

# Southtowns Connector/ Buffalo Outer Harbor Project

## Appendix C: Traffic & Accident Report For the Final Design Report/Final Environmental Impact Statement Section 4(f) Evaluation

PIN 5044.01



May 2006



U.S. Department of Transportation  
**Federal Highway  
Administration**



**NEW YORK STATE  
DEPARTMENT OF TRANSPORTATION**  
Commissioner - Thomas J. Madison, Jr.  
Regional Director - Alan E. Taylor

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**APPENDIX C:  
TRAFFIC & ACCIDENT REPORT**

**PIN 5044.01  
SOUTHTOWNS CONNECTOR/  
BUFFALO OUTER HARBOR PROJECT  
Erie County, New York**

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## PREFACE

Bergmann Associates was retained by Parsons Brinckerhoff Quade & Douglas, Inc. (PB) to prepare this Traffic and Accident Report for the Southtowns Connector / Buffalo Outer Harbor (STC/BOH) project. Existing features and conditions of the highway infrastructure in the study area are described in Chapter 2 of this appendix. Travel forecasts and associated traffic operations for the null alternative and each build alternative are presented in Chapter 3 of this appendix. Two build alternatives of improved access to a brownfield area of South Buffalo and three reconfiguration alternatives of Route 5/Fuhrmann Boulevard are analyzed. Descriptions of each are provided in Chapter 3 of this appendix.



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## CHAPTER 1: OVERVIEW

The Federal Highway Administration (FHWA) and the New York State Department of Transportation (NYSDOT) have prepared a Final Design Report/Final Environmental Impact Statement (FDR/FEIS)/Section 4(f) Evaluation to study the environmental effects of the Southtowns Connector/Buffalo Outer Harbor (STC/BOH) Project, involving a series of transportation access improvements within the New York State NY Route 5 corridor along the Lake Erie waterfront in the City of Buffalo, City of Lackawanna, and Town of Hamburg (from the Skyway touchdown in Buffalo to NY Route 179 in the Town of Hamburg). The project is intended to:

- Improve road access to facilitate redevelopment sites in the vicinity of the Lake Erie waterfront;
- Enhance vehicular access to local roads and enhance access for other modes of travel (bicycles, pedestrian, transit) along the Lake Erie waterfront and within the project;
- Maintain adequate service for commuter/commercial traffic between Downtown Buffalo and Southtowns communities (i.e., Lackawanna, Hamburg, and other outlying towns and villages south of the City of Buffalo);
- Support local and regional planning policies and strategies; and
- Minimize adverse impacts on communities and the environment by avoiding an inequitable distribution of impacts and maintaining neighborhood and community cohesion.

This report assesses the following alternatives considered in the FDR/FEIS.

### 1.1 Null Alternative

The Null Alternative involves implementing only currently planned and committed transportation projects within the STC/BOH project area. For purposes of this assessment, the Null Alternative includes only those improvements currently on the Greater Buffalo Niagara Regional Transportation Council (GBNRTC) 2002-2006 Transportation Improvement Program (TIP).

### 1.2 Build Alternatives

Three feasible build alternatives were formulated to improve transportation access within the STC/BOH project area. The alternatives are generally distinguished by the alignment of NY Route 5 and Fuhrmann Boulevard between the southern terminus of the Skyway to Ridge Road.



The plans, profiles and typical sections for all alternatives are located in **Appendix A** of the FDR/FEIS document but are described here:

- **Modified Improvement Alternative (Preferred Alternative)** This alternative reconfigures the NY Route 5/Fuhrmann Boulevard complex along the Buffalo Outer Harbor into a system designed to be more compatible with the proposed land uses included in local plans.
  - A new diamond interchange constructed just south of the southern terminus of BIN 1001579 (Skyway) to improve local access to a reconstructed Fuhrmann Boulevard and the NFTA Outer Harbor lands.

This new interchange will replace the existing slip ramps currently serving the Outer Harbor. A roundabout will be constructed at the intersection of the interchange cross road and the reconstructed Fuhrmann Boulevard on western side of NY Route 5 (discussed later).
  - Replacement of BIN's 1001559, 1001549, 1001539, with more aesthetically sensitive structures and the removal of BIN's 1001569 and 1074270 on NY Route 5 and the removal of BIN 2260780 on Fuhrmann Boulevard.
  - The original proposal to lower the elevation of NY Route 5 will not be included in the preferred alternative. Public comments related to the NY Route 5 elevation indicated a desire to retain the embankment section to lessen the effects of snow drifting on NY Route 5, reduce the frequency of vehicular/animal accidents and to reduce project costs. The NY Route 5 embankment that currently exists shall remain from BIN 1001559 ("Beachline") to BIN 1001579 (Tifft Street) as currently exists.
  - The original proposal to construct a pedestrian structure over NY Route 5 has not been included in the preferred alternative. The proposed pedestrian structure has been replaced with a more cost effective pedestrian/eco-sensitive underpass. This structure will be aesthetically sensitive and allow for direct access to Tifft Nature Preserve from the Small Boat Harbor and connect the Multi-use paths that exist now or those that will be constructed. This structure, along with BIN 1001579 (Tifft Street) and BIN 1001549 (Ohio Street) shall also provide a means of travel for small and median size animals to limit vehicle-animal collisions.
  - Reconstruction of Fuhrmann Boulevard into a two way roadway on the western side of NY Route 5 from the Union Ship Canal to the U.S. Coast Guard Station.

The reconstructed Fuhrmann Boulevard will include the installation of sidewalks and/or multi-use paths along with architectural lighting, a new closed drainage system, landscaping, signage and striping from the Union Ship Canal to the U.S. Coast Guard Station.



The recommended roadway section of Fuhrmann Boulevard shall consist of:

Union Ship Canal to Tifft Street

2 – 3.30 m (11 ft.) lanes (one lane in each direction)

Tifft Street to Michigan Street

4 – 3.30 m (11 ft.) lanes (two lanes in each direction) with a 2.40 m (8 ft.) median. A new roundabout at the new interchange cross road and Fuhrmann Boulevard is also proposed.

Michigan Street to the U.S. Coast Guard Station

3 – 3.30 m (11 ft.) lanes (one lane in each direction with a continuous two-way center left turn lane)

A new northbound slip exit ramp will be constructed from NY Route 5 to Ohio Street. Ohio Street will terminate at a “T” intersection with Fuhrmann Boulevard (on the western side of NY Route 5). The section of Fuhrmann Boulevard presently located to the east of NY Route 5 between Tifft Street and Ohio Street will be removed. A new entrance drive is will be constructed from Tifft Street to access the Tifft Nature Preserve. The Tifft Street Greenway will be reconstructed to compliment roadway reconstruction.

The existing Tifft Street ramp (Ramp “H”) to southbound NY Route 5 is removed and replaced by a new slip ramp constructed south of Tifft to link Fuhrmann Boulevard southbound to NY Route 5 southbound. In addition, two ramps will be constructed north of Tifft Street to complete the Tifft Street/NY Route 5 interchange.

The existing bike/pedestrian path is reconstructed/maintained along Fuhrmann Boulevard (on western side of NY Route 5) to compliment roadway reconstruction.

- **Boulevard Alternative** This alternative reconstructs the NY Route 5/Fuhrmann Boulevard complex to convert it into a single, six-lane boulevard to serve both through traffic and local access from the southern terminus of the Skyway to Ridge Road. This alignment incorporates a wide landscaped median to separate northbound/southbound lanes and lowering of the roadway’s elevation to grade. North of the Skyway, the road connects to the remaining portion of Fuhrmann Boulevard and includes improvements to provide access to Times Beach and the US Coast Guard Station. Vehicular access to properties is provided through curb cuts along the new boulevard, while bicycle/pedestrian access is provided along the lakeside of the roadway. All grade separations at east-west roads are eliminated and replaced with signalized intersections. The Boulevard Alternative also reconstructs or widens the Father Baker Bridge over the Union Ship Canal to accommodate six lanes and pedestrian/bicycle access, as well as reconstruction/widening of one bridge crossing over existing rail lines in the corridor.





- **Hybrid Alternative** This alternative is a combination of alignments used in the Improvement (as depicted in the June 2005 DR/DEIS) and Boulevard Alternatives. From the southern terminus of the Skyway to Ohio Street, the Hybrid Alternative is an alignment similar to the Improvement Alternative (as depicted in the June 2005 DR/DEIS) --- maintaining NY Route 5 and Fuhrmann Boulevard as separate facilities and converting Fuhrmann Boulevard to a continuous, two-way, two-lane roadway on the west side of NY Route 5 between the US Coast Guard Station and Ohio Street. At Ohio Street, NY Route 5 would transition at a signalized intersection to a six-lane boulevard with a wide center landscape median, similar to the characteristics of the Boulevard Alternative, and Fuhrmann Boulevard is removed south of Ohio Street.

### 1.3 Project Components in All Build Alternatives

The three build alternatives identified above involve a series of other road improvements in key locations within the STC/BOH Study Area, including the following.

- **NY Route 5 – Ridge Road to South Buffalo Railroad Bridge** Passing through the Bethlehem Park section of the City of Lackawanna, this project component adds a new southbound lane to NY Route 5 along the former Bethlehem Steel site frontage to create a total of six travel lanes in this segment. The South Buffalo Railroad Bridge is reconstructed and widened to allow for this improvement. In addition, the existing center turn lane along this segment is converted to a landscaped median (with left turn lanes at key intersections) and streetscape improvements implemented to provide safe bicycle, pedestrian, and transit access (e.g., bicycle trail, sidewalks, transit shelters, bus curb cuts, etc.).
- **NY Route 5 – South Buffalo Railroad Bridge to NY Route 179 (Milestrip Road)** This project component incorporates streetscape and safety improvements along NY Route 5 as it passes through a community business district in the Woodlawn section of the Town of Hamburg. These improvements are similar to those proposed along NY Route 5 between Ridge Road and the South Buffalo Railroad Bridge with the exception of any road widening, given that this segment currently contains six travel lanes.
- **New I-190/Tifft Street Arterial** This project component consists of construction of a new four-lane (or two-lane expandable to four-lane) arterial road connecting I-190 to Tifft Street, with signalized intersections at Seneca Street, Elk Street, and South Park Avenue. The alignment of the new road consists of construction of new on/off ramps at the existing Seneca Street interchange on I-190 and it follows a former railroad right-of-way to a new fixed bridge over the Buffalo River beyond the river's navigable portion for commercial vessels. The alignment passes through the eastern portion of the former LTV/Republic Steel site. In addition, a new bicycle/pedestrian trail is constructed along the full length of the alignment.



- **Ohio Street Improvements** From Michigan Avenue to NY Route 5 through Buffalo's First Ward neighborhood, this project component reconstructs Ohio Street so that it provides better local access between downtown Buffalo and the Lake Erie waterfront. The alignment includes three lanes (two travel lanes and a center turn lane) within the existing curb-to-curb width of the roadway and streetscape improvements to provide safe pedestrian, bicycle, and transit access. In addition, this project component includes construction of a segment of the Industrial Heritage Trail along the west side of Ohio Street and the east side of Ganson Street, including a sidewalk marked with commemorative medallions with locations for interpretive stations.



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## CHAPTER 2: EXISTING FEATURES/CONDITIONS

Existing features and conditions of the principal highway system in the project study area potentially affected by build alternatives are described. Specific locations where non-standard features exist are also identified. The study area for the traffic modeling encompasses the area bounded by Interstate 90 (I-90) to the east, Interstate 190 (I-190) to the north, Lake Erie to the west, and Mile Strip Road (NYS Route 179) to the south.

### 2.1 Functional Classification and National Highway System (NHS)

Functional Classification is a way to categorize a roadway's traffic and travel function within the road and street network. It is the process by which streets and highways are grouped according to the traffic service they are intended to provide. There are three functional classifications: arterial, collector, and local roads.

Arterials provide the highest level of service at the greatest speed for the longest uninterrupted distance, with varying degrees of access control. Arterial expressways are limited access roads that are physically separated from cross streets and railroads, with access provided at interchanges. Route 5 is functionally classified as an urban arterial expressway from I-190 to Ridge Road, where it transitions into an urban principal arterial. Mile Strip Road (Route 179) is also an urban arterial expressway between Route 5 and South Park Avenue (NYS Route 62). Both Route 5 and Mile Strip Road are part of the National Highway System (NHS). The NHS is a national system of primary roads that are of national importance. The NHS was created as part of the Federal Intermodal Surface Transportation Efficiency Act of 1991.

Principal arterial roadways in the project area include Bailey Avenue and Seneca Street. Minor arterial roadways in the project area include Fuhrmann Boulevard, Ohio Street, Louisiana Street, Smith Street, Keating Street, Elk Street between Keating and Seneca Streets, Tifft Street, and Ridge Road. South Park Avenue is functionally classified as a minor arterial from Michigan Avenue to Bailey Avenue, where it transitions into a principal arterial south to Mile Strip Road.

Collector streets provide a less highly developed level of service at lower speeds for shorter distances by collecting traffic from local roads and connecting them with the arterial system. Lake Avenue, Hopkins Street and Elk Street between Babcock and Keating Streets are collector streets within the project area.

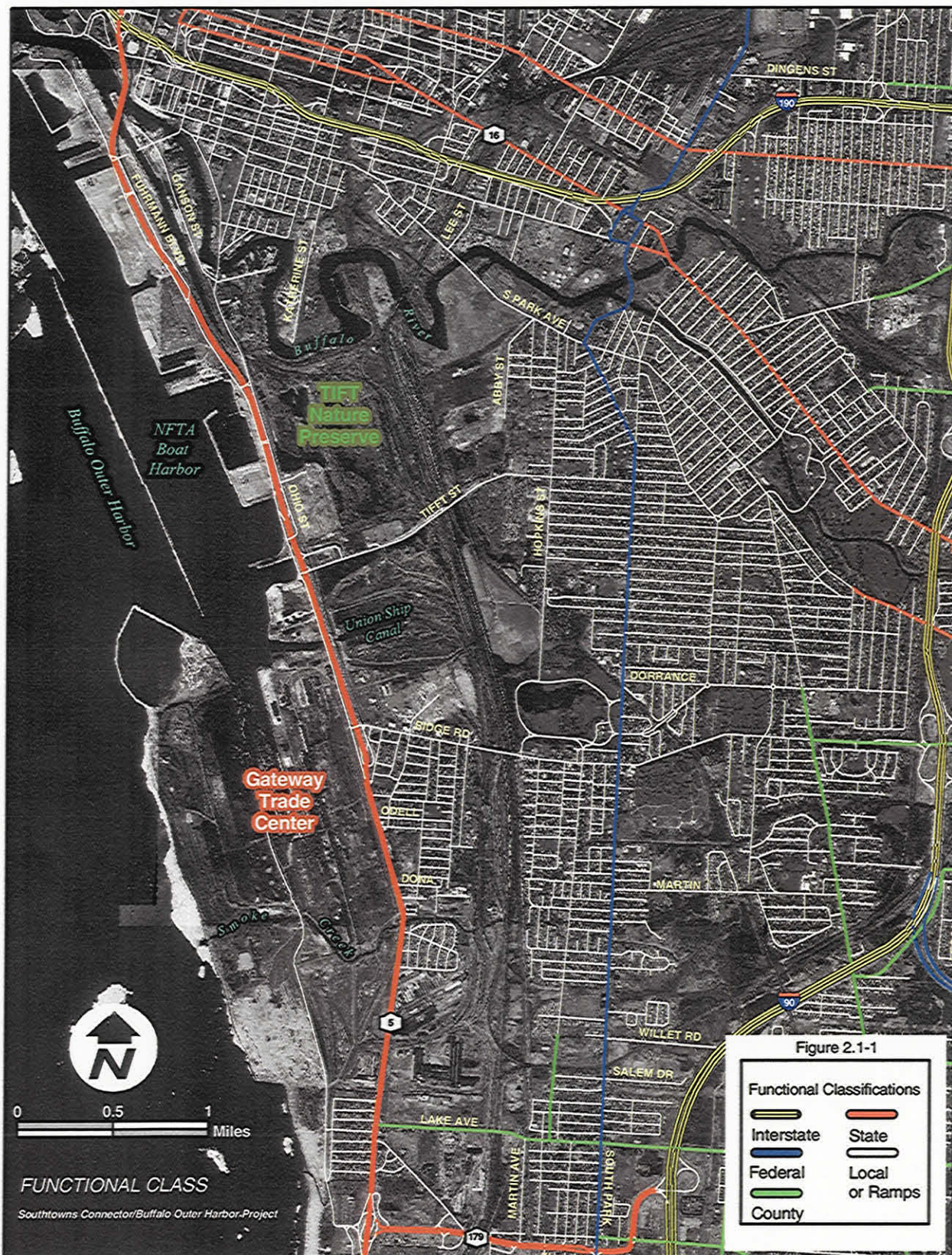
All roads within the study area are Federal Aid Eligible. The functional classification of roads and streets in the project area are shown in **Figure C2.1-1**.



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## 2.2 Ownership and Maintenance Jurisdiction

The NYSDOT has ownership and maintenance jurisdiction of Route 5 and Mile Strip Road. Lake Avenue is owned and maintained by Erie County. The City of Lackawanna owns and maintains Ridge Road. All other streets in the study area are owned and maintained by the City of Buffalo.

## 2.3 Control of Access

Uncontrolled access exists throughout most of the study area. Controlled access exists along Route 5 between I-190 and Ridge Road and along Mile Strip Road between Route 5 and South Park Avenue. All other study area roadways have at grade intersections and driveways.

Not all driveways in the study area conform with the NYSDOT's "Policy and Standards for Entrances to State Highways" as shown in Section 2.14 of this report.

## 2.4 Existing Highway Sections

The following information describes the features of the highway sections within the study area. **Table C2.4-1** provides travel lane information, including speed limit, pavement width, and number and type of lanes. **Table C2.4-2** provides Right-of-Way (ROW) width information, and **Table C2.4-3** provides roadway median and clear zone information, including type of median, width of median, and width of clear zone. **Table C2.4-4** provides roadway shoulder information, including type and width. **Table C2.4-5** provides the location of curb within the study area.



## Travel Lane Information

**Table C2.4-1 - Travel Lane Information**

Route	Segment	Length miles	Speed Limit km/h (mph)	Pavement Width m (ft)	# of Lanes	# of Through Lanes	# of Parking Lanes
Route 5	Mile Strip to Lake	0.35	64 (40)	23.2 (76)	7	7 (3 EB, 3 WB, 1 left turn lane)	1 EB any time 1 WB any time
	Lake to Lackawanna City Line	0.68	64 (40)	23.2 (76)	7	6 (3 EB, 3 WB, 1 left turn lane)	0 EB any time 1 WB any time
	Lackawanna City Line to Ridge	1.60	64 (40)	20.1 (66)	5	5 (3 EB, 2 WB)	0 any time
	Ridge Road to I-190	3.90	88 (55)	16.5 (54)	4	4 (2 EB / 2 WB)	0 any time
Fuhrmann Blvd	Ridge to Buffalo City Line	0.30	48 (30)	15.2 (50)	4	4 (2 NB / 2 SB)	0 any time
	Buffalo City Line to Tift	0.58	48 (30)	15.2 (50)	4	4 (2 NB / 2 SB)	0 any time
	Tift to Ohio	1.50	48 (30)	15.2 (50)	4	4 (2 NB / 2 SB)	0 any time
	Ohio to Fuhrmann	0.30	48 (30)	15.2 (50)	4	4 (2 NB / 2 SB)	0 any time
	Fuhrmann to I-190	1.31	48 (30)	16.5 (54)	4	4 (2 NB / 2 SB)	0 any time
South Park Ave	Ridge to Buffalo City Line	0.10	48 (30)	14.6 (48)	2	2 (1 NB / 1 SB)	1 NB (restricted) 1 SB (restricted)
	Buffalo City Line to Tift	1.10	48 (30)	14.6 (48)	2	2 (1 NB / 1 SB)	1 NB (restricted) 1 SB (restricted)
	Tift to Southside	0.10	48 (30)	14.3 (47)	2	2 (1 NB / 1 SB)	1 NB (restricted) 1 SB (restricted)
	Southside to Bailey	0.50	48 (30)	14.3 (47)	2	2 (1 NB / 1 SB)	1 NB (restricted) 1 SB (restricted)
	Bailey to Bertha	0.80	48 (30)	15.2 (50)	2	2 (1 WB / 1 EB)	1 EB (restricted) 1 WB (restricted)
	Bertha to Smith	0.30	48 (30)	15.2 (50)	4	4 (2 WB / 2 EB)	0 any time
	Smith to Elk	0.25	48 (30)	15.2 (50)	2	2 (1 WB / 1 EB)	1 EB (restricted) 1 WB (restricted)
	Elk to Katherine	0.25	48 (30)	15.2 (50)	4	4 (2 WB / 2 EB)	0 any time
	Katherine to Hamburg	0.10	48 (30)	15.2 (50)	2	2 (1 WB / 1 EB)	1 EB (restricted) 1 WB (restricted)
	Hamburg to Louisiana	0.30	48 (30)	14.9 (49)	2	2 (1 WB / 1 EB)	1 EB (restricted) 1 WB (restricted)
	Louisiana to Moore	0.25	48 (30)	13.1 (43)	2	2 (1 WB / 1 EB)	1 EB (restricted) 1 WB (restricted)
	Moore to Michigan	0.10	48 (30)	13.1 (43)	4	4 (2 WB / 2 EB)	0 any time
Ohio St	Fuhrmann to Louisiana	0.80	48 (30)	13.1 (43)	4	4 (2 NB / 2 SB)	0 any time
	Louisiana to Chicago	0.40	48 (30)	13.7 (45)	4	4 (2 NB / 2 SB)	0 any time
	Chicago to Michigan	0.20	48 (30)	11.6 (38)	4	4 (2 NB / 2 SB)	0 any time
Louisiana St	Ohio to South Park	0.60	48 (30)	12.8 (42)	2	2 (1 WB / 1 EB)	1 EB 1 WB
Smith St	South Park to Elk	0.20	48 (30)	11.6 (38)	2	2 (1 NB / 1 SB)	0 NB anytime 1 SB (restricted)
Keating St	Seneca to Elk	0.10	48 (30)	14.9 (49)	2	2 (1 NB / 1 SB)	0 any time
Bailey Ave	South Park to McKinley	0.20	48 (30)	17.7 (58)	2	2 (1 NB / 1 SB)	0 any time
	McKinley to Elk	0.30	48 (30)	12.8 (42)	4	4 (2 NB / 2 SB)	0 any time
	Elk to Seneca	0.14	48 (30)	17.7 (58)	5	5 (2 NB, 2 SB, 1 left turn lane)	0 any time
	Seneca to Clinton	0.46	48 (30)	15.8 (52)	4	4 (2 NB / 2 SB)	0 any time
Hopkins St	Tift to South Park	0.80	48 (30)	12.2 (40)	2	2 (1 NB / 1 SB)	1 NB (restricted) 1 SB (restricted)

Note: 1. Parking restrictions are listed in Table C2.4- 6





**Table C2.4-1 - Travel Lane Information Continued**

Route	Segment	Length miles	Speed Limit km/h (mph)	Pavement Width m (ft)	# of Lanes	# of Through Lanes	# of Parking Lanes
Seneca St	Elk to Bailey	0.20	48 (30)	12.8 (42)	4	4 (2 WB / 2 EB)	0 any time
	Bailey to Keating/I-190	0.10	48 (30)	13.1 (43)	2	2 (1 WB / 1 EB)	0 any time
	Keating/I-190 to Hayes	0.10	48 (30)	14.6 (48)	2	2 (1 WB / 1 EB)	0 any time
	Hayes to Babcock	0.30	48 (30)	14.6 (48)	2	2 (1 WB / 1 EB)	1 EB (restricted) 1 WB (restricted)
Elk St	Babcock to Keating	0.43	48 (30)	12.8 (42)	2	2 (1 WB/1 EB)	0 any time
	Keating to Bailey	0.10	48 (30)	12.8 (42)	3	3 (all EB)	0 any time
	Bailey to Seneca	0.20	48 (30)	12.2 (40)	3	3 (all EB)	0 any time
Tifft St	Fuhrmann to Hopkins	1.40	48 (30)	13.4 (44)	4	4 (2 WB / 2 EB)	0 any time
	Hopkins to S Park	0.40	48 (30)	8.5 (28)	2	2 (1 WB / 1 EB)	0 WB any time 1 EB (restricted)
Ridge Rd	Rte 5 to South Park	1.36	48 (30)	14.6 (48)	2	2 (1 WB / 1 EB)	1 WB (restricted) 1 EB (restricted)
Lake Ave	Rte 5 to Conrail Tracks	0.50	48 (30)	9.1 (30)	2	2 (1 WB / 1 EB)	0 any time
Mile Strip	Rte 5 to South Park	1.10	48 (30)	13.4 (44)	4	4 (2 WB / 2 EB)	0 any time

Note: 1. Parking restrictions are listed in Table C2.4- 6



## Right-of-Way Widths

**Table C2.4-2 - Approximate Right-of-Way (ROW) Widths**

Route	Segment	ROW Width Range m (ft)	Typical ROW m (ft)
Route 5	Union Ship Canal to Ridge Road		20 (66)
	Ridge Road to Smokes Creek	27-46 (90-150)	27 (90)
	Smokes Creek to Fifth St		27 (90)
	Fifth St to Mile Strip	27-305 (90-1000)	
Fuhrmann Blvd	Coast Guard to S. Michigan Ave		24 (80)
	S. Michigan to Rte 5 underpass	24-137 (80-450)	
	Rte 5 underpass to Ohio St	61-229 (200-750)	
	Ohio to Union Ship Canal	91-137 (300-450)	
South Park Ave	Ridge to Buffalo City Line		20 (66)
	Buffalo City Line to Tifft		20 (66)
	Tifft to Southside		20 (66)
	Southside to Bailey		20 (66)
	Bailey to Smith		20 (66)
	Smith to Katherine		20 (66)
	Katherine to Hamburg		20 (66)
	Hamburg to Louisiana		20 (66)
	Louisiana to Michigan		20 (66)
Ohio St	Fuhrmann Blvd to Louisiana		20 (66)
	Louisiana to Chicago		20 (66)
	Chicago to Michigan		20 (66)
Louisiana St	Ohio to South Park		20 (66)
Smith St	South Park to Elk		15 (50)
Keating St	Seneca to Elk	18-49 (60-160)	18 (60)
Bailey Ave	South Park to McKinley		24 (80)
	McKinley to Elk		30 (100)
	Elk to Seneca		20 (66)
	Seneca to Clinton		20 (66)
Hopkins St	South Park to RR tracks		20 (66)
Seneca St	Elk to Bailey		20 (66)
	Bailey to Keating/I-190		20 (66)
	I-190/Keating to Babcock		20 (66)
Elk St	Babcock to Keating		20 (66)
	Keating to Bailey		20 (66)
	Bailey to Seneca		20 (66)
Tifft St	Fuhrmann to Hopkins	20-198 (66-650)	
	Hopkins to S Park		20 (66)
Ridge Rd	Rte 5 to RR tracks		20 (66)
Lake Ave	Rte 5 to Conrail Tracks		15 (49.5)
Mile Strip – Rte 179	RR tracks to South Park		20 (66)



**Roadway Medians and Clear Zones**

**Table C2.4-3 - Roadway Median and Clear Zone Summary Information**

Route	Segment	Type of Median	Width of Median m (ft)	Width of Clear Zone	
				N side/ W side m (ft)	S side/ E side m (ft)
Route 5	Skyway to Ridge Rd	Concrete barrier	1.5 (5.0)	1.2 (4.0) EB 3.0 (10.0) WB	3.0 (10.0) EB 0.6 (2.0) WB
	Ridge Rd to Lackawanna City Line	Concrete barrier	1.5 (5.0)	3.0 (10.0)	3.0 (10.0)
	Lackawanna City Line to Lake Ave.	Left turn lane	1.2 (4.0)	3.0 (10.0)	3.0 (10.0)
	Lake Ave to Mile Strip	Left turn lane	1.2 (4.0)	3.0 (10.0)	3.0 (10.0)
Fuhrmann Blvd – SB	Coast Guard to S. Michigan	None	NA	6.1 (20.0)	1.2-6.1 (4-20)
	S. Michigan to Rte 5 on-ramp	None	NA	3.0-6.1 (10-20)	6.1 (20.0)
	Rte 5 on-ramp to Rte 5 underpass	None	NA	0.5-1.5 (1.5-5)	0.5-1.5 (1.5-5)
	Rte 5 underpass to RR tracks	None	NA	0.5-1.5 (1.5-5)	0.5-1.5 (1.5-5)
	RR tracks to Ohio St	None	NA	3.0 (10.0)	6.1 (20.0)
	Ohio St to Tift St	None	NA	3.0 (10.0)	6.1 (20.0)
Fuhrmann Blvd – NB	Rte 5 underpass to S. Michigan	None	NA	6.1 (20.0)	1.5 (5.0)
	Tift St and off-ramp	None	NA	1.5 (5.0)	3.0 (10.0)
	Off-ramp to service road	None	NA	3.7 (12.0)	2.4 (8.0)
	Service road to Ohio St intersection	None	NA	3.0 (10.0)	3.0 (10.0)
South Park Ave	Ridge to Tift St	None	NA	0.5 (1.5)	0.5 (1.5)
	Tift to Southside	None	NA	0.5 (1.5)	0.5 (1.5)
	Southside to Bailey	None	NA	0.5 (1.5)	0.5 (1.5)
	Bailey to Hamburg	None	NA	0.5 (1.5)	0.5 (1.5)
	Hamburg to Louisiana	None	NA	0.5 (1.5)	0.5 (1.5)
	Louisiana to Michigan	None	NA	0.5 (1.5)	0.5 (1.5)
Ohio St	Fuhrmann Blvd to Louisiana	None	NA	0.5 (1.5)	0.5 (1.5)
	Louisiana to RR tracks	None	NA	0.5 (1.5)	0.5 (1.5)
	RR tracks to Chicago	None	NA	1.2 (4.0)	0.5 (1.5)
	Chicago to Michigan	None	NA	3.7 (12.0)	0.5 (1.5)
Louisiana St	Ohio to South Park	None	NA	0.5 (1.5)	0.5 (1.5)
Smith St	South Park to Elk	None	NA	0.5 (1.5)	1.5 (5.0)
Keating St	Seneca to Elk	None	NA	0.5 (1.5)	0.5 (1.5)
Bailey Ave	South Park to McKinley	None	NA	0.5 (1.5)	0.5 (1.5)
	McKinley to Elk	None	NA	0.5 (1.5)	0.5 (1.5)
	Elk to Seneca	Striped	1.5 (5.0)	0.5 (1.5)	0.5 (1.5)
	Seneca to Clinton	None	NA	0.5 (1.5)	0.5 (1.5)
Hopkins St	South Park to Spaulding	None	NA	1.5 (5.0)	0.5 (1.5)
	Spaulding to Tift	None	NA	3.0 (10.0)	0.5 (1.5)
Seneca St	Elk to Babcock	None	NA	0.5 (1.5)	0.5 (1.5)
Elk St	Babcock to Seneca St	None	NA	3.0 (10.0)	0.5 (1.5)
Tift St	Fuhrmann to RR tracks	None	NA	0.5 (1.5)	0.5 (1.5)
	RR tracks to Hopkins	None	NA	2.4 (8.0)	1.8 (6.0)
	Hopkins to Folger	None	NA	0.5 (1.5)	0.5 (1.5)
	Folger to South Park	None	NA	3.0 (10.0)	0.5 (1.5)
Ridge Rd	Rte 5 to RR tracks	None	NA	0.5 (1.5)	0.5 (1.5)
Lake Ave	Rte 5 to Conrail Tracks	None	NA	3.0 (10.0)	6.1 (20.0)
Mile Strip – Rte 179	Rte 5 to South Park	Concrete barrier	1.2 (4.0)	0.6 (2.0) EB	2.4 (8.0) EB
				2.4 (8.0) WB	0.6 (2.0) WB

Note: 1. NA = Not Applicable.



### **Shoulder Information**

**Table C2.4-4 - Shoulder Information**

Route	Segment	Location	Width - m (ft)	Type
Route 5 – SB	Skyway to Ridge Rd.	East side	0.6 to 1.8 (2 to 6)	Asphalt
		West side	3.0 (10)	Asphalt
Route 5 – NB	Ridge Rd. to Skyway	East side	3.0 (10)	Asphalt
		West side	0.6 to 1.8 (2 to 6)	Asphalt
Route 5 – SB	Skyway	East side	0.3 (1)	Concrete
		West side	0.6 (2)	Concrete
Route 5 – NB	Skyway	East side	0.6 (2)	Concrete
		West side	0.3 (1)	Concrete
Fuhrmann Blvd - SB	Coast Guard to Route 5 on-ramp	East side	0	NA
		West side	0	NA
	Ohio St. intersection to Tift St.	East side	3.0 (10)	Asphalt
		West side	1.8 (6)	Asphalt
Fuhrmann Blvd - NB	Tift St. to Ohio St. intersection	East side	1.8 to 3.0 (6 to 10)	Asphalt
		West side	1.2 to 2.4 (4 to 8)	Asphalt
Lake Ave	Route 5 to RR Tracks	North side	0	NA
		South side	0	NA
Mile Strip – EB	Route 5 to RR Tracks	North side	1.0 (3)	Asphalt
		South side	2.4 (8)	Asphalt
Mile Strip – WB	RR Tracks to Route 5	North side	2.4 (8)	Asphalt
		South side	1.0 (3)	Asphalt

### **Curb Locations**

**Table C2.4-5 - Curb Locations**

Route	Segment	Location
Route 5	Ridge Rd. to Mile Strip	Both sides
Fuhrmann Blvd - SB	Route 5 on-ramp to Fuhrmann / Route 5 underpass	Both sides
	Tift St. to loop-around by Union Canal	Both sides
Fuhrmann Blvd - NB	Fuhrmann / Route 5 underpass to S. Michigan Ave.	Both sides
Fuhrmann Blvd	Fuhrmann / Route 5 underpass to Ohio St.	Both sides
South Park Ave	Michigan Ave. to Ridge Rd.	Both sides
Ohio St	Michigan Ave. to Miami St.	Both sides
	Miami St. to Chicago St.	Both sides
	Chicago St. to RR Tracks	Both sides
	RR Tracks to South St.	Both sides
	South St. to Louisiana St.	Both sides
	Louisiana St. to Ganson St./Childs St.	Both sides
	Ganson St./Childs St. to Fuhrmann Blvd.	Both sides
Louisiana St	South Park Ave. to Ohio St.	Both sides
Smith St	Elk St. to South Park Ave.	Both sides
Keating St	Seneca St. to Elk St.	Both sides
Bailey Ave	Clinton St. to South Park Ave.	Both sides
Hopkins St	South Park Ave. to Tift St.	Both sides
	Tift St. to Ladner Ave.	Both sides
	Ladner Ave. to Larrabee St.	Both sides
	Larrabee St. to RR Tracks	Both sides
Seneca St	Babcock St. to Elk St.	Both sides
Elk St	Babcock St. to Seneca St.	Both sides
Tift St	Fuhrmann Blvd. to South Park Ave.	Both sides
Ridge Rd	Fuhrmann Blvd. to RR Tracks	Both sides
Lake Ave	RR Tracks to RR Tracks	Both sides



### **Parking Restrictions**

Additional information and detailed parking restrictions are listed in **Table C2.4-6**.

#### *Route 5*

No parking is permitted along Route 5 between Church Street and Buffalo Specialty Products. Parking between Buffalo Specialty Products and Mile Strip Road is limited to 1-hour parking.

#### *South Park Avenue*

Parking regulations vary greatly along South Park Avenue. Parking is allowed along South Park Avenue except during peak period, peak direction of traffic. In other segments, parking is permitted with 2-hour restrictions.

#### *Smith Street*

Parking is allowed along Smith Street between Elk Street and South Park Avenue except during peak periods.

#### *Hopkins Street*

Parking is allowed along Hopkins Street between South Park Avenue and Tifft Street.

#### *Seneca Street*

No parking is permitted along Seneca Street within the project area except between Babcock and Hayes Place with 1-hour restrictions.

#### *Tifft Street*

No parking is permitted on Tifft Street between Route 5 and Hopkins Street. Parking is restricted to the south side from Hopkins Street to South Park Avenue except during peak hours.

#### *Ridge Road*

No parking is permitted along Ridge Road in the project area except between Gates Avenue and Ingham Avenue with seasonal restrictions.

No parking is permitted along Fuhrmann Boulevard, Ohio Street, Louisiana Street, Keating Street, Bailey Avenue, Elk Street, Lake Avenue, or Mile Strip Road at any time within the project area.



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Table C2.4-6 - Parking Restrictions

Route	Segment	Parking	Location	Parking Restrictions
Route 5	Skyway to Buffalo Specialty Products	No	Both sides	
	Buffalo Specialty Products to 5 <sup>th</sup> St.	Yes	West side	1 hr. restriction (7am - 7pm).
	Buffalo Specialty Products to Hawley Rd.	Yes	East side	1 hr. restriction (7am - 7pm).
Fuhrmann Blvd.	I-190 to Ridge Rd	No	Both sides	
South Park Ave.	Michigan Ave. to Moore St.	No	Both sides	
	Moore St. to Louisiana St.	Yes	South side	No parking (1:30am - 7am) from 11/15 to 4/1.
	Moore St. to Louisiana St.	No	North side	No standing (7am - 10am, 4pm - 6pm), except Sat. & Sun
	Louisiana St. to Sidway St.	Yes	Both sides	1 hr. restriction (7am - 7pm), except Sun.
	Sidway St. to Harvey Pl.	No	Both sides	No standing.
	Harvey Pl. to Smith St.	Yes	South side	No standing (4pm - 6pm), except Sat. & Sun.
	Harvey Pl. to Bolton Pl.	Yes	North side	No standing (7am - 9am), except Sat. & Sun. No parking (1:30am - 7am) from 11/15 to 4/1.
	Bolton Pl. to Smith St.	Yes	North side	2 hr. restriction (9am - 7pm), except Sun. No standing (7am - 9am), except Sat. & Sun.
	Smith St. to Buffalo River	No	Both sides	No standing.
	Buffalo River to Abby St.	No	South side	No standing.
	Buffalo River to Bertha St.	No	North side	No standing.
	Abby St. to Lilac St.	Yes	South side	No parking (1:30am - 7am) from 11/15 to 4/1.
	Bertha St. to Abby St.	Yes	North side	No parking (1:30am - 7am) from 11/15 to 4/1.
	Lilac St. to Bailey Ave.	Yes	South side	No standing (4pm - 6pm), except Sat. & Sun.
	Abby St. to Bailey Ave.	Yes	North side	No standing (7am - 9am), except Sat. & Sun.
	Bailey Ave. to Verona St.	No	Both sides	
	Verona St. to Southside Pkwy.	Yes	Both sides	2 hr. restriction (7am - 7pm), except Sun.
	Southside Pkwy. to Aldrich Pl.	Yes	East side	2 hr. restriction (9am - 7pm), except Sun. No standing (7am - 9am), except Sat. & Sun.
	Southside Pkwy. to Tifft St.	Yes	West side	2 hr. restriction (7am - 7pm), except Sun. No standing (4pm - 6pm), except Sat. & Sun.
	Tifft St. to Aldrich Pl.	Yes	West side	2 hr. restriction (7am - 4pm), except Sun. No standing (4pm - 6pm), except Sat. & Sun.
	Aldrich Pl. to Ridge Rd.	Yes	East side	2 hr. restriction (8am - 6pm), weekdays. No standing (7am - 9am), except Sat. & Sun.
	Aldrich Pl. to Nason Pkwy.	No	West side	No standing.
	Nason Pkwy. to Ridge Rd.	Yes	West side	2 hr. restriction (8am - 6pm), weekdays. No standing (4pm - 6pm), except Sat. & Sun.
Ohio St.	Michigan Ave. to Fuhrmann Blvd.	No	Both sides	
Louisiana St.	South Park Ave. to Ohio St.	No	Both sides	There are occasional "No standing" signs, but no parking restrictions or prohibitions.
Smith St.	Elk St. to South Park Ave.	Yes	West side	No standing (7am - 9am, 4pm - 7pm), except Sat. & Sun.
	Elk St. to South Park Ave.	No	East side	
Keating St.	Seneca St. to Elk St.	No	Both sides	No standing.
Bailey Ave.	Clinton St. to South Park Ave.	No	Both sides	
Hopkins St.	South Park Ave. to Tifft St.	Yes	West side	No parking (9am - 4pm) Mon., Tues., and Wed.
	South Park Ave. to Tifft St.	Yes	East side	No parking (9am - 4pm) Thur., and Fri.
Seneca St.	Babcock St. to Hayes Pl.	Yes	Both sides	1 hr. restriction (7am - 4pm), except Sun.
	Hayes Pl. to Elk St.	No	Both sides	
Elk St.	Babcock St. to Seneca St.	No	Both sides	No standing.
Tifft St.	Fuhrmann Blvd. to Hopkins St.	No	Both sides	
	Hopkins St. to South Park Ave.	Yes	South side	No standing (7am - 10am, 4pm - 7pm), except Sat. & Sun.
	Hopkins St. to South Park Ave.	No	North side	No standing.
Ridge Rd.	Fuhrmann Blvd. to Gates Ave.	No	Both sides	
	Gates Ave. to Ingham Ave.	Yes	Both sides	No parking (2:30am - 7am) from 12/1 to 4/1. No parking in front of the churches.
	Ingham Ave. to RR Tracks	No	Both sides	
Lake Ave.	Route 5 to RR Tracks	No	Both sides	
Mile Strip	Route 5 to South Park Ave.	No	Both sides	



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## **Geometry Data**

### *I-190*

The vertical and horizontal geometry data was collected from the 1999 record plans NYSTA TAN 89-39B. The stationing listed in the tables came from these record plans. **Tables C2.4-7a** and **C2.4-7b** have been organized from easternmost to westernmost corridor segments.

**Table C2.4-7a - I-190 Vertical Grade Data**

Clinton St. overpass (approx. 55+00) to Seneca St overpass (approx.85+00)

<b>% Grade</b>	<b>PVI Station<sup>1</sup> (NYSTA) TAN 89-39B</b>	<b>Curve Length m (ft)</b>	<b>Type<sup>2</sup> m (ft)</b>
<b>NORTHBOUND</b>			
+1.29%			
	(NB) 50+76	30 (100)	SSD = 304 (999)
+0.59%			
	(NB) 57+95	61 (200)	HSD > 457 (1500)
+1.39%			
	(NB) 63+88	61 (200)	SSD = 258 (846)
+0.50%			
	(NB) 70+25	136 (445)	SSD = 139 (457)
-2.33%			
	(NB) 79+59	158 (520)	HSD = 160 (526)
+0.73%			
	(NB) 87+85	91 (300)	SSD = 187 (612)
-0.71%			
<b>SOUTHBOUND</b>			
+1.44%			
	(SB) 50+02	30 (100)	SSD = 391 (1282)
+0.90%			
	(SB) 59+16	30 (100)	SSD > 457 (1500)
+0.73%			
	(SB) 70+30	168 (550)	SSD = 147 (481)
-2.43%			
	(SB) 79+90	183 (600)	HSD = 221 (692)
+1.17%			
	(SB) 86+39.25	180 (590)	SSD = 204 (670)
-0.60%			

Notes: <sup>1</sup> Stations from 1999 Record Plans

<sup>2</sup> SSD = Stopping Sight Distance, HSD = Headlight Sight Distance



**Table C2.4-7b - I-190 Horizontal Curve Data**

Clinton St. overpass (approx. 55+00) to Seneca St overpass (approx. 85+00)

PI Station	Radius m (ft)	Curve Length m (ft)	Sight Distance
32+10.53	688 (2257)	386 (1268)	n/a <sup>1</sup>
62+84.78	917 (3010)	276 (907)	n/a
69+37.65	456 (1496)	123 (403)	n/a
78+85.42	3048 (10,000)	455 (1492)	n/a
88+60.36	456 (1496)	139 (457)	n/a

Notes: <sup>1</sup>n/a = not available

### Route 5

Due to the age of NYS Route 5 and the number of repaving, and reconstruction projects along the corridor from Church Street to Mile Strip Road, the centerline stationing information contained in the following tables is inconsistent. There are many locations where vertical and/or horizontal information is not available (n/a) or broken between segments along specific projects. Overlapping centerlines, unusual stationing prefixes, southbound versus northbound station incrementation, and station units were also varied from one plan set to the next. The year of the record plans used for each table is listed in the notes for each. Approximations from intersections have been used to enable the reader to more easily locate the appropriate geometric features described in the tables. Also, each individual table references the NYSDOT Contract number for cross-referencing. **Tables C2.4-8 through C2.4-12b** have been organized from southernmost to northernmost corridor segments.

**Table C2.4-8 - NYS Route 5 Vertical Grade Data**

NYS Route 179/NYS Route 5 interchange, north 1600 ft

% Grade	PVI Station <sup>1</sup> D 256543	Curve Length m (ft)	Type <sup>2</sup> m (ft)
-0.40%			
	43+34.41	30 (100)	HSD > 457 (1500)
+1.16%			
	55+65	61 (200)	SSD = 306 (1005)
+0.30%			
	59+17.46	30 (100)	SSD = 352 (1155)
-0.30%			

Notes: <sup>1</sup> Stations from 1975 Record Plans

<sup>2</sup> SSD = Stopping Sight Distance, HSD = Headlight Sight Distance

1. Lackawanna City/Hamburg Town Line = Sta. 3+73.00. Stationing increases to the south.

2. All vertical curves symmetrical about PVI Station.

3. Vertical information only.



**Table C2.4-9a - NYS Route 5 Vertical Grade Data**

Area of the Smokes Creek Bridge (Station 0+509.723 = Lincoln Ave. centerline)

<b>% Grade</b>	<b>PVI Station<sup>1</sup></b> D 258284	<b>Curve Length</b> m (ft)	<b>Type<sup>2</sup></b> m (ft)
+0.40%			
	0+783.431	20 (66)	HSD > 457 (1500)
+0.68%			
	0+902.000	20 (66)	SSD = 165 (541)
-0.75%			
	1+125.000	20 (66)	HSD > 457 (1500)
-0.40%			
	1+225.000	20 (66)	HSD > 457 (1500)
+0.40%			
	1+250.000	20 (66)	SSD = 288 (945)
-0.33%			

Notes: <sup>1</sup> Stations from 1999 Record Plans  
<sup>2</sup> SSD = Stopping Sight Distance, HSD = Headlight Sight Distance  
 1. All vertical curves symmetrical about PVI Station.

**Table C2.4-9b - NYS Route 5 Horizontal Curve Data**

Area of the Smokes Creek Bridge (Station 0+509.723 = Lincoln Ave. centerline)

<b>PI Station<sup>1</sup></b>	<b>Radius, R<sub>c</sub></b> D 258284 m (ft)	<b>Curve Length</b> m (ft)	<b>Sight Distance</b> m (ft)
		L = 44.446 (146)	
0+533.146	2500 (8202)	LS <sub>in</sub> = 66.000 (217)	n/a
		Lc = 372.912 (1223)	
1+020.994	1000 (3281)	LS <sub>out</sub> = 66.000 (217)	n/a

Notes: <sup>1</sup> Stations from 1999 Record Plans



**Table C2.4-10a - NYS Route 5 Vertical Grade Data**  
Odell St. to approximately 3500 ft North of Tiff St.

% Grade	PVI Station <sup>1</sup> D 500769 m (ft)	Curve Length m (ft)	Type <sup>2</sup> m (ft)
<b>SOUTHBOUND</b>			
+0.18%			
	W 66+39	43 (140)	SSD = 324 (1062)
-.053%			
	W 71+14	146 (480)	HSD = 205 (674)
+2.65%			
<b>NORTHBOUND</b>			
+0.55%			
	E 66+39	37 (120)	SSD > 457 (1500)
+0.35%			
	E 72+86	61 (200)	HSD = 242 (794)
+2.64%			
	E 84+66	320 (1050)	SSD = 162 (533)
-2.28%			
	E 98+55	207 (680)	HSD = 177 (582)
+2.75%			
	E 109+60	229 (750)	SSD = 169 (554)
+0.50%			
	E 121+36	61 (200)	HSD > 457 (1500)
+1.11%			
	E 129+63	229 (750)	SSD = 162 (532)
-2.41%			
	E 138+00	61 (200)	HSD > 457 (1500)
-0.52%			

Notes: <sup>1</sup> Stations from 1992 Record Plans

<sup>2</sup> SSD = Stopping Sight Distance, HSD = Headlight Sight Distance

1. The West centerline (W) grade matches the East centerline (E) grade at station E 84+66 (at the approximate intersection of N.Y.S. Route 5 and Ridge Road)

**Table C2.4-10b - NYS Route 5 Horizontal Curve Data**  
Odell St. to approximately 3500 ft North of Tiff St.

PI Station <sup>1</sup>	Radius, R <sub>c</sub> D 500769 m (ft)	Curve Length m (ft)	Sight Distance
		LS <sub>in</sub> = 64 (210)	
E 69+60.76	610 (2000)	Lc = 87 (284)	n/a
		LS <sub>out</sub> = 64 (210)	
		LS <sub>in</sub> = 64 (210)	
E 80+02.90	610 (2000)	Lc = 123 (405)	n/a
		LS <sub>out</sub> = 64 (210)	
E 131+41.31	1747 (5730)	L = 159 (523)	n/a
E 139+09.15	1747 (5730)	L = 159 (523)	n/a

Notes: <sup>1</sup> Stations from 1992 Record Plans



**Table C2.4-11 - NYS Route 5 Vertical Grade Data**

<b>% Grade</b>	<b>PVI Station<sup>1</sup> FACRC 75-21</b>	<b>Curve Length m (ft)</b>	<b>Type<sup>2</sup> m (ft)</b>
<b>SOUTHBOUND</b>			
+2.5%			
	(SB) 165+50	259 (850)	SSD = 155 (507)
-1.68%			
	(SB) 174+50	61 (200)	HSD = 206 (676)
+0.58%			
	(SB) 182+25.8	No Curve	n/a
+0.67%			
	(SB) 183+74.3	No Curve	n/a
+0.71%			
	(SB) 186+00	61 (200)	HSD > 305 (1000)
+1.10%			
	(SB) 194+00	229 (750)	SSD = 164 (539)
-2.31%			
	n/a		
+1.25%			
	(SB) 213+00	244 (800)	168 (551)
-2.25%			
<b>NORTHBOUND</b>			
+2.5%			
	(NB) 165+50	259 (850)	SSD = 155 (507)
-1.68%			
	(NB) 174+50	61 (200)	HSD = 206 (676)
+0.72%			
	(NB) 182+25.8	No Curve	n/a
+0.67%			
	(NB) 183+74.3	No Curve	n/a
+0.66%			
	(NB) 186+00	61 (200)	HSD > 305 (1000)
+0.98%			
	(NB) 194+00	229 (750)	SSD = 164 (539)
-2.31%			
	n/a		
+1.43%			
	(NB) 210+80	244 (800)	SSD = 185 (607)
+0.24%			
	(NB) 212+40	67 (220)	SSD = 168 (551)
-0.72%			
	(NB) 214+00	30 (100)	n/a

Notes: <sup>1</sup> Stations from 1975 Record Plans

<sup>2</sup> SSD = Stopping Sight Distance, HSD = Headlight Sight Distance

n/a = Not Available



**Table C2.4-12a - NYS Route 5 (Buffalo Skyway) Vertical Grade Data**  
 South Skyway approach to Church St.

<b>% Grade</b>	<b>PVI Station<sup>1</sup></b> FACRC 74-37	<b>Curve Length</b> m (ft)	<b>Type<sup>2</sup></b> m (ft)
+3.25%			
	69+75.35	319 (1046)	SSD = 190 (625)
-3.25%			
	88+00	91 (300)	HSD = 174 (570)
-0.40%			
	93+59.33	122 (400)	SSD = 119 (390)
-3.90%			

Notes: <sup>1</sup> Stations from 1975 Record Plans  
<sup>2</sup> SSD = Stopping Sight Distance, HSD = Headlight Sight Distance  
 1. NYS Route 5 Station 242+16.44 = "Skyway" Station 42+65

**Table C2.4-12b - NYS Route 5 (Buffalo Skyway) Horizontal Curve Data**  
 South Skyway approach to Church St.

<b>PI Station<sup>1</sup></b>	<b>Radius - R</b> m (ft)	<b>Curve Length</b> m (ft)	<b>Sight Distance</b>
59+06	437 (1433)	306 (1004)	n/a
78+47	388 (1274)	162 (533)	n/a
92+50.76	437 (1433)	198 (650)	n/a
99+94.18	291 (955)	184 (604)	n/a

Notes: <sup>1</sup> Stations from 1975 Record Plans

### *Intersections*

Geometrics of select intersections, located primarily on Route 5, South Park Avenue, Bailey Avenue, Tifft Street and Ridge Road, are shown in **Figures C2.4-1 through C2.4-20**.



## 2.5 Abutting Highway Segments and Future Plans for Abutting Highway Segments

There are no proposed or anticipated projects for highway segments adjacent to the study area. **Figures C2.4-1** through **C2.4-20** contain existing intersection information, including some abutting roadway data. In addition, the New York State Department of Transportation (NYSDOT) has provided pavement scores based on 2001 field inspections for roadways within the study area. The rating system for pavement surfaces ranges from 1 (poor, impassable at posted speed) to 6 (fair) to 10 (excellent, no distress, recently constructed or reconstructed). Mile Strip Road between Route 5 and South Park Avenue was rated 10. Lake Avenue between Route 5 and the Conrail Tracks was rated 8, which is described as good condition with distress symptoms beginning to show. A rating of 7, which is also described as pavements giving a good ride, but showing infrequent to occasional signs of surface deterioration, was given to Keating Street. A rating of 6 was given to South Park Avenue between Bailey Avenue and Ridge Road, Bailey Avenue and Tifft Street. Ratings of 4 and 5, which are described as poor condition because distress is frequent, was given to South Park Avenue between Michigan Avenue and Bailey Avenue, Ohio Street, Louisiana Street, Smith Street, Hopkins Street, Seneca Street, Elk Street, and Ridge Road.

## 2.6 Speeds and Delay

### 2.6.1 Posted Speeds

The posted speeds for each roadway are listed in **Table C2.6-1**.



**Table C2.6-1 - Existing Posted Speed Limits**

Route	Segment	Posted Speed Limit km/h (mph)
Route 5	Mile Strip to Ridge Rd	64 (40)
	Ridge Rd to Church St	88 (55)
Fuhrmann Blvd	Ridge to I-190	48 (30)
South Park Ave	Michigan Ave to Ridge Road	48 (30)
Ohio St	Michigan Ave to Fuhrmann Blvd	48 (30)
Louisiana St	Ohio St to South Park Ave	48 (30)
Smith St	South Park Ave to Elk	48 (30)
Keating St	Seneca St to Elk	48 (30)
Bailey Ave	Clinton Ave to South Park Ave	48 (30)
Hopkins St	Tift St to South Park Ave	48 (30)
Seneca St	Babcock to Elk	48 (30)
Elk St	Babcock to Seneca St	48 (30)
Tift St	Fuhrmann Blvd to South Park Ave	48 (30)
Ridge Rd	Rte 5 to South Park Ave	48 (30)
Lake Ave	Rte 5 to Conrail Tracks	48 (30)
Mile Strip	Rte 5 to South Park Ave	48 (30)

### 2.6.2 Existing Speed and Delay Study

Travel time and delay studies were conducted for both Route 5 and South Park Avenue within the study area. These studies were performed weekdays during three different times of day: morning or AM (7-9), mid-day (11AM-1PM), and afternoon or PM (4-6) peak periods. Travel time and delay studies provide data on the amount of time it takes to traverse the Route 5 and South Park Avenue corridors, the free flow speed, overall average operating speed, magnitude of delay and cause of delay.

#### *Route 5*

The Route 5 segment began at the intersection of Church Street and the Skyway and ended west of the Mile Strip overpass. Both Route 5 eastbound and westbound studies were conducted. The posted speed limit (regulatory) along Route 5 between Church Street and Ridge Road is 88 km/h (55 mph). Between Ridge Road and Mile Strip the speed limit is 64 km/h (40 mph). The results of this study have been compiled into **Table C2.6-2**.

