

**URBAN AREA  
REPORT**



**BUFFALO**

**1946**

REPORT  
ON  
NEW YORK STATE THRUWAYS  
AND  
ARTERIAL ROUTES  
THE BUFFALO URBAN AREA  
ERIE COUNTY - NEW YORK

PREPARED BY THE  
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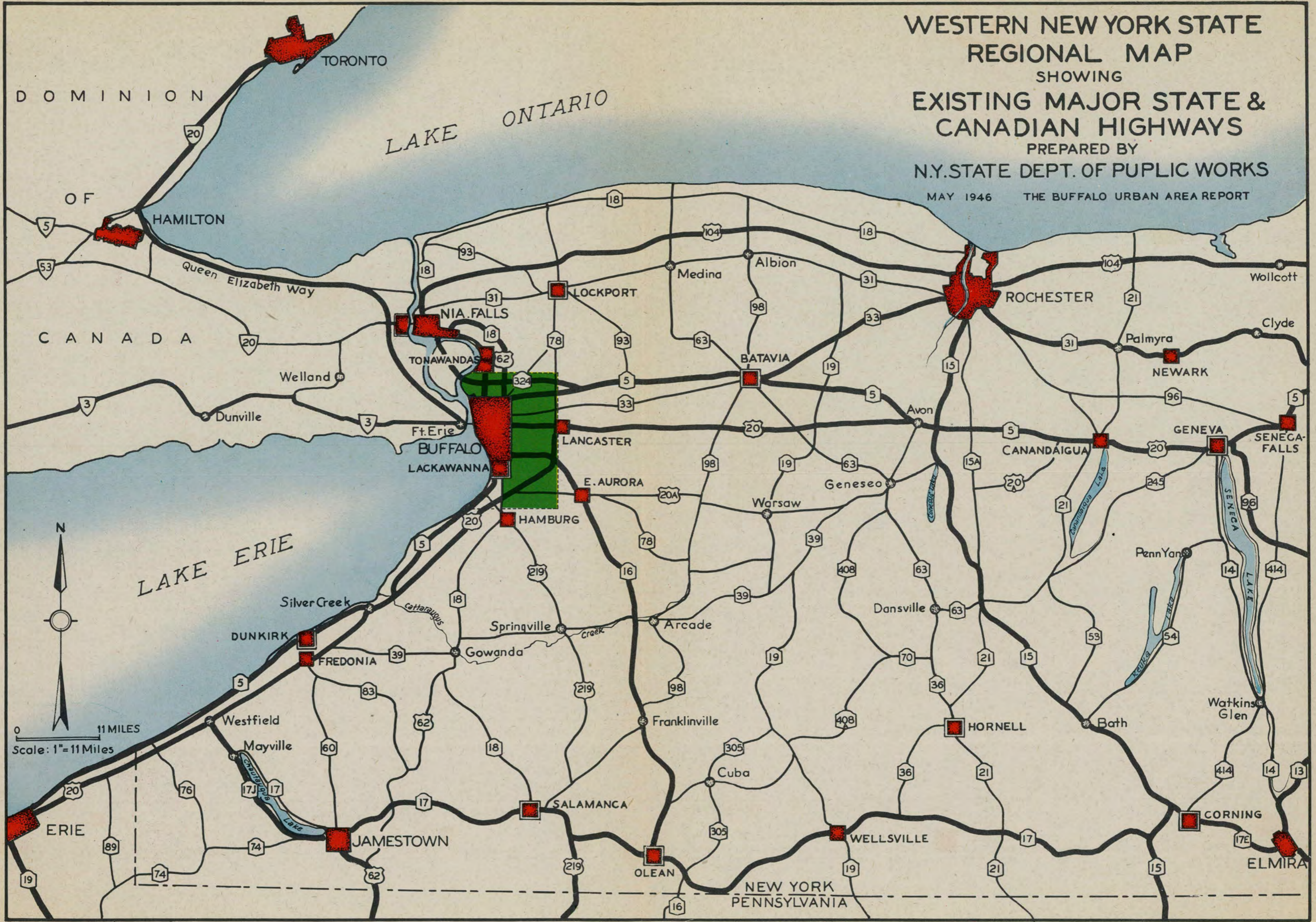
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Hon. Bernard J. Dowd  
Mayor of the City of Buffalo  
Buffalo, New York

Hon. Roy R. Brockett, Chairman  
Erie County Board of Supervisors  
Buffalo, New York

Gentlemen:

I am pleased to inform you that the State of New York is prepared to start construction on certain major highway improvements within the Buffalo urban area in conformance with the comprehensive plan of development described in the following report.

In 1942, legislation was adopted authorizing construction of the Thruway which, when completed, will extend from the Pennsylvania line near the City of Erie, to the northern New Jersey line near New York City. It will continue northeasterly from Pennsylvania to the Buffalo urban area and extend from that section easterly across the State to serve Rochester, Syracuse, Albany and intervening communities. From Albany the route will follow the westerly side of the Hudson River to the northerly New Jersey line, where it will be connected with New York City by way of the George Washington Bridge and high capacity New Jersey routes. The two sections of this Thruway passing in the vicinity of Buffalo have been named the Erie and the Ontario Thruway.

Additional legislation was adopted in 1943 creating the Niagara Thruway. It was established as a north and south waterfront route passing through Buffalo and leading to the City of Niagara Falls on the north, and to Lackawanna and the Erie Thruway on the south. If the adjusted Thruway locations as recommended in the following report are adopted, it will be necessary to amend these acts.

In 1944, still further legislation was passed setting forth a new policy with respect to city thoroughfares connecting with State highways. Prior to that time, State highway funds were used almost exclusively in the rural districts, but this new policy will permit the State to improve and develop arterial routes within the cities themselves. It will permit the State to construct many desperately needed improvements which could not be realized in the past because of the inability of cities to finance them.

Engineers of the New York State Department of Public Works have been engaged for many months in an intensive survey of Buffalo's traffic and related problems. Based on these studies, a comprehensive plan has been prepared which, if carried out, will solve the urgent traffic problems of this metropolitan area.

On the basis of these studies, a construction program estimated to cost in the neighborhood of approximately \$24 million for arterial improvements and \$45 million for thruways has been recommended. Funds to permit work to proceed on some of these projects are now available.

However, the law requires local approval of all arterial route projects for which new rights of way must be acquired and that principle will be followed on all work within cities, irrespective of the type of construction or whether or not rights of way are needed.

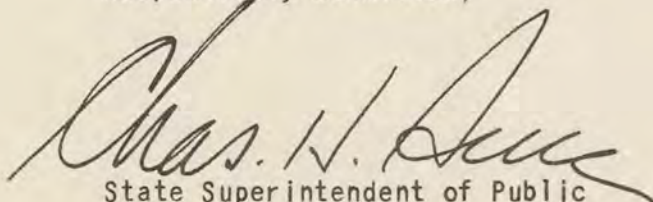
After a comprehensive plan for State arterial route and thruway development has received local approval, projects for construction will be selected from it in accordance with their need and available financing.

While the recommendations presented in this report cover a large number of undertakings and anticipate large expenditures, there remain many of a purely local nature which should also be undertaken.

There are definite indications that the expansion of automobile ownership and population increases in Buffalo and its urban area will result in untenable traffic congestion in the near future if remedial steps are not initiated at once.

It would be appreciated, therefore, if you would give early consideration to the recommendations presented in this report and advise me if the general plan, as outlined herein, meets with your approval.

Respectfully submitted,

  
State Superintendent of Public  
Works

## ACKNOWLEDGEMENTS

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In the preparation of this report, much valuable basic material and information was obtained from the following agencies, and their assistance in furnishing this material is gratefully acknowledged:

Buffalo Dept. of Public Works	New York State Dept. of Commerce
Buffalo City Planning Commission	New York State Police
Buffalo Board of Safety	Niagara Frontier Planning Board
Buffalo Police Department	Erie County Highway Dept.
Buffalo Sewer Authority	Lackawanna Dept. of Public Works
Buffalo Zoning Board of Appeals	
Buffalo Housing Authority	

Acknowledgment is also made of important material freely contributed by the Towns and Villages contiguous to the City of Buffalo and by the many public spirited organizations and residents of this area.

## TABLE OF CONTENTS

	Page
LETTER OF TRANSMITTAL	
ACKNOWLEDGEMENTS	
TABLE OF CONTENTS	
LIST OF MAPS, CHARTS AND ILLUSTRATIONS	
SUMMARY OF RECOMMENDATIONS	1
REPORT	6
A COMPREHENSIVE ARTERIAL HIGHWAY AND THRUWAY PLAN FOR BUFFALO AND THE SUBURBAN AREA	7
HISTORY OF BUFFALO AREA	13
SUPPORTING DATA	16
Population Growth	16
Motor Vehicle Registration Growth	20
Population Density	21
Zoned Land Use	23
Assessed Land Values	25
Traffic Volumes - 1946	27
Peak Hour Traffic Volumes - 1946	29
Traffic Flow - 1946	31
ORIGIN AND DESTINATION SURVEY	33
Destination of Traffic Entering City of Buffalo	35
Origin and Destination of Traffic Within City	37
Suburban Traffic Flow into Buffalo	39
Traffic Accumulation and Distribution in Buffalo	41
Suburban Traffic Following Direct and Indirect Routes to Zone No. 1	43
Suburban Traffic Following Direct and Indirect Routes to Zone No. 2	45
1960 TRAFFIC INCREASES	48
1960 Traffic Density With No Improvements	50
Time Flow Map - 1960 With No Improvements	52
VEHICULAR CAPACITIES OF EXISTING STREETS	
Mass Transportation in the City of Buffalo	54
Mass Transportation in Suburban Areas	59
Parking	61
FINDINGS	65



## TABLE OF CONTENTS - CONT'D

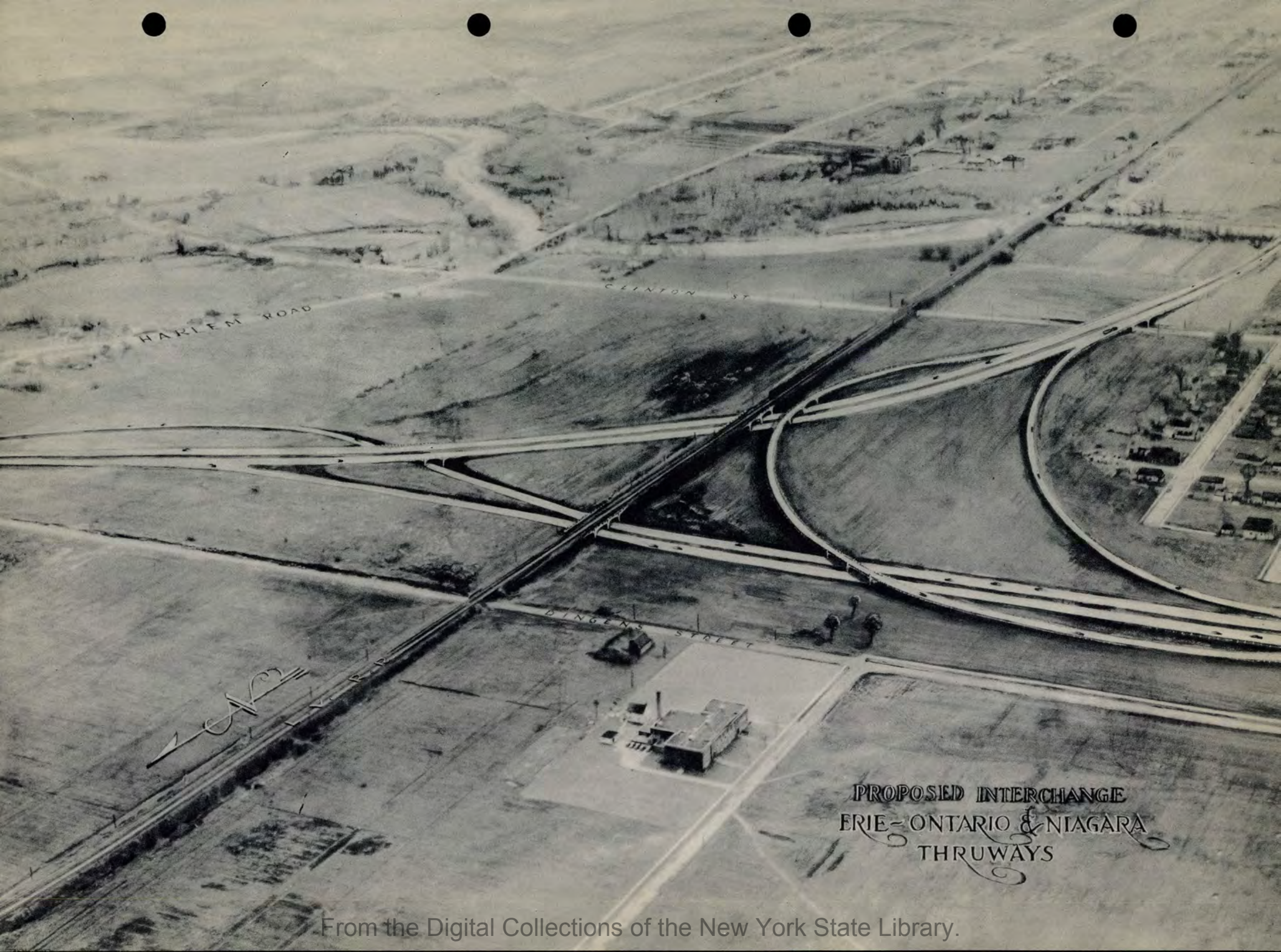
	Page
PROPOSED NEW YORK STATE PLAN	
RECOMMENDATIONS	70
Erie Ontario Thruway	71
Niagara Thruway	72
Thruway Standards	78
Bus Stations	80
Truck Terminals	80
Assessed Value of Land Taken	81
Families Displaced	82
Traffic Flow Pattern on Downtown Diffuser	84
Arterial Routes	90
ESTIMATED COST	
Arterial Routes	96-97
Thruways	98
RESULTS OF PLAN	
1960 Traffic Volumes and Capacity With Plan Completed	99
Time Flow Map - 1960 - With Thruway	103
Population Trends With Thruway	108
Population Density With Thruway	110
Zoned Land Use With Thruway	112
Land Values with Thruway	114
SUMMARY	116
APPENDIX	
Arterial Law	A-1

LIST OF MAPS, CHARTS  
AND ILLUSTRATIONS

-----

	Plate No.
Highway Map - Western New York and Canada	1
Aerial View - Erie-Ontario and Niagara Thruway Interchange	2
Aerial View - Downtown Interchange	3
Population and Motor Vehicle Graph	4
Population Trends	5
Population Density	6
Zones Land Use	7
Assessed Land Values	8
Traffic Volumes - 1946	9
Peak Hour Traffic Volumes and Capacities - 1946	10
Time Flow - 1946	11
Destination of Traffic - Entering City of Buffalo	12
Origin and Destination of Traffic - Within the City	13
Suburban Traffic Flow Into Buffalo	14
Traffic Accumulation and Distribution in Buffalo	15
Suburban Traffic Following Direct and Indirect Routes to Zone No. 1	16
Suburban Traffic Following Direct and Indirect Routes to Zone No. 2	17
1960 Traffic Increases	18
1960 Peak Hour Traffic Volumes and Capacities	19
Time Flow Map - 1960 With No Improvements	20
Mass Transportation - City of Buffalo	21
Mass Transportation - Suburban Areas	22
Typical Multi-storied Parking Garage	23

	Plate No.
Traffic Flow Pattern on Downtown Diffuser	24
1960 - Traffic Capacity With PLAN Completed	25
1960 - Time Flow With PLAN Completed	26
Population Trends With PLAN Completed	27
Population Density With PLAN Completed	28
Zoned Land Use With PLAN Completed	29
Land Values With PLAN Completed	30
GENERAL PLAN	A-A
ERIE-ONTARIO THRUWAY	
Camp Road to Transit Road	A, B & C
Typical Sections	C-C
NIAGARA THRUWAY	
Downtown Interchanges . . . . .	D
Louisiana Avenue to Baitz Avenue. . . . .	E
Interchanges with Bailey Avenue and Ontario Thruway. . . . .	F
Court Street to Albany Street . . . . .	G
Ferry Street to Hertel Avenue . . . . .	H
ARTERIAL ROUTES	
Main-Humboldt . . . . .	a
Delaware Avenue . . . . .	b
Broadway. . . . .	c
Perry Street. . . . .	e
Fuhrmann Boulevard. . . . .	f
Kensington. . . . .	g & h
Cherry Street . . . . .	i
Elm-Oak-Michigan. . . . .	j & k
Virginia-Carolina . . . . .	l
Hinman Avenue . . . . .	m & n
Walden Avenue . . . . .	o



HARLEM ROAD

CLINTON ST

DIGGINS STREET

PROPOSED INTERCHANGE  
ERIE-ONTARIO & NIAGARA  
THRUWAYS



*Proposed  
Down-town Interchanges  
Buffalo, N.Y.*

## SUMMARY OF RECOMMENDATIONS

This report presents the findings of the Department of Public Works in relation to the vehicular mass movements within the City of Buffalo, the traffic generated in adjacent urban areas which enters the city, and the capacity of existing available streets.

A study has also been made indicating traffic growths which may reasonably be expected to take place between the present time and 1960. These are presented in this report, together with an analysis of the traffic problems which are almost certain to result from an anticipated expansion of motor vehicle use.

In order to provide relief from the ever-increasing problem of traffic congestion which so seriously threatens to strangle city property and tax values, the Department has prepared a plan for progressive advancement of Thruway and Arterial route construction. This is briefly summarized in this section of the report.

### *THRUWAYS*

#### *The Erie and Ontario Thruway*

It is proposed to construct the Thruway south of the village of Williamsville, connect it with the Thruway spur leading to Main Street in the vicinity of the intersection of Main Street and Kensington Avenue in Snyder, and to extend it southerly, generally parallel to and as close to the city of Buffalo as economic considerations permit. Near Clinton Street

it would turn southwesterly to the town of Hamburg, to continue along the Lake Erie plain. This route is proposed to be constructed on the highest Thruway standards, with three lane capacity in each direction from Transit Road to Camp Road.

#### *Niagara Thruway*

It is proposed to construct the Niagara Thruway along the so-called Clinton Street route from the intersection of the Erie-Ontario Thruway to the abandoned canal lands in downtown Buffalo, and from there to construct it along the waterfront to a proposed Hinman Avenue extension and Hertel Avenue traffic interchange. All crossings are to be eliminated and the Thruway constructed with three lane capacity in each direction from the Erie-Ontario Thruway to Virginia and Carolina Streets, the westerly terminus of the downtown traffic diffuser. From there it is proposed to construct the Thruway with two lanes of capacity in each direction northerly to Hinman Avenue.

#### *ARTERIAL ROUTES*

*Delaware Avenue:* From Nottingham Terrace to the city line it is proposed to widen Delaware Avenue from 66 to 90 feet, build a 60 foot pavement, and reconstruct three railroad underpasses.

From North Street to Gates Circle it is proposed to construct a 20 foot traffic lane on each side of the existing paved way, and on the inside of trees bordering the present curbs. These lanes will be used for bus traffic only, and incidental parking.

*Humboldt Parkway:* It is proposed to provide an underpass to carry Humboldt Parkway under Main Street. The provision of an underpass to carry Humboldt Parkway under Main Street is a part of the plan for the development of a new six-lane divided roadway across the southerly end of Delaware Park.

*Broadway:* This project provides for the rebuilding of the New York Central Railroad underpass on a straight alignment, and repaving Broadway from Bailey Avenue to the city line to a width of 60 feet.

*Perry Street:* The construction of a viaduct over the New York, Chicago and St. Louis Railroad and the opening of Perry Street east of Dole Street to connect with Bailey Avenue at Seneca are included in the plan. It also includes the development of an underpass at the Delaware, Lackawanna and Western Railroad crossing near Seneca and Bailey, and widening the roadway to 42 feet where necessary.

*Fuhrmann Boulevard:* The construction of a new four lane high level bridge over the Buffalo River from Fuhrmann Boulevard to the Niagara Thruway, at the downtown business district, is also contemplated in the proposal.

*Kensington Avenue:* The proposal includes a new street from Kensington Avenue to Humboldt Parkway, crossing Fillmore Avenue on an overhead bridge, and the New York Central Railroad near Delavan Avenue on an underpass. It includes paving of Kensington 60 feet wide generally, and providing a depressed two center lane elimination at Kensington and Bailey.



*Cherry Street:* Opening of a new street 150 feet wide north of Cherry Street and parallel to it from Michigan Avenue to Herman Street is contemplated. It is also proposed to continue this improvement to Humboldt Parkway by taking a 140 foot right-of-way on the west side of Herman Street, and extending along the west side of Humboldt Park. Underpasses with two 24 foot lanes separated by a mall, will be provided at Best and Northampton Streets.

*Elm, Oak and Michigan:* The plan includes the development of new streets from Virginia to Carlton, on 100 foot right-of-way. It includes widening Elm Street where it is 50 feet to 66 feet, and prolonging Elm to Main on a 66 foot minimum right-of-way. It also includes prolongation of Elm and Oak southerly to the proposed Niagara Thruway.

*Tupper, Carolina and Virginia:* To provide part of the downtown diffuser, it is proposed to widen Edward Street from Main to Delaware to 66 feet; to widen East and West Tupper Streets from 49-1/2 feet to 66 feet, and to pave the loops provided thereby to widths of 40 feet.

*Walden Avenue:* The plan includes widening Walden Avenue from 66 feet to 80 feet and widening Best Street to 100 feet, using Humboldt Park properties. It includes the paving of Walden Avenue from the east city line to Genesee Street to 60 foot width, and paving Best from Genesee to Humboldt with two 37 foot lanes.

*Hinman Avenue:* A part of the plan will be to provide for the extension of Hinman Avenue westerly and southerly over

new right-of-way to connect with the Niagara Thruway, at Arthur Street. The section on new right-of-way would be constructed on the Thruway type, having two 24 foot lanes. The portion between Military Road and Delaware Avenue would be paved to a 60 foot width, using the present street.

THE REPORT

A COMPREHENSIVE ARTERIAL HIGHWAY AND  
THRUWAY PLAN FOR BUFFALO AND  
THE SUBURBAN AREA

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\*

It is the purpose of this report to present briefly a description of the proposed system of arterial and thruway routes designed by the State Department of Public Works for the Buffalo urban area, together with an outline of the surveys and other basic material upon which the design was predicated.

Work on this comprehensive plan was begun some six months ago, and when the plan is executed it will alleviate the major traffic problems within the city and urban area. It will greatly facilitate the movement of state and regional traffic as well.

It is based upon sound land use principles, the need for moving traffic from one section of the city or region to another, and is in accordance with required integration with city streets and state routes.

It is also the intention of this report to present data to show the estimated amount of traffic which will exist in Buffalo and environs in 1960, and how this traffic might be expected to flow upon completion of the Thruway and arterial systems presented in this master plan of development.

Recommendations for construction schedules are also presented. These are based upon the anticipated traffic resulting from the expected population increases and expansion

of motor vehicle mileage in the area, while at the same time recognizing the amount of State and City funds which it is believed may reasonably be expected to be available for such work.

*FORMER STATE HIGHWAY POLICY*

Until two years ago the general policy of the State, insofar as highway construction is concerned, has been to perform work on rural highways in towns and villages but not inside city limits.

The result has been that statewide traffic routes in rural areas have kept pace with traffic needs better than through routes within the cities.

Because of the heavy financial loads which most cities have to shoulder, it has been necessary for them to cut to the bone capital expenditures for these route improvements. This dictated policy resulted inevitably in severe traffic congestion and too frequently in the spread of blight and economic dry rot which so seriously menaces city property and tax values.

By 1940 this situation had reached alarming proportions. The downward swing resulting from curtailment in motor vehicle use during the war created a respite. Now, however, it is expected that a great expansion of motor vehicle ownership and use will develop in the next few years, and a solution to the city arterial route problem had to be found.

#### NEW STATE POLICY-ARTERIAL ROUTES IN CITIES

The State's new policy launched in 1944 provided the key to that problem. Legislation was passed that year which is known as the State Arterial Law. It enables the State Department of Public Works to defray the entire construction cost of approved arterial projects, and in addition to pay one-half of any right-of-way costs which may be involved. The only expense to the City would be the other one-half of such property costs.

The Declaration of Policy in this law reads as follows:

*"The modernization and the construction of arterial highways which are to pass through cities, will contribute greatly to post-war reemployment and to the stimulation of industrial recovery. The resources and the technical skills that are available to the state for these purposes, should be used for the benefit of the cities upon the principle that the construction of such arterial highways is a matter of state concern."*

A copy of the general provisions of this law which relate to up-State cities is included in the appendix to this report.

#### NEW POLICY-STATE THRUWAYS

In addition to the Arterial Law, New York, to be abreast of the times, enacted the State Thruway Law which provides for the construction of a highway of expressway proportions across the state from the Pennsylvania State Line easterly to the vicinity of Albany, and southerly to New York City.

It will have divided arteries of travel with an ultimate capacity of three traffic lanes in each direction. These arteries will be separated by a mall having a minimum width of twenty feet. All crossings at grade are to be eliminated, and no grade will be in excess of three percent. Long sight distances and easy curvatures are to be provided. Access to the Thruway will be by way of cloverleaf or comparable types of traffic interchanges between it and certain state highway and arterial routes. It is being designed and will be built as the "Best Highway in the World".

The Erie and Ontario Thruway sections of the main route which extend from the Pennsylvania State line easterly to a point near Syracuse, a distance of 225 miles, are estimated to cost approximately \$93 million, out of a total estimate of \$202 million for the entire Thruway from New York to Pennsylvania. The completed length will be 486 miles.

Funds to initiate construction of the cross-State Thruway were made available at the last session of the Legislature, out of the Postwar Reconstruction Fund. The average cost is estimated to be \$415,000 per mile.

The Niagara Thruway is a branch of the cross-State Thruway leading to the city of Niagara Falls. It was established as a north-south waterfront route passing through Buffalo and connecting with the city of Niagara Falls on the north, Lackawanna and the Erie Thruway on the south. Its length as presently defined by law is about 32 miles.

*ARTERIAL ROUTE FINANCING*

To provide for financing of New York State's postwar program, the legislature upon recommendation of the Governor established a Postwar Reconstruction Fund from surplus revenues collected during the war years. By maintaining this fund and with continued regular federal aid for highway construction and anticipated state revenue during the next five years, it is expected that \$840 million worth of statewide works can be successfully completed without any additional taxation or selling of bonds.

The percent of completion of the actual construction work, however, included in the Department's program estimated to cost \$840 million, based on 1940 prices, which can be accomplished, however, will depend upon the average of construction prices during that period. If prices stay at present levels or rise even higher, as they might easily do, it, of course, would take correspondingly longer to complete actual construction.

The Department has adopted the policy that all money available for arterial route construction shall be used within city limits, even though a considerable part of that sum could be spent in other areas. It takes that position in recognition of the critical traffic situation which prevails in so many cities, the disproportionate cost of correcting those conditions there and because of the added fact that regular state highway funds may be used to improve state routes in other urban sections.



Even so, the amount of funds presently available for city construction are usually insufficient to complete the minimum of required construction within five years.

As might be expected, this situation prevails in Buffalo . Based upon the assumption that federal aid for the next three years will continue during the last two years of the five year period at the same rate, funds available for arterial route construction in Buffalo would be \$17 million which would be less than the amount required to complete the State arterial route program even based upon 1940 estimates of cost. Physical completion of the entire program will, therefore, extend beyond five years.

## HISTORY OF THE BUFFALO AREA

In carrying out a program of Arterial route and Thruway construction as authorized by these laws, it is necessary to give consideration to the strategic importance of the City of Buffalo.

### *Description of Buffalo*

The City of Buffalo with its surrounding territory is the second largest metropolitan area in New York State. The population approximates one million persons. Within a radius of 500 miles of the city there is a population of sixty-five million people. The location of the city at the easterly end of Lake Erie and at the western terminus of the New York State Barge Canal, makes it a vital link in shipping between the interior of the United States and the eastern seaboard.

Western shipping facilities and the development of electric power in the nearby Niagara Falls have attracted many diversified industries to the area. This shipping and industry have also led to the development of the City of Buffalo as a great railroad center. It is a terminal point for the New York Central, Pennsylvania, Lehigh Valley, Erie, Baltimore & Ohio, Nickel Plate, Canadian National Railways, Delaware, Lackawanna & Western Railroads, Michigan Central, Toronto Hamilton and Buffalo Railroad, and the Pere Marquet.

Heavily traveled highway routes radiate from Buffalo to the north, east, south and southwest. To the north lies the neighboring country of Canada, establishing Buffalo in a

key position for trade and tourist travel to that country. The only highway crossings into Canada between Detroit and the Thousand Islands section of the St. Lawrence River are located in the Niagara Frontier area. More than half of the motor vehicle traffic passing between the United States and Canada in the Niagara Frontier area uses the Peace Bridge across the Niagara River from Fort Erie, Canada, to Buffalo.

#### *Street Layout*

The original plan for the City of Buffalo was conceived by the genius of Major L'Enfant who prepared the plan for the City of Washington, D.C. The plan was later developed by Joseph Ellicott in 1803. The present street system is the same as originally conceived, and consists of radial streets frequently 99 feet wide and 66 foot rectangular streets.

Since it was planned in 1803 as the Village of Amsterdam with an area of one-half square mile, and incorporated as a city in 1832 with a population of 10,119 in an area of five square miles, it has increased to the present day size of 44 square miles with a population of about 600,000. At present there is a total of 675 miles of streets in the city, of which 140 miles are major thoroughfares.

#### *Street Traffic*

Automobile and truck registration in Buffalo exceeded 160,000 vehicles in 1941. These vehicles travel principally on the major streets, and together with the traffic entering

the city from the suburban sections resulted in a maximum density on principal arterial routes.

On nearly every major street there is an average of one bus or street car to about every fifteen other vehicles. The International Railway Company carries up to 600,000 passengers each day. It is estimated that the various trips made by persons in other motor vehicles are in the vicinity of 400,000 each day.

In evaluating highway improvements under conditions of this traffic intensity, it is necessary to give consideration to mass transportation facilities. Uncongested flow of traffic can be attained only when operating difficulties of all vehicles using the streets are reduced to a minimum.

Adequate widths of streets, controlled parking, and wide intersections with long radii on the corners are necessities for all types of modern street traffic. There are many opportunities for improvement along these lines in the city of Buffalo.

## SUPPORTING DATA

In order to ascertain definitely where Arterial improvements are needed in the city of Buffalo and to what extent one should have preference over another, and also to determine the correct locations for the Erie, Ontario and Niagara Thruways in this area, various planning, engineering and traffic studies had to be made. They included field inspections and reviews of previous plans prepared by engineers employed at various times by the City and others since the year 1920. Studies were also made of population densities and trends, together with automobile registrations and their trends. An origin and destination survey was made. Industrial growth, land use and values were studied. Traffic flow, time flow, present street capacities, distribution areas, terminal and parking facilities, and mass transportation also had to be given much consideration.

### *Population Growth*

A study of population growth in Buffalo and Erie County was made for the period between 1900 and 1945, and was based on data obtained from the New York State Legislative Manuals, the New York State Department of Commerce and the Federal Census Reports.

With this information as a base and by using a mathematical projection, a future population in 1960 may be anticipated as 630,000 for Buffalo and 940,000 for Erie County.

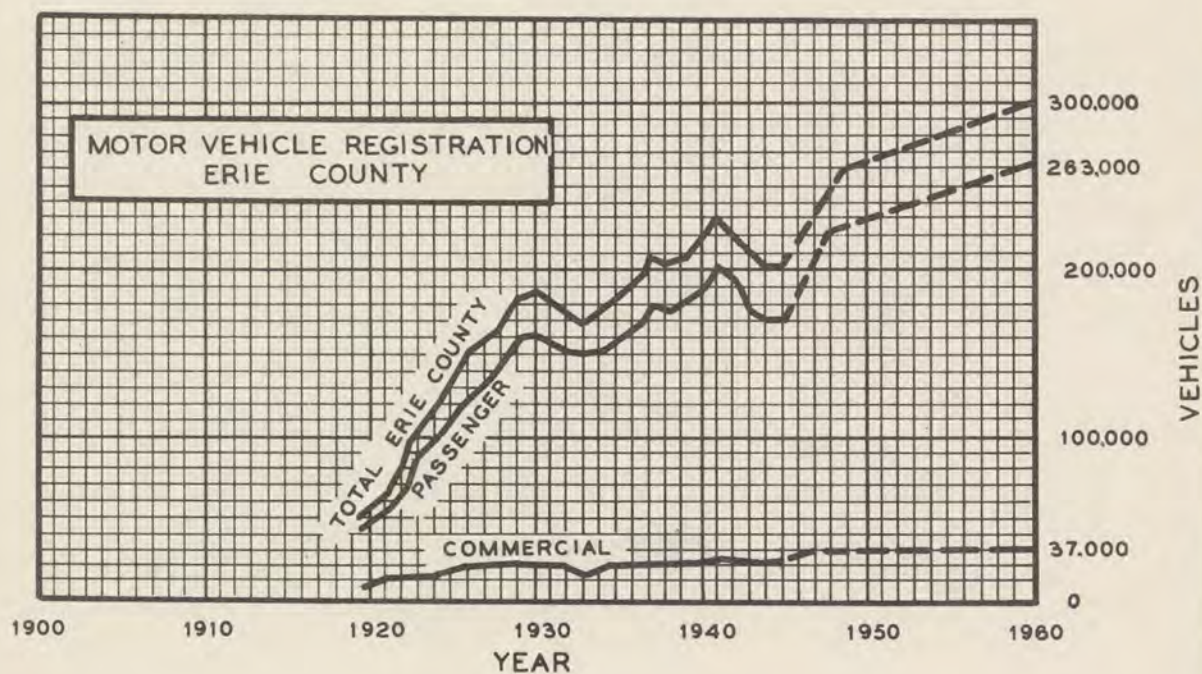
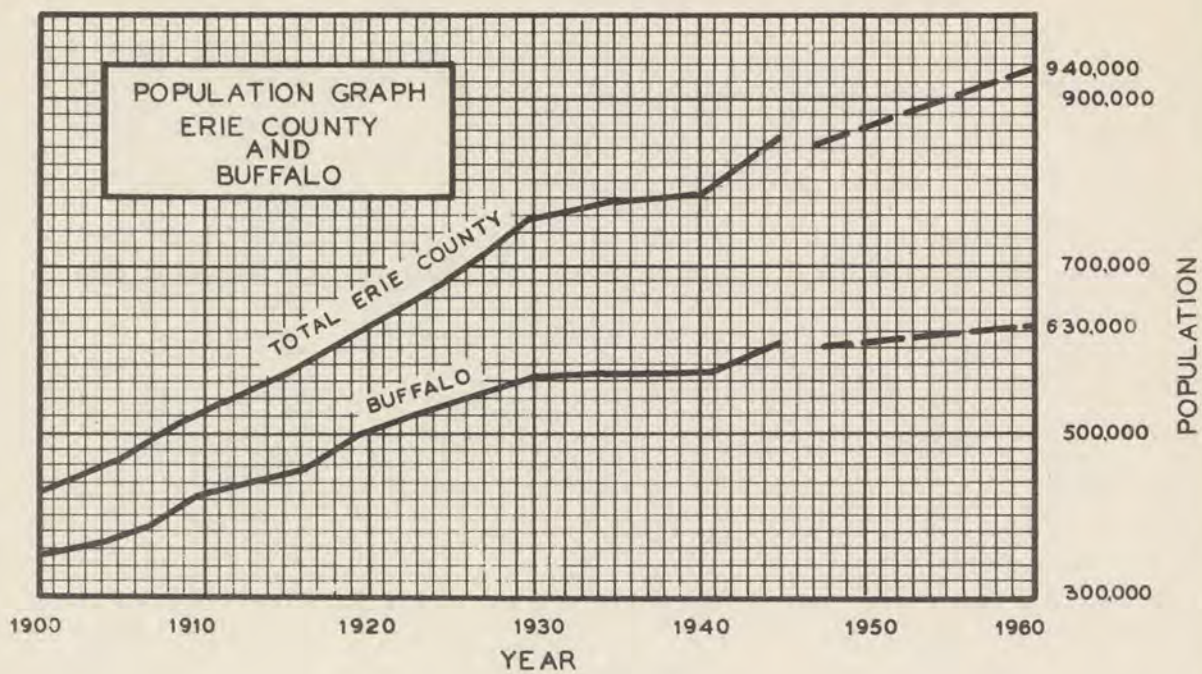
A glance at the population graph (Plate No. 4) shows that Buffalo and Erie County experienced their major rate of growth between 1910 and 1930, and levelled off thereafter

until 1940 as a result of the depression. However, the rate of growth in the county between 1930 and 1940 was substantial and significant.

The period from 1940 to 1945 shows a consistent rise again due to the stimulus of war production and reveals the inherent vitality of the commercial and industrial life of this area.

