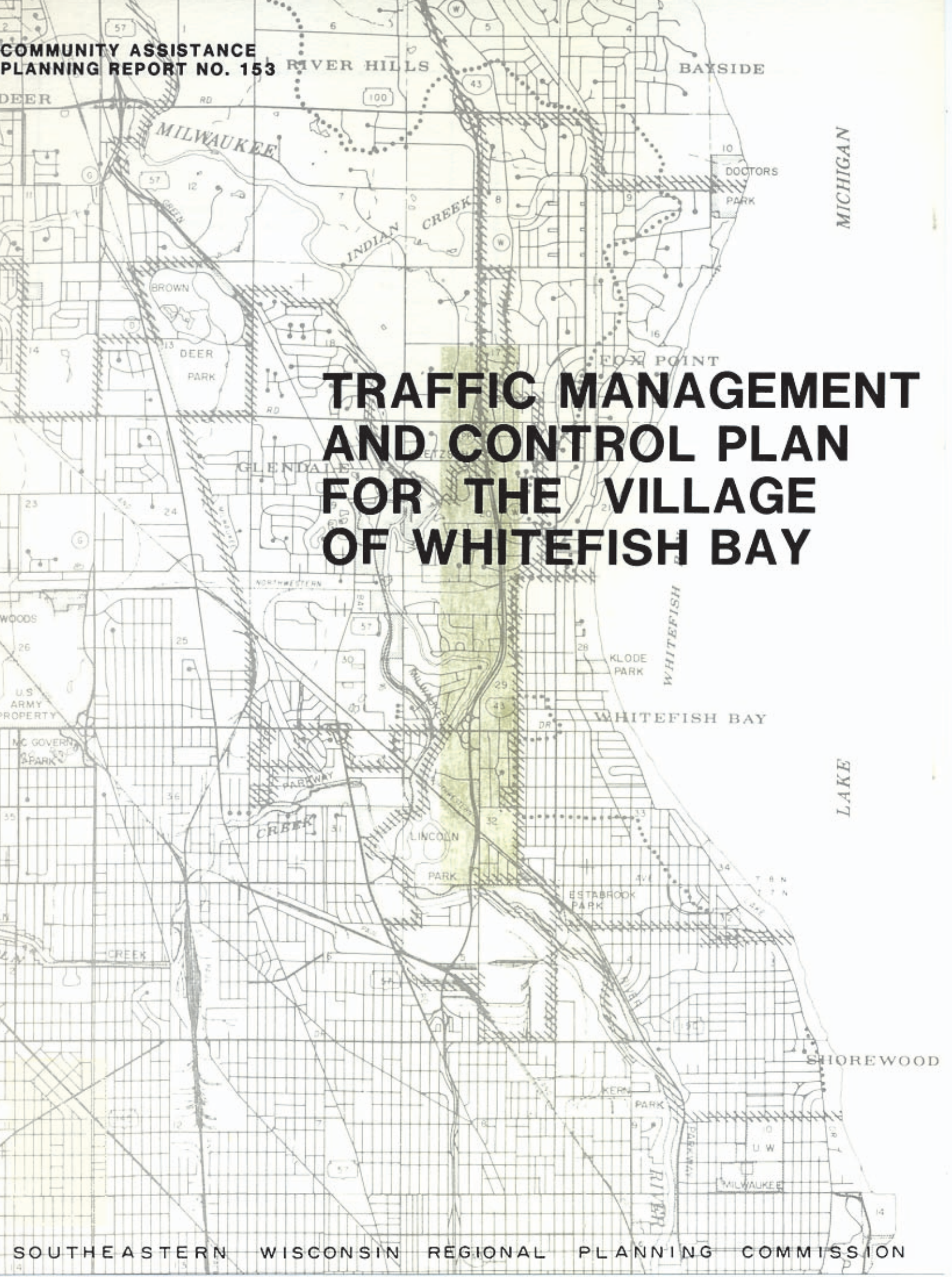
COMMUNITY ASSISTANCE
PLANNING REPORT NO. 153

TRAFFIC MANAGEMENT AND CONTROL PLAN FOR THE VILLAGE OF WHITEFISH BAY



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COMMUNITY ASSISTANCE PLANNING REPORT
NUMBER 153

TRAFFIC MANAGEMENT AND CONTROL PLAN FOR THE VILLAGE OF WHITEFISH BAY

Prepared by the

Southeastern Wisconsin Regional Planning Commission
P. O. Box 1607
Old Courthouse
916 N. East Avenue
Waukesha, Wisconsin 53187-1607

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July 1988

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July 11, 1988

Mr. F. Patrick Matthews, President
and Members of the Board of Trustees
Village of Whitefish Bay
5300 N. Marlborough Drive
Whitefish Bay, Wisconsin 53217

Dear Mr. Matthews:

At the request of the Board of Trustees of the Village of Whitefish Bay, the Regional Planning Commission, in December 1985, undertook a comprehensive study to identify traffic problems existing within the Village and to recommend specific actions to abate those problems. A Citizen Advisory Committee was created by the Village in April 1986 to work with the Commission staff in the development of actions to increase the operating efficiency and safety of the existing arterial street and highway system and reduce through traffic on local residential streets.

The Advisory Committee and Commission staff have now completed the requested study and are pleased to provide to you herewith this report setting forth a recommended traffic management and control plan for the Village of Whitefish Bay. The plan is based upon a careful inventory of the existing street and highway characteristics and operating conditions in the Village; an analysis of those conditions to identify existing traffic problems; consideration of alternative traffic control measures to mitigate the identified problems; and the identification and recommendation for adoption of the best measures from among the alternatives considered. The plan also includes a set of criteria that can be used by village officials to evaluate and address future requests for implementation of traffic control measures on the village street and highway system.

The findings and recommendations of this report are the result of an intensive study by the Citizens Advisory Committee and the Commission staff. The Advisory Committee unanimously recommends the adoption and timely implementation of the plan presented in this report. Such adoption and implementation would, in the opinion of the Committee and the Commission staff, abate existing traffic problems and maintain and enhance the character of the Village as a fine residential community.

This report and plan are respectfully submitted on behalf of the Advisory Committee for your consideration and action. The Advisory Committee and the Commission staff stand ready to meet with the Board of Trustees, should the Board so desire, to discuss the recommendations of the study, and, should the plan be adopted as recommended, to assist the Village in its implementation over time.

Sincerely,

Kurt W. Bauer
Executive Director

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TABLE OF CONTENTS

	Page
Chapter I—INTRODUCTION	1
Study Area	1
Format of Report Presentation	1
Chapter II—EXISTING STREET AND HIGHWAY SYSTEM	5
Introduction	5
Existing Street and Highway System	5
Functional Classification	5
Jurisdictional Classification	8
Other Street and Highway Systems	10
Existing Traffic Control Measures	10
Traffic Signals	10
Intersection Turn Restrictions	10
Speed Limits	15
Summary	15
Chapter III—EXISTING TRAFFIC CONDITIONS	17
Introduction	17
Traffic Volumes	17
Peak-Hour Traffic Volume	17
Existing Arterial Street System Traffic Congestion	17
Traffic Accidents	20
Citizen Perceptions of Traffic Problems	26
Summary	26
Chapter IV—TRAFFIC MANAGEMENT CONTROL CRITERIA	29
Introduction	29
Traffic Management Control Criteria	29
Chapter V—ANALYSIS AND RECOMMENDATIONS	33
Introduction	33
Traffic Problems and Alternative and Recommended Improvements in the Northern Area of the Village	33
E. School Road from N. Santa Monica Boulevard to N. Lake Drive (Problem Location 1)	33
W. Devon Street Intersections with N. Lydell Avenue and N. Bay Ridge Avenue (Problem Locations 2 and 3)	33
E. Devon Street at N. Kent Avenue (Problem Location 4)	41
E. Devon Street at N. Shoreland Avenue (Problem Location 5)	41
N. Lake Drive from E. Belle Avenue to E. School Road (Problem Location 6)	41
E. Monrovia Avenue at N. Bay Ridge Avenue (Problem Location 7)	42
E. Monrovia Avenue at N. Shoreland Avenue (Problem Location 8)	42
N. Bay Ridge Avenue from E. Monrovia Avenue to E. Montclaire Avenue (Problem Location 9)	42
E. Montclaire Avenue from N. Bay Ridge Avenue to N. Lake Drive (Problem Location 10)	42
E. Montclaire Avenue at N. Berkeley Boulevard (Problem Location 11)	43
W. Montclaire Avenue at N. Lydell Avenue (Problem Location 12)	43
E. and W. Belle Avenue from N. Lydell Avenue to N. Santa Monica Boulevard (Problem Location 13)	43
E. Belle Avenue from N. Santa Monica Boulevard to N. Berkeley Boulevard (Problem Location 14)	43
N. Lake Drive from E. Belle Avenue to E. Day Avenue (Problem Location 15)	43
E. Day Avenue from N. Lydell Avenue to N. Santa Monica Boulevard (Problem Location 16)	44
E. Day Avenue from N. Santa Monica Boulevard to N. Lake Drive (Problem Location 17)	44
E. Day Avenue at N. Shore Drive (Problem Location 18)	44
E. Lakeview Avenue from N. Lydell Avenue to N. Lake Drive (Problem Locations 19 and 20)	45
N. Lydell Avenue from W. Lakeview Avenue to W. Silver Spring Drive (Problem Location 21)	45
E. Beaumont Avenue from N. Santa Monica Boulevard to N. Consaul Place (Problem Location 22)	47
E. Beaumont Avenue at N. Consaul Place (Problem Location 23)	47
W. Silver Spring Drive at N. Lydell Avenue (Problem Location 24)	47

Page

E. Silver Spring Drive at N. Bay Ridge Avenue (Problem Location 25) 48
E. Silver Spring Drive at N. Santa Monica Boulevard (Problem Location 26) 48
E. Silver Spring Drive at N. Berkeley Boulevard (Problem Location 27) 49
E. Silver Spring Drive from N. Diversey Boulevard to N. Hollywood Avenue (Problem Location 28) 49
E. Silver Spring Drive at N. Lake Drive and N. Marlborough Drive (Problem Location 29) 49
Through Traffic Problem on Local Streets, Particularly East-West Streets Connecting to Bay Shore Shopping Center 50
Recommendations 67
Traffic Problems and Alternative and Recommended Improvements in the Southern Area of the Village 71
Alley Between N. Hollywood Avenue and N. Marlborough Drive Just South of E. Silver Spring Drive (Problem Location 1) 71
E. Birch Avenue at N. Shoreland Avenue (Problem Location 2) 79
E. Birch Avenue at N. Santa Monica Boulevard (Problem Location 3) 80
E. Birch Avenue at N. Berkeley Boulevard, N. Diversey Boulevard, and N. Hollywood Avenue (Problem Location 4) 80
E. Birch Avenue at N. Idlewild Avenue (Problem Location 5) 80
E. Birch Avenue at N.Danbury Road (Problem Location 6) 80
Alleys in the Area Bounded by E. Birch Avenue, N. Idlewild Avenue, E. Lexington Boulevard, and N. Santa Monica Boulevard (Problem Location 7) 81
E. Fleetwood Place at N. Idlewild Avenue (Problem Location 8) 81
E. Briarwood Place at N. Idlewild Avenue (Problem Location 9) 81
E. Lexington Boulevard at N. Bay Ridge Avenue (Problem Location 10) 81
E. Lexington Boulevard at N. Kent Avenue (Problem Location 11) 81

Page

E. Lexington Boulevard at N. Shoreland Avenue (Problem Location 12) 82
E. Lexington Boulevard at N. Diversey Avenue (Problem Location 13) 82
E. Lexington Boulevard at N. Hollywood Avenue (Problem Location 14) 82
E. Lexington Boulevard at N. Idlewild Avenue (Problem Location 15) 82
E. Sylvan Avenue at N. Idlewild Avenue (Problem Location 16) 82
E. Henry Clay Street from N. Kimbark Place to N. Ardmore Avenue (Problem Location 17) 82
E. Lancaster Avenue at N. Lydell Avenue (Problem Location 18) 83
E. Lancaster Avenue at N. Kent Avenue (Problem Location 19) 83
E. Lancaster Avenue at N. Shoreland Avenue (Problem Location 20) 83
E. Lancaster Avenue at N. Hollywood Avenue (Problem Location 21) 83
E. Lancaster Avenue at N. Woodruff Avenue (Problem Location 22) 83
E. Colfax Place Between N. Woodruff Avenue and N. Marlborough Drive (Problem Location 23) 83
W. Fairmount Avenue at W. Lydell Avenue (Problem Location 24) 84
W. Fairmount Avenue at N. Bay Ridge Avenue (Problem Location 25) 84
W. Fairmount Avenue at N. Kent Avenue (Problem Location 26) 84
W. Fairmount Avenue at N. Shoreland Avenue (Problem Location 27) 84
W. Fairmount Avenue at N. Larkin Street (Problem Location 28) 84
W. Fairmount Avenue at N. Lake Drive and N. Palisades Road (Problem Location 29) 84
W. Chateau Place at N. Lydell Avenue (Problem Location 30) 85
W. Chateau Place at N. Shoreland Avenue (Problem Location 31) 85
W. Chateau Place at N. Berkeley Boulevard (Problem Location 32) 85

Page

W. Chateau Place at N. Woodburn Street (Problem Location 35) 86
E. Hampton Road at N. Marlborough Drive (Problem Location 36) 86
N. Marlborough Drive Between E. Hampton Road and E. Courtland Place (Problem Location 37) 86
E. Courtland Place at N. Sheffield Avenue (Problem Location 38) 87
E. Cumberland Boulevard at N. Cramer Street (Problem Location 39) 87

Page

Summary 88

Chapter VI—SUMMARY AND CONCLUSIONS 95
Introduction 95
Study Area 95
Existing Street and Highway System 95
Existing Traffic Control Measures 96
Existing Traffic Conditions 96
Traffic Management Control Criteria 97
Alternative and Recommended Measures to Abate Identified Traffic Problems 97

LIST OF TABLES

Table — Page

Chapter II

1 Distribution of Street and Highway System Mileage by Functional Distribution in the Village of Whitefish Bay: 1986 8
2 Traffic Signal Operation in the Village of Whitefish Bay: 1986 10

Chapter III

3 Annual Average Weekday Traffic Volumes on Selected Arterial Streets and Highways in the Village of Whitefish Bay: 1970-1986 19
4 Summary of Traffic Problems as Perceived by Citizens Within the Village of Whitefish Bay Comprehensive Traffic Management Study Area: 1986 27

Chapter IV

5 Traffic Management Control Criteria 30

Chapter V

6 Traffic Management Actions Recommended for Implementation at the 29 Traffic Problem Locations Identified to the North of, and Including, E. and W. Silver Spring Drive in the Village of Whitefish Bay 35
7 Evaluation of Alternative Traffic Control Measures to Abate Through Traffic Problems Identified in the Area Bounded by Devon Street, Lake Drive, Silver Spring Drive, and Lydell Avenue in the Village of Whitefish Bay 51
8 Estimated Traffic Impacts of the Alternative Control Measures Considered to Alleviate the Through Traffic Problems Identified in the Village of Whitefish Bay 52
9 Evaluation of Options to the Alternative Control Measures Previously Considered to Abate Through Traffic Problems Identified in the Area Bounded by Devon Street, Lake Drive, Silver Spring Drive, and Lydell Avenue in the Village of Whitefish Bay 63
10 Recommmended Traffic Control Measures on E. and W. Silver Spring Drive in the Village of Whitefish Bay Which May Be Expected to Reduce Through Traffic on Local Streets North of Silver Spring Drive 70

Table Page

11 Traffic Management Actions Recommended for Implementation at the 39 Traffic Problem Locations Identified to the South of E. and W. Silver Spring Drive in the Village of Whitefish Bay 72
12 Recommended Traffic Management Actions and Implementation Priority and Responsibility 89

LIST OF FIGURES

Figure Page

Chapter III

1 Hourly Variation in Annual Average Weekday Traffic on Selected Arterial Streets in the Village of Whitefish Bay: 1986 20

LIST OF MAPS

Map Page

Chapter I

1 Whitefish Bay Traffic Study Area 2
2 Land Use in the Village of Whitefish Bay Study Area 3

Chapter II

3 Arterial Street and Highway System in the Village of Whitefish Bay: 1986 6
4 Functional Classification of Streets in the Village of Whitefish Bay: 1986 7
5 Jurisdictional Classification of Streets in the Village of Whitefish Bay: 1986 9
6 Route System for Emergency Vehicles in the Village of Whitefish Bay: 1986 11
7 Route System for the Milwaukee County Transit System in the Village of Whitefish Bay: 1986 12
8 Location of Traffic Signals, Stop Signs, and Yield Signs in the Village of Whitefish Bay: 1986 13
9 Posted Speed Limits and Turn Prohibition Locations in the Village of Whitefish Bay: 1986 14

Chapter III

10 24-Hour Average Weekday Traffic Volumes on Selected Streets in the Village of Whitefish Bay: 1986 18
11 Number of Traffic Lanes Provided on the Arterial Street and Highway System in the Village of Whitefish Bay: 1986 21
12 Arterial Streets and Highways in the Village of Whitefish Bay Operating Over Design Capacity: 1986 22
13 On-Street Motor Vehicle Accident Locations with Two or More Accidents per Year in the Village of Whitefish Bay: 1983 23
14 On-Street Motor Vehicle Accident Locations with Two or More Accidents per Year in the Village of Whitefish Bay: 1984 24
15 On-Street Motor Vehicle Accident Locations with Two or More Accidents per Year in the Village of Whitefish Bay: 1985 25

Map | Page

16 Citizen-Perceived Traffic Problem Locations in the Village of Whitefish Bay Comprehensive Traffic Management Study Area: 1986 28

Chapter V

17 Location of the Traffic Problems Identified in the Northern Portion of the Village of Whitefish Bay: 1987 34
18 Proposed Modifications to Bus Routes Currently Traversing N. Lydell Avenue Between W. Lakeview Avenue and W. Silver Spring Drive 46
19 Traffic Control Measures for Systemwide Traffic Problems Identified in the Village of Whitefish Bay: Alternative 1 53
20 Traffic Control Measures for Systemwide Traffic Problems Identified in the Village of Whitefish Bay: Alternative 2 54
21 Traffic Control Measures for Systemwide Traffic Problems Identified in the Village of Whitefish Bay: Alternative 3 55
22 Traffic Control Measures for Systemwide Traffic Problems Identified in the Village of Whitefish Bay: Alternative 3, Option 1 56
23 Traffic Control Measures for Systemwide Traffic Problems Identified in the Village of Whitefish Bay: Alternative 3, Option 2 57
24 Traffic Control Measures for Systemwide Traffic Problems Identified in the Village of Whitefish Bay: Alternative 3, Option 3 58
25 Traffic Control Measures for Systemwide Traffic Problems Identified in the Village of Whitefish Bay: Alternative 3, Option 4 59
26 Traffic Control Measures for Systemwide Traffic Problems Identified in the Village of Whitefish Bay: Alternative 3, Option 5 60
27 Traffic Control Measures for Systemwide Traffic Problems Identified in the Village of Whitefish Bay: Alternative 3, Option 6 61
28 Traffic Control Measures for Systemwide Traffic Problems Identified in the Village of Whitefish Bay: Alternative 3, Option 7 62
29 Examples of Circuitous Travel That May Result If a System of Traffic Diverters is Constructed 66
30 Traffic Control Measures for Systemwide Traffic Problems Identified in the Village of Whitefish Bay: Alternative 4 68
31 Traffic Control Measures for Systemwide Traffic Problems Identified in the Village of Whitefish Bay: Alternative 5 69
32 Location of the Traffic Problems Identified in the Southern Portion of the Village of Whitefish Bay: 1987 71

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Chapter I

INTRODUCTION

Over the past several years, Village of Whitefish Bay officials and residents have become increasingly concerned over the traffic, safety, and operating conditions on the Village's street system. In particular, there has been a growing concern about through traffic on the land access streets in the residential neighborhoods of the Village, and with respect to the need to rationally guide the application of traffic control devices.

To help abate these problems, village officials on December 5, 1985, requested the Southeastern Wisconsin Regional Planning Commission to conduct a comprehensive traffic management study of the Village. The study was intended to identify the traffic problems which exist in the Village and recommend specific actions to abate those problems. The study was also intended to establish guidelines to assist village officials in considering future requests for traffic control devices and regulations.

On April 23, 1986, the Village Board appointed a nine-member Traffic Study Committee to guide the Regional Planning Commission staff in the conduct of the traffic study. The membership of that Study Committee is listed on the inside front cover of this report.

STUDY AREA

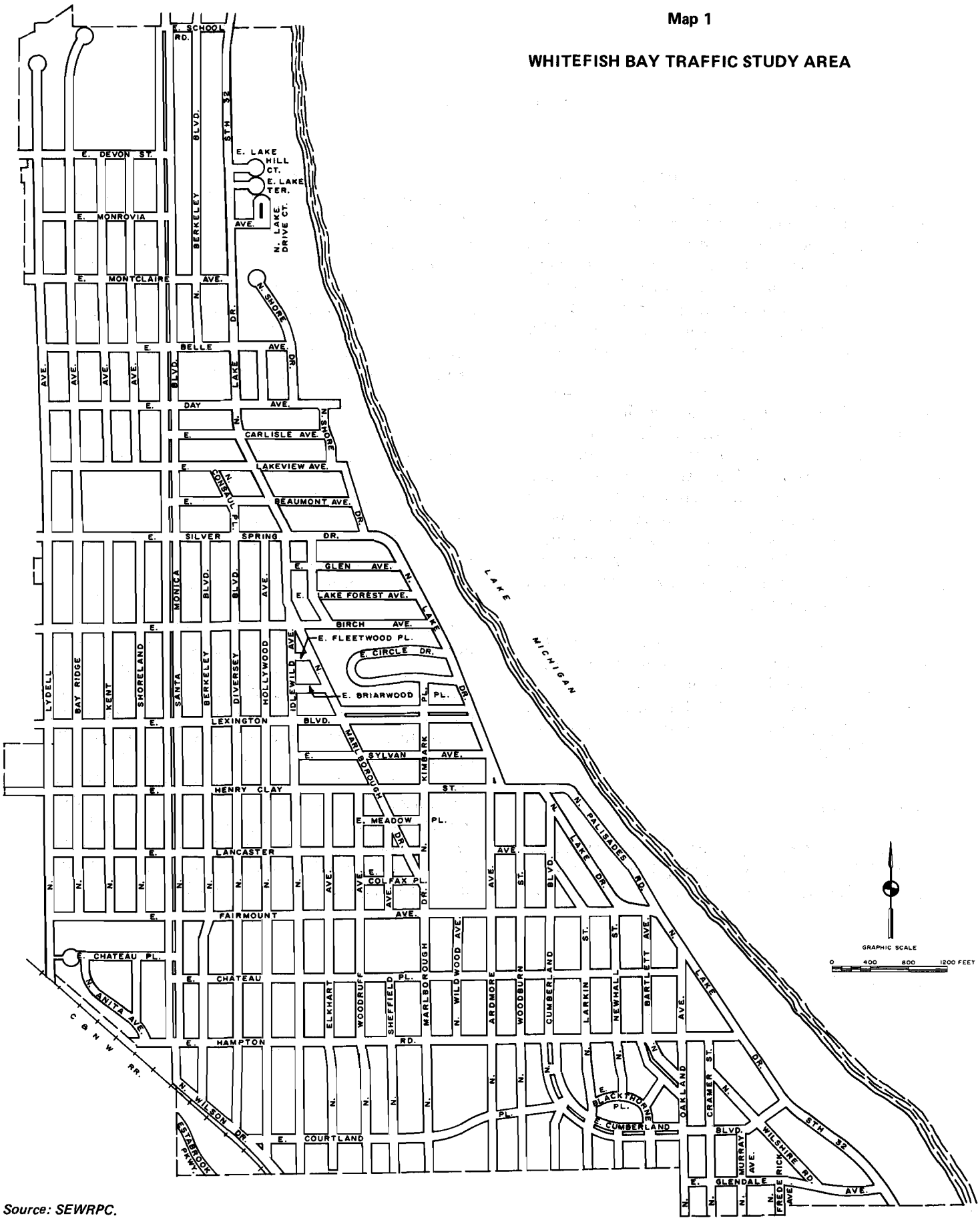
The Village of Whitefish Bay is located in northeastern Milwaukee County along the Lake Michigan shoreline approximately five miles north of the City of Milwaukee central business district. The geographic area covered in this study includes all the area within the corporate limits of the Village of Whitefish Bay, as shown on Map 1. The central business district of the Village is situated along E. Silver Spring Drive between N. Lydell Avenue and N. Lake Drive. Land use in the Village of Whitefish Bay is predominantly residential, with commercial development located primarily along E. Silver Spring Drive, as shown on Map 2.

FORMAT OF REPORT PRESENTATION

This report consists of six chapters. Chapter II, "Existing Street and Highway System," describes the existing street and highway system in the Village, including the traffic control currently in operation. Chapter III, "Existing Traffic Conditions," describes the operating characteristics of the existing street and highway system in the Village. Chapter IV, "Traffic Management Control Criteria," defines the criteria recommended to be used to identify traffic problems, to evaluate alternative traffic management actions, and to serve as guidelines for addressing future requests for traffic control measures. Chapter V, "Analysis and Recommendations," describes the traffic problems identified, evaluates alternative traffic control actions to abate the traffic problems, and identifies recommended actions. Chapter VI, "Summary and Conclusions," provides a summary of the study findings and recommendations.

Map 1

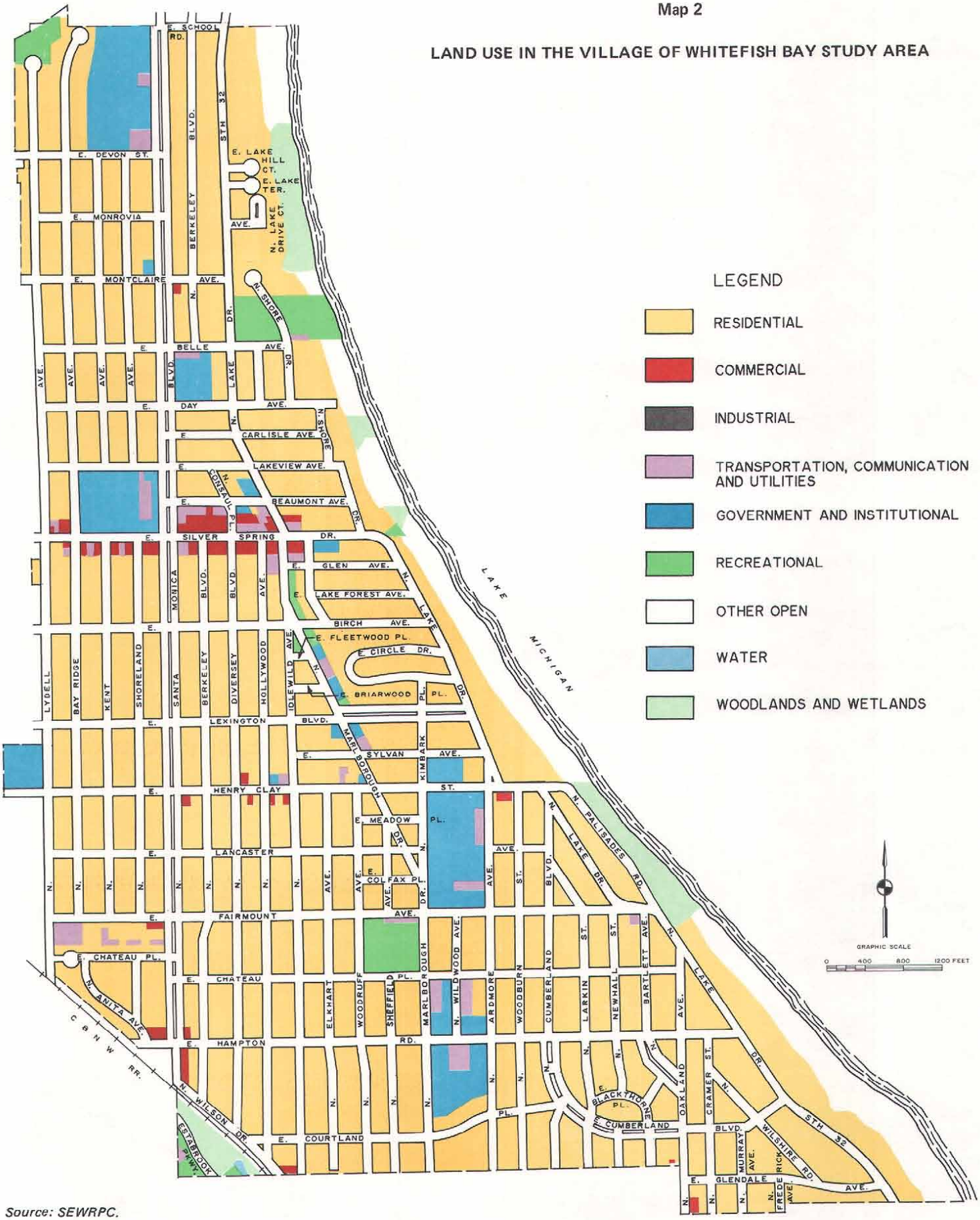
WHITEFISH BAY TRAFFIC STUDY AREA



Source: SEWRPC.

Map 2

LAND USE IN THE VILLAGE OF WHITEFISH BAY STUDY AREA



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Chapter II

EXISTING STREET AND HIGHWAY SYSTEM

INTRODUCTION

This chapter presents a description of the existing street and highway system of the Village. The information presented includes the functional and jurisdiction classification of each segment of the street system, and the existing traffic control measures in operation on that street system.

EXISTING STREET AND HIGHWAY SYSTEM

Functional Classification

The street and highway system of a community must serve several important functions, including: providing for the free movement of through vehicular traffic; providing for access of vehicular traffic to abutting land uses; providing routes for pedestrian and bicycle traffic; and serving as the location for utilities and stormwater drainage facilities.

Because two of these functions—traffic movement and land access—are basically incompatible, street and highway system design must be based upon a functional grouping of streets and highways. The individual facilities constituting the total street and highway system of a community may be classified on the basis of the primary function served, ranging from providing a high degree of travel mobility while providing limited access to adjacent land uses to providing a low degree of travel mobility while providing a high degree of access to adjacent land uses. At least three functional classifications of streets and highways should be recognized: 1) arterial streets; 2) collector streets; and 3) land access streets.

Arterials are defined as streets and highways which are intended to serve the through movement of fast and heavy traffic, providing transportation service between major subareas of an urban area or through the area. Together, the arterials should form an integrated, areawide system, located and designed to properly carry the imposed traffic loadings. Access to abutting property may be a secondary function of some types of arterial streets and highways, but it should always be subordinate to the primary function of traffic movement.

Collector streets are defined as streets and highways which are intended to serve primarily as connections between the arterial system and the land access street system. In addition to collecting and distributing traffic from and to the arterial streets, the collector streets usually provide a secondary function of providing access to abutting property.

Land access streets are defined as streets and highways which are intended to serve primarily as a means of access to abutting properties, principally serving the residential areas of a community.

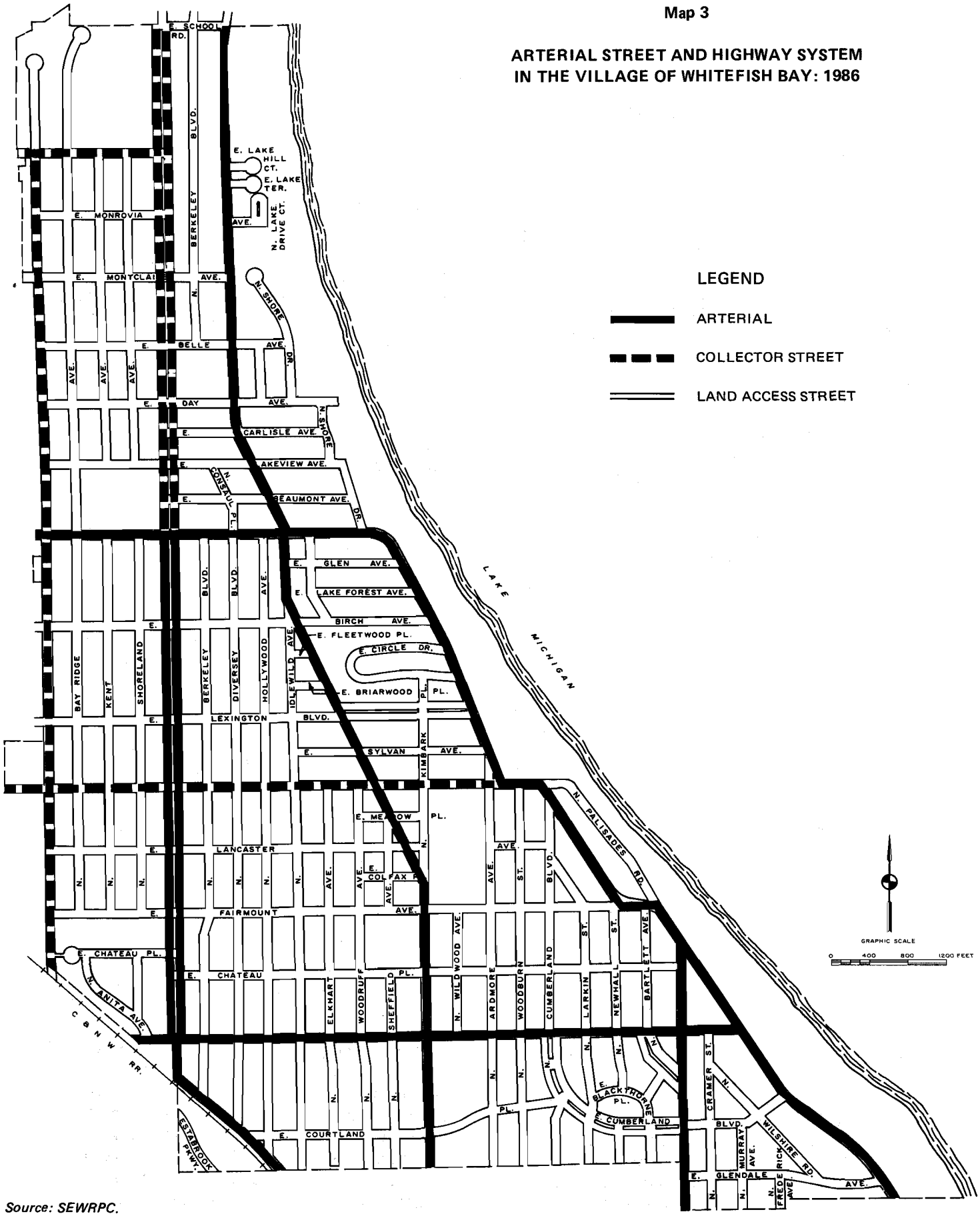
The arterial system for the Village of Whitefish Bay identified by the Regional Planning Commission through application of the foregoing functional classification concepts is shown on Map 3. This identification involved consideration of the existing and proposed land uses to be served, facility design and spacing, current and probable future traffic volumes and trip lengths, and relation to other areawide arterials in adjacent communities.

The Wisconsin Department of Transportation has adopted a national highway classification system developed by the U. S. Department of Transportation, Federal Highway Administration, which, based primarily on existing traffic volumes, functionally classifies each street and highway into one of five major types: principal arterial, minor arterial, major collector, minor collector, and local. This classification system, as shown on Map 4, has been used by the Wisconsin Department of Transportation for the annual allocation of highway aid monies to the Village of Whitefish Bay.

The relationship between the functional classification system developed by the Regional Planning Commission which classifies each street and highway according to the function which should be served, and the classification system used by the Wisconsin Department of Transportation which classifies each street and highway according to the function currently served, can be understood by comparing Maps 3 and 4. Important differences

Map 3

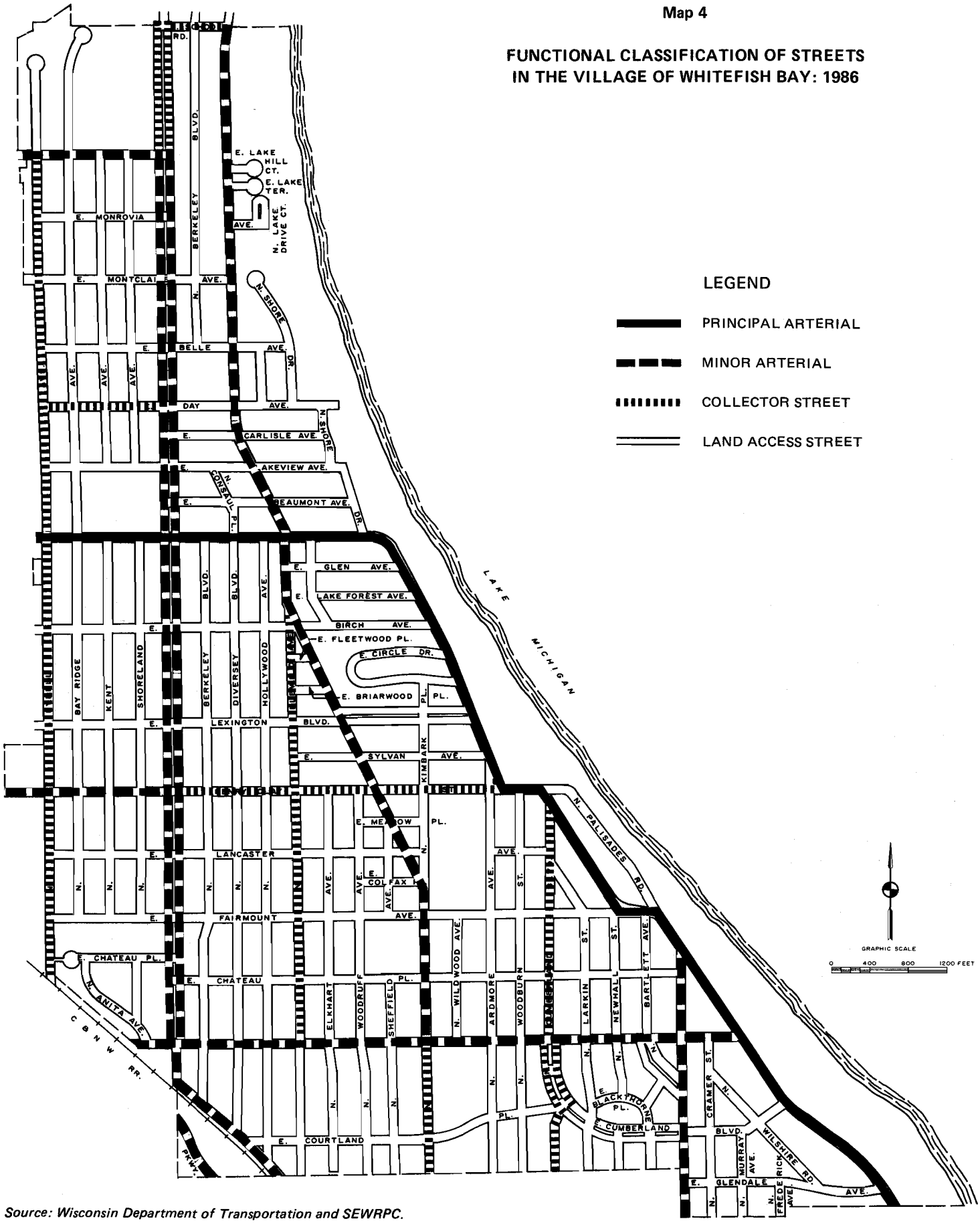
ARTERIAL STREET AND HIGHWAY SYSTEM IN THE VILLAGE OF WHITEFISH BAY: 1986



Source: SEWRPC.

Map 4

FUNCTIONAL CLASSIFICATION OF STREETS IN THE VILLAGE OF WHITEFISH BAY: 1986



Source: Wisconsin Department of Transportation and SEWRPC.

between these two classification systems in the Village include: 1) N. Cumberland Boulevard between N. Morris Boulevard and N. Lake Drive is classified as a land access street by the Commission and as a collector by the Wisconsin Department of Transportation; 2) E. Day Avenue between the village western corporate limits and N. Santa Monica Boulevard is classified as a land access street by the Commission and as a collector by the Wisconsin Department of Transportation; 3) E. Devon Street between the village western corporate limits and N. Santa Monica Boulevard is classified as a collector by the Commission and as a minor arterial by the Wisconsin Department of Transportation; 4) E. Henry Clay Street between the village western corporate limits and N. Santa Monica Boulevard is classified as a collector by the Commission and as a minor arterial by the Wisconsin Department of Transportation; 5) N. Idlewild Avenue between E. Hampton Road and N. Marlborough Drive is classified as a land access street by the Commission and as a collector by the Wisconsin Department of Transportation; 6) N. Marlborough Drive between the village southern corporate limits and E. Hampton Road is classified as an arterial by the Commission and as a collector by the Wisconsin Department of Transportation; 7) N. Morris Boulevard between the village southern corporate limits and N. Cumberland Boulevard is classified as a land access street by the Commission and as a collector by the Wisconsin Department of Transportation; 8) N. Santa Monica Boulevard between E. Silver Spring Drive and E. Devon Street is classified as a collector by the Commission and as a minor arterial by the Wisconsin Department of Transportation; and 9) E. School Road between N. Santa Monica Boulevard and N. Lake Drive is classified as a land access street by the Commission and as a collector by the Wisconsin Department of Transportation. The Department's classifications reflect poor municipal planning practice—particularly in the classification of E. Henry Clay Street between N. Lydell Avenue and N. Santa Monica Boulevard as an arterial, and the classification of E. Day Street between N. Lydell Avenue and N. Santa Monica Boulevard as a collector.

Table 1 indicates the distribution of the street and highway system mileage in the Village of Whitefish Bay according to functional classification, as idenified by the Regional Planning Commission and the Wisconsin Department of Transportation.

Table 1

DISTRIBUTION OF STREET AND HIGHWAY SYSTEM MILEAGE BY FUNCTIONAL DISTRIBUTION IN THE VILLAGE OF WHITEFISH BAY: 1986

Classification	Southeastern Wisconsin Regional Planning Commission According to Function		Wisconsin Department of Transportation Classification for Aid Allocation Purposes	
	Miles	Percent	Miles	Percent
Arterial	7.67	18.5	8.85	21.3
Collector	3.14	7.6	4.01	9.6
Land Access	30.75	73.9	28.70	60.1
Total	41.56	100.0	41.56	100.0

Source: Wisconsin Department of Transportation and SEWRPC.

