

APPENDIX V

Traffic Assessment

Midtown Traffic Assessment
Rochester, New York

Midtown Redevelopment
Rochester, New York

Traffic Assessment
October 30, 2008

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Midtown Traffic Assessment

Rochester, New York

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
I. INTRODUCTION & PURPOSE	5
II. SCENARIO ONE – BASE CONDITIONS.....	7
A. Study Area & Assessed Intersections	
B. Background Developments	
C. Intersection Volumes	
D. Analysis Methodology	
E. Intersection Operations	
III. SCENARIO TWO – PROPOSED CONDITIONS: PAETEC HEADQUARTERS.....	14
A. Trip Generation	
B. Trip Distribution	
C. Intersection Operations	
IV. SCENARIO THREE – POTENTIAL BUILD-OUT CONDITIONS: LOW DENSITY...	22
A. Trip Generation	
B. Trip Distribution	
C. Intersection Operations	
V. SCENARIO FOUR – POTENTIAL BUILD-OUT CONDITIONS: HIGH DENSITY ...	28
A. Trip Generation	
B. Trip Distribution	
C. Intersection Operations	
VI. CONCLUSION.....	23
References	
Appendix	
A. Background Growth & Distribution – Scenario One	
B. Trip Generation – Scenario Two, Three & Four	
C. Trip Distribution – Scenario Two, Three & Four	
D. Capacity Analysis	

Midtown Traffic Assessment

Rochester, New York

LIST OF TABLES

1 – Level of Service Descriptions	10
2 – Trip Generation Summary – PAETEC Headquarters	14
3 – Trip Generation Summary – Potential Build-out: Low Density	22
4 – Trip Generation Summary – Potential Build-out: High Density	24
5 – Level of Service: Morning	34
6 – Level of Service: Evening	35

LIST OF FIGURES

1 – Project Location Map	5
2 – Intersection Geometry	8
3 – Scenario One - Base Conditions Intersection Volumes: Morning	12
4 – Scenario One - Base Conditions Intersection Volume: Evening	13
5 – Overall Trip Distribution Pattern	17
6 – Scenario Two – PAETEC Headquarters Trip Distribution: Morning	18
7 – Scenario Two – PAETEC Headquarters Trip Distribution: Evening	19
8 – Scenario Two – PAETEC Headquarters Volumes: Morning	20
9 – Scenario Two – PAETEC Headquarters Volumes: Evening	21
10 – Scenario Three – Low Density Build-out Trip Distribution: Morning	24
11 – Scenario Three – Low Density Build-out Trip Distribution: Evening	25
12 – Scenario Three – Low Density Build-out Volumes: Morning	26
13 – Scenario Three – Low Density Build-out Volumes: Evening	27
14 – Scenario Four – High Density Build-out Trip Distribution: Morning	30
15 – Scenario Four – High Density Build-out Trip Distribution: Evening	31

Midtown Traffic Assessment
Rochester, New York

16 – Scenario Four – High Density Build-out Volumes: Morning.....32

17 – Scenario Four – High Density Build-out Volumes: Evening33

Midtown Traffic Assessment

Rochester, New York

EXECUTIVE SUMMARY

The Midtown Plaza was once a significant commercial (retail and office) complex in the center of the City of Rochester, New York. It was also the site of the first urban indoor Mall in the United States. Current redevelopment plans include the new PAETEC Headquarters and the potential build-out of the remaining site with a mixture of office, residential, retail and hotel land uses.

This traffic assessment has been conducted to determine the specific affect the PAETEC Headquarters development; as well as the general affects the redevelopment of the entire Midtown Plaza site may have on the study intersections that immediately surround it.

The following intersections were included in the assessment:

1. Clinton Avenue & Main Street
2. Main Street & Midtown Pedestrian Crossing
3. Main Street & Franklin Street – East Avenue
4. Main Street & Stillson Street
5. Main Street & Chestnut Street
6. Chestnut Street & East Avenue
7. Chestnut Street & Elm Street
8. Chestnut Street & Broad Street
9. Chestnut Street & Court Street
10. Court Street & Clinton Avenue
11. Clinton Avenue & Broad Street

The following four development scenarios were assessed:

- o Scenario One – Base Conditions
- o Scenario Two – Proposed Conditions – PAETEC Headquarters
- o Scenario Three – Potential Build-out: Low Density
- o Scenario Four – Potential Build-out: High Density

To determine the impacts the redevelopment of Midtown Plaza would have on the study intersections, a base condition (Scenario One) for comparison was established for morning and evening study periods. This included background development associated with Renaissance Square, Eastman Savings & Loan Headquarters, and a general growth rate of 0.5% per year as well as the redistribution of Midtown Garage patrons. For the purpose of this assessment, it was assumed that the Midtown site would be built-out by 2018.

Scenario Two identified system improvements that would accommodate PAETEC Headquarters. The assessment for Scenarios Three and Four were conducted from a generic perspective to provide guidance where future improvements may be necessary; when tangible development applications are proposed.

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October 30, 2008

Midtown Traffic Assessment

Rochester, New York

Trip generations for Scenarios Two, Three, and Four were conducted based upon a combination of land uses and land use sizes summarized in the following table.

Midtown Traffic Assessment Scenarios

Land Use	Scenario 2 (PAETEC Only)	Scenario 3 (Low Density)	Scenario 4 (High Density)
PAETEC (Square feet)	500,000	500,000	500,000
General Office (Square feet)			220,000
Residential (Units)		231	294
Hotel (Rooms)		100	100
Retail (Square feet)		61,600	67,600
Trip Generation	Scenario 2 (PAETEC Only)	Scenario 3 (Low Density)	Scenario 4 (High Density)
Morning	709	870	1,242
Evening	612	963	1,324

Trips for each of the scenarios were distributed onto the study intersections assuming one-way street configurations and turn restrictions would remain in effect as well as:

- o Overall distribution patterns into and out of the central business district
- o Population Centers
- o Conceptual layout of site
- o Potential location of parking facilities on site
- o Proximity to I-490
- o Intersection turning movements

Under base conditions the capacity analysis indicates that the study intersections, overall, operate acceptably, Level-of-Service (LOS) 'D', or better during morning and evening study periods. And a majority of the individual intersections movements operate at a LOS 'C'.

Implementation of the redevelopment of the Midtown Plaza site will most likely occur over a period of time and will require a coordinated effort between developers and agencies. To assist with this coordination, the assessment identified a number of improvements that minimize the redevelopment's affects on the study intersections. They range from signal timing/operational modifications to the addition of turning lanes. These improvements are summarized in the following tables and may be supplemented or replaced by mitigation identified in future traffic assessments associated with specific development applications.

Midtown Traffic Assessment
Rochester, New York

Intersection / Scenario	Scenario 1 - Baseline Conditions	Scenario 2 - PAETEC Headquarters Development
	<i>Operations Noted</i>	<i>Improvements</i>
Main Street & Clinton Avenue	Eastbound left turning movement added to intersection by the Renaissance Square project operates at a Level of Service (LOS) F for the morning study period	
	Westbound through movement will operate at a LOS D with a volume to capacity ratio (v/c) of approximately 1.0 for the morning study period	
	Northbound through movement will operate at a LOS C with a v/c of approximately 0.9 for the evening study period	Minor signal timing adjustment for northbound approach
Broad Street & Chestnut Street	Northbound left turn movement operates with a protect phase during the morning period only. Observations indicate that the phasing is not necessary during the evening period. Analysis does not reflect field observations.	Signal timing adjustments for northbound left turn movement.
	Intersections of Elm Street & Chestnut Street and Broad Street & Chestnut Street operate on the same controller	Consider running the Broad Street intersection and Elm Street intersection on separate signal controllers
Court Street & Clinton Avenue		Add Eastbound left turn pocket However, widening may not be feasible because of right-of-way constraints

Midtown Traffic Assessment

Rochester, New York

Intersection / Scenario	Scenario 1 - Baseline Conditions	Scenario 3 - Low Density Build-out		Scenario 4 - High Density Build-out
	Operations Noted	Potential Improvements		Potential Improvements
Main Street & Clinton Avenue	Eastbound left turning movement added to intersection by the Renaissance Square project operates at a Level of Service (LOS) F for the morning study period	Add eastbound left turn pocket and protected/permitted phasing		
	Westbound through movement will operate at a LOS D with a volume to capacity ratio (v/c) of approximately 1.0 for the morning study period	Increase capacity of through movement by allowing through and right turns to share curb lane	Increase capacity of through movement by adding a second through lane and a right turn pocket	
	Northbound through movement will operate at a LOS C with a v/c of approximately 0.9 for the evening study period	Continue to monitor northbound approach		
Broad Street & Chestnut Street	Northbound left turn movement operates with a protect phase during the morning period only. Observations indicate that the phasing is not necessary during the evening period. Analysis does not reflect field observations.	Monitor for a northbound protected/permitted left turn phase during other time periods		
	Intersections of Elm Street & Chestnut Street and Broad Street & Chestnut Street operate on the same controller	Intersection of Elm Street & Chestnut Street may be a candidate for reconstruction or elimination depending on how the site eventually builds out		
Court Street & Clinton Avenue		Add Eastbound left turn pocket		
		However, widening may not be feasible because of right-of-way constraints		

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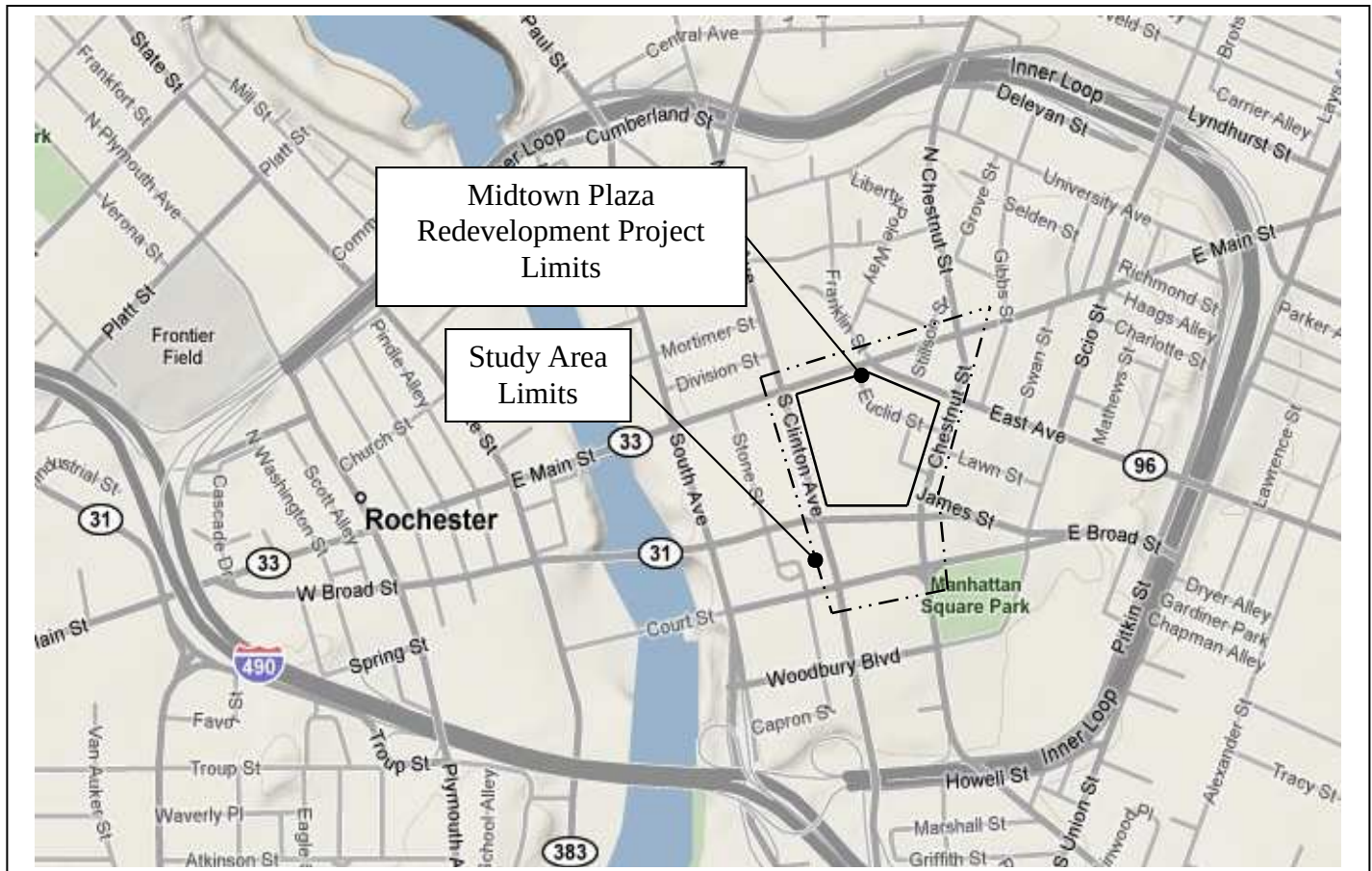
Midtown Traffic Assessment

Rochester, New York

I. INTRODUCTION & PURPOSE

The project is located in Rochester, New York in the core of the central business district inside the Inner Loop. The site is bordered by Main Street to the north, East Avenue and Chestnut Street to the east, Broad Street to the south, and Clinton Avenue to the west.

