1/2 1 1 1/2 2 MI.
Prepared For SEMCOG
By Wilbur Smith & Associates
July 22, 1975
Copyright – SEMCOG
LEGEND
UNPAVED ROADWAY
WYANDOTTE TRUCKWAY
OPTION 1 – D.T.&I. R.R. R/W
OPTION 2 – CON RAIL (NYC) R/W
ALTERNATIVE TRUCKWAY CONCEPTS
Wilbur Smith and Associates
FIGURE 2

FIGURE 25

River Rouge-Ecorse Bypass - Heavy-truck concentrations in the Downriver area was found to be greatest off the Interstate highways and their immediate feeders in the River Rouge-Ecorse area. Average daily heavy-truck movements are up to 50 percent higher in this area than in the Wyandotte area and double or more than the heavy-truck movements found futher south in the corridor.

Many years ago the city of River Rouge took steps to alleviate the volumes of heavy trucks on Jefferson Avenue through the construction of the Marion Industrial Highway. Original plans are believed to have called for extension of this highway to the south through neighboring Ecorse to bypass most of the business center of that community.

The Marion Industrial Highway is the primary access road to the industrial area along the Detroit River in River Rouge. The north terminus of the Industrial Highway Bypass is at the intersection of Marion Avenue and Jefferson Avenue at the north edge of River Rouge adjacent to the Rouge River. The Industrial Highway operates to the east along Marion through oil tank farms of Standard Oil and Texaco and then turns south along the east edge of the residentially developed area of River Rouge to terminate at Great Lakes Avenue near the city limits.

The extension of this route to the south through Ecorse will involve purchase of right-of-way from land presently owned by the industrial complexes along the Detroit River, including Great Lakes Steel Company. Two potential termini for this truck bypass have been identified--at Tecumseh Avenue, the main entrance to Great Lakes Steel and at Westfield Avenue, one block north of the Jefferson-Outer Drive intersection.

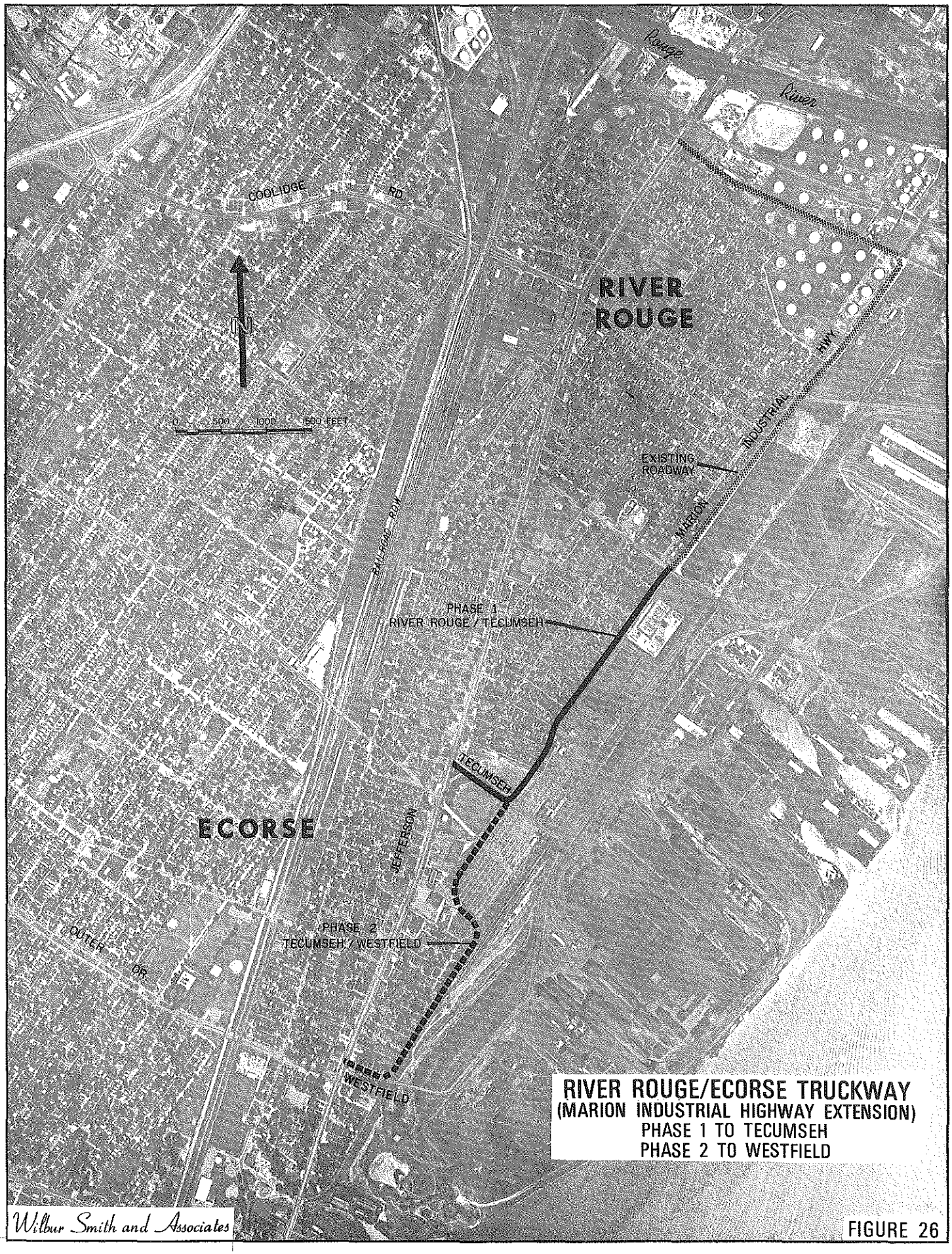
Stage developments of the bypass construction through this area may be desired. The logical first stage would take the Industrial Highway south to Tecumseh Avenue where access to

Jefferson is available. The second stage would be extended south from Tecumseh along the rear of the residential neighborhood east of Jefferson Avenue to connect with Westfield Avenue.

Improvements at the intersection of Jefferson and the Marion Industrial Highway would be desirable but are not essential. Opening up the northeast corner at this intersection to facilitate right turns for a greater truck movement north to Detroit would be beneficial. Figure 26 shows the existing Marion Industrial Highway from Jefferson south to Great Lakes. No major improvements are required in this area, where the city had to replace a significant portion of the road near Belanger Road during the summer of 1976.

From Great Lakes south to Tecumseh, a new 50-foot right-of-way will be necessary between Ironton and the rail right-of-way on the industrial property. Several residential parcels of land will have to be acquired at the south end to complete the connection. Some of these are vacant and should not cause a major neighborhood impact. Tecumseh is adeuqate to handle the proposed truck traffic that will be placed upon it.

The extension of the Industrial Highway to Westfield is proposed to continue along the alignment established north of Tecumseh, passing a large Great Lakes Steel corporation parking lot. Then the roadway would take an S-turn to the east, swing clear of the existing residential area, continuing adjacent to and west of the rail right-of-way to its intersection with Westfield Avenue. Minor improvements may be necessary along the Westfield section to handle the increased number of trucks, although this road presently accommodates heavy trucks to and from the Levy slag yard. It may be desirable to increase the radius on the southeast corner of Jefferson and Westfield to facilitate easier movements to and from the southern end of the bypass. The two phases for extension of the Marion Industrial Highway are shown in Figure 26.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INDUSTRIAL
MARION
EXISTING
ROADWAY
RAILROAD R.O.W.
PHASE 1
RIVER ROUGE / TECUMSEH
TECUMSEH
ECORSE
JEFFERSON
PHASE 2
TECUMSEH / WESTFIELD
OUTER DR
WESTFIELD
RIVER ROUGE/ECORSE TRUCKWAY
(MARION INDUSTRIAL HIGHWAY EXTENSION)
PHASE 1 TO TECUMSEH
PHASE 2 TO WESTFIELD
Wilbur Smith and Associates
FIGURE 26

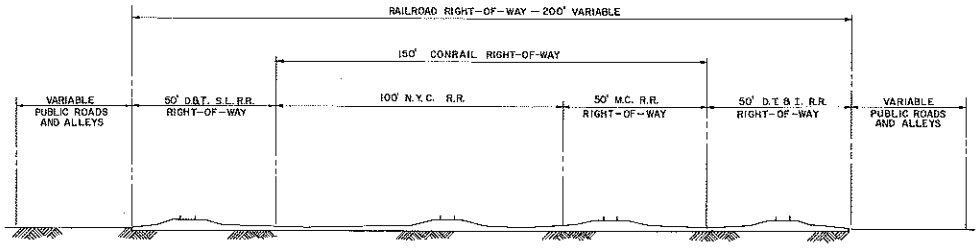
Wyandotte Truckway - Several truckway alternatives are available within this corridor, all of which make use, at least in part, of the four track rail right-of-way west of Biddle Avenue (Jefferson). Two basic route alignments were investigated. The first operates within the old New York Central right-of-way, second from the west among the four, from the Ecorse River in the north terminus to the Riverview area north of Sibley Road in the south. The second alternate alignment utilizes the D. T. and I. on the east side of the total right-of-way for its entire length. A third alternative uses a combination of portions of the first two alignments.

Figure 27 shows a typical location between Ford Avenue and the Ecorse River in the north end of Wyandotte, the four railroads rights of way and the position of the truckway in each of the options. Option 1 which utilizes the Detroit, Toledo and Ironton Railroad right-of-way, anticipate that the D.T. and I. would either share the Michigan Central Right-of-Way or take over that right-of-way with the Michigan Central tracks relocated to the west of the existing New York Central tracks in the New York Central right-of-way. (Both the Michigan Central and New York Central are part of the Conrail system.)

Option 2 would utilize excess land in Conrail's New York Central right-of-way for construction of an at-grade truckway between the tracks of the New York Central and the Detroit and Toledo Shore Line, the most westerly set of tracks in the rail corridor.

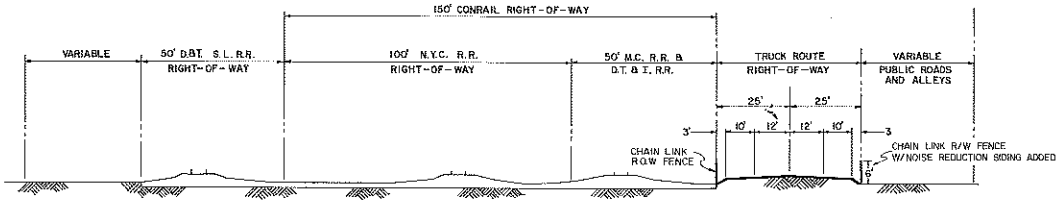
Option 1c utilizes the D.T. and I. alignment from Ecorse to Grove Street, but swings over to join the New York Central alignment between Grove Street and the Riverview terminus north of Sibley Road.

Option 1, Phase A - Alkali/Grove Streets - This represents the first of three stages of development or levels of construction for the Wyandotte Truck Bypass



EXISTING RAILROAD RIGHT OF WAY

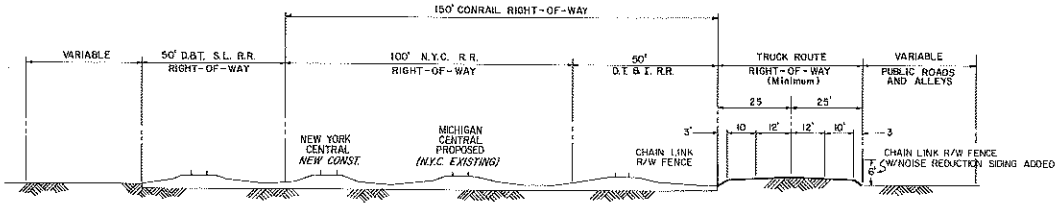
BETWEEN FORD AVE. AND ECORSE RIVER
WYANDOTTE



ALKALI/GROVE AVE. & ECORSE/GROVE AVE. OPTIONS

(D. T. & I. R.R. SHARING R/W)

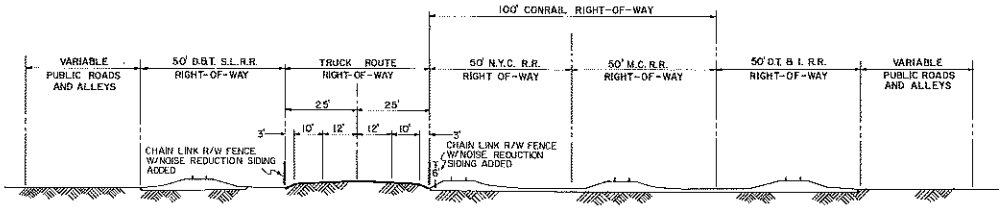
OPTION 1, PHASE a & b



ALKALI/GROVE AVE. & ECORSE/GROVE AVE. OPTIONS

(D. T. & I. R.R. RELOCATED R/W)

OPTION 1, PHASE a & b



LEGEND

D&T. S.L. R.R = DETROIT & TOLEDO SHORE LINE R.R.

D.T. & I. R.R. = DETROIT TOLEDO & IRONTON R.R.

N. Y. C. R.R. = NEW YORK CENTRAL R.R.

M.C. R.R. = MICHIGAN CENTRAL R.R.

ECORSE/RIVERVIEW OPTION

(N.Y.C. R.R. R/W)

OPTION 2

WYANDOTTE TRUCKWAY CROSS SECTIONS

Wilbur Smith and Associates

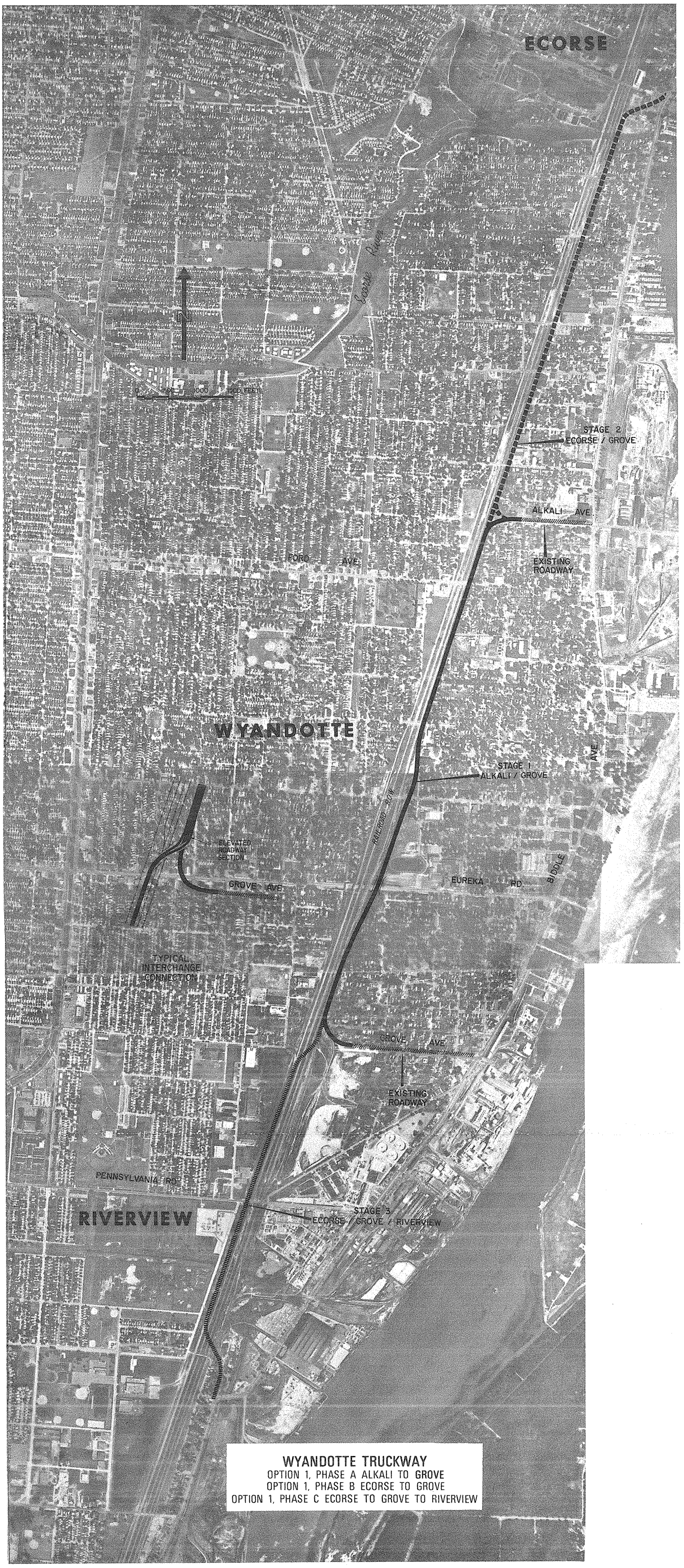
FIGURE 27

using the right-of-way of the Detroit, Toledo and Ironton Railroad, which is the easternmost right-of-way in the rail corridor.

The Alkali-Grove Truckway concept would provide a minimum bypass around the business district of Wyandotte. The problems of truck intrusion into the business and residential community have been concentrated in the central business district of Wyandotte which has been redeveloped in the last few years. New store fronts, landscaping, new sidewalks, and a repaved Biddle Avenue have all been factors involved in "dressing up" the business center and increasing its attraction for shoppers. Elimination of the heavy trucks which operate through the renewed center represents another step toward achieving a better total shopping environment for the community.

Use of the railroad right-of-way has been assumed on the basis that the truckway would follow the basic grade of the rail lines and thus would be separated from Eureka Avenue, which passes under all the tracks. No interchange with Eureka Avenue is planned, nor is it considered desirable, since major reconstruction and realignment of both rail and highway facilities would be required.

The roadway section for this option, shown in Figure 28, will be at-grade through its entire length. The roadway would use Alkali Street, directly opposite the main gate of the North Plant of BASF-Wyandotte, as a connector to Biddle Avenue (Jefferson). The Alkali Street right-of-way is presently shared with rail tracks providing storage for and access to the BASF plant. It is proposed that Alkali Street could be widened



WYANDOTTE TRUCKWAY
OPTION 1, PHASE A ALKALI TO GROVE
OPTION 1, PHASE B ECORSE TO GROVE
OPTION 1, PHASE C ECORSE TO GROVE TO RIVERVIEW

Wilbur Smith and Associates

FIGURE 28

TRANSPORTATION LIBRARY
MICHIGAN DEPT. STATE HIGHWAYS &
TRANSPORTATION LANSING, MICH.

to the north in the area where the primary rail spur is presently placed, to afford increased capacity for trucks moving to and from Biddle and still retain the rails for plant access. An intermediate connection at Vinewood Street would be accessible from both north and south. A structure will be required to carry the truckway over Eureka, which crosses under the rail lines. The present rail structure existing at this point would be replaced so roadway clearance should be tolerable. Connections with Grove Street will also be made at grade.

Option 1, Phase B - Ecorse/Grove Street - This would represent a possible second stage of development for the Wyandotte Truckway. It will have many of the same design characteristics as set forth in the Alkali/Grove Streets section since it would be built as an extension.

The north end of this extension would terminate on Jefferson at Mill Street, just north of the Ecorse River. It would traverse property owned by the City of Ecorse to reach the D.T. and I. Railroad right-of-way, where it would then use the D.T. and I. right-of-way to the south to Alkali Street where it would join the segment identified as Option 1a.