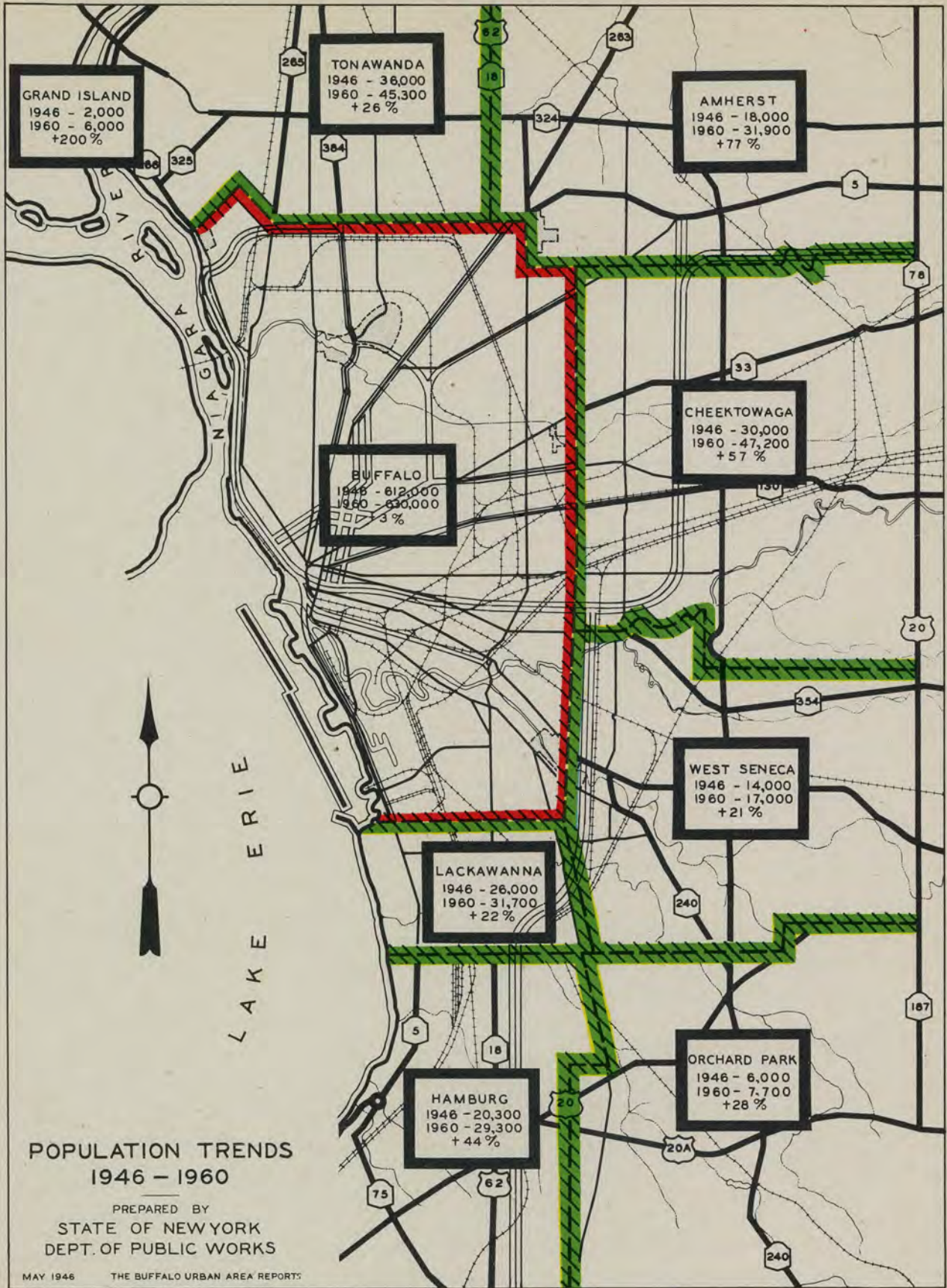
In the period from 1945 to 1960, it is apparent from the graph that population growth in the county will continue to increase. The rate of growth in the city will also increase but at a slower rate. The population growth has been analyzed further for the adjacent towns and the 1946 population, compared to the anticipated 1960 population, appears on Plate Number (5).

This chart indicates that the major increases will be towards the north and east with substantial increases in all other areas.



THE BUFFALO URBAN AREA REPORT  
MAY 1946

Motor vehicle registrations will rise sharply as population increases in Buffalo and Erie County.



Increases in population forecast for 1960.



*Motor Vehicle Registration Growth*

A study of motor vehicle registrations in Erie County from 1919 to 1945, inclusive, was made from the records of the New York State Tax Commission and the results are outlined on the Motor Vehicle Registration Graph (Plate No.4) for passenger, commercial and total registrations.

The graph shows a consistent increase from 1919 to 1930, inclusive, and this is followed by the decline due to the depression of the thirties. The peak in 1941 is also evident and this was followed by the decline due to World War II.

Motor Vehicle Production figures from 1900 to 1944 were studied also from "Automobile Facts & Figures 26th Edition", a publication of the Automobile Manufacturers Association to understand the potential productive capacity of the automotive industry.

A comparison of cars registered in relation to population was made also for the New England and Middle Atlantic States, and for the country as a whole for the year 1940, and these comparisons showed a ratio of 4 persons per vehicle. In Erie County the ratio in 1940 was 3.7 persons per registered vehicle.

The straight line projection to 1960 shows an anticipated total registration of 300,000 vehicles for Erie County and this compared to the population figures anticipates a ratio of 3.1 persons per registered vehicle in Erie County in 1960.

Future motor vehicle production and registration is dependent upon many variables, and present conditions appear to dictate and substantiate the above mentioned ratio of 3.1 persons per vehicle in 1960.

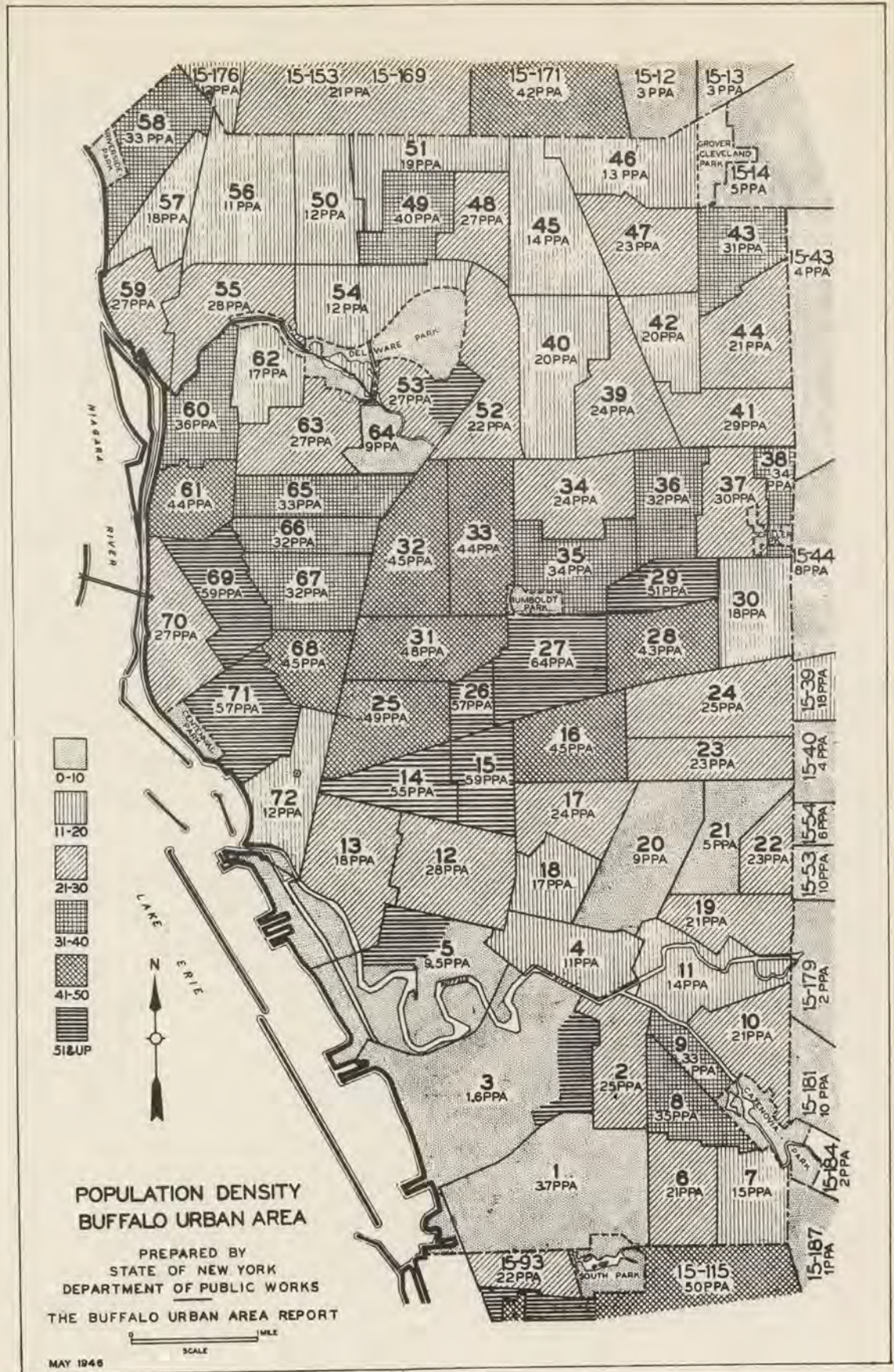
The graph anticipates that motor vehicle registrations will reach the normal projection line in 1948 and will proceed along this normal line until 1960.

#### *Population Density*

The Population Density Map (Plate No. 6), shows the number of persons per acre (P.P.A.) living in the various tracts and enumeration districts established by the Federal Bureau of the Census.

It shows by appropriate symbol the density of population in the several districts of the Buffalo Urban Area.

It serves as an indication of the number of people affected by the selection of any particular route, and is one of the determining factors in the economic and social study of the problem. In the city of Buffalo, the population figures are by census tracts and in the towns outside of Buffalo the population figures are by enumeration districts. The figures are based on the 1940 Federal Census with an increased percentage allowance estimated to bring the data up to date.



Population density figures indicate the centers of population to be served by improved street and highway facilities. This map shows the identification numbers of the census tracts and the persons per acre (---PPA) in each tract.

*Zoned Land Use*

Plate No. 7 has been prepared from all available sources of information in the Buffalo Urban Area.

Towns and other municipalities readily furnished information, zoning maps and regulations, which were used to complete the overall picture.

They include the cities of Buffalo, Lackawanna and Tonawanda, and the towns of Grand Island, Tonawanda, Amherst, Cheektowaga, West Seneca, Orchard Park and Hamburg.

The map shows the principal uses of the land areas and outlines the corporate boundaries of the various municipalities within the Buffalo Urban Area considered in this report.

Industrial, business, residential, farming areas and cemeteries are outlined as well as transportation arteries, both rail and highway.



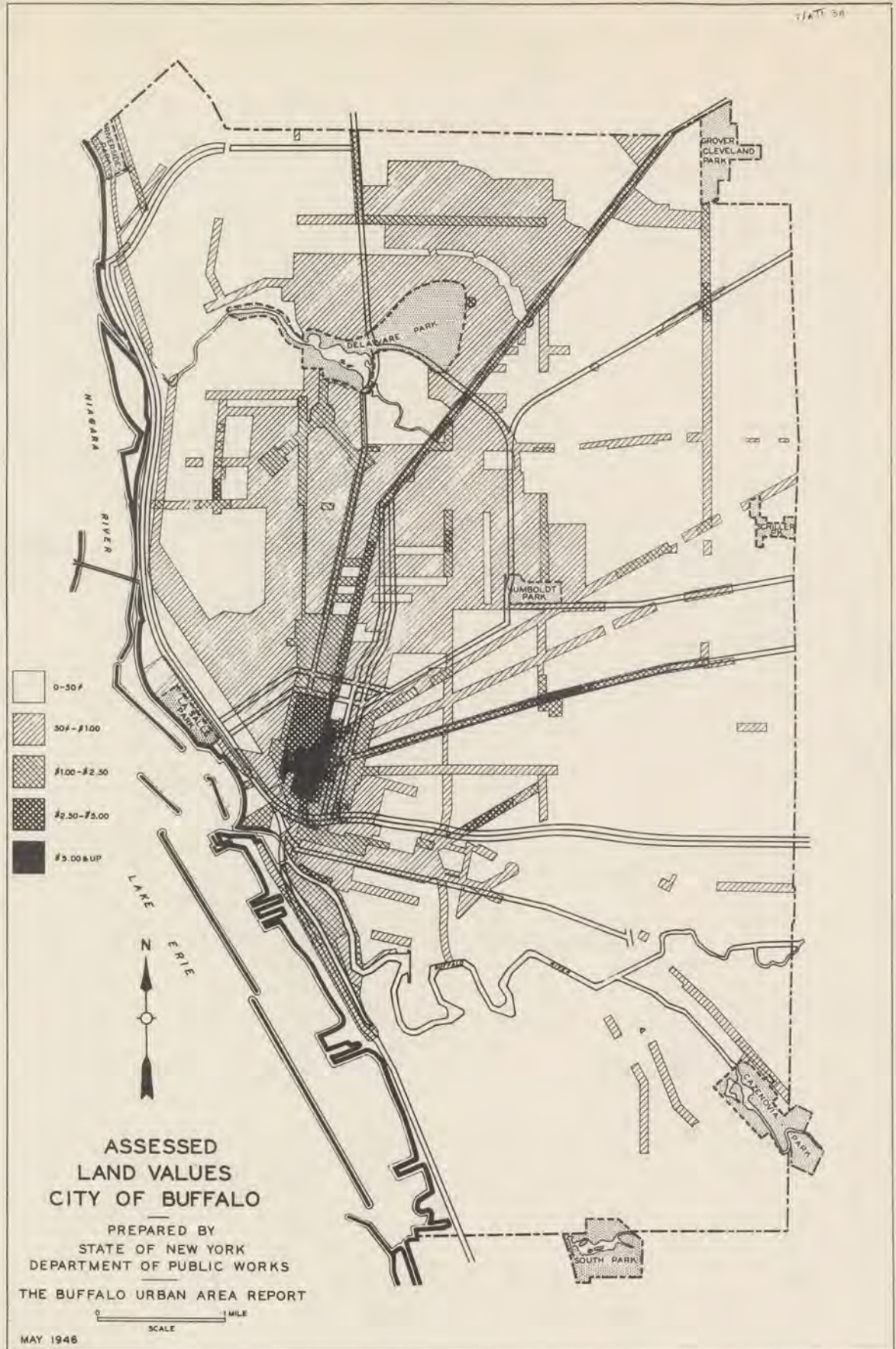
New highway and street facilities must serve a variety of land uses in the busy Buffalo urban area.

*Assessed Land Values*

Assessed land values per square foot for land only in the various sections of the city of Buffalo have been shown on a map, (Plate No. 8) by appropriate symbols. It is part of the study that was used in conjunction with other data in the report in arriving at the economic solution of the problem.

Official 1946 assessed values of land and improvements have been used as a base in the determination of economical right-of-way location, after adjustments were made for anticipated acquisition costs.

In the final analysis, the desirability of location and the economies of right-of-way and construction costs were balanced to produce a workable plan within the financial ability of the state and city.



A study of land value per square foot, as assessed in the city of Buffalo, is essential in route planning to avoid extensive property damage.

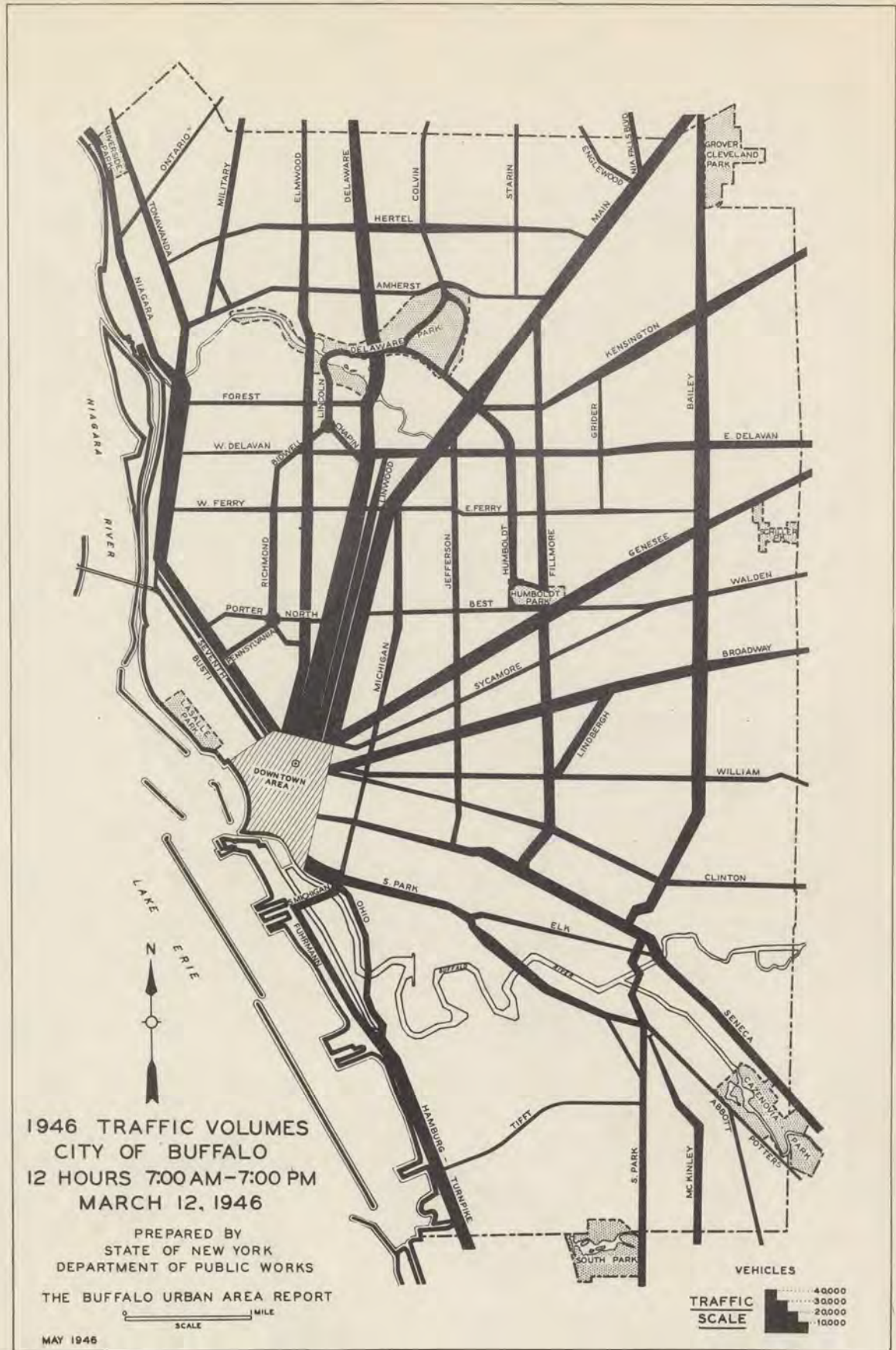
*Traffic Volumes - 1946*

The graphical presentation shown on Plate No. 9 of traffic volumes of the principal streets of Buffalo was prepared from traffic counts taken at 34 key stations during the New York State Traffic Survey held on March 12, 1946. The resulting data was applied to the major streets to obtain a general picture of the overall traffic flows and volumes. Local traffic fluctuations and traffic volumes on some of the principal cross streets were pro-rated from earlier and reliable traffic counts.

High traffic volumes are shown on most of the major streets radiating from the downtown area. Niagara Street, Delaware Avenue, Main Street, Kensington Avenue, Genesee Street, Broadway, portions of Seneca Street and South Park Avenue, Fuhrmann Boulevard and Bailey Avenue show especially heavy traffic.

It can be readily seen from this map that if traffic flows of the future follow present streams, substantial improvements to the present radial streets must be made or other routes constructed which will draw traffic from them leaving those streets open for present and future traffic to the extent of the amount of traffic which is withdrawn.





By March 1946 traffic volumes had returned to 1937 levels, with Genesee Street carrying more traffic along its overtaxed lanes than wider Broadway.

*1946 Peak Hour Traffic Volumes*

This map is a graphical presentation of the peak hour capacities of existing major streets of the city of Buffalo, compared with the actual peak hour volumes. The peak hour capacities, computed as 500 vehicles per free lane per hour, are indicated by the solid black lines. Where peak hour volumes are in excess of the capacity, such excess is indicated by the red bands adjacent to the capacity bands. These red bands, drawn to the same scale as the capacity bands, are therefore graphically indicative of the number of additional lanes needed to carry the present peak hour overload, in addition to being an indication of the relative peak hour congestion.

The areas of greatest congestion, as shown on the map, are not at present a serious barrier to reasonably smooth and steady traffic flow along the major streets. Certain intersections and local areas present rather serious obstacles to free traffic flow, but no section of the city, or complete major street can be considered at present to be in critical condition.

The indications are, however, that as traffic volumes increase, a general over-congested condition will result on several of the major streets in different parts of the city, requiring a carefully designed plan to remedy all, or most all, of these conditions by an integrated system based on the future growth of the city and attendant increases in vehicle usage.



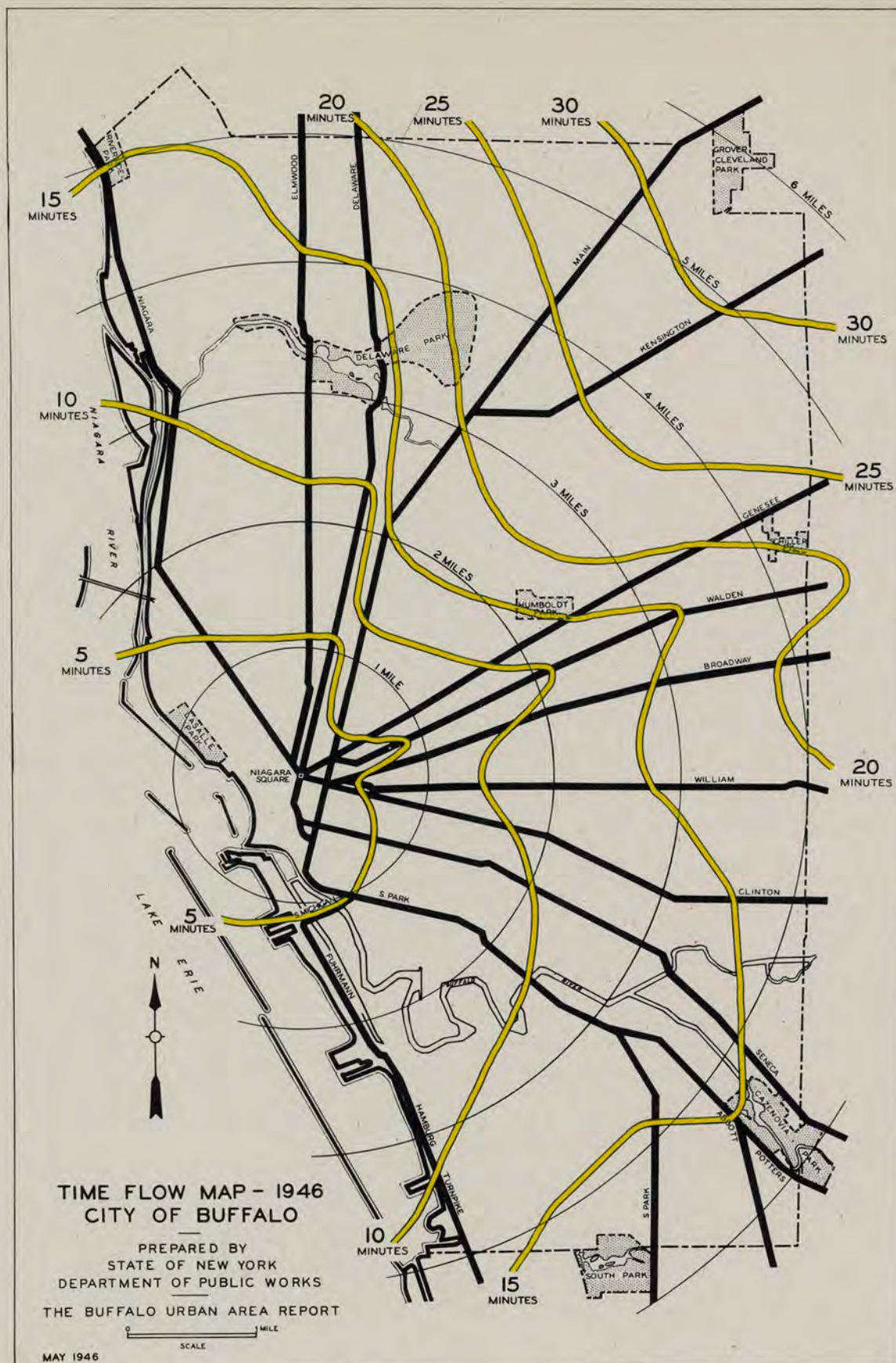
Peak hour volumes now on the verge of creating serious congestion in many parts of the City of Buffalo will become more critical in the areas shown in red as traffic increases.

*Time Flow Map - 1946*

The time required to drive from Niagara Square in downtown Buffalo to the city lines is one of the most important factors to be considered in developing an overall street traffic plan for the city. The Time Flow Map shown on Plate II was developed from data obtained by test runs and check runs during evening peak hours, 5:00 P.M. to 6:00 P.M., in April 1946. At that time no extreme congestion was encountered. However, there were spots of minor congestion, and also street cars and in some instances buses which increased the overall travel time to the city lines on many streets.

The areas on the Time Flow Map where the five-minute contour lines lie close together are representative of the sections in which traffic speeds are reduced by present conditions and may be expected to be more seriously reduced as traffic volumes climb back to and above the 1941 levels. The northeast quadrant of the city is already experiencing undesirable slow speeds and excess travel time to and from downtown Buffalo. This is due for the most part to traffic conditions on Main Street, Kensington Avenue and Genesee Street.

For instance, it takes twenty minutes to drive five miles north along Delaware Avenue to the north city line while only three and three quarter miles can be driven in twenty minutes out Genesee Street and Broadway and only three miles can be driven on Main Street in the same length of time.



Time required to reach the city lines from Niagara Square is an important factor in determining the areas where relief is required.

*Origin and Destination Survey*

In order that all of this traffic information might be correlated and analyzed on a scientific basis, an Origin and Destination Survey was taken by the State. This specialized survey provided data as to where people came from, where they were going, and the routes followed in the city. It included information as to traffic originating outside of the city as well as that in the city, and particular emphasis was given to the downtown areas of Buffalo where the greatest concentration of traffic occurs.

The survey was conducted on March 12, 1946. During a 12 hour period, from 7:00 A.M. to 7:00 P.M., all private traffic proceeding toward the center of the city was stopped by police officers at each of 34 stations, and self-addressed questionnaire postal cards and instruction sheets were handed to the drivers by State employees. At the same time an hourly traffic count was obtained at each station.

There were 17 outer cordon stations on the major streets at the city lines, where traffic was controlled by the State Police, 15 inner cordon stations around the downtown section with traffic under the supervision of the Buffalo City Police, and two outer cordon stations in Lackawanna where traffic was directed by the Lackawanna City Police.

In the twelve hours 243,132 vehicles in both directions were recorded and 89,214 questionnaire cards were handed to inbound drivers by 185 State Department of Public Works employees, assisted by 85 police officers. Thirty-four State trucks were

used to transport supplies and men. Large pedestal warning signs surmounted by red flags were placed well in advance of each station. There were no accidents reported during the progress of the survey.

Within two weeks 33,000 or 37% of the cards had been returned. These were sorted both automatically and manually to obtain the origin and destination data included on the maps and in the text of this report.

Advance publicity of the survey was contributed by the press and radio. This important service largely accounted for the wholehearted cooperation of the traveling public and the resulting unusually high return of the questionnaire cards made the survey a complete success.

With these data definite information as to the needs of particular streets or locations was obtained. The results are shown graphically on Plates 12 to 17, inclusive.

The survey indicates beyond any peradventure of a doubt that the mass movement of automobiles at the peak hours in the morning and late afternoon is home-to-work traffic, and reverse. It shows that the great percentage of the traffic is from the residential or outlying areas to downtown Buffalo and back again. Thru traffic going from city line to city line is relatively minor, and cross traffic is small in comparison with the downtown traffic.

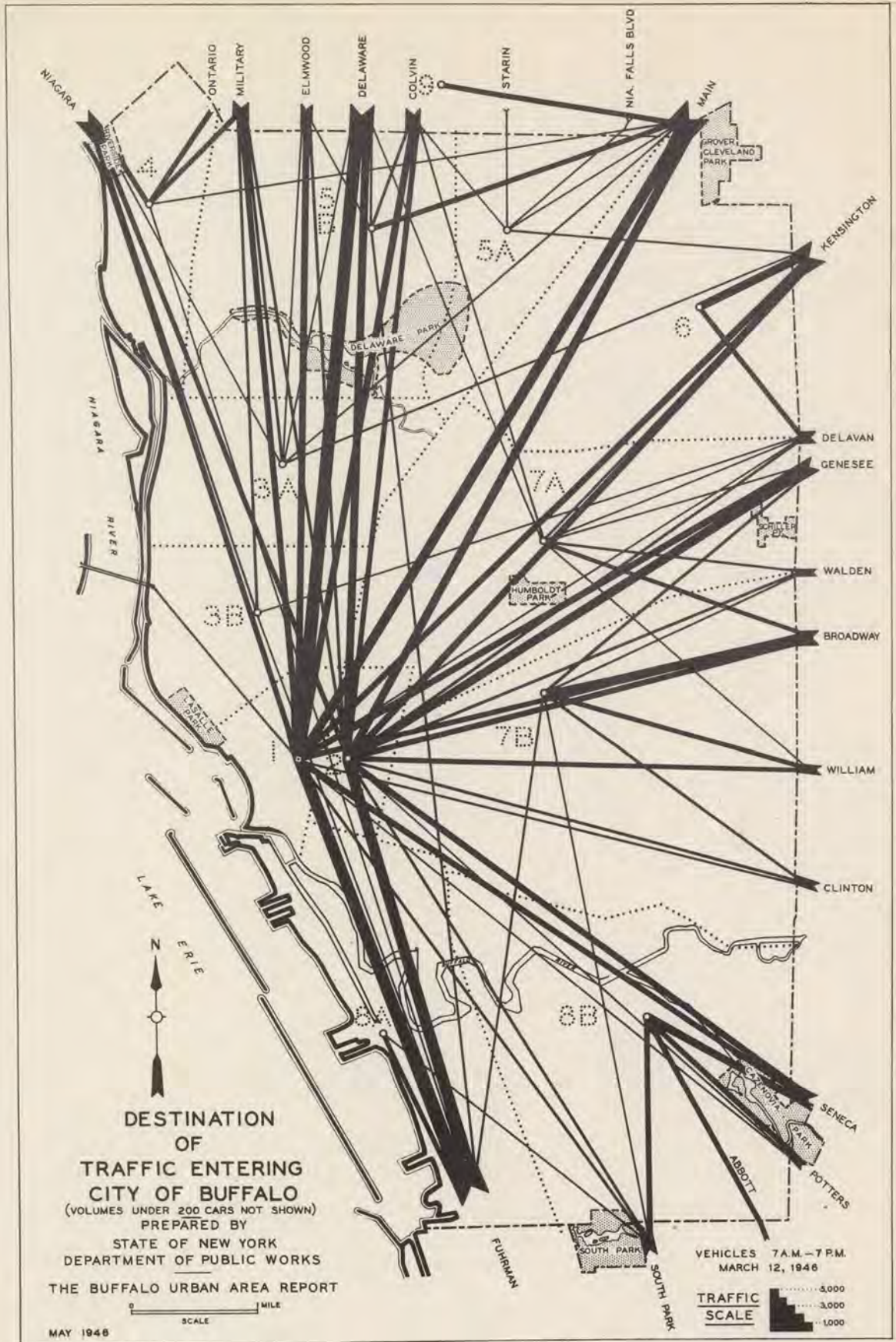
## DESTINATION OF TRAFFIC ENTERING THE CITY OF BUFFALO

Plate 12 shows suburban travel from the city lines to various zones in the city of Buffalo. It is based on destination data obtained from the returned questionnaire postal cards distributed to motorists during the New York State Traffic Survey in March 1946.

It is improbable that measures taken solely to accommodate suburban traffic will provide the answer to the Buffalo traffic problems, but this suburban traffic must be given high consideration in the logical treatment of any conditions within the city. The major portion of this traffic travels to Zone 1 and Zone 2 in downtown Buffalo and contributes to the loads on the major streets radiating from that area for their entire length.

The requirement for this city line to downtown travel from the north, east and south city lines is indicated by the width of the volume bands on Plate 12. The minor traffic flow from the city lines to the other zones is also shown. It is notable that there is no apparent requirement for facilities to accommodate through-city traffic.



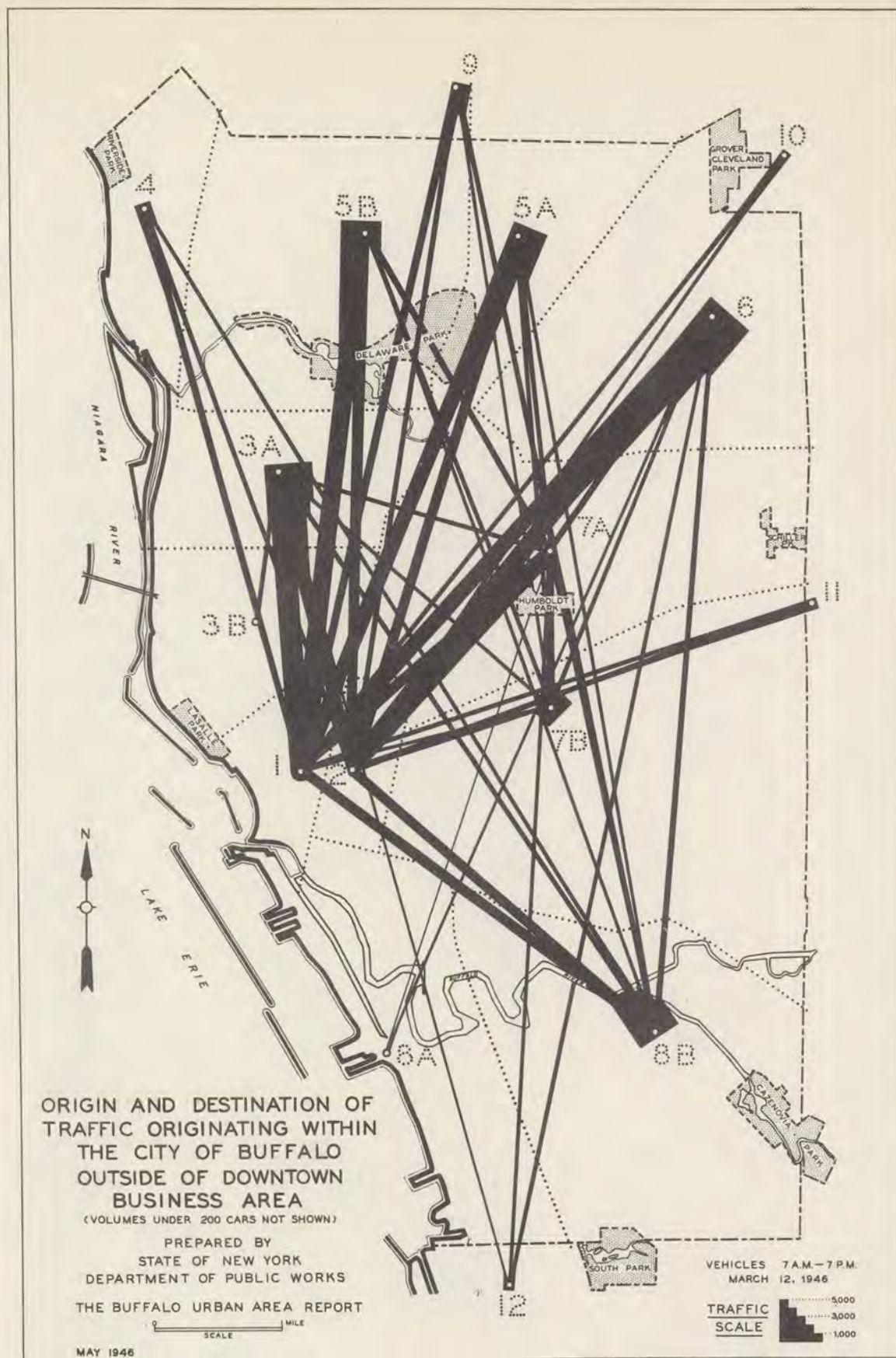


Downtown Buffalo is the principal destination of traffic entering the city. Appreciable volumes of through traffic do not pass the city lines.

## ORIGIN AND DESTINATION OF TRAFFIC WITHIN THE CITY

Zone 1 and Zone 2 in downtown Buffalo are also the principal destinations of traffic originating in the city and adjacent to the city lines, as shown on Plate 13 developed from the New York State Traffic Survey. The widths of the volume bands leading from the origin zones indicate the number of in-bound vehicles which passed the cordon stations around the central business section, and the several miscellaneous stations elsewhere in the city.

The volume bands of this intra-city traffic which point toward the northeast corner of the city, coupled with high traffic volumes and the fact that Main Street is the only thru street serving the area bordering northeast Buffalo and extending all the way between Delaware Avenue and around to Genesee Street show the urgent need for traffic relief for the northeast quadrant of the city. To make existing conditions even worse, both Genesee and Main Streets are inadequate, both have trolley lines and both are business streets, all of which still further hinders traffic-flow. The longer time flows from the northeast quadrant, as shown on Plate 11, further point to the importance of providing additional traffic facilities to that section of the city.

