

**THAMES STREET
ONE-WAY FEASIBILITY STUDY
GROTON, CT**

MMI #2536-01

July 1, 2008

Prepared for:
The Thames Street Advisory Committee

Prepared by:
**BARKAN & MESS
MILONE & MACBROOM, INC.
500 EAST MAIN STREET, SUITE 326
BRANFORD, CT 06405
(203) 481-4208**



PRELIMINARY DRAFT
MEMORANDUM

TO: Mayor Dennis Popp – City of Groton
Barbara Goodrich – City Planner, City of Groton
Marian Galbraith – Public Advisory Committee (PAC)
Hali Keeler – PAC
Lisa Torrellas – PAC
Horace Newbury – PAC
Rita Schmidt – PAC
Marilyn Goodman – PAC
Tom Sheil, L.A. – Milone & MacBroom, Inc. (MMI)
Tony Ciriello - MMI

FROM: David G Sullivan, P.E.

DATE: July 1, 2008

RE: Thames Street One-Way Feasibility Study
Groton, CT

MMI # 2536-01

Introduction

As part of the Thames Street rehabilitation project, Milone and MacBroom, Inc. (MMI) has performed the feasibility of a one-way southbound traffic orientation from Broad Street to the southern terminus of Thames Street. We have developed a study area, performed a field reconnaissance and data collection efforts within the study area, researched accident data, determined existing weekday traffic patterns and volumes for different times of the day, determined the travel patterns and traffic volumes of rerouted vehicles, analyzed the effects of the alternate traffic patterns, and presented findings with potential mitigation to alleviate impacts. Figure 1 shows the project area.

Scope and Data Collection

Our primary focus was to quantify the amount of traffic that would be rerouted from Thames Street to other roadways if a one-way southbound orientation was implemented. The study area used to assess these impacts extends north to Bridge Street, south to Poquonnock Road, east to Mitchell Street and North Street, and west to Thames Street. The study area intersections include the following:

- Bridge Street/North Street/I-95 Exit 85 Ramps
- Thames Street/Baker Avenue
- Thames Street/John Street/Eastern Point Road/Smith Street/Poquonnock Road
- Mitchell Street/Baker Avenue

- Poquonnock Rd/Mitchell Street/Benham Rd/Chicago Avenue
- North Street/Broad Street
- North Street/Mitchell Street /Meridian Street
- Thames Street/School Street
- Thames Street/Broad Street

Accident Research

Accident records from June 2005 to June 2008 were gathered from the City of Groton Police Department and summarized in Table 1. Summarized are the accidents reported along Thames Street, North Street, Mitchell Street, Smith Street and Meridian Street tallied by intersection and section of roadway.

**Table 1
ACCIDENT SUMMARY**

LOCATION:	ACCIDENT SEVERITY				TYPE OF COLLISION									
	FATALITY	INJURY	PROPERTY DAMAGE	TOTAL	TURN			REAR END	ANGLE	SIDE SWIPE	FIXED OBJECT	PARKING	BACKING	TOTAL
					INTERSECTING	SAME	OPPOSITE							
THAMES STREET														
At Fairview Street & Bridge Street			2	2				1			1			2
Between Fairview Street at Bridge Street and Broad Street			2	2				1		1				2
At Broad Street			3	3		1					1	1		3
Between Broad Street and School Street			5	5				1		4				5
At School Street			4	4						3		1		4
Between School Street and Baker Avenue			11	11	1					4	3		3	11
At Baker Avenue		1		1							1			1
Between Baker Avenue and Allen Street														
At Allen Street			2	2	1							1		2
Between Allen Street and Ledyard Avenue														0
At Ledyard Avenue														0
Between Ledyard Avenue & Smith Street, Poquonnock Street, Eastern Point Road, and John Street			1	1						1				1
At Smith Street, Poquonnock Street, Eastern Point Road, and John Street			1	1							1			1
Total		1	31	32	2	1		3		13	7	3	3	32

**Table 1 (Continued)
ACCIDENT SUMMARY**

LOCATION	ACCIDENT SEVERITY				TYPE OF COLLISION									
	FATALITY	INJURY	PROPERTY DAMAGE	TOTAL	TURN			REAR END	ANGLE	SIDE SWIPE	FIXED OBJECT	PARKING	BACKING	TOTAL
					INTERSECTING	SAME	OPPOSITE							
NORTH STREET														
At Spicer Avenue														
Between Spicer and Broad Street														
At Broad Street			5	5	2				1		2			5
Between Broad Street and Meridian Street														
At Meridian Street and Mitchell Street			9	9	3			3	2				1	9
MITCHELL STREET														
Between Meridian Street and Baker Avenue														
At Baker Avenue														
Between Baker Avenue and Poquonnock Road		1	3	4	2	1						1		4
At Poquonnock Road *														
Total		1	17	18	7	1		3	3		2	1	1	18
SMITH STREET														
At Meridian Street			1	1	1									1
Between Meridian Street and Park Avenue			4	4	1					2			1	4
At Park Avenue		1		1							1			1
Between Park Avenue and Baker Avenue														
At Baker Avenue		3		3				1		1		1		3
Between Baker Avenue and Thames Street			2						1		1			2
Total		4	7	11	2			1	1	3	2	1	1	11
MERIDAN STREET														
Between Monument Street and Smith Street		1		1							1			1
Between Smith Street and North Street/ Mitchell Street			2	2				1		1				2
Between North Street/ Mitchell Street and Park Avenue			3	3	2						1			3
Total		1	5	6	2			1		1	2			6

During this time period, a total of 32 accidents were reported along Thames Street, only one of which resulted in injury, which occurred at the intersection with Baker Avenue. Most of the accidents occurred in the segment of Thames Street between School Street and Broad Street by sideswipe collision.

The majority of accidents along Mitchell Street and North Street occurred at the North Street/Mitchell Street/Meridian Street intersection. Only one of the 18 reported accidents resulted in injury.

Approximately one-third of the 11 reported accidents along Smith Street and one of the six reported accidents along Meridian Street resulted in injury. All other accidents reported within the study area resulted in property damage only.

Traffic Volumes

The data collection efforts included performing manual turning movement counts at each of the study area intersections from 7:00–9:00 AM and 2:00–6:00 PM on Wednesday, May 28, 2008. These time periods were selected to include the typical weekday commuter peak periods, and the mid-afternoon shift change at Electric Boat, a major traffic generator in the area. The peak hours along Thames Street were 7:30–8:30 AM and 4:00–5:00 PM; however, the shift change hour between 2:15–3:15 PM also showed a traffic peak albeit lower than 4:00-5:00 PM peak. The existing weekday morning and afternoon peak hour volumes are shown in Figures 2 and 3, respectively.

Daily traffic volumes were collected along Thames Street using automatic traffic recorders (ATR) on Wednesday and Thursday, May 28–29, and on Tuesday and Wednesday, June 3–4, 2008. The ATRs were located at the following three locations along Thames Street, to capture the southern, middle, and northern sections of Thames Street:

- North of Ledyard Avenue (southern Thames Street)
- North of Latham Street (middle Thames Street)
- North of Broad Street (northern Thames Street)

The ATR's captured bi-directional volumes, vehicles speeds and classifications. The volumes and speeds are presented in Figure 4, and summarized in Table 2.

As shown in Table 2, the Thames Street daily traffic volumes are heaviest near Latham Street than the other two locations. The southbound traffic is also greater than the northbound traffic at all three locations. Vehicle speeds are generally consistent in the low to mid 30 mph range. Vehicle classification is consistent with approximately 95% of on-street traffic comprised of passenger vehicles and smaller trucks, while the heavy vehicle volumes ranged from two to four percent of the daily traffic, and bikes/motorcycles are approximately two percent.

Table 2
Thames Street Daily Traffic Data Summary

Location	Daily Volumes ¹			85 th Percentile Speed ²		Vehicle Classification By Percentage		
	NB ³	SB ⁴	Both Directions	NB	SB	Cars and Trailers	Heavy Vehicles	Bikes or Motorcycles
North of Ledyard Ave.	2,240	2,690	4,930	31	34	94%	4%	2%
North of Latham Street	2,790	3,310	6,100	30	30	95%	2%	3%
North of Broad Street	2,700	3,260	5,960	32	35	95%	3%	2%

¹ Daily volumes are represented in vehicles per day (vpd)

² The 85th percentile speed is the speed at or below which 85% of vehicles travel

³ NB = northbound

⁴ SB = southbound

Origin-Destination

An origin-destination study was performed along Thames Street by means of a license plate survey to estimate the travel patterns of northbound vehicles. Persons were stationed at the same three locations as previously mentioned for the ATRs and recorded license plates during the morning and afternoon peak hours (7:30 – 8:30 AM and 4:00 – 5:00 PM) on Thursday, May 29, 2008.

Table 3
Thames Street Northbound Traffic Origin-Destination Summary

Routing key as shown on Figure 5		Number of Vehicles per Time Period	
		Morning Peak Hour	Afternoon Peak Hour
A	Through Trips to be rerouted	40-50	275-300
	Local Trips to be Rerouted		
B	From between Ledyard Avenue and Latham Street past Broad Street	25-35	80-90
C	From between Latham Avenue and Broad Street past Broad Street	20-30	40-50
D	From south of Ledyard Avenue to between Ledyard Avenue and Latham Avenue	35-45	20-30
E	From south of Ledyard Avenue to between Latham Avenue and Broad Street	5-10	30-40
F	From between Ledyard Avenue and Latham Avenue to between Latham Avenue and Broad Street	15-25	30-40
	Total rerouted trips	140-195	475-550

Patterns were observed to recognize vehicles traveling between each or all of the three locations and where vehicle trips were originating and terminating. A summary of this data is provided in Table 3. Figure 5 provides a visual mapping of these routes.