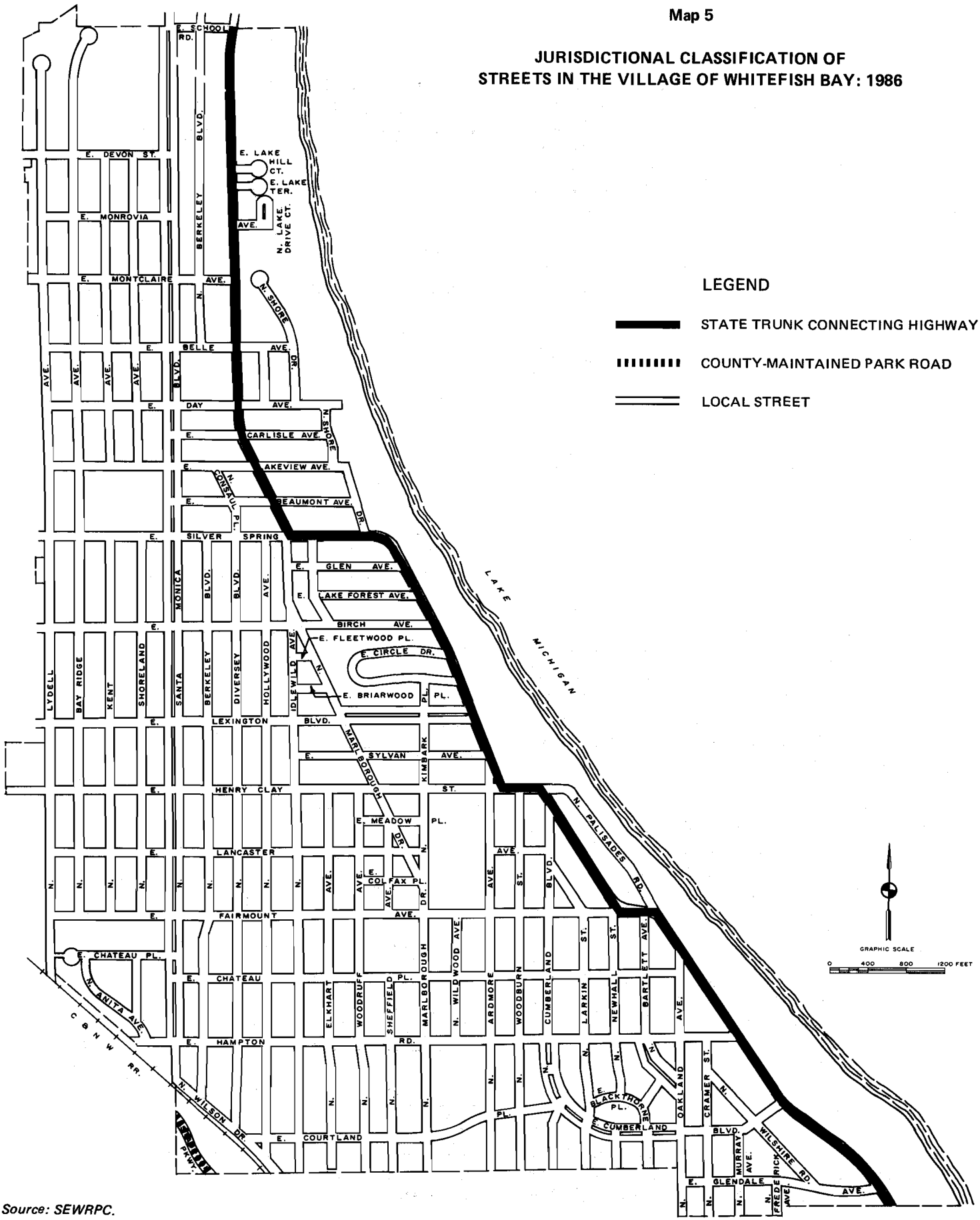
Jurisdictional Classification

Streets and highways may also be classified according to jurisdiction. Jurisdictional classification establishes which level of government—state, county, or local—has responsibility for the design, construction, maintenance, and operation of each segment of street and highway within a community. Arterial facilities may therefore be considered to be one of three types: state trunk highways, county trunk highways, or local trunk highways. A subcategory of state trunk highway within the corporate limits of a city or village is the connecting highway—which is a state highway marked, signed , and routed over a local street—providing for route continuity of the state trunk highway through the municipality. The city or village is responsible for the maintenance of connecting highways, while the State is responsible for construction and operation. The approval of the Wisconsin Department of Transportation is required before any action may be taken by the Village which would substantially alter the use or capacity of a connecting highway. Actions requiring approval include prohibiting turning movements, modifying traffic control devices, and changing intersection geometrics.

Map 5 shows the jurisdictional classification of the streets and highways in the Village of Whitefish Bay. Of the total 41.56 miles of streets and highways in the Village, 2.96 miles, or 7.1 percent, are classified as connecting highways; 0.11 mile, or 0.3 percent, is under county jurisdiction; and 38.49 miles, or 92.6 percent, are classified as local streets and highways.

Map 5

JURISDICTIONAL CLASSIFICATION OF STREETS IN THE VILLAGE OF WHITEFISH BAY: 1986



Source: SEWRPC.

Other Street and Highway Systems

Another type of street classification system in the Village is the emergency route system used by the fire and police emergency vehicles garaged at the Village Hall and fire station, as shown on Map 6. It should be noted that emergency vehicle routes depart from the arterial and collector street system and use the land access street system along the stretch of E. Silver Spring Drive between N. Lake Drive and the village western corporate limits. The two land access streets on the emergency vehicle route system are immediately north and south of E. Silver Spring Drive—E. Lakeview Avenue to the north and E. Birch Avenue to the south.

Yet another type of street classification system in the Village is the Milwaukee County Transit System bus routes, as shown on Map 7. The bus routes are properly located over arterial streets with two exceptions: N. Lydell Avenue between W. Silver Spring Drive and W. Lakeview Avenue, and N. Santa Monica Boulevard between E. Silver Spring Drive and the village northern corporate limits.

EXISTING TRAFFIC CONTROL MEASURES

Traffic control measures have a direct effect on the capacity, operating characteristics, and safety of a roadway facility. The principal traffic control measures that should be inventoried as part of any traffic management planning effort include traffic signals, stop signs and yield signs, school crossing protection devices, turn prohibitions, and posted speed limits.

Traffic Signals

In 1986 there were eight traffic signals in operation within the Village of Whitefish Bay. Table 2 indicates the location, phasing, timing, and total cycle length for each of these signals. These traffic signal cycle lengths vary between 60 and 100 seconds. In addition to these signals, the Village makes extensive use of stop signs. Map 8 shows the location of the eight existing traffic signals, 310 "Stop" signs, and 27 "Yield" signs in the Village of Whitefish Bay.

Intersection Turn Restrictions

As shown on Map 9, left turns are prohibited at four selected intersections in the Village to control traffic conflicts and to discourage through traffic on residential streets. These turn prohibitions are located along N. Lake Drive between E. Day

Table 2

TRAFFIC SIGNAL OPERATION IN THE VILLAGE OF WHITEFISH BAY: 1986

Phase	Intersection Time (seconds)		
	W. Silver Spring Drive		
	Eastbound	Westbound	N. Lydell Avenue
Green	34.3	31.5	18.2
Yellow	4.9	4.9	4.9
Red	24.5	33.6	46.9
Leading Left-Turn Arrow	6.3	--	--
Total Cycle	70.0	70.0	70.0

Phase	Intersection Time (seconds)	
	W. Silver Spring Drive	N. Bay Ridge Avenue
Green	32.9	25.9
Yellow	4.9	4.9
Red	32.2	39.2
Total Cycle	70.0	70.0

Phase	Intersection Time (seconds)		
	E. Silver Spring Drive		N. Santa Monica Boulevard
	Eastbound	Westbound	
Green	40.8	32.0	28.8
Yellow	5.6	5.6	4.8
Red	33.6	42.4	46.4
Leading Left-Turn Arrow	7.2	--	--
Total Cycle	80.0	80.0	80.0

Phase	Intersection Time (seconds)			
	E. Silver Spring Drive		N. Lake Drive and N. Marlborough Drive	
	Eastbound	Westbound	Northbound	Southbound
Green	19.0	19.0	22.0	41.0
Yellow	6.0	6.0	6.0	6.0
Red	75.0	75.0	72.0	53.0
Lagging Right Turn	--	41.0	--	--
Yellow	--	6.0	--	--
Total Cycle	100.0	100.0	100.0	100.0

Phase	Intersection Time (seconds)	
	E. Henry Clay Street	N. Santa Monica Boulevard
Green	30.4	28.4
Yellow	4.6	4.6
Red	35.0	37.0
Total Cycle	70.0	70.0

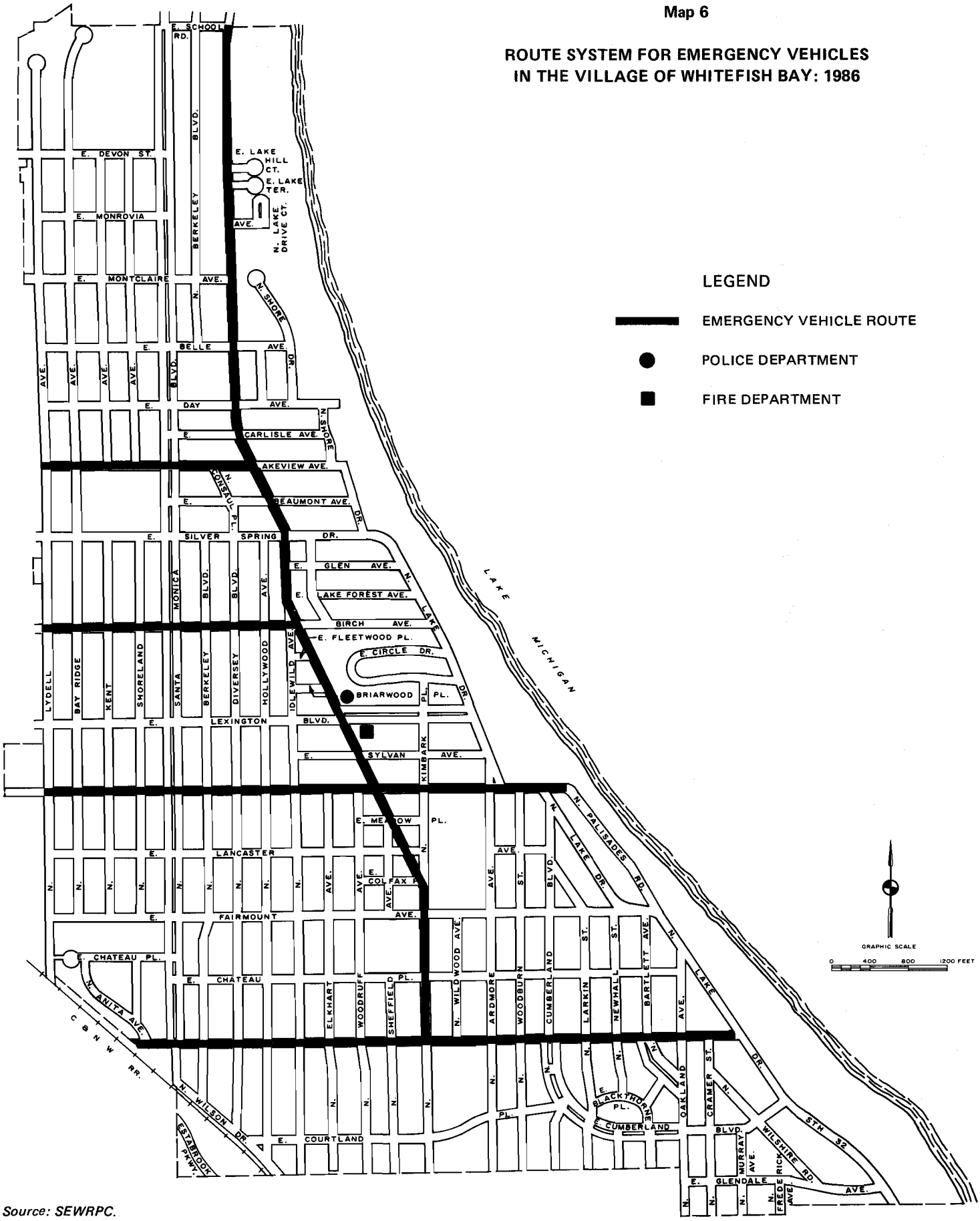
Phase	Intersection Time (seconds)			
	E. Hampton Road		N. Santa Monica Boulevard	
	Eastbound	Westbound	Northbound	Southbound
Green	29.4	22.4	29.4	22.4
Yellow	4.2	4.2	4.2	4.2
Red	36.4	43.4	36.4	43.4
Leading Left-Turn Arrow	7.0	--	7.0	--
Total Cycle	70.0	70.0	70.0	70.0

Phase	Intersection Time (seconds)	
	E. Henry Clay Street	N. Marlborough Drive
Green	25.0	26.0
Yellow	4.5	4.5
Red	30.5	29.5
Total Cycle	60.0	60.0

Source: SEWRPC.

Map 6

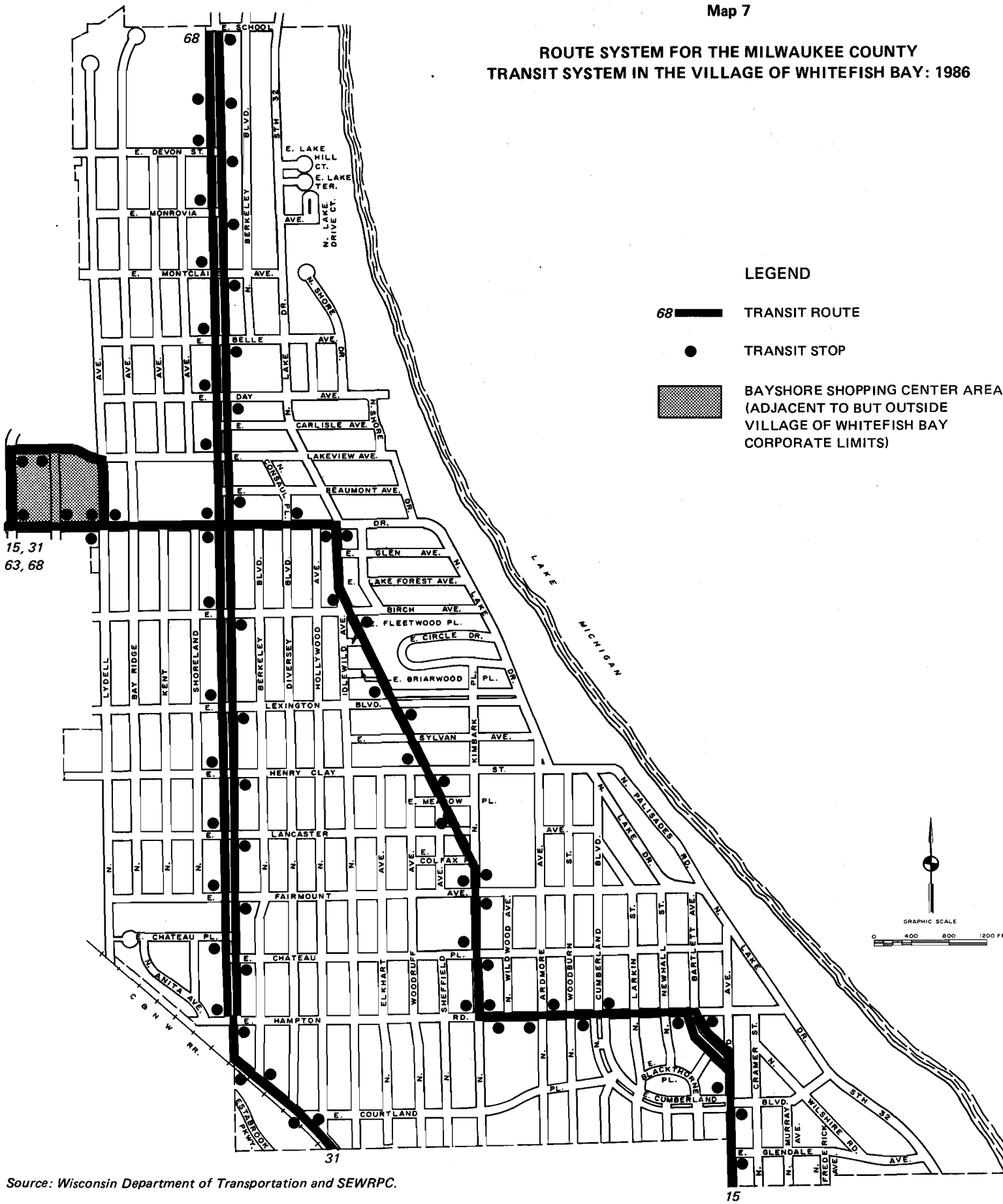
ROUTE SYSTEM FOR EMERGENCY VEHICLES IN THE VILLAGE OF WHITEFISH BAY: 1986



Source: SEWRPC.

Map 7

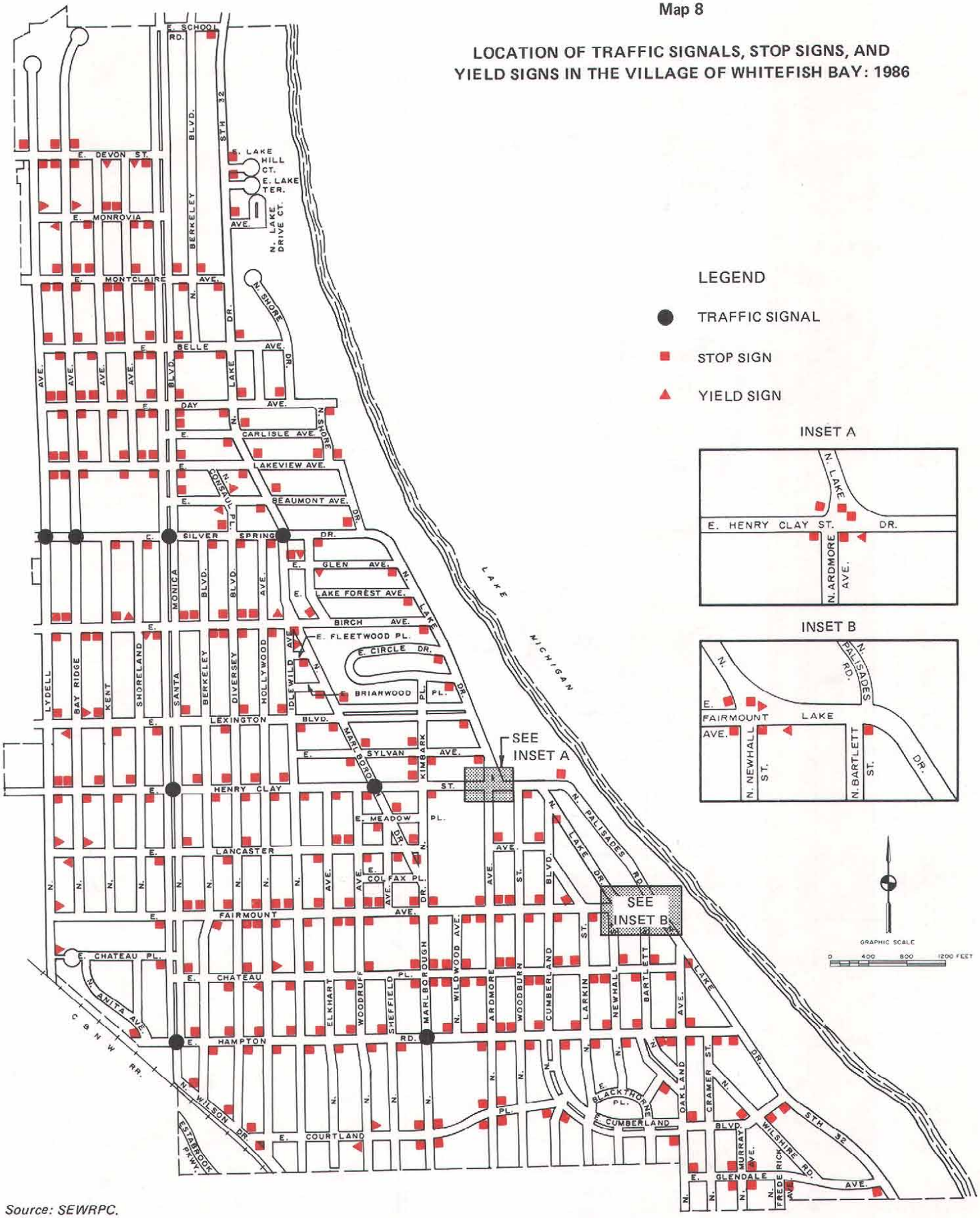
ROUTE SYSTEM FOR THE MILWAUKEE COUNTY TRANSIT SYSTEM IN THE VILLAGE OF WHITEFISH BAY: 1986



Source: Wisconsin Department of Transportation and SEWRPC.

Map 8

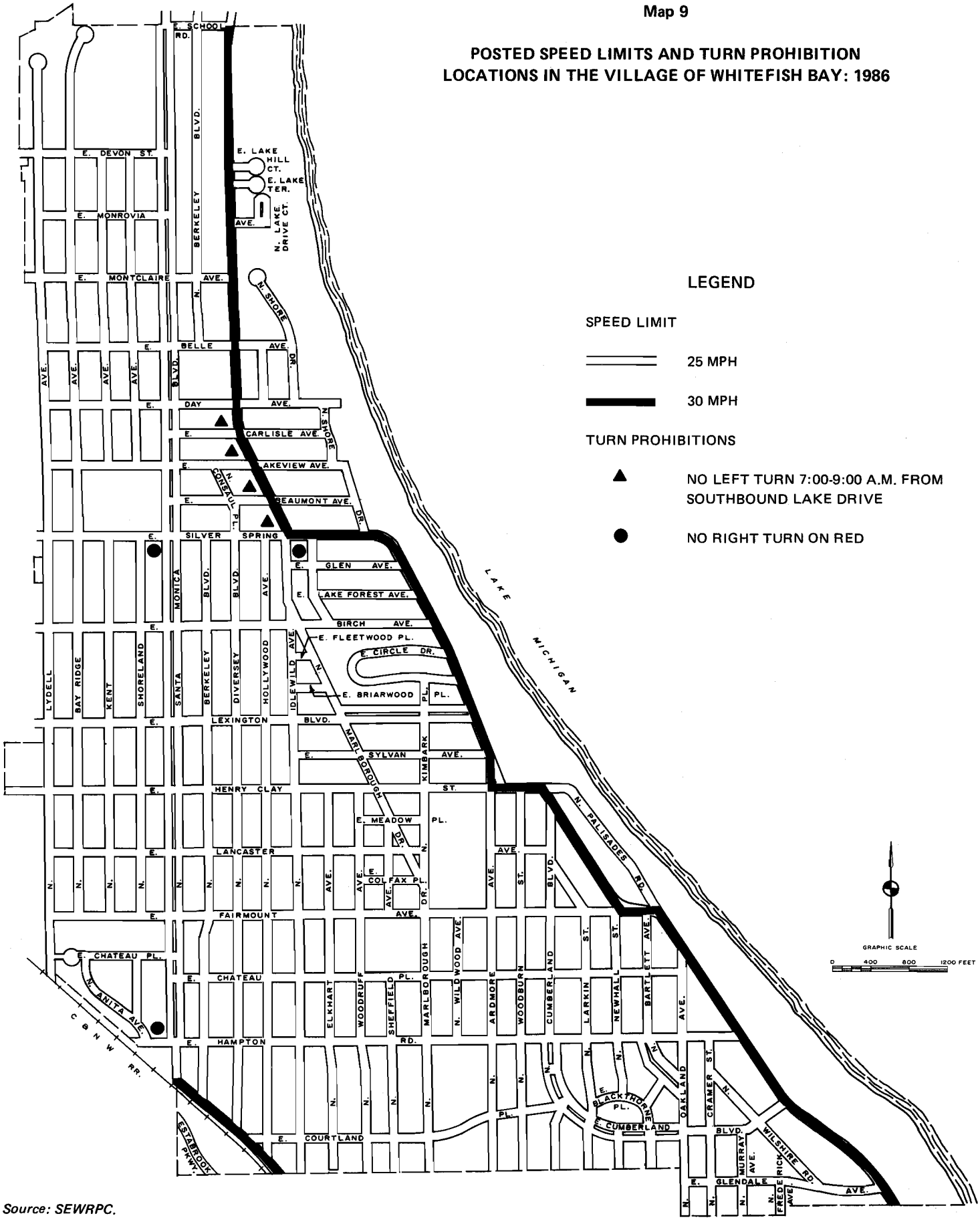
LOCATION OF TRAFFIC SIGNALS, STOP SIGNS, AND YIELD SIGNS IN THE VILLAGE OF WHITEFISH BAY: 1986



Source: SEWRPC.

Map 9

POSTED SPEED LIMITS AND TURN PROHIBITION LOCATIONS IN THE VILLAGE OF WHITEFISH BAY: 1986



Source: SEWRPC.

Avenue and E. Beaumont Avenue. In addition, at the intersections of E. Silver Spring Drive with N. Lydell Avenue, N. Santa Monica Boulevard, and N. Marlborough Boulevard, and at the intersection of E. Hampton Avenue and N. Santa Monica Boulevard, right turns on the red phase of a traffic signal are not permitted, principally to reduce pedestrian-vehicle conflicts.

Speed Limits

All streets and highways in the Village are posted for 25 miles per hour (mph) except N. Lake Drive and N. Wilson Drive, which are posted for 30 mph, as shown on Map 9. It should be noted that placing the same speed limit on the arterial street system as on the collector and land access street system in the Village provides no encouragement for through traffic to use arterial streets in the Village as such traffic should, and does not encourage motorists to distinguish between the arterial street system and the collector and land access street system.

In addition to the posted speed limits, reduced 15-mph speed restrictions are in effect on all roadways adjacent to the public and private schools in the Village. These speed restrictions, which are in effect only during the hours when children are present, and a school crossing guard program serve as the principal school crossing protection measures utilized in the Village of Whitefish Bay.

SUMMARY

This chapter has presented information on the existing street and highway system in the Village of Whitefish Bay and on those traffic controls which directly affect the operation of that system. A total of 41.56 miles of streets and highways currently exist in the Village and, according to the Commission's functional classification of streets and highways, 8.85 miles are classified according to primary function as arterial streets; 4.01 miles are classified as collector streets; and 28.70 miles are classified as land access streets. Of the 41.56 miles of streets and highways in the Village, 2.96 miles are jurisdictionally classified as connecting highways; 0.11 mile is a county park road; and 38.49 miles are classified as local streets and highways. The principal traffic control measures currently in operation in the Village have also been described in this chapter. A total of 63 Milwaukee County Transit System bus stops are located in the Village. In 1986, there were eight traffic signals and 310 stop signs in the Village of Whitefish Bay. All streets and highways in the Village are posted for 25 miles per hour except N. Lake Drive and N. Wilson Drive, which are posted for 30 miles per hour.

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Chapter III

EXISTING TRAFFIC CONDITIONS

INTRODUCTION

This chapter presents definitive information on traffic conditions in the Village of Whitefish Bay, including information on traffic volumes, traffic congestion, and traffic accidents. Also, traffic problems identified by the Traffic Study Advisory Committee and by citizens of the Village attending the Committee meetings are presented. Presented are traffic volume data on existing and historical average weekday traffic volumes on the village arterial street system, and on the hourly variation of average weekday traffic in the Village. Also identified are those arterial facilities that carry average weekday traffic volumes exceeding their design capacity and, as a result, experience traffic congestion. Finally, those locations within the Village with two or more motor vehicle accidents per year for the years 1983 through 1985 are shown.

TRAFFIC VOLUMES

Vehicular traffic volume counts provide quantification of the existing demand on the street and highway system of a community. Map 10 shows the estimated 24-hour average weekday traffic volumes on selected streets and highways in the Village in 1986. East and W. Silver Spring Drive and N. Lake Drive are currently carrying the highest traffic volumes in the Village. Traffic volumes on E. and W. Silver Spring Drive range from 11,400 to 13,900 vehicles per average weekday, and on N. Lake Drive range from 9,500 to 15,000 vehicles per average weekday.

Traffic volume counts on the entire arterial street and highway system of the Village have been taken by the Wisconsin Department of Transportation approximately once every three years since 1965. The historic growth trends exhibited by traffic on key arterials in the study area since 1970 are indicated in Table 3. As indicated in Table 3, vehicular traffic volumes in the Village of Whitefish Bay have increased steadily since 1970 at an average annual rate of about 1.5 percent. The highest growth rates have occurred on N. Lake Drive, where the annual growth rate has been about 2.4 percent.

PEAK-HOUR TRAFFIC VOLUME

Estimates of traffic volumes by hour of the weekday for three selected street segments in the Village are shown in Figure 1, based on Wisconsin Department of Transportation counts. Hourly volumes on these streets range from a low of less than 1 percent of the average weekday 24-hour volume during the early morning hours between 1:00 a.m. and 6:00 a.m. to a high of over 9 percent of the average weekday 24-hour volume between 4:00 p.m. and 6:00 p.m. This distribution of hourly traffic volumes is typical of the traffic flow pattern of arterial streets and highways within the Southeastern Wisconsin Region.

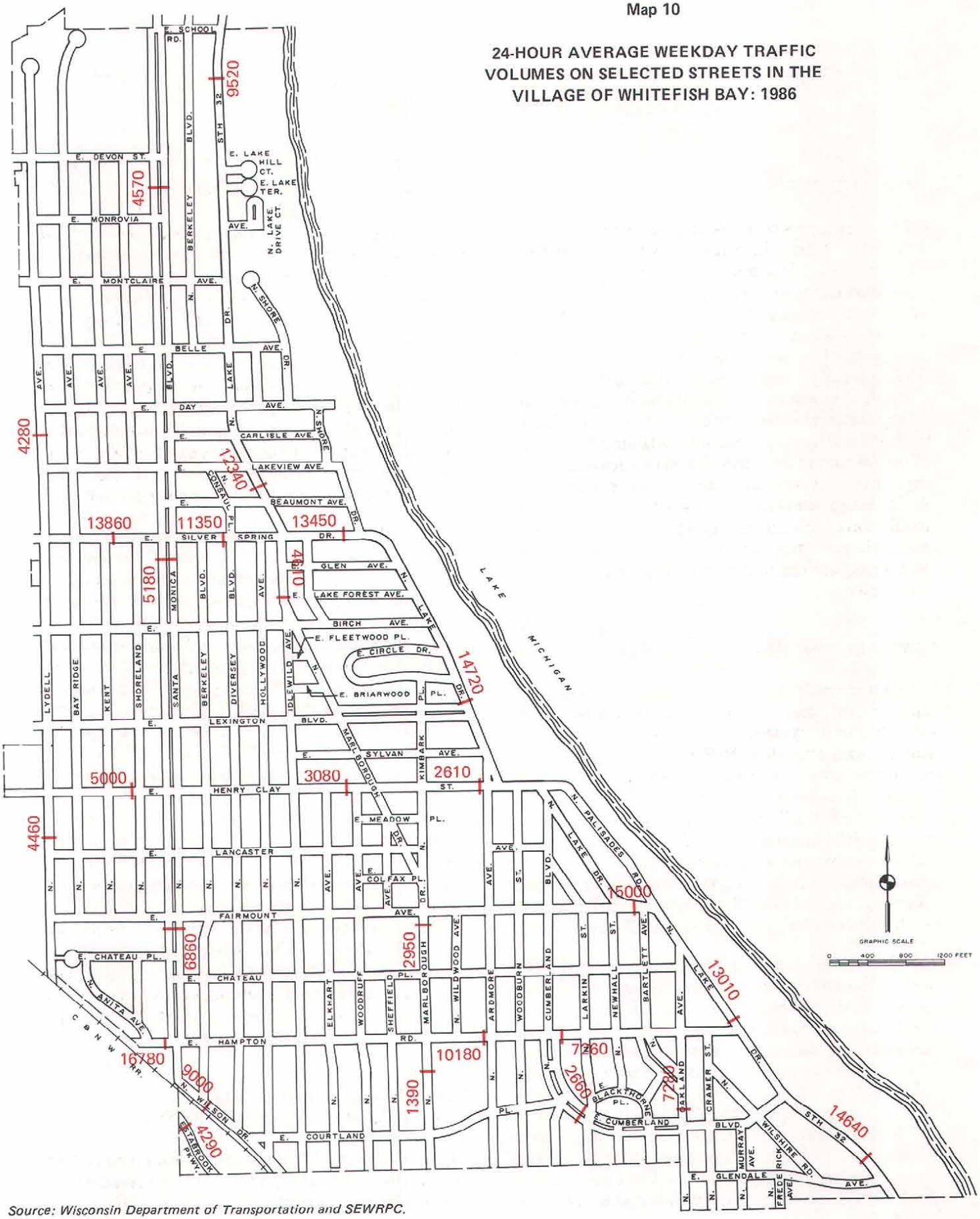
Of the three traffic count locations shown in Figure 1, the segment of N. Lake Drive north of E. Silver Spring Drive exhibits the most typical commuter rush-hour pattern, with 6 percent of the daily traffic volume occurring during the 7:00 a.m. to 8:00 a.m. rush hour and somewhat more than 9 percent occurring during the 5:00 p.m. to 6:00 p.m. rush hour. On the roadway segments of E. Hampton Road east of N. Marlborough Drive, somewhat less than 6 percent of the average daily traffic occurs between 7:00 a.m. and 8:00 a.m. and approximately 9 percent occurs from 5:00 p.m. to 6:00 p.m. On the segment of E. Silver Spring Drive west of N. Santa Monica Boulevard, approximately 4 percent of the average daily traffic occurs between 7:00 a.m. and 8:00 a.m., and about 8 percent occurs from 5:00 p.m. to 6:00 p.m. Between 11:00 a.m. and 6:00 p.m., about 7 percent of the average daily traffic volume occurs each hour. The hourly traffic volume distribution for this segment of E. Silver Spring Drive reflects the trip generation characteristics of shopping trips to the village central business district and the Bay Shore Shopping Center area.

EXISTING ARTERIAL STREET SYSTEM TRAFFIC CONGESTION

The number of traffic lanes provided on an arterial facility largely, although not entirely, establishes its traffic-carrying design capacity. The prohibition of on-street parking may be used during

Map 10

24-HOUR AVERAGE WEEKDAY TRAFFIC VOLUMES ON SELECTED STREETS IN THE VILLAGE OF WHITEFISH BAY: 1986



Source: Wisconsin Department of Transportation and SEWRPC.

Table 3

ANNUAL AVERAGE WEEKDAY TRAFFIC VOLUMES ON SELECTED ARTERIAL STREETS AND HIGHWAYS IN THE VILLAGE OF WHITEFISH BAY: 1970-1986

Location	Year							Annual Growth Rate (percent)
	1970	1972	1975	1977	1980	1983	1986	
N. Lake Drive								
At South Village Limits	8,920	10,920	13,290	13,510	14,170	14,670	14,640	3.8
North of E. Hampton Road	7,720	10,340	12,810	10,550	12,080	12,240	13,010	4.0
North of E. Henry Clay Street	12,340	12,250	10,940	12,700	12,400	14,870	14,720	1.1
North of E. Silver Spring Drive	9,090	10,070	9,090	11,120	11,040	11,170	12,340	2.1
At North Village Limits	7,370	6,580	6,490	7,990	7,640	8,330	9,520	1.7
Average	--	--	--	--	--	--	--	2.4
E. Silver Spring Drive								
West of N. Santa Monica Boulevard	11,840	13,320	16,410	11,320	12,650	15,010	13,860	1.0
East of N. Santa Monica Boulevard	9,820	11,130	13,540	12,580	10,780	12,020	11,350	0.9
Average	--	--	--	--	--	--	--	1.0
E. Hampton Road								
East of N. Marlborough Drive	7,310	11,400	8,810	8,890	7,920	11,230	10,180	2.3
East of N. Cumberland Boulevard	7,190	9,540	6,920	6,530	5,740	7,760	7,260	0.1
Average	--	--	--	--	--	--	--	1.2
N. Santa Monica Boulevard								
South of E. Henry Clay Street	5,840	6,270	5,950	7,330	6,150	6,590	6,270	0.4
South of E. Silver Spring Drive	5,270	5,320	5,410	5,290	5,400	5,810	5,180	-0.1
Average	--	--	--	--	--	--	--	0.2
N. Oakland Avenue								
North of N. Cumberland Boulevard	6,490	6,290	6,170	5,640	5,880	7,820	7,280	0.7
N. Marlborough Drive								
South of E. Hampton Road	1,600	1,490	1,260	1,570	1,530	1,410	1,390	-0.8
North of E. Hampton Road	3,180	3,660	2,960	2,850	2,650	3,180	2,950	-0.4
South of E. Silver Spring Drive	4,610	4,900	5,000	4,660	4,680	4,860	4,610	0.0
Average	--	--	--	--	--	--	--	-0.3
Total	116,090	131,790	133,030	131,660	129,160	146,360	145,250	1.5

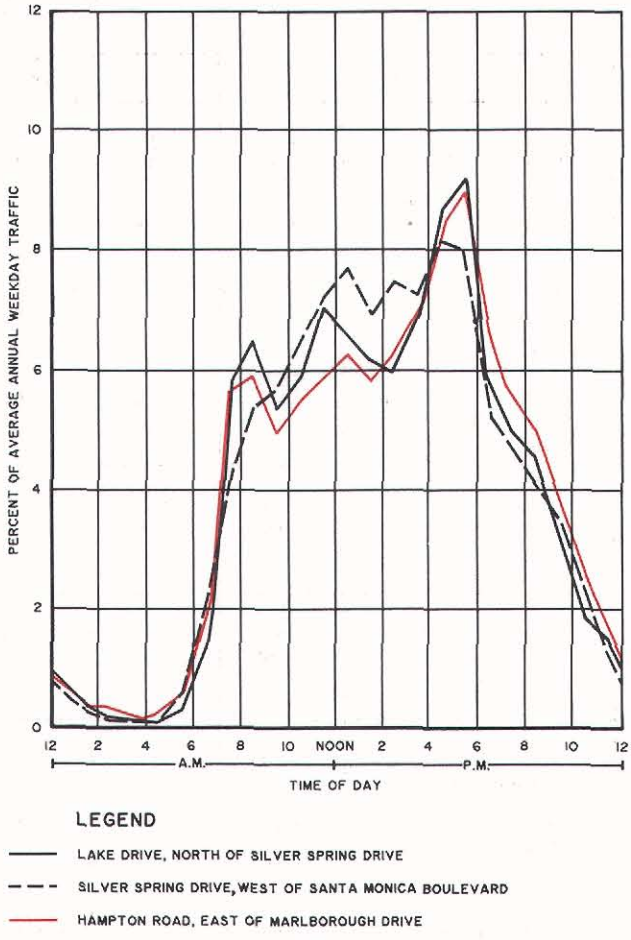
Source: SEWRPC.

the peak traffic periods, or all day, to provide additional traffic lanes on an arterial segment. A two-traffic-lane urban arterial generally has a design capacity of about 13,000 vehicles per day; a four-lane undivided arterial has a design capacity of about 17,000 vehicles per day; a four-lane divided arterial has a design capacity of about 25,000 vehicles per day; and a six-lane divided arterial has a design capacity of about 35,000 vehicles per day. Other factors affecting urban arterial design capacity include intersection approach pavement width, including the provision of exclusive turn lanes; parking within 200 feet of the intersection; type and operation of traffic control regulations and devices; percentage of right and left turns at intersections; and percent of trucks and buses in the traffic stream. Map 11 identifies the number of traffic lanes provided on each arterial segment in the Village.

Urban arterials carrying average weekday traffic volumes exceeding their design capacity may be expected to experience significant delays at controlled intersections, reduced speeds between intersections, and increased accident rates. In addition, such facilities may encourage motorists to utilize alternative routes over collector and land access streets. The reduced speeds and intersection delays on urban arterials carrying average weekday traffic volumes equaling or exceeding their design capacity will generally occur only during the morning and evening

Figure 1

HOURLY VARIATION IN ANNUAL AVERAGE WEEKDAY TRAFFIC ON SELECTED ARTERIAL STREETS IN THE VILLAGE OF WHITEFISH BAY: 1986



Source: Wisconsin Department of Transportation and SEWRPC.

peak traffic hours, or, in some cases, during the three-hour morning and evening peak traffic periods. During midday, evening, and early morning hours, there will generally be little, if any, traffic congestion and delay. Also, on most urban arterial streets, weekend traffic peaks will be less than weekday traffic peaks.

Generally, arterials carrying traffic volumes substantially exceeding their design capacity will experience vehicle delays at signalized intersections of about 35 seconds during peak traffic periods, and delays to some vehicles may approach 120 seconds. Vehicles may have to wait through more than one traffic signal red phase to clear the intersection, particularly left-turning vehicles. Also, between controlled intersections, arterials carrying traffic volumes greater than their design capacity may be expected to experience restrictions on operating speed and on the ability of vehicles to maneuver. Travel times on such arterials may typically increase by one-third to one-half over the average travel times on uncongested facilities.

Arterials carrying traffic volumes equaling or approaching their design capacities may typically experience vehicle delays at signalized intersections during peak traffic periods of about 20 to 30 seconds, with delays to some vehicles approaching 60 to 90 seconds. The average travel times on such arterials will typically increase by up to one-third over the average travel times on uncongested facilities.

Arterials operating under their design capacity will experience little vehicle backup at signalized intersections, and no vehicles will have to wait through more than one red traffic signal phase. The average delay to each vehicle at signalized intersections will be 5 to 15 seconds.

Map 12 indicates those arterial facilities in the Village currently carrying traffic volumes that approach or exceed their design capacity. The roadway segments in the Village currently carrying traffic volumes exceeding design capacity include E. Silver Spring Drive between N. Santa Monica Boulevard and N. Lydell Avenue, and N. Lake Drive between E. Silver Spring Drive and the Village's southern corporate limits.