A major structure would be required over the Ecorse River and between that point and Alkali Street five grade crossings of local streets would be encountered. Emmons Boulevard, Riverbank, St. Johns, Goddard, and Antoine Streets each cross the rail corridor at-grade and would cross a truckway at-grade as outlined in this Option. This configuration is shown with the other Option 1 elements in Figure 28.

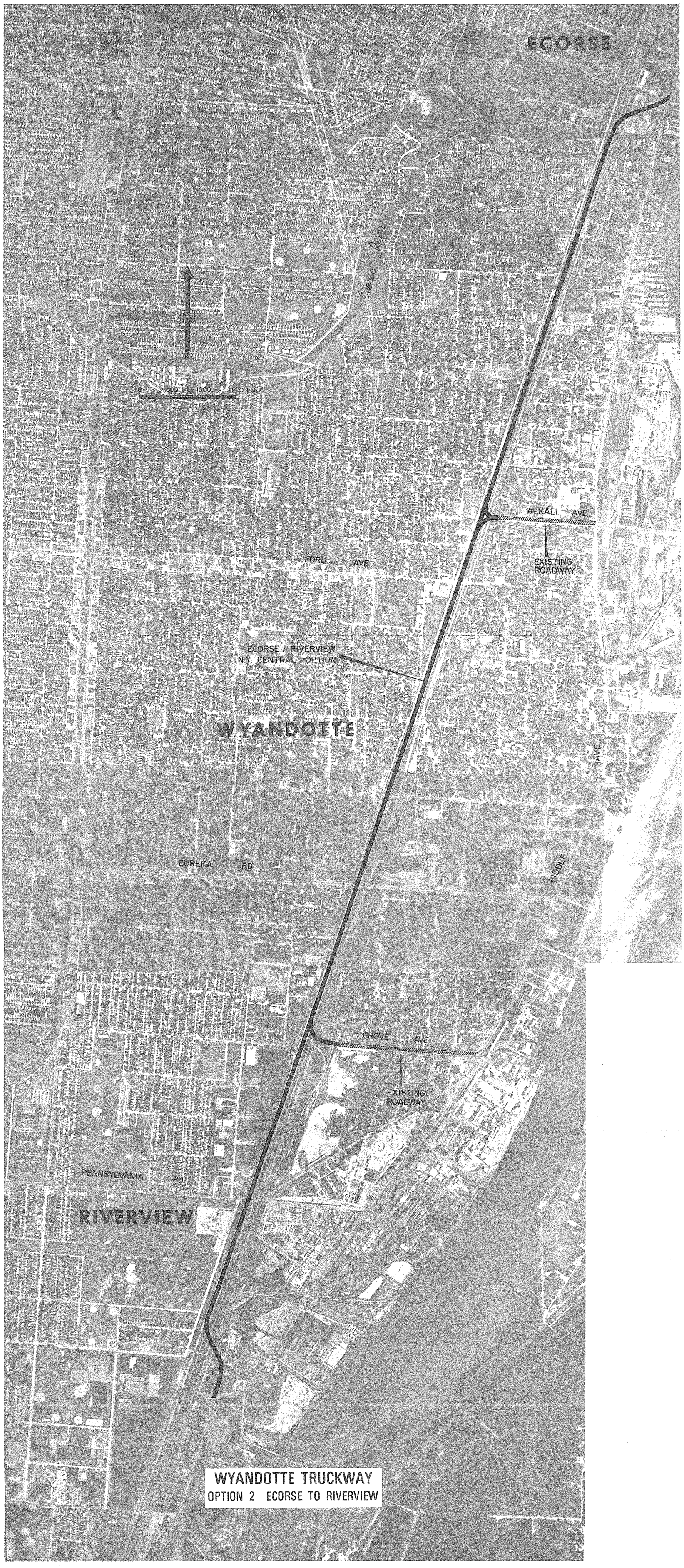
Option 1, Phase C - Ecorse/Grove Street/Riverview - This option would combine the first two stages of the Wyandotte Bypass along the D.T. and I. right-of-way

with a segment running from Grove Street to the Riverview area by crossing over to use space available within the old New York Central right-of-way. Two major structures are required at the south end of this portion of the option, one to cross over the rail tracks in the vicinity of Grove Street and a second to cross back over to terminate on Jefferson north of Sibley Road in Riverview.

This extension will allow traffic to and from Grove to continue to the truckway. Through movement on the truckway would be carried via ramps and structures over the rail right-of-way into the center of the rail corridor along the old New York Central right-of-way. The truckway would continue south along the present rail elevation, through an at-grade crossing with Pennsylvania. It should be noted that if the overpass over rail lines is constructed as previously mentioned, a separated crossing will be provided at this location. The roadway section would then be elevated again south of Pennsylvania to cross over the rail right-of-way to the east, and make a connection with Jefferson at the Riverview area.

This change in route alignment from the D.T. and I. right-of-way followed to the north was necessary because of expanded rail storage yards, and developed land uses occurring between Grove Street and the Riverview area. This development includes a rail spur yard and a central water plant. A lesser impact on the surrounding community would be felt by using the old New York Central alignment along this portion, although the costs to achieve this will be heavy.

Option 2 - Ecorse/Riverview (Old New York Central Right-of-Way) - This alignment shown in Figure 29 would leave the same north terminus point on West Jefferson, cross over the Ecorse River and also three of the four



Wilbur Smith and Associates

FIGURE 29

tracks in the rail right-of-way and enter the old New York Central right-of-way. The roadway section would operate at rail elevation to its approach to Alkali Street where a fully elevated crossover will connect with the side street for both northbound and southbound traffic. The roadway section would continue past Ford Avenue, Eureka and to Grove Street.

At Grove Street another interchange will be provided. A fully-elevated grade separation to provide for connections for both northbound and southbound traffic would be required. Through traffic in both directions on the truck bypass will be continued at grade, thus requiring all turning movements to and from the connecting street to pass overhead, cross the adjacent rail tracks, and come to grade as near the rail right-of-way as possible.

The roadway segment would continue south closely following the alignment of Option 1C to terminate at Riverview.

Right-of-way acquisitions for this alternative will be minimal from the private sector, but very major acquisition will be necessary from the rail lines.

Trenton Bypass - Trenton is located near the southern end of the study corridor. This bypass would alleviate a pair of right angle turns which trucks presently make. The option basically parallels the eastern edge of the existing rail right-of-way forming an extension of present Fifth Street and bypassing the main area of Trenton. Figure 30 shows the Trenton Bypass alignment.

The proposed southern terminus of the Trenton Bypass is at the intersection of Fifth Street and West Jefferson.

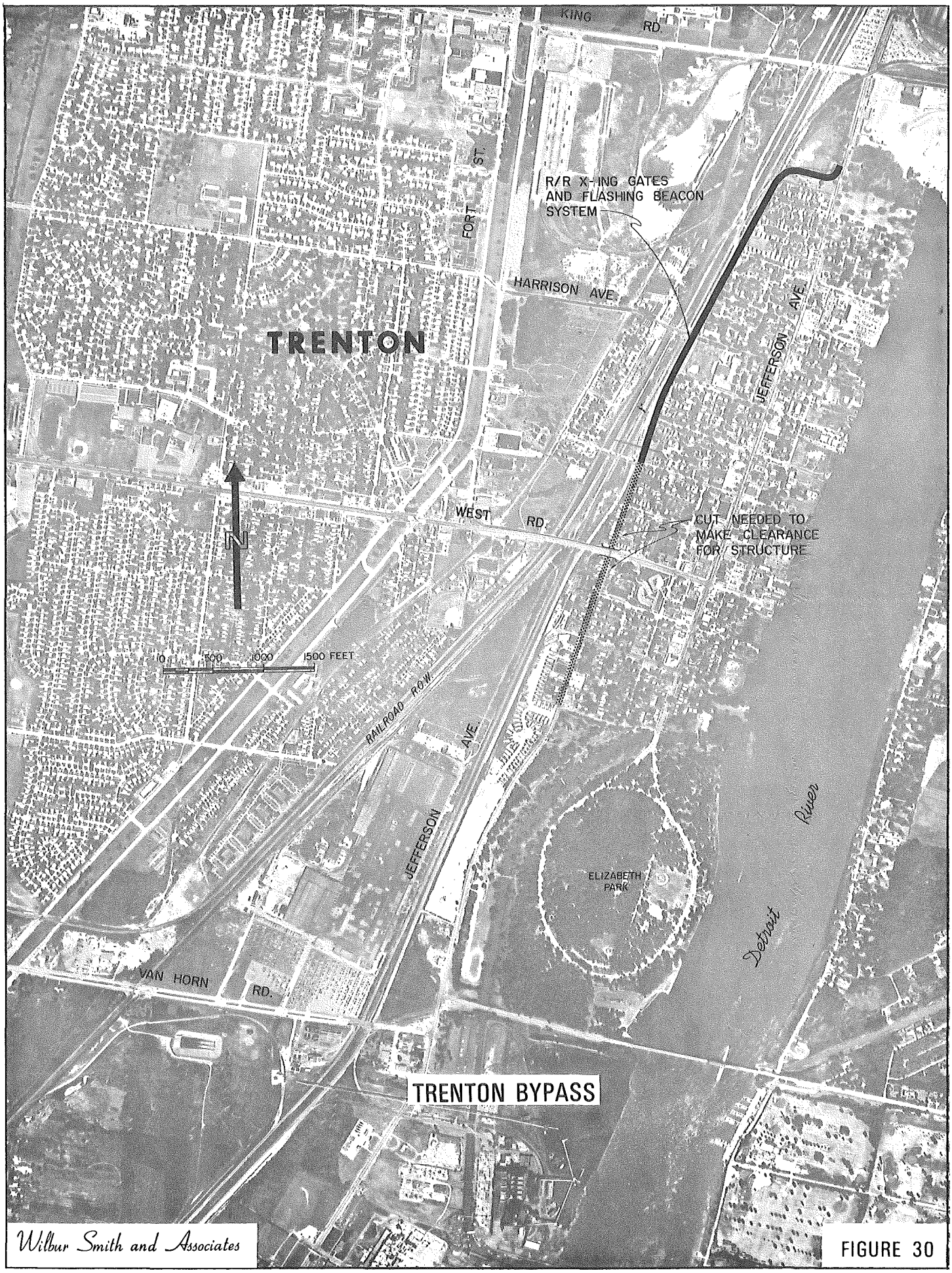


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FIGURE 30

Signalization improvements will be necessary at this intersection. The proposed truck route would continue north along Fifth Street from Jefferson to Elm on an existing Fifth Street right-of-way. Minor alterations to pavement grades (about three feet) will be necessary under the railroad overpass at West Road to ensure adequate truck clearance.

From Elm Street to the north terminus of the truck bypass at Jefferson north of Helen, new construction of a roadway within a 50-foot right-of-way will be necessary. Local street connections will be maintained for Harrison Street which grade-crosses the railroad right-of-way. Other streets will be either connected to the proposed Fifth Street Extension or terminated and provided with a turning area.

A crossing gate/traffic signal system would be necessary at the rail crossing and the truck bypass on Harrison Street. This would be necessary because of the proximity of the bypass to the nearest rail line. This system would allow the area between the truck road and the west side of Harrison to be cleared of all vehicular traffic when trains approach, thus leaving no stranded vehicles on the rail right-of-way as trains approach.

At the north terminus of the truck bypass, a large radius in the northwest corner will be necessary to facilitate easy access from southbound Jefferson onto the truck bypass. A new traffic signal will be needed on Jefferson at the proposed Fifth Street Extension to handle the volumes of truck traffic entering Jefferson.

Truckway Design Details

Right-of-way for truckways must be wide enough to accommodate heavy-truck traffic, allow for adequate shoulders for

breakdown areas, and ensure that edge treatments will minimize impact with adjacent rail lines and residential or commercial properties. It is suggested that the truck right-of-way should be a minimum of 50 feet; however, where land is available, additional width would allow space for noise-reducing berms and shrubbery to help the truckway blend into the surrounding environment. Details of typical at-grade right-of-way and design elements were shown in Figure 27.

Basic design elements are as follows: two 12-foot lanes for two-way operation; two 10-foot shoulder areas, one in each direction; and, two 3-foot edge treatment areas from edge of shoulder to right-of-way fencing. Right-of-way fencing shall be used to create a visual and acoustical barrier between the truck road and surrounding land uses. On elevated sections and bridge sections the same basic minimum right-of-way will be obtained with the structure itself being only 42 feet in width. Right-of-way expansions will be necessary at certain interchange locations, thus requiring slight relocation of certain rail lines within these areas. Through the elevated bridge sections included in the truckway concepts, it should be noted that New Jersey-type barriers are to be placed in the center separating opposing traffic movements only. This can be accomplished by reducing the overly adequate ten-foot shoulders to that of eight-foot shoulders, allowing four feet in the center for the barrier placement.

Estimated Truckway Construction Costs

Preliminary cost estimates have been prepared for the truckway options for River Rouge/Ecorse, Wyandotte, and Trenton. These estimates are based on typical 1976 costs for rail projects and highway construction elements in Michigan. Table 3 summarizes the construction cost estimates for the various options.

The Tecumseh extension of the River Rouge/Ecorse Bypass is the least costly of any option presented with an estimated total of $631,000. The Ecorse/Riverview option for the Wyandotte Bypass following the old New York Central right-of-way is the most expensive option at approximately $17.5 million.

It should be noted that the breakdown of options in Table 3 is slightly different from those presented herein for the reason that some options considered during earlier evaluation of project potentials were subsequently dropped from consideration. (An example is the Wyandotte Truckway where an Alkali-Grove option via the New York Central alignment is not considered feasible because of high costs and operational problems.)

Roadway construction including pavement subbase and minor earthwork, contributes heavily to the total cost of all options. The largest roadway cost element is for the Ecorse/Riverview option for the Wyandotte Truckway, with the total expenditure over $4.4 million. The alternative roadway utilizing the adjacent D.T. and I. right-of-way and connecting with Jefferson at the same terminal points is estimated to cost only $3.9 million.

Major structure work is also highest for the two full-length options for Wyandotte Truckway from Ecorse to Riverview. Option 2 will have structure costs of approximately double that of Option 1c. No major structure would be necessary in either the Trenton or River Rouge/Ecorse Bypass.

Retaining walls, traffic signals, and fences are contained in the minor structure work. Both New York Central right-of-way options for Alkali/Grove and Ecorse/Riverview exceed $3 million each.

Table 3

ESTIMATED CONSTRUCTION COST SUMMARY
SEMCOG Downriver Truck Study

OPTION	RIVER ROUGE-ECORSE BYPASS			D. T. AND I. ALIGNMENT				NEW YORK CENTRAL			TRENTON BYPASS
				1a	1b	1c	1	2a	2b	2	
SEGMENT	PHASE A River Rouge Tecumseh	PHASE B Tecumseh Westfield	TOTAL River Route/ Westfield	Alkali-Grove	Ecorse-Alkali	Grove-Riverview	TOTAL *	Alkali-Grove	Ecorse/Alkali and Grove-Riverview (Combined)	Ecorse/ Riverview	Fifth St. Extension
	(Costs in Thousands of Dollars)										
ITEM											
Segment Length, Miles	0.45	0.91	1.36	2.36	1.36	1.18	4.90	2.42	2.58	5.00	1.00
Roadway Construction (1)	$ 480	$ 646	$1,026	$1,696	$1,154	$1,050	$3,900	$2,795	$1,640	$4,435	$ 676
Major Structure	None	None	None	330	450	3,000	3,780	2,220	4,290	3,986	None
Minor Structure (2)	63	59	127	352	269	734	1,355	3,192	794	6,510	38
Trackwork (3)	None	None	None	507	115	1,900	2,522	169	87	256	None
SUBTOTAL	$ 548	$ 605	$1,153	$2,885	$1,988	$6,684	$11,557	$8,376	$6,811	$15,187	$ 714
Miscellaneous at 15%	83	90	173	433	298	838	1,569	1,257	1,021	2,278	107
Railroad Signalization (4)	None	None	None	630	180	900	1,710	None	90	90	None
SUBTOTAL	$ 631	$ 695	$1,326	$3,948	$2,466	$8,422	$14,836	$9,633	$7,922	$17,555	$ 821
Less Salvage (5)	None	None	None	17	22	None	39	7	2	9	None
TOTAL COST (6)	$ 631	$ 695	$1,326	$3,931	$2,444	$8,422	$14,797	$9,626	$7,920	$17,546	$ 821

(1) Pavement, subbase, and minor earthwork (less area at bridges).
(2) Includes: retaining walls, traffic signals, fences and signal flashers.
(3) Includes: all new track and hardware less signalization.
(4) Assumes: Centralized Traffic Control (CTC), is presently available.
(5) Accounts for all track removal @ $10,000/mile of track.
(6) Less any legal, design or planning fees; right of way acquisition not included..

* This cost includes $3,085,000 for new construction of relocated NYC tracks adjacent to old NYC tracks.

Track work to accommodate the truckways would include all new track and hardware less signalization control costs. The portion of the Wyandotte Truckway for the Ecorse/Grove Street option using the D. T. and I. right-of-way is $622,000, while the cost for track work in Option 1c (Ecorse/Grove/Riverview) is about $2.5 million.

Option 1 would also require $1,710,000 for Centralized Traffic Control (CTC) included under the railroad signalization section.

Salvage of track materials for later reuse constitutes a minor deduction from the total cost of any option. It should be noted that this is due to the fact that as weights increased on these tracks, they were not replaced with heavier gauge rail at that time, thus making them unsuitable for use elsewhere along the main line. It is possible, however, that usage can be made of these rails at isolated sidings where little through traffic is present.

Right-of-Way Costs - Estimates of right-of-way costs have been sought as part of plan development for the proposed truckways. The importance of the railroad rights-of-way in the development of these costs and the question of assigning value to that right-of-way has lead to delays in assembling a "valid" cost estimate for the land required for the truckways. Estimates have been sought from the Detroit, Toledo and Ironton Railroad for their Wyandotte track area and additional estimates will be required in the property of Great Lakes Steel Corporation to complete costs on the River Rouge-Ecorse Bypass.