In general, operating speeds on the 88 km/h (55 mph) section of Route 5 between Church Street and Ridge Road are slower in the eastbound (inbound) direction than the westbound (outbound) direction, regardless of time of day. Traffic is also operating at speeds below the posted speed limit in this section of Route 5. The average operating speed in the eastbound (inbound) direction is 69 km/h (43 mph) for the AM peak period, 79 km/h (49 mph) for the mid-day off-peak period, and 78 km/h (48 mph) for the PM peak period. The average operating speed in the





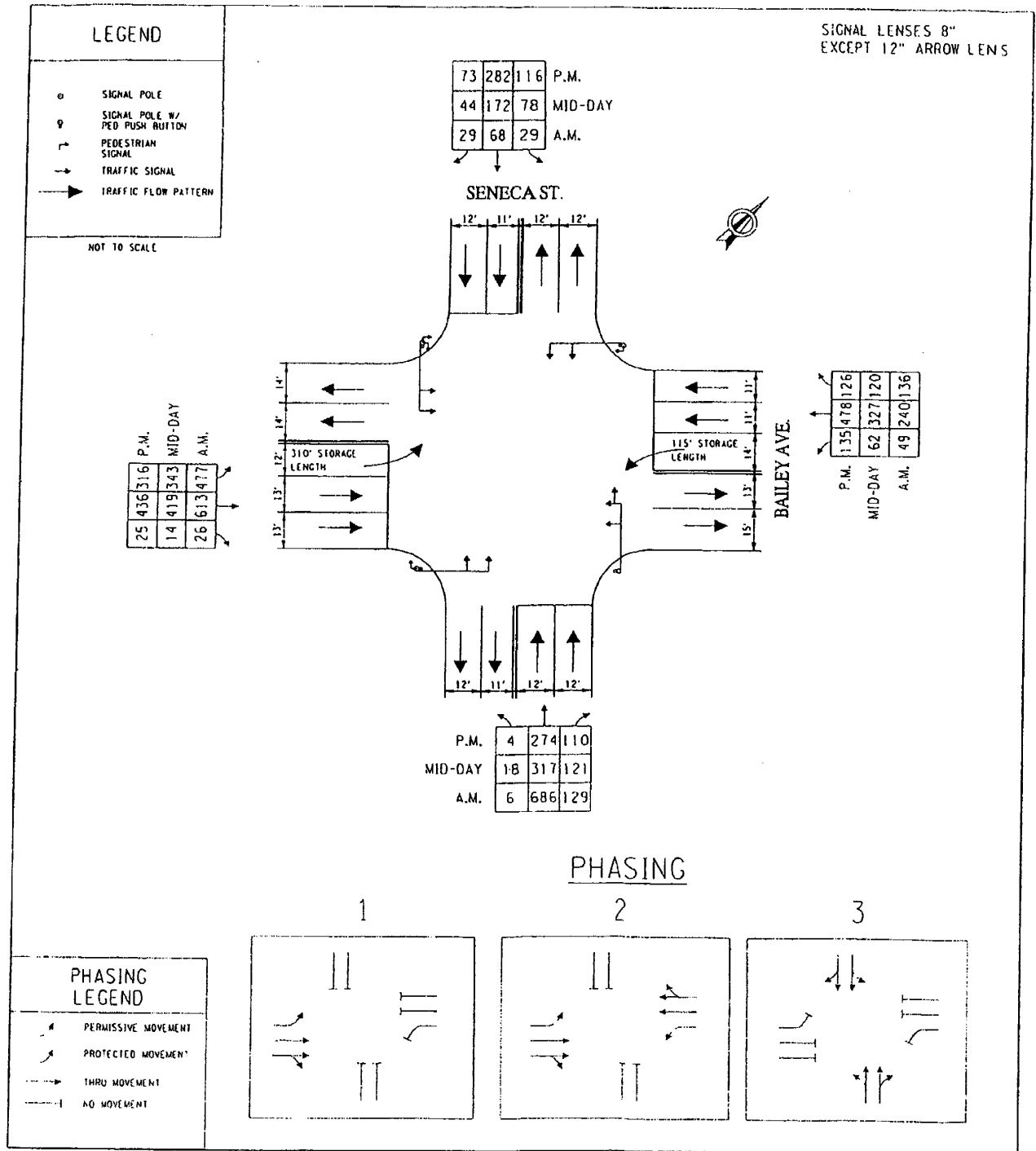


Figure C2.4-1 - Intersection Layout: Bailey Avenue and Seneca Street

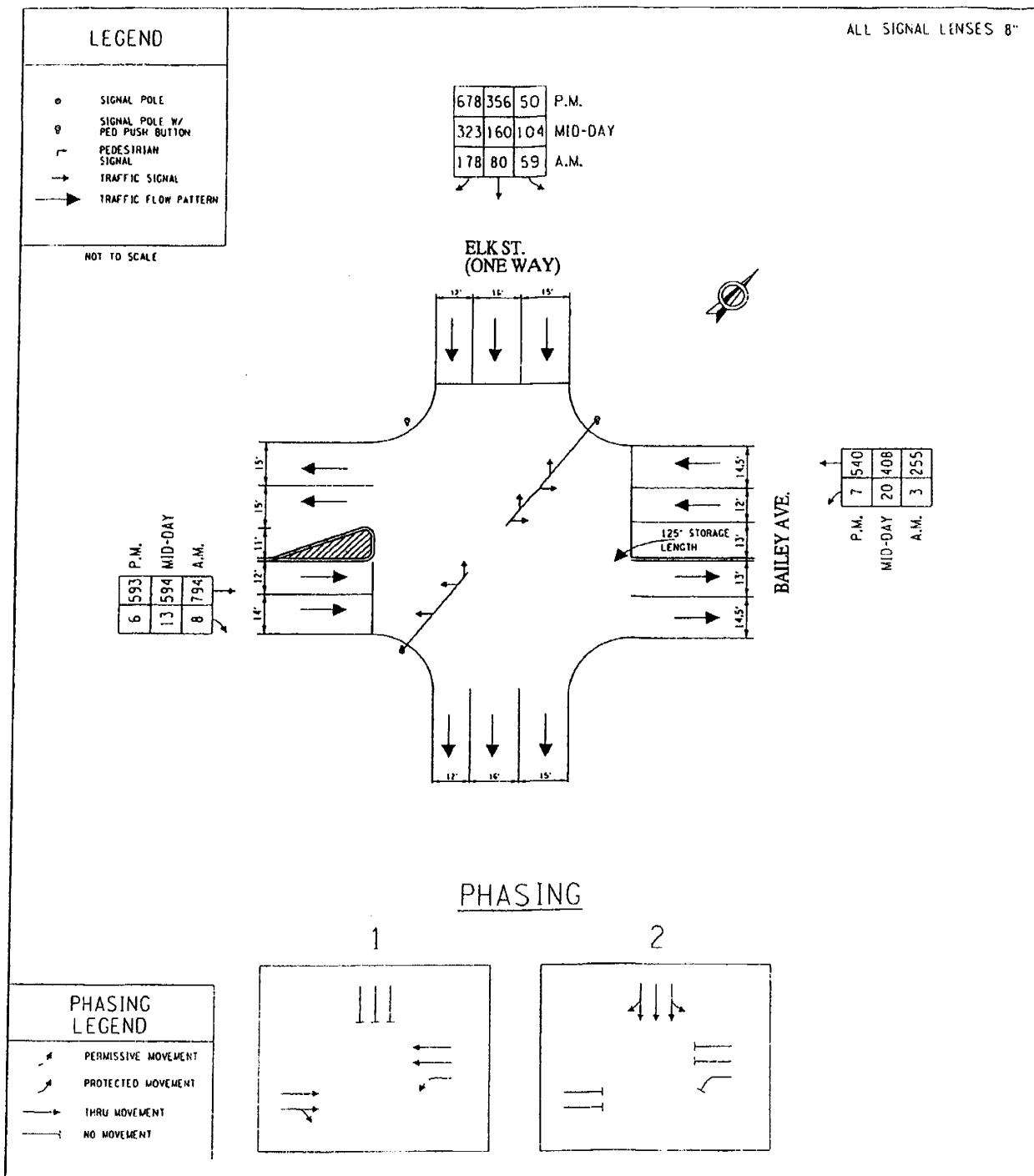


Figure C2.4-2 - Intersection Layout: Bailey Avenue and Elk Street

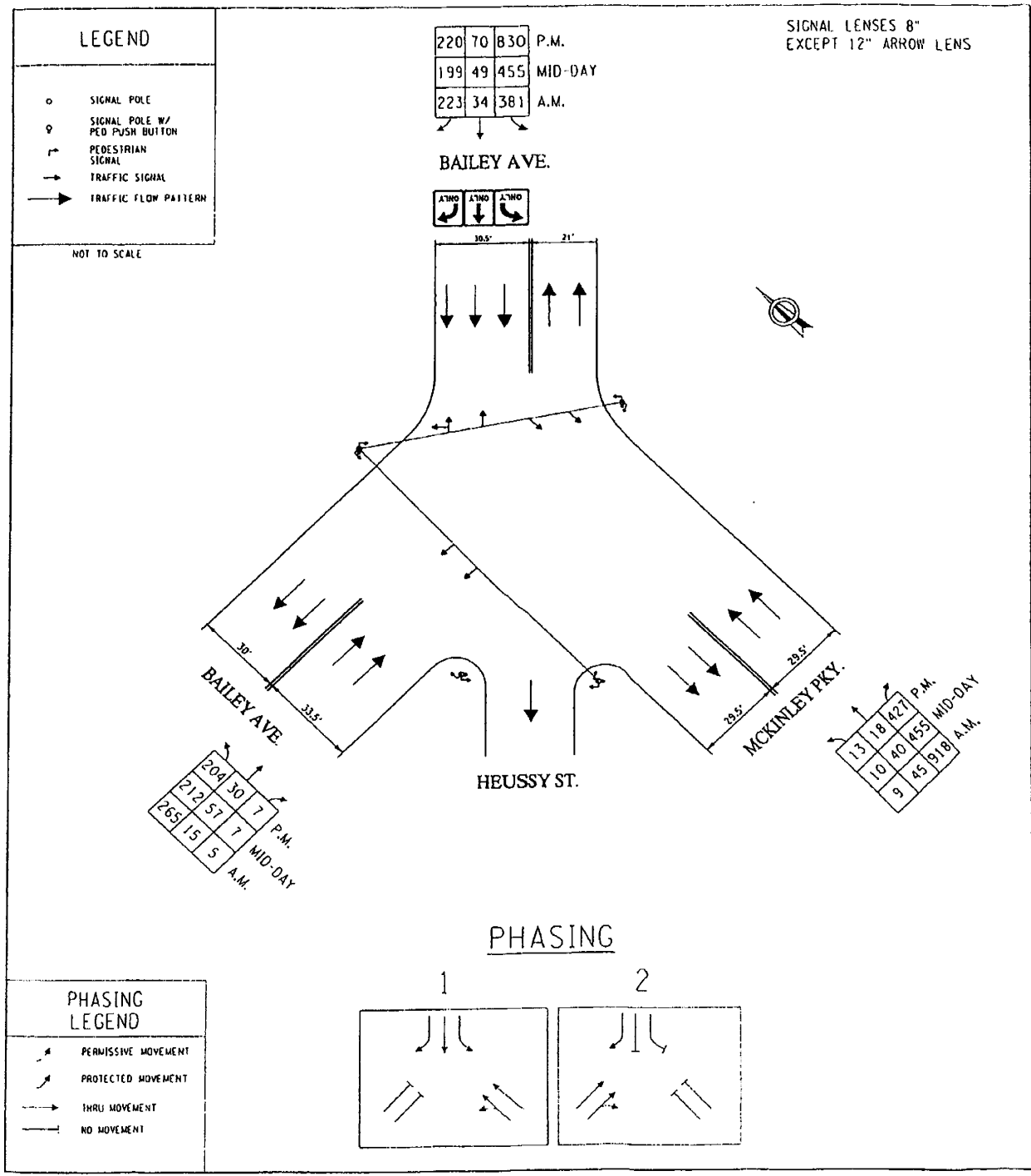


Figure C2.4-3 - Intersection Layout: Bailey Avenue and McKinley Parkway

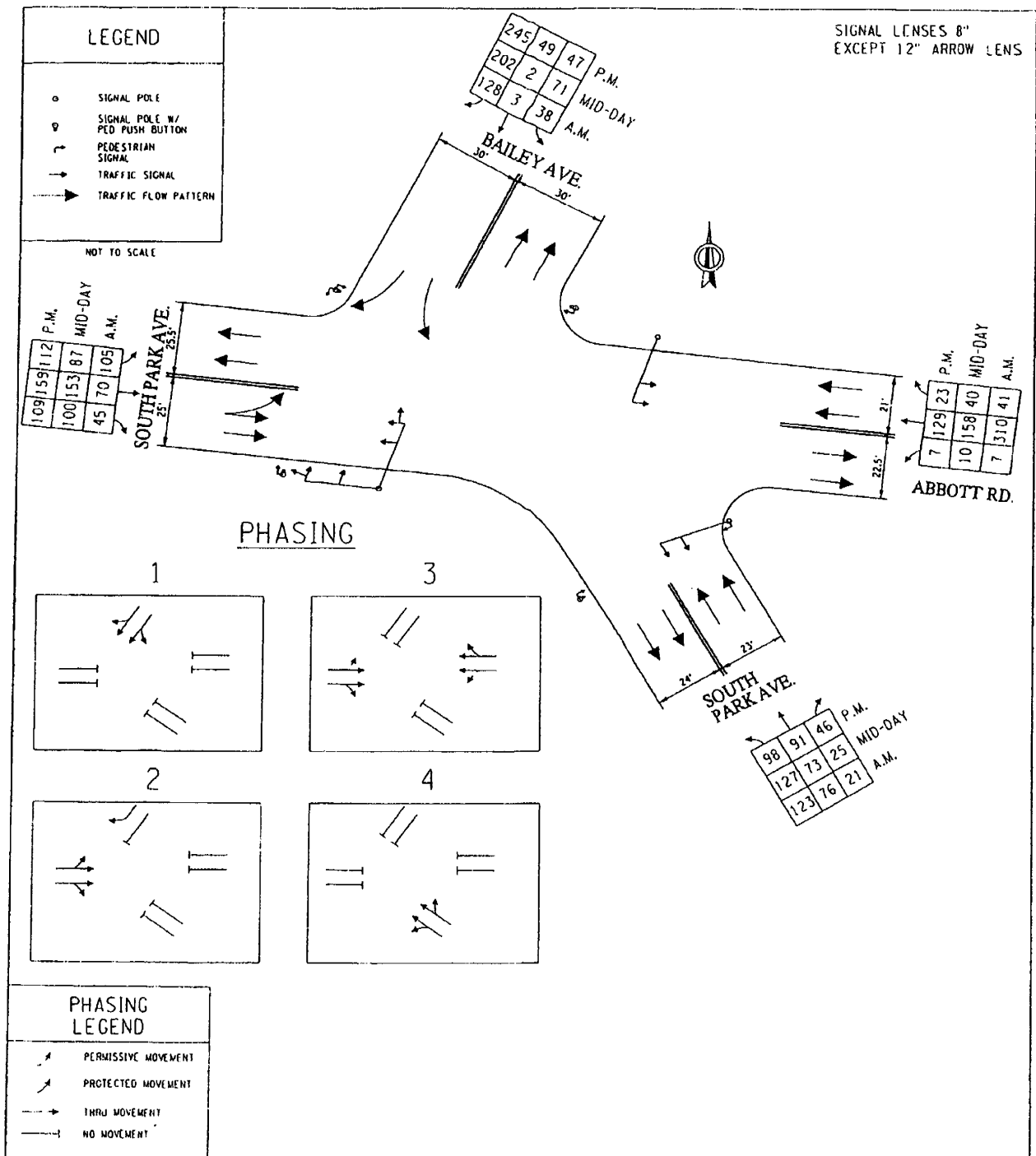
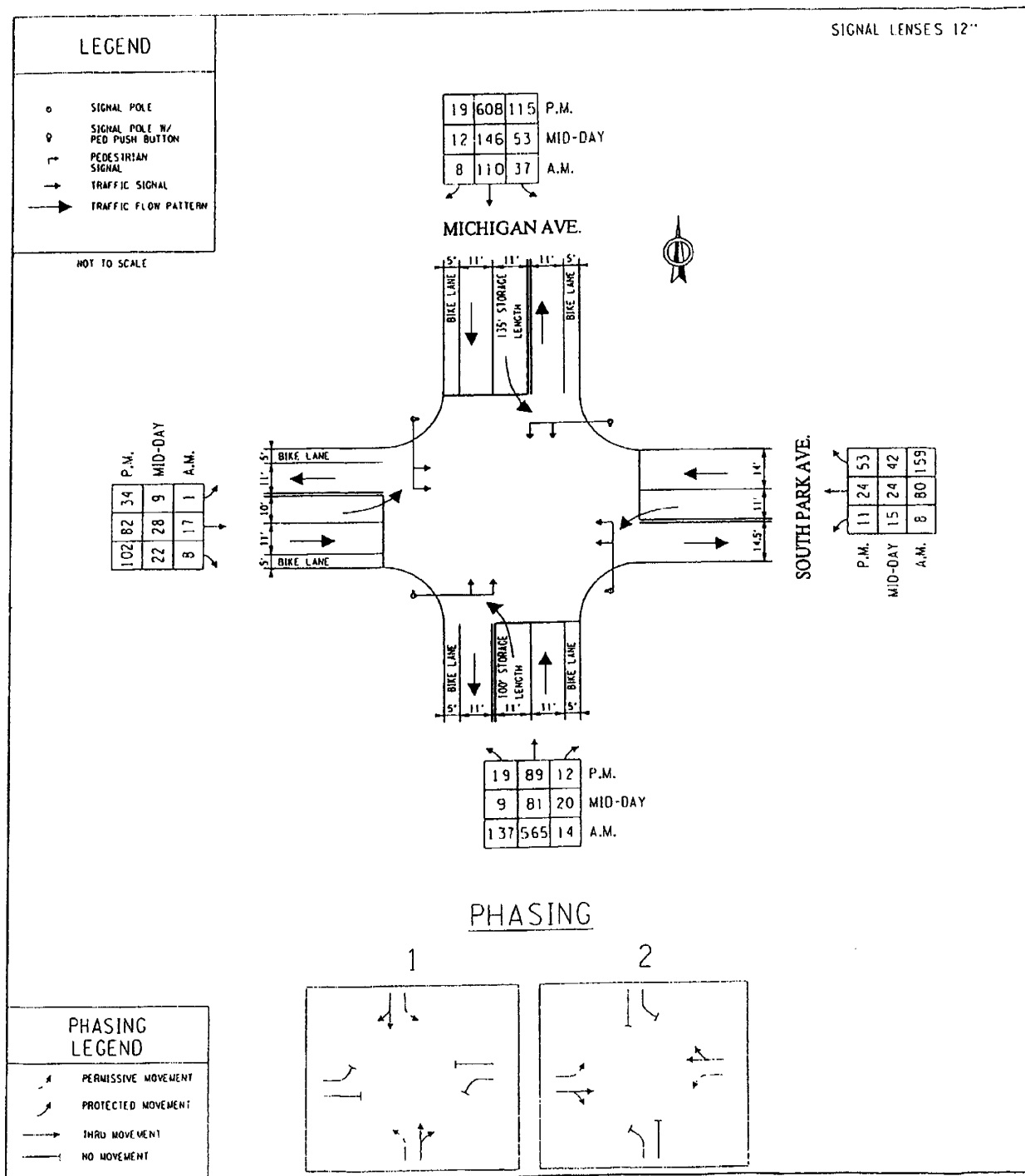


Figure C2.4-4 - Intersection Layout: Bailey Avenue, South Park Ave, & Abbott Rd



**Figure C2.4-5 - Intersection Layout: South Park Avenue and Michigan Avenue**

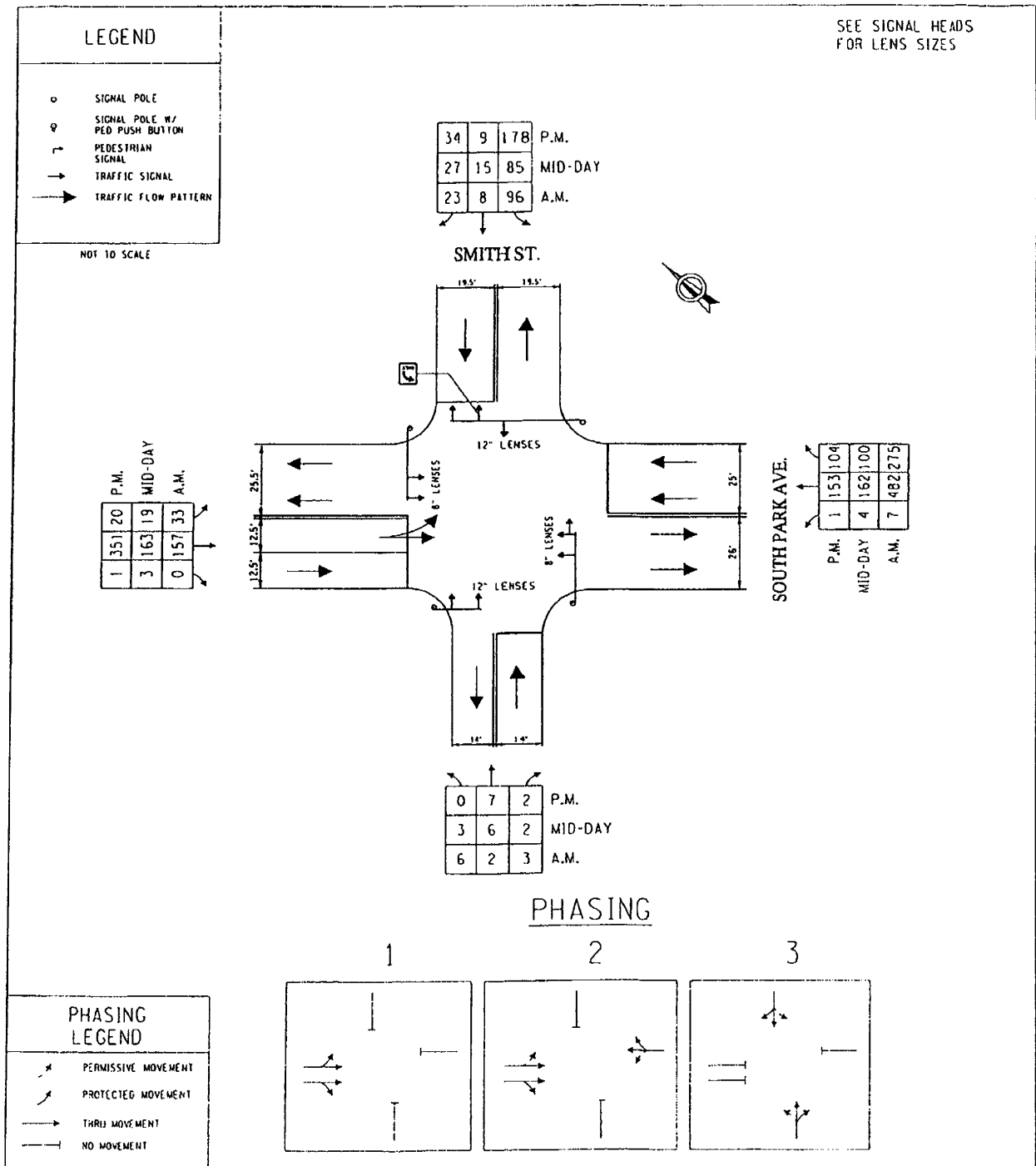


Figure C2.4-6 - Intersection Layout: South Park Avenue and Smith Street

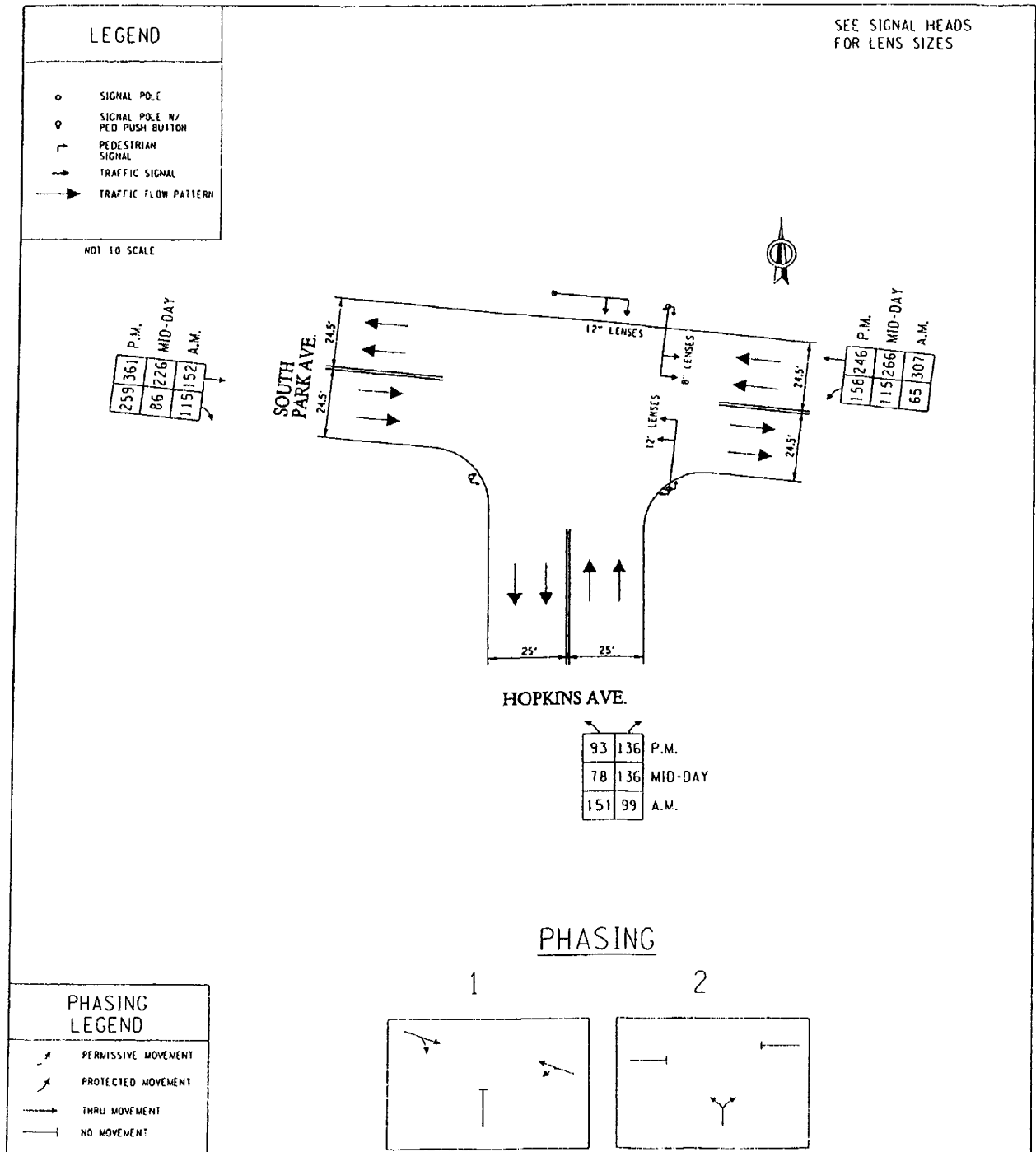


Figure C2.4-7 - Intersection Layout: South Park Avenue and Hopkins Street

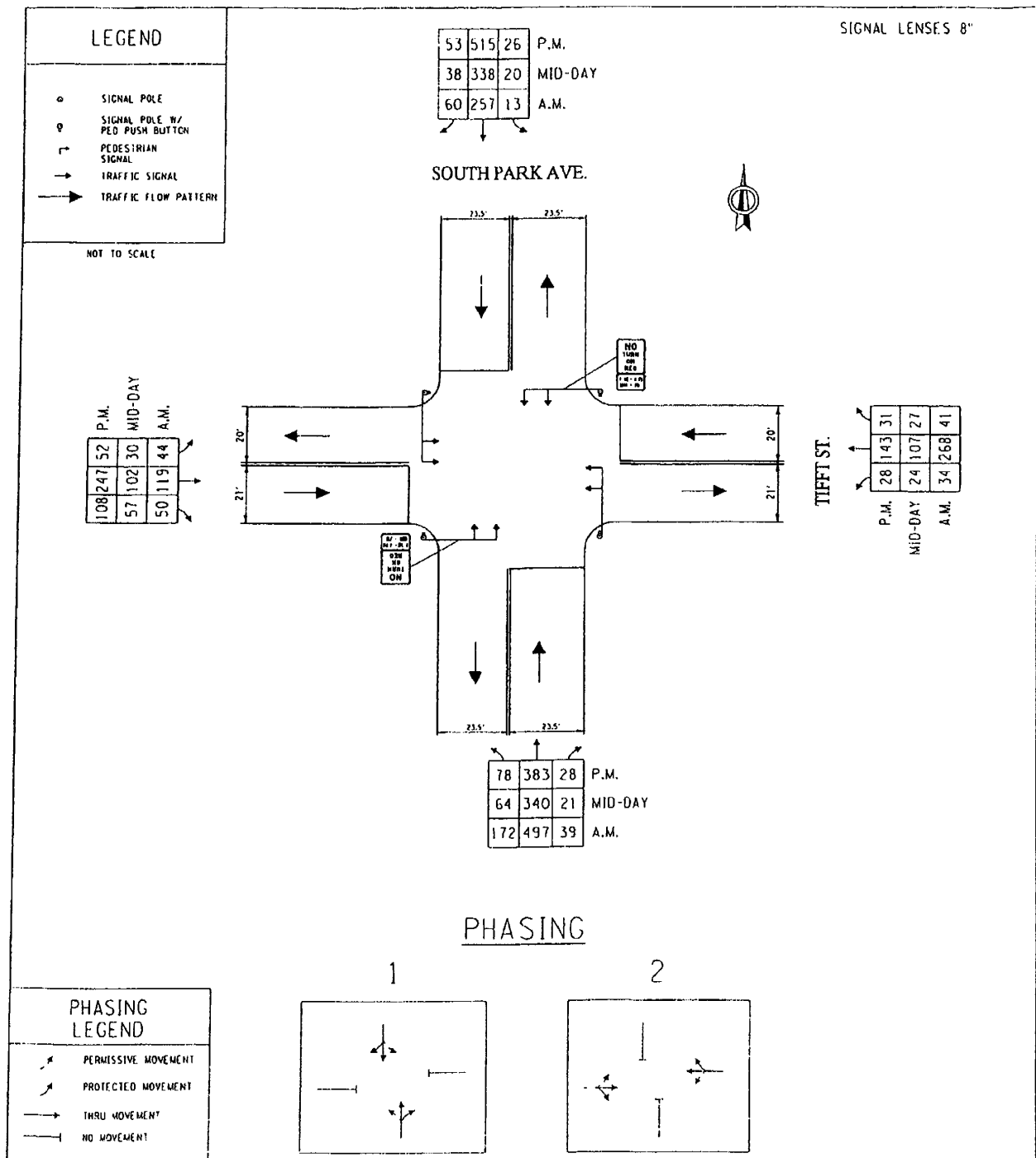


Figure C2.4-8 - Intersection Layout: South Park Avenue and Tiff Street



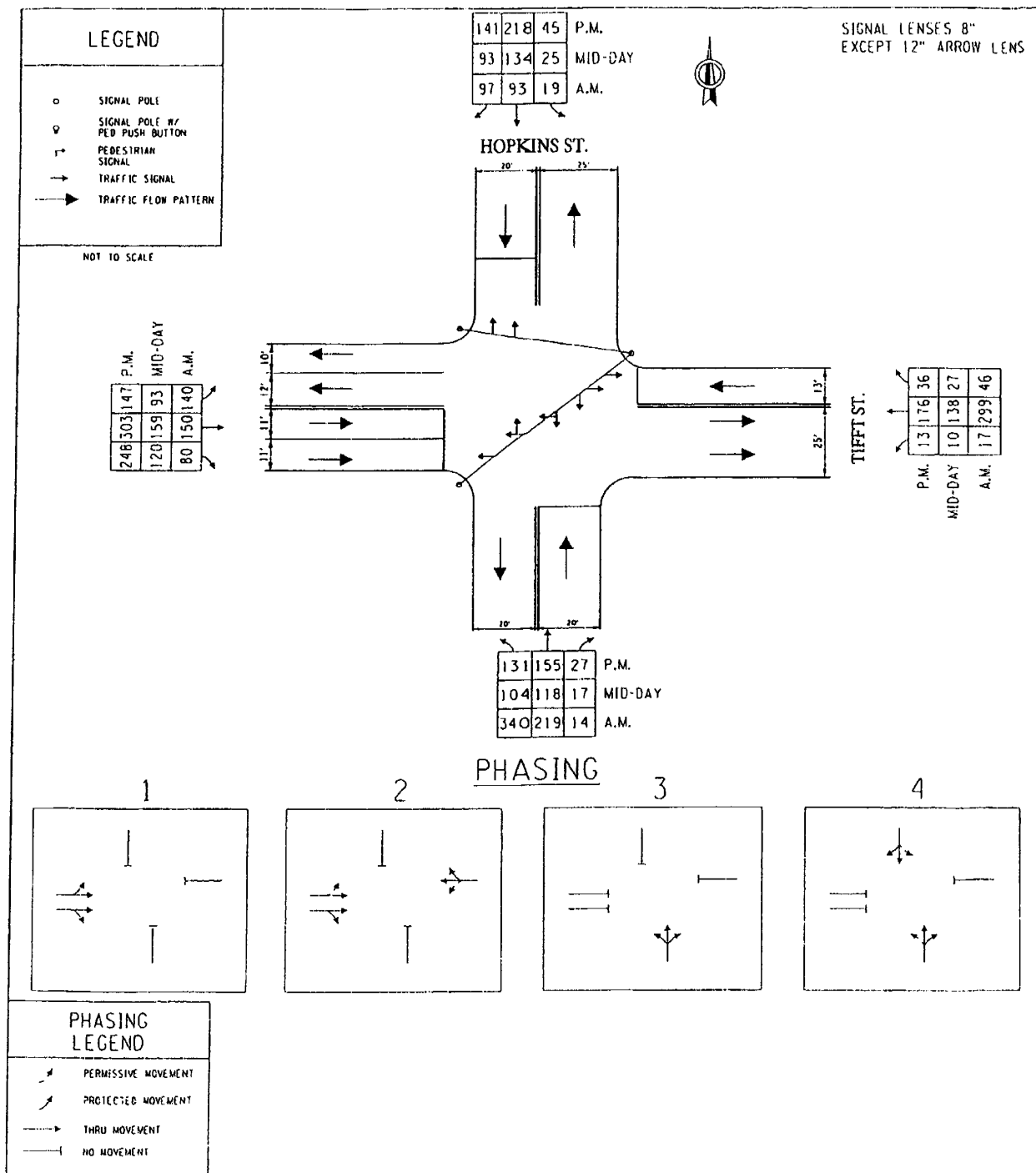


Figure C2.4-9 - Intersection Layout: Tift Street and Hopkins Street

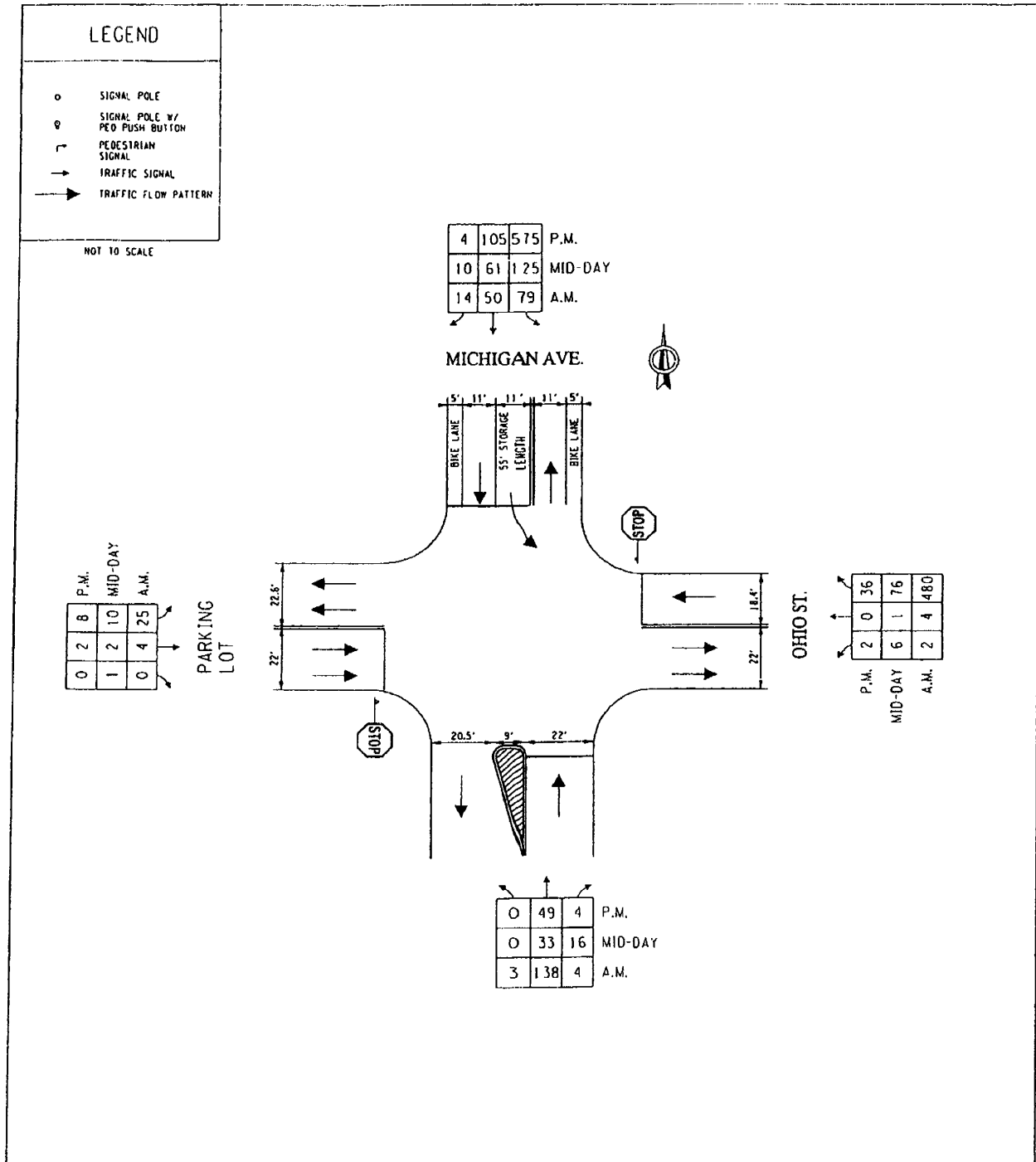


Figure C2.4-10 - Intersection Layout: Michigan Avenue and Ohio Street

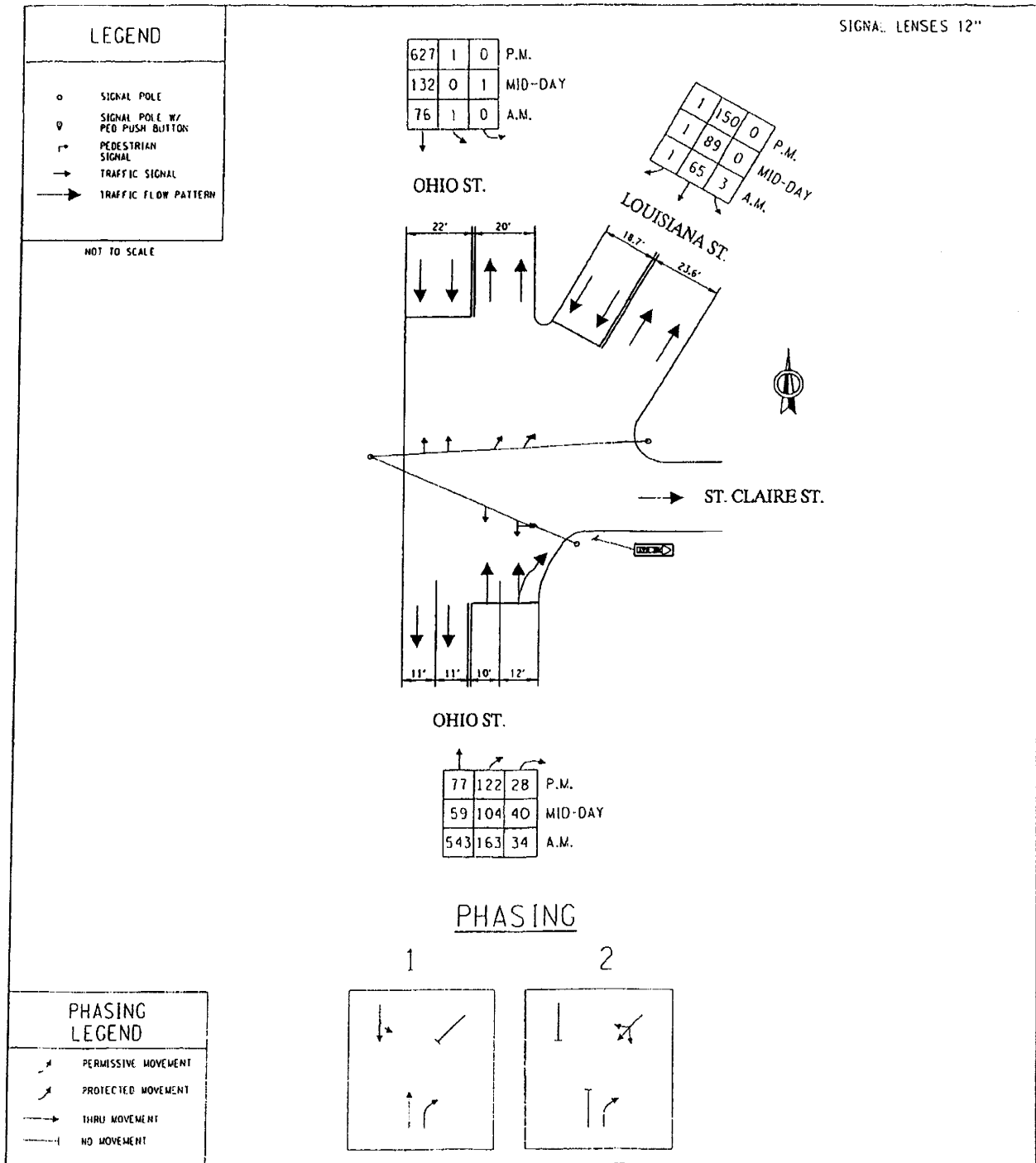


Figure C2.4-11 - Intersection Layout: Ohio Street and Louisiana Street

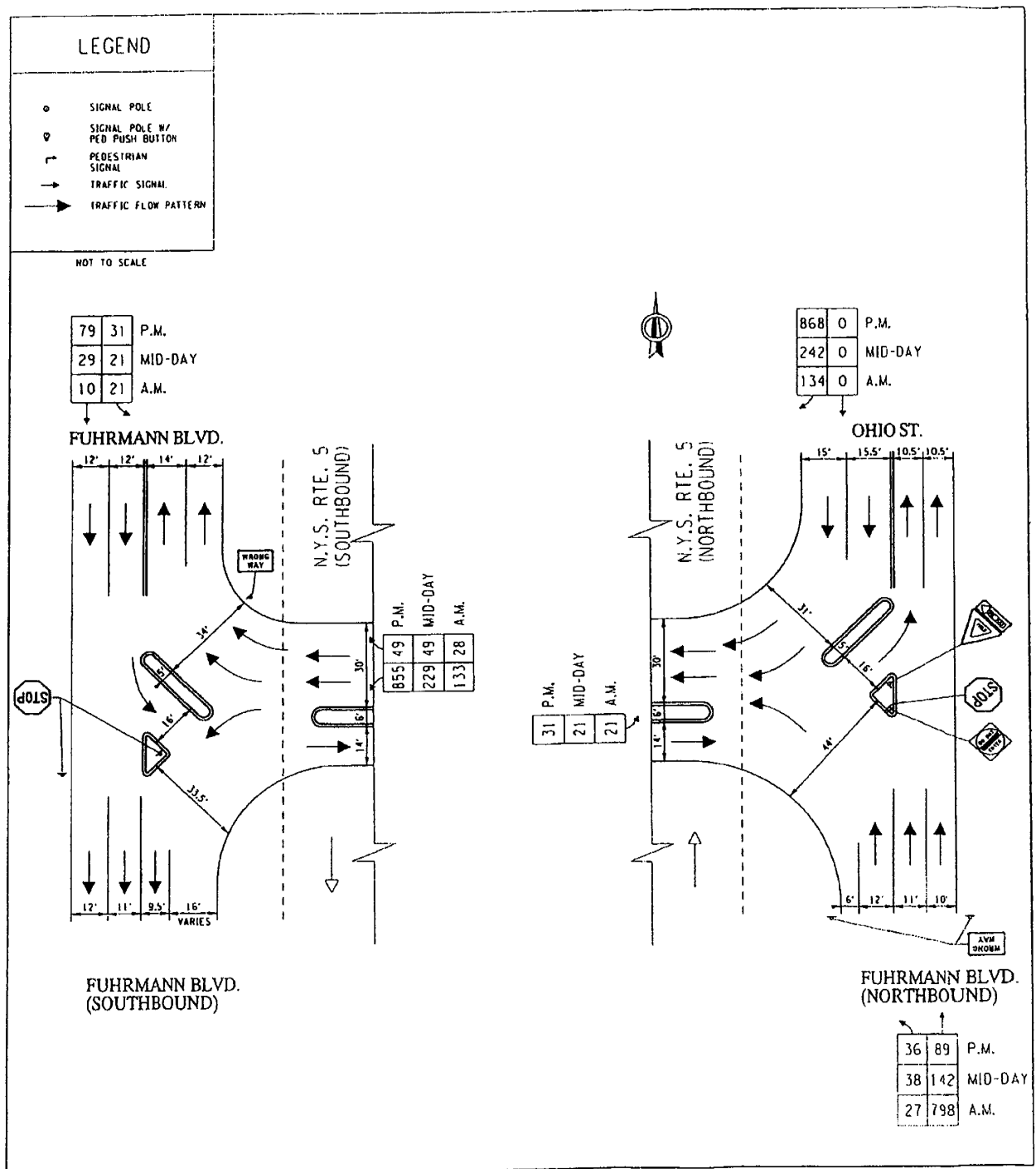
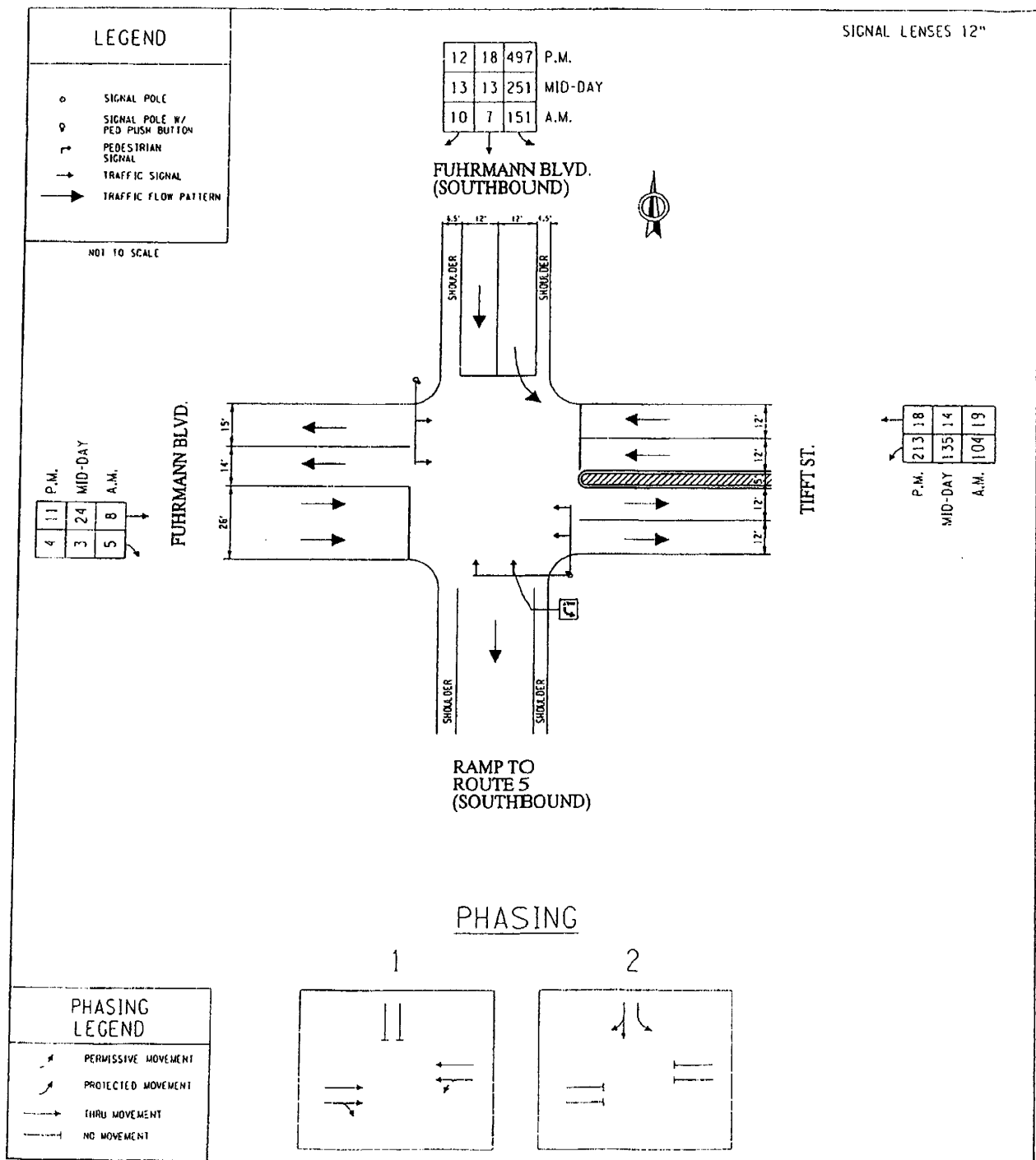


Figure C2.4-12 - Intersection Layout: Fuhrmann Boulevard and Ohio Street





**Figure C2.4-14 - Intersection Layout: Fuhrmann Boulevard (SB) and Tifft Street**

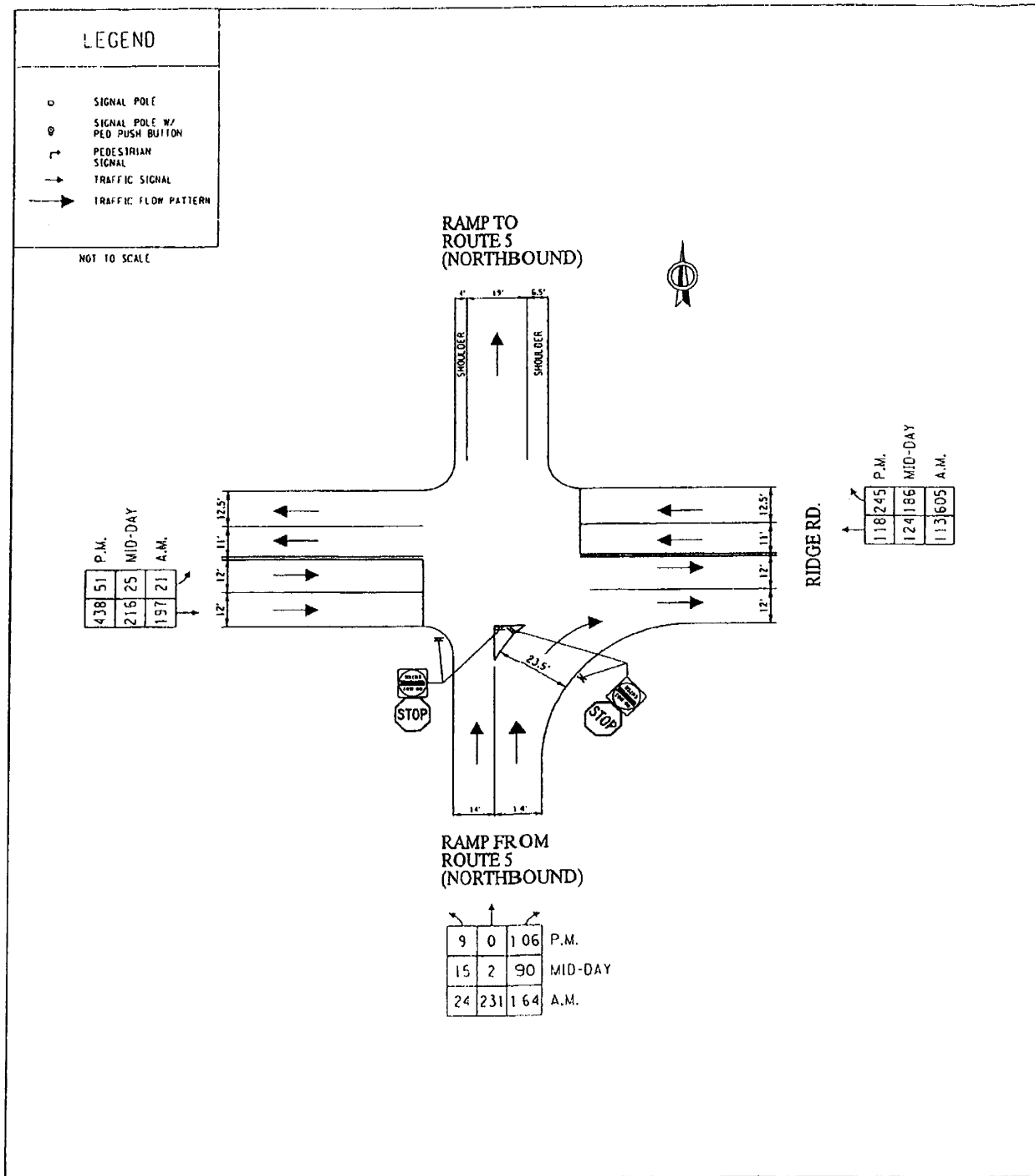
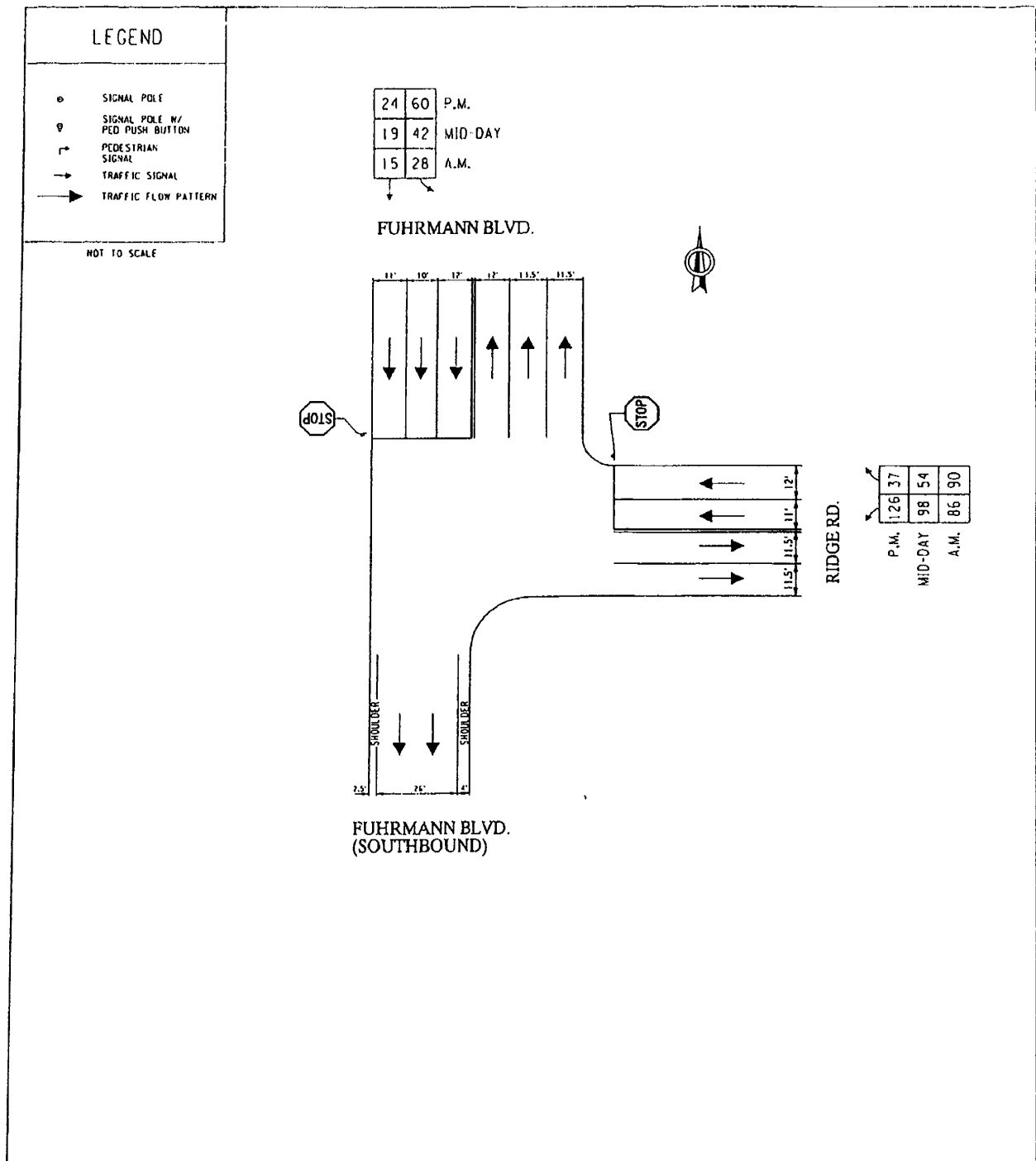


