

TRANSPORTATION MANAGEMENT PLAN
NEWTOWN ROAD (ROUTE 806)
DANBURY, CONNECTICUT

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PREPARED FOR:
HOUSATONIC VALLEY COUNCIL OF ELECTED OFFICIALS (HVCEO)
CITY OF DANBURY

BY:
MILONE & MACBROOM, INC.
IN ASSOCIATION WITH
VN ENGINEERS, INC.

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TABLE OF CONTENTS

	Page
PART ONE – EXISTING CONDITIONS REPORT	
INTRODUCTION	1
1. THE ROADWAY SYSTEM	2
Overview	2
Eastern Portion	2
Western Portion.....	3
Existing Conditions Map	4
2. PAST STUDIES.....	5
Plumtrees Road to Old Newtown Road Transition Area	6
Woodside Avenue and Old Shelter Rock Road Intersections	8
White Street/Beaver Brook Road/Triangle Intersection	9
3. TRAFFIC VOLUMES	11
Comparison of 2010 and 2001 Traffic Volumes	11
Trends in Traffic Volumes 2001-2010	11
Intersection Turning Movement Counts	12
4. ACCIDENT HISTORY	13
Accident History 2006 through 2008	13
High Accident Locations.....	15
Summary	15
5. PEDESTRIAN ACCESS	17
Overview	17

	Page
Route 806 from I-84 Eastbound Exit 8 to Eagle Road.....	17
Route 806 from Eagle Road to Plumtrees Road	19
Route 806 from Plumtrees Road to Old Shelter Rock Road	20
Route 806 from Old Shelter Rock Road to White Street/Beaver Brook Road/ Triangle Street.....	22
Summary	23
6. TRANSIT	24
Stony Hill Road and Newtown Road Line (HART 2)	24
Newtown Road/Bethel Loop Line	26
Bus Stop Locations and Existing Conditions	29
Summary	30
7. LAND USE	31
Existing Land Use	31
Analysis of Development Potential.....	33
 PART TWO – ANALYSIS AND RECOMMENDATIONS	
INTRODUCTION	35
1. 2030 CORRIDOR TRAFFIC FORECASTS.....	37
Historic Corridor Traffic Growth	37
Projected Traffic Growth	37
Estimated 2030 Traffic Volumes	38
2. CAPACITY UPGRADES	41
Spot Improvement Recommendations.....	41

	Page
Section #1 - Issue	41
Spot Improvement Concept 1: Widen Eagle Road	42
Section #2 - Issue	43
Spot Improvement Concept 2: Connecticut Department of Transportation (CTDOT) Widening and Reconfiguration of Route 806.....	45
Section #3 – Issue.....	46
Spot Improvement Concept 3-A: Signalization.....	47
Spot Improvement Concept 3-B: Widen Route 806	48
Section #4 – Issue.....	49
Spot Improvement Concept 4-A: Widen Triangle Street.....	50
Spot Improvement Concept 4-B: Make Triangle Street One-Way Southbound .	50
Spot Improvement Concept 4-C: Make Triangle Street One-Way Northbound .	51
Spot Improvement Concept 4-D: Intersection Reconfiguration.....	51
Assessment of CTDOT’s Proposed Four Lane Wide Cross Section	52
3. ACCESS MANAGEMENT	53
Route 806 from I-84 Eastbound Exit 8 to Eagle Road.....	53
Route 806 from Eagle Road to Old Newtown Road	54
Route 806 from Old Newtown Road to Old Shelter Rock Road	54
Route 806 from Old Shelter Rock Road to White Street/Triangle Street/ Beaver Brook Road.....	55
4. PEDESTRIAN AND TRANSIT FACILITIES.....	56
Sidewalks.....	57
State Funding Policy Toward Sidewalk Construction as a Component of an Improvement Project.....	59
Sidewalk Maintenance.....	60

	Page
Crosswalks.....	61
Existing Transit Service	61
Bus Routing	62
Bus Stops.....	62
Models Used Elsewhere In Connecticut for Agreement as to Bus Shelter Maintenance	63
5. ENHANCEMENT AND BEAUTIFICATION	64
Beautification and Streetscape Improvements	65
6. IMPROVEMENT COST/IMPLEMENTATION MATRIX	67
Appendix available upon request	

PART ONE

EXISTING CONDITIONS REPORT

INTRODUCTION

In order to prepare the Transportation Management Plan (TMP) for the Route 806 (Newtown Road) corridor, it is necessary to understand existing conditions and the implications for the future. There are four basic questions to be answered:

1. How does the roadway system function today and how will existing conditions impact future operations?
2. What is the existing land use pattern in the corridor and what is the potential for changes in this pattern particularly the development of high traffic generating uses?
3. What is the current and future role of transit within the corridor?
4. How can pedestrian movement be improved and integrated with the roadway and transit systems?

This Existing Conditions Part is organized in seven sections as follows:

THE ROADWAY SYSTEM

PAST STUDIES

TRAFFIC VOLUMES

ACCIDENT HISTORY

PEDESTRIAN ACCESS

TRANSIT

LAND USE

The existing conditions findings will provide the basis for recommended roadway capacity upgrades, access management initiatives and transit/pedestrian integration.

1. THE ROADWAY SYSTEM

Overview

Route 806, known locally as Newtown Road, is a 1.54 mile stretch of arterial state roadway within Danbury that extends generally northeast-southwest from the intersection of I-84 eastbound Exit 8 at U.S. Route 6 to the intersection of Triangle Street and Beaver Brook Road at White Street.

This roadway corridor can be generally divided into two segments. The eastern half, from I-84 moving west through Plumtrees Road, is heavily commercialized and contains several shopping centers with major retail anchors. This portion of the corridor is characterized by multiple travel lanes.

The western half of Route 806, from Plumtrees Road moving west to White Street at Beaver Brook Road and Triangle Street, while still largely commercial, is less densely built out and contains some residential and other uses. The roadway along this segment generally has one through travel lane in each direction. The posted speed limit along Route 806 is 35 miles per hour.

Eastern Portion

The eastern half of Route 806 contains two through-lanes of travel in each direction with additional dedicated left turn lanes at signalized intersections. Roadway shoulders up to five feet in width are present along this section.

Five out of seven of the signalized intersections in the corridor are located within this eastern portion. These are:

- At I-84 eastbound Exit 8 and U.S. Route 6



Eastern portion of Route 806 – Looking to the northeast past Eagle Road towards I-84

- At the Friendly's Restaurant Driveway and Commerce Park Shopping Center
- At Eagle Road and Berkshire Shopping Center
- At Nutmeg Square Shopping Center and Berkshire Shopping Center
- At Plumtrees Road

There are approximately 20 unsignalized intersections with Route 806 along the eastern portion. Except for the intersection with Industrial Plaza Road, all of these are private driveways serving commercial uses that operate under implied stop sign control.

Western Portion

The western half of Route 806 generally contains a single travel lane in each direction. Route 806 at the intersection with White Street, Beaver Brook Road and Triangle Street is the only location along the western section to contain separate dedicated turn lanes. Roadway shoulders along the western portion of Route 806 are wider than those along the eastern portion, and in some areas are marginally sufficient in width to allow by-pass of any left turning vehicles.



Western portion of Route 806 – Looking to the southwest towards Old Shelter Rock Road

There are two signalized intersections within the western portion of the Route 806 corridor. These are:

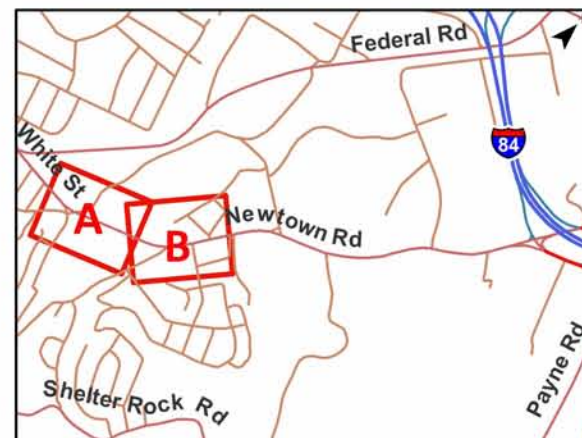
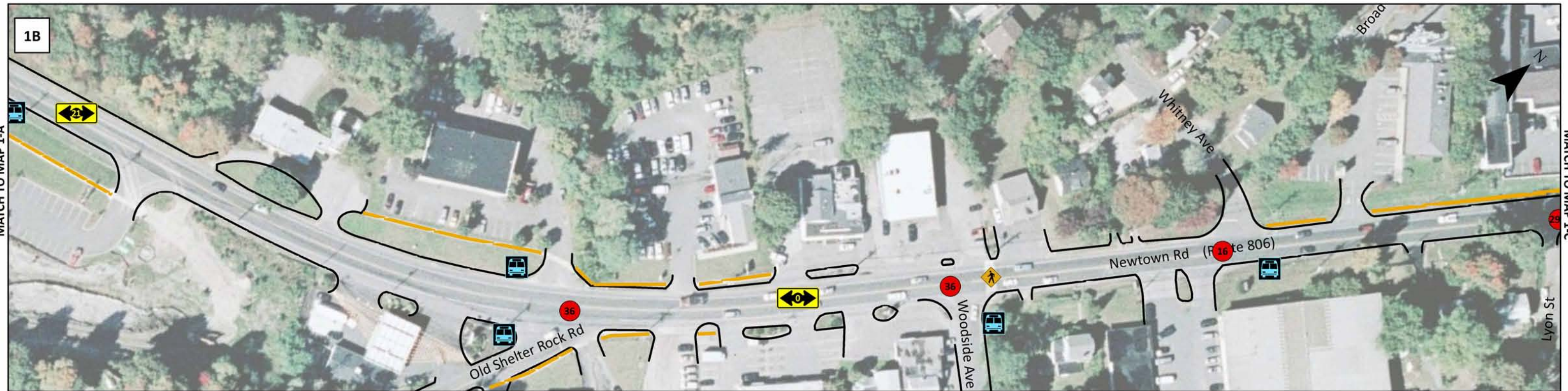
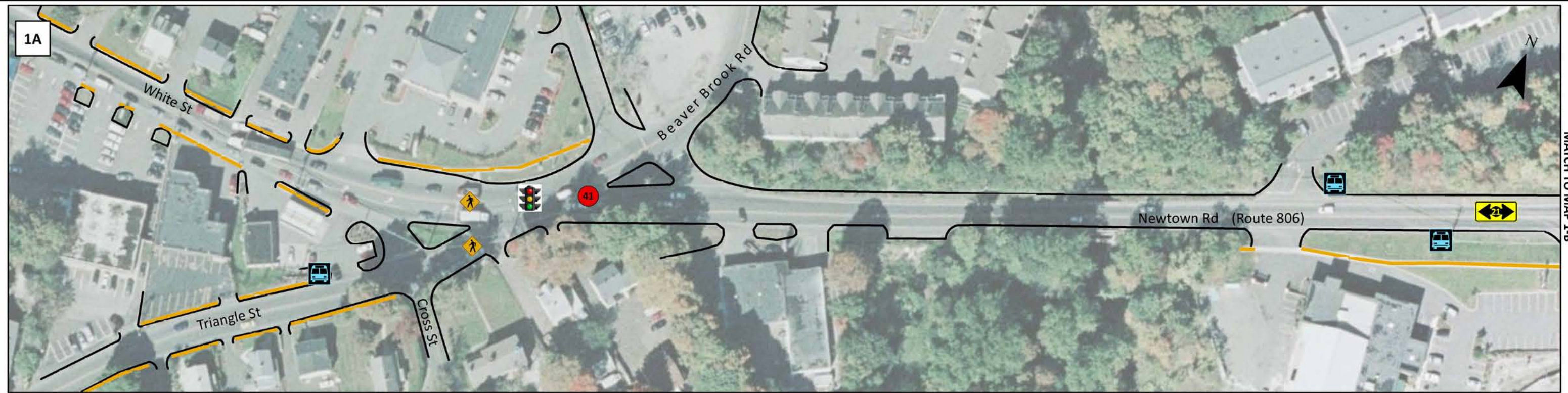
- At Old Newtown Road
- At White Street, Beaver Brook Road, and Triangle Street

There are approximately 40 unsignalized intersections at Route 806 along the western portion. These include the roadways of Lyon Street, Whitney Avenue, Woodside Avenue, and Old Shelter Rock Road. The short connector roadway serving motorists turning left from Route 806 to Old Newtown Road and motorists turning right from Old Newtown Road to Route 806 also

operates under stop sign control. The remaining are driveways that serve commercial uses, some residential uses and the City of Danbury Public Works Complex.

Existing Conditions Map

Existing conditions are presented graphically on Figures 1A through 1F. Conditions on these figures include the location of sidewalks, crosswalks, bus stops, curb cuts and signalized intersections. The figures also show the number of accidents reported from 2006 through 2008 broken out by mid-block and intersection locations.



Legend

Sidewalk	Housatonic Area Regional Transit Bus Stop
Curb Cuts	Accidents at Intersections*
Crosswalk	Mid-Block Accidents*
Signalized Intersection	

*Number of Accidents from 1/1/2006 to 12/31/2008

SOURCE:
City of Danbury
Street Map USA (2009)
Milone & MacBroom Field
Observations (2010)

SHEET 1
of 3

0 50 100 200 Feet

1 inch = Approx. 100 feet

City of Danbury

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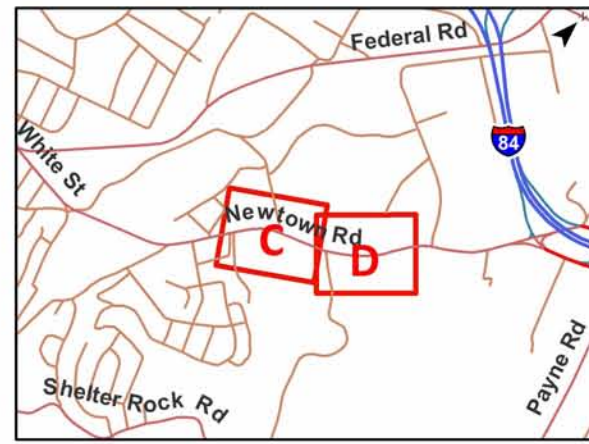
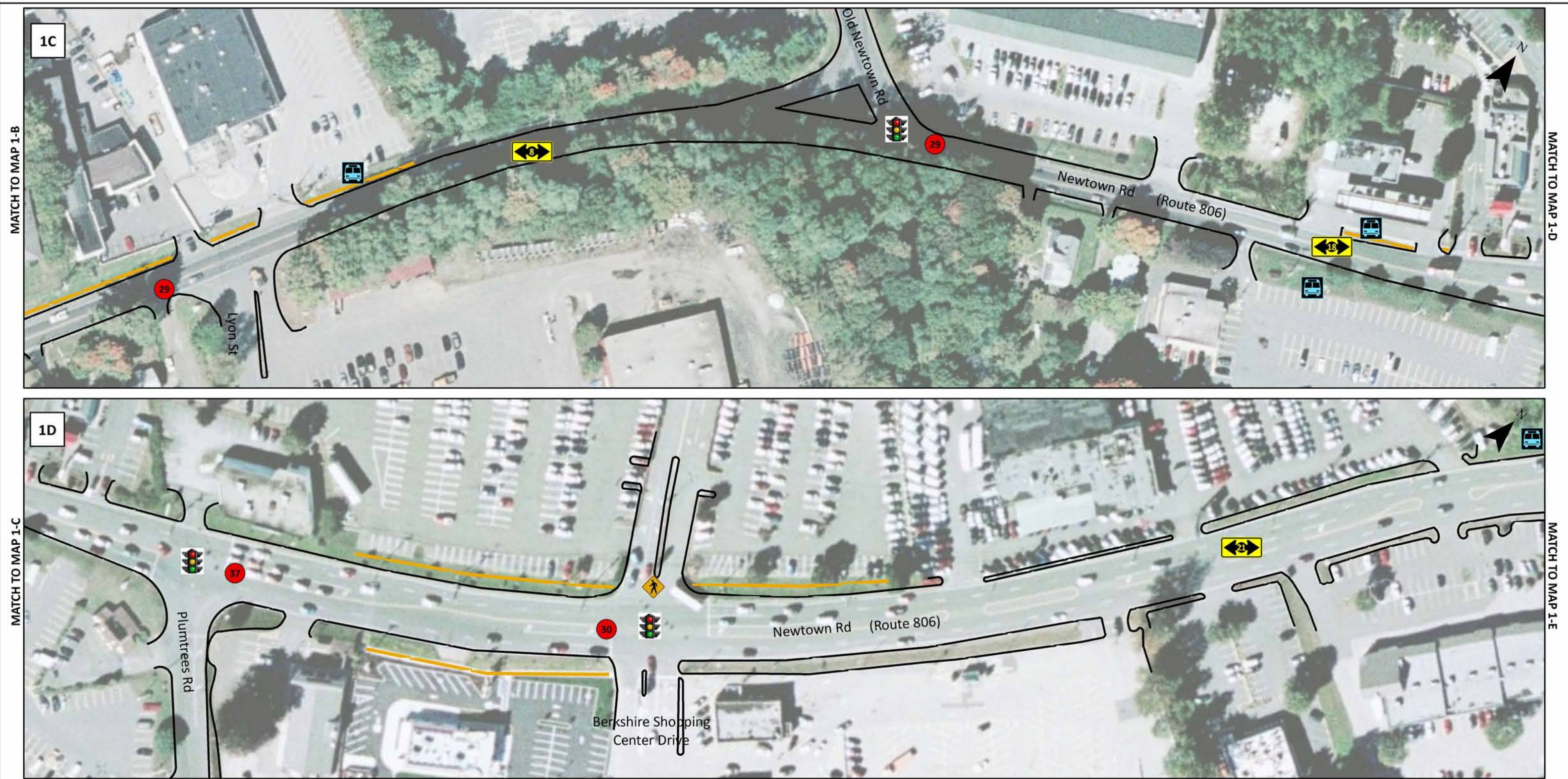
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**ROUTE 806
CORRIDOR STUDY
NEWTOWN ROAD**

**Figure: 1A & 1B
Existing Conditions**

Date: May 2011



Legend

Sidewalk	Housatonic Area Regional Transit Bus Stop
Curb Cuts	Accidents at Intersections*
Crosswalk	Mid-Block Accidents*
Signalized Intersection	

*Number of Accidents from 1/1/2006 to 12/31/2008

SOURCE:
City of Danbury
Street Map USA (2009)

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1 inch = Approx. 100 feet

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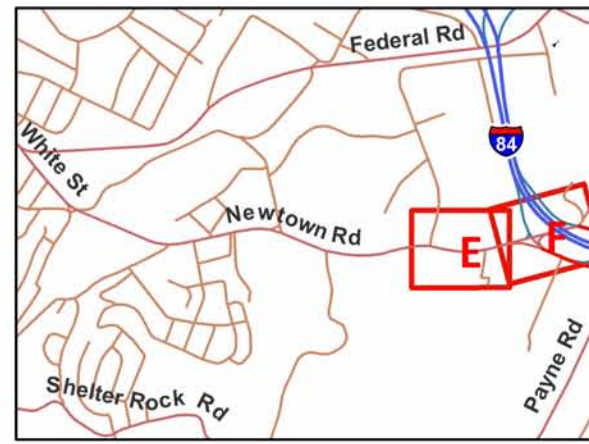
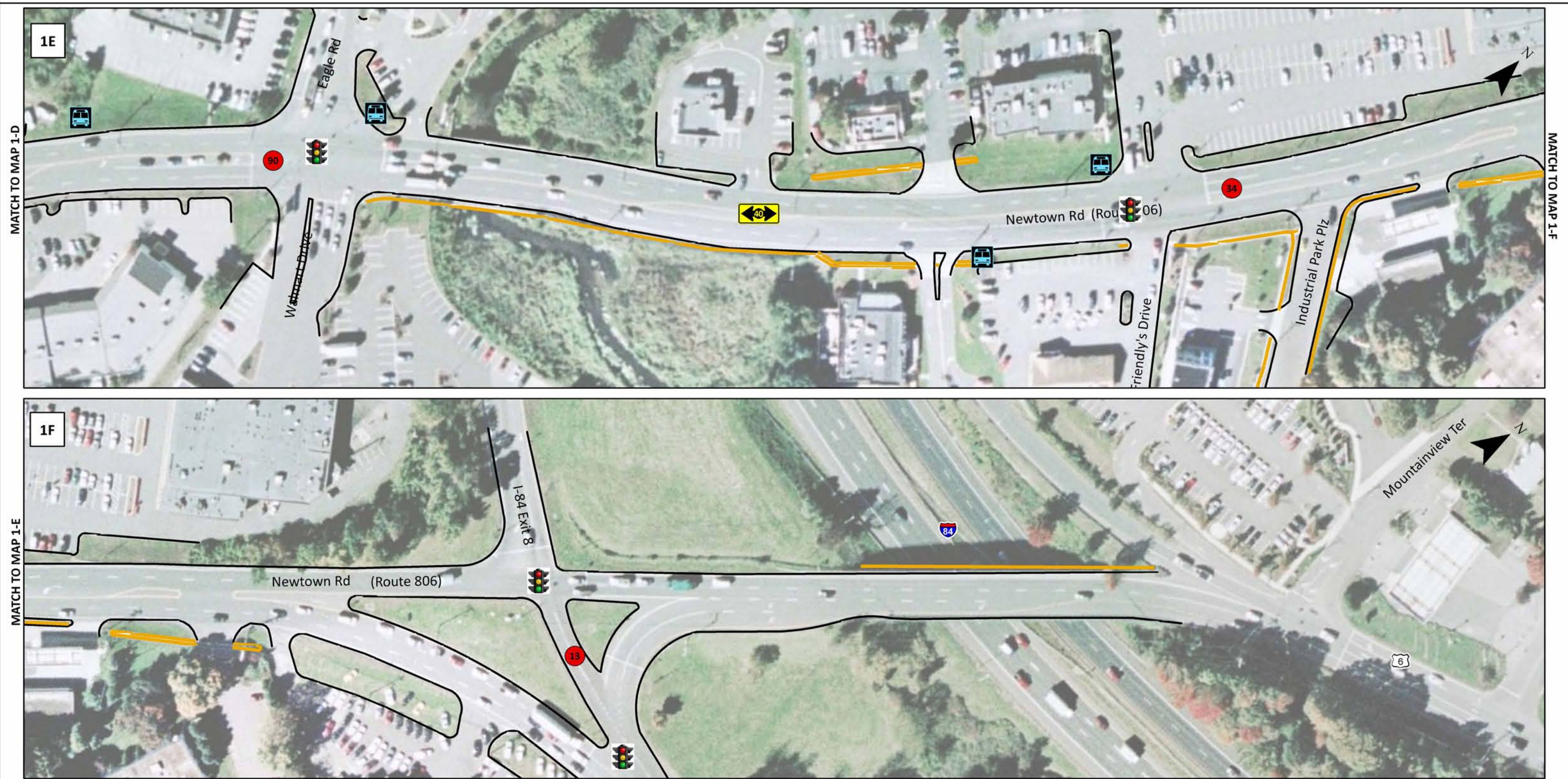
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**ROUTE 806
CORRIDOR STUDY
NEWTOWN ROAD**

**Figure: 1C & 1D
Existing Conditions**

Date: May 2011



Legend

- Sidewalk
- Curb Cuts
- Crosswalk
- Signalized Intersection

Existing Conditions

- Housatonic Area Regional Transit Bus Stop
- Accidents at Intersections*
- Mid-Block Accidents*

*Number of Accidents from 1/1/2006 to 12/31/2008

SOURCE:
City of Danbury
Street Map USA (2009)

SHEET 3
of 3

0 50 100 200
Feet

1 inch = Approx. 100 feet

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**ROUTE 806
CORRIDOR STUDY
NEWTOWN ROAD**

**Figure: 1E & 1F
Existing Conditions**

Date: May 2011

2. PAST STUDIES

There have been numerous studies of Route 806 over the years which have identified traffic operation problem areas and issues. The western portion of Route 806 contains several problem areas. In particular, these include the transition area between Plumtrees Road and Old Newtown Road where the roadway narrows from four through lanes to two through lanes, the intersection of Route 806 at Old Newtown Road, the intersection of Route 806 at Woodside Avenue, the intersection of Route 806 at Old Shelter Rock Road and the intersection of Route 806 at White Street, Beaver Brook Road and Triangle Street.