Figure 1 – Project Location Map



Originally, Midtown Plaza was a significant commercial (retail and office) complex and the site of the first urban indoor Mall in the United States. Current redevelopment plans include the new PAETEC Headquarters as well as a potential build-out of the Midtown site with a mixture of residential, office, retail and hotel land uses.

Midtown Traffic Assessment

Rochester, New York

The assessment includes the following four development scenarios:

- o Scenario One – Base Conditions
- o Scenario Two – Proposed Conditions – PAETEC Headquarters
- o Scenario Three – Potential Build-out: Low Density
- o Scenario Four – Potential Build-out: High Density

Scenario One will establish the base conditions that the following scenarios will be compared against. Scenario Two assessment will identify system improvements to accommodate PAETEC Headquarters development. The assessments for Scenarios Three and Four will be conducted from a generic perspective to provide guidance on where future improvements may be necessary; when actual developments are proposed over the course of the ten-year study period.

Midtown Traffic Assessment

Rochester, New York

II. SCENARIO ONE - BASE CONDITIONS

To determine the effect the redevelopment of Midtown Plaza may have on the study intersections, a base condition was established for morning and evening study periods.

A. Study Area / Study Intersections

The study area is defined by the following intersections:

12. Clinton Avenue & Main Street
13. Main Street & Midtown Pedestrian Crossing
14. Main Street & Franklin Street – East Avenue
15. Main Street & Stillson Street
16. Main Street & Chestnut Street
17. Chestnut Street & East Avenue
18. Chestnut Street & Elm Street
19. Chestnut Street & Broad Street
20. Chestnut Street & Court Street
21. Court Street & Clinton Avenue
22. Clinton Avenue & Broad Street

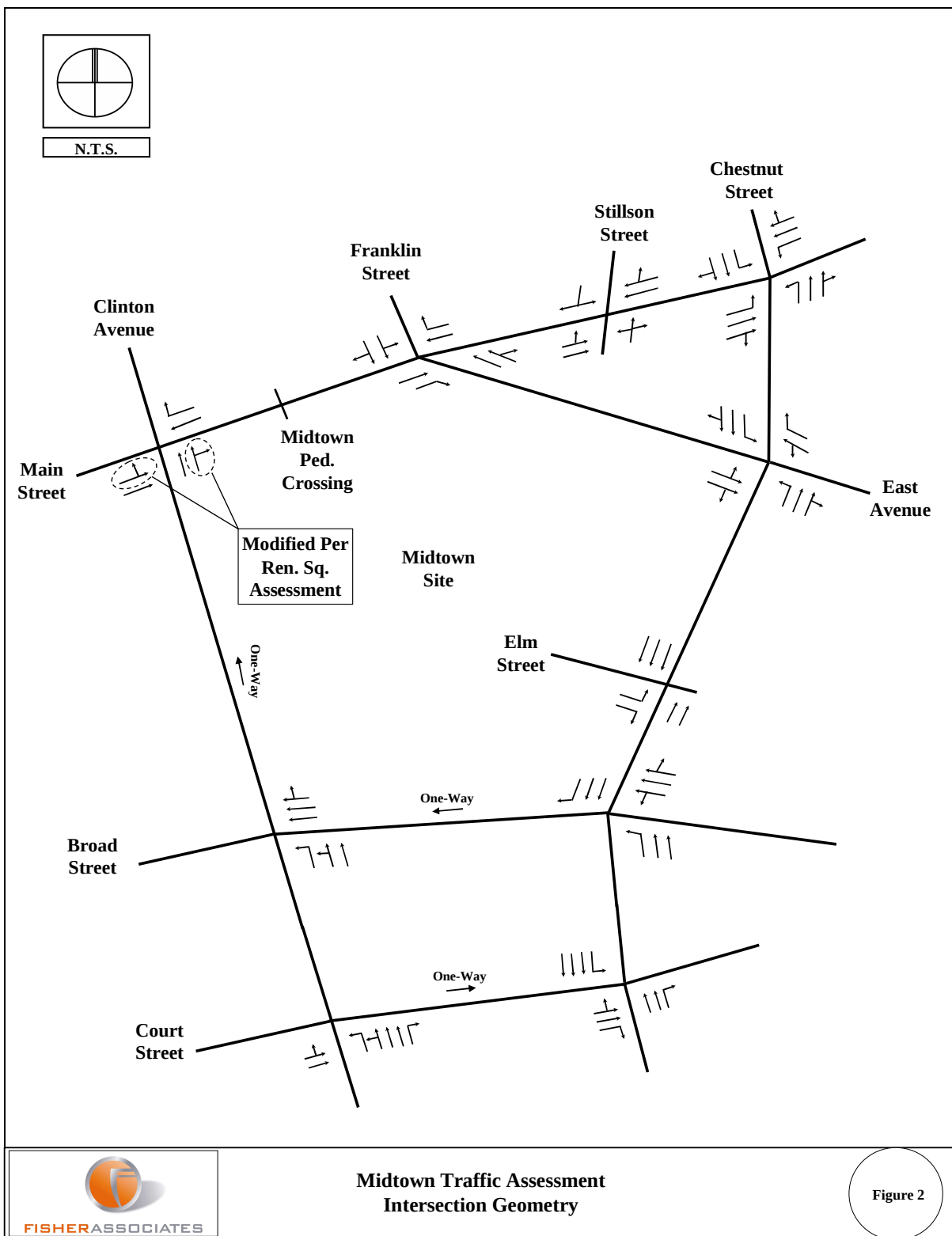
Each of the study intersections are controlled by a traffic signal and part of an interconnected coordinated traffic signal system under the jurisdiction of the Monroe County Department of Transportation (MCDOT). The system is documented electronically by MCDOT¹, which is the basis for this assessment.

Intersection geometry, permissive turning movements and one-way streets are depicted in **Figure 2**. One exception is noted at the intersection of Clinton Avenue and Main Street where a northbound right turn and an eastbound left turn are shown as a permitted movement, which resulted from the Renaissance Square project.

Discussions with MCDOT concluded that the analysis of the Midtown Plaza redevelopment would assume all existing turn restrictions and street networks (one-way and two-way traffic flows) would be remain in affect. And, the analysis would reflect the movements added at the Clinton Avenue and Main Street intersection.

Midtown Traffic Assessment

Rochester, New York



Midtown Traffic Assessment
Intersection Geometry

Figure 2

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Rochester, New York

B. Background Developments – Base Conditions

It was estimated that full build-out of the Midtown Plaza site will take place over a next ten-year period following this assessment, approximately 2018-2019.

The following specific developments were identified as being built and operational within the next ten-year period:

- 23. Eastman Savings & Loan (ESL) Corporate Offices
- 24. Renaissance Square

Trip distributions for ESL were provided by Labella Associates and applied to this assessment's study intersections. Trip distributions for Renaissance Square were provided by MCDOT.

A general straight line growth rate of 0.5% per year, for ten years, was applied to the study area to account for smaller non-specific developments that may impact the study intersections. This general growth rate is consistent with rates used in other projects within the City limits including Renaissance Square.

It is anticipated that the employees and other occupants within PAETEC Headquarters development will be the primary users of the Midtown Garage (associated with Midtown Plaza). The City of Rochester coordinated the displacement of current Midtown Garage users' to three other garages (Mortimer Street Garage, St. Joseph Garage and East End Garage). The following steps outline how this displacement was accounted for under the base conditions of this assessment:

- Step 1: Determine existing Midtown garage use from information contained in the Comprehensive Downtown Parking Study³ for the commuter peak hours.
- Step 2: Removed commuter peak hour existing trips (Midtown Garage Users) from the study intersections based on the trip distribution patterns used for PAETEC Headquarters.
- Step 3: Determine how existing Midtown Garage users will be divided amongst the three designated garages based on the City of Rochester Midtown Garage Relocation Plan⁴.
- Step 4: Redistribute Midtown Garage users back onto the study intersections based on the distribution percentages used for PAETEC Headquarters development.

Midtown Traffic Assessment

Rochester, New York

All background development and growth trip distribution figures are contained in the appendix.

C. Intersection Volumes – Base Conditions

The background development trips, general growth rate, the redistribution of the Midtown garage trips and traffic volume adjustments were applied to the intersection volumes in MCDOT's network models, resulting in the base conditions intersection volumes in this traffic assessment.

Figure 3 and 4 depict Scenario One base conditions intersection traffic volumes.

D. Analysis Methodology

Intersection analysis was conducted using Synchro 7 software⁴. Synchro is based on methodology presented in the 2000 Highway Capacity Manual⁵ that describes the operation of intersections controlled by stop signs and traffic signals. Using this analytical approach, a qualitative measure in the form of Level of Service (LOS) and delay is provided to traffic being served by the intersection. The ranges for signal controlled intersections are listed in **Table 1**:

Table 1 – Level of Service Descriptions

A - Little or No Delay	(Less than or equal to 10.0 sec.)
B - Minor, Short Delay	(10.1 to 20.0 sec.)
C - Average Delays	(20.1 to 35.0 sec.)
D - Long, but Acceptable Delays	(35.1 to 55.0 sec.)
E - Long, Approaching Unacceptable Delays	(55.1 to 80.0 sec.)
F - Long, Unacceptable Delays	(> 80.0 sec.)

As noted in **Table 1** a Level-of-Service 'D' or better is generally considered acceptable.

E. Intersection Operations – Base Conditions

The results of the capacity analysis indicates that the study intersections are, overall, operating at a LOS 'D' or better during morning and evening study periods; with a majority of the intersection turning movements operating at a LOS 'C' or better. The following exceptions are noted:

Midtown Traffic Assessment

Rochester, New York

o *Main Street & Clinton Avenue: eastbound and westbound approaches (Morning)*

For the morning study period the analysis indicates that the eastbound left turn movement (associated with Renaissance Square), which is shared with the through movement, will operate at a LOS 'F' with the inside lane operating as a de-facto left turn pocket.

The analysis also indicates that the westbound through movement will operate acceptably, LOS 'D' with a volume to capacity ratio of approximately 1.0.

From a review of the Renaissance Square traffic assessment⁶ no modifications to the intersections were recommended beyond signal timing adjustments.

o *Main Street & Clinton Avenue: northbound through (evening)*

For the evening study period the analysis indicates that this movement will operate acceptably, LOS 'C' with a volume to capacity ratio of approximately 0.9.