Figure C2.4-15 - Intersection Layout: Fuhrmann Boulevard (NB) and Ridge Road



**Figure C2.4-16 - Intersection Layout: Fuhrmann Boulevard (SB) and Ridge Road**



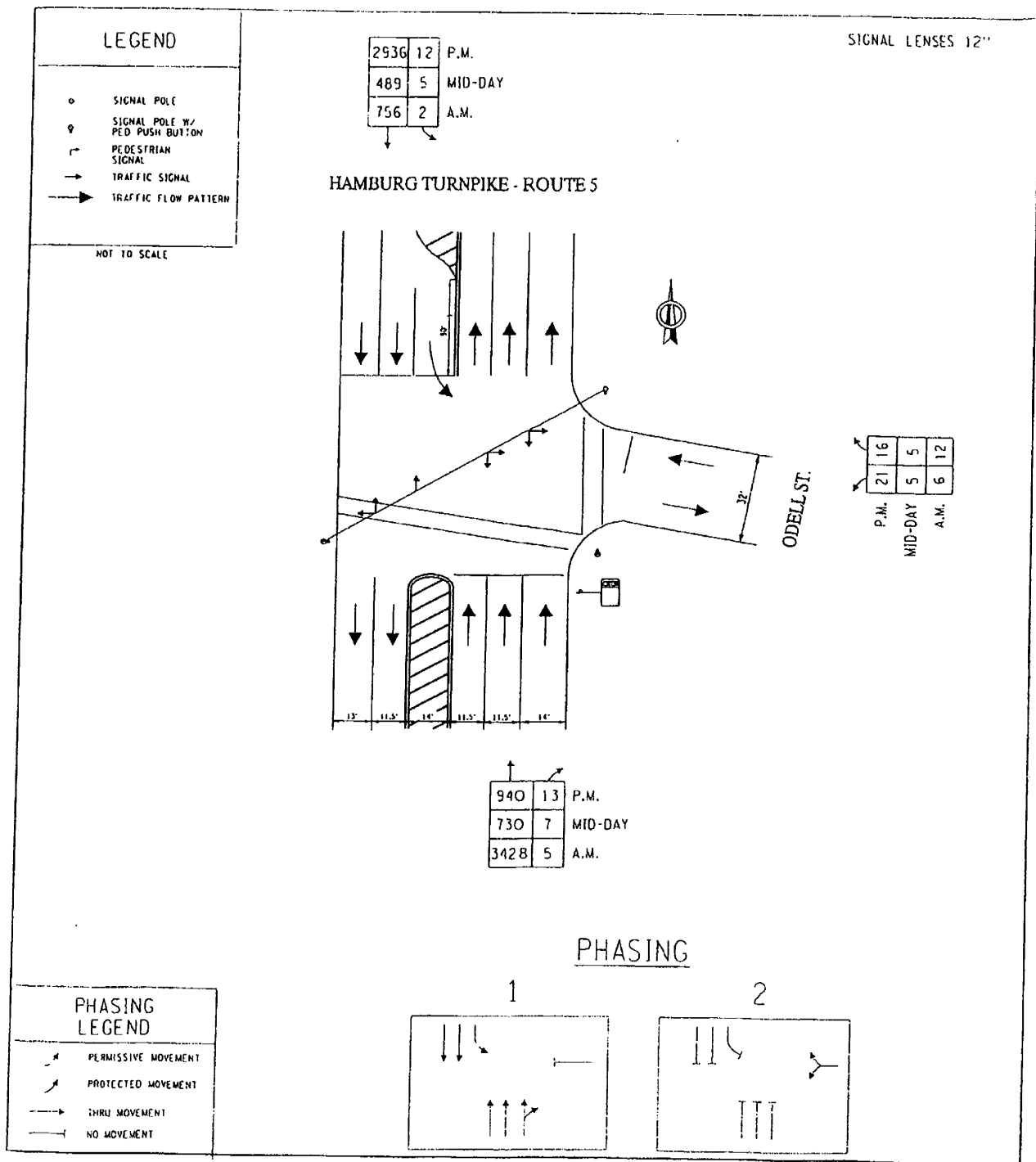


Figure C2.4-17 - Intersection Layout: Route 5 and Odell Street

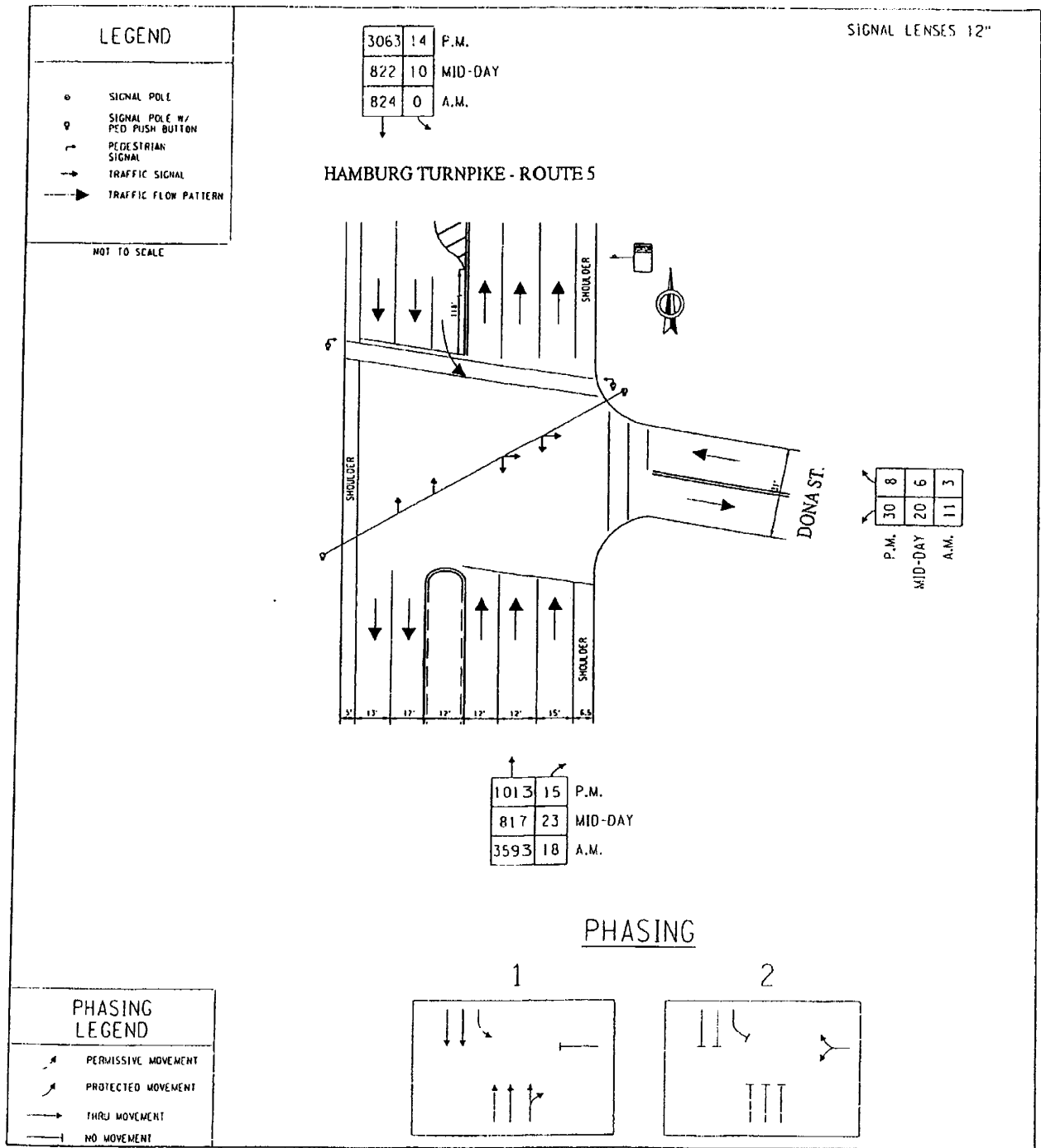


Figure C2.4-18 - Intersection Layout: Route 5 and Dona Street

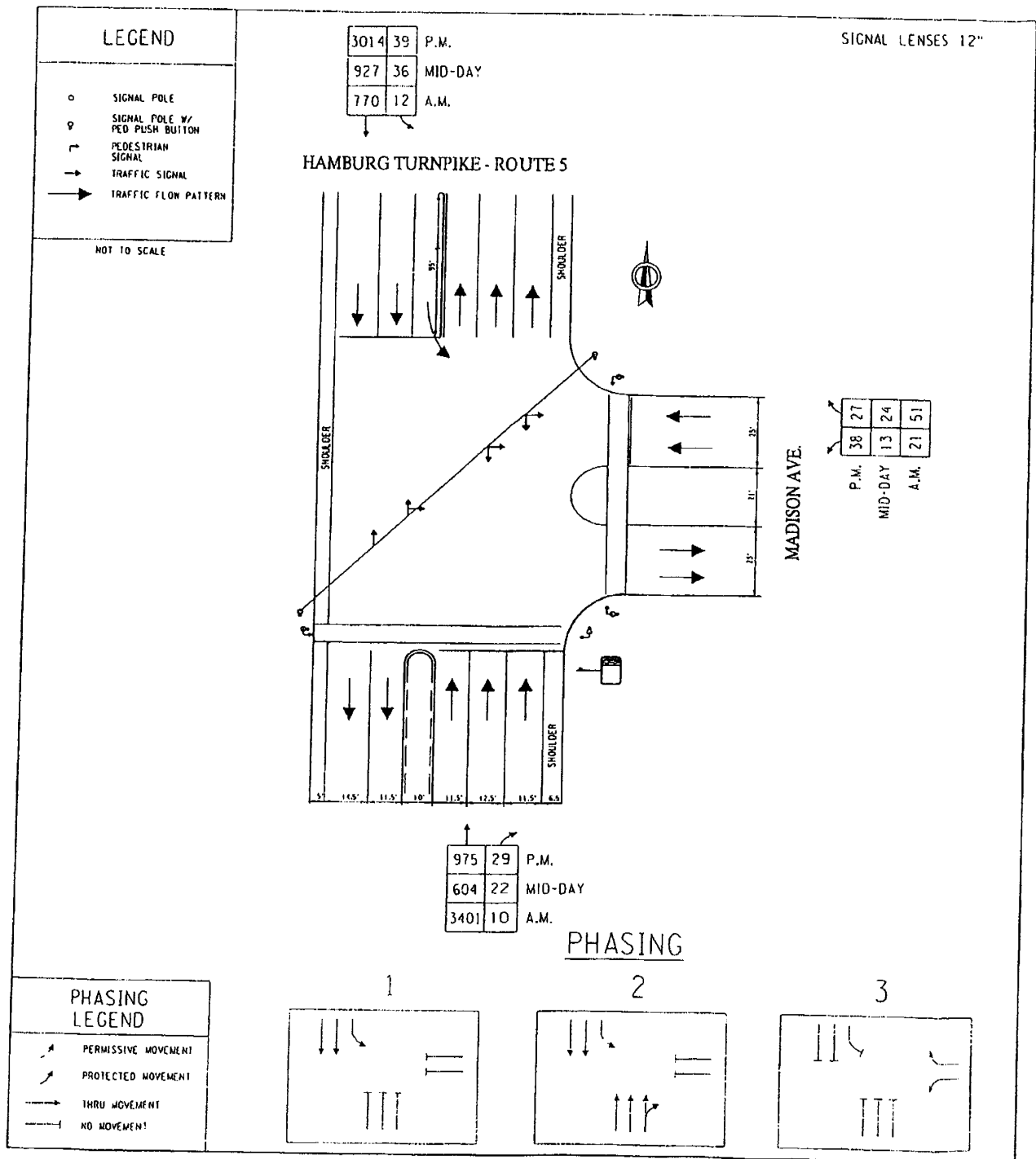


Figure C2.4-19 - Intersection Layout: Route 5 and Madison Avenue

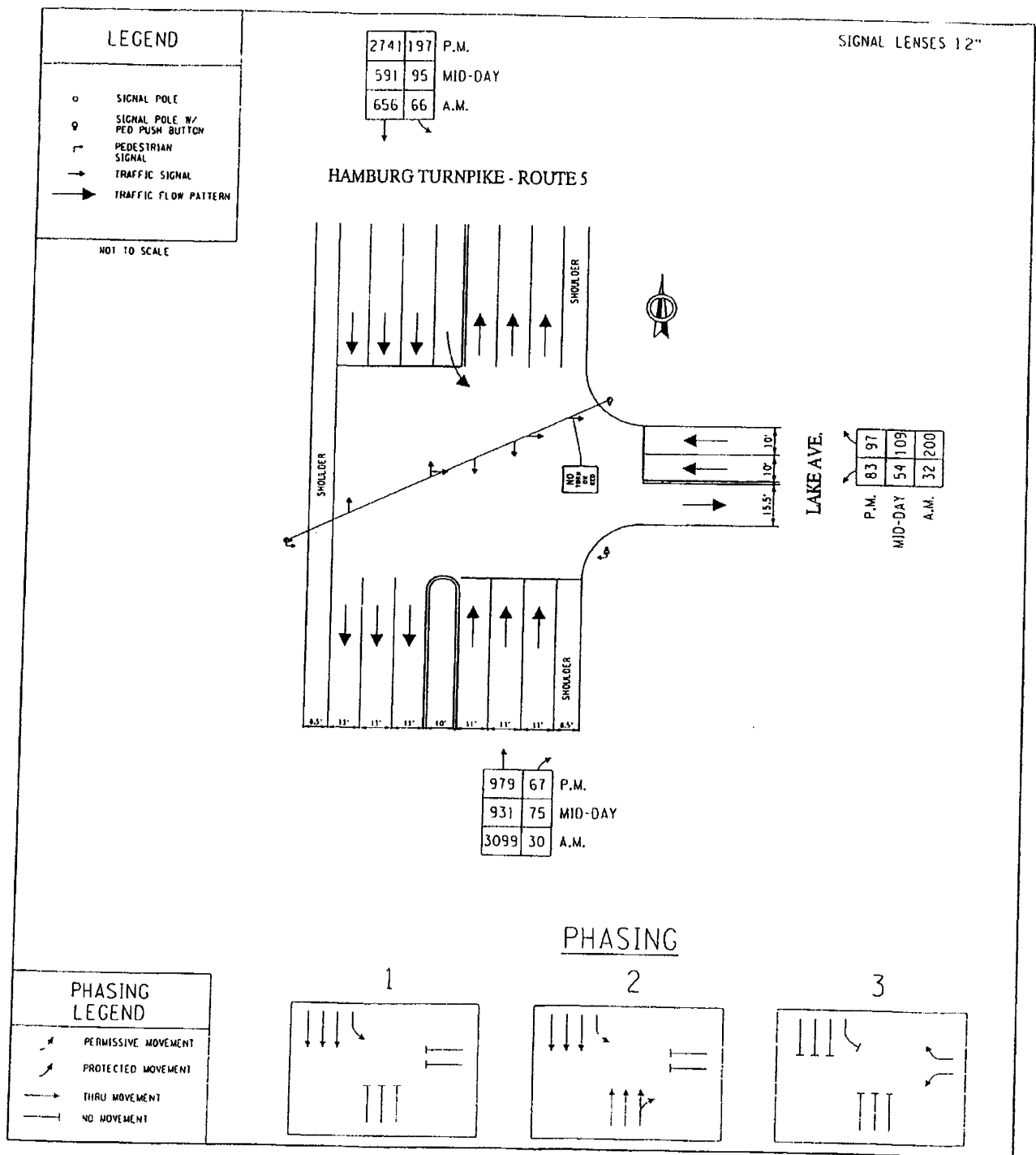


Figure C2.4-20 - Intersection Layout: Route 5 and Lake Avenue

westbound (outbound) direction is 83 km/h (52 mph) for the AM peak period, 84 km/h (42 mph) for the mid-day off-peak period, and 81 km/h (50 mph) for the PM peak period. The greatest delays were experienced between Church Street and the apex of the Skyway in the eastbound (inbound) direction.

In general, operating speeds are slower during peak hour in the peak direction of flow of the 64 km/h (40 mph) section of Route 5 between Ridge Road and Mile Strip. The average operating speed in the eastbound (inbound) direction is 58 km/h (36 mph) for the AM peak period, 64 km/h (40 mph) for the mid-day off-peak period, and 65 km/h (40 mph) for the PM peak period. The average operating speed in the westbound (outbound) direction is 67 km/h (42 mph) for the AM peak period, 66 km/h (41 mph) for the mid-day off-peak period, and 56 km/h (35 mph) for the PM peak period. No significant delays were experienced in this section of Route 5.

#### *South Park Avenue*

The South Park Avenue segment began just north of Michigan Avenue and ended just south of Tifft Street. Five northbound runs and five southbound runs were conducted. The posted speed limit (regulatory) along South Park Avenue is 48 km/h (30 mph). The results of this study have been compiled into **Table C2.6-2**.

In general, operating speeds along South Park Avenue are slightly higher in the PM peak period regardless of peak-direction. Traffic is also operating at speeds below the posted speed limit for all study time periods. The average operating speed in the southbound direction is 36 km/h (22 mph) for the AM peak period, 36 km/h (22 mph) for the mid-day off-peak period, and 37 km/h (23 mph) for the PM peak period. The average operating speed in the northbound direction is 36 km/h (22 mph) for the AM peak period, 38 km/h (24 mph) for the mid-day off-peak period, and 40 km/h (25 mph) for the PM peak period. Delays in the southbound direction vary greatly between peak hour and peak direction. The greatest delay in the northbound direction is experienced between Southside and Bailey Avenue, regardless of time of travel. The greatest delay in the southbound direction occurs during the mid-day peak period between Hopkins Street and Southside.

Detailed data for the travel time and delay study is provided in **Attachment A**.



**Appendix C: Traffic & Accident Report  
Chapter 2: Existing Features/Conditions**

**Table C2.6-2 - Travel Speed and Delay (Year 2001), Route 5 & South Park Ave**

Direction	Segment	AM Peak Period (7-9)				Mid-Day Peak Period (11-1)				PM Peak Period (4-6)				
		Average Free Flow Speed km/h (mph)	Average Operating Speed km/h (mph)	Average Delay min:sec	Total Travel Time min:sec	Average Free Flow Speed km/h (mph)	Average Operating Speed km/h (mph)	Average Delay min:sec	Total Travel Time min:sec	Average Free Flow Speed km/h (mph)	Average Operating Speed km/h (mph)	Average Delay min:sec	Total Travel Time min:sec	
ROUTE 5														
EB	Seventh Ave to Mile Strip	50 (31)	47 (29)	0:02	0:21	66 (41)	66 (41)	0:00	0:14	63 (39)	63 (39)	0:00	0:15	
	Mile Strip to Lake	47 (29)	37 (23)	0:02	0:13	51 (32)	42 (26)	0:03	0:12	60 (37)	60 (37)	0:00	0:08	
	Lake to Bflo Crushed Stone	61 (38)	61 (38)	0:00	0:17	63 (39)	63 (39)	0:00	0:17	68 (42)	68 (42)	0:00	0:16	
	BCS to Beth. Steel Ent	64 (40)	64 (40)	0:00	0:07	66 (41)	56 (34)	0:05	0:11	53 (33)	51 (32)	0:01	0:09	
	Beth. Steel Ent to Madison	63 (39)	63 (39)	0:00	1:12	72 (45)	72 (45)	0:00	1:02	68 (42)	68 (42)	0:00	1:06	
	Madison to Dona	63 (39)	63 (39)	0:00	0:22	64 (40)	64 (40)	0:00	0:21	64 (40)	64 (40)	0:00	0:21	
	Dona to Odell	68 (42)	63 (39)	0:04	0:37	71 (44)	68 (42)	0:01	0:33	68 (42)	68 (42)	0:00	0:33	
	O'Dell to Ridge	64 (40)	64 (40)	0:00	0:52	82 (51)	82 (51)	0:00	0:37	80 (50)	80 (50)	0:00	0:37	
	Ridge to Tifft	69 (43)	69 (43)	0:00	1:14	85 (53)	85 (53)	0:00	0:56	89 (55)	89 (55)	0:00	0:54	
	Tifft to Ohio	80 (50)	80 (50)	0:00	1:10	87 (54)	87 (54)	0:00	1:04	87 (54)	87 (54)	0:00	1:05	
WB	Ohio to Apex of Skyway	80 (50)	80 (50)	0:00	2:07	92 (57)	92 (57)	0:00	1:46	92 (57)	92 (57)	0:00	1:47	
	Apex of Skyway to Church	68 (42)	48 (30)	0:29	1:25	69 (43)	51 (32)	0:22	1:16	69 (43)	42 (26)	0:42	1:37	
	Church to I-190 on ramp	72 (45)	72 (45)	0:00	0:31	74 (46)	74 (46)	0:00	0:30	76 (47)	76 (47)	0:00	0:30	
	I-190 on ramp to Ohio	85 (53)	85 (53)	0:00	2:13	87 (54)	87 (54)	0:00	2:12	85 (53)	85 (53)	0:00	2:15	
	Ohio to Tifft	87 (54)	87 (54)	0:00	1:05	87 (54)	87 (54)	0:00	1:04	85 (53)	85 (53)	0:00	1:06	
	Tifft to Ridge	89 (55)	89 (55)	0:00	0:54	89 (55)	89 (55)	0:00	0:54	79 (49)	79 (49)	0:00	1:01	
	Ridge to Odell	85 (53)	85 (53)	0:00	0:35	85 (53)	85 (53)	0:00	0:35	61 (38)	56 (35)	0:15	1:10	
	Odell to Dona	72 (45)	72 (45)	0:00	0:31	69 (43)	68 (42)	0:02	0:34	47 (29)	42 (26)	0:12	1:02	
	Dona to Madison	66 (41)	66 (41)	0:00	0:21	63 (39)	63 (39)	0:00	0:22	53 (33)	53 (33)	0:00	0:26	
	Madison to Beth. Steel Ent	69 (43)	68 (42)	0:03	1:06	71 (44)	71 (44)	0:00	1:03	66 (41)	66 (41)	0:00	1:07	
SOUTH PARK AVENUE	Beth. Steel Ent to BCS	58 (36)	58 (36)	0:00	0:07	66 (41)	61 (38)	0:02	0:08	63 (39)	63 (39)	0:00	0:07	
	Bflo Crushed Stone to Lake	66 (41)	56 (35)	0:09	0:25	60 (37)	60 (37)	0:00	0:18	56 (35)	56 (35)	0:00	0:20	
	Lake to Mile Strip	63 (39)	61 (38)	0:00	0:08	58 (36)	58 (36)	0:00	0:08	50 (31)	50 (31)	0:00	0:10	
	Mile Strip to Seventh Ave	66 (41)	66 (41)	0:00	0:14	63 (39)	63 (39)	0:00	0:15	61 (38)	61 (38)	0:00	0:16	
	NB	Tifft to Southside	43 (27)	29 (18)	0:14	0:40	45 (28)	29 (18)	0:15	0:39	43 (27)	31 (19)	0:11	0:36
		Southside to Bailey	42 (26)	29 (18)	0:40	1:59	45 (28)	37 (23)	0:17	1:30	43 (27)	39 (24)	0:10	1:25
		Bailey to Hopkins	48 (30)	42 (26)	0:06	0:27	47 (29)	32 (20)	0:12	0:34	43 (27)	37 (23)	0:06	0:29
		Hopkins to Abby	47 (29)	47 (29)	0:00	0:18	45 (28)	45 (28)	0:00	0:19	45 (28)	43 (27)	0:01	0:20
		Abby to Bflo River bridge	47 (29)	47 (29)	0:00	1:01	48 (30)	48 (30)	0:00	1:00	45 (28)	45 (28)	0:00	1:03
		Bflo River bridge to Lee	45 (28)	29 (18)	0:09	0:22	43 (27)	27 (17)	0:09	0:22	43 (27)	43 (27)	0:01	0:14
		Lee to Smith	43 (27)	31 (19)	0:18	0:48	42 (26)	34 (21)	0:12	0:44	45 (28)	39 (24)	0:10	0:40
		Smith to Elk	51 (32)	37 (23)	0:18	0:49	50 (31)	40 (25)	0:11	0:43	47 (29)	43 (27)	0:04	0:38
		Elk to Hamburg	40 (25)	34 (21)	0:16	1:12	43 (27)	43 (27)	0:00	0:51	43 (27)	39 (24)	0:07	0:59
		Hamburg to Alabama	40 (25)	24 (15)	0:13	0:30	39 (24)	34 (21)	0:04	0:21	40 (25)	35 (22)	0:03	0:20
Alabama to Louisiana		43 (27)	39 (24)	0:09	0:35	47 (29)	43 (27)	0:03	0:28	47 (29)	43 (27)	0:02	0:27	
Louisiana to Chicago		45 (28)	45 (28)	0:00	0:23	48 (30)	48 (30)	0:00	0:22	45 (28)	45 (28)	0:00	0:23	
SB	Chicago to Michigan	45 (28)	37 (23)	0:07	0:32	43 (27)	34 (21)	0:10	0:36	42 (26)	35 (22)	0:06	0:33	
	Michigan to Chicago	42 (26)	37 (23)	0:04	0:32	48 (30)	48 (30)	0:00	0:24	47 (29)	47 (29)	0:00	0:25	
	Chicago to Louisiana	43 (27)	34 (21)	0:11	0:35	43 (27)	31 (19)	0:14	0:38	43 (27)	40 (25)	0:05	0:29	
	Louisiana to Alabama	43 (27)	40 (25)	0:03	0:30	45 (28)	37 (23)	0:07	0:33	47 (29)	37 (23)	0:09	0:34	
	Alabama to Hamburg	40 (25)	27 (17)	0:11	0:28	40 (25)	29 (18)	0:11	0:29	40 (25)	19 (12)	0:20	0:37	
	Hamburg to Elk	43 (27)	31 (19)	0:22	1:13	43 (27)	37 (23)	0:13	1:03	42 (26)	37 (23)	0:07	1:01	
	Elk to Smith	43 (27)	39 (24)	0:05	0:42	45 (28)	40 (25)	0:07	0:43	43 (27)	35 (22)	0:10	0:47	
	Smith to Lee	45 (28)	37 (23)	0:10	0:40	47 (29)	43 (27)	0:03	0:33	43 (27)	42 (26)	0:02	0:32	
	Lee to Bflo River bridge	40 (25)	40 (25)	0:00	0:14	40 (25)	40 (25)	0:00	0:14	40 (25)	40 (25)	0:00	0:14	
	Bflo River bridge to Abby	48 (30)	48 (30)	0:00	0:59	48 (30)	48 (30)	0:00	0:58	48 (30)	48 (30)	0:00	1:00	
	Abby to Hopkins	42 (26)	35 (22)	0:05	0:25	43 (27)	32 (20)	0:10	0:30	42 (26)	35 (22)	0:06	0:26	
	Hopkins to Bailey	43 (27)	35 (22)	0:06	0:27	42 (26)	19 (12)	0:34	0:56	40 (25)	34 (21)	0:13	0:35	
Bailey to Southside	40 (25)	39 (24)	0:03	1:31	39 (24)	32 (20)	0:31	2:02	45 (28)	42 (26)	0:04	1:22		
Southside to Tifft	37 (23)	31 (19)	0:10	0:39	39 (24)	27 (17)	0:13	0:42	39 (24)	24 (15)	0:19	0:48		



## 2.7 Traffic Volumes

To understand the characteristics and patterns of vehicular traffic within the study area, current traffic volume data was gathered for select roadway segments and intersections. This data will be used to assess the study area traffic demand. The following traffic data was collected:

- Annual Average Daily Traffic (AADT)
- Peak Hour Directional Traffic Volumes
- Peak Hour Turning Movements
- Vehicle Classifications

### 2.7.1 Annual Average Daily Traffic

The Annual Average Daily Traffic (AADT) is an estimate of the total number of vehicles traveling over a section of highway during one year divided by the number of days in the year. AADT is the most basic measure of traffic demand. **Table C2.7-1** contains existing (year 2001) two-way AADT data.

### 2.7.2 Peak Hour Directional Traffic Volumes

The roadway segment Peak Hour Directional Traffic data was collected for the weekday morning and afternoon peak hours in the study area. **Table C2.7-1** contains existing Peak Hour Directional Traffic data.

### 2.7.3 Peak Hour Turning Movements

Morning (AM), mid-day, and evening (PM) turning movement counts were conducted at selected signalized and unsignalized intersections throughout the study area. The intersection traffic counts were conducted from 7:00 to 9:00 AM, 11:30 AM to 1:30 PM, and 4:00 to 6:00 PM. Four intersections along Route 5 were counted in February 2002. These were Odell Street, Dona Street, Madison Avenue, and Lake Avenue. October 2001 turning counts were performed at Bailey Avenue/South Park Avenue, Ridge Road/Fuhrmann Boulevard, South Park Avenue at Michigan Avenue, Smith Street and Tifft Street, and Ohio Street at Michigan Avenue and Fuhrmann Boulevard. The remaining counts were performed by GBNRTC in May and June of 1999. The weekday morning peak hour of the study area was determined to be 7:00 to 8:00 AM and the weekday evening peak hour was determined to be 5:00 to 6:00 PM. Existing Peak Hour Turning Movement Volumes are shown in **Figures C2.4-1** through **C2.4-20**.



#### 2.7.4 Vehicle Classifications

Vehicle classification data identifies the mix or type of vehicles traveling along highways and streets. Vehicle classification counts, including heavy vehicles, were conducted within the study area as part of the turning movement count collection. Vehicle classification counts were collected manually at each site for two-hour periods during the peak AM, mid-day, and PM hours. Counts were conducted by direction of travel. The vehicle classifications are summarized in Table C2.7-2.

**Table C2.7-1 – Existing (Year 2001) Roadway Traffic Volumes**

Route	Segment	Two-Way AADT	Peak Hour Directional Volumes		
			Direction	AM	PM
Route 5	Mile Strip to Lake Ave	41400	EB	2800	1000
			WB	600	2600
			TOTAL	3400	3600
	Lake Ave to Ridge Rd	37800	EB	3400	1000
			WB	800	3000
			TOTAL	4200	4000
	Ridge Rd to Tift St	41600	EB	2900	1100
			WB	700	2500
			TOTAL	3600	3600
	Tift St to Ohio St	35800	EB	2900	900
			WB	700	2300
			TOTAL	3600	3200
	Ohio St to Fuhrmann Blvd	37800	EB	2800	1000
			WB	600	2300
			TOTAL	3400	3300
	Fuhrmann Blvd to I-190	41800	EB	2800	1000
			WB	900	2600
			TOTAL	3700	3600
Ohio Street	Fuhrmann Blvd – NB to Louisiana St	7300	NB	700	200
			SB	100	800
			TOTAL	800	1000
	Louisiana St to Chicago St	4300	NB	400	100
			SB	100	400
			TOTAL	500	500
	Chicago St. to Michigan Ave	4300	NB	400	100
			SB	100	500
			TOTAL	500	600
Bailey Ave	South Park Ave to McKinley Pkwy	6900	NB	300	200
			SB	200	300
			TOTAL	500	500
	McKinley Pkwy to Elk St	18600	NB	700	500
			SB	400	900
			TOTAL	1100	1400
	Elk St to Seneca St	18000	NB	1000	700
			SB	200	500
			TOTAL	1200	1200





**Table C2.7-1 – Existing (Year 2001) Roadway Traffic Volumes Continued**

Route	Segment	Two-Way AADT	Peak Hour Directional Volumes		
			Direction	AM	PM
South Park Ave	Tift St to Southside	13300	NB	500	400
			SB	300	500
			TOTAL	800	900
	Southside to Bailey Ave	6300	NB	200	200
			SB	100	200
			TOTAL	300	400
	Bailey Ave to Hopkins St	8000	WB	300	400
			EB	200	300
			TOTAL	500	700
	Hopkins St. to Abby St	6700	WB	400	300
			EB	200	600
			TOTAL	600	900
	Abby St to Smith St	7900	WB	400	300
			EB	200	500
			TOTAL	600	800
	Smith St to Katherine St	6700	WB	300	200
			EB	100	300
			TOTAL	400	500
	Chicago St to Michigan Ave	3500	WB	200	100
			EB	100	200
			TOTAL	300	300
Keating Street	Seneca St to SB I-190 exit	1900	SB	100	100
			NB	NA	NA
			TOTAL	100	100
	SB I-190 exit to Elk St	7900	SB	500	900
			NB	NA	NA
			TOTAL	500	900
Hopkins Street	Tift Street to Trowbridge	6900	NB	400	300
			SB	200	400
			TOTAL	600	700
	Trowbridge to South Park Ave	6900	NB	200	200
			SB	200	400
			TOTAL	400	600
Michigan Ave	Ohio St to South Park Ave	6300	NB	500	300
			SB	300	600
			TOTAL	800	900
	South Park Ave to Perry St	9700	NB	600	400
			SB	400	600
			TOTAL	1000	1000
Tift Street	Fuhrmann Blvd – NB to RR Tracks	12600	EB	700	400
			WB	300	600
			TOTAL	1000	1000
	RR Tracks to Hopkins St	12600	EB	700	600
			WB	300	400
			TOTAL	1000	1000
	Hopkins St to South Park Ave	8000	EB	200	400
			WB	300	200
			TOTAL	500	600



**Table C2.7-1 – Existing (Year 2001) Roadway Traffic Volumes Continued**

Route	Segment	Two-Way AADT	Peak Hour Directional Volumes		
			Direction	AM	PM
Mile Strip	Route 5 to RR Tracks	22900	EB	700	1100
			WB	1100	900
			TOTAL	1800	2000
	RR Tracks to South Park Blvd	22900	EB	1400	2300
			WB	2000	2000
			TOTAL	3400	4300
	South Park Blvd to I-90	24900	EB	1000	1100
			WB	200	900
			TOTAL	1200	2000
I-90	Mile Strip to Route 219	47800	EB	900	1500
			WB	1400	1200
			TOTAL	2300	2700
	Ridge Rd to Route 400	90400	EB	4800	3500
			WB	2700	5000
			TOTAL	7500	8500
	Route 400 to I-190	105800	EB	5800	4300
			WB	3300	6100
			TOTAL	9100	10400
I-190	Ogden St to Clinton St	64500	NB	3500	1500
			SB	1600	4000
			TOTAL	5100	5500
	Clinton St to Seneca St/ Bailey Ave	62200	NB	3300	1500
			SB	1400	3800
			TOTAL	4700	5300
	Seneca St/ Bailey Ave to Smith St	74900	NB	3900	1900
			SB	1500	4500
			TOTAL	5400	6400
	Smith St to Hamburg/ Louisiana	75500	NB	3600	2100
			SB	1600	4500
			TOTAL	5200	6600
	Hamburg/ Louisiana to Elm St	74300	NB	3600	2100
			SB	1500	4300
			TOTAL	5100	6400
	Elm St to Route 5	69600	NB	3000	2100
			SB	2500	3500
			TOTAL	5500	5600
Route 219	I-90 to Mile Strip	41600	NB	2500	1700
			SB	1100	2100
			TOTAL	3600	3800



**Table C2.7-2 - Vehicle Classifications (Year 2001)**

Route	Segment	Direction	Peak Period	Total Volume	Percent Composition				
					Autos & Bikes	Pickups & Panels	Buses	Heavy Trucks	TOTAL
Route 5	Ridge Rd to Smokes Creek	EB	AM	6349	88.4%	7.9%	0.6%	3.1%	100.0%
			mid-day	1758	75.1%	13.2%	0.7%	11.0%	100.0%
			PM	2174	81.5%	11.7%	0.8%	6.0%	100.0%
			Subtotal	10281	84.7%	9.6%	0.7%	5.0%	100.0%
		WB	AM	1481	72.3%	14.4%	2.2%	11.1%	100.0%
			mid-day	2118	71.1%	20.4%	0.5%	8.0%	100.0%
			PM	5757	82.3%	15.3%	0.2%	2.2%	100.0%
			Subtotal	9356	78.2%	16.3%	0.6%	4.9%	100.0%
TOTAL		19637	81.6%	12.8%	0.7%	5.0%	100.0%		
South Park Ave	Buffalo River to Hopkins	EB	AM	413	69.2%	13.3%	10.2%	7.3%	100.0%
			mid-day	523	75.3%	15.7%	2.1%	6.9%	100.0%
			PM	961	84.6%	9.7%	3.3%	2.4%	100.0%
			Subtotal	1897	78.7%	12.1%	4.5%	4.7%	100.0%
		WB	AM	1183	80.8%	9.2%	6.3%	3.7%	100.0%
			mid-day	650	76.6%	14.3%	2.9%	6.2%	100.0%
			PM	594	71.7%	22.4%	3.0%	2.9%	100.0%
			Subtotal	2427	77.5%	13.8%	4.6%	4.2%	100.0%
TOTAL		4324	78.0%	13.1%	4.5%	4.4%	100.0%		
Ohio St	Louisiana St to Fuhrmann Blvd	NB	AM	1245	85.1%	11.4%	1.0%	2.4%	100.0%
			mid-day	340	62.4%	19.7%	1.2%	16.8%	100.0%
			PM	370	82.7%	10.0%	1.6%	5.7%	100.0%
			Subtotal	1955	80.7%	12.6%	1.2%	5.5%	100.0%
		SB	AM	275	58.9%	16.7%	3.6%	20.7%	100.0%
			mid-day	385	63.4%	21.6%	0.8%	14.3%	100.0%
			PM	1349	83.9%	13.3%	0.7%	2.1%	100.0%
			Subtotal	2009	76.6%	15.4%	1.1%	7.0%	100.0%
TOTAL		3964	78.6%	14.0%	1.1%	6.3%	100.0%		
Bailey Ave	Elk St to McKinley Pkwy	SB	AM	1293	80.6%	6.2%	7.7%	5.5%	100.0%
			mid-day	1347	79.1%	12.5%	1.8%	6.7%	100.0%
			PM	2405	88.1%	8.9%	1.7%	1.3%	100.0%
			Subtotal	5045	83.8%	9.2%	3.3%	3.8%	100.0%
		NB	AM	2110	79.9%	12.7%	4.4%	3.0%	100.0%
			mid-day	1258	73.3%	18.4%	2.1%	6.3%	100.0%
			PM	1398	78.4%	15.4%	3.9%	2.3%	100.0%
			Subtotal	4766	77.7%	15.0%	3.6%	3.7%	100.0%
TOTAL		9811	80.8%	12.0%	3.4%	3.7%	100.0%		
Tifft St	Hopkins to Route 5	EB	AM	670	74.2%	18.2%	0.9%	6.7%	100.0%
			mid-day	687	75.0%	17.2%	0.1%	7.7%	100.0%
			PM	1153	83.9%	14.2%	0.5%	1.4%	100.0%
			Subtotal	2510	78.8%	16.1%	0.5%	4.5%	100.0%
		WB	AM	1395	84.8%	11.5%	0.6%	3.2%	100.0%
			mid-day	642	74.3%	17.9%	0.5%	7.3%	100.0%
			PM	758	77.6%	17.9%	0.1%	4.4%	100.0%
			Subtotal	2795	80.4%	14.7%	0.4%	4.4%	100.0%
TOTAL		5305	79.7%	15.4%	0.5%	4.5%	100.0%		
Ridge Rd	Railroad Corridor to Route 5	EB	AM	626	70.8%	16.0%	3.4%	9.9%	100.0%
			mid-day	618	75.1%	13.8%	1.5%	9.7%	100.0%
			PM	1151	83.7%	12.8%	0.9%	2.7%	100.0%
			Subtotal	2395	78.1%	13.9%	1.7%	6.4%	100.0%
		WB	AM	1117	83.1%	10.9%	1.9%	4.1%	100.0%
			mid-day	591	71.7%	18.6%	1.5%	8.1%	100.0%
			PM	612	82.5%	12.6%	1.8%	3.1%	100.0%
			Subtotal	2320	80.0%	13.3%	1.8%	4.9%	100.0%
TOTAL		4715	79.0%	13.6%	1.7%	5.6%	100.0%		



## 2.8 Level of Service

Level of Service (LOS) analysis is a means of determining the ability of an intersection or roadway to accommodate traffic volumes and of comparing different operational conditions. The analysis is based on traffic volumes, characteristics of the traffic stream, and geometry. LOS is a qualitative measure that describes motorist satisfaction with various factors influencing the degree of traffic congestion. These factors include travel time, speed, maneuverability, safety, and delay.

The Level of Service analysis methodology is documented in the Highway Capacity Manual (HCM) published by the Transportation Research Board, 2000. The 2000 HCM and the Highway Capacity Software (HCS) developed for the Federal Highway Administration were utilized for this analysis.

Levels of Service range from A to F, with A representing the best traffic operating conditions that have little or no delay and F characterizing the worst conditions that have significant delay. LOS A through D are usually considered acceptable and LOS E is normally considered representative of conditions where improvements are needed. LOS F operating conditions are highly congested with forced (break down) flow and substantial delays. Lane capacities are often, though not always, exceeded at LOS F. LOS F conditions are typically unacceptable and improvements are needed, in the form of traffic control, geometric changes or a combination of both. **Attachment B** includes full definitions of levels of service for expressways, signalized and unsignalized intersections.

### 2.8.1 Intersection Level of Service

Levels of Service for signalized and unsignalized intersections are identified by the average control delay experienced by vehicles in seconds/vehicle. Control delay includes the initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. LOS for signalized intersections is determined for each traffic movement, as well as the total intersection. LOS for unsignalized intersection is determined for the minor approach (stop sign controlled) traffic movements and major approach left turns. The range of seconds of delay defining LOS is different for signalized and unsignalized intersections. Therefore, the LOS results should not be compared to one another.

Existing (2001) weekday AM, Mid-Day, and PM peak hour LOS were calculated for selected intersections within the project area. Traffic signal timings and lane geometry were obtained from field site reconnaissance. A summary of these intersection LOS results is contained in **Table C2.8-1**.



As shown in this table, (**Table C2.8-1**), all lane groups at signalized intersections are presently operating with overall acceptable levels of service (LOS D or better) during each peak hour with the exception of Route 5 at Dona Street which operated at an overall LOS E during the PM peak hour. Of the six unsignalized intersections analyzed, controlled approaches of three currently operate at LOS E or LOS F during at least one of the peak hours. Overall LOS for each intersection is shown in **Figure C2.8-1**.



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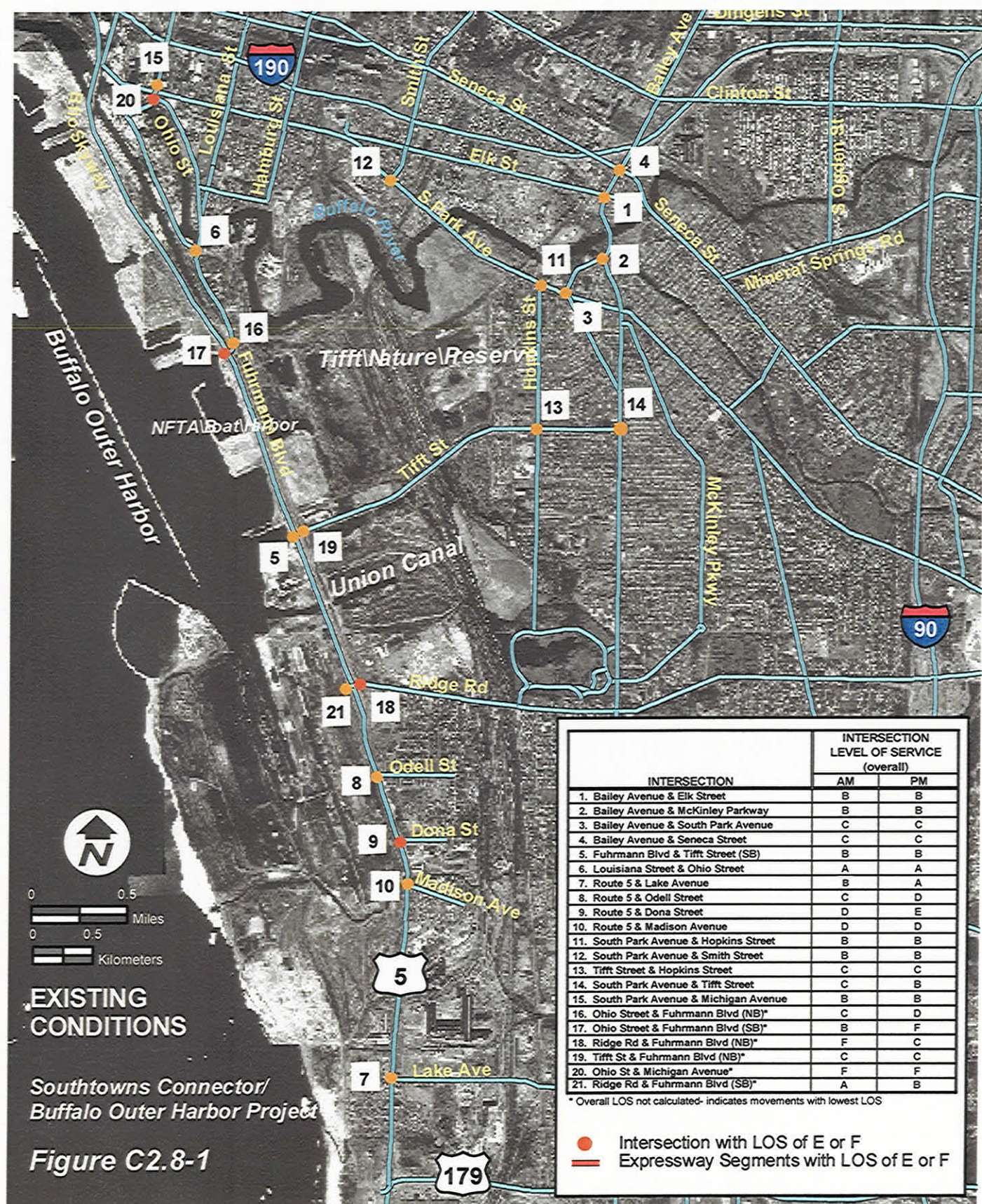




Table C2.8-1 – Existing Intersection LOS

Route	Intersection	Control	Approach		LOS/Delay		
					AM Peak Hour	Mid-Day Peak Hour	PM Peak Hour
Route 5	Lake Ave	Signalized	WB	L	D/35	C/32	D/49
				R	F/94	C/33	D/41
			NB	TR	B/18	A/5	A/8
				L	E/78	A/6	A/5
			SB	T	A/4	A/5	A/7
				Overall	B/20	A/7	A/8
	Odell St	Signalized	WB	LTR	D/39	D/38	D/40
				TR	C/32	A/3	A/3
			NB	L	A/2	A/2	A/2
				T	A/3	A/3	E/64
			Overall	C/27	A/3	D/48	
			Dona St	Signalized	WB	LTR	D/38
	TR	D/48				A/3	A/3
	NB	L			A/2	A/2	A/2
		T			A/3	A/3	F/84
	Overall	D/40			A/4	E/62	
	Madison Ave	Signalized			WB	L	E/61
			R	F/94		E/64	E/56
			NB	TR	D/45	A/5	A/6
				L	D/39	A/2	A/2
SB			T	A/2	A/2	E/60	
			Overall	D/39	A/5	D/47	
South Park Ave	Hopkins St	Signalized	EB	TR	B/11	B/12	B/13
				Def L	NA	NA	B/20
			WB	T	NA	NA	B/13
				LT	B/13	B/13	NA
			NB	L	B/18	B/17	B/17
				R	B/16	B/17	B/17
	Overall	B/14	B/13	B/15			
	Smith St	Signalized	EB	LTR	A/8	A/9	A/10
				LTR	C/21	B/15	B/14
			NB	LTR	B/19	B/17	B/17
				L	C/23	B/20	C/24
			SB	TR	B/19	B/18	B/18
				Overall	B/19	B/14	B/15
	Tiftt St	Signalized	EB	LTR	C/33	C/24	C/24
				LTR	C/34	C/22	B/16
			NB	LTR	C/23	A/9	B/16
				LTR	A/8	A/9	B/17
			Overall	C/24	B/13	B/19	
			Michigan Ave	Signalized	EB	L	C/25
	TR	C/25				C/24	C/33
	WB	L			C/25	C/24	C/28
		TR			C/35	C/25	C/29
	NB	L			A/9	A/9	A/6
		TR			B/13	A/9	A/7
	SB	L			A/9	A/9	A/7
		TR			A/8	A/10	B/11
	Overall	B/18			B/14	B/16	
	Ohio St	Fuhrmann Blvd NB			Unsignalized	NB	L
EB			L	C/17		B/13	D/25
Fuhrmann Blvd SB		Unsignalized	SB	LT	B/11	B/15	F/955
			WB	L	A/8	A/8	A/10
Michigan Ave		Unsignalized	NB	LTR	A/7	A/7	A/7
			SB	L	A/8	A/8	A/9
			WB	LTR	C/18	A/10	B/12
			EB	LT	F/77	B/14	F/53
TR	B/13	B/11	E/41				
Louisiana St	Ohio St	Signalized	WB	LTR	C/32	C/35	D/40
			NB	TR	A/6	A/4	A/3
			SB	LT	A/4	A/4	A/4
			Overall	A/8	B/10	A/9	
Bailey Ave	Elk St	Signalized	EB	LTR	C/26	C/26	B/19
				TR	A/10	A/10	B/17
			WB	L	A/7	A/8	B/14
				T	A/8	A/9	B/17
			Overall	B/13	B/15	B/18	
			McKinley Pkwy	Signalized	EB	L	C/29
	R	C/21				C/21	C/21
	NB	LT			A/10	A/8	A/7
		T			A/9	A/9	B/20
	WB	R			A/0	A/0	A/0
		Overall			B/11	B/10	B/15
	South Park Ave	Signalized	EB	LTR	C/23	C/27	C/30
				LTR	C/33	C/33	C/34
			NB	LTR	C/34	C/34	C/33
				LTR	C/34	C/32	C/32
			Overall	C/31	C/31	C/32	
			Seneca St	Signalized	EB	LTR	B/20
	LTR	C/33				C/28	C/23
	NB	L			E/58	B/18	C/25
		TR			B/12	A/9	B/10
SB	L	C/24			B/14	C/21	
	TR	C/24			B/15	C/20	
Overall	C/30	B/20			C/21		
Tiftt St	Hopkins St	Signalized			EB	LTR	B/20
			LTR	D/47		C/27	C/34
			NB	LTR	C/33	B/17	C/25
				LTR	D/45	C/23	C/29
			Overall	C/34	C/20	C/28	
	Fuhrmann Blvd NB	Unsignalized	EB	LT	B/10	A/8	A/9
				LT	C/17	B/13	C/18
			NB	TR	B/12	B/11	B/15
				TR	B/11	B/12	B/11
				WB	Def L	B/17	B/19
Fuhrmann Blvd SB	Signalized	SB	T	B/12	B/12	B/12	
			L	A/7	A/8	B/14	
		NB	TR	A/6	A/6	A/6	
			Overall	B/11	B/11	B/18	
		Ridge Rd	Fuhrmann Blvd SB	Unsignalized	WB	Lane 1	A/9
Lane 2	A/9					A/8	A/8
SB	Lane 1				A/9	A/10	B/10
	Lane 2				A/8	A/8	A/8
Fuhrmann Blvd NB	Unsignalized		EB	LT	B/13	A/9	A/10
				LT	F/*	B/12	C/17
NB	R	A/10	A/9	B/13			





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### 2.8.2 Freeway Level of Service

Levels of Service of freeways are identified by vehicle density expressed in terms of passenger cars per mile per lane (pc/mi/ln). The flow rate is affected by numerous factors, including free flow speed during non-congested conditions, number of travel lanes, lane widths, shoulder widths, interchange density, grade, and peaking characteristics of traffic volume. LOS for freeways is determined for each direction of traffic. Full definitions of LOS for freeway segments are included in **Attachment B**.

Existing (2001) weekday morning (AM) and afternoon (PM) peak hour traffic operations for selected freeways within the project area were determined in terms of LOS. Lane geometry was obtained from record plans and/or field visits. A summary of the freeway LOS results for AM and PM peak hours of traffic is contained in **Table C2.8-2**.

As shown in **Table C2.8-2**, all freeway segments, that are not Interstates, operate with acceptable levels of service (LOS D or better) during each peak hour. However, facilities on the Interstate system must operate at LOS C or better. The segment of I-90 between Ridge Road (Exit 55) and Route 400 (Exit 54) operates at LOS D during the morning peak hour in the eastbound direction and LOS D during the afternoon peak hour in the westbound direction. In addition, the segment of I-90 between Route 400 (Exit 54) and I-190 (Exit 53) operates at LOS E during the morning peak hour in the eastbound direction and LOS E during the afternoon peak hour in the westbound direction. Subsequent to the 2001 traffic count collection, I-90 between Route 400 (Exit 54) and I-190 (Exit 53) has been reconstructed and expanded to four lanes in each direction.

Some segments of I-190 also experience LOS D operations during the afternoon peak hour. Southbound I-190 between Bailey Avenue and Smith Street, between Smith Street and Hamburg Street, and between Hamburg Street and Elm/Oak Arterial operate at LOS D during the afternoon peak hour.



Table C2.8-2 – Existing Freeway LOS

Route	Segment	Direction	LOS/Density <sup>1</sup>	
			Existing (2001)	
			AM Peak	PM Peak
Route 5	Ridge Rd. to Tift St.	EB	D/32	B/12
		WB	A/8	D/27
	Tift St. to Ohio St.	EB	D/29	A/10
		WB	A/7	C/23
	Ohio St. to I-190	EB	D/31	B/11
		WB	A/10	D/29
Mile Strip (Route 179)	Route 5 to Railroad	EB	A/7	B/12
		WB	B/12	A/10
	Railroad to Route 62	EB	B/15	C/24
		WB	C/22	C/22
I-90	Mile Strip Rd. to Ridge Rd.	EB	A/9	B/15
		WB	B/14	B/11
	Ridge Rd. to Route 400	EB	D/29	C/22
		WB	B/18	D/31
	Route 400 to I-190	EB	E/38	D/27
		WB	C/21	E/43
I-190	I-90 to Ogden St.	NB	C/19	A/8
		SB	B/12	C/25
	Ogden St. to Clinton St.	NB	C/22	A/10
		SB	B/11	C/24
	Clinton St. to Bailey Ave.	NB	C/21	A/10
		SB	A/10	C/23
	Bailey Ave. to Smith St.	NB	C/25	B/12
		SB	A/10	D/27
	Smith St. to Hamburg/Louisiana	NB	C/23	B/13
		SB	A/11	D/27
	Hamburg/Louisiana to Elm/Oak	NB	C/23	B/13
		SB	A/10	D/26
	Elm/Oak to Route 5	NB	C/19	B/14
		SB	B/17	C/21

<sup>1</sup> Density measured in units of passenger cars per mile per lane (pc/mi/ln)

## 2.9 Non-Standard Features and Non-Conforming Features

Non-standard and non-conforming features were identified for the existing facilities based on design speed and functional classification of the route. The highway geometry of Route 5 within the project corridor can be characterized as two distinctly different sections. From I-190 to Ridge Road, the roadway is classified as “Urban Arterial Expressway” and is characterized by a four lane divided expressway with grade separated intersections. The posted speed in this section is 88 km/h (55 mph). Between Ridge Road and Mile Strip Road (Route 179), the roadway is classified as an “Urban Principal Arterial” and is characterized by a four lane



undivided roadway with at grade signalized intersections. The posted speed in this section is 64 km/h (40 mph).

The other roads analyzed for non-standard and/or non-conforming features are Ohio Street, South Park Avenue between the Buffalo River and Bailey Avenue, Bailey Avenue between Seneca Street and Elk Street, Elk Street and Seneca Street as they intersect Bailey Avenue. Bailey Avenue and Seneca Street are classified as “Urban Principal Arterials”. South Park Avenue, Ohio Street and Elk Street are classified as “Urban Minor Arterials”.