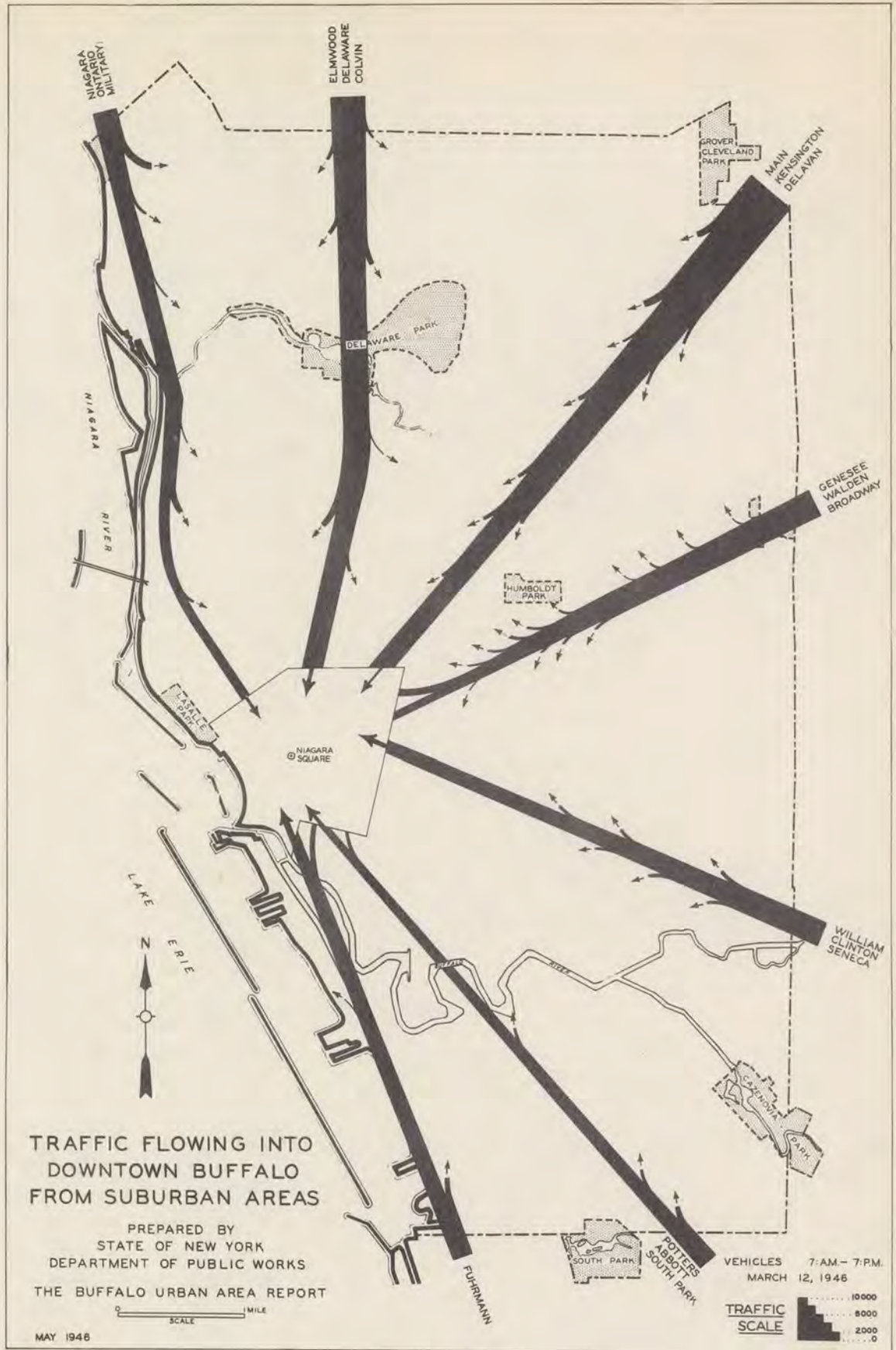


The greatest volume of traffic originating within the city is destined for the downtown area, with interchange between the surrounding areas of minor importance.

## SUBURBAN TRAFFIC FLOW INTO BUFFALO

The map shown on Plate 14 is another representation of the origin and destination features of suburban traffic entering Buffalo. It indicates this traffic flow on the seven major groups of streets converging on the center of the city from the city lines. The arrows in each flow band at the perimeter of the downtown district indicate the volume of traffic proceeding through that district to areas beyond. The smaller arrows and the traffic volume symbols curving away from the seven flow bands indicate the approximate locations and the volumes of traffic that are destined for areas other than downtown Buffalo or beyond that district, which result in a gradual reduction of the city line traffic as it approaches the center of the city.

The locations and relative volumes of these major traffic bands, and the various destinations between the city lines and the downtown district, point to the complexity of new traffic facilities that will serve all suburban traffic and associated interests in the city equally well. Relief measures will obviously need to include many types of street improvements and traffic facilities, located so as to serve all sections of the city.



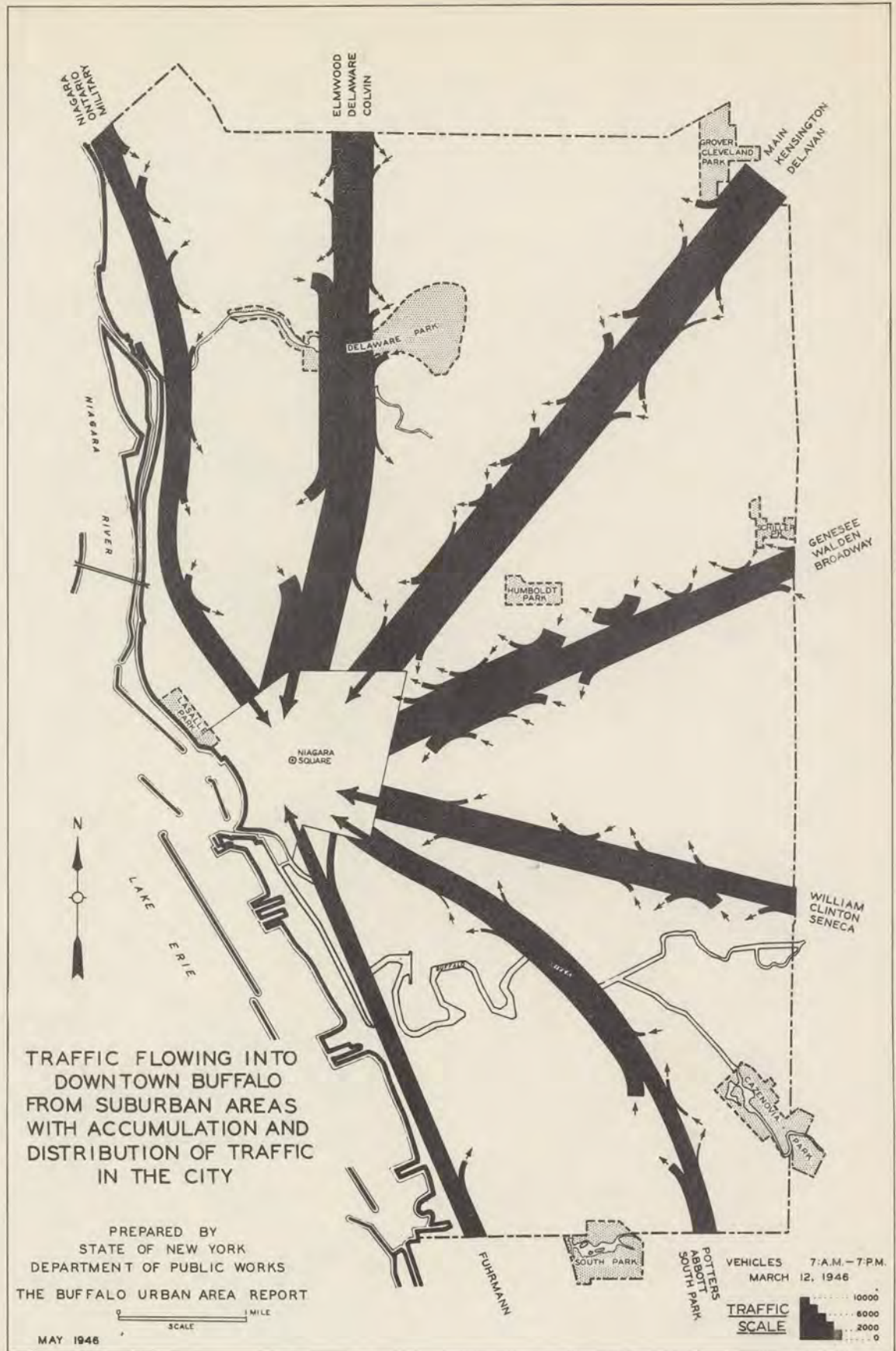
Seven major groups of streets from the suburban areas serve the city, with some traffic proceeding through the central business district to areas beyond.

## TRAFFIC ACCUMULATION AND DISTRIBUTION IN BUFFALO

As seven major groups of traffic bands approach the center of the city, they gradually increase in size, or volume, by the accumulation of traffic originating within the city. The decreases which were previously shown in the groups of streets from the city lines, are more than offset by the intra-city traffic resulting in the general increases. Traffic volumes which proceed right through the downtown area are shown by the width of arrow stems projecting into the downtown zone.

The important fact revealed by the figures from which this diagram shown as Plate 15 was made is that approximately one half of all traffic entering the downtown area west of Main Street wishes to cross over to the area east of Main Street. At the same time, one half of the traffic entering the area east of Main Street passes through the business section to the west side of Main Street.

To properly distribute these traffic volumes with a minimum of congestion it was obvious at the outset from the studies that it would be necessary to devise a system which would disburse traffic in uncongested sections of the downtown area and at points which would be as close to final destinations as conditions would permit. For instance, the bulk of traffic destined for the west side of Main Street from the east side should not have to cross Main Street to get there and of course the reverse is also true.



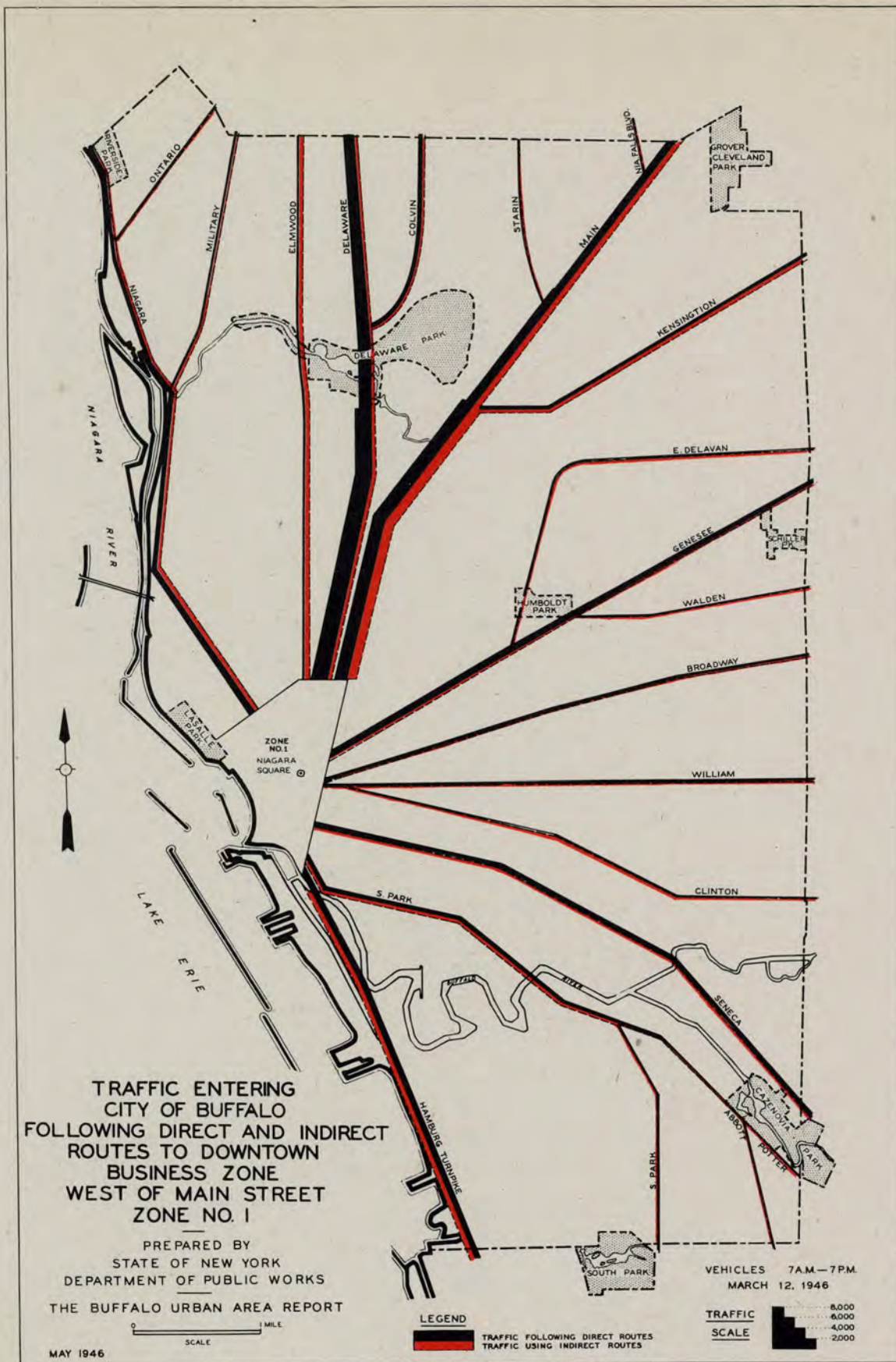
The accumulation and distribution of suburban and city traffic on the seven bands of major streets results in a gradual increase of volumes toward the center of the city.

### SUBURBAN TRAFFIC FOLLOWING DIRECT AND INDIRECT ROUTES TO ZONE NO. 1

Only traffic entering the city of Buffalo and traveling to the downtown business zone west of Main Street, Zone No. 1, is shown on Plate 16. This information was also obtained from the New York State Traffic Survey made in March 1946. Traffic destined for Zone 1 which passed the city lines on certain radial streets would have followed direct routes to it if traffic conditions were satisfactory along the routes. If conditions were unsatisfactory along a route, traffic, since it follows one of the fundamental laws of nature, would divert to routes of the least resistance. On this map the traffic which followed direct routes is shown by solid black bands, while traffic which diverted to indirect routes is shown in red.

According to this study, an unusually large percentage of traffic left Main Street, Elmwood Avenue and several other streets to follow indirect routes, indicating quite clearly that traffic conditions on those streets are unsatisfactory. Traffic diverted from them causes undesirable overloading of other routes, as is the case where Main Street and Elmwood Avenue traffic is diverted to Delaware Avenue and various residential streets.





All traffic destined for Zone No. 1 from the city lines does not follow the logical or more direct routes. Main Street and Elmwood Avenue are too crowded to be popular as direct routes.

## SUBURBAN TRAFFIC FOLLOWING DIRECT AND INDIRECT ROUTES TO ZONE NO. 2

A large percentage of city line traffic destined for the downtown business zone east of Main Street, Zone No. 2, is shown by Plate 17 also to be following indirect routes, rather than direct streets.

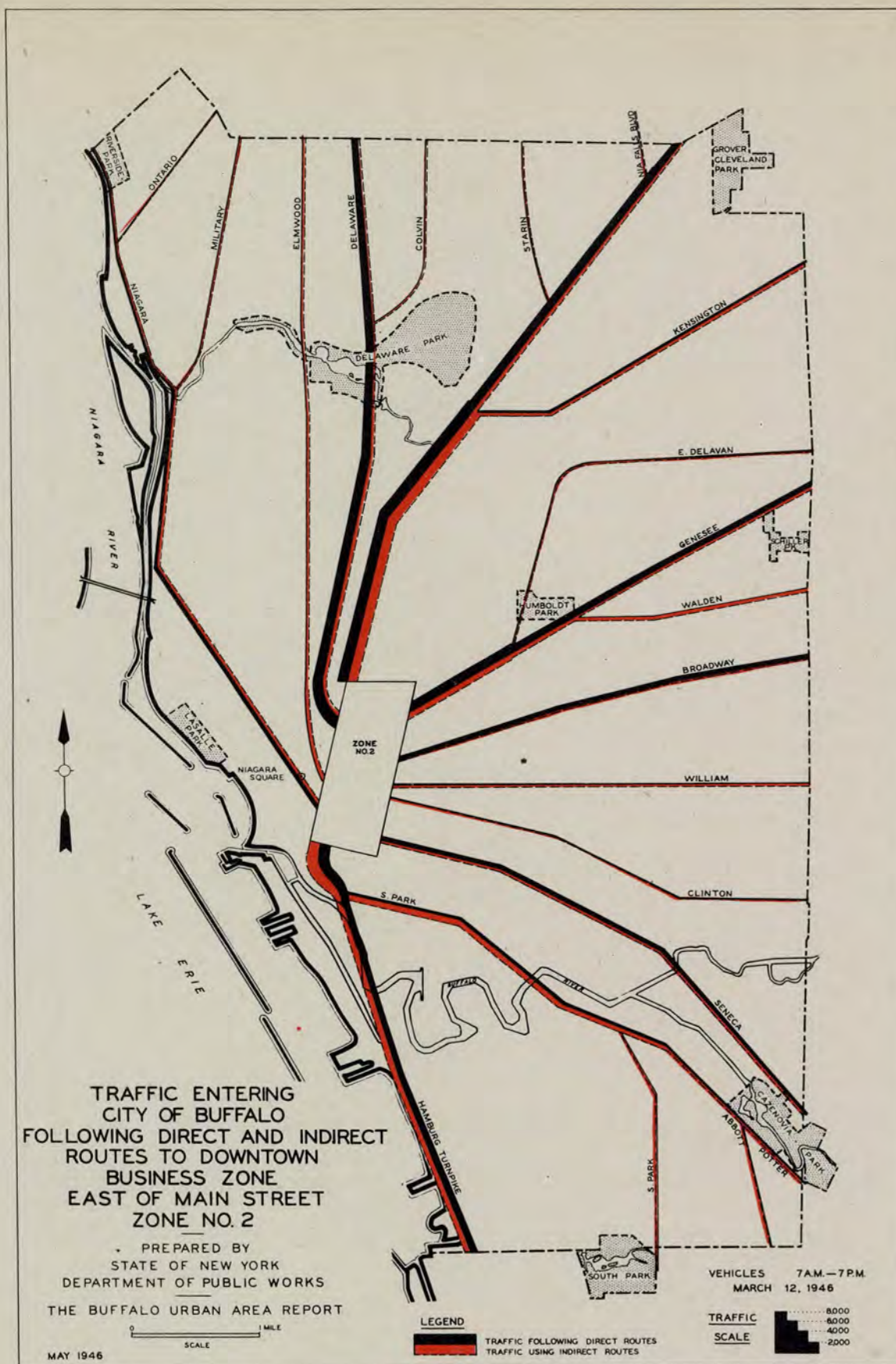
Detailed studies indicated that much of the traffic diverted from Main Street, one of the most unsatisfactory streets for direct travel because of high volumes and delays, crossed over Delavan and Lafayette Avenues and turned down Linwood and Delaware Avenues in Zone No. 1, west of Main. Some of the traffic also left Main Street at or near Hertel Avenue and traveled as far west as Richmond Avenue and down Busti, Niagara, or other parallel streets in the vicinity. It then crossed back through the central business district to Zone No. 2 east of Main Street.

This accounts for much of the congestion on Court Street between Niagara Square and Washington Street in the center of the business district.

The same general principle applies to Genesee, Kensington, Walden, William, South Park and Hamburg Turnpike. These are routes which lead directly to Zone No. 2, yet nearly fifty percent and frequently much higher percentages of traffic on those routes take indirect courses.

New and improved routes that will deliver such traffic with a saving of time to its final destination, and also avoid the congestion at the center of the business district should be the

objective of any system of arterial and thruway routes designed to alleviate Buffalo's traffic problem.

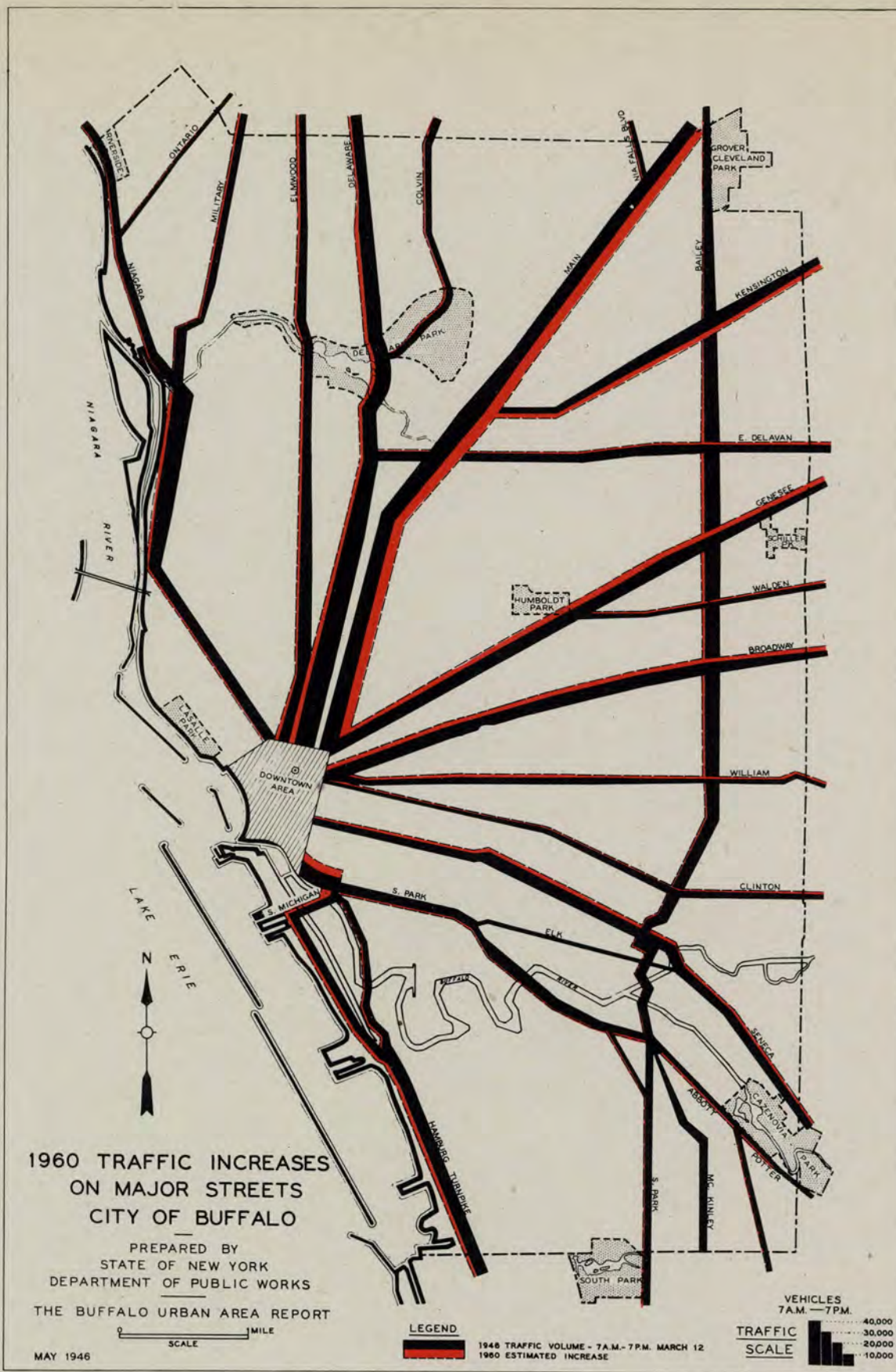


The volume of traffic from the city line, which also leaves Main Street for other routes to Zone No. 2, points to the need for traffic relief in the northeast corner of the city.

## 1960 TRAFFIC INCREASES

Careful consideration of land uses, land values, population, density and growth, and increased vehicle registration, points to a substantial increase in traffic by 1960. It can be conservatively estimated that the increased volumes in 1960 will be 35 percent above present volumes, as determined by the New York State Traffic Survey in March 1946. This traffic increase will not occur uniformly on all major streets in Buffalo, but will tend to be more pronounced on those streets serving areas in and adjacent to the city where population growth and vehicle registration increases are expected.

The traffic volume map presented on Plate 18 shows the anticipated 1960 increases marked in red along the major streets carrying 1946 volumes. The increases are most evident along Main Street, Kensington Avenue, Genesee Street and Broadway, or are weighted decidedly towards the northeast quarter of the city and adjacent suburban area. An increase of nearly 100 percent can be reasonably expected on Main Street. The improvement and construction of new traffic facilities to accommodate this increased traffic from the northeast quadrant will be the only means of avoiding extreme delays and congestion, not only on these streets, but also on other city streets to which it otherwise will be diverted.

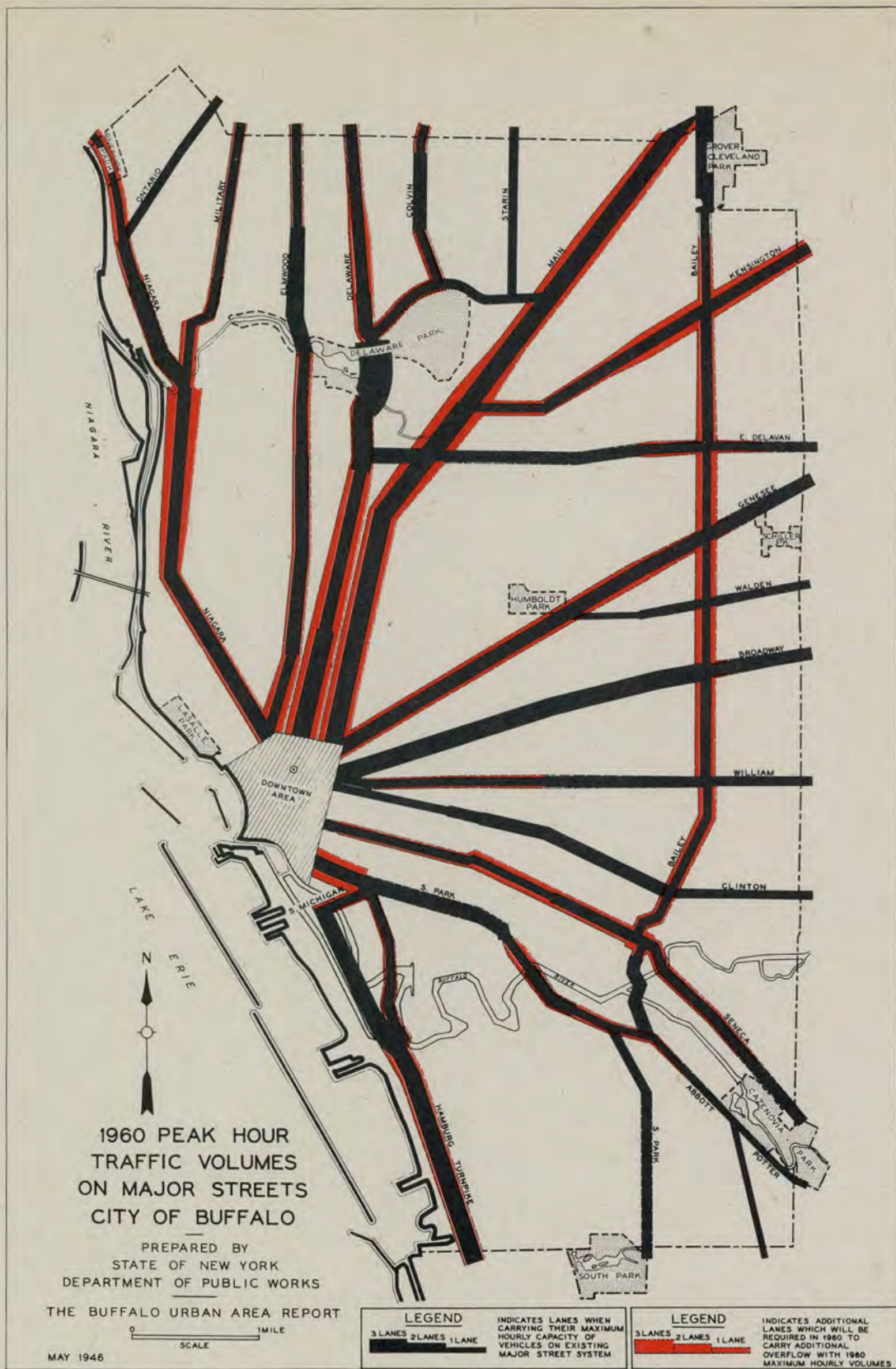


It is anticipated that traffic increases by 1960 will be of greatest prominence on Main Street, Kensington Avenue and Genesee Street, due to population growth in the northeast section of the Buffalo urban area.

## 1960 TRAFFIC DENSITY WITH NO IMPROVEMENTS

Plate 19 is a graphical presentation of the vehicular capacities of present major streets with no improvements, except for lanes made available by the removal of street cars, in comparison with the anticipated 1960 peak hour volumes, using peak flows in both directions. The capacities of the major streets are shown by means of black bands indicating by their width the number of available free lanes or capacities to carry traffic. Where the anticipated peak hour volumes will exceed the capacities of the streets, the excess amounts which are representative also of the degree of congestion, are shown by the red areas adjacent to the capacity symbols.

This is, in effect, a summary of the previous studies of traffic volumes, densities and anticipated traffic increases. It reveals the exact locations and streets where congestion and delays may be expected by 1960, and the relative seriousness of each, if improvements and new routes are not provided. If, after applying the origin and destination data obtained from the 1946 New York State Traffic Survey to estimate the traffic carrying values of the proposed future traffic facilities, the amount of traffic overload shown on this map is removed, it can then be reasonably assumed from a traffic capacity and distribution viewpoint that the proposed plans are satisfactory.



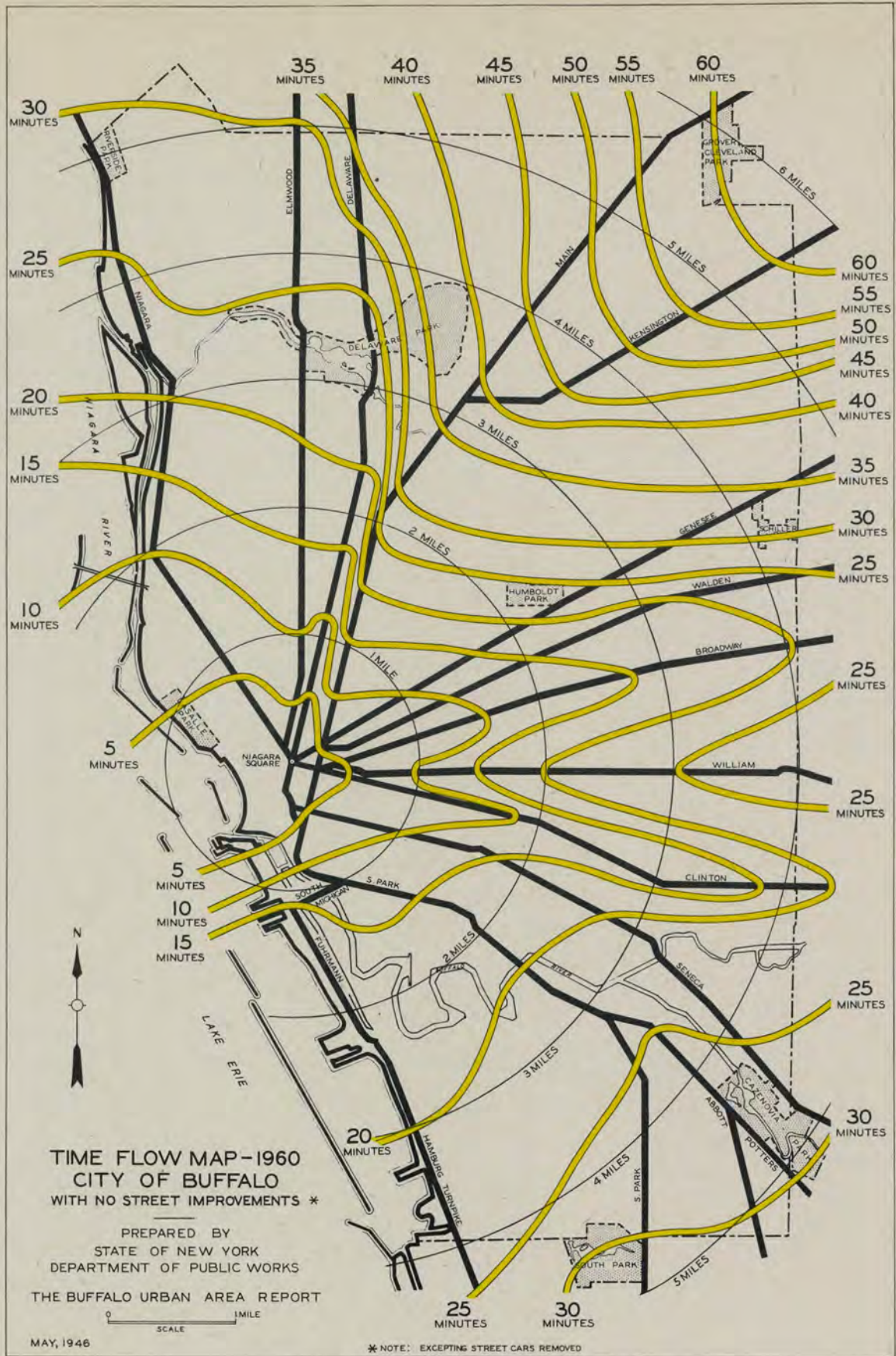
With no improvements, except for lanes made available by the removal of street cars, the 1960 maximum hourly volumes on major streets, using peak hour flows in both directions, will far exceed the capacity of present streets.



### TIME FLOW MAP - 1960

With no improvements, except for the removal of street cars, the excess 1960 traffic volumes shown on the preceding plate will cause unusual delays and congestion along nearly all of the principal streets of Buffalo. The 1960 Time Flow Map, Plate 20, shows the travel time from Niagara Square to the city lines along the radial streets. It was computed from 1946 traffic speeds, anticipated 1960 peak hour volumes, and present pavement capacities which were increased where lanes will be made available by the removal of street cars.

This is additional and conclusive evidence that the northeast quarter of the city will suffer most seriously if adequate traffic facilities are not provided to accommodate traffic in and adjacent to that section.



With no improvements except the removal of street cars, travel time between downtown Buffalo and the city lines during peak hours will become a barrier to the central business section.

*Mass Transportation in the City of Buffalo*

Street cars and buses are the major methods of transporting the population in the city of Buffalo.

At present there are 9 street car routes and 19 bus routes, compared to 15 street car routes and 12 bus routes in 1937.

The total length of these routes is approximately 150 miles, with many of the vehicles using the same streets as shown on the map on Plate No. 21.

An agreement between the City of Buffalo and the International Railway Company provides that all street car routes shall be re-equipped with buses by or before 1950. The affairs of the Railway Company, however, are being investigated by a Joint Legislative Committee and there is a possibility that this may affect the fulfillment of this agreement. There is a possibility that trackless trolleys, which is a type of free-wheel vehicle, may be recommended for some of the present popular routes.

The following data shows the approximate number of passengers carried for the years indicated:

Year	Number of Passengers Carried
1936	96,400,000
1937	96,300,000
1939	Less than 100,000,000
1943 (peak)	218,000,000
1945	210,000,000
1946	Estimated less than 210,000,000

Plate No. 21 is marked to show the routes taken by local trolleys and buses.

The proposed arterial street and express highway routes will give immediate benefits to the suburban bus routes in facilitating travel along present and new routes, into the downtown area.

One of the major considerations in planning the arterial and express highway routes has been the fact that the suburban bus routes use the principal streets such as Niagara, Delaware, Main, Seneca, South Park and Broadway.

The International Railway Company also furnishes bus transportation to the communities north of the city; to the village of Kenmore, town of Tonawanda, city of Tonawanda, city of Niagara Falls, and has connections to Lewiston and Fort Niagara. These routes are indicated on map 22.

Additional interurban bus service is available as follows:

- To - Niagara Falls via Grand Island, via Niagara Street and River Road.
- To - Williamsville and town of Amherst, via Main Street.
- To - Towns of Cheektowaga and Lancaster including villages of Sloan, Depew and Lancaster, via Broadway.
- To - Town of West Seneca and Orchard Park, via Seneca Street.
- To - Town of Hamburg including villages of Hamburg and Athol Springs, via Hamburg Turnpike and Camp Road.
- To - City of Lackawanna and the town of Hamburg, including the village of Blasdell and the village of Hamburg, via South Park Avenue.

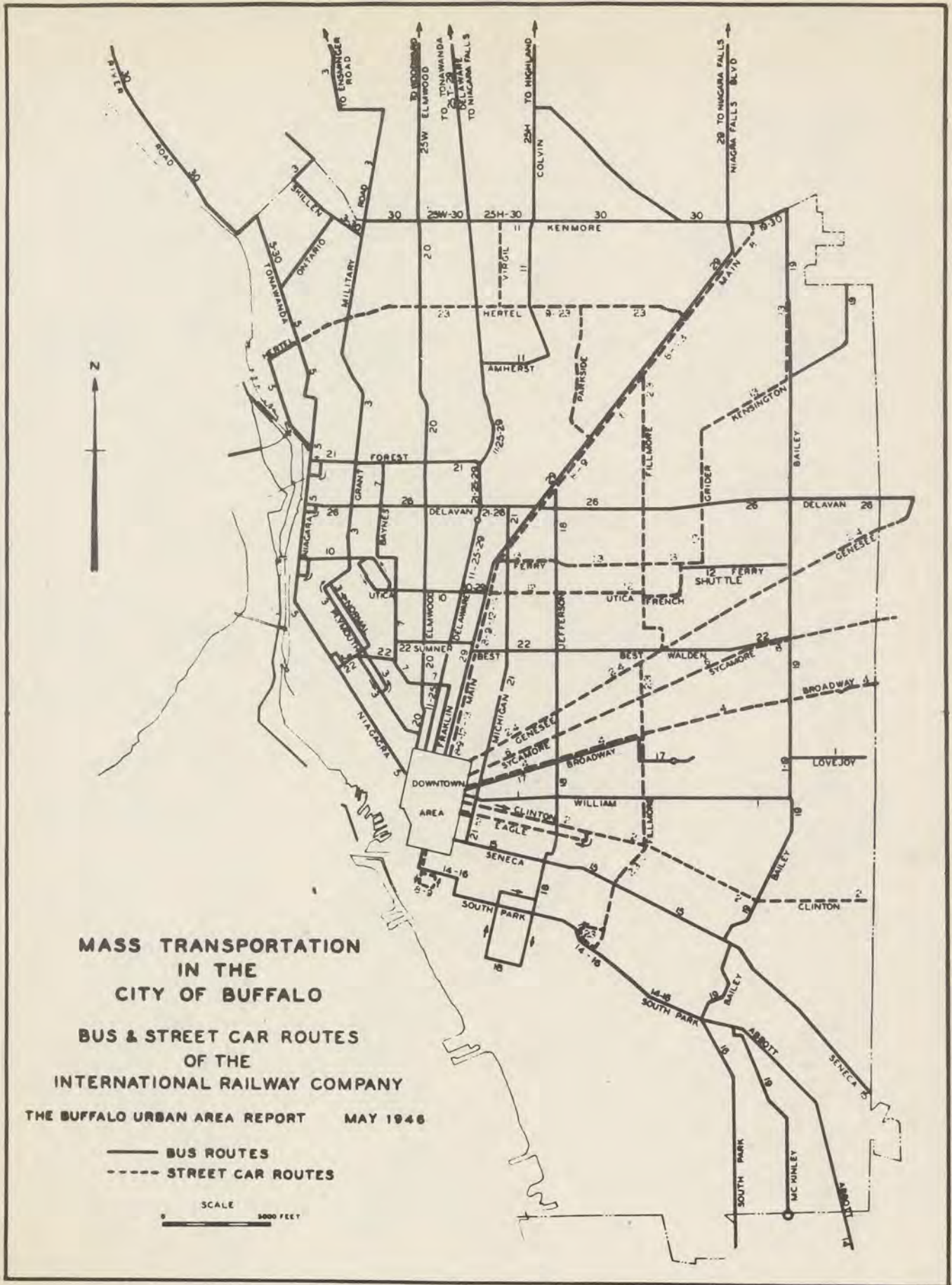
The routes of the above and other suburban Bus Companies are shown on Plate 22.