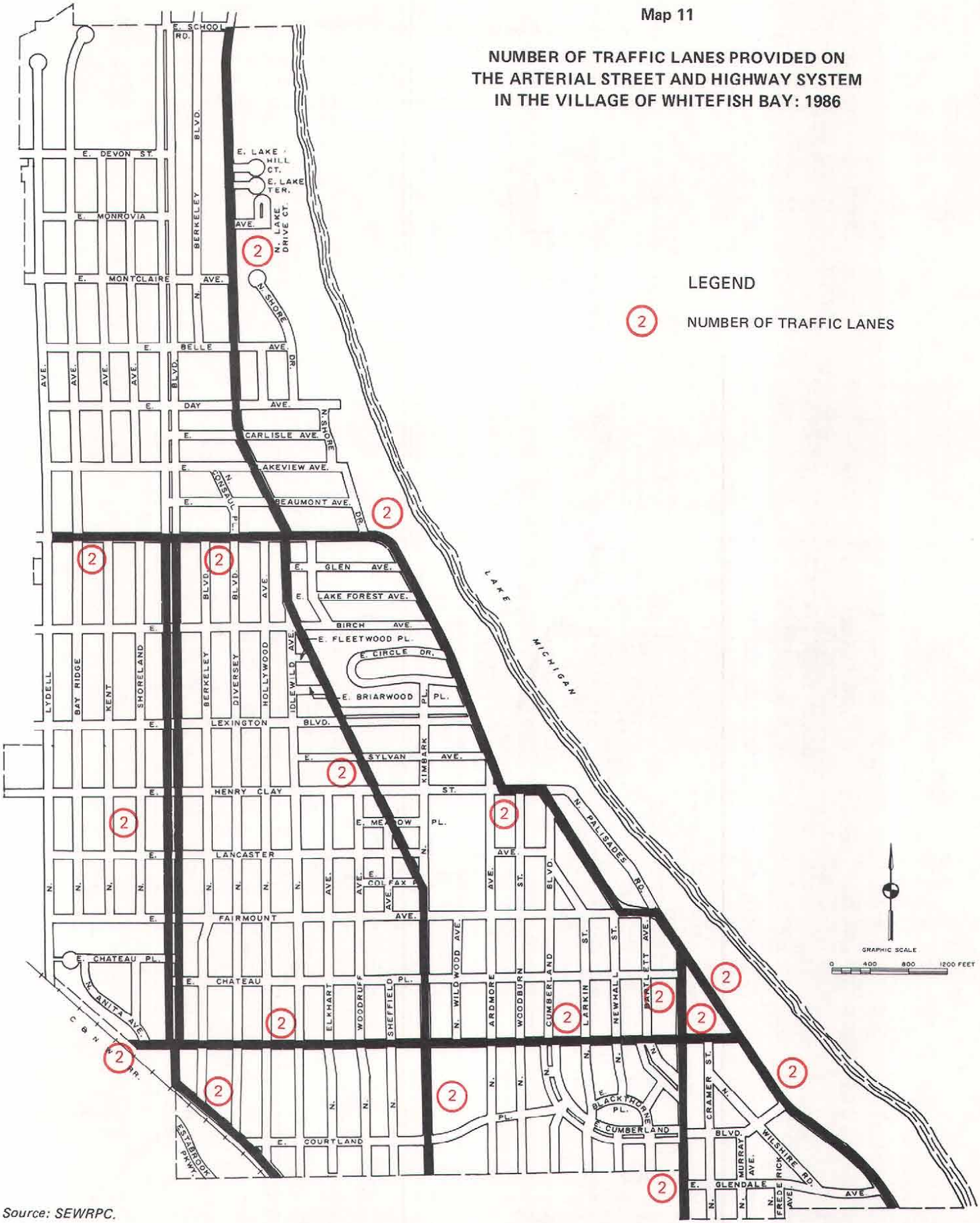
TRAFFIC ACCIDENTS

The incidence of traffic accidents is another measure of the efficiency and operating characteristics of a community's street and highway system. The motor vehicle accident history for the street and highway system of the Village of Whitefish Bay was reviewed for all on-street traffic accidents that occurred in 1983, 1984, and 1985. Each of these accidents was plotted on a map of the study area to identify the locations and severity of the accidents. There were a total of 155 on-street accidents in 1983, 258 in 1984, and 375 in 1985 within the Village. There were no fatal accidents during 1983 or 1984; there was one fatal accident in 1985. The majority of the accidents—78 percent in 1983, 77 percent in 1984, and 77 percent in 1985—resulted in property damage only.

All locations with two or more motor vehicle accidents per year are shown on Maps 13 through 15. There were 55 locations on the street and

Map 11

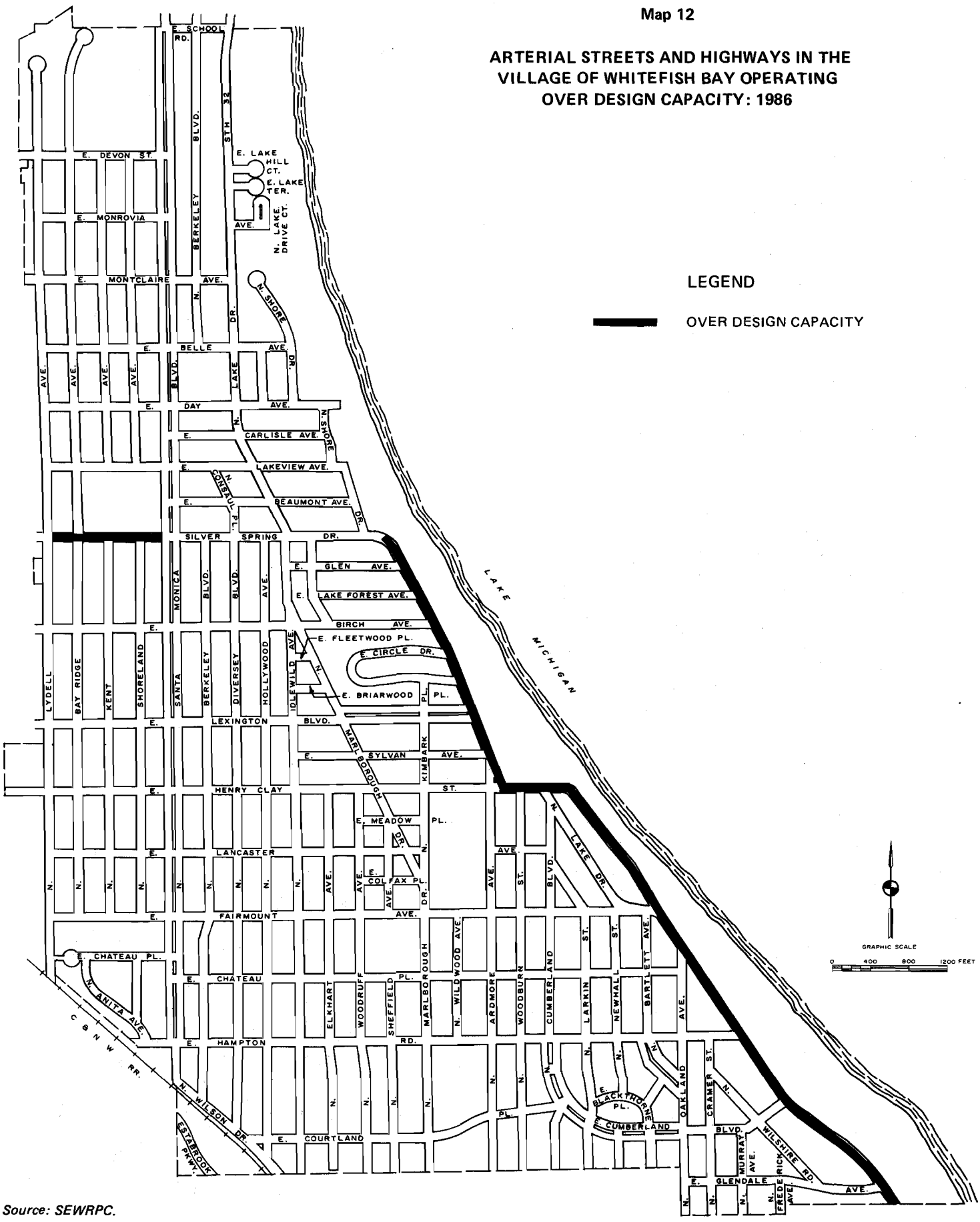
NUMBER OF TRAFFIC LANES PROVIDED ON THE ARTERIAL STREET AND HIGHWAY SYSTEM IN THE VILLAGE OF WHITEFISH BAY: 1986



Source: SEWRPC.

Map 12

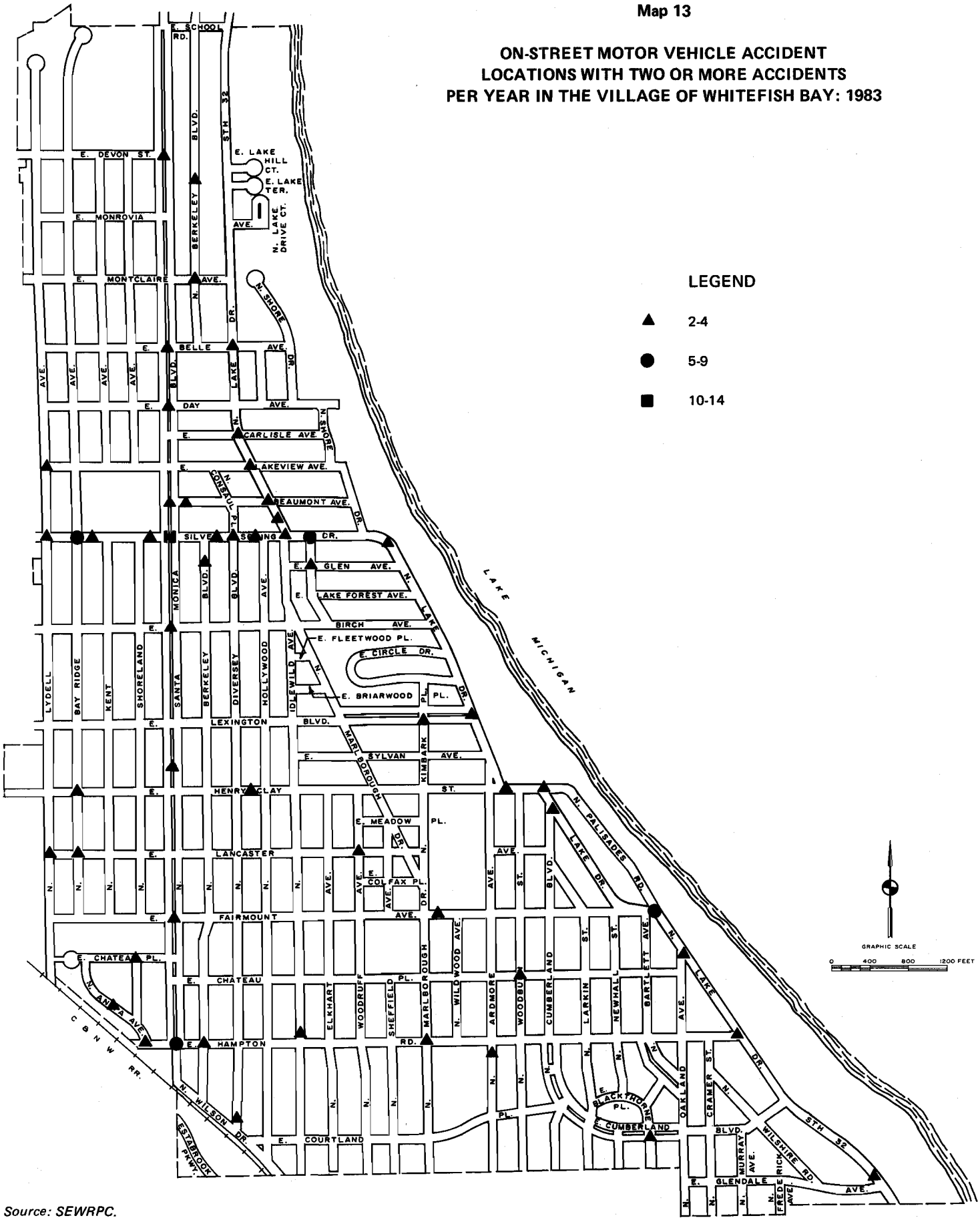
ARTERIAL STREETS AND HIGHWAYS IN THE VILLAGE OF WHITEFISH BAY OPERATING OVER DESIGN CAPACITY: 1986



Source: SEWRPC.

Map 13

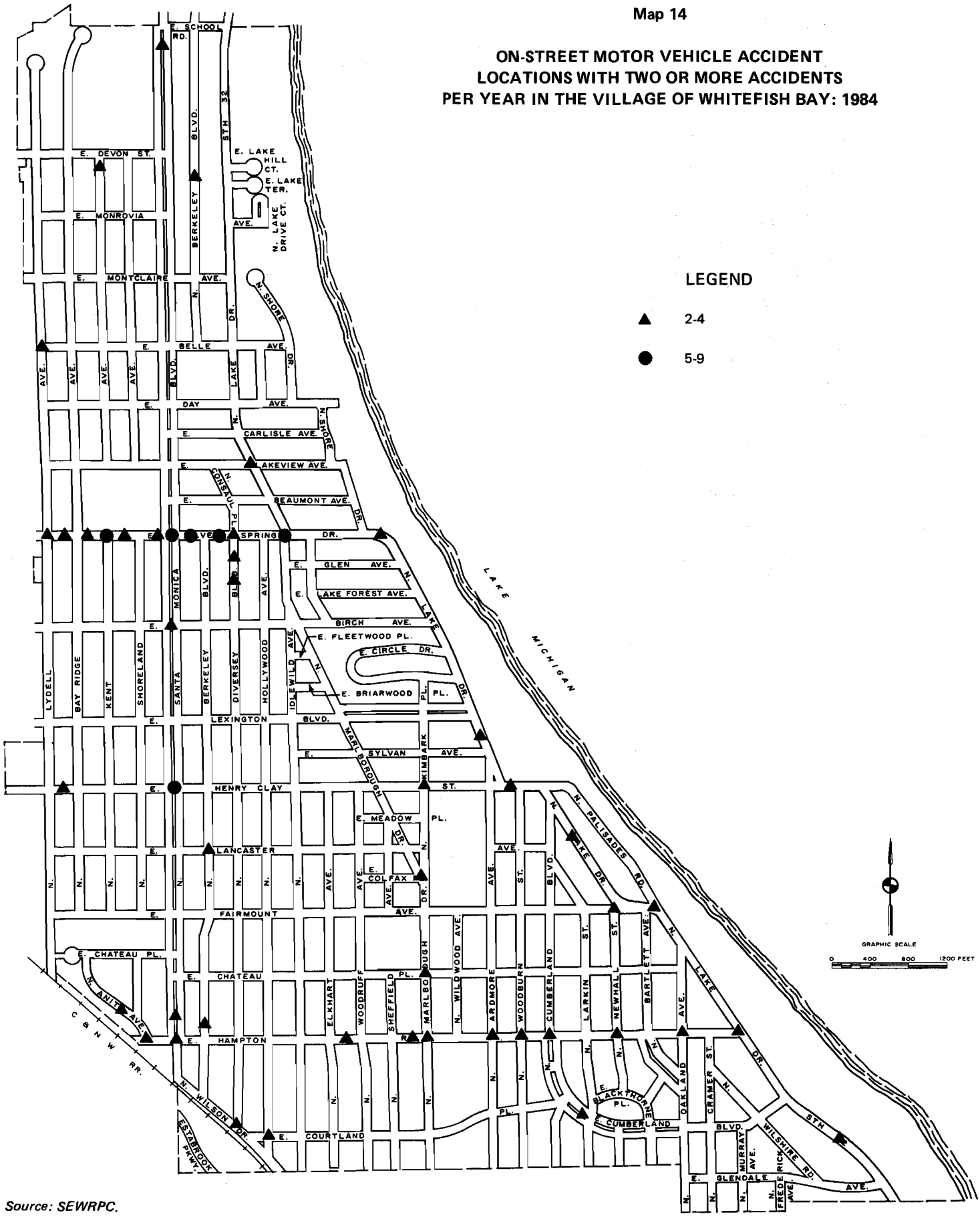
ON-STREET MOTOR VEHICLE ACCIDENT LOCATIONS WITH TWO OR MORE ACCIDENTS PER YEAR IN THE VILLAGE OF WHITEFISH BAY: 1983



Source: SEWRPC.

Map 14

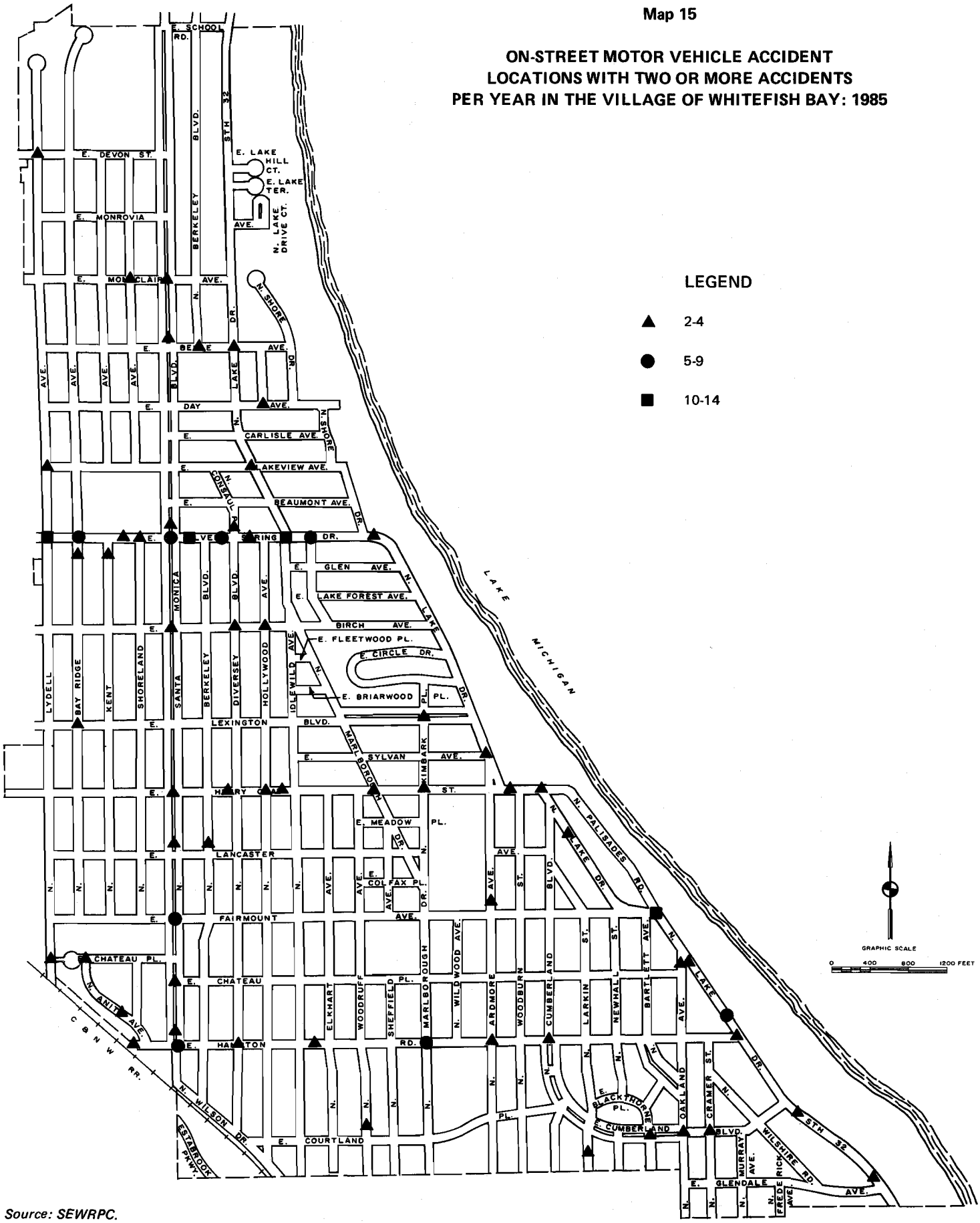
ON-STREET MOTOR VEHICLE ACCIDENT LOCATIONS WITH TWO OR MORE ACCIDENTS PER YEAR IN THE VILLAGE OF WHITEFISH BAY: 1984



Source: SEWRPC.

Map 15

ON-STREET MOTOR VEHICLE ACCIDENT LOCATIONS WITH TWO OR MORE ACCIDENTS PER YEAR IN THE VILLAGE OF WHITEFISH BAY: 1985



Source: SEWRPC.

highway system in the Village in 1983 with two or more accidents. Of those 55 locations, 24, or 44 percent, were located on E. and W. Silver Spring Drive or N. Lake Drive. There were 49 locations with two or more accidents in 1984. Of those 49 locations, 20, or 41 percent, were located on E. and W. Silver Spring Drive or N. Lake Drive. An additional 10 locations, or 20 percent of those 49 locations, were located on E. and W. Hampton Road. There were 67 locations in 1985 with two or more accidents, of which 24 locations, or 36 percent, were located on E. and W. Silver Spring Drive or N. Lake Drive. An additional 10 locations, or 15 percent of those 67 locations, were located on N. Santa Monica Boulevard. The location in the Village with the greatest number of accidents over the three-year period from 1983 through 1985 was the intersection of N. Santa Monica Boulevard and E. Silver Spring Drive.

CITIZEN PERCEPTIONS OF TRAFFIC PROBLEMS

Valuable sources of information in identifying street and highway system problems are the citizens who regularly use the system, and are therefore intimately familiar with the traffic conditions on the system. Not only are citizen perceptions concerning traffic conditions at various locations throughout the study area useful in identifying potential problem areas, but such perceptions can also serve to reinforce and lend support to traffic inventory findings, particularly as applied to neighborhood traffic problems.

Therefore, the nine members of the Village of Whitefish Bay Traffic Study Committee were asked to describe the traffic problems in the Village, and residents of the Village attending the Committee meeting were encouraged as well to identify traffic problems.

A list of 27 perceived traffic problem locations was in this way compiled for the Village, as presented in Table 4 and shown on Map 16. The perceived traffic problems have been grouped into 13 categories. The categories with the greatest number of perceived problems include lack of stop signs, on-street parking, and pedestrian safety.

SUMMARY

This chapter has provided information on traffic volumes and congestion on the arterial street and highway system of the Village of Whitefish Bay. This information has been supplemented with data on motor vehicle accident histories and citizen complaints of traffic problems. This information, together with the information on the physical characteristics of the street and highway systems provided in Chapter II and the traffic management control criteria presented in Chapter IV, provides a basis for identifying and resolving the traffic problems in the Village of Whitefish Bay.

The traffic count information presented in this chapter indicates that the highest traffic volumes on the arterial street and highway system in the Village of Whitefish Bay occur on N. Lake Drive and range from 9,500 to 15,000 vehicles per average weekday. The next highest traffic volumes occur on E. Silver Spring Drive, where they range from 11,300 to 13,900 vehicles per average weekday.

In general, about 1 percent of the average weekday volume occurs during each hour of the early morning hours between 1:00 a.m. and 6:00 a.m. in the Village, with about 6 percent occurring during the 7:00 a.m. to 8:00 a.m. peak hour, about 5 to 7 percent occurring during the midday time period between noon and 3:00 p.m., and a high of about 9 percent occurring during the 5:00 p.m. to 6:00 p.m. evening peak hour.

The efficiency of the arterial street and highway system in the Village was quantitatively determined by analyses of existing traffic volumes, design capacities, and motor vehicle accident rates. These analyses were supplemented by analyses of citizen complaints of traffic problems. Vehicular traffic volumes were found to equal or exceed design capacity on E. Silver Spring Drive between N. Santa Monica Boulevard and N. Lydell Avenue, and on N. Lake Drive between E. Silver Spring Drive and the Village's southern corporate limits.

There were a total of 155 on-street motor vehicle accidents in the Village in 1983, 258 accidents in 1984, and 375 accidents in 1985. There were 55 locations on the street and highway system with two or more accidents in 1983, 49 such locations in 1984, and 67 locations in 1985. The location in the Village having the highest number of accidents over the three-year period 1983 through 1985 was the intersection of N. Santa Monica Boulevard and E. Silver Spring Drive.

As already noted, to supplement the traffic inventory data presented in this chapter, citizen complaints of traffic problems were solicited from residents of the Village and from members of the Traffic Study Committee. A list of 27 traffic problem locations was compiled to assist in identifying traffic problems in the Village.

Table 4

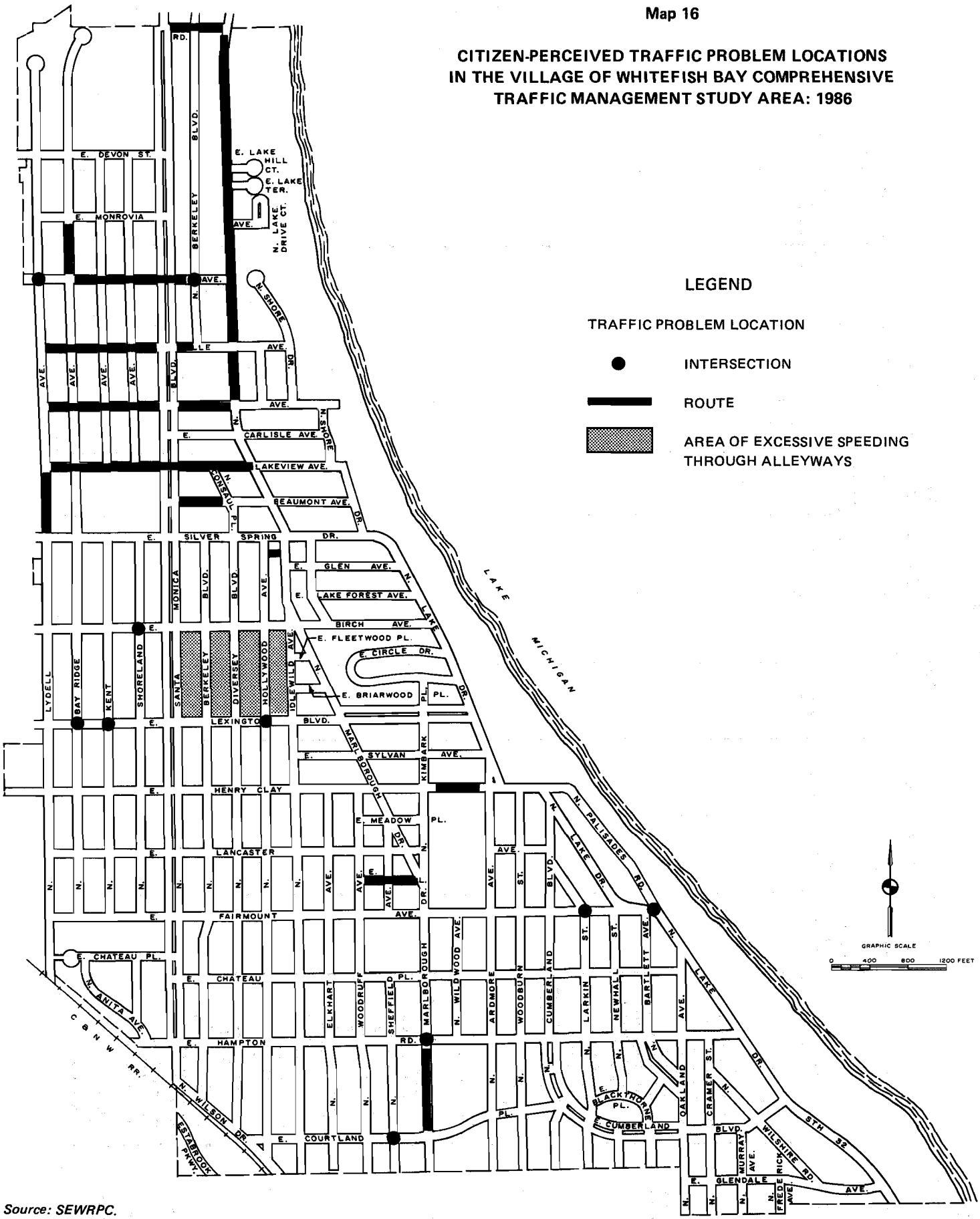
SUMMARY OF TRAFFIC PROBLEMS AS PERCEIVED BY CITIZENS WITHIN THE VILLAGE OF WHITEFISH BAY COMPREHENSIVE TRAFFIC MANAGEMENT STUDY AREA: 1986

Facility	Location	Inadequate Sight Distance	Difficulty in Entering Traffic Stream	Motor Vehicle Accidents	Pedestrian Safety	Speeding Vehicles	Stop Sign			Disrespect for Yield Sign	On-Street Parking	Through Traffic	Traffic Diversion to Avoid Traffic Controls	Other
							Disrespect	Lack of	Too Many					
E. School Road	N. Santa Monica Boulevard to N. Lake Drive	--	--	--	--	--	--	--	--	--	--	X	--	--
N. Lake Drive	E. Belle Avenue to E. School Road	--	--	--	X	--	--	--	--	--	--	--	--	--
N. Bay Ridge Avenue	E. Monrovia Avenue to E. Montclaire Avenue	--	--	--	--	--	--	--	--	--	X	--	--	--
E. Montclaire Avenue	N. Bay Ridge Avenue to N. Lake Drive	--	--	--	--	--	--	--	X	--	--	--	--	--
	N. Berkeley Boulevard	--	--	--	--	--	--	X	--	--	--	--	--	--
W. Montclaire Avenue	N. Lydell Avenue	--	--	--	--	--	X	--	--	--	--	--	--	--
E. and W. Belle Avenue	N. Lydell Avenue to N. Santa Monica Boulevard	--	--	--	--	--	--	X	--	--	--	--	--	--
E. Belle Avenue	N. Santa Monica Boulevard to N. Berkeley Boulevard	--	--	--	X	--	--	--	--	--	X	--	--	--
N. Lake Drive	E. Belle Avenue to E. Day Avenue	--	--	--	X	--	--	--	--	--	--	--	--	--
E. Day Avenue	N. Lydell Avenue to N. Santa Monica Boulevard	--	--	--	--	--	--	X	--	--	--	--	--	--
	N. Santa Monica Boulevard to N. Lake Drive	--	--	--	X	--	--	--	--	--	--	--	--	--
E. Lakeview Avenue	N. Lydell Avenue to N. Lake Drive	--	--	--	--	--	--	--	--	--	--	--	--	Lack of "Children at Play" signs
N. Lydell Avenue	W. Lakeview Avenue to W. Silver Spring Drive	--	--	--	--	--	--	--	--	--	--	--	--	Bus air and noise pollution
E. Beaumont Avenue	N. Santa Monica Boulevard to N. Consaul Place	--	X	--	--	--	--	--	--	--	X	--	--	--
Alleys	Between N. Hollywood Avenue and N. Marlborough Drive south of E. Silver Spring Drive	--	--	--	--	--	--	--	--	--	--	--	X	--
	Bordered by E. Birch Avenue, N. Idlewild Avenue, E. Lexington Boulevard, and N. Santa Monica Boulevard	--	--	--	--	X	--	--	--	--	--	--	--	--
E. Birch Avenue	N. Shoreland Avenue	--	--	--	--	--	--	X	--	--	--	--	--	--
E. Lexington Boulevard	N. Bay Ridge Avenue	--	--	--	--	--	--	--	--	X	--	--	--	--
	N. Kent Avenue	--	--	--	--	--	--	X	--	--	--	--	--	--
	N. Hollywood Avenue	--	--	--	--	--	--	X	--	--	--	--	--	--
E. Henry Clay Street	N. Kimbark Place to N. Ardmore Avenue	X	--	--	--	--	--	--	--	--	--	--	--	--
E. Colfax Place	N. Woodruff Avenue to N. Marlborough Drive	--	--	--	--	--	--	--	--	--	X	--	--	--
W. Fairmount Avenue	N. Larkin Street	--	--	--	--	--	--	X	--	--	--	--	--	--
	N. Lake Drive and N. Palisades Road	--	--	X	--	--	--	--	--	--	--	--	--	--
E. Hampton Road	N. Marlborough Drive	--	--	--	--	--	--	--	--	--	--	--	--	Hazardous median islands
N. Marlborough Drive	E. Hampton Road to E. Courtland Place	--	--	--	--	--	--	--	--	--	X	--	--	--
E. Courtland Place	N. Sheffield Avenue	--	--	--	--	--	--	X	--	--	--	--	--	--

Source: SEWRPC.

Map 16

CITIZEN-PERCEIVED TRAFFIC PROBLEM LOCATIONS IN THE VILLAGE OF WHITEFISH BAY COMPREHENSIVE TRAFFIC MANAGEMENT STUDY AREA: 1986



Source: SEWRPC.

Chapter IV

TRAFFIC MANAGEMENT CONTROL CRITERIA

INTRODUCTION

Planning and decision-making for the improvement of the operation of a municipal street and highway system should be based upon criteria which permit the objective determination of the need to implement traffic management control measures. These criteria should be based upon sound engineering principles. Traffic management control measures will be effective only if they are truly needed. Measures that are not needed but that are nevertheless implemented will not be obeyed, and such public disregard can spread to measures that are needed and are essential for the safety and efficiency of the street system.

Traffic management control criteria fall into two basic categories: absolute and comparative. Absolute criteria can be applied individually to any existing condition or plan alternative since such criteria are expressed in terms of maximum, minimum, or desirable system operating levels. An example of such a criterion is a warrant for the installation of a traffic control signal at the intersection of two arterial streets. Such a warrant could require a minimum of 500 vehicles per hour for eight hours of the day on the major arterial street and a minimum of 150 vehicles per hour for the same eight hours on the intersecting arterial street.

Comparative criteria must be applied through a comparison of the performance of alternative traffic control measures. An example of such a criterion is the minimization of through traffic on a land access street; alternative traffic control measures are compared to each other and to the existing conditions to identify the measure that best meets the criterion.

TRAFFIC MANAGEMENT CONTROL CRITERIA

The following traffic management control criteria were formulated to serve as guidelines in addressing traffic problems in the Village of Whitefish Bay, as well as in evaluating requests for the installation of, or changes in existing, traffic control measures and devices. Those criteria, as shown in Table 5, are set forth in three basic categories: 1) street and highway system development criteria; 2) internal traffic control measure warrants; and 3) peripheral traffic control measure warrants.

The application of the traffic management control criteria set forth in Table 5 is intended to assure uniformity in the placement and installation of traffic control measures throughout the Village of Whitefish Bay. Uniformity simplifies the task of the driver because it aids in recognition and understanding. By treating similar situations in the same way, traffic control measures will be respected and obeyed with a minimum of enforcement. A standard traffic control measure used where it is inappropriate may be expected to result in disrespect at those locations where it is needed, resulting in increased communitywide enforcement and safety costs.

Table 5

TRAFFIC MANAGEMENT CONTROL CRITERIA

Street and Highway System Development Criteria

1. The arterial street and highway system should comprise from 15 to 25 percent of the total community street and highway system mileage.

2. Arterial streets and highways should be spaced no more than one-half mile in each direction in urban high-density areas (7.0 to 17.9 dwelling units per net residential acre).

3. The time required for the response of emergency vehicles to all areas of the community should be minimized.

4. Circuitous travel routing of through traffic should be discouraged.

5. The penetration of residential and environmentally sensitive areas such as parks by arterial streets and highways should be avoided.

6. The total vehicle miles of travel within a community should be minimized.

7. The conflict between the movement of through traffic and local traffic and pedestrians within a community should be minimized.

8. Through traffic should use the arterial street and highway system within a community.

9. The volume-to-design-capacity ratio of existing arterial facilities should not exceed 1.0.

10. Average vehicle delays at signalized intersections should not exceed 30 seconds per vehicle.

11. Local transit service should provide an appropriate balance between passenger convenience and safety; speed of operation, with convenient walk distances; and, in general, local bus stop spacings of no less than 660 feet apart, and no more than 1,320 feet apart.

Internal Traffic Control Warrants

1. Traffic control devices such as traffic signals, stop signs, yield signs, and pavement markings should be installed in accordance with the following warrants:

   a. On the arterial street and highway system, the installation of traffic control devices should conform with the warrants set forth in the Manual on Uniform Traffic Control Devices[a] published by the U. S. Department of Transportation.

      The Village's street system, as shown on Map 3 in Chapter II, is functionally classified into a system of arterials, collectors, and land access streets. This system categorizes streets according to the service they perform, ranging from travel mobility to land access. The arterial streets are intended to carry the heaviest volumes of traffic, including all traffic traveling through the Village. Collector streets are intended to distribute traffic from the arterials to the land access streets, and to collect traffic from the land access streets for routing to the arterials. Land access streets are intended to provide direct access to abutting land development and provide for local traffic movement. Accordingly, traffic control devices should be installed on arterial and collector streets in such a manner as to encourage all through traffic to use arterials and to encourage all traffic between land access and arterial streets to use collector streets.

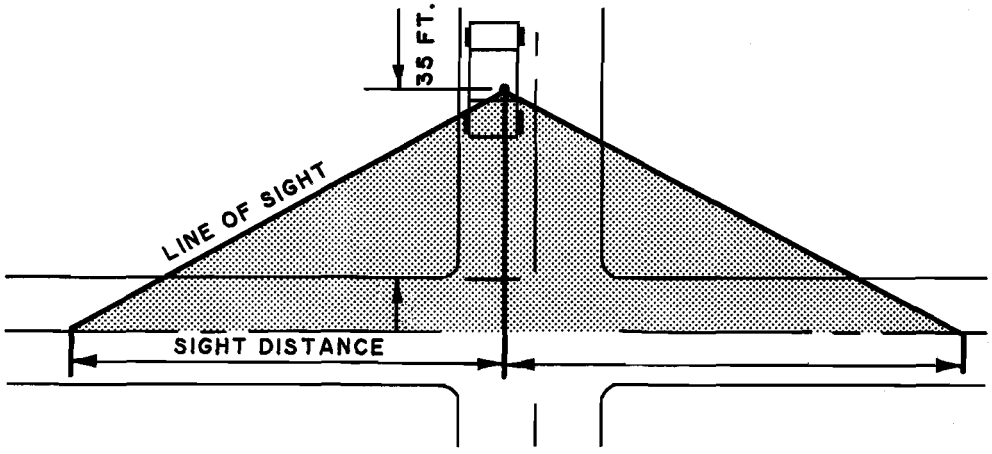
b. On land access and collector streets, the installation of traffic control devices should conform to the following warrants:

   1. Whenever a street intersects a higher order street in the street hierarchy, the street of lower order shall be stop sign controlled.

   2. The intersection of two collector streets should be controlled with multi-way stop signs.

c. Each intersection of two land access streets shall be analyzed primarily with regard to safety rather than convenience. Generally, intersection control in residential areas should appear reasonable and be designed to minimize conflicts and remove any doubt as to the establishment of rights-of-way. The assumed speed limit for this warrant is 25 miles per hour. Appropriate adjustments for this warrant must be made for higher posted speeds or when the known 85th percentile speed is 10 miles per hour greater than the posted speed.

   A two-way "Stop" control shall be used to control two approaches at a four-legged intersection of two land access streets whenever one or more of the following conditions exist: the sight distances, as shown in the accompanying figure, are equal to or less than 125 feet from the uncontrolled approaches; an accident problem evidenced by three or more accidents susceptible to correction by two-way stop control occurs in a 12-month period; or unusual geometrics or pedestrian or vehicle patterns suggest a need for positive control.



   Two-way "Yield" control may be used to control two approaches at a four-legged intersection where sight distance from the uncontrolled approach exceeds 125 feet, provided none of the other stop sign criteria are satisfied. Two-way yield at four-legged intersections should be used only when relatively low volumes of traffic occur.

   Although intersection control at a T-type intersection is generally limited to the approach on the stem of the T, special conditions may warrant consideration of controls on other approaches, which would require special studies. The criteria for placement of stop or yield controls for the stem of T-type intersections shall be the same as for a four-legged intersection. A decision to provide no control at a T-type intersection must represent a clear judgment that conditions are safe beyond reasonable doubt based upon a minimum sight distance of 200 feet on all approaches to the intersection, as well as a lack of an accident problem or geometric deficiencies.

   Multi-way stop controls should be considered only when roadways of equal character intersect and cannot operate at an acceptable level of safety with only one street controlled. Multi-way stops should be considered under the following conditions: a sight distance of 125 feet cannot be obtained for any approach when stop signs are placed on that approach; or evidence exists that a total of three or more accidents susceptible to correction by multi-way stop control have occurred within a 12-month period. Under both criteria, all less restrictive measures to obtain adequate sight distance or improve intersection safety are assumed to have been considered.

No controls should be provided at intersections of two land access streets when a sight distance of 200 feet is provided on all approaches to the intersection, and provided none of the other stop or yield sign criteria are satisfied.

d. Traffic stop signs should not be used for speed control. Studies have shown that this device does not reduce speeds and that the use of unwarranted devices breeds disregard for all traffic control devices and laws and, in many cases, may cause accident problems where no accident problem previously existed.

e. "Children-at-Play" signs attempting to warn motorists of normal conditions in residential areas should be discouraged. Children should not be encouraged to play within the street travelways. Children-at-Play signs serve as an open suggestion that this behavior is acceptable.

   Specific warnings for schools, playgrounds, parks, and other recreational facilities are available for use where clearly justified. These warnings should, according to the Manual on Uniform Traffic Control Devices, be based upon an engineering study, and be erected no less than 150 feet and no more than 700 feet in advance of the school grounds or school crossing, and must be used in advance of every school crossing sign. It is important that a uniform approach to school area traffic controls be applied to assure a uniform behavior on the part of vehicle operators and pedestrians.

f. Channelization to discourage through traffic and control vehicle speeds in residential areas includes such devices as roadway narrowings, traffic circles, and cul-de-sacs. Such devices should be used to preserve the integrity of the neighborhood while causing little inconvenience to the residents on the land access street to which they are applied, or to other residents in the neighborhood. These devices are not warranted on arterial facilities and should be applied only on collector and local access streets where identifiable conflicts exist between through and local traffic, or where excessive vehicle speeds are identified through observations or traffic accident patterns.

g. Designation of one-way streets in residential areas should be used to discourage through traffic patterns on land access streets, reduce vehicular/pedestrian traffic conflicts, or reduce vehicle conflicts at an identified accident problem location. The designation of a one-way street should not have adverse traffic impacts on other land access streets or create circuitous and time-consuming travel for residents of the neighborhood or community.

h. A residential parking permit program is a traffic control action designed to manage on-street vehicular parking in neighborhoods and to enhance the liveability for the residents of those neighborhoods.

Peripheral Traffic Control Warrants

1. Peripheral traffic controls include turn prohibitions, one-way street designations, roadway diverters, and street closures. These controls are designed and used to divert through traffic from residential areas and to discourage "short-cutting" by drivers to avoid arterial street system congestion problems. These traffic control measures shall not be applied unless the volume of traffic on a land access street exceeds 200 vehicles per hour. Streets with peak-hour traffic volumes below 200 vehicles per hour are generally considered by residents as possessing desirable neighborhood amenities with minimum physical danger, noise, vibration, dust, and air pollution.

[a]*U. S. Department of Transportation, Federal Highway Administration, "Warrants for the Installation of Traffic Signals and Stop and Yield Signs," Manual on Uniform Traffic Control Devices, 1978.*

Source: SEWRPC.

Chapter V

ANALYSIS AND RECOMMENDATIONS

INTRODUCTION

This chapter describes the traffic problems identified in the Village of Whitefish Bay, as well as alternative and recommended traffic control measures which may be expected to alleviate those problems. The problems and alternative traffic control measures are presented in two sections, with the traffic problems and alternative measures north of E. and W. Silver Spring Drive presented first, and the traffic problems and alternative measures south of E. and W. Silver Spring Drive presented second. The traffic problems were identified in three ways. First, citizen input on perceived traffic problems in their neighborhoods was solicited at a widely publicized meeting held on June 18, 1986, at the Whitefish Bay Village Hall. Second, additional traffic problems were identified by the Village Traffic Study Committee. Third, the traffic management control criteria presented in Chapter IV of the report and adopted by the Study Committee were applied to identify inadequate, nonconforming, or inappropriate traffic control measures.

TRAFFIC PROBLEMS AND ALTERNATIVE AND RECOMMENDED IMPROVEMENTS IN THE NORTHERN AREA OF THE VILLAGE

The northern portion of the Village of Whitefish Bay for the purposes of this study was identified as being bounded by School Road on the north, E. and W. Silver Spring Drive on the south, N. Lydell Avenue on the west, and Lake Michigan on the east, as shown on Map 17. Identified within this area were 29 problems at individual street intersections or segments, and one problem of through traffic in a subarea of this northern portion of the Village. The 29 intersection problems identified within this area are shown on Map 17, and each problem is numbered. Table 6 identifies the traffic management actions recommended for implementation by the Commission staff and Traffic Study Committee. Traffic management actions were recommended for implementation by Commission staff and the Study Committee at 20 of the 29 identified problem locations. No action was recommended by the staff and Study Committee at seven of the 29 locations, and at two other locations, Commission staff-recommended actions were rejected by the Study Committee.