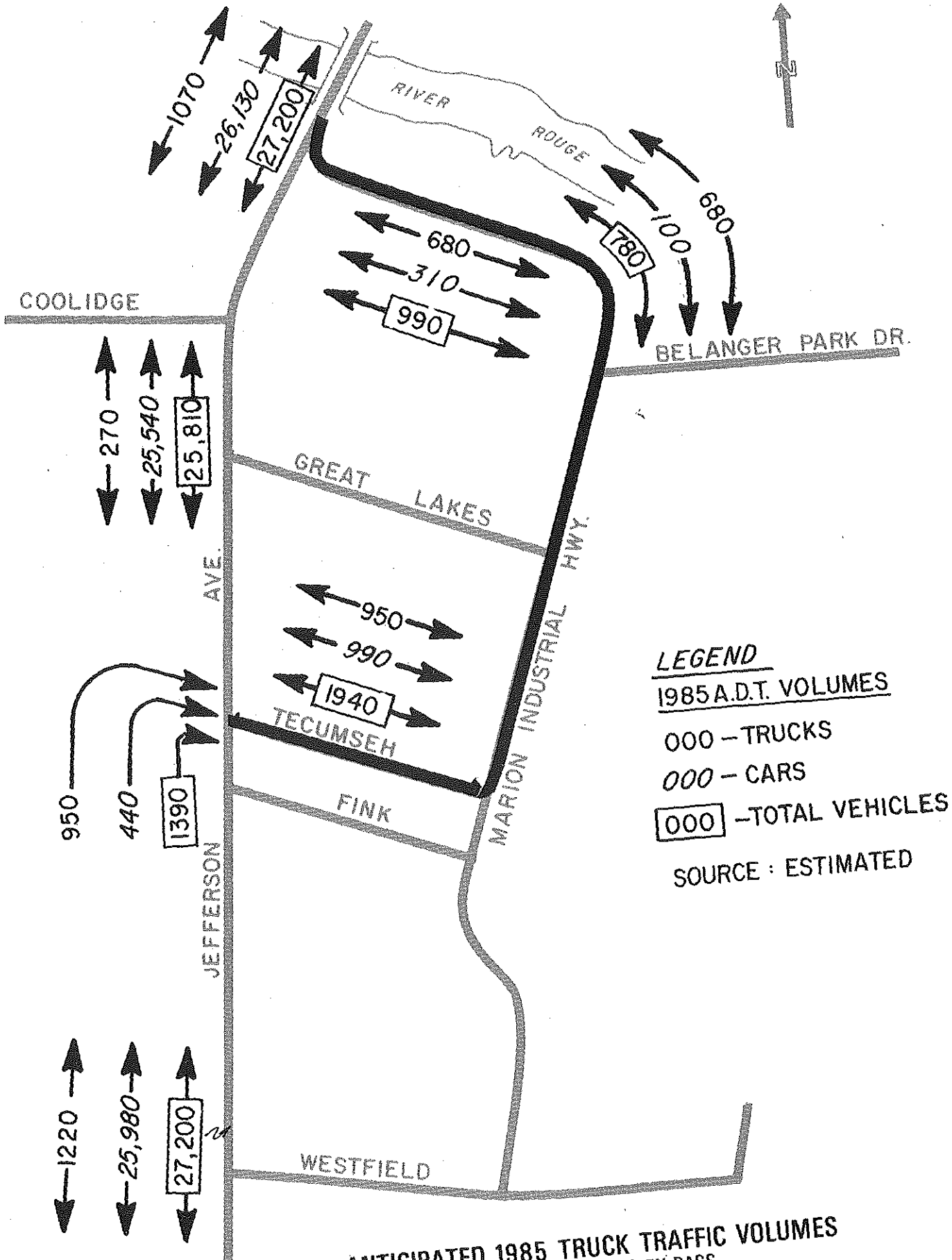
The Trenton Bypass right-of-way cost has been developed from assessment data and it is expected to total nearly $500,000. This would bring the total cost of the Trenton Bypass to over $1.3 million.

Truckway Traffic Service Impacts

Each option for truckways within the Downriver area has been analyzed to estimate the 1985 average daily traffic volumes for trucks, cars, and combined total vehicles. These figures demonstrate the changes in anticipated vehicular traffic volumes due to changes in truckway configuration.

River Rouge/Ecorse Bypass - Truck volumes north of the Rouge River on Jefferson Avenue total approximately 1,070 per day. About 680 of these trucks are estimated to turn onto the Marion Industrial Highway. The remaining trucks (390) have local origins and destinations or are proceeding to Schaefer for westbound connections with the Interstate. The southern end of this option will carry approximately 950 trucks which includes going north on Jefferson Avenue or local connections and routing to Schaefer. Due to the relatively short length of this option and the out-of-the-way location, it is logical to assume that even if mandatory through truck prohibition occurs on the segment of Jefferson Avenue between the termini, some heavy trucks will continue to use Jefferson Avenue. Figure 31 reflects estimated traffic diversion with the Tecumseh extension in operttion in 1985. The 630 truck trips indicated represents an increase of about two percent over diversion of 1976 volumes in accord with growth factors for the two communities. A small number of passenger vehicles will use the truck route in the River Rouge/Tecumseh option primarily for connections with industrial sites on the riverfront.

With the extension of the Marion Industrial Highway from Tecumseh, south to Westfield, traffic volumes on the bypass will increase both in heavy truck volumes and passenger vehicles. Truck volumes will increase because greater time savings will be possible over the longer truck route. Passenger car traffic will pick up the truck road for this option due to the fact



ANTICIPATED 1985 TRUCK TRAFFIC VOLUMES
RIVER ROUGE/ECORSE BY-PASS
PHASE 1 RIVER ROUGE TO TECUMSEH

FIGURE 31

Wilbur Smith and Associates

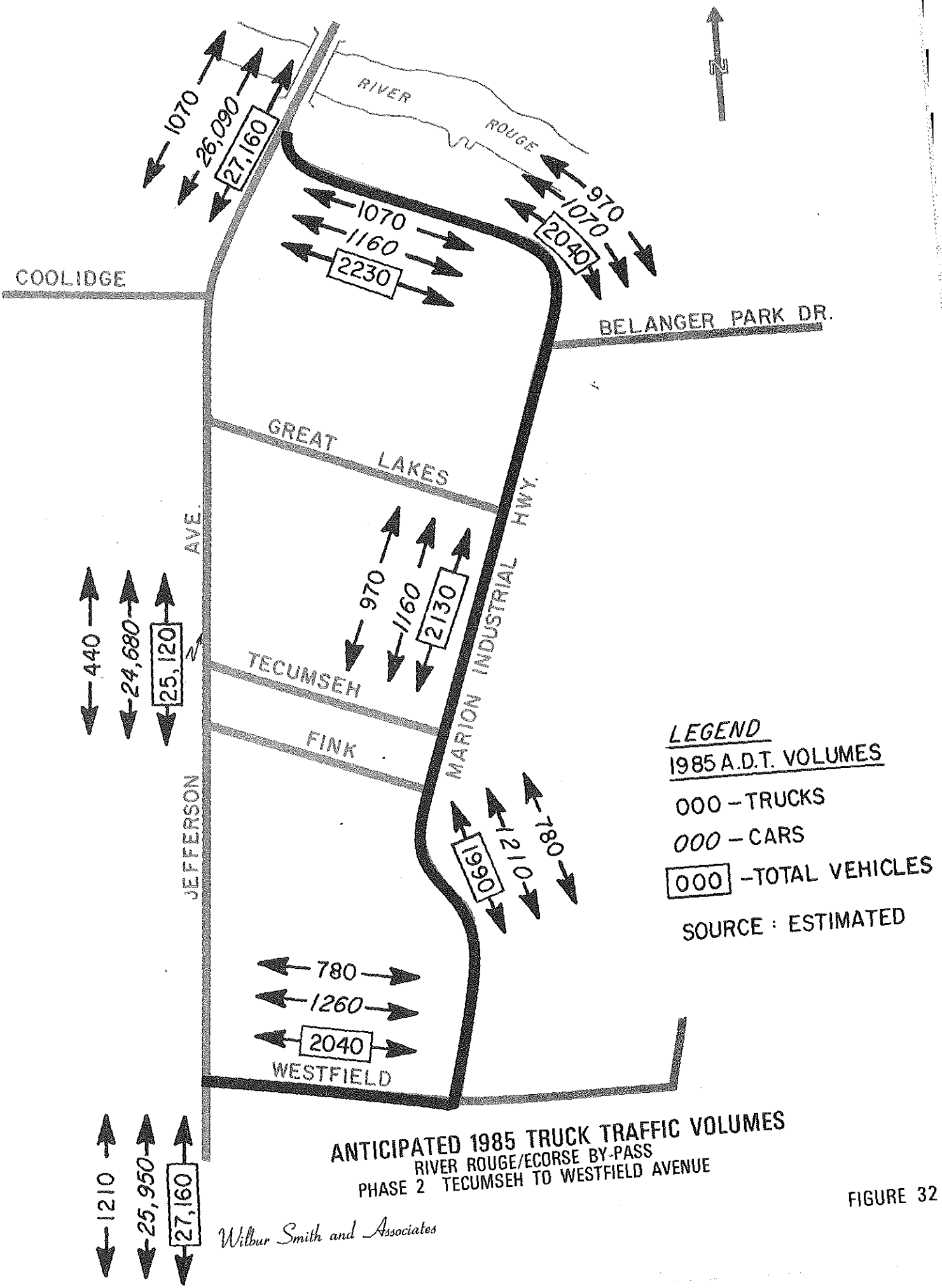
that a connection will be made with the large employee parking lot at Tecumseh, thus allowing employees optional routes for entrance and exit from the plant. This option is illustrated in Figure 32.

Wyandotte Truckway Option 1, Phase A - Alkali/Grove Street - In 1985 it is estimated that this section will carry only 610 heavy-trucks with a limited number of vehicles using it because of its out-of-the-way location and its short length. Even though stringent regulations may be enacted to prevent heavy-truck usage of the section of Jefferson between Alkali and Grove Streets, it is reasonable to assume that a small percentage of the trucks on Jefferson will continue as local trucks stopping within the area. Figure 33 shows the estimated 1985 traffic assignments to this option.

Final decisions on auto use of the proposed Wyandotte Truckway will have to be resolved as a part of working out operating details related to the use of railroad right-of-way. It may become necessary to limit use of the facility to heavy trucks in recognition of cross-track conflicts.

Wyandotte Truckway Option 1, Phase B - Ecorse/Alkali - This option is an extension of the previous Alkali/Grove option and provides for extension of the truckway to the north to Jefferson Avenue in Ecorse. While truck volumes are estimated at 740, an increase of about 130 per day, automobile traffic will also increase on this roadway because of connections with adjacent residential areas and reduced delays during some periods of the day. Figure 34 presents traffic data for this option.

Wyandotte Truckway Option 1, Phase C - Grove/Riverview - Figure 35 depicts a combination of options forming the Ecorse/Grove Street connection and combining it with a portion of the New York Central right-of-way from Grove Street to Riverview.



ANTICIPATED 1985 TRUCK TRAFFIC VOLUMES
RIVER ROUGE/ECORSE BY-PASS
PHASE 2 TECUMSEH TO WESTFIELD AVENUE

FIGURE 32

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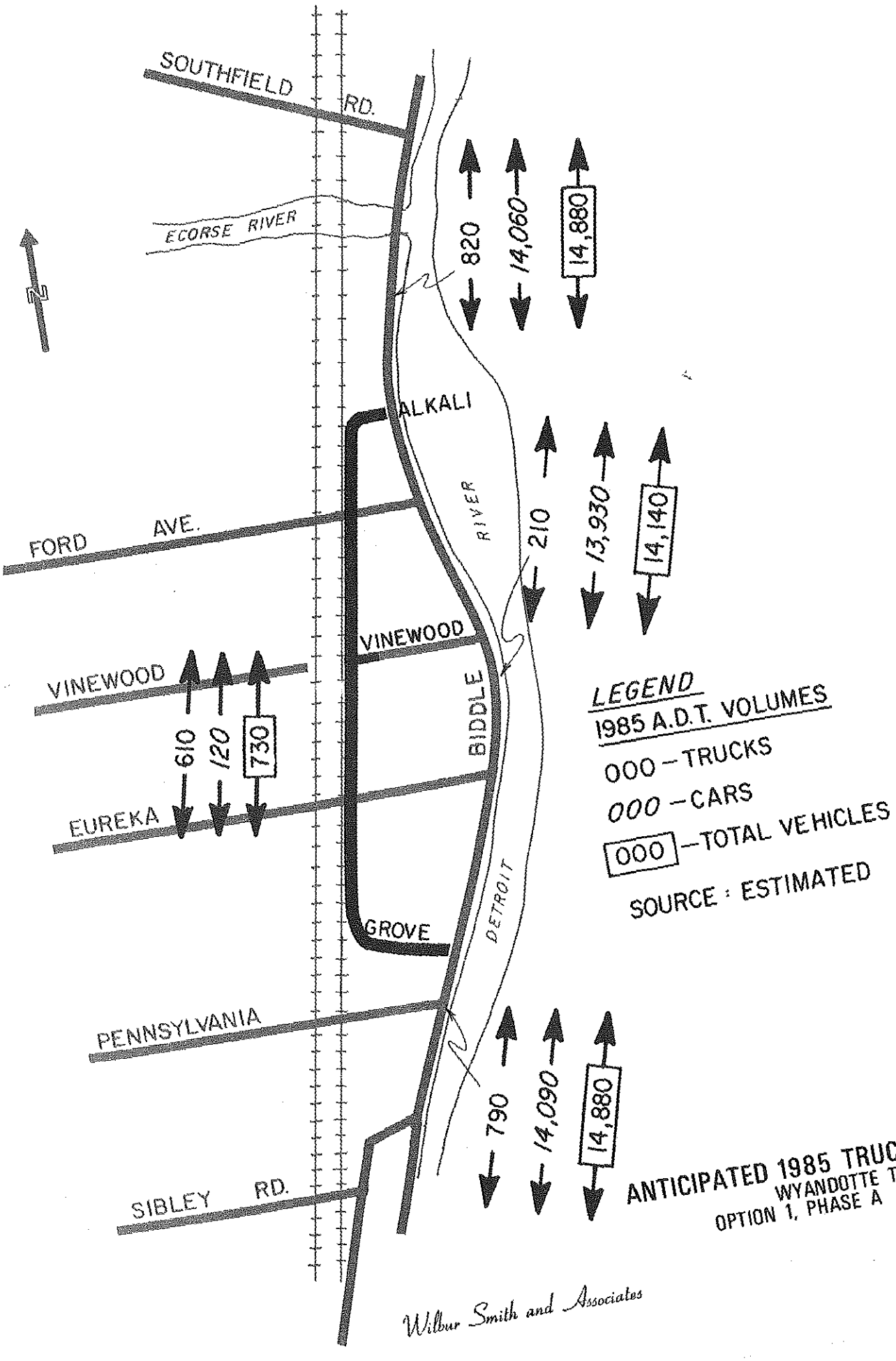

ANTICIPATED 1985 TRUCK TRAFFIC VOLUMES
WYANDOTTE TRUCKWAY
OPTION 1, PHASE A ALKALI TO GROVE

FIGURE 3

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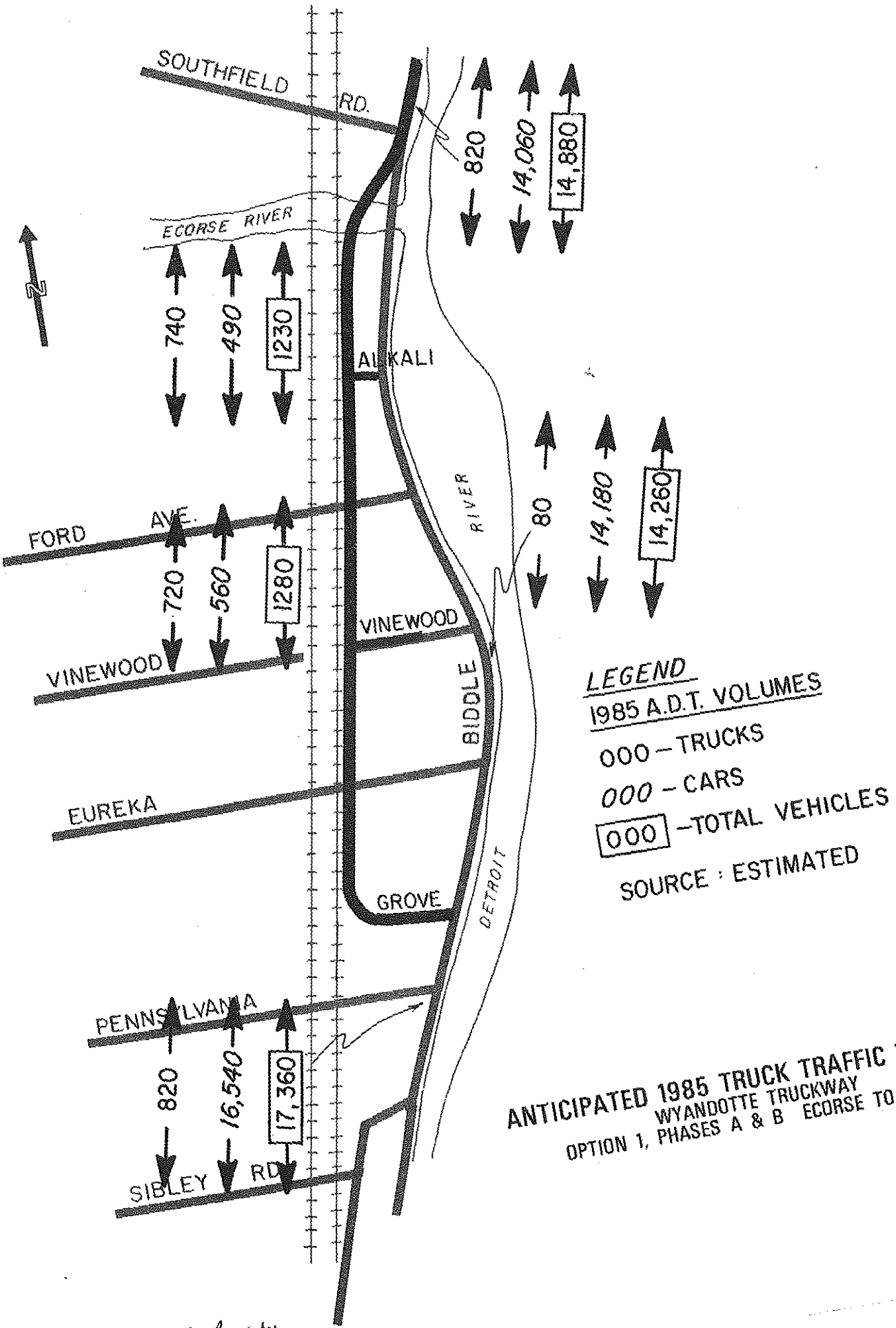
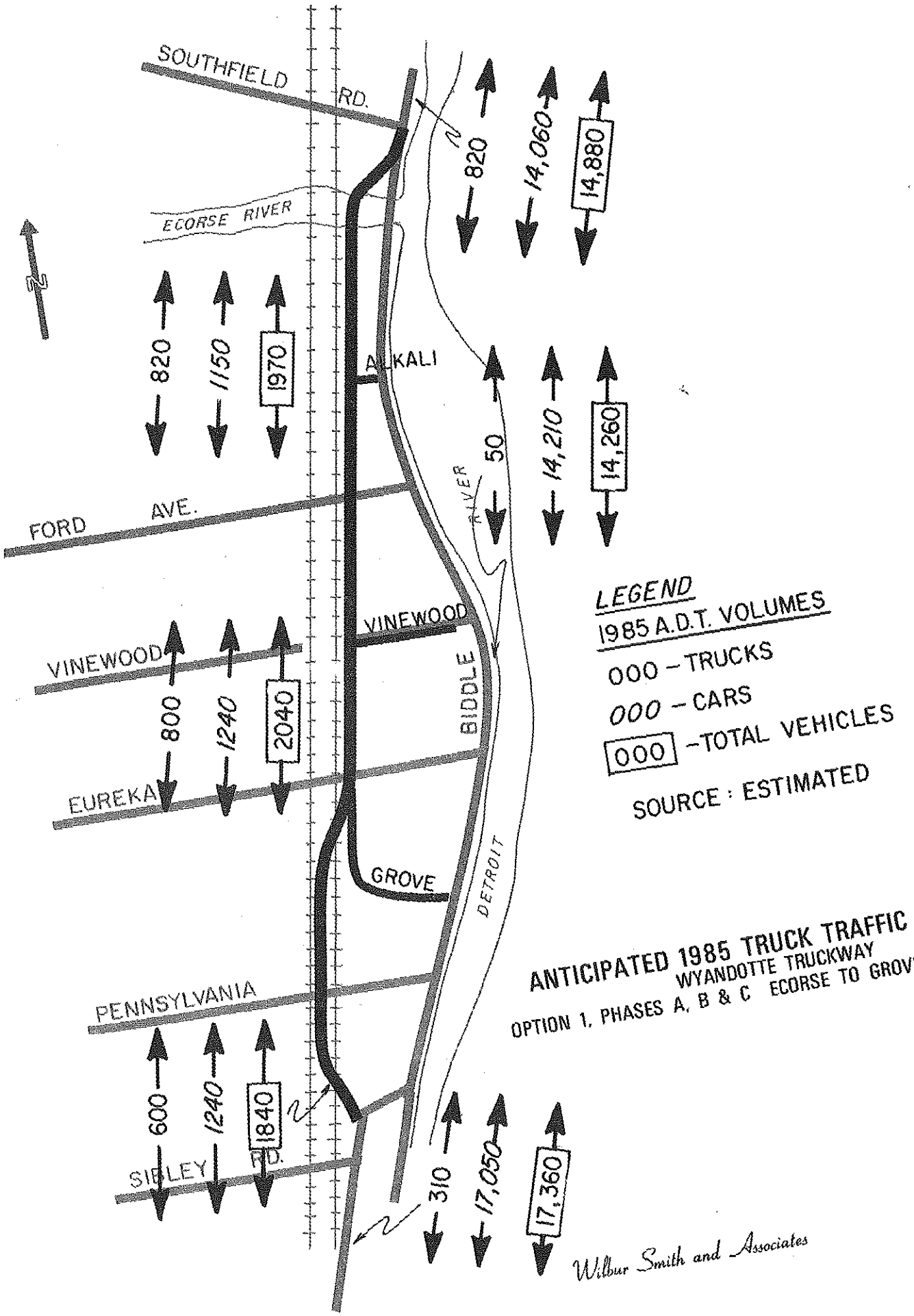