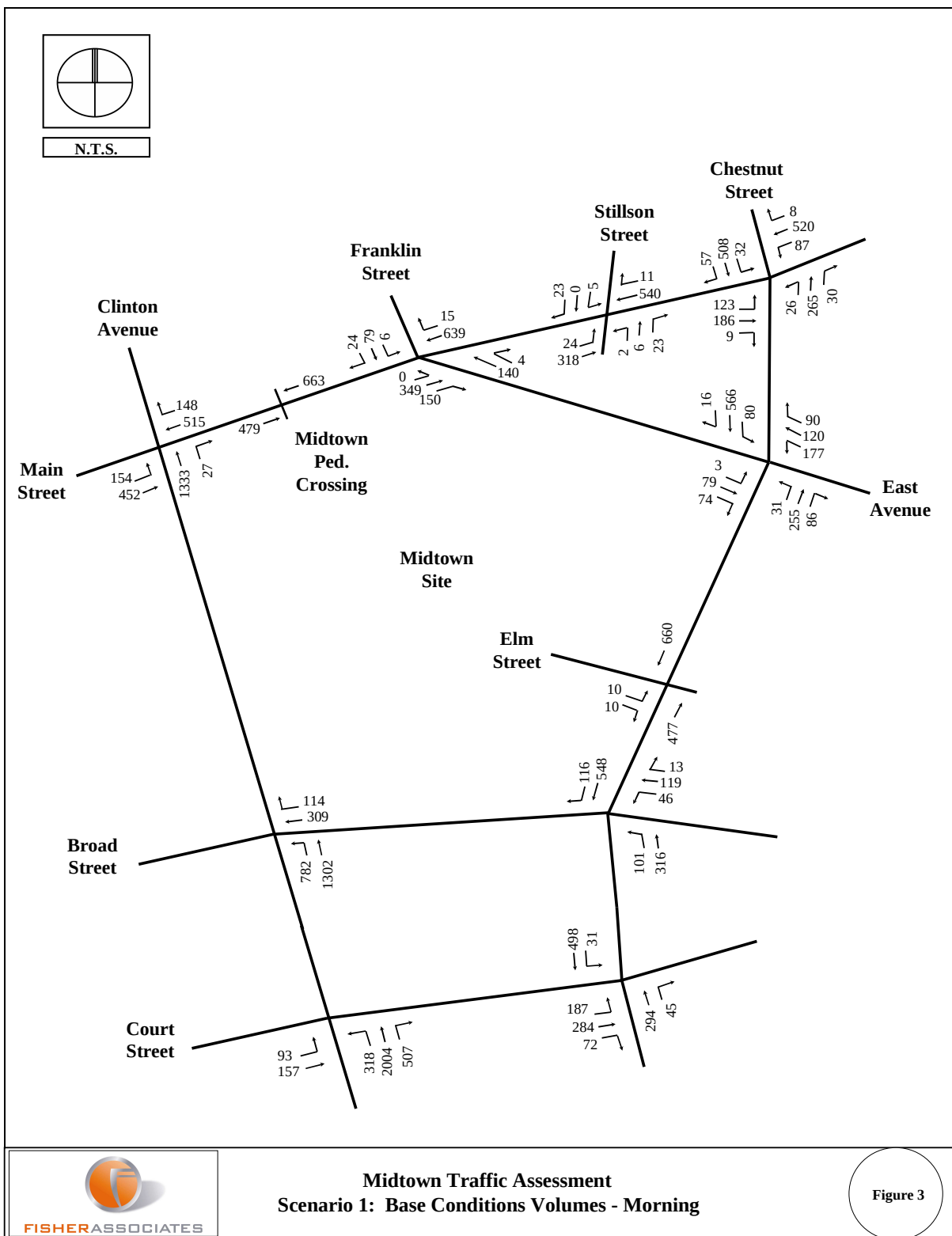
o *Chestnut Street & Broad Street: northbound left turn (evening)*

The movement is not served by a protected left turn phase and as a result the analysis indicates that this movement fails during the evening study period. It was confirmed that the left turn phasing is only available in the morning. And, MCDOT is aware of the operations depicted in the analysis. Ongoing monitoring of the intersection indicates it operates acceptably without the phasing.

Table 5 on page 33-34 provides a summary of the level of service for the study intersections.

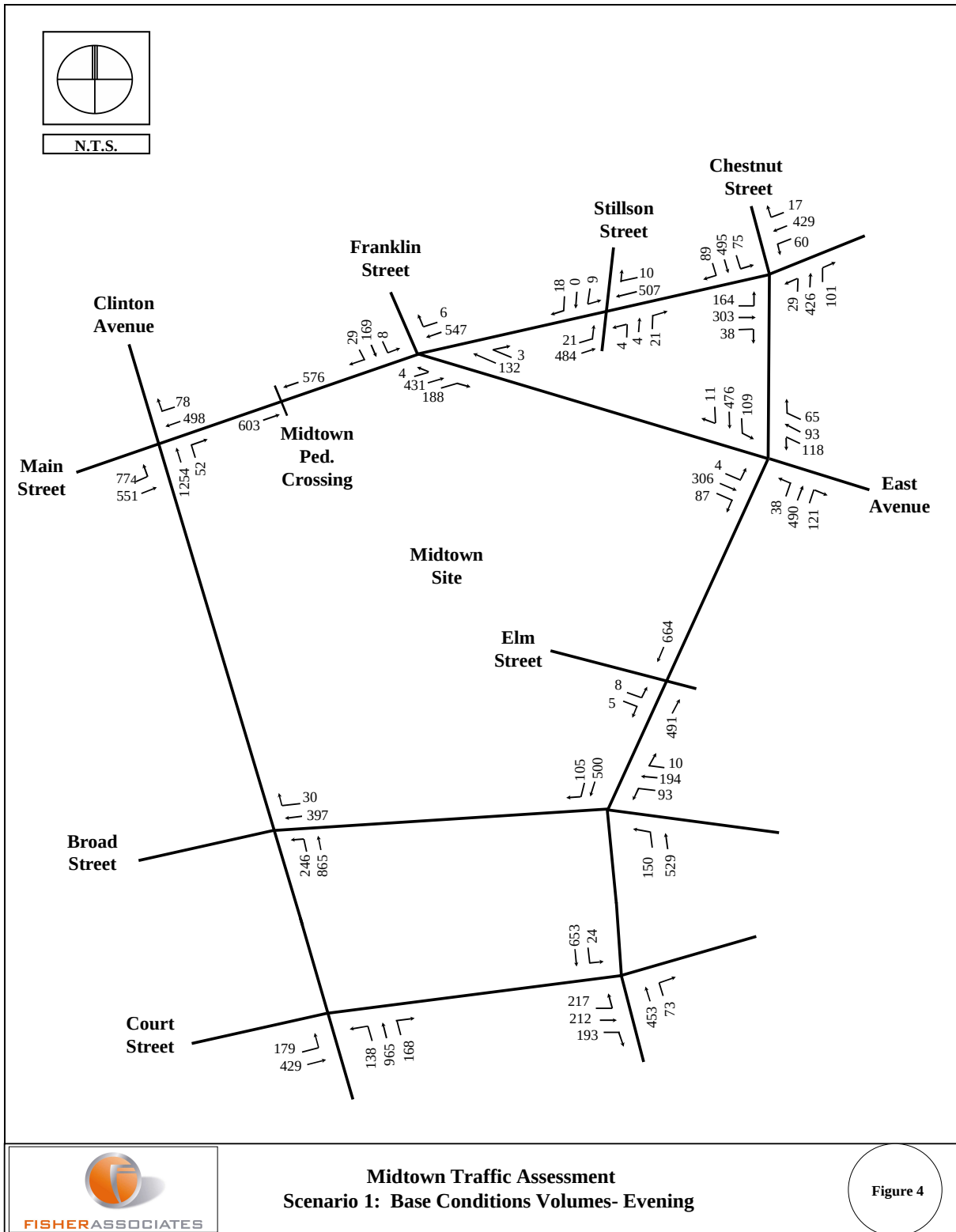
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Rochester, New York



Midtown Traffic Assessment

Rochester, New York



Midtown Traffic Assessment

Rochester, New York

III. SCENARIO TWO - PROPOSED CONDITIONS – PAETEC HEADQUARTERS

Scenario Two assesses the specific affect the PAETEC Headquarter development may have on the study intersections. It is estimated that the headquarters will be built on the west - southwest side of the Midtown Plaza site, along Clinton Avenue as depicted in Rochester Midtown – Concept Alternative Presentation⁷. For the purposes of this assessment it was assumed that a 500,000 square foot building will be constructed; however, the current concepts indicate a smaller building is being considered.

Parking for this development will be accommodated at the renovated Midtown Garage with primary access to this garage on Clinton Avenue, Court Street and Broad Street as it currently exists.

A. Trip Generation – PAETEC Headquarters

The Institute of Transportation Engineers Trip Generation Manual⁷ was used to estimate the number of trips for a corporate headquarters. Typical of an office type land use, all trips were assumed to be new to the study area. These trips are summarized in **Table 2**. Trip generation calculations are included in the appendix.

**Table 2 - Trip Generation Summary
PAETEC Headquarters – 500,000 square feet**

Morning		
<i>Enter</i>	<i>Exit</i>	<i>Total</i>
659	50	709
Evening		
<i>Enter</i>	<i>Exit</i>	<i>Total</i>
61	551	612

For conservative assessment purposes no reduction or credit was taken for transit use, pedestrian/bike modes of travel, or instituting travel demand management techniques.

B. Trip Distribution – PAETEC Headquarters

Figure 5 depicts an overall directional distribution pattern for the PAETEC Headquarters development. These directional patterns are based on flows/patterns along major routes into and out of the central business district contained in MCDOT's system models. And, correlate with the primary access routes to the central business district depicted in the Rochester Midtown – Concept Alternative Presentation.

Midtown Traffic Assessment

Rochester, New York

The trips were distributed onto the study intersections considering the overall directions distribution patterns, existing Midtown Garage access points, proximity to I-490 and intersection turning movements. This assessment assumed existing one-way street configurations and turn restrictions remain applicable.

Figure 6 and 7 depict the trip distributions. The intersection volumes resulting from adding the new trips to the base conditions traffic volumes are depicted in **Figures 8 and 9**.

C. Intersection Operations – PAETEC Headquarters

Capacity analysis was conducted for each of the study intersections using the same methodology as identified under base conditions.

The results of the capacity analysis indicate that the PAETEC Headquarters will not significantly degrade the levels of operations for the majority of the study area; however the following mitigation is provided for consideration where operations were notably reduced:

o *Broad Street & Chestnut Street: northbound left turn (morning)*

The analysis predicts this movement would drop from a LOS 'C' (33 sec.) to 'D' (43 sec). Signal timing adjustments would result in a LOS 'C' (34 sec.).

The controller for this intersection also operates the traffic signal at the intersection of Elm Street & Chestnut Street. Hence, modifying timings at Broad Street and Chestnut Street reduce the LOS on the southbound through movement from 'B' to 'C'. If signalization is still necessary at this intersection, in the future, consideration should be given to running it off of its own controller to increase signal timing flexibility at both the Broad Street and Elm Street intersections.

o *Court Street & Clinton Avenue: eastbound approach (morning)*

The analysis predicts this approach will drop from a LOS 'C' (26 sec.) to 'F' (99 sec.).

The addition of a left turn pocket, in addition to the two through movements, will minimize this degradation in operations. Specifically, this improvement results in an approach LOS 'D' (35 sec.); the left turn movement operated at a LOS 'C' (32 sec.) and the through movement operates at a LOS 'D' (36 sec.).

The widening of Court Street at Clinton Avenue may not be feasible once impacts, on St. Mary's park on the south side of the street and the sidewalk on

Midtown Traffic Assessment

Rochester, New York

the north side of the street in front of main lobby entrance and atrium to the Bausch & Lomb Headquarters office building, are considered.

o *Main Street & Clinton Avenue: northbound through (evening)*

The analysis predicts this movement would drop from a LOS 'C' (26 sec.) to 'C' (32 sec.).

A two second adjustment in the timing splits mitigated the movement back to pre-development base conditions. Given that such a small change in timings is necessary, it is recommended that the intersection only be monitored.

Table 5 on page 34-35 provides a summary of the level of service for the study intersections.