The interurban bus lines indicated above leave from different termini in Buffalo about every hour on week days.

While it is expected that the local buses will, in general, continue to travel the present streets, the interurban buses may find it advantageous to utilize the proposed system of Thruways. For example, express buses to Williamsville and vicinity could completely avoid local traffic and save considerable time by entering the Niagara Thruway in the downtown area and travel over the Thruway system to Main Street and Kensington Avenue, beyond the city line.

Individuals now using passenger cars would be induced to travel by mass transportation vehicles, providing the service was made attractive.

Since the capacity of one bus is equivalent, on the average, to that of twenty-five passenger cars, the relief to traffic and parking on city streets by replacement of twenty-five cars by one bus, would do much in the relief of traffic and parking.



Mass transportation will derive immediate benefits on all routes upon completion of the proposed Thruway and Arterial Route System.

## MASS TRANSPORTATION IN THE SUBURBAN AREA

Buffalo is the focal point of 15 independently operated suburban bus companies which have different terminals located in the downtown area, as shown on the maps presented on Plates 19 and 20.

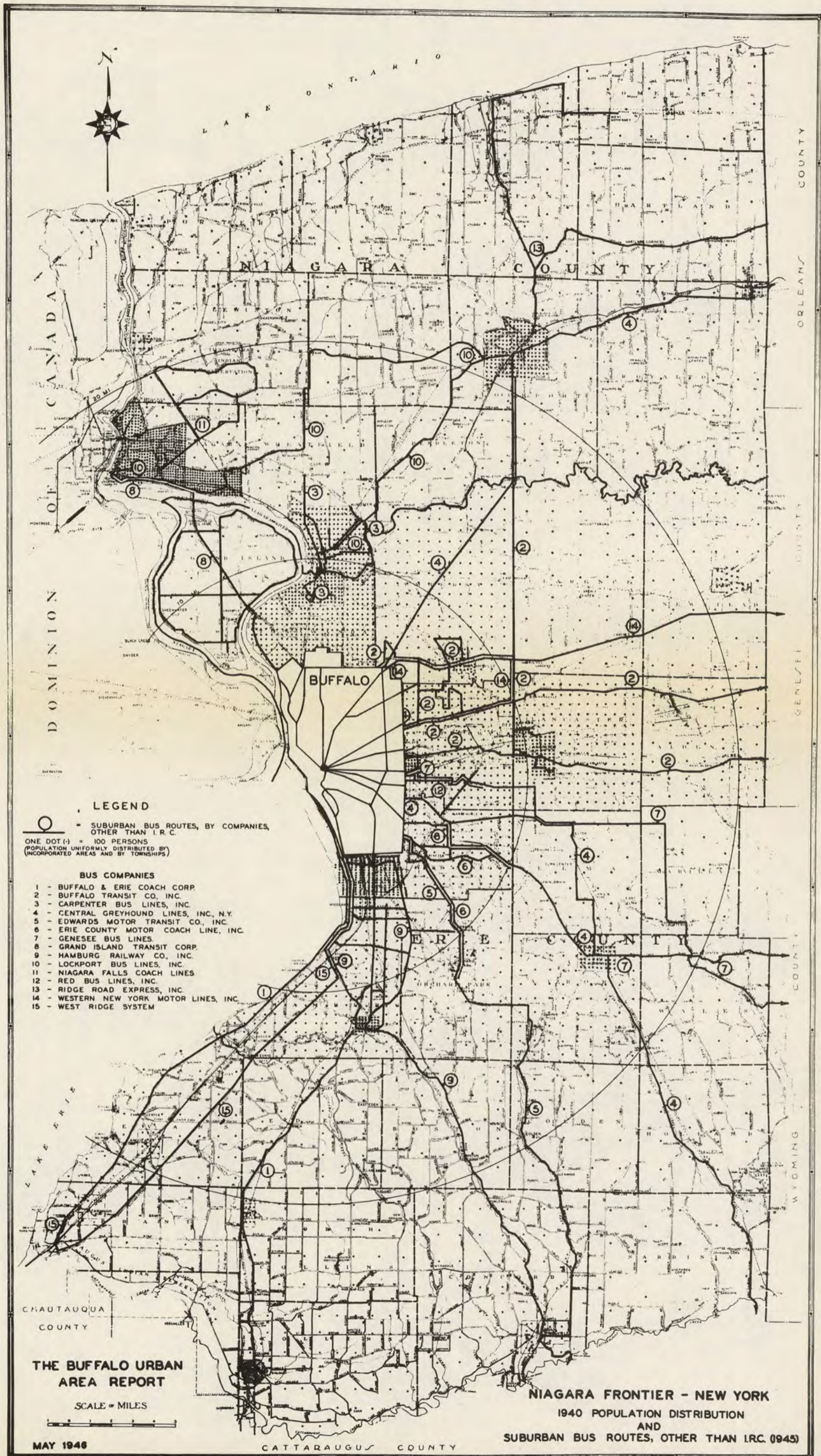
The population data shown on Plate No. 4 anticipates that the population in the county will increase at a greater rate than within the city.

On Plate No. 5 the increased population trends in the towns of Amherst and Cheektowaga indicate these towns are entering an era of major growth. Industrial expansion in Cheektowaga is well under way at the present time also.

The upward trend in population is indicated in the other suburban towns as well. The present difficulties of suburban schedules, transfer limitations and distance between terminals due to the number of different operating companies may be expected to multiply in the future under a laissez faire expansion.

It appears, therefore, that the future transit needs of the suburban area will dictate a more integrated transit system, perhaps a metropolitan system, uniting the Buffalo urban area with the Niagara Falls area, in a modern and efficient well integrated rapid transit system.





### *Parking*

In connection with the proposed street improvements, serious consideration should be given by the local municipal authorities to the problem of parking. Traffic engineers have estimated that the average street, primarily because car parking is permitted, has but a fraction of its possible capacity where the entire usable roadway width is available. With the high concentration of people in the large, congested downtown area, with space at a premium, the erection of multi-storied buildings for car storage, with ramps or elevators, has become a necessity. Plate No. 23 illustrates such a low-cost type of building.

The problem of parking in downtown Buffalo has been the subject of various studies from time to time and has been met by the installation of parking meters and by the conversion of temporarily vacant land in parking lots.

The origin and destination survey dated March 12, 1946 revealed the following data relative to parking in the downtown area, the approximate boundaries of which were Exchange Street on the south, Virginia Street on the north and west, and Chicago Street and Lemon Street on the east:

12 hours - 7:00 A.M.-7:00 P.M. - March 12, 1946

Vehicles Using Curb Parking	Vehicles Using Parking Lots	Vehicles Using Garage	Vehicles No Answer	Total Vehicles
16,056	15,971	5,000	3,352	40,379

These figures give an indication of the extent of the use of the different kinds of parking facilities, but do not

show the space required since the vehicles were not in the area at the same time.

A traffic survey made in 1932 by the then Buffalo Planning Board shows a peak hour accumulation of 9,518 vehicles parked in the central business district. This is estimated to have increased to 10,350 vehicles at present, and expected to be 14,300 in 1960.

A traffic accumulation study made from the origin and destination survey data for the period from 2:00 P.M. to 3:00 P.M. on March 12, 1946 shows 10,350 vehicles accumulated, and by projecting this data into the future an anticipated accumulation of 14,280 vehicles for the same hour for 1960 is indicated.

The 1936-1937 W.P.A. survey shows parking space as follows:

	*Cordon Area
	Car Spaces
Curb Line	2,211
Parking Lots	6,206
Garages	4,065
Total car storage space	12,482

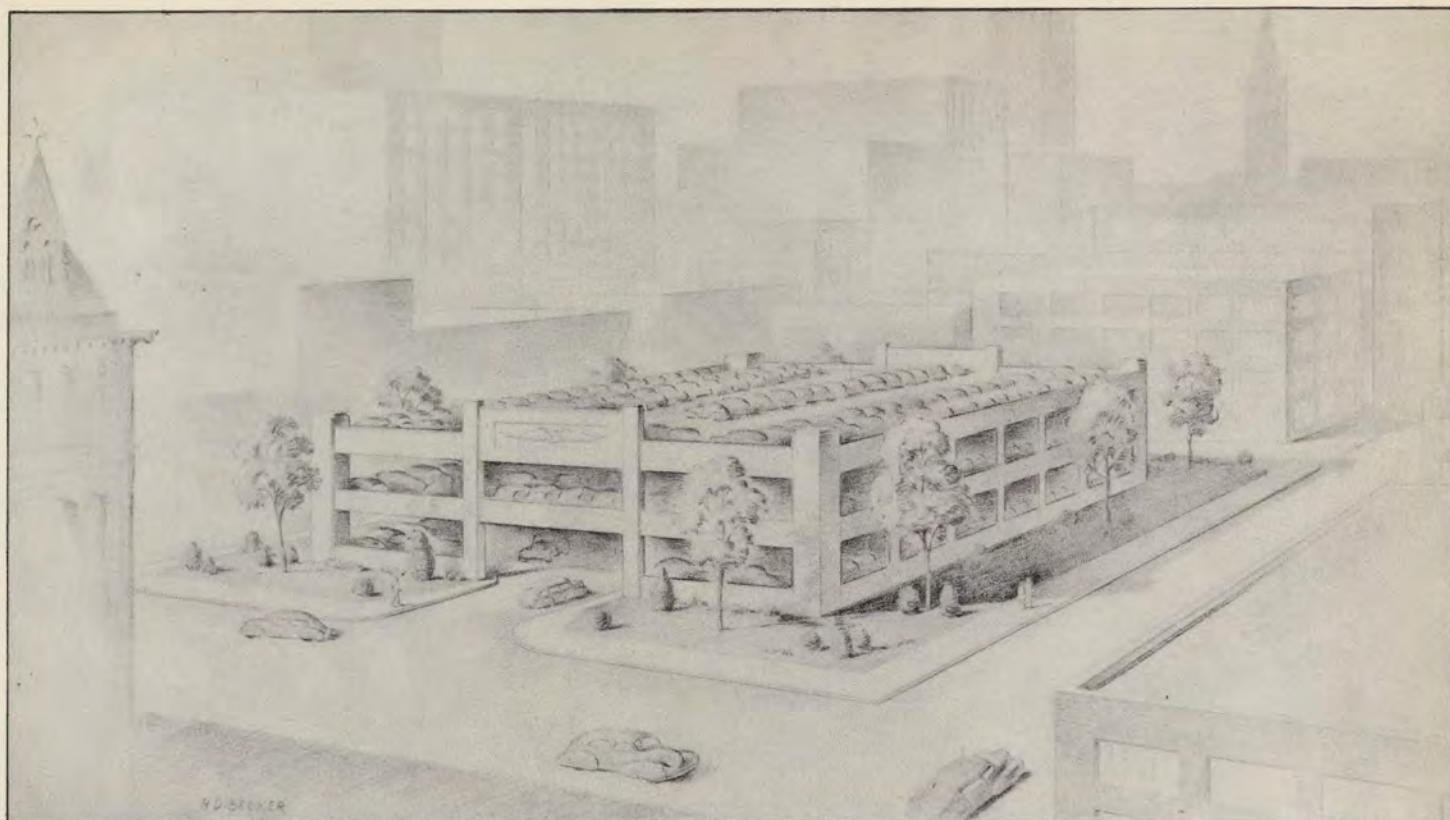
\*Business district bounded by Chippewa, Genesee, Elm, Seneca, Lower Terrace and Elmwood.

With the rapid increase in building, it is to be expected that little vacant land will be available by 1960 for this number of cars. If curb parking is permitted and assuming no vacant space is available for parking, there will be 8,000 cars for which storage will be required. Assuming a 100' x 100' floor space with a 3-storied building, this would require approximately 60 buildings to adequately store this number of cars.

The above figures are used purely as an illustration to show the necessity for providing storage space in the future.

The problem, however, may be reviewed as a local one with its own particular requirements, and it is believed that it should be solved by the local interests and in a manner satisfactory for all concerned.

For example, in the Broadway-Fillmore area the local Business Associations and the City have been preparing postwar plans for the reconstruction of the Broadway market, and in those plans provisions are being made for parking on top of the market by means of ramps.



## TYPICAL MULTI-STORIED PARKING GARAGE

PREPARED BY  
STATE OF NEW YORK  
DEPARTMENT OF PUBLIC WORKS  
THE BUFFALO URBAN AREA REPORT

MAY 1946

## FINDINGS

A study of the relative magnitude of the present traffic volumes, and the anticipated 1960 growths definitely indicate that the present arterial streets which carry the bulk of the traffic have now reached their saturation point and that serious congestion will exist by 1960 if major improvements are not made in the meantime.

Plate No. 11 showing the present time required to reach various points of the city from the central downtown area, and Plate No. 20 showing the expected time to reach these same points in 1960 with no improvements to the street system, clearly indicate the traffic delays which will exist in 1960 and which in many instances will be twice those of 1946 if some wide scale improvements are not made.

On Plate No. 19 are indicated the additional lanes which will be required for the anticipated 1960 traffic. This further demonstrates how urgent it is to provide for this future traffic.

A study of the map of the city of Buffalo with its system of radial streets beginning at the downtown section and fanning out to the city line, shows that the area in the northeast section has fewer number of these radial streets than any other section. This is also the section of the metropolitan area which has the greatest anticipated population growth. (See Plate No. 5).

The origin and destination survey further demonstrates that of the traffic entering the city of Buffalo at the city line, the major portion is destined principally to the downtown area, (see Plate No. 12) and that the majority of the traffic originating in the residential area within the city is likewise destined principally for this same downtown area. (See Plate No. 13).

From a study of the foregoing data, it was evident that the present radial street system as originally planned by its founders was well conceived and will continue to serve as an indispensable part of any future transportation system.

Although it was equally evident that improvements such as the widening of certain existing streets, the designation of others as one-way, the prohibition of parking, street extensions, and the elimination of trolleys will have to be done to expedite traffic movement, even then resulting capacities will be insufficient to meet the anticipated future pressure of traffic, and other long range relief will have to be provided.

A brief summary of the Department's findings relative to specific existing streets may be helpful prior to presenting the Department's plan for State arterial route and thruway development. They are as follows:

*Niagara Street:* This street carries a considerable amount of traffic, and the removal of the trolley rails some years ago substantially increased the capacity of the pavement. However, additional relief is needed and must be de-

veloped before long. Obviously, construction of a Thruway along the waterfront will do much to relieve this artery of through traffic. Niagara Street will, however, continue to be used by local vehicles and necessary improvements to accommodate these cars are regarded as a City project.

*Elmwood Avenue:* This street does not carry as much traffic as it should, due to narrowness and business congestion. The pavement could be widened and relief afforded Delaware Avenue, but it is considered a City rather than a State problem.

*Delaware Avenue:* This street does not carry its full potential capacity at the present time, due to existing bottlenecks. The first is between Nottingham Terrace and the city line where the pavement is only 36 feet wide, and the second bottleneck is the narrow paved section north of North Street. The elimination of these constrictions to traffic flow should be undertaken.

*Main Street:* This may be considered the backbone route for traffic from the northeastern area, and the studies indicate it to have the greatest overcrowding and traffic delay. As stated previously, much could be done to improve it. It is at present a 60 foot pavement and could be widened north of the downtown business section to 74 feet without acquisition of additional right of way. An underpass at the Humboldt Parkway crossing and spot widening from that location to Delevan Avenue would relieve the congestion in that section. The elimination of street cars and substitution of free-moving



mass transportation vehicles would give immediate relief. Diversion of traffic entering Main at Kensington and opening up a new artery on or near Michigan, as mentioned elsewhere, would solve the lower Main Street section situation.

*Kensington Avenue:* This route serves a large and growing section of the suburban area to the northeast, and at the present time it has many bottlenecks along its length. The charts show that present travel time is very slow. Traffic constrictions occur at Bailey Avenue and along certain sections of narrow pavement. It is blocked from Humboldt Parkway and has no good outlet to the downtown area.

*Bailey Avenue:* After the Thruways are constructed, State Highway Route 18 and U.S. Route 62 will be removed from Bailey Avenue to new routes. While congestion will likely continue on Bailey Avenue as automobile traffic increases, it will be primarily a city route and as such should be handled by the City. However, spot congestion occurring at Seneca and at Kensington might become State arterial route responsibilities and be improved as such.

*Genesee Street:* This street is greatly overcrowded at the present time. The pavement is widened to its maximum width within the present 66 foot right of way. The purchase of additional right of way would be costly and not economically justified. Traffic from this street should be diverted to other streets.

*Broadway:* Broadway can be improved by widening the present narrow pavement from Bailey Avenue to the city line, and

improving the angle of the underpass with the New York Central Railroad in that section. The present pavement west of Bailey Ave. is 60 feet wide and also could be widened at each side within the existing 100 foot right of way for its entire length. When the trolley tracks are removed and free-wheel vehicles substituted, a distinct improvement in traffic conditions will be realized.

*Perry Street:* The entire south section of Buffalo could be given relief if Perry Street were opened and connected with Bailey Avenue. This would take care of a great deal of traffic which now overcrowds Seneca, Elk and South Park Avenue.

*Fuhrmann Boulevard:* The southerly approach to Buffalo over Fuhrmann Boulevard requires a new outlet to the downtown section of the city to relieve the congestion along Ohio Street and lower Michigan. This could be accomplished by a facility to cross the Buffalo River to the lower downtown section west of Main Street.

## RECOMMENDATIONS

After meticulous study of the foregoing and related information, the State Department of Public Works proposes the following thruway and arterial route development program:

(1) - That a combination of thruway and arterial route construction be planned to create what amounts to a cordon virtually encircling the city. This to be planned to intercept the suburban traffic on all main arteries leading into the city, and to carry that traffic freely to the downtown area.

(2) - That a new artery be opened up extending from the downtown area to the northeast section of the city, in order to provide relief to outer Main Street and a new outlet for Kensington Avenue traffic.

(3) - That the present radial system of traffic arteries focusing on the downtown section of Buffalo be retained as a part of the overall arterial route plan and improved where necessary.

(4) - That a downtown loop should be recognized and developed to disperse traffic brought to that area by the thruway and the principal arterial streets.

(5) - That traffic should be discharged from the thruway and arterial routes, where possible, close to the downtown destination of traffic yet in areas of least congestion.

It is believed that if these general recommendations are carried out, they will redound with decided improvement to the flow of Buffalo traffic. The elimination of bottlenecks and the providing of entirely new facilities for siphoning off the ever-growing suburban traffic will enable the city to free itself from the creeping paralysis of congestion which so seriously menaces its future welfare.

#### *Erie and Ontario Thruway*

After innumerable alignment, traffic and economic studies, the Erie and Ontario Thruway was located as close to the city as economically possible. Such a location would bring through traffic close to the city limits before connecting with arterial routes, and at the same time draw more local traffic destined for the downtown areas from the proposed arterial and existing street systems.

According to the plan proposed, the Ontario Thruway would approach the northeasterly section of the city from the east on an alignment which would carry it just south of the village of Williamsville. It would turn southerly in the vicinity of Snyder and continue generally parallel to the easterly city line several miles to a point where it would turn westerly to the intersection with the Niagara Thruway as relocated near Clinton Street. From there the Erie Thruway would extend southerly and parallel the easterly city line to the city of Lackawanna, where it would turn southwesterly and southerly to meet the present loca-

tion as defined by the legislature in the vicinity of Camp Road. A spur connection from the Thruway would be constructed from the point of intersection of Kensington Avenue and Main Street in the town of Amherst, to the point where the Thruway first turns southerly.

In the future, the Ontario Thruway would continue northerly and westerly from the point of intersection of the spur thruway with Main Street and Kensington Avenue, across the towns of Amherst and Tonawanda, to carry thruway traffic to the southerly Grand Island Bridge and the Niagara Thruway leading to Niagara Falls, proposed to transect Grand Island.

Points of interchange would be located with the proposed arterial system at the intersection of Main Street and Kensington Avenue, at Genesee Street, at the crossing with the new arterial route along Walden Avenue, at the proposed Niagara Thruway, at Seneca Street and at Abbott Road.

The Erie and Ontario Thruway would be constructed at the outset between Transit Road and Camp Road, with three traffic lanes in each direction.

#### *Niagara Thruway*

In order to carry Erie - Ontario Thruway traffic into the downtown area, the focal point of the great bulk of the travel, some connecting link would have to be built.

An analysis of the traffic flow soon demonstrated the fact that any attempt to locate this route in the busy sections of the city would be very difficult. While a limited access will carry a maximum number of vehicles because of its uninterrupted flow, difficulty was encountered in developing a plan for discharging such concentrated traffic from its ramps and into the busy city streets.

It was necessary to develop plans and locations for traffic interchanges that would discharge heavy thruway traffic flows in areas where traffic flow is relatively light, yet be as close to the point of traffic destination as possible.

To discharge heavy volumes of traffic on a street system which is already congested, would likely create more havoc than relief. Another guiding principle was that every effort should be made to keep traffic destined for one side of Main Street and in the business section from crossing that thoroughfare in going to and from its destination and the thruway.

An inspection of the traffic flow charts indicates that the heavily congested areas are to the north and east of the downtown section while streets immediately adjacent on the west and south carry relatively little traffic. Traffic from interchanges placed here would have a much greater opportunity of dispersing and diffusing itself on the city streets than it would if the interchanges were located to the north and north-east.

A careful balance had to be maintained in the design of the Niagara Thruway particularly between the need for interchanges connecting with the arterial system and the necessity for avoiding sources of constriction to thruway traffic flow. At every point of ingress and egress to the thruway in a city there is a constriction to traffic flow caused by weaving, meshing and jockeying for position of cars entering or leaving the through route.

A two-lane discharge ramp from the Thruway would require approximately six lanes of city streets in one direction in order to properly unload its vehicles without providing excessive moving storage in the ramp. The only solution for traffic carried into busy streets is to provide grade separations and a study indicates that any such involved grade separation construction in the heart of the city would be impractical.

Experience has demonstrated the time worn adage "A chain is no stronger than its weakest link", is definitely an axiom for traffic. Unless provision is made for the uninterrupted flow of vehicles from the Thruway onto the streets and they in turn have ample capacity to receive this concentrated flow there will be blocked intersections and heavy congestion at each point of exit and entrance.

To add to the difficulties, there is a proposed railroad grade elimination project in Buffalo and the expected location of tracks under this program had to be considered. The locations of the Thruway and its connections had to be set so as to fit in with these plans.

A dozen or more lines were studied before final location, which is generally along Clinton Street, was adopted. Many lines were discarded after a cursory examination while others showing promise were studied more in detail and their benefits and costs compared.

A location along Genesee Street was considered, where plans and estimates were prepared for both an embankment section and a depressed highway. Cost analyses showed that the expense of this line would be far in excess of the benefits derived.

The possibility of constructing the route along Perry Street and South Park Avenue were studied, with 3 lanes of elevated structure west bound along Perry Street and 3 lanes of elevated structures east bound along South Park Avenue. The design indicated, however, that there would be difficulty in affecting proper ramp connections to the various important streets along the route with particular trouble experienced in providing connections to the business area east of Main Street. The wide railroad trackage to the north of Perry Street formed a barrier financially impractical to overcome.

A third line was investigated along the railroad just south, and roughly parallel to South Park Avenue. It was planned to construct the Thruway on embankment, but the same difficulties that were common to Perry Street were encountered here.



The adopted location along Clinton Street had many advantages over the others studied. Its location north of the railroad tracks is such that the discharge of vehicles into the downtown areas both east and west of Main Street is excellent. The route runs through lowcost property and the depressed type roadway will do much to properly separate industrial and other land uses throughout its length. Its interchange connection with the Erie Ontario Thruway to the east presented no difficulties because of the flat and rural character of the area. Plate A-A shows a plan of this interchange.

It will be necessary to amend the present law which now locates the Niagara Thruway along the waterfront passing south through Lackawanna.

The ramp connections to the downtown area east of Main Street occurred in a built up industrial and warehouse area where property acquisition costs will be appreciable. Plate D shows the method used to obtain access. It is planned to carry Seneca Street overhead on a bridge so as to separate its traffic from that of the ramps.

The waterfront connections west of Main Street required considerable study. Here there is an interchange of traffic from three sources, the proposed Buffalo River Bridge traffic, entering on an elevated structure, and contributing vehicles from the area on the south, the depressed Niagara Thruway contributing traffic from the north and the east and traffic from the busy downtown streets. Many interchange layouts were drawn

up before the indicated plan shown on Plate D was selected. Inspection will disclose that no important cross traffic occurs under this layout and vehicles will be discharged into an area where city travel is relatively light and will have an opportunity to be diffused before entering the busy downtown area to the north.

The Niagara Thruway has been carried north along the waterfront to Hinman Avenue as a surface route with two traffic lanes for each direction instead of the three in each direction proposed for the Niagara Thruway extending east to the Ontario-Erie Thruway. Connections from this north line will be made to the streets at Virginia and Carolina, the western end of the downtown traffic diffuser; at Porter Avenue, at Hertel Avenue, at the Hinman Avenue Extension and possibly at one other street between, depending upon the results of further studies. These streets would serve as feeders and diffusers into the city north of Niagara Square.

#### *Public Utilities*

The depressed thruway will be about 18 feet below present street levels and will necessitate the reconstruction of the utilities such as water, gas, telephone, electric duct lines, etc. and the local and main trunk sewers which cross this area. Most of the utilities can be rerouted or carried across on the bridges over the Thruway.

### *Existing Sewers*

A preliminary investigation of the sewers which are both combined storm and sanitary indicates that a few of the main trunk lines are deep enough to permit their being carried under the depressed roadway providing that their shape is rebuilt as a wide shallow section. Others can be intercepted and rerouted using where possible the existing trunk lines paralleling the cut. Where this is not possible a new intercepting sewer will have to be constructed to carry the flow.

### *Drainage*

The depressed roadway is approximately five feet above the mean level of the Lake and since most of the present sewers are above this level, it will be impossible to drain the thruway storm water by gravity into them. The few which do pass under the roadway are undoubtedly overloaded and are under hydrostatic pressure at various times of the year. For this reason it will be unwise to drain into them and it is expected that a new gravity outlet will have to be provided or that sumps will have to be installed and the runoff pumped into the adjacent sewers, or a combination of both.

### *Thruway Standards*

The standards set up by the Department of Public Works for the design of Thruways in rural areas will be modified for the portion of the Thruways within the city. The frequent access points and the greater proportion of truck traffic indicate lower traffic speed.

*Thruway Design Standards*

The following table shows the differences between the adopted general design standards for rural Thruways and those proposed for urban Thruways:

Item	Thruway Design Standards	
	Rural	Urban
Minimum vertical and horizontal sight distances	1,000 ft.	800 ft.
Maximum grade	3%	3%
Minimum width of lanes	12 ft.	12 ft.
Maximum banking on curves	3/4 in. per ft.	3/4 in. per ft.
Minimum width of ramp pavement	26 ft.	26 ft.
Maximum grade "up" ramp	3%	3%
Maximum grade "down" ramp	4%	4%
Designed Speed	70 M.P.H.	50 M.P.H.

*Rural Area*

The standards under "rural" will apply to the Erie and Ontario Thruways, and will permit maximum speeds.

*Urban Area*

The standards under "urban" will apply to the Niagara Thruway from its connection with the Erie and Ontario Thruways through Buffalo to Hinman Avenue, and will permit speeds up to 50 miles per hour, but it is expected that the average rate of vehicles will be about 35 miles per hour.

The "off" ramps at access points have been widened to provide moving storage for vehicles awaiting the opportunity to merge with the traffic streams on connecting streets. "On" ramp widths are such as will permit a flow of traffic even when the ramp is occupied by a disabled vehicle. Ramps which are curved, such as in the cloverleaf design, will be properly banked and widened. Deceleration and acceleration lanes of suitable length will be provided at all access points.

Thruways in Buffalo will be on the surface or elevated or depressed and will have a center mall and wide shoulders. Mountable curbs will be provided which will permit disabled cars to park on the shoulders. The mall, in addition to separating opposing lanes of traffic and permitting emergency parking, will provide an area for storage of snow.

#### *Bus Stations*

The local transit company, the interurban bus companies and local authorities might consider the economic justification for a central bus terminal to be constructed in a location convenient for the public and so situated that area express buses and interurban buses entering on the thruways and arterial routes will reach them by the most direct routes, with the least travel on local streets. Local buses should connect with this terminal to transport passengers to their destination.

#### *Truck Terminals*

Similarly, local authorities and operators of fleets of long distance or local trucks will be interested in utilizing the street improvements to best advantage, and may find that

erection of a union terminal building would be desirable. In addition to furnishing a place for transfer of commodities hauled, the proper location of this terminal would result in removing many heavy trucks, which seriously obstruct traffic flows, from the local streets.

*Assessed Value of Property Taken*

In the selection of the new routes for arterial streets and thruways in the city of Buffalo and in widening existing rights of way, attention has been paid to the value of the additional land which will be necessary for the improvements. In general large and expensive improved properties have been avoided, as well as cultural improvements such as schools and churches.

The assessed valuation of the additional land necessary for these improvements, obtained from the Assessor's records, is as follows:

Route	From	To	Assessed Value
Tupper Carolina St.	Michigan	Niagara Thruway	\$ 430,860
Delaware Ave.	Nottingham Terr.	City Line	400,000
Elm-Oak	Niagara Thruway	Main Street	702,900
Cherry St.	Michigan	Herman	1,791,400
Walden Ave.	Humboldt	City Line	485,000
Humboldt Pkwy.	Main	Thru Park	0
Kensington	Humboldt	City Line	685,700
Perry St.	At Bailey Ave.		85,700

Route	From	To	Assessed Value
Fuhrmann Blvd.	Crossing over	Buffalo Creek	\$ 300,000
Hinman Ext.	Delaware	Niagara Thruway	400,000
Niagara Thruway Along Clinton	Court St.	City Line	5,314,290
Niagara Thruway Along river	Court St.	Hinman Ext.	1,200,000
Interchange Niagara Thruway At Elm & Oak			1,184,000
		Total	\$12,979,850

*Families Displaced*

In selecting routes for new streets or in providing additional capacity for existing streets by the method of widening the right of way, great care has been exercised to allow for a minimum displacement of families. The program has been arranged so that the first construction projects will not require the removal or tearing down of residences.

The so-called "Cherry Street Arterial Route" and the Thruway location over Clinton Street will each require the displacement of over 500 families. This work should not be progressed until provision has been made to take care of these families in other homes.

The following is a tabular list of the families which will be displaced in the city of Buffalo by the proposed arterial and thruway construction:

Route	From	To	Displaced Number Families
Tupper St. Carolina St.	Michigan	Niagara Thruway	22
Delaware Ave.	Nottingham Terr.	City line	0
Elm-Oak	Niagara Thruway	Main Street	146
Cherry St.	Michigan	Herman	400
Walden Ave.	Humboldt Pkwy.	City line	0
Humboldt Pkwy.	Main Street	Thru Park	0
Kensington Ave.	Humboldt Pkwy.	City line	62
Perry St.	At Bailey Ave.		1
Fuhrmann Blvd.	Crossing over Buffalo River		20
Hinman Ave.	Delaware	Niagara & Arthur	177
Niagara Thruway	Court St.	Hinman Extension	39
Niagara Thruway	Court St.	City line	754
		<b>TOTAL</b>	<b>1,621</b>



## TRAFFIC FLOW PATTERN ON DOWNTOWN DIFFUSER

Severe congestion and delays which are beginning to develop in the center of the downtown business district, as along Court Street from Niagara Square to Lafayette Square, can be attributed to the lack of a satisfactory distributing system, or traffic diffuser, within or at the perimeter of the downtown zone. At present nearly all the traffic coming into this area from one side of the center of the district, which is destined for the other side of the central zone, converges on Niagara Square or the adjacent streets in passing through the downtown area to its destination. This is causing extreme congestion during peak hours and the condition will be aggravated as traffic volumes increase.

Since it is apparent that all available space in the central business district will need to be used for the storage of automobiles in addition to business, no great areas can be given up to the construction of grade separations, costly street widenings, or new modern facilities with connecting ramps, bridges and other structures. These might act to strangle the business life of the downtown area rather than lift it out of its present difficulty.

The Buffalo Urban Area Plan proposes the solution of this problem by the traffic diffusing system shown on the accompanying plate. Briefly, the purpose of this diffusing

system is to carry traffic around the perimeter of the downtown area to points nearest to its ultimate destination. Then during the hours of incoming traffic, the vehicular volumes will gradually decrease along the various radial streets converging on Niagara and Lafayette Squares, as traffic reaches its destinations. During the evening peak hours, traffic will drain away from the central business area in several directions, with a minimum of congestion around Niagara and Lafayette Squares.

The traffic diffuser will form a loop around the downtown district, consisting of the Niagara Thruway on the south and west sides of the area, the Virginia-Carolina one-way street system on the north side, and the Elm-Oak one-way street system on the east.

The large volumes of traffic using the Niagara Thruway will be served by three carefully designed and located interchanges. The portion destined for the east side of Main Street will use the Seneca Street interchange at the south ends of Elm and Oak Streets. It can enter Elm Street which will be one-way for northbound traffic, and follow this street to the point nearest its destination. This traffic will follow Oak Street, which will be one-way for southbound traffic, in returning to the Niagara Thruway.

Traffic from the Niagara Thruway destined for the lower downtown section west of Main Street including Niagara Square, the Auditorium area, lower Main Street, and the Buffalo River Bridge to the Fuhrmann Boulevard zone, will be served by the

downtown interchange which allows convenient entrance and exit by several ramps in the zone from Pearl Street to Genesee Street. In general these ramps meet existing streets on the lower west side of the business district along the Lower Terrace and at the ends of Genesee Street, Delaware Avenue and Franklin Street.

Niagara Thruway traffic destined for the northwest or northern areas of the central business district can conveniently reach its destination from the Virginia-Carolina interchange. This traffic will leave the Thruway at Carolina Street which is one-way for eastbound traffic and travel along the northwest and north side of the business district to points nearest to its destination, by way of Carolina Street, and also Tupper Street. Tupper Street is the extension for one-way eastbound traffic from Carolina Street to the Elm-Oak eastside diffuser, and to the Cherry Street-Humboldt Parkway project.

Traffic returning to the Niagara Thruway from the northern areas of the business section west of Main Street will follow Goodell-Edward-Virginia Streets, the one-way streets for westbound traffic, which complete the Virginia-Carolina one-way system.

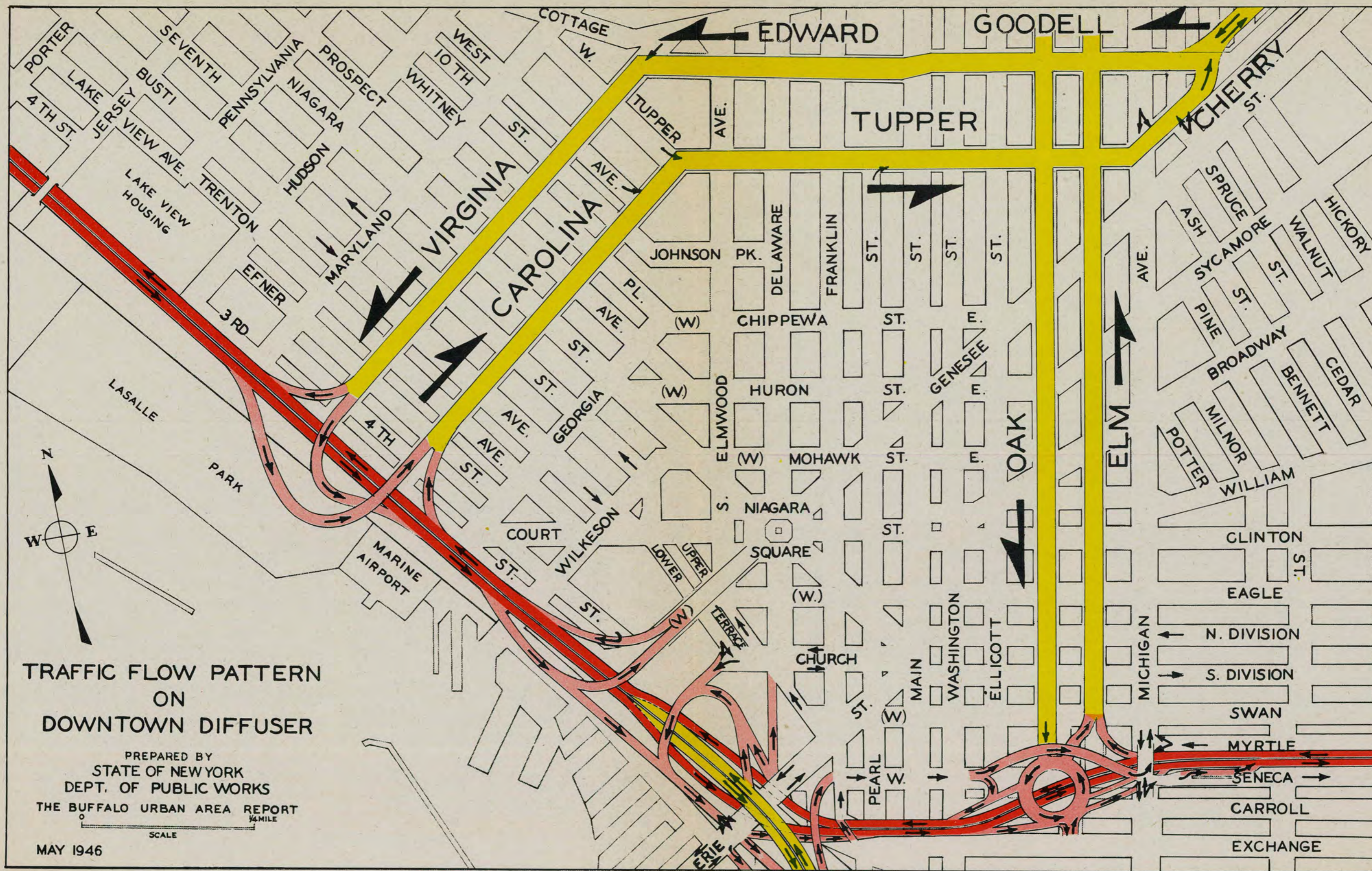
This distribution of the Niagara Thruway traffic bound for areas in downtown Buffalo will serve to greatly reduce congestion in that zone and deliver traffic to street levels at points in the business area convenient to parking lots, stores and offices.