The 2005 City of Danbury Transportation Plan called for the following improvements on Newtown Road (Route 806), (1) widen with additional lanes, as feasible, from Plumtrees Road to Triangle Street, (2) reconfigure the intersection at Triangle Street/Beaver Brook Road, (3) add turning lanes and geometric improvements at Old Newtown Road, Old Shelter Rock Road and at other intersections as warranted and (4) add a traffic signal at the Old Shelter Rock Road intersection.

In addition, the plan recommended that “Roadways which combine major commercial destinations with high traffic volumes ought to include continuous sidewalks along one or both sides of the road, including the following: Newtown Road from Triangle Street to Eagle Road.

The HVCEO 2011 – 2040 Draft Regional Transportation Plan supports the above referenced recommended improvements. The Plan also noted that,

“For the short range, improve the alignment and traffic capacity of Newtown Road (Route 806) at Old Newtown Road. Include a new entrance for the Danbury Public Works complex. This project was submitted by Danbury in 2006 to the Connecticut Department of Transportation (CTDOT) Project Development Unit for evaluation.”

Plumtrees Road to Old Newtown Road Transition Area

The transition area of Route 806 between Plumtrees Road and Old Newtown Road, and the intersection of Route 806 at Old Newtown Road itself can be considered a single problem due to the close proximity of the two intersections. Vehicles heading southwest on Route 806 through the intersection with Plumtrees Road must quickly merge from two lanes to a single lane.

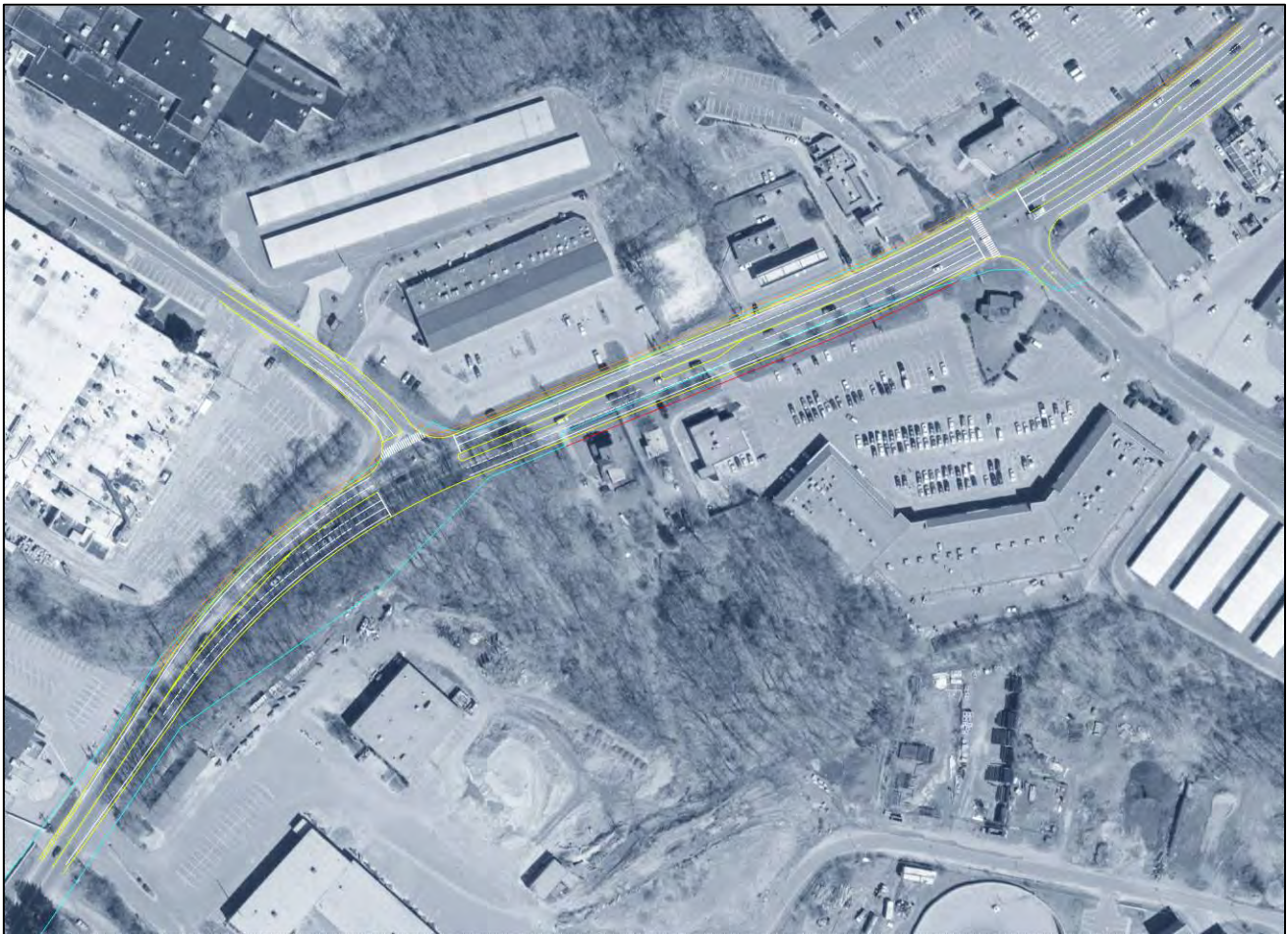


Transition area of Route 806 between Plumtrees Road and Old Newtown Road – Looking to the southwest towards Old Newtown Road

This issue combined with vehicle queuing in the same direction at the intersection with Old Newtown Road results in notable delays and backups during peak travel periods. In order to improve upon this current condition, as well as to address delays and queuing in the opposite direction along Route 806 at Old Newtown Road, a redesign of this area is currently being studied by CTDOT.

An untitled conceptual plan received from CTDOT and seen below calls for Route 806 to be widened to provide five lanes in this area, matching the current cross section along the eastern portion of the corridor, heading southwest past Old Newtown Road then narrowing down to the existing width of two lanes in the vicinity of the City of Danbury Public Works Complex driveway.

This plan provides two through lanes in each direction on Route 806 with an additional left turn lane. The Old Newtown Road approach would also be widened to provide two separate turn lanes. Moreover, the City of Danbury is seeking to construct a main entrance driveway for the Public Works Complex (DPW) driveway such that it would constitute a fourth leg to the intersection opposite Old Newtown Road. The redesign of the Route 806 at Old Newtown Road intersection is a top priority for the City and HVCEO. It has been indicated by HVCEO that STP-Urban funding is currently available for improvements to this intersection.



Conceptual Improvement for Route 806 at Old Newtown Road. Source: CTDOT, 2010.

Woodside Avenue and Old Shelter Rock Road Intersections

The separate intersections of Woodside Avenue and Old Shelter Rock Road at Route 806 are closely spaced to one another at 400 feet apart. Local concerns dating back to the 1980s have led to multiple detailed investigations by CTDOT into the potential signalization of one or the other of these intersections^{1 2}. As is common at unsignalized stop controlled approaches to heavily travel roadways such as Route 806, long delays can occur for motorists trying to enter the major roadway. This is especially the case for left turns. The HART 2 bus line provides service along Woodside Avenue (to/from Eden Drive). Inbound buses along this line, for example, must make a difficult left turn from Woodside Avenue onto Route 806³.



Route 806 at Woodside Avenue – Looking to the Northeast

Past reviews from CTDOT into the potential signalization of Woodside Avenue at Route 806 have resulted in the state recommending that this location not be signalized, citing lack of warrant criteria based on traffic volumes. Rather, Old Shelter Rock Road at Route 806 was found to be more conducive to signalization because it handles more traffic.

The state began design work towards signalization of this intersection (CTDOT Project No. 34-309), which would also widen or restripe Route 806 to include a separate left turn lane for

¹ December 16, 1998 letter from Patricia A. Ellsworth, P.E. (City of Danbury Acting City Engineer) to Joseph Santaniello, P.E. (Connecticut State Traffic Commission Executive Director) referencing CTDOT Traffic Investigation Report No. 034-8901-03 from June 20, 1989 regarding Route 806 at Woodside Avenue.

² CTDOT Traffic Investigation Report No. 031-9812-03 regarding Route 806 at Woodside Avenue, August 1999.

³ July 26, 1999 letter from Eric C. Bergstraesser (HART Executive Director) to James F. Sullivan (CTDOT Commissioner)

motorists turning onto Old Shelter Rock Road. A realignment of the Old Shelter Rock Road approach to Route 806 would be incorporated into the design. A lateral goal of signaling this intersection is that gaps in the flow of Route 806 traffic may be created which could aid left turning motorists exiting from Woodside Avenue. Funding for this state project has however stalled⁴.

White Street/Beaver Brook Road/Triangle Street Intersection

Route 806 at White Street, Beaver Brook Road and Triangle Street is a rather complicated intersection where acute angle approaches of the roadways have led to two small island medians at this location. Nearby Cross Street intersects White Street and Triangle Street in the direct vicinity as well.

Concepts for geometrically and operationally improving this intersection have been looked into for decades. However, no preferred improvement concepts have been formulated. Ideas have included closing and rerouting travel in certain directions at this location. Another concept was to redesign the intersection to create two closely spaced “T” intersections that would both likely be signaled under the same controller⁵.



⁴ Report of Meeting – Review of HVCEO’s Urban Program, CTDOT November 24, 2009.

⁵ Project Summary Report – Major Widening SR 806, Newtown Road (Project No. 034-01-1036), CTDOT July, 1995.

Route 806 at White Street, Beaver Brook Road and Triangle Street. Source: Microsoft Corporation 2011.

The latter improvement concept was part of an investigation in the mid-1990s into widening the entire western portion of Route 806. The widening would be to increase Route 806 from the existing two travel lanes to a several lane cross section matching the eastern portion of the corridor. As would be expected, such a widening project would likely necessitate takings along the frontages of a number of properties through this stretch of Route 806. Furthermore, widening would require replacement of the bridge over the Still River that is located between White Street and Old Shelter Rock Road. As seen in the picture below, this bridge has narrow roadway shoulders and no dedicated space for pedestrians.



Route 806 Still River Bridge – Looking to the southwest towards White Street

3. TRAFFIC VOLUMES

Comparison of 2010 and 2001 Traffic Volumes

The CTDOT collects traffic volumes every three years at four different roadway segment locations along Route 806. Data was last collected at these traffic monitoring stations in 2010. Table 1 provides a summary of the 2010 Average Daily Traffic (ADT) volumes, as well as a comparison to ADT data collected in 2001 to show traffic at the beginning and end of the last decade. The volumes shown are two-way traffic.

Table 1

AVERAGE DAILY TRAFFIC

Location:	2001 Average Daily Traffic Volumes	2010 Average Daily Traffic Volumes	Annual Percent Change 2001 - 2010	Overall Percent Change 2001 - 2010
Route 806 northeast of Eagle Road	33,100	33,400	0.10%	0.91%
Route 806 southwest of Eagle Road	29,000	28,100	-0.35%	-3.10%
Route 806 northeast of Old Newtown Road	26,400	24,000	-1.05%	-9.09%
Route 806 east of Beaver Brook Road	19,500	18,800	-0.41%	-3.59%

Source: Connecticut Department of Transportation

Trends In Traffic Volumes 2001 – 2010

Average Daily Traffic along Route 806 decreased when comparing the latest available data to the 2001 data, with the exception of the easternmost location. The sole increase in traffic on Route 806 northeast of Eagle Road could be an indication of new development having occurred along Eagle Road during the decade drawing motorists past this point, but not past the locations further southwest along the corridor.

Comparison of the 2010 to the 2001 data does not tell the whole story, however, as traffic at the four locations generally increased during the middle of the decade before then decreasing at the end of the decade. For example, traffic at the Route 806 location northeast of Eagle Road notably increased from 2001 to 2004, remained relatively the same from 2004 to 2007, and

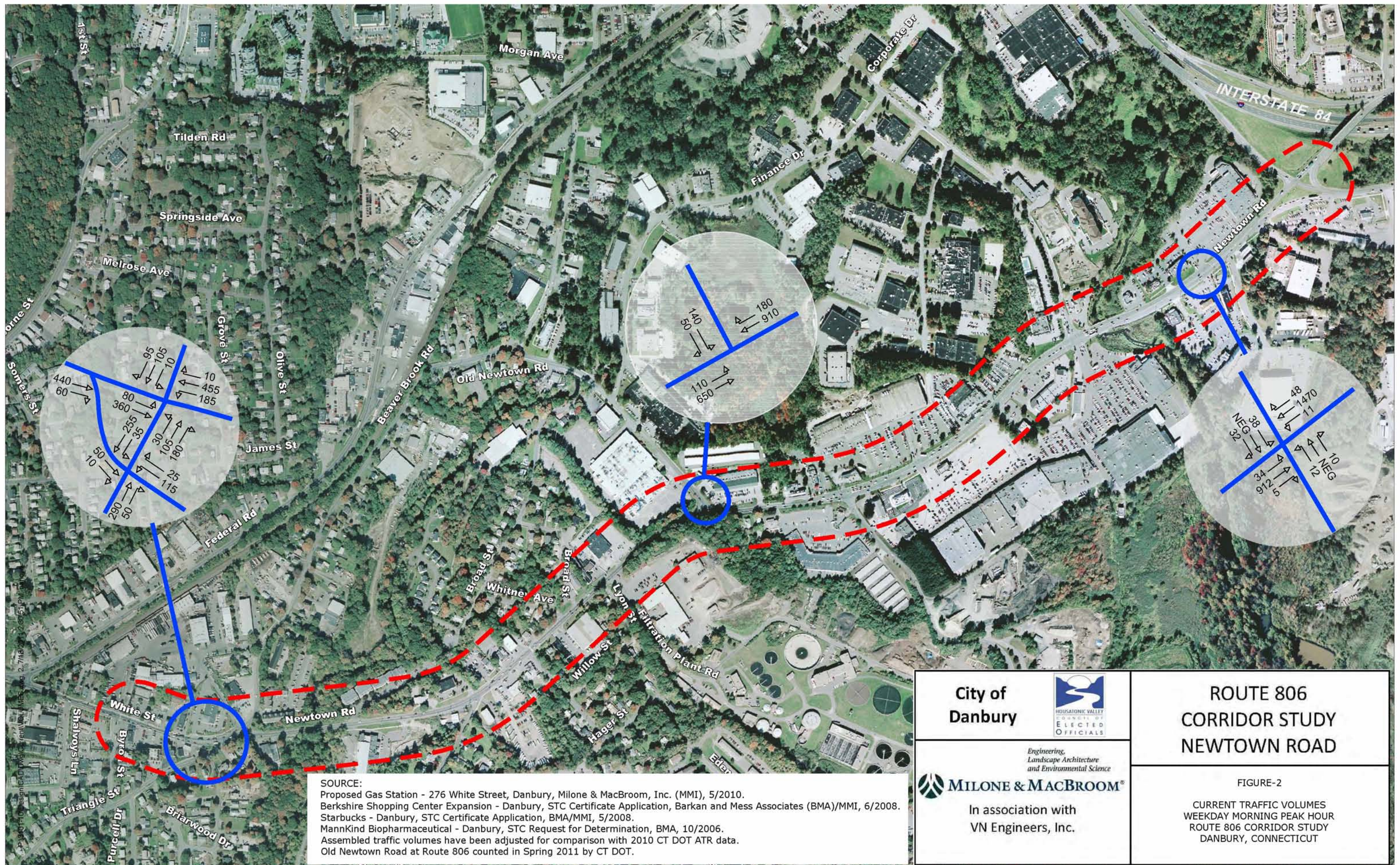
then somewhat decreased from 2007 to 2010. Traffic on Route 806 northeast of Old Newtown Road remained relatively flat from 2001 to 2007 and then notably decreased from 2007 to 2010. East of White Street, Triangle Street and Beaver Brook Road, traffic on Route 806 showed a fair increase from 2001 to 2004 and then a steady decrease from 2004 to 2010.

Intersection Turning Movement Counts



Intersection turning movement traffic counts were also assembled at key locations along Route 806 for the weekday morning and afternoon peak hours, and the Saturday midday peak hour from several past traffic studies⁶. The traffic volumes were then adjusted for comparison with the 2010 CTDOT ATR data. Turning movement traffic counts from 2011 for the intersection of Route 806 and Old Newtown Road were additionally included. Figures 2, 3 and 4 illustrate this current peak hour traffic data.

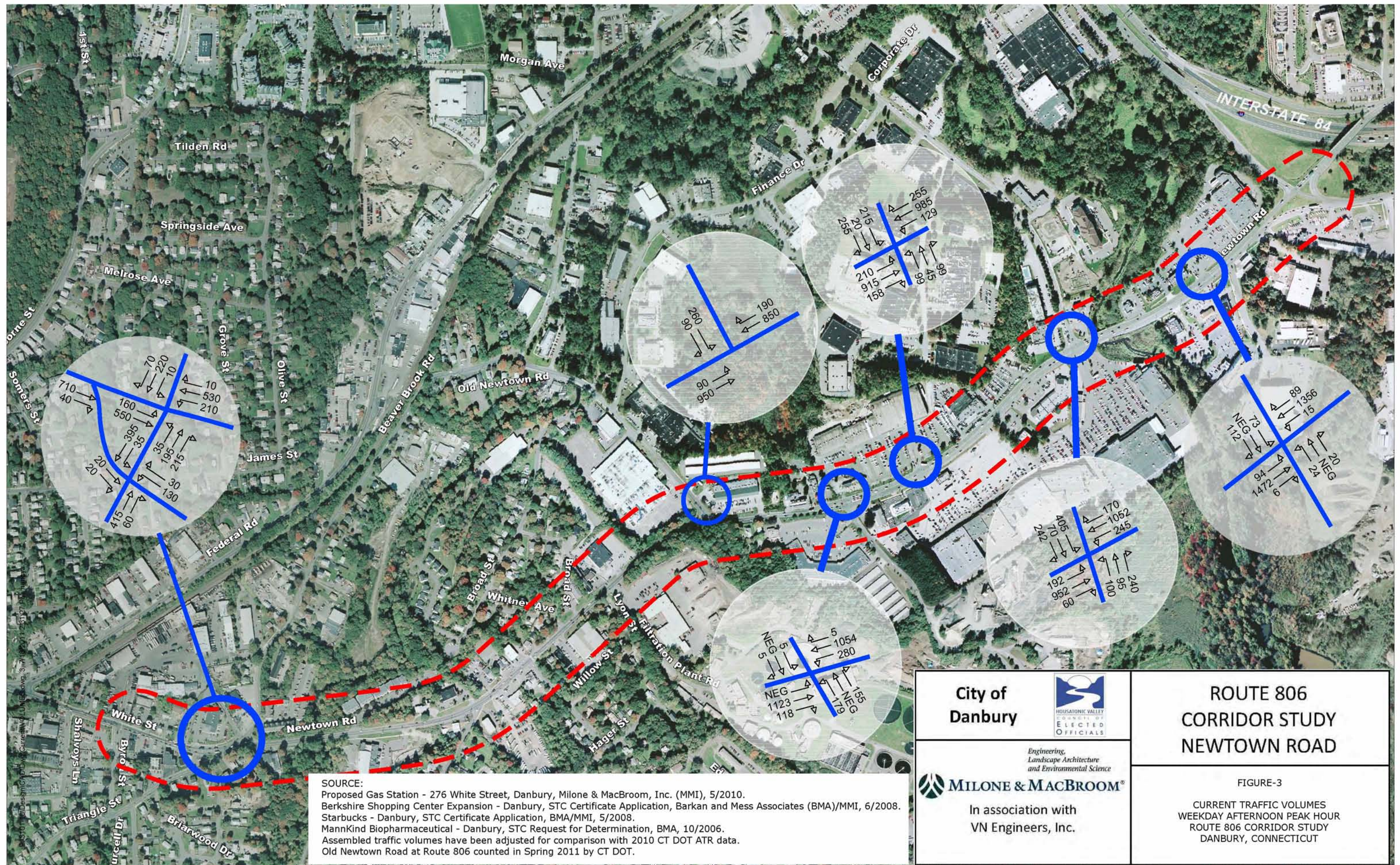
Commuter patterns observed for these periods show that the heaviest flow of traffic occurs during the weekday morning peak hour in the southwest-bound direction (coming from I-84) and during the weekday afternoon peak hour in the opposite northeast-bound direction. The directional flow is more pronounced during the morning peak hour, likely indicating a significant percentage of commuters on the roadway. During the afternoon peak hour, the directional flow is less pronounced, likely due to an influx of non-commuter, retail oriented, traffic.