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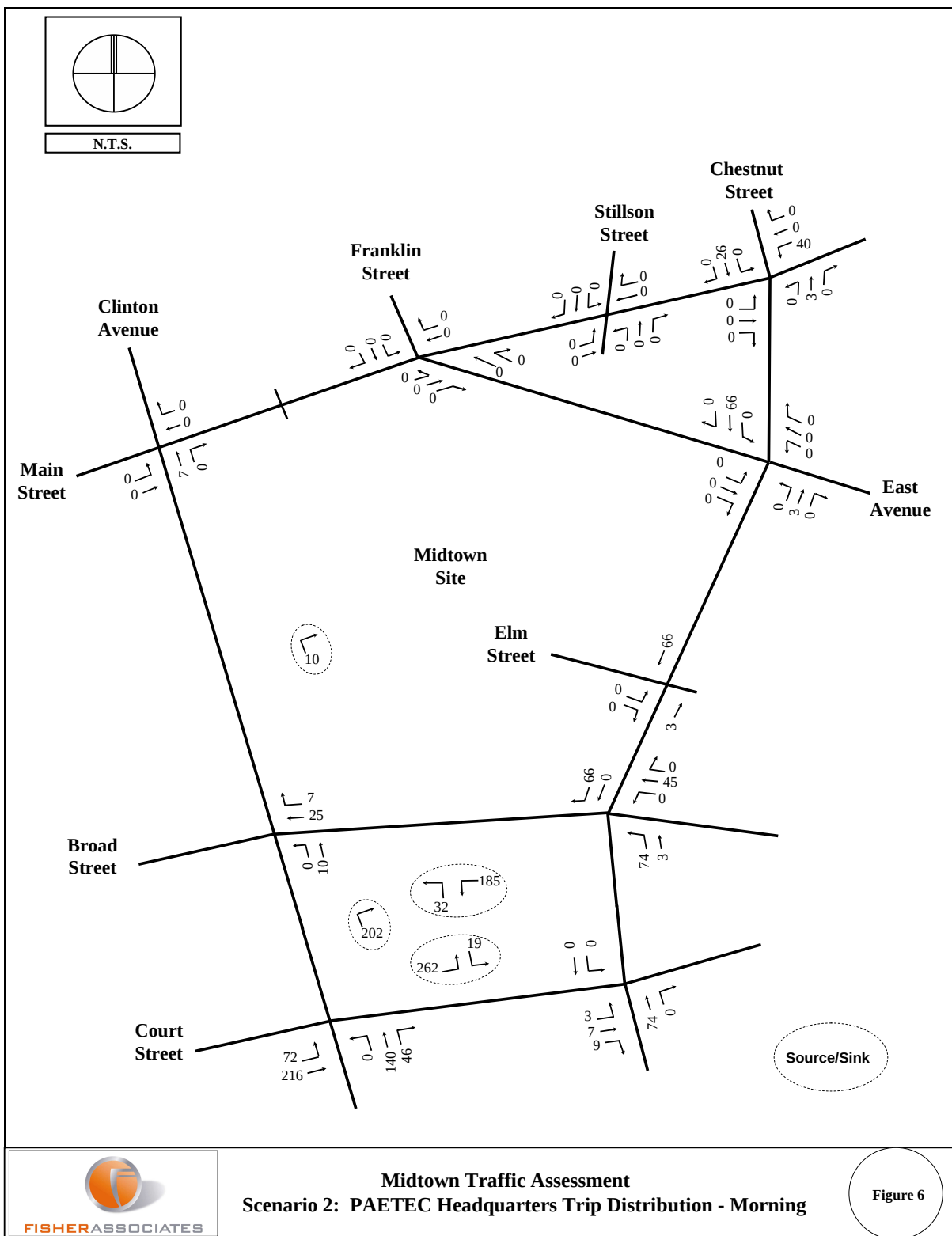
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Overall Directional Trip Distribution Pattern

Figure 5

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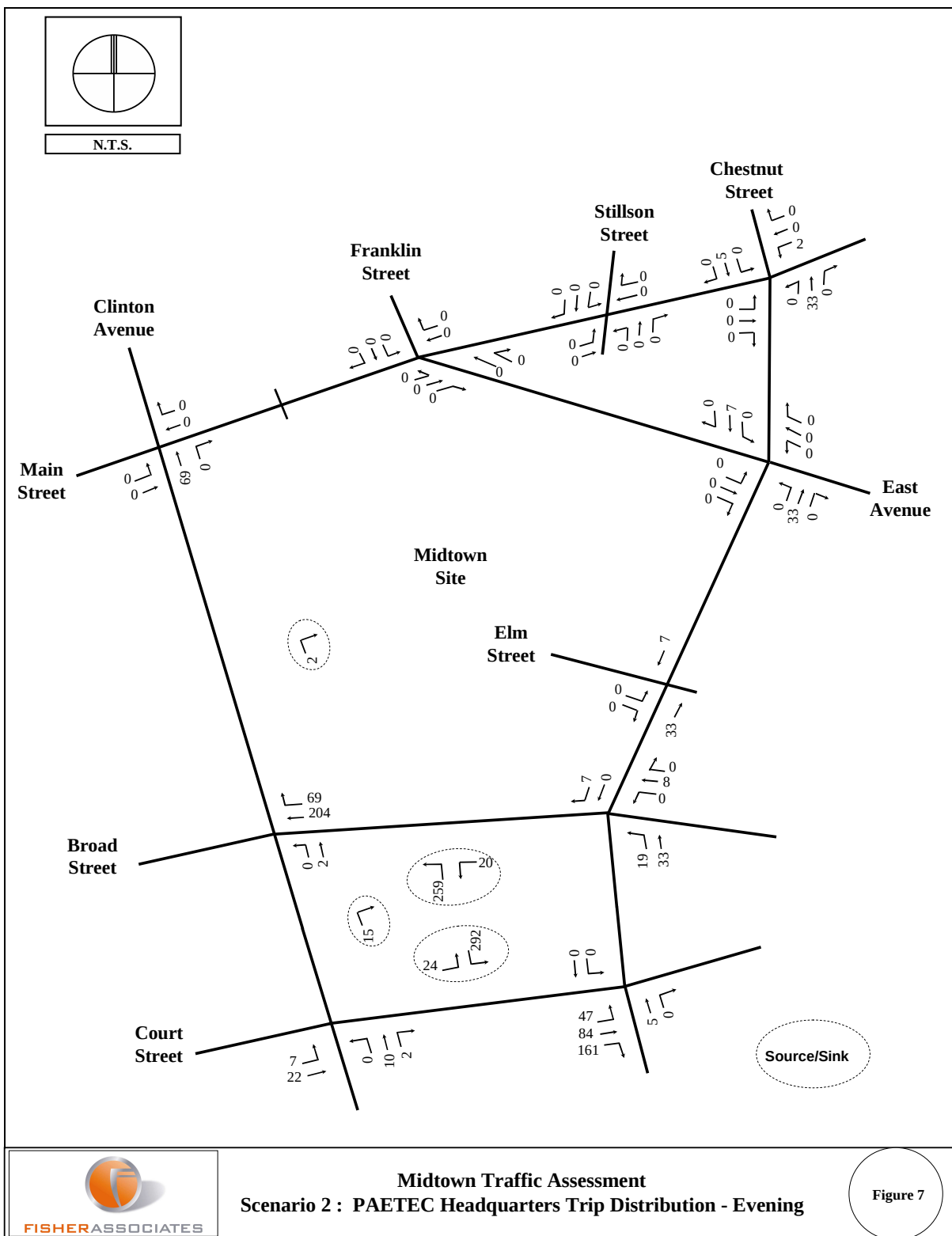
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Rochester, New York



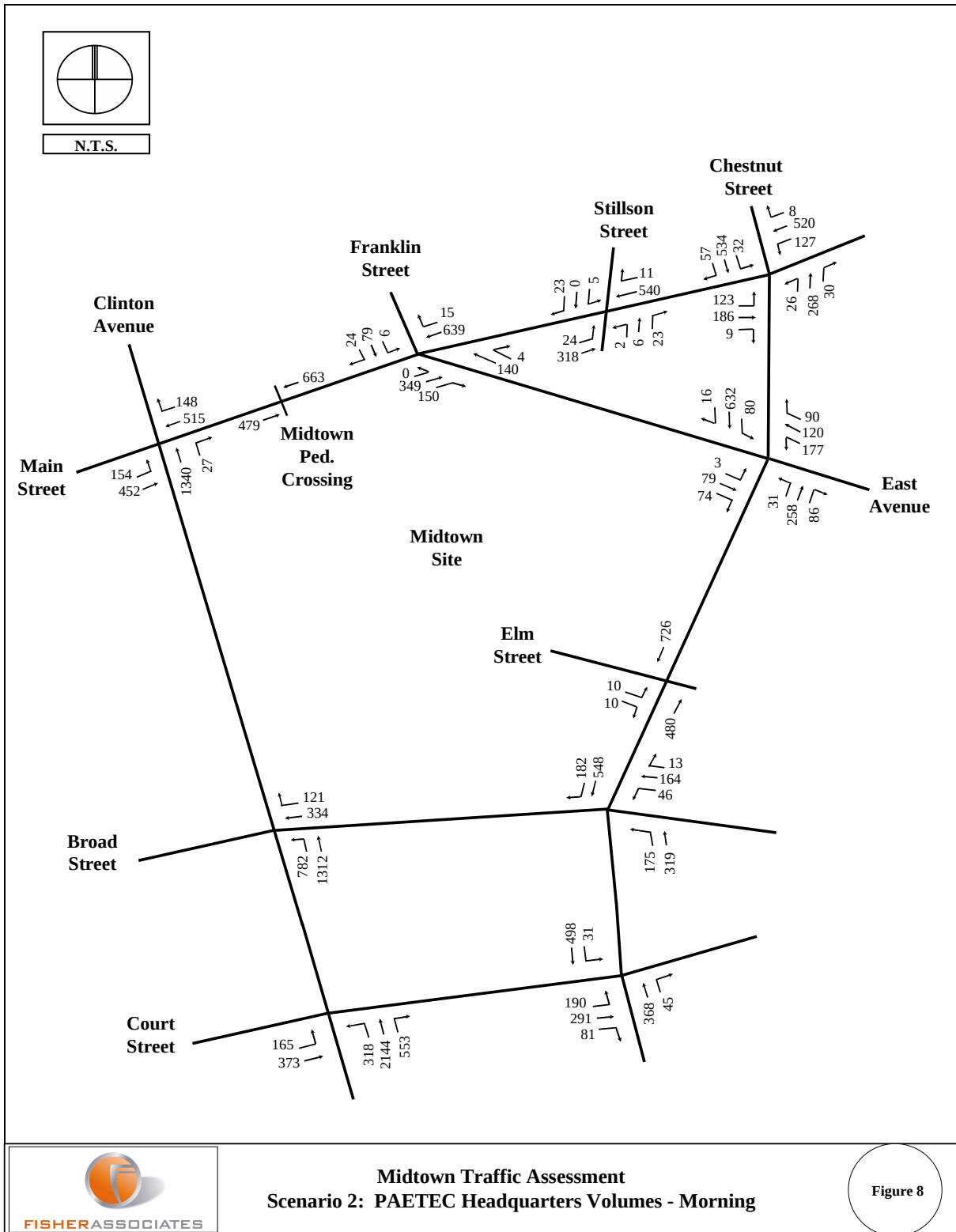
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Rochester, New York



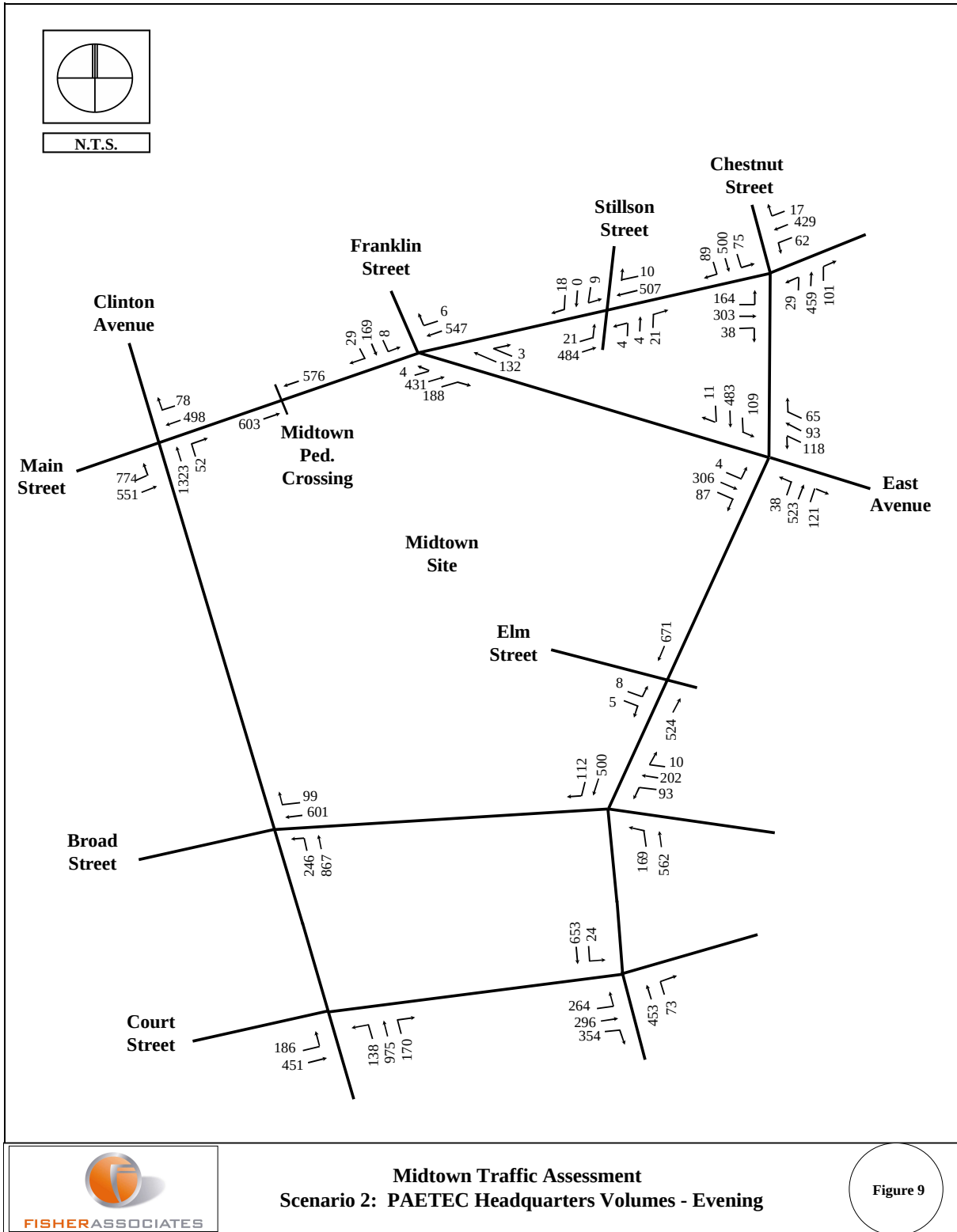
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Rochester, New York