E. School Road from N. Santa Monica Boulevard to N. Lake Drive (Problem Location 1)

Potential through traffic on E. School Road was identified by a citizen as a traffic problem, and the installation of traffic stops or signs was suggested at the intersection of E. School Road with N. Berkeley Avenue. It is recommended that traffic control measures not be applied on E. School Road. Traffic volumes on E. School Road are typical of a local street, and little through traffic exists. The installation of traffic control would not be in conformance with the adopted traffic management criteria. Furthermore, such installation may be expected to provide unnecessary delay for all traffic, result in an increase in certain types of accidents, and encourage disrespect for and noncompliance with traffic control devices.

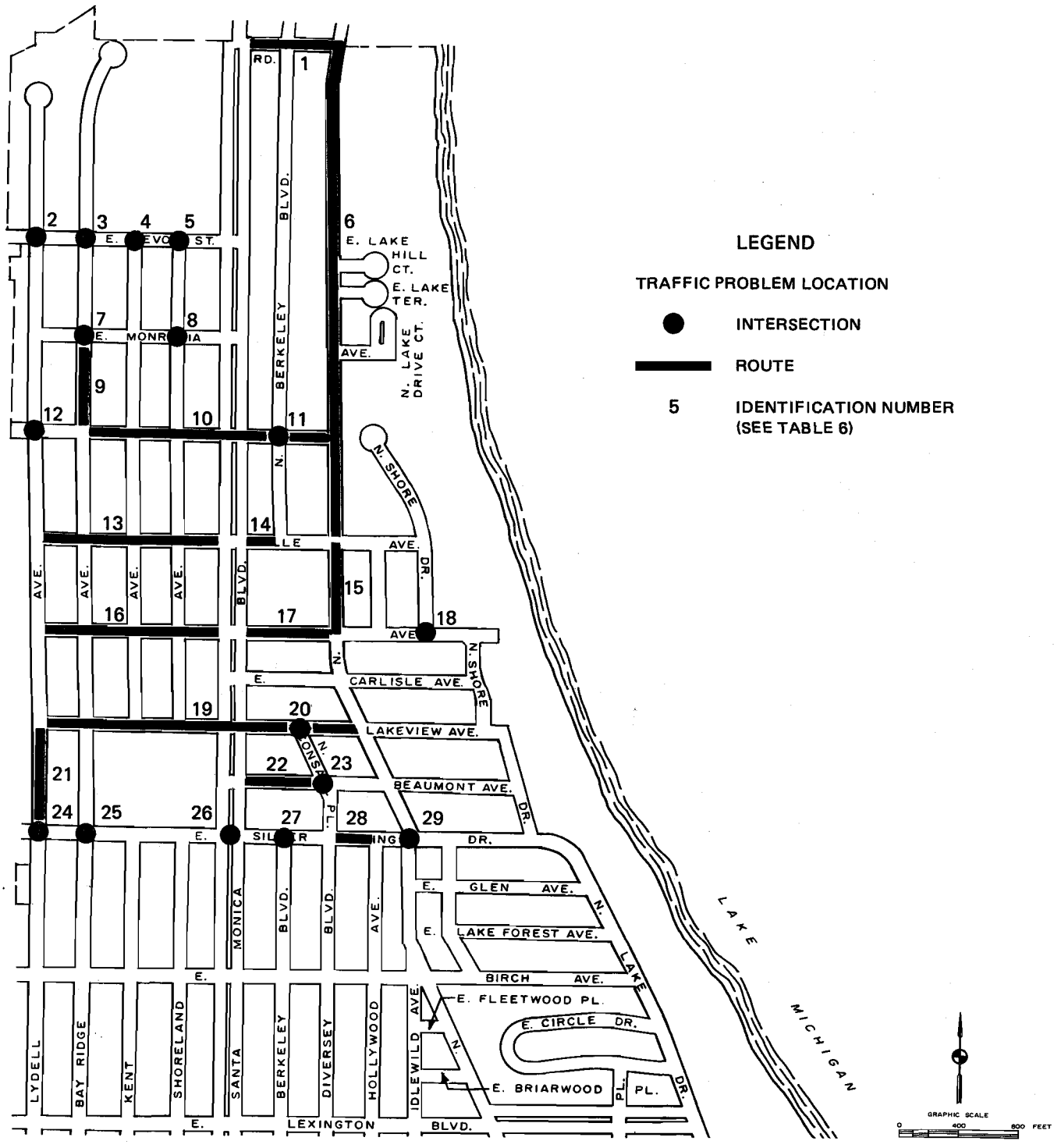
Also considered but not recommended was the construction of a traffic diverter at the intersection of E. School Road and Berkeley Avenue, which would permit only selected turns and no through traffic on E. School Road. The advantage of this control measure is that there would be no potential for through traffic. The disadvantage is that circuitous travel patterns would result, particularly with the configuration of the street system in this area.

W. Devon Street Intersections With N. Lydell Avenue and N. Bay Ridge Avenue (Problem Locations 2 and 3)

Four-way stop sign control is provided at the intersection of W. Devon Street with N. Bay Ridge Avenue, and two-way stop sign control is provided at the intersection of W. Devon Street with N. Lydell Avenue on the N. Lydell Avenue approaches. As W. Devon Street is classified as a collector street, as is N. Lydell Avenue, and N. Bay Ridge Avenue is classified as a land access street, the four-way stop sign control should more appropriately be provided at the intersection of W. Devon Street and N. Lydell Avenue, and two-way stop sign control should be provided at the intersection of W. Devon Street and N. Bay

Map 17

LOCATION OF THE TRAFFIC PROBLEMS IDENTIFIED IN THE NORTHERN PORTION OF THE VILLAGE OF WHITEFISH BAY: 1987



Source: SEWRPC.

Table 6

TRAFFIC MANAGEMENT ACTIONS RECOMMENDED FOR IMPLEMENTATION AT THE 29 TRAFFIC PROBLEM LOCATIONS IDENTIFIED TO THE NORTH OF, AND INCLUDING, E. AND W. SILVER SPRING DRIVE IN THE VILLAGE OF WHITEFISH BAY[a]

Number	Location	Traffic Problem	Recommended Traffic Management Actions	Advantages	Disadvantages
4	W. Devon Street at N. Kent Avenue	Intersection of collector street and land access street with improper traffic control	Remove yield sign and erect stop sign on northbound approach to the intersection, at an estimated cost of $50	• Increased safety • Conforms to the control criteria in Chapter IV (land access street approachs to intersection with collector street should be stop sign-controlled)	• Increases vehicular delay and travel time
5	W. Devon Street at N. Shoreland Avenue	Intersection of collector street and land access street with improper traffic control	Remove yield sign and erect stop sign on northbound approach to the intersection, at an estimated cost of $50	• Increased safety • Conforms to the control criteria in Chapter IV (land access street approaches to intersection with collector street should be stop sign-controlled)	• Increases vehicular delay and travel time
6	N. Lake Drive E. School Road to E. Belle Avenue	Pedestrian safety	Construct a sidewalk on the east side of N. Lake Drive between E. School Road and E. Belle Avenue, at an estimated cost of $14,000	• Provides a separate pedestrian walkway to reach the improved crossing of N. Lake Drive at E. Belle Avenue • Increases pedestrian safety for residents east of N. Lake Drive	• May encourage residents west of N. Lake Drive to cross N. Lake Drive north of E. Belle Avenue • Cost is assessed to property owners and efforts to implement this recommendation have been resisted in the past
7	E. and W. Monrovia Avenue at N. Bay Ridge Avenue	Unwarranted traffic control device installation on east- and westbound approaches Inadequate sight distance on the northbound approach	Remove yield signs on east- and westbound approaches to the intersection, at an estimated cost of $150 Erect stop signs on the north- and southbound approaches to the intersection, at an estimated cost of $200	• Encourages respect for and compliance with traffic control devices by eliminating unwarranted installations • Increased safety as motorists on the approach with inadequate sight distance must stop • Conforms to the control criteria in Chapter IV (intersections of two land access streets should be controlled only if sight distance or other factors would indicate need)	• None • Increases vehicular delay and travel time
8	E. and W. Monrovia Avenue at N. Shoreland Avenue	Unwarranted traffic control device installation	Remove stop signs on the north- and southbound intersection approaches, at an estimated cost of $150	• Encourages respect for and compliance with traffic control devices by eliminating unwarranted installation • Conforms to the control criteria in Chapter IV (intersections at two land access streets should be controlled only if sight distance or other factors would indicate need)	• None

Table 6 (continued)

Number	Location	Traffic Problem	Recommended Traffic Management Actions	Advantages	Disadvantages
9	N. Bay Ridge Avenue from E. Monrovia Avenue to E. Montclaire Avenue	Inappropriate parking restrictions	Eliminate schoolday parking restriction, at an estimated cost of $300	• Residents have the opportunity for unrestricted on-street parking	• The problem of nonresident use of unrestricted parking may reappear; however, this is not anticipated
10	E. Montclaire Avenue from N. Bay Ridge Avenue to N. Lake Drive	Excessive number of stop signs	Remove stop signs: all approaches to the intersection of N. Bay Ridge Avenue and E. Montclaire Avenue; the eastbound and westbound approaches to the intersection of N. Kent Avenue and E. Montclaire Avenue; and the eastbound and westbound approaches to the intersection of N. Shoreland Avenue and E. Montclaire Avenue, at an estimated cost of $600	• Reduces delay and travel time; encourages respect for, and compliance with, stop signs • Conforms to the control criteria in Chapter IV (intersections of two land access streets should be controlled only if sight distance or other factors would indicate need)	• None
11	E. Montclaire Avenue at N. Berkeley Boulevard	Lack of stop signs on north- and southbound approaches	Remove stop signs from the eastbound and westbound approaches and install stop signs at the northbound and southbound approaches to the intersection of N. Berkeley Boulevard and E. Montclaire Avenue, at an estimated cost of $350	• Reduces speed at intersection • Provides necessary stop sign control • Increased safety as motorists on the approach with inadequate sight distance must stop • Conforms to the control criteria in Chapter IV (intersections of two land access streets should be controlled only if sight distance or other factors would indicate need)	• Increases travel time and delay on N. Berkeley Boulevard • May result in increase in certain types of accidents • May encourage disrespect for, and noncompliance with, stop signs
12	E. Montclaire Avenue at N. Lydell Avenue	Lack of stop sign respect	Install larger stop sign, at an estimated cost of $50	• Increased visibility	• None
14	E. and W. Belle Avenue N. Santa Monica Boulevard to N. Berkeley Boulevard	Student pedestrian safety related to on-street parking. Also, residents on north side of E. Belle Avenue complain of parked cars at curbs adjacent to their residences on school days	Prohibit parking on north side of E. Belle Avenue between 7:30 a.m. and 4:40 p.m. between N. Santa Monica Boulevard and N. Berkeley Boulevard on school days, at an estimated cost of $200	• Improved student-pedestrian visibility • Improved traffic flow • Eliminates concern of nearby residents	• Some alternative parking must be found. Parking which remains should not be problem to residents
			Carry on an ongoing education program with frequent reminders within the school	• Alerts students to dangers of crossing streets at midblock from between parked cars	• Fades from students' consciousness with time

Table 6 (continued)

Number	Location	Traffic Problem	Recommended Traffic Management Actions	Advantages	Disadvantages
15	N. Lake Drive E. Belle Avenue to E. Day Avenue	Vehicular/pedestrian conflicts (heavy traffic volumes with few gaps make crossing Lake Drive Drive very difficult for pedestrians)	The Village of Whitefish Bay endorsed and implemented the following traffic management actions:		
			Thermoplastic pavement markings	• Improves identification of pedestrian crossing locations	• Does not solve gap problem
			Strict speed limit enforcement	• Controls speeding vehicles and associated stopping sight distance problem	• Temporary action; does not solve gap problem
			Crossing guards	• Creates gaps in traffic; reinforces pedestrian safety; encourages use of marked pedestrian crossing	• Only effective during school periods
		Vehicle/pedestrian conflicts (continued)	Install variable message signs	• Identifies pedestrian crossing locations; abates speeding problem; effective all day; reinforces reduced school zone speed limit	• Does not solve gap problem
			Construct median islands	• Decreases pedestrian exposure; identifies pedestrian crossing locations; increases gap availability	• Accident potential
			Change school zone speed to 20 mph	• Increases motorist acceptance of reduced school zone speed	• Does not solve gap problem
17	E. Day Avenue from N. Santa Monica Boulevard to N. Lake Drive	Pedestrian safety at school dismissal times	Carry on an ongoing education program with frequent reminders within the school	• Alerts students to dangers of crossing streets at midblock from between parked cars	• Fades from students' consciousness with time
			Strict enforcement of parking prohibitions and restrictions on a frequent and regular basis, at an estimated annual cost of $1,300	• Compliance with parking prohibitions and restrictions may be expected to be high in presence of law officer and will limit potential for students to cross street from between parked vehicles	• Compliance decreases significantly without law officer
18	E. Day Avenue at N. Shore Drive	Unwarranted traffic control device installation	Remove stop sign on southbound approach to the intersection, at an estimated cost of $75	• Encourages respect for and compliance with traffic control devices by eliminating unwarwanted installations • Conforms to the control criteria in Chapter IV (intersections of two land access streets should be controlled only if sight distance or other factors would indicate need)	• None

Table 6 (continued)

Number	Location	Traffic Problem	Recommended Traffic Management Actions	Advantages	Disadvantages
20	E. Lakeview Avenue at N. Consaul Place	Insufficient traffic controll related to restricted sight distance	Install stop sign on northbound approach to the intersection, at an estimated cost of $200	• Reduces accident potential and improves safety • Conforms to the control criteria in Chapter IV (intersection of two land access streets should be controlled due to restriced sight distance)	• Modest increase in travel time and delay
21	N. Lydell Avenue W. Lakeview Avenue to W. Silver Spring Drive	Noise and air pollution from bus traffic	Reroute buses from N. Lydell Avenue to N. Mohawk Avenue between W. Lakeview Avenue extended and W. Silver Spring Drive. Construct 200 feet of concrete sidewalks on the north side of W. Lakeview Avenue extended approximately 100 feet west of N. Mohawk Avenue. Erect necessary bus stop signs. Erect shelters. Install traffic signals at the intersection of W. Lakeview Avenue and N. Port Washington Road, at an estimated cost of $62,000 (Another alternative which would be equally acceptable would be to route buses over Port Washington Road and in the Bay Shore Shopping Center lot west of the shopping center)	• All bus traffic would be diverted from N. Lydell Avenue between W. Silver Spring Drive and W. Lakeview Avenue to N. Mohawk Avenue between W. Silver Spring Drive and W. Lakeview Avenue extended • Bus traffic removal from residential street • Installation of traffic signals at the intersection of N. Port Washington Road and W. Lakeview Avenue extended will facilitate ingress into and egress from the Bay Shore Shopping Center	• Requires the installation of traffic signals at the intersection of W. Lakeview Avenue extended and N. Port Washington Road to accommodate buses turning left from W. Lakeview Avenue to N. Port Washington Road • Increased travel time and delay for vehicles entering the intersection of W. Lakeview Avenue extended and N. Port Washington Road • Buses may have difficulty entering traffic stream on W. Silver Spring Drive at N. Mohawk Avenue
		Truck traffic	Erect "No Trucks" signing on Lydell and Bay Ridge Avenues at their intersections with Lakeview, Day, and Belle Avenues and Silver Spring Drive, at an estimated cost of $200	• Prohibition of truck traffic	• None
23	E. Beaumont Avenue from N. Santa Monica Boulevard to N. Consaul Place	Inadequate pavement width	Install "No Parking at Any Time" signs on south side of E. Beaumont Avenue from a point approximately 150 feet east to a point approximately 300 feet east of the intersection of E. Beaumont Avenue and N. Santa Monica Boulevard, at an estimated cost of $100	• Provides for a 12-foot travel lane in each direction • Improves ingress and egress at the access point located directly opposite the existing parking proposed to be prohibited	• Loss of three on-street parking stalls

Table 6 (continued)

Number	Location	Traffic Problem	Recommended Traffic Management Actions	Advantages	Disadvantages
24	W. Silver Spring Drive at N. Lydell Avenue	Congestion	Provide a separate signal cycle for each peak period and the midday to accommodate varying patterns of demand throughout the day	• Reduces vehicular delay	• None
			Install "No Parking at Any Time" signs to prohibit parking on the north side of W. Silver Spring Drive within 150 feet of intersection of N. Lydell Avenue and W. Silver Spring Drive, at an estimated cost of $150	• Reduces vehicular delay • Allows one lane on westbound approach to operate as a through and left-turn lane, and one lane to operate as a through and right-turn lane	• Loss of three on-street parking stalls
		Traffic diversion to avoid traffic controls	Provide necessary offset via interconnection for signal timing to allow traffic to progress from signal to signal without stopping, at an estimated cost of $10,500[b]	• Should reduce vehicular delay and thereby reduce through traffic on local streets	• None
			Install 12-inch lenses and mast arm signal heads on the east- and westbound approaches, at an estimated cost of $8,400	• Significantly increased signal visibility	• None
		Lane continuity in the eastbound direction	Construct channelization to provide a protected left-turn bay; install "Left Lane Left Turn Only" signs upstream of the intersection; install thermoplastic pavement markings to delineate through movement through intersection; and prohibit parking within 150 feet of the intersection, at an estimated cost of $6,000	• Single eastbound lane through the intersection	• May encourage diversion to local access streets
			Remove the left-turn signal indication for the eastbound left-turn movement, at an estimated cost of $200	• Discourages diversion to land access streets • Overall intersection operation improves	• Additional delay to eastbound left-turning vehicles
25	W. Silver Spring Drive at N. Bay Ridge Avenue	Congestion	Provide a separate signal cycle for each peak period and the midday to accommodate varying patterns of demand throughout the day	• Reduces vehicular delay	• None

Table 6 (continued)

Number	Location	Traffic Problem	Recommended Traffic Management Actions	Advantages	Disadvantages
	W. Silver Spring Drive at N. Bay Ridge Avenue (continued)	Traffic diversion to avoid traffic controls	Provide necessary offset via signal interconnection for signal timing to allow traffic to progress from signal to signal without stopping[b]	• Should reduce vehicular delay and thereby reduce through traffic on local streets	• None
26	E. Silver Spring Drive at N. Santa Monica Boulevard	Congestion	Provide a separate signal cycle for each peak period and the midday to accommodate varying patterns of demand throughout the day	• Reduces vehicular delay	• None
		Traffic diversion to avoid traffic controls	Provide necessary offset for signal timing to allow traffic to progress from signal to signal without stopping[b]	• Should reduce vehicular delay and thereby reduce through traffic on local streets	• None
			Prohibit parking within 150 feet of the intersection on the east- and westbound approaches, at an estimated cost of $350	• Reduces vehicular delay by providing lanes for through traffic to bypass left-turning traffic	• Reduces on-street parking • Potential conflict in pedestrian/vehicular intersection approaches
		Pedestrian/vehicular conflicts	Install a "No Right Turn on Red When Pedestrians are Present" or a folding "No Right Turn on Red" sign on the southbound approach to the intersection, at an estimated cost of $100	• Reduces pedestrian and vehicular conflicts	• Increases vehicular delay and travel time
29	E. Silver Spring Drive at N. Lake Drive and N. Marlborough Drive	Congestion	Provide a separate signal cycle for each peak period and the midday to accommodate varying patterns of demand throughout the day. Extend pedestrian signal time clearance intervals	• Reduces vehicular delay	• None
		Traffic diversion to avoid traffic controls	Provide necessary offset for signal timing to allow traffic to progress from signal to signal[b]	• Should reduce vehicular delay and thereby reduce through traffic on local streets	• None
			Install "No Right Turn 3:00 p.m. to 6:00 p.m." sign on westbound approach of N. Lake Drive at N. Shore Drive, at an estimated cost of $100	• Prohibits through traffic diversion to land access streets	• More circuitous route for local residents
		Traffic accidents	Install 12-inch signal lens on mast arms as well as pole-mounted indications, at an estimated cost of $11,300	• Provides significantly improved signal visibility	• None

Table 6 (continued)

Number	Location	Traffic Problem	Recommended Traffic Management Actions	Advantages	Disadvantages
	E. Silver Spring Drive at N. Lake Drive and N. Marlborough Drive (continued)	Vehicular/pedestrian conflicts	Erect a "No Right Turn on Red When Pedestrians Present" sign on the westbound approach to the intersection, at an estimated cost of $100	• Reduces vehicular and pedestrian conflicts	• Increases vehicular delay and travel time
		Inadequately marked exclusive left-turn lanes	Install thermoplastic lane markings to delineate lanes. Install thermoplastic arrows in the exclusive lane to advise motorists of the lane, at an estimated cost of $800	• Provides clear lane delineation	• None
			Install "Left Lane Must Turn Left" signs, at an estimated cost of $200	• Provides information regarding which movements are permitted from specific lanes	• None

[a] *This table lists the traffic management actions recommended for implementation by staff and Study Committee. Actions were recommended by staff and study committee at 19 of the 28 identified problem locations. At seven problem locations, as discussed in this report, no action was recommended for implementation by staff and Study Committee. At the remaining two locations, staff recommended actions for implementation and the Study Committee rejected these recommendations, as discussed in the text.*

[b] *The estimated cost of $10,500 for traffic signal interconnection represents the cost to interconnect all the signals on Silver Spring Drive within the Village.*

Source: SEWRPC.

Ridge Avenue, according to the adopted traffic management criteria.

Nevertheless, it is recommended that the stop signs at these two intersections be retained at their current locations. There are no sidewalks at some approaches to the intersection of N. Lydell Avenue and W. Devon Street. Also, the limitation of N. Lydell Avenue to one-way operation between W. Belle Avenue and W. Montclaire Avenue effectively limits the ability of N. Lydell Avenue to operate as a collector street between W. Belle Avenue and W. Devon Street, and reduces its function to that of a land access street.

E. Devon Street at N. Kent Avenue (Problem Location 4)

The existing traffic control at this intersection was identified as not conforming with the adopted traffic management criteria. This is an intersection between a collector street and a local access street, and the local street approach—N. Kent Avenue—is currently controlled by a yield sign. The traffic management control criteria dictate that the local street approach to such an intersection be stop sign-controlled for safety purposes. It is recommended that the yield sign be replaced with a stop sign on the northbound N. Kent Avenue approach to this intersection, at an estimated cost of $50.

E. Devon Street at N. Shoreland Avenue (Problem Location 5)

The existing traffic control at this intersection was identified as not conforming with the adopted traffic management criteria. This is an intersection between a collector street and a local access street, and the local street approach—N. Shoreland Avenue—is currently controlled by a yield sign. The traffic management control criteria dictate that the local street approach to such an intersection be stop sign-controlled for safety purposes. It is recommended that the yield sign be replaced with a stop sign on the northbound N. Shoreland Avenue approach to this intersection, at an estimated cost of $50.

N. Lake Drive from E. Belle Avenue to E. School Road (Problem Location 6)

A citizen identified a pedestrian safety problem on this roadway segment related to the lack of a sidewalk on the east side of N. Lake Drive from W. Belle Avenue to E. School Road, and the difficulty in crossing N. Lake Drive owing to existing traffic volumes, vehicle speeds, and a lack of gaps in the traffic stream. Traffic volume on N. Lake Drive just south of W. Day Avenue in 1986 was estimated to be 12,300 vehicles per average weekday. Average traffic speed on N. Lake Drive was estimated to be 32 miles per hour (mph), with the highest speed being 40 mph, and

the 85th percentile speed—a nationally accepted speed used as the basis for establishing proper speed limits on any street or highway—being 34 mph. A gap in the traffic stream equal to or exceeding 16 seconds is the gap in traffic required for a typical child to cross N. Lake Drive walking at a rate of four feet per second with a three-second period for making the decision to cross the street. Such a gap should, desirably, be present once every minute. During the morning and afternoon, when students are walking to and from school, the required gap in traffic may be expected to occur only once every three to five minutes based upon the volume and speed of traffic on N. Lake Drive.

The advantage of the suggested sidewalk is that it provides a defined pedestrian walkway along the east side of N. Lake Drive, thereby increasing pedestrian safety by separating pedestrians from vehicle traffic. Also, pedestrians would have a defined pathway to reach the recently improved pedestrian crossing at N. Lake Drive and E. Belle Avenue. A disadvantage of this alternative control measure is that it may encourage residents on the west side of N. Lake Drive to cross N. Lake Drive at locations north of E. Belle Avenue. This alternative measure could be difficult to implement because the cost of constructing a sidewalk would be assessed 100 percent against the adjacent property; such implementation has been attempted, but has not been successful. Nevertheless, it is recommended in the interest of pedestrian safety that such implementation again be attempted. The estimated cost of implementing this alternative control measure is $14,000.

E. Monrovia Avenue at N. Bay Ridge Avenue (Problem Location 7)

The existing traffic control at this intersection—yield signs on the westbound and eastbound approaches—was identified as not conforming to the adopted traffic management criteria, and an additional problem of inadequate sight distance on the northbound approach was also identified. The traffic problem identified at this intersection was the presence of an unwarranted control device. Alternative control measures included removal of the existing traffic control devices.

It is recommended that the yield sign on the east- and westbound approaches to the intersection be removed, at an estimated cost of $150. To resolve the problem of inadequate sight distance on the northbound intersection approach, it is recommended for safety purposes that stop signs be erected on the north- and southbound approaches to the intersection, at an estimated cost of $200.

E. Monrovia Avenue at N. Shoreland Avenue (Problem Location 8)

The existing traffic control at this intersection was identified as not conforming with the adopted traffic management criteria. The intersection has stop signs which are not warranted. It is recommended that the stop signs on the north- and southbound intersection approaches be removed, at an estimated cost of $150. Such removal should encourage respect for and compliance with traffic control devices by eliminating unwarranted installations and reducing unnecessary delay.

N. Bay Ridge Avenue from E. Monrovia Avenue to E. Montclaire Avenue (Problem Location 9)

This road segment was identified by a citizen as having inappropriate parking restrictions. One alternative control measure considered to alleviate this problem was to change the one-hour parking restrictions to two-hour parking restrictions. The advantage of this control measure is that residents would have greater opportunity for on-street parking; there are no anticipated disadvantages. However, it is not recommended that this control measure be implemented. The other alternative control measure considered was the elimination of the parking restrictions. The advantage of this control measure is that residents would have the opportunity for unrestricted on-street parking. A possible disadvantage of this alternative is that the initial reasons for implementing parking restrictions may reappear. It is recommended that this alternative control measure be implemented, at an estimated cost of $300.

E. Montclaire Avenue from N. Bay Ridge Avenue to N. Lake Drive (Problem Location 10)

The traffic problem identified by a citizen on this roadway segment was an excessive number of stop signs. Removal of some of the signs would be in conformance with the adopted traffic management control criteria, and would encourage compliance with necessary traffic control and reduce unnecessary delay. It is recommended that the stop signs be removed from the intersection of N. Bay Ridge Avenue and E. Montclaire Avenue and from selected approaches to the intersections of N. Kent Avenue and N. Shoreland Avenue with E. Montclaire Avenue, at an estimated cost of $600.

E. Montclaire Avenue
at N. Berkeley Boulevard
(Problem Location 11)
The traffic problem identified by a citizen at this intersection was a lack of stop signs on the north- and southbound approaches, and unnecessary stop signs on the east- and westbound approaches. It is recommended that stop signs be installed at the north- and southbound approaches. This would address the inadequate sight distance on the southbound approach and would be in conformance with the adopted traffic management control criteria. It is further recommended that, with the control on the north- and southbound approaches, the stop signs on the east- and westbound approaches be removed. The estimated cost of these recommendations is $350.

W. Montclaire Avenue at N.
Lydell Avenue (Problem Location 12)
The traffic problem identified by a citizen at this intersection was a lack of respect for the existing stop sign. It is recommended that a larger stop sign be installed to increase its visibility. The estimated cost of the larger stop sign is $50.

Another alternative control measure considered was strict law enforcement. The advantage of this measure is that compliance would be excellent while the law officer was present. The disadvantage is that compliance would decrease when the the law officer was not present. It is not recommended that this control measure be implemented.

E. and W. Belle Avenue from N.
Lydell Avenue to N. Santa Monica
Boulevard (Problem Location 13)
A traffic problem identified by a citizen on this roadway segment is a lack of sufficient stop signing. The installation of stop signs at additional locations on this street segment could increase travel time and delay, increase certain types of accidents, and encourage disrespect for and noncompliance with other stop signs.

According to the adopted traffic management control criteria, the removal of existing stop signs should, rather, be considered on this street segment. These criteria indicate that the stop signs on east- and westbound approaches to the intersection of N. Bay Ridge Avenue and E. Belle Avenue should be removed, at an estimated cost of $150.

It should be noted that the desire for additional stop signs may result from concern about potential through traffic on E. and W. Belle Avenue. Actions to address that problem are examined later in this chapter, along with actions to address similar problems on E. and W. Day Avenue and E. and W. Lakeview Avenue. The actions recommended to address the through traffic problem would, in the short range, make traffic flow improvements on E. Silver Spring Drive to encourage the through traffic to use E. Silver Spring Drive. Because no direct action is proposed to be taken to restrict use of E. Belle Avenue by through traffic, no change in its current traffic control is recommended.

E. Belle Avenue from N. Santa
Monica Boulevard to N. Berkeley
Boulevard (Problem Location 14)
The traffic problems identified by citizens on this roadway segment were a lack of pedestrian safety and a lack of on-street parking for area residents caused by the use of on-street parking by the staff at Richards School. The alternative traffic control measure recommended to abate these problems is the prohibition of on-street parking on the north side of E. Belle Avenue between N. Santa Monica Boulevard and N. Berkeley Boulevard on schooldays between 7:30 a.m. and 4:30 p.m. This control measure would effectively abate the pedestrian safety problem by significantly improving pedestrian visibility and eliminating the reason for students to cross the street except at the sidewalk. It is also recommended that an in-school education program regarding traffic safety be implemented. The estimated cost of implementing this control measure is $200.

A control measure considered but rejected was the imposition of restrictions on the length of time that on-street parking would be permitted while school was in session. This measure was rejected because it would not address the pedestrian safety problems.

N. Lake Drive from E. Belle
Avenue to E. Day Avenue
(Problem Location 15)
A vehicular/pedestrian conflict problem was identified at the intersection of N. Lake Drive and E. Belle Avenue by the Village's Traffic Safety Committee. Vehicular volumes—12,300 vehicles per average weekday in July 1986—result in few gaps in the traffic stream of sufficient length to allow pedestrians to safely cross N. Lake

Drive on the segment from E. Belle Avenue to E. Day Avenue. On November 20, 1986, two young children were seriously injured one block south of the N. Lake Drive and E. Belle Avenue intersection at the intersection of N. Lake Drive and E. Day Avenue.

To abate this problem, a set of actions was recommended to increase motorist awareness of the problem, and to decrease the distance, and thus the duration, of the gap required for pedestrians to cross the street. The installation of variable message signs on N. Lake Drive north of E. Belle Avenue, and south of E. Carlisle Avenue; construction of median islands on N. Lake Drive at E. Belle Avenue, at E. Day Avenue, and at E. Carlisle Avenue; and the installation of thermoplastic pavement markings were among the recommended actions. Also recommended was the continued use of crossing guards, and a change in the school zone speed limit from 15 mph to 20 mph and strict enforcement of the speed limit. The estimated capital cost of implementing these alternatives is $25,200. The estimated annual operating costs are $6,000. It should be noted that these actions were recommended to the Village of Whitefish Bay in a letter from the Commission staff dated February 10, 1987, and that the Village has implemented these recommendations.

A number of alternative control actions were considered but rejected. They included: 1) the use of portable stop signs; 2) plant removal on the east side of N. Lake Drive south of E. Day Avenue; 3) the installation of traffic signals; 4) the relocation of school crossing to E. Belle Avenue; 5) the installation of overhead flashing beacons; 6) retiming of traffic signals at the N. Lake Drive and E. Silver Spring Drive intersection; 7) reconstruction of the curve on N. Lake Drive south of E. Day Avenue; 8) a reduction in roadway width; 9) grooving the pavement; 10) rescheduling school start and stop times; and 11) construction of a pedestrian overpass.

E. Day Avenue from N. Lydell Avenue to N. Santa Monica Boulevard (Problem Location 16)

A traffic problem identified by a citizen on this roadway segment is a lack of sufficient stop signs. However, according to the adopted traffic management control criteria, the removal of the existing stop signs should, rather, be considered. These criteria indicate that stop signs should be removed on all four approaches to the intersection of N. Bay Ridge Avenue and E. Day Avenue, at an estimated cost of $300.

It should be noted that the desire for additional stop signs may result from concern about potential through traffic on E. and W. Day Avenue. Actions to address that problem, along with actions to address similar problems on E. and W. Lakeview and E. and W. Belle Avenues, are examined later in this chapter. The action recommended to address the through traffic problem would, in the short range, make traffic flow improvements on E. Silver Spring Drive to encourage through traffic to use E. Silver Spring Drive. Because no direct action is proposed to be taken to restrict the use of E. Day Avenue by through traffic, no change in its current traffic control is recommended.

E. Day Avenue from N. Santa Monica Boulevard to N. Lake Drive (Problem Location 17)

Another traffic problem identified by the Village's Traffic Study Committee is related to pedestrian safety at school dismissal times. Vehicles waiting for students queue on both sides of the street at dismissal times—both at lunch and at the end of day—and students cross the street between vehicles. The alternative control measures recommended to abate this problem are the institution of an ongoing educational program within the school emphasizing the danger of and discouraging midblock street crossing from between parked vehicles, and of a program of strict enforcement of existing parking prohibitions and restrictions. The estimated cost of implementing these control measures is $1,300 annually.

A control measure considered but rejected was staggered dismissal times, as this would be ineffective and would inconvenience parents with more than one child attending the school.

E. Day Avenue at N. Shore Drive (Problem Location 18)

The existing traffic control at this intersection was identified as not conforming with the adopted traffic management criteria. This is an intersection between two local streets, and the southbound approach of N. Shore Drive is stop sign-controlled. The traffic management control criteria indicate that no control should be provided.

The advantage of stop sign removal is that it encourages respect for and compliance with

traffic control devices by eliminating unwarranted installation and decreasing travel time. It is recommended that the stop sign on the southbound approach to the intersection be removed, at an estimated cost of $75; however, such removal should not be implemented until after an ongoing lakefront erosion control project is completed to allow trucks access to the project.

E. Lakeview Avenue from N. Lydell Avenue to N. Lake Drive (Problem Locations 19 and 20)

A traffic problem identified on this roadway segment by a citizen is a lack of signs warning of children playing. Such signs may afford children and parents a false sense of security and encourage children to play in the street. Further, signs warning of a common condition are not effective and, indeed, encourage disrespect for those traffic control devices that are appropriately utilized. It is not recommended that this action be implemented.

A traffic problem on this roadway segment was also identified at the intersection of E. Lakeview Avenue and N. Consaul Place by a Traffic Study Committee member, that problem being the perceived restricted sight distance at this intersection, with attendant inadequate traffic control. The only control measure considered to alleviate this problem was the installation of a stop sign on the northbound approach to the intersection. The advantages of this control measure are a reduction in accident rates and improved safety, and conformance with the adopted traffic management criteria. The sight distance at this intersection is sufficiently restricted to warrant installation of a stop sign. The disadvantage of this control measure is the attendant increase in travel time and delay. It is recommended that this control measure be implemented, at an estimated cost of $100.

It should be noted that a desire for "Slow—Children Playing" signs may be a result of a concern about potential through traffic on E. and W. Lakeview Avenue. Actions to address that problem are examined later in this chapter. The actions recommended to address the through traffic problem would, in the short range, make traffic flow improvements on E. Silver Spring Drive to encourage through traffic to use E. Silver Spring Drive. Because no direct action is proposed to be taken to restrict use of E. Lakeview Avenue by through traffic, no change in its current traffic control is recommended west of N. Santa Monica Boulevard. It is recommended, however, that a stop sign be installed at the northbound approach of N. Consaul Place because of restricted sight distance.

N. Lydell Avenue from W. Lakeview Avenue to W. Silver Spring Drive (Problem Location 21)

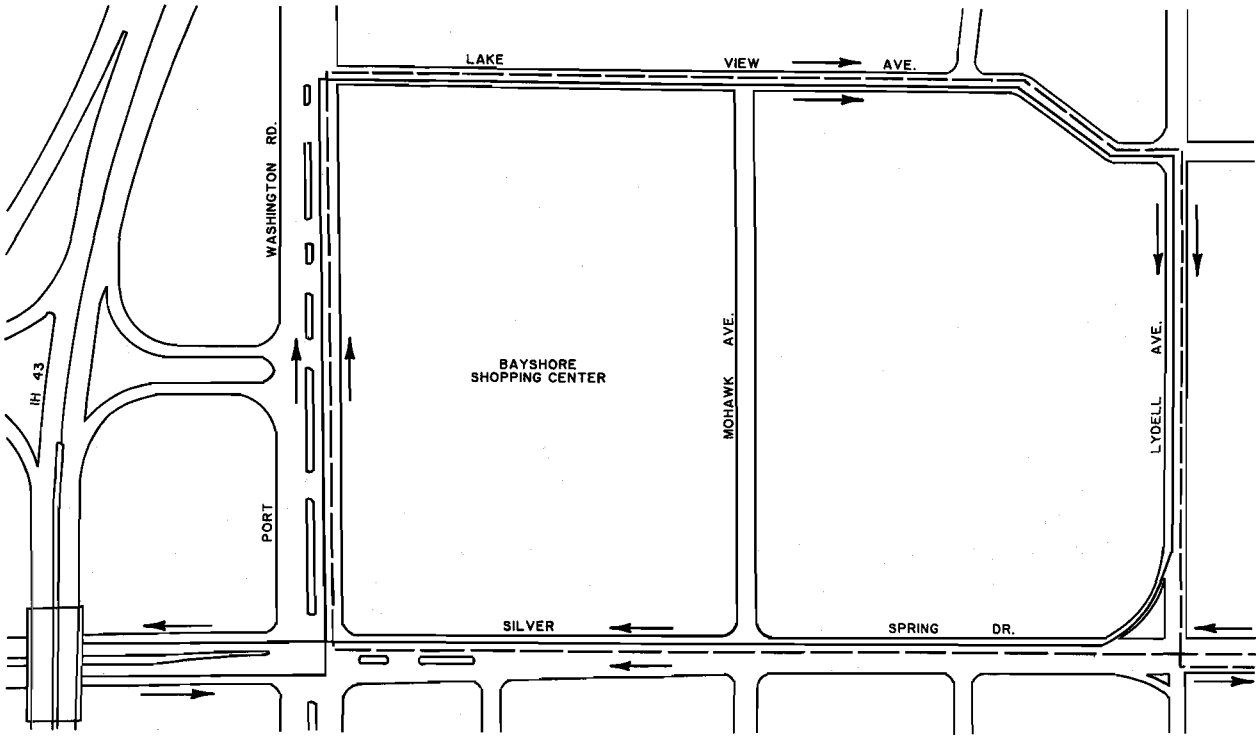
A traffic problem identified by a citizen at this intersection is excessive noise and air pollution from bus traffic. The alternative control measure considered to alleviate this problem is to reroute buses from N. Lydell Avenue between W. Lakeview Avenue and W. Silver Spring Drive to N. Mohawk Avenue between W. Lakeview Avenue extended and W. Silver Spring Drive, as shown on Map 18. One advantage of this control measure is the removal of bus traffic from a residential neighborhood. Also, the installation of traffic signals to accommodate the rerouted bus traffic at the intersection of W. Lakeview Avenue extended and N. Port Washington Road would facilitate ingress and egress of all traffic at the Bay Shore Shopping Center. The disadvantage of this control measure is that the new traffic signals at the intersection of W. Lakeview Avenue extended and N. Port Washington Road would result in increased travel time and delay. It is recommended as part of this action that 200 feet of concrete sidewalk be constructed on the north side of W. Lakeview Avenue extended approximately 100 feet west of W. Mohawk Avenue to accommodate the rerouted buses. Necessary bus stop signs and passenger shelters should be erected. The estimated cost of implementing the recommendations is $62,000.

Another option would be to route the buses from Routes No. 15, 31, and 63 along Port Washington Road and in the western Bay Shore Shopping Center parking lot. The buses would circulate in the parking lot as buses from Routes No. 29 and 68 currently do. The buses could enter at the central access point to the shopping center's western parking lot and exit at the southern access to the parking lot, or they could operate in the opposite direction. It would be desirable to have a traffic signal at the parking access, from which buses would be required to make left turns exiting the parking lot. The disadvantages of this option are that it does not provide good bus service to the Kohl's store, and bus operations are moved to the north.

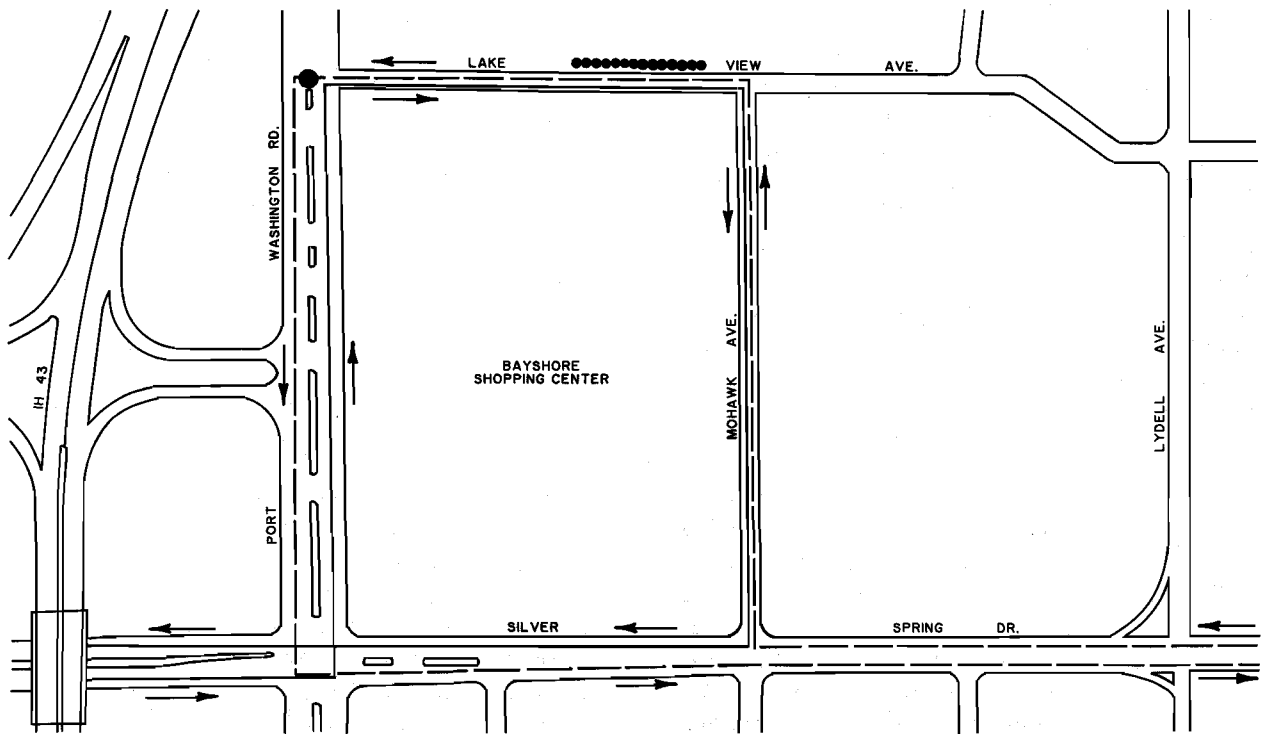
Map 18

PROPOSED MODIFICATIONS TO BUS ROUTES CURRENTLY TRAVERSING N. LYDELL AVENUE BETWEEN W. LAKEVIEW AVENUE AND W. SILVER SPRING DRIVE

CURRENT ROUTES: 1987



PROPOSED ROUTES



LEGEND

- ROUTE 63
- ROUTES 15 AND 31
- DIRECTION OF TRAVEL
- PROPOSED SIDEWALK
- PROPOSED TRAFFIC SIGNAL

GRAPHIC SCALE 0 100 200 FEET

Source: SEWRPC.