⁶ *Proposed Gas Station – 276 White Street, Danbury, Milone & MacBroom, Inc. (MMI), 5/2010.*
Starbucks – Danbury, STC Certificate Application, Barkan and Mess Associates (BMA)/MMI, 5/2008.
Berkshire Shopping Center Expansion – Danbury, STC Certificate Application, BMA/MMI, 6/2008.
MannKind Biopharmaceutical – Danbury, STC Request for Determination, BMA, 10/2006.



SOURCE:
 Proposed Gas Station - 276 White Street, Danbury, Milone & MacBroom, Inc. (MMI), 5/2010.
 Berkshire Shopping Center Expansion - Danbury, STC Certificate Application, Barkan and Mess Associates (BMA)/MMI, 6/2008.
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 MannKind Biopharmaceutical - Danbury, STC Request for Determination, BMA, 10/2006.
 Assembled traffic volumes have been adjusted for comparison with 2010 CT DOT ATR data.
 Old Newtown Road at Route 806 counted in Spring 2011 by CT DOT.

<p>City of Danbury</p> 	<p>ROUTE 806 CORRIDOR STUDY NEWTOWN ROAD</p>
<p>Engineering, Landscape Architecture and Environmental Science</p>  <p>MILONE & MACBROOM</p> <p>In association with VN Engineers, Inc.</p>	
<p>FIGURE-2</p> <p>CURRENT TRAFFIC VOLUMES WEEKDAY MORNING PEAK HOUR ROUTE 806 CORRIDOR STUDY DANBURY, CONNECTICUT</p>	



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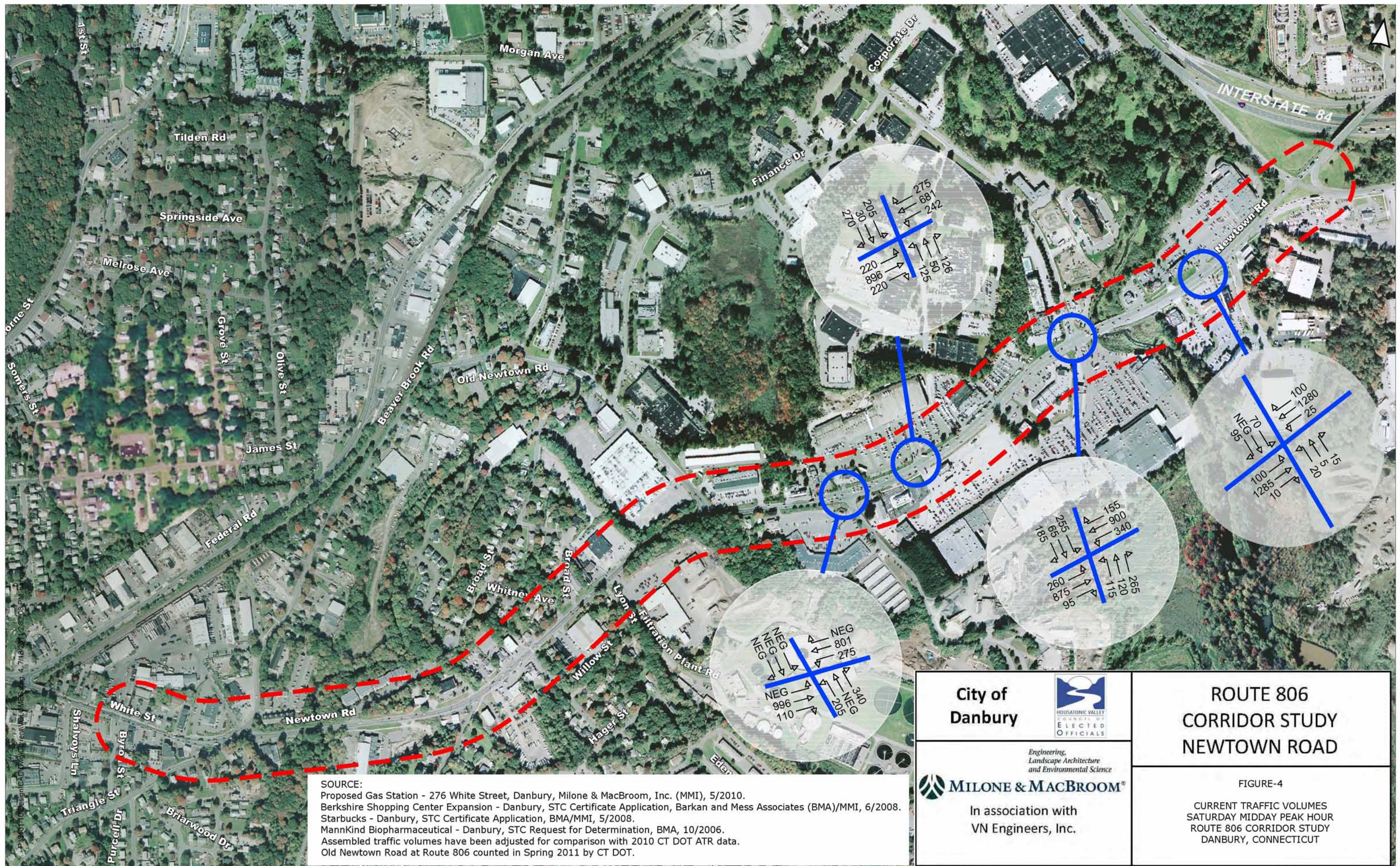


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ROUTE 806 CORRIDOR STUDY NEWTOWN ROAD

FIGURE-3

CURRENT TRAFFIC VOLUMES
WEEKDAY AFTERNOON PEAK HOUR
ROUTE 806 CORRIDOR STUDY
DANBURY, CONNECTICUT



SOURCE:
 Proposed Gas Station - 276 White Street, Danbury, Milone & MacBroom, Inc. (MMI), 5/2010.
 Berkshire Shopping Center Expansion - Danbury, STC Certificate Application, Barkan and Mess Associates (BMA)/MMI, 6/2008.
 Starbucks - Danbury, STC Certificate Application, BMA/MMI, 5/2008.
 MannKind Biopharmaceutical - Danbury, STC Request for Determination, BMA, 10/2006.
 Assembled traffic volumes have been adjusted for comparison with 2010 CT DOT ATR data.
 Old Newtown Road at Route 806 counted in Spring 2011 by CT DOT.

<p>City of Danbury</p> 	<p>ROUTE 806 CORRIDOR STUDY NEWTOWN ROAD</p>
<p><i>Engineering, Landscape Architecture and Environmental Science</i></p> <p>MILONE & MACBROOM®</p> <p>In association with VN Engineers, Inc.</p>	
<p>FIGURE-4</p> <p>CURRENT TRAFFIC VOLUMES SATURDAY MIDDAY PEAK HOUR ROUTE 806 CORRIDOR STUDY DANBURY, CONNECTICUT</p>	

4. ACCIDENT HISTORY

Accident History 2006 through 2008

Crashes can be a symptom of poor roadway characteristics (e.g. too many driveways, lack of turn lanes, narrow lanes, poor sight lines, etc), they can identify areas where travel patterns and congestion may be creating safety issues, or they can be due to environmental factors such as wildlife or weather conditions.

Information on recent traffic accident statistics for Route 806 was obtained from CTDOT by VN Engineers, Inc. for the latest available three year period of January 1, 2006 through December 31, 2008. Table 2 shows the accident information, summarized by location, accident and collision type.

Over the three year period there were a total of 499 reported accidents. There was a fairly even split between the number of accidents that occurred along the eastern half of Route 806 and those that occurred along the western half of the corridor. The vast majority of all the accidents were either rear-end collisions or turning type collisions. Fifty-three percent of all the accidents were rear-end type collisions. Thirty-nine percent of all the accidents involved vehicles making a turning maneuver.

No accidents resulted in fatalities during the three-year period. Approximately one-quarter of all the accidents resulted in injuries and 75% resulted in property damage only. One accident was reported involving a pedestrian. This occurred at the intersection with Eagle Road involving a pedestrian crossing Route 806 and a southwest-bound vehicle. No cross-walks are present at this intersection.

Table 2
ACCIDENT SUMMARY

LOCATION: Route 806	ACCIDENT SEVERITY			TYPE OF COLLISION												
	INJURY	PROPERTY DAMAGE ONLY	TOTAL	TURN			REAR-END	HEAD-ON	BACKING	ANGLE	OVERTURN	SIDE SWIPE (Opposite Dir.)	PEDESTRIAN / BICYCLIST	MOVING OBJECT	FIXED OBJECT	TOTAL
				SAME DIRECTION	OPPOSITE DIRECTION	INTERSECTING PATHS										
At I-84 eastbound exit 8 / U.S. Route 6	3	10	13	1			9		1					1	1	13
At Industrial Plaza Rd and Friendly's / Commerce Park	10	24	34	3	4	4	17		1	1	1			1	2	34
Between Industrial Plaza Rd / Friendly's and Eagle Road	6	34	40	8	5	14	12								1	40
At Eagle Rd	23	67	90	14	21	7	45					1	1		1	90
Between Eagle Rd and Nutmeg Plaza	6	15	21	3	1	7	9			1						21
At Nutmeg Plaza	10	20	30	4	10	4	8			3		1				30
At Plumtrees Rd	8	29	37	9	5	6	16							1		37
Between Plumtrees Rd and Old Newtown Rd	6	12	18		3	5	8				1	1				18
At Old Newtown Rd	7	22	29			1	27								1	29
Between Old Newtown Rd And Lyon St	2	6	8			1	6								1	8
At Lyon St	8	21	29		3	3	23									29
At Whitney Ave	2	14	16				16									16
At Woodside Ave	12	24	36	2	3	15	14		1						1	36
At Old Shelter Rock Rd	7	29	36	1		3	27	1	1			2		1		36
Between Old Shelter Rock Rd and White St/Triangle St/Beaver Brook Rd	5	16	21	3		3	10			1		3			1	21
At White St / Triangle St / Beaver Brook Rd	8	33	41	6	3	10	17	1		2					2	41
TOTAL	123	376	499	54	58	83	264	2	4	8	2	8	1	4	11	499

Source: Connecticut Department of Transportation (Data from January 1, 2006 through December 31, 2008).

High Accident Locations

There are several areas along the corridor that experience high accident rates. The mid-block section of Route 806 between the traffic signal serving the Commerce Park Shopping Center and Eagle Road experienced a large number of accidents considering that only three driveways exist there. Left turns entering and exiting these driveways are difficult given that Route 806 is five lanes wide in this section.

The intersection of Route 806 at Eagle Road has by far the most accidents for any single location along the corridor. Ninety accidents occurred here during the three-year period; half were rear-end collisions. Twenty-three of the accidents at this intersection involved injuries, possibly indicating excessive travel speeds through this area.

The portion of Route 806 from Lyon Street to Old Shelter Rock Road experienced 117 accidents during the three-year period. This area has a large number of curb cuts and driveways, which can add to motorist indecision. The intersection of Route 806 at Woodside Avenue, along this stretch, experienced a relatively high percentage of accidents involving injuries (one-third).

The crash rate computed for this intersection is above the state average rate for similar locations. Eleven of the 37 accidents (30%) that occurred at Route 806 and Woodside Avenue occurred when it was dark, possibly due to visibility or lighting issues. The intersection of Route 806 at Old Shelter Rock Road had the same number of accidents that occurred at Woodside Avenue; with a lesser number involving turning collisions and more involving rear-end collisions.

Summary

In summary, although traffic has mostly decreased on Route 806 when comparing recent volumes to those from 2001, there is current need for capacity upgrades at multiple locations along the corridor. These include the intersections with Old Newtown Road, Old Shelter Rock Road and White Street/Triangle Street/Beaver Brook Road. Access management is needed

along the corridor as a measure to also reduce accidents. This would include consolidation and closure at some curb cuts, and possible restriction of certain turning movements at select unsignalized driveways. Furthermore, some areas along the corridor would benefit from improvement to lighting and visibility.

5. PEDESTRIAN ACCESS

Overview

The existing pedestrian system along Route 806 was examined for access and connectivity. Areas with and without sidewalks or crossings were identified, informal walkways such as dirt paths were observed, and connectivity between walkways and nearby land uses were noted.

There is a variety of purposes for which one becomes a pedestrian. This could be anyone from a motorist walking to a store after parking his/her vehicle, to a hotel occupant walking to a nearby restaurant across the street, to a person walking from their residence to a bus stop to get to work.

A well developed, 'walkable' pedestrian system can encourage non-motorized travel, thereby easing demand on the roadway and reducing motorized vehicle emissions. The existing conditions mapping of Route 806 illustrates the locations of currently available sidewalks along the corridor. Route 806 as a whole has what can be described as a partial sidewalk network.

Route 806 from I-84 Eastbound Exit 8 to Eagle Road

The north side of Route 806 between I-84 eastbound Exit 8 and Eagle Road has only a short sidewalk along the Taco Bell frontage that is less than 200 feet in length. This concrete sidewalk looks to be fairly new and in good condition, but does not connect to the restaurant building itself.

Sidewalks do exist along much of the south side of Route 806 in this area, with the exception of the Friendly's Restaurant frontage. A gap in the network is present here where no sidewalk is provided. The beginnings of a worn foot path are evident along this stretch, indicating that some amount of pedestrian traffic occurs here.



Sidewalk in front of Taco Bell along the north side of Route 806 – looking to the southwest)

A HART bus stop (outbound line 2) sign is also present at this location in front of the Friendly's Restaurant. As is the case with most other HART bus stop locations along the corridor, no paved connection or waiting area is provided.



A gap in the sidewalk network in front of Friendly's along the south side of Route 806 – looking to the northeast

Sidewalks for the most part in this area along the south side of Route 806 are concrete, with the exception of a short stretch that is bituminous between Eagle Road and the Chili's Restaurant. This particular stretch of bituminous sidewalk does not have any buffer space between the walkway and roadway, meaning that pedestrians have a very small amount of roadway shoulder space between them and vehicle traffic on Route 806.

Pedestrian travel directly alongside a roadway becomes less comfortable as the volume and speed of vehicle traffic on the roadway increases. Pedestrians may feel unsafe and therefore discouraged from traveling even a short distance on foot when having to walk near such conditions as are present along Route 806. Pedestrian buffer space comprised of a grass strip and utility poles exist at other sidewalk locations in this area. No crosswalks are provided in this area of Route 806 from I-84 eastbound Exit 8 to Eagle Road.

Route 806 from Eagle Road to Plumtrees Road

Two areas of sidewalk exist along Route 806 between Eagle Road and Plumtrees Road. Both concrete and in great condition, these sidewalks are located along the Nutmeg Square shopping center (Stop and Shop) frontage on the north side of Route 806 and in front of the McDonald's Restaurant along the south side of the roadway. Pedestrian buffer space between the sidewalks and the corridor is present.

A single crosswalk is located in this area, traversing the driveway for the Nutmeg Square shopping center. No crosswalks extend across Route 806 in this area between Eagle Road and Plumtrees Road. One bus stop sign is located in this area where no sidewalk exists on the north side of Route 806 approximately 100 feet west of Eagle Road. The beginnings of worn foot paths are evident at locations along this stretch of Route 806 without sidewalks.



Route 806 at Nutmeg Square Shopping Center and Berkshire Shopping Center. Source: Microsoft Corp.

Route 806 from Plumtrees Road to Old Shelter Rock Road

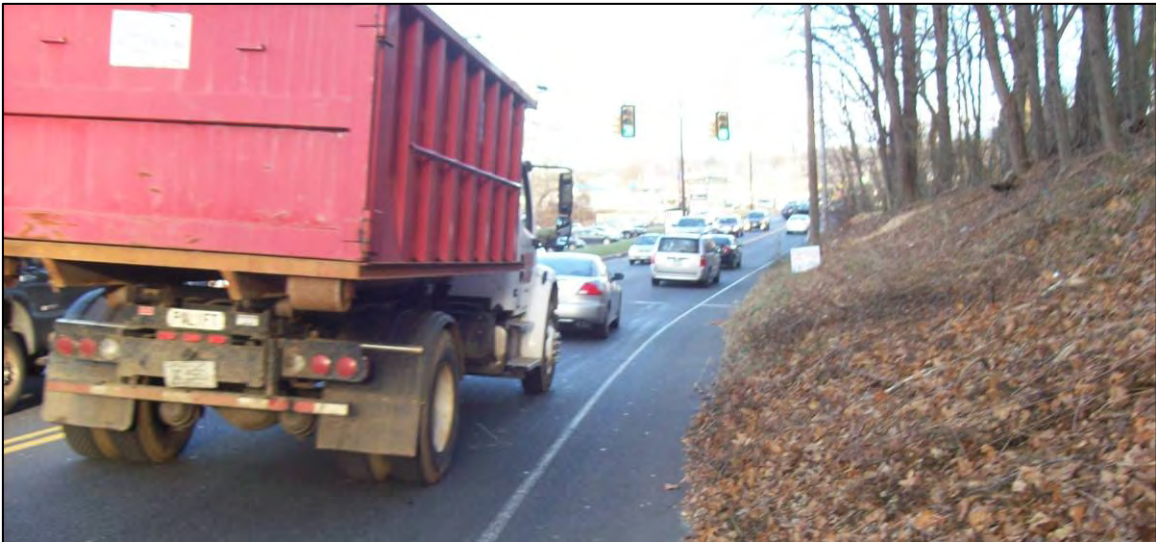
The stretch of Route 806 between Plumtrees Road and Old Shelter Rock Road contains varied locations of sidewalk along the north side of the road. At the eastern end of this area, a short concrete sidewalk is present along the Sunoco Gasoline Station frontage. Worn footpaths are evident moving to the southwest past Old Newtown Road, as no sidewalks exist here.



A worn foot path along the north side of Route 806 west of Old Newtown Road – looking to the southwest

A bituminous sidewalk with no pedestrian buffer space picks up in front of the vacant Premier Collision Centre building. This sidewalk is in poor condition and ends at Whitney Avenue. No sidewalk exists moving further to the southwest along Route 806 until just before Old Shelter Rock Road, where a concrete sidewalk with pedestrian buffer space picks up. A crosswalk does exist across Route 806 along this particular stretch located just to the east of Woodside Avenue. However, prior to approaching this crosswalk pedestrians are mostly forced to walk on the roadway shoulder on the north side of the Route 806 between Whitney Avenue and Woodside Avenue due to the grade of the embankments in this vicinity.

The only location with a sidewalk along the south side of Route 806 in this area is just to the east of Old Shelter Rock Road. This short length of concrete sidewalk does not have a pedestrian buffer space. No sidewalks exist moving to the northeast along the south side of Route 806 again until getting to the McDonald's Restaurant east of Plumtrees Road.



Pedestrians are forced to walk on the roadway shoulder along the south side of Route 806 near Old Newtown Road

Embankment grade issues pose significant safety concerns along this stretch as pedestrians are forced to walk on the Route 806 roadway shoulder for long lengths. Five bus stop signs (two inbound and three outbound) are present along Route 806 between Plumtrees Road and Old Shelter Rock Road. Of these bus stop locations, two of them (both inbound) are located at sidewalks providing paved waiting areas for transit users: in front of the Sunoco Gasoline Station and in front of the vacant Premier Collision Centre building.

Route 806 from Old Shelter Rock Road to White Street/Beaver Brook Road/Triangle Street

The stretch of Route 806 between Old Shelter Rock Road and the intersection of White Street, Beaver Brook Road and Triangle Street contains two areas with sidewalks. A concrete sidewalk in fair condition is present on the north side of the roadway just west of Old Shelter Rock Road along the Animal Emergency Clinic building frontage.

On the south side of Old Shelter Rock Road, a concrete sidewalk in great condition is located along the Klaff's frontage. Both sidewalks have pedestrian buffer space. Locations without sidewalks along this stretch of Route 806 have noticeable worn footpaths. Three bus stop signs (two inbound and one outbound) are also present in this area. As mentioned earlier, the bridge over the Still River is narrow and does not contain sidewalks. This condition forces pedestrian to walk on the roadway shoulder. No cross-walks are present along this stretch of Route 806. However, crosswalks do exist across Triangle Street and White Street to the west of Route 806 at their intersection with Beaver Brook Road



Pedestrians are forced to walk on the Route 806 roadway shoulder on the Still River Bridge

Summary

In summary, the sidewalk network along Route 806 is fragmented at best. There are large and numerous gaps between sidewalks. Worn footpaths are present, indicating pedestrian demand along the corridor. Certain locations contain embankments forcing pedestrians to walk on the shoulder of the roadway. Another key constraint forcing pedestrians onto the shoulder is the narrow bridge over the Still River. Other areas lack pedestrian buffer space between Route 806



A worn footpath along the south side of Route 806 approaching Old Shelter Rock Road

and the sidewalk. Some areas of sidewalk are in poor condition. There is also significant lack of crosswalks along the Route 806 corridor.

6. TRANSIT



Stony Hill Road and Newtown Road Line (HART 2)

Housatonic Area Regional Transit (HART) operates several fixed route transit lines in the region, all emanating from Downtown Danbury. HART currently operates one urban fixed route transit line through the Route 806 corridor: the Stony Hill Road and Newtown Road line, or HART 2.