Similarly, traffic approaching the downtown area on one of the existing radial streets, the proposed Elm-Oak one-way system,

or the Humboldt-Cherry entrance to the business section, will be intercepted by the traffic diffusing system. The Virginia-Carolina system will provide easy access from the north to points in the northern and northwestern section of the downtown area, and will serve as a connection between the surface streets and the Niagara Thruway, thereby diverting through traffic from the central part of the business section. The Elm-Oak system will assist traffic on surface streets from the north and east to reach the east side of the business district or the Seneca Street interchange and the Niagara Thruway.

A traffic diffusing plan has long been advocated in various forms by Buffalo city planners. Some of these plans suggest a loop on the Virginia-Carolina and Elm-Oak streets which are used in this plan. However, this is the first comprehensive plan to serve the entire perimeter of the downtown area in such an effective manner. This is possible because the Niagara Thruway is admirably routed around the city to draw traffic from nearly all suburban routes entering the city, and in addition it will pick up considerable traffic in the city that is bound for the downtown area. This traffic will be delivered to the desired side of Main Street by means of convenient interchanges, making the Thruway popular as the route to and from the downtown area. The diversion of this traffic from the present streets will decrease traffic on the streets from the north, northeast and east, and will render the diffuser more effective than if these streets were loaded to their capacity. This would complicate turning movements at the diffuser streets and reduce their effectiveness for this purpose. Under this Buffalo Urban Area Plan, the balanced distribution by the

Niagara Thruway, as well as by the Virginia-Carolina and Elm-Oak systems, will eliminate overloads on any particular part of the diffuser and will thereby add to its effectiveness.



*ARTERIAL ROUTES*

(1) - *Delaware Avenue*: This arterial improvement provides for widening the pavement to 60 feet from its present width of 36 feet between Nottingham Terrace and the north city line, a distance of 1.6 miles. It will include rebuilding of three railroad structures, and will require the acquisition of a strip of land 24 feet wide on the west side of the Avenue. The new width will provide for four operating lanes and two parking lanes in a section of Delaware Avenue which is presently congested during rush hours.

This part of Delaware Avenue, together with the Hinman Avenue extension proposed in this report and the connection through Delaware Park on Humboldt Parkway to Main Street and to the east and south, will offer an excellent new route from east Buffalo to the new industrial area northwest of the city.

Also included in this plan is a proposal to widen the remaining constricted section of the Avenue from North Street to Gates Circle. This portion of the street having a width of 100 feet, is wide enough to accommodate a 60 or 70 foot pavement without acquisition of additional right of way. However, it would require the removal of most of the trees which line the curb. Therefore, it is proposed to construct two lanes 20 feet wide and to place them on the property line side of the trees, leaving 8 to 10 foot malls between the new lanes and the present 40 foot pavement. Such planned development would save

practically all of the trees bordering the present curb and 75 percent of all trees along the route.

(2) - *Humboldt Parkway at Main-Kensington and west to Delaware Avenue:*

It is proposed in this improvement to provide a structure to carry the Parkway under Kensington Avenue and Main Street and to build a two-way, six-lane roadway to Delaware Avenue in a section of Delaware Park around the meadow, which is now limited to eastbound traffic. The length is one mile. This underpass and new artery would not only eliminate present delays at the Main-Humboldt intersection, but would also afford an improved, high capacity facility between Delaware Avenue and Main Street.

(3) - *Broadway:* This project provides for the rebuilding of the present New York Central underpass which contains sharp "S" turns near the city line east of Bailey Avenue. The alignment would be straightened and the present narrow pavement rebuilt and widened to 60 feet from Bailey Avenue to the city line, a distance of three-quarters of a mile.

(4) - *Perry Street:* This project contemplates the construction of a viaduct over the New York Chicago and St. Louis Railroad, and the opening of Perry Street east of Smith Street to connect with Bailey Avenue near Elk and Seneca Streets. It includes the development of an underpass at the Delaware, Lackawanna and Western Railroad crossing and the building of a connection to Bailey Avenue at Seneca Street, together with the widening of narrow portions of Perry Street to a width of 42 feet.



This project will open and provide a new traffic route from downtown Buffalo to the south side. It will also afford relief to Seneca Street and Elk Street, and a portion of Bailey Avenue.

(5) - *Fuhrmann Boulevard*: One of the most congested spots in the city of Buffalo is the intersection of South Park Avenue and Michigan Avenue, where traffic from South Buffalo meets the lake shore traffic. The lift bridges on lower Michigan Avenue and Ohio Street complicate the situation. To correct this undesirable condition, it is proposed to construct a high level bridge across the Buffalo River. Lake shore traffic would then be able to reach the downtown business district on a direct route without meeting the Ohio Street or Michigan Avenue interferences. The bridge plaza would be interconnected with the proposed Niagara Thruway.

(6) - *Kensington Avenue*: This project provides for widening the pavement on Kensington Avenue from its present variable width of 30 and 40 feet, to a new width of 60 feet. Acquisition of right of way will be needed. The plan also contemplates a new connection from the intersection of Humboldt Parkway and West Delavan northeasterly crossing Fillmore Avenue on an overpass to Kensington Avenue. An underpass would also be constructed on Humboldt Parkway in conjunction with a rotary interchange at West Delavan Avenue, and another underpass to be built at the intersection of Kensington and Bailey Avenues.

(7) - *Cherry Street*: A new route from the downtown business district easterly and northerly direct to the Kensington area would be afforded by this so-called Cherry Street project. It provides for a new divided artery type of roadway from the downtown diffuser at Michigan, Parallel to Genesee Street and north of Cherry Street, extending to a connection with the southerly end of Humboldt Parkway in the vicinity of the Buffalo Museum of Science. It would consist of two surface roadways, each to carry three lanes of traffic, controlled by modern synchronized traffic signals, with crossings limited to major streets. When completed, traffic will be able to proceed directly to the Kensington area and relief will be given to both the Genesee and Main Street routes. Underpasses are to be constructed at the Best Street and Northampton Street crossings.

(8) - *Elm-Oak and Michigan*: A new facility equal in importance from a traffic viewpoint to lower Delaware and southerly of Main Street is proposed by opening up the Elm-Oak-Michigan route on the east of Main Street from Seneca Street north to the Cold Spring area. It would be a surface roadway and would use the present Elm and Oak Streets for one-way traffic, except north of the Virginia-Carlton area where the routing will swing to Elm Street and Michigan Avenue. The length would be 2.7 miles.

This Elm-Oak combination will give a total pavement width of 80 feet, in comparison with 60 feet on lower Delaware. In later years, if traffic warrants it, the buildings between Oak and Elm, and elsewhere, can be removed and the routing fur-

ther developed in accordance with whatever needs may become evident. This Oak-Elm project would relieve Main Street of considerable traffic. Taken in conjunction with the other projects recommended, traffic on Main Street would be reduced and the street become more valuable to the use of business and shopping interests.

(9) - *Downtown Diffuser*: This proposal provides for a downtown loop around the business section. It contemplates the use of the proposed Oak-Elm project as the north and south portion, and the improvement of east and west streets for the remainder running to the Niagara Thruway. The streets to be used and improved in addition to Oak and Elm will be Virginia, Edward, Goodell, Carolina and Tupper. The total pavement width would be 80 feet. The length is 1.4 miles.

(10) - *Walden Avenue-East Street*: This project begins on the improved artery near the Buffalo Museum of Science and extends easterly on Walden Avenue to the east city line, a distance of 2.4 miles. From there it would continue east to connect with the Thruway. It will afford a direct and useful routing from east Buffalo and the Thruway to the downtown business area parallel to Genesee Street. It is proposed to acquire the right of way necessary to widen the pavement to 60 feet. The present pavement width generally is about 36 feet.

(11) - *Hirman Avenue*: Under this project Hinman Avenue would be widened to 60 feet from Delaware Avenue to Military Road

and extended westerly and southwesterly, using expressway proportions two 24 foot lanes with a mall, to a connection with the Niagara Thruway on the waterfront. The total length is 2.6 miles. This project will require acquisition of new right of way. Crossings at the principal streets will be separated.

This improvement, in conjunction with the Niagara Thruway, will afford a rapid traffic route from the north city line at Delaware, Elmwood and Military to downtown Buffalo, and thus relieve the streets mentioned of their suburban traffic.

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The estimated cost of the above-mentioned improvements and other details follow in tabular form.

A R T E R I A L    R O U T E S

LISTED IN ACCORDANCE WITH SUGGESTED CONSTRUCTION PREFERENCES

STREET	SECTION	LENGTH (IN MILES)	ESTIMATED COST				DESCRIPTION	
			CONSTRUCTION	RIGHT-OF-WAY	TOTAL COST	STATE'S SHARE		CITY'S SHARE
DELAWARE AVENUE	FROM NOTTINGHAM TERRACE TO CITY LINE AND NORTH STREET TO GATES CIRCLE	3.0	\$1,125,000.	\$700,000.	\$1,825,000.	\$1,475,000.	\$350,000.	WIDEN THE RIGHT OF WAY ON DELAWARE AVE., FROM 66' TO 90'. CONSTRUCT NEW PAVEMENT 60' WIDE. RECONSTRUCT 3 RAILROAD UNDERPASSES. PROVIDE 2- 20' LANES FROM NORTH STREET TO GATES CIRCLE.
HUMBOLDT PARKWAY	AT MAIN STREET AND THROUGH DELAWARE PARK	1.0	600,000.	00.	600,000.	600,000.	00.	PROVIDE AN UNDERPASS TO CARRY HUMBOLDT PARKWAY UNDER MAIN STREET. PROVIDE A NEW 3-LANE ROADWAY ACROSS SOUTHERLY END OF DELAWARE PARK TO PROVIDE FOR WESTBOUND TRAFFIC. EASTBOUND TRAFFIC TO CONTINUE USING PRESENT 3-LANE ROADWAY.
BROADWAY	FROM BAILEY AVENUE TO CITY LINE	0.7	1,100,000.	60,000.	1,160,000.	1,130,000.	30,000.	STRAIGHTEN BROADWAY BY REBUILDING THE UNDERPASS UNDER THE NEW YORK CENTRAL RAILROAD. REPAVE FROM BAILEY TO CITY LINE 60' WIDE.
PERRY STREET	SMITH STREET TO BAILEY AVENUE	2.9	530,000.	140,000.	670,000.	600,000.	70,000.	CONSTRUCT VIADUCT OVER NEW YORK, CHICAGO AND ST. LOUIS RAILROAD. OPEN PERRY STREET EAST OF SMITH STREET TO BAILEY AT ELK, AND BAILEY AT SENECA. BUILD UNDERPASS AT D.L. AND W. RAILROAD. WIDEN AND BUILD 42' PAVEMENT WHERE NECESSARY.
FUHRMANN BLVD.	BRIDGE TO CROSS BUFFALO RIVER	1.0	4,500,000.	500,000.	5,000,000.	4,750,000.	250,000.	PROVIDE A DIRECT CONNECTION BETWEEN DOWNTOWN BUSINESS DISTRICT OF BUFFALO AND FUHRMANN BLVD., BY CONSTRUCTING A BRIDGE TO CROSS BUFFALO RIVER.
KENSINGTON AVE.	FROM CITY LINE TO HUMBOLDT PARKWAY	2.8	1,300,000.	1,000,000.	2,300,000.	1,800,000.	500,000.	CUT A NEW STREET FROM KENSINGTON, EAST OF FILLMORE, TO A TRAFFIC CIRCLE AT HUMBOLDT PARKWAY AND DELAVAN AVE. CROSS FILLMORE ON A BRIDGE. PAVE KENSINGTON 60' WIDE, EXCEPT AT BAILEY AVENUE AND AT PRESENT BRIDGE OVER D. L. AND W. RAILROAD (40' ROADWAY). DEPRESS 2 CENTER LANES OF KENSINGTON UNDER BAILEY. DEPRESS HUMBOLDT UNDER CIRCLE AT DELAVAN.
CHERRY STREET	FROM MICHIGAN AVENUE TO HUMBOLDT PARKWAY	1.6	1,400,000.	2,910,000.	4,310,000.	2,855,000.	1,455,000.	OPEN A NEW STREET 150' WIDE NORTH OF CHERRY STREET AND PARALLEL TO IT FROM MICHIGAN AVENUE, TO NORTH STREET. TAKE 140' OF RIGHT OF WAY ON WEST SIDE OF HERMAN STREET FROM NORTH STREET TO BEST STREET. PAVE WITH 2-37' LANES WITH A MALL. PROLONG THROUGH HUMBOLDT PARK TO HUMBOLDT PARKWAY. DEPRESS FOR THROUGH TRAFFIC BY UNDERPASSES AT BEST AND NORTHAMPTON STREETS.
ELM, OAK AND MICHIGAN	FROM NIAGARA THRUWAY TO MAIN STREET	2.7	380,000.	900,000.	1,280,000.	830,000.	450,000.	CUT NEW STREETS WITH 100' RIGHT OF WAY FROM OAK AND VIRGINIA TO ELM AND CARLTON, AND FROM ELM AND VIRGINIA TO MICHIGAN AND CARLTON. WIDEN ELM TO A 66' WIDTH OF RIGHT OF WAY FROM HIGH STREET TO BEST ST. PROLONG ELM TO MAIN STREET USING HOLLAND PLACE AND OTIS PLACE WITH A MINIMUM WIDTH OF RIGHT OF WAY OF 66'. PROLONG ELM AND OAK SOUTHERLY TO NIAGARA THRUWAY. WIDEN ALL PAVEMENTS LESS THAN 40' TO 40'. CONSTRUCT NEW 40' PAVEMENTS WHERE NEEDED.

## ARTERIAL ROUTES

STREET	SECTION	LENGTH (IN MILES)	ESTIMATED COST				DESCRIPTION	
			CONSTRUCTION	RIGHT OF WAY	TOTAL COST	STATE'S SHARE		CITY'S SHARE
DOWNTOWN DIFFUSER (VIRGINIA-EDWARD- GOODELL-CAROLINA- TUPPER)	FROM MICHIGAN AVE., TO NIAGARA THRUWAY	1.4	\$246,000.	\$754,000.	\$1,000,000.	\$623,000.	\$377,000.	WIDEN EDWARD STREET-MAIN TO DELAWARE FROM 30 FT. RIGHT-OF-WAY TO 66 FT. WIDEN EAST AND WEST TUPPER STREET FROM 49.5 FT. RIGHT OF WAY TO 66 FT. PAVE EDWARD, VIRGINIA, TUPPER AND CAROLINA STREETS, 40 FT. WIDE. PAVEMENT ON GOODELL STREET TO REMAIN.
WALDEN AVE. BEST STREET	FROM WEST PARADE TO EAST CITY LINE	2.4	850,000.	850,000.	1,700,000.	1,275,000.	425,000.	WIDEN WALDEN AVE. FROM 66 FT. RIGHT OF WAY TO 80 FT. WIDEN BEST STREET TO 100 FT. USING HUMBOLDT PARK LANDS. PAVE WALDEN AVENUE FROM CITY LINE TO GENESEE STREET 60 FT. WIDE. PAVE BEST STREET FROM GENESEE STREET TO WEST PARADE WITH TWO 37 FT. LANES.
HINMAN AVENUE	DELAWARE AVENUE TO NIAGARA THRUWAY	2.6	3,000,000.	700,000.	3,700,000.	3,350,000.	350,000.	EXTEND HINMAN WESTERLY AND SOUTHERLY OVER NEW RIGHT-OF-WAY TO CONNECT TO THE NIAGARA THRUWAY NEAR HERTEL AVENUE. CONSTRUCT PRINCIPALLY ON EMBANKMENT. PAVE WITH TWO 24 FT. LANES, SEPARATED BY A MALL. WIDEN PAVEMENT ON HINMAN AVENUE FROM MILITARY TO DELAWARE TO 60 FT.
TOTALS - ARTERIAL ROUTES		21.2	\$15,031,000.	\$8,514,000.	\$23,545,000.	\$19,288,000.	\$4,257,000.	

T H R U W A Y S

THRUWAY	SECTION	LENGTH (IN MILES)	ESTIMATED COST				DESCRIPTION	
			CONSTRUCTION	RIGHT OF WAY	TOTAL COST	STATE'S SHARE		CITY'S SHARE
ERIE-ONTARIO	FROM CAMP ROAD TO TRANSIT ROAD MAIN STREET SPUR	17	\$10,628,000.	\$1,272,000.	\$11,900,000.	\$11,900,000.	00.	HIGH SPEED THRUWAY WITH 3 LANES IN EACH DIRECTION CONSTRUCTED PRINCIPALLY AT GROUND SURFACE. NO CROSSINGS AT GRADE.
			600,000.	100,000.	700,000.	700,000.	00.	
NIAGARA THRUWAY	FROM ERIE-ONTARIO THRUWAY TO BUFFALO BUSINESS DISTRICT	5.2	15,500,000.	11,250,000.	26,750,000.	26,750,000.	00.	THRUWAY WITH 3 LANES IN EACH DIRECTION, CONSTRUCTED PRINCIPALLY WITH ROADWAY DEPRESSED BELOW GROUND SURFACE.
NIAGARA THRUWAY	FROM BUFFALO BUSINESS DISTRICT TO HINMAN AVENUE EXTENSION	4.6	4,000,000.	2,000,000.	6,000,000.	6,000,000.	00.	THRUWAY WITH 2 LANES IN EACH DIRECTION, CONSTRUCTED PRINCIPALLY AT GROUND SURFACE.
TOTALS THRUWAYS		26.8	\$30,728,000.	\$14,622,000.	\$45,350,000.	\$45,350,000.	00.	

## 1960 TRAFFIC VOLUMES AND CAPACITY WITH PLAN COMPLETED

This map, Plate No. 25, was obtained by distributing the estimated 1960 volumes over the proposed new traffic system, in proportion with previously explained origin and destination data. Peak hour volumes were computed from data obtained during the New York State Traffic Survey, and are approximately twice the average hourly volume over a twelve-hour period.

Hourly capacities of the unimproved streets are indicated by the solid black lines, and are computed as 500 vehicles per free lane per hour. Excess peak hour volumes are indicated by the red bands, to the same scale, adjacent to the capacity lines. Capacities of the new facilities and improved streets are shown by the hatched areas with estimated volumes on the Thruways shown by the broken lines within the capacity bands.

A comparison of this map with the 1960 Peak Hour Volume Map shows that excess volumes have practically disappeared, the only exception being Bailey Avenue, which, as mentioned previously, will probably have to be improved as a local undertaking.

The critical situation in the northeast portion of the city has been relieved by the Kensington-Humboldt-Cherry Street improvement, and also by the Erie-Ontario Thruway, which serves to divert a portion of the traffic bound for downtown and west Buffalo from the suburban area



east of the city line. The Kensington-Humboldt-Cherry Street improvement serves a double purpose in that it will carry traffic which formerly flowed into Main Street from Kensington Avenue, and at the same time will draw traffic from the overloaded Bailey Avenue-Genesee Street route.

The Walden Avenue-Cherry Street improvement will divert much traffic from overcrowded Genesee Street.

The Perry Street improvement, together with the east-west spur of the Niagara Thruway, will eliminate congestion from Seneca Street and South Park Avenue.

The Buffalo River bridge connection from Fuhrmann Boulevard to the downtown area will eliminate the heavy traffic from Ohio Street, South Michigan Avenue, and South Park Avenue from Michigan Avenue to Main Street, thus relieving one of the most critical areas in the city.

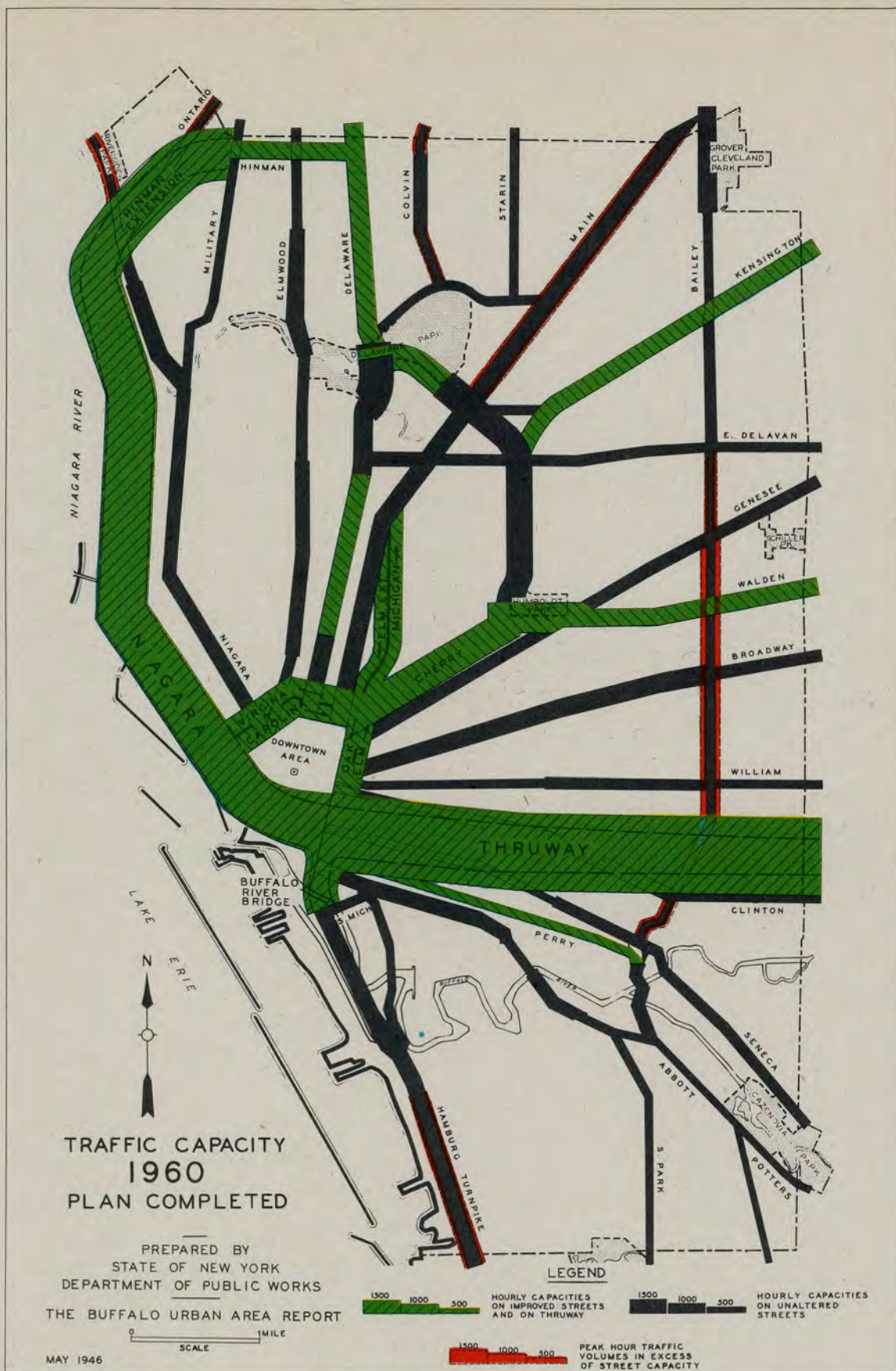
Construction of the Niagara Thruway will entirely eliminate the excess traffic volume on Niagara Street from Ontario Street to Niagara Square, and also on Military Road from the city line to Niagara Street.

The connection from the Niagara Thruway along Hinman Avenue to Delaware Avenue will attract a high percentage of the city-bound suburban traffic to the Thruway, thus relieving Delaware Avenue and Elmwood Avenue, and indirectly relieving Main Street.

Traffic volumes on Bailey Avenue from Genesee Street to South Park Avenue are largely local traffic with some through traffic. Suggested improvements will not materially affect this traffic; therefore, this section of Bailey Avenue will carry excessive traffic per lane until local improvements are made. However, the Perry Street connection at Bailey Avenue will reduce the congestion at the Bailey-Seneca intersections, and will relieve the most serious situation on Bailey Avenue.

Indicated congestion by 1960 along Main Street from near the city line to Humboldt Parkway may require an additional lane on each side after street car tracks have been removed. These can be provided by widening, or by establishment and enforcement of parking restrictions during peak hours. Restriction of parking will increase traffic capacity more than 500 vehicles per hour in each direction.

Many of the improvements proposed for other arterial streets will also afford relief to Delaware Avenue. In addition, the widening of Delaware Avenue from Nottingham Terrace to the north city line, and the proposed additional lane capacity proposed for the section of Delaware Avenue between North Street and Gates Circle will complete the widening of this entire route. When all of these improvements are completed, the capacity of the pavement on Delaware Avenue will meet the needs of the traffic using it.



Upon completion, the proposed Thruway and Arterial Route System will accommodate traffic volumes up to and beyond 1960 with no serious congestion.

## TIME FLOW MAP - 1960

Reduction of travel time, consistent with safety, is the final test of a transportation plan. The principal traffic requirement in Buffalo evolves around mass and private transportation from the center of the downtown district, near Niagara Square, to or toward the city lines. This is accomplished at present along the many radial streets. It has been previously shown by Plate No. 11 that in April 1946, travel time to the city lines on these streets was not excessive except in the northeast district along Main Street, Kensington Avenue and Genesee Street. However, it was anticipated that by 1960 travel time would be excessive along nearly every radial street, and would serve as a barrier to the downtown section, thereby possibly endangering the economic life of the city. This is shown on Plate No. 20.

The accompanying map of 1960 time flow Plate No. 26, shows the extent to which travel time can be reduced by the Buffalo Urban Area Plan below that anticipated by 1960 if there are no traffic improvements other than the removal of street cars. The travel time shown on this map in five-minute contour lines was developed by estimating traffic speeds at 35 miles per hour on the Thruway sections. Present day speeds were used along most of the new and improved surface streets, with slight increases in speed in those sections where traffic volumes may fall below the 1946 levels because of the diversion of traffic to new streets and to the Thruway.

The effect of the Thruway will be most evident in a sharp

reduction of the time required to reach downtown Buffalo from the suburbs. Travel time from Williamsville, for example, which would require approximately 70 minutes in 1960 via Main Street, will be cut to about 25 minutes by use of the Erie-Ontario Thruway and the Niagara Thruway into downtown Buffalo. Travel from the northwest river front areas outside the city line to the downtown business area will be reduced from an estimated 30 minutes to about 15 minutes. Similarly, travel time from the easterly city line, around William Street, will be reduced from 30 minutes to less than 15, while from the south, along Fuhrmann Boulevard, a reduction from 25 minutes to about 10 minutes should result.

Flow of traffic within the city will be greatly expedited by the proposed improvements and new facilities. Travel to and from the Kensington-Delavan section will be aided by the Kensington-Humboldt-Cherry Street improvement, a close approach to the long needed diagonal route between this section and the downtown area. Traffic circles, underpasses, and divided lanes will combine to cut estimated travel time on this route from about 55 minutes to 25 minutes.

The underpass carrying Humboldt Parkway under Main Street, plus the addition of an east-west lane through Delaware Park from Agassiz Circle to Delaware Avenue will connect the Kenmore, Hertel and Black Rock sections with the Humboldt improvement, thus supplying a thruway type of connection between the North Park section and the east side of Buffalo. Travel time will not only be greatly reduced, but much cross-town traffic and delays on

other streets will be eliminated. There will also be some reduction in the volume of traffic, and a consequent saving of time along the entire length of Delaware Avenue, Elmwood Avenue, and other north-south streets when a portion of traffic from those streets follows the route through Delaware Park and along Humboldt Parkway.

The Elm-Oak two-way improvement will eliminate congestion along lower Main Street, and will reduce travel time in a north-south direction in the downtown area five minutes below the time on Main Street. Parallel routes on the east side of Main Street have long been needed by traffic destined for the east side of Buffalo. Much of this traffic is now diverted from Main Street to Linwood Avenue and Delaware Avenue, and crosses back over Main Street through the extremely congested Genesee Street-Court Street area.

The Walden Avenue improvement and connection to the southerly extension of Humboldt Parkway will provide a five minute route from the city line to Humboldt Park. This will attract much traffic now using crowded Genesee Street, thus reducing travel time in that section of the city.

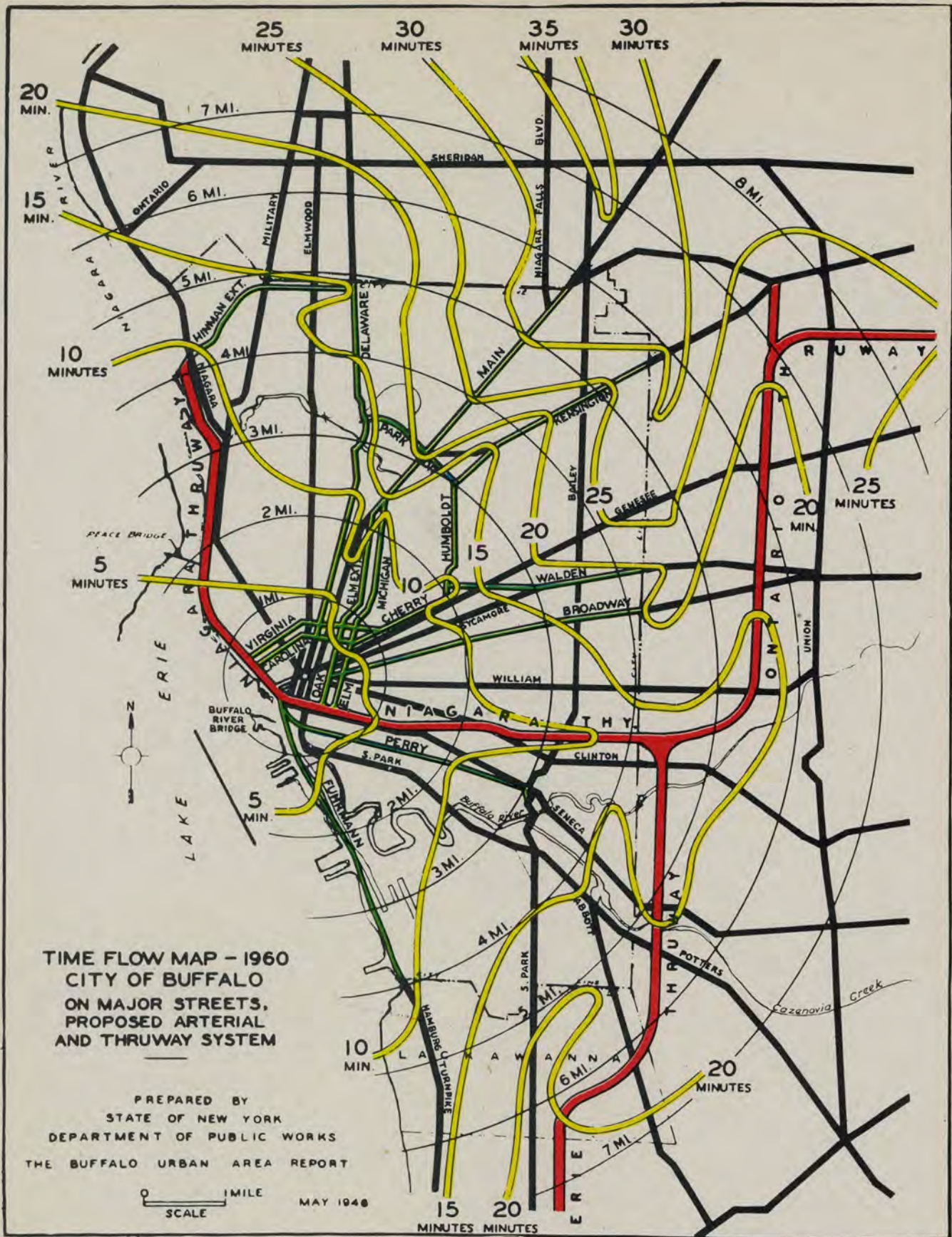
The Perry Street improvement, by diverting traffic from South Park Avenue and Seneca Street, will reduce the travel time along these surface streets. Congestion at Seneca Street and Bailey Avenue will be reduced by the Bailey Avenue extension to South Bailey, which also connects North Bailey Avenue to Elk Street and the new Perry Street extension.

It can be logically concluded that all of the projects proposed in and adjacent to the city under the Buffalo Urban Area Plan will materially reduce travel time in the area by means of the carefully chosen street improvements and the new facilities. On the basis of this time saving, together with the increased safety factor obtained by accommodating the larger volumes of traffic on the Thruways, the plan should be favorably received by the motoring public.

#### *RECREATIONAL FACILITIES*

Detailed recommendations pertaining to the use of surplus lands for recreational purposes which may become available as the result of acquisition of rights of way have not been made. However, it is recognized that such an incidental though highly beneficial use may be made of such excess property.

Recommendations will be submitted upon completion of preliminary working drawings after detailed surveys of actual land taking requirements have been made. At that time, the location, type and area of the remnants can be compared with neighborhood recreational needs and an intelligible appraisal made of the value of such surplus properties for that purpose.

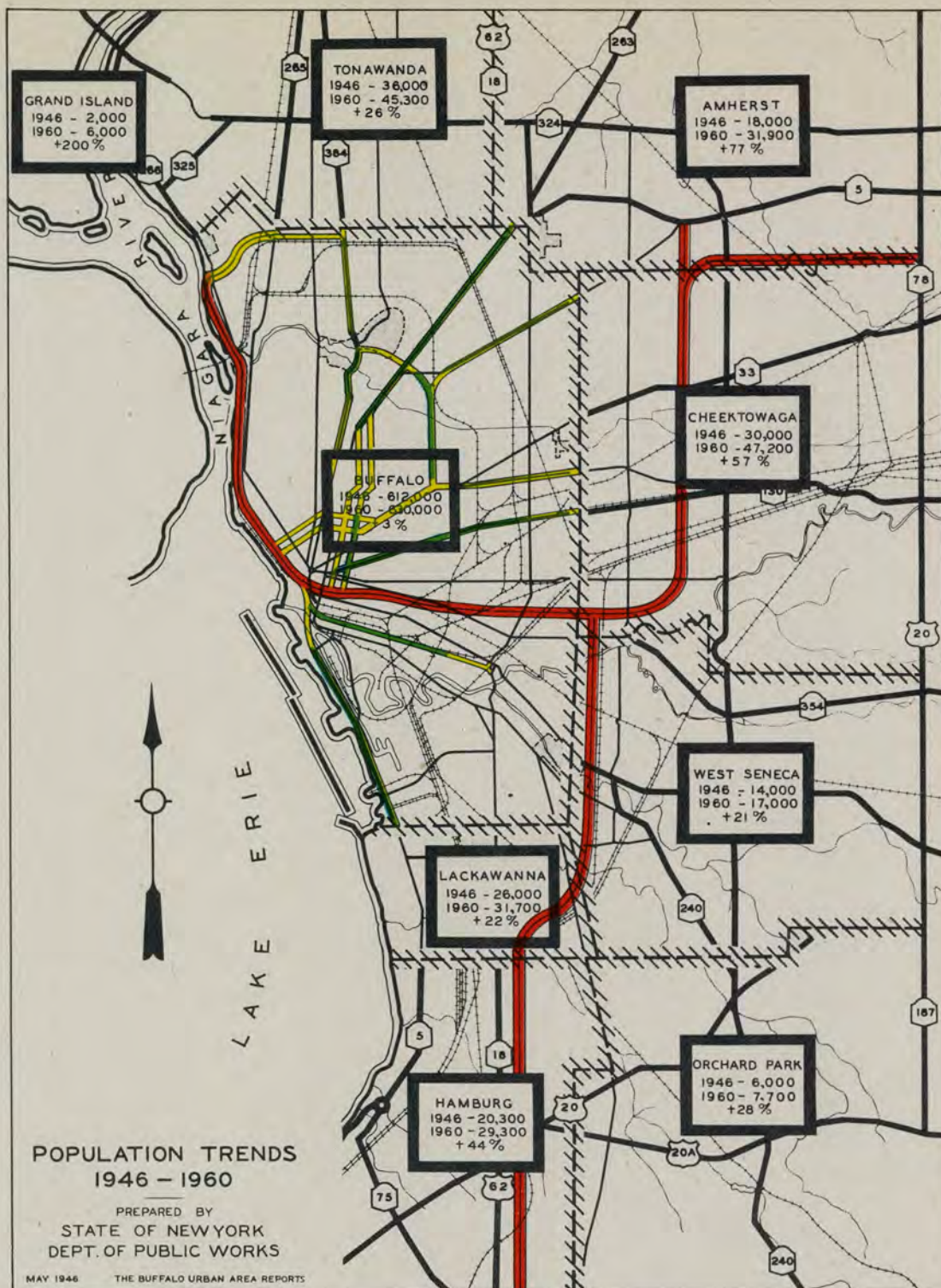


The proposed Thruway system, shown in red, and the Arterial Route System, shown in green, will reduce travel time in the City of Buffalo to considerably below that required in 1946 to travel from Niagara Square to the city lines.