ANTICIPATED 1985 TRUCK TRAFFIC VOLUMES
WYANDOTTE TRUCKWAY
OPTION 1, PHASES A & B ECORSE TO GROVE

FIGURE

Wilbur Smith and Associates



ANTICIPATED 1985 TRUCK TRAFFIC VOLUMES

WYANDOTTE TRUCKWAY

OPTION 1, PHASES A, B & C ECORSE TO GROVE TO RIVERVIEW

Wilbur Smith and Associates

FIGURE 3

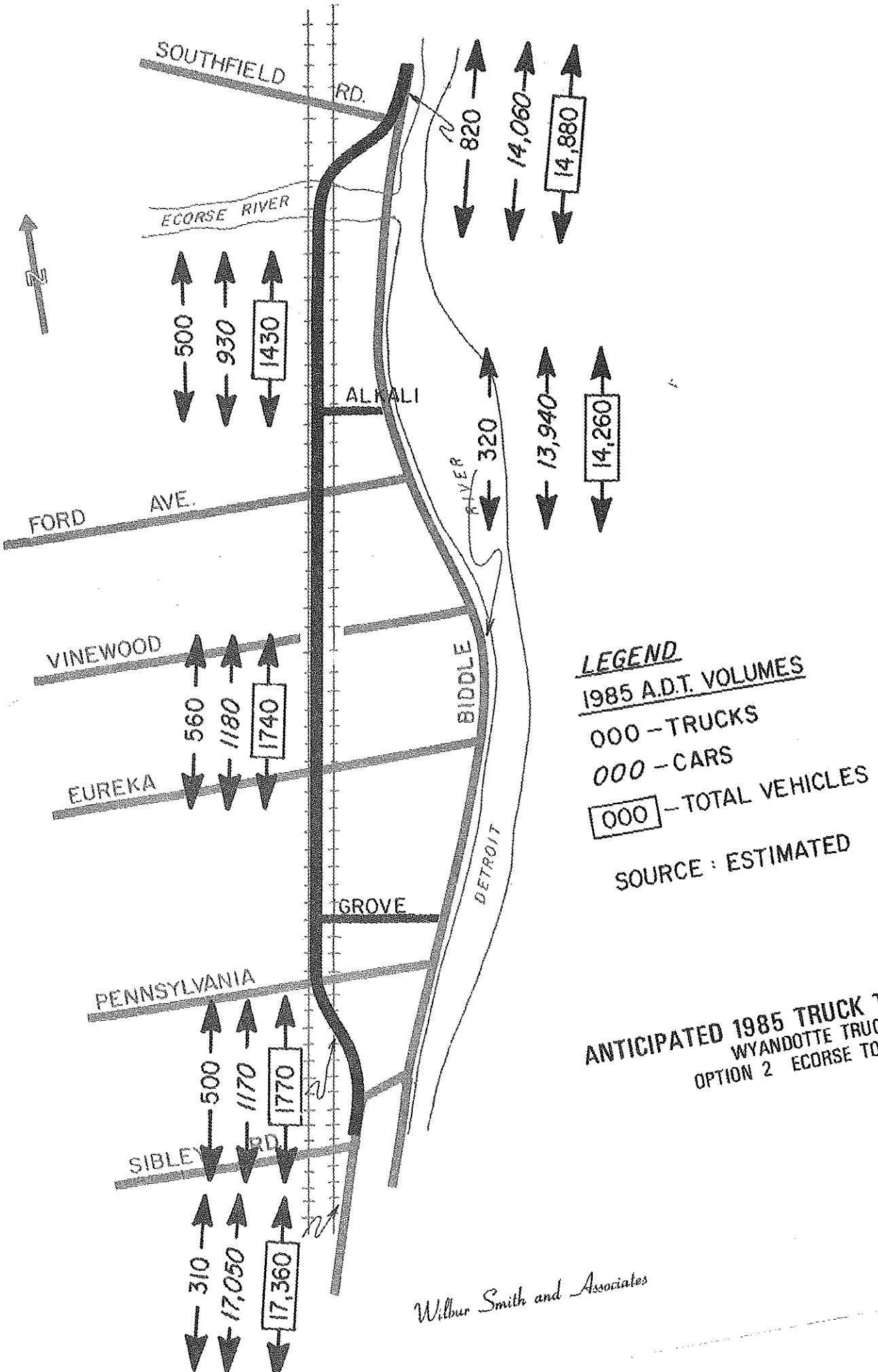
This option will carry through traffic from Jefferson, bypassing Wyandotte, as well as the local traffic wishing to make connections with the riverfront industries in Wyandotte. It provides the greatest amount of accessibility for industry while at the same time separating the largest volumes of trucks from the business traffic in the downtown area. In its heaviest utilized section, this option would carry about 820 trucks and 1,150 cars per day at 1985 traffic levels.

Wyandotte Truckway Option 2 - Ecorse/Riverview - Due to the fact that option has only two intermediate connection points, it will serve primarily traffic destined through the Wyandotte area estimated at 500 to 560 vehicles per day. This option will provide little relief from the basic problem of east-west usage to connect with riverfront industry in the Wyandotte area; it will, however, remove a portion of the traffic travelling up Jefferson and continuing beyond Wyandotte. The volume breakdowns for this option are depicted on Figure 36.

Trenton Bypass - As depicted in Figure 37, this short bypass will carry approximately 700 trucks. A greater percentage of the trucks using Jefferson to the north and south of Trenton will be attracted to take the bypass due to numerous signals and roadway turns in Jefferson Avenue.

Truckway Environmental Impacts

Socioeconomic impacts as well as air pollution and noise are important components of present day feasibility studies for public works projects. Preliminary analysis of the proposals for truckways and related improvements in the Downriver area have been reviewed from the broader viewpoint of impacts on the communities.



ANTICIPATED 1985 TRUCK TRAFFIC VOLUMES
WYANDOTTE TRUCKWAY
OPTION 2 ECORSE TO RIVERVIEW

FIGURE 36

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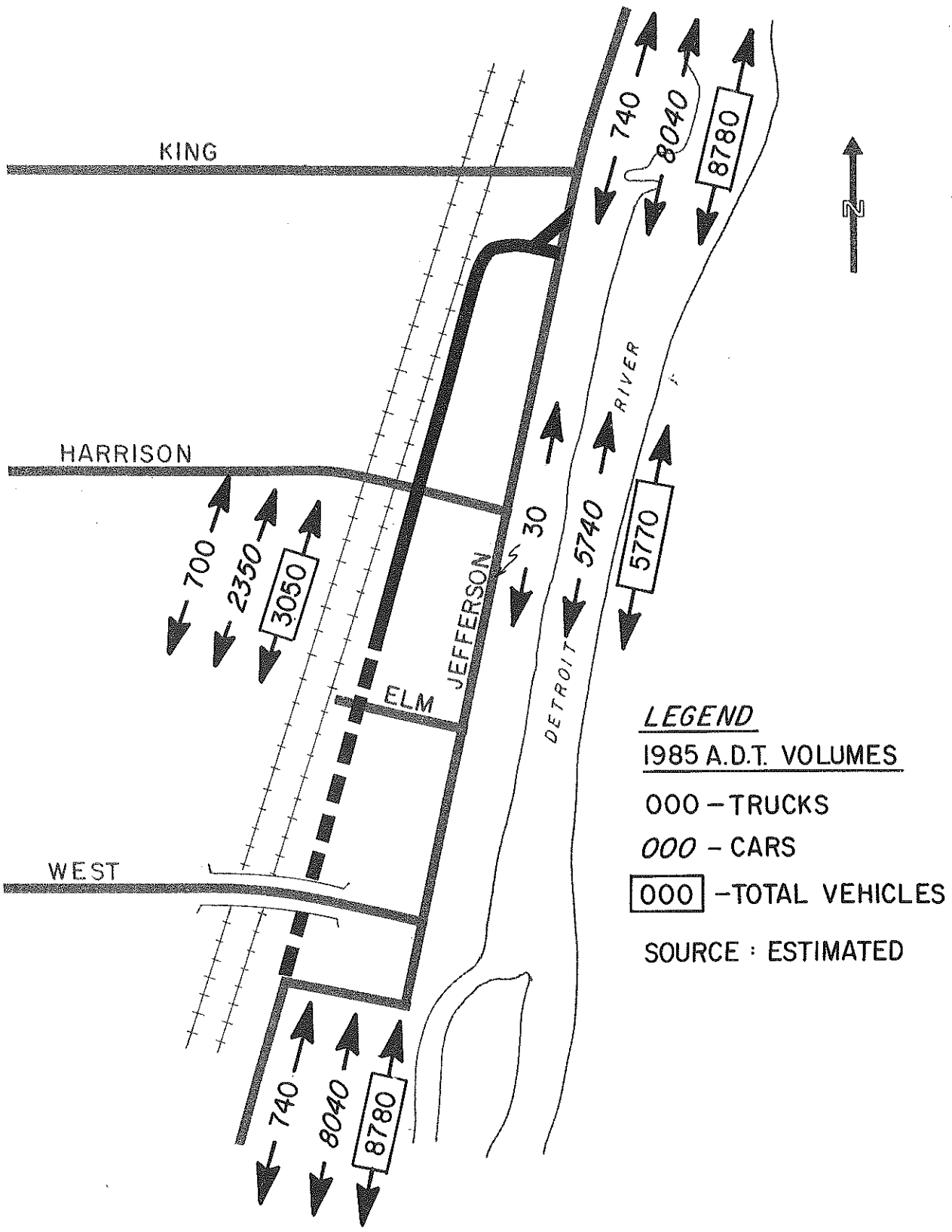


ANTICIPATED 1985 TRUCK TRAFFIC VOLUMES
TRENTON BYPASS

Wilbur Smith and Associates

FIGURE 37

West Jefferson Avenue (Biddle Avenue) which bisects the communities of River Rouge, Ecorse, Wyandotte, Riverview, and Trenton is used by heavy trucks for access to industries located along the Detroit River. In addition, it serves as the center for shopping activities in four of these five communities. Other land uses that have developed along Jefferson include residential, medical, strip commercial, and parks and open space.

The issue which surfaces as a result of this investigation is the desire of the communities to retain viable commercial centers, yet accommodate the transportation requirements of the industries upon which they depend for employment and tax base. Solutions to this problem are complicated by the desire of the truckers to reach I-75, I-94, and I-96 to the north and west of the area. Consequently, the problem becomes the movement of products to and from the industries without adversely affecting trip schedules and costs and at the same time preserving the communities attributes.

In general, truckway options studied herein will have both beneficial and adverse impacts in the study area. Probable beneficial effects include:

1. Providing a facility that will increase efficiency for movement of materials into and out of the area;
2. Separating pedestrian and shopping traffic from heavy-truck traffic;
3. Creating an atmosphere for the merchants and civic organizations to develop attractive commercial areas, a viable commercial area is an asset to each community's tax base.
4. In addition to the above and the emphasis on conservation of energy, it will entice redevelopment of older neighborhoods close to the shopping area;

drivers, and a variety of other impacts, are compared on the basis of negative and positive benefits to the community. Pluses indicated a positive or beneficial effect on the community. a zero indicates that the impact is either negligible or not pertinent, and minuses indicate a negative impact on the study area.

The most favorable ranking among the options suggested is the proposal for rail grade crossing separations, with a total of nine points. The next two most favorable options were the Trenton Bypass and the River Rouge/Westfield concept. These were closely followed by the River Rouge/Tecumseh option, Pennsylvania Road Improvements, Pennsylvania Road/Fort Street/ Trenton Road intersection improvements, and Ecorse/Grove Street/ Riverview, Option 1c. The remaining positive impact option was the Ecorse/Grove Street, Option 1b. Two of the options had negative impact totals. They were Alkali/Grove Street, Option 1a and the Ecorse/Riverview Option 2 following the New York Central right-of-way.

Costs Vs. Benefits

Costs for construction of the different options considered for improvement of truck traffic range from as little as $631,000 to as much as $17,546,000. Right-of-way costs are a significant factor in several options and must be considered in connection with those options involving use of the railroad rights-of-way. Specific data are not available to estimate the cost of rail right-of-way at this time.

Right-of-way costs for the Trenton project have been estimated at $500,000. This brings the total cost of this project to over $1.3 million.

The River Rouge-Ecorse Bypass, an extension of Marion Industrial Highway, is estimated to involve private rights-of-way valued at approximately $70,000 for the extension to Tecumseh and an additional $140,000 for the extension south to Westfield Avenue.

Combined costs have not been developed for the individual construction options, principally because the rail right-of-way cost is such a key factor and has not been resolved.

Traffic Benefits

The improvement of east-west access between I-75 and Jefferson Avenue and the reduction in heavy truck movements on Jefferson will be the principal benefits of the proposals outlined herein. Estimates of traffic anticipated to use the proposed improvements were developed in Chapter 3. Heavy truck volumes forecast for the truckways in 1985 range from 680 per day for the extension of Marion Industrial Highway to Tecumseh in River Rouge-Ecorse to 820 per day for Wyandotte Option 1, Phase C, which extends from Ecorse to Riverview. The Trenton Bypass has been estimated to attract 700 heavy trucks daily at 1985 traffic levels.

Each of the options also was estimated to accommodate automobile and light-truck traffic although no firm decisions in this regard were arrived at pending results of discussions with the railroad companies and restrictions that may be agreed to as a result thereof. The auto and light-truck traffic may be a conservative estimate in the case of certain of the options such as the Trenton bypass, where a signifiaant potential time savings may be realized by all users of the Bypass.

By removing heavy trucks from Jefferson Avenue in communities where truckways are proposed, two major savings would be accomplished. The first would be that as a result of removal

of the trucks, passenger vehicles will be able to increase slightly their average operating speed along Jefferson, thus increasing fuel economy and reducing average travel time. Conflicts between pedestrians and heavy trucks will be virtually eliminated in the bypassed areas.

On the truckways, the separation of the truck traffic and the reduced number of signals and cross streets incurred by the trucks on their routes, will enable the average travel times of the trucks to decrease as well.

Analyses of the heavy truck volumes which may be served by the Downriver truckways, may lead to basic decisions as to feasibility, when consideration is given to statistics developed in recent comparisons of truckway costs and benefits.(3) This concludes that where capital costs exceed $2,000,000 per mile, a daily truck volume of 2,500 vehicles would be required to justify construction. Review of anticipated costs for the Downriver truckways in comparison to the above estimates, indicates that cost per mile for the River Rouge-Ecorse and Trenton proposals would be within the above levels. The Wyandotte Truckway options involving use of the D.T. and I. Railroad right-of-way also appear to be within the $2 million per mile figure although the cost of rail right-of-way has not been determined.

In each of the above cases, however, the truck volumes for 1985 are well below the break-even level indicated (2,500 heavy trucks per day) and on this basis it appears clear that the truckways cannot be justified on a strict traffic benefit/cost basis.

(3) Wilbur Smith and Associates, Urban Truck Road Systems and Travel Restrictions, U.S. Department of Transportation, September, 1976, p. 156. The tradeoffs are based on the relationships between direct user benefits and costs.

Many other considerations affect truckway feasibility. Because they also may be used by private vehicles and because they would produce general community benefits, it is reasonable to consider truckway development for lower truck volume levels. The following ranges of truck volume should be considered for planning purposes and as a means of relating monitored truck volume data to possible construction timetables:

Heavy Truck Volume Range (Vehicles Per Day)	Need for Relief	
	Traffic	Environmental (Noise, Vibration, Intrusion, etc.)
0- 500	Not Required	Not Required
500- 1,000	May be Desirable	Desirable
1,000- 1,500	Desirable	Highly Desirable
1,500- 2,000	Highly Desirable	Serious
2,000- 2,500	Serious	Essential
Over 2,500	Essential and Feasible	Essential

This suggests that as the volume of heavy trucks increases the need for relief becomes more urgent in terms of both traffic and environmental factors. The specific locations or roadways involved will have a major bearing on the interpretation of these evaluative statements. In general, however, when truck volumes reach the range of 1,000 to 1,200 per day the road section involved should be carefully reviewed in terms of both traffic and environment for programming of relief facilities.

When consideration is given to the fact that the passenger car equivalent factors for the heavy trucks which are the object of this study are 3.0 for semi-trailers and 4.0 for semi- and full trailers, it is apparent that the threshold

volumes of 1,000-1,200 heavy trucks will have the affect of about 4,000 cars per day on the road network. This impact will be substantial in the community centers along Jefferson and in selected locations can be expected to cause problems under peak flow conditions.

General community benefits, such as to properties along Jefferson, commercial interests in the business centers, air pollution and noise considerations and the matter of community image are also conducive to the feasibility of these projects. Heavy trucks on Jefferson are a major concern of citizens in River Rouge, Ecorse, Wyandotte and Trenton.