### 2.9.1 Non-Standard Features

Non-standard is defined in this text as a condition less than current applicable State or Federal standards for arterials and/or expressways. The following are non-standard features:

#### *Lateral Clearance*

The minimum lateral clearance for the curbed section of Route 5, between Mile Strip Road and Ridge Road is 0.5 m (1’-8”). However, the existing lateral clearance at the railroad bridge over Route 5 near Buffalo Specialty Products is 0.3 m (1’-1”). This non-standard feature is located on the west side where corrugated beam guide rail is attached to the face of the bridge abutment.

#### *Stopping Sight Distance*

Minimum stopping sight distance for Route 5 from the Skyway to Ridge Road is 160 m (525 ft.). However, the vertical curve located at the bridge that carries Route 5 over Service Road “C” (BIN 1001539) is 155 m (507 ft.).

#### *Lane Width*

Minimum travel lane widths for Route 5 between Mile Strip Road and Ridge Road are 3.6 m (12 ft.). However, lane widths along this corridor are generally 3.3 m (11 ft.), with the exception of the roadway and bridge improvements made in the Smokes Creek area between milepost markers 5-5302-2003 and 5-5302-2008.

#### *Shoulder Width*

Based on truck traffic exceeding 250 DDHV (directional design hourly volume), the shoulder widths for Route 5 between the Skyway and Ridge Road should be 3.6 m (12 ft.) for both left and right sides. However, as evidenced in **Table C2.7-2 - Vehicle Classification Summary**, the right side shoulder widths are non-standard because they are 3.0 m (10 ft.). Left side shoulder widths are also non-standard as they vary from 0.6 m to 1.8 m (2 ft. to 6 ft.).



### *Bridge Roadway Width*

Four bridges along Route 5 including, BIN 1001569 (Route 5 over Service Road "D"), BIN 1001559 (Route 5 over Conrail RR), BIN 1001549 (Route 5 over Ohio Street) and BIN 1001539 (Route 5 over Service Road "C"), do not carry the full width of the approach roadway. Therefore, they are non-standard bridge widths as specified in Section 2.3.3 of the "NYSDOT Bridge Manual" dated April 2002.

### *Vertical Clearance*

One bridge along Route 5, BIN 1074270 (Route 5 over CSX Spur Rail Road) does not meet the current 6.71m (22'-0") vertical clearance requirements over railroad tracks.

### *Interstate LOS*

Level of Service (LOS) for interstates is a critical design element. LOS C or better is considered acceptable for urban conditions. LOS D or worse is considered a non-standard feature when occurring on the Interstate system. Based on year 2001 traffic count information, the eastbound movement on Interstate 90 (I-90) between Ridge Road and Route 400 operates at LOS D during the morning peak hour and LOS D during the afternoon peak hour in the westbound direction. In addition, in the eastbound direction the I-90 between Route 400 and I-190 operates at LOS E during the morning peak hour and LOS D during the afternoon peak hour. This segment of I-90 also operates at LOS E in the westbound direction during the afternoon peak hour. In addition, southbound traffic on I-190 operates at LOS D between Bailey Avenue and Smith Street, between Smith Street and Hamburg Street, and between Hamburg Street and Elm/Oak Arterial.

## 2.9.2 Non-Conforming Features

Non-standard features are based upon "Critical Design Elements" identified in section 2.6 of the NYSDOT Design Manual. However, there are other design standards beyond those "Critical Design Elements" which every project must follow. When these design standards are not met they are referred to as "non-conforming". The existing non-conforming features:

### *Guide Rail*

- Several bridges along Route 5 contain bridge rail installations which are non-conforming because they exceed the current standard 125mm (5") horizontal curb offset and have vertical posts which do not meet current design standards. These bridges are BIN 1001569 (Rte. 5 over Service Road "D"); BIN 1001559 (Rte. 5 over Conrail Rail Road); BIN 1001549 (Rte. 5 over Ohio Street) and BIN 1001539 (Rte. 5 over Service Road "C").
- Corrugated beam guide rail sections are installed on Route 5 near milepost markers 5-5302-1219 & 5-5302-1221, adjacent to Buffalo Specialty Products and the railroad



overpass. These are non-conforming features because they do not meet point of need requirements or are installed outside the acceptable installation height requirements.

- All corrugated beam guide railing along Ohio Street between Rigidized Metal and Bulkmat are non-conforming because they have outdated terminal ends and are in poor condition.
- All guide rail along Bailey Avenue is non-conforming because it is either outdated, in poor condition or does not meet point of need requirements.
- Two crash cushions are installed on Route 5 which are non-conforming because they are an outdated device known as the “Hex-Foam Sandwich System.”

#### *Driveways*

- 37 commercial driveways along Route 5 between Mile Strip Road and Ridge Road are non-conforming. Most are non-conforming because they exceed the maximum driveway width. Other driveway locations do not adhere to current design practices as outlined in the “Policy and Standards for Entrances to State Highways” February 1998. **Table C2.14-1** “Minor Commercial Driveways Not Meeting Standards” in Section 2.14 of this chapter denote specific standards not met.
- 31 commercial driveways along Ohio Street are non-conforming, the majority of which exceed the maximum driveway width. Further information is found in **Table C2.14-1** “Minor Commercial Driveways Not Meeting Standards” in Section 2.14 of this chapter.

#### *Intersection LOS*

Level of Service (LOS) for an intersection is measured for each movement, as well as for the overall operation. LOS D or better is considered acceptable for urban areas. LOS E or worse is considered unacceptable.

- As a signalized intersection, the intersection of Bailey Avenue and Seneca Street operates overall at LOS C during the AM peak hour. However, the northbound approach left turn operates at LOS E.
- As a signalized intersection, the intersection of NYS Route 5 and Lake Avenue operates overall at LOS B during the AM peak hour. However, the westbound approach right turn movement operates at LOS F and the southbound approach left turn operates at LOS E.
- As a signalized intersection, the intersection of NYS Route 5 and Odell Street operates overall at LOS D during the PM peak hour, but the southbound through movement operates at LOS E.
- As a signalized intersection, the intersection of NYS Route 5 and Dona Street operates overall at LOS E during the PM peak hour. In addition, the southbound approach through movement operates at LOS F.
- As a signalized intersection, the intersection of NYS Route 5 and Madison Avenue operates overall at LOS D during the AM peak hour, LOS A during mid-day peak hour and LOS D during PM peak hour. However, both westbound movements (left and right



turns) operate at unacceptable LOS during all peak hour periods. In addition, the southbound through movement in the afternoon peak operates at LOS E.

- The southbound left/through movement of the unsignalized intersection of Ohio Street and Fuhrmann Boulevard SB operates at LOS F during the afternoon peak hour.
- The eastbound left/through movement of the unsignalized intersection of Ohio Street and Michigan Avenue operates at LOS F in both the morning and afternoon peak hours. In addition, the eastbound through/right movement operates at LOS E in the afternoon peak.
- The northbound left/through movement of the unsignalized intersection of Ridge Road and northbound Fuhrmann Boulevard NB currently operates at LOS F.

### *Traffic Control Devices*

Traffic control devices at primary intersections were evaluated for conformity with applicable guidelines and are described in section 2.13 of this chapter.

## 2.10 Safety Considerations, Accident History, and Analysis

The New York State Department of Motor Vehicles Police Accident Reports were analyzed for the three-year period from September 1997 to August 1999 for all accidents occurring within the study area. The accident information provided a basis for examination of cause and effect.

The detailed accident data found in **Attachment C** is summarized by severity, type, cause, pavement condition, time of day, day of the week and month of the year. This information is then broken down further as follows. Severity of the crash is divided into three categories: Fatality Crashes, Injury Crashes and Property Damage (Only). Type of crash is classified into eleven categories: Right Angle, Right Turn, Left Turn, Sideswipe, Overtake, Head On, Rear End, Fixed Object, Pedestrian or Bicycle, and Other. Cause of crash is stratified into three major categories: Human, Vehicular and Environmental. These three major categories are then collectively divided into fourteen minor categories: Alcohol Involvement, Driver Inattention, Driver Inexperience, Failure to Yield Right of Way, Fell Asleep, Following Too Closely, Unsafe Speed, Unsafe Lane Change, Other Human, All Vehicular, Obstruction/Debris, Pavement Slippery, Deer/Animal and Other Environmental. Pavement condition is divided into five categories: Dry, Wet, Snow/Ice, Slush and Not Stated. The accident information is graphically depicted in collision diagrams located in **Attachment D**.

Accident rates were developed from this three-year collection of data and then compared to New York statewide average rates for comparable highways and intersections to identify problem areas. Statewide averages for urban highways and intersections are summarized in Tables **C2.10-1** and **C2.10-2** respectively.



**Table C2.10-1 - Average Statewide Crash Rates For Urban State Highways**

Access Control	Lanes	Segment Type	All Types	Wet Road	Fixed Object	Injury Type
FREE	2 Lanes - Undivided	Mainline Only	1.94	0.24	0.21	0.62
FREE	2 Lanes - Undivided	Mainline & Junctures	3.58	0.49	0.29	1.24
FREE	4 Lanes - Undivided	Mainline Only	2.49	0.34	0.12	0.80
FREE	4 Lanes - Undivided	Mainline & Junctures	5.57	0.78	0.20	1.93
FREE	All Lanes - Undivided	Mainline Only	2.12	0.27	0.19	0.68
FREE	All Lanes - Undivided	Mainline & Junctures	4.17	0.58	0.26	1.45
FULL	4 Lanes - Divided	Mainline & Junctures	1.39	0.17	0.23	0.48
FULL	6 Lanes - Divided	Mainline & Junctures	2.16	0.23	0.19	0.75

**Table C2.10-2 - Average Statewide Crash Rates For Intersections**

Intersection Type		All Types	Wet Road	Rear End	Injury Type
# of Legs	Traffic Control / Lanes				
3	signal / 1 - 4 lanes	0.41	0.06	0.10	0.16
3	signal / w/ left turn / 5 & > lanes	0.37	0.05	0.09	0.14
4	signal / 1 - 4 lanes	0.72	0.11	0.16	0.28
4	signal / w/ left turn / 5 & > lanes	0.58	0.08	0.14	0.23
4	signal / w/o left turn / 5 & > lanes	0.42	0.05	0.09	0.16

Accident data for I-190 between I-90 and Route 5 is contained in **Table C2.10-3**. The data is summarized separately for the northbound and southbound directions. For evaluation purposes this segment of I-190 has been divided at milepost markers within each interchange to produce 7 smaller segments for both northbound and southbound directions. As noted in this table, the accident rates for specific roadways segments, as well as wet road type, fixed object type, injury type, and all type (total) were also developed. These rates were then compared with the most recent statewide average rates as denoted previously in **Tables C2.10-1** and **C2.10-2**. Crash rates are shown with shading, where appropriate, to signify a rate that is above the corresponding statewide average rate. Notations are provided to denote the category of highway and therefore the corresponding statewide average crash rate to be used for comparison.

As shown in **Table C2.10-3**, three of fifty-six accident rates for I-190 are greater than the statewide average. However, it should be noted that the total, overall crash rate for each of the segments is lower than the corresponding statewide average rate. The three accident rates that are higher than the statewide average rates correspond to fixed object crash rates. Specifically, the northbound segment of I-190 between Smith Street and Hamburg Street exhibits a higher than





**Table C2.10-3 - Crash Summary (1997-1999) - I-190**

Interstate 190				Average Crash Rate (acc/mvm)				Number Of Crashes			
Segment			# of Lanes	Total	Wet	Fixed Object	Injury	Total	1997	1998	1999
NB	MP 0.0 - MP 0.7	I-190 to Ogden	3	0.13 <sup>1</sup>	0.00 <sup>2</sup>	0.00 <sup>3</sup>	0.00 <sup>4</sup>	2	1	0	1
	MP 0.7 - MP 1.5	Ogden to Clinton	3	0.16	0.00	0.12	0.00	4	1	0	3
	MP 1.5 - MP 2.2	Clinton to Seneca	3	0.20	0.00	0.15	0.15	4	2	1	1
	MP 2.2 - MP 3.1	Seneca to Smith	3	0.60	0.09	0.09	0.28	19	11	4	4
	MP 3.1 - MP 4.0	Smith to Hamburg	3	0.92	0.14	0.24	0.51	27	14	5	8
	MP 4.0 - MP 4.6	Hamburg to Elm/Oak	3	0.91	0.09	0.13	0.48	21	5	6	10
	MP 4.6 - MP 5.0	Elm/Oak to Route 5	3	0.31	0.06	0.00	0.06	5	3	1	1
SB	MP 5.0 - MP 4.6	Route 5 to Elm/Oak	3	1.32	0.19	0.56	0.56	14	6	4	4
	MP 4.6 - MP 4.0	Elm/Oak to Hamburg	3	0.56	0.18	0.12	0.21	19	8	5	6
	MP 4.0 - MP 3.1	Hamburg to Smith	3	0.44	0.09	0.14	0.14	19	12	2	5
	MP 3.1 - MP 2.2	Smith to Seneca	3	0.61	0.08	0.22	0.33	22	8	9	5
	MP 2.2 - MP 1.5	Seneca to Clinton	3	0.13	0.00	0.04	0.09	3	1	0	2
	MP 1.5 - MP 0.7	Clinton to Ogden	3	0.20	0.00	0.03	0.00	6	3	1	2
	MP 0.7 - MP 0.0	Ogden to I-190	3	0.05	0.05	0.00	0.05	1	1	0	0
Statewide Average			3	2.16	0.23	0.19	0.75				

= Crash rate above statewide average  
 1 – Total overall statewide average crash rate = 2.16  
 2 – Wet road condition statewide average crash rate = 0.23  
 3 – Fixed object statewide average crash rate = 0.19  
 4 – Injury type statewide average crash rate = 0.75

average fixed object crash rate. The fixed object type crash rate within this segment is greater than the statewide average rate by a factor of 1.3. In addition, the southbound segment of I-190 between Route 5 and Elm/Oak exhibits a higher than average fixed object crash rate. This segment of elevated roadway exhibits an S-type curvilinear horizontal alignment, a merge area and a diverge area. The fixed object type crash rate within this segment is greater than the statewide average rate by a factor of 2.9. The third segment of I-190 that exhibits a higher than average fixed object crash rate is between Smith Street and Seneca Street. The fixed object type crash rate within this segment is greater than the statewide average rate by a factor of 1.2.

**Table C2.10-4** is a summary of accident information and accident rates by roadway segment along the following highways within the project limits:

- Route 5 between Church Street and Route 179,
- South Park Avenue between Michigan Avenue and Tifft Street,
- Bailey Avenue between Clinton Street and South Park Avenue,
- Ohio Street between Michigan Avenue and Fuhrmann Boulevard,
- Tifft Street between South Park Avenue and Fuhrmann Boulevard, and
- Elk Street between Babcock Street and Bailey Avenue.



Table C2.10-4 - Crash Summary (1997-1999) - Other Highway Segments

Description			Average Crash Rate (acc/mvm)				Number Of Crashes			
Route	Segment	# of Lanes	Total	Wet	Fixed Object	Injury	Total	1997	1998	1999
Route 5	Church to Ohio <sup>7</sup>	4	0.51	0.10	0.21	0.22	54	21	13	20
	Ohio to Tift <sup>7</sup>	4	1.15	0.05	0.46	0.43	43	13	10	20
	Tift to Ridge <sup>7</sup>	4	0.47	0.17	0.22	0.30	17	6	6	5
	Ridge to Odell <sup>6</sup>	5	0.94	0.20	0.35	0.40	19	5	7	7
	Odell to Dona <sup>6</sup>	5	0.73	0.00	0.07	0.20	11	2	7	2
	Dona to Madison <sup>5</sup>	5	0.66	0.00	0.11	0.22	6	2	3	1
	Madison to Beth. Steel <sup>6</sup>	5	0.22	0.03	0.03	0.16	7	3	1	3
	Beth. Steel to Lake <sup>6</sup>	6	0.73	0.18	0.09	0.18	8	1	7	0
	Lake to Mile Strip <sup>6</sup>	6	0.57	0.57	0.28	0.28	2	1	1	0
	Mile Strip to Seventh <sup>6</sup>	6	1.71	0.28	0.00	0.57	12	8	2	2
	Seventh to Route 179 <sup>6</sup>	6	0.73	0.27	0.27	0.27	8	2	2	4
South Park Ave	Michigan to Chicago <sup>2</sup>	2	0.00	0.00	0.00	0.00	0	0	0	0
	Chicago to Louisiana <sup>2</sup>	2	4.34	1.45	0.00	0.00	3	0	2	1
	Louisiana to Alabama <sup>2</sup>	2	3.13	0.00	0.00	2.35	4	1	3	0
	Alabama to Hamburg <sup>1</sup>	2	6.52	0.00	0.00	2.61	5	2	2	1
	Hamburg to Elk <sup>2</sup>	2	3.04	0.91	0.30	1.22	10	5	1	4
	Elk to Abby <sup>4</sup>	4	0.65	0.28	0.28	0.37	7	1	4	2
	Abby to Hopkins <sup>4</sup>	4	2.18	0.73	0.00	0.73	3	0	2	1
	Hopkins to Bailey <sup>4</sup>	4	2.04	0.68	0.00	0.68	3	1	1	1
	Bailey to Southside <sup>2</sup>	2	7.53	1.74	0.58	2.90	26	9	10	7
	Southside to Tift <sup>2</sup>	2	2.75	0.00	0.00	0.92	9	3	2	4
Bailey Ave	Clinton to Seneca <sup>4</sup>	4	1.59	0.37	0.37	0.98	13	3	9	1
	Seneca to Elk <sup>3</sup>	4	0.77	0.00	0.00	0.00	2	0	1	1
	Elk to McKinley <sup>3</sup>	4	0.57	0.00	0.28	0.14	4	2	0	2
	McKinley to South Park <sup>3</sup>	4	0.00	0.00	0.00	0.00	0	0	0	0
Ohio Street	Michigan to Louisiana <sup>2</sup>	2	0.99	0.33	0.33	0.66	3	0	2	1
	Louisiana to Ganson <sup>1</sup>	2	0.00	0.00	0.00	0.00	0	0	0	0
	Ganson to Fuhrmann <sup>1</sup>	2	0.66	0.00	0.44	0.22	3	1	0	2
Tift Street	Fuhrmann to Hopkins <sup>3</sup>	4	0.31	0.05	0.05	0.00	6	3	3	0
	Hopkins to South Park <sup>2</sup>	2	3.54	0.54	0.54	0.54	14	5	4	5
Elk Street	Babcock to Keating <sup>2</sup>	2	0.78	0.00	0.78	0.78	1	0	0	1
	Keating to Bailey <sup>1</sup>	2	0.94	0.00	0.00	0.00	1	1	0	0

= Crash rate above statewide average

1 – Free Access Control Urban Undivided 2 Lanes Mainline Crashes Only= Crash rate above statewide average

2 – Free Access Control Urban Undivided 2 Lanes Mainline & Junction Crashes

3 – Free Access Control Urban Undivided 4 Lanes Mainline Crashes Only

4 – Free Access Control Urban Undivided 4 Lanes Mainline & Junction Crashes

5 – Free Access Control Urban Undivided All Lanes Mainline Crashes Only

6 – Free Access Control Urban Undivided All Lanes Mainline & Junction Crashes

7 – Full Access Control Urban Divided 4 Lanes Mainline & Junction Crashes



**Table C2.10-4** reveals three of thirty-two highway segments exhibiting overall crash rates greater than statewide average. All three are segments of South Park Avenue and are further highlighted in **Table C2.10-5**.

**Table C2.10-5 - Highway Segments With Above Average Crash Rates**

Route	Segment	Actual Overall Crash Rate (acc./mvm)	Statewide Overall Average Crash Rate (acc./mvm)
		3-Year Period (1997-1999)	3-Year Period (1997-1999)
South Park Ave	Chicago to Louisiana	4.34	3.58
	Alabama to Hamburg	6.52	1.94
	Bailey to Southside	7.53	3.58

The crash rate for South Park Avenue between Chicago Street and Louisiana Street is high at 4.34 acc/mvm, which is 1.2 times the statewide average, with three crashes during the three-year period. This segment, similar to the South Park Avenue segment between Hamburg Street and Alabama Street, is located near P.S. 4 and Fulton Academy Complex. The length of this segment is 950 feet. All three crashes were property damage only severity crashes. Two of the three were overtake type crashes and the third was a rear end type. Unsafe lane changes caused two of the three crashes. Two crashes occurred on dry pavement and one on wet pavement. All three occurred after 3 PM. Crashes in this segment were fairly well distributed amongst days of the week and months of the year.

The crash rate for South Park Avenue between Alabama Street and Hamburg Street is high at 6.52 acc/mvm, which is 3.4 times the statewide average, with five crashes during the three-year period. This segment is located near two schools, P.S. 4 and Fulton Academy Complex. The length of this segment is 620 feet. Forty percent of the crashes, (or two crashes), were injury type crashes, which produced an above average injury crash rate of 2.61 acc./mvm. This rate is 4.2 times the statewide average. No crashes were fatal. Forty percent of the crashes, (or two crashes), were sideswipe type. The major cause of the crashes was unsafe lane changing, which caused three of the five crashes. All five crashes occurred on dry pavement, and occurred between 9 AM and 3 PM. The majority of crashes occurred on Saturday (60%). Crashes in this segment were fairly well distributed amongst months of the year.

The crash rate for South Park Avenue between Bailey Avenue and Southside Parkway is 7.53 acc/mvm, 2.1 times the statewide average, with 26 crashes during the three-year period. This segment is located near three schools, P.S. 28 and South Park High School and Holy Family School. The length of this segment is 3150 feet. Ten of twenty-six crashes (38%) were injury type crashes, which produced an above average injury crash rate of 2.90 acc./mvm. This crash rate is 2.3 times the statewide average. No crashes were fatal. Twenty-three percent of the crashes (or six crashes) were right angle type, 23% (or six crashes) were rear end type, 19% (or five crashes) were left turn types, and 12% (or three crashes) were pedestrian or bicycle type.



Two of the 26 crashes were fixed object type crashes yielding a fixed object type crash rate of 0.58 acc./mvm, which is 2.0 times the statewide average. Failure to yield right of way was the major cause of crashes forcing eight of the 26 total crashes along this segment. The cause of another eight crashes was attributed to other human factors and four were attributed to unsafe lane changes. Fifty-four percent (or fourteen) of the 26 total accidents occurred on dry pavement, 23% (or six) on wet pavement and 12% (or three) on snow/ice. Thirty-eight percent (or ten) of the 26 crashes occurred between 9 AM and 3 PM and 19% (or five accidents) occurred between 8 PM and midnight. Crashes in this segment were fairly well distributed amongst days of the week and months of the year.

**Table C2.10-6** provides the crash numbers and accident rates for 11 major intersections within the project limits during the three-year study period. The intersections are located along Route 5, South Park Avenue, Bailey Avenue, Ohio Street and Tifft Street. Wet road type, rear end type, injury type and all type (Total) crash rates are shown with shading, where appropriate, to signify a rate that is above the corresponding statewide average rate. Notations are provided to denote the category of intersection and therefore the corresponding statewide average crash rates to be used for comparison.

**Table C2.10-6 - Crash Summary (1997-1999) - Intersections**

Description			Average Crash Rate (acc/mev)				Number Of Crashes			
Route	Intersection	# of Legs	Total	Wet	Rear End	Injury	Total	1997	1998	1999
Route 5	Lake Ave. <sup>2</sup>	3	0.63	0.30	0.17	0.19	30	15	5	10
South Park Ave	Michigan Ave. <sup>3</sup>	4	0.76	0.34	0.00	0.42	9	1	3	5
	Hopkins St. <sup>1</sup>	3	0.71	0.00	0.32	0.32	9	2	4	3
	Bailey Ave. <sup>3</sup>	4	0.53	0.13	0.13	0.13	8	3	2	3
	Tifft St. <sup>3</sup>	4	1.34	0.18	0.45	0.58	30	9	10	11
Bailey Ave	Seneca St. <sup>4</sup>	4	1.52	0.34	0.54	0.68	54	19	21	14
	Elk St. <sup>4</sup>	4	0.54	0.12	0.12	0.00	14	5	3	6
	McKinley Pkwy. <sup>5</sup>	4	0.65	0.18	0.14	0.18	14	2	9	3
Ohio Street	Michigan St. <sup>3</sup>	4	0.19	0.00	0.00	0.10	2	0	1	1
	Louisiana St. <sup>3</sup>	4	0.33	0.11	0.11	0.00	3	1	1	1
Tifft Street	Hopkins St. <sup>3</sup>	4	0.76	0.11	0.00	0.38	14	8	4	2

= Crash rate above statewide average

1 – 3 Leg Signal Controlled Intersection with 1-4 Lanes Per Leg.

2 – 3 Leg Signal Controlled Intersection with Left Turn Lane and 5 & > Lanes Per Leg.

3 – 4 Leg Signal Controlled Intersection with 1-4 Lanes Per Leg.

4 – 4 Leg Signal Controlled Intersection with Left Turn Lane and 5 & > Lanes Per Leg.

5 – 4 Leg Signal Controlled Intersection without Left Turn Lane and 5 & > Lanes Per Leg.

Those intersections which did not have side street approach traffic volumes available are not included in this summary. Intersection crash rates are based upon the annual number of vehicles



entering the intersection and are measured in units of accidents per million entering vehicles (acc./mev). Comparison to average rates is based on New York statewide average crash rates obtained from the New York State Department of Transportation for similar type intersections as noted in **Table C2.10-2**.

Twenty-seven of the forty-four (61%) crash rates shown in **Table C2.10-6** are above their corresponding statewide average. The intersection of Route 5 and Lake Avenue exhibits a wet road type crash rate 6 times the statewide average. This represents the most severe difference in comparison to the statewide average. The rear end type crash rate for this same segment is 2.1 times the state average. The intersection of Bailey Avenue and Seneca Street is notable in that this intersection exhibits either the highest or second highest differential above the corresponding statewide crash rate for each of the four crash type categories. Four intersections have crash rates greater than the state average for all four crash type categories. They are: Route 5 & Lake Avenue, South Park Avenue & Tifft Street, Bailey Avenue & Seneca Street and Bailey Avenue & McKinley Parkway.

**Table C2.10-7** provides the crash rate information for intersections with an overall crash rate above the statewide average. The intersection of Bailey Avenue and Seneca Street, at 2.6 times the statewide average, exhibits the highest overall crash rate differential. The next highest overall crash rate differential, with a rate 1.9 times the statewide average, is located at the intersection of South Park Avenue and Tifft Street.

**Table C2.10-7 - Intersections With Above Average Crash Rates**

Description		Actual Overall Crash Rate (acc./mev) 3-Year Period (1997-1999)	Statewide Overall Average Crash Rate (acc./mev) 3-Year Period (1997-1999)
Route	Intersection		
Route 5	Lake Ave.	0.63	0.37
South Park Ave	Michigan Ave.	0.76	0.72
	Hopkins St.	0.71	0.41
	Tifft St.	1.34	0.72
Bailey Ave	Seneca St.	1.52	0.58
	McKinley Pkwy.	0.65	0.42
Tifft Street	Hopkins St.	0.76	0.72

The crash rate for the intersection of Route 5 and Lake Avenue is 1.7 times the statewide average at 0.63 acc./mev, with 30 crashes during the three-year period. Nine of thirty crashes (30%) were injury type crashes, which produced an above average injury crash rate of 0.19 acc./mev, or 1.4 times the statewide average. No crashes were fatal. Fifty percent of the crashes (or fifteen crashes) were left turn type, 27% (eight crashes) were rear end type and 13% (four crashes) were overtake type. The rear end type crash rate at this intersection of 0.17 acc./mev is 1.9 times the statewide average. Failure to yield right of way was the major cause of crashes leading to 17 of



the 30 total crashes at this intersection. The cause of another five crashes was attributed to other human factors and four were attributed to unsafe lane changes. Forty-seven percent (or fourteen) of the 30 total crashes occurred on wet pavement, yielding a crash rate (0.30 acc./mev), which is 6.0 times the statewide average. Forty-three percent (or thirteen) of the 30 crashes occurred between 9 AM and 3 PM, and 20% (or six crashes) occurred between 6 AM and 9 AM. Crashes in this segment were fairly well distributed amongst days of the week with the greatest number of crashes (seven) occurring on Thursday. Crashes in this segment were fairly well distributed amongst months of the year as well, with the greatest number of crashes (seven) occurring in January.

The crash rate for the intersection of South Park Avenue and Michigan Avenue is 1.1 times the statewide average at 0.76 acc./mev, with nine crashes occurring during the three-year period. Five of the nine crashes (56%) were injury type crashes, which produced an above average injury crash rate of 0.42 acc./mev, or 1.5 times the statewide average. No crashes were fatal. Forty-four percent of the accidents (or four) were right angle type, 22% (or two) were left turn type and 22% (or two) were overtake type. Failure to yield right of way was the major cause of crashes leading to six of the nine total crashes at this intersection. The cause of another two crashes was attributed to unsafe lane change and one crash was attributed to driver inattention. Five of nine crashes occurred on dry pavement, and four of nine occurred on wet pavement, thus yielding a wet pavement type crash rate (0.34 acc./mev) that is 3.1 times the statewide average. Four of nine crashes occurred between 3 PM and 6 PM and the other five were distributed amongst the other times of day. Crashes in this segment were fairly well distributed amongst days of the week and months of the year.

The crash rate for the intersection of South Park Avenue and Hopkins Street is 1.7 times the statewide average at 0.71 acc./mev, having nine crashes during the three-year period. Four of the nine crashes (44%) were injury type crashes producing an above average injury crash rate of 0.32 acc./mev, or 2.0 times the statewide average. No crashes were fatal. Four of nine crashes were rear end type, 22% (or two) were right turn type and 22% (or two) were overtake type. The cause of four crashes was attributed to other human factors and two were attributed to unsafe lane changing. The rear end type crash rate at this intersection is 0.32 acc./mev, which is 3.2 times the statewide average. Eight of nine crashes occurred on dry pavement. Crashes in this segment were fairly well distributed amongst times of the day, days of the week, and months of the year.

The crash rate for the intersection of South Park Avenue and Tifft Street, which had thirty crashes during the three-year study period is 1.9 times the statewide average at 1.29 acc/mev. Thirteen of 30 crashes (43%) were injury type crashes, producing an above average injury crash rate of 0.58 acc./mev, or 2.1 times the statewide average. No crashes were fatal. Thirty-four percent of the crashes (ten crashes) were rear end type, 27% (eight crashes) were right angle type and 23% (seven crashes) were left turn type. Failure to yield right of way was the major cause of crashes leading to 13 of the 30 total crashes at this intersection. The cause of another nine crashes was attributed to other human factors. Nineteen of thirty (63%) crashes occurred on dry pavement, and four of thirty occurred on wet pavement, yielding a wet pavement type crash rate



(0.18 acc./mev) that is 1.6 times the statewide average. Eleven of 30 crashes occurred between 9 AM and 3 PM and the other nineteen crashes were distributed amongst the other times of day. Crashes in this segment were fairly well distributed amongst days of the week and months of the year.

The crash rate for the intersection of Bailey Avenue and Seneca Street is 2.6 times the statewide average at 1.52 acc./mev, with 54 crashes during the three-year period. Forty-four percent of the 54 crashes were injury type crashes, which produced an above average injury crash rate of 0.68 acc./mev, or 3.0 times the statewide average. No crashes were fatal. Nineteen of the 54 crashes were rear end type and yielded a crash rate of 0.54 acc./mev. This is 3.9 times the statewide average. Thirty-five percent of the crashes (or nineteen crashes) were left turn type and 20% (or eleven crashes) were right angle type. Failure to yield right of way was the major cause of crashes leading to 30 of the 54 total crashes at this intersection. The cause of another eleven of the crashes was attributed to other human factors. Fifty-nine percent of the 54 crashes (or thirty-two crashes) occurred on dry pavement, and twelve of 54 occurred on wet pavement. The wet pavement type crash rate (0.34 acc./mev) was 4.3 times the statewide average. Thirty-three percent of crashes (or eighteen) occurred between 9 AM and 3 PM and 20% (or eleven) occurred between 6 AM and 9 AM. Crashes in this segment were more prevalent on weekdays and during the summer months.

The crash rate for the intersection of Bailey Avenue and McKinley Parkway, which had fourteen crashes during the three-year study period is 1.5 times the statewide average at 0.60 acc./mev. Four of fourteen crashes (29%) were injury type crashes, producing an above average injury crash rate of 0.18 acc./mev, or 1.1 times the statewide average. No crashes were fatal. Twenty-nine percent of the fourteen crashes (or four) were right turn type, three were rear end type, two were left turn type, and two were overtaking type accidents. Unsafe lane changing was the major cause of crashes leading to four of the fourteen total crashes at this intersection. The cause of another three crashes was attributed to failure to yield right of way and another three were attributed to other human factors. Four of fourteen (29%) crashes occurred on dry pavement, and four of fourteen occurred on wet pavement, which yielded a wet pavement type crash rate (0.18 acc./mev) that is 3.6 times the statewide average. The time of day most crashes occurred was between 9 AM and 3 PM. Crashes in this segment were fairly well distributed throughout the week and throughout the year.

The crash rate for the intersection of Tifft Street and Hopkins Street is 1.1 times the statewide average at 0.76 acc./mev, with fourteen crashes occurring during the three-year period. Half of the crashes (or seven crashes) were injury type crashes, which produced an above average injury crash rate of 0.38 acc./mev, and resulted in a rate 1.4 times the statewide average. No crashes were fatal. Forty-three percent of the crashes (or six) were rear end type and 29% (or four) were right angle type. Failure to yield right of way lead to five of the fourteen total crashes at this intersection. The cause of another 7 crashes was attributed to other human factors. Nine of fourteen (64%) crashes occurred on dry pavement, and two of fourteen occurred on wet



pavement. Crashes in this segment were fairly well distributed amongst the times of day, days of the week, and months of the year.

### *Summary*

Crash data, including causes and effect, was analyzed for each of the forty-six highway segments and the eleven intersections, chosen for their individual characteristics in an effort to simplify the crash analysis for the three-year study period from 1997 through 1999.

Of the forty-six highway segments examined, three were found to have higher than average overall crash rates, as shown in **Table C2.10-4**. All three of these segments are located on South Park Avenue. One is the segment between Chicago Street and Louisiana Street (1.2 times the statewide average) the second is between Alabama Street and Hamburg Street (3.4 times the statewide average) and the third is between Bailey Avenue and Southside Parkway (2.1 times the statewide average).

Of the eleven intersections examined, seven were found to have higher than average overall crash rates, as shown in **Table C2.10-6**. The seven intersections are as follows:

- Route 5 & Lake Ave. (1.7 times the statewide average)
- South Park Ave. & Michigan Ave. (1.1 times the statewide average)
- South Park Ave. & Hopkins St. (1.7 times the statewide average)
- South Park Ave. & Tift St. (1.9 times the statewide average)
- Bailey Ave. & Seneca St. (2.6 times the statewide average)
- Bailey Ave. & McKinley Pkwy. (1.5 times the statewide average)
- Tift St. & Hopkins St. (1.1 times the statewide average)

There were three fatal type crashes that occurred within the study area during the three-year analysis period. In 1997, there was a fatal crash on I-190 southbound between Route 5 and the Elm/Oak interchange. In 1998, there was a fatal crash along Route 5 between Tift Street and Ridge Road. In 1999, there was a fatal crash at the intersection of Route 5 and the entrance to the Bethlehem Steel Plant.

A location with an overall crash rate of 2.5 times the statewide average or greater is designated a Priority Investigation Location (PIL). Two locations in the study area are identified as PIL's. One location is the intersection of Bailey Avenue and Seneca Street. In addition to its high overall crash rate, this intersection had an injury severity crash rate of 3.0 times the statewide average, a rear end type crash rate of 3.9 times the statewide average, and a wet pavement crash rate of 4.3 times the statewide average. The major cause of crashes within this location is failure to yield right of way, which contributed to 56% of the 54 crashes.

The other location within the project with a PIL designation is the street segment of South Park Avenue between Alabama Street and Hamburg Street, which had an overall crash rate 3.4 times





the statewide average rate. In addition, this segment of roadway had an injury severity crash rate of 4.2 times the statewide average. The major cause of crashes within this location was unsafe lane changing, causing three of the five total crashes, which occurred within this segment during the three-year study period.

## 2.11 Pavement and Shoulder Considerations

The NYSDOT rating system for pavement surface ranges from 1 (poor - impassable at posted speed) to 10 (excellent - no distress, recently constructed or reconstructed). Pavement condition ratings are further discussed in **Table C2.11-1**.

**Table C2.11-1 – Generalized Descriptions of Pavement Condition Ratings**

<b>General Score Condition</b>		<b>Condition Surface Rating Description</b>
Poor	1	Pavements are in extremely deteriorated condition and are in need of immediate corrective action. These facilities are considered impassable at posted speeds.
	2	Pavements are in extremely deteriorated condition and may require complete reconstruction. Motorists experience discomfort and travel speeds will decrease.
	3	Pavements have deteriorated to a point where resurfacing is required immediately. Flexible pavements show evidence of severe and frequent scaling, joint spalling, faulting cracking, and patching. Rigid pavements show signs of frequent and severe joint spalling, cracking and scaling.
	4	Pavements have deteriorated to a point where resurfacing is required, showing occasional to frequent distress. Readability, even at slow speeds, is impaired. Surface defects on flexible pavements include severe rutting, cracking, raveling, and patching. Surface defects of rigid pavements include severe joint spalling, cracking, scaling, and patching. Overlay pavements show evidence of severe surface delamination.
	5	Riding quality is noticeably inferior to new pavements but may be tolerable for high-speed traffic. Pavements show occasional to frequent signs of distress. Surface defects of pavements are the same as under the 6 rating but are more severe.
Fair	6	Riding quality is noticeably inferior to new pavements, showing infrequent to occasional signs of distress. Surface defects of flexible pavements may include moderate rutting, cracking, and raveling; patching is apparent. Overlay pavements show evidence of slight to moderate cracking and raveling along cracks.



**Table C2.11-1 – Generalized Descriptions of Pavement Condition Ratings Continued**

<b>General Score Condition</b>		<b>Condition Surface Rating Description</b>
Good	7	Pavements give a good ride but show infrequent to occasional signs of surface deterioration. Flexible pavements show evidence of slight rutting, random cracking and some raveling. Rigid pavements show evidence of slight joint spalling, scaling, or minor cracking. Overlay pavements show evidence of slight reflection cracking and multiple cracking at reflection cracks.
	8	Pavements give an excellent ride but show infrequent to occasional signs of surface deterioration. Flexible pavements begin to show very slight evidence of raveling, cracking, and wheel track wear. Rigid pavements begin to show very slight evidence of surface deterioration such as cracking, joint spalling, or scaling. Overlay pavements show evidence of very slight reflection cracking.
Excellent	9	Pavement has no cracks or patches. Flexible pavement recently resurfaced within the past year or two. Overlay pavements may show evidence of some hairline reflection cracking. Rigid pavement joints function properly.
	10	There are no visual derivations from a smooth surface. Pavement recently constructed, reconstructed, or overlaid.

Existing pavement conditions were evaluated within the project area. Year 2001 Pavement Scores are noted in Table C2.11-2.

**Table C2.11-2 – 2001 Pavement Sufficiency Rating**

<b>Route</b>	<b>Segment</b>	<b>2001 Pavement Sufficiency Rating</b>
Route 5	I-190 to Ridge Road	9
	Ridge Road to Mile Strip	6
Fuhrmann Blvd	I-190 to Ridge Road	6
South Park Ave	Michigan Avenue to Bailey Ave	5
	Bailey Ave to Ridge Road	6
Mile Strip	Route 5 to South Park	10

Existing pavement conditions for additional roadways within the project area are described in section 2.5 of this chapter.



## 2.12 Guide Railing, Median Barrier, and Impact Attenuators

### 2.12.1 Guide Railing

Detailed information pertaining to existing guide rail in the project area, including location, rail or barrier type, condition, mount height and adherence to current design standards is outlined in **Table C2.12-1**. Summaries from that table are noted below.

#### *Route 5 - Skyway*

Guide rail along the highway section of the Skyway is mostly W-beam, with some box beam guide rail installed near the Union Ship Canal. The barrier is generally in good condition with the exception of some warped sections caused by differential road settlement near the Father Baker Memorial Bridge. The barrier in this area can be reset to bring the rail height within acceptable installation tolerances. Some roadside slopes at the gore areas are not adequately protected.

Bridge railing along the Skyway portion of the project area is either box beam or concrete barrier. Two-rail bridge rail is installed at four locations (MP 5-5302-3012, MP 5-5302-3016, MP 5-5302-3018 and MP 5-5302-3021) and is in good condition, however, it does not meet current design standards. Concrete barrier is installed at three locations (MP 5-5302-3002, MP 5-5302-3003 and 5-5302-3005) and is in good condition.

#### *Route 5 to Mile Strip Road - Hamburg Turnpike*

Highway guide rail along the Hamburg Turnpike portion is of varying condition. New box beam guide rail was installed near the Smokes Creek Bridge in year 2001 and is in good condition.

At the Bethlehem Steel railroad overpass, W-beam is installed on the west side of the roadway and is bolted to the face of the abutment wall with no deflection distance provided. It does not meet current design standards. Box beam guide rail is installed on the east side of the overpass that does meet current installation standards.

W-beam guide rail is installed near Buffalo Specialty Products to protect motorists from a drainage ditch. This rail does not meet current installation requirements.

#### *Fuhrmann Boulevard*

Guide rail along Fuhrmann Boulevard in both northbound and southbound directions is either W-beam or wood posts. The rail is in poor condition and does not meet current design standards.



### *South Park Avenue*

Highway guide rail along South Park Avenue is either box beam, 4-rail bridge rail or a miscellaneous installation. The majority of the rail is in poor condition and does not meet current design standards. Very poor guide rail conditions exist around the Lift Bridge with severely inadequate protection of the concrete walls east of the Lift Bridge, and only chain link fence on the southwest approach to the Lift Bridge.

Bridge rail on South Park Avenue is either 4-rail or concrete barrier and generally is in good condition meeting current design standards, with the exception of the transitions from 4-rail to box beam guide rail.

### *Ohio Street*

Scattered installations of highway guide rail exist along Ohio Street. Short sections of guide rail in poor condition are located in front of Rigidized Metal, Casual Dining and Bulkmatic Corporation. These are in need of replacement. The box beam and W-beam guide rail surrounding the bridge over the Conrail Railroad tracks are in good condition and meet current design standards.

Bridge rail on Ohio Street is concrete barrier, in good condition, and meets current design standards.

### *Bailey Avenue*

Both highway guide rail and bridge rail along this roadway are in poor condition, damaged to some extent, and do not meet current design standards. Motorists are not adequately protected from roadside hazards such as signs, embankment slopes, and bodies of water.

### *Hopkins Street*

The highway guide rail north of the bridge on both the east and west sides is damaged and is in need of maintenance. Also some end assemblies are needed to bring this section of rail up to current design standards. The highway rail south of the bridge is in good condition and meets current design criteria.

Bridge rail on Hopkins Street is generally in good condition, but does not meet current design standards.

### *Tift Street*

The highway guide rail located at the entrance to the C&D Transfer has suffered recent strikes and is damaged. Maintenance on this section would be adequate to return it to normal operating



state. Otherwise, highway and bridge guide rails on Tifft Street are in good condition and meet current design standards.

*Seneca Street, Elk Street, Keating Street, Lake Avenue*

There are no existing guide rails along these corridors within the project area.

#### 2.12.2 Median Barrier

*Route 5 - From Skyway to Hamburg Turnpike*

Median barrier is installed the entire length of the Route 5 Skyway portion of the project area. It is concrete median barrier and is in good condition.

#### 2.12.3 Impact Attenuators

*Route 5 - From Skyway to Hamburg Turnpike*

Two crash cushions are installed on the Route 5 Skyway corridor and are the “Hex-Foam Sandwich System.” They both have minor damage, requiring normal maintenance to repair. However, this impact attenuator is an outdated device.



Table C2.12-1 - Guide Railing, Median Barrier, Impact Attenuators Information and Locations

Location					Type of Barrier	Physical Condition				Notes	Summary / Recommendations					
Route	Segment Location	Location ID	Milepost Marker	Side N,S,W,E		Height	Curbed ? Y/N	Significant Rust? Y/N	Significant Damage? Y/N		General Physical Condition	Point of Need Requirements met? Y/N	Guide Rail Fall Within Height Limits? Y/N	Rail Termination Outdated? Y/N	Barrier Outdated? Y/N	Recommendation
Route 5 - Skyway	WB - Coast Guard exit near Skyway to Fuhrmann Blvd exit	1	5-5302-3023 to 5-5302-3010	W	W-beam	29"	N	N	N	some roadside slopes between exits and entrances to Rte 5 are not adequately protected	good	See Notes	Y	N	N	OK
	WB & EB over Fuhrmann Blvd.	1A	5-5302-3021	W & E	bridge 2-rail	33"	Y	N	N	generally good condition; 2-rail to box beam to w-beam; vertical post do not meet current standards; horiz. offset exceeds current standard of 5"	good	Y	Y	NA	Y	REPLACE
	WB & EB over RR N of Ohio St.	1B	5-5302-3018	W & E	bridge 2-rail	33"	Y	N	N	generally good condition; 2-rail to box beam to w-beam; vertical post do not meet current standards; horiz. offset exceeds current standard of 5"	good	Y	Y	NA	Y	REPLACE
	WB & EB over Ohio St.	1C	5-5302-3016	W & E	bridge 2-rail	33"	Y	N	N	generally good condition; 2-rail to box beam to w-beam; vertical post do not meet current standards; horiz. offset exceeds current standard of 5"	good	Y	Y	NA	Y	REPLACE
	WB & EB over roadway; cross through	1D	5-5302-3012	W & E	bridge 2-rail	33"	Y	N	N	generally good condition; 2-rail to box beam to w-beam; vertical post do not meet current standards; horiz. offset exceeds current standard of 5"	good	Y	Y	NA	Y	REPLACE
	WB - Fuhrmann Blvd entrance to RR overpass near Tiftt	1E	5-5302-3007 to 5-5302-3004	W	W-beam	29" & varies	N	N	N	warped section of guide rail due to settling; milling of pvmt adjacent to rail edge creates varying rail height	fair	Y	N	N	N	MAINTENANCE
	WB & EB over Tiftt St.	1F	5-5302-3005	W & E	bridge concrete barrier	34"	N	NA	N	generally good condition; concrete barrier to box beam to w-beam	good	Y	Y	NA	N	OK
	WB & EB over RR S of Tiftt	1G	5-5302-3003	W & E	bridge concrete barrier	34"	N	NA	N	generally good condition; concrete barrier to box beam to w-beam	good	Y	Y	NA	N	OK
	WB & EB over Union Ship Canal "Father Baker Memorial Bridge"	1G1	5-5302-3002	W & E	bridge concrete barrier	34"	N	NA	N	generally good condition; with fence installed, bolted to outside of barrier; concrete barrier to box beam to w-beam	good	Y	Y	NA	N	OK
	WB - starting on entrance ramp from Tiftt St. to RR overpass	1H	5-5302-3005 to 5-5302-3003	W	W-beam	29" & varies	N	N	N	warped section of guide rail due to settling; milling of pvmt adjacent to rail edge creates varying rail height	good	Y	N	N	N	MAINTENANCE
	WB - starting after RR overpass to Union Ship Canal	1I	5-5302-3003 to 5-5302-3002	W	box beam	27"	N	N	N	few warped sections resulting from milling of roadway	good	Y	Y	NA	N	MAINTENANCE
	WB - RR overpass near Tiftt to Ridge Road	1J	5-5302-3002 to 5-5302-2019	W	box beam	27"	N	N	N	-	good	Y	Y	NA	N	OK
	WB & EB over Ridge Road	1K	5-5302-2016	W & E	bridge concrete barrier	33"	N	NA	N	generally good condition; concrete barrier to box beam to w-beam	good	Y	Y	N	N	OK
	WB - end of concrete barrier after entrance to Fuhrmann Blvd. from Ridge Rd.	1L	5-5302-2016 to 5-5302-2014	W	W-beam	29"	N	N	N	-	good	Y	Y	N	N	OK
Route 5 - Hamburg Turnpike	Rte. 5 WB & EB	1M	entire length	N & S	median concrete barrier	35"	N	N	N	entire length of Skyway	good	Y	Y	NA	N	OK
	WB - beginning of concrete barrier at Ridge Rd. exit	1N	5-5302-2018	W	impact attenuator crash cushion	36"	N	N	N	hex foam sandwich system with minor damage to cells	fair	NA	NA	NA	NA	MAINTENANCE
	WB - end of concrete barrier at Hamburg Turnpike & Fuhrmann Blvd.	1O	5-5302-2012	center	impact attenuator crash cushion	36"	N	N	N	hex foam sandwich system with minor damage to cells	fair	NA	NA	NA	NA	MAINTENANCE
	WB - over Smoke Creek	1P	5-5302-2006 to 5-5302-2005	W	box beam	26"	Y	N	N	installed 2001	new	Y	Y	NA	N	OK
	EB - over Smoke Creek	1Q	5-5302-2005	E	bridge concrete barrier - vertical faced concrete parapet	48"	Y	NA	N	bridge over Smokes Creek; constructed 2001	new	Y	Y	NA	N	OK
	WB - over Smoke Creek	1R	5-5302-2005	W	bridge concrete barrier w/bike rail	34"	Y	NA	N	bridge over Smokes Creek; constructed 2001	new	Y	Y	NA	N	OK
Route 5 - Hamburg Turnpike	WB - Bethlehem Steel RR overpass	1S	5-5302-1221	W	W-beam	22"	Y	N	N	W-beam attached to inside face of abutment wall	good	N	N	N	N	REPLACE
	WB - Buffalo Specialty Products	1T	5-5302-1219	W	W-beam	32"-40"	Y	N	N	protects ditch & headwall @ Buffalo Specialty Products	good	Y	N	Y	N	REPLACE
Route 5 - Hamburg Turnpike	EB - Bethlehem Steel RR overpass	2	5-5302-1221	E	box beam	30"	Y	N	N	weak post; S end terminal w/ 38" offset; 3' sidewalk between guide rail and abutment	good	N	Y	NA	N	OK
	EB - over Smoke Creek	2A	5-5302-2005 to 5-5302-2006	E	box beam	27"	Y	N	N	installed 2001; behind sidewalk	new	Y	Y	NA	N	OK
Route 5 - Skyway	EB - Hamburg Turnpike to Ridge Road exit	2B	5-5302-2015 to 5-5302-2017	E	W-beam	30"	N	N	N	extends down exit ramp	good	Y	Y	N	N	OK
	EB - just after Ridge Rd. exit ramp	2C	5-5302-2019	E	type III end section	27"	N	N	N	type III end section	good	Y	Y	N	NA	OK
	EB - Ridge Road to Tiftt Street	2D	5-5302-2019 to 5-5302-3005	E	box beam	27"	N	N	N	-	good	Y	Y	NA	N	OK
	EB - from Tiftt street exit to Ohio St. exit	2E	5-5302-3004 to 5-5302-3007	E	W-beam	29"	N	N	N	-	good	Y	Y	N	N	MAINTENANCE
	EB - from Tiftt St. entrance to Skyway	2F	5-5302-3010 to 5-5302-3022	E	W-beam	29"	N	N	N	-	good	Y	Y	N	N	OK
Fuhrmann Blvd.	SB - Coast Guard to Rte. 5 on-ramp	8	-	-	-	-	-	-	-	no existing guide rail	-	-	-	-	-	-
	NB - Rte. 5 on-ramp to Fuhrmann/Rte. 5 underpass	9	-	-	-	-	-	-	-	no existing guide rail	-	-	-	-	-	-
	NB - Tiftt St. to Ohio St. (just south of Fuhrmann crossover & Ohio St.)	10	-	E	W-beam	27"	N	N	Y	short section of rail installed at entrance to pump station; section is damaged and needs replaced.	poor	N	Y	Y	Y	REPLACE
	NB - between Tiftt St. to Ohio St. (pump house entrance to Ohio St.)	10A	-	E	W-beam	varies	N	N	N	weak post; a few damaged posts & missing bolts (not bad); needs regrading in front of rail due to plow damage; ultimately it appears that the rail would need to be reset after regrading due to height requirements; rail protects embankment.	good	Y	N	N	N	REPLACE



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Table C2.12-1 - Guide Railing, Median Barrier, Impact Attenuators Information and Locations Continued

Location					Type of Barrier	Physical Condition				Notes	Summary / Recommendations					
Route	Segment Location	Location ID	Milepost Marker	Side N,S,W,E		Height	Curbed ? Y/N	Significant Rust? Y/N	Significant Damage? Y/N		General Physical Condition	Point of Need Requirement s met? Y/N	Guide Rail Fall Within Height Limits? Y/N	Rail Termination Outdated? Y/N	Barrier Outdated? Y/N	Recommendation
Fuhrmann Blvd. cont	NB-along Lake Kirsty at Tifft Nature Preserve	10B	-	E	W-beam	34" & varies	N	N	Y	outdated end sections and posts, does not adequately protect motorists from lake	poor	N	N	Y	Y	REPLACE
	SB - Fuhrmann/Rte. 5 underpass to Ohio St.	11	-	-	-	-	-	-	-	no existing guide rail	-	-	-	-	-	-
	SB - Ohio St. to Tifft St.	12	-	W	wood posts	NA	N	NA	Y	6"x8" @ 6' o.c. wood posts in front of small boat harbor; approx. 2.0 miles in length	fair-good	Y	NA	NA	Y	REPLACE
	NB - Tifft St. to Ohio St.	13	-	E	W-beam on wood posts	22"	N	Y	Y	end terminals outdated; .15 miles in length	poor	N	N	Y	Y	REPLACE
South Park	Red Jacket St. to Bridge	18	-	N	4-rail	47"	Y	N	N	rail opens for bldg's; tuning fork transitions outdated	good	Y	N	NA	Y	REPLACE
	either side of Katherine Street	18A	-	S	4-rail	47"	Y	N	N	4-rail bridge rail	good	Y	N	NA	Y	REPLACE
	VanRensselaer St. to Red Jacket	18B	-	N	bridge concrete barrier - vertical faced concrete parapet	46"	Y	NA	N	width=12"; w/fence mounted on top	good	Y	N	NA	N	OK
	VanRensselaer St. to Red Jacket	18C	-	S	bridge concrete barrier	46"	Y	NA	N	width=12"; w/fence mounted on top	good	Y	N	NA	N	OK
	Bridge to Elk St	19	-	N	box-beam	29"-31"	Y	N	N	rail height is on high side; posts do not meet current standards; behind sidewalk	good	Y	N	NA	Y	REPLACE
	Bridge to Elk St	19A	-	S	box-beam	29"-31"	Y	N	N	rail height is on high side; posts do not meet current standards; behind sidewalk	good	Y	N	NA	Y	REPLACE
	Across from Elk St from Bldg corner of South Park going West	19B	-	S	4-rail	48"	Y	N	N	behind sidewalk; connects to box beam; installation does n ot meet current design standards	good	Y	N	NA	Y	REPLACE
	Elk St half way to VanRensselaer St	19C	-	N	4-rail	48"	Y	N	N	behind sidewalk; connects to box beams; installation does not meet current design standards	good	Y	N	NA	Y	REPLACE
	785 South Park to Leddy St	19D	-	S	4-rail	48"	Y	Y	Y	rail is outdated; pieced together scrap metal; behind sidewalk	poor	Y	N	NA	Y	REPLACE
	Just east of Elk St	19E	-	N	W-beam	34"	Y	Y	N	appears as if intended to protect house; does not perform this adequately	fair	N	N	Y	N	REMOVE
	Smith St to bridge	20	-	N	box-beam	31"	Y	N	N	situated between 4-rail; type I end sections used at walk; behind sidewalk	good	Y	N	NA	N	REPLACE
	Smith St to bridge	21	-	N	4-rail	46"	Y	N	N	with box beam in between; tuning fork transitions outdated; behind sidewalk	good	Y	N	NA	Y	REPLACE
	Bridge to just west of Lee St	21A	-	N	bridge concrete barrier	46"	Y	NA	N	width=12"; w/fence mounted on top	good	Y	N	NA	N	OK
	Bridge to just west of Lee St	21A	-	S	bridge concrete barrier	46"	Y	NA	N	width=12"; w/fence mounted on top	good	Y	N	NA	N	OK
	Smith St west to bridge	22	-	S	4-rail	46"	Y	Y	N	behind sidewalk	good	Y	N	NA	Y	REPLACE
	Lee St west to bridge	23	-	N	4-rail	46"	Y	Y	N	behind sidewalk	good	Y	N	NA	Y	REPLACE
	Lee St west to bridge	23A	-	S	4-rail	46"	Y	Y	N	behind sidewalk	good	Y	N	NA	Y	REPLACE
	Lee St to lift bridge	24	-	N	misc.	38"	Y	Y	Y	behind sidewalk	poor	N	N	NA	Y	REPLACE
	East of lift bridge	25	-	N	misc.	38"	Y	Y	Y	outdated rail in disrepair; 200' pedestrian style rail install; behind sidewalk	poor	N	N	NA	Y	REPLACE
	Lift bridge	25A	-	N & S	bridge pedestrian rail	-	-	-	-	-	-	-	-	-	-	-
	East of lift bridge	25B	-	S	misc.	38"	Y	Y	Y	outdated rail in disrepair; also inadequate protection for motorists of concrete walls east of Lift Bridge; pedestrian style rail; behind sidewalk	poor	N	N	NA	Y	REPLACE
	Hopkins to Ridge Rd	26	-	NA	-	-	-	-	-	no existing guide rail	-	-	-	-	-	-
Ohio Street	SB - S. end of Ohio St. to bridge	29	-	W	W-beam	28"	Y	N	N	6" granite curb; behind sidewalk	good	Y	Y	N	N	OK
	Ohio Street	29A	-	W	bridge concrete barrier	34"	N	NA	N	-	good	Y	Y	NA	N	OK
	bridge to N end near Pierce & Stevens bldg	29B	-	W	W-beam	28"	Y	N	N	6" granite curb; behind sidewalk	good	Y	Y	N	N	OK
	NB - S. end of Ohio St. to bridge	30	-	E	W-beam	25.5"	Y	N	N	no sidewalk this side	good	Y	Y	N	N	OK
	Ohio Street	30A	-	E	bridge concrete barrier	34"	N	NA	N	-	good	Y	Y	NA	N	OK
	bridge to N end near Pierce & Stevens bldg	30B	-	E	box-beam	21"	Y	N	N	6" granite curb	good	Y	Y	NA	N	OK
	SB - on curve across from Rigidized Metal	31	-	W	W-beam	varies	Y	Y	Y	heavy post/damaged end terminals; needs replaced butted up against DFO	poor	N	N	Y	N	REPLACE
	SB - in front of Casual Dining	31A	-	W	W-beam	30"	Y (only 2" reveal)	N	N	protects stairway to bldg entrance	fair	N	Y	Y	N	REPLACE
Keating Street	SB - Bulkmatic to City Park	31B	-	W	W-beam	35"	N	Y	N	old end terminals	poor	N	N	Y	N	REPLACE
	Keating Street	32	-	NA	-	-	-	-	-	no existing guide rail	-	-	NA	-	-	-