This line operates Mondays through Saturdays between 6:00 am and 5:30 pm, providing service from east of the study area (the Big Y in Bethel) to the “Pulse Point” on Kennedy Avenue in Downtown Danbury. The Pulse Point is the central hub of all of HART’s fixed route lines, allowing for easy transfers among lines and multi-modal connections.

Thirty-five foot transit coaches, most of which are equipped with bike racks, are used on the HART 2 line.










The schedule for the HART 2 line is shown on the following pages. Stops highlighted in orange are along Route 806 within the study area. Stops highlighted in green are part-time loops off of the study area section of Route 806.

HART 2Weekdays Saturdays Only Saturdays and Weekdays 

Express ---

By request only +

Stony Hill to Downtown (Inbound)

								
Big Y/ Stony Hill	Berkshire Corporate Park	Outback	Commerce Park	Stop & Shop	Eden Drive	Triangle/ White	Town Hill/ Cottage	Pulse Point
6:05	+	6:08	---	+	6:13	6:18	6:22	6:25
6:30	+	6:33	---	+	6:42	6:46	6:51	6:55
7:00	+	7:03	---	+	7:12	7:15	7:20	7:25
7:30	+	7:33	---	+	7:42	7:45	7:50	7:55
8:00	+	8:03	---	+	8:12	8:15	8:20	8:25
8:30	+	---	---	+	8:37	8:42	8:45	8:50
9:30	---	9:33	---	9:37	9:42	9:45	9:50	9:55
10:30	---	10:33	---	10:37	10:42	10:45	10:50	10:55
11:30	---	11:33	---	11:37	11:42	11:45	11:50	11:55
12:30	---	12:33	---	12:37	---	12:42	12:45	12:50
1:30	---	1:33	---	1:37	1:42	1:45	1:50	1:55
2:30	---	2:33	---	2:37	2:42	2:45	2:50	2:55
3:00	---	3:03	3:07	---	+	3:15	3:20	3:25
3:30	---	3:33	3:37	---	3:37	+	3:45	3:50
4:00	---	4:03	4:07	---	+	4:15	4:20	4:25
---	4:30	---	4:37	---	4:37	+	4:45	4:50
5:00	---	5:03	5:07	---	+	5:15	5:20	5:25
---	5:30	5:33	5:37	---	+	5:45	5:50	5:55

Downtown to Stony Hill (Outbound)

1	2	3	4				5		6		7		8		9	
Pulse Point	Town Hill/ Cottage	Triangle/ White	Eden Drive		Commerce Park		Berkshire Shopping Center		Medical Buildings		Berkshire Corporate Park		Big Y/ Stony Hill			
6:05 a.m.	6:08	6:11	+		6:17		+		6:20		+		6:26			
6:30	6:34	6:37	+		6:44		+		6:47		+		6:56			
7:00	7:04	7:07	+		7:14		+		7:17		+		7:26			
7:30	7:34	7:37	+		7:44		+		7:47		+		7:56			
8:00	8:04	8:07	+	8:12	8:14	---	+	8:18	8:17	8:20	+	---	8:26			
8:30	8:34	8:37	8:42		---		8:48		8:50		---		8:56			
9:00	9:04	9:07	9:12		---		9:18		9:20		---		9:26			
10:00	10:04	10:07	10:12		---		10:18		10:20		---		10:26			
11:00	11:04	11:07	11:12		---		11:18		11:20		---		11:26			
12:00	12:04	12:07	12:12		---		12:18		12:20		---		12:26			
1:00	1:04	1:07	1:12		---		1:18		1:20		---		1:26			
2:00	2:04	2:07	2:12		---		2:18		2:20		---		2:26			
3:00	3:04	3:07	3:12		---		3:18		3:20		---		3:26			
3:30	3:34	3:37	3:42		---		3:48		3:50		---		3:56			
4:00	4:04	4:07	4:12		---		4:18		4:20		4:25	---	---	4:26		
4:30	4:34	4:37	4:42		---		4:48		4:50		---		4:58			
5:00	5:04	5:07	5:12		---		5:18		5:20		5:25	---	---	5:26		
5:30	5:34	5:37	5:42		---		5:48		5:50		---		5:56			
6:00 p.m.	6:04	6:07	6:12		---		6:18		6:20		---		6:26			

Source: HART's website: www.hartct.org

According to HART, 2010 average daily trips on the HART 2 line were 410 on weekdays and 210 on Saturdays.

Newtown Road/Bethel Loop Line

The second fixed route transit line in service through the Route 806 corridor is HART's Newtown Road – Downtown Bethel Loop (Newtown/Bethel Loop). This line complements the HART 2 line by providing evening and Sunday service along an expanded, but similar route. The Newtown/Bethel Loop provides service from the Pulse Point in Downtown Danbury to Bethel at Grassy Plain and Fleetwood Ave, before extending north along Triangle Street to Newtown Road, looping back at Stony Hill Road. Smaller, light-duty body-on-chassis buses are used on

Loop route. This Loop operates Mondays through Saturdays from 6:00 pm to 11:00 pm, and Sundays from 9:30 am to 7:30 pm.

The current Newtown Rd/Bethel Loop schedule is shown below. Again, stops highlighted in orange are along Route 806 within the limits of the study area. Stops highlighted in green are located on small loops off of Route 806 within the study area.

The Newtown Rd/Bethel LOOP

From Berkshire Shopping Center to Pulse Point (Inbound)

8	9	10	11	12	1
Berkshire Shopping Center	Stony Hill/Sky Edge	Stop & Shop	Newtown Rd/ White Street	WESTCONN	Pulse Point
Weekday Evenings....					
6:08	6:11	6:15	6:18	6:21	6:25
7:08	7:11	7:15	7:18	7:21	7:25
8:08	8:11	8:15	8:18	8:21	8:25
9:08	9:11	9:15	9:18	9:21	9:25
10:08	10:11	10:15	10:18	10:21	10:25
Saturday Evenings					
5:08	5:11	5:15	5:18	5:21	5:25
6:08	6:11	6:15	6:18	6:21	6:25
7:08	7:11	7:15	7:18	7:21	7:25
8:08	8:11	8:15	8:18	8:21	8:25
9:08	9:11	9:15	9:18	9:21	9:25
10:08	10:11	10:15	10:18	10:21	10:25
Sundays and Holidays...					
9:38	9:41	9:45	9:48	9:51	9:55
10:38	10:41	10:45	10:48	10:51	10:55
11:38	11:41	11:45	11:48	11:51	11:55
12:38	12:41	12:45	12:48	12:51	12:55
1:38	1:41	1:45	1:48	1:51	1:55
2:38	2:41	2:45	2:48	2:51	2:55
3:38	3:41	3:45	3:48	3:51	3:55
4:38	4:41	4:45	4:48	4:51	4:55
5:38	5:41	5:45	5:48	5:51	5:55
6:38	6:41	6:45	6:48	6:51	6:55

From Pulse Point To Berkshire Shopping Center (Outbound)

1	2	3	4	5	6	7
Pulse Point	Main St/ West St	Division St/ Wooster St	Main St/ South St	Fleetwood Ave/ Grassy Plain Rd	Triangle St/ Newtown Rd	Berkshire Shopping Center
Weekday Evenings...						
6:30	6:32	6:35	6:39	6:43	6:50	6:55
7:30	7:32	7:35	7:39	7:43	7:50	7:55
8:30	8:32	8:35	8:39	8:43	8:50	8:55
9:30	9:32	9:35	9:39	9:43	9:50	9:55
10:27	10:29	10:32	10:36	10:40	10:47	EXPRESS
Saturday Evenings...						
5:30	5:32	5:35	5:39	5:43	5:50	5:55
6:30	6:32	6:35	6:39	6:43	6:50	6:55
7:30	7:32	7:35	7:39	7:43	7:50	7:55
8:30	8:32	8:35	8:39	8:43	8:50	8:55
9:30	9:32	9:35	9:39	9:43	9:50	9:55
10:27	10:29	10:32	10:36	10:40	10:47	EXPRESS
Sundays and Holidays...						
10:00	10:02	10:05	10:09	10:13	10:20	10:25
11:00	11:02	11:05	11:09	11:13	11:20	11:25
12:00	12:02	12:05	12:09	12:13	12:20	12:25
1:00	1:02	1:05	1:09	1:13	1:20	1:25
2:00	2:02	2:05	2:09	2:13	2:20	2:25
3:00	3:02	3:05	3:09	3:13	3:20	3:25
4:00	4:02	4:05	4:09	4:13	4:20	4:25
5:00	5:02	5:05	5:09	5:13	5:20	5:25
6:00	6:02	6:05	6:09	6:13	6:20	6:25
6:57	6:59	7:02	7:06	7:10	7:17	EXPRESS

Source: HART website: www.hartct.org

According to HART, 2010 average daily trips on the Newtown/Bethel Loop were 80 on weekdays, 80 on Saturdays, and 160 on Sundays.

Bus Stop Locations and Existing Conditions

In addition to the stops shown in the two schedules above, several other signed and unsigned HART bus stops exist within the study area. All stops are shown in Existing Conditions Maps 1A through 1-E. None of the 14 stops along Route 806 in the study area have shelters, several have no pedestrian facilities at all, while most just have curbing. The following table lists the site features at each stop.

HART 2 Bus Stop Locations

Stop Number	Direction	Location Description	Site Features	Land Use	Traffic Control
2013	O/B	Opposite Riverbend Condos	None	Commercial	None
2014	O/B	Corner of Old Shelter Rock Rd	None	Commercial	None
2019	O/B & I/B	Woodside Ave just south of Newtown Rd	None	Residential	Stop Sign
2020	O/B	Opposite 48 Newtown Rd	None	Residential	None
2021	O/B	In front of Plumtrees Plaza	Curb	Commercial	None
2030	O/B	Just West of Industrial Plaza Dr	Curb	Commercial	None
2052	I/B	In front of Bertucci's	Curb	Commercial	Traffic Signal
2053	I/B	In front of Wachovia	Curb	Commercial	Traffic Signal
2059	I/B	In front of Holiday Inn	None	Commercial	Traffic Signal
No sign	I/B	Stop & Shop - Nutmeg Sq	Curb, sidewalk	Commercial	None
2060	I/B	Opposite Plumtrees Plaza	Curb	Commercial	None
2061	I/B	In front of 52 Newtown Rd	None	Commercial	None
2062	I/B	In front of Monro Muffler	None	Commercial	None
2063	I/B	Entrance of Riverbend Condos	Curb	Residential	None
2064	I/B	Citgo Station @ Triangle St	Curb, sidewalk	Commercial	Traffic Signal

Source: HART, 2010.

I/B: Inbound

O/B: Outbound

The lack of pedestrian facilities at many designated transit stops within the corridor appears to pose some danger to transit riders, as they board and exit on the side of the road. With snow cover, pedestrians would be forced onto the pavement at these sites.



Corner of Old Shelter Rock Rd

Summary

The Route 806 corridor is well served by public transit that is used regularly by area residents. However, transit service in the corridor could be greatly enhanced by integrating transit stops into a more fully developed pedestrian system. Connecting bus stops with major retail and employment destinations throughout the corridor with sidewalks, paved waiting areas, crosswalks and pedestrian signals would improve transit users' safety and experience in the corridor, and could boost ridership. Bus shelters should be installed at high demand bus stops along Route 806.



Plumtrees Plaza Stop



Opposite Side of Plumtrees Plaza



Opposite Riverbend Condos



Just East of Woodside

7. LAND USE

Existing Land Use

Route 806 is home to a significant portion of Danbury's retail development and provides direct access to Interstate 84 connecting Danbury to the greater region and beyond. The corridor's well established land use pattern consists of a mix of commercial, industrial, municipal and residential uses. The Route 806 corridor is impacted by land uses on parcels with frontage along the corridor and land uses adjacent to the corridor.



Berkshire Shopping Center

In order to accurately assess the composition and distribution of the land uses within the Route 806 corridor, a current digital land use map of Danbury was utilized. The existing digital base map and corresponding property records from the assessor's database were mapped and field verified, resulting in Figure 5 "*Existing Land Use Map*" and data base including existing zoning and land area for each parcel.

Within the study area, the overall land use is predominately commercial and industrial development (66.8%) with a mix of municipal (24.7%), residential (6.7%) and vacant land (1.9%). Of the commercial/industrial land, the single largest land use is retail, lodging and food service at 46.1% of all land in the corridor. Table 3 "*Existing Land Use - Route 806 Corridor Study Area*" provides a summary of the land use distribution within the corridor.



Route 6 Plaza

Table 3

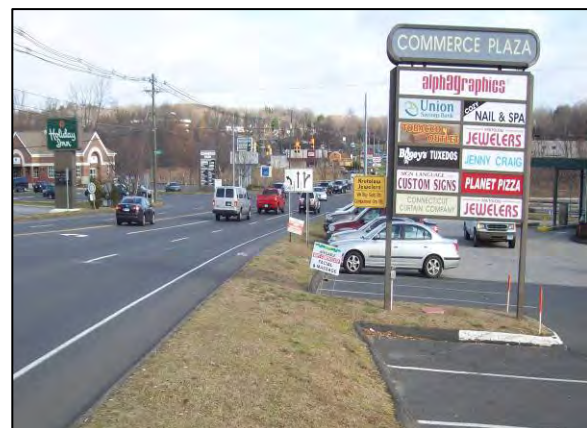
Existing Land Use - Route 806 Corridor Study Area			
Land Use	Number of Parcels	Acres	Percentage
Commercial / Industrial			
Commercial: Automotive	14	12.6	5.9%
Commercial: General	6	9.2	4.3%
Commercial: Retail, Lodging, & Food Service	38	99.0	46.1%
Industrial	4	22.5	10.5%
SubTotal:	62	143.2	66.8%
Residential			
Residential: 1-3 Family	14	5.6	2.6%
Residential: Apartments	2	8.8	4.1%
SubTotal:	16	14.4	6.7%
Vacant Land			
Vacant Land	5	4.1	1.9%
Institutional			
Municipal*	2	52.9	24.7%
Total :	85	214.6	100.0%

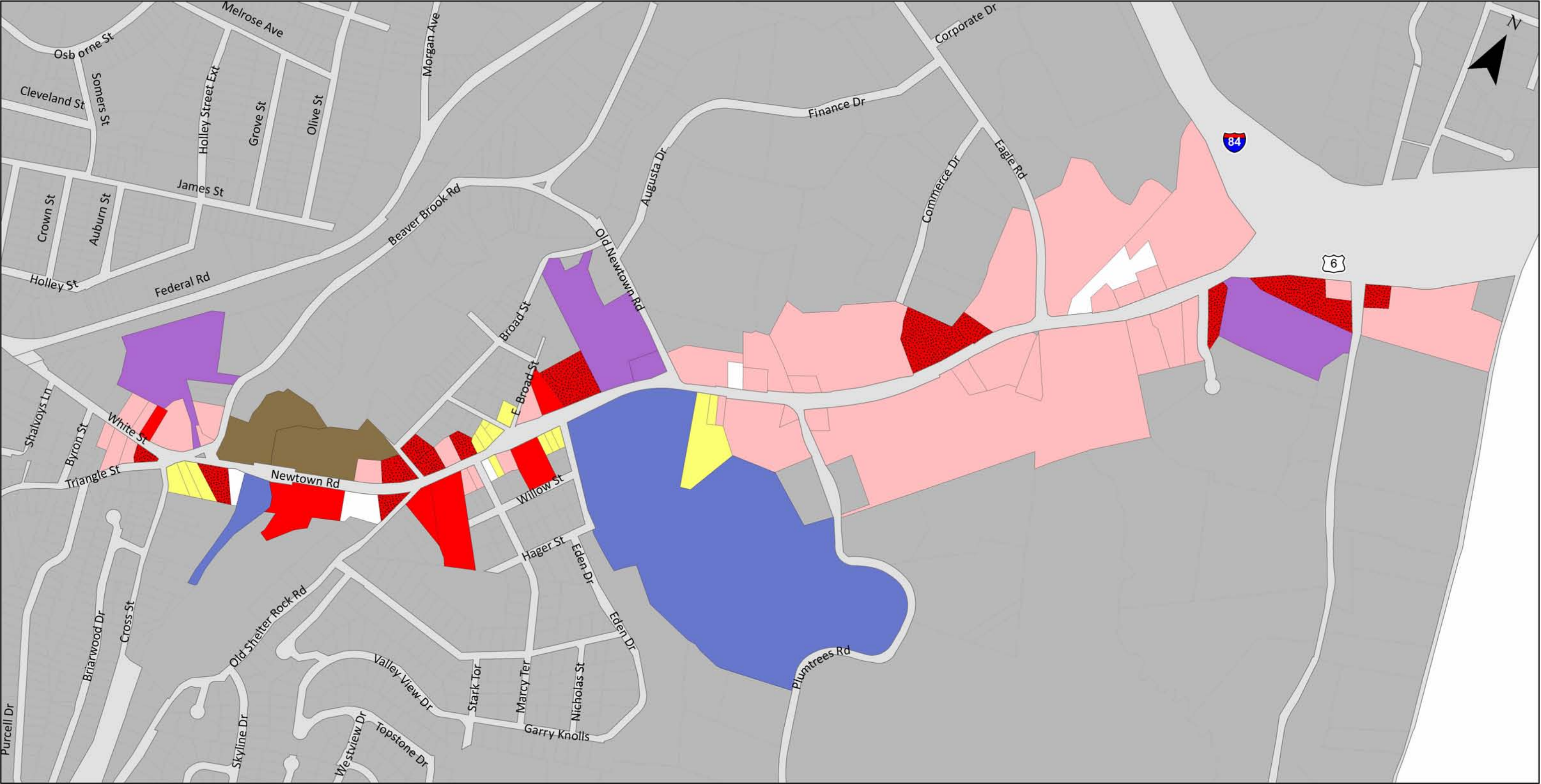
Please note that the land uses only represent parcels fronting along Route 806 within the defined study area.

* Includes the Department of Public Works Facility (51 Acres).

At its eastern end, the corridor is home to numerous plazas and shopping centers including Commerce Park Shopping Center, Commerce Plaza, Nutmeg Square, Plumtrees Plaza, Berkshire Shopping Center and Route 6 Plaza. Tenants within the shopping centers consist of both national and regional retailers including Wal-Mart, Staples and Stop & Shop as well as several chain restaurant establishments.









Route 806 provides access to Eagle Road and Danbury's light industrial businesses on Commerce, Finance and Corporate Drives. This area contains approximately 781,000 gross square feet of industrial, light industrial and office space and serves as an employment center for the region. These uses generate a significant


Commerce Plaza

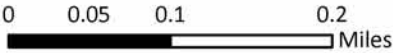


EXISTING LAND USE

Legend

- | | |
|---|---|
|  Residential: 1-3 Family |  Commercial: Automotive |
|  Residential: Apartments |  Commercial: General |
|  Vacant Land |  Commercial: Retail, Lodging, & Food Service |
|  Municipal |  Industrial |

SOURCE:
Parcel Basemap: City of Danbury
Street Map USA (2009)



**City of
Danbury**



Engineering,
Landscape Architecture
and Environmental Science
MILONE & MACBROOM®

In association with
VN Engineers, Inc.

**ROUTE 806
CORRIDOR STUDY
NEWTOWN ROAD**

**Figure 5:
Existing Land Use**

Date: May 2011

amount of traffic requiring turning movements to and from Route 806. These turning movements, particularly left hand turns, contribute to delays and un-safe traffic conditions.

The western end of the study area has less intensive commercial development and a greater mix of uses than the northeastern end. The Riverbend and Crossroads condominium complexes contain 54 units and 60 units, respectively. At the western end of the study area is a major traffic bottleneck at the intersection of White Street, Triangle Street and Route 806. White Street and Triangle Street connect Main Street in Downtown Danbury to Route 806's shopping centers and the interstate highway system.

Analysis of Development Potential

Route 806 is a built-out corridor with little vacant land available for development. With only four acres of raw vacant land available within the corridor, additional new development will most likely come from redevelopment of obsolete or underutilized uses. For the build-out analysis, single and two family residential lots were aggregated to form larger development properties when possible. The analysis examined the physical capacity of the vacant land and redevelopment properties to support new or expanded growth under existing zoning controls. It was assumed that new development will “fit” the existing pattern of retail development throughout corridor.