Although the acquisition and development of the truckway alternatives and associated roadway improvements will be costly, these costs must be balanced against factors such as the "value of the individual community" and one such measurement can be expressed in terms of its cash value.

In this context, the 1976 True Cash Value as determined by the Wayne County Bureau of Taxation in its Equalization Report of 1976, is shown in Table 8. The figures are presented in two groupings, the first reflecting the communities most directly affected by the "truckway concepts", and the second grouping reflecting the adjacent communities which would benefit through other means of control, and residual benefits of the truckways. Figures are given for the three basic forms of land use--commercial, industrial, and residential.

The total cost of proposed truck improvements included in this plan, $45,000,000, exclusive of rail right-of-way costs, can be related to the value of the communities in the Downriver area of over $4 billion to establish that the proposed investment is only slightly more than one percent of total community value.

Table 8

1976 TRUE CASH VALUE OF SELECTED LAND USES IN DOLLARS

SEMCOG Downriver Truck Study

Communities Within Truckway Concepts

	COMMERCIAL	INDUSTRIAL	RESIDENTIAL	TOTAL
River Rouge	$10,004,250	$150,526,630	$ 54,568,630	$215,099,510
Ecorse	12,956,050	143,986,410	65,978,920	222,921,380
Wyandotte	54,240,580	60,684,980	228,433,460	343,359,020
Riverview	43,691,670	27,833,440	101,916,670	173,441,780
Trenton	38,743,060	163,262,320	207,663,500	409,668,880
TOTAL	$179,644,110	$546,293,780	$658,561,180	$1,364,490,570

Communities Benefiting From Other Improvements

Allen Park	$ 54,060,670	$ 58,862,250	$327,374,680	$440,297,600
Lincoln Park	71,959,860	10,375,000	320,559,370	402,894,230
Melvindale	23,769,540	36,944,500	72,822,830	133,536,870
Taylor	206,754,120	95,051,080	447,166,640	748,791,840
Southgate	95,498,510	10,293,860	237,719,670	343,512,040
Brownstown	41,497,840	71,992,340	92,302,500	205,943,070
Woodhaven	33,561,440	58,996,320	73,691,860	166,249,620
Gibraltor	9,007,630	28,275,740	33,101,710	70,385,080

(continued)

Table 8 (Cont.)

	COMMERCIAL	INDUSTRIAL	RESIDENTIAL	TOTAL
Communities Benefiting From Other Improvements (Cont.)				
Flat Rock	$ 20,072,220	$ 51,022,240	$ 42,493,910	$113,588,370
Rockwood	5,540,200	7,007,890	21,261,400	33,809,490
Grosse Ile	10,285,510	4,240,300	140,001,180	155,152,800
TOTAL	$571,827,540	$433,061,520	$1,808,495,750	$2,814,161,010
SUMMARY OF TOTALS	$751,471,750	$979,355,300	$2,467,056,930	$4,178,651,580

SOURCE: Wayne County Bureau of Taxation.

Major elements of the improvement costs can be assigned to the five communities identified as "within truckway concepts." Measured against the value of these communities, the truck plan represents only 3.3 percent of gross value. The protection of these community values, in terms of commercial, residential and industrial land and buildings, would seem to justify the expenditure of the three percent investment, particularly when the bulk of the funds required can be expected to come from State and Federal sources.

Sources of Funding

A major concern since the inception of this project has been the identification of potential sources of funds for construction of truckways from among the proposals outlined. The normal sources of highway construction funds include the Federal Highway Administration which supports existing Interstate, Primary, Secondary, and Urban Systems in each state, the Michigan Department of State Highways and Transportation, the Wayne County Roads Commission, and to a very limited extent, the local communities. Since the truckways proposals are intercity in nearly every case, it would not be expected that the local communities would have to play a major role in funding the truckways. The exception may be in Trenton where the proposal is completely within that city, although it has regional significances and should be treated as the other truckway options.

The intermediate levels of funding sources, Wayne County and the State of Michigan, are faced with the problems of most state and county governments and do not have sufficient funds to cover the projects identified as needed, including those already programmed.

The Federal Aid Highway Act of 1973 addressed the subject of truck lanes, however, as follows:

Section 149 "The Secretary may approve as a project on any Federal-aid system, the construction of exclusive or preferential truck lanes."

Further in this act, the following is found:

Section 307. Research and Planning

"(b)....The highway research program herein authorized shall also include studies to identify and measure quantitatively and qualitatively those factors which relate to economic, social, environmental, and other impacts of highway projects.

"(c) (1) Not to exceed 1½ per centum of the sums apportioned for each fiscal year beginning with fiscal year 1974 to any State under section 104 of this title shall be available for expenditure upon request of the State highway department, with the approval of the Secretary, with or without State funds, for engineering and economic surveys and investiaations; for the planning of future highway programs and local public transportation systems and for planning for the financing thereof; for studies of the economy, safety, and convenience of highway usage and the desirable regulation and equitable taxation thereof; and for research and development, necessary in connection with the planning, design, construction, and maintenance of highways and highway systems, and the regulation and taxation of their use.

"(2) One and one-half per centum of the sums apportioned for each fiscal year beginning with the fiscal year 1964 to any State under section 104 of this title shall be available for expenditure by the State highway department only for the purposes enumerated in paragraph (1) of this subsection.

"(3) In addition to the percentage provided in paragraph (2) of this subsection, not to exceed one-half of one per centum of sums apportioned for each fiscal year beginning with the fiscal year 1964 under paragraphs (1), (2), and (3) of section 104(b) of this title shall be available for expenditure upon request of the State highway department for the purposes enumerated in paragraph (1) of this subsection, including demonstration projects in connection with such purposes.

"(4) Sums made available under paragraphs (2) and (3) of this subsection shall be matched by the State in accordance with section 120 of this title unless the Secretary determines that the interests of the Federal-aid highway program would be best served without such matching."

Section 120 of the Federal Aid Highway Act of 1973 referred to above states generally that a 70-30 Federal-State matching ratio will exist in most cases. This, of course, is excepted in the quotation from Section 307.

The use of Federal funds for the truckways would involve establishing the truckways as part of the Federal Aid Urban System, as replacement or supplements for bypassed sections of Jefferson. Since Jefferson is on the FAUS system throughout the Downriver area, 70-30 funds could be utilized to undertake the proposed truckways. As a demonstration project under paragraph 307 C3 above, the Secretary of Transportation may decide that the best interests of the Federal-aid highway program can be served without requiring matching funds, in which case the total cost of the development can be programmed using Federal funds.

Consideration should also be given to utilizing Federal railroad grade-separation construction funds to provide new facilities required at the four locations outlined. Review of all funding source potentials should lead to a funding plan which would permit earlier project completion than might be anticipated if regular funding channels are followed.

It would appear that the opportunity exists if the State and local officials can reach agreement on a preferred course of action, to take advantage of Federal funds for demonstration projects to initiate one or more of the truckway projects proposed herein.

Implementation Strategy - Staging and Scheduling.

The proposals resulting from this project can be divided into seven significant action items, each dealing with a particular improvement or series of actions leading to a total plan. The following are the seven items:

1. Truck route signing;
2. Rail grade-crossing improvements - Pennsylvania, King, North Line, and Sibley;
3. Pennsylvania Road Widening;
4. Pennsylvania Road, Fort Street, and Trenton Road intersection improvements;
5. Marion Industrial Highway Extension to Tecumseh and Westfield (Phases 1 and 2);
6. Wyandotte Truckway (Option 1, Phases A, B, C); and,
7. Trenton Bypass.

The overall development concept consists of a sequenced series of coordinated improvements and measures desiged to alleviate existing delay and congestion, minimize truck intrusion in residential and commercial areas, and combine construction

and restriction in the final program. Figure 38 presents the Downriver Truck Improvement Concept.

Staging of the program reflects actual and demonstrated needs and compatibility with programmed improvements as well as ease of implementation.

Table 9 presents a suggested implementation plan and estimated costs for the various elements of the proposed plan for the Downriver truck operation.

This staging of alternatives will allow the State, Region, County, and communities to fit expensive options into future budgets and spread their impact over many years.

The railroad grade separations are given priority over truckways since their benefits will accrue to all road users and their construction is necessary to purchase at-grade intersections with truckways.

Truckway development will become desirable when daily heavy-truck volumes on Jefferson exceed 1,000 vehicles per day. Timing should be contingent upon continued monitoring of truck volumes and traffic conditions.

The total cost of nearly $45 million is proposed to be spread over a 10-15-year period in six stages of two years each after the initial year (1977). Costs for individual stages range from $6 million to $10 million based on the estimates utilizing 1976 cost levels.

Railroad grade separations would cost about $3.5 million at each of the proposed four crossings. The widening and reconstruction of five miles of Pennsylvania Road would cost about $6.5 million and improvement of the Fort-Pennsylvania-

Table 9

IMPLEMENTATION STAGING

SEMCOG Downriver Truck Study

ITEM	STAGE	ESTIMATED COSTS (1)	TIME PERIOD
Trailblazers and Restrictions	1	$ 15,000	1977-78
Pennsylvania Avenue Grade Separation @ Railroads	2	3,500,000	1978-
Widening 5 miles of highway	2	6,450,000	1980
Intersection-Phase 1	2	1,700,000	
Grade Separations at Railroads			
King Road	3	3,500,000	1981-
Sibley Road	3	4,200,000	1982
North Line	3	2,800,000	
Marion Industrial Highway Extension to Tecumseh	4	700,000 (3)	1982-83
Wyandotte Truckway Option 1, Phase A	5	3,931,000 (2)	1983-84
Marion Industrial Highway Extension to Westfield Ave.	5	765,000 (3)	
Wyandotte Truckway Option 1, Phase B	6	2,444,000 (2)	1985-86
Pennsylvania-Fort-Trenton Intersection - Phase 2	6	4,900,000	
Wyandotte Truckway Option 1, Phase C	7	8,422,000 (2)	1987-90
Trenton Bypass	7	1,321,000	
TOTAL		$44,648,000	

(1) Estimates by Wilbur Smith and Associates (1976 dollars).
(2) Does not include right-of-way costs.
(3) Includes right-of-way costs of approximately $70,000 for each of these

Trenton intersection would involve about $1.7 million in Phase 1 and $4.9 million in Phase 2.

The River Rouge/Ecorse Bypass will range from $700,000 for the extension to Tecumseh, to $765,000 for the further extension to Westfield.

Staged construction of the Wyandotte Truckway allows for the building of the Alkali/Grove Streets link for about $3.9 million in the D.T. and I. rail right-of-way as a possible first step in the process. The second stage would be an extension north to Ecorse, which if implemented would cost an additional $2.4 million. The third stage would include an extension from Grove Street to Jefferson Avenue in Riverview north of Sibley Road, via the New York Central Railroad right-of-way estimated to cost $8.4 million, making the total truckway development cost $15 million.

The Trenton Bypass would cost about $1,321,000 -- $821,000, for construction and $500,000 for right-of-way.

Implementation of the proposed truckways in accord with the six stage plan outlined above should be contingent on monitoring the results of each step in the staged program. The Wyandotte Truckway, heavily contingent upon the completion of satisfactory negotiations with the railroads in the corridor, is particularly susceptible to the monitoring process, with successive decisions to extend, dependent upon satisfactory performance of the recently completed sections.

Because of the timing problem involved throughout the process of deciding on a truckway in the rail corridor, it is important to start at once to work out the decisions required.

Next Steps

The logical next steps are to (1) achieve consensus on program components and staging; (2) obtain necessary commitments from railroads and public agencies; and, (3) secure and earmark funds. These are prerequisite to translating the truck improvement concepts from plan to reality and in this way set the pattern for other parts of the metropolitan area.

Formulation of an implementation plan in terms of on-going Transportation Systems Management plans and elements of the Transportation Improvement Program (a plan which is updated each year for the metropolitan area and is part of the TSM plan) lies in the determination of appropriate county-wide or region-wide priorities for capital improvements and the relative importance of needs in other corridors.

The total costs associated with the Downriver Area as related to other county and region programs must be placed in proper focus in terms of the County's ability to fund on-going projects.

APPENDIX

Appendix Table 1

INDUSTRY IDENTIFICATION BY TYPE AND EMPLOYMENT

SEMCOG Downriver Truck Study

AREA	INDUSTRY	TYPE	TOTAL EMPLOYMENT
Ecorse	Ecorse Plant Stamping Division	Metal Stamping	250
	Ecorse Screw Machine Products, Inc.	Screw Machine Products	125
	Extruded Hinge Div.	Aircraft Parts	100
	Walcon Corp.	Sheet Metal Work	196
River Rouge	Allied Chemical Corp.	Chemicals-Industrial Inorganic	500
	Fabricon Products	Castings - Nonferrous	360
	Marblehead Lime Co.	Lime	50
	United States Gypsum Co.	Concrete Products	140
	Whitehead & Kales	Railroad & Street Cars	1,500
Riverview	Firestone Tire & Rubber Company	Motor Vehicle Parts and Accessories	990
Trenton	Chrysler Corp.	Engines - Internal Combustion	---
	Ford Motor Co.	Metal Stampings	---
	Levy, Edw. Co.	Minerals, Earth, Treated	---
	McLouth Steel Corp.	Blast Furnace, Steel Works & Rolling Mills	---

(continued)

Appendix Table 1 (Cont.)

AREA	INDUSTRY	TYPE	TOTAL EMPLOYMENT
Trenton (Cont.)	Mobil Oil Corp.	Petroleum Refining	340
	Monsanto Co.	Plastics & Synthetic Resins	682
	Monsanto Co.	Plastic Products	100
	Nicholson Machine Products, Inc.	Motor Vehicle Parts & Accessories	61
	Petroleum Specialties, Inc.	Petroleum Refining	60
Southgate	Carbidex Corp.	Tools, Dies, Jigs & Fixtures	77
	Gladwin Corp.	Machinery-Industrial-Misc.	110
Wyandotte	BASF Wyandotte Corp.	Misc. Chemicals	2,500
	Karmazin Products Corp.	Oil Coolers for Compressors, Heavy Constr. & Agriculture	300
	Chrysler Corp.	Plastics & Synthetic Resins	---
	Great Lakes Mfg. & Foundry Co.	Foundries - Gray Iron	104
	Hogart Mfg. Co.	Motor Vehicle Parts & Accessories	184
Lincoln Park	Wolverine Aluminum Corp.	Aluminum - Rolling, Drawing, Extruding	217

(continued)

Appendix Table 1 (Cont.)

AREA	INDUSTRY	TYPE	TOTAL EMPLOYMENT
Gibraltar	McLouth Steel Corp.	Blast Furnaces, Steel Works, Rolling Mills	---
Flat Rock	Moynahan Bronze Co., Inc.	Aircraft Parts	305
	Stearns Mfg. Co., Inc.	Construction Machinery & Equipment	165

Appendix Table 2

FIRESTONE STEEL PRODUCTS CO.-RIVERVIEW
Truck Origin and Destination
SEMCOG-Downriver Truck Study

	ROUTES								
ORIGINS	I-75 SOUTHFIELD-JEFFERSON	I-75 WEST RD.-ALLEN-SIBLEY	SIBLEY FORT-SOUTH	I-75 ALLEN PENN	I-75 DIX TOLEDO	I-75 EUREKA	JEFFERSON	SUB TOTAL	PER CENT OF TOTAL
Detroit	20	2		1		5		28	32
N. Suburbs (Warren, Royal Oak, Mt. Clemens, Pontiac	6			2				8	9
N.W. Suburbs (Dearborn, Garden City, Plymouth, Livonia)						3		3	3
Other Mich. N. (Flint, Saginaw)	1							1	1
Ohio & East		3	22					25	28
Canada	4				1	1		6	7
Indiana & West	1	2	3					6	7
Southern States				2				2	2
Wyandotte							2	2	2
Woodhaven			1				1	2	2
Taylor				1		3		4	5
Melvindale	—	2	—	—	—	—	—	2	2
Subtotal	32	9	26	6	1	12	3	89	
Per Cent of Total	36	10	29	7	1	14	3		100

Appendix Table 3

FORD MOTOR COMPANY - WOODHAVEN STAMPING PLANT
Truck Origin and Destination
SEMCOG - Downriver Truck Study

ORIGINS	ROUTES								SUB-TOTAL	PER CENT OF TOTAL
	I-75 WEST RD.	I-75 SCHAFFER RD.	I-75 TELEGRAPH	I-75 DIX	I-75 SOUTHFIELD	KING-JEFFERSON WEST-ALLEN	FORD-VREELAND-ALLEN	WEST TELEGRAPH		
Detroit	31	11	5		2				49	38
N. Suburbs (Warren, Royal Oak, Mt. Clemens, Pontiac)	2		2						4	2
N.W. Suburbs (Dearborn, Garden City, Livonia, Plymouth, Ford Rouge, Greenfield)	15	9	3		4			1	32	24
W. Suburbs (Wayne, Bellville, Romulus Inkster)			2						2	1
Other Mich. N. (Flint, Saginaw, Etc.)	1								1	1

(continued)

Appendix Table 3 (Cont.)

ORIGINS	ROUTES								SUB-TOTAL	PER CENT OF TOTAL
	I-75 WEST RD.	I-75 SCHAFFER RD.	I-75 TELEGRAPH	I-75 DIX	I-75 SOUTHFIELD	KING-JEFFERSON-WEST-ALLEN	FORD-VREELAND-ALLEN	WEST TELEGRAPH		
Other Mich. W. (Lansing, Grand Rapids, Kalamazoo, Jackson, Ann Arbor)	1		2						3	2
Monroe County	3								3	2
Ohio & East	7								7	5
Indiana, Chic. W.	1		2						3	2
Canada										
South										
Ecorse	4	3			3	1			11	8
Woodhaven	2								2	1
Trenton			1			4		1	6	4
Taylor	1		2			1		1	5	4
Wyandotte	3								3	2
Gibraltar							1		1	1
Southgate				2					2	1
Flat Rock	2								2	1
Rockwood	1								1	1
Sub-total	74	23	19	2	9	6	2	1	137	
Per Cent of Total	54	17	15	1	7	4	1	1		100

Appendix Table 4

CHRYSLER ENGINE PLANT - TRENTON
Truck Origin and Destination
SEMCOG-Downriver Truck Study

ORIGINS	ROUTES: I-75 WEST-FORT VAN HORN	VAN HORN-WEST ALLEN-FORT	JEFFERSON-KING	SOUTHFIELD-FORT	TELEGRAPH-WEST	FORT	SUB TOTAL	PER CENT OF TOTAL
Detroit	43	7	1			2	53	45
N. Suburbs (Warren, Royal Oak, Mt. Clemens, Pontiac)	5						5	4
N.W. Suburbs (Dearborn, Garden City, Playmouth, Livonia)	2						2	2
W. Suburbs (Romilus Wayne, Inkster, Bellville)								
Other Mich. N. (Flint, Saginaw)	3						3	3
Other Mich. W. (Lansing, Grand Rapids, Kalamazoo, Jackson, Ann Arbor)	9				1		10	9

(continued)

Appendix Table 4 (Cont.)