As can be determined from Table 3, of the vehicles traveling northbound along Thames Street from its southern terminus, south of Ledyard, during the morning peak hour, approximately 30-40% of motorists travel the entire distance between Ledyard Avenue to Broad Street. These vehicles would require relocation to neighboring streets for a relatively long distance should Thames Street become one-way southbound between its southern terminus and Broad Street. The second largest component during the morning peak hour is vehicles accessing the area between Ledyard Avenue and Latham Street from the south.

During the afternoon peak hour, approximately 75% of northbound motorists travel the entire length of Thames Street from the southern terminus. The second largest component includes vehicles originating between Ledyard Avenue and Latham Street, traveling north past Broad Street. This is likely due to egress from Electric Boat parking lots and the Garbo Lobster Company within this area.

The morning and afternoon rerouted trips would be diverted along neighboring roadways, and the analyses of these impacts evaluated.

Traffic Rerouting

The concept of a one-way southbound orientation along Thames Street will require the existing northbound traffic to find alternate routes to reach their destination, whether it be in the vicinity of Thames Street, or otherwise. Following the assessment of the aforementioned origin-destination data, travel time information, and the roadway network, the existing northbound motorists have been diverted from Thames Street onto nearby roadways including, but not limited to: Mitchell Street, Smith Street, Poquonnock Road, Chicago Avenue, Baker Street, School Street, and Broad Street.

Figure 6 shows the limits of travel origins and destinations. This is followed by Figures 7 – 12, which depict the volumes of traffic and the likely routing for the diverted trips. Although the displayed routes were chosen based on likely travel patterns and ease of navigation, we understand that additional neighborhood roadways might incur additional traffic due to the one-way concept; however, the method used was an attempt to assess the general impacts. Accounting for the rerouted traffic at the study area intersections, Figures 13 and 14 show the rerouted morning and afternoon peak hour traffic volumes. Individual roadway segments within the study area were assessed for additional traffic volumes. Figure 15 shows the ranges of increased traffic along these roadway links.

**Table 4
Capacity Analysis Summary- Signalized Intersections**

LOCATION/APPROACH	LEVEL OF SERVICE			
	EXISTING CONDITIONS		REROUTED CONDITIONS	
	MORNING PEAK HOUR	AFTERNOON PEAK HOUR	MORNING PEAK HOUR	AFTERNOON PEAK HOUR
Bridge Street at North Street, I-95 Ramps (Exit 85)				
Eastbound Left/Through/Right	C	D	C	D
Westbound Left/Through/Right	C	C	C	C
Northbound Left/Through/Right	C	D	C	F
Southbound Left/Through/Right	E	C	D	D
Overall	D	D	C	F
North Street at Broad Street				
Eastbound Left/Through/Right	B	B	B	B
Westbound Left/Through/Right	B	B	B	B
Northbound Left/Through/Right	A	A	A	A
Southbound Left/Through/Right	A	A	A	A
Overall	A	A	A	A
North Street/Mitchell Street at Meridian Street				
Eastbound Left/Through/Right	C	D	D	F
Westbound Left/Through/Right	C	B	C	B
Northbound Left/Through/Right	A	B	B	C
Southbound Left/Through/Right	B	A	B	B
Overall	B	B	B	F
Poquonnock Road at Chicago Avenue, Mitchell Street, Benham Road				
Poquonnock Street - Eastbound	D	F	E	F
Poquonnock Street - Westbound	D	D	C	D
Chicago Avenue - Northbound	D	F	D	F
Mitchell Street - Southbound	B	C	B	C
Benham Road - Northwest Bound	D	F	D	F
Overall	C	F	C	F

**Table 4 (Continued)
Capacity Analysis Summary – Signalized Intersections**

LOCATION/APPROACH	LEVEL OF SERVICE			
	EXISTING CONDITIONS		REROUTED CONDITIONS	
	MORNING PEAK HOUR	AFTERNOON PEAK HOUR	MORNING PEAK HOUR	AFTERNOON PEAK HOUR
Eastern Point Road/Smith Street at Thames Street				
Northbound Left/Through/Right	C	F	B	B
Southbound Left/Through/Right	C	C	C	C
Southeastbound Through/Left	A	B	A	B
Northwestbound Left/Through/Right	C	C	C	B
Overall	B	F	A	B
School Street at Thames Street				
Eastbound Left/Through	A	C	A	A
Westbound Left/Through	B	B	C	C
Northbound Through/Right	A	A	A	A
Southbound Left/Through	A	A	A	A
Overall	A	A	A	A
Broad Street at Thames Street				
Westbound Left/Right	B	B	C	C
Northbound Through/Right	A	A	A	A
Southbound Left/Through	A	A	A	A
Overall	A	A	B	B

Level of Service Analyses

To quantify the traffic impacts at the study area intersections due to rerouting the northbound Thames Street traffic, analyses were performed for the peak hours at each intersection under existing and proposed conditions. Traffic modeling was performed using the SYNCHRO¹ traffic analysis software. The software package adheres to the methodologies outlined in the Highway Capacity Manual (HCM 2000), an engineering standard, to determine a Level of Service (LOS) for each peak hour. The LOS is a qualitative measure of the efficiency of operations of intersections in terms of delay and inconvenience to motorists and are displays with letter designations A through F, LOS A being the best and LOS F being the worst. Tables 4 and 5 summarize the LOS for the signalized and unsignalized intersections.

¹ SYNCHRO 7, Traffic Signal Coordination Software, Trafficware, 2007.

As shown in these tables, the operations at the signalized intersection of Bridge Street/North Street/I-95 Exit 85 Ramps degrade from LOS D to LOS F in the afternoon peak hour, which is primarily due to the increased northbound traffic. The signalized intersection of North Street/Mitchell Street/Meridian Street degrades from LOS B to LOS F in the afternoon peak hour, which is due to the increased volume on Meridian Street from Smith Street. At the Mitchell Street/Poquonnock Road/Chicago Avenue, Benham Road intersection, the LOS remains LOS F. However, average vehicle delays increase substantially. This is due to increased traffic on Benham Road at the Chicago Avenue approach and the left turns from Poquonnock Road onto Mitchell Street.

**Table 5
Capacity Analysis Summary- Unsignalized Intersections**

LOCATION/APPROACH	LEVEL OF SERVICE			
	EXISTING CONDITIONS		REROUTED CONDITIONS	
	MORNING PEAK HOUR	AFTERNOON PEAK HOUR	MORNING PEAK HOUR	AFTERNOON PEAK HOUR
Thames Street at Baker Avenue				
Westbound Left/Right	A	B	B	B
Baker Avenue at Mitchell Street				
Eastbound Left	C	C	C	C
Eastbound Through	B	C	C	C
John Street at Eastern Point Road				
Southbound Left/Through	A	A	A	A

The signalized intersection of Thames Street/Eastern Point Road and Smith Street improves, especially in the afternoon peak hour. This location could actually be subject for traffic signal removal. Unsignalized analysis of this location has yielded adequate traffic operations.

The unsignalized locations generally operate with little to no degradation in LOS following the rerouting of traffic.

Mitigation

To alleviate the impacts from rerouted traffic at certain study area intersections, several alternatives were evaluated. Certain measures involve less funding; however, produce less significant effects. These recommendations and their results are summarized in Table 6.

**Table 6
POSSIBLE MITIGATION**

Location	Mitigation	Result
Bridge Street/ North Street/ I-95 Exit 85 Ramps	Adjust signal timing	Improve LOS at eastbound and southbound approaches from LOS D to LOS C
North Street/ Mitchell Street/ Meridian Street	Adjust signal timing	Improve LOS at eastbound approach from LOS F to LOS E. Overall improves to LOS D
	Adjust signal timing and provide geometric changes (additional turn lanes)	Improve LOS at eastbound approach from LOS F to LOS D, northbound approach from LOS C to LOS B, and overall to LOS C
Poquonnock Rd/ Mitchell Street/ Benham Rd/ Chicago Avenue	Adjust signal timing	Improve LOS at westbound approach from LOS D to LOS B, and the Benham Road approach from LOS F to LOS E. Overall remains LOS F
	Adjust signal timing and provide geometric changes (additional turn lanes)	Improve LOS at westbound approach from LOS D to LOS C, and overall improves to LOS E
Thames Street/ Eastern Point Road/ Smith Street/ Poquonnock Road	Remove traffic signal and install stop signs for traffic control	Eliminate funding needed to power the traffic signal
Mitchell Street/ Park Avenue or Mitchell Street/ Baker Street	Install a traffic signal	Alleviate traffic burden along other east-west roadways for access to Mitchell Street from Smith Street and areas between Smith Street and Thames Street

Observations and Opportunities

After having rerouted northbound vehicles currently using Thames Street, performing analyses and investigating mitigation measures, the following observations and opportunities have been summarized outlining reasons for Thames Street operating under its current two-way operation or the proposed one-way operation.

Increase in the number of parking spaces – The most obvious benefit of the reduction from two-way to one-way southbound is a significant increase in parking on Thames Street. Currently, there are 66 parking spaces on Thames Street for businesses and residences. Under the one-way option, this will essentially triple to approximately 200 parking spaces.

Post Office – The one-way traffic flow will allow for drive-up access to the post office. Currently, motorists must park and exit their car. Under the one-way scenario, the driver will be able to pull up and access the mailboxes from the driver’s side seat.

Accidents – There were 32 accidents on Thames Street, of which were sideswipes were the most common type. More formalized parking and one-way flow could positively affect the rest of these types of collisions.

Service Vehicles – The one-way scenario also provides an opportunity for curb side loading for service vehicles. Strategically located short term parking for service vehicles would now be available.

Traffic Operations – It is apparent that the most significant diversion of traffic will take place during the afternoon peak hour. From a positive standpoint, most of the traffic will be diverted to Mitchell Street which is well suited to handle the additional northbound traffic. It will also improve operations at the intersection of Thames Street with Eastern Point Road/Smith Street. Conversely, the intersections of Mitchell Street with Meridian Street, Park Street and Poquonnock Street will all have significant increase in left turning vehicles onto Mitchell Street. This will affect operations at those intersections. Timing changes and/or geometric improvements would be required at these locations.