It must be noted that the corporate boundary between the Village of Whitefish Bay and the City of Glendale lies on the centerline of N. Lydell Avenue. Further, W. Lakeview Avenue extends into private property. Thus, implementation of these recommendations will require coordination with, and the cooperation of, the City of Glendale and the owners of Bay Shore Shopping Center.

Another traffic problem identified was the excessive number of trucks. The control measure considered to abate this problem is the prohibition of trucking. The advantage of this control measure is the elimination of trucking from a residential street. It is recommended that "No Trucking" signs be installed on N. Lydell Avenue, at an estimated cost of $200. Again, the cooperation of the City of Glendale will be required to prohibit trucking in the southbound direction. No Trucking signs would also need to be installed on E. Lakeview, E. Day, and E. Belle Avenues between N. Bay Ridge Avenue and. Lydell Avenue.

It may be possible as well to achieve some reduction in trucking on Lydell Avenue by encouraging such trucking to instead use Port Washington Road. The placement of a traffic signal, which would be warranted on Port Washington Road at a Bay Shore Shopping Center access point, would enable trucks to make left turns in and out of the shopping center more easily. The Village should work with the City of Glendale, Milwaukee County, and the Wisconsin Department of Transportation to install such a traffic signal.

E. Beaumont Avenue from N. Santa Monica Boulevard to N. Consaul Place (Problem Location 22)

A citizen on this roadway segment indicated that the parking spaces on the south side of a short stretch of E. Beaumont Avenue have narrowed the driving lanes and have made ingress to and egress from a residential driveway on the north side of E. Beaumont Avenue difficult. The alternative control measure considered to alleviate this problem is to prohibit parking from a point approximately 150 feet east of the intersection of E. Beaumont Avenue and N. Santa Monica Boulevard to a point approximately 300 feet east of that intersection on the south side of E. Beaumont Avenue. The advantage of this control measure is that it provides for a 12-foot traffic lane in each direction, rather than a single traffic lane for both directions of travel. The disadvantage of this measure is the loss of three on-street parking stalls. The estimated cost of implementing this recommendation is $100.

E. Beaumont Avenue at N. Consaul Place (Problem Location 23)

The existing traffic control was identified as not conforming with the adopted traffic management criteria. However, it is not recommended that the yield signs on the east- and westbound Beaumont Avenue approaches to the intersection be removed because parked vehicles at the intersection obstruct sight distance.

W. Silver Spring Drive at N. Lydell Avenue (Problem Location 24)

A traffic problem identified at this intersection is the traffic congestion at the intersection and inefficient travel along E. and W. Silver Spring Drive. The modification of the traffic signal cycle and provision of progression via interconnected traffic signals on E. and W. Silver Spring Drive was considered as an alternative to alleviate these problems. The advantages of these control measures are the reduction in vehicular delay at the intersection and the potential reduction in the diversion of through traffic from E. and W. Silver Spring Drive to land access streets. It is recommended that a separate signal cycle be provided for each peak period and the midday to accommodate varying patterns of traffic demand throughout the day. It is recommended that the signal be interconnected with adjacent traffic signals, with the necessary offset to allow traffic to proceed from one signal to the next without stopping. It is also recommended that the three westernmost on-street parking stalls on the north side of W. Silver Spring Drive between N. Lydell Avenue and N. Bay Ridge Avenue be eliminated in order to provide a through and a right-turn lane and a through and a left-turn lane on the westbound approach to the intersection of W. Silver Spring Drive and N. Lydell Avenue. The estimated cost of implementing these alternative control measures is $10,500.[1]

The second traffic problem identified at this intersection is the high incidence of accidents involving left-turning vehicles on the eastbound approach to the intersection. Recommended alternative

[1] *This estimated cost includes the cost of interconnection of all the traffic signals from N. Lydell Avenue to N. Lake Drive on W. Silver Spring Drive.*

control measures include increasing the traffic signal lens size and adding mast arm indications. These alternative control measures would significantly increase signal visibility. There are no disadvantages associated with these alternative control measures. It is recommended that 12-inch lenses be installed and that mast arm signal heads be installed on the east- and westbound approaches, at an estimated cost of $8,400.

Another traffic problem identified by the staff is a lane continuity problem in the eastbound direction. Resolution of this problem would serve to improve the efficiency of traffic in the intersection and along W. Silver Spring Drive. Currently, there are two lanes on the eastbound approach from which traffic may proceed through the intersection. However, this traffic must merge to a single lane on the east side of N. Lydell Avenue because the pavement narrows and parking is allowed on E. Silver Spring Drive east of the intersection. The Village is considering narrowing the pavement permanently as part of a streetscape project. The control measure recommended to abate this problem is the conversion of the left-hand lane in the eastbound direction to an exclusive left-turn lane and the use of only the right lane for through movement. This would require the construction of channelization, the installation of advance signing, and the prohibition of parking within 150 feet of the intersection on the eastbound approach. With the provision of an exclusive left-turn lane, the eastbound exclusive left-turn arrow at the intersection can be eliminated, but only subsequent to conversion of the left lane in the eastbound direction to an exclusive left-turn lane. The removal of the left-turn arrow will improve the efficiency of traffic flow in the intersection and along E. and W. Silver Spring Drive. The estimated cost of implementing these measures is $6,200.

It must be noted that the corporate boundary between the Village of Whitefish Bay and the City of Glendale lies on the centerline of N. Lydell Avenue. Thus, implementation of these recommendations will require coordination with, and the cooperation of, the City of Glendale.

E. Silver Spring Drive at N. Bay Ridge Avenue (Problem Location 25)

A traffic problem identified at this intersection is traffic congestion. The modification of the traffic signal cycle and provision of progression on E. and W. Silver Spring Drive were considered as alternatives to alleviate the problem. The advantages of these control measures are the reduction in vehicular delay at the intersection and the reduction in the diversion of through traffic to local streets. It is recommended that a separate signal cycle be provided for each peak period and the midday to accommodate varying patterns of traffic demand throughout the day. It is recommended that the signal be interconnected with adjacent traffic signals, with the necessary offset to allow traffic to proceed from one signal to the next without stopping. The estimated cost of implementing these measures is included in the estimated cost of interconnection at the intersection of N. Lydell Avenue and W. Silver Spring Drive.

E. Silver Spring Drive at N. Santa Monica Boulevard (Problem Location 26)

The traffic problem identified at this intersection was traffic congestion. The modification of the traffic signal cycle and provision of progression on E. and W. Silver Spring Drive was considered as an alternative to alleviate the problem. The advantages of these control measures are the reduction of vehicular delay at the intersection and the reduction in the diversion of through traffic to local streets. It is recommended that a separate signal cycle be provided for each peak period and the midday to accommodate varying patterns of traffic demand throughout the day. It is recommended that the signal be interconnected with adjacent traffic signals, with the necessary offset to allow traffic to proceed from one signal to the next without stopping. The estimated cost of implementing these alternative control measures is included in the estimated cost of interconnection at the intersection of N. Lydell Avenue and W. Silver Spring Drive.

Another alternative considered for this intersection was the provision of additional traffic lanes on the east- and westbound intersection approaches by prohibiting parking on the north side of E. Silver Spring Drive within 150 feet east of the intersection, and on the south side of E. Silver Spring Drive within 150 feet of the intersection. The advantage of this control measure, which will permit through and right-turning traffic to bypass left-turning traffic, is that it would reduce vehicular delay as, without these additional lanes, a single left-turning vehicle and a parked vehicle can effectively stop all through traffic on E. Silver Spring Drive.

The disadvantages include the loss of seven on-street parking spaces and a potential increase in pedestrian/vehicular conflicts on these two approaches. It is recommended that parking be prohibited within 150 feet of the intersection on the east- and westbound approaches to provide the exclusive right-turn lanes, at an estimated cost of $350.

Another problem noted by the Study Committee was the conflict between southbound right-turning vehicle traffic and pedestrians when right turns are made on a traffic signal red phase. It is recommended that a sign prohibiting right turns on red when children are present be installed at the southbound approach to the intersection. This sign may be a folding sign such as the Village currently employs at the intersection of E. Hampton Road and N. Marlborough Drive to display the message "No Right Turn on Red When Children are Present" at school start and dismissal times; or it may be a sign that displays the message at all times.

E. Silver Spring Drive
at N. Berkeley Boulevard
(Problem Location 27)

The traffic problems identified at this intersection were traffic delay and a high incidence of traffic accidents. An alternative control measure considered at this intersection is the prohibition of left turns to and from N. Berkeley Boulevard. The advantage of this control measure is that it would reduce E. Silver Spring Drive traffic delay and significantly reduce the potential for vehicular conflicts in the intersection. The disadvantage is that it would cause circuitous travel patterns, increasing travel time and delay; and the left turns would be placed on adjacent intersections. The Commission recommended that "No Left Turn" signs be erected on the westbound and northbound approaches to the intersection, at an estimated cost of $400. The Study Committee rejected this recommendation because of concern over the resultant circuity in travel.

E. Silver Spring Drive from N.
Diversey Boulevard to N. Hollywood
Avenue (Problem Location 28)

The traffic problem identified on this roadway segment was a high incidence of traffic accidents. An alternative control measure considered was the prohibition of on-street parking. The advantage of this control measure is that is would significantly reduce vehicular conflicts and significantly improve sight distance for vehicles entering and exiting the driveway directly opposite N. Hollywood Avenue. The disadvantage is that it would eliminate six on-street parking stalls in a commercial area. The Commission staff recommended that parking be prohibited on the north side of E. Silver Spring Drive between N. Diversey Boulevard and N. Hollywood Avenue between 3:00 p.m. and 6:00 p.m., at an estimated cost of $200. The Study Committee rejected this recommendation because of concern over the loss of on-street parking.

Alternative control measures also considered but rejected by both staff and Study Committee included the prohibition of left turns to E. Silver Spring Drive at the driveway opposite N. Hollywood Avenue, and the closure of the driveway, as such measures would cause inconvenience to shoppers in this commercial portion of the Village.

E. Silver Spring Drive at N.
Lake Drive and N. Marlborough
Drive (Problem Location 29)

The first traffic problem identified at this intersection was traffic congestion. The alternatives considered to alleviate this problem included modification of the traffic signal cycle and provision of progression on E. and W. Silver Spring Drive. The advantages of these control measures are the reduction of vehicular delay at the intersection and the reduction in the diversion of through traffic to local streets. It is recommended that a separate signal cycle be provided for each peak period and the midday to accommodate varying patterns of traffic demand throughout the day. It is recommended that the signal be interconnected with adjacent traffic signals, with the necessary offset to allow traffic to proceed from one signal to the next without stopping. The estimated cost of implementing these alternative control measures is included in the estimated cost of interconnection at the intersection of N. Lydell Avenue and W. Silver Spring Drive. It is also recommended that a "No Right Turn When Pedestrians are Present" sign be installed on the westbound approach to the intersection of N. Lake Drive at W. Silver Spring Drive, at an estimated cost of $100. To prevent any substantial diversion of traffic making the westbound to northbound movement from the intersection of E. Silver Spring Drive at N. Lake Drive to the intersection of E. Silver Spring Drive and N. Shore Drive as a result of the installation

of the No Right Turn on Red When Pedestrians are Present sign at the former intersection, the installation of a "No Right Turn on Red 3:00 p.m. to 6:00 p.m." sign on the westbound approach of the latter intersection is recommended at an estimated cost of $100.

Another traffic problem identified was a high incidence of accidents at the intersection. The alternative control measure considered to alleviate this problem was an increase in the lens size of the traffic signals from eight inches to 12 inches, and the installation of mast arm signal heads, at an estimated cost of $11,300.

Another traffic problem identified was vehicular/pedestrian conflicts in the westbound right-turn lane at the intersection. The alternative control measure considered to alleviate this problem was the prohibition of right turns on red. This control measure would reduce vehicular/pedestrian conflicts, and there would be an increase in vehicular delay. It is recommended that a "No Right Turn on Red" sign be erected on the westbound approach to the intersection, at an estimated cost of $100.

Another traffic problem identified was the inadequate marking of the exclusive left-turn lanes. The alternative control measures considered to abate this problem were the installation of thermoplastic pavement markings and lane-use control signing. The advantages of these control measures include clear lane delineation and clear identification of which movements are permitted from specific lanes. There are no disadvantages to implementing these control measures. It is recommended that thermoplastic lane markings be installed to delineate the lanes, along with arrows to advise the motorist of the movement(s) for which the lane has been designated. It is also recommended that "Left Turn Must Turn Left" signs be installed. The estimated cost of implementing these recommendations is $1,000.

Through Traffic Problem on Local Streets, Particularly East-West Streets Connecting to Bay Shore Shopping Center

One traffic problem within a subarea of the northern portion of the Village of Whitefish Bay requires a set of measures for its resolution. This is the problem of through traffic traversing the residential neighborhood bounded roughly by E. and W. Devon Street on the north; E. and W. Silver Spring Drive on the south; N. Lydell Avenue on the west; and N. Lake Drive on the east. Such through traffic should be utilizing the arterial and collector streets rather than the local land access streets. The local streets most affected are E. and W. Lakeview Avenue between N. Lydell Avenue and N. Lake Drive, and N. Lydell Avenue between W. Silver Spring Drive and W. Lakeview Avenue. Also affected are E. and W. Day Avenue and E. and W. Belle Avenue. The problem is principally a result of traffic moving to, from, and through the Bay Shore Shopping Center and commercial areas adjoining the shopping center on the south.

Three basic alternatives for alleviating this problem were identified and evaluated, as presented in Table 7. The traffic impacts that may be expected under each alternative control measure are shown in Table 8.

The first alternative control measure considered was the construction of a system of traffic diverters at eight intersections. These diverters would restrict movements on selected intersection approaches to right and/or left turns only, as shown on Map 19. The estimated cost of this alternative control measure is $41,800.

The second alternative control measure considered was to close E. Lakeview, E. Day, and E. Belle Avenues just east of N. Lydell Avenue, as shown on Map 20. The estimated cost of this alternative control measure is $17,850.

The third alternative control measure considered was the closure of the driveways serving the Bay Shore Shopping Center opposite Lakeview, Day, and Belle Avenues at N. Lydell Avenue, as shown on Map 21. The estimated cost of this alternative control measure is $9,450.

A number of options which are basically modifications of Alternative 3 were also considered to alleviate the through traffic problem. Options 1 through 4 involve actions that would require the cooperation of the City of Glendale and/or the owners of the Bay Shore Shopping Center for implementation because all or part of the actions would have to be undertaken outside the corporate limits of the Village of Whitefish Bay. Options 5, 6, and 7 involve actions that could be undertaken by the Village within its corporate boundaries, but which would severely restrict access to the Bay Shore Shopping Center. The seven options are shown on Maps 22 through 28. The advantages and disadvantages of implementing each of these options, along with the estimated cost of implementation, are presented in Table 9.

Table 7

EVALUATION OF ALTERNATIVE TRAFFIC CONTROL MEASURES TO ABATE THROUGH TRAFFIC PROBLEMS IDENTIFIED IN THE AREA BOUNDED BY DEVON STREET, LAKE DRIVE, SILVER SPRING DRIVE, AND LYDELL AVENUE IN THE VILLAGE OF WHITEFISH BAY[a]

Alternative Control Measures		Advantages	Disadvantages	Cost
Number	Description			
1	Construction of a system of traffic diverters at eight intersections to restrict movements on selected approaches to right and/or left turns only (see Map 19)	• Eliminates nearly all existing through traffic problems by making use of local streets very circuitous. Travel would only be reasonably direct if arterial and collector streets are used. Exception is Lydell Avenue, which would continue to carry through traffic • Traffic diverters could replace street surface with attractive landscaped planters • Traffic diverters could be perceived as providing the benefits of a curvilinear local street system—that is, low levels of traffic and isolated residential streets—within a grid street system	• Results in circuitous travel for most local traffic, including emergency vehicles • Nonresident delivery and visitor traffic will experience considerable difficulty in traveling to and from selected areas. Compounding this problem will be that the diverters and their turn restrictions and one-way streets will not typically be shown on street maps • All parts of area will generally experience circuitous local travel, including northern portion of area, which now has little through traffic • Two street segments—Lydell Avenue and Kent Avenue between Devon Street and Montclaire Avenue—become "No Outlet" streets for southbound traffic without adequate turnarounds • Temporary "test" of traffic control will be relatively expensive	$41,800
2	Close Lakeview Avenue, Day Avenue, and Belle Avenue just east of Lydell Avenue. These three streets must be marked as "No Outlet" streets at their intersections with Bay Ridge Avenue. The closures should be appropriately landscaped (see Map 20) and Belle Avenue (continued)	• Eliminates nearly all existing through traffic problems by closing streets that now carry or could carry east-west through traffic. Exception is Lydell Avenue, which would continue to carry through traffic • Temporary "test" of traffic control would be relatively inexpensive	• Three street segments—Lakeview, Day, and Belle Avenues—between Bay Ridge Drive and Lydell Avenue become "No Outlet" streets for westbound traffic without adequate turnarounds • Some modest modification of existing emergency vehicle routes will be required • Through traffic would remain on Lydell Avenue, and residents of Lydell Avenue south of Belle Avenue may be somewhat isolated from remainder of Village	$17,850
3	Close driveways from Bay Shore Shopping Center to Lydell Avenue opposite Lakeview, Day, and Belle Avenues. Utilize appropriate landscaping to accomplish closure (see Map 21)	• Eliminates nearly all existing through traffic problems by eliminating access to, from, and through the Bay Shore Shopping Center	• Implementation is likely to be difficult in short term as action would have to be taken by Bay Shore Shopping Center which is located in the City of Glendale, as is the western one-half of Lydell Avenue. This action would reduce access to the Bay Shore Shopping Center	$ 9,450

[a] *Traffic Problem: Through traffic on local streets, particularly east-west traffic to, from, and through the Bay Shore Shopping Center. The local streets most affected are Lakeview Avenue and Lydell Avenue between Silver Spring Drive and Lakeview Avenue. Also affected are Day and Belle Avenues.*

Source: SEWRPC.

Table 8

ESTIMATED TRAFFIC IMPACTS OF THE ALTERNATIVE CONTROL MEASURES CONSIDERED TO ALLEVIATE THE THROUGH TRAFFIC PROBLEMS IDENTIFIED IN THE VILLAGE OF WHITEFISH BAY[a]

	Estimated Average Weekday Traffic						
	Land Access Streets			Arterial and Collector Streets			
	Belle Avenue	Day Avenue	Lakeview Avenue	Devon Street	Port Washington Road	Silver Spring Drive	Santa Monica Boulevard
Average Weekday Traffic (1986)	1,600	1,200	3,300	4,950	17,450-33,700	13,500	3,600-4,900
Alternative 1	1,300	1,120	2,100	5,200	17,850-34,100	14,750	2,350-3,650
Alternative 2	1,200	700	1,800	5,350	17,950-34,200	15,000	2,350-3,650
Alternative 3	1,200	700	1,800	5,350	17,950-34,200	15,000	2,600-4,100

[a] *None of the alternatives would be expected to divert traffic to N. Bay Ridge Avenue.*

Source: SEWRPC.

Two study committee meetings were held to consider these alternatives and preliminary staff recommendations. The Commission staff recommended that the Village work in the long term toward implementation of Alternative 3 or one of its sub-options—closing the driveways from the Bay Shore Shopping Center to N. Lydell Avenue—in cooperation with the City of Glendale and the shopping center; and work in the short range to implement Alternative 2—which would close W. Lakeview, W. Day, and W. Belle Avenues at N. Lydell Avenue.

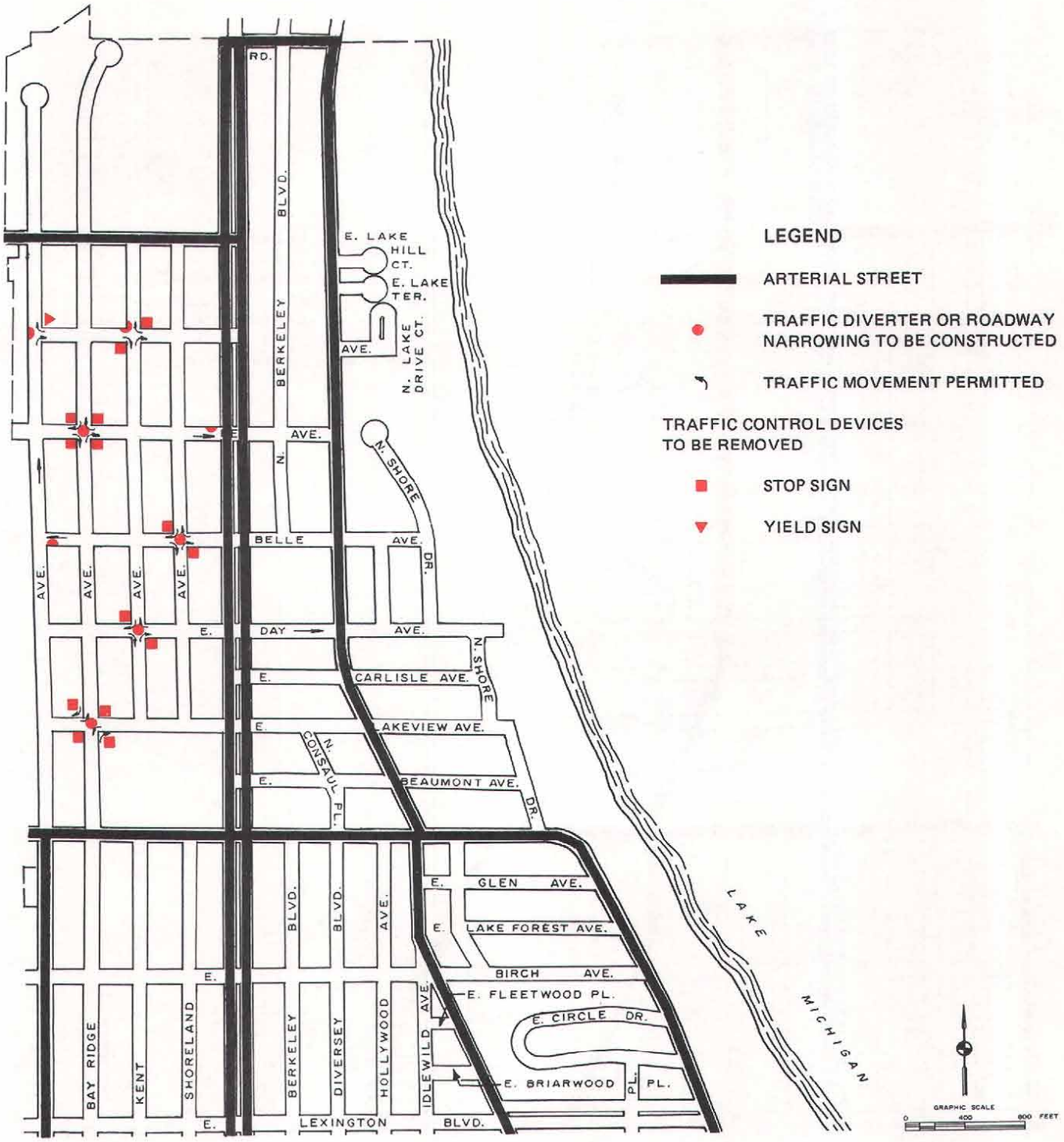
Alternative 3 was considered by the Commission staff as the most desirable alternative control measure because it would eliminate nearly all through traffic problems by eliminating access to, from, and through the Bay Shore Shopping Center, including through traffic on N. Lydell Avenue and on E. and W. Lakeview, E. and W. Day, and E. and W. Belle Avenues. In addition, it would place no restrictions on local traffic circulation within the neighborhood. A disadvantage of the alternative is that it restricts direct access to the Bay Shore Shopping Center and to shopping areas south of the center. Also, the Bay Shore Shopping Center lies outside the corporate limits of the Village of Whitefish Bay, and therefore the Village would have to rely on the cooperation of not only the Bay Shore Shopping Center but the City of Glendale for implementation of the alternative. Some of the sub-options of Alternative 3 would not have to rely on the shopping center or the City of Glendale for implementation, but could be implemented by the Village. These options, however, would restrict access to the shopping center, and would therefore need to be implemented cooperatively.

The Commission staff further recommended that Alternative 2—the closure of E. and W. Lakeview, E. and W. Day, and E. and W. Belle Avenues just east of N. Lydell Avenue—be implemented in the short term. This alternative may also be expected to eliminate nearly all existing through traffic problems on Lakeview, Day, and Belle Avenues. It would, however, not remove any through traffic from N. Lydell Avenue. The proposed street closures would be within the corporate limits of the Village of Whitefish Bay, and thus could be implemented by the Village. The disadvantage of this alternative is that residents living on N. Lydell Avenue south of W. Belle Avenue may feel isolated from the remainder of the Village. Also, three street segments—W. Lakeview, W. Day, and W. Belle Avenues between N. Bay Ridge Avenue and N. Lydell Avenue—would, in effect, become "no outlet" streets for traffic but would lack adequate turnarounds.

Alternative 1, which calls for the construction of diverters to alleviate the through traffic problem, was rejected by Commission staff. While this control measure may be expected to eliminate

Map 19

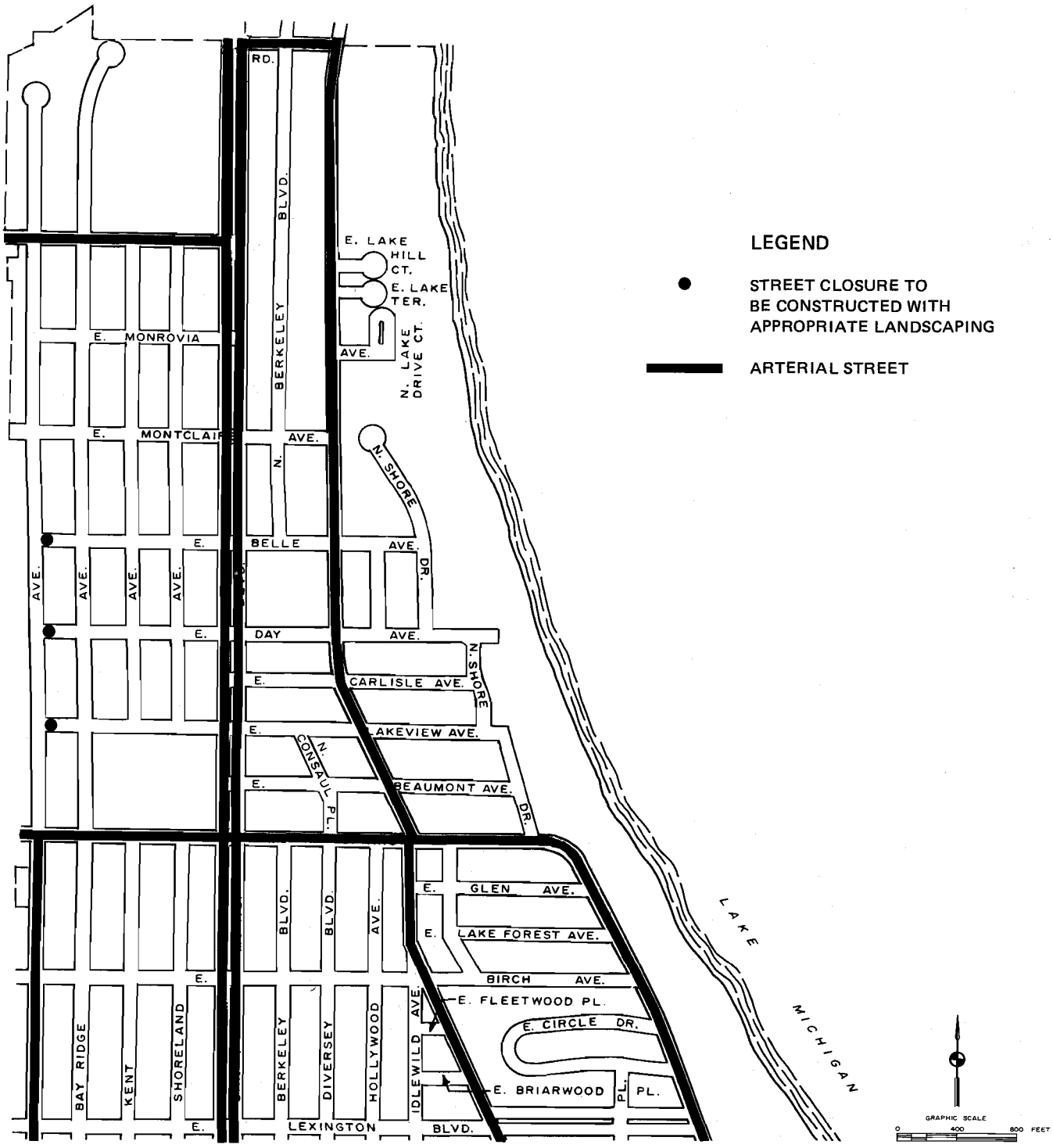
TRAFFIC CONTROL MEASURES FOR SYSTEMWIDE TRAFFIC PROBLEMS IDENTIFIED IN THE VILLAGE OF WHITEFISH BAY: ALTERNATIVE 1



Source: SEWRPC.

Map 20

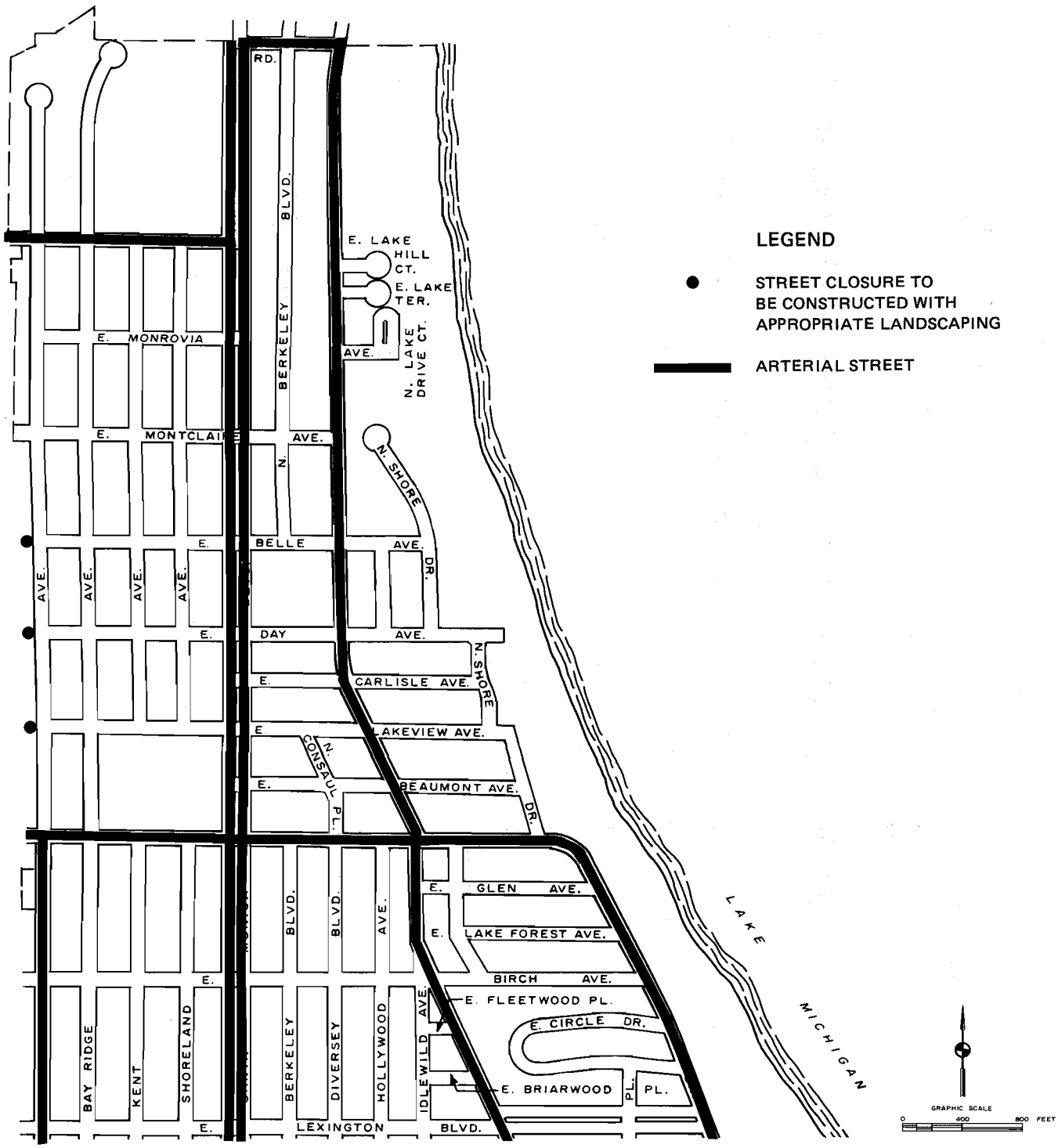
TRAFFIC CONTROL MEASURES FOR SYSTEMWIDE TRAFFIC PROBLEMS IDENTIFIED IN THE VILLAGE OF WHITEFISH BAY: ALTERNATIVE 2



Source: SEWRPC.

Map 21

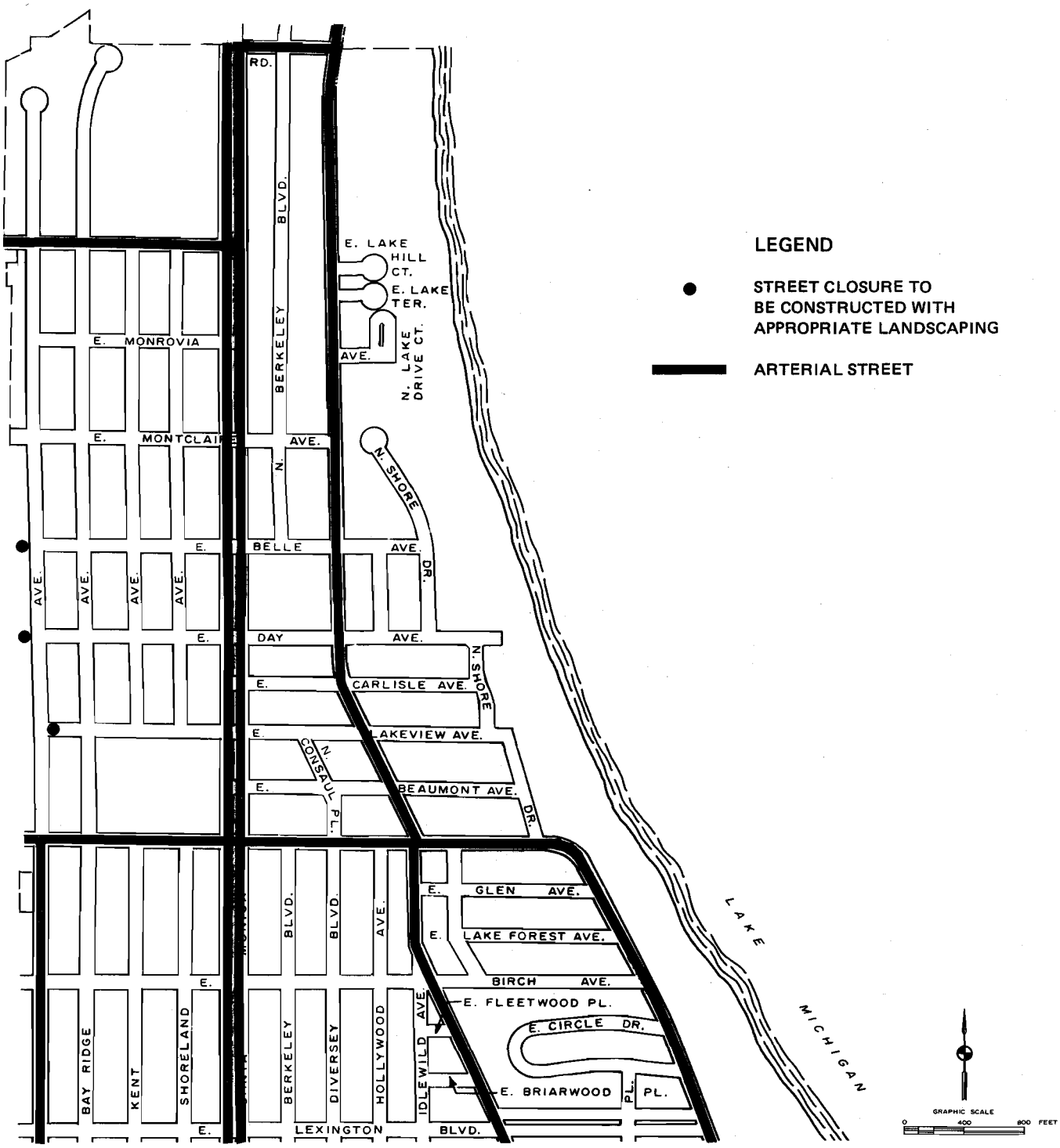
TRAFFIC CONTROL MEASURES FOR SYSTEMWIDE TRAFFIC PROBLEMS IDENTIFIED IN THE VILLAGE OF WHITEFISH BAY: ALTERNATIVE 3



Source: SEWRPC.

Map 22

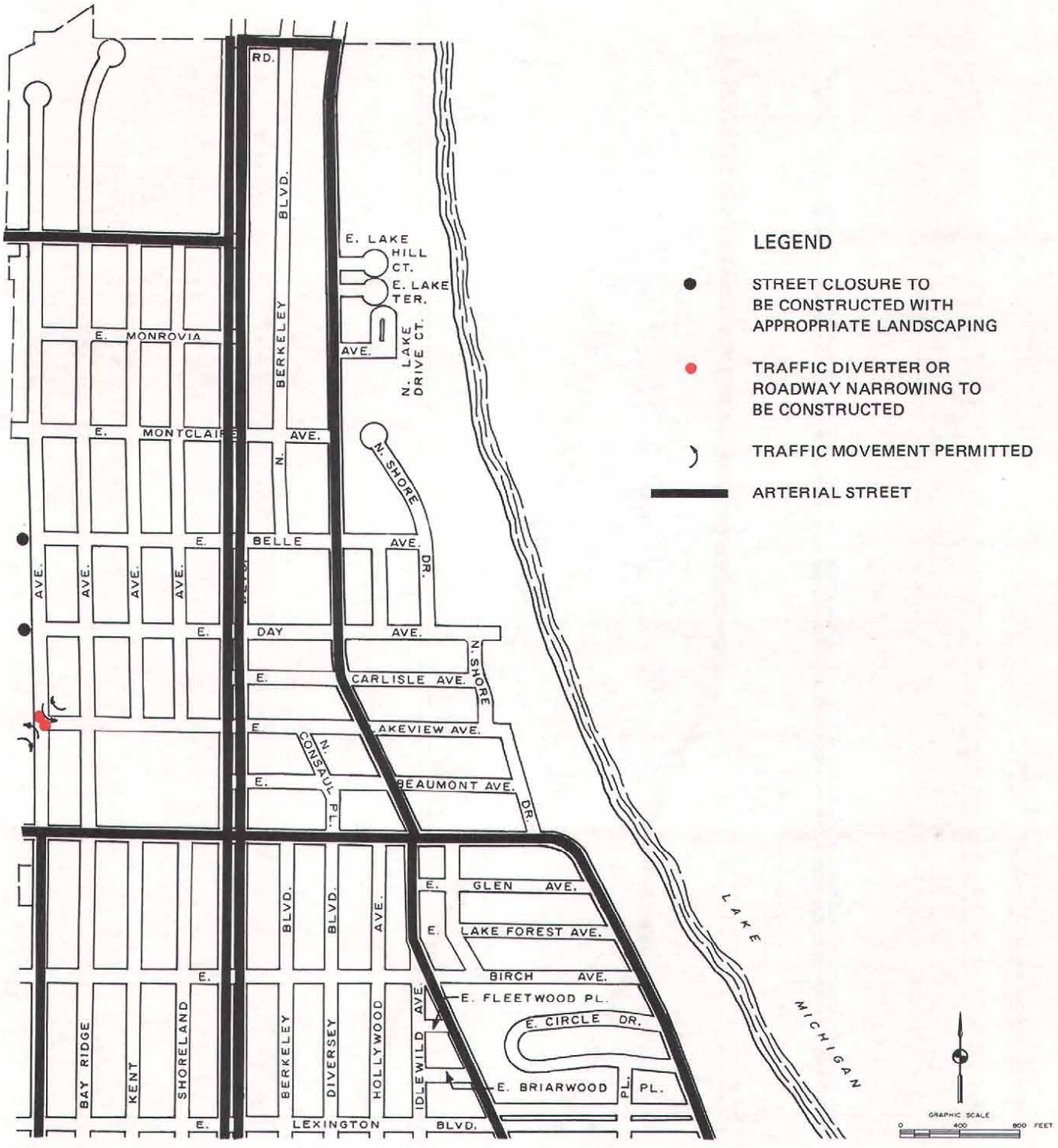
TRAFFIC CONTROL MEASURES FOR SYSTEMWIDE TRAFFIC PROBLEMS IDENTIFIED IN THE VILLAGE OF WHITEFISH BAY: ALTERNATIVE 3, OPTION 1



Source: SEWRPC.