Looking to the future, it is expected that the land use patterns impacting Route 806 will remain relatively unchanged. Figure 6 titled “*Build Out Potential*” presents estimates of potential future development impacting the corridor. This build-out is expressed in terms of



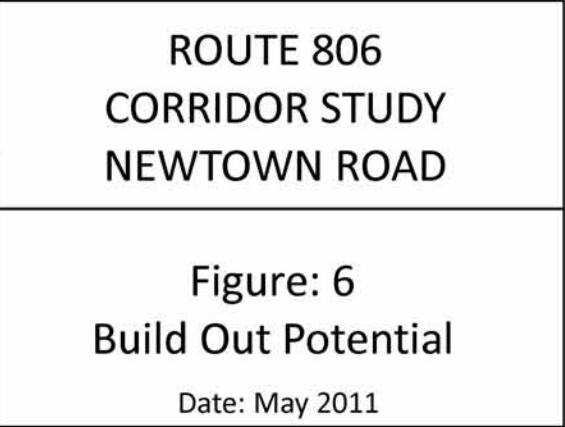
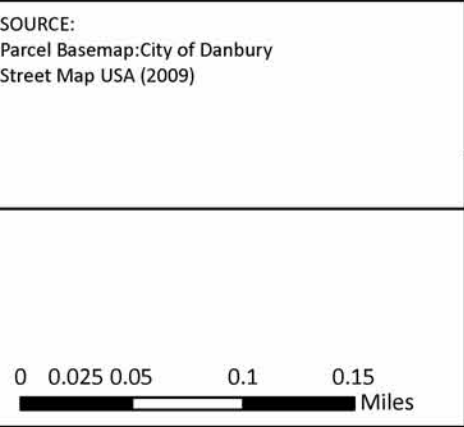
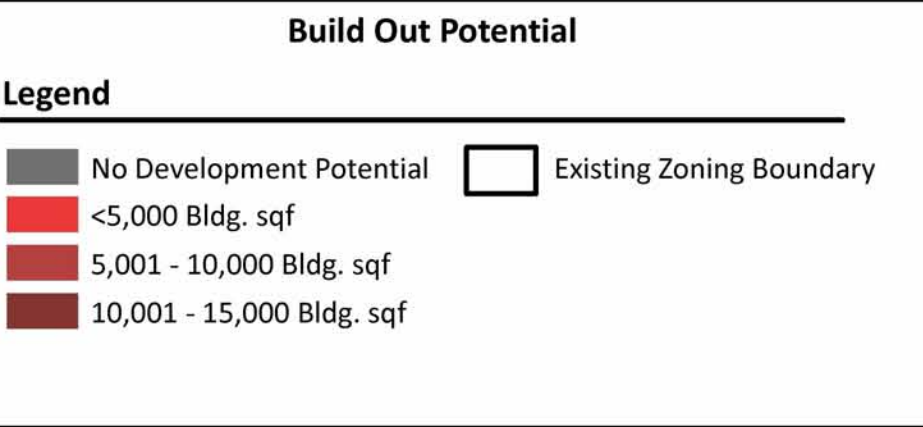
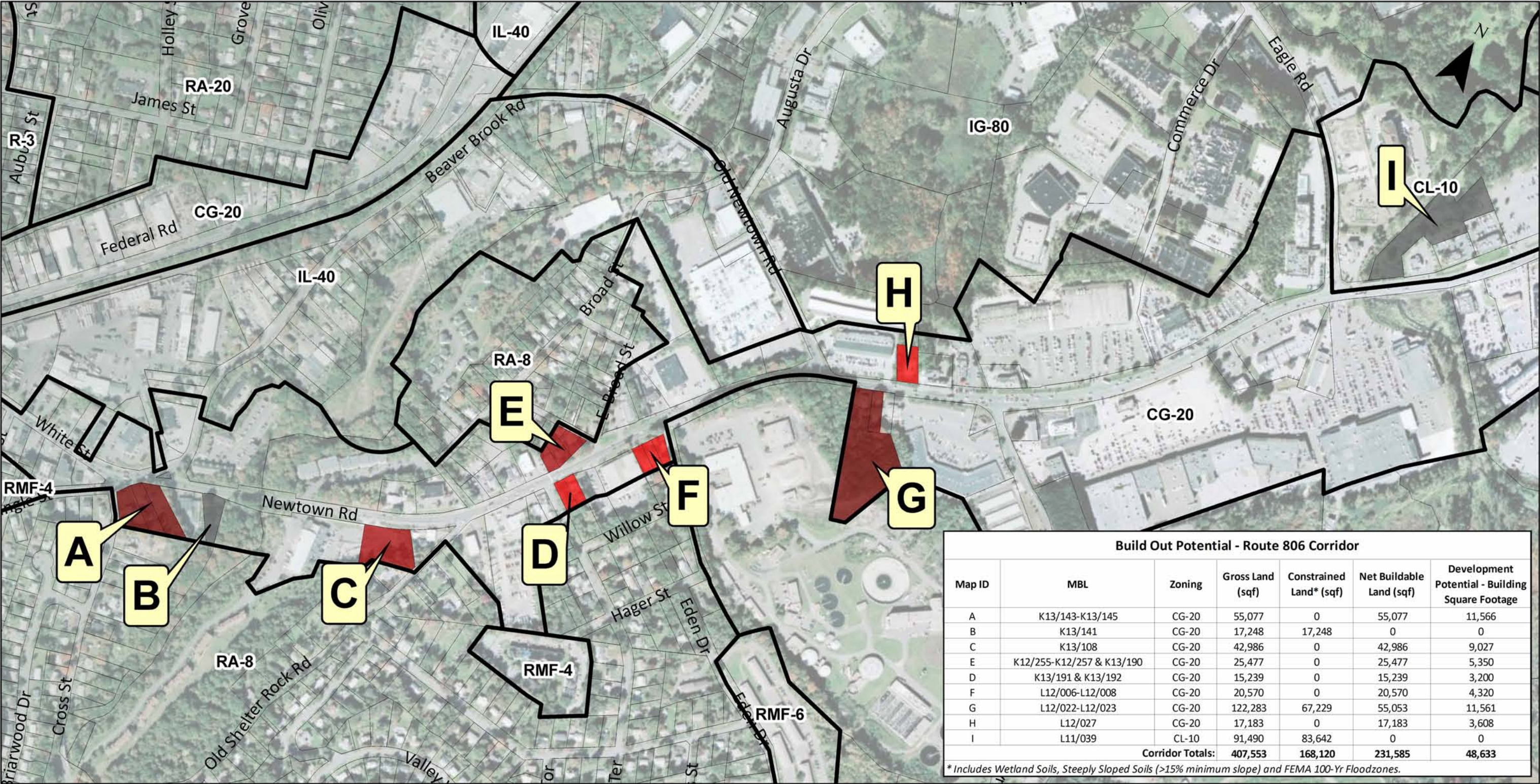
Build Out Analysis Area “A” – Potential for 11,500 sf. of Retail Development

potential gross building square footage. For the purposes of the build out analysis constrained land was deducted from the gross land to compute net buildable land. Based upon existing zoning, it is estimated that an additional 48,600 square feet of commercial development can be accommodated within the corridor.

As with any build-out analysis, these numbers are estimates based on assumptions. Land development depends upon a number of variables that can greatly affect the type and intensity of land uses. The build-out methodology assumes that all vacant and underdeveloped land is built to the maximum density allowed under current zoning regulations, which rarely happens in practice due to a myriad of factors.

By way of example, Parcel C shown on the *“Build Out Potential”* figure would most likely be modified if the Danbury Public Works facility access is realigned to form a four leg intersection with Old Newtown Road. Therefore, the development potential totals given here are intended to indicate a relative order of magnitude estimate and will likely change over time.

In summary, the land use pattern impacting the Route 806 corridor is firmly established and contains a range of land uses from convenience shopping to regional and super-regional uses. Route 806 is also part of the road network providing an important connection between the downtown and Danbury’s shopping centers. Significant changes in the current land use pattern in the future are not anticipated.



PART TWO

ANALYSIS AND RECOMMENDATIONS

INTRODUCTION

Recommended improvements for Route 806 focus on roadway safety concerns, roadway capacity upgrades, access management, pedestrian and transit access, and streetscape improvements.

Some of the recommendations for improvements such as access management and pedestrian access can be applied throughout the corridor. Others are specific to certain sections of the corridor. Stratified in this report are four distinct areas where more specific recommendations are made. The areas, illustrated in Figure 7, are:

SECTION #1: The eastern section of Route 806 centered by the intersection of Eagle Road and the driveway to Wal-Mart / the Berkshire Shopping Center.

SECTION #2: The transition area from four lanes to two lanes of Route 806 between Plumtrees Road and Old Newtown Road.

SECTION #3: Route 806 between Old Newtown Road and Old Shelter Rock Road.

SECTION #4: The western section of the corridor in the vicinity of White Street, Triangle Street and Beaver Brook Road.

Issues were identified in each area and recommendations have been developed to address these issues. Where appropriate, concept plans were developed. A discussion of the benefits and impacts of each concept studied were prepared.

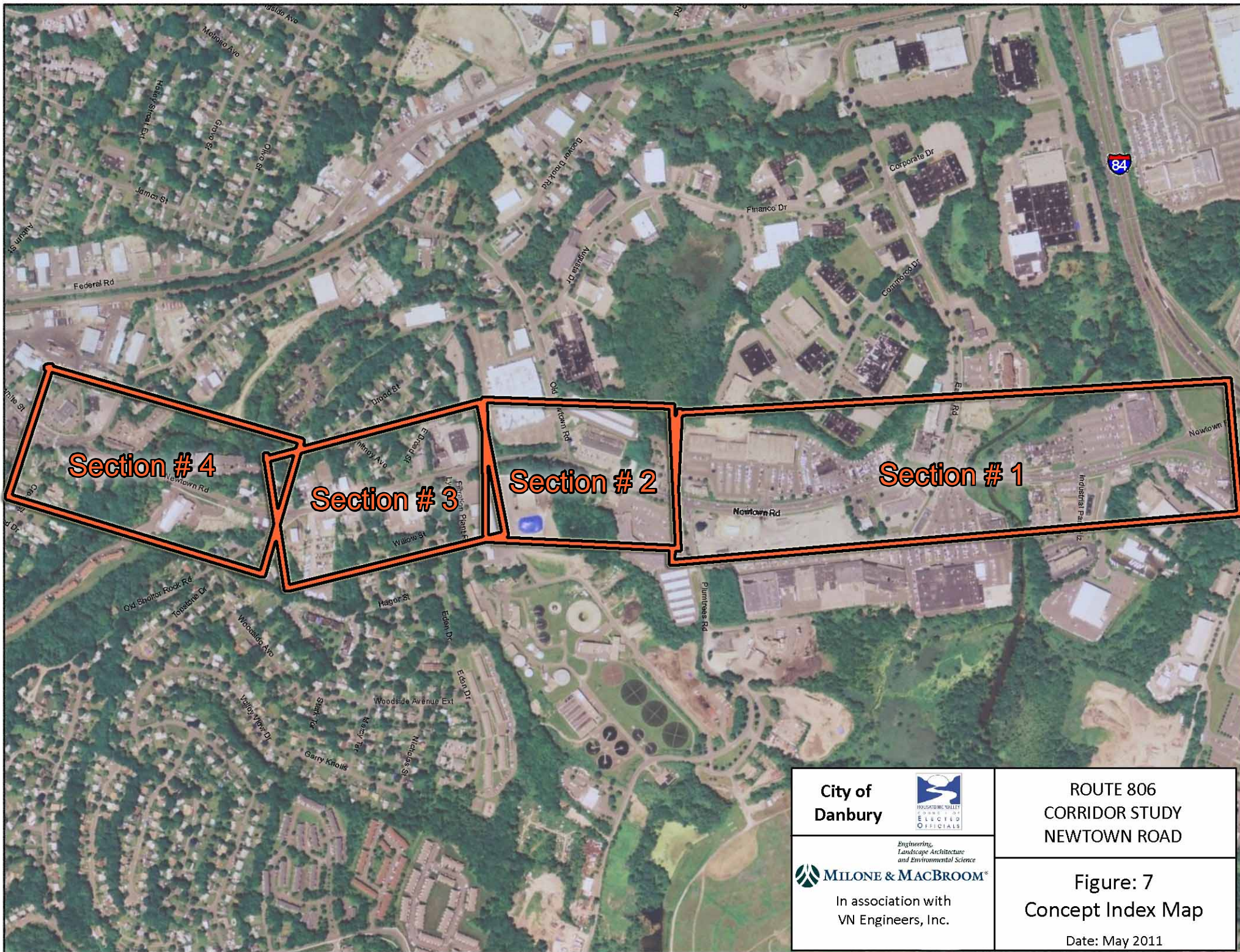
There were three main types of improvements evaluated. These are:

- Geometric: capacity upgrades and safety improvements;

- Access management; and
- Pedestrian and transit improvements

For capacity upgrades, there were two timeframes evaluated: current (2010/2011) and 2030.

This study is intended to compliment and support, but not supersede current and ongoing activities to implement transportation system improvements in the corridor. The recommended improvements described in this study have been developed to a conceptual level. If any of the concepts were to move forward it will be necessary to bring them to a final design level. This process would require the completion of a number of additional tasks, including survey, detailed analysis of traffic operations, evaluation of right-of-way impacts, environmental review, and cost/benefit analysis. The process of developing conceptual plans and/or design documents to advance projects towards construction also includes public involvement components as well as an evaluation of feasible and prudent alternatives. As such, any endeavors in the corridor must be based on well documented and coordinated efforts.



1. 2030 CORRIDOR TRAFFIC FORECASTS

Historic Corridor Traffic Growth

The Route 806 corridor experiences significant traffic demands; with recent 2010 ADT ranging from 18,800 vehicles east of Beaver Brook Road to 33,400 vehicles east of Eagle Road. Daily traffic over the past decade, from 2001 to 2010, actually decreased at three of the four CTDOT monitoring stations. Such is not the case when looking deeper into the past.

To gain a longer perspective, review was made of ADT volumes along the corridor back to 1992. A comparison of the traffic volumes in the beginning of the eighteen year, 1992 - 2010 period finds that they were less at three of the four CTDOT monitoring stations. Daily traffic along the Route 806 corridor increased at these three locations by double-digit percentages over this almost two decade period.

The largest percentage growth in traffic over this 18-year period occurred at the eastern end of the corridor. Route 806 west of Eagle Road had an increase in ADT of 28.3% from 1992 to 2010. Route 806 east of Eagle Road had an increase in ADT of 24.2% from 1992 to 2010. At the western end of Route 806, east of the White Street / Beaver Brook Road / Triangle Street intersection, ADT increased 12.6% from 1992 to 2010. What this reveals is that while traffic may have decreased over the short-term during the last decade, there has been growth over the past almost two decades.

Projected Traffic Growth

Traffic growth along Route 806 over the next two decades as projected by CTDOT is 25% based on their models. This equates to a traffic growth rate of 1.1% compounded annually. The 25% traffic growth forecast is in-line with the upper range trend that occurred over the past 20 years at the eastern section of Route 806.

A cursory review of county-wide population projections from the Connecticut State Data Center and the US Census Bureau for the general surrounding geographic area over the next 20 years finds similar levels of forecasted population growth to that which occurred over the last 20 years. This substantiates CTDOT's 25% 20-year traffic growth forecast as reasonable.

Estimated 2030 Traffic Volumes

In addition to the projected 25% normal growth in traffic over the next 20 years, review was made of the potential for build-out of vacant, obsolete or underutilized parcels/land uses along the Route 806 corridor. Assessment of development potential that was made in the existing conditions section of this report estimated there to be an additional 48,633 square feet of commercial development that can be accommodated along the corridor. Land use patterns along Route 806 are expected to remain relatively unchanged. These build-out parcels are currently zoned either General Commercial (CG-20) or Light Commercial (CL-10).

In order to estimate the amount of traffic that could generally be expected to be generated by 48,600 square feet of commercial space, the Institute of Transportation Engineers (ITE) *Trip Generation*, 8th edition publication was utilized. For the purpose of this study, ITE's shopping center land use was used. Table 4 summarizes these trip generation estimates.

TABLE 4
ESTIMATED TRAFFIC GENERATED BY BUILD-OUT POTENTIAL

	Number of Vehicle Trips ⁽¹⁾		
	Enter	Exit	Total
48,633 S.F. of Commercial Build-Out			
Weekday	2,125	2,125	4,250
Weekday Morning Peak Hour	60	40	100
Weekday Afternoon Peak Hour	200	200	400
Saturday	2,935	2,935	5,870
Saturday Peak Hour	280	260	540

(1): Build-out Potential is approximately 48,633 square feet. Number of vehicle trips based on:
Trip Generation 8th Edition, Institute of Transportation Engineer, 2008 – Land Use 820 (Shopping Center).

One other known development expected to be built in the near future is a Sonic Restaurant at the eastern end of the corridor within the Commerce Park Shopping Center (Xpect Discount Plaza).

The estimated traffic generated by the build-out potential was added to the expanded roadway traffic. Table 5 summarizes this for all day traffic and for the weekday afternoon peak hour at the four CTDOT traffic monitoring stations along Route 806, as well as a generalized Volume / Capacity (V/C) assessment.

V/C is the ratio of vehicular traffic volume (demand) to available roadway capacity. Detailed in the Highway Capacity Manual,⁷ the V/C ratio is a general indicator of sufficiency of a particular roadway segment. Based on the methodology used in CTDOT's Congestion Management Program (CMP), generalized V/C assessment was made for 2010 and 2030. Conditions are generally considered congested for a roadway if it has a V/C ratio of 0.90 or above.

As can be seen in Table 5, V/C ratios at two of the four locations are currently over 0.90. This indicates that peak hour congestion currently occurs on a typical day on Route 806 west of Eagle Road and between Old Newtown Road and Plumtrees Road. By the year 2030, congestion is projected throughout the corridor.

These same growth projections were applied to the available turning movement counts. They are depicted in Figures 8, 9 and 10 for the weekday morning, weekday afternoon and Saturday midday peak hours, respectively.

⁷ *Highway Capacity Manual 2000*, Transportation Research Board - National Research Council.

TABLE 5
Volume / Capacity (V/C) Assessment
Route 806 - Danbury, CT

General Vicinity	2010 ADT	Overall 20-Year Growth Factor ¹	Estimated Daily Traffic Generated by Build-out Potential	2030 ADT	2010 Directional Peak Hour Volume	Estimated Directional Peak Hour Traffic from Build-out Potential	2030 Directional Peak Hour Volume	Directional Peak Hour Capacity	2010 Directional Volume / Capacity	2030 Directional Volume / Capacity
Route 806 east of Beaver Brook Road	18,800	25%	2,125	25,600	750	100	1,040	1,020	0.74	1.02
Route 806 east of Old Newtown Road	24,000	25%	2,125	32,100	960	100	1,300	860	1.12	1.51
Route 806 west of Eagle Road	28,100	25%	2,125	37,300	1,120	100	1,500	1,125	1.00	1.33
Route 806 east of Eagle Road	33,400	25%	2,125	43,900	1,340	100	1,780	1,875	0.71	0.95

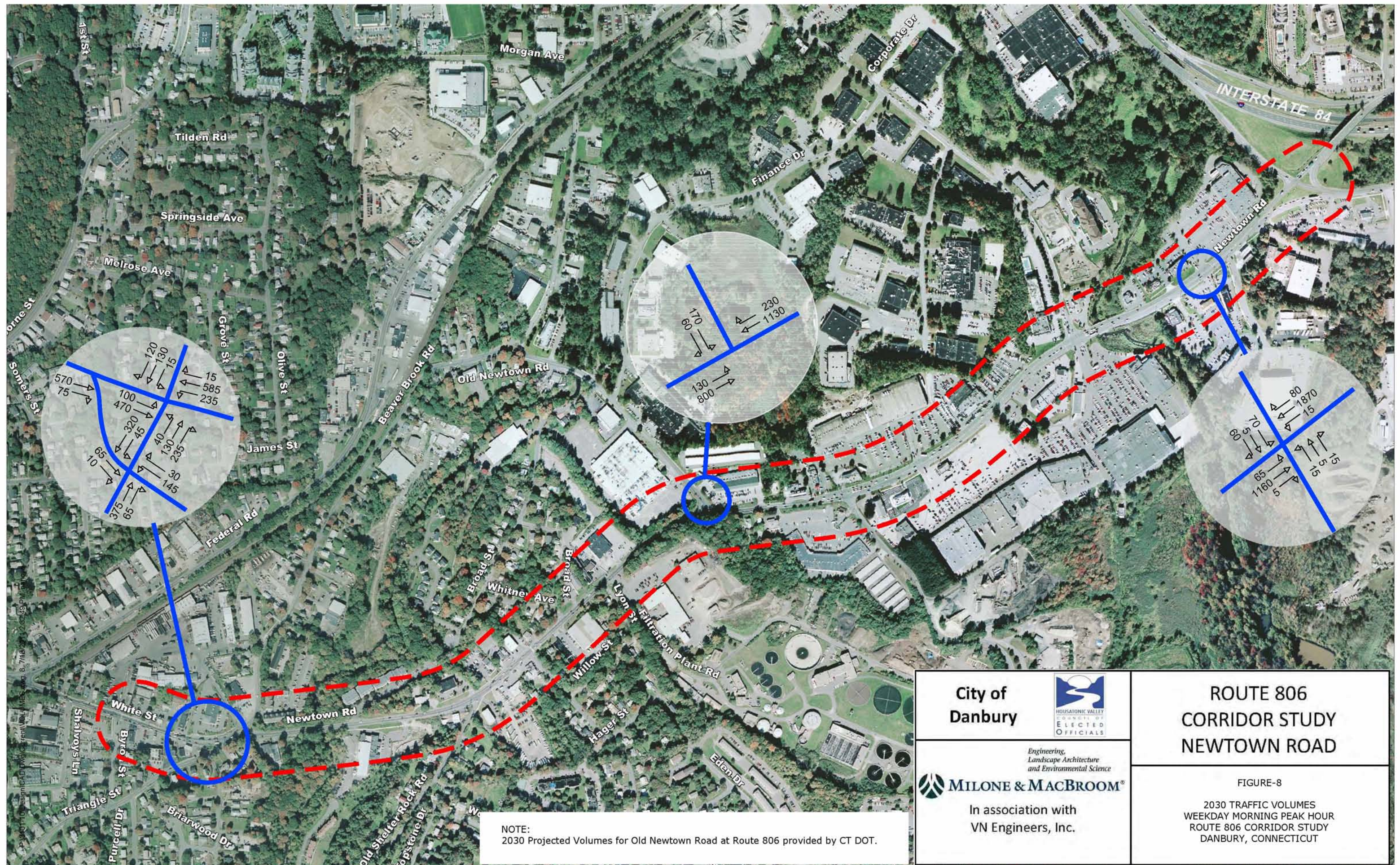
Note: Methodology is that used in CTDOT's Congestion Management Program (CMP), which is based on the Highway Capacity Manual (Transportation Research Board).

Peak Hour (K-Factor) occurs during the afternoon and is 8% of the ADT. The directional split during the peak hour (D-Factor) is 50/50

K-Factor and D-Factor are based on review of 2010 CTDOT monitoring data.

Directional peak hour capacity from CTDOT.