Midtown Traffic Assessment

Rochester, New York



Midtown Traffic Assessment

Rochester, New York

IV. SCENARIO THREE - POTENTIAL BUILD-OUT CONDITIONS: LOW DENSITY

Scenario Three is a generic assessment of the affects a low density build-out of the Midtown Plaza site may have on the study intersections. This build-out scenario includes following land uses and corresponding sizes referenced in Rochester Midtown – Concept Alternative Presentation:

- o PAETEC Headquarters – 500,000 Square feet
- o Residential – 231 Units
- o Hotel – 100 Rooms
- o Retail – 61,600 Square feet

A. Trip Generation – Low Density Build-out

The Institute of Transportation Engineers Trip Generation Manual was used to estimate the number of trips to the study area. All trips were considered new trips. No trip adjustments for pass-by or multi-use associations were assumed. Additionally, no credit was taken for transit use, pedestrian/bike modes of travel or instituting travel demand management techniques.

The trips generation is summarized in **Table 3**.

**Table 3 - Trip Generation Summary
Low Density Potential Build-out**

Morning		
<i>Enter</i>	<i>Exit</i>	<i>Total</i>
715	155	870
Evening		
<i>Enter</i>	<i>Exit</i>	<i>Total</i>
243	720	963

Trip generations for each land use are included in the appendix.

B. Trip Distribution – Low Density Build-out

Trip distributions for Scenario Three considered overall distribution patterns into and out of the central business district, population centers, conceptual layout of site, potential location of parking facilities on site, proximity to I-490 and intersection turning movements. Also, this assessment assumed existing one-way street configurations and turn restrictions would remain applicable.

Midtown Traffic Assessment

Rochester, New York

Figure 10 and 11 depict the total trip distributions for all four land uses. Individual land use trip distributions are included in the appendix. The intersection volumes resulting from adding the new trips to the base conditions traffic volumes are depicted in **Figures 12 and 13**.

C. Intersection Operations – Low Density Build-out

Significant degradation in intersection operations is not predicted for a majority of the study area. However, the following improvements are provided for consideration where intersection operations may be notably impacted. These improvements are in addition to those stated for PAETEC Headquarters development:

o *Main Street & Clinton Avenue: (morning)*

Eastbound - Need for a left turn pocket and protected/permitted left turn phasing.

Westbound - Need to increase capacity of through movement by allowing throughs and right turn movements to share the curb lane.

o *Main Street & Clinton Avenue (evening)*

Northbound - Monitor through movement where traffic volumes may approach capacity conditions.

o *Broad Street & Chestnut Street: (evening)*

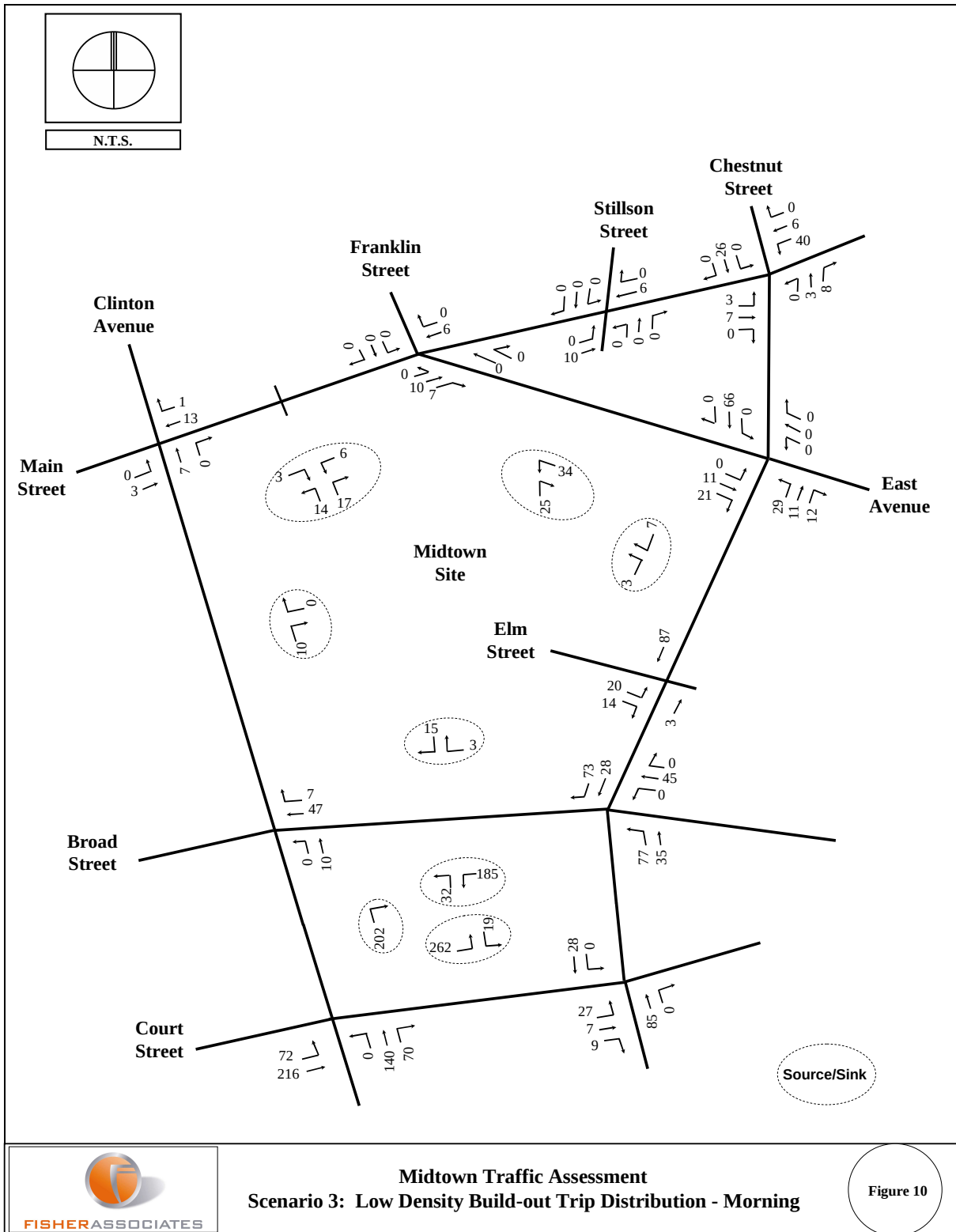
Northbound - Monitor for left turn movement for a left turn phase.

As development applications occur, these improvements may be supplemented or replaced by mitigation identified in future traffic assessments. Also, the intersection of Elm Street and Chestnut Street may be a candidate for reconstruction or elimination depending on site development, building layout and internal site circulation.

Table 5 on page 34-35 provides a summary of the level of service for the study intersections.

Midtown Traffic Assessment

Rochester, New York

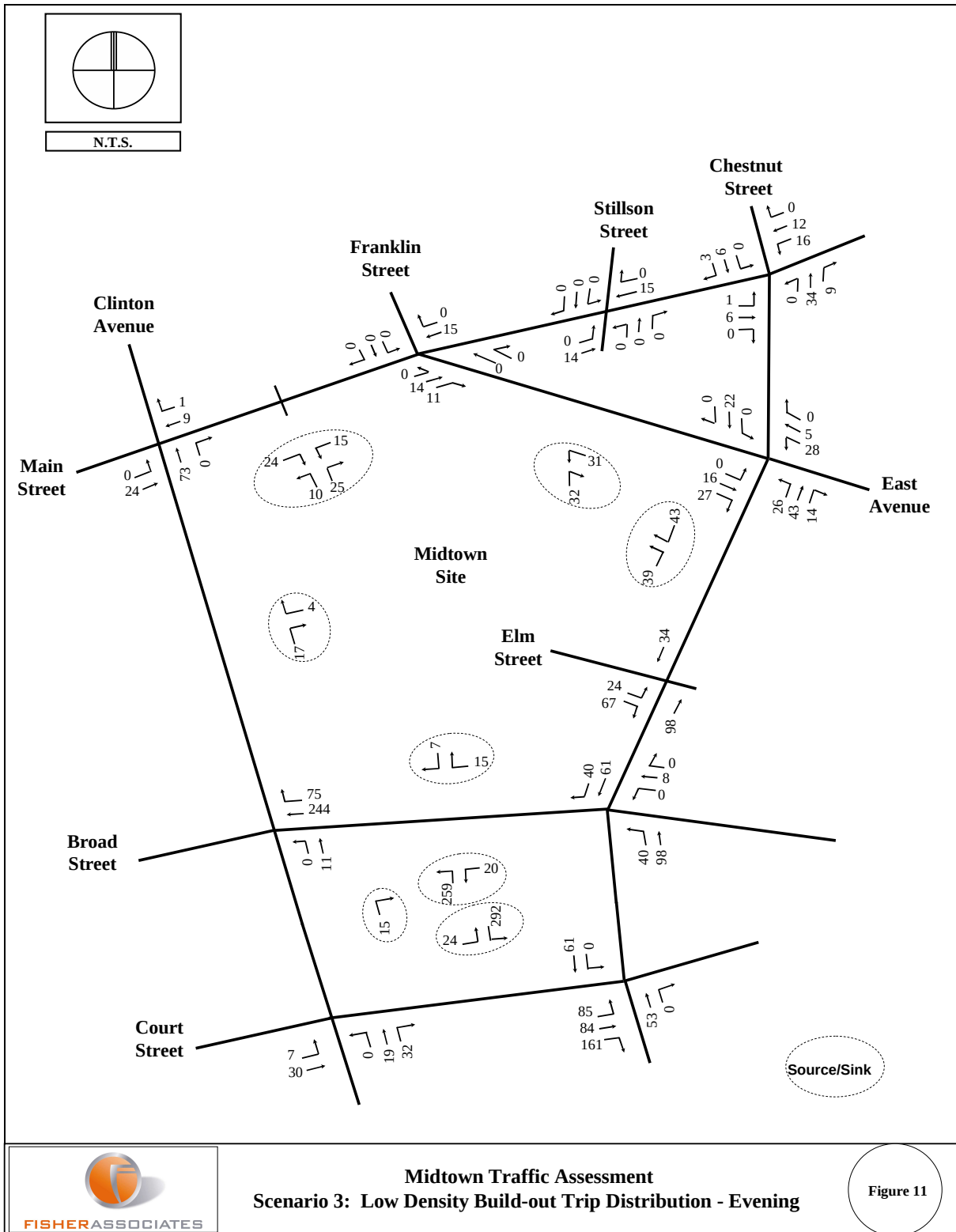


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Scenario 3: Low Density Build-out Trip Distribution - Morning