*Population Trends With Thruway:*

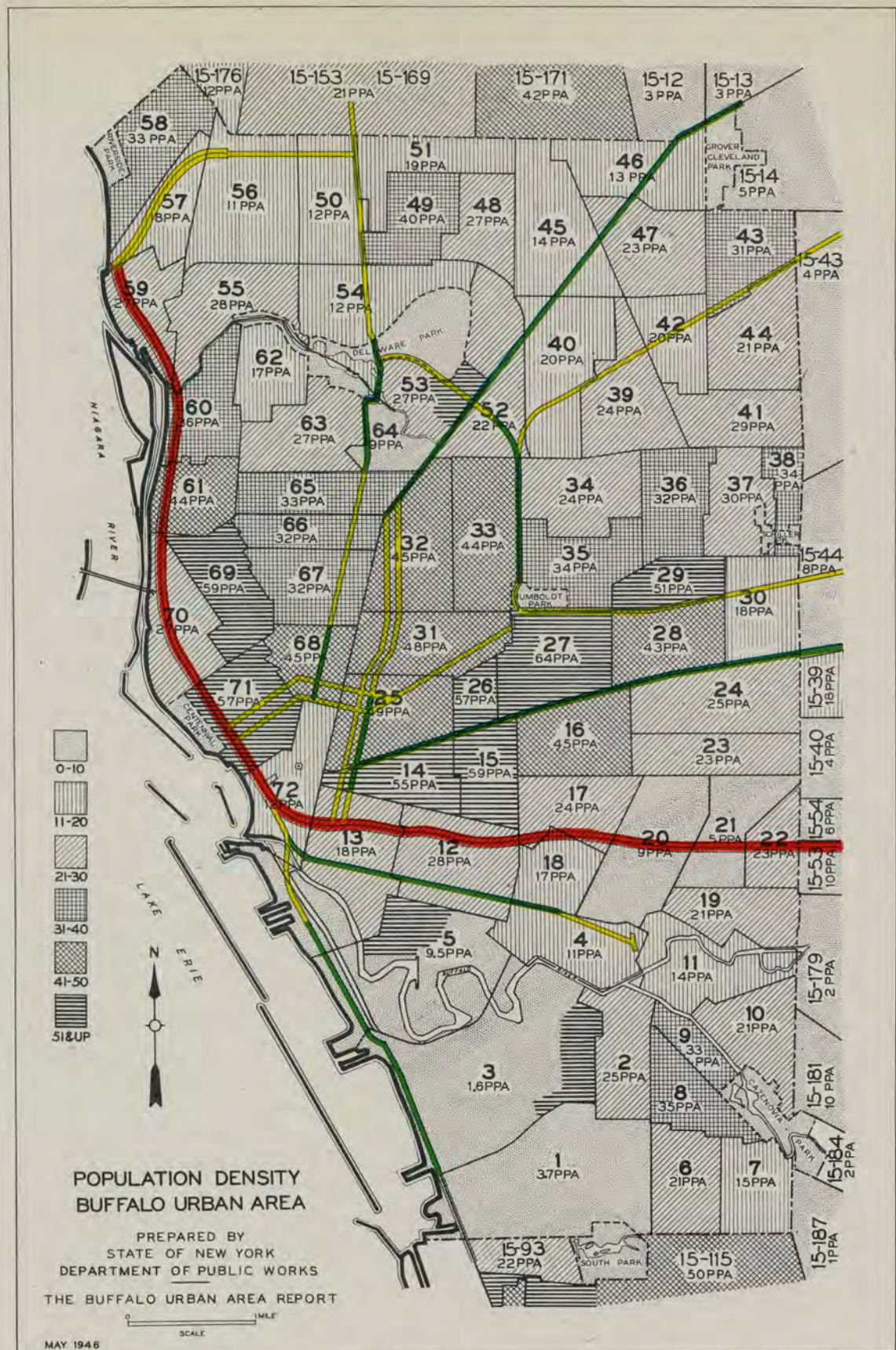
The proposed Thruway and Arterial Route System is shown on Plate 27 in color. It is clearly indicated that these systems are located so as to serve the present densely populated areas, and at the same time to provide convenient and fast transportation within and through the areas where the greater population increases are anticipated by 1960, especially to the northeast and east. This will greatly assist in developing the Buffalo Urban Area into a closely integrated unit which is essential to the life of the City.



The proposed Thruway and Arterial Route Systems are designed to serve the areas where greatest population increases are expected.

*Population Density with Thruway*

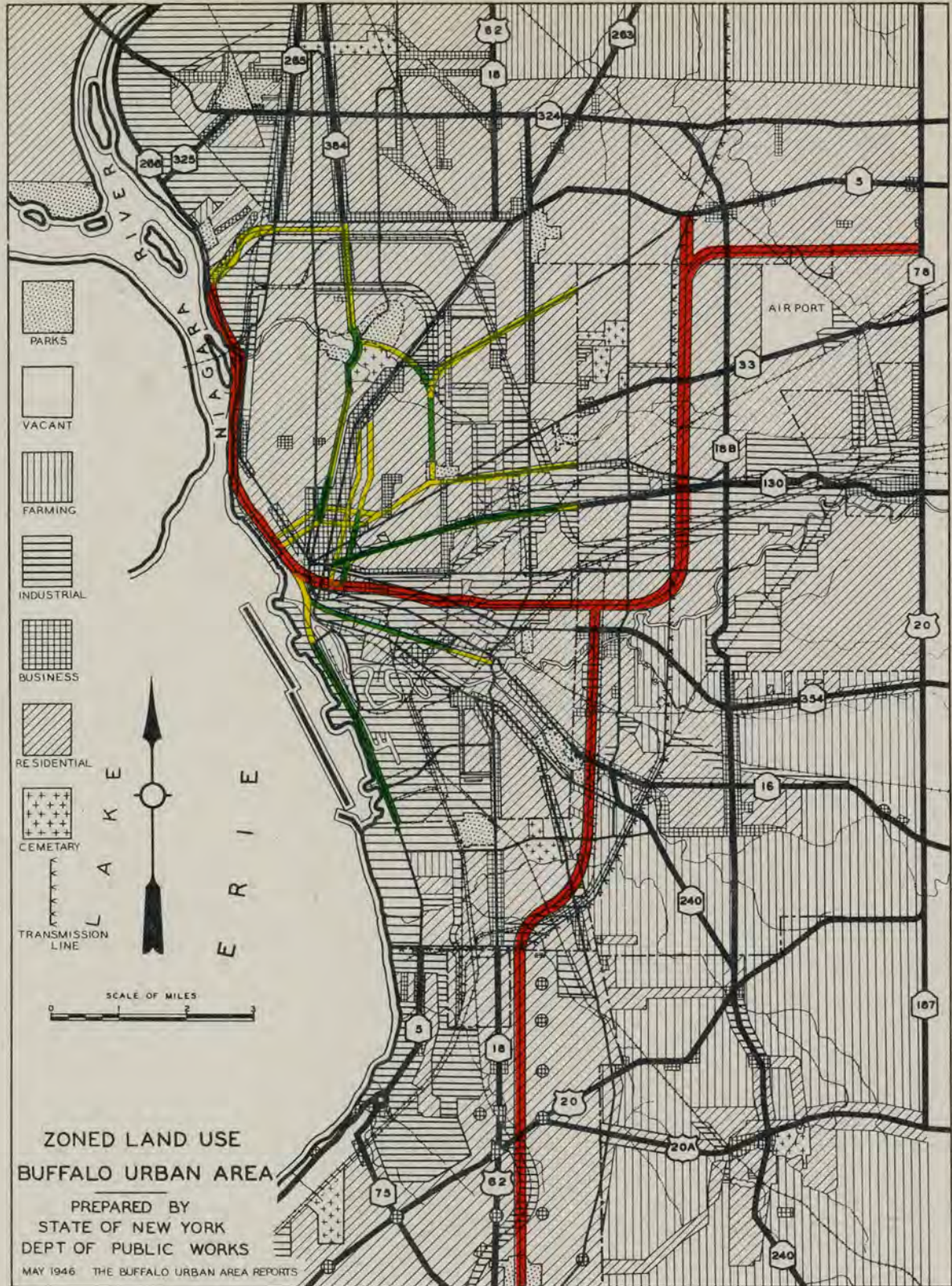
The proposed Thruway system and Arterial Route system shown in color, (Plate 28), are superimposed on this Population Density Map to demonstrate that as far as practical, these facilities have been located in areas of the least population density, but in such a manner as to effectively serve the more dense sections and at the same time to promote the general population growth.



The proposed new facilities have been located, where practicable, in areas of low population density, but in such a manner as to serve the more dense sections.

*ZONED LAND USE - WITH THRUWAY*

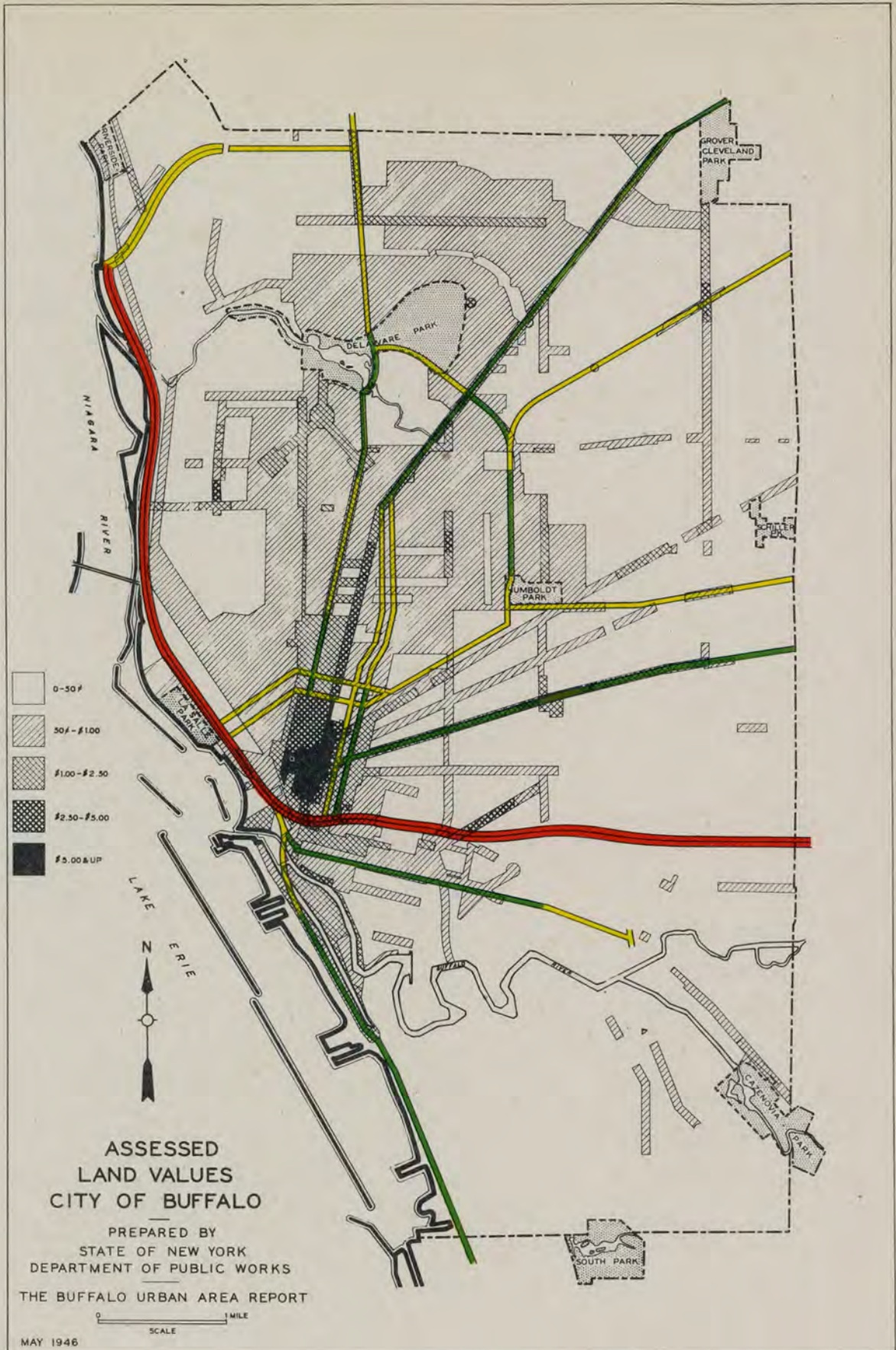
The location of the Thruway System and the Arterial Route System shown in color (Plate 29) are superimposed on the Zoned Land Use Map, to indicate how it is practical to choose locations for these traffic improvements to serve all types of land use equally well.



The proposed improvements are so located as to serve all types of land use.

*Assessed Land Values - With Thruway*

The location of the proposed Thruway system and the Arterial system has been shown in color on Plate 30. This demonstrates the effectiveness with which it was possible to select routings for these facilities through the lower cost areas in such a manner as to serve the more valuable areas to a good advantage.



Low cost areas have been selected for the routes of the proposed improvements, wherever possible.



## SUMMARY

In conclusion, it might be well to again point out that the Buffalo urban area undoubtedly faces an era of healthy expansion in the immediate future.

New industries are coming and many local plants are expanding their activities. Westinghouse has just acquired from the Federal Government the ultra-modern Curtiss-Wright plant adjacent to the Buffalo airport. A short distance away the Twin Coach Company has taken over one of the large modification buildings of the wartime plane industry. Trico Products have just announced a program for a huge enlargement of their plant and facilities.

However, this rapid expansion and expected increase in motor vehicle ownership and use means ultimate traffic flow stagnation unless a remedial plan is adopted and steps taken immediately to carry it out in accordance with the need and available financing.

The Thruway and Arterial Route plans presented in this report will admirably meet those conditions. They have been prepared in accordance with sound land-use principles and reasonable financial programs.

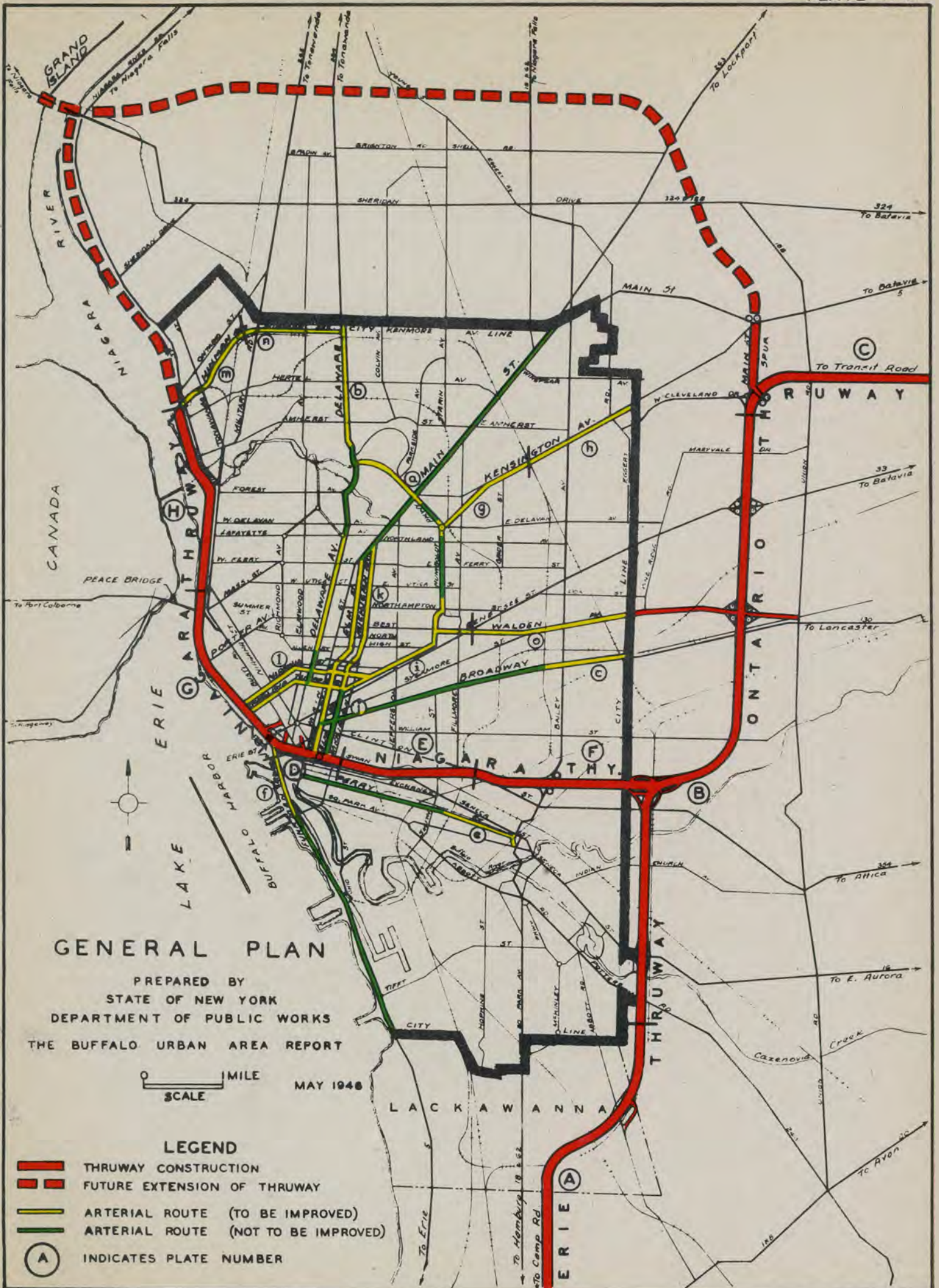
In spite of estimated traffic increases, travel time in 1960 from the McKinley Monument in the heart of Buffalo to the city line along the various radial streets will not exceed the present travel time, and in many cases it will be considerably

less when the proposed program is carried out.

For example, travel time from McKinley Monument along Main Street to the city line at the present time is 32 minutes. If no street improvements are made, the travel time for this trip in 1960 would be increased to 72 minutes. On the other hand, if the recommended program of street improvements is completed by that time, the travel time on Main Street will remain at 32 minutes. Similar conditions prevail in all other sections.

There is every reason to believe, from the traffic studies which have been made, that the improvements recommended will be a great boon to local residents and merchants of Buffalo. They will be of equal benefit to people in the urban areas who will be able to continue to use the cultural facilities and the main shopping district of the city with freedom.

There are great possibilities for Buffalo's future, and the fulfillment of this program will go a long way toward making those possibilities realities.



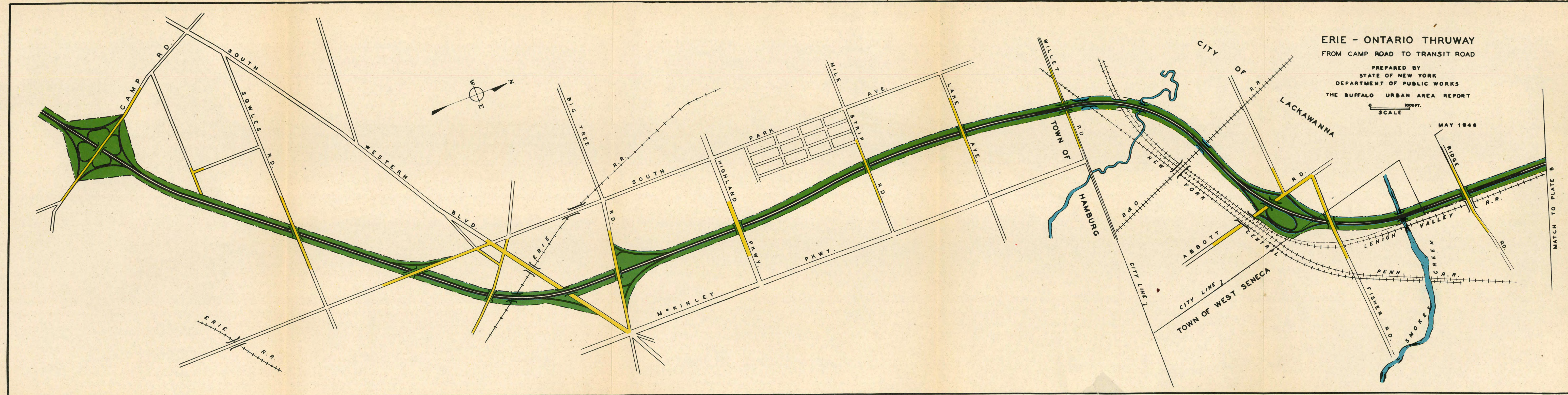
### GENERAL PLAN

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 THE BUFFALO URBAN AREA REPORT

0 1 MILE  
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 MAY 1948

#### LEGEND

- ▬ THRUWAY CONSTRUCTION
- - - FUTURE EXTENSION OF THRUWAY
- ▬ ARTERIAL ROUTE (TO BE IMPROVED)
- ▬ ARTERIAL ROUTE (NOT TO BE IMPROVED)
- A INDICATES PLATE NUMBER



**ERIE - ONTARIO THRUWAY**  
 FROM CAMP ROAD TO TRANSIT ROAD

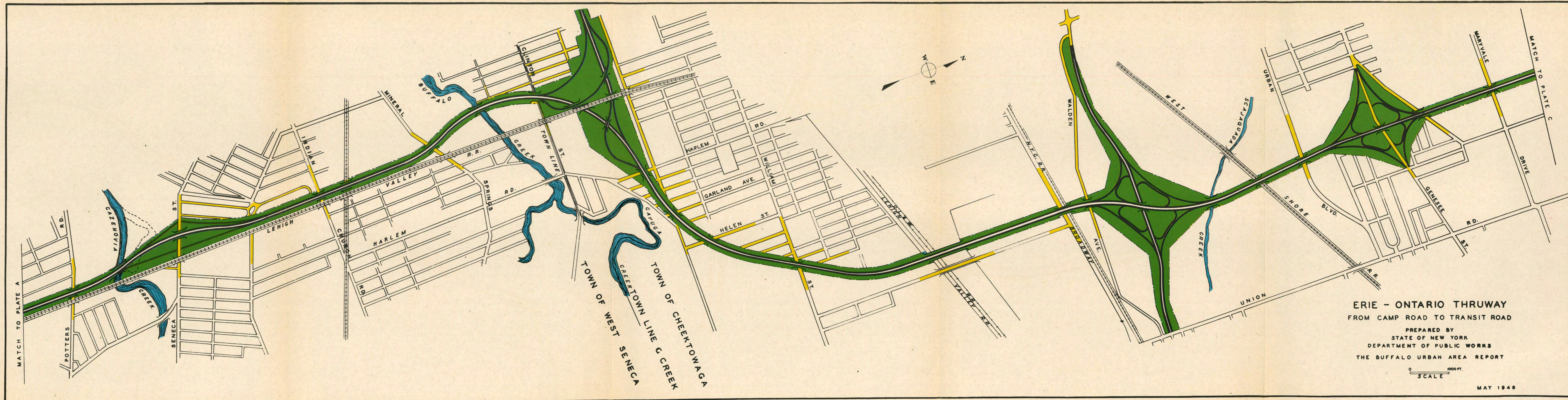
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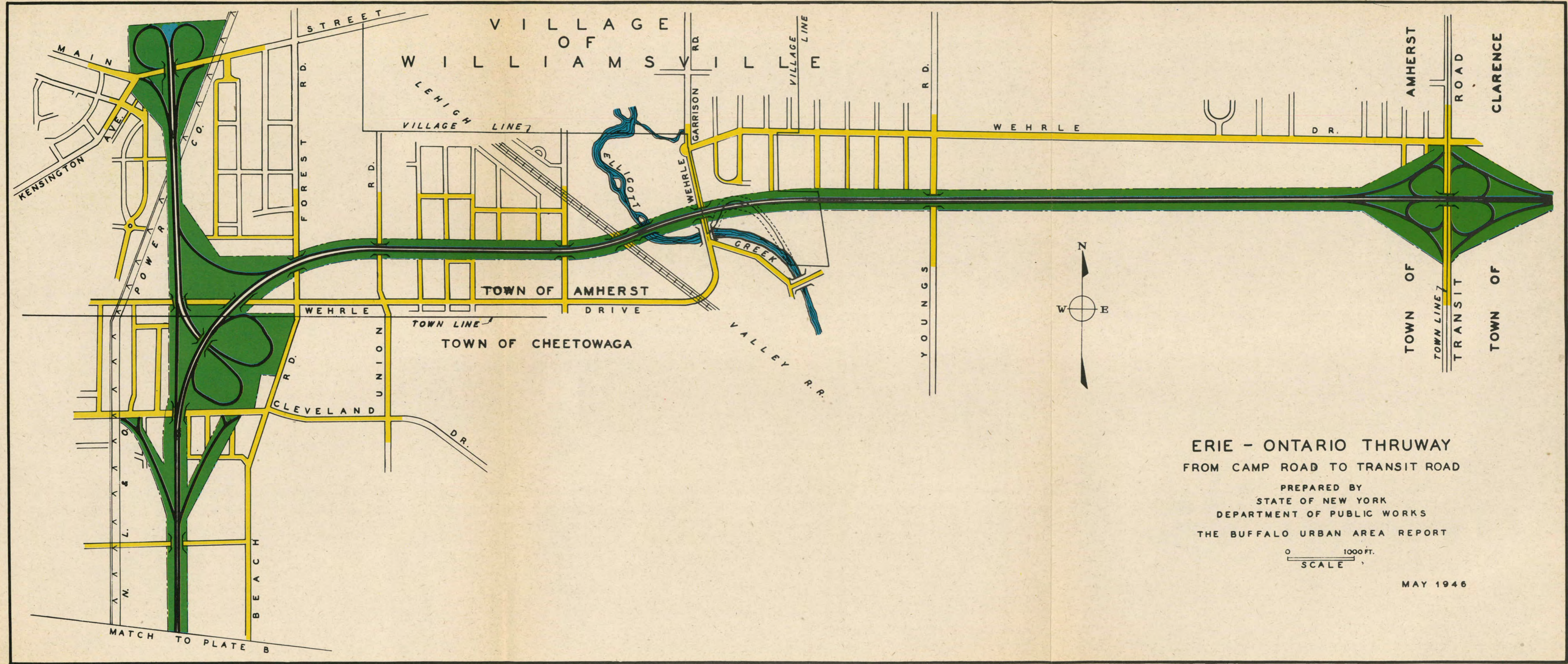
MAY 1946

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From the Digital Collections of the New York State Library.



From the Digital Collections of the New York State Library.

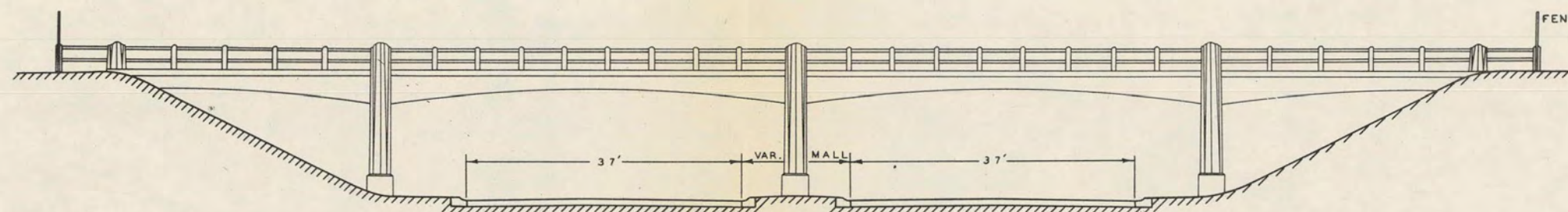
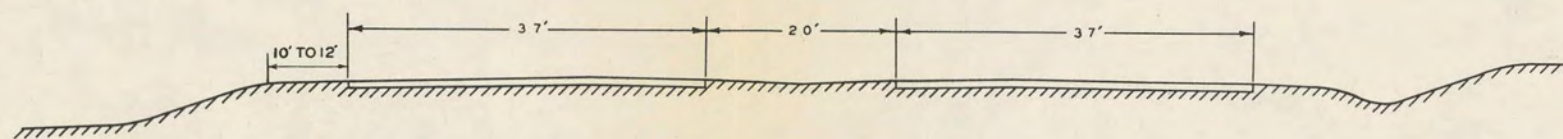
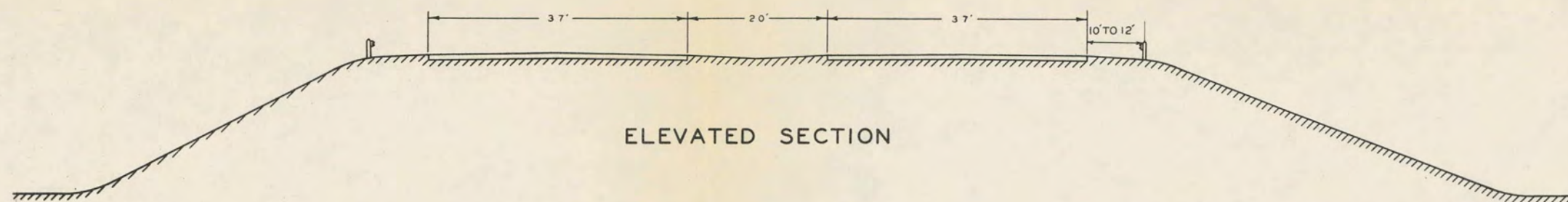


ERIE - ONTARIO THRUWAY  
FROM CAMP ROAD TO TRANSIT ROAD

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TYPICAL SECTIONS  
ERIE - ONTARIO THRUWAY

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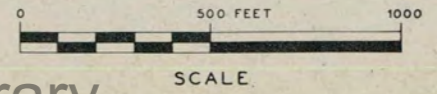
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NIAGARA THRUWAY  
DOWNTOWN INTERCHANGES

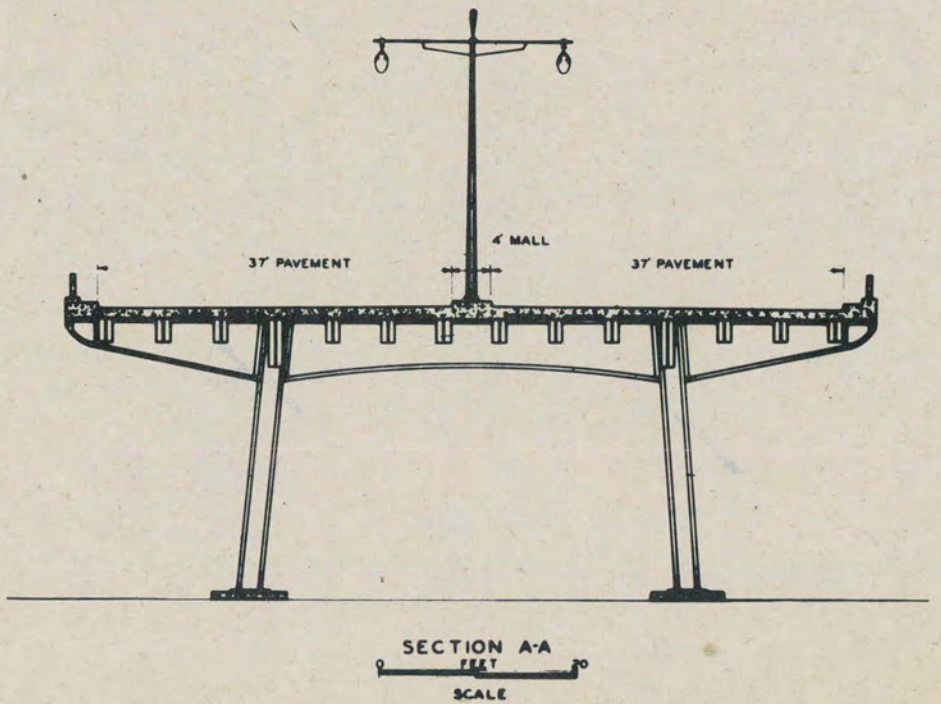
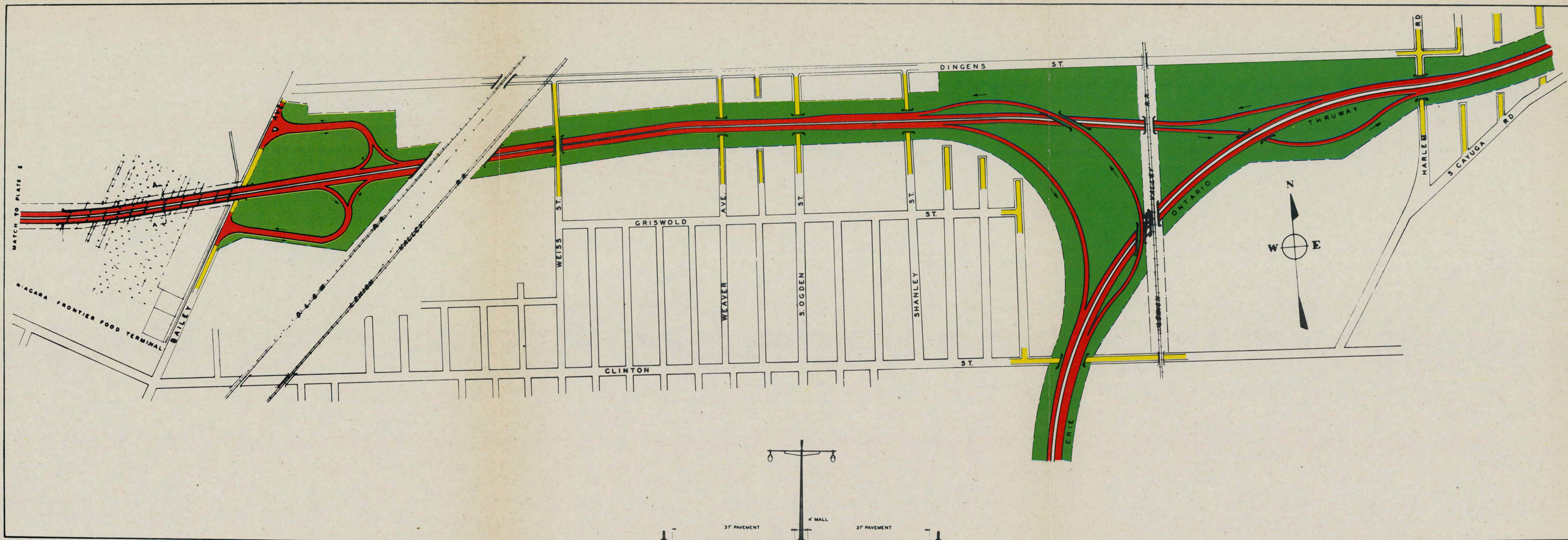
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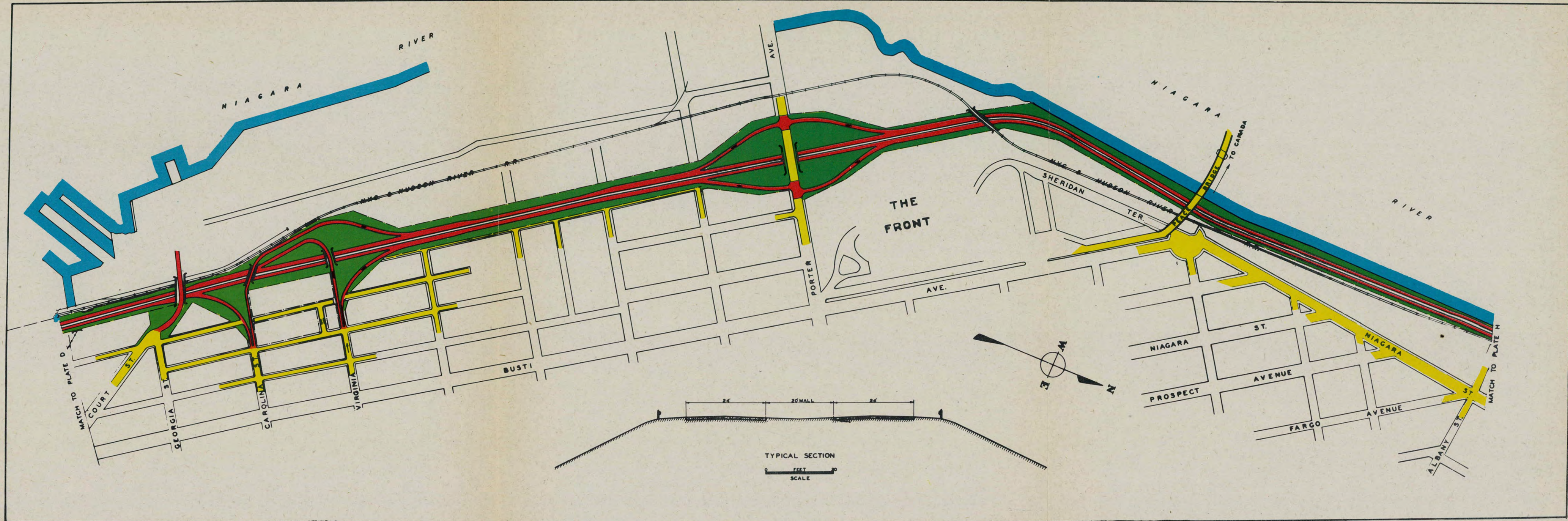