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Table C2.12-1 - Guide Railing, Median Barrier, Impact Attenuators Information and Locations Continued

Location					Type of Barrier	Physical Condition				Notes	Summary / Recommendations					
Route	Segment Location	Location ID	Milepost Marker	Side N,S,W,E		Height	Curbed ? Y/N	Significant Rust? Y/N	Significant Damage? Y/N		General Physical Condition	Point of Need Requirements met? Y/N	Guide Rail Fall Within Height Limits? Y/N	Rail Termination Outdated? Y/N	Barrier Outdated? Y/N	Recommendation
Bailey Avenue	Clinton St. to Elk St.	33	-	NA	-	-	-	-	-	no existing guide rail	-	-	NA	-	-	-
	Elk St. to Buffalo Sewer Authority Bldg.	34	-	NA	-	-	-	-	-	no existing guide rail	-	-	NA	-	-	-
	Northwest of bridge over Buffalo River	35	-	W	W-beam	24"	Y	N	N	intent is to protect motorist from river (does not adequately protect); 62' length; heavy post no-blockout; spade and box glove end terminals; abuts bridge rail; behind sidewalk	poor	N	Y	Y	N	REPLACE
	Bridge over Buffalo River	35A	-	W	bridge rail	48"	Y	Y	Y	-	fair	Y	Y	NA	Y	REPLACE
	Southwest of bridge over Buffalo River	35B	-	W	W-beam	varies	Y	N	N	intent is to protect motorist from river (does not adequately protect); 66' length; heavy post no-blockout; needs regrading and cleanup around rail; behind sidewalk; abuts bridge rail	poor	N	N	Y	N	REPLACE
	Northwest of bridge over Cazenovia Creek	36	-	W	W-beam	varies	Y	N	N	intent is to protect motorist from Creek (does not adequately protect); 66' length; heavy post no-blockout; box glove end terminal; abuts bridge rail	poor	N	N	Y	N	REPLACE
	Bridge over Cazenovia Creek	36A	-	W	bridge rail	48"	Y	Y	N	-	fair	Y	Y	NA	Y	REPLACE
	Southeast of bridge over Cazenovia Creek	36B	-	W	W-beam	24"-26"	Y	N	N	intent is to protect motorist from Creek (does not adequately protect); 26' length; heavy post no-blockout; box glove end terminal; abuts bridge rail	poor	N	N	Y	N	REPLACE
	Bridge over Cazenovia Creek	37	-	E	bridge rail	48"	Y	Y	N	-	fair	Y	Y	NA	Y	REPLACE
	Southwest of bridge over Cazenovia Creek	37A	-	E	W-beam	34"	Y	N	N	intent is to protect motorist from Creek (does not adequately protect); 33' length; heavy post no-blockout; box glove end terminal; abuts bridge rail	poor	N	N	Y	N	REPLACE
	Southeast of bridge over Buffalo River	38	-	E	W-beam	24"	Y	N	Y	intent is to protect motorist from Creek (does not adequately protect); 36' length; heavy post no-blockout; spade and box glove end terminals; rail appears to have been struck at corner of bridge; abuts bridge rail	poor	N	Y	Y	N	REPLACE
	Bridge over Buffalo River	38A	-	E	bridge rail	48"	Y	Y	Y	-	fair	Y	Y	NA	Y	REPLACE
	Northeast of bridge over Buffalo River	38B	-	E	W-beam	24"-25"	Y	N	N	intent is to protect motorist from Creek and billboard (does neither adequately); 89' length; heavy post no-blockout; spade end terminals; abuts bridge rail	poor	N	Y	Y	N	REPLACE
Hopkins Road	Just south of Elk St	38C	-	E	W-beam	28"-32"	Y	N	N	partially protects embankment; missing bolts at splice; more involved investigation required to determine if clear zone is properly protected; heavy post no-blockout; 90 ft length; box glove end terminals; just south of Elk approx. 120 yds. Placed at top of slope and runs skewed of Bailey centerline.	poor	Y	N	Y	N	REPLACE
	South end of bridge over RR	53	-	E	box-beam	28"	Y	N	N	Type 1 end assembly w/ no flare; sidewalk on east side only	good	Y	Y	NA	N	OK
	Over bridge; just south of Larrabbie St	53A	-	E	bridge 4-rail	42"	Y	Y	N	over bridge; tuning fork transitions	good	Y	Y	NA	Y	REPLACE
	North end of bridge over RR	53B	-	E	box-beam	28"	Y	N	N	Type 1 end assembly; damaged end sections north of bridge; Type 1 end assembly used at sidewalk (current standards call for Type II) ; sidewalk on east side only	good	Y	Y	NA	N	MAINTENANCE
	North of bridge	54	-	W	box-beam	25"	Y	N	N	Type 1 end assembly; damaged end sections north of bridge	good	Y	Y	NA	N	MAINTENANCE
	Over bridge just south of Larrabbie St	54A	-	W	bridge 2-rail	31"	Y	Y	N	tuning fork transitions	good	Y	N	NA	Y	REPLACE
Seneca Street	Seneca Street	40	-	-	-	-	-	-	-	Type 1 end assembly w/ no flare	good	Y	Y	NA	N	OK
Elk Street	Elk Street	41	-	-	-	-	-	-	-	no existing guide rail	-	-	-	-	-	-
Tiftt Street										no existing guide rail	-	-	-	-	-	-
	Tiftt Street	42	-	N	box-beam	25"	Y	N	N	weak post behind SW; mowing strip; good terminal ends; at one location it appears as though inadequate deflection space exists above a 4' drop-off at retaining wall. First impression is that the wall was installed improperly requiring the guide rail to bow slightly inward. Relatively new installation. Type 1 end section. length approx. = .4 miles	good	Y	Y	NA	N	OK
	Over RR	42A	-	N	bridge concrete barrier - vertical faced concrete parapet	41"	Y	NA	N	vertical faced concrete parapet	good	Y	Y	NA	N	OK
	J&R Auto to bridge on NE side	42B	-	N	box-beam	27"	Y	N	N	weak post behind SW; mowing strip; good terminal ends. Type II end assembly	good	Y	Y	N	N	OK
	Tiftt Street	43	-	S	box-beam	21"	Y	N	N	weak post; no SW this side; mowing strip; good terminal ends; relatively new installation. Type I end assembly; length approx. = .4 miles	good	Y	Y	N	N	OK
	Over RR	43A	-	S	bridge concrete barrier	35"	Y	NA	N	concrete half barrier	good	Y	Y	NA	N	OK
	bridge to the entrance to C&D Transfer Station SE of Bridge over RR	43B	-	S	box-beam	22"	Y	N	Y	weak post; recent strikes have severely damaged the rail and other hits along rail suggests that the entrance design may not adequately accommodate turning movements of vehicles. Type I end assembly.	good	Y	Y	N	N	MAINTENANCE
Lake Avenue	entrance to C&D Transfer Station SE of Bridge over RR	43C	-	S	box-beam	27"	Y	N	Y	weak post; recent strikes have severely damaged the rail and other hits along rail suggests that the entrance design may not adequately accommodate turning movements of vehicles. Type I end assembly.	good	Y	Y	N	N	MAINTENANCE
	EB - Rte. 5 to RR tracks	46	-	N & S	-	-	-	-	-	no existing guide rail	-	-	-	-	-	-
	EB - RR tracks to RR tracks	47	-	S	-	-	-	-	-	no existing guide rail	-	-	-	-	-	-
	WB - RR tracks to RR tracks	48	-	N	-	-	-	-	-	no existing guide rail	-	-	-	-	-	-

NOTES: 1. NA= Not Applicable



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## 2.13 Traffic Control Devices (signs, signals, etc.)

Traffic control at intersections within the project area selected for the purpose of analyzing traffic operations is as noted in **Table C2.13-1**. **Figure C2.13-1** also depicts the locations of all signalized intersections in the study area.

**Table C2.13-1 - Traffic Control at Selected Intersections**

Route	Intersection	Type of Control
Route 5	Odell Street	Signalized
	Dona Street	Signalized
	Madison Ave	Signalized
	Lake Ave	Signalized
Fuhrmann Blvd - NB	Ohio Street	Stop sign on Fuhrmann Blvd NB to make left; yield to make left from Fuhrmann Blvd SB onto Ohio Street
	Tift Street & Route 5 exit ramp	Stop sign from Route 5 exit ramp
	Ridge Road (ramps to Route 5)	Stop sign from Route 5 exit ramp
Fuhrmann Blvd - SB	Ohio Street	Stop sign on Fuhrmann Blvd SB to make left towards Ohio Street
	Tift & Route 5 entrance ramp	Signalized
	Ridge Road (ramps to Route 5)	Stop signs from Fuhrmann Blvd and Ridge Road
South Park Ave	Michigan Ave	Signalized
	Smith Street	Signalized
	Hopkins Street	Signalized
	Bailey Avenue & Abbott Road	Signalized
	Tift Street	Signalized
Ohio Street	Michigan Ave	Stop signs from Ohio St NB and parking lot SB
	Louisiana Street	Signalized
Bailey Ave	McKinley Parkway	Signalized
	Elk Street	Signalized
	Seneca Street	Signalized
Tift Street	Hopkins Street	Signalized



### **MUTCD Conformity**

Traffic control devices at primary intersections were evaluated for conformity with the *New York State Manual on Uniform Traffic Control Devices* (NYS MUTCD, 2001) guidelines.

#### *Bailey Avenue and Seneca Street*

Two non-conforming features were identified at this intersection according to the NYS MUTCD guidelines. The northbound and southbound approach lenses are currently 8 inches in diameter. However, these lenses should be 12 inches in diameter as they are located greater than 80 feet from the stop bar on the approaches that they control.

#### *Bailey Avenue and Elk Street*

All signal features at this intersection are in conformance with MUTCD guidelines.

#### *Bailey Avenue and McKinley Parkway*

This intersection has only one non-conforming feature. The north-eastbound approach (Bailey Avenue approach) is required to have at least one signal head 40 feet or more from the stop bar on this approach. However, the furthest signal from the stop bar was measured to be approximately 35 feet away. This measurement was based on an approximate location of the stop bar because no stop bar exists at this approach.

#### *Bailey Avenue, South Park Avenue and Abbott Road*

This intersection has two non-conforming features. The north-westbound approach (South Park Avenue approach) is required to have at least one signal head 40 feet or more from the stop bar. However, the furthest signal from the stop bar was measured to be only 13.5 feet away. In addition, approaches are also required to have at least 15 feet of longitudinal clearance between the stop bar and the *closest or nearest* signal head. Yet, as mentioned earlier, the distance between the signal and the stop bar was measured to be only 13.5 feet.

#### *South Park Avenue and Hopkins Street*

The westbound approach (South Park Avenue approach) carries a non-conforming feature because it should have at least 40 feet of longitudinal spacing to its controlling signal head. However, only 20 feet is provided from the approximate location of the stop bar. This measurement is approximate, as there is currently no stop bar on this approach.

#### *Tifft Street and Hopkins Street*

The westbound (Tifft Street) approach of this intersection also has non-conforming features because the approach does not fulfill the minimum longitudinal signal offset requirements (at









least 15 feet and greater than 40 feet) from the stop bar. The approach has two signal heads located 14 and 26 feet respectively from the stop bar.

*South Park Avenue and Tift Street*

All signal features at this intersection are in conformance with MUTCD guidelines.

*South Park Avenue and Smith Street*

All signal features at this intersection are in conformance with MUTCD guidelines.

*South Park Avenue and Michigan Avenue*

All signal features at this intersection are in conformance with MUTCD guidelines.

*Fuhrmann Boulevard (Southbound) and Tift Street*

All signal features at this intersection are in conformance with MUTCD guidelines.

*Ohio Street and Louisiana Street*

All signal features at this intersection are in conformance with MUTCD guidelines.

*Route 5 and Lake Avenue*

All signal features at this intersection are in conformance with MUTCD guidelines.

*Michigan Avenue and Ohio Street*

There are features that are not in conformance with MUTCD on the eastbound and westbound approaches. The stop signs are located adjacent to the stop bar. The MUTCD recommends locating the stop signs four feet in front of the stop bar.

*Fuhrmann Boulevard Northbound and Tift Street*

There is no Keep Right sign located on the west end of the curbed median that is located on the east leg of the intersection. This does not conform to the MUTCD.

*Fuhrmann Boulevard Northbound and Ridge Road*

All sign features at this intersection are in conformance with MUTCD guidelines. Although, the stop bar located on the northbound approach for left/thru turning vehicles crosses the pedestrian path between handicap ramps. No crosswalk is delineated for this pedestrian crossing.



*Fuhrmann Boulevard Southbound and Ridge Road*

There is no sign to warn motorists of the lane reduction on the southbound departure of the intersection. All other sign features conform to MUTCD.

*Fuhrmann Boulevard Northbound and Ohio Street*

All sign features at this intersection are in conformance with MUTCD guidelines.

*Fuhrmann Boulevard Southbound and Ohio Street*

There is no sign to warn motorists of the southbound lane reduction to the south of the intersection. Nor is there a sign to warn motorists of the lane merge on the southbound departure of the intersection. All other sign features conform to MUTCD.

## 2.14 Commercial Driveways

The NYSDOT's *Policy and Standards for Entrances to State Highways, February 1998* reports design requirements for residential and commercial driveways. Commercial driveways are broken down into two categories, major and minor driveways. A major commercial driveway is considered to be any commercial driveway where the anticipated traffic volume on a typical day is either: a.) 100 or more one-way trips during the peak hour for either the adjacent roadway or the development, or b.) 50 or more one-way trips during the 8<sup>th</sup> highest hour of annual driveway activity. A minor commercial driveway is considered to be any commercial driveway where the anticipated traffic volume on a typical day is less than the values stipulated for a major commercial driveway. It was determined, that there are no major commercial driveways within the study area. The NYSDOT standards for minor and major commercial driveways are provided below in **Table C2.14-1**.

**Table C2.14-1 - NYSDOT Minor and Major Commercial Driveway Standards**

Commercial Type	W (1-way) ft	W (2-way) ft	Distance btwn W <sub>1</sub> & W <sub>2</sub> (1-way) ft	Distance btwn W <sub>1</sub> & W <sub>2</sub> (2-way) ft	Corner Angle <sup>4</sup> , θ degrees	Distance to signalized intersection ft	Distance to unsignalized intersection ft	Distance to property line ft	Curb height at sidewalk in	Slope <sup>5</sup> %
minor	16 <sup>1</sup>	24 <sup>2</sup>	30 <sup>3</sup>	75 <sup>3</sup>	90	100	$\frac{(2 \times W) + 1}{5}$	5	1	6
major	12/lane	12/lane	30 <sup>3</sup>	75 <sup>3</sup>	90	100	$\frac{(2 \times W) + 1}{5}$	5	1	6

<sup>1</sup> The standard width of a 1-way minor commercial driveway is 16 ft, but 12 ft – 24 ft widths are permissible.

<sup>2</sup> The standard width of a 2-way minor commercial driveway is 24 ft, but 22 ft – 30 ft widths are permissible.

<sup>3</sup> Only one driveway permitted unless operational need can be substantiated.

<sup>4</sup> A 90° corner angle is standard, but 60°- 120° angles are permissible.

<sup>5</sup> A 10% slope is allowed in rural areas, and a 6% slope is allowed in urban areas. This project lies entirely in urban areas.





Existing commercial driveway geometry was collected for the following roadway segments, as summarized in **Table C2.14-2**, to evaluate compliance with current NYSDOT standards:

- Route 5 between Ridge Road and Route 179,
- Ohio Street between Michigan Avenue and Fuhrmann Boulevard,
- Fuhrmann Boulevard between Michigan Avenue and Ridge Road,
- Keating between Seneca Street and Elk Street,
- South Park Avenue between the Buffalo River and Hopkins Street, and
- Tift Street between Fuhrmann Boulevard and Hopkins Street.

Geometry data included driveway width, corner angle, access control (medians, curbs, etc), spacing from side roads, and distance from the edge of property. These field measurements were then compared to the NYSDOT standards for the appropriate commercial driveway type to determine compliance with current standards. **Table C2.14-3** notes that compliance for specific driveways within the project. In addition, **Attachment E** contains complete detailed driveway geometry for the commercial driveways evaluated.

As shown in **Table C2.14-3**, one hundred twenty-eight (128) of the 164 minor commercial driveways were found to exceed at least one NYSDOT standard. This table shows that ninety-one (91) of the 164 minor commercial driveways do not meet the NYSDOT standards for driveway width. Forty-four (44) driveways do not meet standards for distances between driveways, twenty-six (26) are too close to the nearest intersection and thirty-two (32) exceed the standards for driveway slope. Thirty-six (36) driveways within the study area appear to be within 5 feet of the property line, although many property lines were difficult to identify during the field visit. On the other hand, none of the minor commercial driveways exceed the permissible corner angle or the 1 inch standard for curb height at the sidewalk.



**Table C2.14-2 - Minor Commercial Driveway Measurements By Segment**

Route	Segment	Total # of Driveways	Number Of Driveways Not Meeting NYSDOT Standards							
			W (1-way)	W (2-way)	Distance Between W1 & W2	Corner Angle, θ	Distance To Intersection	Distance to Property Line	Curb Height at Sidewalk	Slope
Route 5	Ridge Rd. to Lake Ave.	25	0	14	7	0	5	1	0	13
	Lake Ave. to Route 179	24	NA	7	4	0	10	8	0	7
Fuhrmann Blvd-NB	Michigan Ave to Fuhrmann Blvd.	4	NA	3	0	0	NA	0	0	0
	Fuhrmann Blvd. to Canal	3	NA	2	0	0	NA	2	0	0
Fuhrmann Blvd-SB	Michigan Ave to Fuhrmann Blvd.	11	NA	6	0	0	NA	5	0	0
	Fuhrmann Blvd. to Canal	10	1	4	0	0	NA	0	0	0
South Park Ave	Buffalo River to Hopkins St.	23	NA	15	9	0	4	10	0	6
Ohio Street	Michigan Ave. to Ganson	20	NA	17	9	0	2	4	0	0
	Ganson to Fuhrmann Blvd.	15	1	10	7	0	2	2	0	2
Keating Street	Seneca St. to Elk St.	10	NA	9	4	0	1	2	0	2
Tifft Street	Fuhrmann Blvd. to Hopkins St.	19	NA	2	4	0	2	2	0	1

NOTES: 1. NA= Not Applicable



Table C2.14-3 - Minor Commercial Driveways Not Meeting Standards

Route	Address	Commercial Name	NYSDOT Standard(s) Not Met					
			W (1-way)	W (2-way)	Distance Between W1 & W2	Distance to Intersection	Distance to Property Line	Slope
Route 5 – Ridge Rd to Lake Ave	2350 Hamburg Turnpike	RAF Supply Inc. #1		X	X	X		X
	2350 Hamburg Turnpike	RAF Supply Inc. #2		X	X			X
	2350 Hamburg Turnpike	RAF Supply Inc. #3		X		X		X
	2368 Hamburg Turnpike	Sunoco – Sonny's Service #1		X	X	X		X
	2368 Hamburg Turnpike	Sunoco – Sonny's Service #2		X				X
	Hamburg Turnpike	empty lot #1		X				X
	Hamburg Turnpike	empty lot #2		X			X	
	Hamburg Turnpike	Rick's Auto Shop		X				
	2424 Hamburg Turnpike	2424 Hamburg Turnpike		X				X
	2424 Hamburg Turnpike	Wiper Installation Place		X				
	2600 Hamburg Turnpike	Creekside Industrial Park		X				
	2654 Hamburg Turnpike	BRC – Basement Remodeling Co.				X		
	3176 Lake Shore Rd	1st Street Salvage #2			X	X		
	Lake Shore Rd	N of vacant liquor store		X	X			X
	Lake Shore Rd	S of vacant liquor store						X
	3231 Lake Shore Rd	Elspeth Bakery #1			X			X
	3231 Lake Shore Rd	Elspeth Bakery #2						X
	3233 Lake Shore Rd	Jim Moran Auto Sales #1		X	X			X
	3233 Lake Shore Rd	Jim Moran Auto Sales #2		X				X
Route 5 – Lake Ave to Rte 179	3232 Lake Shore Rd	New York Frame				X	X	
	3252 Lake Shore Rd	Mr. Greek #1 (Buffalo Hots)		X	X		X	
	Lake Shore Rd	OTB #1			X	X		
	3310 Lake Shore Rd	Woodlawn Cottage					X	
	3314 Lake Shore Rd	Julie's				X	X	
	3326 Lake Shore Rd	Mobil #1		X		X		
	3326 Lake Shore Rd	Mobil #2		X		X		
	3348 Lake Shore Rd	Lake Shore Tile				X		
	3255 Lake Shore Rd	Gazebo's Inc #1			X	X		X
	3255 Lake Shore Rd	Gazebo's Inc #2						X
	Lake Shore Rd	Woodlawn Hotel					X	X
	3281 Lake Shore Rd	Woodlawn Fire Dept.		X		X		X
	3291 Lake Shore Rd	NY Board of Fire Underwriters		X			X	
	3319 Lake Shore Rd	Our Lady Of Grace			X			
	Lake Shore Rd	Pie-Zon (vacant)					X	
	S 3355 Lake Shore Rd	Kettles Point				X	X	X
	S 3379 Lake Shore Rd	Curt's Stop Inn Restaurant		X		X		X
	Lake Shore Rd	Spirit Collision		X				X
Fuhrmann Blvd – NB – Michigan to Fuhrmann	284 Fuhrmann Blvd	RCR Yachts Inc		X				
	Fuhrmann Blvd	sand piles #3		X				
	Fuhrmann Blvd	sand piles #1		X				
Fuhrmann Blvd – NB – Fuhrmann to Canal	Fuhrmann Blvd	Pumping Station					X	
	1200 Fuhrmann Blvd	Tifft Nature Preserve #2		X			X	
	1200 Fuhrmann Blvd	Tifft Nature Preserve #1		X				
Fuhrmann Blvd – SB – Michigan to Fuhrmann	32 Fuhrmann Blvd	First Buffalo River Marina		X				
	Fuhrmann Blvd	empty lot		X			X	
	Fuhrmann Blvd	boat storage #1		X				
	Fuhrmann Blvd	blue and white building		X			X	
	Fuhrmann Blvd	yellow building		X				
	325 Fuhrmann Blvd	The Pier #1 (vacant)					X	
	325 Fuhrmann Blvd	The Pier #3 (vacant)					X	
	901 Fuhrmann Blvd	Euro United Corps #1		X			X	
Fuhrmann Blvd – SB – Fuhrmann to Canal	901 Fuhrmann Blvd	Euro United Corps #2		X				
	975 Fuhrmann Blvd	Freezer Queen		X				
	1111 Fuhrmann Blvd	NFTA Boat Harbor #1 (entrance)	X					
	1111 Fuhrmann Blvd	NFTA Boat Harbor #2		X				
	1751 Fuhrmann Blvd	St. Lawrence Cement		X				
South Park Ave	1086 South Park Ave	misc trailers and debris		X			X	
	1176 South Park Ave	Village Farms of Buffalo #1		X				
	1176 South Park Ave	Village Farms of Buffalo #2		X				
	1327 South Park Ave	snow storage #1		X	X			
	1327 South Park Ave	snow storage #2		X				
	1320 South Park Ave	Della's #1		X	X		X	
	1320 South Park Ave	Della's #2		X	X			
	1320 South Park Ave	Della's #3		X			X	X
	1346 South Park Ave	Clinton Disposal Service #1		X	X			
	1346 South Park Ave	Clinton Disposal Service #2		X			X	
	1402 South Park Ave	Bruckman Bros. #1			X			
	1402 South Park Ave	Bruckman Bros. #2		X			X	
	1345 South Park Ave	The Old Triangle				X		
	1365 South Park Ave	Southside Auto & Truck Repair #1		X	X		X	X
	1365 South Park Ave	Southside Auto & Truck Repair #2		X			X	X
	South Park Ave	repair storage #1		X	X		X	
	South Park Ave	repair storage #2		X		X		
	1387 South Park Ave	Queen City Motors #1			X	X		X
	1387 South Park Ave	Queen City Motors #2					X	X
	1409 South Park Ave	Sunoco #1			X		X	X
	1409 South Park Ave	Sunoco #2				X		X

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Table C2.14-3 - Minor Commercial Driveways Not Meeting Standards cont.

Route	Address	Commercial Name	NYSDOT Standard(s) Not Met					
			W (1-way)	W (2-way)	Distance Between W1 & W2	Distance to Intersection	Distance to Property Line	Slope
Ohio St – Michigan Ave to Ganson	170 Ohio Street	Old Hardie		X		X		
	Ohio Street	brown building #1		X	X			
	Ohio Street	brown building #2		X				
	Ohio Street	industrial		X				
	300 Ohio Street	Petroleum Sales & Service #1		X	X	X	X	
	300 Ohio Street	Petroleum Sales & Service #2		X	X			
	300 Ohio Street	Petroleum Sales & Service #3		X	X			
	300 Ohio Street	Petroleum Sales & Service #4		X	X			
	300 Ohio Street	Petroleum Sales & Service #5		X	X			
	300 Ohio Street	Petroleum Sales & Service #6		X			X	
	Ohio Street	blue bldg. #1		X				
	301 Ohio Street	blue bldg. #2 (Bulkmatic Transport)		X				
	441 Ohio Street	Great Lakes Paper Fiber Corps #1		X			X	
	441 Ohio Street	Great Lakes Paper Fiber Corps #2		X	X			
	441 Ohio Street	Great Lakes Paper Fiber Corps #3		X	X			
	441 Ohio Street	Great Lakes Paper Fiber Corps #4		X				
	511 Ohio Street	Bison City Rod & Gun Club #1			X		X	
	511 Ohio Street	Bison City Rod & Gun Club #2		X				
Ohio St – Ganson to Fuhrmann Blvd	601 Ohio Street	Buffalo Casual Dining #1		X		X		
	601 Ohio Street	Buffalo Casual Dining #2		X	X			
	601 Ohio Street	Buffalo Casual Dining #3		X				
	Ohio Street	empty lot #1		X	X	X		X
	Ohio Street	empty lot #2		X				X
	658 Ohio Street	Rigidized Metals #1 (truck entrance)	X		X		X	
	658 Ohio Street	Rigidized Metals #2			X			
	658 Ohio Street	Rigidized Metals #3		X	X			
	658 Ohio Street	Rigidized Metals #4 (truck exit)					X	
	710 Ohio Street	Pierce & Stevens #1		X	X			
	710 Ohio Street	Pierce & Stevens #2		X	X			
	710 Ohio Street	Pierce & Stevens #3		X				
	710 Ohio Street	Pierce & Stevens #4		X				
Keating St	1445 Seneca St	Len-Co Lumber #5		X		X		
	1445 Seneca St	Len-Co Lumber #6		X				
	1445 Seneca St	Len-Co Lumber #8		X				
	1445 Seneca St	Len-Co Lumber #1		X	X			
	1445 Seneca St	Len-Co Lumber #2		X	X			
	1445 Seneca St	Len-Co Lumber #3		X	X			
	1445 Seneca St	Len-Co Lumber #4		X				
	1445 Seneca St	Len-Co Lumber #7					X	
	718 Elk St	Natural Environmental #1		X	X		X	X
	718 Elk St	Natural Environmental #2		X				X
Tiftt St	570 Tiftt St	J&R Auto					X	
	580 Tiftt St	Hood Industries #2					X	
	637 Tiftt St	Skyway Auto Parts #1		X	X			
	637 Tiftt St	Skyway Auto Parts #2		X				
	356 Hopkins St	Security Auto Service #1			X			
	356 Hopkins St	Security Auto Service #2			X			
	356 Hopkins St	Security Auto Service #3				X		
	667 Tiftt St	J.D. Cousins & Sons #1			X			
	667 Tiftt St	J.D. Cousins & Sons #2						X
	347 Hopkins St	Turtle Motors #2				X		

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## 2.15 Structures

The following are the eighteen existing bridge structures within the project limits. They are further highlighted in **Figure C2.15-1**.

1. BIN 2256770, South Park Avenue over CSX Railroad
2. BIN 2257540, South Park Avenue over Norfolk Southern and CSX Railroads
3. BIN 2260650, South Park Avenue over Buffalo River
4. BIN 2028330, Bailey Avenue over Buffalo River
5. BIN 2028320, Bailey Avenue over Cazenovia Creek
6. BIN 2260430, Ohio Street over Buffalo River
7. BIN 2260620, Ohio Street over CSX Railroad
8. BIN 1001569, Route 5 over Service Road “D”
9. BIN 1001559, Route 5 over Conrail Railroad
10. BIN 1001549, Route 5 over Ohio Street
11. BIN 1001539, Route 5 over Service Road “C”
12. BIN 1074280, Route 5 over Tifft Street
13. BIN 1074270, Route 5 over CSX Spur Railroad
14. BIN 1001520, Route 5 over Union Ship Canal
15. BIN 1074260, Route 5 over Ridge Road
16. BIN 1001490, Route 5 over Smokes Creek
17. BIN 1001439, Route 5 over Mile Strip
18. BIN 1001429, Route 5 over Mile Strip

Tables **C2.15-1a** and **C2.15-1b** summarize the history, characteristics, geometrics, condition, load rating, and maintenance responsibility for the eighteen structures. The FHWA Federal Sufficiency Rating ranges from 0 to 100. Bridges scoring under 80 are eligible for rehabilitation or replacement funds. The NYSDOT Condition Rating is a weighted average of individual ratings for different bridge components. The NYSDOT Condition Ratings are:

1. Potential Hazards
2. Used to Shade Between a Rating of 1 and 3
3. Serious Deterioration or Not Functioning as Originally Designed
4. Used to Shade Between a Rating of 3 and 5
5. Minor Deterioration, Functioning as Originally Designed
6. Used to Shade Between a Rating of 5 and 7
7. New Condition
8. Not Acceptable
9. Unknown



**Tables C2.15-2a** and **C2.15-2b** summarize the numerical ratings from the most recent inspections. The ratings reference a scale of 1 to 7, with 1 being in very poor condition, 3 requiring major repairs and 7 signifying in new condition. A rating of 8 refers to items not applicable to the specific structure while a rating of 9 refers to items that are not inspectable.

The eighteen bridges all fall within Seismic Performance Category “B” and are classified as “Functionally Important”. Americans with Disabilities Act (ADA) rules do not apply on the NYS Route 5 structures because pedestrians and bicyclists are prohibited from traversing limited access highways. Where pedestrians and bicyclists are permitted, (structures BIN 2256770, BIN 2257540, BIN 2260650, BIN 2028330, BIN 2028320 and BIN 2260430), all applicable ADA rules must be followed.





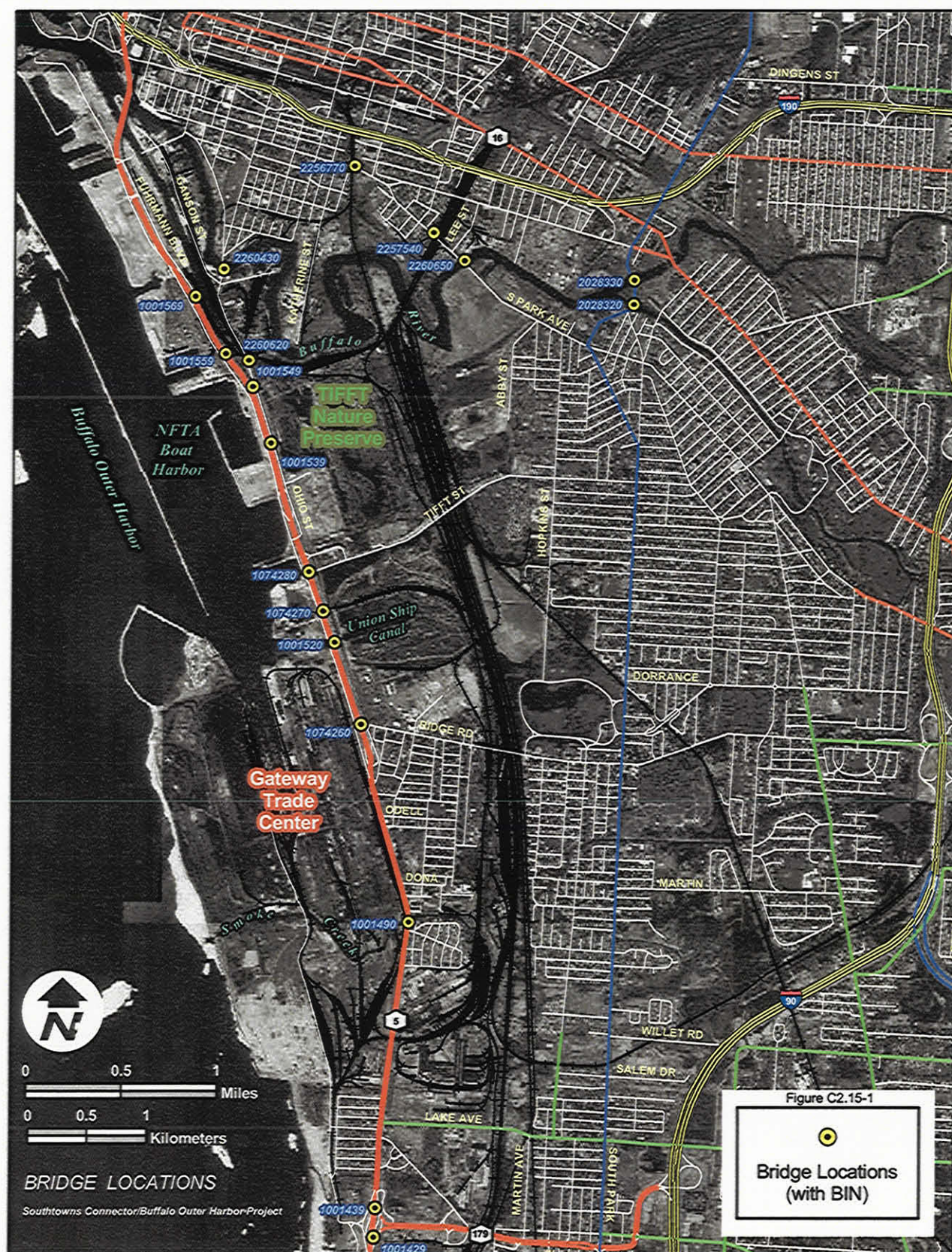




Table C2.15-1a - Bridge Summary – Route 5 Bridges

	Route 5 Over										
	Service Road "D"	Conrail Railroad	Ohio Street	Service Road "C"	Tifft Street	CSX Spur Railroad	Union Ship Canal	Ridge Road	Smokes Creek	Mile Strip Expressway	Mile Strip Expressway
BIN	1001569	1001559	1001549	1001539	1074280	1074270	1001520	1074260	1001490	1001439	1001429
General Information											
Functional Class of Roadway	Urban – Principle Arterial, Other Freeway/ Expressway	Urban – Principle Arterial, Other Freeway/ Expressway	Urban – Principle Arterial, Other Freeway/ Expressway	Urban – Principle Arterial, Other Freeway/ Expressway	Urban – Principle Arterial, Other Freeway/ Expressway	Urban – Principle Arterial, Other Freeway/ Expressway	Urban – Principle Arterial, Other Freeway/ Expressway	Urban – Principle Arterial, Other Freeway/ Expressway	Urban- Other Principal Arterial	Urban- Other Principal Arterial	Urban- Other Principal Arterial
Year Built	1965	1965	1965	1965	1991	1991	1991	1991	1912	1962	1962
Year Last Major Reconstruction	None	None	None	None	None	None	2000	None	2001	None	None
Owner	NYSDOT	NYSDOT	NYSDOT	NYSDOT	NYSDOT	NYSDOT	NYSDOT	NYSDOT	NYSDOT	NYSDOT	NYSDOT
Maintenance Responsibility	NYSDOT	NYSDOT	NYSDOT	NYSDOT	NYSDOT	NYSDOT	NYSDOT	NYSDOT	NYSDOT	NYSDOT	NYSDOT
Structure Characteristics											
Structure Type	Steel, Multi-Girder	Steel, Multi-Girder	Steel, Multi-Girder	Steel, Multi-Girder	Prestressed Concrete Box Beams	Prestressed Concrete, Voided Slabs	Steel, Multi-Girder	Prestressed Concrete Box Beams	Steel, Multi-Girder	Steel, Multi-Girder	Steel, Multi-Girder
Number of Spans (span lengths) (m (ft) )	1 span @ 30.7 (101)	3 spans @ 21.3 (70), 21.3 (70), 20.4 (67)	3 spans @ 8.5 (28), 26.2 (86), 8.5 (28)	3 spans @ 11.2 (37), 19.5 (64), 11.2 (37)	1 span @ 30.5 (100)	1 span @ 12.8 (42)	3 spans @ 27.7 (91), 26.8 (88), 27.7 (91)	1 span @ 30.4 (100)	1 span @ 28.0 (92)	3 spans @ 14.0 (46), 24.1 (79), 11.0 (36)	3 spans @ 10.7 (35), 23.8 (78), 14.0 (46) )
Deck	C.I.P. Conc. / Uncoated Rebar	C.I.P. Conc. / Uncoated Rebar	C.I.P. Conc. / Uncoated Rebar	C.I.P. Conc. / Uncoated Rebar	None	None	C.I.P. Conc. / Epoxy Rebar	C.I.P Conc. / Uncoated Rebar	C.I.P. Conc. / Epoxy Rebar	C.I.P. Conc. / Uncoated Rebar	C.I.P. Conc. / Uncoated Rebar
Wearing Surface	Micro-Silica Overlay	Micro-Silica Overlay	Micro-Silica Overlay	Micro-Silica Overlay	Concrete Overlay	Concrete Overlay	Monolithic Concrete	None	HP Concrete	Bonded Concrete	Bonded Concrete
Raised Median on Bridge (m (ft))	2.9 (9.6)	2.9 (6.9)	2.9 (6.9)	2.9 (6.9)	0.7 (2.5)	0.7 (2.5)	0.7 (2.5)	0.7 (2.5)	None	2.4 (8.0)	2.3 (7.6)
Railing / Concrete Barrier	Steel	Steel	Steel	Steel	Concrete	Concrete	Concrete	Concrete	Concrete	Steel	Steel
Utilities	Electric	Electric	Electric	Electric	Electric	None	Gas, Navigation	None	None	Electric	Electric
Lighting	Below	Yes	Yes	Yes	None	None	None	No	None	Over, Under	Over, Under
Structure Geometrics											
Out-to-Out Width / Culvert Length (m (ft) )	20.5 (67.3)	20.5 (67.3)	20.4 (67.0)	20.4 (67.0)	25.8 (84.6)	30.4 (99.8)	25.8 (84.6)	25.7 (84.6)	26.9 (88.3)	31.5 (103.3)	31.5 (103.3)
Curb-to-Curb Width (m (ft) )	18.8 (62.0)	18.8 (62.0)	18.8 (62.0)	18.0 (59.2)	24.4 (80.1)	28.1 (92.3)	24.8 (81.4)	24.0 (78.9)	24.6 (80.7)	29.9 (98.1)	29.9 (98.0)
Bridge length (span length, m (ft) )	34.4 (113)	65.5 (215)	45.1 (148)	44.1 (145)	31.1 (102)	13.7 (45)	83.5 (274)	31.0 (102)	28.6 (93.8)	51.5 (169)	50.9 (167)
Bridge Skew (approx., degrees)	0	45	0	0	0	1	0	10	27	0	0
Area Bridge Deck, (m² (ft²) )	706 (7,600)	1338 (14,400)	920 (9,900)	901 (9,700)	801.7 (8,629)	417.3 (4,492)	2,154 (23,185)	802 (8,629)	769.3 (8,281)	1625.8 (17,500)	(17,200)
Min. Vertical Clearance Under, (m (ft) )	4.59 (15'-1")	7.18 (23'-7")	4.44 (14'-7")	5.74 (18'-10")	4.6 (15'-0")	6.4 (21'-0")	7.3 (24'-0")	4.44 (14'-7")	-	4.44 (14'-7")	4.36 (14'-3")
NB/WB Lanes on Bridge	2	2	2	2	2	3	2	2	3	3	4
SB/EB Lanes on Bridge	2	2	2	2	2	3	2	2	2	4	3
Structural Condition											
NYSDOT Conditional Rating (Year)	5.261 (2000)	5.221 (2000)	5.234 (2000)	5.015 (2000)	6.280 (2001)	6.72 (2001)	6.857 (2000)	6.180 (2001)	7.000 (2001)	5.750 (2002)	5.812 (2000)
NYSDOT General Recommendation (Year)	5 (2000)	5 (2000)	5 (2000)	5 (2000)	5 (2001)	7 (2001)	7 (2000)	6 (2001)	7 (2001)	6 (2002)	6 (2000)
FHWA Sufficiency Rating (Year)	71.7 (2000)	84.2 (2000)	69.7 (2000)	69.7 (2000)	85.0 (2001)	98.3 (2001)	82.1 (2000)	95.2 (2001)	89.6 (2001)	98 (2002)	93 (2000)
Maintenance History	Micro-Silica Overlay, New Br. Rail to Guide Rail Trans., Repair Substruct. (6/91)  Clean and Paint Steel (11/86)  Replaced Railing and Br. Joint (12/76)	Micro-Silica Overlay, New Br. Rail to Guide Rail Trans., Repair Substruct., New Joints at Pier & End Abut. (6/91)  Clean and Paint Steel (11/86)  Replaced Railing and Br. Joint (12/76)	Micro-Silica Overlay, New Br. Rail to Guide Rail Trans., Repair Substruct., New Seals at Piers 1 & 2 & N. Abut. (6/91)  Clean and Paint Steel (11/86)  Replaced Railing and Br. Joint (12/76)	Micro-Silica Overlay, New Br. Rail to Guide Rail Trans., Repair Substruct., New Seals at Piers 1 & 2 (6/91)  Clean and Paint Steel (11/86)  Replaced Railing and Br. Joint (12/76)	New Concrete Approach Slabs (10/96)	None	Major Reconstruction 2000.  Replaced Superstructure, Seal Deck, Replace Approach Slabs, Modify Abutments (12/00)	None	Major Reconstruction 2001.	Reconstruction (10/96)  Paint metal (11/86)  Replace wearing surface & safety improvements (01/84)  Safety Improvements (12/76)	Reconstruction (10/96)  Paint metal (11/86)  Replace wearing surface & safety improvements (01/84)  Safety Improvements (12/76)
Load Rating											
Inventory Rating (tons)	24 (level 2, 3/96)	17 (level 2, 2/00)	25 (level 2, 2/00)	32 (level 2, 2/00)	47 (level 1, 3/92)	37 (level 2, 5/01)	53 (level 1, 12/00)	47 (level 1, 3/92)	59 (level 1, 11/01)	35 (level 2, 1/00)	39 (level 2, 1/00)
Operating Rating (tons)	55 (level 2, 3/96)	39 (level 2, 2/00)	56 (level 2, 2/00)	60 (level 2, 2/00)	51 (level 1, 3/92)	81 (level 2, 5/01)	98 (level 1, 12/00)	51 (level 1, 3/92)	99 (level 1, 11/01)	60 (level 2, 1/00)	62 (level 2, 1/00)
Substructure											
Abutment Type	Solid, Concrete Cantilever	Stub, Concrete Cantilever	Stub, Concrete Cantilever	Stub, Concrete Cantilever	Solid, Concrete Cantilever	Stub, Concrete	Solid, Concrete Cantilever	Solid, Concrete Cantilever	Integral	Stub, Cantilever	Stub, Cantilever
Pier Type	None	Pile Bent, Concrete Filled Tubular Steel	Concrete Rigid Frame	Concrete Columns with Cap Beam	None	None	Concrete, Rigid Frame	None	None	Concrete Columns with Cap Beam	Other
Foundation	Steel Piles	Steel Piles	Steel Piles	Steel Piles	Steel Piles	Continuous Spread Footing on Earth	Steel Piles	Continuous Spread Footing on Earth	Steel Piles	Steel Piles	Steel Piles
Structural Details											
Fracture Critical Span	No	No	No	No	No	No	No	No	No	No	No
Fatigue Resistance	C Details	D, E, E' Details	D, E, E' Details	D, E, E' Details	N/A	N/A	C Detail	N/A	C Detail	D, E, & E' Details	D, E, & E' Details
Out-of-Plane Bending Detail	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes	Yes
Load Path Redundancy (1)	Multi-Member	Multi-Member	Multi-Member	Multi-Member	Multi-Member	Multi-Member	Multi-Member	Multi-Member	Multi-Member	Multi-Member	Multi-Member
Internal Redundancy (2)	Welded	Rolled	Rolled	Rolled	Internally Redundant	Internally Redundant	Welded	Internally Redundant	Welded	Rolled	Rolled
Continuity Redundancy (3)	Simple Span	Simple Spans	Simple Spans	Simple Spans	Simple Span	Simple Span	Spans1 & 3-End Spans Span 2 -Interior span of Continuous Structure	Simple Span	Simple Span	Simple Spans	Simple Spans
Bearings	Steel Rocker & Sliding	Steel Rocker & Sliding	Steel Rocker & Sliding	Steel Rocker & Sliding	Elastomeric	Elastomeric	Elastomeric	Elastomeric	None	Elastomeric	Elastomeric
Other											
Historically Significant	No	No	No	No	No	No	No	No	No	No	No



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Table C2.15-1b - Bridge Summary – South Park Avenue, Bailey Avenue, and Ohio Street Bridges

	South Park Ave Over			Bailey Ave Over		Ohio Street Over	
	CSX Railroad	Norfolk-Southern and CSX Railroad	Buffalo River	Buffalo River	Cazenovia Creek	Buffalo River	CSX Railroad
BIN	2256770	2257540	2260650	2028330	2028320	2260430	2260620
General Information							
Functional Class of Roadway	Urban-Minor Arterial	Urban-Minor Arterial	Urban-Minor Arterial	Urban- Other Principal Arterial	Urban- Other Principal Arterial	Urban-Minor Arterial	Urban-Minor Arterial
Year Built	1981	1981	1952	1928	1928	1961	1962
Year Last Major Reconstruction	None	None	None	1972	1972	None	1996
Owner	City of Buffalo / CSX	City of Buffalo / CSX	City of Buffalo	City of Buffalo	City of Buffalo	City of Buffalo	City of Buffalo / CSX
Maintenance Responsibility	City of Buffalo / CSX	City of Buffalo / CSX	City of Buffalo	City of Buffalo	City of Buffalo	City of Buffalo	City of Buffalo / CSX
Structure Characteristics							
Structure Type	Steel, Multi- Girder	Steel, Multi- Girder	Approach Spans – Steel Multi-Girder Main Span – Steel Moveable (lift)	Span 1 – Steel Two Girder, Span 2 – Steel Bascule, Span 3 – Steel Multi-Girder	Steel Thru-Girder	Approach Spans – Steel Multi-Girder, Main Span – Steel Moveable (lift)	Steel, Multi- Girder
Number of Spans (span lengths) ( m (ft) )	5 Spans @ 19.5 (64), 19.5 (64), 15.8 (52), 15.8 (52), 15.8 (52)	7 Spans @ 25.3 (83), 25.3 (83), 30.2 (99), 30.2 (99), 19.2 (63), 25.0 (82), 19.2 (63)	5 Spans @ 5.4 (18), 7.6 (25), 68.3 (224), 7.6 (25), 6 (20)	3 Spans @ 27.1 (89), 28.0 (92), 14.0 (46)	1 Span @ 31.4 (103)	7 Spans @ 1.2 (4), 8.5 (28), 1.2 (4), 82.3 (270), 1.2 (4), 8.5 (28), 1.2 (4)	3 Spans @ 55.5 (182), 56.4 (185), 22.3 (73)
Deck	C.I.P. Conc. / Epoxy Rebar	C.I.P. Conc. / Epoxy Rebar	C.I.P. Conc. / Uncoated Rebar	C.I.P. Conc. / Uncoated Rebar	C.I.P. Conc. / Uncoated Rebar	C.I.P. Conc. / Uncoated Rebar	C.I.P. Conc. / Epoxy Rebar
Wearing Surface	High Density Concrete	High Density Concrete	Asphalt Concrete	Asphalt Concrete	Asphalt Concrete	Asphalt Concrete	Monolithic Concrete
Raised Median on Bridge	None	None	None	None	None	None	None
Railing / Concrete Barrier	Concrete	Concrete	Steel	Steel	None	Steel Pedestrian Railing	Concrete
Utilities	None	None	Electric, Navigation	Water, Sewer, Electric	Water, Telephone, Sewer, Electric	Electric, Navigation	None
Lighting	Yes	Yes	Yes	Yes	None	Yes	Yes
Structure Geometrics							
Out-to-Out Width / Culvert Length (m (ft) )	19.2 (63.0)	19.2 (63.0)	16.0 (52.7)	20.8 (68.2)	16.5 (54.0)	14.7 (48.2)	17.4 (57.2)
Curb-to-Curb Width (m (ft) )	15.2 (50.0)	15.2 (50.0)	14.6 (48.0)	15.2 (50.0)	15.2 (50.0)	13.4 (44.0)	16.5 (54.0)
Bridge length (span length, m (ft) )	87.8 (288)	176.2 (578)	95.4 (313)	70.1 (230)	32.0 (105)	105.8 (347)	136.2 (447)
Bridge Skew (approx., degrees)	Varies 0 to 15	Varies 0 to 13	0	0	0	0	Varies 0 to 38
Area Bridge Deck, ( m <sup>2</sup> (ft <sup>2</sup> ) )	1690.8 (18,200)	3381.7 (36,400)	1914 (20,600)	1105.5 (11,900)	529.5 (5,700)	1551.5 (16,700)	2375.3 (25,568)
Min. Vertical Clearance Under, ( m (ft) )	6.14 (20'-2")	6.47 (21'-2")	-	-	-	-	6.52 (21'-5")
NB/WB Lanes on Bridge	2	2	2	2	2	2	2
SB/EB Lanes on Bridge	2	2	2	2	2	2	2
Structural Condition							
NYSDOT Conditional Rating (Year)	4.819 (2000)	4.736 (2000)	3.263 (2000)	4.166 (2000)	4.453 (2000)	4.283 (2000)	6.464 (2000)
NYSDOT General Recommendation (Year)	6 (2000)	5 (2000)	4 (2000)	4 (2000)	4 (2000)	5 (2000)	7 (2000)
FHWA Sufficiency Rating (Year)	80.5 (2000)	78.5 (2000)	57.3 (2000)	42.3 (2000)	39.4 (2000)	56.2 (2000)	80.9 (2000)
Maintenance History	None	None	New Concrete Sidewalk on Span 4 (7/94)	Major Reconstruction 1972	Major Reconstruction 1972. Replaced Wearing Surface (8/90). Replaced Joints. (8/90)	Painted Steel (1989) Maint./Repair of Electric and Mechanical Equipment (1991)	Major Reconstruction 1996
Load Rating							
Inventory Rating (tons)	45 (level 2, 10/98)	58 (level 2, 8/95)	32 (level 2, 2/01)	18 (level 2, 2/01)	33 (level 2, 10/98)	36 (level 2, 3/01)	43 (level 2, 11/98)
Operating Rating (tons)	72 (level 2, 10/98)	99 (level 2, 8/95)	79 (level 2, 2/01)	48 (level 2, 2/01)	59 (level 2, 10/98)	80 (level 2, 3/01)	94 (level 2, 11/98)
Substructure							
Abutment Type	Solid, Concrete Cantilever	Solid, Concrete Cantilever	Solid, Concrete Cantilever	Solid, Concrete Gravity	Solid, Concrete Cantilever with Tiebacks	Solid, Concrete Gravity	Solid, Concrete Cantilever
Pier Type	Concrete, Rigid Frame	Concrete, Rigid Frame	Solid, Concrete	Solid, Concrete	None	Solid, Concrete	Concrete, Rigid Frame
Foundation	Steel Piles	Steel Piles	Unknown	Beg. Abut – Timber Piles, Pier 1 Spread Footing on Rock	Timber Piles	Continuous Spread Footing, on Rock	Abut. - Steel Piles Pier – Concrete CIP Piles
Structural Details							
Fracture Critical Span	No	No	Span 3	Spans 1 & 2	Yes	Spans 1, 3, 4, 5 & 7	No
Fatigue Resistance	A & B Details	C Details	D, E, E' Details	Spans 1 & 2 – D, E & E' Details Span 3 – A & B Details	D, E, & E' Details	D, E, & E' Details	A & B Details
Out-of-Plane Bending Detail	No	No	Span 3	Spans 1 & 2	Yes	Spans 1, 3, 4, 5 & 7	No
Load Path Redundancy (1)	Multi-Member	Multi-Member	Spans 1, 2, 4 & 5 – Multi-Member Span 3 – 2 Member	Spans 1 & 2 – Two Member With Multi Load Path, Span 3 – Multi-Member	2 Member With Multi Load Path	Spans 1, 3, 4, 5, & 7 – Riveted Spans 2 & 6 – Rolled	Multi-Member
Internal Redundancy (2)	Rolled	Welded	Spans 1, 2, 4 & 5 – Rolled Span 3 – Riveted	Spans 1 & 2 - Riveted, Span 3 –Rolled	Riveted	Spans 1, 3, 4, 5, 7 – Riveted Spans 2 & 6 - Rolled	Welded
Continuity Redundancy (3)	Cont. Int. Span (3 spans) Simple / End Span (2 spans)	Cont. Int. Span (1 span) Simple / End Span (6 spans)	Simple Spans	Simple / End Span	Simple / End Span	Spans 1, 3, 4, 5, 7 - Simple / End Span Spans 2 & 6 - Cont. Int. Spans	Simple / End Span
Bearings	Steel Rocker and Steel Pinned	Steel Rocker and Steel Pinned	Steel Sliding and Steel Fixed	Steel Rocker and Steel Fixed	Steel Slider and Steel Pinned	Steel Pinned	Multi-Rotational
Other							
Historically Significant	No	No	Eligible for National Register	No	No	No	No



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Table C2.15-2a - Bridge Inspection Data – Route 5 Bridges