Map 23

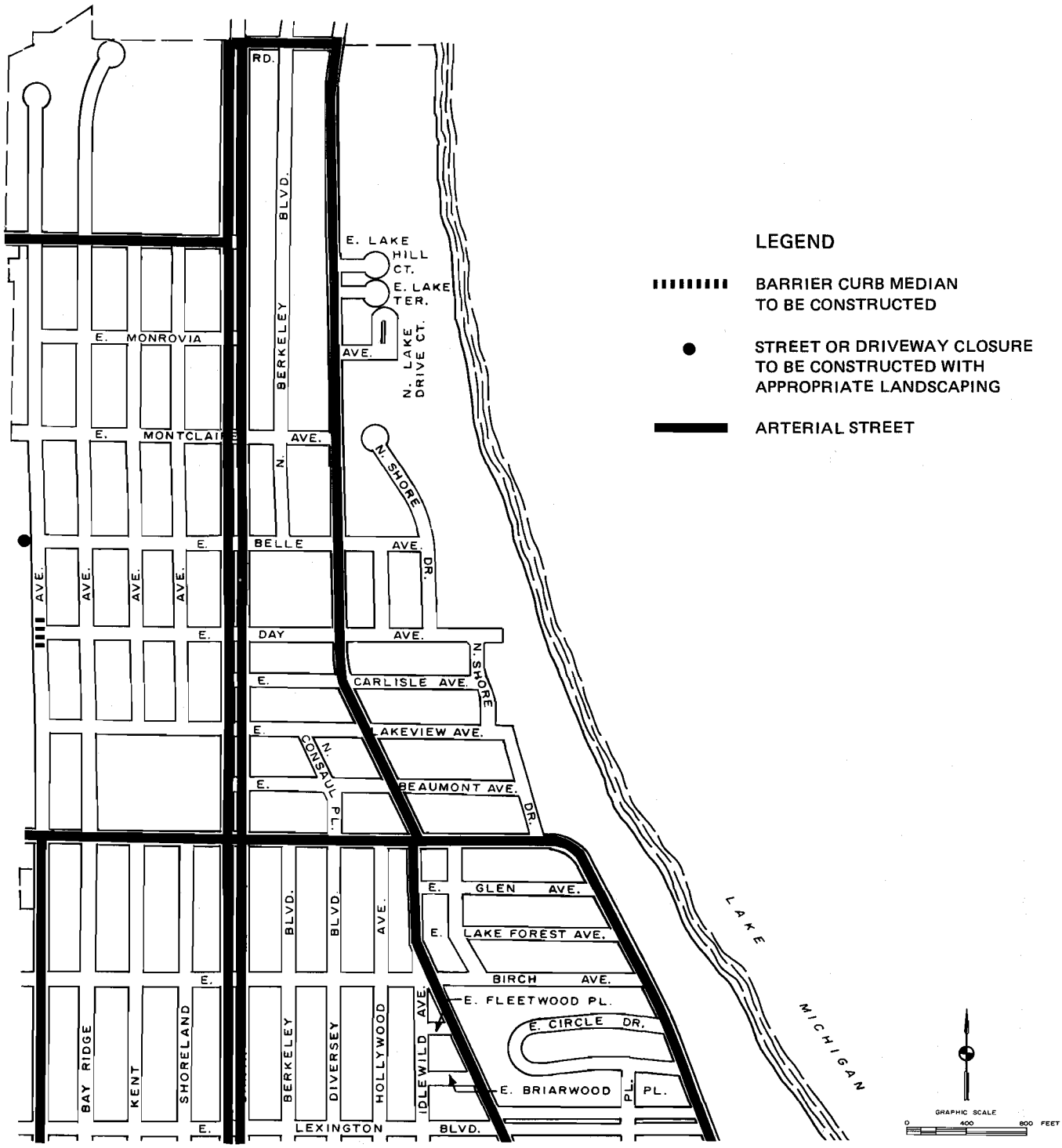
TRAFFIC CONTROL MEASURES FOR SYSTEMWIDE TRAFFIC PROBLEMS IDENTIFIED IN THE VILLAGE OF WHITEFISH BAY: ALTERNATIVE 3, OPTION 2



Source: SEWRPC.

Map 24

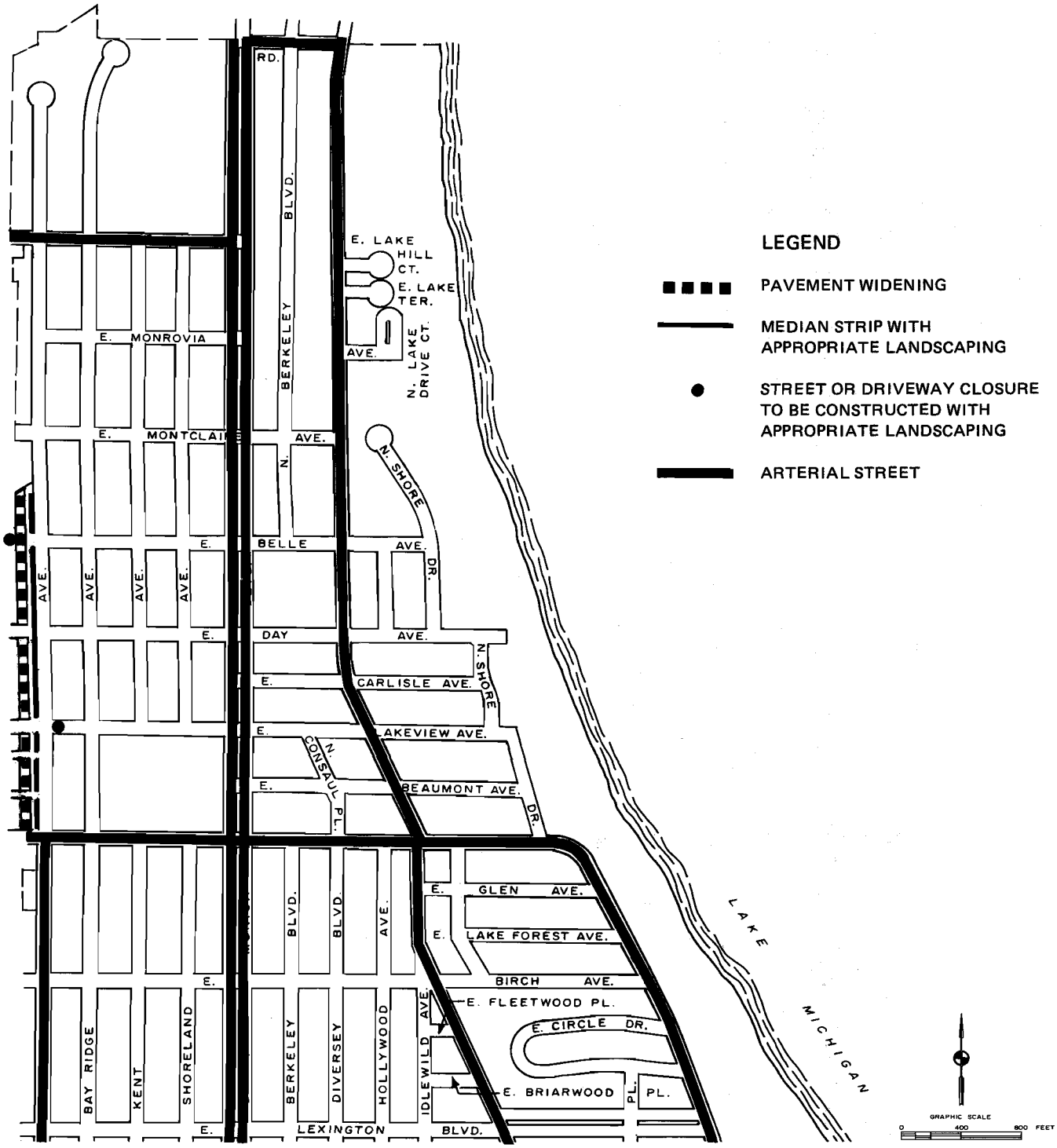
TRAFFIC CONTROL MEASURES FOR SYSTEMWIDE TRAFFIC PROBLEMS IDENTIFIED IN THE VILLAGE OF WHITEFISH BAY: ALTERNATIVE 3, OPTION 3



Source: SEWRPC.

Map 25

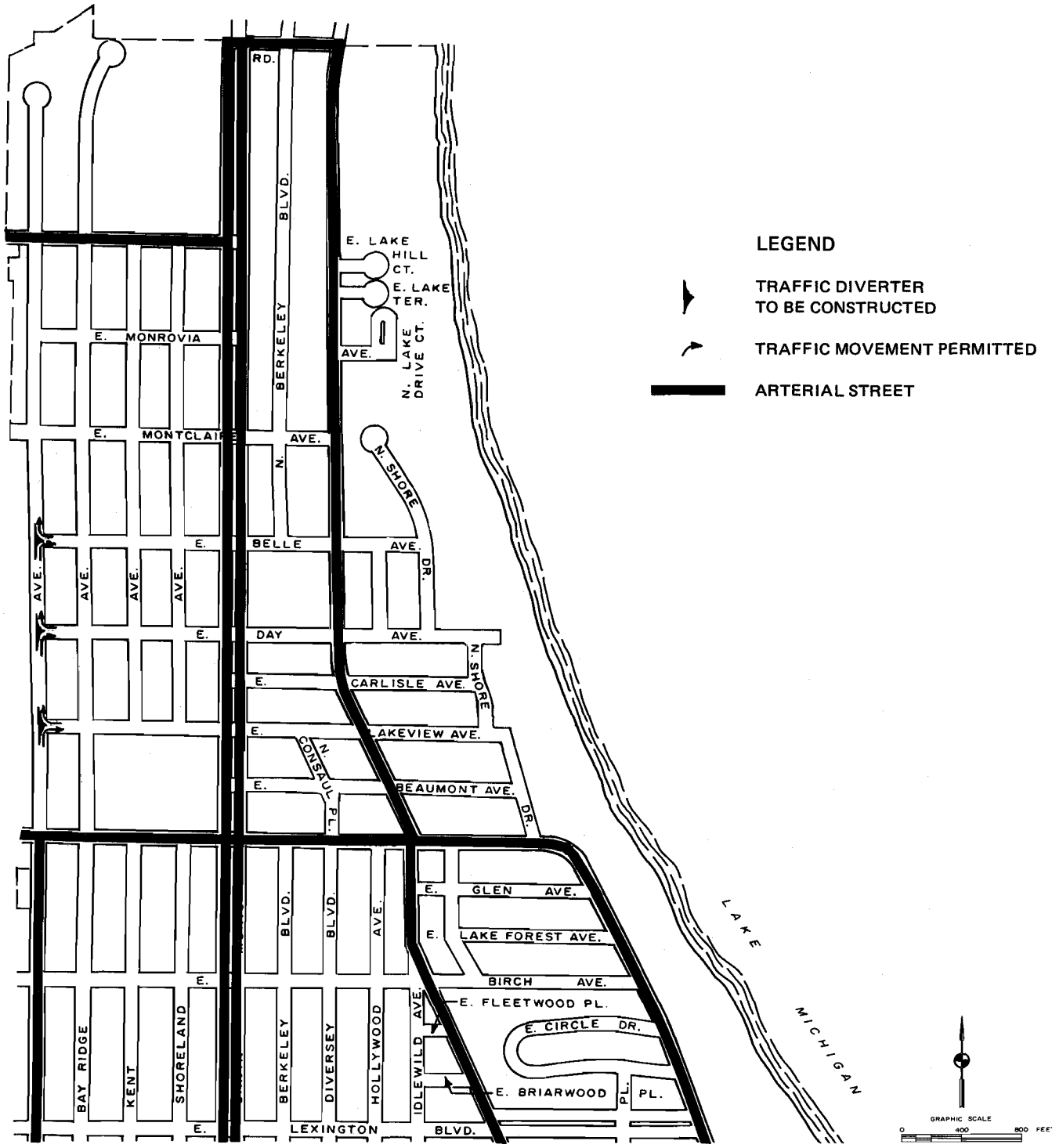
TRAFFIC CONTROL MEASURES FOR SYSTEMWIDE TRAFFIC PROBLEMS IDENTIFIED IN THE VILLAGE OF WHITEFISH BAY: ALTERNATIVE 3, OPTION 4



Source: SEWRPC.

Map 26

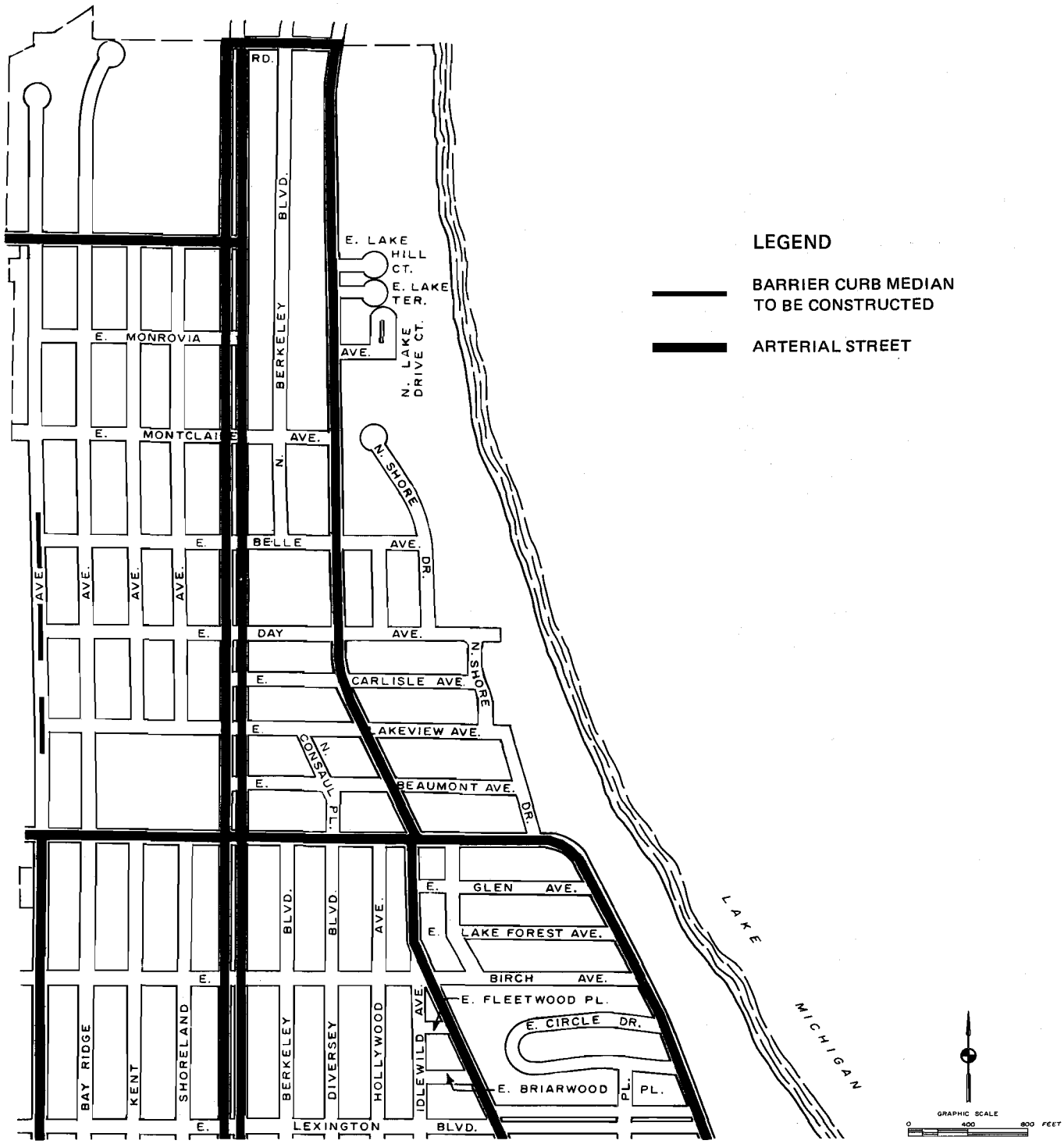
TRAFFIC CONTROL MEASURES FOR SYSTEMWIDE TRAFFIC PROBLEMS IDENTIFIED IN THE VILLAGE OF WHITEFISH BAY: ALTERNATIVE 3, OPTION 5



Source: SEWRPC.

Map 27

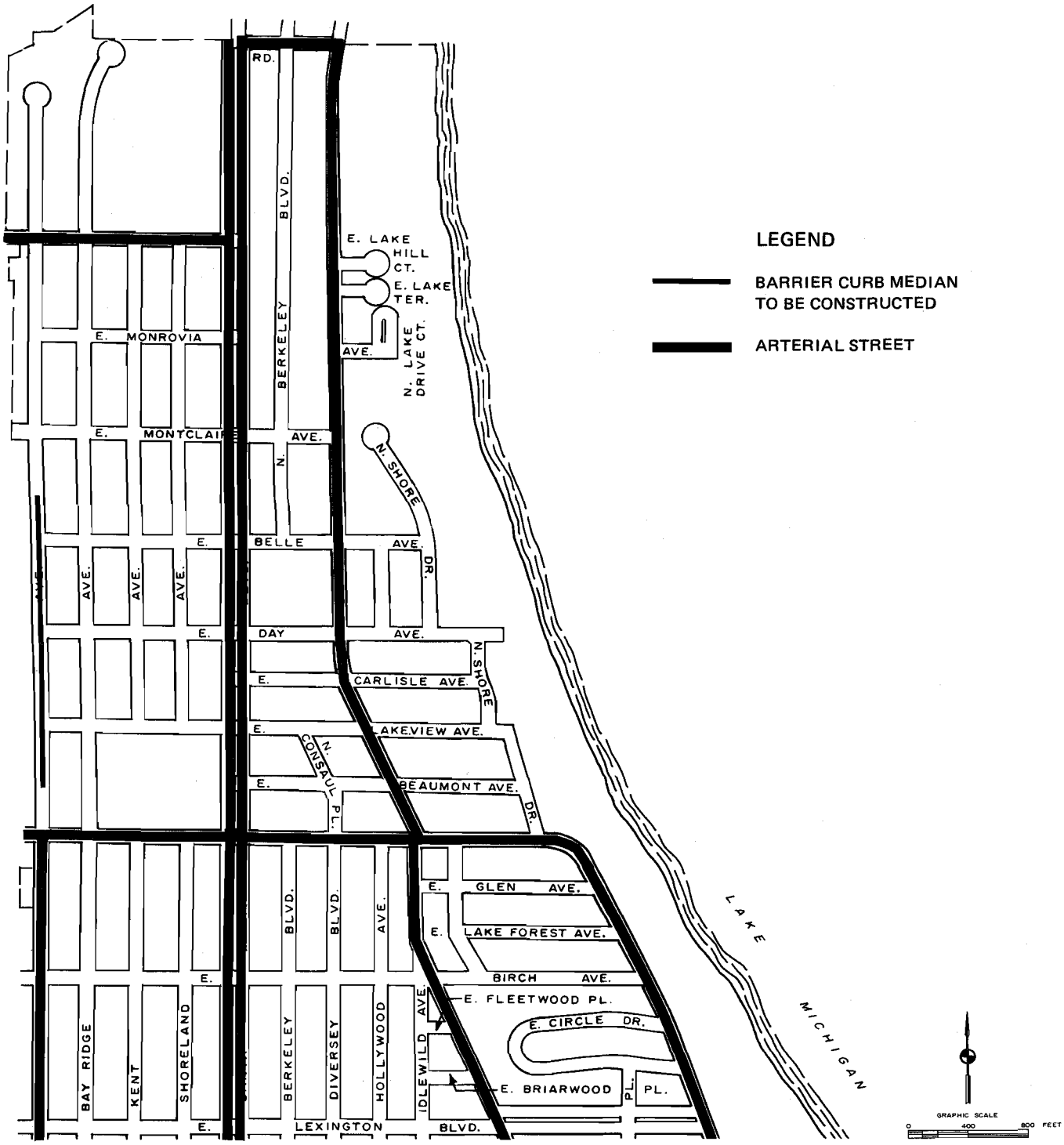
TRAFFIC CONTROL MEASURES FOR SYSTEMWIDE TRAFFIC PROBLEMS IDENTIFIED IN THE VILLAGE OF WHITEFISH BAY: ALTERNATIVE 3, OPTION 6



Source: SEWRPC.

Map 28

TRAFFIC CONTROL MEASURES FOR SYSTEMWIDE TRAFFIC PROBLEMS IDENTIFIED IN THE VILLAGE OF WHITEFISH BAY: ALTERNATIVE 3, OPTION 7



Source: SEWRPC.

Table 9

EVALUATION OF OPTIONS TO THE ALTERNATIVE CONTROL MEASURES PREVIOUSLY CONSIDERED TO ABATE THROUGH TRAFFIC PROBLEMS IDENTIFIED IN THE AREA BOUNDED BY DEVON STREET, LAKE DRIVE, SILVER SPRING DRIVE, AND LYDELL AVENUE IN THE VILLAGE OF WHITEFISH BAY[a]

Alternative Control Measures		Advantages	Disadvantages	Cost
Number	Description			
1	Close Lakeview Avenue just east of Lydell Avenue and the driveways from the Bay Shore Shopping Center to Lydell Avenue opposite Day and Belle Avenues. Lakeview Avenue must be marked as a "No Outlet" street at its intersection with Bay Ridge Avenue. The closures should be appropriately landscaped (see Map 24)	• May be expected to reduce the through traffic problem as a local street is is closed and access to selected Bay Shore Shopping Center driveways is eliminated • A temporary "test" of traffic control would be relatively inexpensive	• One street segment—Lakeview Avenue—between Bay Ridge Avenue and Lydell Avenue becomes "No Outlet" street for westbound traffic without an adequate turnaround • Some modest modification of emergency vehicle routes will be required • Through traffic would remain on Lydell Avenue, and the potential for diversion of east-west through traffic from Lakeview Avenue to Day and Belle Avenues to access the Bay Shore driveway opposite Lakeview Avenue may occur • Implementation of the driveway closures may be difficult in the short term, as action would have to be taken by the Bay Shore Shopping Center, which is located in the City of Glendale, as is the western one-half of Lydell Avenue	$ 9,250
2	Close driveways from Bay Shore Shopping Center to Lydell Avenue opposite Day and Belle Avenues. Reconstruct intersection of Lakeview Avenue with Lydell Avenue so that Lydell Avenue south of Lakeview Avenue provides direct connection into Lakeview Avenue entrance to Bay Shore Shopping Center (see Map 25)	• Eliminates east-west through traffic problem by eliminating access to, from, and through the Bay Shore Shopping Center from Lakeview Avenue, Day Avenue, and Belle Avenue. The exception is Lydell Avenue, which would continue to carry through traffic between Silver Spring Drive and Lakeview Avenue	• Implementation is likely to be diffi- in the short term, as action would have to be taken by both the Bay Shore Shopping Center and the City of Glendale, since the western one-half of Lydell Avenue is located in the City of Glendale • A temporary "test" is more difficult to undertake because temporary construction of the traffic diverter would be difficult to implement • Residents on Lydell Avenue south of Lakeview Avenue may be somewhat isolated from the remainder of the Village	$ 11,900
3	Close the driveway from the Bay Shore Shopping Center to Lydell Avenue opposite Belle Avenue. Construct a barrier curb median in the intersection of Day and Lydell Avenues to inhibit east-west movement through the intersection. Close Lakeview Avenue just east of Lydell Avenue. Utilize appropriate landscaping to accomplish the closures (see Map 26)	• May be expected to reduce east-west through traffic problem • Temporary "test" of the closures would be relatively inexpensive	• One street segment—Lakeview Avenue—between Bay Ridge and Lydell Avenues becomes a "No Outlet" street for westbound traffic without an adequate turnaround • Some modest modification of existing emergency vehicle routes would be required • Through traffic would remain on Lydell Avenue, and residents of Lydell Avenue south of Lakeview Avenue may be somewhat isolated from the remainder of the Village • Some east-west through traffic may divert from Lakeview Avenue to Day and Belle Avenues • Parking within 75 feet of the median would be prohibited • Implementation is likely to be difficult in the short term, as action would have to be taken by the Bay Shore Shopping Center and by the City of Glendale, since the western one-half of Lydell Avenue is located within that City	$ 11,700

Table 9 (continued)

Alternative Control Measures		Advantages	Disadvantages	Cost
Number	Description			
4	Close the Bay Shore Shopping Center driveway on Lydell Avenue opposite Belle Avenue. Close Lakeview Avenue just east of Lydell Avenue. Construct a median strip from a point approximately 150 feet north of the intersection of Silver Spring Drive and Lydell Avenue to a point approximately 100 feet north of the intersection of Belle Avenue and Lydell Avenue, with openings at the north and south entrances to the post office and at Lakeview and Belle Avenues. The median and the closures would be appropriately landscaped. The pavement would be widened on the west side of Lydell Avenue to maintain the existing lane width in the north- and southbound directions, and to accommodate construction of a median (see Map 27)	• Reduces the east and west through traffic problem by closing the Bay Shore Shopping Center driveway at Lydell Avenue opposite Belle Avenue, and by closing Lakeview Avenue just east of Lydell Avenue. East-west access to the Bay Shore Shopping Center driveway opposite Day Avenue is restricted by the median	• One street segment—Lakeview Avenue—between Bay Ridge Avenue and Lydell Avenue becomes a "No Outlet" street for westbound traffic without an adequate turnaround • Some modest modification of existing emergency vehicle routes will be required • Through traffic would remain on Lydell Avenue • Some diversion of east-west through traffic from Lakeview Avenue to Day and Belle Avenues may be expected • Parking would be prohibited on Lydell Avenue from Silver Spring Drive to a point 100 feet north of the northern terminus of the median • A temporary "test" of traffic control would be difficult • Travel for residents on Lydell Avenue between Lakeview and Belle Avenues will become somewhat more circuitous because travel on either side of the median strip will be in one direction • Implementation is likely to be difficult in the short term, as action would have to be taken by both the Bay Shore Shopping Center and the City of Glendale, since the western one-half of Lydell Avenue is located within that City • Level of capital investment	$224,000
5	Construct traffic diverters in the intersections of Lakeview Avenue, Day Avenue, and Belle Avenue with Lydell Avenue. Utilize appropriate landscaping (see Map 28)	• The movement of east-west through traffic is inhibited by the traffic diverter, which would require a right turn for east- and westbound traffic at each intersection • Northbound traffic on Lydell Avenue would be required to turn right at each intersection • Traffic diverters would be perceived as providing the benefits of a curvelinear local street system—that is, low levels of traffic in isolated residential streets—within the grid street system	• Results in some circuitous travel for nonresident delivery and visitor traffic with destinations along Lydell Avenue. Residents of Lydell Avenue may also experience some circuitous travel • The diverters may be circumvented by turning into a private driveway and then turning south to access the driveways of the Bay Shore Shopping Center • Parking within 75 feet of the diverters would be prohibited • A temporary "test" of this traffic control will be more difficult to undertake than either street closures or driveway closures • Implementation is dependent upon cooperation of the City of Glendale, as the western one-half of Lydell Avenue is located within that City	$ 13,200
6	Construct a barrier curb median 125 feet in length on N. Lydell Avenue at Belle, Day, and Lakeview Avenues (see Map 30)	• Eliminates the east-west through traffic problem by eliminating access to, from, and through the Bay Shore Shopping Center	• Parking would have to be prohibited on both sides of the roadway for a distance of approximately 75 feet beyond the northern and southern termini of the median • Northbound through traffic would remain on Lydell Avenue • Implementation is likely to be difficult as action would have to be taken by the City of Glendale, since the western one-half of Lydell Avenue lies within that City	$ 9,800

Table 9 (continued)

Alternative Control Measures		Advantages	Disadvantages	Cost
Number	Description			
7	Construct a barrier curb median from a point approximately 250 feet south of Lakeview Avenue to a point approximately 100 feet north of Belle Avenue (see Map 31)	• Eliminates the east-west through traffic problem by eliminating access to, from, and through the Bay Shore Shopping Center	• Parking would have to be prohibited on both sides of the roadway for a distance of approximately 75 feet beyond the northern and southern termini of the median • Some through traffic would remain on Lydell Avenue • Travel for residents on Lydell Avenue between Lakeview and Belle Avenues will become somewhat more circuitous because travel on either side of the median curb will be in one direction • Implementation is likely to be difficult as action would have to be taken by the City of Glendale, since the western one-half of Lydell Avenue lies within that City	$ 55,300

[a] *Traffic Problem: Through traffic on local streets, particularly east-west traffic to, from, and through the Bay Shore Shopping Center. The local streets most affected are Lakeview Avenue and Lydell Avenue between Silver Spring Drive and Lakeview Avenue. Also affected are Day and Belle Avenues.*

Source: SEWRPC.

nearly all the existing through traffic problems except those on N. Lydell Avenue, it may also be expected to result in circuitous travel for most local traffic, including emergency vehicles. Examples of such travel are shown on Map 29. Nonresident delivery and visitor traffic would also experience considerable difficulty in traveling to and from destinations within the neighborhood. Further, all parts of the neighborhood would experience circuitous local travel, including the northern portion of the neighborhood which experiences little through traffic. Finally, a temporary trial of this alternative control measure would be relatively difficult and costly to implement.

The first study committee meeting on the preliminary recommendations was held on August 26, 1987, and the second on September 2, 1987. At these meetings, some support was expressed for implementation of the staff preliminary recommended actions, while substantial opposition to such implementation was also expressed. Those opposed were particularly concerned about the traffic that would be diverted to E. Devon Street. E. Devon Street is a collector street; however, residential land uses abut part of the street. Those opposed noted that E. Devon Street currently carried about 5,000 vehicles per average weekday, which was substantially more than the 3,000 vehicles per average weekday carried on E. Lakeview Avenue, and that E. Devon Street would soon be carrying additional traffic with the opening of the Jewish Federation Campus.

The total amount of diverted through traffic was estimated to be 2,400 vehicles per average weekday, of which about 1,600 vehicles, or 65 percent, had their trip origin or destination south of Silver Spring Drive, and the remaining 800 vehicles, or 35 percent, had their trip origin or destination north of Silver Spring Drive.

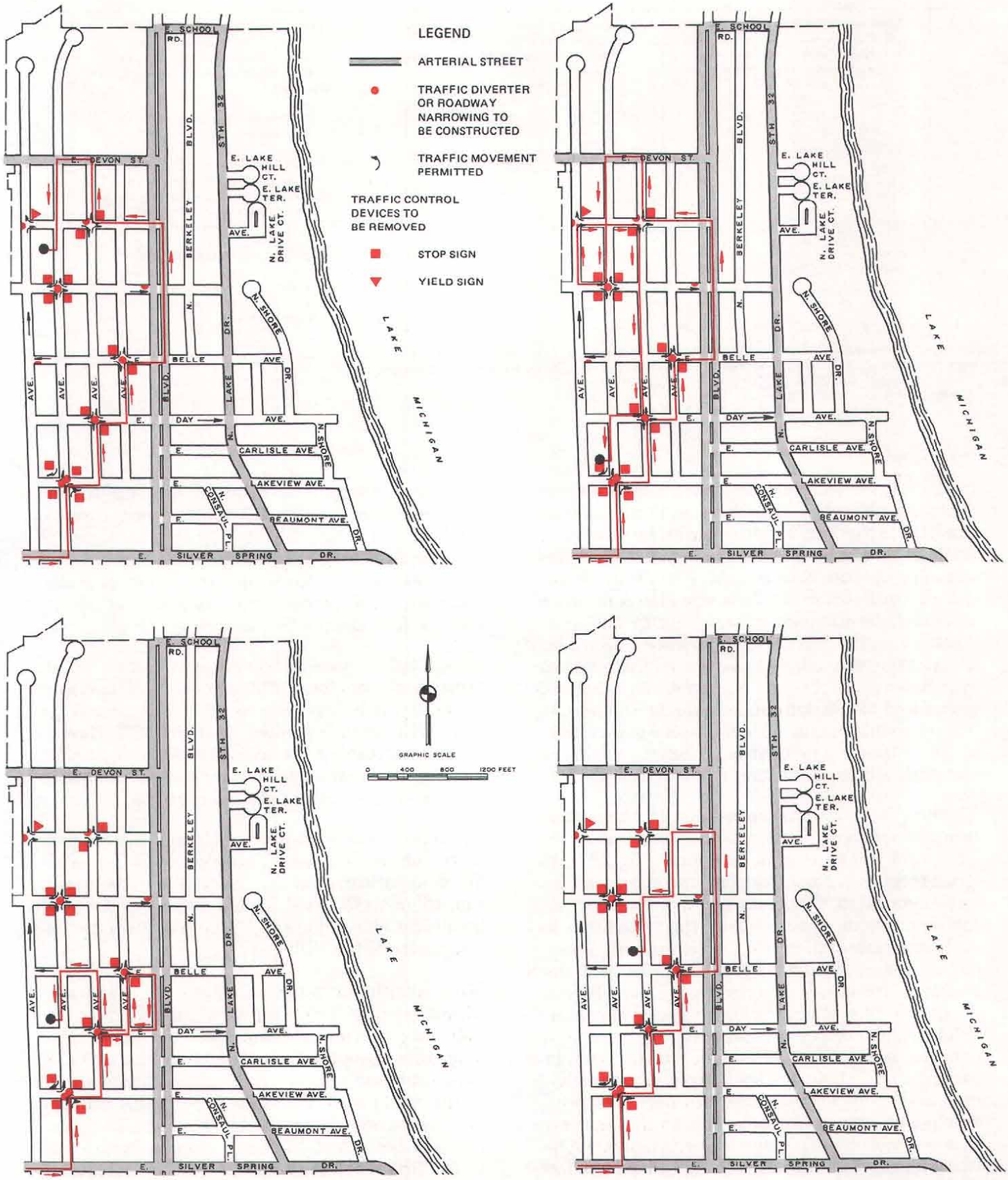
About 400 vehicles per average weekday, or 50 percent of the total 800 vehicles per average weekday with trip origins and destinations to the north, were estimated to divert to E. Devon Street, increasing its average weekday traffic from approximately 5,000 vehicles to about 5,400 vehicles under each of the alternatives.

A concern was also expressed that Alternative 2—which would close W. Lakeview, W. Day, and W. Belle Avenues at N. Lydell Avenue—would not reduce traffic on N. Lydell Avenue and would isolate residents along N. Lydell Avenue from the remainder of the Village.

Four additional alternatives to alleviate the through traffic problem were suggested at or following the study committee meetings. One alternative proposed was the construction of a new east-west arterial route immediately north of the Village of Whitefish Bay in the Village of Fox Point, which would divert traffic from N. Lake Drive and N. Santa Monica Boulevard to N. Port Washington Road in the Village of Fox Point. Analysis indicated, however, that

Map 29

EXAMPLES OF CIRCUITOUS TRAVEL THAT MAY RESULT IF A SYSTEM OF TRAFFIC DIVERTERS IS CONSTRUCTED



Source: SEWRPC.

this alternative may be expected to carry a limited amount of traffic at substantial cost. The implementation of this alternative would require the acquisition of a minimum of three residences, additional right-of-way, and the construction of a structure over the Chicago & North Western Transportation Company Railway, as well as at the new roadway itself. Construction of the railway grade separation structure alone would cost at least $500,000. In addition, it would be unreasonable to expect the Village of Fox Point to construct such a roadway addressing a local traffic problem in the Village of Whitefish Bay. This alternative was therefore rejected.

Another of the four alternatives proposed was the installation of stop signs throughout the area experiencing the through traffic problems east of the Bay Shore Shopping Center and west of N. Santa Monica Boulevard. Implementation of this alternative was rejected for the following reasons: 1) installation of such unnecessary—or unwarranted—stop signs encourages disrespect for, and noncompliance with, necessary—or warranted—stop signs; 2) the potential for traffic accidents may be expected to increase in this area and throughout the Village as motorists increasingly disregard stop signs; and 3) if the additional stop signs would indeed be successful in diverting through traffic from land access streets, such diversion would affect the same streets as under the other alternatives proposed.

Another of the additional alternatives proposed was the conversion of E. and W. Lakeview, E. and W. Day, and E. and W. Belle Avenues from two-way to one-way operation, alternating the direction of traffic movement. This alternative is shown on Map 30 and would have an estimated cost of $3,000. The alternative would be expected primarily to shift traffic between Lakeview, Day, and Belle Avenues, and also to shift a small amount of traffic to E. and W. Silver Spring Drive. Traffic on E. and W. Lakeview Avenue would be reduced from about 3,300 to about 2,000 vehicles per average weekday. Traffic on E. and W. Day Avenue would increase from about 1,200 to about 2,600 vehicles per average weekday, and traffic on E. and W. Belle Avenue would be expected to be reduced from about 1,600 to 1,100 vehicles per average weekday. Also, an additional 400 vehicles per average weekday would use E. and W. Silver Spring Drive. Thus, this alternative would reduce through traffic on E. and W. Lakeview and Belle Avenues, while increasing such traffic on E. and W. Day Avenue, although not to the level which now exists on E. and W. Lakeview Avenue. It should be noted that this one-way street alternative would not alleviate the present through traffic problems on N. Lydell Avenue, and would result in circuitous travel for residents in the area of the new one-way streets.

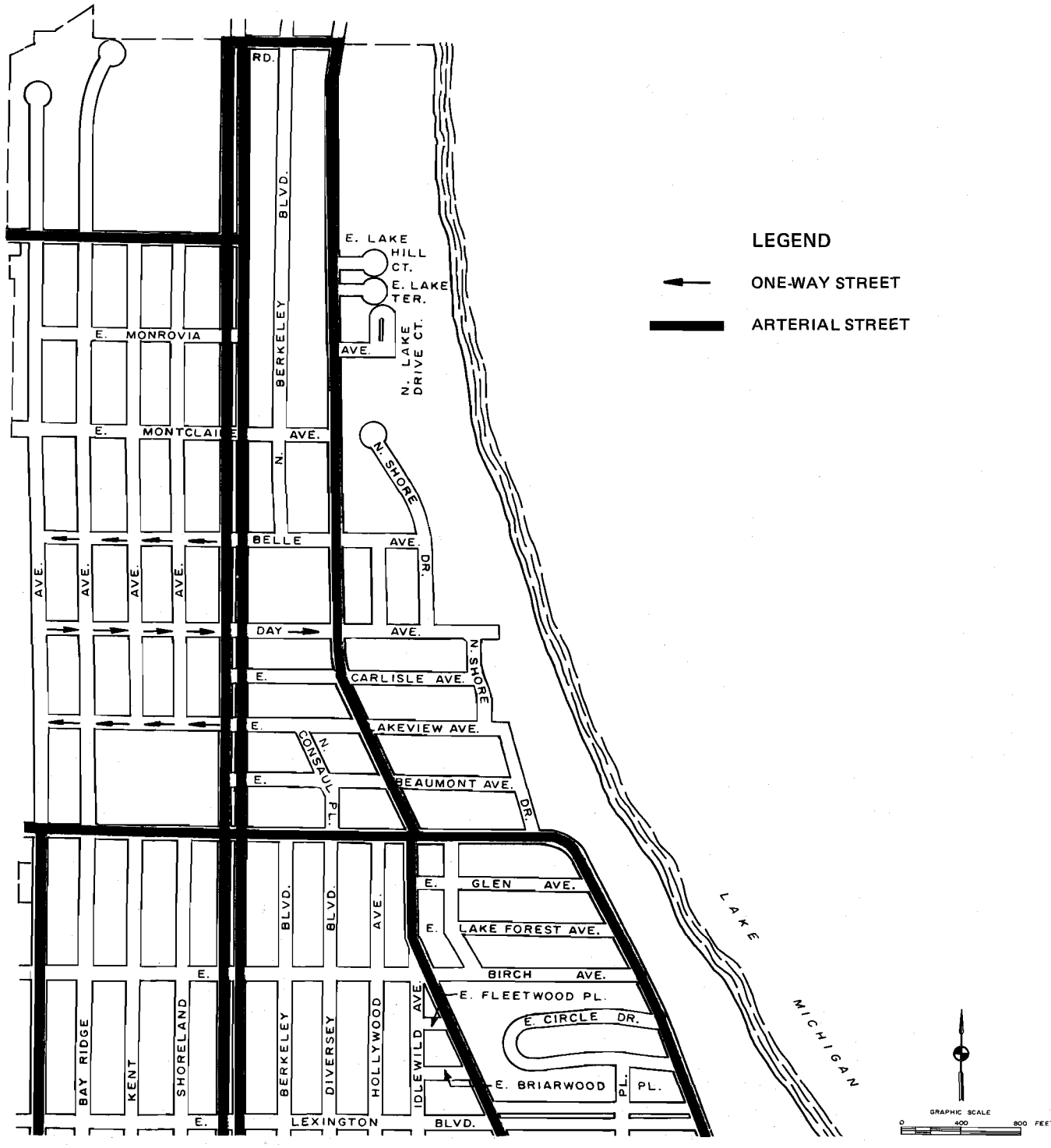
The last of the four additional alternatives proposed was the conversion of segments of E. and W. Belle, E. and W. Day, and E. and W. Lakeview Avenues between N. Lydell Avenue and N. Bay Ridge Avenue and between N. Shoreland Avenue and N. Santa Monica Boulevard to one-way westbound and one-way eastbound, respectively, as shown on Map 31. The estimated cost of implementing this alternative control measure is $3,000. This alternative would be expected to shift traffic principally to E. and W. Silver Spring Drive, as under Alternatives 2 and 3, with some additional traffic diverted to N. Port Washington Road and E. and W. Devon Street. In addition, this alternative would shift some traffic to N. Bay Ridge Avenue, N. Kent Avenue, and N. Shoreland Avenue. This alternative would not be expected to reduce traffic on N. Lydell Avenue, and would tend to isolate N. Lydell Avenue residents from the remainder of the Village. In addition, this alternative would result in circuitous travel for residents in the vicinity of the one-way street segments.

Recommendations: Based upon the public comments at the two study committee meetings, the Commission staff continued to recommend that in the long-term the Village seek implementation of Alternative 3, which would close the driveways to the Bay Shore Shopping Center west of N. Lydell Avenue, or one of its sub-options. This alternative would not only resolve the through traffic problems on E. and W. Lakeview, E. and W. Day, and E. and W. Belle Avenues, but would, as well, resolve the through traffic problems on N. Lydell Avenue without isolating N. Lydell Avenue residents. The only disadvantage to this alternative is that it would result in some additional traffic on E. and W. Devon Street.