Figure 10

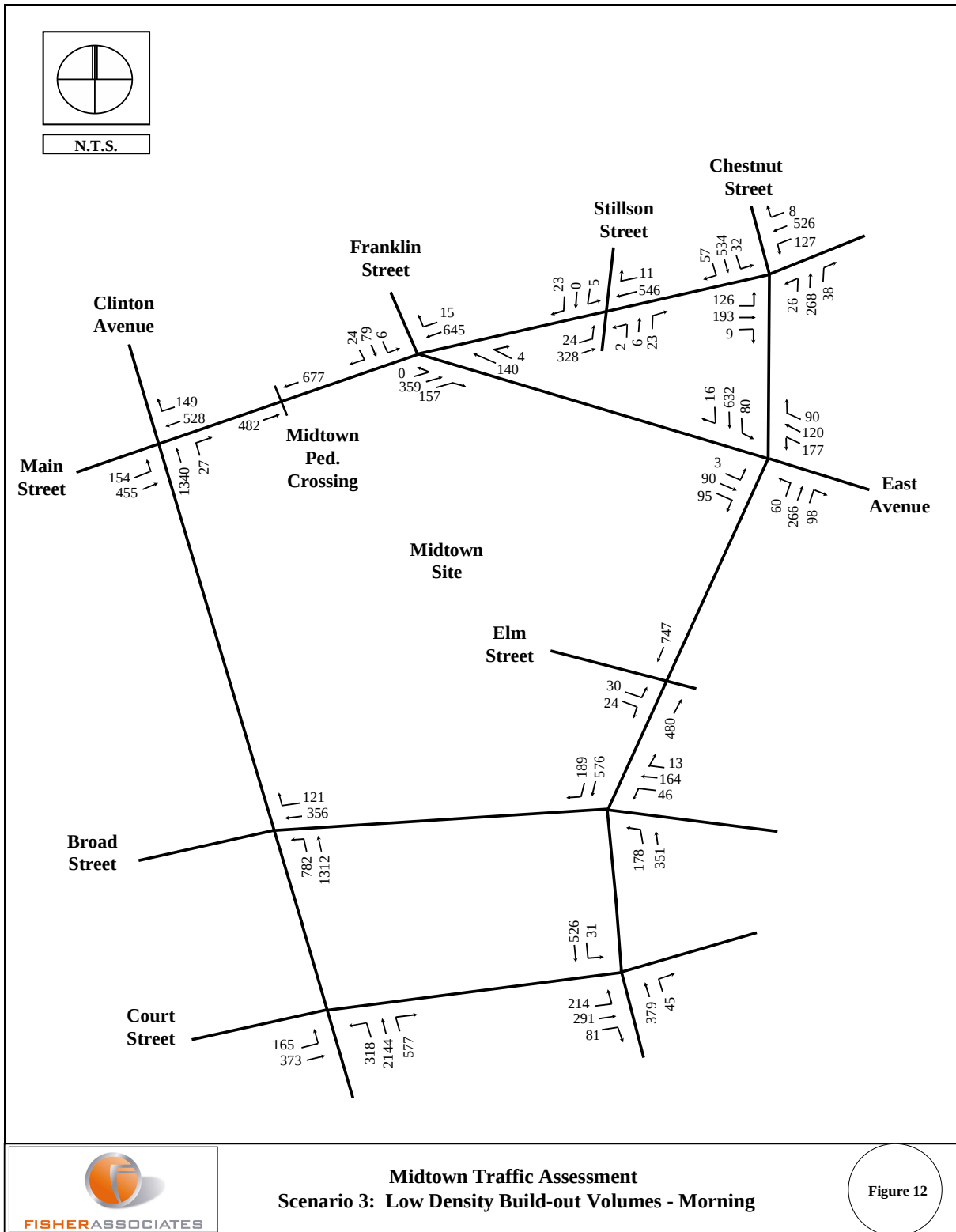
Midtown Traffic Assessment

Rochester, New York



Midtown Traffic Assessment

Rochester, New York

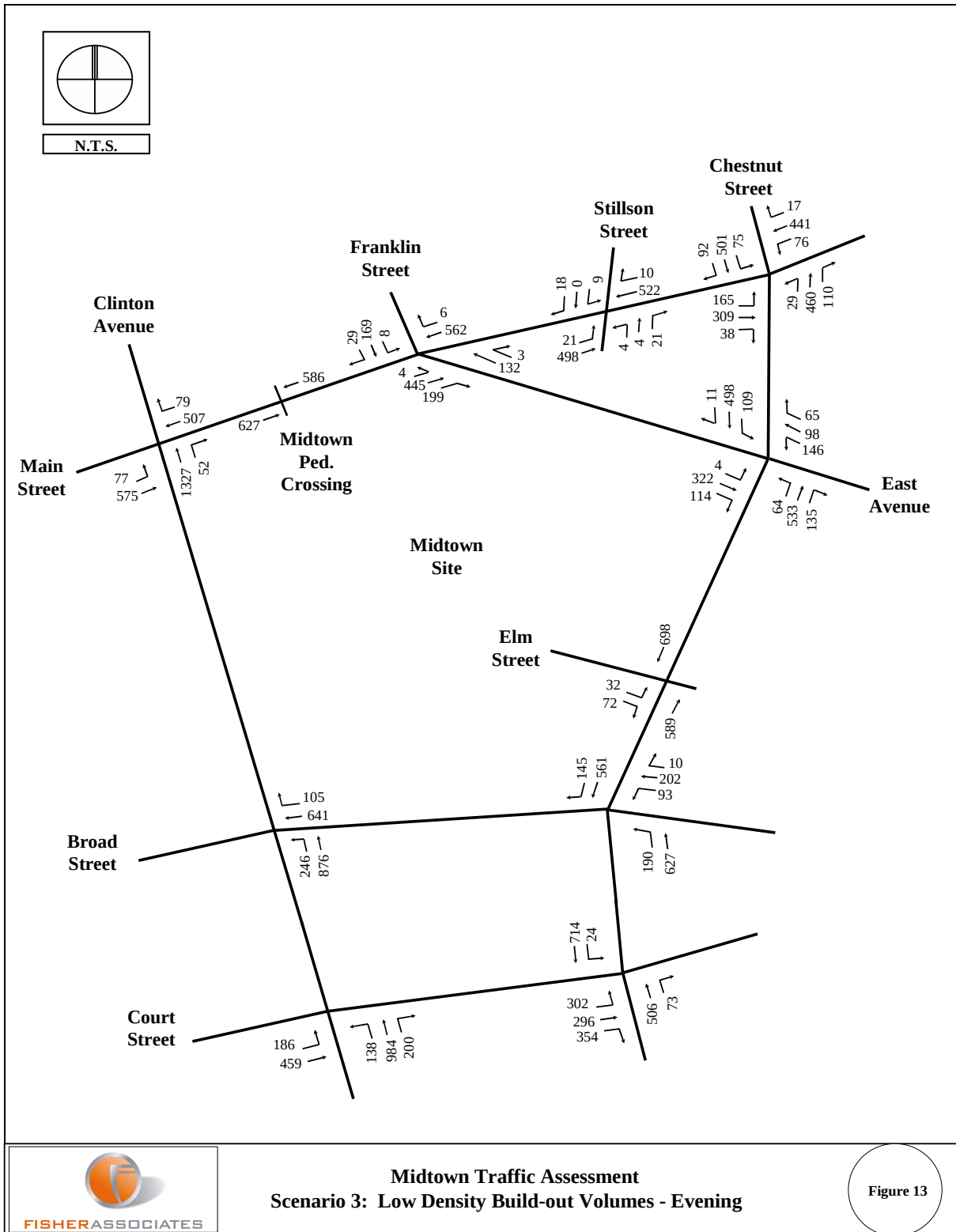


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October 30, 2008

Midtown Traffic Assessment

Rochester, New York



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Scenario 3: Low Density Build-out Volumes - Evening

Midtown Traffic Assessment

Rochester, New York

V. SCENARIO FOUR - POTENTIAL BUILD-OUT CONDITIONS: HIGH DENSITY

Scenario Four is a generic assessment of the affects high density build-out of the Midtown Plaza site on the study intersections. This build-out scenario includes the following land uses and corresponding sizes referenced in Rochester Midtown – Concept Alternative Presentation:

- o PAETEC Headquarters – 500,000 Square feet
- o General Office Space – 220,000 Square feet
- o Residential – 294 Units
- o Hotel – 100 Rooms
- o Retail – 67,600 Square feet

B. Trip Generation – High Density Build-out

Similar to the other scenarios, the Institute of Transportation Engineers Trip Generation Manual was used to estimate the number of trips. All trips were considered new trips to the study area. No trip adjustments for pass-by or multi-use associations were assumed. Additionally, no credit was taken for transit use, pedestrian/bike modes of travel or instituting travel demand management techniques. The trip generation is summarized in **Table 4**.

**Table 4 - Trip Generation Summary
High Density Potential Build-out**

Morning		
<i>Enter</i>	<i>Exit</i>	<i>Total</i>
1030	212	1242
Evening		
<i>Enter</i>	<i>Exit</i>	<i>Total</i>
317	1007	1324

Detailed trip generations for each lane use are included in the appendix.

C. Trip Distribution – High Density Build-out

Similar to the other scenarios, trip distributions for Scenario Four considered overall directional distribution patterns into and out of the central business district, population centers, conceptual layout of site, potential location of parking facilities on site, proximity to I-490 and intersection turning movements. Also, this assessment assumed one-way street configurations and turn restrictions would remain in affect.

Midtown Traffic Assessment

Rochester, New York

Figure 14 and 15 depict the total trip distributions for all four land uses. Individual land use trip distributions are included in the appendix. The intersection volumes resulting from adding the new trips to the base conditions traffic volumes are depicted in **Figures 16 and 17**.

D. Intersection Operations – High Density Build-out

With full build-out of the site under the high density scenario, significant degradation in intersection operations is not predicted for a majority of the study area. However, the following improvements are provided for consideration where intersection operations may be notably impacted. These improvements are in addition to those stated for PAETEC Headquarters development:

o *Main Street & Clinton Avenue: (morning)*

Eastbound - left turn pocket and protected/permitted left turn phasing.

Westbound - increase capacity of through movement by providing a second through lane and a right turn pocket.

o *Main Street & Clinton Avenue (evening)*

Northbound - Monitor through movement where traffic volumes may approach capacity conditions.

o *Broad Street & Chestnut Street: (evening)*

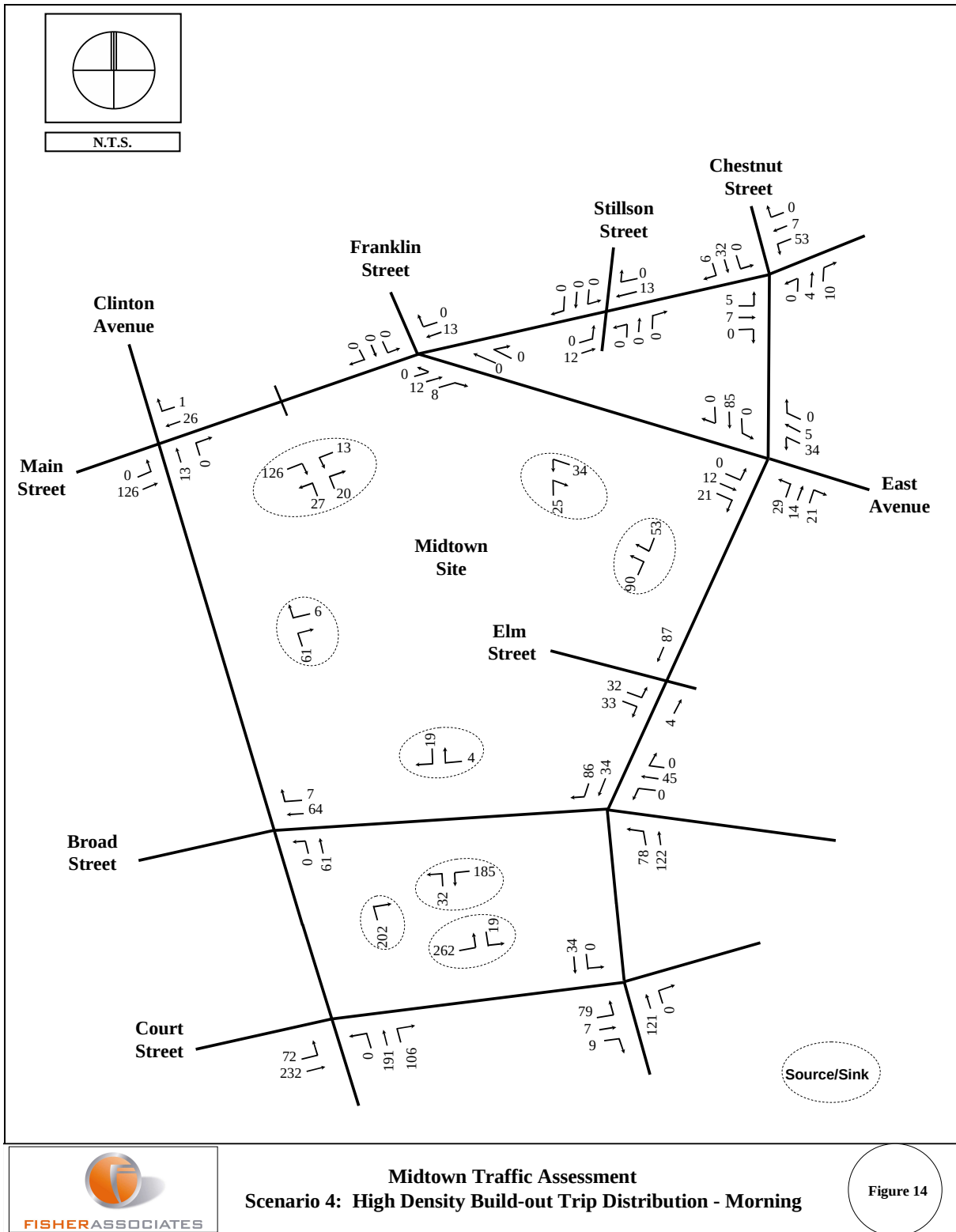
Northbound - Monitor for left turn movement for a left turn phase.