	Route 5 Over										
	Service Rd. "D"	Conrail Rail Road	Ohio Street	Service Rd. "C"	Tifft Street	CSX Spur Rail Road	Union Ship Canal	Ridge Road	Smoke Creek	Mile Strip Expressway	Mile Strip Expressway
BIN	1001569	1001559	1001549	1001539	1074280	1074270	1001520	1074260	1001490	1001439	1001429
Inspection Results											
Last Year Inspected	5/21/2002	5/16/2002	5/17/2002	4/24/02	5/11/2001	5/10/2001	12/19/2000	5/10/2001	11/05/2001	5/9/2002	5/9/2002
General Recommendation	5	5	5	5	5	7	7	6	7	6	6
Begin Abutment											
Joint with Deck	8	8	8	8	6	7	7	5	8	7	6
Bearings and Anchor Bolts	4	5	4	3	6	7	7	6	8	7	7
Bridge Seat and Pedestals	5	6	5	6	7	7	7	7	8	7	7
Backwall	6	6	6	6	7	7	7	7	8	6	6
Stem	5	8	8	8	7	7	7	6	7	8	8
Erosion and Scour	6	6	6	6	7	7	7	7	7	6	6
Footings	9	9	9	9	9	5	9	9	8	9	9
Piles	9	9	9	9	9	8	9	8	9	9	9
End Abutment											
Joint with Deck	8	5	4	8	6	7	8	5	8	7	7
Bearings and Anchor Bolts	4	4	3	3	6	7	7	6	8	7	7
Bridge Seat and Pedestals	5	5	4	6	7	7	7	7	8	7	7
Backwall	5	5	5	5	7	7	7	7	8	6	6
Stem	6	8	8	8	7	7	7	7	7	8	8
Erosion and Scour	6	6	6	5	7	7	7	7	7	6	6
Footings and Piles	9	9	9	9	9	7	9	9	8	9	9
Piles	9	9	9	9	9	8	9	8	9	9	9
Begin Wingwalls											
Walls	5	5	5	4	7	5	7	7	7	6	6
Footings	9	9	9	9	5	7	9	9	8	9	9
Erosion and Scour	6	7	6	6	7	7	7	7	7	6	6
Piles	9	9	9	9	9	8	9	8	8	9	9
End Wingwalls											
Walls	5	6	6	5	7	5	7	6	7	6	6
Footings	9	9	9	9	5	7	9	9	8	9	9
Erosion and Scour	6	7	6	6	7	7	7	7	7	6	6
Piles	9	9	9	9	9	8	9	8	8	9	9
Stream Channel											
Stream Alignment	8	8	8	8	8	8	7	8	7	8	8
Erosion and Scour	8	8	8	8	8	8	7	8	7	8	8
Waterway Opening	8	8	8	8	8	8	7	8	7	9	8
Bank Protection	8	8	8	8	8	8	7	8	7	8	8
Approach											
Drainage	5	6	4	6	6	7	7	7	7	6	6
Embankment	6	6	6	6	6	5	7	6	7	6	6
Settlement	6	6	7	6	4	7	7	6	7	5	6
Erosion	6	6	6	5	5	5	7	6	7	6	6
Pavement	5	6	7	6	5	4	7	6	7	4	4
Railing	6	4	6	6	7	7	7	7	7	6	7
Deck Elements											
Wearing Surface	6	5, 5, 5	6, 6, 6	5, 5, 5	6	6	7, 7, 7	6	7	6, 6, 6	6, 6, 6
Mono Deck Surface	6	6, 6, 6	6, 6, 6	6, 6, 6	6	6	7, 7, 7	5	7	7, 7, 7	7, 7, 7
Curbs	6	6, 6, 6	6, 6, 6	6, 6, 6	8	8	8, 8, 8	8	7	6, 6, 6	6, 6, 6
Sidewalks and Fascias	5	5, 5, 5	6, 6, 6	6, 6, 6	6	7	7, 7, 7	7	7	6, 6, 6	6, 6, 6
Railings and Parapets	5	5, 5, 5	6, 6, 6	6, 6, 6	6	6	7, 7, 7	7	7	6, 6, 6	5, 5, 5
Scuppers	8	8, 8, 8	8, 8, 8	8, 6, 8	8	8	8, 8, 8	8	7	8, 8, 8	8, 8, 8
Gratings	8	8, 8, 8	8, 8, 8	8, 8, 8	8	8	8, 8, 8	8	8	8, 8, 8	8, 8, 8
Median	4	6, 6, 6	6, 6, 6	6, 6, 6	6	7	7, 7, 7	7	8	5, 5, 5	5, 5, 5
Superstructure											
Deck Structural	5	5, 5, 5	5, 5, 5	6, 6, 6	8	8	7, 7, 7	8	7	5, 5, 5	5, 5, 5
Primary Member	6	6, 6, 6	6, 6, 6	6, 6, 6	5	7	7, 7, 7	6	7	6, 6, 6	6, 6, 6
Secondary Member	6	6, 6, 6	7, 7, 7	6, 6, 6	8	8	7, 7, 7	8	7	6, 6, 6	6, 6, 6
Paint	6	6, 6, 6	7, 7, 7	6, 6, 6	8	8	7, 7, 7	8	7	5, 5, 5	5, 5, 5
Joints	8	5, 5, 8	3, 5, 8	4, 5, 8	8	8	8, 8, 8	8	8	4, 4, 8	4, 4, 8
Piers											
Bridge Anchor Bolts	8	4, 4, 8	3, 5, 8	3, 3, 8	8	8	7, 7, 8	8	8	6, 7, 8	6, 7, 8
Pedestals	8	6, 6, 8	4, 5, 8	4, 5, 8	8	8	7, 7, 8	8	8	6, 7, 8	7, 6, 8
Top Of Pier Cap And Bearings	8	6, 6, 8	6, 6, 8	5, 5, 8	8	8	7, 7, 8	8	8	6, 6, 8	6, 6, 8
Stem Solid Pier	8	8, 8, 8	8, 8, 8	8, 8, 8	8	8	8, 8, 8	8	8	8, 8, 8	8, 8, 8
Cap Beam	8	6, 6, 8	6, 6, 8	6, 6, 8	8	8	7, 6, 8	8	8	6, 6, 8	6, 6, 8
Pier Columns	8	6, 6, 8	6, 6, 8	5, 5, 8	8	8	7, 7, 8	8	8	6, 6, 8	6, 6, 8
Footings	8	8, 8, 8	9, 9, 8	9, 9, 8	8	8	9, 9, 8	8	8	9, 9, 8	9, 9, 8
Erosion Or Scour	8	7, 7, 8	7, 7, 8	7, 7, 8	8	8	7, 7, 8	8	8	6, 6, 8	6, 6, 8
Piles	8	9, 9, 8	9, 9, 8	9, 9, 8	8	8	9, 9, 8	8	8	9, 9, 8	9, 9, 8
Utilities											
Lighting Standards & Fixtures	3	2, 8, 2	6, 8, 6	5, 8, 8	8	8	7, 8, 7	6	7	6, 3, 6	6, 6, 6
Sign Structure	8	8, 8, 8	8, 8, 8	8, 8, 8	8	8	8, 8, 8	8	7	8, 8, 8	8, 8, 8
Utilities and Utilities Support	3	8, 8, 8	8, 8, 8	8, 8, 8	8	8	8, 7, 8	8	8	8, 8, 8	8, 8, 8



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Table C2.15-2b - Bridge Inspection Data – South Park Avenue, Bailey Avenue, and Ohio Street Bridges

	South Park Ave Over			Bailey Ave Over		Ohio Street Over	
	CSX Rail Road	Norfolk-Southern and CSX Rail Roads	Buffalo River	Buffalo River	Cazenovia Creek	Buffalo River	CSX Rail Road
<b>BIN</b>	<b>2256770</b>	<b>2257540</b>	<b>2260650</b>	<b>2028330</b>	<b>2028320</b>	<b>2260430</b>	<b>2260620</b>
<b>Inspection Results</b>							
Last Year Inspected	11/09/2000	12/06/2000	10/18/2000	6/18/2002	9/28/2000	11/03/2000	11/16/2000
General Recommendation	6	5	4	4	4	5	7
<b>Begin Abutment</b>							
Joint with Deck	2	3	3	6	3	8	5
Bearings and Anchor Bolts	4	4	3	3	5	8	7
Bridge Seat and Pedestals	6	6	4	3	4	8	7
Backwall	4	5	3	5	5	8	6
Stem	5	6	4	3	3	4	7
Erosion and Scour	7	5	5	5	3	6	7
Footings	9	9	9	9	5	9	9
Piles	9	9		9	5	8	9
<b>End Abutment</b>							
Joint with Deck	2	3	2	8	5	8	5
Bearings and Anchor Bolts	4	4	3	9	5	8	5
Bridge Seat and Pedestals	5	6	2	5	4	8	7
Backwall	4	5	3	5	4	8	7
Stem	5	6	3	5	4	5	6
Erosion and Scour	3	7	5	7	3	6	7
Footings and Piles	5	9	9	9	5	9	9
Piles	9	9		9	5	8	9
<b>Begin Wingwalls</b>							
Walls	6	5	3	5	5	5	6
Footings	9	9	9	9	5	5	9
Erosion and Scour	6	7	5	6	5	5	7
Piles	9	9	9	9	5	8	9
<b>End Wingwalls</b>							
Walls	6	5	5	5	5	5	6
Footings	9	9	9	9	5	5	9
Erosion and Scour	5	7	5	6	5	5	7
Piles	9	9	9	9	5	8	9
<b>Stream Channel</b>							
Stream Alignment	8	8	6	7	6	6	8
Erosion and Scour	8	8	5	5	4	5	8
Waterway Opening	8	8	7	6	5	7	8
Bank Protection	8	8	5	5	5	5	8
<b>Approach</b>							
Drainage	5	3	6	6	4	5	7
Embankment	6	6	6	6	5	5	7
Settlement	2	3	4	4	5	4	6
Erosion	5	5	5	5	5	3	7
Pavement	3	3	3	3	4	3	5
Railing	2	5	2	5	5	5	6
<b>Deck Elements</b>							
Wearing Surface	6, 6, 6, 6, 6	5, 5, 5, 5, 5, 5, 5	4, 4, 3, 5, 4	5, 5, 5	5	6, 6, 3, 5, 3, 3, 3	7, 7, 7
Mono Deck Surface	8, 8, 8, 8, 8	8, 8, 8, 8, 8, 8, 8	8, 8, 8, 8, 8	8, 8, 8	8	8, 8, 8, 8, 8, 8, 8	7, 7, 7
Curbs	4, 4, 4, 4, 4	4, 3, 4, 3, 3, 3, 4	3, 3, 5, 4, 5	5, 5, 5	5	4, 5, 5, 5, 5, 5, 5	8, 8, 8
Sidewalks and Fascias	5, 5, 5, 5, 5	5, 4, 5, 5, 4, 5, 5	3, 3, 2, 4, 3	4, 4, 5	5	4, 5, 5, 4, 5, 5, 5	7, 7, 7
Railings and Parapets	5, 5, 4, 5, 5	6, 6, 6, 5, 5, 6, 6	5, 5, 5, 5, 5	5, 5, 5	5	6, 6, 6, 6, 6, 6, 6	7, 7, 7
Scuppers	8, 8, 8, 8, 8	8, 8, 8, 8, 8, 8, 8	8, 8, 8, 8, 8	3, 3, 8	2	8, 8, 8, 8, 8, 8, 8	8, 8, 8
Gratings	8, 8, 8, 8, 8	8, 8, 8, 8, 8, 8, 8	8, 8, 8, 8, 8	8, 8, 8	8	8, 8, 8, 8, 8, 8, 8	8, 8, 8
Median	8, 8, 8, 8, 8	8, 8, 8, 8, 8, 8, 8	8, 8, 8, 8, 8	8, 8, 8	8	8, 8, 8, 8, 8, 8, 8	8, 8, 8
<b>Superstructure</b>							
Deck Structural	5, 5, 6, 6, 6	5, 5, 5, 5, 5, 5, 5	4, 4, 4, 5, 4	5, 5, 5	5	4, 3, 3, 4, 5, 2, 4	7, 7, 7
Primary Member	6, 6, 7, 7, 7	6, 6, 6, 6, 6, 7, 6	5, 5, 4, 5, 4	4, 4, 5	5	5, 5, 5, 5, 5, 5, 5	7, 7, 7
Secondary Member	6, 5, 6, 7, 7	6, 6, 6, 6, 6, 7, 6	4, 5, 4, 5, 5	5, 5, 8	5	8, 5, 8, 4, 8, 5, 8	7, 7, 7
Paint	5, 4, 4, 6, 6	5, 5, 5, 5, 5, 7, 5	3, 3, 3, 3, 3	3, 3, 3	3	4, 4, 4, 4, 4, 4, 4	7, 7, 7
Joints	8, 2, 8, 8, 8	8, 3, 8, 2, 8, 8, 8	8, 3, 3, 8, 8	6, 5, 8	8	8, 8, 5, 5, 8, 8, 8	8, 5, 8
<b>Piers</b>							
Bridge Anchor Bolts	5, 4, 6, 6, 8	6, 3, 5, 4, 7, 6, 8	5, 4, 4, 5, 8	3, 3, 8	8	5, 5, 5, 5, 5, 5, 8	6, 7, 8
Pedestals	6, 6, 6, 6, 8	7, 6, 6, 4, 6, 7, 8	5, 4, 3, 5, 8	3, 3, 8	8	5, 5, 5, 5, 5, 5, 8	7, 7, 8
Top Of Pier Cap And Bearings	5, 5, 7, 7, 8	7, 6, 6, 6, 7, 7, 8	5, 5, 5, 5, 8	4, 8, 8	8	8, 8, 5, 5, 8, 8, 8	7, 7, 8
Stem Solid Pier	8, 5, 6, 6, 8	6, 5, 5, 5, 5, 8, 8	5, 4, 5, 5, 8	4, 4, 8	8	8, 8, 5, 5, 8, 8, 8	7, 7, 8
Cap Beam	6, 4, 6, 6, 8	7, 6, 7, 4, 6, 7, 8	5, 5, 5, 5, 8	4, 8, 8	8	8, 8, 8, 8, 8, 8, 8	7, 7, 8
Pier Columns	6, 6, 6, 6, 8	6, 6, 7, 6, 6, 6, 8	8, 8, 8, 8, 8	8, 8, 8	8	8, 8, 8, 8, 8, 8, 8	7, 7, 8
Footings	9, 9, 9, 9, 8	9, 9, 9, 9, 9, 8	9, 9, 9, 9, 8	9, 9, 8	8	9, 9, 9, 5, 9, 9, 8	9, 9, 8
Erosion Or Scour	7, 7, 7, 7, 8	7, 7, 7, 7, 7, 7, 8	5, 5, 5, 5, 8	5, 5, 8	8	5, 5, 5, 5, 5, 5, 8	7, 7, 8
Piles	9, 9, 9, 9, 8	9, 9, 9, 9, 9, 9, 8	9, 9, 9, 9, 8	9, 9, 8	8	8, 8, 8, 8, 8, 8, 8	9, 9, 8
<b>Utilities</b>							
Lighting Standards & Fixtures	8, 6, 8, 6, 8	6, 6, 6, 6, 6, 8, 6	1, 1, 4, 1, 8	5, 8, 4	8	8, 6, 8, 6, 8, 6, 8	7, 7, 7
Sign Structure	8, 4, 8, 4, 8	8, 8, 8, 8, 8, 8, 8	4, 8, 8, 8, 4	8, 8, 8	8	1, 8, 8, 3, 8, 8, 2	8, 8, 8
Utilities and Utilities Support	9, 9, 9, 9, 9	6, 6, 6, 6, 6, 6, 6	3, 3, 5, 5, 5	2, 2, 4	2	5, 5, 5, 5, 5, 5, 5	8, 8, 8





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## 2.16 Provisions for Pedestrians and Bicyclists

### *Sidewalk Locations*

Sidewalks are provided along all roadways in the study area with the exception of Fuhrmann Boulevard, Lake Avenue, Mile Strip, and parts of Ohio Street. **Table C2.16-1** lists the sidewalk locations in the project area.

**Table C2.16-1 - Sidewalk Locations**

<b>Route</b>	<b>Segment</b>	<b>Location</b>
Route 5	Ridge Rd. to Buffalo Specialty Products Inc.	East side
	Buffalo Specialty Products Inc. to Mile Strip Exp.	Both sides
South Park Ave	Michigan Ave. to Ridge Rd.	Both sides
Ohio St	Miami St. to Chicago St.	East side
	South St. to Louisiana St.	East side
	Louisiana St. to Ganson St./Childs St.	Both sides
	Ganson St./Childs St. to Fuhrmann Blvd.	East side
Louisiana St	South Park Ave. to Ohio St.	Both sides
Smith St	Elk St. to South Park Ave.	Both sides
Keating St	Seneca St. to Elk St.	Both sides
Bailey Ave	Clinton St. to South Park Ave.	Both sides
Hopkins St	South Park Ave. to Tift St.	Both sides
	Tift St. to Ladner Ave.	East side
	Larrabee St. to RR Tracks	East side
Seneca St	Babcock St. to Elk St.	Both sides
Elk St	Babcock St. to Seneca St.	Both sides
Tift St	Fuhrmann Blvd. to Hopkins St.	North side
	Hopkins St. to South Park Ave.	Both sides
Ridge Rd	Fuhrmann Blvd. to RR Tracks	Both sides
Lake Ave	RR Tracks to RR Tracks	South side

Pedestrian provisions are noted in **Table C2.16-2**, as well as being described as follows:

### *Crosswalk Locations*

Pedestrian crosswalks are provided across all legs of the following intersections:

- Route 5 at Fourth Street, and Hawley Street,
- South Park Avenue at Michigan Avenue, Southside Parkway, Tift Street, Choate, the Police Athletic League, Marilla Street, Lake Ave, and Mile Strip Road,



- Ridge Road at Electric Avenue,
- Bailey Avenue at Elk Street and McKinley Parkway,
- Seneca Street at Babcock Street,
- Elk Street at Smith Street, and
- Hopkins Street at Tift Street and Good Avenue.

Pedestrian crosswalks are provided across selected legs of the following intersections:

- Route 5 at Odell Street, Dona Street, Madison Avenue, and Lake Avenue,
- South Park Avenue at Harvey Place, Euclid Street, Bailey Avenue/Abbott Road, Verona Street, Good Avenue, and McKinley Parkway,
- Ridge Road at Franklin Street and Victory Avenue,
- Ohio Street at Michigan Avenue,
- Bailey Avenue at Seneca Street,
- Okell Street at South Park Avenue,
- Center Street at Ridge Road,
- Littel Avenue at Bailey Avenue, and
- Minton Street at Seneca Street

Manual push button controllers assist pedestrian traffic across all legs of the following intersections:

- South Park Avenue at Alabama Street, Hamburg Street, Bailey Avenue/Abbott Road, Tift Street, the Police Athletic League, Lake Avenue, and Mile Strip,
- Bailey Avenue at Seneca Street and McKinley Parkway, and
- Seneca Street at Smith Street.

Manual push button controllers assist pedestrian traffic across selected legs of these intersections:

- Route 5 at Odell Street, Dona Street, Madison Avenue, Lake Avenue, Fourth Street, and Hawley Street,
- Tift Street at Fuhrmann Boulevard SB,
- South Park Avenue at Michigan Avenue, Elk Street, Lee Street, Germania Street, Hopkins Street, Southside Parkway, Choate, and Marilla Street,
- Ohio Street at Ganson Street,
- Bailey Avenue at Elk Street, and
- Hopkins Street at Good Avenue.

Pedestrian signals without manual push buttons are provided at the intersection of Bailey Ave and Clinton Street.



Table C2.16-2 - Pedestrian Provisions

Route	Intersection	Crosswalk		Manual Push Button		Pedestrian Signal	
		All Legs	Selected Legs	All Legs	Selected Legs	All Legs	Selected Legs
Route 5	Odell St		X		X		
	Dona St		X		X		X
	Madison Ave		X		X		X
	Lake Ave		X		X		X
	Fourth Street	X			X		X
	Hawley St	X			X		X
Fuhrmann Blvd - SB	Tift St				X		
South Park Avenue	Michigan Ave	X			X		
	Alabama St			X			
	Hamburg St			X			
	Elk St				X		X
	Harvey Pl		X				
	Euclid		X				
	Lee St				X		X
	Germania St				X		
	Hopkins St				X		
	Bailey Ave / Abbott Rd		X	X		X	
	Verona St		X				
	Good Ave		X				
	Southside Pkwy / Como	X			X		
	Tift St	X		X			
	Choate	X			X		X
	Police Athletic League	X		X			
	Okell St		X				
	Marilla St	X			X		
	McKinley Pkwy		X				
	Lake Ave	X		X		X	
	Mile Strip	X		X		X	
Ohio Street	Michigan Ave		X				
	Ganson St				X	X	
Bailey Avenue	Clinton St					X	
	Littel Ave		X				
	Seneca St		X	X			X
	Elk Street	X			X		
	McKinley Pkwy	X		X		X	
Hopkins Street	Tift St	X					
	Good Ave	X			X		
Seneca Street	Smith St			X		X	
	Babcock St	X					
	Milton St		X				
Elk Street	Smith St	X					
Ridge Road	Center St		X				
	Franklin St		X				
	Electric Ave	X					
	Victory Ave		X				



### *Bicycle Traffic*

Bicycle traffic is accommodated via a bike lane in both directions along Tifft Street between the George Hartman Playing Fields and the driveway for Modern Recycling. Pedestrian and bicycle traffic on Route 5 from the Skyway to Ridge Road is prohibited. According to the NYSDOT Highway Design Manual, a roadway shoulder must be at least 1.2 m (3.9 ft) in width to be usable for bicycle traffic. There are only a few road segments that include a paved shoulder wide enough for safe bicycle traffic. However, in most cases these routes do not provide the required width for an extended length between two destination points. **Figure C2.16-1** shows the quality rating of the on-street bicycle network according to the GBNRTC. Designated bicycle lanes and multi-use trails are also identified on this map.

There are no known plans for improvements to bicycle or pedestrian accommodations.

## 2.17 Planned Development for Area

Future highway projects planned by NYSTA, NYSDOT, and local governments in the project area have been identified. These projects have been evaluated to determine the influence, if any, they will have on travel patterns in the project area. These projects are organized below according to their listing in either the Greater Buffalo-Niagara Regional Transportation Council (GBNTRC) *Transportation Improvement Program 2002-2006 (TIP)* or the GBNRTC *2025 Long-Range Plan For Erie And Niagara Counties*.

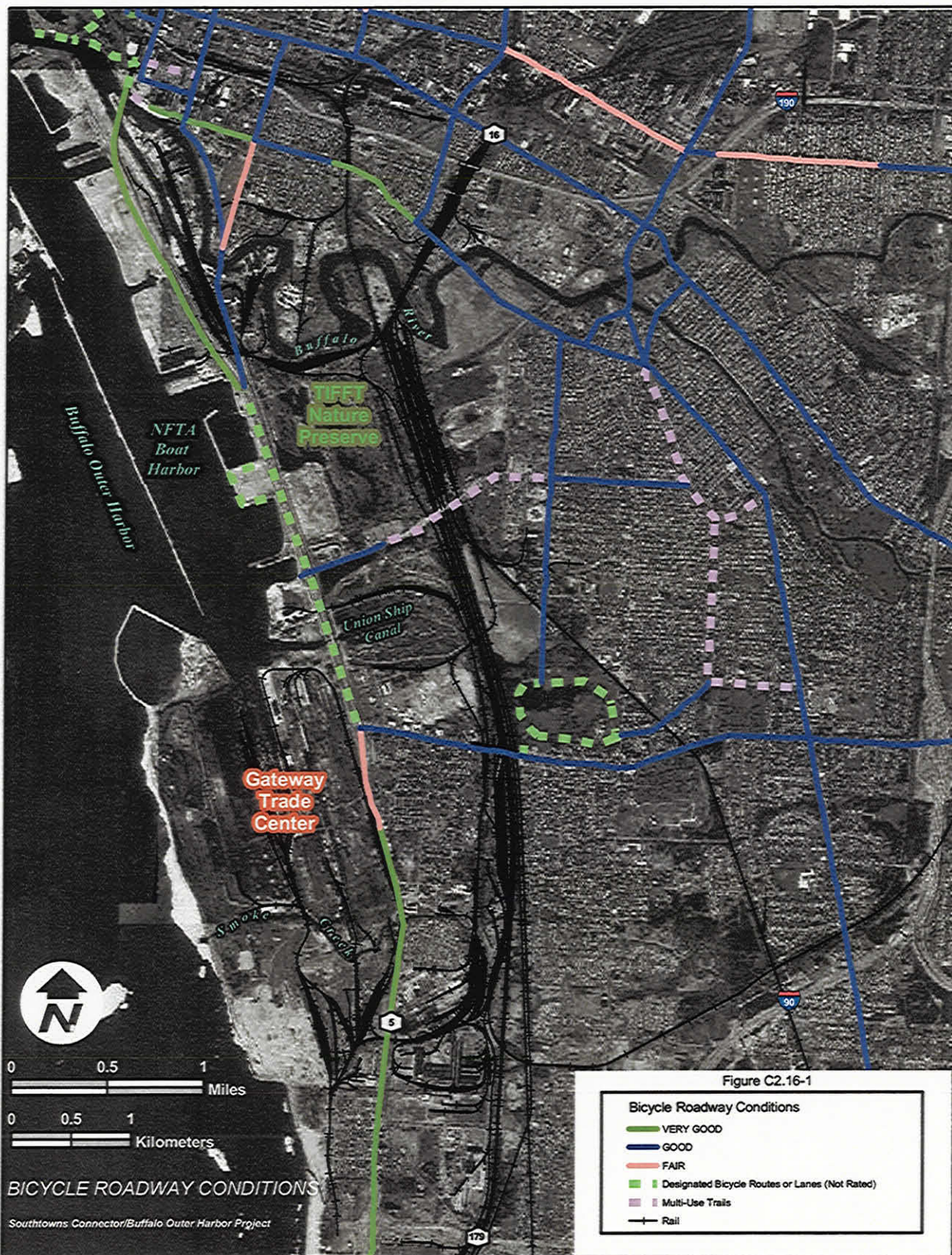
### **GBNRTC Transportation Improvement Program 2002-2006 (TIP)**

Construction is complete for the widening of I-90 from six to eight lanes between NY-400 (exit 54) and I-190 (exit 53). This will relieve congestion on I-90. The reconstruction of the I-90/I-290 interchange will be let in June 2006. Due to the distant proximity of this project to the Southtowns Connector, these improvements are not expected to produce significant changes in the volume of traffic in the study area.

The Buffalo Fort Erie Public Bridge Authority (BFEPBA) is addressing the need for improvements and possible expansion of the Peace Bridge. This Peace Bridge Configuration Relief project is presently progressing through the Environmental Impact Statement (EIS) phase of planning and could take two years to complete. Design and construction would follow should and alternative be approved. Construction of the Peace Bridge project may not commence until 2006 or 2007. Start of construction could be impacted if right-of-way acquisition is necessary. This project is not expected to produce significant changes in the volume of traffic within the project area if the bridge remains in relatively the same location. Options for new locations, however, are typically considered as part of the EIS process.







The I-190/I-290 Bridge rehabilitation is scheduled to be let in June 2005. The I-290 between I-190 and Main Street is scheduled for resurfacing and is anticipated to be in February 2004. The interchange rehabilitation is not expected to cause changes in the volume of traffic in the study area.

### **GBNRTC 2025 Long-Range Plan For Erie And Niagara Counties**

A number of economic development projects are planned to support economic development in the Buffalo-Niagara region. Highway improvements to expand the commercial, economic and tourism base of the area will aid these redevelopment areas. These economic development projects include the Southtowns Connector Access / Redevelopment Project.

The Project Management Team for the City of Buffalo has developed the South Buffalo Redevelopment Plan to reestablish commercial properties on the former industrial properties located adjacent to Lake Erie. Some of the planned improvements involve the redevelopment of the former Republic Steel (LTV) Properties, the Union Ship Canal, the Lehigh Valley Rail Corridor, and the Lackawanna Commerce Park. The redevelopment plan investigates the possibility of transforming the currently vacant land into light industrial, warehousing, distribution, research and development, corporate facilities, and other office uses. The redevelopment of these sites and the increase in new jobs is still in the planning stages but is reflected in future demographic and travel forecasts for the Southtowns Connector/Buffalo Outer Harbor Project.



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## CHAPTER 3: SCENARIOS

Scenarios/Alternatives considered for the Southtowns Connector / Buffalo Outer Harbor Project are highway infrastructure facilities. They consist of either reconfiguring existing roadways or constructing new facilities.

The major objectives of the project focus on: improving access to specific brownfield development sites in South Buffalo and on the Lake Erie waterfront; reconfiguring the Route 5/Fuhrmann Boulevard/Ohio Street complex into a waterfront arterial system that would be more consistent with local plans; maintaining adequate service for commuter/commercial traffic between the Southtowns and Downtown Buffalo; and improving access in the project area for other modes of transportation (bus, bicycle, pedestrian).

### 3.1 Scenarios Considered

The Scenarios/Alternatives analyzed as a part of this project resulted from community input gathered through the DR/DEIS Scoping Process and Public Scoping Meetings. Scenarios consisted of a “No-Build” or Null Scenario and seven “Build” Scenarios.

Scenario 2 was developed as a new arterial beginning at an interchange at I-190 near Bailey Avenue and then extending southerly to Tifft Street. This alternative was rejected from consideration due to issues of high costs associated with the interchange configuration, adverse property impacts, lack of accessibility to adjacent properties, and promulgation of circuitous travel patterns.

Six build alternatives, in addition to the Null Scenario, were considered for further evaluation. The Null Scenario consists of the existing highway system, plus improvements outlined in the current Transportation Improvement Program (TIP). Additional information about the TIP is found in Section 3.2 of this chapter. The Null Scenario does not meet any study objectives and is therefore not considered a feasible alternative. However, the Null Alternative is retained to serve as a baseline for comparison of impacts associated with the feasible alternatives. The feasible build alternatives examined in this report are:

#### Scenario 1: New Arterial Only

This alternative consists of the existing highway system including improvements outlined in the current TIP, as well as a construction of a new four lane undivided arterial connecting I-190 near Bailey Avenue and extending to Tifft Street.



**Scenario 3: Boulevard Alternative**

This alternative includes an at-grade reconfiguration of Route 5 between Ridge Road and the Skyway, and a reconfiguration of Ohio Street between Fuhrmann Boulevard and Michigan Avenue. The remaining highway system within the project area would remain, with improvements as noted in the TIP.

**Scenario 4: Hybrid Alternative**

This alternative is similar to Scenario 3 in that it includes an at-grade reconfiguration of both Route 5 between Ridge Road and the Skyway, and Ohio Street between Fuhrmann Boulevard and Michigan Avenue. However, access to Route 5 is limited. Therefore, this alternative contains a parallel service road to provide access to waterfront development. The remaining highway system within the project area would remain, with improvements as noted in the TIP.

**Scenario 5: Modified Improvement Alternative (Preferred Alternative)**

This alternative is similar to existing Route 5 between Tifft Street and the Skyway because it is an elevated roadway section with limited access. Therefore, waterfront development access is provided by a parallel service road. An at-grade intersection is provided at Ridge Road. Ohio Street, between Fuhrmann Boulevard and Michigan Avenue, is also reconfigured. The remaining highway system within the project area would remain, with improvements as noted in the TIP.

**Scenario 6: Boulevard Alternative with New Arterial**

This alternative is a combination of Scenarios 1 and 3. It is similar to Scenario 3 because it reconfigures Route 5 between Ridge Road and the Skyway, as well as Ohio Street between Fuhrmann Boulevard and Michigan Avenue. In addition, it includes the components of Scenario 1; that is, it includes a new four lane undivided arterial between I-190 (at Bailey Avenue) and Tifft Street. The remaining highway system within the project area would remain, with improvements as noted in the TIP.

**Scenario 7: Hybrid Alternative with New Arterial**

This alternative is a combination of Scenarios 1 and 4 because it includes a new four lane undivided arterial between I-190 (at Bailey Avenue) and Tifft Street, a reconfigured Route 5 between Ridge Road and the Skyway, a reconfigured Ohio Street between Fuhrmann Boulevard and Michigan Avenue, and also a parallel service road to provide access to the waterfront properties. The remaining highway system within the project area would remain, with improvements as noted in the TIP.



### 3.2 Methodology of Traffic Analysis of Alternatives

The Greater Buffalo Niagara Regional Transportation Council (GBNRTC) is the Metropolitan Planning Organization (MPO) for the Greater Buffalo-Niagara Region. GBNRTC is the interagency transportation planning group which establishes policies and programs, and which provides a regional decision-making forum for the development of a multi-modal, integrated transportation system that best fits the Niagara Frontier.

GBNRTC is responsible for long-range planning of transportation infrastructure improvements and establishment of the near-term Transportation Improvement Program (TIP). The TIP includes all federally funded transportation projects being considered for implementation in the next five-year period (through September of 2006). The GBNRTC, in cooperation with the New York State Department of Transportation (NYSDOT), is responsible for selecting projects to be included in the TIP. The TIP is updated every other year to reflect those projects of highest priority based on need, local desires, long-range plan conformity and funding availability. For this study, the addition of a fourth lane to I-90 between Route 400 and I-190 is contained in the TIP, and was therefore included in the travel forecasts. Construction of the fourth lane to I-90 was completed in 2002.

GBNRTC has developed a travel-forecast model and has defined demographic forecasts to assist with the development of the TIP and the Long Range Plan. The travel-forecast model produces forecasts of 2025 peak hour and average daily traffic volumes (AADT). This model is an approved tool for planning purposes and estimating future travel forecasts.

The travel-forecast model was used to forecast 2030 daily and peak hour travel forecasts for the Southtowns Connector / Buffalo Outer Harbor project. The model produced 2025 estimates of AM and PM peak hour traffic, as well as AADT traffic volumes by direction of highway segments. Year 2030 travel forecasts were developed by straight-line extrapolation from year 2025 forecasts. Existing (Year 2001) volumes were utilized as a base reference for extrapolation.

Year 2030 travel forecasts were utilized to analyze the traffic operations of each build scenario/alternative. Traffic operations are expressed in terms of Levels of Service (LOS). LOS characterizes traffic operations in terms of delay for intersections and density for roadway segments. Density reflects the degree of congestion and freedom of mobility for drivers. Forecasted operating speeds reflect some degree of mobility. Year 2030 operating speeds were estimated by the travel forecast model. They are summarized in **Attachment F** for selected highway segments.

LOS ranges from A to F. LOS A describes freely flowing traffic with little or not delay. LOS F describes highly congested conditions with forced (breakdown) flow and substantial delays. **Attachment B** contains complete definition of expressway LOS.



### 3.3 Scenarios

#### 3.3.1 Null Scenario

The Null Scenario consists of the existing highway system plus improvements contained in the Transportation Improvement Program (TIP). The single component of the TIP affecting roadway capacity in the project area is the widening of I-90 between NYS Route 400 (Exit 54) and I-190 (Exit 53). Widening consisted of adding a fourth travel lane to each direction of travel, thus increasing number of directional travel lanes from three to four. This widening project was completed in 2002 and the Null Scenario includes a four lane segment of I-90 between Exit 54 and Exit 53.

Daily traffic volumes for the design year (2030) were estimated to evaluate the traffic characteristics of the Null Scenario. Year 2030 average daily travel forecasts for key roadway segments in the project area are summarized in **Table C3.3-1**. In addition, the estimated annual average daily traffic (AADT) is summarized in **Table C3.3-2** and shown graphically in **Figure C3.3-1**. **Table C3.3-3** and **Table C3.3-4** show the existing and estimated future directional traffic volumes for the morning (AM) and afternoon (PM) peak hours, respectively. AM and PM peak hour turning movements of selected intersections forecast for the Null Scenario are shown in **Figures C3.3-2** (AM) and **C3.3-3** (PM).

Level of Service analysis was performed using year 2030 peak hour travel forecasts produced by the travel-forecast model. Operational analyses (LOS analyses) were conducted for the morning and afternoon peak hour periods because they represent the two critical hours of an average day for traffic. Conditions present during other hours of the day were not studied. It is assumed that these conditions would be more favorable as volumes are typically lower during the remaining hours. A summary of intersection LOS is provided in **Table C3.3-5** and roadway LOS is shown in **Table C3.3-6**. Graphic presentation of congested locations under the Null Scenario in Year 2030 is shown in **Figure C3.3-4**. A summary of congested locations is contained in **Table C3.3-7**. Congestion is forecasted at signalized intersections on Route 5, Michigan at South Park Avenue and Ohio Street, at the Skyway, and I-90 between Ridge Road (Exit 55) and I-190 (Exit 53).









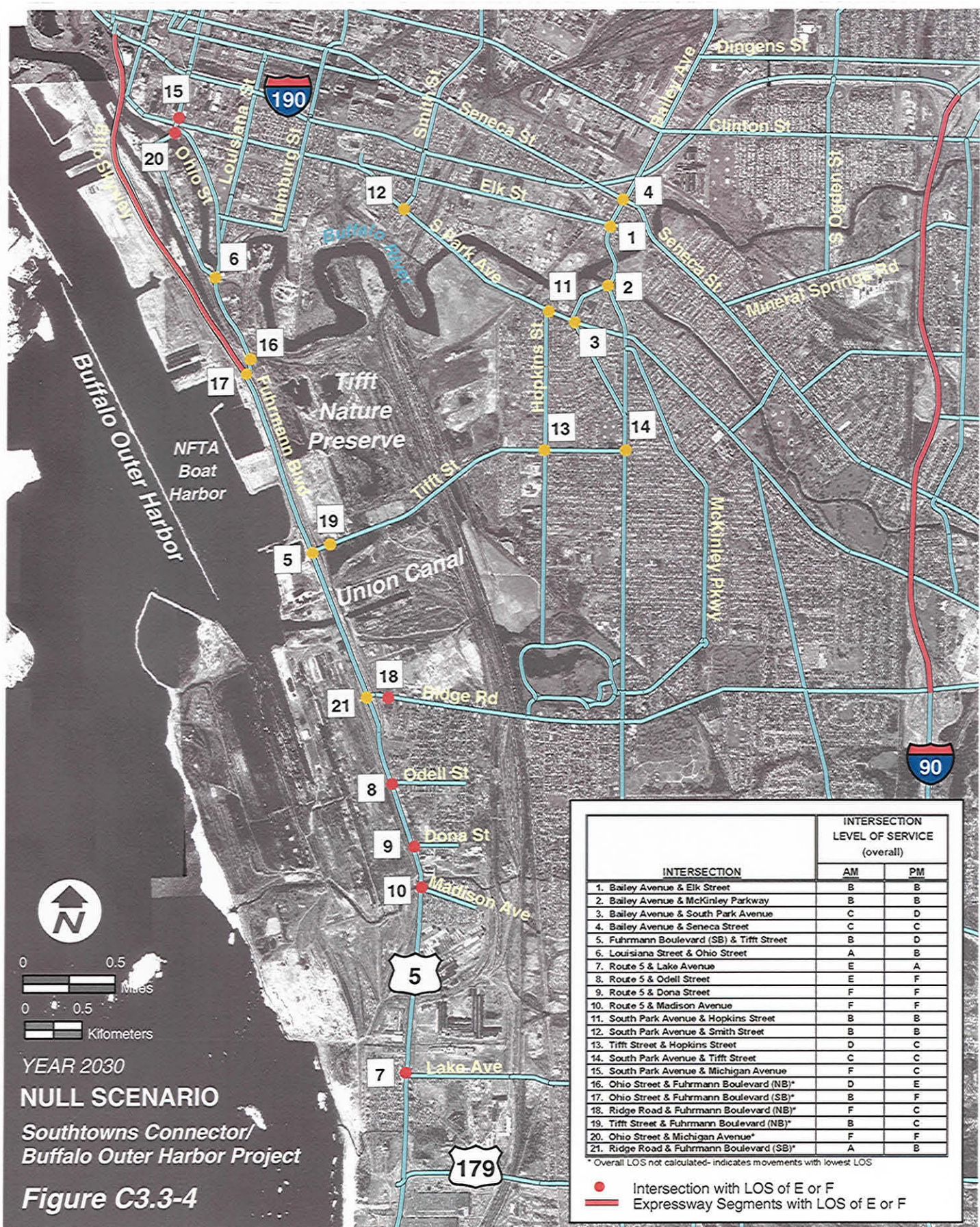
Figure C3.3-2





Figure C3.3-3







**Table C3.3-1 - Year 2030 Daily Travel Forecast Summary - Volume Impact Summary**

Road		Scenario						
		Null	1	3	4	5	6	7
Route 5		53,000 = 1%/yr	Same as Null	11,000 decrease = 42,000	7,000 decrease = 46,000	2,000 decrease = 51,000	11,000 decrease = 42,000	5,000 decrease = 48,000
South Park Ave		6,000 – 8,000 = 0.3%/yr	Same as Null	Same as Null	Same as Null	Same as Null	Same as Null	Same as Null
Ohio Street		10,000 = 1%/yr	Same as Null	1,000 increase = 11,000	4,000 increase = 14,000	4,000 increase = 14,000	1,000 increase = 11,000	4,000 increase = 14,000
Mile Strip (Rte 179)	Abbott to McKinley	21,000 = 0.7%/yr	Same as Null	3,000 decrease = 18,000	1,000 decrease = 20,000	Same as Null	3,000 decrease = 18,000	1,000 decrease = 20,000
	I-90 to S. Park	37,000 = 1.4%/yr	Same as Null	10,000 decrease = 27,000	7,000 decrease = 30,000	3,000 decrease = 34,000	10,000 Decrease = 27,000	8,000 decrease = 29,000
	S. Park to Rte 5	27,000 = 1.0%/yr	Same as Null	9,000 decrease = 18,000	6,000 decrease = 21,000	3,000 decrease = 24,000	10,000 decrease = 17,000	6,000 decrease = 21,000
I-90	I-190 to Rte 400	153,000 = 1.3%/yr	Same as Null	10,000 increase = 163,000	5,000 increase = 158,000	Same as Null	7,000 increase = 160,000	3,000 increase = 156,000
	Rte 400 to Ridge Rd	123,000 = 1.1%/yr	Same as Null	11,000 increase = 134,000	6,000 increase = 129,000	1,000 increase = 124,000	9,000 increase = 132,000	4,000 increase = 127,000
	Ridge Rd to Rte 179	65,000 = 1.1%/yr	Same as Null	9,000 increase = 74,000	5,000 increase = 70,000	Same as Null	7,000 increase = 72,000	3,000 increase = 68,000
	Rte 179 to Rte 75	55,000 = 1.4%/yr	Same as Null	2,000 increase = 57,000	Same as Null	Same as Null	2,000 increase = 57,000	Same as Null
I-190	I-90 to Bailey/Seneca	77,000 = 0.6%/yr	Same as Null	9,000 increase = 86,000	5,000 increase = 82,000	2,000 increase = 79,000	10,000 increase = 87,000	6,000 increase = 83,000
	Bailey/Seneca to Hamburg	86,000 = 0.4%/yr	Same as Null	10,000 increase = 96,000	6,000 increase = 92,000	2,000 increase = 88,000	10,000 increase = 96,000	5,000 increase = 91,000
New Arterial		N/A	Range: 5,000 – 12,000	N/A	N/A	N/A	Range: 6,000 – 11,000	Range: 5,000 – 11,000



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Table C3.3-2 - Estimated Annual Average Daily Traffic (AADT)

Route	Segment	AADT														
		2001	2010							2030						
			Null	Scenario 1	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Null	Scenario 1	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
Route 5	Mile Strip to Lake Ave	41400	44200	44300	40000	42200	43900	40100	42600	52600	52900	41000	46900	51800	41300	48000
	Lake Ave to Ridge Rd	37800	41500	41700	37300	39700	41200	37600	40100	51600	52200	39600	46100	50700	40300	47300
	Ridge Rd to Tiftt St	41600	45000	45400	40400	42700	44400	40800	43300	54700	55900	41700	47900	52900	42700	49600
	Tiftt St to Ohio St	35800	41200	40700	36600	38600	40500	36200	38300	53000	51300	39300	44900	50600	38200	44000
	Ohio St to Fuhrmann Blvd	37800	41800	41500	28100	37400	40000	27900	37300	50500	49700	34000	38200	45200	33700	37900
	Fuhrmann Blvd to I-190	41800	45900	45600	29200	40500	43400	28900	40300	54900	54000	35000	40100	47800	34600	39700
South Park Ave	Tiftt St to Southside	13300	13700	13200	14100	13800	13600	13700	13200	14700	13400	15800	14900	14600	14700	13300
	Southside to Bailey Ave	6300	6400	6600	6800	6600	6600	6800	6500	6700	7300	7800	7200	7300	7800	7000
	Bailey Ave to Hopkins St	8000	8100	5400	8400	8000	7900	7200	6700	8500	5700	9100	8300	8100	6300	5100
	Hopkins St. to New Arterial	6700	6900	6700	7400	7100	6500	7100	6700	7300	6900	8800	7800	6500	7800	6800
	New Arterial to Smith St	7900	8100	7400	8700	8300	7700	8200	7800	8700	7000	10300	9200	7700	9000	7700
	Smith St to Katherine St	6700	7100	7000	7200	6600	6600	7000	6800	7900	7500	8100	6500	6500	7600	7000
	Chicago St to Michigan Ave	3500	3500	3500	3500	3500	3300	3500	3500	3600	3500	3500	3400	3100	3400	3400
Ohio St	Fuhrmann Blvd – NB to Louisiana	7300	8100	8200	9000	11800	11600	9000	11400	9800	10000	10900	13300	14000	10900	13800
	Louisiana St to Michigan Ave	4300	4900	5100	5400	6900	6900	5400	6900	6400	7000	7000	9000	9000	7000	9000
Keating St	I-190 to Seneca Street	NA	NA	7200	NA	NA	NA	7100	7000	NA	7800	NA	NA	NA	7700	7600
	Seneca St to SB I-190 exit	1900	1900	5400	1900	1900	1900	5900	5900	2100	5600	2100	2100	1900	6200	6200
	SB I-190 exit to Elk St	7900	7700	11700	7700	7700	7600	11300	11400	7700	12500	7600	7700	7400	10800	11100
Bailey Ave	South Park Ave to McKinley Pkwy	6900	6800	4600	6800	6900	7000	5900	6000	6900	4700	6800	7100	7300	4700	4900
	McKinley Pkwy to Elk St	18600	18600	16600	18800	18500	18700	17900	17600	18900	16900	19800	18700	19400	17500	16700
	Elk St to Seneca St	18000	18000	15800	18500	18200	18400	16400	16400	18600	16300	19900	18900	19600	14600	14600
Hopkins St	Tiftt St to South Park Ave	6900	6900	6200	7200	7300	6800	6200	6400	7200	5500	8100	8100	7100	5400	5800
Michigan Ave	Ohio St to South Park Ave	6300	7300	7200	8400	8300	7900	8400	8300	9300	9100	13400	12900	11600	13200	13200
	South Park Ave to Perry St	9700	9900	9800	10900	10800	10700	10700	10600	10700	10300	13600	13100	12800	13000	12700
Tiftt St	Fuhrmann Blvd – NB to New Arterial	12600	13000	13900	9600	11800	13200	12500	15800	14400	17200	10600	13100	14900	13800	17500
	New Arterial to Hopkins St	12600	13100	11000	10100	11700	13200	10400	11800	14600	12300	11300	13000	14900	11600	13100
	Hopkins St to South Park Ave	8000	8300	8000	7900	7800	8200	8100	7900	9300	8500	8100	8000	8900	8600	8300
Camp Rd	Route 5 to Old Big Tree Rd	14300	18000	18100	17600	17800	18000	17400	17900	21700	21800	20500	21100	21500	19800	21000
	Old Big Tree Rd to US 20	14300	18500	18600	18100	18500	18500	18000	18600	23300	23300	21800	23000	23300	21400	23300
	US 20 to I-90	21300	27300	27200	27100	27200	27000	27100	27100	31500	31200	31100	31400	30700	31000	31100
Mile Strip	Route 5 to RR Tracks	22900	22800	22600	18800	20500	21700	18700	20500	25500	25000	15700	19600	22700	15500	19500
	RR tracks to South Park Blvd	22900	24000	23800	21200	22300	23600	21200	22200	29100	28600	21400	24200	28000	21400	23900
	South Park Blvd to I-90	24900	31100	30600	27400	28700	29900	27300	28100	37000	35500	26900	30100	33500	26500	28600
I-90	Mile Strip to Route 219	47800	49700	49100	52100	51200	49700	51500	50600	65300	63300	73700	70400	65200	71600	68400
	Ridge Rd to Route 400	90400	100900	100400	104400	102800	101100	103800	102200	123200	121600	134400	129300	123900	132400	127300
	Route 400 to I-190	105800	126500	126000	129900	128000	126500	128900	127400	152700	151100	163300	157400	152700	160200	155500
I-190	I-90 to Ogden St	61000	65300	64600	67600	66200	64900	67000	65900	77900	76000	85100	80900	76900	83300	79700
	Ogden St to Clinton St	64500	67500	67900	70000	68800	68100	70300	69100	78000	79100	85500	81800	79600	86700	82900
	Clinton St to Seneca St/Bailey Ave	62200	65100	67400	67900	66300	65100	70400	69400	75300	82200	83700	79000	75100	92100	88600
	Seneca St/ Bailey Ave to Smith St	74900	76900	76300	80100	79000	77400	80200	78500	86200	84600	95700	92200	87500	95800	90700
	Smith St to Hamburg/ Louisiana	75500	77000	76700	80600	79500	77600	80700	79200	85600	84600	95900	92800	87200	96300	91700
	Hamburg/ Louisiana to Elm St	74300	75400	75100	78900	77500	75600	79000	77400	83100	82300	93100	89100	83500	93600	88800
	Elm St to Route 5	69600	71300	71100	73800	72500	70300	73700	72500	79700	78900	86800	83200	76900	86600	83100
Route 219	I-90 to Mile Strip	41600	47300	47400	48400	47600	47400	48400	47600	57600	57900	61000	58400	57800	61200	58600
New Arterial	Elk St to South Park Ave	NA	NA	5500	NA	NA	NA	5800	6200	NA	6000	NA	NA	NA	6300	6700
	South Park Ave to Tiftt St	NA	NA	4500	NA	NA	NA	5400	5700	NA	4900	NA	NA	NA	5800	6100

Note: 1. NA = Not Applicable



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Table C3.3-3 – Existing and Estimated Future AM Peak Hour Directional Traffic Volumes

Route	Segment	Direction	AM Peak Hour														
			2001	2010							2030						
				Null	Scenario 1	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Null	Scenario 1	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
Route 5	Mile Strip to Lake Ave	EB	2800	2900	3000	2700	2900	2900	2700	2700	3200	3400	2800	3100	3300	2800	2700
		WB	600	600	600	500	600	600	500	600	700	700	400	500	700	400	500
		TOTAL	3400	3500	3600	3200	3500	3500	3200	3300	3900	4100	3200	3600	4000	3200	3200
	Lake Ave to Ridge Rd	EB	3400	3500	3600	3400	3400	3500	3400	3400	4000	4100	3500	3600	3900	3500	3700
		WB	800	800	800	700	700	800	700	700	1000	1000	600	700	1000	600	700
		TOTAL	4200	4300	4400	4100	4100	4300	4100	4100	5000	5100	4100	4300	4900	4100	4400
	Ridge Rd to Tiftt St	EB	2900	3000	3000	2700	2800	3000	2700	2800	3500	3500	2700	2800	3400	2700	2900
		WB	700	800	800	600	700	800	600	700	900	900	500	600	900	500	600
		TOTAL	3600	3800	3800	3300	3500	3800	3300	3500	4400	4400	3200	3400	4300	3200	3500
	Tiftt St to Ohio St	EB	2900	3000	3000	2800	2900	3100	2800	2800	3300	3300	2900	3000	3600	2800	2900
		WB	700	700	700	600	600	700	600	600	800	800	500	600	900	500	600
		TOTAL	3600	3700	3700	3400	3500	3800	3400	3400	4100	4100	3400	3600	4500	3300	3500
	Ohio St to Fuhrmann Blvd	EB	2800	2900	3000	2400	2500	2700	2400	2400	3200	3300	1900	2100	2700	1800	2000
		WB	600	700	700	500	600	700	500	500	800	800	400	500	800	400	500
		TOTAL	3400	3600	3700	2900	3100	3400	2900	2900	4000	4100	2300	2600	3500	2200	2500
	Fuhrmann Blvd to I-190	EB	2800	2900	2900	2400	2400	2700	2300	2400	3200	3200	1900	1900	2600	1800	1900
		WB	900	900	900	700	800	900	700	800	1000	1000	600	700	1000	500	700
		TOTAL	3700	3800	3800	3100	3200	3600	3000	3200	4200	4200	2500	2600	3600	2300	2600
South Park Ave	Tiftt St to Southside	NB	500	500	500	600	600	600	500	600	600	600	700	700	700	500	600
		SB	300	300	300	300	300	300	300	300	300	300	300	400	400	300	200
		TOTAL	800	800	800	900	900	900	800	900	900	900	1000	1100	1100	800	800
	Southside to Bailey Ave	NB	200	200	200	300	300	200	200	200	200	300	400	400	300	300	300
		SB	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
		TOTAL	300	300	300	400	400	300	300	300	300	400	500	500	400	400	400
	Bailey Ave to Hopkins St	WB	300	300	100	300	300	200	200	300	200	100	300	300	100	100	200
		EB	200	200	100	200	200	200	100	100	200	100	200	200	200	100	100
		TOTAL	500	500	200	500	500	400	300	400	400	200	500	500	300	200	300
	Hopkins St. to New Arterial	WB	400	400	300	400	400	300	300	400	300	100	500	500	200	200	300
		EB	200	200	200	300	200	200	300	200	300	200	300	300	200	300	200
		TOTAL	600	600	500	700	600	500	600	600	600	300	800	800	400	500	500
	New Arterial to Smith St	WB	400	300	200	400	400	300	400	400	300	100	500	400	200	300	300
		EB	200	200	200	200	200	200	200	200	200	100	200	200	200	100	100
		TOTAL	600	500	400	600	600	500	600	600	500	200	700	600	400	400	400
	Smith St to Katherine St	WB	300	300	300	300	300	200	300	300	300	300	400	200	200	400	500
		EB	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
		TOTAL	400	400	400	400	400	300	400	400	400	400	500	300	300	500	600
Chicago St to Michigan Ave	WB	200	200	200	200	200	200	200	200	100	100	200	200	100	200	200	
	EB	100	100	100	100	100	100	100	100	200	200	200	200	200	200	200	
	TOTAL	300	300	300	300	300	300	300	300	300	300	400	400	300	400	400	
Ohio St	Route 5 to Route 5 ramps	NB	NA	NA	NA	NA	100	NA	NA	100	NA	NA	NA	100	NA	NA	100
		SB	NA	NA	NA	NA	200	NA	NA	100	NA	NA	NA	200	NA	NA	100
		TOTAL	NA	NA	NA	NA	300	NA	NA	200	NA	NA	NA	300	NA	NA	200
	Route 5 ramps to Louisiana St	NB	NA	NA	NA	1000	1000	NA	1000	1000	NA	NA	2100	2000	NA	2000	2000
		SB	NA	NA	NA	200	200	NA	200	200	NA	NA	300	300	NA	200	300
		TOTAL	NA	NA	NA	1200	1200	NA	1200	1200	NA	NA	2400	2300	NA	2200	2300
	Nature Preserve Rd to Louisiana St	NB	NA	NA	NA	NA	NA	1000	NA	NA	NA	NA	NA	NA	2000	NA	NA
		SB	NA	NA	NA	NA	NA	200	NA	NA	NA	NA	NA	NA	200	NA	NA
		TOTAL	NA	NA	NA	NA	NA	1200	NA	NA	NA	NA	NA	NA	2200	NA	NA
	Fuhrmann Blvd – NB to Louisiana St	NB	700	900	800	NA	NA	NA	NA	NA	1300	1300	NA	NA	NA	NA	NA
		SB	100	100	100	NA	NA	NA	NA	NA	100	100	NA	NA	NA	NA	NA
		TOTAL	800	1000	900	NA	NA	NA	NA	NA	1400	1400	NA	NA	NA	NA	NA
Louisiana St to Chicago St	NB	400	600	600	700	700	700	700	700	1000	900	1900	1900	1600	1800	1900	
	SB	100	100	100	200	100	100	100	100	100	100	500	300	300	400	300	
	TOTAL	500	700	700	900	800	800	800	800	1100	1000	2400	2200	1900	2200	2200	
Chicago St to Michigan Ave	NB	400	600	600	800	800	800	800	800	1100	1000	2200	2200	1900	2100	2200	
	SB	100	100	100	100	100	100	100	100	100	100	200	100	100	100	100	
	TOTAL	500	700	700	900	900	900	900	900	1200	1100	2400	2300	2000	2200	2300	
Keating St	I-190 to Seneca St	SB	NA	NA	300	NA	NA	NA	300	300	NA	300	NA	NA	NA	300	300
		NB	NA	NA	200	NA	NA	NA	200	200	NA	200	NA	NA	NA	200	200
		TOTAL	NA	NA	500	NA	NA	NA	500	500	NA	500	NA	NA	NA	500	500
	Seneca St to SB I-190 exit	SB	100	200	100	200	200	200	200	100	200	200	200	200	200	200	200
		NB	NA	NA	400	NA	NA	NA	500	200	NA	400	NA	NA	NA	600	200
		TOTAL	100	200	500	200	200	200	700	300	200	600	200	200	200	800	400
SB I-190 exit to Elk St	SB	500	500	500	500	500	500	500	400	500	500	500	500	500	500	400	
	NB	NA	NA	400	NA	NA	NA	500	200	NA	400	NA	NA	NA	600	200	
	TOTAL	500	500	900	500	500	500	1000	600	500	900	500	500	500	1100	600	
Bailey Ave																	