With respect to short-term actions, the Commission staff revised its preliminary recommendations. The Commission staff dropped its recommendation for implementation of Alternative 2 in the short-term because this alternative would not address the through traffic problem on N. Lydell Avenue and would tend to isolate the

Map 30

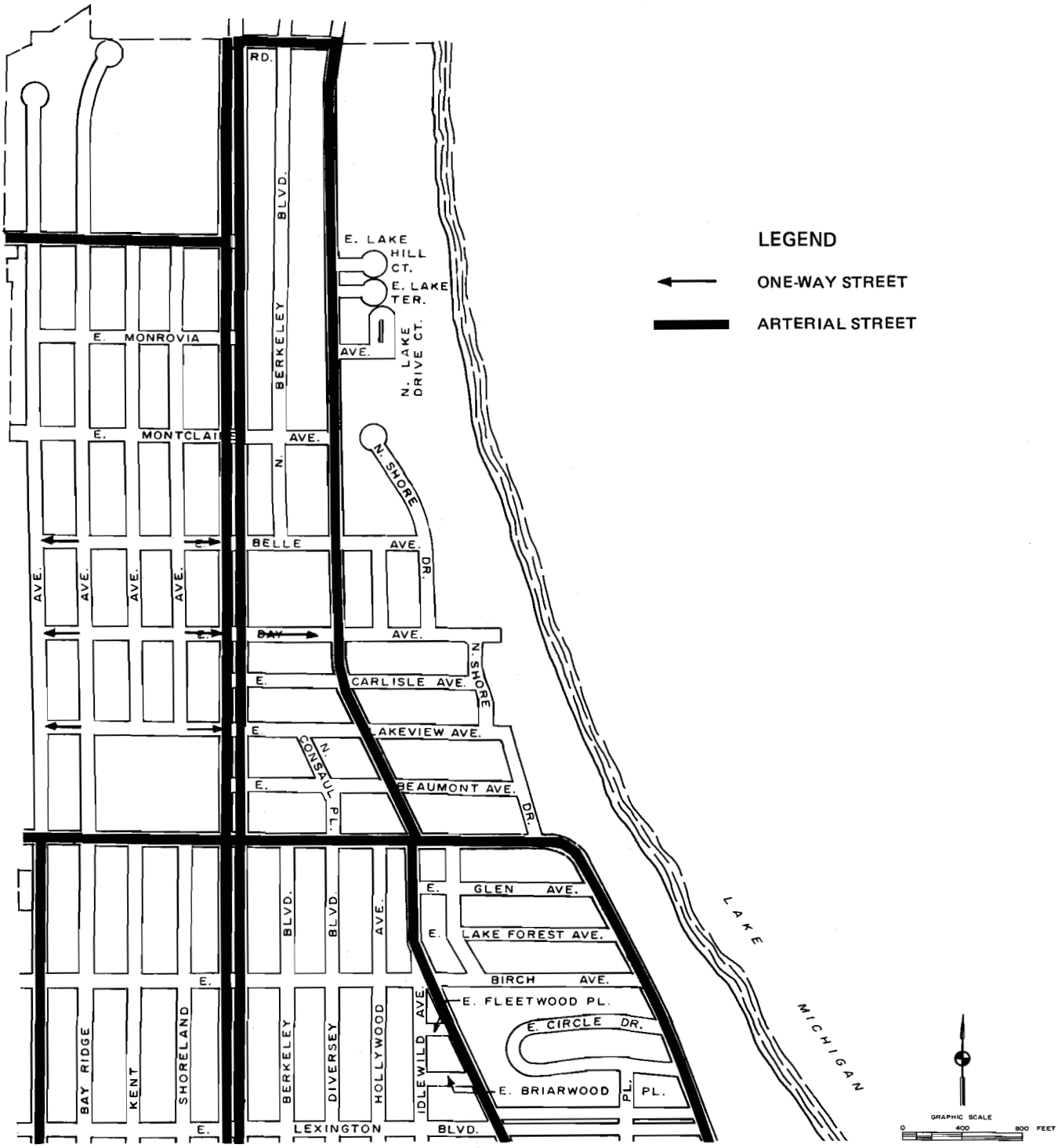
TRAFFIC CONTROL MEASURES FOR SYSTEMWIDE TRAFFIC PROBLEMS IDENTIFIED IN THE VILLAGE OF WHITEFISH BAY: ALTERNATIVE 4



Source: SEWRPC.

Map 31

TRAFFIC CONTROL MEASURES FOR SYSTEMWIDE TRAFFIC PROBLEMS IDENTIFIED IN THE VILLAGE OF WHITEFISH BAY: ALTERNATIVE 5



Source: SEWRPC.

Table 10

RECOMMENDED TRAFFIC CONTROL MEASURES ON E. AND W. SILVER SPRING DRIVE IN THE VILLAGE OF WHITEFISH BAY WHICH MAY BE EXPECTED TO REDUCE THROUGH TRAFFIC ON LOCAL STREETS NORTH OF SILVER SPRING DRIVE

Recommended Control Measure	Location	Impact
Modification of Traffic Signal Cycle	Intersections of Silver Spring Drive • N. Lydell Avenue • N. Bay Ridge Avenue • N. Santa Monica Boulevard • N. Lake Drive/N. Marlborough Drive	• Green time reallocated to favor traffic on Silver Spring Drive • Separate cycles designed for specific times of day; i.e.,a.m., p.m., and midday
Interconnection of Traffic Signals	Intersections of Silver Spring Drive • N. Lydell Avenue • N. Bay Ridge Avenue • N. Santa Monica Boulevard • N. Lake Drive/N. Marlborough Drive	• Capability for platoons of traffic to progress from N. Lydell Avenue to N. Lake Drive without stopping at each signal
Parking Prohibitions	Intersection of W. Silver Spring Drive at N. Lydell Avenue (north side of W. Silver Spring Drive 150 feet east of intersection)	• Provides two westbound traffic lanes so through traffic can bypass left-turning traffic • Loss of three on-street stalls on the westbound approach
	Intersection of E. Silver Spring at N. Santa Monica Boulevard (south side of E. Silver Spring Drive 150 feet west of intersection and north side of E. Silver Spring Drive 150 feet west of intersection)	• Provides for two lanes at eastbound and westbound intersection approaches so through traffic can bypass left-turning traffic • Loss of four on-street stalls on the westbound approach and three on-street stalls
Channelization	Intersection of W. Silver Spring Drive at N. Lydell Avenue	• Provides exclusive eastbound left-turn lane to provide better transition along eastbound W. Silver Spring Drive at N. Lydell Avenue, and to permit elimination of eastbound left-turn arrow

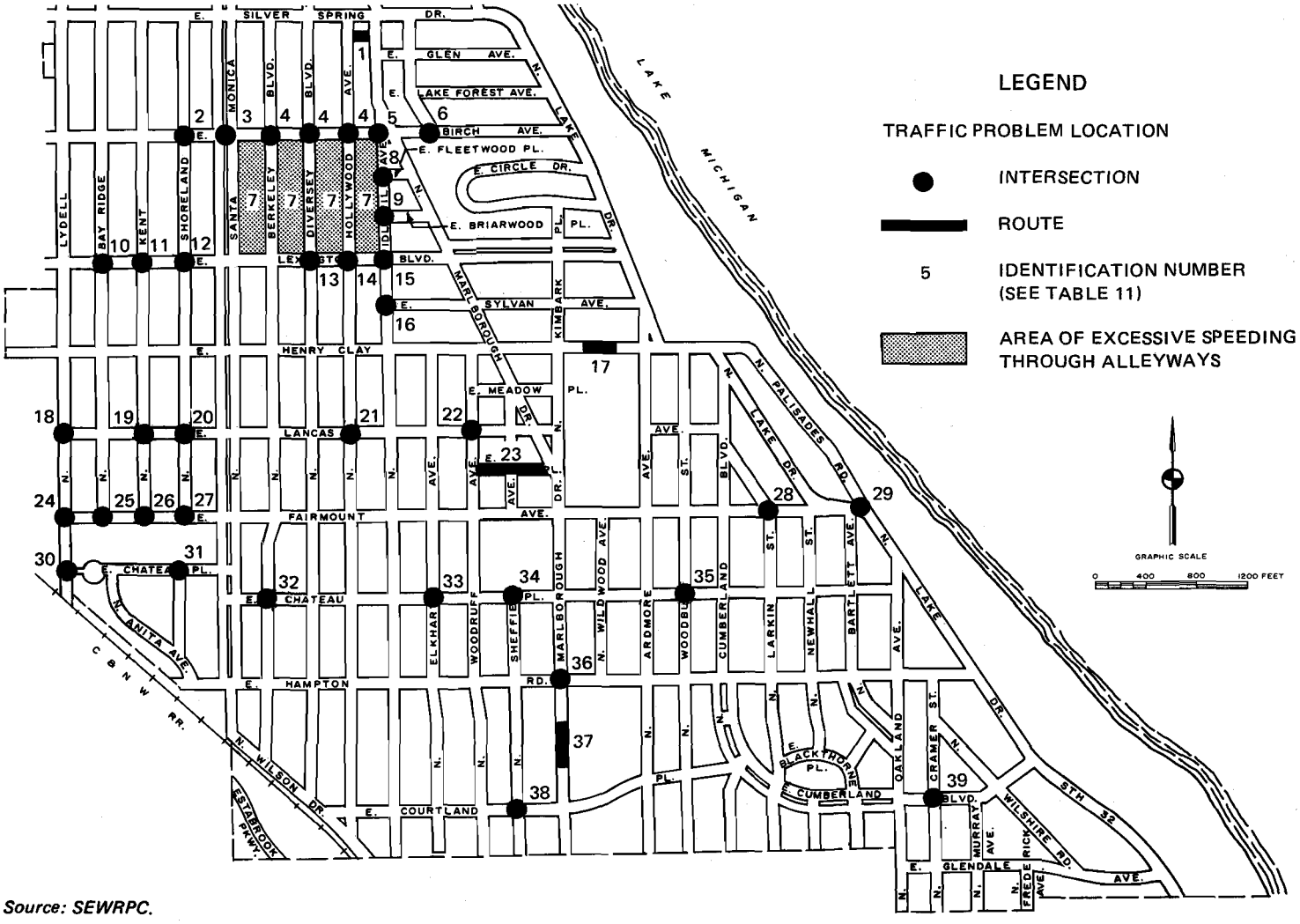
Source: SEWRPC.

residents on N. Lydell Avenue from the remainder of the Village. In addition, it would result in some additional traffic in the short range on E. and W. Devon Street. The Commission staff did not recommend the implementation of any of the other alternatives in the short term owing to their significant disadvantages. That is, Alternative 1 would make travel very difficult for residents and emergency vehicles in the area north of Silver Spring Drive; Alternative 4 would merely shift the through traffic between Lakeview, Day, and Belle Avenues and significantly increase traffic on Day Avenue; and Alternative 5 would also increase through traffic on other local streets, such as N. Bay Ridge Avenue. The Commission staff did recommend that the Village implement in the short term selected actions to improve traffic flow on E. and W. Silver Spring Drive as presented earlier in this report and summarized in Table 10. These actions may be expected to reduce traffic on Lakeview, Day, and Belle Avenues by making travel on Silver Spring Drive more convenient.

At its meeting of December 8, 1987, the Study Advisory Committee unanimously adopted the short-term and long-term recommendations of the Commission staff for resolution of the through traffic problems in the area of the Village east of the Bay Shore Shopping Center area.

Map 32

LOCATION OF THE TRAFFIC PROBLEMS IDENTIFIED IN THE SOUTHERN PORTION OF THE VILLAGE OF WHITEFISH BAY: 1987



Source: SEWRPC.

TRAFFIC PROBLEMS AND ALTERNATIVE AND RECOMMENDED IMPROVEMENTS IN THE SOUTHERN AREA OF THE VILLAGE

The southern portion of the Village of Whitefish Bay was defined for the purposes of this study as that part of the Village bounded by E. and W. Silver Spring Drive on the north, the south corporate limits of the Village of Whitefish Bay on the south, N. Lydell Avenue on the west, and Lake Michigan on the east, as shown on Map 32. The traffic problem sites identified within this area included 39 individual street intersections or segments, as shown on Map 32. Table 11 identifies the traffic management actions recommended for implementation by the Commission staff and Traffic Study Committee at 35 of the 39 identified problem locations. No action was recommended by staff and Study Committee at the four remaining locations.

Alley Between N. Hollywood Avenue and N. Marlborough Drive Just South of E. Silver Spring Drive (Problem Location 1)

The diversion of through traffic to avoid the traffic signals at the intersection of E. Silver Spring Drive and N. Marlborough Drive was identified by a citizen as a traffic problem. The diversion is to the alley and public parking lot south of E. Silver Spring Drive between N. Hollywood Avenue

Table 11

TRAFFIC MANAGEMENT ACTIONS RECOMMENDED FOR IMPLEMENTATION AT THE 39 TRAFFIC PROBLEM LOCATIONS IDENTIFIED TO THE SOUTH OF E. AND W. SILVER SPRING DRIVE IN THE VILLAGE OF WHITEFISH BAY

Number	Location	Traffic Problem	Recommended Traffic Management Actions	Advantages	Disadvantages
2	E. Birch Avenue at N. Shoreland Avenue	Insufficient traffic control	Remove yield signs from north- and southbound approaches to the intersection and install stop signs, at an estimated cost of $100	• Reduces accident potential and improves safety • Clearly establishes which approaches have right-of-way • Protects the integrity of Birch Avenue as an emergency route for police vehicles	• Modest increase in travel time and delay • Tend to encourage through traffic
3	At N. Santa Monica Boulevard	Excessive speed	Focus enforcement efforts in area on an irregular basis, at an estimated annual cost of $700	• Compliance high in presence of police officer	• None
		Lack of respect for existing traffic control	Install larger stop signs, at an estimated cost of $100	• Increased visibility	• None
			Install stop signs, at an estimated cost of $100. Install "Stop Sign Ahead" signs on E. Birch Avenue	• Warns motorists of impending stop	• None
			Focus enforcement efforts in area on an irregular basis, at an estimated annual cost of $700	• Compliance high in presence of police officer	• None
5	At N. Idlewild Avenue	Insufficient traffic control	Remove yield signs from north- and southbound approaches and install stop signs, at an estimated cost of $100	• Reduces accident potential and improves safety • Clearly establishes which approaches have right-of-way • Protects the integrity of Birch Avenue as an emergency route for police vehicles	• Modest increase in travel time and delay • Tends to encourage through traffic
6	E. Birch Avenue at Danbury Road	Insufficient traffic control related to restricted sight distance	Install yield sign on the southbound approach to the intersection, at an estimated cost of $100	• Reduces accident potentential and improves safety due to restricted sight distance • Conforms to the control criteria in Chapter IV (intersection of two land access streets should be controlled due to restricted sight distance)	• Modest increase in travel time and delay
7	Alleys In the Area Bounded by E. Birch Avenue; N. Idlewild Avenue; E. Lexington Boulevard; and N. Santa Monica Boulevard	Lack of traffic control devices to control speed	Install "Speed Limit 10 mph" signs, at an estimated cost of $1,000	• Alerts motorists to the speed limit • Would cause majority of motorists to slow to a safe speed	• Signs can be expected to have no effect on speed • May require periodic enforcement

Table 11 (continued)

Number	Location	Traffic Problem	Recommended Traffic Management Actions	Advantages	Disadvantages
8	E. Fleetwood Place at N. Idlewild Avenue	Insufficient traffic control related to restricted sight distance	Install stop sign on the westbound approach to the intersection, at an estimated cost of $100	• Reduces accident potential and improves safety due to restricted sight distance • Conforms to control criteria in Chapter IV (intersection of two land access streets should be controlled due to restricted sight distance)	• Modest increase in travel time and delay
9	E. Briarwood Place at N. Idlewild Avenue	Insufficient traffic control related to restricted sight distance	Install stop sign on the westbound approach to the intersection, at an estimated cost of $100	• Reduces accident potential and improves safety due to restricted sight distance • Conforms to control criteria in Chapter IV (intersection of two land access streets should be controlled due to restricted sight distance)	• Modest increase in travel time and delay
10	E. Lexington Boulevard at N. Bay Ridge Avenue	Lack of respect for existing traffic control	Remove yield signs from east- and westbound approaches to the intersection, and install stop signs, at an estimated cost of $100	• Reduces accident potential and improves safety • Clearly establishes which approaches have right-of-way • Conforms to control criteria in Chapter IV (intersection of two land access streets should be controlled only if sight distance or other factors would indicate need)	• Modest increase in travel time and delay
11	E. Lexington Boulevard at N. Kent Avenue	Improper traffic control at intersection of two land access streets	Remove stop signs signs on north- and southbound approaches to the intersection, at an estimated cost of $150	• Encourages respect for and compliance with warranted traffic control devices • Reduces travel time and delay • Conforms to the control criteria in Chapter IV (intersections of two land access streets should be controlled only if sight distance or other factors would indicate need) • Reduces potential for motorists to consider E. Lexington Boulevard as a street for "through" traffic	• None
12	At N. Shoreland Avenue	Insufficient traffic control related to restricted sight distance	Install yield signs on the north- and southbound approaches to the intersection, at an estimated cost of $200	• Reduces accident potential and improves safety • Clearly establishes which approaches have the right-of-way • Conforms to the control criteria in Chapter IV (intersection of two land access streets should be controlled due to restricted sight distance)	• Modest increase in travel time and delay

Table 11 (continued)

Number	Location	Traffic Problem	Recommended Traffic Management Actions	Advantages	Disadvantages
13	At N. Diversey Avenue	Unwarranted traffic control devices	Remove stop signs on the east- and westbound approaches to the intersection, at an estimated cost of $150	• Encourages respect for and compliance with warranted traffic control devices • Reduces travel time and delay • Conforms to control criteria in Chapter IV (intersections of two land access streets should be controlled only if sight distance or other factors would indicate need)	• None
15	At N. Idlewild Avenue	Unwarranted traffic control devices	Remove stop signs on the north- and southbound approaches to the intersection, at an estimated cost of $150	• Encourages respect for and compliance with warranted traffic control devices • Reduces travel time and delay • Conforms to the control criteria in Chapter IV (intersections of two land access streets should be controlled only if sight distance or other factors would indicate need)	• None
16	E. Sylvan Avenue at N. Idlewild Avenue	Insufficient traffic control related to restricted sight distance	Install yield sign on the westbound approach to the intersection, at an estimated cost of $100	• Reduces accident potential and improves safety • Conforms to control criteria in Chapter IV (intersection of two land access streets should be controlled due to restricted sight distance)	• Modest increase in travel time and delay
17	E. Henry Clay Street from N. Kimbark Place to N. Ardmore Avenue	Restricted sight distance at the driveway serving the North Shore Exceptional Education building	Prohibit parking on the north side of E. Henry Clay Street from N. Kimbark Place to a point 150 feet east of the driveway serving the North Shore Exceptional Education building, at an estimated cost of $100	• Reduces accident potential and improves safety • Increases sight distance	• Alternative parking must be found
18	E. Lancaster Avenue at N. Lydell Avenue	Intersection of collector street and land access street with improper traffic control	Remove yield sign on westbound approach to the intersection and install stop sign, at an estimated cost of $50	• Reduces accident potential and improves safety • Clearly establishes which approaches have the right-of-way • Conforms to control criteria in Chapter IV (land access street approaches to intersection with collector street should be stop sign-controlled)	• Modest increase in travel time and delay

Table 11 (continued)

Number	Location	Traffic Problem	Recommended Traffic Management Actions	Advantages	Disadvantages
19	At N. Kent Avenue	Insufficient traffic control related to restricted sight distance	Install yield sign on north- and southbound approaches to the intersection, at an estimated cost of $200	• Reduces accident potential and improves safety • Conforms to control criteria in Chapter IV (intersection of two land access streets *should be controlled* due to restricted sight distance)	• Modest increase in travel time and delay
20	At N. Shoreland Avenue	Insufficient traffic control related to restricted sight distance	Install yield sign on north- and southbound approaches to the intersection, at an estimated cost of $200	• Reduces accident potential and improves safety • Conforms to control criteria in Chapter IV (intersection of two land access streets should be controlled due to restricted sight distance)	• Modest increase in travel time and delay
21	E. Lancaster Avenue at N. Hollywood Avenue	Insufficient traffic control related to restricted sight distance	Install yield sign on north- *and southbound* approaches to the intersection, at an estimated cost of $200	• Reduces accident potential and improves safety • Conforms to control criteria in Chapter IV (intersection of two land access streets should be controlled due to restricted sight distance)	• Modest increase in travel time and delay
22	At N. Woodruff Avenue	Insufficient traffic control related to restricted sight distance	Install stop sign on east- and westbound approaches to the intersection, at an estimated cost of $200	• Reduces accident potential and improves safety • Conforms to control criteria in Chapter IV (intersection of two land access streets should be controlled due to restricted sight distance)	• Modest increase in travel time and delay
23	E. Colfax Place from N. Woodruff Avenue to N. Marlborough Drive	Shortage of on-street parking related to over utilization by students and staff of Whitefish Bay High School	Impose two-hour time restrictions on the east half of each block on the north side of E. Colfax Place between N. Woodruff Avenue and N. Marlborough Drive, at an estimated cost of $800	• Frees on-street parking space for residents along E. Colfax Place within the vicinity of their residences • Maintains sufficient unrestricted parking for students and staff of Whitefish Bay High School	• None
24	W. Fairmount Avenue at W. Lydell Avenue	Intersection of *collector street* with land access street with improper traffic control	Remove yield sign on westbound approach to the intersection and install stop sign, at an estimated cost of $50	• Reduces accident potential and improves safety • Clearly establishes which approaches have right-of-way • Conforms to control criteria in Chapter IV (land access street approaches to intersection with collector street should be stop signed-controlled)	• Modest increase in travel time and delay

Table 11 (continued)

Number	Location	Traffic Problem	Recommended Traffic Management Actions	Advantages	Disadvantages
25	At N. Bay Ridge Avenue	Insufficient traffic control related to sight distance	Install yield sign on southbound approach to the intersection, at an estimated cost of $100	• Reduces accident potential and improves safety • Conforms to control criteria in Chapter IV (intersection of two land access streets should be controlled due to restricted sight distance)	• Modest increase in travel time and delay
26	At N. Kent Avenue	Insufficient traffic control related to sight distance	Install yield sign on southbound approach to the intersection, at an estimated cost of $100	• Reduces accident potential and improves safety • Conforms to control criteria in Chapter IV (intersection of two land access streets should be controlled due to restricted sight distance)	• Modest increase in travel time and delay
27	At N. Shoreland Avenue	Insufficient traffic control related to sight distance	Install yield sign on southbound approach to the intersection, at an estimated cost of $100	• Reduces accident potential and improves safety • Conforms to control criteria in Chapter IV (intersection of two land access streets should be controlled due to restricted sight distance)	• Modest increase in travel time and delay
29	W. Fairmount Avenue at N. Lake Drive and N. Palisades Road	High accident incidence on northbound roadway	Convert existing mercury vapor luminairs to high-pressure sodium, at an estimated cost of $2,500	• Improves visibility during periods of low levels of natural light	• None
			Install chevron alignment signs on the outside of the curve adjacent to the northbound pavement, at an estimated cost of $700	• Delineates boundary of the curve • High visibility during periods of low levels of natural light and snowy weather	• A break in delineation must be provided to accommodate Palisades Road
			Install left-turn arrow and 20-mph thermoplastic markings which shall have reflective beading as an integral component, at an estimated cost of $300	• Alerts motorists to abrupt change in roadway alignment and reduced speed	• Limited effectiveness in snow and ice
			Cut two series of transverse grooves in pavement of northbound lanes approximately 200 feet apart, 175 feet in advance of the curve, at an estimated cost of $1,000	• Audible warning to motorist of a change in conditions ahead	• May infill with snow and ice, reducing effectiveness • Motorist, though alerted, is not advised of specific change in conditions ahead

Table 11 (continued)

Number	Location	Traffic Problem	Recommended Traffic Management Actions	Advantages	Disadvantages
30	W. Chateau Place at N. Lydell Avenue	Intersection of collector street and local access street with improper traffic control	Remove yield sign on westbound approach to intersection and install a stop sign, at an estimated cost of $50	• Reduces accident potential and improves safety • Clearly establishes which approaches have right-of-way • Conforms to control criteria in Chapter IV (land access street approaches to intersection with collector street should be stop sign-controlled)	• Modest increase in travel time and delay
31	At N. Shoreland Avenue	Lack of traffic control related to restricted sight distance	Install yield sign on northbound approach to intersection, at an estimated cost of $100	• Reduces accident potential and improves safety • Conforms to control criteria in Chapter IV (intersection of two land access streets should be controlled due to restricted sight distance)	• Modest increase in travel time and delay
32	At N. Berkeley Boulevard	Lack of traffic control related to restricted sight distance	Install yield signs on east- and westbound approaches to intersection, at an estimated cost of $200	• Reduces accident potential and improves safety • Conforms to control criteria in Chapter IV (intersection of two land access streets should be controlled due to restricted sight distance)	• Modest increase in travel time and delay
33	W. Chateau Place at N. Elkhart Avenue	Lack of traffic control related to restricted sight distance	Install yield signs on north- and southbound approaches to intersection, at an estimated cost of $200	• Reduces accident potential and improves safety • Conforms to control criteria in Chapter IV (intersection of two land access streets should be controlled due to restricted sight distance)	• Modest increase in travel time and delay
34	At N. Sheffield Avenue	Lack of traffic control related to restricted sight distance	Install yield sign on northbound approach to intersection, at an estimated cost of $100	• Reduces accident potential and improves safety • Conforms to control criteria in Chapter IV (intersection of two land access streets should be controlled due to unrestricted sight distance)	• Modest increase in travel time and delay
35	At N. Woodburn Street	Unwarranted traffic control devices	Remove stop signs from north- and southbound approaches and install yield signs on those approaches, at an estimated cost of $100	• Encourages respect for and compliance with warranted traffic control devices • Reduces travel time and delay • Conforms to control criteria in Chapter IV (sight distance is not so restricted as to warrant stop signs, but yield signs are warranted)	• None

Table 11 (continued)

Number	Location	Traffic Problem	Recommended Traffic Management Actions	Advantages	Disadvantages
36	E. Hampton Road at N. Marlborough Drive	Hazardous median islands of sub-standard size[a]	Remove median islands on east-, west-, and southbound approaches to the intersection, and install 9-inch Portland cement concrete pavement, at an estimated cost of $2,200	• Solves visibility and size problems • The islands perform no identifiable function	• None
37	N. Marlborough Drive between E. Hampton Road and E. Courtland Place	Illegally parked or stopped vehicles	Relocate northern "No Parking-Stopping-Standing" sign 10 feet to north of its present location, and southern sign 20 feet south of its present location, at an estimated cost of $300	• Reduces encroachment into driveway by parked or stopped vehicles • Improved sight distance for ingress to and egress from the driveway • Enhances opportunity for ingress and egress by increasing turning radius	• Modest decrease in length of curb available to parents to queue along to drop off or pick up students
			Direct mail to each family in the school a map showing the school grounds and the location of the restricted area at the handicapped driveway	• Serve as reminder to parents that they may not encroach on the driveway	• None
			Instruct area squad to patrol on occasional basis several times per month, at an estimated annual cost of $700	• Reduces encroachment into driveway by parked or stopped vehicles	• None
38	E. Courtland Place at N. Sheffield Avenue	Lack of traffic control related to restricted sight distance	Install yield signs on north- and southbound approaches to the intersection, at an estimated cost of $200	• Reduces accident potential and improves safety • Clearly establishes which approaches have the right-of-way • Conforms to control criteria in Chapter IV (intersection of two land access streets should be controlled due to restricted sight distance)	• Modest increase in travel time and delay
		Excessive speed	Focus enforcement efforts in area on an irregular basis, at an estimated annual cost of $300	• Compliance high in presence of law officer	• Limited law enforcement manpower

Table 11 (continued)

Number	Location	Traffic Problem	Recommended Traffic Management Actions	Advantages	Disadvantages
39	E. Cumberland Boulevard at N. Cramer Street	Lack of traffic control related to restricted sight distance	Install stop signs on east- and westbound approaches to the intersection, at an estimated cost of $200	• Reduces accident potential and improves safety • Clearly establishes which approaches have the right-of-way • Conforms to control criteria in Chapter IV (intersection of two land access streets should be controlled due to restricted sight distance)	• Modest increase in travel time and delay
		Excessive speed	Focus enforcement efforts in area on an irregular basis, at an estimated annual cost of $700	• Compliance high in presence of police officer	• None

[a] *Existing islands are approximately 50 square feet; the American Association of State Highway and Transportation Officials' A Policy on Geometric Design of Highways and Streets, 1984, recommends a minimum island size of 100 square feet.*

Source: SEWRPC.

and N. Marlborough Drive. Alternative control measures considered to alleviate this problem included: 1) the prohibition during peak traffic periods of southbound left turns into the alley from N. Hollywood Avenue and of northbound left turns into the alley and into the parking lot from N. Marlborough Drive; 2) conversion of the alley from two-way to one-way operation; 3) closing the alley at N. Hollywood Avenue and the parking lot driveway at N. Marlborough Avenue and constructing a new driveway at the southwest corner of the parking lot to N. Hollywood Avenue; and 4) reconstructing the alley at N. Hollywood Avenue to allow left-turn egress only, and constructing a new driveway at the southwest corner of the parking lot to allow right-turn ingress only from N. Hollywood Avenue. The advantage of these control measures is that they would reduce the traffic diversion into the alley. The disadvantages of these control measures are that some of the traffic that is currently using the alley may be diverted to the local street system, and that each measure by itself will deter traffic moving only in one direction. Further, access to the public parking lot abutting the alley on the south would be impaired.

Commission staff observed this alley and parking lot on November 3rd and 4th, 1987, and determined that the through traffic using the alley amounted to fewer than 15 vehicles per hour. Because the through traffic is relatively minimal, and the measures that would need to be taken to eliminate the through traffic would make use of the parking lot difficult, it is recommended that no action be taken.

E. Birch Avenue at N. Shoreland Avenue (Problem Location 2)

A traffic problem identified by a citizen at this intersection is a need for stop signs. This is an intersection between two land access streets, with sufficient sight distance on all approaches to negate the need for traffic control, based on the adopted traffic management criteria. However, Birch Avenue between N. Lydell Avenue and N. Marlborough Drive serves as an emergency route for the Village's Police Department. Typically, when responding to a call for assistance, squad cars operate in a "silent responsive" mode on Birch Avenue—that is, without the benefit of audio warning of their approach. Therefore, to protect the integrity of the emergency route and reduce the accident potential between the general public and squad cars responding to a call for assistance, it is recommended that the yield signs on the north- and southbound approaches to the intersection be replaced with stop signs.

E. Birch Avenue at N. Santa Monica Boulevard (Problem Location 3)

A traffic problem identified by citizens at this intersection is excessive speed along N. Santa Monica Boulevard. This speed is perceived as contributing to a number of accidents and near accidents at the intersection. A traffic speed study was conducted on N. Santa Monica Boulevard to determine the average speed of traffic and the 85th percentile speed. Based on that study, the average speed on N. Santa Monica Boulevard just south of E. Birch Avenue was 30.1 mph; and the 85th percentile speed was 33.5 mph. The highest speed observed was 42 mph. The data confirm that there is substantial disregard for the posted speed limit at this location. A measure considered to alleviate the problem of excessive speed on N. Santa Monica Boulevard is an increased level of law enforcement. The advantage of this control measure is that it would reduce the number of motorists exceeding the speed limit. The estimated annual cost for increased enforcement activities is $700.

A review of the accident history at this location for the years 1985, 1986, and 1987 indicates that two accidents occurred in 1985, one accident occurred in 1986, and three accidents occurred in 1987. Failure to stop at the stop sign was listed as a possible contributing factor to three of these accidents. The alternative control measure recommended to alleviate this problem was the installation of larger stop signs on the east- and westbound approaches to the intersection and the installation of warning signs approximately 150 feet in advance of the intersection on east- and westbound approaches to E. Birch Avenue. The estimated cost of implementing these measures is $300.

E. Birch Avenue at N. Berkeley Boulevard, N. Diversey Boulevard, and N. Hollywood Avenue (Problem Location 4)

The existing traffic control at the intersection of E. Birch Avenue and N. Diversey Boulevard was installed as a result of an accident problem at that intersection. In addition, Birch Avenue functions as an emergency route for the Police Department as it responds to calls for assistance along E. and W. Silver Spring Drive. Therefore, in order to protect the integrity of this emergency route and because the traffic control devices have been effective in reducing the potential for accidents, it is recommended that the stop sign control at these intersections be maintained.

E. Birch Avenue at N. Idlewild Avenue (Problem Location 5)

The intersection of E. Birch Avenue and N. Idlewild Avenue is a standard four-legged intersection, with the legs intersecting at 90 degrees. However, the proximity of N. Marlborough Drive to the intersection of E. Birch Avenue and N. Idlewild Avenue makes the situation unique. Marlborough Drive diagonally intersects E. Birch Avenue and N. Idlewild Avenue approximately 60 feet easterly and approximately 80 feet northerly of the intersection of E. Birch Avenue and N. Idlewild Avenue, respectively. A sight distance problem does exist in the southeast quadrant of this intersection, but yield signs on the north- and southbound approaches address this problem.

The intersection of E. Birch Avenue and N. Marlborough Drive is stop sign-controlled on the E. Birch Avenue approaches. Westbound traffic on E. Birch Avenue approaching the intersection of E. Birch Avenue and N. Idlewild Avenue, therefore, would be traveling at relatively slow speeds—between 10 and 15 mph, based on normal acceleration rates—because of the proximity of the E. Birch Avenue and N. Marlborough Drive and E. Birch Avenue and N. Idlewild Avenue intersections. Such traffic should not pose a particular problem for vehicles northbound on N. Idlewild Avenue approaching the intersection of E. Birch Avenue and N. Idlewild Avenue because of its relatively slow speed. Traffic that is northbound on N. Marlborough Drive and turns left to proceed westbound on E. Birch Avenue has the potential for higher speeds if there is no southbound traffic to impede the progress of a vehicle through the intersection of E. Birch Avenue and N. Marlborough Drive. Such traffic may be expected to approach the intersection of E. Birch Avenue and N. Idlewild Avenue at speeds of about 25 mph.

Village of Whitefish Bay Police Department squad cars responding to emergency calls operate through the intersection of E. Birch Avenue and N. Idlewild Avenue on E. Birch Avenue. To protect this emergency route and, as well, motorists approaching the intersection of E. Birch Avenue and N. Idlewild Avenue, it is recommended that the yield signs on the north- and southbound approaches be replaced with stop signs.

E. Birch Avenue at N. Danbury Road (Problem Location 6)

The traffic problem identified on this road segment was insufficient traffic control related to

restricted sight distance. The alternative control measure considered to alleviate this problem is the installation of a yield sign on the southbound approach to the intersection. The advantage of this alternative control measure is the reduction in the accident potential and improvement in safety at the intersection, as well as conformance with the adopted traffic management criteria. The disadvantage of this traffic control measure is an attendant increase in travel time and delay. It is recommended that this alternative control measure be implemented, at an estimated cost of $100.

Alleys in the Area Bounded by E. Birch Avenue, N. Idlewild Avenue, E. Lexington Boulevard, and N. Santa Monica Boulevard (Problem Location 7)

A traffic problem identified by a citizen in this area is excessive speed in the alleys. One alternative control measure considered to alleviate this problem was the installation of "10 Miles per Hour" speed limit signs. The advantages of this control measure is that it would alert the motorist to a specific speed limit and thus encourage the majority of motorists to slow to a safe speed. This control measure may require periodic enforcement by police officers. It is recommended that this alternative control measure be implemented, at an estimated cost of $1,000.

An alternative control measure considered but rejected was the construction of speed humps. A speed hump is a four-inch rise from and decline to the existing pavement surface within a lateral distance of 12 feet and perpendicular to the direction of travel. The advantage of this control measure is an ability to reduce vehicular speeds as the vehicles cross the hump in the absence of a police officer. The disadvantage of this control measure is that motorists resume speed once over the hump.

Another alternative control measure considered to alleviate this problem, but rejected, was the installation of "Slow—Children" signs. There are no advantages to the installation of these signs. The expected disadvantages of such installation are that such signs afford children a false sense of security, encouraging them to play within the alley—an activity that should be discouraged.

E. Fleetwood Place at N. Idlewild Avenue (Problem Location 8)

A traffic problem identified at this intersection is insufficient traffic control related to sight distance. The alternative control measure considered to alleviate this problem was the installation of a stop sign on the westbound approach to the intersection. The advantage of this control measure is that it would reduce the accident potential and improve safety at the intersection. Also, such installation would conform with the adopted traffic management criteria. The disadvantage of this control measure is an attendant increase in travel time and delay. It is recommended that this alternative control measure be implemented, at an estimated cost of $100.

E. Briarwood Place at N. Idlewild Avenue (Problem Location 9)

A traffic problem identified at this intersection is insufficient traffic control related to sight distance. The alternative control measure considered to alleviate this problem was the installation of a stop sign on the westbound approach to the intersection. The advantage of this alternative control measure is that is would reduces the accident potential and improves safety at the intersection. Also, such installation would conform with the adopted traffic management criteria. The disadvantage of this control measure is an attendant increase in travel time and delay. It is recommended that this alternative control measure be implemented, at an estimated cost of $100.

E. Lexington Boulevard at N. Bay Ridge Avenue (Problem Location 10)

A traffic problem identified by a citizen is disrespect for the existing traffic control at this intersection. The east- and westbound intersection approaches are currently controlled by yield signs. The sight distance on these intersection approaches is restricted and traffic control is warranted. The alternative control measure considered to alleviate this problem was replacement of the yield signs with stop signs. The advantages of this control measure are that it would reduce the accident potential and improve safety at the intersection, clearly establish which approaches have the right-of-way, and conform with the adopted traffic management criteria. The disadvantage of this control measure is an attendant increase in travel time and delay. It is recommended that this alternative control measure be implemented, at an estimated cost of $100.

E. Lexington Boulevard at N. Kent Avenue (Problem Location 11)

A traffic problem identified by a citizen is a need for stop signs on E. Lexington Boulevard at this

intersection to discourage motorists from using E. Lexington Boulevard as an arterial.

According to the adopted traffic management control criteria, the removal of the existing stop signs on northbound and southbound N. Kent Avenue should, rather, be considered at this intersection of two land access streets. It is recommended, consistent with these criteria, that the stop signs on the north- and southbound approaches be removed. The advantage of this alternative is that motorists will be less likely to perceive E. Lexington Boulevard as an arterial street. This alternative can also be expected to reduce travel time and delay and encourage respect for, and compliance with, warranted traffic control devices. It is recommended that this alternative traffic control measure be implemented, at an estimated cost of $150.

E. Lexington Boulevard at N. Shoreland Avenue (Problem Location 12)

A traffic problem identified at this intersection is insufficient traffic control related to restricted sight distance. The alternative control measure considered to alleviate this problem was the installation of yield signs on the north- and southbound approaches to the intersection. The advantages of this control measure are a reduction in accident potential and improved safety, and the clear establishment of which approaches have the right-of-way. This installation would conform with the adopted traffic management criteria. The disadvantage of this control measure would be the attendant increase in travel time and delay. It is recommended that this alternative control measure be implemented, at an estimated cost of $200.

E. Lexington Boulevard at N. Diversey Avenue (Problem Location 13)

The existing traffic control at this intersection was identified as not conforming with the adopted traffic management criteria. The intersection has stop signs that are not warranted at an intersection of two land access streets. It is recommended that the stop signs on the east- and westbound approaches to the intersection be removed, at an estimated cost of $150. This would serve to encourage respect for, and compliance with, traffic control devices by eliminating unwarranted installations, and would reduce unnecessary delay.

E. Lexington Boulevard at N. Hollywood Avenue (Problem Location 14)

The traffic problem identified by a citizen at this intersection was a lack of traffic control devices. The installation of stop signs at this intersection would increase in travel time and delay, increase the potential for certain types of accidents, and possibly encourage disrespect for, and noncompliance with, other stop signs. It is therefore recommended that no change be made in the traffic control at this intersection.

E. Lexington Boulevard at N. Idlewild Avenue (Problem Location 15)

The existing traffic control at this intersection was identified as not conforming with the adopted traffic management criteria. The intersection has stop signs that are not warranted. It is recommended that the stop signs on the north- and southbound approaches to the intersection be removed, at an estimated cost of $150. This would serve to encourage respect for, and compliance with, traffic control devices by eliminating unwarranted installations, and would reduce unnecessary delay.

E. Sylvan Avenue at N. Idlewild Avenue (Problem Location 16)

The traffic problem identified at this intersection was insufficient traffic control related to restricted sight distance. One alternative control measure considered to alleviate this problem was the installation of a yield sign on the westbound approach to the intersection. The advantages to this control measure are a reduction in accident potential and improved safety. Also, such installation would conform with the adopted traffic management criteria. The disadvantage is the attendant increase in travel time and delay. It is recommended that this alternative control measure be implemented, at an estimated cost of $100.

E. Henry Clay Street from N. Kimbark Place to N. Ardmore Avenue (Problem Location 17)

The traffic problem identified by a citizen on this roadway segment was restricted sight distance at the driveway serving the North Shore Exceptional Educational building parking lot. The alternative control measure considered to alleviate this problem was the prohibition of parking on the north side of E. Henry Clay Street from N. Kimbark Place to a point 150 feet east of the driveway serving the parking lot. The advantages of this control measure are increased sight distance, which will, in turn, reduce accident potential and improve safety. The disadvantage of this measure is the loss of six on-street parking spaces. Motorists currently parking on E. Henry Clay Street may be expected to park on N. Kimbark

Place. It is recommended that this alternative control measure be implemented, at an estimated cost of $100.

E. Lancaster Avenue at N. Lydell Avenue (Problem Location 18)

The existing traffic control at this intersection was identified as not conforming with the adopted traffic management criteria. This intersection is between a collector and a local access street, with the local street approach—E. Lancaster Avenue—currently controlled by a yield sign. The traffic management control criteria dictate that the local street approach at such an intersection be stop sign-controlled for safety purposes. It is recommended that the yield sign be replaced with a stop sign on the westbound E. Lancaster Avenue approach to this intersection, at an estimated cost of $50.

E. Lancaster Avenue at N. Kent Avenue (Problem Location 19)

The traffic problem identified at this intersection was insufficient traffic control related to restricted sight distance. The alternative control measure considered to alleviate this problem was the installation of yield signs on the north- and southbound approaches to the intersection. The advantages of this alternative control measure are reduced accident potential and improved safety. Also, such installation would conform with the adopted traffic management criteria. The disadvantage of this control measure is the attendant increase in travel time and delay. It is recommended that this control measure be implemented, at an estimated cost of $200.

E. Lancaster Avenue at N. Shoreland Avenue (Problem Location 20)

The traffic problem identified at this intersection was insufficient traffic control related to restricted sight distance. The alternative control measure considered to alleviate this problem was the installation of yield signs on the north- and southbound approaches to the intersection. The advantages of this control measure are reduced accident potential and improved safety. Also, such installation would conform with the adopted traffic management criteria. The disadvantage of this control measure is the attendant increase in travel time and delay. It is recommended that this alternative control measure be implemented, at an estimated cost of $200.

E. Lancaster Avenue at N. Hollywood Avenue (Problem Location 21)

The traffic problem identified at this intersection was insufficient traffic control related to restricted sight distance. The alternative control measure considered to alleviate this problem was the installation of yield signs on the north- and southbound approaches to the intersection. The advantages of this control measure are reduced accident potential and improved safety. Also, such installation would conform with the adopted traffic management criteria. The disadvantage of this control measure is the attendant increase in travel time and delay. It is recommended that this alternative control measure be implemented, at an estimated cost of $200.

E. Lancaster Avenue at N. Woodruff Avenue (Problem Location 22)

The traffic problem identified at this intersection was insufficient traffic control related to restricted sight distance. The alternative control measure considered to alleviate this problem was the installation of yield signs on the east- and westbound approaches to the intersection. The advantages of this alternative control measure are reduced accident potential and improved safety. Also, such installation would conform with the adopted traffic management criteria. The disadvantage of this control measure is the attendant increase in travel time and delay. It is recommended that this alternative control measure be implemented, at an estimated cost of $200.

E. Colfax Place Between N. Woodruff Avenue and N. Marlborough Drive (Problem Location 23)

A traffic problem identified by a citizen on this street segment is a shortage of on-street parking for residents due to parking by students and staff of the Whitefish Bay High School. The alternative control measure considered to alleviate this problem was the imposition of two-hour time restrictions on the east half of each block of E. Colfax Place between N. Woodruff Avenue and N. Marlborough Drive. The advantage of this control measure is that is would make some on-street parking available for residents and visitors within the immediate vicinity of the residences on E. Colfax Place. There is no disadvantage to this alternative control measure. It is recommended that parking be restricted to two hours on the north side of the eastern half of each block of E. Colfax Place between N. Woodruff Avenue and N. Marlborough Drive between 7:30 a.m. and 4:30 p.m. on schooldays. The estimated cost of implementing this control measure is $800.