Secondary Impacts – Many of the residential streets will experience some degree of increased traffic. Some of these streets (i.e. Slocomb Terrace, Fort Street, Latham Street, Pleasant Street) are ill suited for any increase in traffic, however, from a capacity standpoint, they will not be compromised.

Future revitalization traffic increases – Not addressed in this study is the additional traffic that would be generated assuming successful revitalization of Thames Street. This of course is the primary objective of the operational change, but will result in traffic increases on many of the residential streets.

Smith Street – Another north/south artery which will have significant increase in northbound traffic will be Smith Street. It's width and operational characteristics can handle the additional traffic but puts increased burden on Meridian Street particularly at the intersection of Mitchell Street.

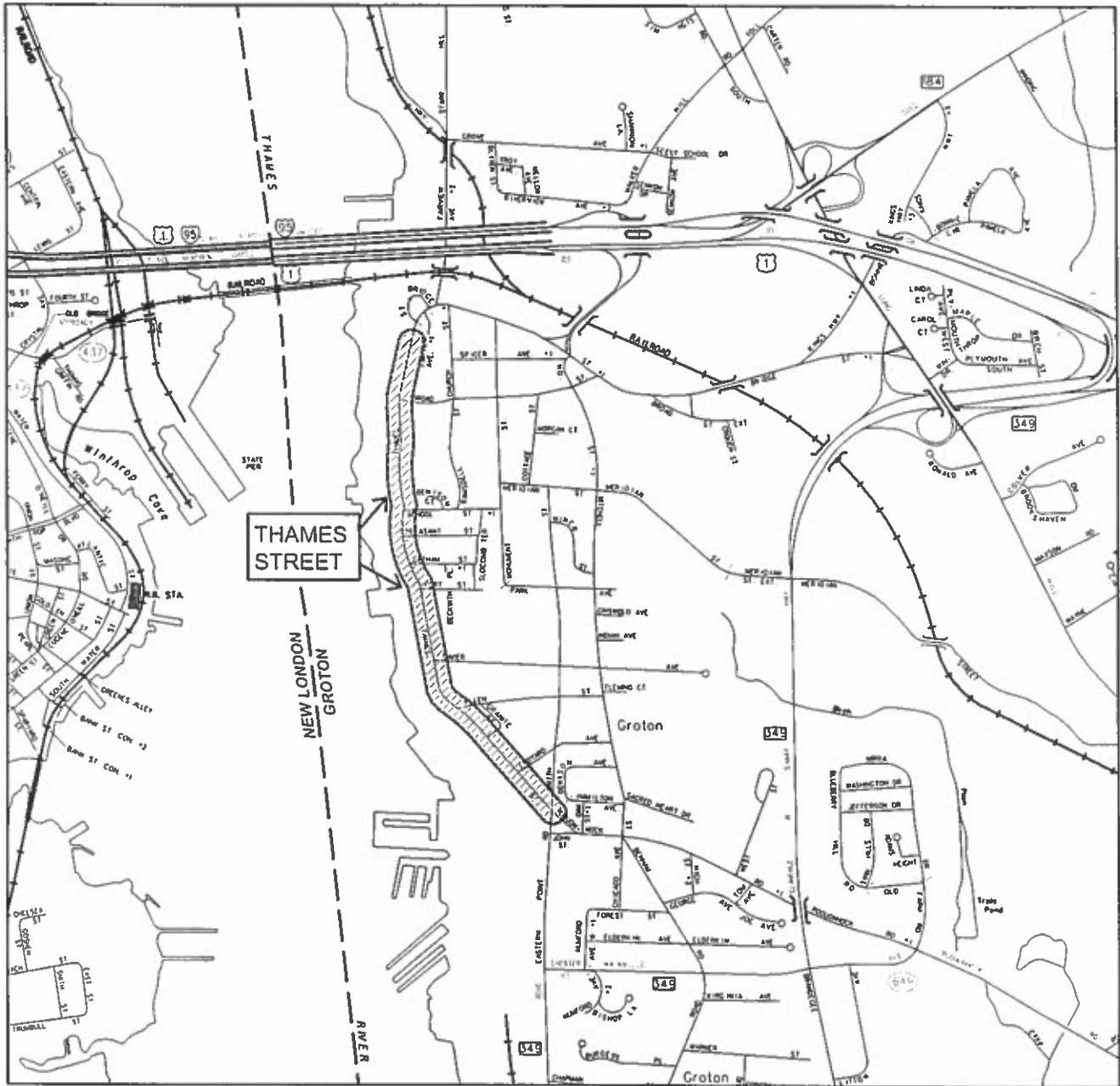
Park Avenue – The increased delay at Meridian Street may result in motorists finding other routes to Mitchell Street. Because of the afternoon turn prohibitions, it is likely that Park Avenue may see an increase in traffic. Depending on the magnitude of this diversion, an additional traffic signal may be required at that location.

Summary

This study quantifies the anticipated affect on traffic conditions in the area that taking the section of Thames Street south of Broad Street and limiting traffic to southbound vehicles only. Clearly, there will be shifting of traffic to alternate routes, most notably Mitchell Street and Smith Street, the two parallel north/south routes between Electric Boat and I-95.

The most significant traffic impact would be at the intersections of Mitchell Street with Meridian Street and Mitchell Street at Poquonnock Road/Chicago Street. Timing changes can somewhat offset the impacts but to fully ameliorate the affect of the additional traffic some geometric improvements would be necessary. Further study to evaluate constraints to these improvements (available right-of-way, property impacts, etc.) would need to be undertaken.

A logical next step, assuming the advisory committee wishes to move forward with further evaluation of a one-way scenario on Thames Street, would be to do a trial run for a short period of time, i.e. two weeks. Appropriate signage would need to be developed, traffic signals adjusted to reflect the new operations would need to be instituted and count data should be assembled to more specifically quantify the diversions.