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Table C3.3-3 - Existing and Estimated Future AM Peak Hour Directional Traffic Volumes continued

Route	Segment	Direction	AM Peak Hour														
			2001	2010							2030						
				Null	Scenario 1	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Null	Scenario 1	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
Elk St	Babcock St to Keating Avenue	EB	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
		WB	100	100	100	100	100	100	200	200	100	500	100	100	100	600	900
		TOTAL	200	200	200	200	200	200	300	300	200	600	200	200	200	700	1000
	Keating St to Bailey Ave	EB	400	400	400	400	400	300	400	400	400	500	400	400	300	500	500
		WB	NA	NA	1000	NA	NA	NA	1000	900	NA	1100	NA	NA	NA	1100	1000
		TOTAL	400	400	1400	400	400	300	1400	1300	400	1600	400	400	300	1600	1500
Michigan Ave	Ohio St to South Park Ave	NB	500	800	700	1000	1000	900	1000	1000	1800	1500	3000	2900	2700	2800	3100
		SB	300	300	300	300	300	300	300	300	300	300	300	200	200	300	300
		TOTAL	800	1100	1000	1300	1300	1200	1300	1300	2100	1800	3300	3100	2900	3100	3400
	South Park Ave to Perry St	NB	600	500	500	700	700	700	700	700	500	500	1000	1000	1000	1000	1000
		SB	400	400	400	400	400	400	400	400	400	300	400	300	300	400	300
		TOTAL	1000	900	900	1100	1100	1100	1100	1100	900	800	1400	1300	1300	1400	1300
Tift St	Fuhrmann Blvd – NB to New Arterial	EB	700	600	800	600	600	600	800	800	500	900	400	600	600	1000	1200
		WB	300	400	400	300	300	300	300	300	500	500	200	300	300	200	300
		TOTAL	1000	1000	1200	900	900	900	1100	1100	1000	1400	600	900	900	1200	1500
	New Arterial to Hopkins St	EB	700	300	400	300	300	300	400	500	300	400	200	300	300	300	400
		WB	300	700	600	600	600	700	600	600	900	700	500	600	700	800	700
		TOTAL	1000	1000	1000	900	900	1000	1000	1100	1200	1100	700	900	1000	1100	1100
	Hopkins St to South Park Ave	EB	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
		WB	300	400	400	300	300	300	400	400	500	500	300	300	400	500	500
		TOTAL	500	600	600	500	500	500	600	600	700	700	500	500	600	700	700
Ridge Rd	Fuhrmann Blvd – NB to South Park Avenue	EB	200	200	200	200	200	200	200	200	200	200	300	200	200	300	200
		WB	400	400	500	300	300	500	300	300	500	500	200	200	500	200	200
		TOTAL	600	600	700	500	500	700	500	500	700	700	500	400	700	500	400
Mile Strip	Route 5 to RR Tracks	EB	700	700	700	700	700	700	500	600	900	800	400	700	900	400	600
		WB	1100	1100	1100	1100	1100	1100	900	1100	1200	1300	900	1200	1300	800	1200
		TOTAL	1800	1800	1800	1800	1800	1800	1400	1700	2100	2100	1300	1900	2200	1200	1800
	RR tracks to South Park Blvd	EB	1400	1400	1400	1400	1300	1400	1200	1200	1700	1600	1200	1400	1700	1000	1200
		WB	2000	2100	2100	2000	2000	2000	1900	2000	2400	2400	2000	2200	2300	2000	2100
		TOTAL	3400	3500	3500	3400	3300	3400	3100	3200	4100	4000	3200	3600	4000	3000	3300
	South Park Blvd to I-90	EB	1000	1100	1100	1000	1000	1100	900	900	1300	1100	900	1000	1100	700	700
		WB	200	300	300	200	300	300	300	300	400	400	200	300	400	200	300
		TOTAL	1200	1400	1400	1200	1300	1400	1200	1200	1700	1500	1100	1300	1500	900	1000
I-90	Mile Strip to Route 219	EB	900	1100	1000	1100	1100	1100	1000	1000	1600	1400	1600	1600	1600	1400	1400
		WB	1400	1500	1500	1600	1600	1500	1600	1600	1900	1800	2400	2300	1800	2300	2200
		TOTAL	2300	2600	2500	2700	2700	2600	2600	2600	3500	3200	4000	3900	3400	3700	3600
	Ridge Rd to Route 400	EB	4800	5100	4900	5200	5100	5100	5000	5000	6100	5700	6400	6300	6200	6000	5900
		WB	2700	2900	2800	3000	3000	2800	3000	3000	3400	3300	3900	3700	3300	3800	3700
		TOTAL	7500	8000	7700	8200	8100	7900	8000	8000	9500	9000	10300	10000	9500	9800	9600
	Route 400 to I-190	EB	5800	6200	6000	6300	6200	6200	6100	6100	7500	7100	7700	7600	7600	7200	7200
		WB	3300	3400	3400	3600	3500	3400	3600	3500	3900	3900	4400	4300	3900	4300	4200
		TOTAL	9100	9600	9400	9900	9700	9600	9700	9600	11400	11000	12100	11900	11500	11500	11400
I-190	Ogden St to Clinton St	NB	3500	3600	3600	3500	3600	3600	3600	3600	3900	4000	3800	3900	4200	4100	4000
		SB	1600	1600	1600	1700	1700	1600	1800	1700	1700	1700	2100	2000	1700	2100	2100
		TOTAL	5100	5200	5200	5200	5300	5200	5400	5300	5600	5700	5900	5900	5900	6200	6100
	Clinton St to Seneca St/ Bailey Ave	NB	3300	3500	3400	3600	3400	3500	3700	3500	4000	3900	4300	3800	4000	4800	4200
		SB	1400	1400	1500	1600	1600	1400	1700	1700	1600	1900	2000	1900	1600	2400	2300
		TOTAL	4700	4900	4900	5200	5000	4900	5400	5200	5600	5800	6300	5700	5600	7200	6500
	Seneca St/ Bailey Ave to Smith St	NB	3900	4000	4100	4100	4100	4100	4300	4200	4500	4700	4800	4900	4800	5300	5200
		SB	1500	1500	1500	1700	1600	1500	1600	1600	1600	1600	2000	1900	1600	2000	1900
		TOTAL	5400	5500	5600	5800	5700	5600	5900	5800	6100	6300	6800	6800	6400	7300	7100
	Smith St to Hamburg/ Louisiana	NB	3600	3700	3700	3800	3900	3800	3900	3900	4200	4200	4300	4600	4500	4700	4600
		SB	1600	1500	1500	1700	1600	1500	1700	1600	1700	1600	2000	2000	1600	2000	1900
		TOTAL	5200	5200	5200	5500	5500	5300	5600	5500	5900	5800	6300	6600	6100	6700	6500
	Hamburg/Louisiana to Elm St	NB	3600	3700	3600	3800	3800	3800	3900	3800	4000	3900	4300	4400	4300	4600	4400
		SB	1500	1500	1500	1600	1600	1500	1600	1600	1600	1500	1900	1800	1500	1900	1800
		TOTAL	5100	5200	5100	5400	5400	5300	5500	5400	5600	5400	6200	6200	5800	6500	6200
	Elm St to Route 5	NB	3000	3100	3100	3000	3100	3100	3100	3100	3500	3500	3400	3500	3600	3500	3600
		SB	2500	2400	2400	2500	2500	2300	2500	2500	2500	2500	2800	2600	2300	2800	2700
		TOTAL	5500	5500	5500	5500	5600	5400	5600	5600	6000	6000	6200	6100	5900	6300	6300
Route 219	I-90 to Mile Strip	NB	2500	2800	2800	2900	2900	2800	2900	2900	3400	3300	3500	3400	3400	3500	3400
		SB	1100	1100	1100	1200	1100	1100	1200	1100	1300	1300	1300	1300	1300	1300	1300
		TOTAL	3600	3900	3900	4100	4000	3900	4100	4000	4700	4600	4800	4700	4700	4800	4700
New Arterial	Elk St to South Park Ave	NB	NA	NA	300	NA	NA	NA	400	400	NA	300	NA	NA	NA	400	500
		SB	NA	NA	200	NA	NA	NA	100	100	NA	200	NA	NA	NA	200	200
		TOTAL	NA	NA	500	NA	NA	NA	500	500	NA	500	NA	NA	NA	600	700
	South Park Ave to Tift St	NB	NA	NA	300	NA	NA	NA	500	500	NA	300	NA	NA	NA	600	500
		SB	NA	NA	100	NA	NA	NA	100	100	NA	100	NA	NA	NA	100	100
		TOTAL	NA	NA	400	NA	NA	NA	600	600	NA	400	NA	NA	NA	700	600



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Table C3.3-4 - Existing and Estimated Future PM Peak Hour Directional Traffic Volumes

Route	Segment	Direction	PM Peak Hour															
			2001	2010							2030							
				Null	Scenario 1	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Null	Scenario 1	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	
Route 5	Mile Strip to Lake Ave	EB	1000	1000	1100	1000	1000	1000	1000	1000	1000	1300	1300	1100	1200	1300	1100	1300
		WB	2600	2700	2700	2500	2600	2700	2500	2700	3100	3200	2600	2900	3200	2600	3000	
		TOTAL	3600	3700	3800	3500	3600	3700	3500	3700	4400	4500	3700	4100	4500	3700	4300	
	Lake Ave to Ridge Rd	EB	1000	1100	1100	1000	1000	1100	1000	1100	1300	1400	1100	1300	1300	1200	1300	
		WB	3000	3100	3100	2900	3000	3100	2900	3000	3600	3600	2900	3100	3500	3000	3200	
		TOTAL	4000	4200	4200	3900	4000	4200	3900	4100	4900	5000	4000	4400	4800	4200	4500	
	Ridge Rd to Tifft St	EB	1100	1100	1200	1100	1100	1100	1100	1100	1400	1500	1100	1300	1400	1200	1400	
		WB	2500	2600	2700	2400	2500	2600	2400	2500	3000	3100	2400	2500	2900	2500	2700	
		TOTAL	3600	3700	3900	3500	3600	3700	3500	3600	4400	4600	3500	3800	4300	3700	4100	
	Tifft St to Ohio St	EB	900	1000	1000	1000	1000	1000	1000	1000	1200	1200	1100	1200	1300	1000	1100	
		WB	2300	2400	2400	2300	2300	2500	2300	2300	2800	2700	2300	2500	2800	2300	2500	
		TOTAL	3200	3400	3400	3300	3300	3500	3300	3300	4000	3900	3400	3700	4100	3300	3600	
	Ohio St to Fuhrmann Blvd	EB	1000	1100	1100	900	1000	1000	900	1000	1300	1300	900	1000	1100	900	1000	
		WB	2300	2400	2400	2100	2200	2300	2100	2000	2800	2700	1800	2000	2400	1800	1700	
		TOTAL	3300	3500	3500	3000	3200	3300	3000	3000	4100	4000	2700	3000	3500	2700	2700	
	Fuhrmann Blvd to I-190	EB	1000	1100	1100	1000	1000	1100	1000	1000	1400	1300	900	900	1100	900	1000	
		WB	2600	2800	2700	2300	2400	2600	2300	2300	3100	3000	1900	2100	2700	1900	2000	
		TOTAL	3600	3900	3800	3300	3400	3700	3300	3300	4500	4300	2800	3000	3800	2800	3000	
South Park Ave	Tifft St to Southside	NB	400	400	400	500	400	400	400	400	500	400	500	500	400	400	400	
		SB	500	600	600	600	600	600	700	600	700	700	700	600	700	900	700	
		TOTAL	900	1000	1000	1100	1000	1000	1100	1000	1200	1100	1200	1100	1100	1300	1100	
	Southside to Bailey Ave	NB	200	200	200	200	200	200	200	200	200	200	300	200	200	200	200	
		SB	200	200	200	200	200	200	200	200	200	300	300	200	300	500	300	
		TOTAL	400	400	400	400	400	400	400	400	400	500	600	400	500	700	500	
	Bailey Ave to Hopkins St	WB	400	400	300	400	400	300	300	300	400	200	400	400	300	200	200	
		EB	300	400	400	500	400	400	500	300	600	500	700	500	600	800	300	
		TOTAL	700	800	700	900	800	700	800	600	1000	700	1100	900	900	1000	500	
	Hopkins St. to New Arterial	WB	300	300	300	300	300	300	300	300	300	300	400	400	300	300	300	
		EB	600	700	700	700	700	700	700	600	900	900	1100	900	900	1100	800	
		TOTAL	900	1000	1000	1000	1000	1000	1000	900	1200	1200	1500	1300	1200	1400	1100	
	New Arterial to Smith St	WB	300	300	300	300	300	300	300	300	300	200	400	400	300	300	200	
		EB	500	600	600	700	600	600	700	600	800	700	1000	900	800	1100	700	
		TOTAL	800	900	900	1000	900	900	1000	900	1100	900	1400	1300	1100	1400	900	
	Smith St to Katherine St	WB	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	
		EB	300	400	400	400	300	400	400	300	600	500	600	400	600	400	300	
		TOTAL	500	600	600	600	500	600	600	500	800	700	800	600	800	600	500	
Chicago St to Michigan Ave	WB	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100		
	EB	200	200	200	200	200	200	200	200	200	200	100	100	100	100	100		
	TOTAL	300	300	300	300	300	300	300	300	300	300	200	200	200	200	200		
Ohio Street	Route 5 to Route 5 ramps	NB	NA	NA	NA	NA	100	NA	NA	100	NA	NA	NA	100	NA	NA	100	
		SB	NA	NA	NA	NA	500	NA	NA	500	NA	NA	NA	300	NA	NA	300	
		TOTAL	NA	NA	NA	NA	600	NA	NA	600	NA	NA	NA	400	NA	NA	400	
	Route 5 ramps to Louisiana St	NB	NA	NA	NA	300	300	NA	300	300	NA	NA	700	600	NA	600	500	
		SB	NA	NA	NA	1200	1200	NA	1200	1200	NA	NA	2400	2100	NA	2200	2100	
		TOTAL	NA	NA	NA	1500	1500	NA	1500	1500	NA	NA	3100	2700	NA	2800	2600	
	Nature Preserve Rd to Louisiana St	NB	NA	NA	NA	NA	NA	300	NA	NA	NA	NA	NA	NA	700	NA	NA	
		SB	NA	NA	NA	NA	NA	1200	NA	NA	NA	NA	NA	NA	2100	NA	NA	
		TOTAL	NA	NA	NA	NA	NA	1500	NA	NA	NA	NA	NA	NA	2800	NA	NA	
	Fuhrmann Blvd – NB to Louisiana St	NB	200	200	200	NA	NA	NA	NA	NA	200	300	NA	NA	NA	NA	NA	
		SB	800	900	900	NA	NA	NA	NA	NA	1200	1200	NA	NA	NA	NA	NA	
		TOTAL	1000	1100	1100	NA	NA	NA	NA	NA	1400	1500	NA	NA	NA	NA	NA	
	Louisiana St to Chicago St	NB	100	100	100	200	100	100	100	100	100	200	500	200	300	300	200	
		SB	400	400	400	600	600	600	600	600	500	500	1200	900	900	1100	900	
		TOTAL	500	500	500	800	700	700	700	700	600	700	1700	1100	1200	1400	1100	
	Chicago St to Michigan Ave	NB	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
		SB	500	400	500	700	600	600	700	600	400	400	1100	800	800	1100	900	
		TOTAL	600	500	600	800	700	700	800	700	500	500	1200	900	900	1200	1000	
Keating St	I-190 to Seneca St	SB	NA	NA	100	NA	NA	NA	100	100	NA	200	NA	NA	NA	200	200	
		NB	NA	NA	600	NA	NA	NA	500	500	NA	600	NA	NA	NA	600	600	
		TOTAL	NA	NA	700	NA	NA	NA	600	600	NA	800	NA	NA	NA	800	800	
	Seneca St to SB I-190 exit	SB	100	100	100	100	100	100	200	100	100	200	100	100	100	200	200	
		NB	NA	NA	400	NA	NA	NA	500	400	NA	400	NA	NA	NA	500	500	
		TOTAL	100	100	500	100	100	100	700	500	100	600	100	100	100	700	700	
	SB I-190 exit to Elk St	SB	900	800	800	800	800	800	700	800	700	800	700	700	700	500	600	
		NB	NA	NA	400	NA	NA	NA	500	400	NA	400	NA	NA	NA	500	500	
		TOTAL	900	800	1200	800	8											

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Table C3.3-4 - Existing and Estimated Future PM Peak Hour Directional Traffic Volumes continued

Route	Segment	Direction	PM Peak Hour														
			2001	2010							2030						
				Null	Scenario 1	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Null	Scenario 1	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
Elk St	Babcock St to Keating Ave	EB	100	100	100	100	100	100	100	100	100	100	100	200	100	200	200
		WB	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
		TOTAL	200	200	200	200	200	200	200	200	200	200	200	300	200	300	300
	Keating St to Bailey Ave	EB	900	800	800	800	900	800	500	700	800	700	800	800	700	300	500
		WB	NA	NA	100	NA	NA	NA	200	200	NA	100	NA	NA	NA	200	200
		TOTAL	900	800	900	800	900	800	700	900	800	800	800	800	700	500	700
Michigan Ave	Ohio St to South Park Ave	NB	300	300	300	300	300	300	300	300	300	300	400	500	300	400	400
		SB	600	700	700	800	800	700	800	800	800	800	1200	1200	1100	1200	1200
		TOTAL	900	1000	1000	1100	1100	1000	1100	1100	1100	1100	1600	1700	1400	1600	1600
	South Park Ave to Perry St	NB	400	400	400	500	500	500	300	500	500	500	600	700	500	200	600
		SB	600	600	600	700	700	700	700	700	800	700	1000	900	1000	1000	900
		TOTAL	1000	1000	1000	1200	1200	1200	1000	1200	1300	1200	1600	1600	1500	1200	1500
Tiftt St	Fuhrmann Blvd – NB to New Arterial	EB	400	500	500	400	400	500	400	500	600	600	300	400	500	500	600
		WB	600	600	700	500	600	600	700	800	700	900	500	600	600	800	1000
		TOTAL	1000	1100	1200	900	1000	1100	1100	1300	1300	1500	800	1000	1100	1300	1600
	New Arterial to Hopkins St	EB	600	700	500	600	600	700	500	600	800	500	500	600	800	600	600
		WB	400	400	500	400	400	400	400	400	400	400	300	400	400	300	400
		TOTAL	1000	1100	1000	1000	1000	1100	900	1000	1200	900	800	1000	1200	900	1000
	Hopkins St to South Park Ave	EB	400	400	400	400	400	400	400	400	500	400	400	400	500	400	400
		WB	200	200	200	200	200	200	200	200	300	200	200	200	200	200	200
		TOTAL	600	600	600	600	600	600	600	600	800	600	600	600	700	600	600
Ridge Rd	Fuhrmann Blvd – NB to South Park Ave	EB	500	500	500	500	500	500	500	500	500	500	500	500	600	500	500
		WB	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
		TOTAL	800	800	800	800	800	800	800	800	800	800	800	800	900	800	800
Mile Strip	Route 5 to RR Tracks	EB	1100	1200	1200	1000	1100	1200	1000	1100	1600	1600	1000	1100	1400	1000	1200
		WB	900	1000	1000	900	900	900	900	900	1200	1200	1000	1100	1100	1000	1100
		TOTAL	2000	2200	2200	1900	2000	2100	1900	2000	2800	2800	2000	2200	2500	2000	2300
	RR tracks to South Park Blvd	EB	2300	2400	2400	2100	2100	2300	2100	2200	2900	2800	2100	2300	2600	2100	2300
		WB	2000	2100	2000	2000	2000	2000	2000	2000	2400	2300	2300	2200	2200	2200	2100
		TOTAL	4300	4500	4400	4100	4100	4300	4100	4200	5300	5100	4400	4500	4800	4300	4400
	South Park Blvd to I-90	EB	1100	1400	1400	1200	1200	1300	1200	1200	1900	1700	1200	1200	1400	1100	1100
		WB	900	1100	1100	1000	1100	1100	1000	1000	1200	1100	1100	1200	1200	900	1100
		TOTAL	2000	2500	2500	2200	2300	2400	2200	2200	3100	2800	2300	2400	2600	2000	2200
I-90	Mile Strip to Route 219	EB	1500	1700	1600	1700	1700	1700	1700	1700	2200	2100	2300	2300	2200	2200	2200
		WB	1200	1400	1300	1500	1500	1400	1400	1400	2000	1800	2300	2300	2100	2100	2100
		TOTAL	2700	3100	2900	3200	3200	3100	3100	3100	4200	3900	4600	4600	4300	4300	4300
	Ridge Rd to Route 400	EB	3500	3800	3700	3800	3800	3800	3800	3800	4500	4500	4700	4600	4600	4600	4500
		WB	5000	5400	5400	5600	5500	5500	5500	5500	6600	6500	7200	7000	6800	7100	6900
		TOTAL	8500	9200	9100	9400	9300	9300	9300	9300	11100	11000	11900	11600	11400	11700	11400
	Route 400 to I-190	EB	4300	4500	4500	4600	4600	4500	4500	4500	5300	5300	5500	5400	5400	5400	5300
		WB	6100	6600	6600	6800	6600	6600	6600	6600	8100	8000	8700	8200	8200	8200	8100
		TOTAL	10400	11100	11100	11400	11200	11100	11100	11100	13400	13300	14200	13600	13600	13600	13400
I-190	Ogden St to Clinton St	NB	1500	1600	1600	1600	1600	1600	1600	1600	2000	1900	2000	2000	2000	1900	1900
		SB	4000	4100	4100	4300	4200	4200	4300	4200	4700	4700	5200	4900	4900	5200	5000
		TOTAL	5500	5700	5700	5900	5800	5800	5900	5800	6700	6600	7200	6900	6900	7100	6900
	Clinton St to Seneca St/ Bailey Ave	NB	1500	1600	1600	1600	1600	1600	1700	1700	1900	2000	1900	1900	1900	2100	2100
		SB	3800	3900	4100	4000	4000	4000	4200	4100	4500	4900	4800	4700	4600	5300	5100
		TOTAL	5300	5500	5700	5600	5600	5600	5900	5800	6400	6900	6700	6600	6500	7400	7200
	Seneca St/ Bailey Ave to Smith St	NB	1900	1900	1900	2000	2000	2000	2000	2000	2200	2200	2400	2300	2300	2400	2300
		SB	4500	4500	4500	4600	4600	4600	4600	4600	4900	4800	5300	5200	5100	5100	5200
		TOTAL	6400	6400	6400	6600	6600	6600	6600	6600	7100	7000	7700	7500	7400	7500	7500
	Smith St to Hamburg/ Louisiana St	NB	2100	2100	2100	2200	2200	2100	2200	2100	2400	2300	2600	2500	2400	2500	2400
		SB	4500	4400	4400	4600	4700	4500	4600	4600	4700	4700	5300	5300	5000	5200	5300
		TOTAL	6600	6500	6500	6800	6900	6600	6800	6700	7100	7000	7900	7800	7400	7700	7700
	Hamburg/ Louisiana St to Elm St	NB	2100	2100	2100	2200	2200	2100	2200	2100	2300	2300	2600	2500	2400	2500	2400
		SB	4300	4300	4300	4500	4500	4400	4500	4500	4600	4500	5200	5100	4800	5100	5000
		TOTAL	6400	6400	6400	6700	6700	6500	6700	6600	6900	6800	7800	7600	7200	7600	7400
	Elm St to Route 5	NB	2100	2100	2100	2200	2100	2100	2100	2100	2300	2200	2400	2300	2300	2300	2200
		SB	3500	3600	3600	3800	3700	3600	3700	3700	4100	4000	4500	4400	4000	4400	4300
		TOTAL	5600	5700	5700	6000	5800	5700	5800	5800	6400	6200	6900	6700	6300	6700	6500
Route 219	I-90 to Mile Strip	NB	1700	1800	1800	1900	1800	1800	1900	1800	2100	2100	2200	2100	2100	1900	2100
		SB	2100	2400	2400	2400	2400	2400	2400	2400	2900	3000	3100	3000	3000	3100	3000
		TOTAL	3800	4200	4200	4300	4200	4200	4300	4200	5000	5100	5300	5100	5100	5300	5100
New Arterial	Elk St to South Park Ave	NB	NA	NA	300	NA	NA	NA	200	300	NA	300	NA	NA	NA	300	300
		SB	NA	NA	200	NA	NA	NA	300	300	NA	300	NA	NA	NA	300	300
		TOTAL	NA	NA	500	NA	NA	NA	500	600	NA	600	NA	NA	NA	600	600
	South Park Ave to Tiftt St	NB	NA	NA	200	NA	NA	NA	200	200	NA	200	NA	NA	NA	200	300
		SB	NA	NA	200	NA	NA	NA	300	300	NA	200	NA	NA	NA	400	400
		TOTAL	NA	NA	400	NA	NA	NA	500	500	NA	400	NA	NA	NA	600	700



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Table C3.3-5 - LOS at Selected Intersections During Peak Hours For Existing (2001) and Design Year (2030)

Route	Intersection	Control	Approach		LOS/Delay <sup>1</sup>																	
					2001						2030											
					Existing			Null		Scenario 1		Scenario 3		Scenario 4		Scenario 5		Scenario 6		Scenario 7		
					AM Peak	Mid-Day Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	
Route 5	Lake Ave	Signalized	WB	L	D/35	C/32	D/49	D/36	D/43	D/35	D/46	D/36	D/41	C/35	D/47	D/39	D/45	D/36	D/41	C/35	D/47	
				R	F/94	C/33	D/41	F/322	D/39	F/97	D/40	F/326	D/38	D/39	D/40	C/30	D/40	F/354	D/38	D/38	D/42	
			NB	TR	B/18	A/5	A/8	E/57	A/8	F/82	A/9	B/15	A/8	D/39	A/8	E/68	A/5	B/15	A/8	B/13	A/8	
				L	E/78	A/6	A/5	F/193	B/10	F/193	B/13	D/44	A/4	F/82	A/6	E/59	A/6	D/44	A/5	F/86	A/8	
	SB	T	A/4	A/5	A/7	A/4	A/8	A/4	A/8	A/4	A/5	A/4	A/6	A/4	A/3	A/4	A/5	A/4	A/6			
	Overall		B/20	A/7	A/8	E/65	A/9	E/70	A/9	D/37	A/7	C/34	A/8	D/52	A/5	D/40	A/7	B/13	A/8			
	Odell St	Signalized	WB	LTR	D/39	D/38	D/40	D/38	D/40	D/39	D/40	D/39	D/40	D/39	D/40	D/39	D/40	D/39	D/40	D/39	D/40	
				TR	C/32	A/3	A/3	F/104	A/3	F/108	A/3	C/30	A/3	D/44	A/3	E/62	A/1	C/35	A/3	D/55	A/3	
			SB	L	A/2	A/2	A/2	A/2	A/2	A/2	A/2	A/2	A/2	A/2	A/2	A/2	B/10	A/2	A/2	A/2	A/2	
				T	A/3	A/3	E/64	A/3	F/142	A/3	F/147	A/3	C/31	A/3	E/59	A/1	A/4	A/2	D/41	A/3	E/77	
	Overall		C/27	A/3	D/48	E/85	F/103	F/88	F/105	C/27	C/23	D/37	D/42	D/50	A/4	C/33	C/30	D/47	D/54			
	Dona St	Signalized	WB	LTR	D/38	D/40	D/40	D/38	D/39	D/38	D/39	D/38	D/39	D/38	D/39	D/38	D/40	D/38	D/39	D/38	D/39	
TR				D/48	A/3	A/3	F/117	A/3	F/126	A/3	D/50	A/3	E/64	A/3	D/50	A/1	D/53	A/3	E/65	A/3		
SB			L	A/2	A/2	A/2	A/2	A/2	A/2	A/2	A/2	A/2	A/2	A/2	A/2	A/3	A/2	A/2	A/2	A/2		
			T	A/3	A/3	F/84	A/3	F/197	A/3	F/203	A/3	E/69	A/3	E/77	A/1	A/5	A/3	E/73	A/3	E/76		
Overall		D/40	A/4	E/62	F/96	F/142	F/103	F/144	D/44	D/49	D/55	D/54	D/40	A/5	D/47	D/52	D/55	D/53				
Madison Ave	Signalized	WB	L	E/61	E/61	E/58	E/61	E/58	E/61	E/58	E/61	E/58	E/61	E/58	D/38	D/40	E/61	E/58	E/61	E/58		
			R	F/94	E/64	E/56	F/94	E/56	F/94	E/56	F/94	E/56	F/94	E/56	D/41	D/40	F/94	E/56	F/94	E/56		
		NB	TR	D/45	A/5	A/6	F/114	A/6	F/123	A/7	D/48	A/6	E/62	A/6	B/18	A/4	D/51	A/6	E/63	A/6		
			L	D/39	A/2	A/2	D/39	A/3	D/39	A/3	D/39	A/2	D/38	A/3	B/10	A/3	D/38	A/2	D/38	A/3		
		SB	T	A/2	A/2	E/60	A/2	F/152	A/2	F/153	A/2	E/64	A/2	E/57	A/1	A/8	A/2	E/74	A/2	E/73		
		Overall		D/39	A/5	D/47	F/93	F/110	F/101	F/110	D/43	D/48	D/53	D/42	A/7	A/7	D/45	D/55	D/54	D/53		
South Park Ave	Hopkins St	Signalized	EB	TR	B/11	B/12	B/13	B/11	B/15	B/11	B/15	B/11	B/12	B/11	B/16	B/11	B/15	B/11	B/13	B/11	B/14	
				DefL	NA	NA	B/20	NA	D/46	NA	C/21	NA	E/67	NA	D/52	NA	C/30	NA	C/23	NA	B/16	
			WB	T	NA	NA	B/13	NA	B/13	NA	B/12	NA	A/10	NA	B/13	NA	B/13	NA	A/9	NA	B/12	
				LT	B/13	B/13	NA	B/11	NA	B/10	NA	B/13	NA	B/12	NA	B/11	NA	B/11	NA	B/11	NA	
			NB	L	B/18	B/17	B/17	B/19	B/17	B/17	B/16	C/34	C/22	B/20	B/17	B/19	B/17	B/18	C/21	B/17	B/16	
				R	B/16	B/17	B/17	B/17	B/17	B/16	B/16	C/22	C/22	B/17	B/17	B/17	B/16	C/21	B/16	B/16		
			Overall		B/14	B/13	B/15	B/14	B/19	B/13	B/15	C/22	B/19	B/15	B/20	B/14	B/17	B/14	B/14	B/13	B/14	
	Smith St	Signalized	EB	LTR	A/8	A/9	A/10	A/8	B/12	A/8	B/11	A/8	B/19	A/8	B/16	A/8	B/11	A/8	B/16	A/8	B/15	
				TR	C/21	B/15	B/14	B/13	B/15	B/12	B/14	B/15	C/23	B/15	C/22	B/13	B/14	C/20	B/14	C/20		
			NB	LTR	B/19	B/17	B/17	B/19	B/17	B/19	B/17	B/19	B/12	B/19	B/12	B/19	B/17	B/19	B/12	B/19	B/12	
				L	C/23	B/20	C/24	C/25	C/26	C/26	C/26	C/32	D/35	C/28	C/35	C/25	C/33	D/46	F/111	C/35	C/28	
			SB	TR	B/19	B/18	B/18	B/20	B/18	B/20	B/18	C/21	B/14	C/20	B/14	C/20	B/19	C/22	B/15	C/21	B/13	
	Overall		B/19	B/14	B/15	B/15	B/15	B/17	B/15	B/18	C/24	B/17	C/24	B/16	B/17	C/24	D/55	B/20	C/21			
	Tiftt St	Signalized	EB	LTR	C/33	C/24	C/24	D/37	D/41	D/38	C/28	D/36	C/27	C/32	C/27	C/34	C/34	D/35	C/25	C/32	C/27	
				TR	C/34	C/22	B/16	C/34	B/16	C/34	B/16	C/34	B/16	C/33	B/16	C/34	B/16	C/34	B/16	C/33	B/16	
			NB	LTR	C/23	A/9	B/16	D/40	B/17	C/32	B/14	C/33	B/18	C/30	B/15	C/34	B/14	D/35	B/18	D/47	B/14	
L				A/8	A/9	B/17	A/9	C/21	A/8	B/20	A/8	C/22	A/8	B/18	A/9	B/20	A/8	D/52	A/8	B/19		
Overall			C/24	B/13	B/19	C/32	C/26	C/29	C/21	C/29	C/22	C/27	B/20	C/28	C/23	C/30	C/34	D/36	C/20			
Michigan Ave	Signalized	EB	L	C/25	C/23	C/29	C/25	C/30	C/25	C/29	C/25	D/40	C/25	D/39	C/25	C/26	C/25	D/40	C/25	D/40		
			TR	C/25	C/24	C/33	C/25	E/60	C/26	D/55	C/28	F/764	C/28	F/747	C/27	F/103	C/30	F/775	C/27	F/782		
		WB	L	C/25	C/24	C/28	C/25	C/30	C/25	C/30	C/25	C/30	C/25	C/30	C/25	C/25	C/25	C/29	C/25	C/29		
			TR	C/35	C/25	C/29	C/27	C/29	C/27	C/29	C/29	C/29	C/30	C/29	C/28	C/24	C/29	C/29	C/31	C/29		
		NB	L	A/9	A/9	A/6	B/14	A/7	B/12	A/7	F/85	B/10	E/63	A/9	C/30	C/25	E/68	A/9	E/65	A/9		
			TR	B/13	A/9	A/7	F/240	A/8	F/128	A/8	F/708	A/8	F/686	A/9	F/542	B/10	F/637	A/8	F/739	A/8		
		SB	L	A/9	A/9	A/7	F/208	A/7	F/189	A/7	F/369	A/8	F/*	A/8	F/*	B/11	F/382	A/8	F/*	A/8		
			TR	A/8	A/10	B/11	A/9	B/11	A/9	B/10	A/9	B/18	A/9	B/14	A/9	C/29	A/10	B/16	A/9	B/14		
		Overall		B/18	B/14	B/16	F/163	C/22	F/89	C/21	F/482	F/286	F/*	F/277	F/*	D/43	F/421	F/296	F/*	F/302		
Ohio St	Fuhrmann Blvd NB	Unsignalized	NB	L	A/8	A/8	B/10	A/8	B/13	A/8	B/12	NA	NA	NA	NA	NA	NA	NA	NA	NA		
			EB	L	C/17	B/13	D/25	D/35	E/49	C/24	E/39	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	Fuhrmann Blvd SB	Unsignalized	SB	LT	B/11	B/15	F/955	B/11	F/*	B/11	F/*	NA	NA	NA	NA	NA	NA	NA	NA	NA		
			WB	L	A/8	A/8	A/10	A/8	B/13	A/8	B/13	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	Fuhrmann Blvd	Signalized	EB	LTR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	C/32	D/55	NA	NA	NA	NA	
				L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	B/14	D/45	NA	NA	NA	NA
			WB	TR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	A/4	A/4	NA	NA	NA	NA
				LTR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	C/31	D/42	NA	NA	NA	NA
			SB	L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	C/31	D/42	NA	NA	NA	NA
				TR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	C/31	D/52	NA	NA	NA	NA
	Overall		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	B/19	D/44	NA	NA	NA	NA		
	Louisiana St	Signalized	WB	LTR	C/32	C/35	D/40	C/32	D/41	C/32	D/37	C/34	E/62	D/47	F/154	D/44	D/39	C/34	D/49	D/45	F/119	
				TR	A/6	A/4	A/3	A/9	A/3	A/9	A/4	D/44	A/2	E/60	A/1	E/56	A/3	C/23	A/2	E/58	A/1	
			SB	LT	A/4	A/4	A/4	A/4	A/4	A/4	A/5	A/6	A/5	A/4	A/9	A/4	B/19	A/5	A/5	A/4	A/10	
				Overall		A/8	B/10	A/9	A/10	B/12	A/9	D/35	B/13	D/51	C/34	D/48	B/17	C/20	B/10	D/50	C/28	
	Michigan Ave	Unsignalized	NB	LTR	A/7	A/7	A/7	A/8	A/8	A/8	A/8	A/8	A/8	A/8	A/7	A/8	A/8	A/8	A/8	A/8	A/8	
L				A/8	A/8	A/9	A/10	A/10	A/10	A/10	A/10	B/13	A/9	B/12	A/9	B/12	A/10	B/13	A/9	B/12		
WB			LTR																			

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Table C3.3-5 - LOS at Selected Intersections During Peak Hours For Existing (2001) and Design Year (2030) cont.

Route	Intersection	Control	Approach		LOS/Delay <sup>1</sup>																		
					2001					2030													
					Existing			Null		Scenario 1		Scenario 3		Scenario 4		Scenario 5		Scenario 6		Scenario 7			
					AM Peak	Mid-Day Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak		
Bailey Ave cont.	Seneca St	Signalized	EB	LTR	B/20	C/31	C/30	C/22	D/39	C/21	C/35	C/22	D/44	C/22	D/42	C/29	D/35	C/20	F/111	B/19	D/51		
			WB	LTR	C/33	C/28	C/23	C/27	C/25	C/24	C/24	C/28	C/27	C/28	C/26	D/44	C/25	E/65	B/19	C/22	B/15		
			NB	L	E/58	B/18	C/25	D/54	B/17	B/15	B/12	F/84	B/15	F/95	B/16	D/38	B/18	B/12	B/13	B/18	B/17		
				TR	B/12	A/9	B/10	B/12	A/10	B/11	A/10	B/13	A/10	B/13	A/10	A/9	B/10	B/10	B/12	B/11	B/15		
			SB	L	C/24	B/14	C/21	C/25	B/19	C/21	B/18	C/26	B/18	C/26	B/19	C/33	B/19	C/21	C/21	C/22	C/24		
				TR	C/24	B/15	C/20	C/26	B/19	C/22	B/18	C/26	B/18	C/26	B/18	C/32	B/18	C/22	C/22	C/22	C/25		
Overall			C/30	B/20	C/21	C/28	C/23	B/19	C/22	C/34	C/24	D/36	C/24	C/30	C/22	D/43	D/53	B/18	C/31				
Tiftt St	Route 5	Signalized	EB	L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	C/29	C/31	NA	NA		
				T	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	C/30	C/27	NA	NA	
				R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	C/30	C/28	NA	NA	
				LTR	NA	NA	NA	NA	NA	NA	NA	NA	D/36	NA	D/36	C/31	NA	NA	NA	NA	D/36	C/27	
				DefL	NA	NA	NA	NA	NA	NA	NA	NA	NA	D/48	NA	NA	NA	NA	NA	NA	NA	NA	
			WB	L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	C/30	F/240	D/37	F/342
				T	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	C/29	C/28	D/36	C/28
				R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	C/24	F/171	C/30	C/25
				LTR	NA	NA	NA	NA	NA	NA	NA	NA	D/55	NA	F/86	F/195	NA	NA	NA	NA	NA	NA	
				DefL	NA	NA	NA	NA	NA	NA	NA	NA	NA	F/129	NA	NA	NA	NA	NA	NA	NA	NA	
			NB	L	NA	NA	NA	NA	NA	NA	NA	NA	A/2	B/16	A/2	B/16	NA	NA	A/8	B/16	A/7	B/16	
				TR	NA	NA	NA	NA	NA	NA	NA	NA	A/6	B/19	A/6	B/20	NA	NA	C/29	B/19	C/30	C/20	
				L	NA	NA	NA	NA	NA	NA	NA	NA	F/264	C/29	F/411	D/50	NA	NA	D/38	E/68	D/38	D/51	
			SB	TR	NA	NA	NA	NA	NA	NA	NA	NA	A/2	A/6	A/3	A/7	NA	NA	A/4	A/9	A/3	A/10	
				Overall			NA	NA	NA	NA	NA	NA	NA	B/17	C/25	C/27	D/40	NA	NA	C/26	D/54	C/27	D/50
			Route 5 SB Ramps	Signalized	EB	T	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	C/23	B/17	NA	NA	NA	NA
					WB	T	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	C/25	C/23	NA	NA	NA	NA
	SB	L			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	C/25	C/33	NA	NA	NA	NA		
	R	NA			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	C/24	C/24	NA	NA	NA	NA		
	Overall			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	C/25	C/23	NA	NA	NA	NA			
	Fuhrmann Blvd SB	Signalized	EB	TR	B/11	B/12	B/11	B/11	B/11	B/11	A/9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
			WB	L	B/17	B/19	C/29	B/17	D/39	C/21	E/69	NA	NA	NA	NA	C/28	C/30	NA	NA	NA	NA		
				T	B/12	B/12	B/12	B/12	B/12	B/12	A/9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
				R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	A/7	A/0	NA	NA	NA	NA		
			SB	L	A/7	A/8	B/14	A/7	E/58	A/6	B/18	NA	NA	NA	NA	C/24	C/24	NA	NA	NA	NA	NA	
				TR	A/6	A/6	A/6	A/6	A/6	A/6	A/8	NA	NA	NA	NA	A/7	B/12	NA	NA	NA	NA	NA	
	Overall			B/11	B/11	B/16	B/11	D/50	B/16	D/41	NA	NA	NA	NA	B/15	B/16	NA	NA	NA	NA			
	Hopkins St	Signalized	EB	LTR	B/20	B/18	C/27	B/16	D/36	B/17	C/22	B/17	C/22	B/18	C/24	C/21	C/32	A/9	C/24	B/17	C/27		
			WB	LTR	D/47	C/27	C/34	E/72	C/34	E/78	C/31	C/34	C/29	D/36	C/30	D/46	C/32	D/46	C/28	F/100	C/28		
			NB	LTR	C/33	B/17	C/25	D/51	C/21	C/28	B/19	C/29	C/21	C/29	C/23	C/27	B/19	B/18	B/16	C/28	B/16		
			SB	LTR	D/45	C/23	C/29	C/32	C/27	D/45	C/24	D/48	C/29	D/39	C/30	C/35	C/25	C/32	B/20	D/44	B/20		
			Overall			C/34	C/20	C/28	D/49	C/31	D/44	C/23	C/31	C/25	C/29	C/26	C/31	C/28	C/29	C/22	D/52	C/23	
	Fuhrmann Blvd NB	Unsignalized	EB	LT	B/10	A/8	A/9	A/9	A/10	A/9	B/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
			NB	LT	C/17	B/13	C/18	B/14	C/25	B/14	D/26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	Route 5 NB Ramps	Unsignalized	EB	LT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	A/9	A/10	NA	NA	NA	NA		
			NB	LTR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	B/11	B/14	NA	NA	NA	NA		
	Ridge Rd	Fuhrmann Blvd NB	Unsignalized	EB	LT	B/13	A/9	A/10	B/11	A/10	B/11	A/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
				NB	LT	F/*	B/12	C/17	D/26	C/17	D/28	C/18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
R					A/10	A/9	B/13	A/9	B/13	A/9	B/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Fuhrmann Blvd SB		Unsignalized	WB	Lane 1	A/9	A/9	A/9	A/9	A/9	A/9	A/9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
				Lane 2	A/9	A/8	A/8	A/9	A/8	A/9	A/8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
			SB	Lane 1	A/9	A/10	B/10	A/9	B/10	A/9	A/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
				Lane 2	A/8	A/8	A/8	A/8	A/8	A/8	A/8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Route 5		Signalized	EB	LTR	NA	NA	NA	NA	NA	NA	NA	D/36	D/37	D/36	D/37	D/38	C/35	D/36	D/37	D/36	D/37		
				L	NA	NA	NA	NA	NA	NA	NA	NA	D/55	F/118	D/50	F/140	D/39	D/38	D/51	F/137	E/55	F/162	
			WB	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	E/84	C/20	NA	NA	NA	NA	
				L	NA	NA	NA	NA	NA	NA	NA	NA	A/2	A/3	A/2	A/3	A/5	B/15	A/2	A/3	A/2	A/3	
			NB	T	NA	NA	NA	NA	NA	NA	NA	NA	B/16	A/3	B/19	A/3	F/128	B/12	B/18	A/3	B/17	A/3	
				R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	A/4	A/9	NA	NA	NA	NA	
			SB	L	NA	NA	NA	NA	NA	NA	NA	NA	F/623	F/171	F/806	F/341	D/46	D/39	F/628	F/228	F/823	F/404	
				TR	NA	NA	NA	NA	NA	NA	NA	NA	A/3	A/4	A/3	A/5	A/1	A/5	A/3	A/5	A/3	A/5	
			Overall			NA	NA	NA	NA	NA	NA	NA	NA	D/41	C/29	D/54	D/47	F/92	B/12	D/42	D/37	D/55	D/55
New Arterial	Seneca St	Signalized	EB	L	NA	NA	NA	NA	NA	D/36	C/24	NA	NA	NA	NA	NA	NA	F/108	C/25	B/13	C/32		
				TR	NA	NA	NA	NA	NA	NA	B/12	B/17	NA	NA	NA	NA	NA	NA	B/13	B/18	B/13	B/19	
			WB	L	NA	NA	NA	NA	NA	NA	B/12	A/7	NA	NA	NA	NA	NA	NA	B/14	A/8	A/8	A/8	
				TR	NA	NA	NA	NA	NA	NA	B/17	C/25	NA	NA	NA	NA	NA	NA	D/41	C/27	C/28	C/25	
			NB	L	NA	NA	NA	NA	NA	NA	D/45	C/24	NA	NA	NA	NA	NA	NA	E/68	C/29	D/43	C/26	
				TR	NA	NA	NA	NA	NA	NA	B/12	B/19	NA	NA	NA	NA	NA	NA	B/11	B/20	B/17	B/20	
			SB	L	NA	NA	NA	NA	NA	NA	B/12	B/19	NA	NA	NA	NA	NA	NA	C/23	B/19	B/17	B/19	
				TR	NA	NA	NA	NA	NA	NA	B/14	B/20	NA	NA	NA	NA	NA	NA	E/66	B/19	C/22	B/19	
	Overall			NA	NA	NA	NA	NA	NA	C/22	C/22	NA	NA	NA	NA	NA	NA	D/48	C/23	C/26	C/23		
	Elk St	Signalized	EB	L	NA	NA	NA	NA	NA	NA	A/10	C/23	NA	NA	NA	NA	NA	NA	A/9	C/23	A/9	C/23	
				TR	NA	NA	NA	NA	NA	NA	A/9	C/22	NA	NA	NA	NA	NA	NA	A/9	C/23	A/9	C/23	
			WB	L	NA	NA	NA	NA	NA	NA	B/11	C/23	NA	NA	NA	NA	NA	NA	B/10	C/24	B/10	C/24	
				TR	NA	NA	NA	NA	NA														

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Table C3.3-6 – Expressway Segment LOS  
Route 5, Route 179, I-90 & I-190  
Existing (2001) and Design Year (2030)  
AM and PM Peak Hours

Route	Segment	Direction	LOS/Density <sup>1</sup>															
			2001		2030													
			Existing		Null		Scenario 1		Scenario 3		Scenario 4		Scenario 5		Scenario 6		Scenario 7	
			AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Route 5	Ridge Rd. to Tift St.	EB	D/32	B/12	D/34	B/15	D/34	B/16	-	-	-	-	D/33	B/15	-	-	-	-
		WB	A/8	D/27	A/10	D/31	A/10	D/32	-	-	-	-	A/10	D/30	-	-	-	-
	Tift St. to Ohio St.	EB	D/29	A/10	D/33	B/13	D/33	B/12	-	-	-	-	E/38	B/13	-	-	-	-
		WB	A/7	C/23	A/9	D/28	A/8	D/27	-	-	-	-	A/9	D/28	-	-	-	-
	Ohio St. to I-190	EB	D/31	B/11	E/36	B/15	E/36	B/14	C/20	A/10	C/22	B/11	D/29	B/12	C/20	A/10	C/21	B/11
		WB	A/10	D/29	B/12	E/36	B/11	E/35	A/7	C/21	A/9	C/23	B/12	D/30	A/6	C/21	A/8	C/22
Mile Strip (Route 179)	Route 5 to Railroad	EB	A/7	B/12	A/9	B/16	-	-	A/5	A/10	A/8	B/12	-	-	A/4	A/10	A/6	B/13
		WB	B/12	A/10	B/13	B/13	-	-	A/9	A/10	B/13	B/12	-	-	A/9	A/10	B/13	B/12
	Railroad to Route 62	EB	B/15	C/24	B/18	D/31	-	-	B/13	C/23	B/14	C/24	-	-	A/11	C/22	B/12	C/24
		WB	C/22	C/22	C/25	C/26	-	-	C/22	C/24	C/23	C/23	-	-	C/21	C/23	C/22	C/23
I-90	Mile Strip Rd. to Ridge Rd.	EB	A/9	B/15	B/15	C/21	B/13	C/21	B/16	C/22	B/15	C/22	B/15	C/21	B/13	C/21	B/13	C/21
		WB	B/14	B/11	C/19	C/19	C/18	B/17	C/23	C/22	C/22	C/22	B/18	C/21	C/23	C/20	C/22	C/20
	Ridge Rd. to Route 400	EB	D/29	C/22	E/42	D/29	E/37	D/28	F/*	D/30	F/*	D/29	E/44	D/29	E/41	D/29	E/39	D/28
		WB	B/18	D/31	C/22	F/*	C/21	F/*	C/25	F/*	C/24	F/*	C/21	F/*	C/24	F/*	C/24	F/*
	Route 400 to I-190	EB	E/38	D/27	E/36	C/24	D/32	C/24	E/38	C/25	E/36	C/25	E/36	C/25	D/34	C/25	D/33	C/24
		WB	C/21	E/43	C/18	E/42	C/18	E/41	C/20	F/*	C/20	E/43	C/18	E/43	C/20	E/44	C/20	E/41
I-190	I-90 to Ogden St.	NB	C/19	A/8	C/25	B/12	C/22	A/11	C/25	B/12	C/25	B/12	C/25	B/11	C/21	B/11	C/21	A/11
		SB	B/12	C/25	B/13	D/34	B/12	D/33	B/15	E/39	B/14	E/35	B/12	D/34	B/15	E/37	B/14	E/35
	Ogden St. to Clinton St.	NB	C/22	A/10	D/26	B/13	D/26	B/13	D/29	B/14	D/28	B/13	D/28	B/14	D/27	B/13	D/26	B/13
		SB	B/11	C/24	B/12	D/31	B/12	D/31	B/14	D/35	B/14	D/33	B/12	D/32	B/15	D/35	B/14	D/34
	Clinton St. to Bailey Ave.	NB	C/21	A/10	D/27	B/13	D/26	B/14	D/32	B/13	D/28	B/13	D/27	B/13	D/32	B/14	D/28	B/14
		SB	A/10	C/23	B/11	D/30	B/13	D/33	B/14	D/31	B/14	D/31	B/11	D/31	B/17	E/36	B/16	D/35
	Bailey Ave. to Smith St.	NB	C/25	B/12	D/30	B/14	D/31	B/14	E/37	B/16	E/35	B/15	D/32	B/15	E/36	B/16	D/35	B/15
		SB	A/10	D/27	B/11	D/33	A/11	D/32	B/14	E/36	B/13	E/35	A/11	D/34	B/13	D/34	B/13	D/35
	Smith St. to Hamburg/ Louisiana	NB	C/23	B/13	D/28	B/16	D/28	B/15	D/32	B/17	D/31	B/17	D/29	B/16	D/31	B/17	D/30	B/16
		SB	A/11	D/27	B/11	D/31	B/11	D/31	B/14	E/36	B/13	E/36	B/11	D/33	B/13	E/35	B/13	E/35
	Hamburg/ Louisiana to Elm/Oak	NB	C/23	B/13	D/26	B/16	C/26	B/15	D/31	B/17	D/29	B/16	D/28	B/16	D/31	B/17	D/29	B/16
		SB	A/10	D/26	A/11	D/30	A/10	D/29	B/13	D/35	B/12	D/34	A/10	D/32	B/13	D/34	B/12	D/33
	Elm/Oak to Route 5	NB	C/19	B/14	C/23	B/15	C/23	B/15	C/23	B/16	C/23	B/15	C/24	B/15	C/23	B/15	C/24	B/15
		SB	B/17	C/21	B/17	D/27	B/17	C/26	C/19	D/29	B/18	D/29	B/16	D/26	C/19	D/29	C/18	D/28

Notes: <sup>1</sup> Density measured in units of passenger cars per mile per lane (pc/mi/ln)  
 Denotes unacceptable levels of service



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**Table C3.3-7 – Summary of Congested Locations - Design Year (2030)**

**SIGNIFICANT CONGESTION (LOS E or F) INTERSECTIONS:**

Route	Intersection	Scenario						
		Null	Scenario 1	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
Route 5	Lake Ave	X	X					
	Madison	X	X					
	Dona	X	X					
	Odell	X	X					
	Ridge					X		
Michigan	South Park Ave	X	X	X	X	X	X	X
	Ohio	X	X	X	X	X	X	X

**SIGNIFICANT CONGESTION (LOS D, E or F) EXPRESSWAY SEGMENTS:**

Route	Segment	Scenario						
		Null	Scenario 1	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
Route 5	Tifft to Ohio					X		
	Ohio to I-190	X	X			X		
I-190	I-90 to Ogden	X	X	X	X	X	X	X
	Ogden to Clinton	X	X	X	X	X	X	X
	Clinton to Bailey	X	X	X	X	X	X	X
	Bailey to Smith	X	X	X	X	X	X	X
	Smith to Hamburg/ Louisiana	X	X	X	X	X	X	X
	Hamburg/ Louisiana to Elm/ Oak	X	X	X	X	X	X	X
	Elm/Oak to Route 5	X		X	X	X	X	X
I-90	Ridge to Rte 400	X	X	X	X	X	X	X
	Route 400 to I-190	X	X	X	X	X	X	X

Note:  denotes LOS D or better



### 3.3.2 Scenario 1 (New Arterial Only)

Scenario 1 consists of the existing highway system including improvements outlined in the current TIP, as well as a construction of a new four lane undivided arterial connecting I-190 near Bailey Avenue and extending to Tifft Street. Alignment and interchange configuration is provided in **Figure C3.3-5**.

The new road has at-grade signalized intersections with Elk Street, South Park Avenue and Tifft Street. Left turn lanes are provided at each of these intersections for all approaches. The travel lanes at the intersections are 12 feet wide and have curbing. Parking is prohibited on the arterial. Year 2030 average daily travel forecasts for key roadway segments in the project area are summarized in **Table C3.3-1**. The estimated annual average daily traffic (AADT) is summarized in Table C3.3-2 and shown graphically in **Figure C3.3-1**. In addition, the existing and estimated future directional traffic volumes are found in **Tables C3.3-3** and **C3.3-4** for the morning (AM) and afternoon (PM) peak hours, respectively. AM and PM peak hour turning movements of selected intersections forecast for Scenario 1 are shown in **Figures C3.3-5** (AM) and **C3.3-6** (PM).

Level of Service analysis for year 2030 peak hour travel forecasts is summarized in **Table C3.3-5** for intersections and **Table C3.3-6** for expressways. Graphic presentation of congested locations is shown in **Figure C3.3-7**.

A summary of the congested locations formed under Scenario 1 is contained in **Table C3.3-7**. Congestion is forecasted at signalized intersections on Route 5, Michigan at South Park Avenue and at Ohio Street, at the Skyway, and I-90 between Ridge Road (Exit 55) and I-190 (Exit 53).