As development applications occur, these improvements may be supplemented or replaced by mitigation identified in future traffic assessments. Similar to Scenario Three, the intersection of Elm Street and Chestnut Street may be a candidate for reconstruction or elimination depending on site development, building layout and internal site circulation.

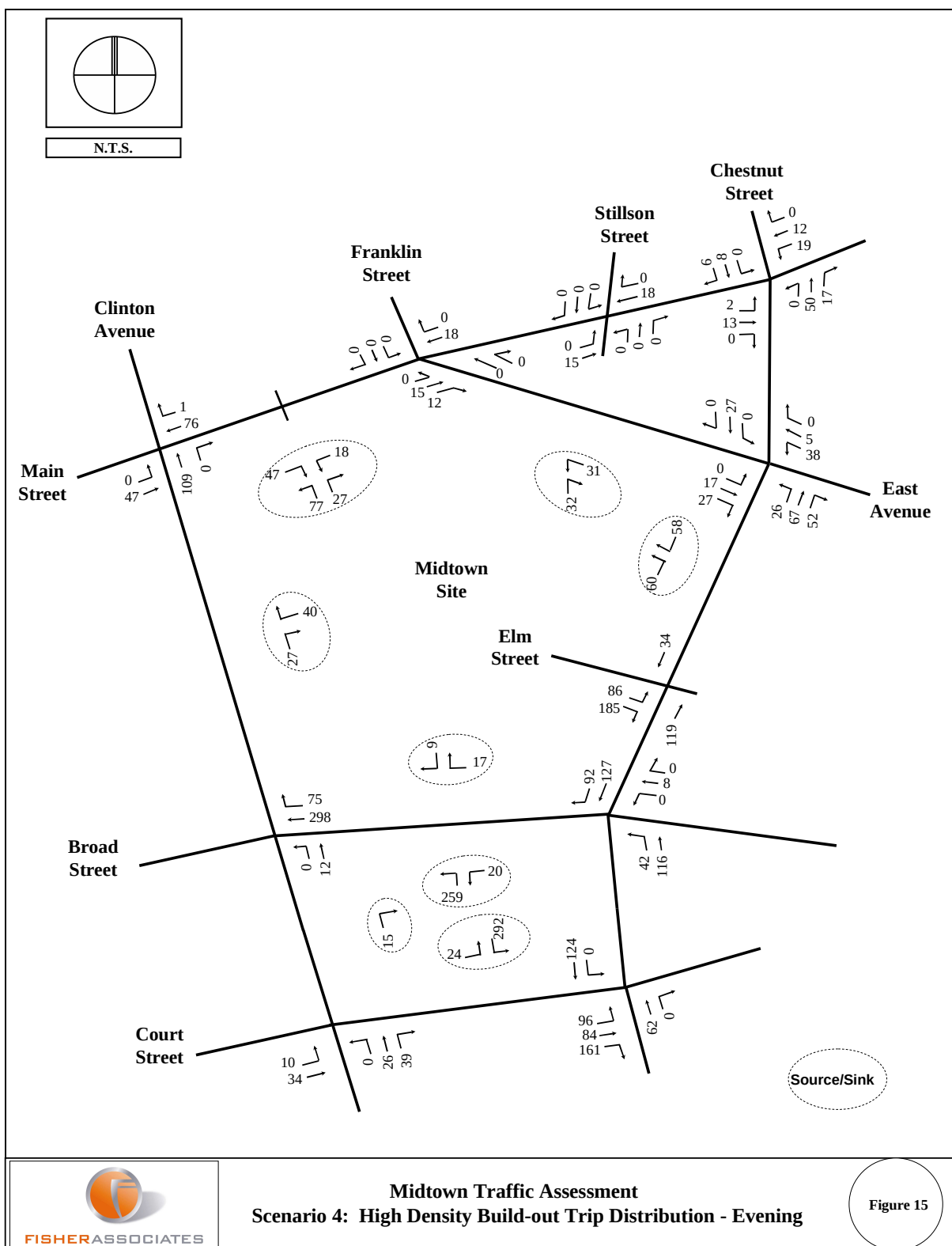
Table 5 on **page 34-35** provides a summary of the level of service.