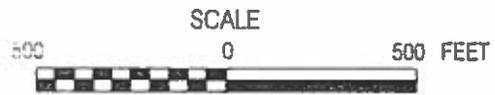


THAMES STREET

NEW LONDON
GROTON

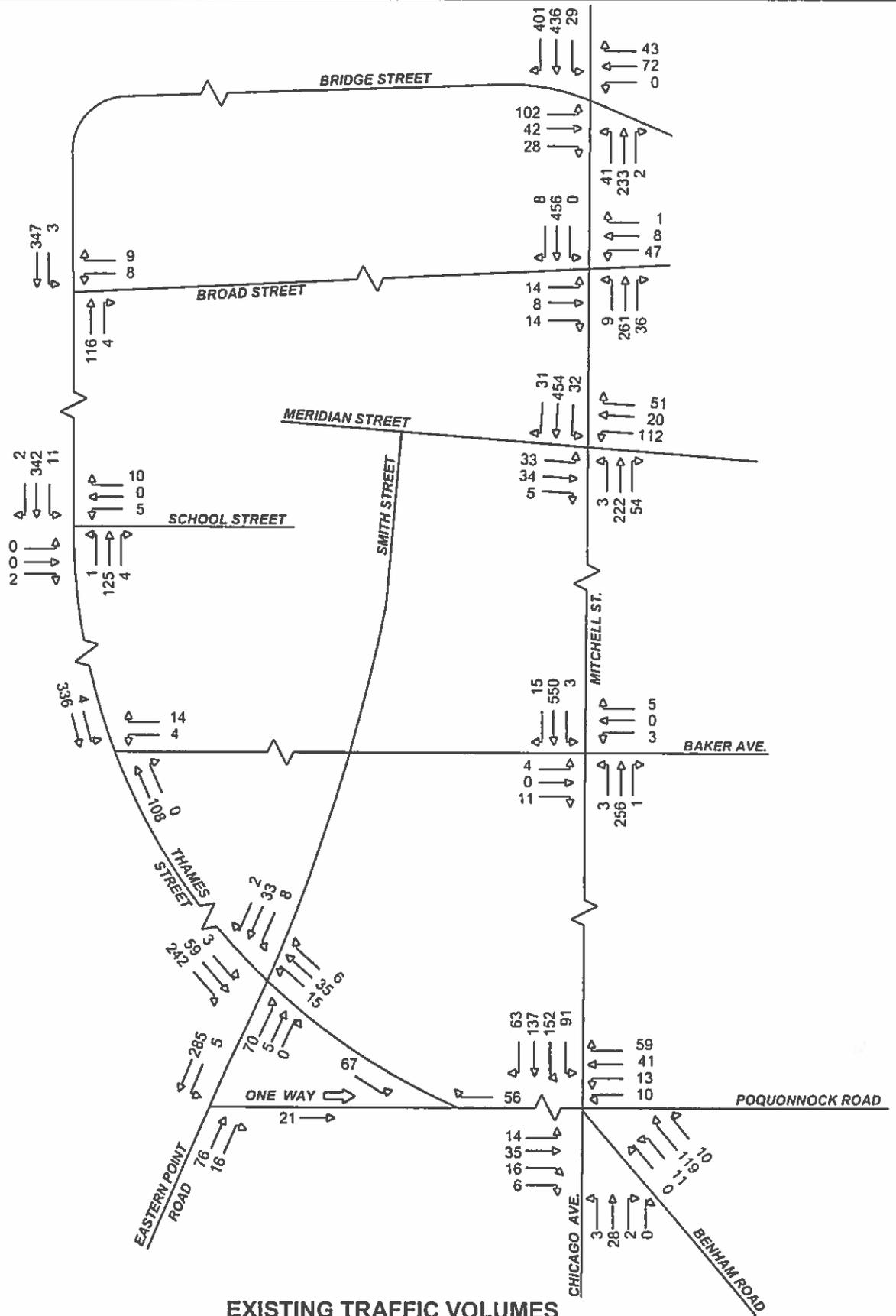
Groton

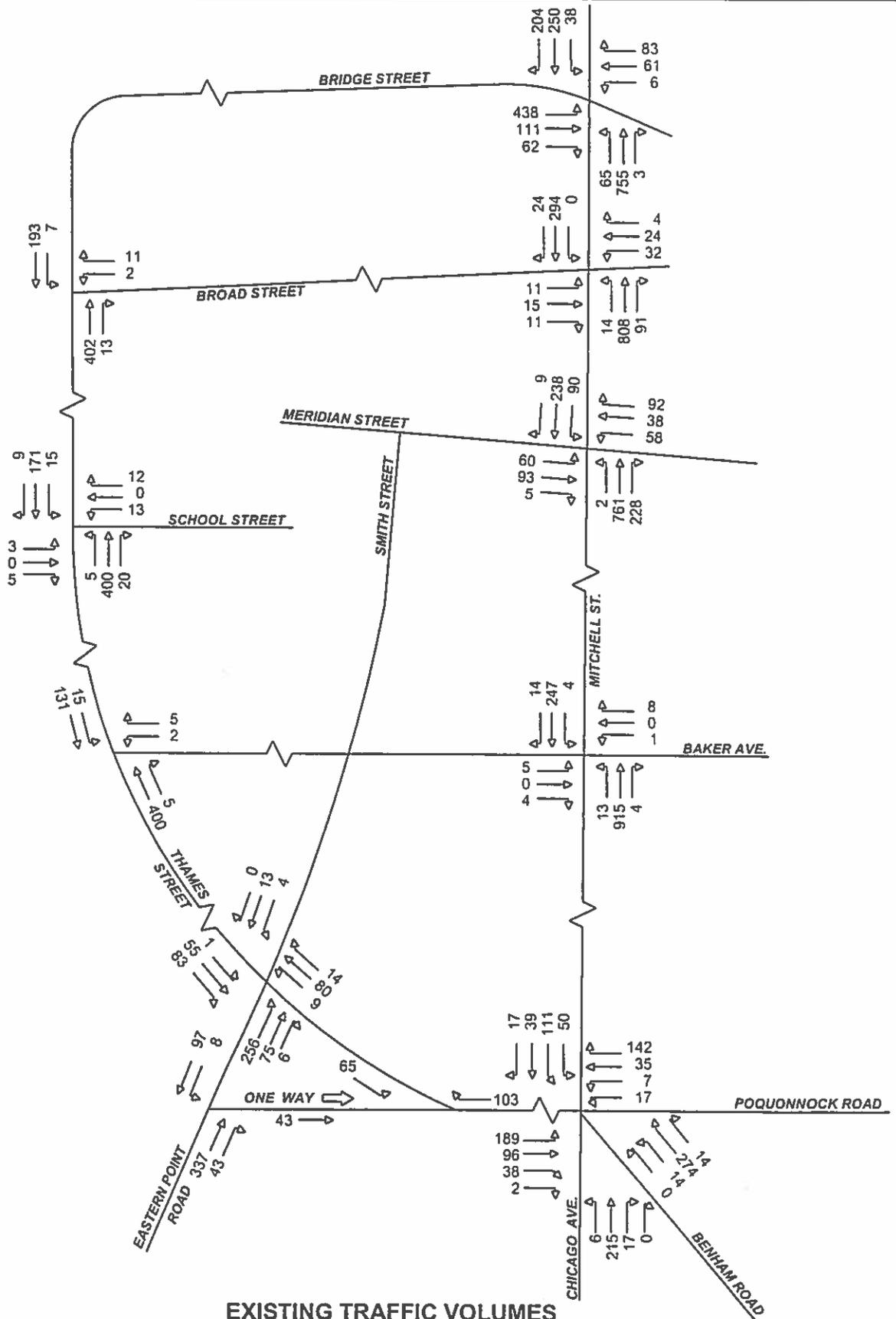
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LOCATION MAP