NIAGARA THRUWAY  
 SHOWING INTERCHANGES WITH BAILEY AVE.  
 AND WITH ONTARIO THRUWAY  
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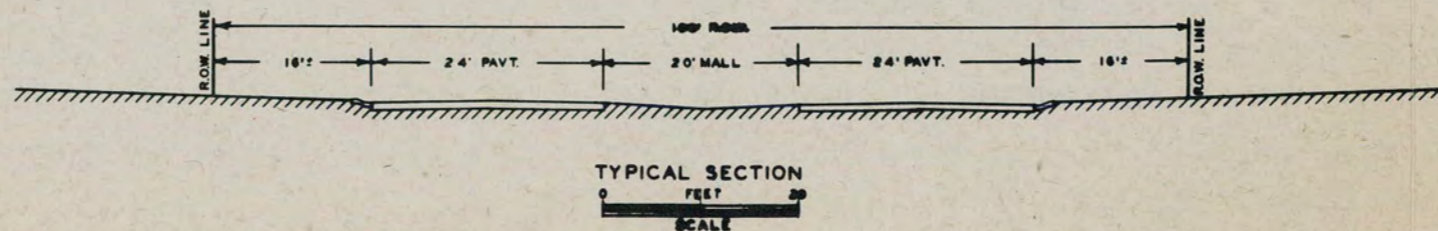
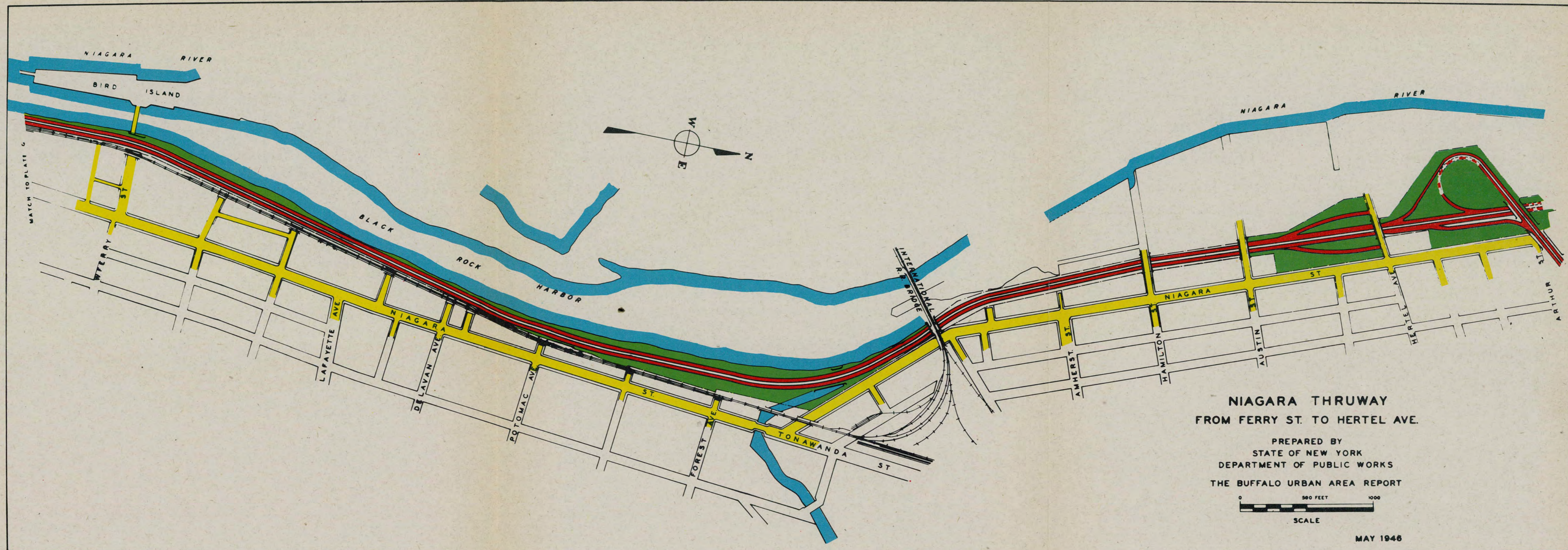
**NIAGARA THRUWAY  
FROM COURT ST. TO ALBANY ST.**

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SCALE

MAY 1946

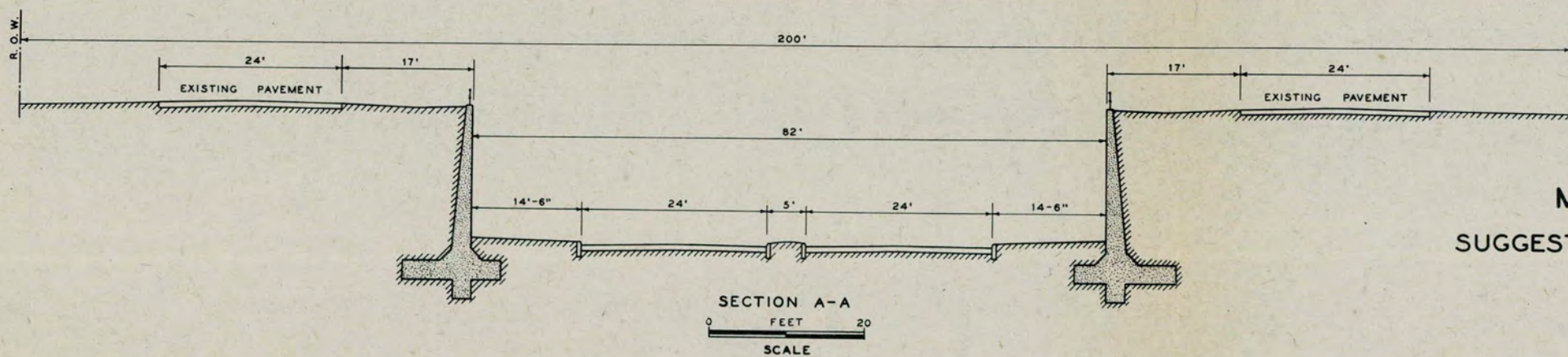
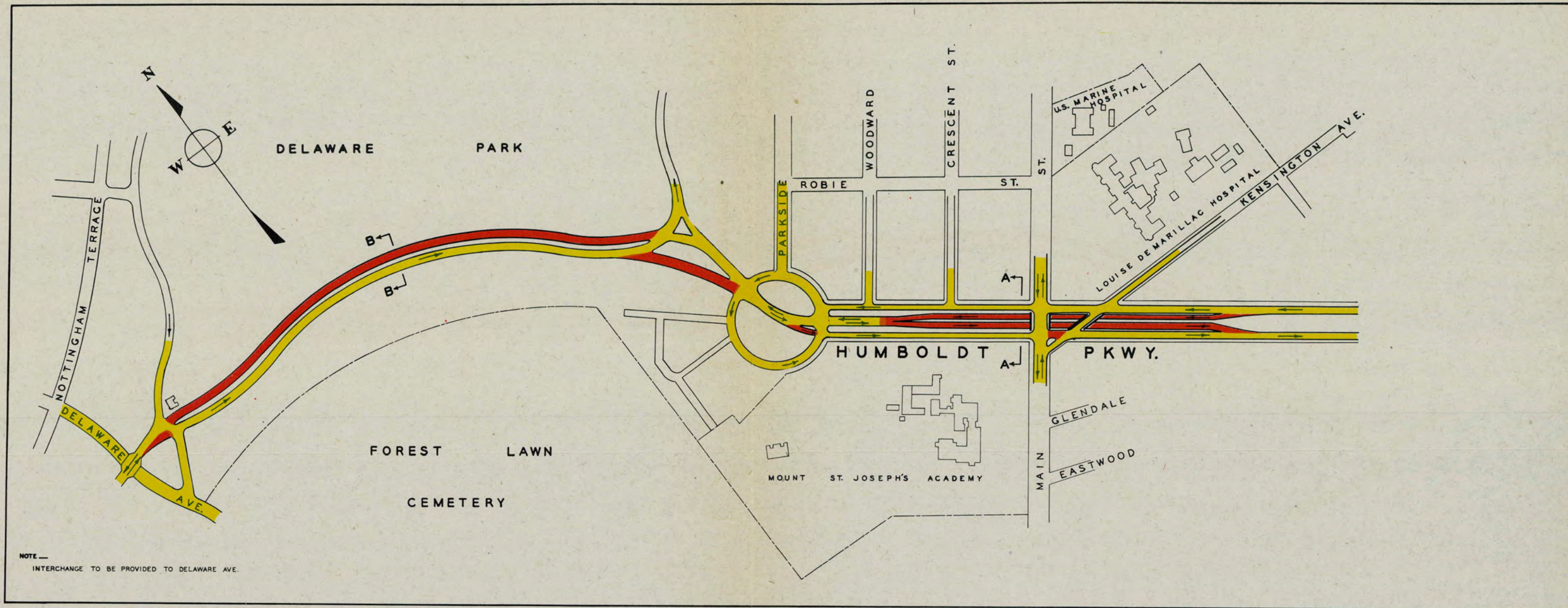


NIAGARA THRUWAY  
FROM FERRY ST. TO HERTEL AVE.

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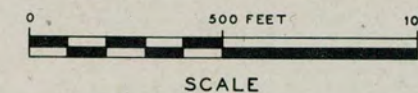
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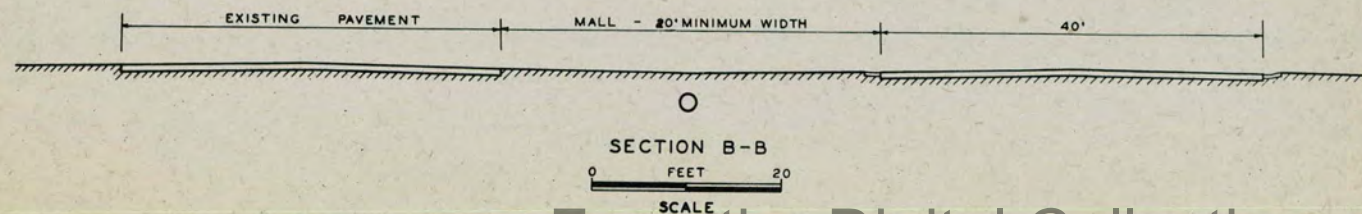


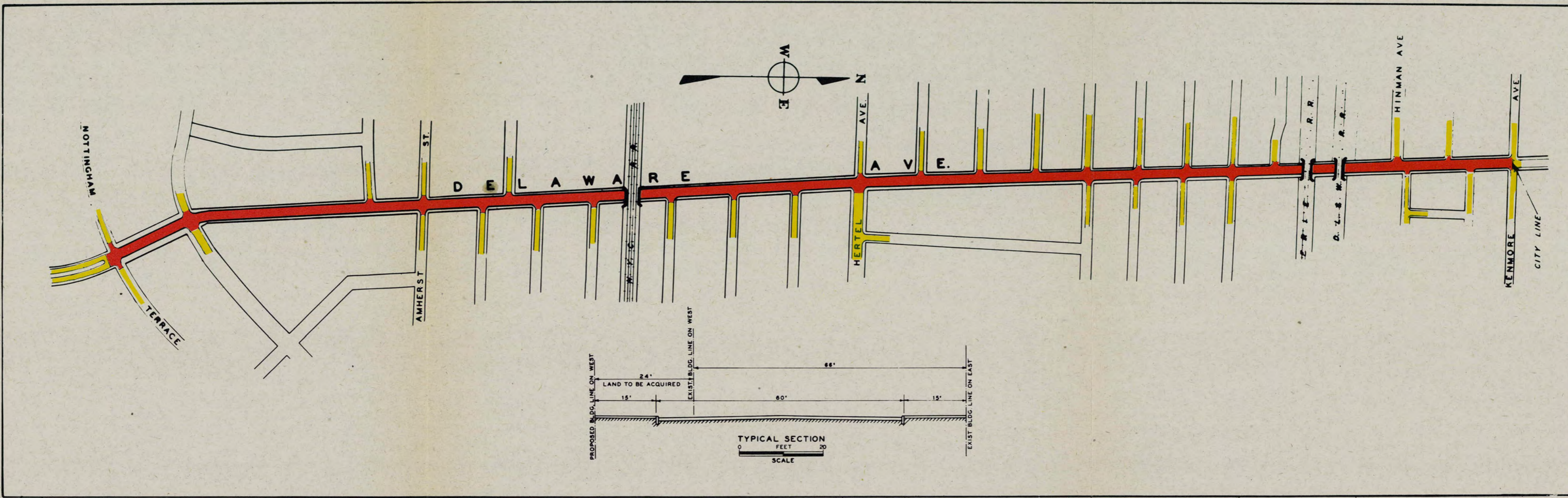
**MAIN - HUMBOLDT GRADE SEPARATION**  
**SUGGESTED TWO WAY TRAFFIC THROUGH DELAWARE PARK**

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 THE BUFFALO URBAN AREA REPORT



MAY 1946

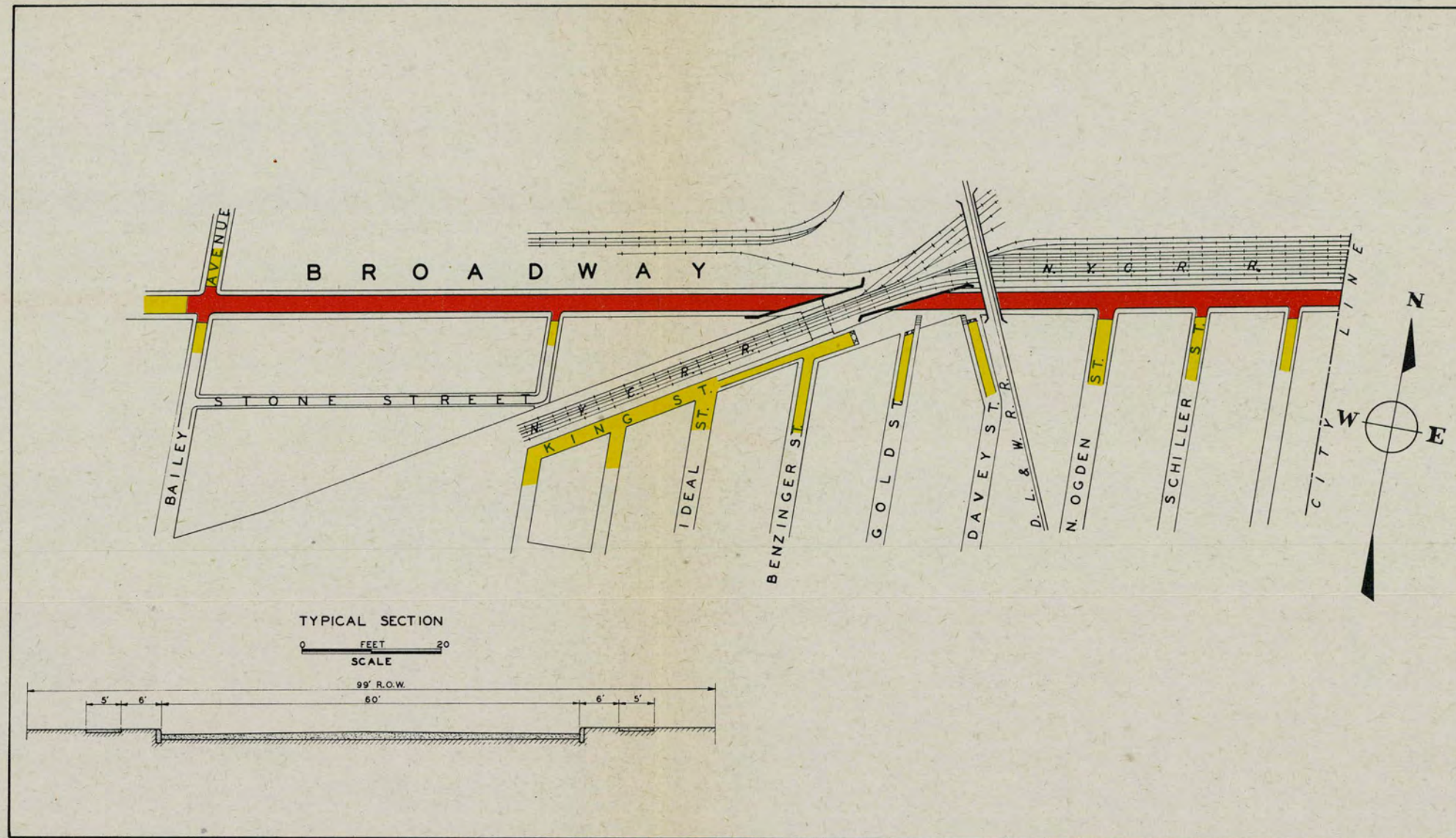




**PROPOSED DELAWARE AVENUE IMPROVEMENT  
NOTTINGHAM TERRACE TO CITY LINE**

PREPARED BY  
STATE OF NEW YORK  
DEPARTMENT OF PUBLIC WORKS  
THE BUFFALO URBAN AREA REPORT



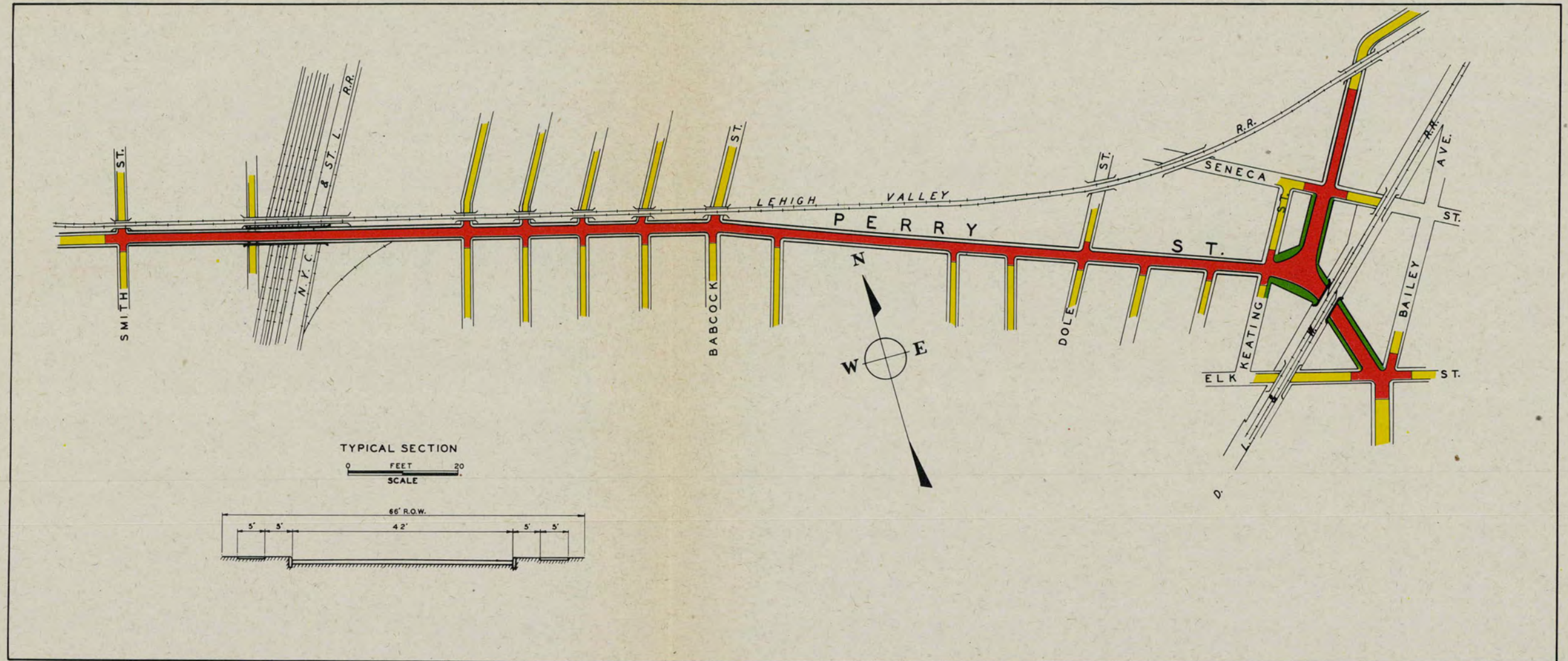


PROPOSED BROADWAY IMPROVEMENT  
FROM BAILEY AVENUE TO CITY LINE

PREPARED BY  
STATE OF NEW YORK  
DEPARTMENT OF PUBLIC WORKS  
THE BUFFALO URBAN AREA REPORT

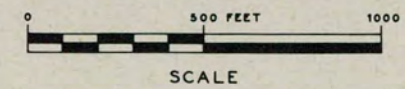


MAY 1946



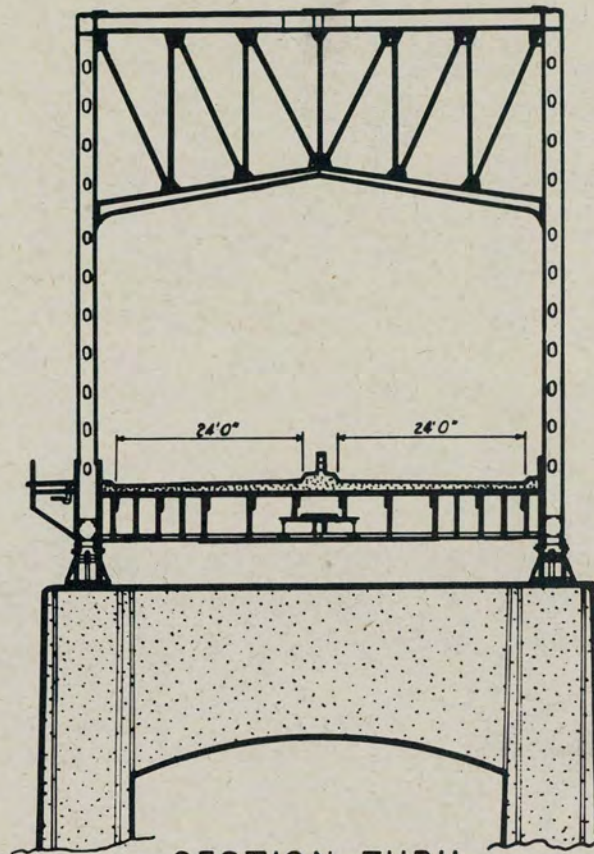
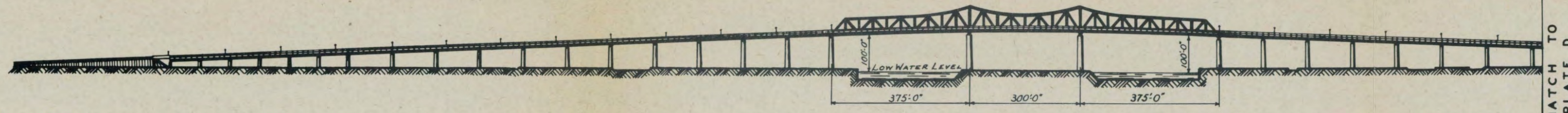
PROPOSED PERRY STREET EXTENSION & IMPROVEMENT  
FROM SMITH ST. TO BAILEY AVE.

PREPARED BY  
STATE OF NEW YORK  
DEPARTMENT OF PUBLIC WORKS  
THE BUFFALO URBAN AREA REPORT



MAY 1946

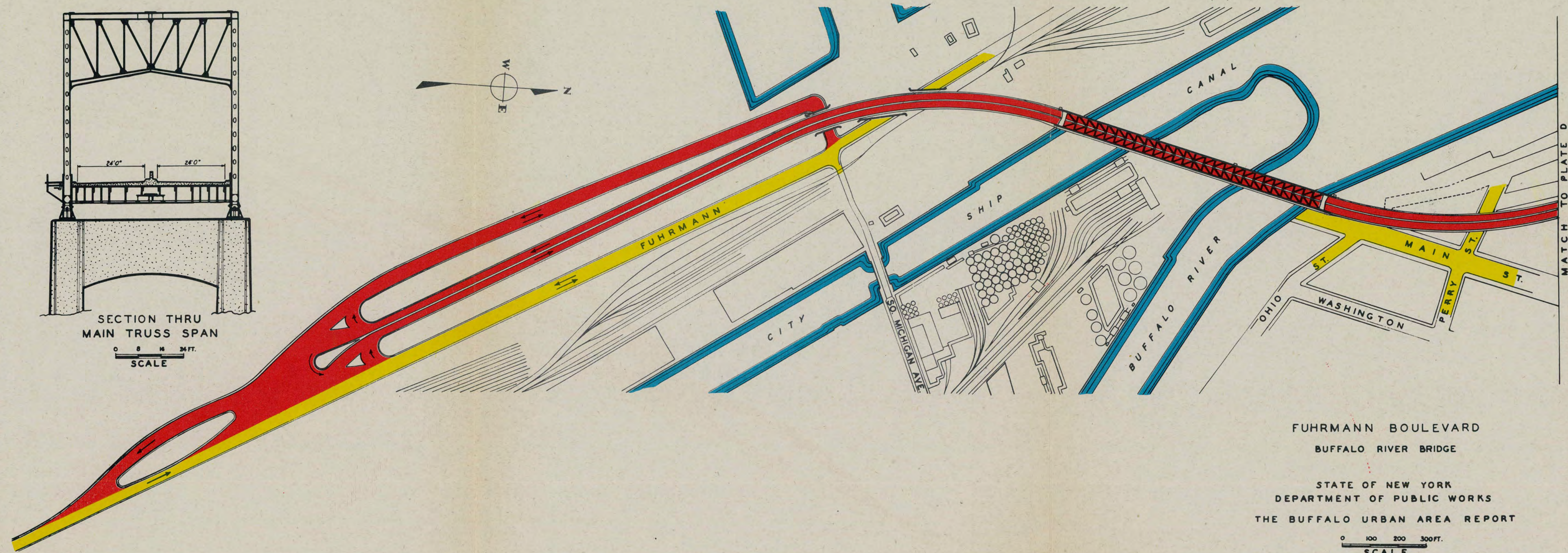




SECTION THRU MAIN TRUSS SPAN

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SCALE

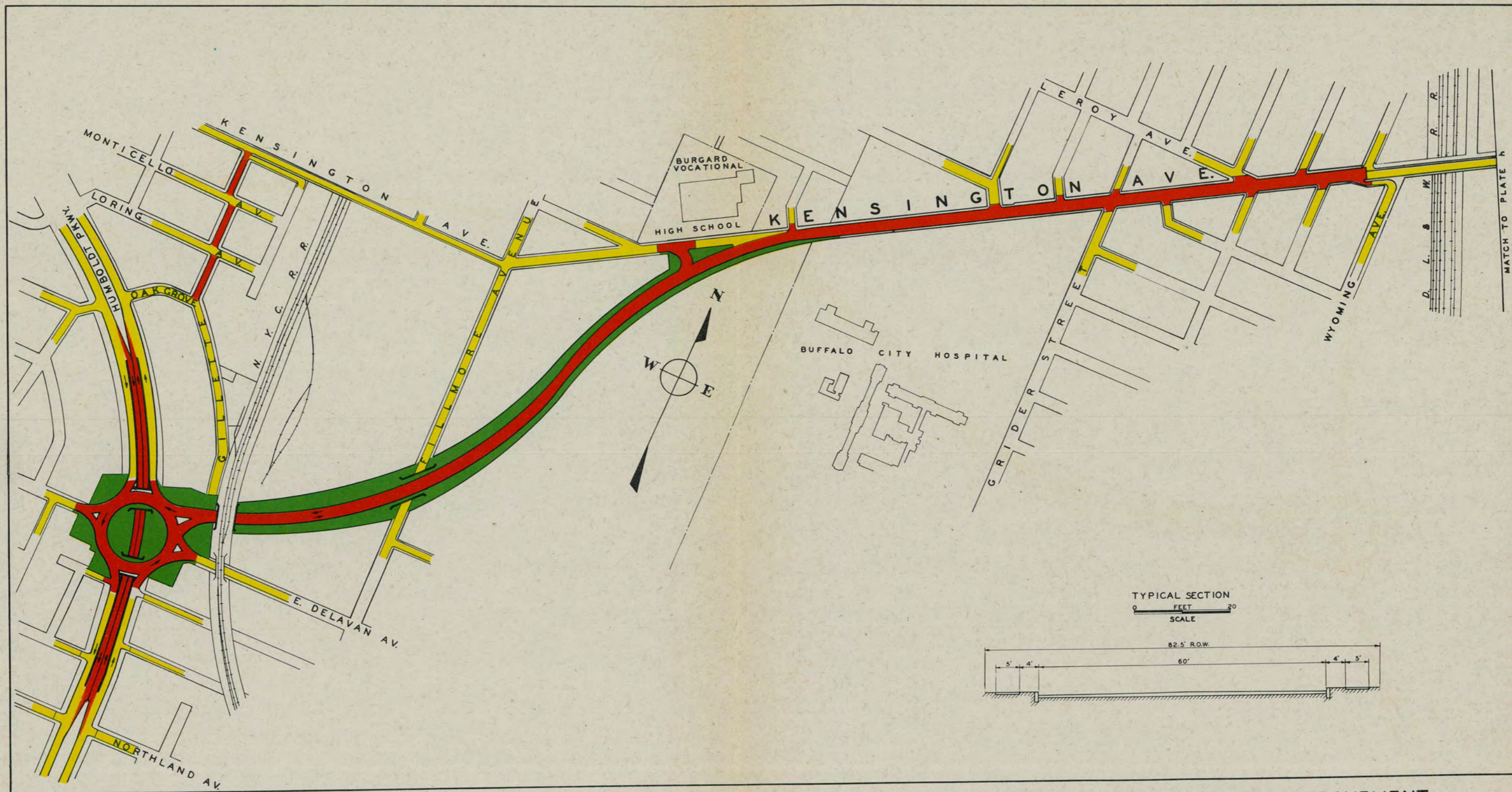


FUHRMANN BOULEVARD  
BUFFALO RIVER BRIDGE

STATE OF NEW YORK  
DEPARTMENT OF PUBLIC WORKS  
THE BUFFALO URBAN AREA REPORT

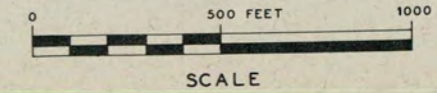
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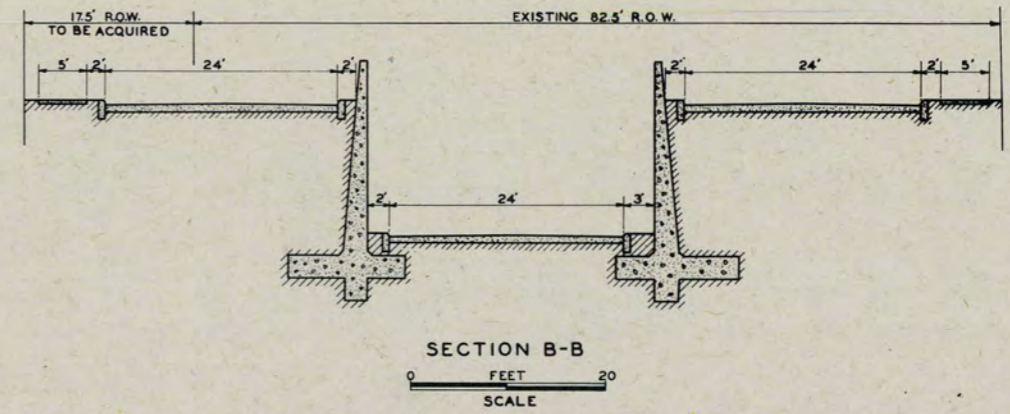
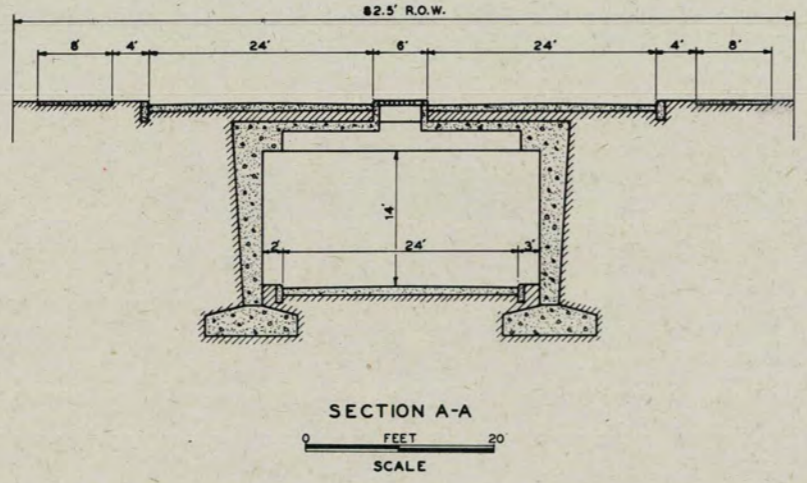
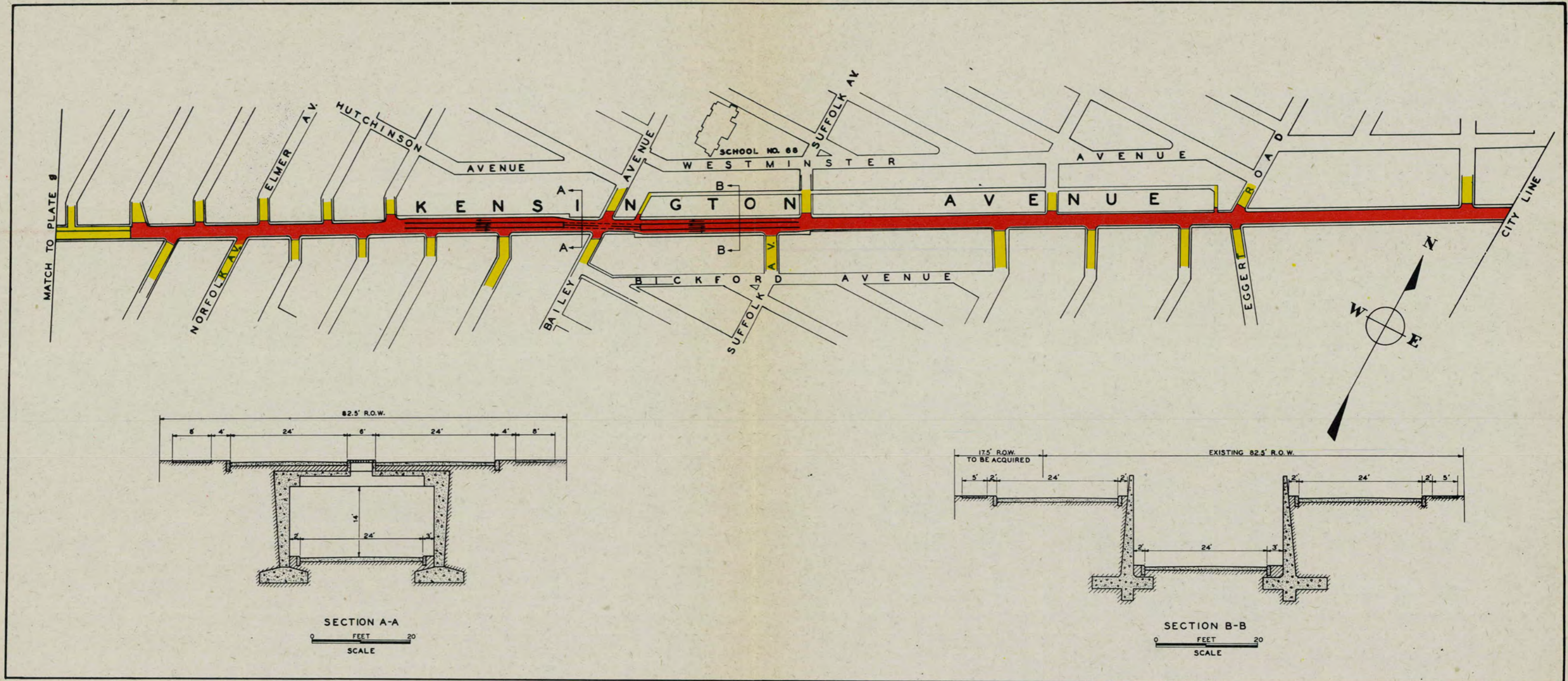
MAY 1946



PROPOSED KENSINGTON AVE. IMPROVEMENT  
FROM HUMBOLDT PKWY. TO CITY LINE

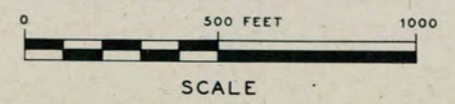
PREPARED BY  
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THE BUFFALO URBAN AREA REPORT