ORIGINS	ROUTES						SUB-TOTAL	PER CENT OF TOTAL
	I-75 WEST-FORT VAN HORN	VAN HORN-WEST ALLEN-FORT	JEFFERSON-KING	SOUTHFIELD-FORT	TELEGRAPH-WEST	FORT		
Monroe County	1						1	1
Ohio & East	15						15	13
Canada	2			1			3	3
Indiana & West	4						4	3
South	2						2	2
Brownstown	3	1					4	3
Wyandotte			1				1	1
Downriver								
Taylor	2						2	2
River Rouge	1						1	1
Melvindale	1						1	1
Trenton	2	1					3	3
Riverview	2						2	2
Rockwood	1	1	—	—	—	—	2	2
Total	98	10	2	1	1	2	114	
Per Cent of Total	85	9	2	1	1	2		100

Appendix Table 5

MOYNAHAN BRONZE COMPANY
Truck Origin and Destination
SEMCOG Downriver Truck Study

ORIGINS	ROUTE		TOTAL	PER CENT OF TOTAL
	TELEGRAPH-WEST HURON RIVER DR.	I-75		
Detroit			1	14
Flat Rock	4	1	4	58
Toledo	1		1	14
Monroe	1	—	1	14
Total	6	1	7	
Per Cent of Total	86	14		100

Appendix Table 6

SUMMARY OF SCREEN LINE MANUAL CLASSIFICATION COUNTS

SEMCOG Downriver Truck Study

LOCATION	DIRECTION	A.M. PEAK PERIOD VOLUMES			P.M. PEAK PERIOD VOLUMES			PEAK TRUCK HOUR VOLUMES			TOTAL DAILY VOLUMES		
		Time Period	Heavy Trucks	Total Vehicles	Time Period	Heavy Trucks	Total Vehicles	Time Period	Heavy Trucks	Total Vehicles	Basis	Heavy Trucks	Total Vehicles
East of Fort St. at:													
Huron River Dr.	EB	8:00AM-9:00AM	17	198	3:00PM-4:00PM	6	276	11:00AM-12:00N	13	246	E	100	3,500
	WB	8:00AM-9:00AM	11	162	2:30PM-3:30PM	14	343	12:30PM- 1:30PM	14	187	E	100	3,200
Vreeland Rd.	EB	8:00AM-9:00AM	11	240	2:30PM-3:30PM	6	424	12:30PM- 1:30PM	12	302	E	75	4,500
	WB	8:00AM-9:00AM	7	184	2:30PM-3:30PM	7	430	9:00AM-10:00AM	11	155	E	80	3,500
Van Horn Rd.	EB	8:00AM-9:00AM	113	847	2:00PM-3:00PM	17	505	8:00AM- 9:00AM	113	847	E	375	7,400
	WB	8:00AM-9:00AM	67	739	2:30PM-3:30PM	24	1,382	1:00PM- 2:00PM	52	698	E	325	7,600
West Rd.	EB	8:00AM-9:00AM	15	564	3:00PM-4:00PM	11	496	12:00N - 1:00PM	20	482	E	150	7,700
	WB	9:00AM-10:00AM	8	281	3:00PM-4:00PM	23	435	1:00PM- 2:00PM	25	491	E	150	5,800
Eureka Rd.	EB	9:00AM-10:00AM	27	612	3:00PM-4:00PM	14	880	12:30PM- 1:30PM	36	554	E	275	9,800
	WB	9:00AM-10:00AM	13	501	3:30PM-4:30PM	18	802	12:00N - 1:00PM	32	670	E	250	9,300
Ford Ave.	EB	9:00AM-10:00AM	6	559	3:00PM-4:00PM	7	712	1:00PM- 2:00PM	15	544	E	90	9,300
	WB	8:30AM-9:30AM	14	452	2:30PM-3:30PM	12	686	12:00N - 1:00PM	18	615	E	95	9,400
Southfield Rd.	EB	8:00AM-9:00AM	51	805	3:00PM-4:00PM	29	806	10:00AM-11:00AM	53	640	E	375	11,200
	WB	8:00AM-9:00AM	26	821	3:00PM-4:00PM	46	1,244	10:30AM-11:30AM	52	852	E	375	13,600
Outer Dr.	EB	9:00AM-10:00AM	2	402	2:30PM-3:30PM	-	1,070	9:00AM-10:00AM	2	402	E	10	8,100
	WB	9:00AM-10:00AM	-	443	3:00PM-4:00PM	1	1,387	11:00AM-12:00N	3	856	E	15	10,300
Shaefer Rd.	EB	8:30AM-9:30AM	65	598	3:00PM-4:00PM	63	721	8:30AM- 9:30AM	65	598	E	775	8,600
	WB	8:00AM-9:00AM	62	281	2:30PM-3:30PM	64	412	8:30AM- 9:30AM	66	196	E	700	9,200
North of Pennsylvania Rd. at:													
Telegraph Rd.	NB	8:00AM-9:00AM	30	451	2:30PM-3:30PM	23	769	8:30AM- 9:30AM	37	422	E	250	8,200
	SB	8:30AM-9:30AM	41	381	2:30PM-3:30PM	21	622	9:00AM-10:00AM	42	374	E	275	7,000
I-75	NB	8:00AM-9:00AM	365	1,515	2:30PM-3:30PM	275	2,300	9:00AM-10:00AM	455	1,590	E	4,275	28,900
	SB	8:00AM-9:00AM	295	2,362	3:00PM-4:00PM	420	2,450	11:00AM-12:00N	500	1,955	E	4,350	28,900
Allen Rd.	NB	8:00AM-9:00AM	29	698	3:00PM-4:00PM	37	863	2:00PM- 3:00PM	58	559	E	425	8,750
	SB	8:00AM-9:00AM	53	337	2:30PM-3:30PM	69	547	9:30AM-10:30AM	75	428	E	525	8,200
Toledo Rd.	NB	8:00AM-9:00AM	21	482	3:00PM-4:00PM	25	616	11:30AM-12:30PM	33	529	E	205	7,400
	SB	8:00AM-9:00AM	15	224	3:00PM-4:00PM	18	516	1:00PM- 2:00PM	32	419	E	200	5,500
Quarry Rd.	NB	8:00AM-9:00AM	1	123	3:00PM-4:00PM	-	114	10:00AM-11:00AM	1	75	E	10	1,600
	SB	8:00AM-9:00AM	3	64	2:30PM-3:30PM	1	143	10:00AM-11:00AM	3	82	E	15	1,550

Appendix Table 7

SUMMARY OF MANUAL VEHICLE CLASSIFICATION COUNTS

At Intersections Along Jefferson Avenue

SEMCOG Downriver Truck Study

		A.M. PEAK PERIOD VOLUMES			P.M. PEAK PERIOD VOLUMES			PEAK TRUCK HOUR VOLUMES			TOTAL DAILY VOLUMES		
ERSECTION	APPROACH	Time Period	Heavy Trucks	Total Vehicles	Time Period	Heavy Trucks	Total Vehicles	Time Period	Heavy Trucks	Total Vehicles	Basis	Heavy Trucks	Total Vehicles
it Jefferson at:													
/reeland Rd.	NB	8:00AM-9:00AM	7	258	3:00PM-4:00PM	7	556	3:30PM-4:30PM	13	437	E	130	5,300
	SB	8:00AM-9:00AM	1	128	2:30PM-3:30PM	8	382	2:00PM-3:00PM	11	275	E	100	3,300
	EB	8:00AM -9:00AM	4	192	3:00PM-4:00PM	-	321	10:30AM-11:30AM	10	125	E	60	2,550
VanHorn Rd.	NB	8:30AM-9:30AM	20	211	3:00PM-4:00PM	21	421	1:00PM-2:00PM	28	231	E	210	4,000
	SB	8:00AM-9:00AM	16	310	1:30PM-2:30PM	14	411	1:00PM-2:00PM	27	370	E	195	5,000
	EB	8:30AM-9:30AM	12	192	3:00PM-4:00PM	10	333	1:30PM-2:30PM	18	279	E	150	3,550
West Rd.	NB	8:30AM-9:30AM	5	179	3:00PM-4:00PM	6	322	1:00PM-2:00PM	28	361	E	280	4,350
	SB	8:00AM-9:00AM	11	171	3:00PM-4:00PM	12	426	12:30PM-1:30PM	33	362	E	300	4,500
	EB	8:30AM-9:30AM	12	249	2:30PM-3:30PM	8	256	12:30PM-1:30PM	30	365	E	180	4,650
	WB	8:30AM-9:30AM	2	62	2:30PM-3:30PM	1	133	1:00PM-2:00PM	32	328	E	60	2,800
King Rd.	NB	8:30AM-9:30AM	16	231	2:00PM-3:00PM	150	631	2:00PM-3:00PM	150	631	E	370	4,800
	SB	8:30AM-9:30AM	55	254	2:30PM-3:30PM	58	332	1:00PM-2:00PM	61	391	E	400	4,150
	EB	8:30AM-9:30AM	41	220	3:00PM-4:00PM	52	325	1:00PM-2:00PM	72	371	E	425	3,200
	WB	8:30AM-9:30AM	19	139	3:00PM-4:00PM	57	496	1:30PM-2:30PM	91	465	E	345	3,900
Sibley Rd.	NB	8:00AM-9:00AM	5	288	3:00PM-4:00PM	7	586	10:30AM-11:30AM	13	276	E	200	4,600
	SB	8:00AM-9:00AM	25	237	2:30PM-3:30PM	23	396	1:30PM-2:30PM	31	319	E	290	4,450
	EB	8:00AM-9:00AM	16	106	3:00PM-4:00PM	2	170	8:00AM-9:00AM	16	106	E	95	2,075
Pennsylvania Rd.	NB	7:00AM-8:00AM	8	664	3:00PM-4:00PM	14	660	10:00AM-11:00AM	23	401	E	250	6,500
	SB	7:00AM-8:00AM	14	361	4:30PM-5:30PM	11	706	1:00PM-2:00PM	35	404	E	325	6,950
	EB	6:30AM-7:30AM	3	273	3:00PM-4:00PM	6	206	1:30PM-2:30PM	14	113	E	80	2,600
Eureka Rd.	NB	7:30AM-8:30AM	12	380	4:00PM-5:00PM	21	509	11:30AM-12:30PM	64	489	C	395	6,350
	SB	8:30AM-9:30AM	25	546	4:30PM-5:30PM	9	791	10:00AM-11:00AM	61	481	C	360	9,300
	EB	7:00AM-8:00AM	14	358	2:30PM-3:30PM	34	313	12:30PM-1:30PM	64	311	C	260	4,700
	WB	9:00AM-10:00AM	-	18	2:30PM-3:30PM	-	17	-	-	-	C	-	300
Northline Rd.	NB	8:00AM-9:00AM	9	310	3:00PM-4:00PM	11	640	11:00AM-12:00N	29	405	E	320	7,300
	SB	8:30AM-9:30AM	28	389	3:00PM-4:00PM	18	1,031	9:00AM-10:00AM	35	482	E	350	10,500
	EB	8:00AM-9:00AM	5	204	3:00PM-4:00PM	7	310	12:00N -1:00PM	11	352	E	80	4,050
	WB	8:00AM-9:00AM	-	31	2:30PM-3:30PM	2	59	1:00PM-2:00PM	6	34	E	35	475
Southfield Rd.	NB	8:00AM-9:00AM	17	459	3:00PM-4:00PM	54	825	3:00PM-4:00PM	54	825	E	375	8,100
	SB	8:00AM-9:00AM	36	568	3:00PM-4:00PM	33	1,142	10:00AM-11:00AM	62	463	E	360	10,150
	EB	8:00AM-9:00AM	47	272	3:00PM-4:00PM	78	906	3:00PM-4:00PM	78	906	E	400	7,400
	WB	9:00AM-10:00AM	-	30	2:00PM-3:00PM	-	43	-	-	-	E	-	450
Shaefer Rd.	NB	7:30AM-8:30AM	24	654	4:00PM-5:00PM	15	769	2:00PM-3:00PM	47	663	E	475	9,800
	SB	9:00AM-10:00AM	76	516	4:30PM-5:30PM	24	843	9:00AM-10:00AM	76	516	E	575	8,200
	EB	6:30AM-7:30AM	38	761	3:00PM-4:00PM	60	570	2:30PM-3:30PM	68	537	E	640	8,100

Appendix Table 8

SUMMARY OF MANUAL CLASSIFICATION COUNTS AT VARIOUS INTERSTATE 75 INTERCHANGES

SEMCOG Downriver Truck Study

LOCATION	RAMP AND DIRECTION	A.M. PEAK PERIOD VOLUMES			P.M. PEAK PERIOD VOLUMES			PEAK TRUCK HOUR VOLUMES			TOTAL DAILY VOLUMES		
		Time Period	Heavy Trucks	Total Vehicles	Time Period	Heavy Trucks	Total Vehicles	Time Period	Heavy Trucks	Total Vehicles	Basis	Heavy Trucks	Total Vehicles
I-75 at:													
Fort M85	NB Off	9:00AM-10:00AM	15	112	2:00PM-3:00PM	3	290	1:30PM-2:30PM	14	227	E	125	2,500
	SB On	8:00AM-9:00AM	7	124	3:00PM-4:00PM	2	355	11:00AM-12:00N	18	141	E	125	2,500
West Rd.	NB Off	9:00AM-10:00AM	23	121	2:30PM-3:30PM	9	147	9:30AM-10:30AM	37	121	E	350	1,950
	NB On	8:00AM-9:00AM	50	701	3:00PM-4:00PM	64	681	9:30AM-10:30AM	63	391	E	625	7,100
	SB Off	8:00AM-9:00AM	55	365	3:00PM-4:00PM	39	431	2:00PM-3:00PM	62	390	E	625	5,300
	SB On	8:30AM-9:30AM	29	120	3:00PM-4:00PM	18	146	10:30AM-11:30AM	46	130	E	400	1,900
Toledo Rd.	NB Off	8:00AM-9:00AM	2	122	3:00PM-4:00PM	4	240	9:00AM-10:00AM	8	48	E	50	800
	NB On	8:00AM-9:00AM	6	186	2:30PM-3:30PM	6	198	12:00N-1:00PM	15	128	E	75	1,300
	SB Off	8:00AM-9:00AM	4	120	3:00PM-4:00PM	12	344	10:00AM-11:00AM	11	151	E	125	1,400
	SB On	8:00AM-9:00AM	5	98	3:00PM-4:00PM	6	112	10:00AM-11:00AM	9	44	E	75	750
Eureka Rd.	NB Off	8:00AM-9:00AM	5	57	3:00PM-4:00PM	2	37	10:30AM-11:30AM	3	77	E	50	900
	NB On	8:00AM-9:00AM	16	238	3:00PM-4:00PM	16	382	10:30AM-11:30AM	26	243	E	250	4,100
Eastbound	SB Off	8:00AM-9:00AM	4	55	3:00PM-4:00PM	5	77	3:00PM-4:00PM	5	77	E	50	600
Westbound	SB Off	8:00AM-9:00AM	5	143	3:00PM-4:00PM	20	396	1:30PM-2:30PM	20	350	E	175	4,200
	SB On	8:00AM-9:00AM	5	49	3:00PM-4:00PM	4	186	9:30AM-10:30AM	5	75	E	50	900
Allen Rd.	NB Off	8:00AM-9:00AM	15	131	3:00PM-4:00PM	27	306	1:30PM-2:30PM	35	184	E	350	2,000
	SB On	8:00AM-9:00AM	21	153	3:00PM-4:00PM	35	265	2:00PM-3:00PM	41	178	E	300	2,300
Northline Rd.	NB Off	8:00AM-9:00AM	27	437	3:00PM-4:00PM	25	485	2:30PM-3:30PM	38	439	E	350	4,900
	SB On	8:00AM-9:00AM	48	269	3:00PM-4:00PM	51	694	10:30AM-11:30AM	68	325	E	575	5,650
Southfield Rd.	NB Off	8:00AM-9:00AM	3	169	2:00PM-3:00PM	73	651	10:30AM-11:30AM	105	628	C	950	9,400
Eastbound	NB On	8:00AM-9:00AM	44	288	3:00PM-4:00PM	16	341	8:00AM-9:00AM	44	288	C	350	3,400
Westbound	NB On	9:00AM-10:00AM	11	223	2:00PM-3:00PM	16	269	10:00AM-11:00AM	21	206	C	250	3,850
	SB Off	8:00AM-9:00AM	36	357	3:00PM-4:00PM	48	770	2:00PM-3:00PM	84	588	C	650	7,900
Eastbound	SB On	8:00AM-9:00AM	22	273	3:00PM-4:00PM	24	325	9:00AM-10:00AM	34	242	C	375	4,450
Westbound	SB On	6:30AM-7:30AM	4	140	2:30PM-3:30PM	31	232	11:30AM-12:30PM	40	175	C	300	2,500
Shaefer Rd.	NB Off WB	8:00AM-9:00AM	31	196	2:30PM-3:30PM	66	268	9:00AM-10:00AM	57	156	E	550	2,300
	EB	8:00AM-9:00AM	14	159	2:30PM-3:30PM	12	208	9:00AM-10:00AM	22	135	E	200	2,500
	Total	8:00AM-9:00AM	45	355	2:30PM-3:30PM	78	476	9:00AM-10:00AM	79	291	E	750	4,800
Eastbound	NB On	8:00AM-9:00AM	34	128	3:00PM-4:00PM	66	153	3:00PM-4:00PM	66	153	E	500	1,600
Westbound	SB Off	8:30AM-9:30AM	28	231	3:00PM-4:00PM	63	417	3:00PM-4:00PM	63	417	E	450	3,300
Eastbound	SB Off	8:00AM-9:00AM	73	193	3:00PM-4:00PM	34	262	12:30PM-1:30PM	58	228	E	575	2,600
	SB On WB	8:00AM-9:00AM	37	151	3:00PM-4:00PM	73	229	12:00N-1:00PM	60	190	E	600	2,250
	EB	8:00AM-9:00AM	53	189	3:00PM-4:00PM	70	508	12:00N-1:00PM	84	233	E	450	3,100
	Total	8:00AM-9:00AM	90	340	3:00PM-4:00PM	143	737	12:00N-1:00PM	144	423	E	1,050	5,350