**Thames St. One-Way Feasibility Study
Groton, Connecticut**





EXISTING TRAFFIC VOLUMES
WEEKDAY AFTERNOON PEAK HOUR
 4:00 - 5:00 PM
 DATA COLLECTED MARCH 28, 2008

Thames St. One-way Feasibility Study
 Groton, Connecticut



3,260 VPD
35 MPH



2,700 VPD
32 MPH

BROAD STREET

MERIDIAN STREET

SCHOOL STREET

3,310 VPD
30 MPH



2,790 VPD
30 MPH

2,690 VPD
34 MPH



2,240 VPD
31 MPH

ONE WAY →

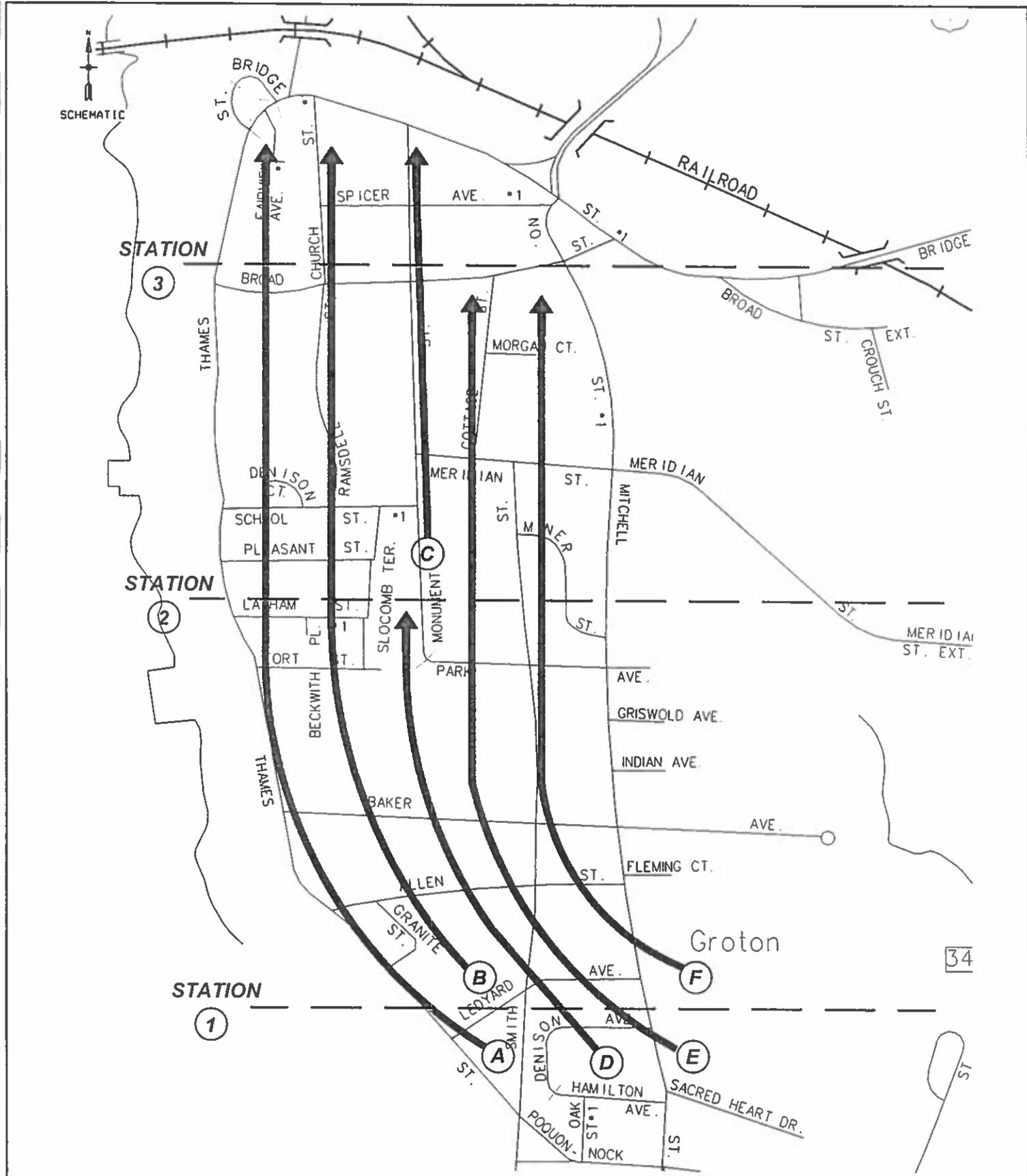
POQUONNOCK ROAD

LEGEND

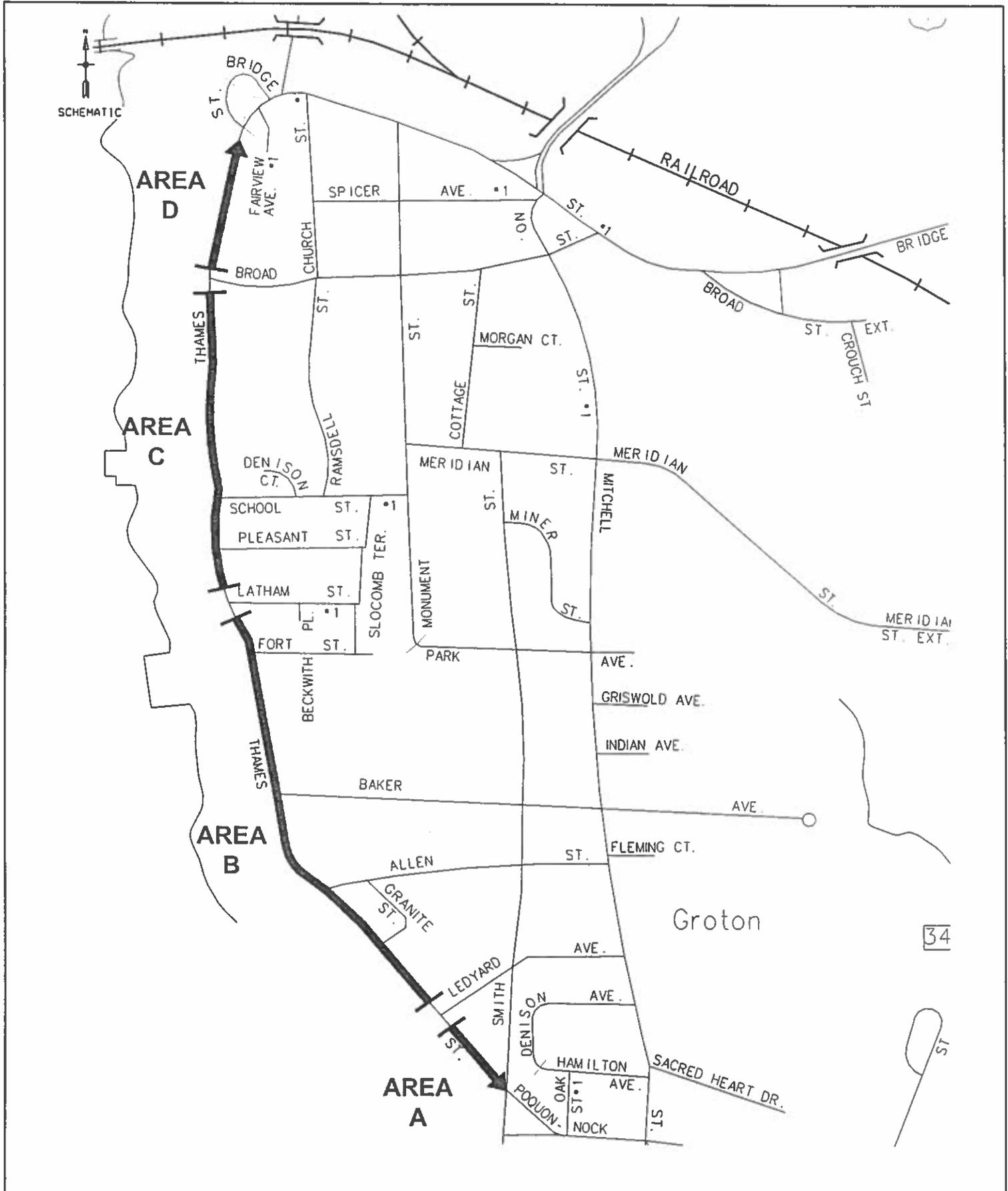
VPD = VEHICLES PER DAY
MPH = MILES PER HOUR

**AVERAGE WEEKDAY DAILY TRAFFIC VOLUMES
AND 85TH PERCENTILE SPEEDS**

**Thames St. One-way Feasibility Study
Groton, Connecticut**



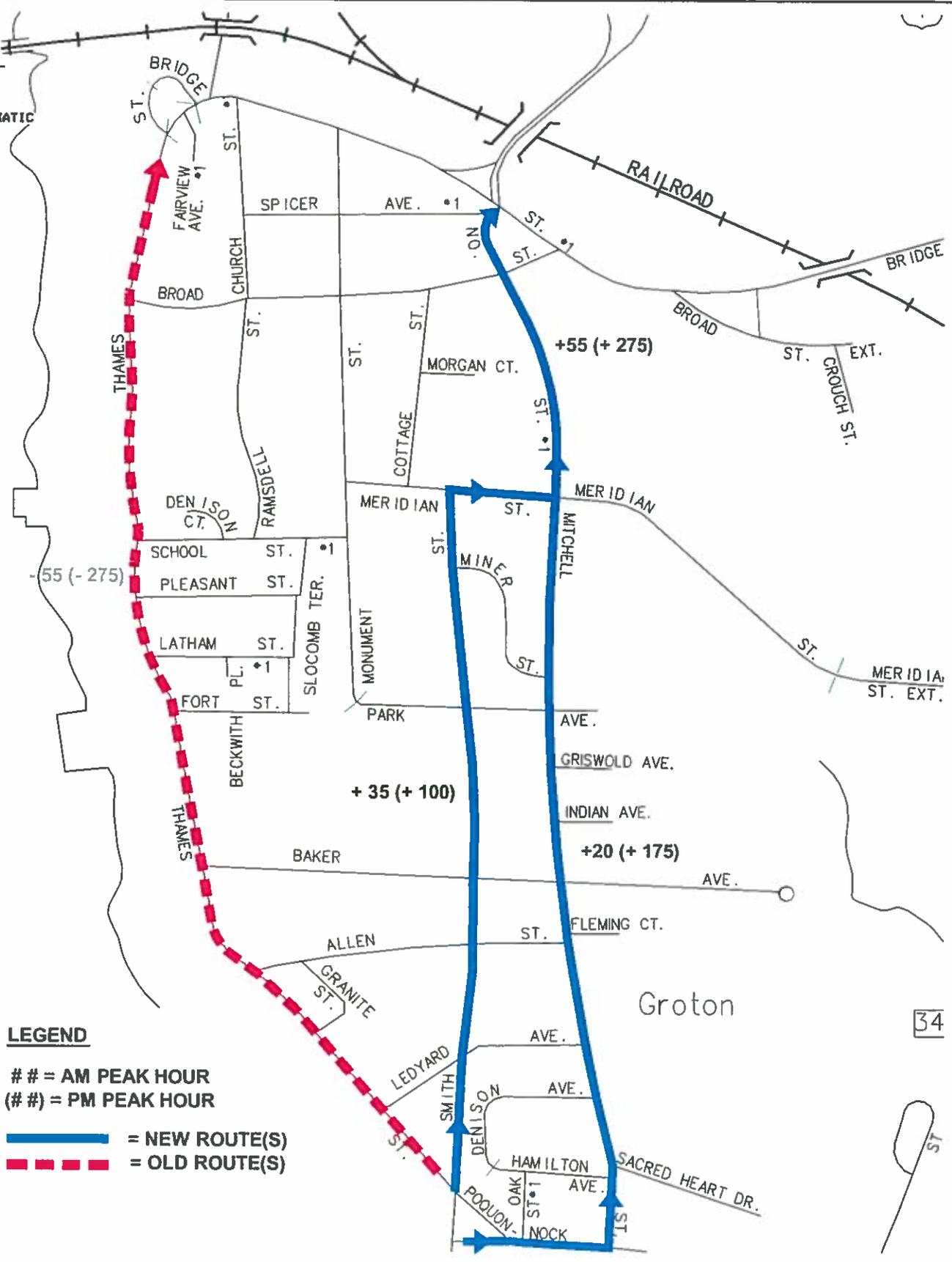
**ORIGIN / DESTINATION OF VEHICLE
TO BE DIVERTED**
(REFER TO TABLE 3 IN MEMO)
Thames St. One-way Feasibility Study
Groton, Connecticut



VEHICLE ORIGIN - DESTINATION AREA DESIGNATION

**Thames St. One-way Feasibility Study
Groton, Connecticut**

SCHEMATIC



LEGEND

= AM PEAK HOUR
(##) = PM PEAK HOUR

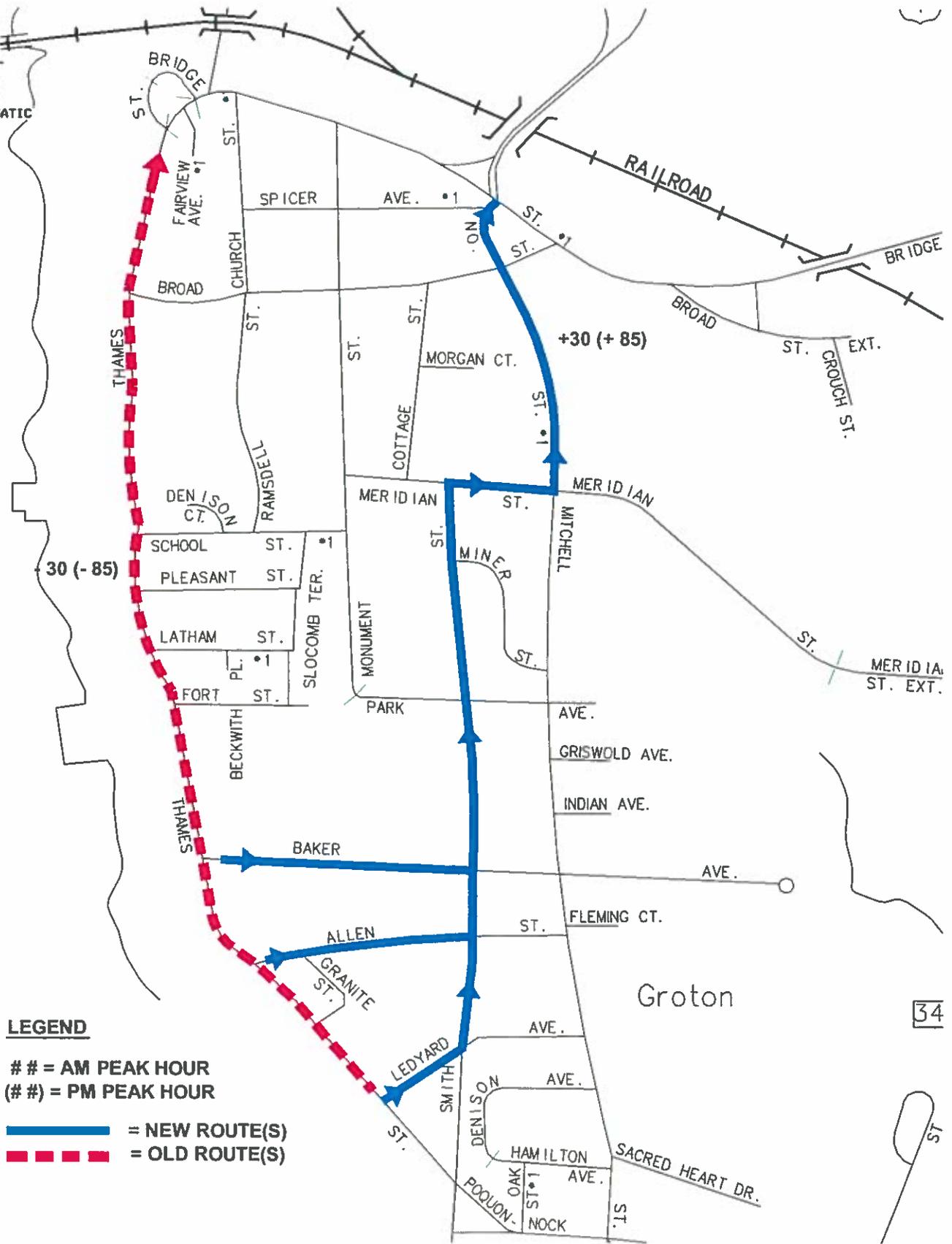
————— = NEW ROUTE(S)
- - - - - = OLD ROUTE(S)