### 3.3.3 Scenario 3 (Boulevard Alternative)

Scenario 3 includes a reconfiguration of the elevated section of Route 5 between Ridge Road and the Skyway, as well as a reconfiguration of Ohio Street between Fuhrmann Boulevard and Michigan Avenue. Route 5 and Fuhrmann Boulevard are reconfigured into a single at-grade urban boulevard with a median. It has six travel lanes between Mile Strip Road and the base of the Skyway and four travel lanes for the Skyway portion. Travel lanes are 12 feet wide with curbing. Parking is prohibited on this new boulevard. The posted speed limit is 64 km/h (40 mph). All intersections are at-grade. Access to Lake Erie waterfront development along Route 5 is provided, as necessary, to serve waterfront venues. New access is provided to the proposed Union Ship Canal development, both north and south of the canal. Ohio Street contains four travel lanes, each 12 feet wide, and parking is prohibited. Posted speed limit on Ohio Street is 56 km/h (35 mph). A graphic presentation of Scenario 3 is shown in **Figure C3.3-8**.

Year 2030 average daily travel forecasts for key roadway segments in the study area are summarized in **Table C3.3-1**. The estimated annual average daily traffic (AADT) is summarized



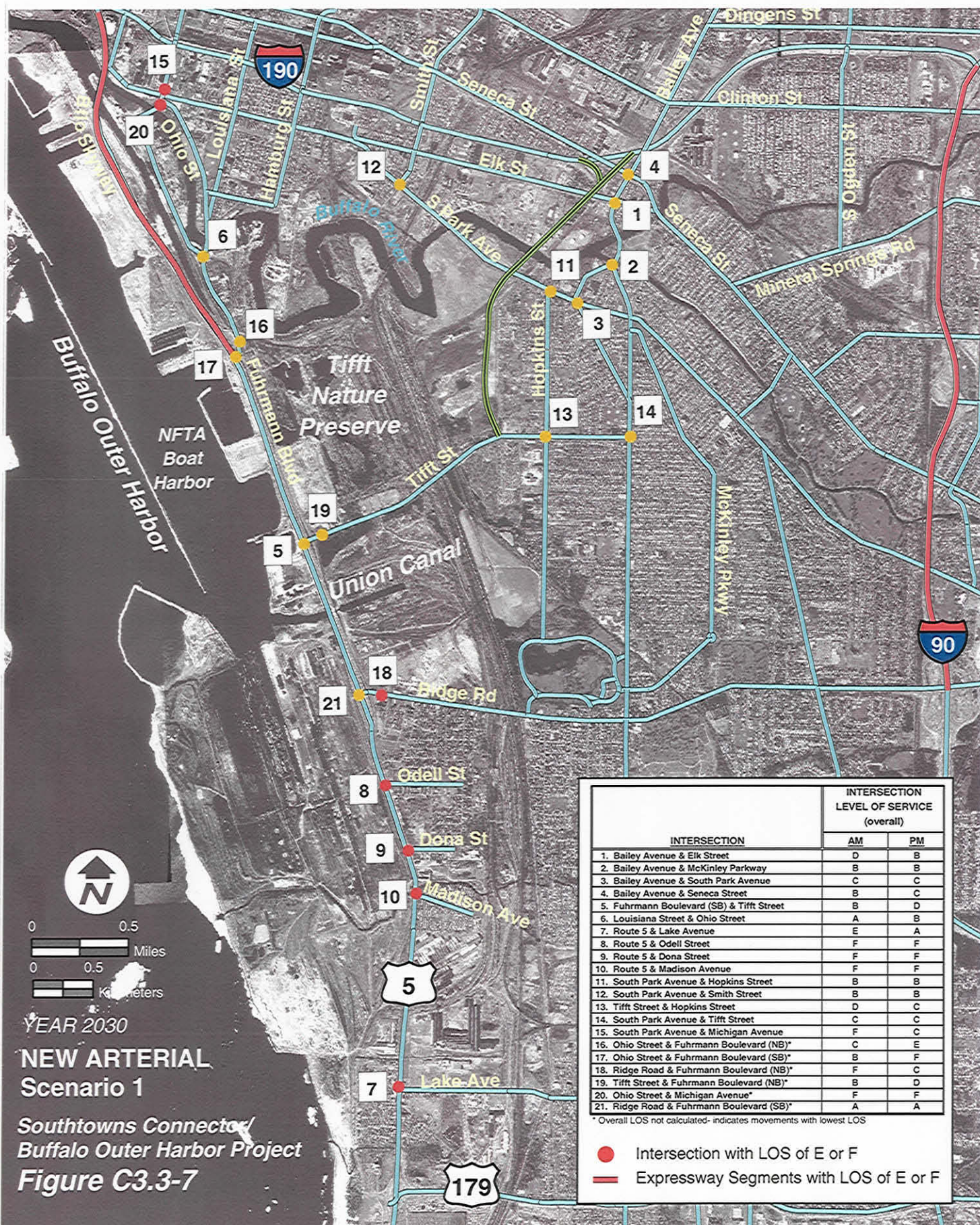


Figure C3.3-5











in **Table C3.3-2** and shown graphically in **Figure C3.3-1**. In addition, the existing and estimated future directional traffic volumes are found in **Tables C3.3-3** and **C3.3-4** for the morning (AM) and afternoon (PM) peak hours, respectively. AM and PM peak hour turning movements of selected intersections forecast for Scenario 3 are shown in **Figures C3.3-8** (AM) and **C3.3-9** (PM).

Level of Service analysis for year 2030 peak hour travel forecasts is summarized in **Table C3.3-5** for intersections and **Table C3.3-6** for expressways. Graphic presentation of congested locations is shown in **Figure C3.3-10**.

A summary of congested locations is contained in **Table C3.3-7**. Congestion is forecasted at Michigan intersecting South Park Avenue and Ohio Street, I-90 between Ridge Road (Exit 55) and I-190 (Exit 53), and I-190 between Hamburg Street (Exit N5) and Bailey Avenue (Exit N3) and between Ogden (N1) and I-90 (Exit 53).

#### 3.3.4 Scenario 4 (Hybrid Alternative)

Similar to Scenario 3, Scenario 4 - the Hybrid Alternative, reconfigures Route 5 and Ohio Street. However, unlike Scenario 3 where Ohio Street consists of 4 travel lanes, under Scenario 4 Ohio Street will consist of three lanes, one travel lane in each direction with a center two-way left turn lane. Route 5 is also reconfigured differently than described under Scenario 3 in that it has six lanes between Ohio Street and Mile Strip Road, and four lanes between Ohio Street and the Skyway. Like Scenario 3, Route 5 will consist of an at-grade facility. It will be an at-grade urban boulevard with a median. Scenario 4 differs from Scenario 3, in that the only intersections along the newly configured Route 5 will be at Ohio Street, Tifft Street and Ridge Road. Because Scenario 4 has limited access to Route 5 (only at Ohio Street, Tifft Street and Ridge Road), this scenario introduces a parallel service road to provide direct access to adjacent development along the waterfront at the Tifft Nature Preserve, at Union Ship Canal, and for development between Ridge Road and Ohio Street. The parallel service roads are curbed with one 11-foot travel lane and an 8-foot parking lane in each direction. The service roads are located on each side of Route 5, as needed, to provide direct access to adjacent development. An interchange will be constructed at the south end of the Skyway with a local access road. Unlike Scenario 3, the posted speed limit on Route 5 for Scenario 4 is 72 km/h (45 mph). **Figure C3.3-11** contains a graphic presentation of Scenario 4.





Year 2030 average daily travel forecasts for key roadway segments in the project area are summarized in **Table C3.3-1**. The estimated annual average daily traffic (AADT) is summarized in **Table C3.3-2** and shown graphically in **Figure C3.3-1**. In addition, the existing and estimated future directional traffic volumes are found in **Tables C3.3-3** and **C3.3-4** for the morning (AM) and afternoon (PM) peak hours, respectively. AM and PM peak hour turning movements of selected intersections for Scenario 4 are shown in **Figures C3.3-11** (AM) and **C3.3-12** (PM).

Level of Service analysis for year 2030 peak hour travel forecasts is summarized in **Table C3.3-5** for intersections and **Table C3.3-6** for expressways. Graphic presentation of congested locations is shown in **Figure C3.3-13**.

A summary of congested locations is contained in **Table C3.3-7**. Congestion is forecasted at the intersections of Michigan Avenue with South Park Avenue and Ohio Street, I-90 between Ridge Road (Exit 55) and I-190 (Exit 53), and I-190 between Hamburg Street (Exit N5) and Bailey Avenue (Exit N3) and between Ogden (N1) and I-90 (Exit 53).

### 3.3.5 Scenario 5 (Modified Improvement Alternative- Preferred Alternative)

Scenario 5 also reconfigures both Route 5 and Ohio Street. However, under Scenario 5, Route 5 will appear similar to its current configuration because it consists of a four-lane grade separated expressway between Tift Street and Ohio Street. Grade separation and interchanges are provided at the intersecting roadways of Ohio Street, Tift Street and at the south end of the Skyway. The posted speed limit is 80 km/h (50 mph). An at-grade intersection is provided at Ridge Road with Route 5. Ohio Street is reconfigured the same as in Scenario 4; that is, with three lanes. Scenario 5 also includes the parallel service roads as detailed in Scenario 4. **Figure C3.3-14** contains a graphic presentation of Scenario 5.

Year 2030 average daily travel forecasts for key roadway segments in the project area are summarized in **Table C3.3-1**. The estimated annual average daily traffic (AADT) is summarized in **Table C3.3-2** and shown graphically in **Figure C3.3-1**. In addition, the existing and estimated future directional traffic volumes are found in **Tables C3.3-3** and **C3.3-4** for the morning (AM) and afternoon (PM) peak hours, respectively. AM and PM peak hour turning movements of selected intersections for Scenario 5 are shown in **Figures C3.3-14** (AM) and **C3.3-15** (PM).

Level of Service analysis for year 2030 peak hour travel forecasts is summarized in **Table C3.3-5** for intersections and **Table C3.3-6** for expressways. Graphic presentation of congested locations is shown in **Figure C3.3-16**.

A summary of congested locations is contained in **Table C3.3-7**. Congestion is forecasted at signalized intersections on Route 5, Michigan Avenue at South Park Avenue and at Ohio Street, Route 5 between Ridge Road and Ohio Street, and I-90 between Ridge Road (Exit 55) and I-190 (Exit 53).



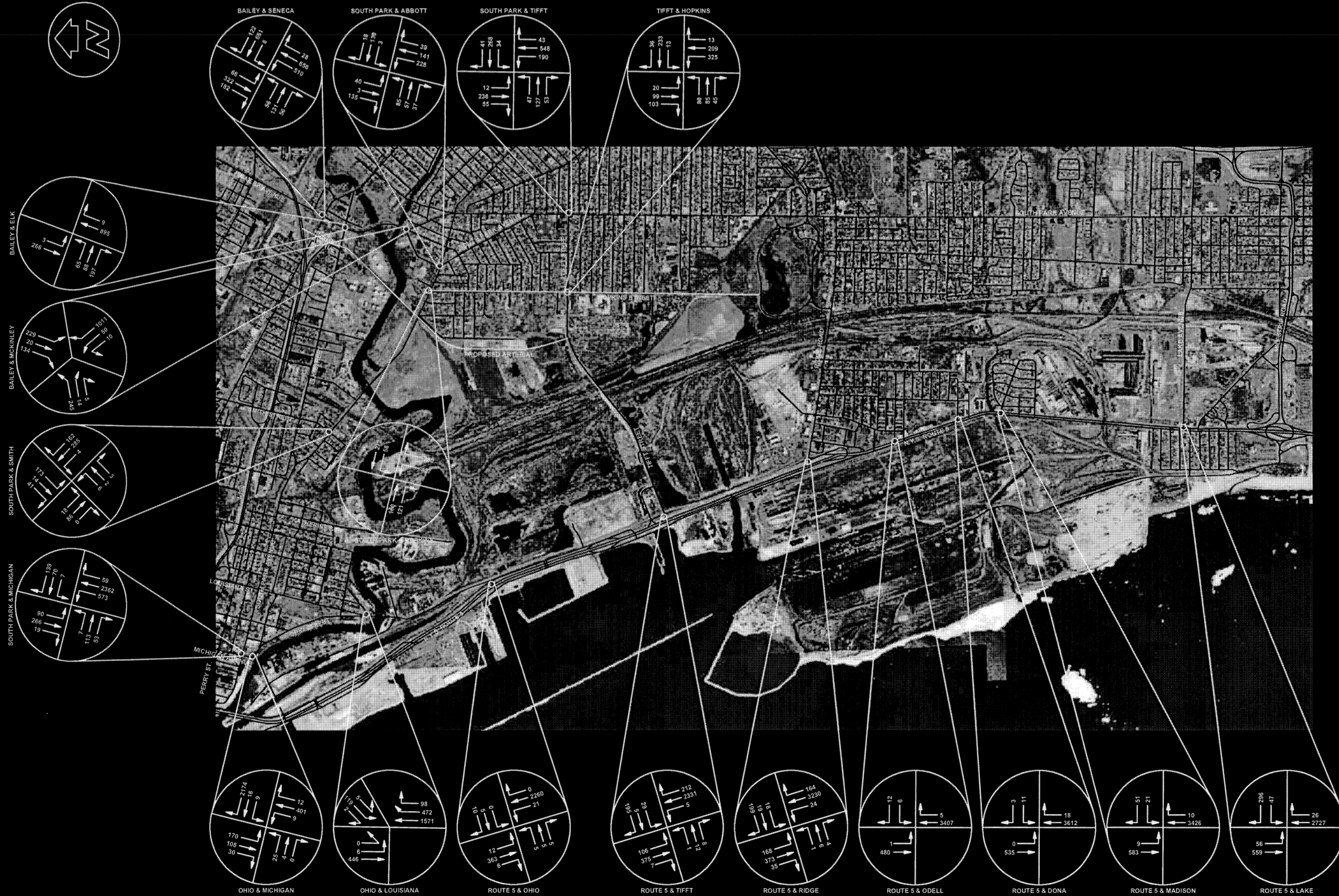
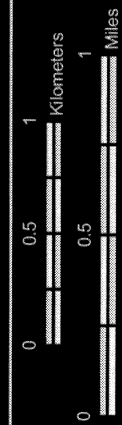


Figure C3.3-8

2030 PEAK AM TURNING MOVEMENTS



SCENARIO 3



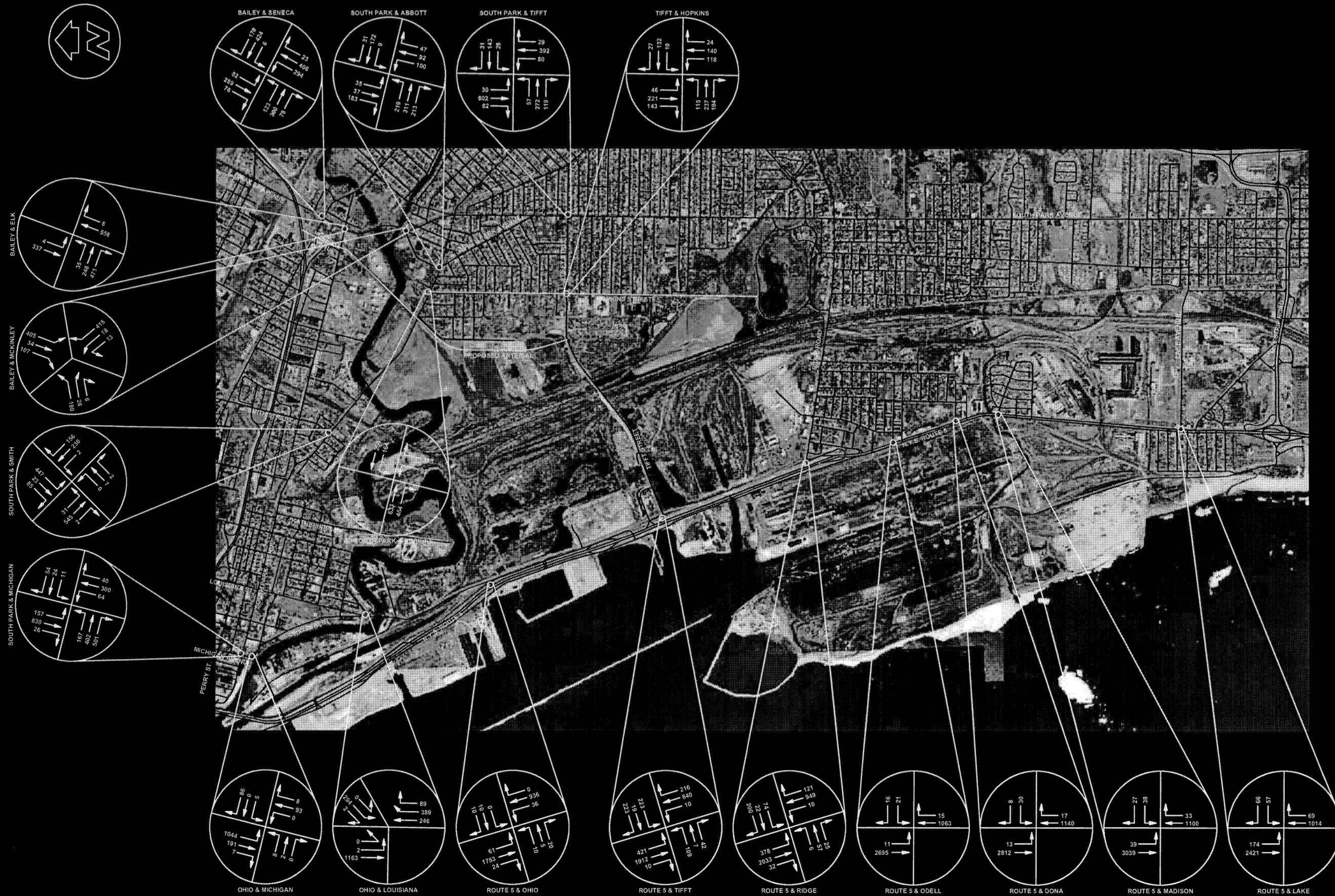
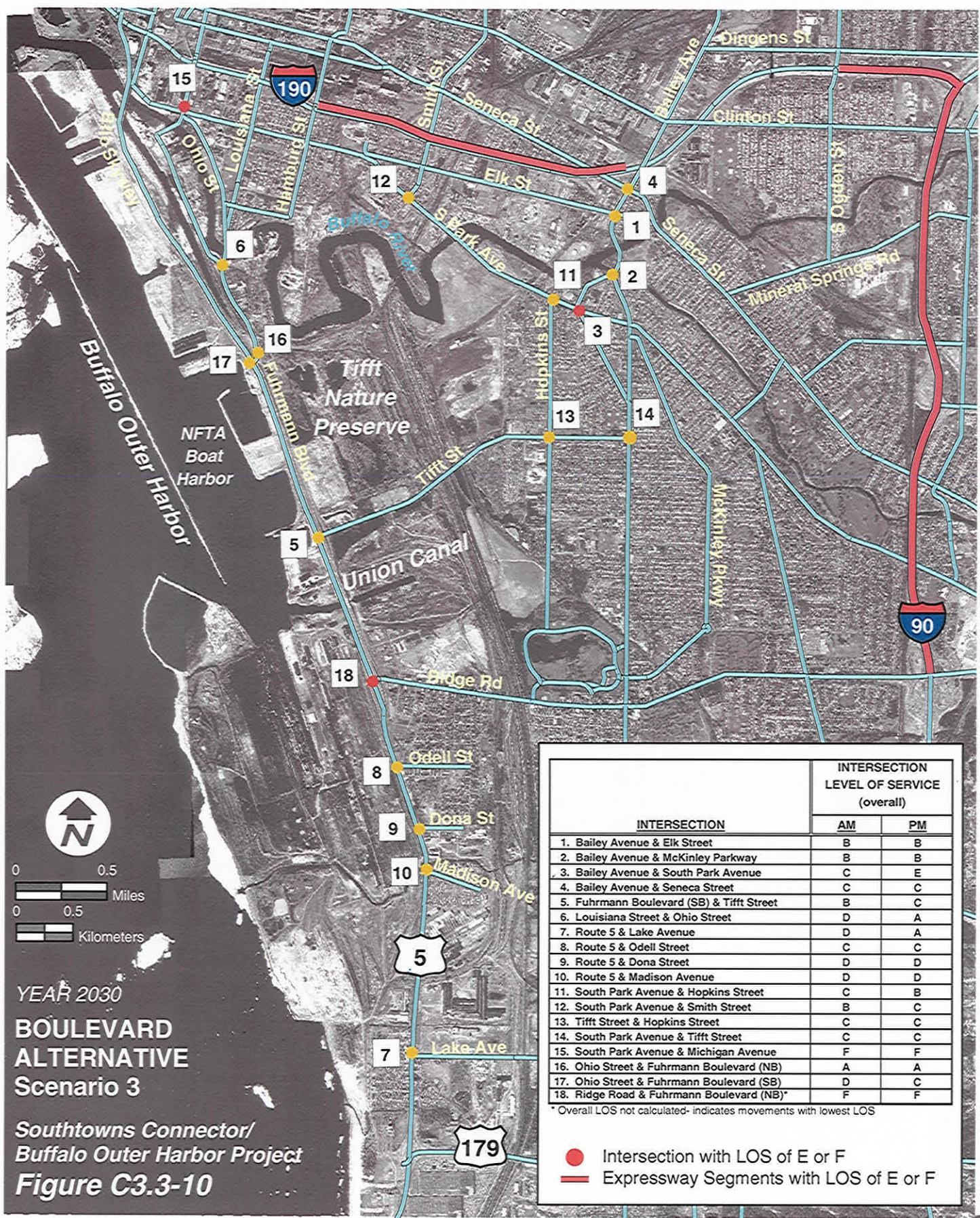


Figure C3.3-9











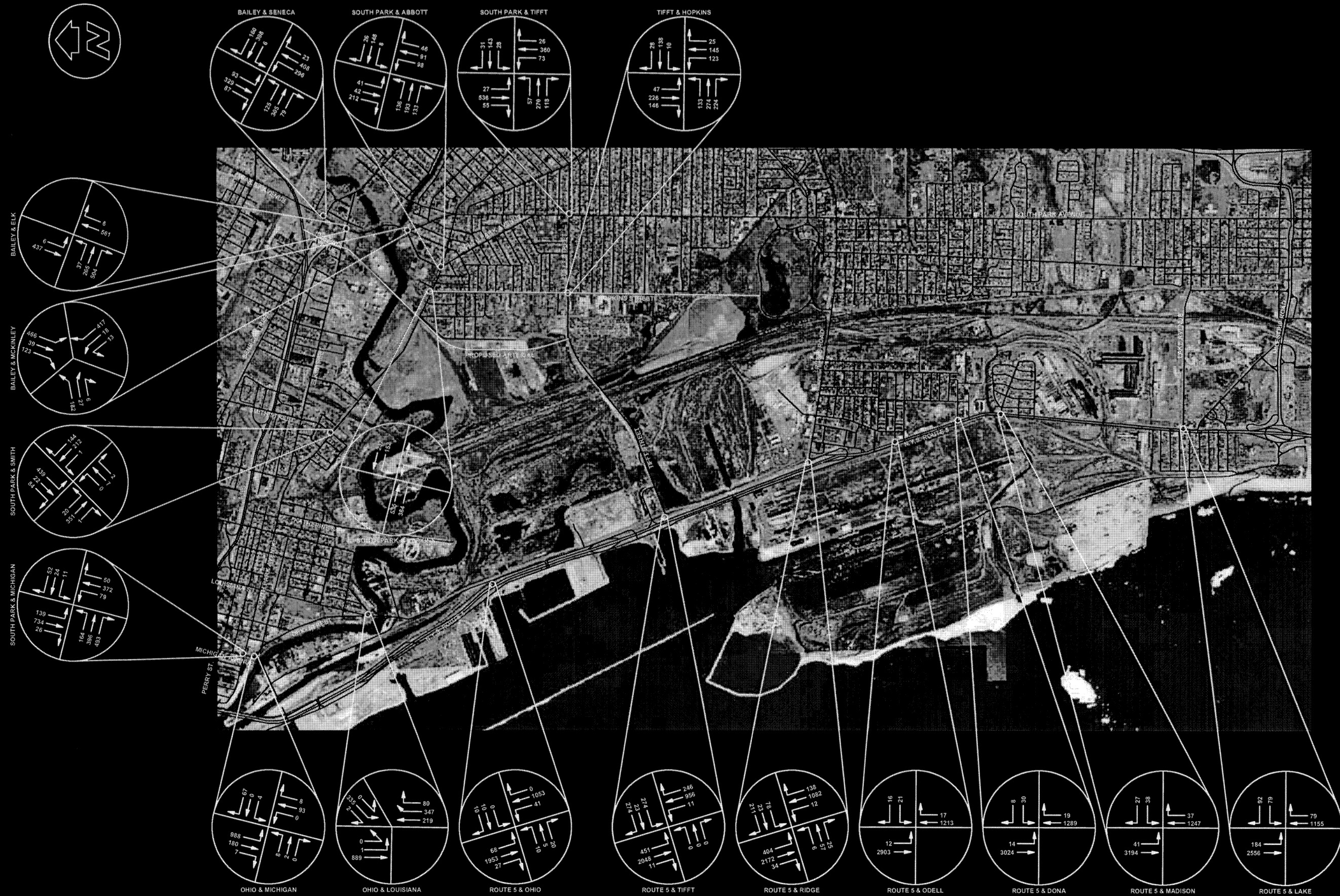
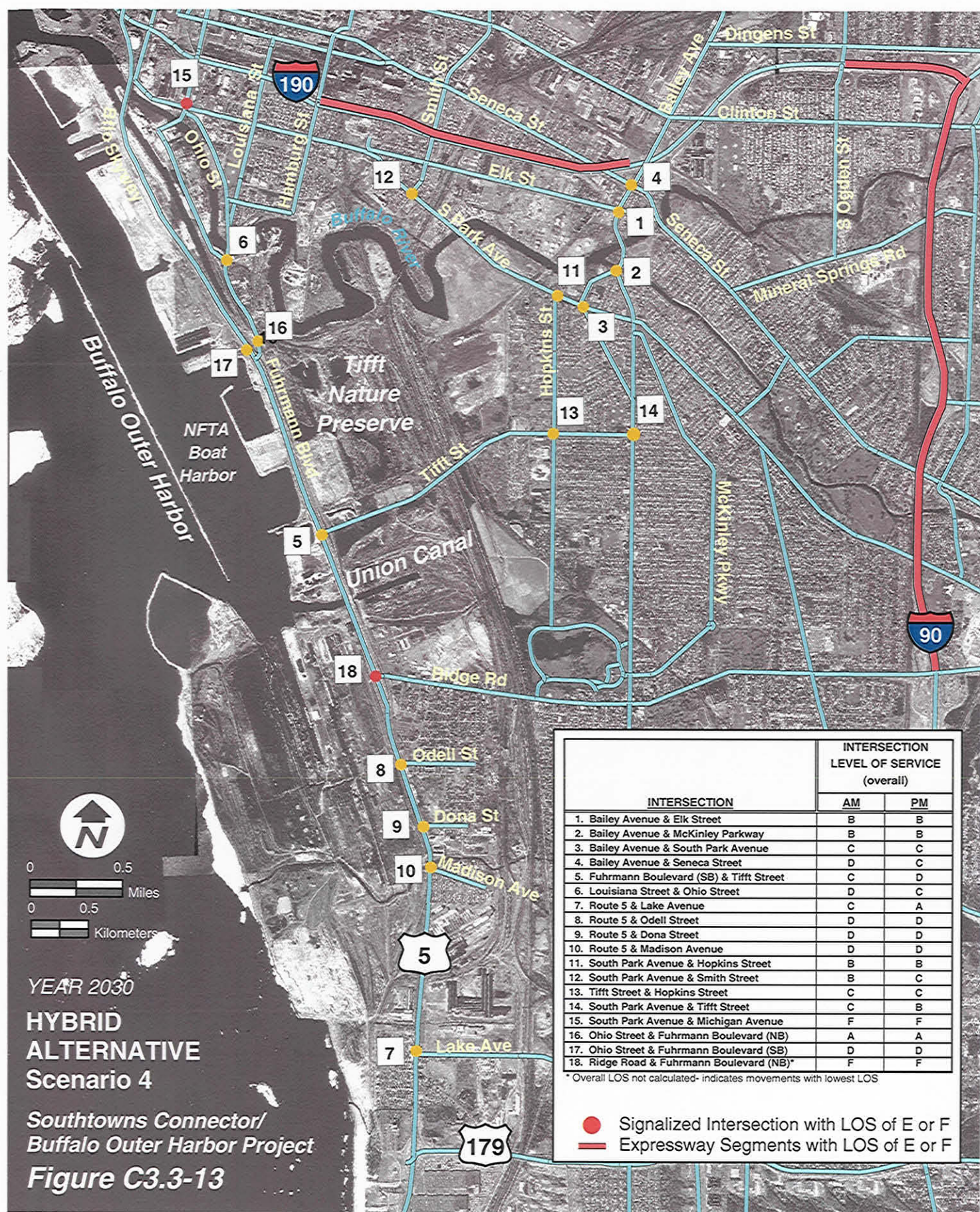


Figure C3.3-12

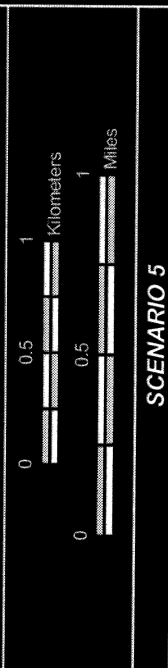








## 2030 PEAK AM TURNING MOVEMENTS





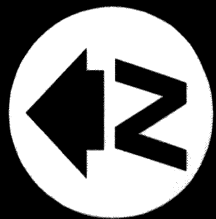
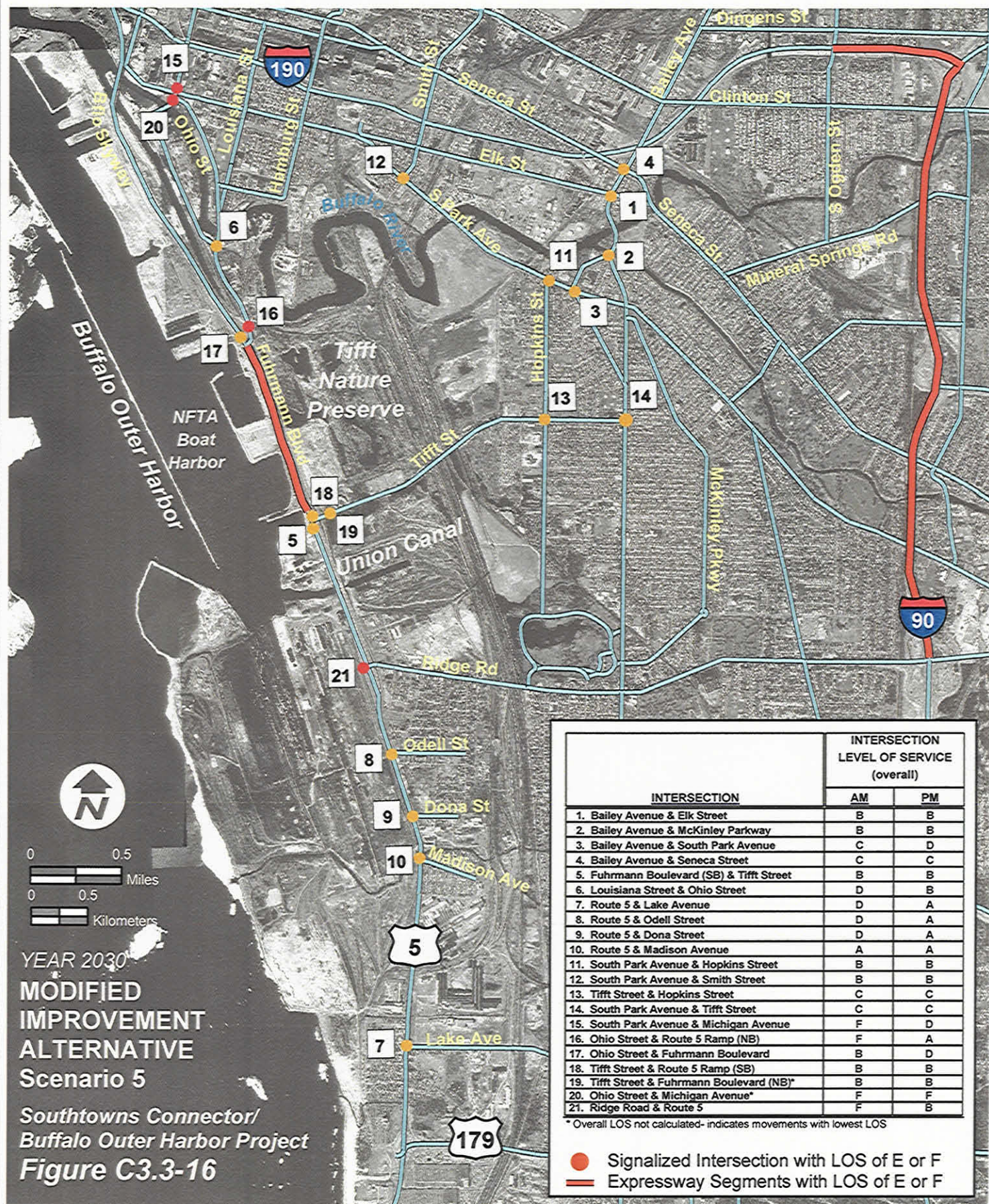


Figure C3.3-15

2030 PEAK PM TURNING MOVEMENTS	
0 0.5 1 Kilometers	
0 0.5 1 Miles	
SCENARIO 5	







### 3.3.6 Scenario 6 (Boulevard Alternative with New Arterial)

Scenario 6 is a combination of Scenarios 1 and 3. It contains a new four lane undivided arterial connecting I-190 near Bailey Avenue and Tifft Street with identical alignment and configuration as detailed under Scenario 1. See **Figure C3.3-5** for additional information. In addition, Scenario 6 contains a reconfiguration of the elevated section of Route 5 between Ridge Road and the Skyway, and a reconfiguration of Ohio Street between Fuhrmann Boulevard and Michigan Street as detailed in Scenario 3. **Figure C3.3-8** highlights these reconfigured routes. Route 5 and Fuhrmann Boulevard are reconfigured into a single at-grade urban boulevard with a median. It has six travel lanes between Mile Strip Road and the base of the Skyway and four travel lanes for the Skyway portion. The travel lanes are 12 feet wide and include curbing. Parking is prohibited on the newly configured Route 5. All intersections are at-grade. The posted speed limit is 64 km/h (40 mph). Access to Lake Erie waterfront development along Route 5 is provided, as necessary, to serve waterfront venues. New access is also provided to the proposed Union Ship Canal development, both north and south of the canal. Ohio Street is also identical to that described under Scenario 3 and contains four travel lanes, each 12 feet wide. The posted speed limit on Ohio Street is 56 km/h (35 mph).

Year 2030 average daily travel forecasts for key roadway segments in the project area are summarized in **Table C3.3-1**. The estimated annual average daily traffic (AADT) is summarized in **Table C3.3-2** and shown graphically in **Figure C3.3-1**. In addition, the existing and estimated future directional traffic volumes are found in **Tables C3.3-3** and **C3.3-4** for the morning (AM) and afternoon (PM) peak hours, respectively. AM and PM peak hour turning movements of selected intersections forecast for Scenario 6 are shown in **Figures C3.3-17** (AM) and **C3.3-18** (PM).

Level of Service analysis for year 2030 peak hour travel forecasts is summarized in **Table C3.3-5** for intersections and **Table C3.3-6** for expressways. Graphic presentation of congested locations is shown in **Figure C3.3-19**.

A summary of congested locations is contained in **Table C3.3-7**. Congestion is forecasted at intersections of Michigan at South Park Avenue and at Ohio Street, I-90 between Ridge Road (Exit 55) and I-190 (Exit 53), and I-190 between I-90 (Exit 53) and Hamburg Street (Exit N5).

### 3.3.7 Scenario 7 (Hybrid Alternative with New Arterial)

Scenario 7 is a combination of Scenarios 1 and 4. Therefore, it contains a new four lane undivided arterial connecting I-190 near Bailey Avenue and Tifft Street with identical alignment and configuration as detailed under Scenario 1, (see **Figure C3.3-5**). In addition, Scenario 7 includes the reconfigurations of Route 5 and Ohio Street as detailed under Scenario 4, (see **Figure C3.3-11**). Route 5 would be reconfigured as an at-grade urban boulevard with a median and would contain six lanes between Ohio Street and Mile Strip Road and four lanes between Ohio and the Skyway. The posted speed limit on Route 5 south of Ohio Street is 72 km/h (45



mph); north of Ohio Street it is 88 km/h (55 mph). Ohio Street would be reconfigured into a three lane route, with one travel lane in each direction and a center two-way left turn lane. Finally, Scenario 7 would also include a parallel service road system on each side of Route 5, as needed, to provide direct access to adjacent development along the waterfront, at Tifft Nature Preserve, and at the Union Ship Canal development between Ridge Road and Ohio Street. The parallel service roads are curbed and have one 11-foot travel lane and an 8-foot parking lane in each direction.

Year 2030 average daily travel forecasts for key roadway segments in the project area are summarized in Table C3.3-1. The estimated annual average daily traffic (AADT) is summarized in Table C3.3-2 and shown graphically in Figure C3.3-1. In addition, the existing and estimated future directional traffic volumes are found in Tables C3.3-3 and C3.3-4 for the morning (AM) and afternoon (PM) peak hours, respectively. AM and PM peak hour turning movements of selected intersections forecast for Scenario 7 are shown in Figures C3.3-20 (AM) and C3.3-21 (PM).

Level of Service analysis for year 2030 peak hour travel forecasts is summarized in Table C3.3-5 for intersections and Table C3.3-6 for expressways. Graphic presentation of congested locations is shown in Figure C3.3-22.

A summary of congested locations is contained in Table C3.3-7. Congestion is forecasted at intersections of Michigan Avenue with South Park Avenue and Ohio Street, as well as I-90 between Ridge Road (Exit 55) and I-90 (Exit 53), I-90 between I-90 (Exit 53) and Ogden Street (Exit N1), and I-90 between Smith Street (Exit N4) and Hamburg Street (Exit N5).





Figure C3.3-17



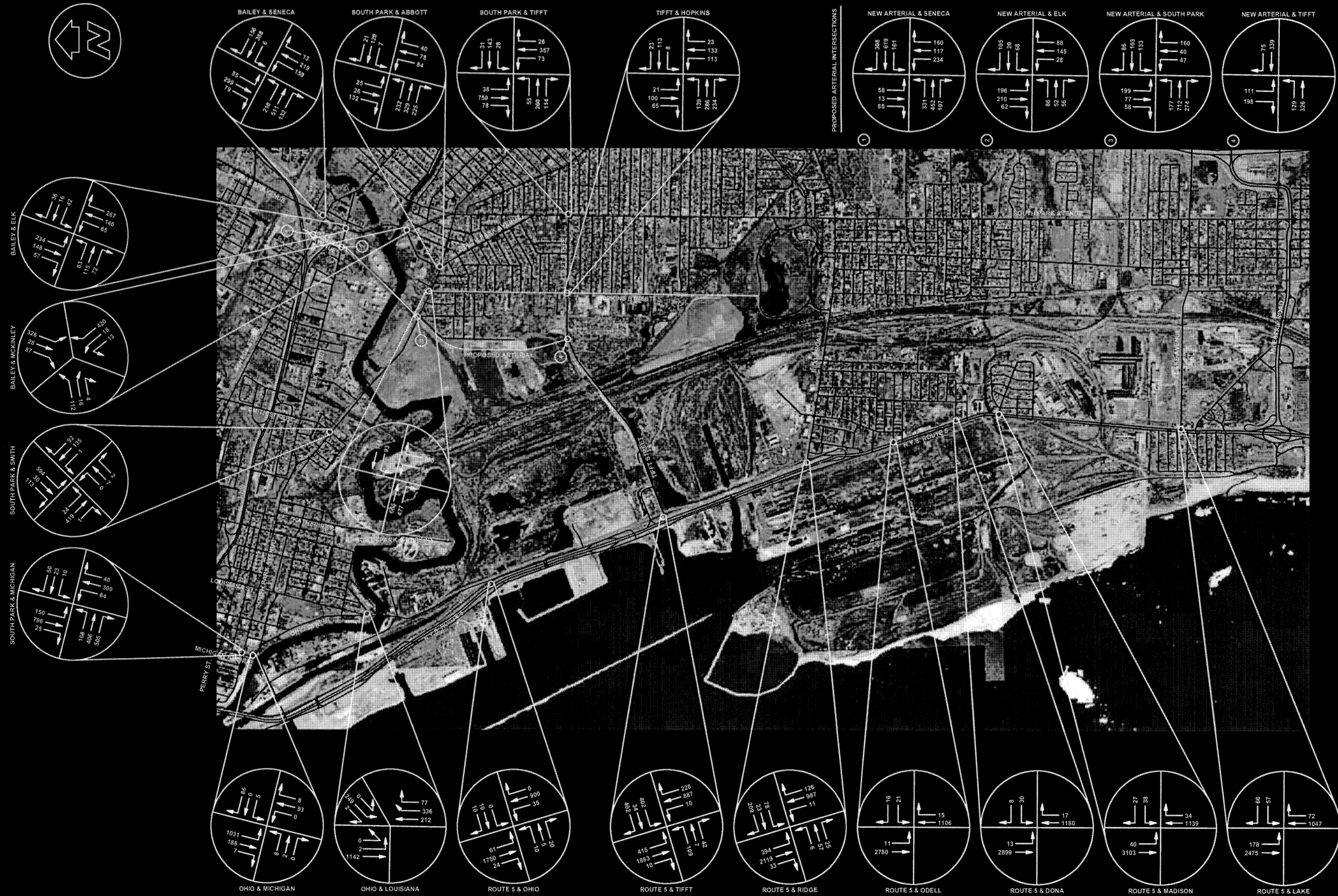
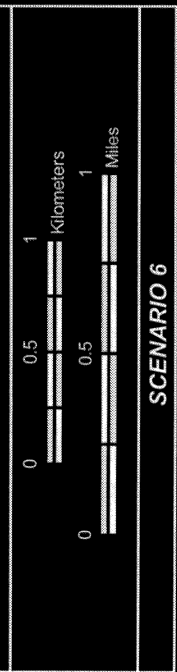


Figure C3.3-18





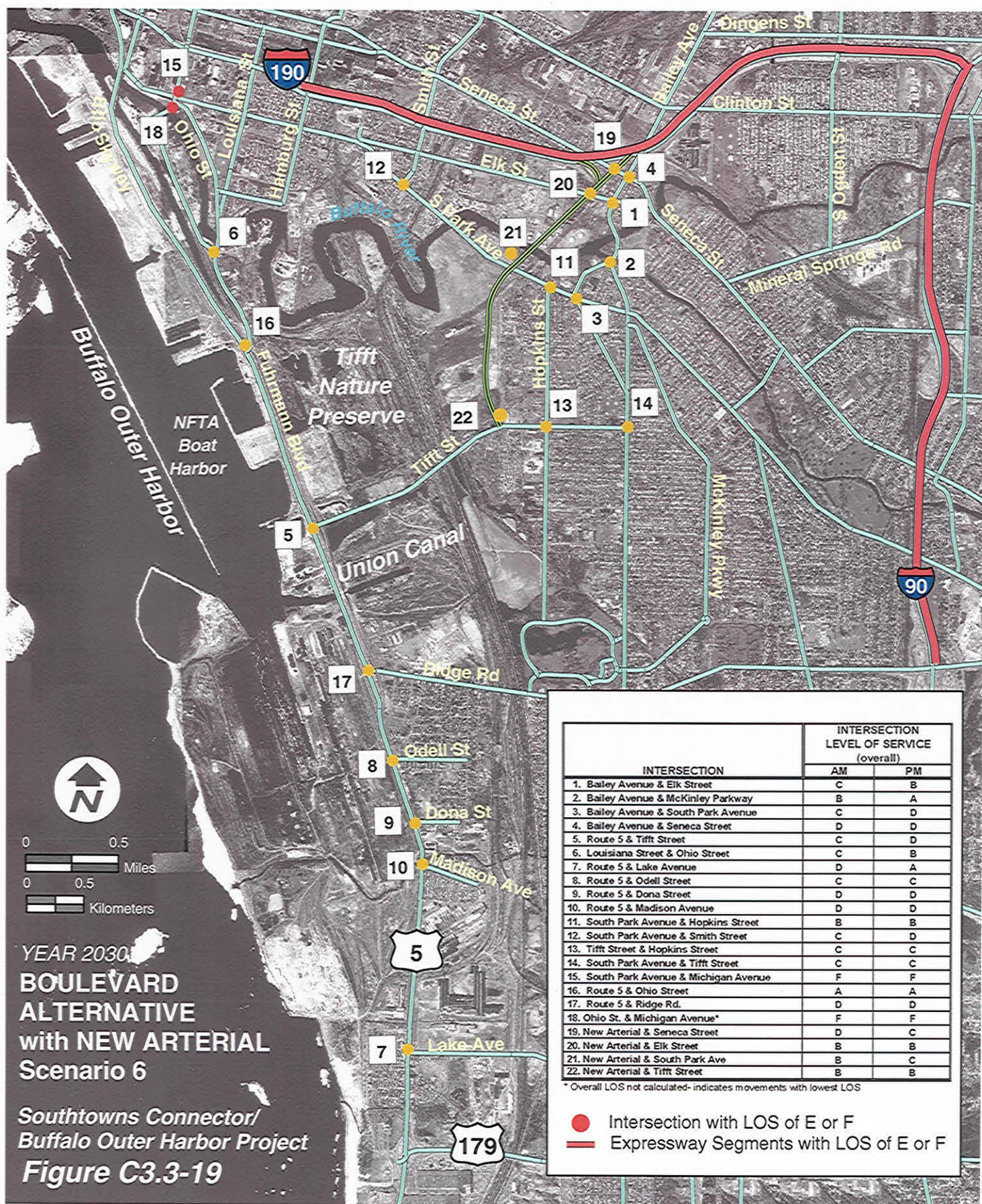
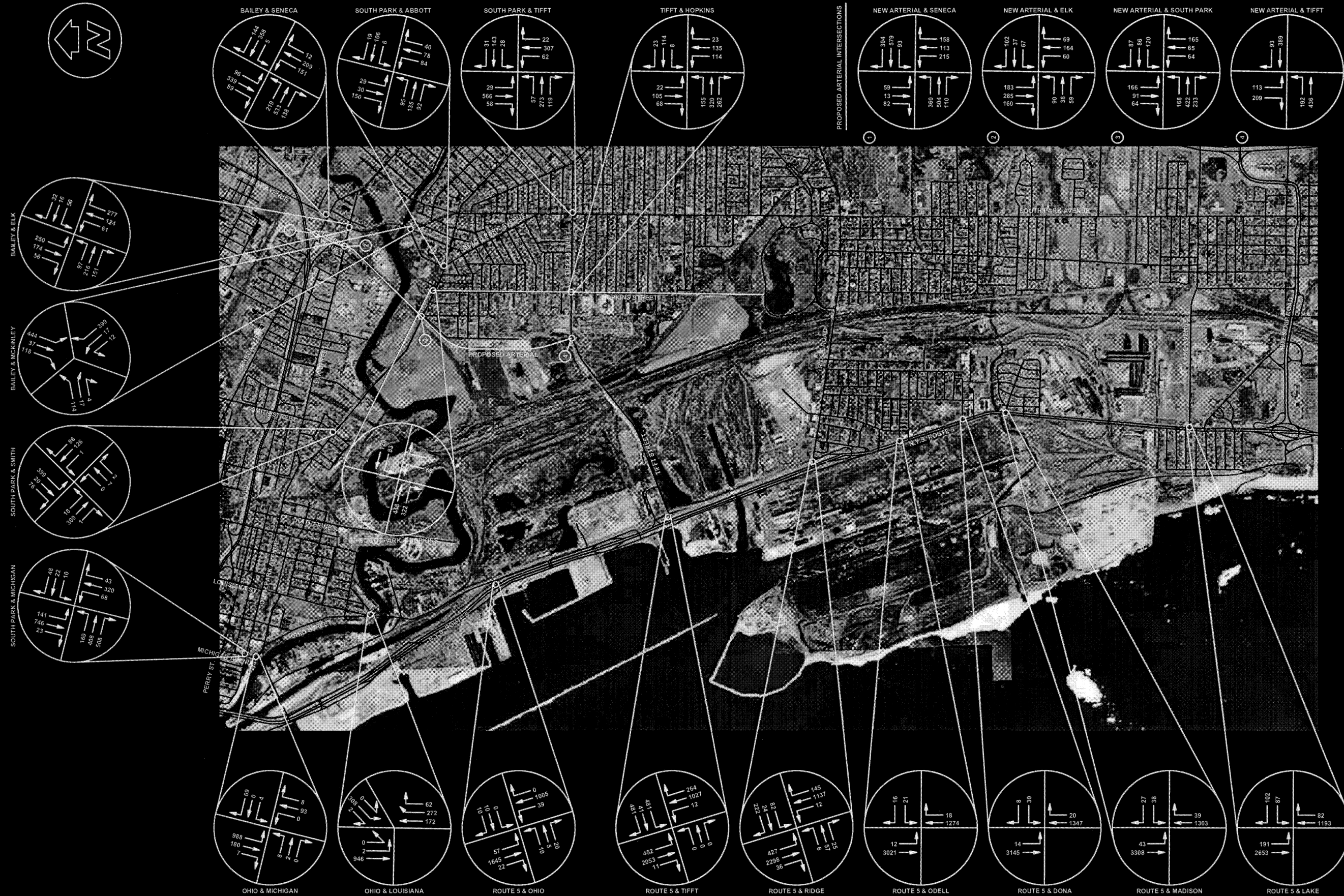




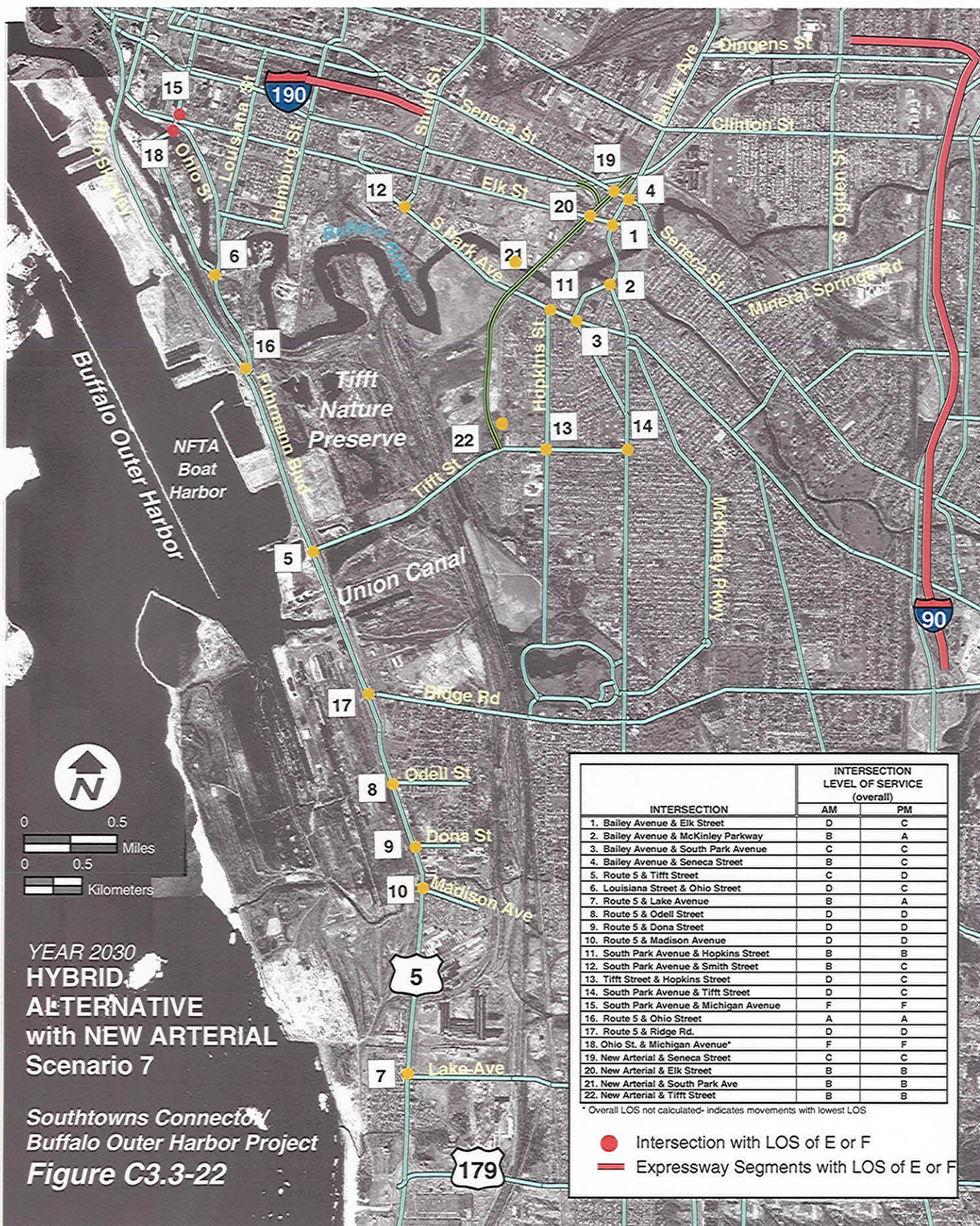


Figure C3.3-20











### 3.4 Summary of Scenarios

The focus of the Southtowns Connector / Buffalo Outer Harbor Environmental Impact Study has been to examine two corridors for highway improvements. The impact of traffic volume forecasts and traffic operations generated by the different build scenarios has been identified.

The impact of build scenarios on travel forecasts and traffic operations is based on comparisons to the “do nothing” option, or NULL Scenario. Scenario 1 is the inclusion of a new four-lane arterial road from Tifft Street extending northerly to Interstate 190 (I-190) near Bailey Avenue. The arterial has limited access and an interchange with I-190. Three other scenarios (Scenarios 3, 4 and 5) pertain to the Route 5 corridor between the Skyway Bridge and Mile Strip Road. Scenarios 3 and 4 convert the roadway to a six-lane at-grade boulevard; however, Scenario 4 has limited access to Route 5. Scenario 5 retains most of Route 5 as an elevated expressway and converts Fuhrmann Boulevard to a two-way roadway located on the west side of Route 5. Scenario 6 is a combination of Scenarios 1 and 3 and Scenario 7 is a combination of Scenarios 1 and 4.

The impact of future daily travel forecasts on the principle roadways in the project area compared to those for the NULL Scenario are summarized in **Table C3.3-1** and **Table C3.3-2**. The results indicate that:

- **The new 4-lane arterial (Scenario 1) compared to scenarios for Route 5 has its own traffic utility and is independent of improvements to Route 5. The converse is also true: improvements to Route 5 do not affect travel forecasts for the new 4-lane arterial.**

Conversion of Route 5 from an expressway to a boulevard results in slower travel speeds along the corridor. The reduction in overall travel speed causes a diversion of traffic from the Route 5 corridor to Interstates 90 and 190. The magnitude of diversion from Route 5 varies between approximately 10,000 and 5,000 vehicles a day between Scenario 3 and 4, respectively, due to slower speeds for Route 5 in Scenario 3 (40 mph) compared to those for Scenario 4 (45 mph).

Impact of travel forecasts on traffic operations are summarized in **Tables C3.3-5** and **C3.3-6**. The results reflect that as travel forecasts are similar between scenarios, so are the traffic operation forecasts. Therefore, intersections with forecasted congestion (LOS E or F) are similar for the NULL and Scenario 1. Congestion at four intersections on Route 5 and two on Michigan Avenue are common to these two scenarios. In addition, both scenarios have similar expressway roadway segments forecasted to have congestion.



Scenarios 3, 4, 6 and 7 retain a similar configuration of Route 5; that is, a 6 lane boulevard between Ohio Street and Mile Strip Road. The slower speeds associated with the boulevard configuration causes sufficient diversion of traffic to the expressway system (Interstates 90 and 190) to provide acceptable traffic operations along Route 5 through the signalized intersections. The added traffic forecasted to the interstate system causes congestion along all segments of I-190 between I-90 and the Skyway Bridge and on I-90 between Ridge Road and I-190.

Scenario 5 has modified improvements to Route 5 consisting of an at-grade intersection with Ridge Road, 6 lane arterial between Ridge and Lake, and an expressway from Tifft to I-190 as presently configured. With the additional segment of Route 5 being an arterial at Ridge Road some diversion of traffic occurs to the Interstate system of I-90 and I-190. The diversion provides acceptable traffic operations along Route 5 through the signalized intersections with the exception at Ridge Road. In addition, the added traffic forecasted to the interstate system yields expressway roadway segments forecasted to have congestion slightly greater than those for the NULL and Scenario 1, but less than those for scenarios 3 and 4.