Appendix Table 9

SUMMARY OF MANUAL VEHICLE CLASSIFICATION COUNTS

Various Intersections

SEMCOG Downriver Truck Study

INTERSECTION	DIRECTION	A.M. PEAK PERIOD VOLUMES			P.M. PEAK PERIOD VOLUMES			PEAK TRUCK HOUR VOLUMES			TOTAL DAILY VOLUMES		
		Time Period	Heavy Trucks	Total Vehicles	Time Period	Heavy Trucks	Total Vehicles	Time Period	Heavy Trucks	Total Vehicles	Basis	Heavy Trucks	Total Vehicles
Fort Road at:													
King Rd.	NB	8:30AM-9:30AM	34	517	3:00PM-4:00PM	16	1,282	8:00AM-9:00AM	42	459	E	300	11,900
	SB	9:00AM-10:00AM	24	871	3:00PM-4:00PM	13	1,466	1:00PM-2:00PM	35	961	E	300	15,000
	EB	9:00AM-10:00AM	37	214	3:00PM-4:00PM	11	500	10:00AM-11:00AM	38	152	E	280	3,250
	WB	8:30AM-9:30AM	26	212	2:00PM-3:00PM	16	305	10:00AM-11:00AM	36	245	E	210	3,300
Sibley Rd.	NB	8:00AM-9:00AM	12	930	2:30PM-3:30PM	12	1,298	9:30AM-10:30AM	26	960	E	275	15,300
	SB	9:00AM-10:00AM	18	987	2:30PM-3:30PM	16	1,492	10:00AM-11:00AM	40	785	E	250	13,500
	EB	8:00AM-9:00AM	2	174	2:00PM-3:00PM	10	384	11:30AM-12:30PM	27	289	E	95	3,400
	WB	8:00AM-9:00AM	15	167	3:00PM-4:00PM	8	331	10:00AM-11:00AM	16	209	E	100	3,650
Pennsylvania	NB	8:00AM-9:00AM	17	442	4:00PM-5:00PM	15	1,001	12:00N -1:00PM	55	1,348	E	350	14,200
	SB	9:00AM-10:00AM	17	462	3:30PM-4:30PM	17	1,268	12:00N -1:00PM	19	903	E	250	13,900
	SB(1)	9:00AM-10:00AM	-	217	3:30PM-4:30PM	-	632	8:00AM-9:00AM	3	124	E	75	7,500
	EB	9:00AM-10:00AM	14	256	4:00PM-5:00PM	19	342	3:30PM-4:30PM	22	329	E	115	4,700
	WB	9:00AM-10:00AM	28	374	3:00PM-4:00PM	14	543	10:30AM-11:30AM	52	325	E	235	7,600
Dix-Toledo Rd. at:													
Northline Rd.	NB	8:00AM-9:00AM	12	792	3:00PM-4:00PM	13	893	11:00AM-12:00N	19	1,044	E	125	12,700
	SB	8:00AM-9:00AM	11	569	3:00PM-4:00PM	12	903	10:00AM-11:00AM	25	640	E	130	11,700
	EB	8:30AM-9:30AM	12	407	3:00PM-4:00PM	12	623	10:30AM-11:30AM	16	533	E	185	7,900
	WB	9:00AM-10:00AM	12	478	3:00PM-4:00PM	29	665	11:30AM-12:30PM	57	720	E	225	9,300
Allen Rd. at:													
West Rd.	NB	8:00AM-9:00AM	10	257	3:00PM-4:00PM	6	335	2:00PM-3:00PM	11	299	E	95	4,700
	SB	8:00AM-9:00AM	16	232	3:00PM-4:00PM	17	583	9:30AM-10:30AM	19	259	E	140	5,150
	EB	8:30AM-9:30AM	30	452	3:30PM-4:30PM	33	681	2:00PM-3:00PM	36	626	E	250	6,800
	WB	9:00AM-10:00AM	19	471	2:30PM-3:30PM	21	771	1:00PM-2:00PM	29	610	E	200	8,900
Telegraph Rd. at:													
Goddard Rd.	NB	8:00AM-9:00AM	71	1,280	3:00PM-4:00PM	48	1,987	11:00AM-12:00N	86	1,378	E	675	24,400
	SB	9:00AM-10:00AM	79	1,170	3:00PM-4:00PM	96	1,748	10:00AM-11:00AM	99	1,364	E	775	23,600
	EB	8:30AM-9:30AM	6	481	1:00PM-2:00PM	17	-	12:30PM-1:30PM	17	455	E	85	7,600
	WB	9:00AM-10:00AM	15	538	1:00PM-2:00PM	8	907	11:30AM-12:30PM	15	677	E	125	10,800

(1) Southbound Movement on Trenton Rd.

Appendix Table 10

ENERGY IMPACT - TRUCK FUEL SAVINGS
50,000 Pound Diesel Truck
SEMCOG Downriver Truck Study

SPEED MPH	FUEL COSTS (1,000 veh./mile)	
5 MPH	$64.70	
10 MPH	34.05	
15 MPH	24.30	
20 MPH	19.86	
25 MPH	17.62	
30 MPH	16.64	
35 MPH	16.46	- Optimum Fuel Economy
40 MPH	17.06	
45 MPH	18.38	
50 MPH	20.53	
55 MPH	23.66	
60 MPH	26.43	

SPEED DIFFERENTIALS (1) MPH	Savings of:
20-25	$2.24/1,000 veh-miles
20-30	$3.22/1,000 veh-miles
20-35	$3.40/1,000 veh-miles
20-40	$2.80/1,000 veh-miles
20-45	$1.48/1,000 veh-miles

Assumed Present Running Speed = 20 MPH Average

SOURCE: Robley Winfrey, Economic Analysis for Highways.
(1) Derived from above costs.

Appendix Table 11

ENERGY IMPACT - TRUCK FUEL SAVINGS

50,000 Pound Diesel Truck

Excess Gallons and Costs of Fuel Consumed During Speed Change Cycles

SEMCOG Downriver Truck Study

FROM AVERAGE RUNNING SPEED	EXTRA COST Dollars Per 1,000 Cycles*	EXTRA GALLONS Gallons Per 1,000 Cycles*
15 MPH to Stop	$ 34.50	16.0 gal.
20 MPH to Stop	52.21	26.5
25 MPH to Stop	74.75	37.3
30 MPH to Stop	102.21	48.5

*Speed change cycle is reducing speed from and returning to initial speed.

SOURCE: Robley Winfrey, Economic Analysis for Highways.

5. Lowering the noise levels to a more acceptable level along Jefferson Avenue where development exists. This could encourage redevelopment of areas along Jefferson that have heretofore not been acceptable because of noise, debris, etc.;

6. Assisting in upgrading the rail crossing in the area;

7. Offering an opportunity for the railroad to upgrade their facilities at minimum costs;

8. Eliminating safety hazards and reducing accident potentials; and,

9. Redeveloping of land adjacent to facility as it becomes available, by the communities into industrial parks that could be served by both rail and truck.

The probable adverse effects are:

1. Relocation of several families in the communities of Ecorse and Trenton;

2. Additional intersection conflicts along the Truckway;

3. Increasing the noise levels of the residents adjacent to the proposed facility. However, they will be within acceptable levels, considering the rail corridor location;

4. Taking land that is presently being taxed and placing it in a non-taxable use, i.e., highways; and,

5. Creating a situation in the rail corridor that involves changes in facilities or operating practices.

The truckway options will affect the communities of River Rouge, Ecorse, Wyandotte, and Trenton in varying degrees. These impacts, both beneficial and adverse, are as follows:

River Rouge - The extension of the present Marion Industrial Highway would not require acquisition of residential land or dwelling units. However, several acres of industrial land would have to be acquired from Great Lakes Steel, Dana Corporation and Detroit Edison. Most of this land is being used for storage and/or parking for employees.

Relocating the heavy truck traffic off of Jefferson Avenue will create an atmosphere within which the civic organizations and merchants can pursue their goals and plans for revitalizing the commercial and residential areas adjacent to Jefferson Avenue. Upgrading of these areas will increase revenues and taxes for the City.

Ecorse - Extending the Marion Industrial Highway from the city limits to Tecumseh would require the relocation of approximately 10 single family structures. These structures are in very poor state of repair and in all probability will be torn down in the very near future. It would also require the acquisition of several acres of industrial land from Great Lakes Steel and Detroit Edison. This land is presently being used for employee parking.

Extending the facility further to Westfield Avenue would require acquisition of several acres of land that is presently owned by the City. Part of this land is being used as a park, while the remaining is adjacent to City Hall. The remaining right-of-way acreage would be acquired from Great Lakes Steel.

As the facility will be located on the fringe between residential and industrial land uses, it will not bisect the neighborhoods nor intrude upon the community.

It can act as a barrier for industrial expansion into the residential areas.

Relocating the heavy-truck traffic to the east adjacent to the industries should create a situation in the retail core as well as the civic center complex that is conducive for enhancement of the area. This can be accomplished through urban design and redevelopment. This beautification will bring shoppers downtown and thereby increase the revenue for the City.

It could assist in redevelopment of land adjacent to Jefferson Avenue that has deteriorating or vacant structures on it. This, in turn, will increase the tax base for the community.

Although daily traffic is projected to increase only slightly over the next several years, relocating the truck traffic will assist in a better flow of traffic in the area. By eliminating the conflict between cars and trucks, the number of accidents in the retail-civic core should be reduced.

Wyandotte - Through their own initiative and funds, the merchants of Wyandotte have revitalized the commercial area. This revitalization included construction of new sidewalks, store front treatment, removal of several deteriorated buildings, construction of new buildings (i.e., Sports Arena; Savings and Loan, etc.), planting of trees and shrubs, improved circulation and parking, new street lighting and street furniture, and repaving of Biddle Avenue between Vinewood Street and Eureka Avenue. (This last item was financially assisted to the extent of two thirds of the cost by Wayne County Road Commission.) In addition, to the north of the commercial area, the property owners have maintained the buildings in a good state of repair.

These efforts have transformed central Wyandotte into an attractive commercial environment and they have set the pattern for similar efforts by other Downriver communities.

Relocating the heavy-truck traffic off of Biddle Avenue would assist the property owners and the City in maintaining this spirit of cooperation. It is anticipated that this action will invite other areas of the City to begin a program of rehabilitation.

Placing the truck route within the rail corridor would not require the acquisition of residential properties for right-of-way purposes. It would, however, require purchasing 50 feet of rail right-of-way from Either Detroit, Toledo and Ironton Railroad or Conrail. In either situation, cooperation will be required for joint use of trackage or right-of-way. This could be an expensive and long, drawn-out process.

The truckway options would not disrupt the neighborhoods, as the area has already been divided by the rail corridor.

Although the traffic volumes are expected to increase only slightly over the next few years, the removal of heavy trucks from Biddle Avenue will decrease the number of accidents, particularly in the commercial area. In addition, with less trucks in the shopping area, pedestrians and passenger vehicles will have better mobility in the area.

Trenton - In cooperation with the merchants, the City Planning Commission is in the process of developing a Downtown Plan. The plan, when implemented,will include store front treatments, plantings, and lighting.

Fortunately, the timing of this study and the truck route study are compatible.

Relocating the truck route to the west of Jefferson Avenue and adjacent to the rail corridor could assist the downtown redevelopment plan. It will create an atmosphere that is pleasing for the shoppers, as well as the residents adjacent to Jefferson Avenue. Collectively, it should bring together parties that are interested in saving the retail core area.

The redevelopment of the downtown area and the fringe area will increase the tax base for the ciry. In addition, redevelopment of properties adjoining Jefferson Avenue both north and south of the central area should increase the tax base as well as the general appearance of the area. The bypass would require acquisition of four residential structures and several vacant lots. Several acres of industrial land owned by McLouth Steel Corporation would also need to be acquired.

Since the community is already divided by the rail corridor, the proposed truck route will not increase this division. The truck bypass will have no effect on the rail operations and will, if designed properly, offer the opportunity to construct a small barrier between both the rail and truck alignment and the remaining community. Other benefits to be realized from this bypass include the reduction of exhaust fumes and dust from the heavy trucks in the commercial center.

The truck route should reduce the travel time for the heavy trucks. This will result in a net savings in user costs.

Air Impacts - Air quality in the Downriver area will be affected by the construction of one or more of the truckway options outlined herein. Passenger cars remaining on Jefferson Avenue should experience reduced auto emissions due to the slightly increased average running speeds that would be expected with the majority of the heavy-truck traffic diverted to the truckway routes.

Carbon monoxide and hydrocarbon emissions will be reduced for each vehicle an average of 20 percent and 10 percent, respectively. Nitrogen oxide emissions within the corridor will change negligibly with the addition of the truck bypass.[2] These percentages are derived assuming an average running speed increase from 20 to 30 miles per hour on Jefferson Avenue.

These savings may be greater than the actual improvements created but they point to the savings that can be optimumly obtained.

Noise Impacts - A preliminary noise analysis was performed in the Downriver area to establish ambient noise levels and estimate noise levels as a result of future traffic volumes on West Jefferson (Biddle) Avenue and the proposed truck routes. The analysis involved a field survey to establish ambient noise levels and an estimation of future noise levels.

Acoustic noise is measured in decibels (dB) on an A-weighted scale which produces a composite noise value that closely approximates the response levels of the human ear. That noise level which is exceeded ten percent of the time at any one

(2) David S. Kircher and Donald P. Armstrong, An Interim Report on Motor Vehicle Emission Estimation, prepared for Environmental Protection Agency-Office of Air and Water Programs, and Office of Air Quality Planning and Standards, May, 1973.

Table 4

DESIGN NOISE LEVEL/LAND USE RELATIONSHIPS

DESIGN NOISE LEVEL - L_{10}	CATEGORY	LAND USE DESCRIPTION
60 dBA (Exterior)	A	Tracts of land in which serenity and quiet are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. Such areas could include amphitheatres, particular parks or portions of parks, of open spaces which are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
70 dBA	B	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, picnic areas, recreation areas, playgrounds, active sports areas, and parks.
75 dBA	C	Developed lands, properties or activities not included in categories A and B above.
---------	D	Undeveloped land requirements are a responsibility of the local area.
55 Dba (Interior)	E	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

SOURCE: Federal-Aid Highway Program Manual, Volume 7, Chapter 7, Section 2 (December, 1974).

Table 5

NOISE LEVELS AT SELECTED SITES
DOWNRIVER AREA
1977

LOCATION	EXISTING LAND USE CATEGORY(1)	DISTANCE FROM SOURCE (feet)	AMBIENT L_{10}
River Rouge -			
Jefferson Avenue @ Abbott Street	B	30	78
Marion Industrial Highway @ Coolidge Street	B	50	60
Ecorse -			
Biddle Avenue @ Elton Avenue	B	30	76
Wyandotte -			
Biddle Avenue @ Maple Street	C	18	76
Ford Avenue @ 6th Street	B	40	64-84(2)
Trenton -			
Biddle Avenue @ St. Joseph	C	25	74

(1) Table 4 defines Land Use Categories.
(2) The higher L_{10} reading occurred when the train was passing through the area.

SOURCE: Wilbur Smith and Associates.

the roadway that the noise will dissipate to a lesser degree prior to reaching the structures. In addition, the roadway presently serves the industries along the riverfront. Therefore, the proposals do not place a new road through an area, rather expands upon an existing situation.

Ecorse - Phase A could have the effect of increasing the ambient noise level from 76 dBA to 79 dBA within the commercial area. The basis for this judgement is that the heavy trucks will continue to use Jefferson (Biddle) Avenue through the city. This situation would place the ambient noise level above acceptable standards. However, in this case it is not feasible to install a noise barrier to lower the noise level to acceptable standards. Other methods (i.e., truck and/or noise ordinances; routing heavy truck traffic away from the commercial area, etc.) will have to be employed to lower noise level within the city.

Phase B will route approximately 75 percent of the heavy trucks on the truckway along Marion Industrial Highway extension to Westfield, south of the commercial area in Ecorse. This action would have the effect of lowering the ambient noise level from 76 dBA to 72 dBA within the commercial area of Ecorse. The truckway, however, will raise the ambient noise level from 64 dBA to 67 dBA in the residential areas adjacent to its right-of-way. The effect will be minimal as a majority of the structures adjaeent to the proposed right-of-way are rapidly deteriorating and in all probability will be removed in the not too distant future.

Wyandotte - The Alkali Street/Grove Avenue (Option 1, Phase A) truck bypass will remove approximately 80 percent of the heavy trucks from Biddle Avenue within

the residential and commercial areas of Wyandotte. This would have the effect of lowering the ambient noise level from the present 76 dBA to 73 dBA. It is expected that if appropriate action is not taken, the 1985 ambient noise level will be approximately 77 dBA. For those residents adjacent to the truck bypass, the ambient noise level will be increased from 64 dBA to 66 dBA. However, this is much lower than when a train is traversing the corridor and/or switching within the area.

Option 1, Phases A and B, will relocate approximately 90 percent of the heavy trucks from Biddle Avenue within the Wyandotte area. The difference between this option and the Alkali Street-Grove Avenue option is that the heavy trucks will bypass all the residential and commercial area along Biddle Avenue within the Wyandotte area. The noise analysis presented above applies here also.

Extending the options further south through Riverview connecting to Jefferson Avenue south of Pennsylvania will remove the heavy trucks from Jefferson Avenue within the Riverview area. The noise analysis presented above also applies in this situation.

Trenton - The Trenton truck bypass will remove approximately 95 percent of the heavy trucks from Jefferson Avenue between King Road and south of West Road. This action will cause the ambient noise level to be decreased from the present 74 dBA to 69 dBA through the commercial area of Trenton. If this or some other action is not taken, it is estimated that the 1985 ambient noise level through the commercial area will be 75 dBA. Adjacent to the bypass, the ambient noise level will be raised from the present 64 dBA (without trains) to 67 dBA. Although higher than present levels, it is within acceptable standards.

In summary, the truck bypasses through River Rouge, Ecorse, Wyandotte, and Trenton will have the effect of improving the environmental quality of the residential and commercial areas adjacent to Jefferson (Biddle) Avenue. In addition, the aesthetics of the area will be greatly improved. At the same time, the bypasses will have a slight adverse effect upon the areas adjacent to their right-of-way.

Should the options not become a reality, other local measures will have to be instituted. Noise barrier treatments cannot be installed in the business centers without creating significant aesthetic and physical impact on the street and the community. Consequently, local measures (i.e., truck ordinances, limiting hours of movement, etc.) will have to be applied to improve the environmental quality through the areas.

Energy Impacts - Energy consumption in car and truck travel can be calculated in several ways. Values presented herein have been determined on the basis of dollars saved and gallons of fuel saved.

Fuel Costs - Appendix Table 10 indicates that the speed obtained for best fuel economy for a 50,000-pound diesel truck is 35 miles per hour at a cost of $16.46 per thousand vehicle-miles. As average running speed increases from 15 miles per hour to 25 miles per hour, savings of $6.68 per thousand vehicle-miles are realized. For the increase from 20 to 25 miles per hour, a fuel cost savings of $2.24 per thousand vehicle-miles is noted.

Fuel Cost Savings - The following computations attempt to assess extra fuel costs for truck speed change cycles. Speed change cycles involve reducing speed from and returning to initial speeds. Typical situations are those found in the business districts along Jefferson Avenue. A 50,000-pound diesel truck going into a speed change cycle from 20 miles per

hour will involve additional cost for fuel of $52.21 per thousand cycles as tabulated in Appendix Table 10. From 30 miles per hour, this cost increases to $102.21 per thousand cycles. It should be noted, however, that as average speed increases, the number of stops along a given roadway section should decrease, therefore, an average running speed is increased to 30 miles per hour and stop conditions must occur at more than one-half of the present stop conditions then the increased running speed will not show favorable fuel savings. However, to achieve an average running speed of 30 miles per hour with the relative close locations of intersections, it will be very unlikely that the number of stops will be more than one half of the present number, therefore, a slight savings should be realized.

Fuel Gallons Savings - The extra fuel used for stopping and starting up from a 20 miles per hour average running speed, depicted in Appendix Table 11, is 26.5 gallons per thousand cycles. This compared with the 30 miles per hour average running speed consumption of 48.5 gallons per thousand cycles. The consumption in speed change cycles at 30 miles per hour is approximately twice that at 20 miles per hour.