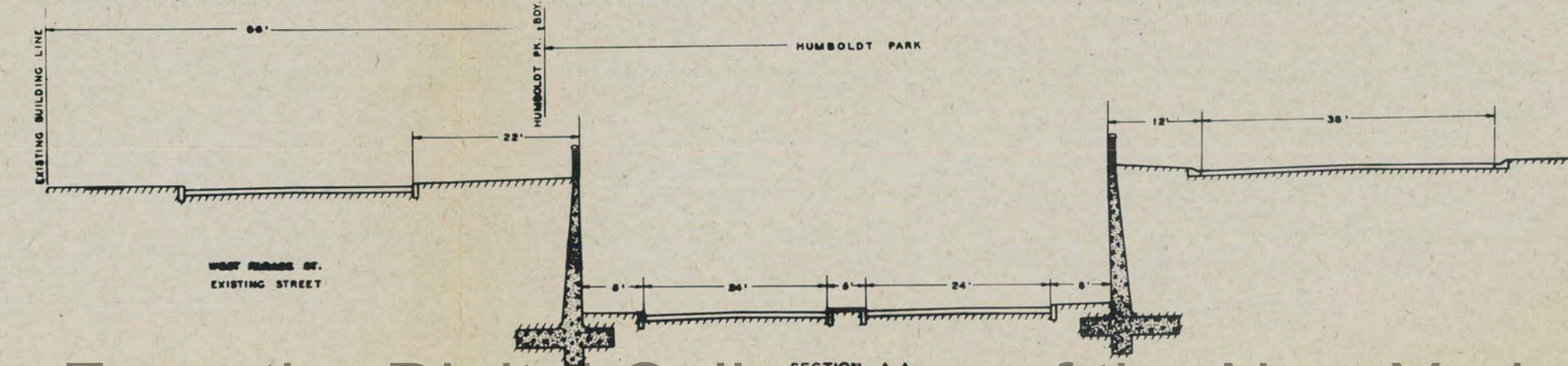
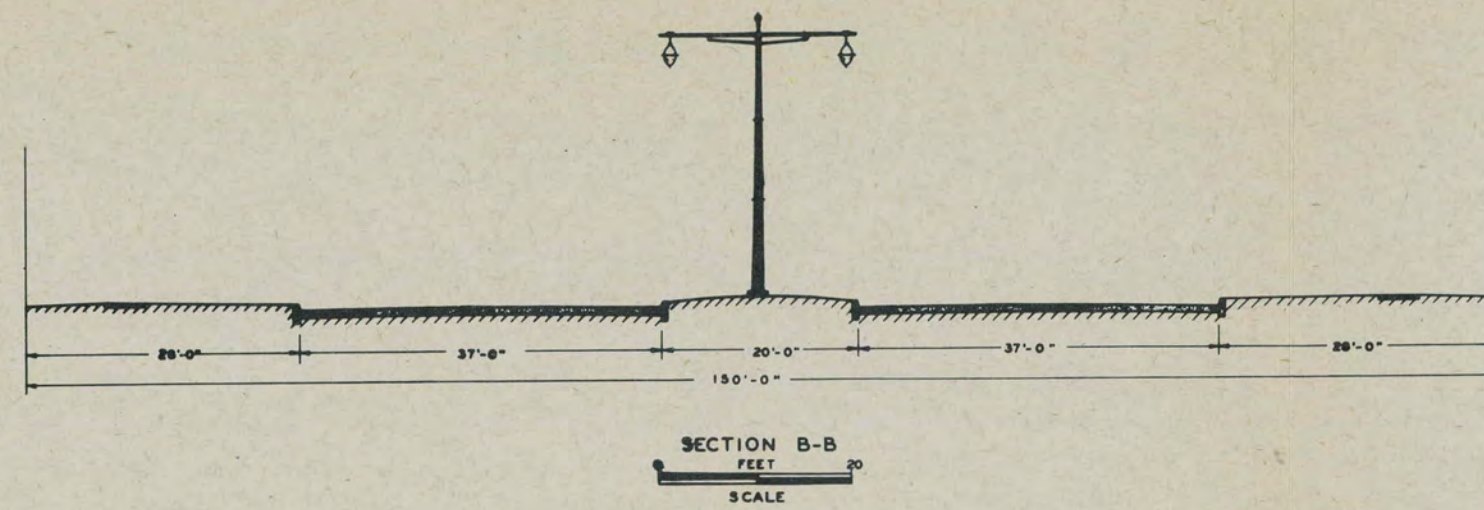
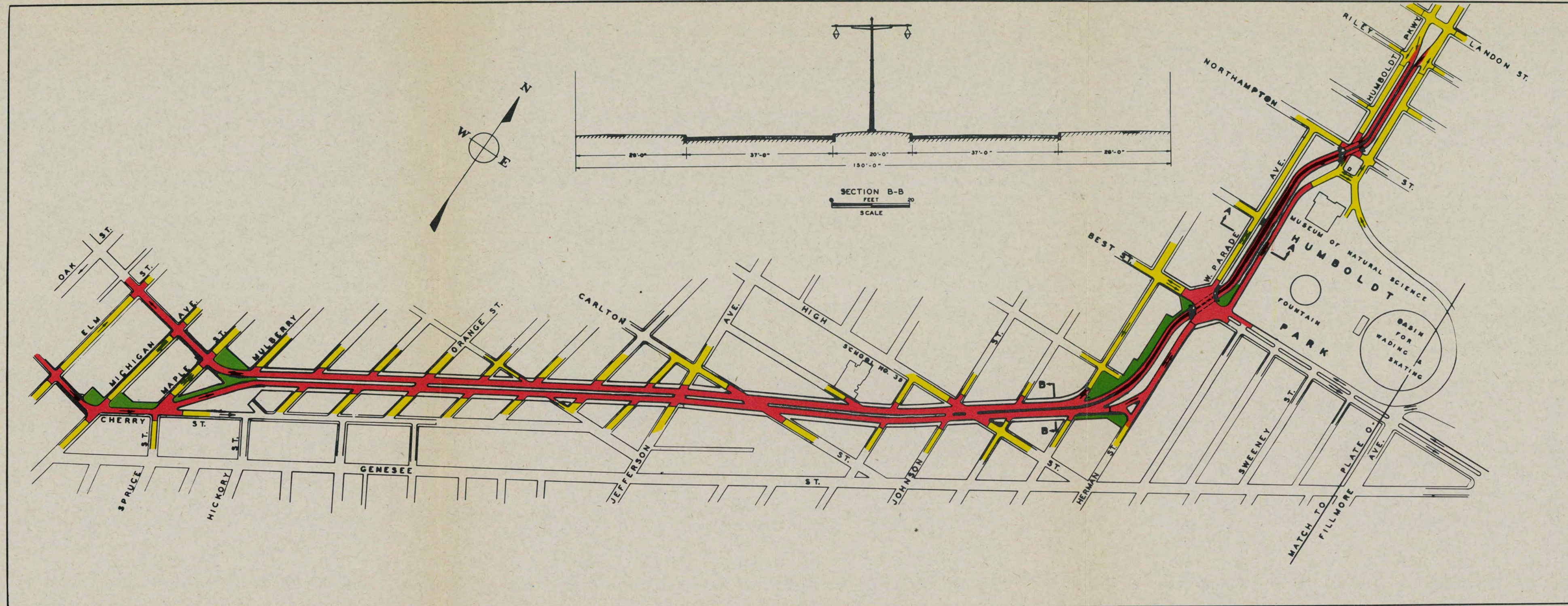


**PROPOSED KENSINGTON AVE. IMPROVEMENT  
FROM HUMBOLDT PKWY. TO CITY LINE**

PREPARED BY  
STATE OF NEW YORK  
DEPARTMENT OF PUBLIC WORKS  
THE BUFFALO URBAN AREA REPORT

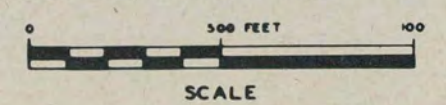


MAY 1946

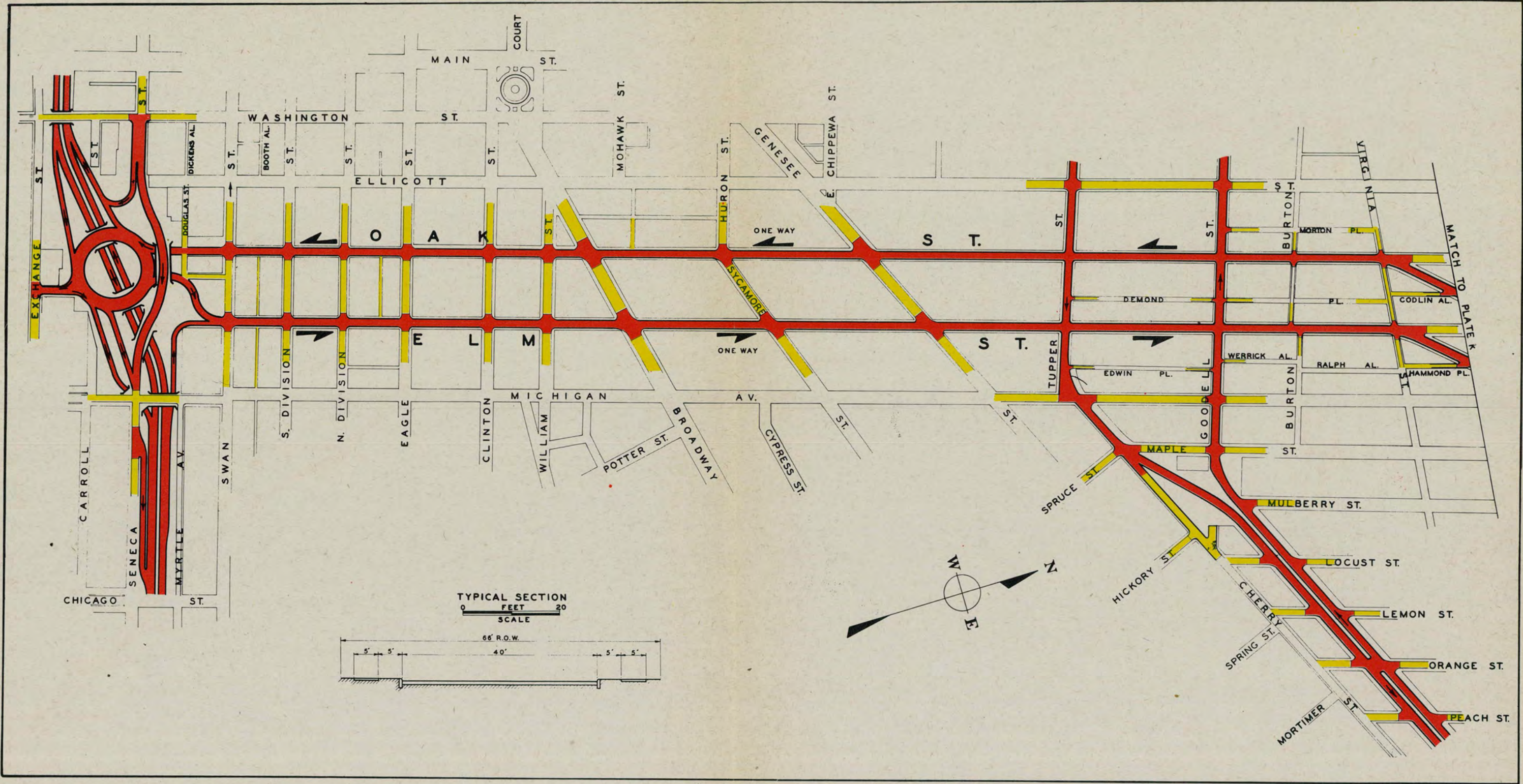


**PROPOSED EXTENSION OF CHERRY ST.  
FROM MICHIGAN AVE. TO HUMBOLDT PKWY.**

PREPARED BY  
STATE OF NEW YORK  
DEPARTMENT OF PUBLIC WORKS  
THE BUFFALO URBAN AREA REPORT

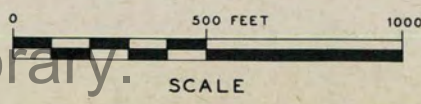


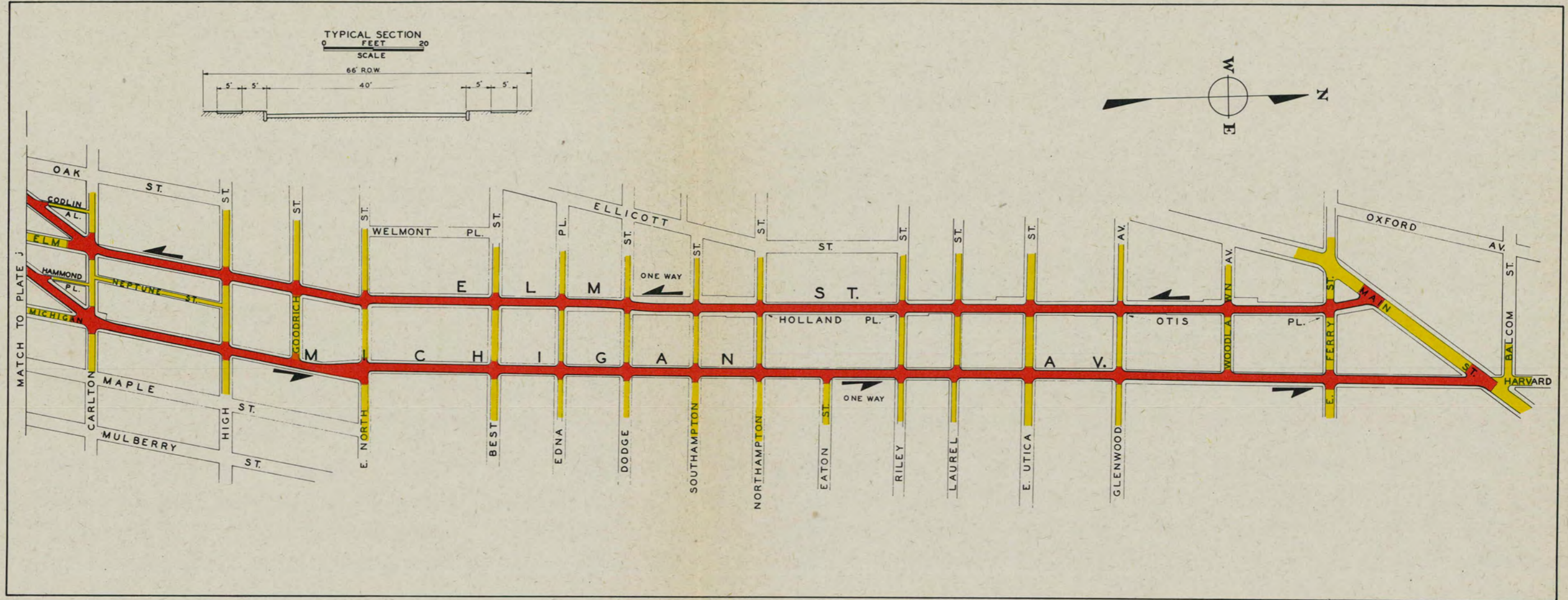
MAY 1946



PROPOSED ELM-OAK-MICHIGAN IMPROVEMENT  
 NIAGARA THRUWAY TO MAIN STREET

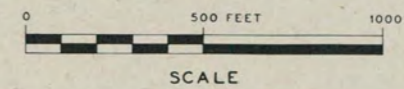
PREPARED BY  
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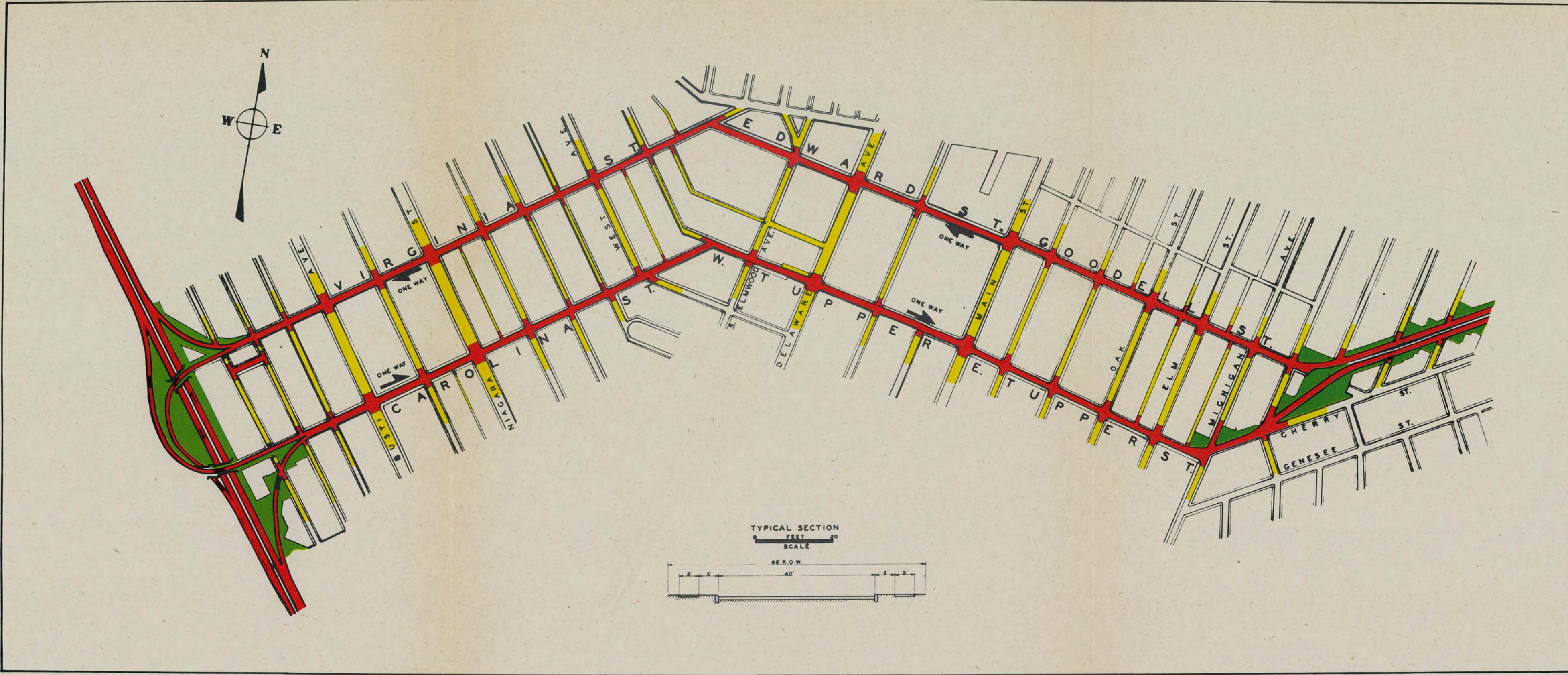


PROPOSED ELM-OAK-MICHIGAN IMPROVEMENT  
 NIAGARA THRUWAY TO MAIN STREET

PREPARED BY  
 STATE OF NEW YORK  
 DEPARTMENT OF PUBLIC WORKS  
 THE BUFFALO URBAN AREA REPORT



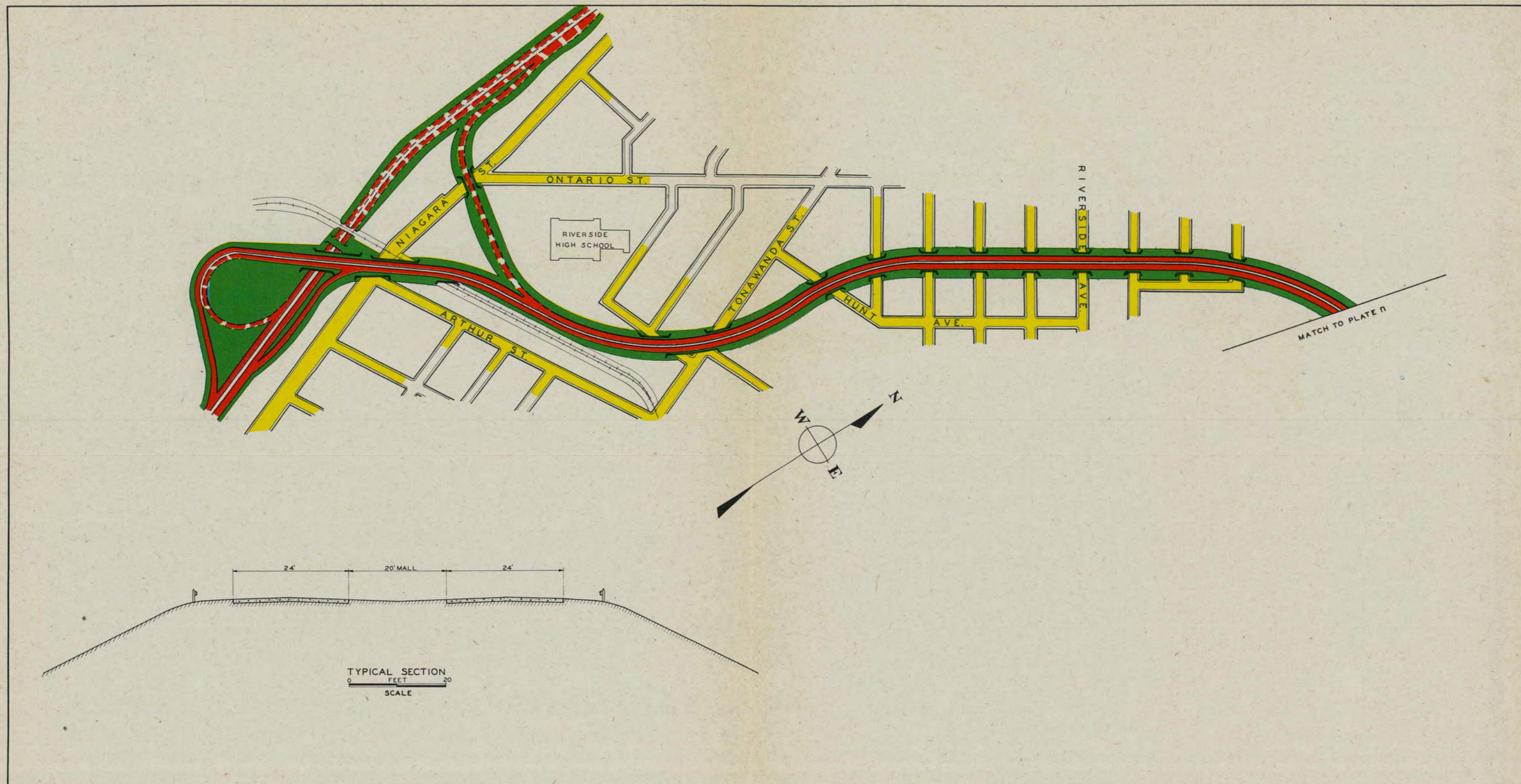
MAY 1946



**PROPOSED VIRGINIA - CAROLINA IMPROVEMENT  
FROM NIAGARA THRUWAY TO CHERRY ST.**

PREPARED BY  
STATE OF NEW YORK  
DEPARTMENT OF PUBLIC WORKS  
THE BUFFALO URBAN AREA REPORT

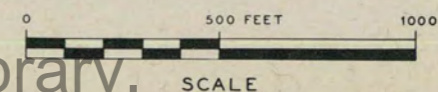




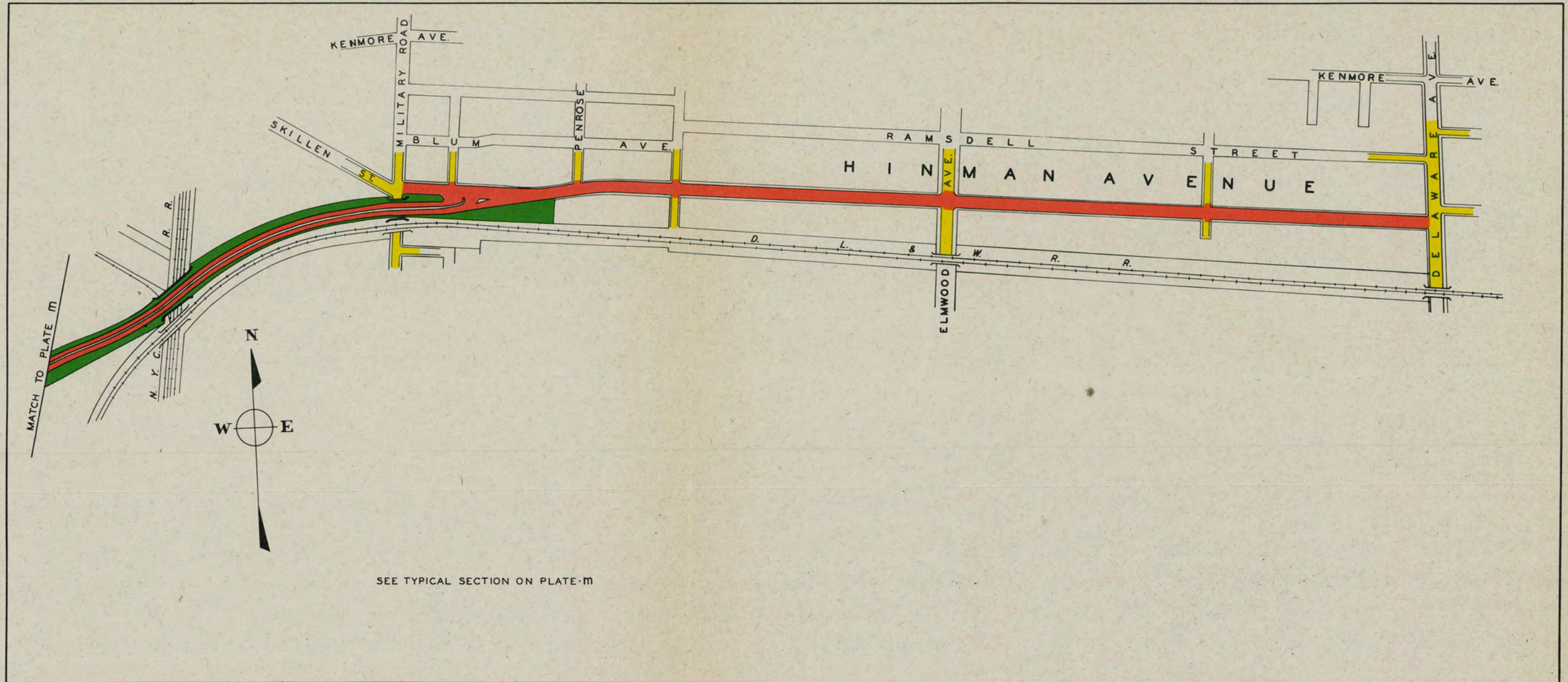
PROPOSED EXTENSION OF HINMAN AVE.  
FROM PENROSE ST. TO NIAGARA THRUWAY

PREPARED BY  
STATE OF NEW YORK  
DEPARTMENT OF PUBLIC WORKS  
THE BUFFALO URBAN AREA REPORT

MAY 1946



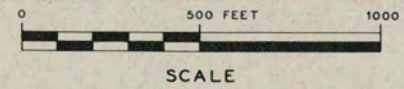




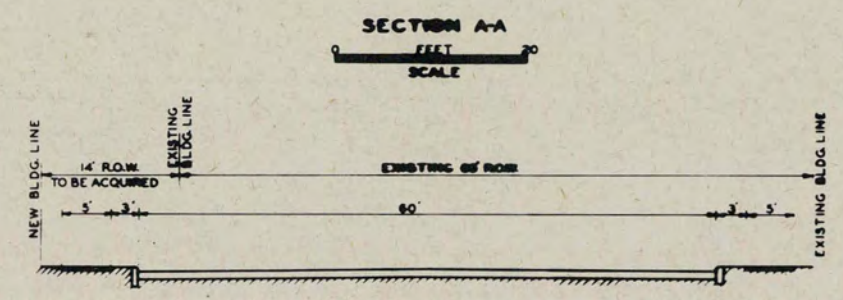
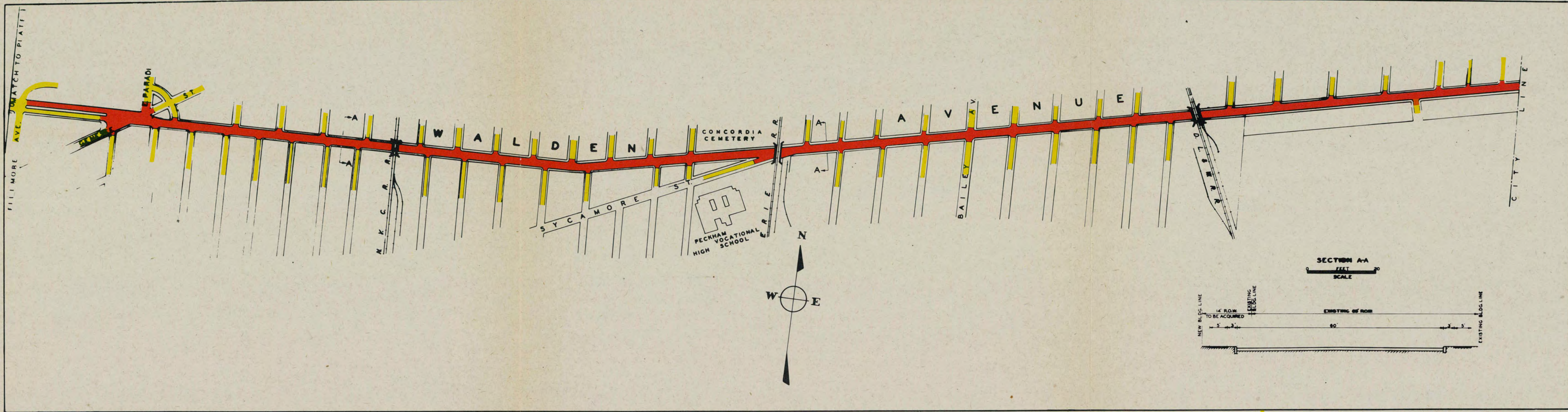
SEE TYPICAL SECTION ON PLATE-M

PROPOSED EXTENSION OF HINMAN AVE.  
 FROM PENROSE ST. TO NIAGARA THRUWAY

PREPARED BY  
 STATE OF NEW YORK  
 DEPARTMENT OF PUBLIC WORKS  
 THE BUFFALO URBAN AREA REPORT

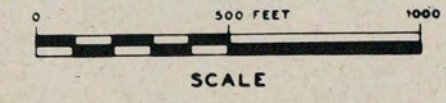


MAY 1946



**PROPOSED WALDEN AVE. IMPROVEMENT  
FROM GENESEE ST. TO CITY LINE**

PREPARED BY  
STATE OF NEW YORK  
DEPARTMENT OF PUBLIC WORKS  
THE BUFFALO URBAN AREA REPORT



MAY 1946

A P P E N D I X

## ARTICLE XII-B

## STATE ARTERIAL HIGHWAYS PASSING THROUGH CITIES

*Section 349-b. Declaration of policy.*

*349-c. Design, construction and payment of costs.*

*349-b Declaration of policy.* The modernization and the construction of arterial highways which are to pass through cities, will contribute greatly to post-war reemployment and to the stimulation of industrial recovery. The resources and the technical skills that are available to the state for these purposes should be used for the benefit of the cities upon the principle that the construction of such arterial highways is a matter of state concern. However, it is the manifest intention of the state to recognize and to preserve the powers or rights heretofore conferred upon or delegated to any city to regulate the property, affairs or government thereof, in the modernization and the construction of such arterial highways. The integration of such arterial highways in the system of state highways throughout the state contemplates an expenditure of public funds to pay the costs that are attendant upon the fulfillment of a program of the work of modernization and construction as herein mentioned, as well as of the maintenance of such public ways. It is hereby declared to be the purpose of this act to initiate the procedure that is prerequisite to any project of the magnitude herein provided, to the end that orderly progress and equitable distribution of effort and moneys may be observed in the administration of this article, and, from time to time,

when expressly authorized by the legislature, any section of such arterial highways may be constituted, constructed, reconstructed, improved and maintained as a part of the state highway system.

*349-c. Design, construction, and payment of costs.*

1. Notwithstanding the provisions of any general, special or local law, the superintendent of public works is authorized and empowered to prepare designs, plans, specifications and estimates for the construction, reconstruction or improvement (1) of any extension or continuation of any highway or route which is now or which shall hereafter be authorized by sections three hundred forty and three hundred forty-one of this chapter, upon any public street or streets in any city outside of the city of New York, which are now or which shall hereafter be designated in this article, and (2) of any existing or proposed main routes or thoroughfares in the city of New York; all of which are designated in this article. Such designs, plans, specifications and estimates may be prepared (a) by the department of public works; (b) by any city herein named, if the preparation of such designs, plans, specifications and estimates are authorized in advance by the superintendent of public works and then upon such terms and conditions as may be agreed by and between such city and the superintendent of public works; (c), subject to the approval of the director of the budget, by the employment of private engineers or engineering firms; or (d) by a combination of such methods. The superintendent of public works may, in his discretion, provide or direct that there be provided in such designs, plans,

specifications and estimates, such roadside and landscape development, including such sanitary and other facilities as may be deemed reasonably necessary to accommodate the public; provided however that such development is within the bounds of any property acquired for purposes connected with the highway system of the state of New York pursuant to this chapter, and any adjacent publicly owned or controlled recreational areas of limited size and with provision for convenient and safe access thereto by pedestrian and vehicular traffic. All references herein after contained in this article to the construction of facilities and appurtenances of state highways, or to a section or sections of the arterial system, may be deemed to include the development and facilities mentioned in this paragraph.

2. With relation to any city named in this article, but not including the city of New York:

2.1 The superintendent of public works is authorized to provide in such designs, plans, specifications and estimates, for bridges, culverts, drainage, shoulders, gutters, curbs, sidewalks and any other facilities and appurtenances as he may determine.

2.2 The superintendent of public works shall construct, reconstruct or improve such extensions or continuations, including said facilities and appurtenances, in the same manner as other state highways, facilities and appurtenances are constructed, reconstructed and improved pursuant to this chapter. For all the purposes of this section, the jurisdiction of the superintendent of public works shall extend over the entire

property affected by the provisions hereof, as such jurisdiction has been obtained, or as such jurisdiction may hereafter be obtained pursuant to the provisions of this chapter. Such sidewalks, facilities and appurtenances shall be maintained or shall continue to be maintained, as the case may be, by the city in which they are located, or by the agency or unit owning or having control and jurisdiction thereof.

2.3 The governing body of any city named in section three hundred forty-nine-e of this article may apply to the superintendent of public works for a change in such designation of a public street or streets within the boundaries of such city, and the superintendent of public works may grant such application, and in case such application is granted, the additional costs and expenses of the acquisition of property and legal damages caused thereby, and the additional costs and expenses of construction, reconstruction or improvement of the public street or streets as requested in such application shall, pursuant to written agreement, be paid by such city to the state. The monies so required shall be raised by tax or pursuant to the local finance law or in accordance with any local charter or law, as the case may be, and such funds shall be deposited and be subject to requisition in the manner as herein provided in case a greater width or different type of construction is desired by such city.

2.4 A state highway may be constructed or reconstructed through any such city, of such width and type of construction as the superintendent of public works shall deem proper, unless a greater width or different type of construction is desired by such city, in which case the governing body of such city may apply to the

superintendent of public works to provide the width and type of construction desired. The superintendent of public works may grant such application, if he deems the filing of such application to be timely, and the additional cost and expenses of such width and type of construction, or either of them, shall, pursuant to written agreement, be paid by such city to the state. Whenever the superintendent of public works shall have granted such an application, the designs, plans, specifications and estimates of costs, together with an estimate showing the additional costs and expenses to be born by such city, to provide for the greater width or different type of construction or both, shall be submitted to the governing body of such city which, if it approves such designs, plans, specifications and estimate of cost, shall by resolution appropriate funds necessary to provide for the portion of the costs and expenses of construction to be born by such city. Such funds shall, prior to the advertisement for bids for or including the said greater width or different type of construction, be deposited by such city with the state comptroller subject to the draft or requisition of the superintendent of public works, and a certified copy of such resolution shall be filed with the state comptroller and with the superintendent of public works. The monies so required shall be raised by tax or pursuant to the local finance law or in accordance with any local charter or law, as the case may be. Upon the completion of a highway within such city where a portion of the costs and expenses are borne by the city the superintendent of public works shall transmit to the



governing body of such city a statement showing the actual costs and expenses of the additional width or changed construction including a proportionate charge for engineering, and shall notify the city clerk that he will accept the work within twenty days from the date of such notice, unless protest in writing against the acceptance shall be filed by such clerk with the superintendent of public works. In case a protest is filed the superintendent of public works shall hear the same and if it is sustained the superintendent of public works shall delay the acceptance of the highway or section thereof until the same be properly completed. If no protest is filed the highway or section thereof shall at the expiration of the said twenty days be deemed finally completed and accepted on behalf of such city and the state. The provisions of any general or special laws relative to the pavement or improvement of streets and the assessment and payment of the cost thereof shall apply, as far as may be, to such additional construction and the assessment and payment of the cost thereof, except that the provisions of any general or local act affecting the pavement or improvement of streets or avenues in any such city and requiring the owners, or any of the owners, of the frontage on a street to consent to the improvement or pavement thereof, or requiring a hearing to be given to the persons whose premises are subject to assessment, upon the question of doing such paving or making such improvement shall not apply to the portion of the improvement or pavement of a state highway the expense for which is required to be paid by such city to the state.

2.5 Whenever the superintendent of public works deems it necessary to acquire property for the purpose of widening any

such designated street, he shall, before filing the description and the original tracing of any map, or proceeding with the acquisition of such property or the work of construction, reconstruction or improvement, transmit the designs, plans, specifications and estimates of cost for the construction, reconstruction or improvement of the extension or continuation upon said street to the governing body of such city in which such designated street or any portion thereof is located. The governing body of such city, after the receipt of such designs, plans, specifications and estimates of cost, may conduct a public hearing or hearings upon such notice as such governing body shall deem reasonable, but not less than ten days, to the superintendent of public works and to such other party or parties, deemed by said governing body to be interested in the project. In any event and within sixty days or within such other period of time as may be provided by the provisions of the charter of such city, after the receipt of the designs, plans, specifications and estimates of cost, the said governing body shall, by resolution, duly adopted by its members, approve, disapprove or recommend modifications in such designs, plans, specifications and estimates of cost as the public interest shall require. Within ten days after the adoption of the resolution, the clerk of such governing body shall mail a certified copy thereof to the superintendent of public works. The form of the resolution shall be prescribed by the superintendent of public works. In case such governing body shall disapprove the designs, plans, specifications and estimates of cost, without proposing modifications, the superintendent of public works may, in his

discretion, prepare and submit to such governing body for approval other designs, plans, specifications and estimates of cost, for the construction, reconstruction or improvement of the extension or continuation within the bounds of such city or in his discretion he may proceed with the work of construction, reconstruction or improvement within and confined to the existing width of the pavement of said designated street in the affected location. In case such governing body shall disapprove the designs, plans, specifications and estimates of cost, and shall recommend modifications, the superintendent of public works may approve the designs, plans, specifications and estimates of cost, so modified, or recommend other modifications for approval, and said extension or continuation shall be constructed, reconstructed or improved in accordance with such designs, plans, specifications and estimates of cost, as finally approved. When the designs, plans, specifications and estimates of cost for construction, reconstruction or improvement of an extension or continuation as aforesaid have finally been approved as hereunder provided, no resolution thereafter adopted by the governing body of such city shall rescind, annul or modify such prior resolution either directly or indirectly excepting upon the advice and with the consent of the superintendent of public works. Upon the failure or omission of the governing body of any such city to act within the time and manner herein required, the said designs, plans, specifications and estimates of costs shall be deemed to be approved so far as such governing body is concerned.

2.6 Any property which is deemed by the superintendent of public works to be necessary to carry out the provisions of this section, shall be acquired by him pursuant to section thirty of this chapter. The costs and expenses of such acquisition of property and any liability incurred by reason thereof, including legal damages caused by such acquisition and by the work of constructing, reconstructing or improving such extensions and continuations, including legal damages caused by such work of construction, reconstruction or improving, all as provided in section thirty of this chapter, shall be paid by the state in the first instance and shall be borne as follows: fifty per centum by the state and fifty per centum by such city affected thereby.

2.7 Before property shall be so acquired in such city for the purpose of this section, the superintendent of public works shall transmit to the governing body of such city an estimate showing the proportionate costs and expenses of such acquisition as such costs and expenses are specified in section thirty of this chapter, whereupon and within ninety days after the transmittal of said estimate such city shall (a) by resolution, appropriate the funds as shown in said estimate, (b) deposit such funds with the state comptroller subject to the draft or requisition of the superintendent of public works, and (c) file a copy of the resolution with the state comptroller and with the superintendent of public works. Upon the completion of a highway within such city where a portion of the costs and expenses of the acquisition of the property are borne by the city, the superintendent of public works shall transmit to the

governing body of such city a statement showing the actual costs and expenses of such acquisition as hereinbefore mentioned, and shall notify the city clerk of the amount due from or to be returned to the city, as the case may be. Any sum due the state shall be paid by such city within sixty days after the date of the transmittal of said statement and the funds therefor shall be raised by tax or pursuant to the local finance law, or in accordance with any local charter or law, as the case may be.