Control measures considered but rejected included the imposition of time restrictions on the north

side over the entire length of E. Colfax Place, and conversion of the no parking zone on the south side of E. Colfax Place to time-restricted parking. The first measure was rejected because it would simply force all current users to seek alternative on-street parking, and thus merely relocate the problem. The second alternative would cause the width of the street to be reduced enough to negatively impact its operation and safety when vehicles were parked on both sides of the street.

W. Fairmount Avenue at W. Lydell Avenue (Problem Location 24)

The existing traffic control was identified as not conforming with the adopted traffic management criteria. This intersection is between a collector street and a local access street, and the local access street approach—W. Fairmount Avenue—is currently controlled by a yield sign. The traffic management control criteria dictate that the local street approach at such an intersection be stop sign-controlled for safety purposes. It is recommended that the yield sign be replaced with a stop sign on the westbound W. Fairmount Avenue approach to the intersection, at an estimated cost of $50.

W. Fairmount Avenue at N. Bay Ridge Avenue (Problem Location 25)

The traffic problem identified at this intersection was insufficient traffic control related to sight distance. The alternative control measure considered to alleviate this problem was the installation of a yield sign at the southbound approach to the intersection. The advantages of this control measure are a reduction in accident potential and improved safety, and conformance with the adopted traffic management criteria. The disadvantage is the attendant increase in travel time and delay. It is recommended that this alternative control measure be implemented, at an estimated cost of $100.

W. Fairmount Avenue at N. Kent Avenue (Problem Location 26)

The traffic problem identified at this intersection was insufficient traffic control related to sight distance. The alternative control measure considered to alleviate this problem was the installation of a yield sign at the southbound approach to the intersection. The advantages of this control measure are a reduction in accident potential and improved safety, and conformance with the adopted traffic management criteria. The disadvantage is the attendant increase in travel time and delay. It is recommended that this alternative control measure be implemented, at an estimated cost of $100.

W. Fairmount Avenue at N. Shoreland Avenue (Problem Location 27)

The traffic problem identified at this intersection was insufficient traffic control related to sight distance. The alternative control measure considered to alleviate this problem was the installation of a yield sign at the southbound approach to the intersection. The advantages of this control measure are a reduction in accident potential and improved safety, and conformance with the adopted traffic management criteria. The disadvantage is the attendant increase in travel time and delay. It is recommended that this alternative control measure be implemented, at an estimated cost of $100.

W. Fairmount Avenue at N. Larkin Street (Problem Location 28)

The traffic problem at this intersection identified by a citizen was a lack of traffic control devices. This intersection of two land access streets has adequate sight distance. The installation of traffic control devices would increase travel time and delay, possibly increase certain types of accidents, and encourage disrespect for, and noncompliance with, other traffic control devices. It is recommended that additional traffic control devices not be installed at this intersection.

W. Fairmount Avenue at N. Lake Drive and N. Palisades Road (Problem Location 29)

A citizen identified a safety problem on the northbound roadway of Lake Drive immediately southeast of this intersection. A total of 18 accidents occurred at this location between March 1980 and July 1986. Of those 18 accidents, 12 occurred at night and in seven of those, excessive speed or inattentive driving was a factor as well. Excessive speed was a factor in five of the six accidents that occurred during daylight hours.

One of the alternative control measures considered to alleviate this problem was the installation of high-pressure sodium vapor street lighting. The advantage of such lighting would be an improvement in visibility during periods of low levels of natural light. The disadvantage of this alternative is the cost entailed. It is recommended that the existing mercury vapor luminaires be converted to high-pressure sodium luminaires.

Another alternative measure considered to alleviate this problem was the installation of delineator posts with reflectors or warning signs on the outside of the northbound curve. This control measure would provide improved visibility of the curve during periods of low levels of natural light and in times of foggy, rainy, or snowy weather. A potential disadvantage of this control measure is that a break in the delineation would be necessary to accommodate Palisades Road. It is recommended that delineator posts with reflectorized chevron alignment signs be installed on the outside of the curve adjacent to the northbound pavement.

A third alternative control measure considered to alleviate this problem was the installation of pavement markings. The advantage of this control measure is that it would alert motorists to change in the roadway alignment and the necessity for reduced speed. The disadvantage of this measure is its limited effectiveness under snow and ice conditions. It is recommended that a left-turn arrow thermoplastic pavement marking and a 20-mph speed limit thermoplastic marking, both having reflective beading, be installed on the pavement in advance of the curve. The cost of this control measure is estimated at $300.

A fourth alternative control measure considered to alleviate this problem was the installation of rumble strips south of the curve. The advantage of this control measure is that it would provide an audible warning to the motorist of a change in conditions ahead. The disadvantages of this control measure include the potential for the strips to infill with snow and ice, reducing their effectiveness, and the fact that the motorist, though alerted, is not advised of the specific change in conditions ahead. It is recommended that two series of 10 grooves be cut into the pavement of the northbound lanes approximately 200 feet apart in advance of the curve. The cost of this control measure is estimated at $1,000. The total cost of implementing all four recommended measures is $4,500.

Other alternative control measures also considered but rejected included: 1) the installation of a corrugated concrete median on the outside of the curve on the northbound lane; 2) the installation of reflective, snowplowable pavement markers on the outside of the curve on the northbound lane; 3) the operation of a one-way pair of streets between N. Fairmount Avenue and E. Henry Clay Streets, with N. Palisades Road one way northbound and N. Lake Drive one way southbound; 4) reconstruction of N. Lake Drive to provide a flatter curve of substantial length; 5) reconstruction of the curve on N. Lake Drive with a superelevated cross-section and a slightly flatter and longer curve; and 6) construction of a cul-de-sac on N. Palisades Road and W. Fairmount Avenue and a GM type barrier on the outside of the northbound roadway. The reasons for rejecting these alternative control measures included the level of capital investment required, and the relatively lower level of effectiveness. The operation of a one-way pair of streets would result in through traffic being routed over Palisades Road and in indirection of traffic movement and circulation, particularly for residents on N. Lake Drive.

W. Chateau Place at N. Lydell Avenue (Problem Location 30)

The existing traffic control at this intersection was identified as not conforming with the adopted traffic management criteria. This intersection is located between a collector street and a local access street, with the local street approach—W. Chateau Place—currently controlled by a yield sign. The traffic management control criteria dictate that the local street approach to such an intersection be stop sign-controlled for safety. It is recommended that the yield sign be replaced with a stop sign on the westbound approach to the intersection, at an estimated cost of $50.

W. Chateau Place at N. Shoreland Avenue (Problem Location 31)

The traffic problem identified at this intersection was insufficient traffic control related to sight distance. The alternative control measure considered to alleviate this problem was the installation of a yield sign at the southbound approach to the intersection. The advantages of this control measure are a reduction in accident potential and improved safety, and conformance with the adopted traffic management criteria. The disadvantage is the attendant increase in travel time and delay. It is recommended that this alternative control measure be implemented, at an estimated cost of $100.

W. Chateau Place at N. Berkeley Boulevard (Problem Location 32)

The traffic problem identified at this intersection was insufficient traffic control related to sight distance. The alternative control measure considered to alleviate this problem was the

installation of a yield sign at the southbound approach to the intersection. The advantages of this control measure are a reduction in accident potential and improved safety, and conformance with the adopted traffic management criteria. The disadvantage is the attendant increase in travel time and delay. It is recommended that this alternative control measure be implemented, at an estimated cost of $100.

W. Chateau Place at N. Elkhart Avenue (Problem Location 33)

The traffic problem identified at this intersection was insufficient traffic control related to sight distance. The alternative control measure considered to alleviate this problem was the installation of a yield sign at the southbound approach to the intersection. The advantages of this alternative control measure are a reduction in accident potential and improved safety, and conformance with the adopted traffic management criteria. The disadvantage is an attendant increase in travel time and delay. It is recommended that this alternative control measure be implemented, at an estimated cost of $100.

W. Chateau Place at N. Sheffield Avenue (Problem Location 34)

The traffic problem identified at this intersection was insufficient traffic control related to sight distance. The alternative control measure considered to alleviate this problem was the installation of a yield sign at the southbound approach to the intersection. The advantages of this control measure are a reduction in accident potential and improved safety, and conformance with the adopted traffic management criteria. The disadvantage is the attendant increase in travel time and delay. It is recommended that this alternative control measure be implemented, at an estimated cost of $100.

W. Chateau Place at N. Woodburn Street (Problem Location 35)

The existing traffic control at this intersection was identified as not conforming with the adopted traffic management criteria. The intersection has stop signs that are not warranted. It is recommended that the stop signs on the north- and southbound approaches be removed and that yield signs be installed on those approaches, at an estimated cost of $100. This will encourage respect for, and compliance with, traffic control devices by eliminating unwarranted installations and reducing unnecessary delay.

E. Hampton Road at N. Marlborough Drive (Problem Location 36)

The traffic problem at this intersection identified by a citizen was hazardous median islands. The islands at this intersection have an area of approximately 50 square feet, which is one-half of the recommended minimum island size. Two elementary schools are located at this intersection—one in the northeast quadrant and one in the southeast quadrant. This results in substantial pedestrian traffic at the intersection. The intersection is controlled by a traffic signal that includes "Walk" and "Don't Walk" pedestrian signal displays, and a crossing guard is present during certain times of the day. The timing of the traffic signal is such that sufficient time is afforded during the Walk display for the pedestrians to cross from one side of the street to the other. The crossing guard ensures that children cross with the Walk indication on the traffic signal.

Given that the traffic signals provide ample time for pedestrians to cross from one side of the street to the other and that the size of the existing island provides little or no refuge, the islands perform no needed function. An alternative traffic control measure considered to alleviate this problem was the removal of the islands. There are no disadvantages to this alternative control measure. It is recommended that the median islands on the east-, west-, and southbound approaches to the intersection be removed and that a nine-inch portland cement pavement be installed, at an estimated cost of $2,200.

Other alternative control measures considered but rejected included: 1) the installation of pavement markers; 2) the installation of delineator posts with reflectors on the islands; and 3) reconstruction of the islands to meet minimum size requirements. The advantage of these control measures is that they would provide additional delineation of the islands. Only the final alternative control measure would address the substandard size problem, but given that the islands perform no needed function, it is not recommended that this alternative control measure be implemented.

N. Marlborough Drive Between E. Hampton Road and E. Courtland Place (Problem Location 37)

The traffic problem on this roadway segment identified by a citizen was illegally parked or stopped vehicles which block the driveway providing access to the entrance to Cumberland School serving handicapped students. An alternative control

measure considered to alleviate this problem was the relocation of existing regulatory signing to enlarge the area in which parking, stopping, and standing are prohibited. The advantages of this control measure include reduced encroachment to the driveway by parked or stopped vehicles and improved sight distance for ingress and egress to and from the driveway, as well as improved turning radius for ingress and egress. The disadvantage of this control measure is a modest decrease in the length of curb available for vehicles to queue along to drop off and pick up students. It is recommended that the northern "No Parking-Stopping-Standing" sign be relocated 10 feet to the north of its present location and that the southern sign be relocated 20 feet south of its present location.

Another alternative control measure considered to alleviate the problem was a direct mailing to each family with children in the schools containing a map showing the school grounds and the location of the No Parking-Stopping-Standing area at the school driveway. The advantage of this control measure is that it would serve to remind parents that they may not encroach on the driveway. There are no disadvantages to this alternative control measure.

Another alternative control measure considered to alleviate this problem was an increase in law enforcement activity at the driveway. The advantage of this control measure is that it would reduce encroachment of the driveway by parked or stopped vehicles. There are no disadvantages to this alternative control measure and it is recommended that it be implemented. The cost of implementing these alternative control measures is estimated to be $300 in capital costs, with an annual cost of $700 for enforcement.

An alternative control measure also considered but rejected was staggering the start and dismissal times for handicapped students from the start and dismissal times for the general student population. This would ensure that the driveway would be open when those vehicles serving handicapped students were arriving or leaving. The disadvantages of staggered start and dismissal times are the staffing problems created within the school and the potential disruption of classes either at the beginning or at the end of the day. It is recommended that this alternative not be implemented.

E. Courtland Place at N. Sheffield Avenue (Problem Location 38)

The traffic problem at this intersection identified by a citizen was a lack of stop signs to control through traffic. The use of stop signs to attempt to control through traffic is inappropriate and ineffective. In addition, the installation of stop signs may be expected to increase travel time and delay, may result in an increase in certain types of accidents, and encourages disrespect for, and noncompliance with, warranted traffic control devices. Therefore, the installation of stop signs is not recommended.

Another traffic problem at this intersection identified by a citizen was excessive speed. The alternative control measure considered to alleviate this problem was diligent enforcement of the existing speed limit. The advantage of this control measure is that compliance with the speed limit may be expected to be high in the presence of a law officer. The disadvantage is the need to commit limited law enforcement manpower to this function. It is recommended that enforcement efforts in the area be increased, but on an irregular basis. The estimated cost of this measure is $300 per year.

An alternative control measure considered but rejected was the installation of speed limit signs. The advantage of such installation is that it reminds motorists of the speed limit. The disadvantage is that compliance without the presence of a law officer can be expected to be no better than it is today. It is therefore recommended that this alternative control measure not be implemented.

The final traffic problem identified at this intersection was a lack of traffic control related to restricted sight distance. The alternative control measure considered to alleviate this problem was the installation of yield signs on the north- and southbound approaches. The advantages of this control measure are that it reduces accident potential and improves safety; it clearly establishes which approaches have the right-of-way; and it conforms with the adopted traffic management criteria. The disadvantage of this control measure is the attendant increase in travel time and delay. It is recommended that this alternative control measure be implemented, at an estimated cost of $200.

E. Cumberland Boulevard at N. Cramer Street (Problem Location 39)

The traffic problem identified at this intersection was a lack of traffic control. Sight distance was determined to be sufficiently restricted at this intersection to require the installation of

yield signs, and possibly the installation of stop signs. The accident history at this intersection for 1983, 1984, and 1985 shows that only two traffic accidents occurred over this period, and that six accidents occurred at this intersection in 1986, 1987, and early 1988. All six accidents in the latter time period were right-angle collisions, which should be reduced upon introduction of traffic control on two of the intersection approaches. Three of the six accidents occurred within a 12-month period. Based on the sight distance restrictions at the intersection, and the recent accident history, it is recommended that stop signs be installed on the Cumberland Boulevard approaches to this intersection.

The disadvantage of this alternative control measure is the attendant increase in travel time and delay. The estimated cost of this alternative is $200.

A traffic problem identified by a citizen at this intersection is excessive speed and its impacts on traffic safety. A traffic speed study was conducted on Cumberland Boulevard to determine the average speed of traffic and the 85th percentile speed, or the speed at or below which 85 percent of all traffic is traveling. The traffic speed study indicated that the average speed on N. Cumberland Boulevard just west of E. Birch Avenue was 24.1 miles per hour; and the 85th percentile speed was 27.6 miles per hour. The highest speed observed was in the range of 40 to 55 miles per hour. The data suggest that while there is some disregard for the posted speed limit, 85 percent of the traffic is traveling at or below the posted limit.

The traffic control measure considered to alleviate this problem was an increase in the level of law enforcement activity. The disadvantage of this alternative control measure is that compliance with the speed limit decreases without the presence of a police officer. It is recommended that enforcement efforts in the area be increased, but on an irregular basis. The estimated cost of this measure is $700 per year.

SUMMARY

This chapter has presented and evaluated alternative traffic control measures intended to resolve the identified traffic problems in the Village of Whitefish Bay. From the alternative measures evaluated, a set of recommended measures was selected which may be expected to best resolve the identified problems. The recommended traffic control measures are presented in Table 12 and are divided into three categories, representing recommended priorities for implementation. Those measures having the highest priority for implementation are those addressing the through traffic problem associated with Bay Shore Shopping Center in the part of the Village lying east of the shopping center. Also having high priority are those measures addressing student/pedestrian safety and addressing the resolution of an accident problem on N. Lake Drive at Palisades Road.

Those actions having the next highest priority for implementation involve the installation of new or additional intersection traffic controls in the Village in accordance with the adopted traffic management criteria. Such recommended measures include the installation of yield or stop signs at uncontrolled intersections or the replacement of yield signs with stop signs. It is recommended that with the implementation of new traffic control at an intersection approach, warning signs be installed and left in place for a period of at least three months 100 feet in advance of the approach, indicating that a stop sign or a yield sign is ahead. In addition, signs indicating that cross traffic does not stop should be installed with each new stop sign recommended where such signing is appropriate.

Those actions having the lowest priority for implementation are those addressing the problems at intersections where unnecessary or overly restrictive traffic control is currently provided, as indicated by the adopted traffic management criteria. The principal recommendation at these locations is the removal of stop signs. As these recommendations are implemented, it is essential that warning signs be installed 150 feet from the intersection indicating that cross traffic does not stop. These signs should be left in place for a period of at least three months.

Table 12

RECOMMENDED TRAFFIC MANAGEMENT ACTIONS AND IMPLEMENTATION PRIORITY AND RESPONSIBILITY[a]

Highest Priority for Implementation			
Problem Disruption and Location	**Description of Recommended Action**	**Implementing Unit of Government/Agency**	**Estimated Cost**
Through Traffic on Lakeview, Day, and Belle Avenues	Silver Spring Drive at Lydell Avenue		
	• Provide separate signal cycles by time of day	Village of Whitefish Bay Bay/City of Glendale	$ --
	• Provide two westbound intersection approach traffic lanes by prohibiting parking on north side of Silver Spring Drive 150 feet east of intersection		$ 150
	• Interconnect all traffic signals on Silver Spring Drive in Village		$10,500 total cost of interconnecting all traffic signals in Village
	• Install 12-inch signal lenses and mast arm signal heads on eastbound and westbound approaches		$ 8,400
	• Provide exclusive eastbound left-turn lane and remove eastbound left-turn arrow		$ 6,200
	Silver Spring Drive at Bay Ridge Avenue		
	• Provide separate signal cycles by time of day	Village of Whitefish Bay	$ --
	• Interconnect all traffic signals on Silver Spring Drive in Village		Included in Silver Spring Drive at Lydell Avenue
	Silver Spring Drive at Santa Monica Boulevard		
	• Provide separate signal cycles by time of day	Village of Whitefish Bay	$ --
	• Provide two traffic lanes on eastbound and westbound intersection approaches by prohibiting parking on north side of intersection 150 feet east of intersection; and on south side of intersection 150 feet west of intersection		$ 350
	• Interconnect all traffic signals on Silver Spring Drive in Village		Included in Silver Spring Drive at Lydell Avenue
	• On southbound approaches install signs prohibiting right turn on red when children are present		$ 100
	Silver Spring Drive at Lake Drive and Marlborough Drive		
	• Provide separate signal cycles by time of day	Village of Whitefish Bay/Wisconsin Department of Transportation	$ --
	• Interconnect all traffic signals on Silver Spring Drive in Village		Included in Silver Spring Drive at Lydell Avenue
	• Install "No Rignt Turn on Red When Pedestrians are Present" signs on westbound approach; and install "No Right Turn 3:00 p.m. to 6:00 p.m." sign on westbound Lake Drive at Shore Drive		$ 200
	• Install 12-inch signal lens and mast arm signal heads		$11,300
	• Install thermoplastic lane and arrow markings		$ 800
	• Install "Left Lane Must Turn Left" signs		$ 200

Table 12 (continued)

Highest Priority for Implementation			
Problem Disruption and Location	Description of Recommended Action	Implementing Unit of Government/Agency	Estimated Cost
Through Traffic on Lakeview, Day, and Belle Avenues (continued)	Bay Shore Shopping Center Area Access to and from Lydell Avenue • Work toward implementing in the long range closure of shopping center driveways on Lydell Avenue (or one of the several options to such closure)	Village of Whitefish Bay/City of Glendale/ Bay Shore Shopping Center, and Kohl's Department and Food Stores	$9,300 to $244,000 (depending on option selected)
Student/Pedestrian Safety on Belle Avenue from Santa Monica Boulevard to Berkeley Boulevard	• Prohibit schoolday parking from 7:30 a.m. to 4:30 p.m. on north side of street • Provide ongoing student education program concerning street crossing safety	Village of Whitefish Bay	$ 200 $ --
Student/Pedestrian Safety on Day Avenue from Santa Monica Boulevard to Lake Drive	• Strict, frequent enforcement of parking prohibitions and restrictions • Provide ongoing student education program concerning street crossing safety	Village of Whitefish Bay	$ 1,300 $ --
Traffic Safety on Fairmount Avenue and Lake Drive at Palisades Road	• Convert street lighting to high-pressure sodium • Install chevron alignment signs on outside of curve adjacent to northbound pavement • Install thermoplastic pavement markings with reflective beads to indicate lanes, arrows, and 20-mph speed • Install rumble strips south of curve in northbound pavement	Village of Whitefish Bay/Wisconsin Department of Transportation	$ 2,500 $ 700 $ 300 $ 1,000
Student/Pedestrian Safety on Marlborough Drive from Hampton Road to Courtland Place	• Increase area at driveway on east side of street where parking is prohibited by 10 feet to the north and 20 feet to the south • Inform parents of students through a mailing of the parking restrictions and their purpose • Enforce parking restrictions on occasional basis to assure compliance	Village of Whitefish Bay	$ 300 $ -- $ 700
Inconvenience of Truck and Bus Traffic on Local Street—Lydell Avenue from Lakeview Avenue to Silver Spring Drive	• Prohibit truck traffic on northbound Lydell Avenue, as well as on Lakeview, Day, and Belle Avenues, between Bay Ridge and Lydell Avenues • Reroute bus traffic from Lydell Avenue to route in Bay Shore Shopping Center area	Village of Whitefish Bay/City of Glendale	$ 800 $62,000

Table 12 (continued)

Medium Priority for Implementation			
Problem Disruption and Location	Description of Recommended Action	*Implementing* Unit of Government/Agency	Estimated Cost
Inadequate Traffic Control at Devon Street at Kent Avenue	• Replace yield sign with stop sign on northbound approach	Village of Whitefish Bay	$ 50
Inadequate Traffic Control at Devon Street at Shoreland Avenue	• Replace yield sign with stop sign on northbound approach	Village of Whitefish Bay	$ 50
Pedestrian Safety on Lake Drive from School Road to Belle Avenue	• Construct sidewalk on east side of Lake Drive	Village of Whitefish Bay	$14,000
Unnecessary Parking Restrictions on Bay Ridge Avenue from Monrovia Avenue to Montclaire Avenue	• Eliminate schoolday parking restrictions	Village of Whitefish Bay	$ 300
Lack of Compliance with Stop Sign at Montclaire Avenue at Lydell Avenue	• Install larger stop sign on northbound approach	Village of Whitefish Bay	$ 50
Inadequate Traffic Control at Birch Avenue at Shoreland Avenue	• Replace yield signs with stop signs on north- and southbound approaches[b]	Village of Whitefish Bay	$ 100
Lack of Traffic Control at Birch Avenue and Danbury Road	• Install yield sign on southbound approach[b]	Village of Whitefish Bay	$ 100
Lack of Traffic Control at Fleetwood Place at Idlewild Avenue	• Install stop sign on westbound approach[b]	Village of Whitefish Bay	$ 100
Lack of Traffic Control at Briarwood Place at Idlewild Avenue	• Install stop sign on westbound approach[b]	Village of Whitefish Bay	$ 100
Inadequate Traffic Control at Lexington Boulevard and Bay Ridge Avenue	• Replace yield signs with stop signs on east- and westbound approaches	Village of Whitefish Bay	$ 100
Lack of Traffic Control at Lakeview Avenue and Consaul Place	• Install stop sign on northbound approach[b]	Village of Whitefish Bay	$ 100

Table 12 (continued)

Medium Priority for Implementation			
Problem Disruption and Location	Description of Recommended Action	Implementing Unit of Government/Agency	Estimated Cost
Lack of Traffic Control at Lexington Boulevard at Shoreland Avenue	• Install yield sign on north- and southbound approaches[b]	Village of Whitefish Bay	$ 200
Lack of Traffic Control at Sylvan Avenue and Idlewild Avenue	• Install yield sign on westbound approach[b]	Village of Whitefish Bay	$ 100
Inadequate Sight Distance— E. Henry Clay Street from N. Kimbark Place to N. Ardmore Avenue	• Prohibit parking on north side of Henry Clay Street from Kimbark Place to 150 feet east of driveway	Village of Whitefish Bay	$ 100
Inadequate Traffic Control at Lancaster Avenue and Lydell Avenue	• Replace yield sign with stop sign on westbound approach[b]	Village of Whitefish Bay	$ 50
Lack of Traffic Control at Lancaster Avenue and Kent Avenue	• Install yield signs on north- and southbound approaches[b]	Village of Whitefish Bay	$ 200
Lack of Traffic Control at Lancaster Avenue and Shoreland Avenue	• Install yield signs on north- and southbound approaches[b]	Village of Whitefish Bay	$ 200
Lack of Traffic Control at Lancaster Avenue and Hollywood Avenue	• Install yield signs on north- and southbound approaches[b]	Village of Whitefish Bay	$ 200
Lack of Traffic Control at Lancaster Avenue and Woodruff Avenue	• Install stop signs on east- and westbound approaches[b]	Village of Whitefish Bay	$ 200
No Parking for Residents on Colfax Place Between Woodruff Avenue and Marlborough Drive Owing to Use of Parking by High School Students and Staff	• Restrict parking to two-hour duration on eastern half of each block on north side of Colfax Place	Village of Whitefish Bay	$ 800
Inadequate Traffic Control at Fairmount Avenue and Lydell Avenue	• Replace yield sign with stop sign on westbound approach[b]	Village of Whitefish Bay	$ 50
Inadequate Traffic Control at Birch Avenue and Santa Monica Boulevard	• Install larger stop signs on east- and westbound approaches • Install advance warning signs on east- and westbound approaches	Village of Whitefish Bay	$ 100 $ 200

Table 12 (continued)

Medium Priority for Implementation			
Problem Disruption and Location	Description of Recommended Action	Implementing Unit of Government/Agency	Estimated Cost
Lack of Traffic Control at Fairmount Avenue and Bay Ridge Avenue	• Install yield sign on southbound approach[b]	Village of Whitefish Bay	$ 100
Lack of Traffic Control at Fairmount Avenue and Kent Avenue	• Install yield sign on southbound approach[b]	Village of Whitefish Bay	$ 100
Lack of Traffic Control at Fairmount Avenue and Shoreland Avenue	• Install yield sign on southbound approach[b]	Village of Whitefish Bay	$ 100
Inadequate Traffic Control on Chateau Place and Lydell Avenue	• Replace yield sign with stop sign on westbound approach[b]	Village of Whitefish Bay	$ 50
Lack of Traffic Control on Chateau Place and Shorewood Avenue	• Install yield sign on northbound approach[b]	Village of Whitefish Bay	$ 100
Lack of Traffic Control at Chateau Place and Berkeley Boulevard	• Install yield signs on east- and westbound approaches[b]	Village of Whitefish Bay	$ 200
Lack of Traffic Control at Chateau Place and Elkhart Avenue	• Install yield signs on north- and southbound approaches[b]	Village of Whitefish Bay	$ 200
Lack of Traffic Control on Chateau Place and Sheffield Avenue	• Install yield sign on northbound approach[b]	Village of Whitefish Bay	$ 100
Pedestrian Safety at Hampton Road and Marlborough Drive	• Remove median islands, which are too small to protect pedestrians	Village of Whitefish Bay	$ 2,200
Lack of Traffic Control and Failure to Obey Speed Limits at Courtland Place and Sheffield Avenue	• Install yield signs on north- and southbound approaches[b] • Provide occasional enforcement of speed limits	Village of Whitefish Bay	$ 200 $ 300
Lack of Traffic Control at Cumberland Boulevard and Cramer Street	• Install stop signs on east- and westbound approaches[b]	Village of Whitefish Bay	$ 200

Table 12 (continued)

Problem Disruption and Location	Description of Recommended Action	Implementing Unit of Government/Agency	Estimated Cost
	Lowest Priority for Implementation		
Improper Traffic Control on Montclaire Avenue at Berkeley Boulevard	• Remove stop signs on east- and westbound approaches and install stop signs on north- and southbound approaches[d]	Village of Whitefish Bay	$ 350
Unnecessary Traffic Control on Monrovia Avenue and Shoreland Avenue	• Remove stop signs on north- and southbound approaches[c]	Village of Whitefish Bay	$ 150
Unnecessary Traffic Control on Montclaire Avenue Between Bay Ridge Avenue and Santa Monica Boulevard	• Remove all stop signs at Bay Ridge Avenue intersection; east- and westbound stop signs at Kent Avenue intersection; and east- and westbound stop signs at Shoreland Avenue[c]	Village of Whitefish Bay	$ 600
Unnecessary Traffic Control on Day Avenue and Shore Drive	• Remove stop sign on southbound approach[c]	Village of Whitefish Bay	$ 75
Excessive Speed in Alleys Bounded by Birch Avenue, Idlewild Avenue, Lexington Boulevard, and Santa Monica Boulevard	• Install "Speed Limit 10 MPH" signs	Village of Whitefish Bay	$ 1,000
Unnecessary Traffic Control at Lexington Boulevard and Kent Avenue	• Remove stop signs on north- and southbound approaches[c]	Village of Whitefish Bay	$ 150
Unnecessary Traffic Control at Lexington Boulevard and Diversey Avenue	• Remove stop signs on east- and westbound approaches[c]	Village of Whitefish Bay	$ 150
Unnecessary Traffic Control at Lexington Boulevard and Idlewild Avenue	• Remove stop signs on north- and southbound approaches[c]	Village of Whitefish Bay	$ 150
Improper Traffic Control at Chateau Place and Woodburn Street	• Replace stop signs on north- and southbound approaches with yield signs	Village of Whitefish Bay	$ 100

[a]One action recommended under the study has been implemented by the Village during the course of the study. This action involved measures to improve pedestrian crossing safety along Lake Drive between Day Avenue and Belle Avenue. The measures recommended and implemented included variable message warning signs, median islands, and pavement markings.

[b]It is recommended that upon implementation of this action, for a period of at least three months, warning signs indicating "Stop Ahead" or "Yield Ahead" be installed 100 and 200 feet back from the appropriate intersection approaches. In addition, it is recommended that a sign indicating "Cross Traffic Does Not Stop" be installed for a period of three months with each new stop sign, where appropriate.

[c]It is recommended that upon implementation of this action, for a period of at least three months, warning signs be installed at each intersection approach and 100 and 200 feet back from each intersection approach, as appropriate, indicating "Cross Traffic Does Not Stop."

[d]It is recommended that upon implementation of this action, for a period of at least three months, warning signs indicating "Stop Ahead" be installed 100 and 200 feet back from the north- and southbound intersection approaches; and that signs indicating "Cross Traffic Does Not Stop" be installed along with the stop signs.

Source: SEWRPC.

Chapter VI

SUMMARY AND CONCLUSIONS

INTRODUCTION

Over the past several years, Village of Whitefish Bay officials and residents have become increasingly concerned over traffic, safety, and operating conditions on the village street system. In particular, there has been a growing concern about through traffic on the land access streets in the residential neighborhoods of the Village, and about the need to more rationally guide the application of traffic control devices.

To address these concerns, village officials on December 5, 1985, asked the Southeastern Wisconsin Regional Planning Commission to conduct a comprehensive traffic management study of the Village. The study was intended to identify the traffic problems in the Village and to recommend specific actions to abate those problems. The study was also intended to establish guidelines to assist village officials in considering future requests for the application of traffic control devices and regulations.

On April 23, 1986, the Village Board appointed a eight-member Traffic Study Committee to guide the Regional Planning Commission staff in the conduct of the traffic study. The membership of that Committee is listed on the inside front cover of this report.

STUDY AREA

The Village of Whitefish Bay is located in northeastern Milwaukee County along the Lake Michigan shoreline approximately five miles north of the City of Milwaukee central business district. The geographic area considered in the study includes all the area within the corporate limits of the Village of Whitefish Bay. Land use in the Village of Whitefish Bay is predominantly residential, with some commercial development located along E. Silver Spring Drive between N. Lydell Avenue and N. Lake Drive.

EXISTING STREET AND HIGHWAY SYSTEM

The street and highway system of a community must serve several important functions. Because two of these functions—traffic movement and land access—are basically incompatible, street and highway system design must be based upon a functional grouping of streets and highways. At least three functional classifications of streets and highways should be recognized: 1) arterial streets; 2) collector streets; and 3) land access streets.

Arterials are defined as streets and highways that are intended to serve the through movement of fast and heavy traffic, providing transportation service between major subareas of an urban area or through the area. Access to abutting property may be a secondary function of some types of arterial streets and highways, but is should always be subordinate to the primary function of safe and expeditious traffic movement. Collector streets are defined as streets and highways that are intended to serve primarily as connections between the arterial street system and the land access street system. In addition to collecting and distributing traffic from and to the arterial streets, the collector streets usually perform a secondary function of providing access to abutting property. Land access streets are defined as streets and highways that are intended to serve primarily as a means of access to abutting properties, principally serving the residential areas of a community.

The arterial system for the Village of Whitefish Bay was identified by the Regional Planning Commission through the application of these functional classification concepts. This identification involved consideration of the existing and proposed land uses to be served; facility design and spacing; current and probable future traffic volumes and trip lengths; and relation to areawide arterials in adjacent communities.

Streets and highways may be classified according to jurisdiction as well as function. Jurisdictional classification establishes which level of government—state, county, or local—has responsibility for the design, construction, maintenance, and operation of each segment of street and highway within a community. Arterial facilities may be one of three jurisdictional types: state trunk highways, county trunk highways, or local trunk highways. A subcategory of state trunk

highway within the corporate limits of a city or village is the connecting highway—which is a state highway marked, signed, and routed over a local street—thus providing areawide route continuity for the state trunk highway. The city or village is responsible for the maintenance of connecting highways, while the State is responsible for construction and operation. The Wisconsin Department of Transportation must approve any action to be taken by the Village that would substantially alter the use or capacity of a connecting highway. Such actions requiring approval include the implementation of traffic control measures, the prohibition of turning movements, modification of traffic control devices, and making changes to intersection geometrics. Collector and land access streets are almost always jurisdictional local facilities.

Another type of street classification system which was inventoried as part of the study was the emergency route system used by the fire and police emergency vehicles garaged at the Village Hall and fire station. These vehicle routes depart from the arterial and collector street system and use the land access street system rather than the stretch of E. Silver Spring Drive between N. Lake Drive and the village western corporate limits. The two land access streets on the emergency vehicle route system are located immediately north and south of E. Silver Spring Drive—E. Lakeview Avenue to the north and E. Birch Avenue to the south.

Another type of street classification system in the Village is the Milwaukee County Transit System bus routes. The bus routes are properly located over arterial streets with two exceptions: N. Lydell Avenue between W. Silver Spring Drive and W. Lakeview Avenue, and N. Santa Monica Boulevard between E. Silver Spring Drive and the northern corporate limits of the Village.

EXISTING TRAFFIC CONTROL MEASURES

Traffic control measures have a direct effect on the capacity, operating characteristics, and safety of a roadway facility. Accordingly, these measures were inventoried throughout the Village under the study. In 1986 there were eight traffic signals in operation within the Village of Whitefish Bay. In addition to these signals, there were 310 stop signs and 27 yield signs within the Village.

All streets and highways in the Village are posted for 25 miles per hour (mph) except N. Lake Drive and N. Wilson Avenue, which are posted for 30 mph. It should be noted that placing the same speed limit on the arterial street system as on the collector and land access street systems in the Village provides no encouragement for through traffic to use the arterial streets in the Village as such traffic should, and does not encourage motorists to distinguish between the arterial street system and the collector and land access street systems.

In addition to the posed speed limits, reduced 15-mph speed restrictions are in effect on all roadways adjacent to the public and private schools in the Village. These speed restrictions, which are in effect only during the hours when children are present, and a school crossing guard program serve as the principal school crossing protection measures utilized in the Village.

EXISTING TRAFFIC CONDITIONS

Existing traffic conditions throughout the Village were inventoried under the study. The traffic count information collected and collated for the arterial street system indicated that the highest traffic volumes in the Village occur on N. Lake Drive and range from 9,500 to 15,000 vehicles per average weekday. The next highest traffic volumes occur on E. Silver Spring Drive, and range from 11,300 to 13,900 vehicles per average weekday.

Generally, about 1 percent of the average weekday volume occurs during each hour of the early morning hours between 1:00 a.m. and 6:00 a.m. in the Village, with about 6 percent occurring during the 7:00 a.m. to 8:00 a.m. peak hour; about 5 to 7 percent occurring during the midday time period between noon and 3:00 p.m.; and a high of about 9 percent occurring during the 5:00 p.m. to 6:00 p.m. evening peak hour.

The efficiency of the arterial street and highway system in the Village was quantitatively determined by analyses of existing traffic volumes, design capacities, traffic accidents, and citizen complaints of perceived traffic problems. Vehicular traffic volumes were found to equal or exceed design capacity only on E. Silver Spring Drive between N. Santa Monica Boulevard and the southern corporate limits of the Village.

A total of 155 on-street motor vehicle accidents occurred in the Village in 1983; 258 accidents

in 1984; and 375 accidents in 1985. There were 55 locations on the street and highway system that experienced two or more accidents in 1983; 49 locations in 1984; and 67 locations in 1985. The location experiencing the highest number of accidents over the three-year period 1983 through 1985 was the intersection of N. Santa Monica Boulevard and E. Silver Spring Drive.

To supplement the traffic condition inventory data collected and collated as part of the study, citizen perceptions of traffic problems were solicited from residents of the Village and from members of the Traffic Study Committee.

TRAFFIC MANAGEMENT CONTROL CRITERIA

Traffic management control criteria which objectively establish the need to apply traffic management control measures were developed as part of the study. These criteria were applied to assist in defining existing traffic problems and evaluating alternative abatement actions. In addition, the criteria were used in the evaluation of the need to modify traffic control measures in the Village. The criteria were based upon sound traffic engineering principles and related to the operation of the collector and land access street systems, as well as to the operation of the arterial street system. The defined criteria reflect the basic principle that traffic management control measures will be effective only if they are truly needed. Measures that are not needed and are, nevertheless, implemented will not be obeyed, and such public disregard can spread to traffic control measures that are needed and that are essential for the safe and efficient operation of the street system.

Application of the traffic management control criteria will assure uniformity in the placement and installation of traffic control measures throughout the Village of Whitefish Bay. Uniformity simplifies the task of the driver because it aids in recognition and understanding. By treating similar situations in the same way, traffic control measures will be respected and obeyed with a minimum of enforcement. A standard traffic control measure used where it is inappropriate may be expected to result in disrespect at those locations where it is needed, resulting in increased communitywide enforcement and safety costs.

ALTERNATIVE AND RECOMMENDED MEASURES TO ABATE IDENTIFIED TRAFFIC PROBLEMS

The existing traffic problems in the Village of Whitefish Bay were identified in three ways under the study. First, citizen input on perceived traffic problems in their neighborhoods was solicited at a widely publicized meeting held on June 18, 1986, at the Whitefish Bay Village Hall. Second, additional traffic problems were identified by the Village Traffic Study Committee. Third, the traffic management control criteria presented in Chapter V of the report and adopted by the Study Committee were applied to identify inadequate or inappropriate traffic control measures.

Within the northern portion of the Village of Whitefish Bay—that is, that part of the Village north of E. and W. Silver Spring Drive—29 problems were identified at individual street intersections or on segments of streets, along with one problem of through traffic on land access streets in a subarea of this portion of the Village. Traffic management actions were recommended for implementation by Commission staff and the Study Committee at 20 of the 29 identified problem locations. No action was recommended by staff and Study Committee at seven of the 29 locations; and at two other locations, Commission staff-recommended actions were rejected by the Study Committee.

The problems are identified and the recommended measures set forth in Table 6 of this report. Within the portion of the Village south of E. and W. Silver Spring Drive, 39 problems were identified at individual street intersections or on segments of streets. Traffic management actions were recommended by Commission staff and Study Committee at 35 of the 39 problem locations. The problems are identified and the recommended measures set forth in Table 11 of this report.

A number of specific recommendations with respect to increased law enforcement activities and student-pedestrian educational programs are an integral part of the traffic management actions intended to abate the traffic problems in the Village of Whitefish Bay. The Study Committee recommended to the Village Board that staff be added to the Village Police Department not only to ensure that the report recommendations for increased law enforcement activities are implemented and to provide an increase in the general

level of those activities throughout the Village, but also to provide for needed student-pedestrian educational efforts. The Study Committee also recommended that the Village Police Department work with school district staff and parent-teacher organizations at the respective schools to develop a pedestrian safety educational program.

The traffic management actions recommended by the staff and Committee to abate a pedestrian crossing safety problem on N. Lake Drive between E. Belle Avenue and E. Day Avenue were implemented by the Village prior to publication of this report. The actions implemented may be expected to promote pedestrian safety by increasing motorist awareness of the pedestrian crossing, and by decreasing the distance, and thus the duration, of the gap required for pedestrians to cross the street. The actions implemented included the installation of variable message signs on N. Lake Drive north of E. Belle Avenue and south of E. Carlisle Avenue; construction of median islands on N. Lake Drive at E. Belle Avenue, at E. Day Avenue, and at E. Carlisle Avenue; and the installation of thermoplastic pavement markings. Also recommended were the continued use of crossing guards, and a change in the school zone speed limit from 15 to 20 mph, along with strict enforcement of the speed limit.

A traffic problem that was particularly severe and which was identified as a concern by many citizens was the through traffic traversing land access streets in the residential neighborhood bounded roughly by E. and W. Devon Street on the north; E. and W. Silver Spring Drive on the south; N. Lydell Avenue on the west; and N. Lake Drive on the east. The local streets most affected were E. and W. Lakeview Avenue between N. Lydell Avenue and N. Lake Drive; and N. Lydell Avenue between W. Silver Spring Drive and W. Lakeview Avenue. Also affected were E. and W. Day and E. and W. Belle Avenues. The problem was principally a result of traffic moving to, from, and through the Bay Shore Shopping Center and commercial areas adjoining the shopping center on the south.

Several alternatives for alleviating this through traffic problem were identified and evaluated, including a system of traffic diverters at eight intersections; the closure of E. Lakeview, E. Day, and E. Belle Avenues just east of N. Lydell Avenue; the closure of the driveways serving the Bay Shore Shopping Center opposite E. Lakeview, E. Day, and E. Belle Avenues at N. Lydell Avenue; the construction of a new east-west arterial street; and the conversion of selected land access streets to one-way operation.

Following careful consideration of the alternatives, and of public comments made at two Study Committee meetings, the Commission staff and the study committee recommended that, in the long term, the Village seek implementation of the alternative that would close the driveways to the Bay Shore Shopping Center west of N. Lydell Avenue, or one of that alternative's sub-options. This alternative would not only resolve the through traffic problems on E. and W. Lakeview, E. and W. Day, and E. and W. Belle Avenues, but would also resolve the through traffic problems on N. Lydell Avenue without isolating N. Lydell Avenue residents from the remainder of the Village.

With respect to short-term actions, the Commission staff and the Study Committee recommended that the Village implement traffic management actions to encourage use of the arterial street system instead of the land access streets. The recommended measures are intended to improve traffic flow on E. and W. Silver Spring Drive, and include traffic signal interconnection, modification of traffic signal timing, and selected parking prohibitions. These actions may be expected to reduce traffic on Lakeview, Day, and Belle Avenues by making travel on Silver Spring Drive more convenient.