1. Based on CTDOT growth models.



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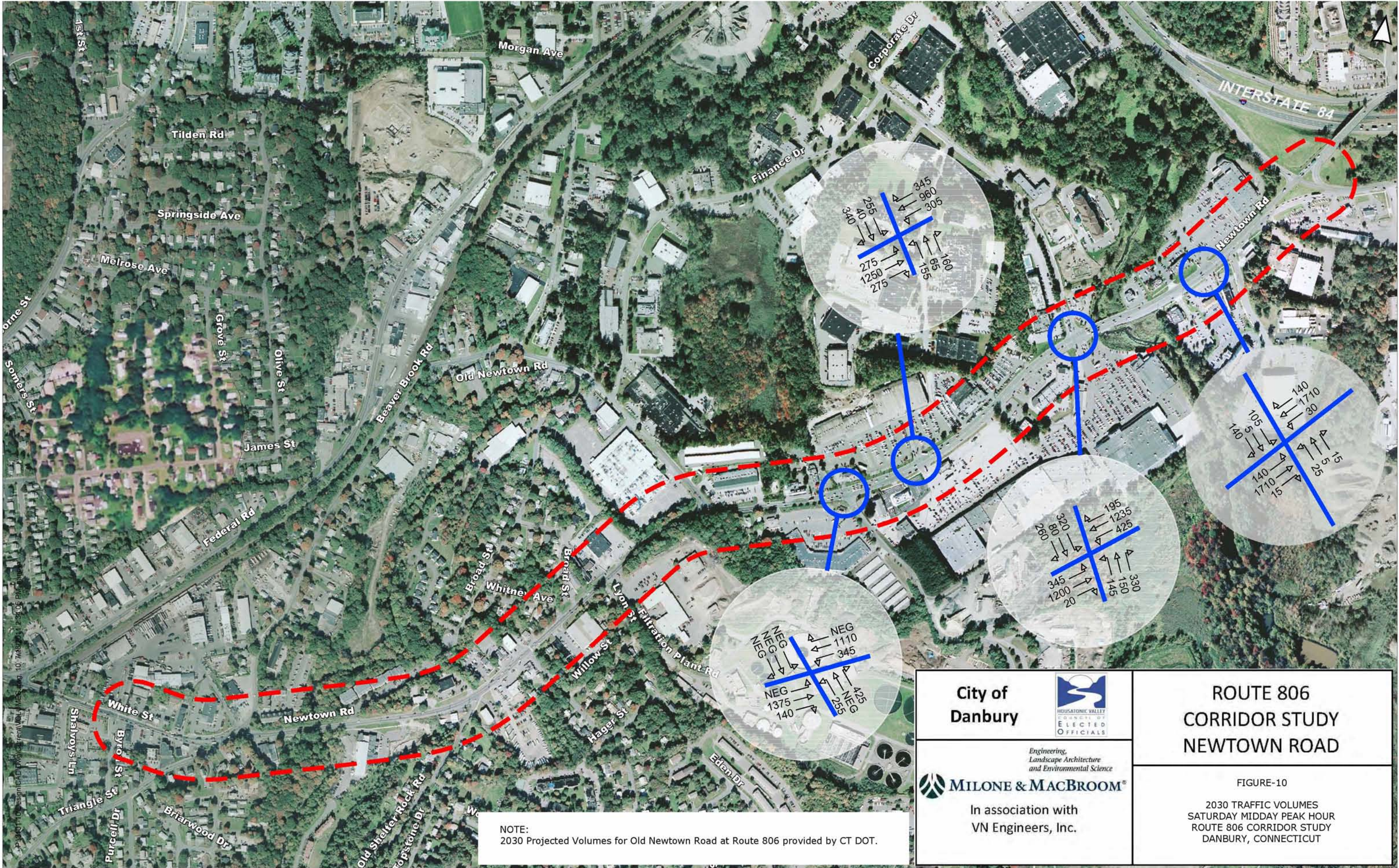


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ROUTE 806 CORRIDOR STUDY NEWTOWN ROAD

FIGURE-8

2030 TRAFFIC VOLUMES
WEEKDAY MORNING PEAK HOUR
ROUTE 806 CORRIDOR STUDY
DANBURY, CONNECTICUT



NOTE:
2030 Projected Volumes for Old Newtown Road at Route 806 provided by CT DOT.

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**ROUTE 806
CORRIDOR STUDY
NEWTOWN ROAD**

FIGURE-10

2030 TRAFFIC VOLUMES
SATURDAY MIDDAY PEAK HOUR
ROUTE 806 CORRIDOR STUDY
DANBURY, CONNECTICUT

2. CAPACITY UPGRADES

Spot Improvement Recommendations

Based on review of the generalized V/C assessments and the noted historical roadway issues along Route 806, a series of spot improvement recommendations have been made with the aim of upgrading capacity and increasing safety along the corridor.

SECTION #1: The eastern section of Route 806 centered by the intersection of Eagle Road and the driveway to Wal-Mart / the Berkshire Shopping Center.

Issue:

Route 806 in the vicinity of Eagle Road is expected have a V/C ratio above 0.90 by the year 2030 indicating significant peak period congestion. Moreover, the intersection of Route 806 with Eagle Road and the Wal-Mart /Berkshire Shopping Center drive reportedly had the largest number of accidents occur during the latest available three-year period of data from the state. Approximately 90 accidents occurred between the start of 2006 and the end of 2008, one of which involved a pedestrian trying to cross the street. Accident Severity: 26% involved injury and 74% involved property damage only. Type of Collision: 50% rear-end, 47% turning collision, remaining 3% included either side-swipe/fixed object/pedestrian.

Route 806 through this intersection already has a five lane-cross section. Both Route 806 approaches to the signal contain an exclusive left turn lane, a through lane, and a shared through/right turn lane.

Eagle Road and the Wal-Mart/Berkshire Shopping Center drive both have three lane approaches to the signal. The Eagle Road approach contains an exclusive left turn lane, a shared left turn/through lane, and an exclusive right turn lane. The Wal-Mart/

Berkshire Shopping Center drive approach contains a left turn lane, a through lane and a right turn lane.

With the availability of intersection turning movement traffic count data at this intersection, capacity analyses were performed using the Synchro/SimTraffic computer software program set. Level of Service (LOS) is a qualitative measure of the efficiency of operations of an intersection in terms of delay and inconvenience to motorists. LOS A indicates very little delay, while LOS F denotes an intersection being over-capacity. Similar to assessment of V/C ratios described above, lower V/C ratios correspond with better LOS while higher V/C ratios correspond with worsening LOS. LOS D is considered acceptable in urbanized areas.

Currently, the intersection operates at an overall LOS D during both the weekday afternoon peak hour and Saturday midday peak hour. By 2030 (based on projected 20-year horizon traffic volumes with full corridor build-out) the intersection is anticipated to operate at LOS F during peak periods.

Spot Improvement Concept 1: Widen Eagle Road

The opportunity to increase capacity in this section of the corridor is limited. Given the close proximity of the Route 806 Bridge over the Still River and the current width already of five lanes, widening Route 806 is impractical. The only opportunity for increased capacity is widening Eagle Road from a three lane approach to a four lane approach. The Eagle Road approach to the signal under this improvement concept would contain dual left turn lanes, an exclusive through lane, and a right turn lane. This intersection modification would be expected to improve overall LOS from F to E under 2030 conditions.

This is a small improvement in LOS for what could be a complicated improvement. Right-of-way is limited on Eagle Road and the length of the additional lane is limited by

the rapid transition to a two lane roadway just north of the turn lanes. Furthermore, the acceptance width on Route 806 for a double left from Eagle Road is currently substandard. Additional widening on the north side of Route 806 would be necessary to standardize the double left acceptance, likely affecting the bridge structure. Significant LOS improvements to this section of Route 806 for the future horizon year of 2030 would entail an even greater degree of widening than discussed above.

Specifically, in order to improve future operations better than LOS E, additional lanes would be necessary at other approaches to the signal. Exclusive right turn lanes at one or both Route 806 approaches to the signal may be one option to achieve further improved LOS. A separate or concurrent measure may be to further widen Route 806 so that there are double left turn lanes at one or both Route 806 approaches to the signal. Such measures to widen Route 806 at this location from the existing five lane cross-section to six or seven lanes wide would be extremely high-cost.

Moreover, while vehicular delays may be reduced with more widening, it is important to note that there comes a point where the impact upon pedestrians and non-motorized roadway users becomes increasingly onerous and dangerous. As mentioned earlier, this intersection experiences a very high number of traffic accidents including one involving a pedestrian. Widening of Route 806 would increase the pedestrian crossing distance, expectedly making matters worse. Operations at this intersection and along this section of the corridor should be closely monitored over the coming decades.

SECTION #2: The transition area from four lanes to two lanes of Route 806 between Plumtrees Road and Old Newtown Road.

Issue:

The intersection of Route 806 and Old Newtown Road has a single lane at each approach to the signal. Significant vehicle queuing occurs during peak times along each

approach. At the northwest quadrant of the intersection there is additionally a short connector roadway that serves motorists turning left from Route 806 to Old Newtown Road and motorists turning right from Old Newtown Road to Route 806.

Vehicles heading west on Route 806 through the intersection with Plumtrees Road must quickly merge from two lanes to a single lane. This merge area is additionally located where several closely spaced and relatively high traffic commercial driveways exist, two at a Sunoco gasoline station, two at a Burger King restaurant and two others at retail plazas. These issues compound where merging traffic interacts with queued vehicles and vehicles entering and exiting Route 806 at the several closely spaced driveways.

A capacity analysis review of the existing signalized portion of the intersection finds it to currently operate at overall LOS B during the weekday morning and afternoon peak hours. The Old Newtown Road approach operates at LOS D, while through traffic on Route 806 at the signal operates at LOS_B. The unsignalized left turn from Route 806 to Old Newtown Road operates at LOS_B and the unsignalized right from Old Newtown Road onto Route 806 operates at LOS_C. These are the LOS operations under ideal conditions when, for instance, the short connector roadway is not blocked by traffic queued at the signal. However, queuing and also lack of bypass width does commonly cause blockage of traffic at the unsignalized short connector. If sufficient bypass width was available, motorists traveling behind another vehicle that slows to turn left could bypass that vehicle and not be blocked. Bypass could also be achieved if multiple lanes approached the signal. The multiple lanes would furthermore reduce vehicle queuing at the signal.

Approximately 55 accidents occurred during the three-year period (of 2006 through 2008) along this stretch of Route 806 between Plumtrees Road and Lyon Street. (This number may actually be higher, as some of the accidents listed as occurring west of this

area at Lyon Street, for example, may have had to do specifically with vehicle queuing from the Old Newtown Road signal.). Accident Severity: 27% involved injury and 73% involved property damage only. Type of Collision: 75% rear-end, 18% turning collision, remaining 7% included either side-swipe/overtake/fixed object.

Spot Improvement Concept 2: CTDOT Widening and Reconfiguration of Route 806

CTDOT is in the process of developing conceptual improvements for this stretch of Route 806. The roadway would be widened from Plumtrees Road through the intersection with Old Newtown Road to provide a five lane cross section, matching the current cross section east of Plumtrees Road. Route 806 at the intersection with Old Newtown Road would have two through lanes in each direction and an additional left turn lane. The Old Newtown Road approach to Route 806 would be realigned and widened for separate turn lanes. The existing short connector roadway that serves motorists turning left from Route 806 to Old Newtown Road and motorists turning right from Old Newtown Road to Route 806 would be eliminated. The City of Danbury has indicated their intention to construct a new driveway for their Public Works Complex as the fourth leg of the intersection opposite Old Newtown Road. Figure 11 illustrates this modified intersection geometry concept.

With the addition of the opposing left turn lanes on Route 806 at the intersection, signal phasing would be modified to provide left turn advances. Currently, the signal functions on a simple two phased cycle first allowing Route 806 progress and then permitting the Old Newtown Road approach to proceed.

The inclusion of exclusive turn lanes removes those vehicles under normal circumstances from blocking through movements. This, combined with the added capacity along Route 806 by adding additional through lanes reduces overall delays and queuing in this area.

Based on the 2030 projected traffic volumes, LOS B can be maintained during the weekday morning peak hour and LOS C can be expected for the afternoon peak hour. With the added capacity of two through lanes at both Route 806 approaches, queuing is anticipated to be greatly reduced to what occurs today.

Another benefit under this improvement is that the transition area where Route 806 narrows from four through lanes to two through lanes would be shifted to the west side of Old Newtown Road to an area with comparatively fewer driveways. The construction of a new driveway for the Danbury Public Works Complex opposite Old Newtown Road would also allow for the closure of the current Public Works Complex driveway, thereby further reducing the potential for vehicle conflicts in this area.

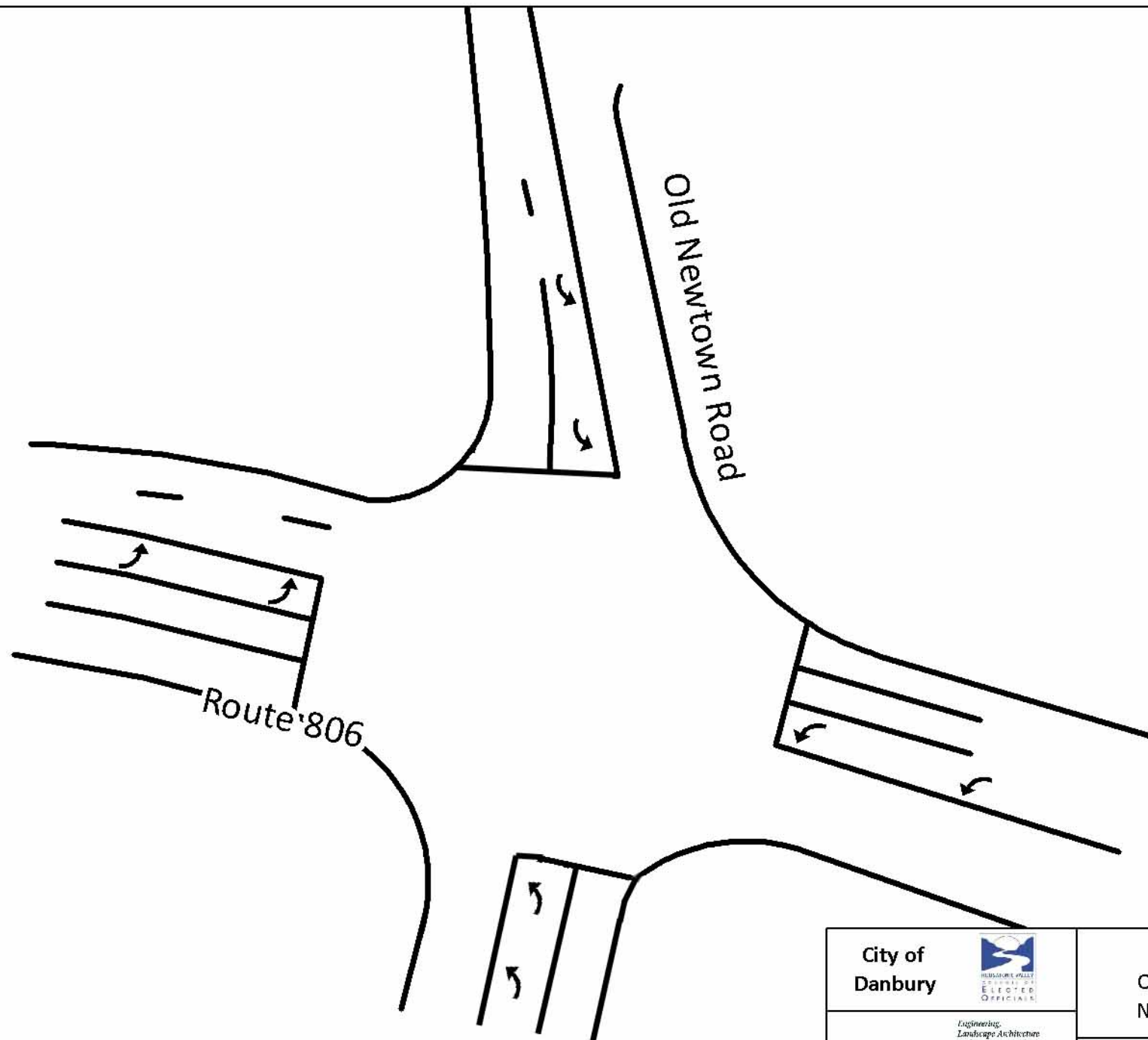
This is a highly desirable improvement with much benefit in terms of added capacity and improved safety.

SECTION #3: Route 806 between Old Newtown Road and Old Shelter Rock Road.

Issue:

As is common at unsignalized stop controlled approaches to heavily traveled roadways such as Route 806, long delays can occur for motorists trying to enter the major roadway. Motorists traveling through the stop controlled approaches of Woodside Avenue and Old Shelter Rock Road to Route 806 often experience long delays, especially those making left turns. During peak times, this is due to a limited number of acceptable safe openings, or gaps, in-between groups of vehicles. At Woodside Avenue, not only is this the case for neighborhood residents but also for transit vehicles on the HART 2 bus line.

This area of Route 806 additionally contains a very high number of driveways. Similar to egress from Woodside Avenue and Old Shelter Rock Road long delays exist for



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ROUTE 806
CORRIDOR STUDY
NEWTOWN ROAD

Figure: 11
Route 806 at Old Newtown Road
Concept 2
Date: May 2011

motorists egressing these driveways. The number of unsignalized access points spaced this closely heightens the need for access management.

Another issue along this stretch of Route 806 is a lack of sufficient bypass width. A motorist traveling behind another vehicle that slows to turn left onto a driveway or side street cannot bypass that vehicle since sufficient roadway width is not available. Lastly, the terrain along this stretch of Route 806, specifically in the area of Lyon Street, is hilly with embankments along the roadside, limiting visibility.

A total of 117 accidents occurred during the three-year period (of 2006 through 2008) along this stretch of Route 806 from Lyon Street to Old Shelter Rock Road. Accident Severity: 25% involved injury and 75% involved property damage only. Type of Collision: 68% rear-end, 26% turning collision, remaining 6% included either side-swipe/head-on/backing/moving object/fixed object.

Two improvement concepts have been developed for this section of the Route 806 corridor. These two concepts could be implemented concurrently or separately.

Spot Improvement Concept 3-A: Signalization

The Old Shelter Rock Road intersection with Route 806 has been found in the past to warrant signalization based on the amount of traffic it handles, while the Woodside Avenue intersection has not. The state began design work (CTDOT Project No. 034-309) towards signalization of Old Shelter Rock Road at Route 806. However, funding was stalled for this improvement and the project was removed from the regional Transportation Improvement Program (TIP) around 2009. In addition to signalizing this intersection, the improvement project would widen or restripe Route 806 to include a separate left turn lane for motorists turning onto Old Shelter Rock Road. The Old Shelter Rock Road approach to Route 806 would additionally be realigned.

Recently, CTDOT began reevaluating the improvement project for this location to assess the pros, cons, and warrants of signalizing both intersections of Route 806 at Old Shelter Rock Road and Route 806 at Woodside Avenue together. The two signals would operate coordinated or on the same controller. It is likely that Route 806 through Woodside Avenue would be widened to additionally include an exclusive left turn lane for motorists turning onto Woodside Avenue. Due to the lack of intersection traffic count data along this section, capacity analyses were not performed and LOS results not determined for current or 2030 conditions at these intersections. However, the addition of an exclusive left turn lanes on Route 806 at the westbound approaches to Old Shelter Rock Road and Woodside Avenue removes those vehicles under normal circumstances from blocking through traffic. Signalization of both intersections would greatly improve peak hour operations for motorists egressing from Old Shelter Rock Road and Woodside Avenue, and may have residual benefit of creating gaps in the Route 806 traffic flow allowing for easier egress from nearby side streets and driveways.

Spot Improvement Concept 3-B: Widen Route 806

At side streets along this section of Route 806 where signalization is not warranted, other improvement measures could be entertained. One measure to improve operations would be to widen Route 806 in this area to facilitate a bypass of motorists turning onto side streets and driveways. This would, under normal circumstances, remove those vehicles turning left from blocking through traffic.

The width of Route 806 varies in this area generally between 30 and 36 feet. Ideally, a curb to curb width of 40 to 44 feet between Old Newtown Road and Old Shelter Rock Road would moderately improve traffic capacity and improve vehicular safety.

SECTION #4: The western section of the corridor in the vicinity of White Street, Triangle Street and Beaver Brook Road.

Issues:

This signalized intersection is geometrically complicated with acute angle approaches of Triangle Street and Beaver Brook Road, and the adjacent intersection of Cross Street. Motorists unfamiliar with the intersection are prone to confusion. Two raised triangular islands exist to channelize traffic; one between Route 806 and Beaver Brook Road at the northeast corner of the intersection, and the other between White Street, Triangle Street and Cross Street at the southwest corner of the intersection. The channelized right turn lanes on the Route 806 and White Street approaches are stop-controlled. At the traffic signal, Route 806 and White Street both contain exclusive left turn lanes. Triangle Street and Beaver Brook Road have single lane approaches. There are also several private driveways in the direct vicinity adding to the confusing nature of the intersection.

During peak times, notable delays and queuing are experienced at each approach. Without any modifications to the signal, these issues will be exacerbated as traffic volumes increase over the course of the next 20 years.

With the availability of intersection turning movement traffic count data at this intersection, capacity analyses were performed. Currently, the intersection operates at an overall LOS D during the weekday afternoon peak hour. By 2030 the intersection is anticipated to operate at LOS F.

Approximately 41 accidents occurred during the three-year period (of 2006 through 2008) at the Route 806 intersection with White Street, Triangle Street and Beaver Brook

Road. (This number may actually be higher as accidents that occurred just outside of the Route 806 corridor on the city streets of White Street or Cross Street, for example, were likely not included.) Accident Severity: 24% involved injury and 76% involved property damage only. Type of Collision: 42% rear-end, 46% turning collision, remaining 12% included either head-on/backing/fixed object.

Four different improvement concepts have been developed for this section of Route 806. These four concepts are exclusive of one another.