From Table 6 it is evident that even though fuel cost will increase, for all Wyandotte and Trenton alternatives, it must be understood that the additional vehicles that will increase the fuel cost will be operating at more economical levels. Maximum fuel savings in dollars and gallons was observed for Option 2 for the Wyandotte truckway, extending from Ecorse to Riverview. However, energy cost and gallon savings are only slightly better for this alternative than for Option 1c for Wyandotte which uses a combination of the D. T. and I. and New York Central rights-of-way.

Table 6

ENERGY IMPACT - FUEL COSTS AND SAVINGS

SEMCOG Downriver Truck Study

AREA	FUEL SAVINGS ▲ $/veh-mile	FUEL SAVINGS ▲ $/cycle (2)	FUEL SAVINGS ▲ gal/cycle (2
RIVER ROUGE/ECORSE			
1 - River Rouge/Tecumseh	(2.62) (1)	0.41	0.22
*2 - River Rouge/Westfield	(3.63)	0.46	0.24
WYANDOTTE			
1a - Alkali/Grove	1.26	0.26	0.14
1b - Ecorse/Grove Ave.	5.54	0.42	0.22
*1c - Ecorse/Grove Ave./Riverview	1.85	0.46	0.24
2 - Ecorse/Riverview	0.22	0.52	0.27
TRENTON			
* - Trenton	5.79	0.03	0.02
Total for Final Completed Project (3)	4.01	0.97	0.50

(1) ( ) denotes loss or extra cost.
(2) Speed change cycle is reducing speed from and returning to initial speed.
(3) Includes Projects with (*).

If all truck bypass segments are implemented, a total fuel savings for trucks using the bypass is $0.97 per speed change cycle. In tons of gallons of fuel saved, 0.50 gallons per cycle change will be realized.

Fuel savings calculated on the basis of seven total miles of truckway and an approximate total decrease of 20 stops from the old routing along Jefferson to the new routing on the truck bypass. This reduction will develop a savings of approximately $7,080 per year and 3,200 gallons of fuel per year based on current cost assumptions. The above calculations are made to reflect the impact of trucks on the new truck bypasses and do not reflect any savings that may be incurred by automobiles using the truckway. Savings that automobiles and trucks remaining on Jefferson (Biddle) Avenue may realize by the increased average running speeds and reduction of delays are not quantified here.

Implications and Directions

Analysis and review of various alternatives to reduce the impacts of heavy trucks in the Downriver area suggests the following directions:

1. A system of improvements should be considered which include parts of each option (other than status quo). Improvements are complementary, not mutually exclusive. Physical construction, for example, allows definition of new truck routes, and possible extension of restrictions.

2. This system of improvements should be progressively implemented and the impacts of each step should be carefully monitored before proceeding with more elaborate construction.

3. Priority should be given to those options which are consistent with programmed roadway improvement plans and which will have widespread benefits. In this context, it is desirable to widen east-west arterial streets and grade separate railroads at major crossings. These grade separations are prerequisite to Wyandotte Truckway development.

4. Logical next steps include development of special truckways. The truckways for the River Rouge-Ecorse area should be given precedence over truckway development which requires railroad acceptance and participation, as well as intra-agency agreements.

Chapter 4

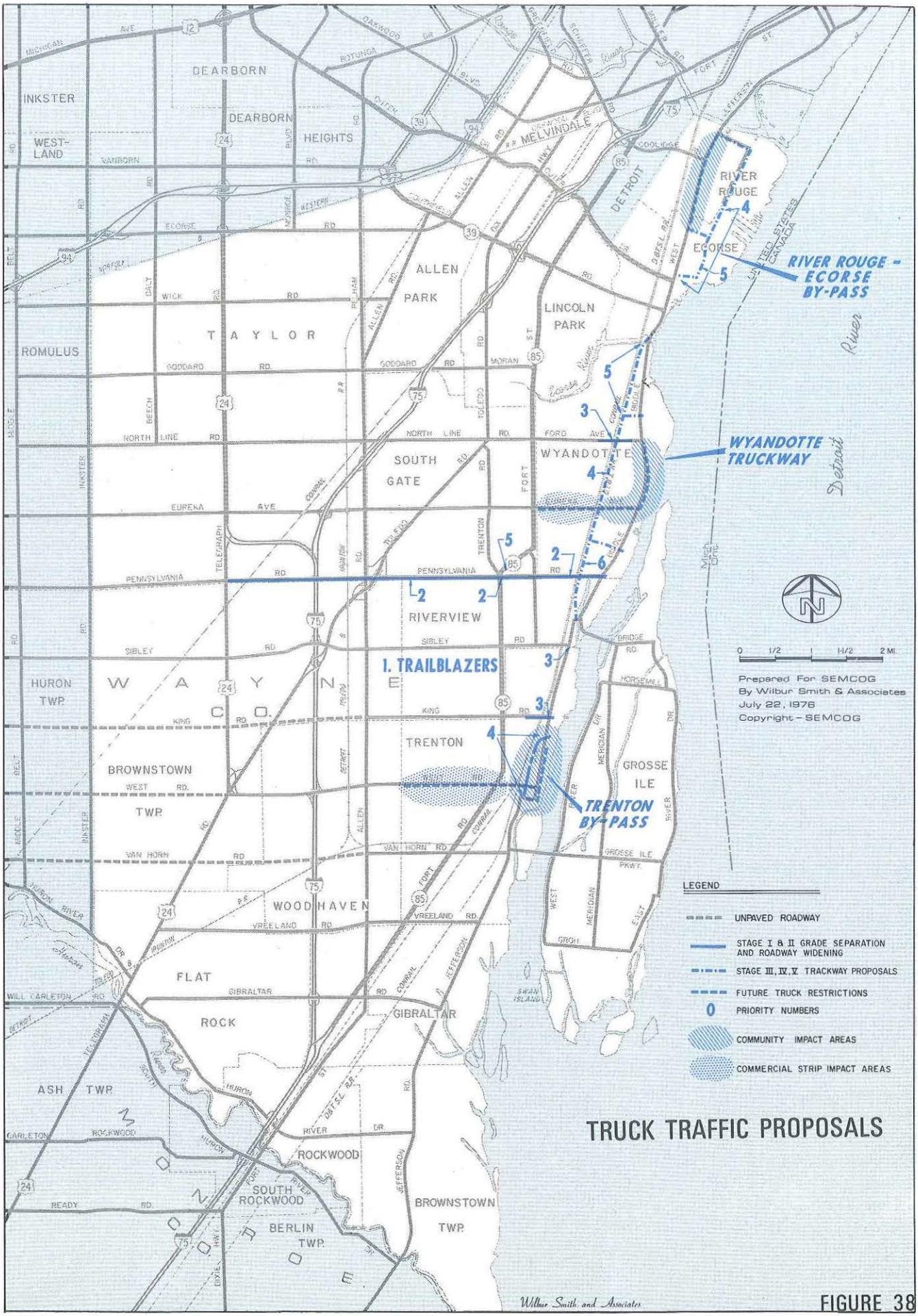
DOWNRIVER TRUCK IMPROVEMENT CONCEPT

This study of truck operations in the Downriver Area reflects the desire of the individual communities to improve living conditions and environmental quality. The study has assessed traffic conditions throughout the study area and looked closely at the numbers and impacts of heavy trucks operating through the Downriver highway system. It has identified problems in several of the business districts in the Downriver communities as a result of the intrusion caused by the double trailer material haulers which move into, out of, and through the area throughout the day.

The business centers which appear to be most affected by the truck movements are Wyandotte and Trenton, although truck movements are heavier in River Rouge and Ecorse. Other Downriver communities are affected more by east-west movements as truckers seek access to the riverfront industrial area from I-75 and other major north-south truck routes. Allen Park, Lincoln Park, South Gate, and Riverview are faced with these problems.

Improvement concepts presented and analyzed in the previous chapter have focused on a staged program of short and longer range actions which are designed to remove trucks from community centers and neighborhoods. The goals are to improve both the environment and accessibility.

This chapter describes the components of the Downriver truck improvement concept, shown in Figure 38. It compares costs with benefits and suggests a general staging sequence. Thus, it provides a planning context for future actions by public agencies. It calls for close cooperation among local, county, regional, and state planning and highway officials as well as the railroads serving the Downriver Area.


DEARBORN
INKSTER
DEARBORN HEIGHTS
WEST-LAND
MELVINDALE
RIVER ROUGE
ECORSE
DETROIT
ALLEN PARK
LINCOLN PARK
ROMULUS
TAYLOR
SOUTH GATE
WYANDOTTE
RIVERVIEW
HURON TWP.
WAYNE CO.
TRENTON
BROWNSTOWN TWP.
GROSSE ILE
WOODHAVEN
FLAT ROCK
GIBRALTAR
ASH TWP.
ROCKWOOD
SOUTH ROCKWOOD
BERLIN TWP.
BROWNSTOWN TWP.
RIVER ROUGE - ECORSE BY-PASS
WYANDOTTE TRUCKWAY
I. TRAILBLAZERS
TRENTON BY-PASS
Detroit River
Lake Erie
0 1/2 1 1/2 2 MI.
Prepared For SEMCOG
By Wilbur Smith & Associates
July 22, 1976
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LEGEND
UNPAVED ROADWAY
STAGE I & II GRADE SEPARATION AND ROADWAY WIDENING
STAGE III, IV, V TRACKWAY PROPOSALS
FUTURE TRUCK RESTRICTIONS
0 PRIORITY NUMBERS
COMMUNITY IMPACT AREAS
COMMERCIAL STRIP IMPACT AREAS
TRUCK TRAFFIC PROPOSALS
Wilbur Smith and Associates

FIGURE 38

Initial Actions

First steps in developing the truck improvement concept are the installation of truck route markers or trailblazers to assure that heavy trucks are aware of restrictions which apply on most local residential streets and many in commercial areas. There is a substantial interstate truck movement terminating in the Downriver area and while the truckers will generally be drivers familiar with approved routes, trailblazers would be beneficial in identifying those routes on which heavy loads are permissable.

Other high priority items include the construction of railroad grade-separation structures on Pennsylvania Road and King Road. These roads serve as the boundary lines between Wyandotte and Riverview and Riverview and Trenton, respectively. Grade separations have been considered for these crossings for some time and this study suggests that they be given a high priority in the highway improvement program.

Additional grade separations on Sibley Road in the Trenton-Riverview boundary and North Line Road (Ford Avenue) are presented in the program as the next priority. These grade separations have a slightly lower priority since in longer term, it is not expected that North Line can be improved sufficiently to become an important truck route and the Sibley crossing, while associated with an I-75 interchange, does not relate as well to land use considerations as King and Pennsylvania.

Treatments are outlined for improvements of Pennsylvania Road between Jefferson Avenue and Telegraph Road so that an additional centrally-located continuous truck access to the riverfront industrial area would be available, away from commercial centers or densely developed neighborhoods. This work will include widening Pennsylvania to four lanes minimum

throughout, with additional lanes at signalized locations. A standard five-lane section may be used for this widening.

The work program also includes proposals for relieving traffic capacity limitations at the intersection of Fort Street-Pennsylvania Road-Trenton Road in Southgate in Riverview. Two options are outlined for this improvement, one of which achieves capacity increases through at-grade construction and operational changes and represents a first stage of improvements, while the second, a long-range approach, would construct a flyover for Fort Street traffic so that the pressure on the remaining at-grade intersection would be significantly reduced.

Truckways

Optional plans for three separate truckway facilities have been suggested for a possible third stage, or later development, because they involve major capital expenditures as well as cooperative planning efforts by all responsible government officials. They should be keyed to business renewal programs such as being considered for Trenton and River Rouge and to rates of truck traffic growth.

The basic grid network of arterial streets for the Downriver area estabiishes the pattern of major flows of heavy trucks. Interstate Route 75, superimposed on this basic grid in the mid-1960's, has changed some of the travel patterns and has required a heavy shift to east-west from north-south truck movements. This has caused a shift in truck priorities to give maximum consideration to east-west access, where north-south movements formerly were most critical.

While recognizing the priority requirements of east-west improvements, it is also important to provide relief for north-south movements, since there is an element of north-south

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movements along Jefferson in each east-west trip to reach a major east-west road or an industrial destination.

Because the industrial development extends along the full length of the riverfront, destinations are sufficiently spread out so that no single east-west facility would be convenient to all destinations. Accordingly, there is need for consideration of north-south truck movements, particularly as related to Jefferson Avenue, which serves as the primary access to most of the riverfront industry.

River Rouge-Ecorse - The truckway proposals for extension of the Marion Industrial Highway into Ecorse are updates of plans which were advanced in the early 1960's. Truck traffic to and from Great Lakes Steel Corporation represents a major percentage of Jefferson Avenue truck traffic and this volume could be diverted with an atrractive extension of the Marion route. Cooperative negotiations will be essential in this instance between government planners and the industrial owners of property through which much of this truckway would be built.

Wyandotte - Consideration of north-south truckway leads very quickly to the major four track rail right-of-way which parallels Jefferson Avenue throughout most of the Downriver area. The rail right-of-way includes tracks of the Detroit, Toledo and Ironton, Detroit and Toledo Shore Line, and two Conrail lines. There appears, on observation of the right-of-way, to be available space which might be used for a truckway. On review of the detailed rail plans, however, the available unused right-of-way looks less atrractive, raising question as to the feasibility of truckways in the rail corridor.

Early rail line alternatives for truckways were frequently premised on the concept of entering the rail right-of-way south of Trenton and continuing north to River Rouge. Functional

analysis of such proposals, however, quickly lead to the conclusion that the problems of ingress and egress to such a facility at key arterial crossings would be virtually impossible to solve. Further, activity between the mainline tracks including storage trucks, crossovers, and spur connections, in some cases related to the fact that the D.T. and I. and D. and T. S.L. change positions in the corridor just north of Trenton with an across-all-tracks crossover, indicated that plans involving use of the rail right-of-way south of Riverview would be extremely difficult to resolve.

After initial analyses and preliminary cost estimates were prepared, discussions were arranged with local Detroit officials of both Conrail and the D.T. and I. Railroad. These discussions lead to different views on the feasibility of the truckway proposals for the Wyandotte area, where the geometric detail requires that rail right-of-way be purchased and arrangements be made for two of the rail operations to either share a single track line or build a new parallel line to alleviate the sharing of trackage. It is anticipated that many additional discussions will be required to arrive at acceptable arrangements for the changes essential to achieve a truckway in the railroad right-of-way bypassing Wyandotte.

Trenton - The Fifth Street Extension as a bypass of Downtown Trenton was presented as part of the Trenton plan for development several years ago. As a part of this project, two alternatives were considered:

1. Construct the extension along a true extension of Fifth Street paralleling the railroad right-of-way.

2. Construct the extension over the tracks of the D. and T. S.L. Railroad, the closest tracks to

Fifth Street and avoid the property taking required with Alternate 1 above.

The possibilities of the second alternate were studied briefly and while the plan has merit as it relates to community impact, it is very complicated in terms of railroad cooperation since it involves the third railroad in the corridor for the first time in negotiations for the truckways.

The principal problem associated with proposing Alternate 2 for the Trenton Bypass is the crossover, which the D. T. and I. and D. and T. S.L. Railroads execute, just north of Trenton. The right-of-way of 60 feet along the east side of the total rail right-of-way contains as many as four tracks in portions of the area adjacent to Trenton. Because of the crossover and the connecting tracks which provide access from all of the rail lines in the corridor to McLouth Steel Company's Trenton Plant, and because of the other track placement in this area, it does not appear feasible to consider displacing the rail facilities in the 60-foot right-of-way in favor of a bypass road.

Benefit Comparisons

In reviewing the areawide impact of the various truckway options outlined herein, a variety of benefits can be realized if staging and coordination between the Michigan Department of State Highways and Transportation, SEMCOG, Wayne County, and local municipalities can be achieved.

Study area benefits will vary in magnitude with each local option for truckways development. Table 7 compares benefits from the options outlined. A broad range of impacts are listed and related to each option analyzed in the Downriver truckways concept. Railroad relocation implications, adaptability to stage development, impact on local streets, acceptance by truck

Table 7

TRUCK IMPROVEMENT CONCEPTS-BENEFITS COMPARISON

SEMCOG Downriver Truck Study

CONCEPT OR OPTION					A	B	2	1a	1b	1c
Description	RAILROAD CROSSING IMPROVEMENT, PENN; KINC,NORTH LINE AND SIBLEY Grade Separation of Major Cross Street With R/R	PENNSYLVANIA ROADWAY IMPROVEMENTS Upgrading and Expansion of Lanes to Handle Capacity	PENNSYLVANIA FORT ST.- TRENTON INTERSECTION Revise Phasing New Geometrics and Connections	TRENTON BYPASS Use of Fifth St. from Jefferson to Elm. Const. on East Side Adjacent to D.T.&I. Railline, past Helen back to Jefferson	RIVER ROUGE/ TECUMSEH (RIVER ROUGE/ ECORSE) Use Marion Indus. Hwy. to Great Lakes. Const. on East side adjacent to Ironton. Then a long west side of R/R-R/W to Tecumseh.	RIVER ROUGE/ TECUMSEH WESTFIELD (RIVER ROUGE/ ECORSE) Extend A from Tecumseh to Westfield. Shift to Avoid Excessive Residential R/W to East.	ECORSE/ RIVERVIEW (N.Y.C. R/W - WYANDOTTE) Cross Ecorse River and Railines. Enter NYC R/W. Make Elevated Full Connections with Side streets Alkali & Grove Ave. Continue S & Exit R/W to Riverview.	ALKALI/ GROVE AVE. (WYANDOTTE) From Alkali proceed adjacent on East to D.T.&I. R/W. Some minor R/W takes to Grove Ave.	ECORSE/ ALKALI (WYANDOTTE) Cross Ecorse River and proceed adjacent on East to D.T.&I. R/W to connection at Alkali.	GROVE AVE./ RIVERVIEW (WYANDOTTE) From Section 1a and 1b Cross over into NYC R/W after Grove Ave. Proceed at grade past Pennsylvania, Cross backover and connect at Jefferson.
ESTIMATED COST (In Thousands)	$14,000	$6,450	$1,700	$1,321	$ 700	$ 765	$ 17,546	$ 3,931	$ 2,444	$ 8,422
USAGE (Traffic)	++	++	++	++	+	+	+	+	-	++
R/R RELOCATION IMPLICATION	0	0	0	0	0	0	-	-	-	-
ADAPTABILITY TO STAGE DEVELOPMENT	0	0	+	0	++	++	--	--	++	++
ACCESS TO RIVERFRONT INDUSTRIES	+	+	0	+	+	+	--	0	+	++
IMPACT ON LOCAL STREETS	+	0	0	++	+	++	0	0	+	++
CONTINUITY OF TRUCK MOVEMENTS	++	0	0	0	0	0	--	-	-	-
BLOCKAGE OF CROSS STREETS OR R/R TRACKS	0	0	0	-	0	0	-	-	-	-
ACCEPTANCE BY TRUCK DRIVERS	++	++	0	++	+	-+	0	0	+	++
CONSTRUCTION PROBLEMS FOR EXTENSIONS	-	0	0	0	0	0	--	-	-	--
ACCEPTANCE BY PASSENGER VEHICLES	++	++	++	++	0	0	--	-	0	++
R/W DISPOSITION ALONG PROPOSED ROUTE	0	-	0	-	0	-	--	-	-	--
SUM OF + AND -	+9	+6	+5	+7	+6	+7	-13	-3	+1	+5