34

VEHICLE REROUTING - AREA A TO AREA D

Thames St. One-way Feasibility Study
Groton, Connecticut

SCHEMATIC



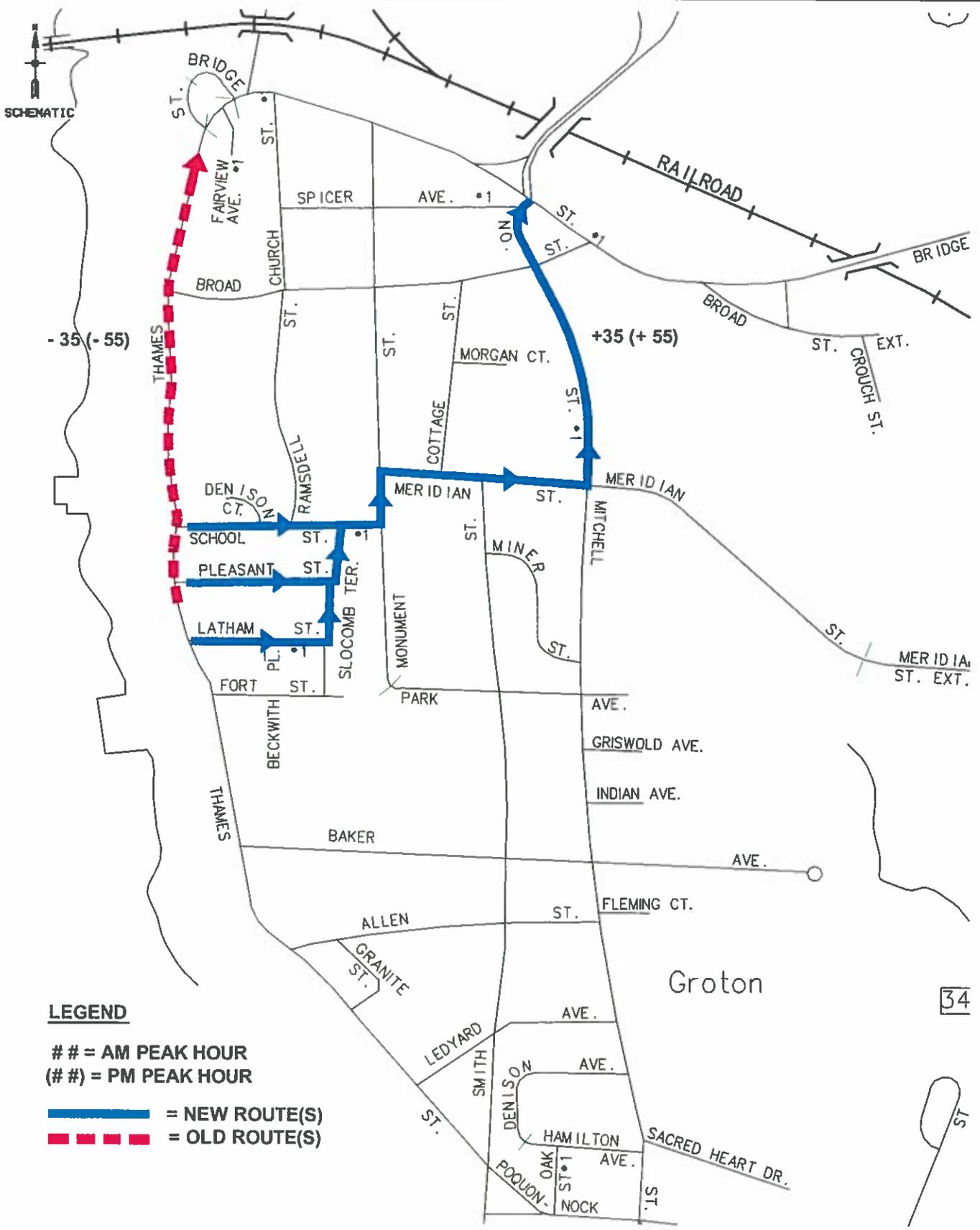
LEGEND

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- - - = OLD ROUTE(S)

VEHICLE REROUTING - AREA B TO AREA D

Thames St. One-way Feasibility Study
Groton, Connecticut



LEGEND

- ## = AM PEAK HOUR
- (##) = PM PEAK HOUR
- = NEW ROUTE(S)
- - - - - = OLD ROUTE(S)

VEHICLE REROUTING - AREA C TO AREA D

Thames St. One-way Feasibility Study
Groton, Connecticut

SCHENATIC

+20 (+20)

-20 (-20)

+10 (+5)

-10 (-5)

-10 (-0)

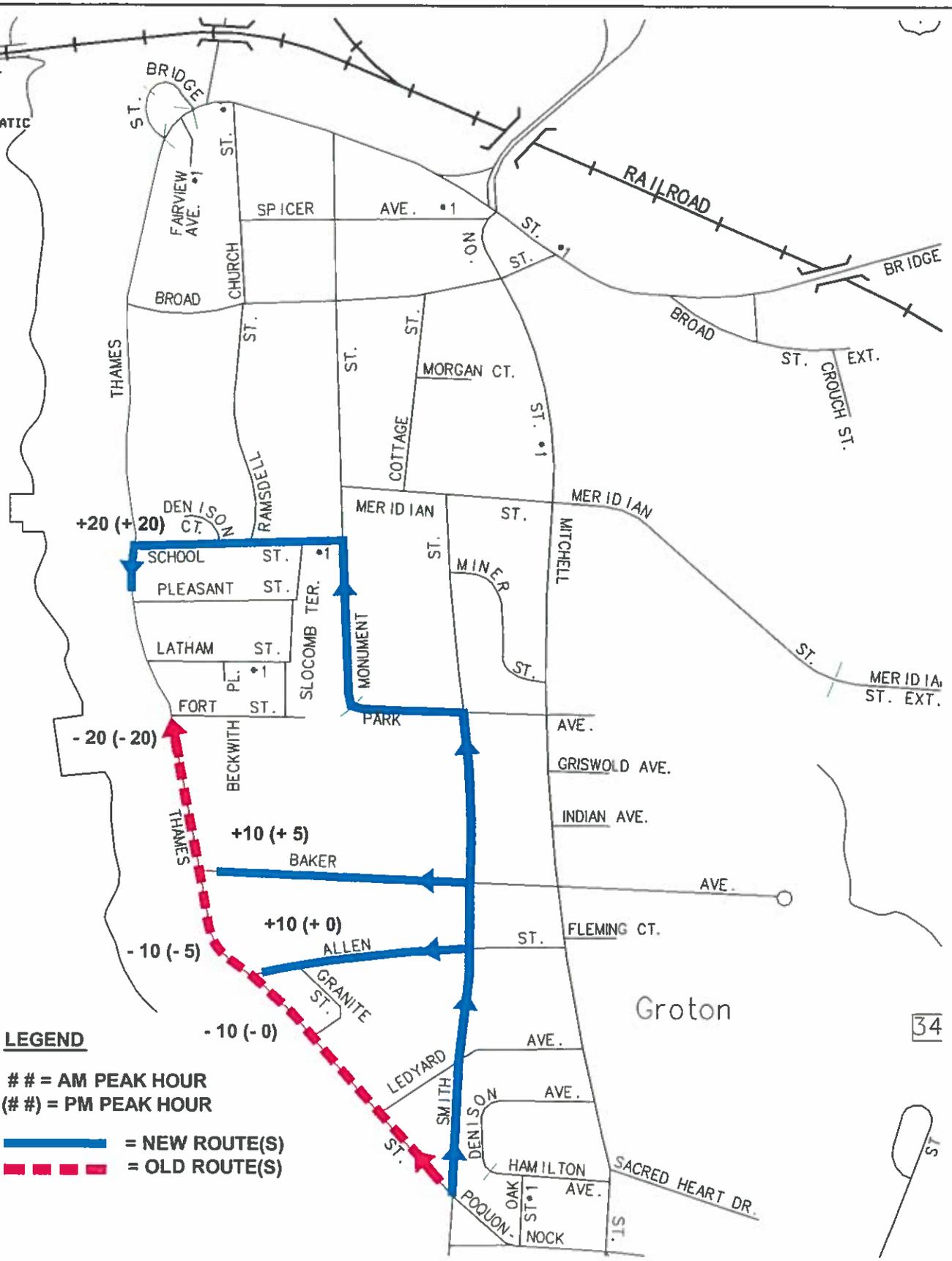
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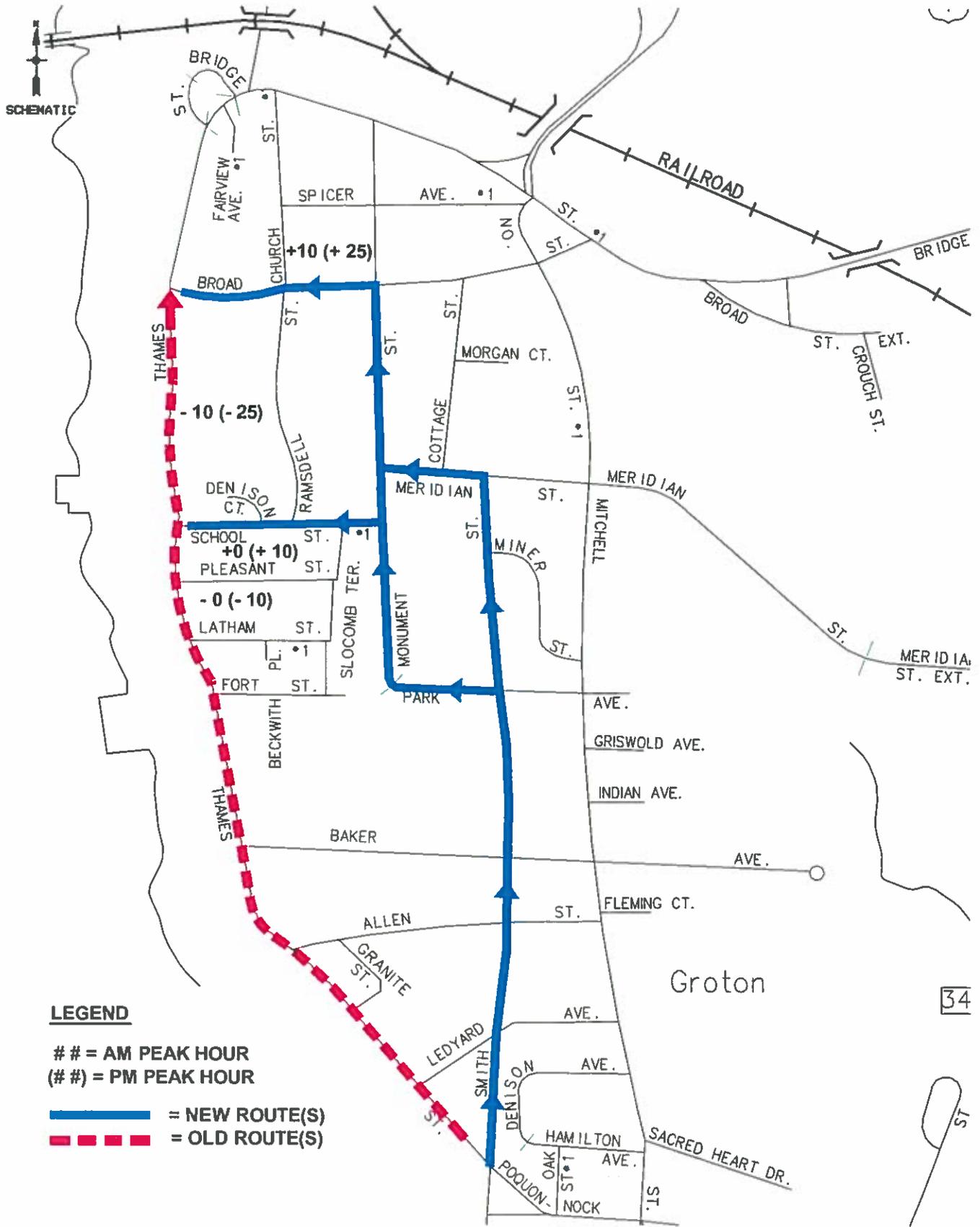
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(##) = PM PEAK HOUR