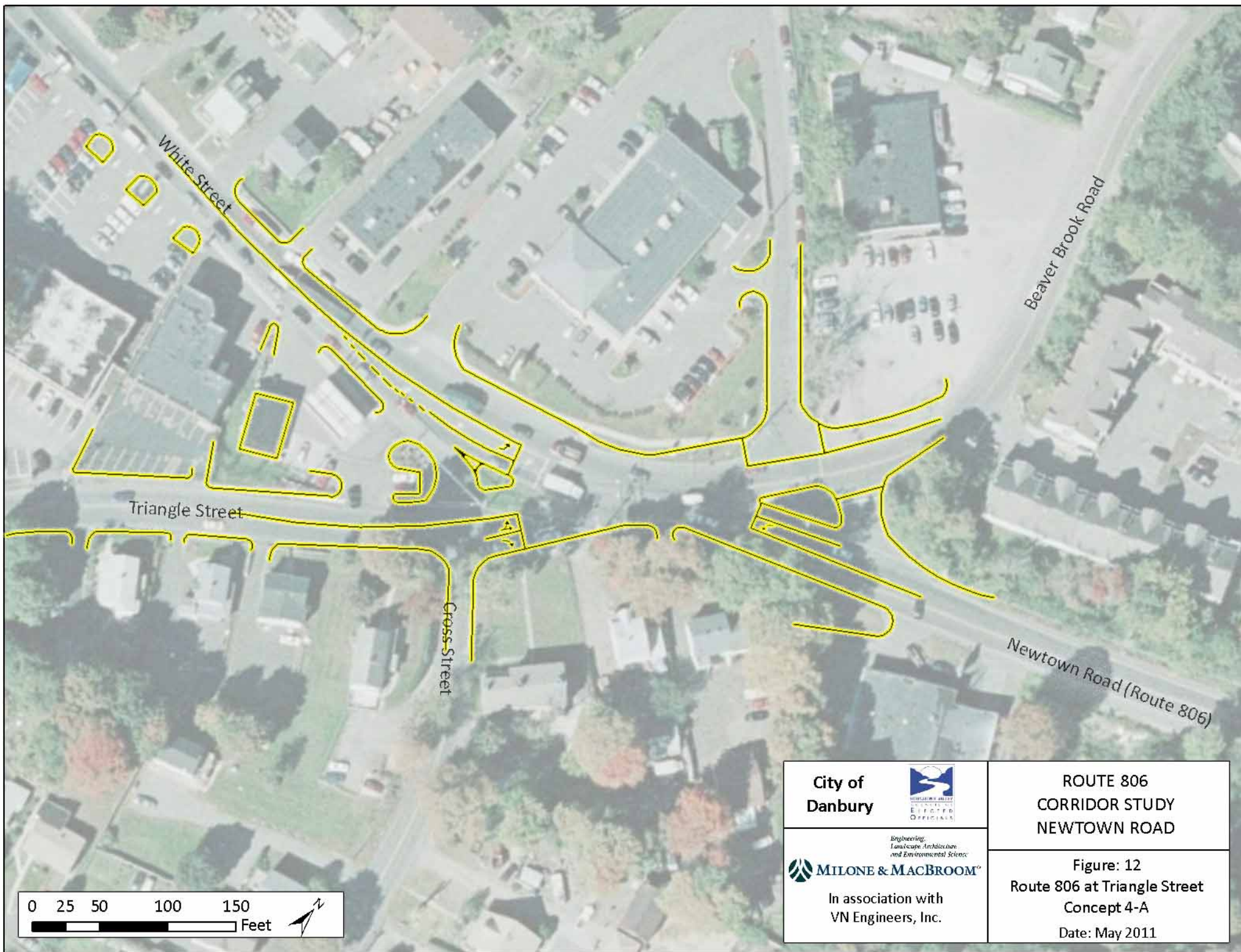
Spot Improvement Concept 4-A: Widen Triangle Street

Review of the existing traffic volumes during peak weekday periods at the signalized intersection reveals that there are a large percentage of vehicles at the Triangle Street northbound approach that turn right relative to the left and through movements from this approach. However, this approach provides only a single lane. This concept modifies the northbound approach to include a shared left turn/through lane and a separate right turn lane. This concept is illustrated in Figure 12.

As shown, to achieve this improvement, a sliver widening and re-striping of Triangle Street and Beaver Brook Road legs would be required. The raised triangle median at southwest corner of intersection would be decreased in size or completely removed. The result of this modification is an improvement of the current overall LOS from D to C and under 2030 conditions an improvement of overall LOS from F to E.

Spot Improvement Concept 4-B: Make Triangle Street One-Way Southbound

This concept is to restrict northbound traffic from Triangle Street making Triangle Street one-way southbound from Route 806 to Purcell Drive/Byron Street. As a result, motorists would be diverted to Byron Street or avoid the area and use other streets in the wider geographic area such as Shelter Rock Road and Old Shelter Rock Road.



With some widening through the intersection of Route 806 and White Street, this concept would result in improvement of overall LOS from F to E under 2030 conditions, but no significant change to LOS under current conditions.

Spot Improvement Concept 4-C: Make Triangle Street One-Way Northbound

This concept would be to restrict southbound traffic of Triangle Street between the signal and Purcell Drive/Byron Street making Triangle Street one-way in the northbound direction. Motorists now making a left turn from Route 806 to Triangle Street would now do so at the White Street / Byron Street intersection. Motorists that currently travel through to Triangle Street from Beaver Brook Road would instead make a right turn to White Street and then a left to Byron Street.

With some widening through the intersection on Route 806 and White Street, the current LOS under this concept would improve from D to C, and under 2030 conditions the LOS would improve from F to D.

Spot Improvement Concept 4-D: Intersection Reconfiguration

This concept is a redesign of the Route 806 intersection with White Street, Triangle Street and Beaver Brook Road to create two closely spaced “T” intersections. Triangle would be realigned at White Street to create one intersection and Beaver Brook Road would be realigned at Route 806 to create the other intersection, with approximately 200 feet between the two. The closely spaced intersections would operate together on a single controller. The raised triangle medians would be removed. Figure 13 depicts this concept.

Under this concept, the current LOS would improve from D to B, and under 2030 conditions LOS would improve from F to C.

Table 6 provides a comparison of the LOS results for the different improvement concepts.

TABLE 6
OVERALL LEVEL OF SERVICE (LOS) COMPARISON
ROUTE 806 AT WHITE STREET / BEAVER BROOK ROAD / TRIANGLE STREET

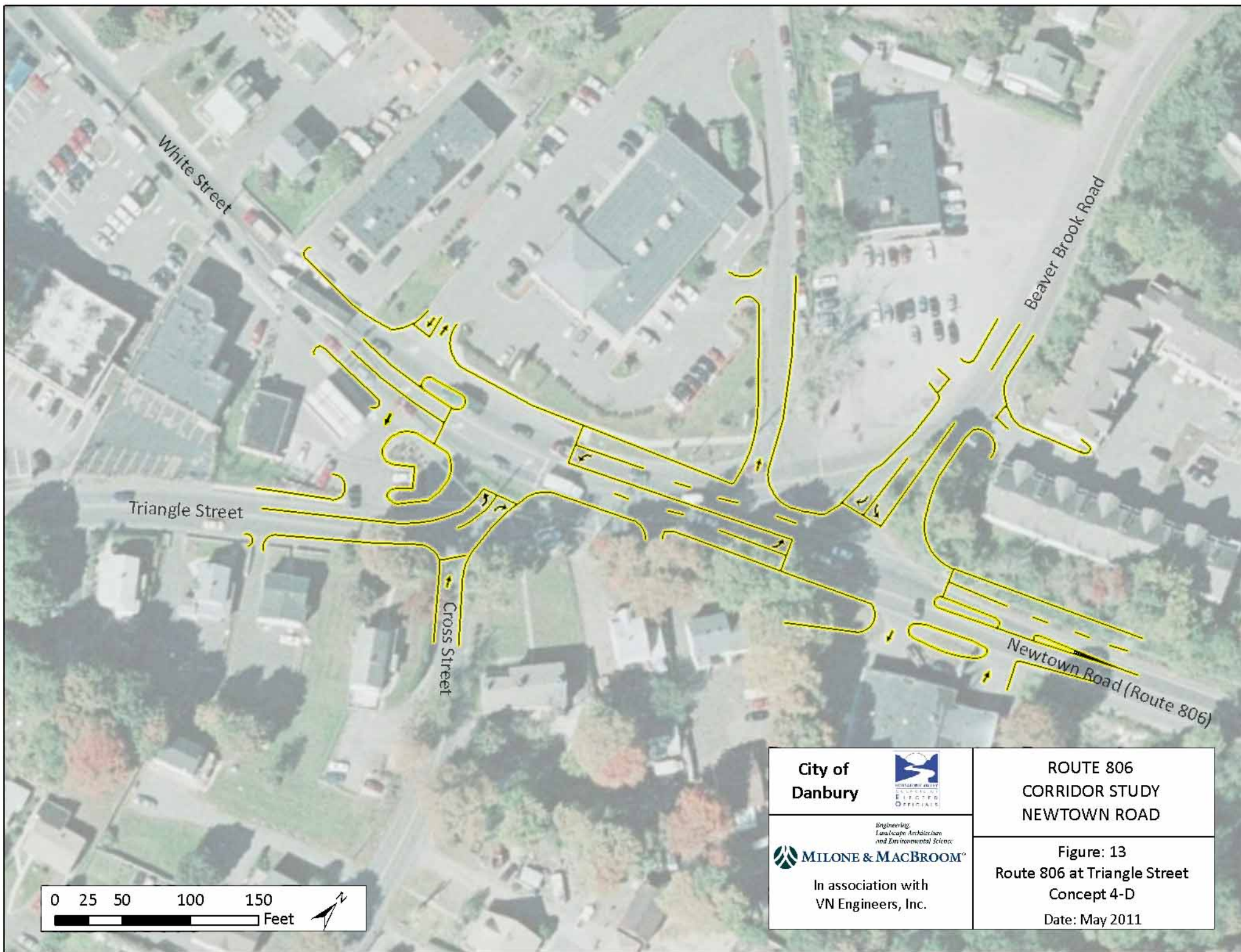
	LEVEL OF SERVICE	
	WEEKDAY AFTERNOON PEAK HOUR	
	Current	2030
Current Intersection Layout	D	F
Concept 4-A (Widen Triangle Street approach for addition of right turn lane)	C	E
Concept 4-B (Triangle Street becomes one-way southbound)	D	E
Concept 4-C (Triangle Street becomes one-way northbound)	C	D
Concept 4-D (Complete redesign to create two “T” intersections) ⁽¹⁾	B	C

(1) Under this concept, the LOS shown is actually that at both newly formed signalized intersections.

While a comparison of the different improvement concepts for the intersection of Route 806 at White Street, Beaver Brook Road and Triangle Street indicates that Concept 3-D may achieve the best LOS during a weekday afternoon peak hour, it should be noted that this is relative to only weekday afternoon peak hour analysis. Evaluation of operations during other peak times, such as the midday peak hour on a Saturday, should be made.

Assessment of CTDOT’s Proposed Four Lane Wide Cross Section

As discussed in the Existing Conditions Section, there has been a long standing concept presented by CTDOT to widen the western portion of Route 806 to a four and five lane cross-section. Based on a planning level assessment, a widening to a three lane cross-section is expected to be adequate for the western portion of the corridor. This three lane cross-section is recommended from just west of Old Newtown Road to just east of the White Street / Triangle Street / Beaver Brook Road intersection. The three-lane cross section would allow for easier bypass and/or the installation of center left turn lanes where appropriate along this stretch.



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ROUTE 806
CORRIDOR STUDY
NEWTOWN ROAD

Figure: 13
Route 806 at Triangle Street
Concept 4-D

Date: May 2011

3. ACCESS MANAGEMENT

A large part of the cause of congestion along areas of Route 806 is the fact that an excessive number of business and private driveways exist along the corridor. The area of Route 806 in the vicinity of Woodside and Old Shelter Rock Road, as mentioned earlier, has a large number of small businesses and other uses each with their own driveway or driveways. Conditions such as this allow for many vehicles to enter and exit at dozens of locations within a short distance from one another. This additionally causes issues of safety for pedestrians and vehicles.

The most common way to manage curb cuts / driveways is through consolidation, the creation of shared access roads, and through interconnecting adjacent parcels so that motorists can proceed from parcel to parcel without the use of Route 806. Measures such as these reduce the potential for accidents, reduce the number of conflict points, provide more clearly defined vehicular entrance/egress points, and lead to improved flow of travel along the corridor.

A number of curb cut / driveway access management recommendations have been developed for Route 806. These can be seen on Figures 14a through 14f. The driveway access plan recommendations are to serve as a guide for the City of Danbury to begin to consolidate driveways as properties are sold and or redeveloped in the future. Access management recommendations that are agreed upon by property owners, or mutually agreed upon between adjacent property owners, could be completed in the more near-term.

Route 806 from I-84 Eastbound Exit 8 to Eagle Road

Beginning at the eastern end of the corridor: the car dealership on the south side of Route 806 has four driveways. Up to three of the four curb cuts for that parcel could be closed without hampering its access.

Egress at the Dunkin' Donuts driveway and the Taco Bell driveway, both located between the Commerce Park Shopping Center (Xpect Discounts Plaza) signal and the signal at Eagle Road,

could be restricted to right out only and left turn egress from these properties could be prohibited. Motorists seeking to make left turns out of these sites can do so through the Commerce Park Shopping Center (Xpect Discounts Plaza) signal via existing interconnections at the rear of each building. Moreover, there is the potential along this area of Route 806 for a raised center median to be installed without need for roadway widening. This would further prohibit left turns from entering these driveways.

Restricted access could also be implemented at the Wachovia Bank located at the northeast corner of the intersection of Route 806 and Eagle Road. The two driveways located nearest to the signal would allow entering vehicles only. Motorists would exit the bank site at its existing northern driveway at Eagle Road furthest from the signal.

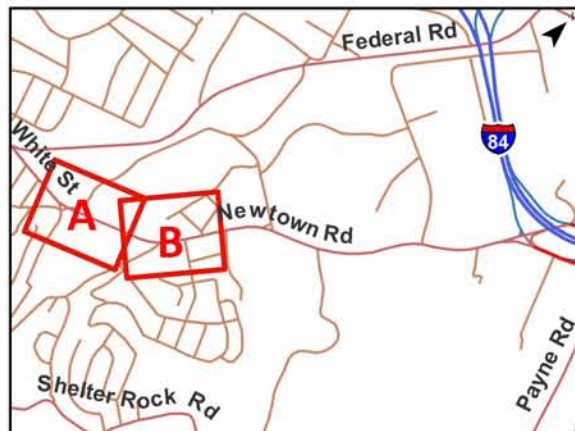
Route 806 from Eagle Road to Old Newtown Road

Moving further west along the corridor, select curb cut closures are recommended at the car dealership located adjacent to the Nutmeg Square shopping center (Stop & Shop) and also at the Sleepy's store located at the southeast corner of Route 806 and Plumtrees Road within the Berkshire Shopping Center. Portions of Route 806 between Eagle Road and the Nutmeg Square Shopping Center may be suitable for the installation of a raised center median. One-way driveway pairs could be implemented at the Burger King Restaurant and adjacent gasoline station.

As mentioned earlier, CTDOT has begun to review improvement concepts for the intersection of Old Newtown Road at Route 806 that would include realignment. The City also intends to locate a new driveway for its Public Works Complex opposite Old Newtown Road as part of this improvement.

Route 806 from Old Newtown Road to Old Shelter Rock Road

Should the new driveway be constructed for the Danbury Public Works complex, its existing driveway just west of the signal could be closed or restricted to ingress only and new secondary



Curb-Cut Access Recommendations			
Legend			
---	Access Modification	Y	Create shared driveway
---	Curb Cuts	★	Relocate/realign access
---	Sidewalk	6'	Maximize sight lines
- - -	Potential Raised Median	↱	Right-Turn-Only
X	Access Closure	→	One-Way
↑	Define Entrance	↔	Provide vehicular Interconnection


SOURCE:
City of Danbury
Street Map USA (2009)
Milone & MacBroom Field
Observations (2010)

SHEET 1
of 3

0 50 100 200
Feet

1 inch = Approx. 100 feet

City of Danbury



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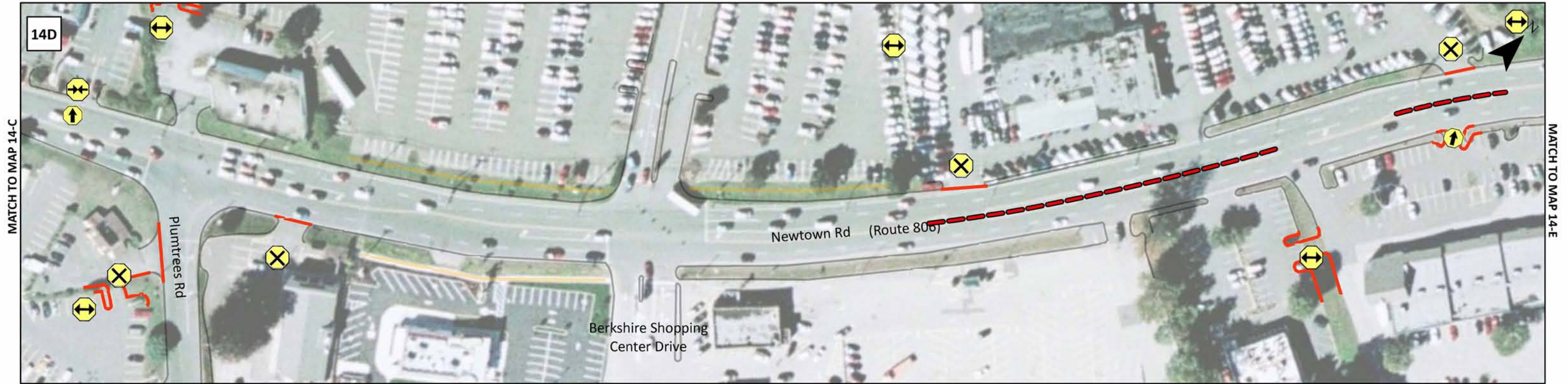
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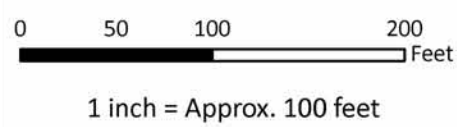
**ROUTE 806
CORRIDOR STUDY
NEWTOWN ROAD**

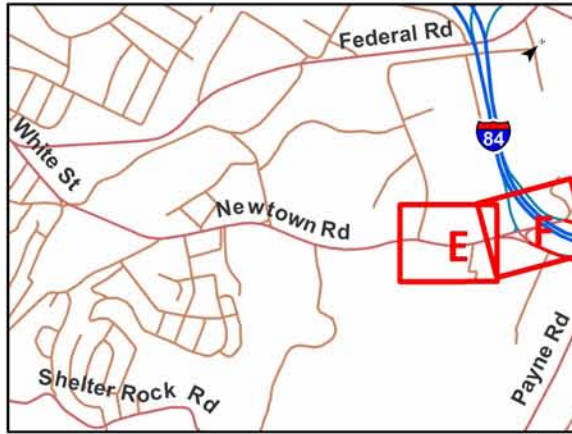
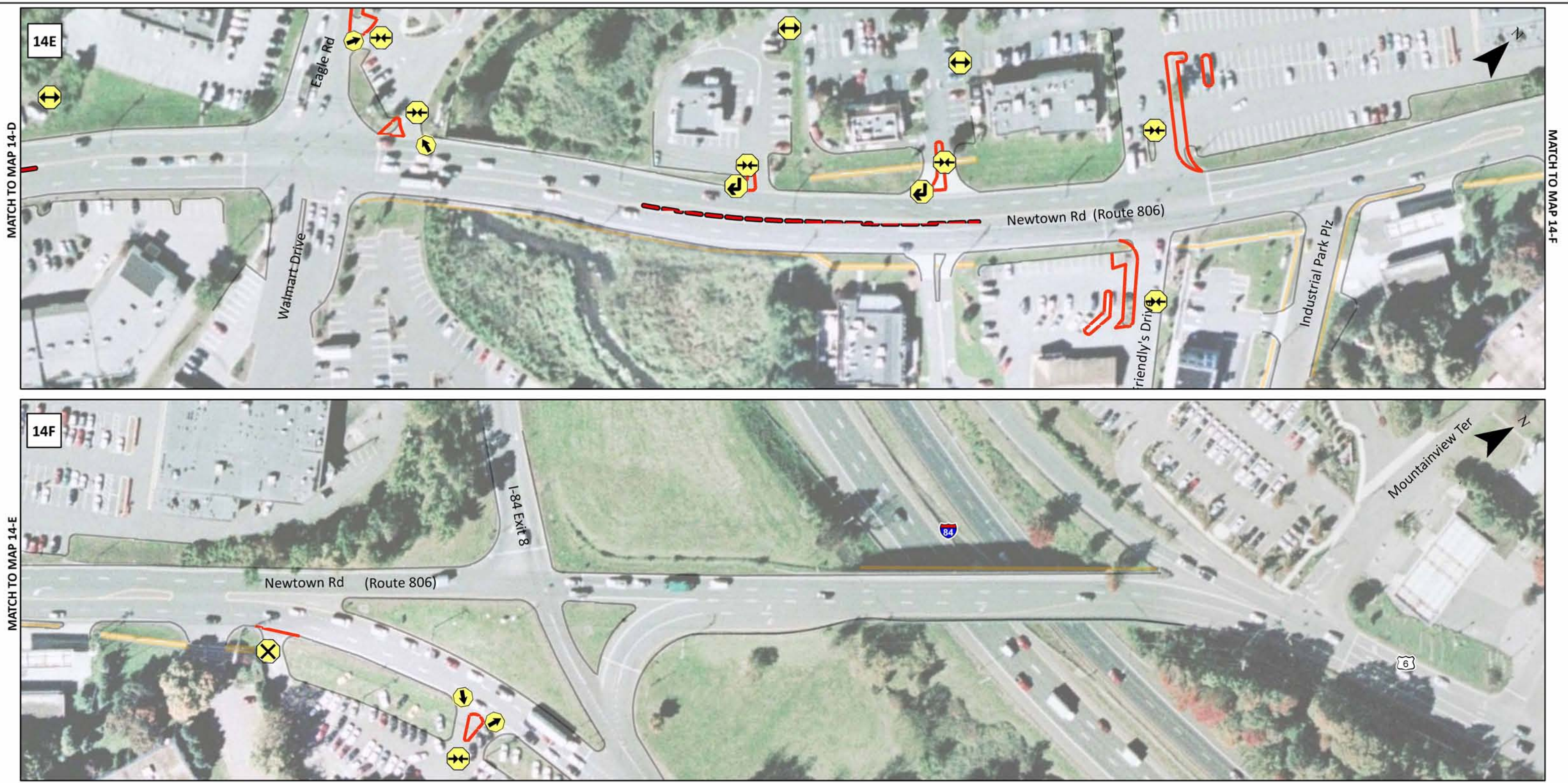
**Figure: 14A & 14B
Curb-Cut Access
Recommendations**

Date: May 2011



<p>Legend</p> <ul style="list-style-type: none"> Access Modification Curb Cuts Sidewalk Potential Raised Median Access Closure Define Entrance 		<p>Curb-Cut Access Recommendations</p> <ul style="list-style-type: none"> Create shared driveway Relocate/realign access Maximize sight lines Right-Turn-Only One-Way Provide vehicular Interconnection 		<p>SOURCE: City of Danbury Street Map USA (2009) Milone & MacBroom Field Observations (2010)</p>	<p>SHEET 2 of 3</p>	<p>City of Danbury</p> <p>Engineering, Landscape Architecture and Environmental Science</p> <p>MILONE & MACBROOM®</p> <p>In association with VN Engineers, Inc.</p>	<p>ROUTE 806 CORRIDOR STUDY NEWTOWN ROAD</p> <p>Figure: 14C & 14D Curb-Cut Access Recommendations</p> <p>Date: May 2011</p>
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Curb-Cut Access Recommendations			
Legend			
—	Access Modification		Create shared driveway
—	Curb Cuts		Relocate/realign access
—	Sidewalk		Maximize sight lines
- - -	Potential Raised Median		Right-Turn-Only
	Access Closure		One-Way
	Define Entrance		Provide vehicular Interconnection

SOURCE:
City of Danbury
Street Map USA (2009)
Milone & MacBroom Field
Observations (2010)

SHEET 3
of 3

0 50 100 200 Feet
1 inch = Approx. 100 feet

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**ROUTE 806
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**Figure: 14E & 14F
Curb-Cut Access
Recommendations**
Date: May 2011

access provided from Lyon Street. At this same time, the existing Lyon Street approach to Route 806 could be relocated slightly east of its current alignment as a means to improve visibility. Opposite the newly realigned Lyon Street, a shared driveway could be provided for the Premier Collision Centre property and adjacent AIA/BRT Law office

Similarly, a shared driveway could be provided for the US Granit property and adjacent Rankin' Sporting Goods parcel located on the south side of Route 806 just west of Whitney Avenue. This area of Route 806 between Lyon Street and Old Shelter Rock Road contains the largest concentration of curb cuts within the entire corridor. Several curb cut closures/consolidations are recommended here in order to achieve better defined access points and vehicular interconnection between properties.