Midtown Traffic Assessment

Rochester, New York

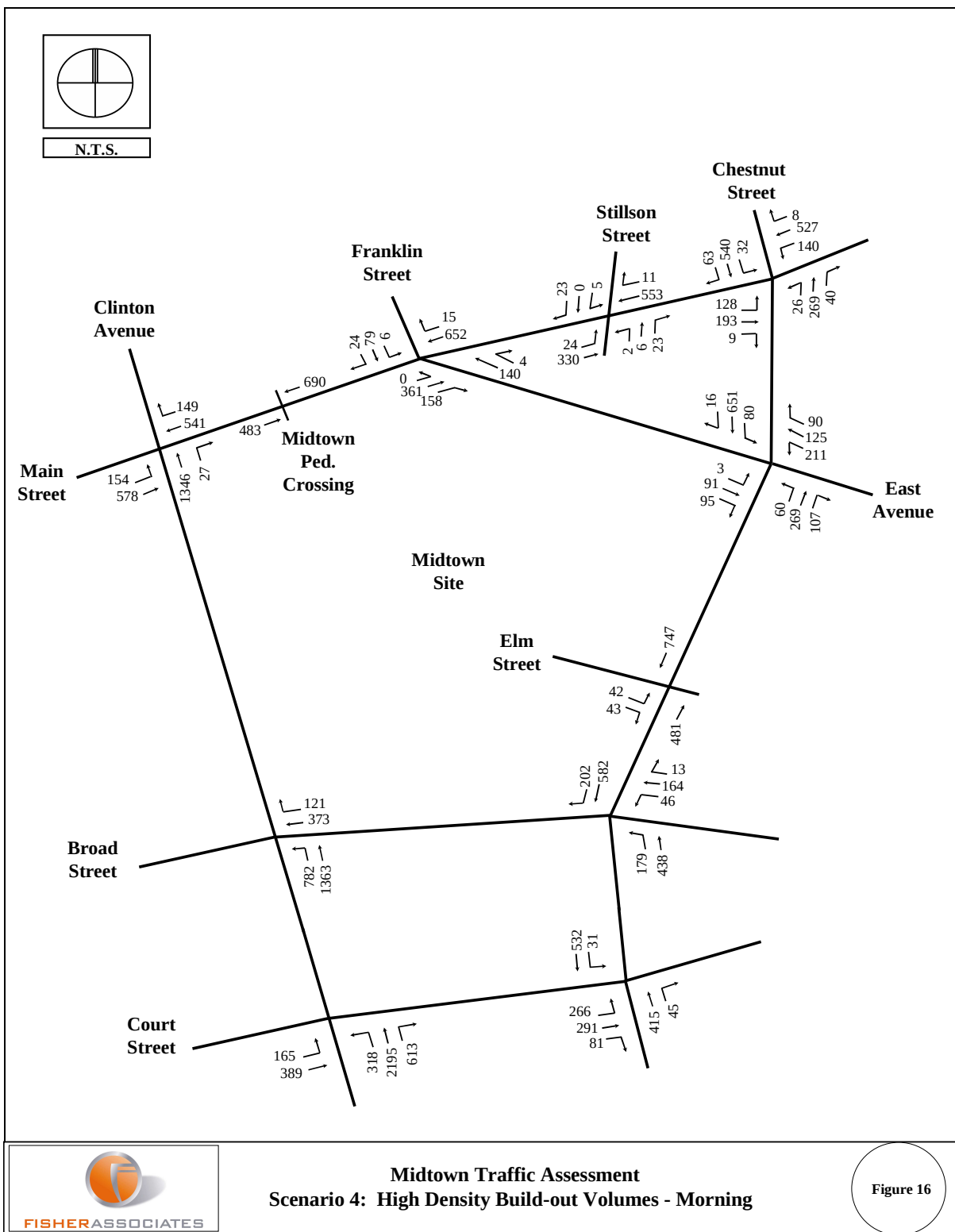


Rochester, New York



Midtown Traffic Assessment

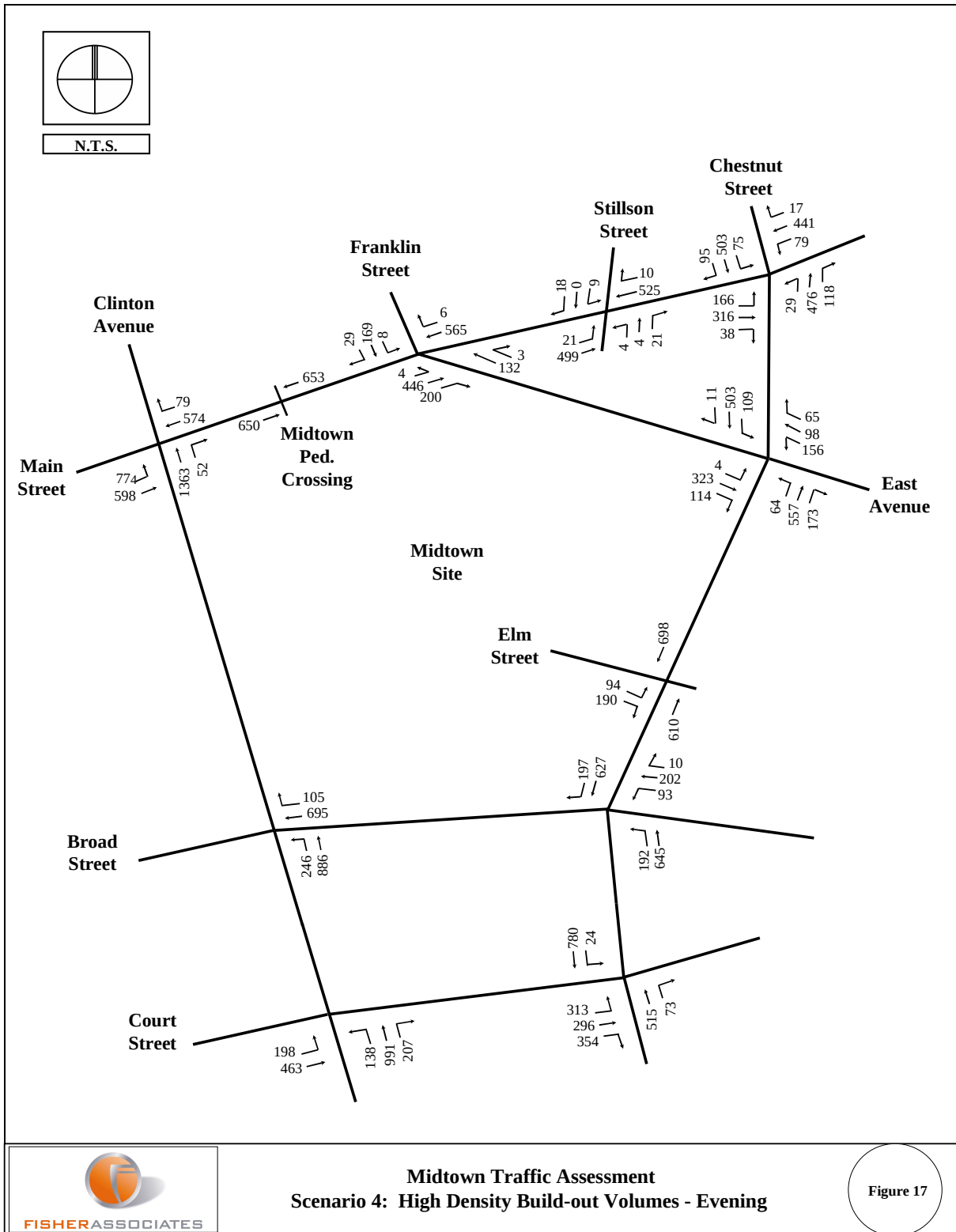
Rochester, New York



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October 30, 2008

Midtown Traffic Assessment

Rochester, New York



Midtown Traffic Assessment
Scenario 4: High Density Build-out Volumes - Evening

Midtown Traffic Assessment

Rochester, New York

Table 5 - Level of Service
Morning

Intersection			Approach and Movement		Scenario #1		Scenario #2		Scenario #2 with Improvements		Scenario #3		Scenario #4	
					Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	E. Main Street & Clinton Avenue <i>{Movement added by Ren. Sq.}</i>	Eastbound	T-T (L)	115	F	115	F	115	F	117	F	205	F	
		Westbound	T	49	D	50	D	50	D	56	E	62	E	
			R	17	B	17	B	17	B	18	B	18	B	
		Northbound	T-T (R)	9	A	10	B	10	B	10	B	9	A	
		Overall		42	D	42	D	42	D	44	D	71	E	
2	E. Main Street & Midtown Ped Crossing	Eastbound	T-T	2	A	2	A	2	A	2	A	2	A	
		Westbound	T-T	2	A	2	A	2	A	2	A	2	A	
		Overall		2	A	2	A	2	A	2	A	2	A	
3	E. Main Street & East Avenue	Eastbound	T	6	A	6	A	6	A	6	A	6	A	
			R	2	A	2	A	2	A	2	A	2	A	
		Westbound	T	8	A	8	A	8	A	8	A	8	A	
			R	1	A	1	A	1	A	1	A	1	A	
		Northbound	T-TR	28	C	28	C	28	C	24	C	24	C	
		Southbound	T-TR	7	A	7	A	7	A	7	A	7	A	
		Overall		9	A	9	A	9	A	8	A	8	A	
		4	E. Main Street & Stillson Street	Eastbound	LT-T	2	A	2	A	2	A	2	A	2
Westbound	T-TR			3	A	3	A	3	A	3	A	3	A	
Northbound	LTR			13	B	13	B	13	B	13	B	13	B	
Southbound	LTR			12	B	12	B	12	B	12	B	12	B	
Overall				3	A	3	A	3	A	3	A	3	A	
5	E. Main Street & Chestnut Street	Eastbound	L	19	B	19	B	19	B	19	B	19	B	
			T-TR	26	C	26	C	26	C	26	C	26	C	
		Westbound	L	4	A	4	A	4	A	4	A	5	A	
			T-TR	7	A	7	A	7	A	7	A	8	A	
		Northbound	L	15	B	15	B	15	B	15	B	15	B	
			T-TR	12	B	12	B	12	B	11	B	11	B	
		Southbound	L	11	B	11	B	11	B	11	B	12	B	
			T-TR	13	B	15	B	15	B	15	B	15	B	
Overall		12	B	13	B	13	B	13	B	13	B			
6	Chestnut Street & East Avenue	Eastbound	LT-TR	27	C	27	C	27	C	26	C	27	C	
		Westbound	LT	13	B	13	B	13	B	13	B	15	B	
			R	2	A	2	A	2	A	2	A	2	A	
		Northbound	L	10	B	11	B	11	B	17	B	16	B	
			T-TR	7	A	7	A	7	A	7	A	6	A	
		Southbound	L	8	A	9	A	9	A	10	B	10	B	
			T-TR	8	A	9	A	9	A	9	A	10	B	
Overall		10	B	11	B	11	B	11	B	12	B			
7	Chestnut Street & Elm Street	Eastbound	L	21	C	21	C	21	C	22	C	22	C	
			R	11	B	11	B	11	B	8	A	7	A	
		Northbound	T-T	4	A	4	A	4	A	3	A	2	A	
			T-T-T	14	B	14	B	22	C	23	C	24	C	
Overall		10	B	10	B	15	B	15	B	15	B			
8	Broad Street & Chestnut Street	Westbound	LT-T-TR	24	C	25	C	25	C	25	C	25	C	
		Northbound	L	33	C	43	D	34	C	36	D	38	D	
			T-T	10	B	8	B	8	B	10	B	11	B	
		Southbound	T-T	7	A	7	A	8	A	8	A	8	A	
			R	2	A	3	A	3	A	3	A	3	A	
Overall		12	B	14	B	13	B	13	B	14	B			
9	Court Street & Chestnut Street	Eastbound	LT-T	25	C	20	B	20	B	21	C	22	C	
			R	7	A	4	A	4	A	4	A	4	A	
		Northbound	T-T	11	B	12	B	12	B	12	B	13	B	
			R	4	A	4	A	4	A	4	A	4	A	
		Southbound	L	4	A	4	A	2	A	2	A	2	A	
			T-T-T	5	A	4	A	2	A	2	A	2	A	
Overall		13	B	11	B	10	B	11	B	11	B			
10	Court Street & Clinton Avenue (Proposed Eastbound Movement)	Eastbound	LT-T (L)	26	C	99	F	32	C	32	C	33	C	
			(T-T)	-	-	-	-	36	D	36	D	41	D	
		Northbound	L	5	A	5	A	5	A	5	A	5	A	
			LT-T-T	7	A	9	A	9	A	9	A	10	B	
		Overall		7	A	6	A	6	A	7	A	9	A	
11	Broad Street & Clinton Avenue	Westbound	T-T-TR	16	B	13	B	15	B	14	B	14	B	
		Northbound	L	4	A	4	A	4	A	4	A	4	A	
			LT-T	6	A	7	A	8	A	8	A	8	A	
		Overall		7	A	7	A	8	A	8	A	8	A	

Midtown Traffic Assessment

Rochester, New York

Table 6 - Level of Service
Evening

Intersection		Approach and Movement		Scenario #1		Scenario #2		Scenario #2 with Improvements		Scenario #3		Scenario #4	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	E. Main Street & Clinton Avenue {Movement added by Ren. Sq.}	Eastbound	T-T {L}	12	B	12	B	14	B	15	B	18	B
		Westbound	T	6	A	6	A	7	A	7	A	10	B
		Northbound	R	2	A	2	A	2	A	2	A	3	A
		Northbound	T-T {R}	26	C	32	C	26	C	26	C	29	C
			Overall	18	B	21	C	19	B	19	B	21	C
2	E. Main Street & Midtown Ped Crossing	Eastbound	T-T	2	A	2	A	2	A	2	A	2	A
		Westbound	T-T	1	A	1	A	1	A	1	A	2	A
			Overall	2	A	2	A	1	A	1	A	2	A
3	E. Main Street & East Avenue	Eastbound	T	24	C	24	C	24	C	24	C	25	C
		Eastbound	R	7	A	7	A	7	A	7	A	8	A
		Westbound	T	16	B	16	B	16	B	16	B	16	B
		Westbound	R	3	A	3	A	3	A	3	A	3	A
		Northbound	T-TR	24	C	24	C	24	C	20	C	21	C
		Southbound	T-TR	9	A	9	A	9	A	9	A	9	A
			Overall	17	B	17	B	17	B	17	B	17	B
4	E. Main Street & Stillson Street	Eastbound	LT-T	2	A	2	A	2	A	2	A	2	A
		Westbound	T-TR	1	A	1	A	1	A	1	A	2	A
		Northbound	LTR	13	B	13	B	13	B	13	B	13	B
		Southbound	LTR	14	B	14	B	14	B	14	B	14	B
			Overall	2	A	2	A	2	A	2	A	2	A
5	E. Main Street & Chestnut Street	Eastbound	L	24	C	24	C	23	C	24	C	23	C
		Eastbound	T-TR	31	C	31	C	31	C	30	C	29	C
		Westbound	L	6	A	6	A	6	A	6	A	7	A
		Westbound	T-TR	12	B	12	B	12	B	13	B	13	B
		Northbound	L	9	A	9	A	9	A	9	A	8	A
		Northbound	T-TR	7	A	7	A	7	A	7	A	7	A
		Southbound	L	16	B	17	B	17	B	18	B	19	B
		Southbound	T-TR	13	B	13	B	13	B	13	B	13	B
			Overall	15	B	15	B	15	B	15	B	15	B
6	Chestnut Street & East Avenue	Eastbound	LT-TR	37	D	37	D	37	D	37	D	37	D
		Westbound	LT	14	B	14	B	14	B	17	B	18	B
		Westbound	R	4	A	4	A	4	A	4	A	4	A
		Northbound	L	7	A	7	A	7	A	8	A	9	A
		Northbound	T-TR	8	A	8	A	8	A	7	A	9	A
		Southbound	L	10	B	12	B	12	B	13	B	18	B
		Southbound	T-TR	5	A	5	A	5	A	6	A	6	A
			Overall	14	B	14	B	14	B	15	B	16	B
7	Chestnut Street & Elm Street	Eastbound	L	21	C	21	C	21	C	22	C	23	C
		Eastbound	R	13	B	13	B	13	B	6	A	7	A
		Northbound	T-T	2	A	2	A	2	A	2	A	2	A
		Southbound	T-T-T	4	A	4	A	4	A	5	A	6	A
			Overall	3	A	3	A	3	A	4	A	5	A
8	Broad Street & Chestnut Street *Analysis does not reflect field observations	Westbound	LT-T-TR	28	C	28	C	28	C	28	C	28	C
		Northbound	L*	525	F	635	F	635	F	786	F	817	F
		Northbound	T-T	7	A	7	A	8	A	10	B	12	B
		Southbound	T-T	2	A	1	A	2	A	2	A	3	A
		Southbound	R	1	A	1	A	1	A	2	A	3	A
			Overall	56	E	71	E	71	E	87	F	86	F
9	Court Street & Chestnut Street	Eastbound	LT-T	27	C	30	C	31	C	33	C	33	C
		Eastbound	R	4	A	12	B	13	B	16	B	19	B
		Northbound	T-T	8	A	8	A	8	A	8	A	8	A
		Northbound	R	3	A	3	A	3	A	3	A	3	A
		Southbound	L	5	A	5	A	5	A	5	A	5	A
		Southbound	T-T-T	5	A	5	A	5	A	5	A	5	A
			Overall	17	B	13	B	14	B	15	B	15	B
10	Court Street & Clinton Avenue (Proposed Eastbound Movement)	Eastbound	LT-T (L)	26	C	28	C	18	B	18	B	18	B
		Eastbound	(T-T)	-	-	-	-	20	C	21	C	21	C
		Northbound	L	7	A	7	A	7	A	8	A	8	A
		Northbound	LT-T-T	9	A	9	A	9	A	10	A	10	A
		Northbound	R	1	A	1	A	1	A	1	A	1	A
			Overall	14	B	15	B	12	B	12	B	12	B
11	Broad Street & Clinton Avenue	Westbound	T-T-TR	12	B	14	B	14	B	16	B	17	B
		Northbound	L	1	A	1	A	1	A	1	A	1	A
		Northbound	LT-T	11	B	11	B	12	B	12	B	12	B
			Overall	10	B	11	B	11	B	12	B	13	B

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October 30, 2008

Midtown Traffic Assessment

Rochester, New York

VI. CONCLUSION

This traffic assessment has been conducted for the redevelopment of the Midtown Plaza site. The assessment evaluated the specific affect PATEC Headquarters may have on the study intersections; as well as the general affects two potential build-out scenarios may have on the study intersections.

Implementation of this redevelopment will most likely occur over a period of time and will require a coordinated effort between developers and agencies. To assist with this coordination, the assessment identified a number of improvements that may minimize the redevelopment's impacts on the study intersections ranging from signal timing/operational modifications to the addition of turning lanes. And, these improvements may be supplemented or replaced by mitigation identified in future traffic assessments associated with specific development applications.

Midtown Traffic Assessment

Rochester, New York

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