————— = NEW ROUTE(S)
- - - - - = OLD ROUTE(S)

VEHICLE REROUTING - AREA A TO AREA B

Thames St. One-way Feasibility Study
Groton, Connecticut





LEGEND

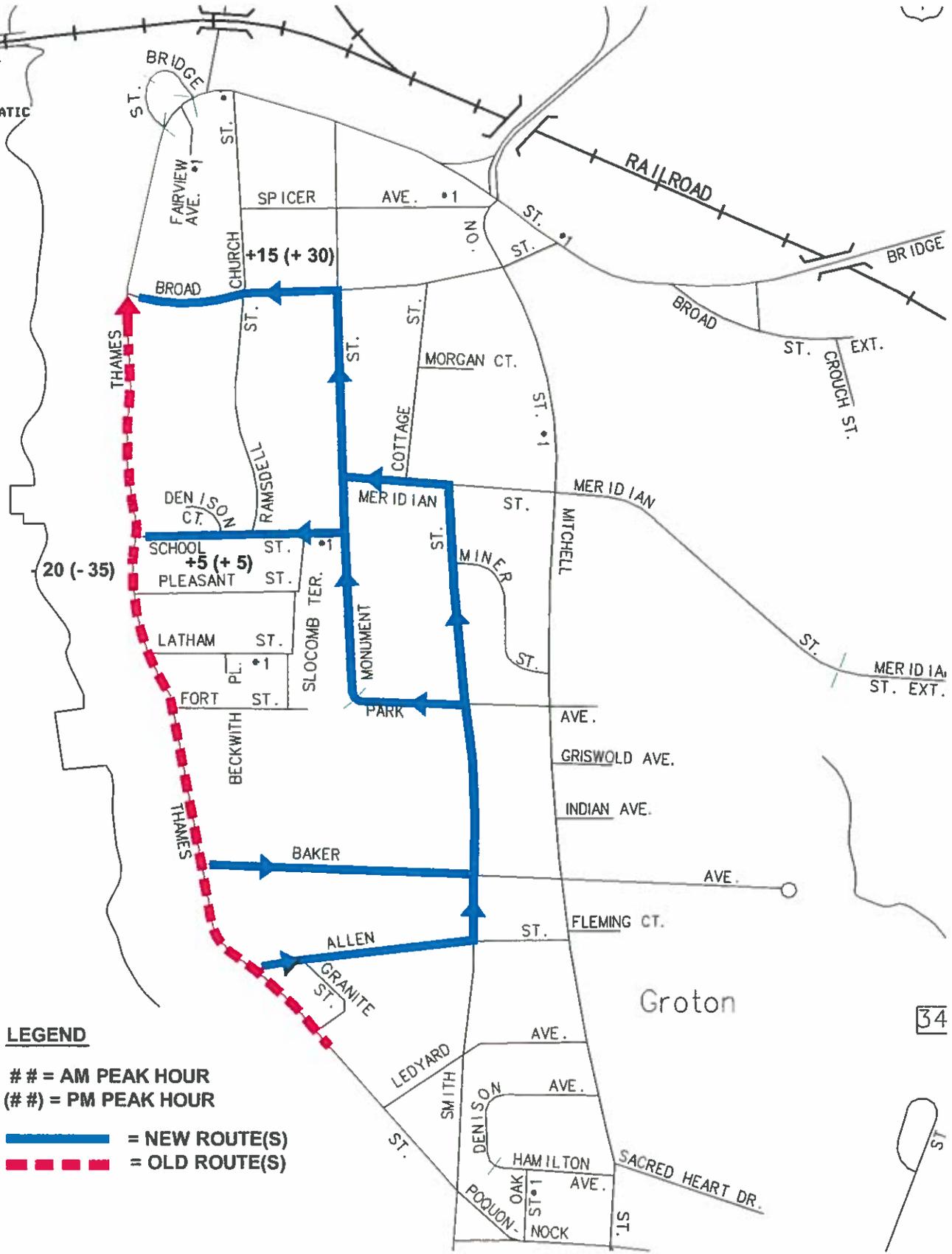
= AM PEAK HOUR
 (# #) = PM PEAK HOUR

— = NEW ROUTE(S)
- - - = OLD ROUTE(S)

VEHICLE REROUTING - AREA A TO AREA C

Thames St. One-way Feasibility Study
 Groton, Connecticut

SCHMATIC



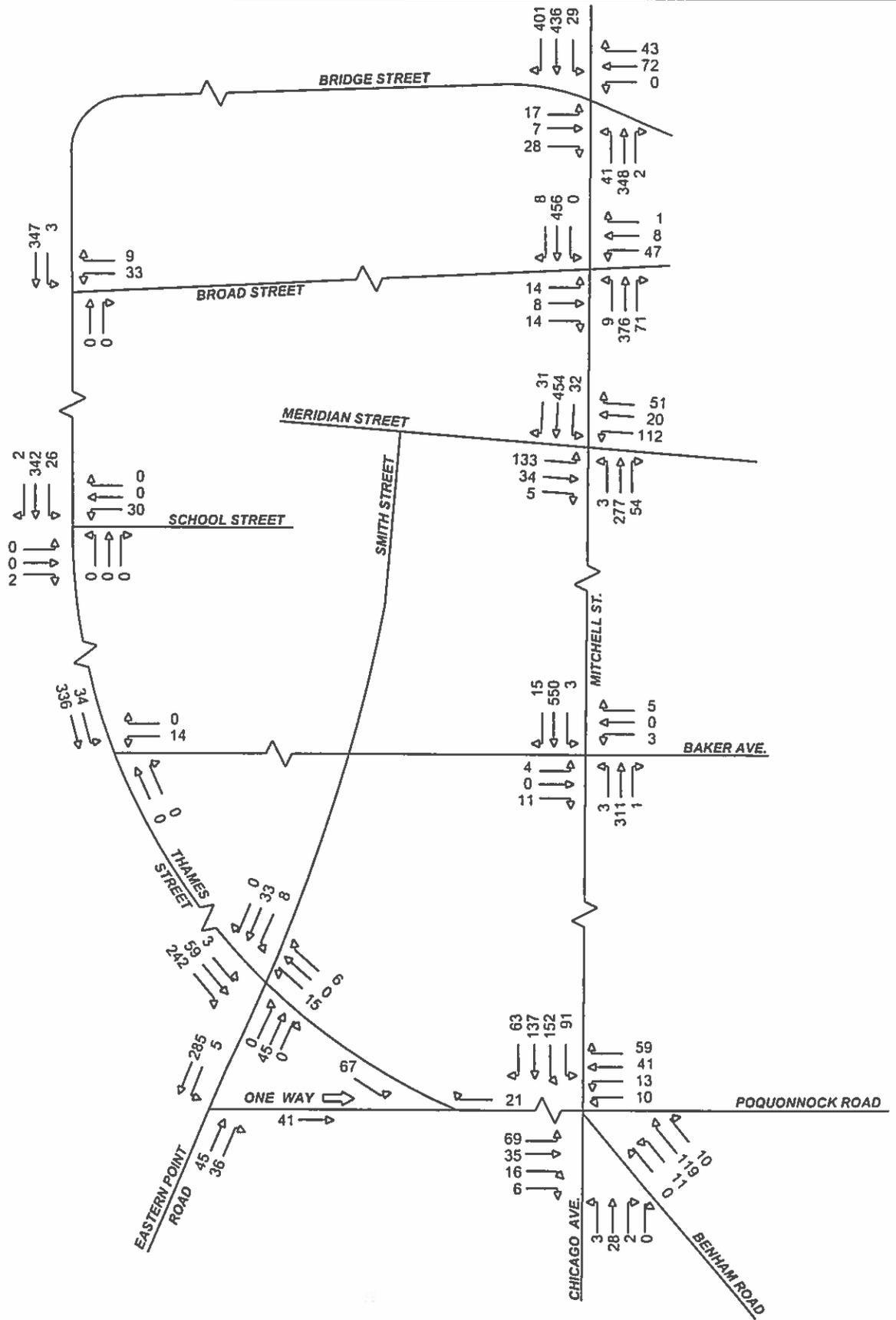
LEGEND

= AM PEAK HOUR
(# #) = PM PEAK HOUR

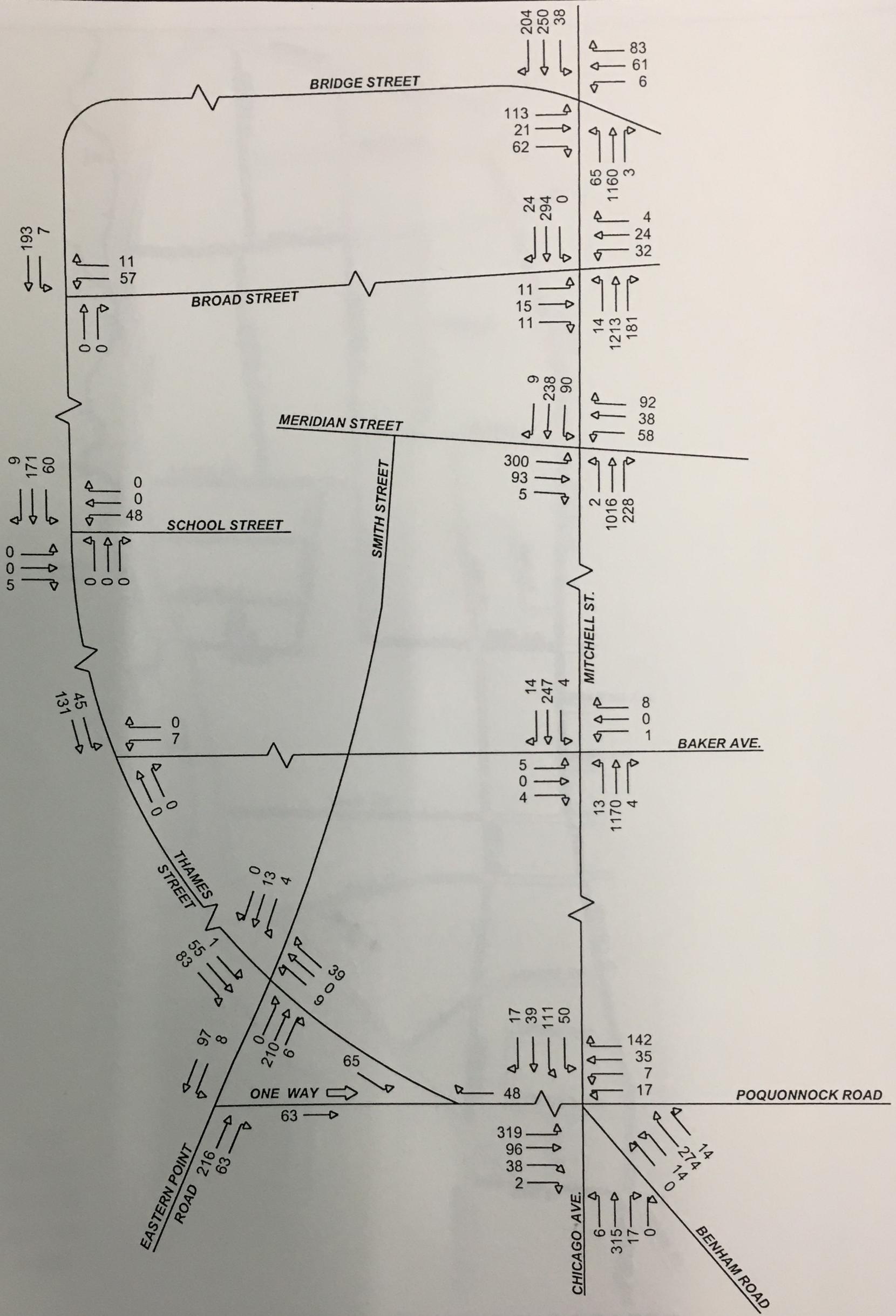
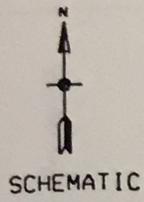
———— = NEW ROUTE(S)
- - - - = OLD ROUTE(S)

VEHICLE REROUTING - AREA B TO AREA C

Thames St. One-way Feasibility Study
Groton, Connecticut

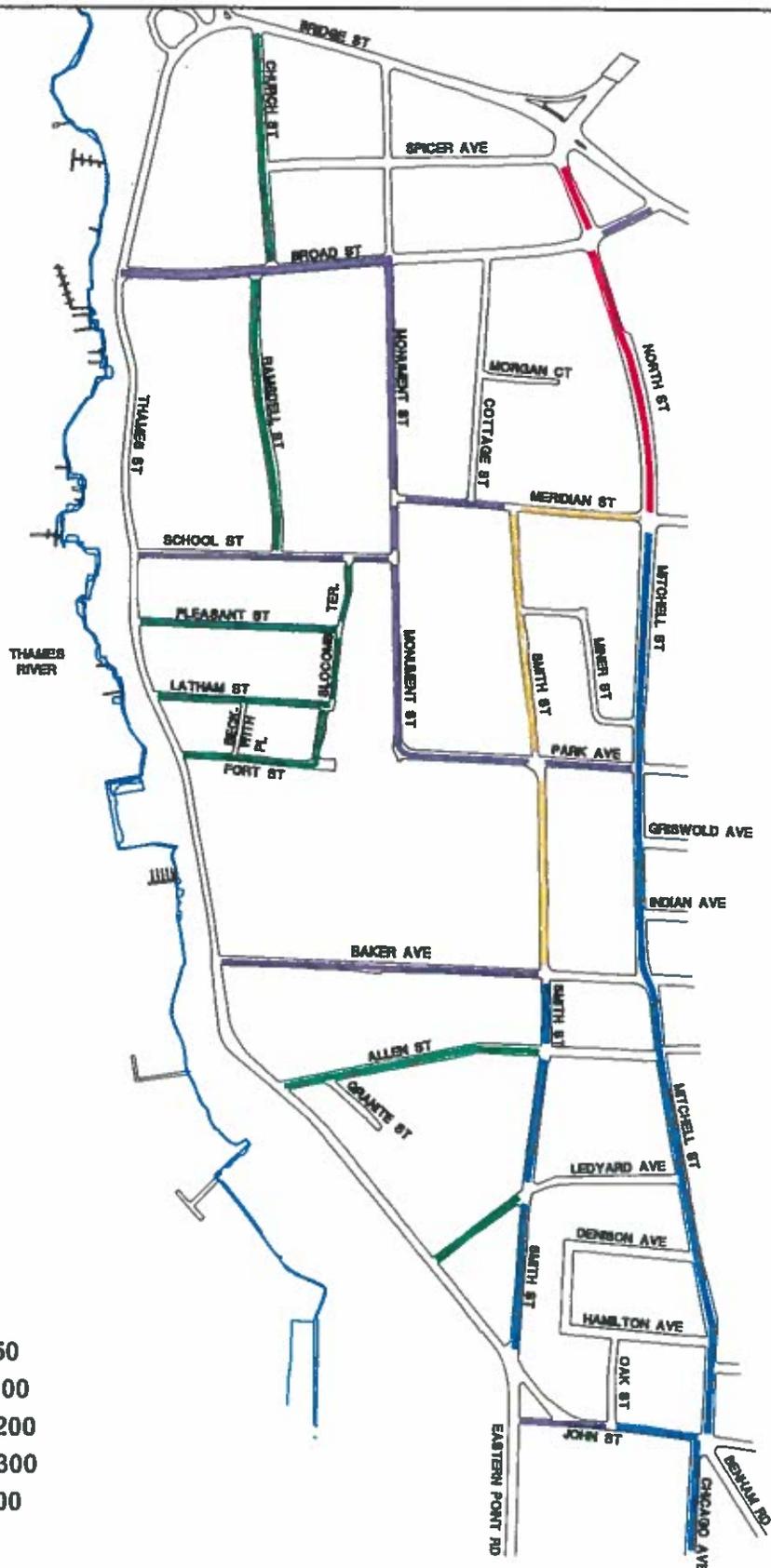


**REROUTED TRAFFIC VOLUMES
WEEKDAY MORNING PEAK HOUR**
Thames St. One-way Feasibility Study
Groton, Connecticut



**REROUTED TRAFFIC VOLUMES
 WEEKDAY AFTERNOON PEAK HOUR**

**Thames St. One-way Feasibility Study
 Groton, Connecticut**



LEGEND

- < 50
- 50-100
- 101-200
- 201-300
- > 300

ROADWAY SEGMENT TRAFFIC INCREASES

Thames St. One-way Feasibility Study
Groton, Connecticut