Route 806 from Old Shelter Rock Road to White Street / Triangle Street / Beaver Brook Road

As mentioned earlier, the state began design work (CTDOT Project No. 034-309) towards signalization of Old Shelter Rock Road at Route 806. This project would realign the Old Shelter Rock Road approach. At the western end of the corridor, one-way driveway pairs could be implemented at the AAMCO Transmissions parcel. The Goodwill parcel at the northwest corner of Beaver Brook Road and White Street has a significant need for defined access.

4. PEDESTRIAN AND TRANSIT FACILITIES

The existing conditions section of this report examined the pedestrian system along Route 806 for access and connectivity. Areas with and without sidewalks or crossings were identified, informal walkways such as dirt paths were observed, and connectivity of walkways, transit facilities and nearby land uses were noted.

A well developed, ‘walkable’ pedestrian system can encourage non-motorized travel, thereby easing demand on the roadway and reducing motorized vehicle emissions. The existing conditions map of Route 806, Figures 1a – 1f, illustrated the locations of the existing sidewalks along the corridor. Route 806 as a whole has what can be described as a partial sidewalk network.

There are numerous constraints facing a pedestrian attempting to access the Route 806 corridor study area. These include:

- Large and numerous gaps in the sidewalk network on both the north and south sides of Route 806.
- No connection from the sidewalk to the adjacent land uses in many locations.
- Many areas have no buffer or snow shelf between the sidewalks and the roadway.
- The topography at certain locations limits access to the unpaved portion of the right-of-way and forces pedestrians to walk on the shoulder of the roadway.
- The narrow bridge over the Still River at the western end of the corridor provides very limited and dangerous access for pedestrians.
- Sections of sidewalks are in poor condition.
- There are few crosswalks providing access for pedestrians to cross Route 806.

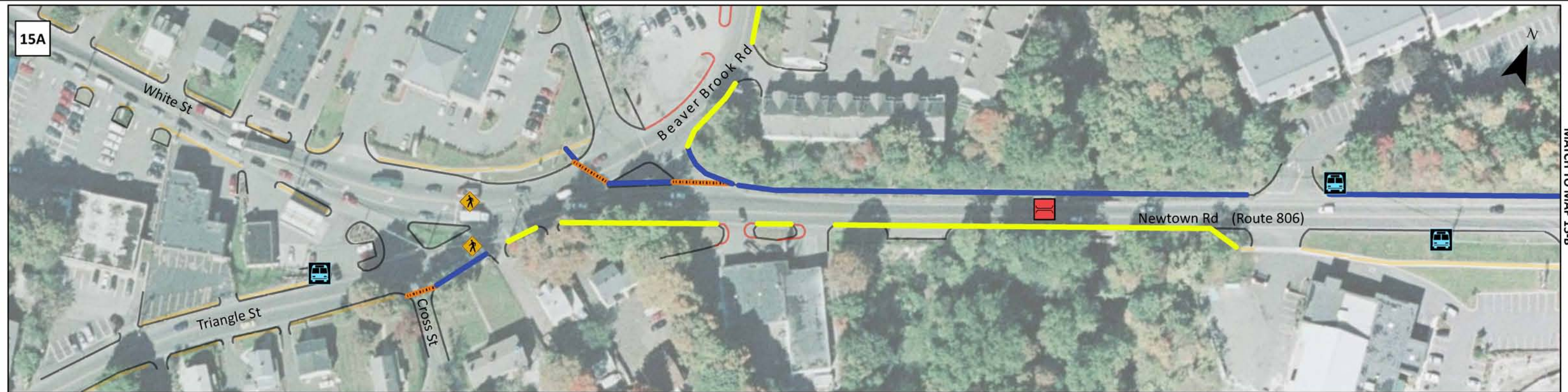
The Pedestrian/Transit Recommendations Map, Figures 15a through 15f contains recommendations for installing numerous sections of sidewalks on both sides of Route 806. The map also contains recommendations for crosswalks at various signalized and non-signalized intersections. Bicycle access is limited along the corridor due to the minimal right-of-way and the speed and volume of the traffic on Route 806.

Sidewalks

Two sets of recommendations are shown on the Pedestrian/Transit Recommendations Map; short term (Blue) and long term (Yellow). The purpose of two sets of recommendations is to differentiate between those areas where sidewalks may be more feasible in the short term (say within the next ten years) versus other areas where the installation of sidewalks may be further off and not as immediately needed. This can be seen as prioritizing where sidewalks would be needed in the short term such that a single continuous walkway could exist along the entire corridor. Larger areas of missing sidewalks most likely would only be addressed when CTDOT reconstructs portions of Route 806. However, some shorter missing sections of sidewalks could be addressed during the development or redevelopment of certain parcels. Many communities require sidewalks to be installed as part of the development or redevelopment of properties. The City of Danbury may wish to take this approach into consideration. It is recommended that sidewalks be installed in the following locations:

Route 806 from I-84 Eastbound Exit 8 to Eagle Road

- North side – Along the Commerce Park Shopping Center (Xpect Discounts Plaza), (short-term);
- North side – Along the Bertucci's Restaurant frontage, (short-term);
- South side – from I-84 Eastbound Exit 8 westward to existing sidewalks, (long-term);
- South side – Along the Friendly's Restaurant frontage, (short-term)

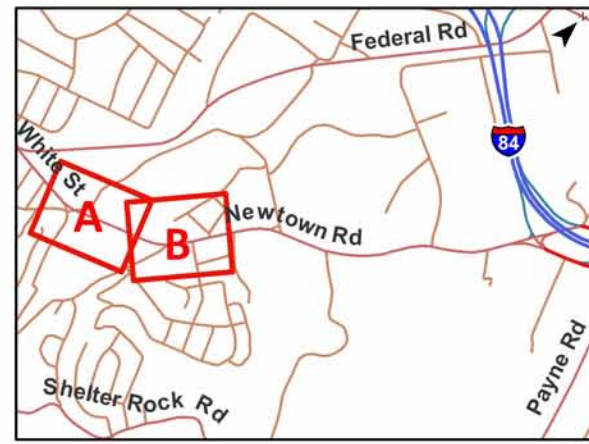


MATCH TO MAP 15-B



MATCH TO MAP 15-A

MATCH TO MAP 15-C



Pedestrian/Transit Recommendations			
Legend			
	Existing HART Bus Stop		Install HART Bus Shelter
	Existing Crosswalks		Install Crosswalk
	Existing Sidewalks		Install Sidewalk - Short Term
	Existing Curb-Cuts		Install Sidewalk - Long Term
	Access Modification		Bridge Modification

SOURCE:
City of Danbury
Street Map USA (2009)
Milone & MacBroom Field
Observations (2010)

SHEET 1
of 3

0 50 100 200 Feet
1 inch = Approx. 100 feet

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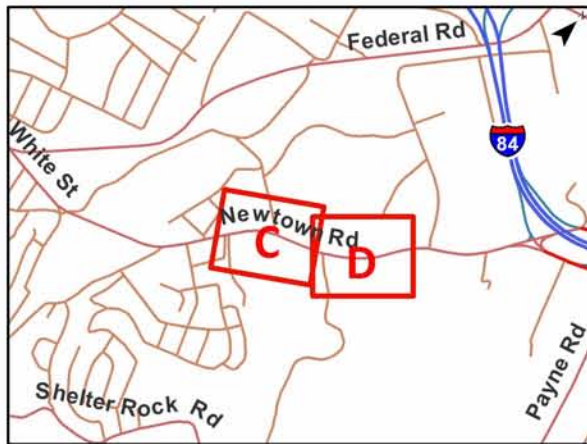
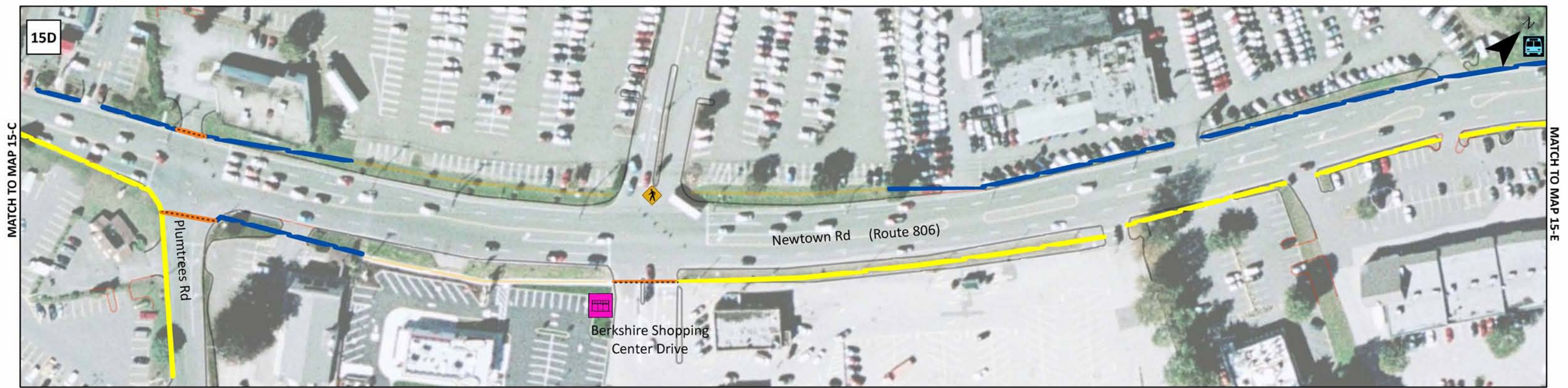
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CORRIDOR STUDY
NEWTOWN ROAD**

**Figure: 15A & 15B
Pedestrian/Transit
Recommendations**

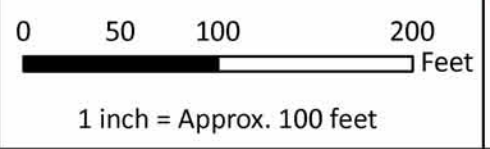
Date: May 2011



Pedestrian/Transit Recommendations			
Legend			
	Existing HART Bus Stop		Install HART Bus Shelter
	Existing Crosswalks		Install Crosswalk
	Existing Sidewalks		Install Sidewalk - Short Term
	Existing Curb-Cuts		Install Sidewalk - Long Term
	Access Modification		Bridge Modification

SOURCE:
City of Danbury
Street Map USA (2009)
Milone & MacBroom Field
Observations (2010)

SHEET 2
of 3

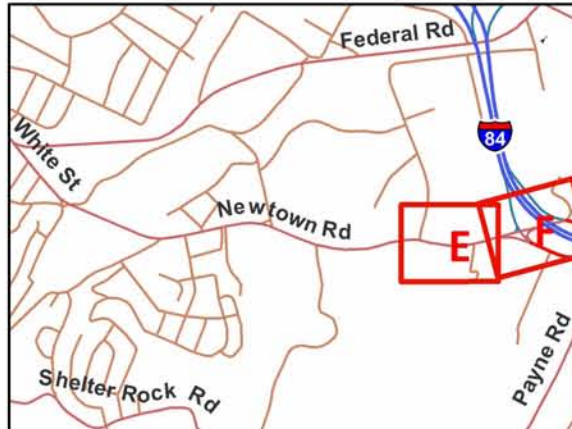


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ROUTE 806
CORRIDOR STUDY
NEWTOWN ROAD

Figure: 15C & 15D
Pedestrian/Transit
Recommendations
Date: May 2011



Legend Existing HART Bus Stop Existing Crosswalks Existing Sidewalks Existing Curb-Cuts Access Modification		Pedestrian/Transit Recommendations Install HART Bus Shelter Install Crosswalk Install Sidewalk - Short Term Install Sidewalk - Long Term Bridge Modification		SOURCE: City of Danbury Street Map USA (2009) Milone & MacBroom Field Observations (2010)	SHEET 3 of 3	City of Danbury Engineering, Landscape Architecture and Environmental Science MILONE & MACBROOM® In association with VN Engineers, Inc.	ROUTE 806 CORRIDOR STUDY NEWTOWN ROAD Figure: 15E & 15F Pedestrian/Transit Recommendations Date: May 2011
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Route 806 from Eagle Road to Plumtrees Road

- North side – from Eagle Road to Nutmeg Square Shopping Center property (Stop and Shop), (short-term);
- North side – from western edge of Nutmeg Square Shopping Center property (Stop and Shop) to Plumtrees Road, (short term);
- South side – from the Wal-Mart/Berkshire Shopping Center driveway westward to the Berkshire Shopping Center main entrance, (long-term). Issue here is that the snow shelf area between the road and retail parking areas is limited;
- South side – from McDonald’s Restaurant westward to Plumtrees Road along Sleepy’s frontage, (short-term);

Route 806 from Plumtrees Road to Old Shelter Rock Road

- North side – from Plumtrees Road to Old Shelter Rock Road, fill in the gaps, (short term). The state’s conceptual plan for improving the intersection of Route 806 at Old Newtown Road, Spot Improvement Concept 2, described earlier calls for a sidewalk to be constructed on the north side of Route 806 at that area;
- South side – from Plumtrees Road to Old Shelter Rock Road, fill in the gaps, (long term). Installation of sidewalks along this stretch would require re-grading of embankments west of Old Newtown Road. Such re-grading of the embankments would also improve visibility for motorists to see and be seen at side streets and private driveway approaches to Route 806 along this stretch;

Route 806 from Old Shelter Rock Road to Beaver Brook Road and Triangle Street

- North side – from Old Shelter Rock Road to Beaver Brook Road, (short term);
- South side – from Old Shelter Rock Road to Beaver Brook Road, fill in the gaps, (long term);

An issue along this stretch is the narrow width of the bridge over the Still River. Modification/widening of this bridge, or installation of a pedestrian bridge, would be necessary to continue a walkway through this point.

State Funding Policy Toward Sidewalk Construction as a Component of an Improvement Project

CTDOT has had a long-standing policy with respect to its participation in constructing sidewalks along state roads. Under this policy, if the state reconstructed a road with state or federal funds and the project disturbed an existing sidewalk, the reconstruction of the sidewalk was included, in kind, in the reconstruction project.

If CTDOT was constructing or reconstructing a state road in an area where there was no existing sidewalk and the community could show, according to generally accepted design standards, that a sidewalk was warranted, the state would construct the sidewalk, but only based upon a specific agreement with the municipality under which the municipality provided the nonfederal share of any costs associated with the sidewalk.

Recently, this policy was fundamentally changed with the issuance of *Connecticut Department of Transportation Policy Statement No. E&C -19, dated February 2, 2011, Subject Sidewalks*. (This Policy Statement superseded *Policy Statement No. E&H.O. -19, dated December 11, 2007*). In the case where a sidewalk does not currently exist along a state road or bridge, construction of a new sidewalk may take place using the federal/state/local cost sharing ratio consistent with the overall project's funding participation. The relevant portion of this updated policy states:

When a roadway is to be constructed or reconstructed, when deciding on the inclusion of new sidewalks, the extent and patterns of pedestrian travel demand should be considered, as well as other factors such as project scope, costs and associated impacts. Pedestrian accommodation should be evaluated by means of a pedestrian travel assessment, while also taking into account public comment. The assessment may consider, but not be limited to, the existing or planned pedestrian facilities in the project area; a review of the Town Sidewalk Plan if one exists; whether the road facility is a potential barrier to pedestrian travel or if there are alternative paths or crossings available; pedestrian accidents; existing

or planned significant destinations in the area, such as residential areas, schools, employment centers, shopping centers, businesses, public transportation facilities; recreation areas, etc. If the Department determines that it is prudent and feasible to include new sidewalks, then sidewalks may be included within the limits of the project or extending to a logical terminus point.

Also stated in the policy statement regarding local roads:

Sidewalks beyond the limits of the project or logical nearby terminus point may be constructed as part of the project if the local community will enter into an agreement to provide the financial resources for the full cost of the design and construction, including associated rights-of-way and utility costs of such sidewalks.

Based upon this updated state policy, it is likely that sidewalks would be installed along the portions of Route 806 to be rebuilt under the CTDOT plans for the separate Old Newtown Road and Old Shelter Rock Road intersections.

Projects which include only sidewalks may also be considered along a state roadway or a local roadway where a need is demonstrated following assessment procedures cited above

Sidewalk Maintenance

The following statement addresses the issue of sidewalk maintenance and was also contained in *Connecticut Department of Transportation Policy Statement No. E&C -19 dated February 2, 2011, Subject Sidewalks.*

The municipality in which the sidewalks are located will be required to enter into an agreement with the State in perpetuity, clearly stating that the municipality is fully responsible for all liability, maintenance, repairs, and snow and ice removal for any new sidewalks constructed under the provisions of this policy, with the exception that the State will be responsible for liability, maintenance, repairs, and snow and ice removal of sidewalks on State maintained bridges and their approaches, consistent with Connecticut General

Statute 13a-91. The responsibility for liability, maintenance, repair, and snow and ice removal of existing sidewalks which are reconstructed will remain as was prior to the reconstruction work.

Crosswalks

There are very few existing crosswalks along the Route 806 corridor today. If new exclusive crossings are desired, traffic signal modifications would likely be needed. Upgrades would also need to be made to accommodate ADA requirements. It is recommended that crosswalks be installed in the following locations along the Route 806 corridor as shown on Figures 15a – 15f:

- Across Industrial Park Road;
- Across the Friendly's Restaurant Driveway and the Commerce Park Shopping Center (Xpect Discounts Plaza) driveway;
- At the intersection of Route 806 with Eagle Road and the WalMart/Berkshire Shopping Center driveway, across each leg except for the southwest leg of Route 806;
- Across the Berkshire Shopping Center driveway near the McDonald's Restaurant;
- Across Plumtrees Road;
- Across Old Newtown Road;
- Across Woodside Avenue;
- Across Old Shelter Rock Road;
- Across Beaver Brook Road;
- Across Cross Street

Existing Transit Service

As was previously discussed in the existing conditions part of this report, the Housatonic Area Regional Transit (HART) operates several fixed route transit lines in the region, all emanating from Downtown Danbury. HART currently operates one urban fixed route transit line through the Route 806 corridor: the Stony Hill Road and Newtown Road line, or HART 2. This line operates Mondays through Saturdays from 6:00 am to 5:30 pm, providing service between east

of the study area (the Big Y in Bethel) and the “Pulse Point” in Downtown Danbury. The Pulse Point is the central hub of all of HART’s fixed route lines, allowing for easy transfers among lines and multi-modal connections. Thirty-five foot transit coaches, most of which are equipped with bike racks, are used on the HART 2 line.

The second fixed route transit line in service through the Route 806 corridor is HART’s Newtown Road – Downtown Bethel Loop (Newtown/Bethel Loop). This line compliments the HART 2 line by providing evening and Sunday service along an expanded but similar route.

Bus Routing

A transit issue described in the existing conditions part of this report pertains to the routing of the HART 2 line providing service to Eden Drive via Woodside Avenue. Particularly, inbound buses leaving Eden Drive have a difficult time making a left turn from Woodside Avenue to Route 806 during peak traffic periods. This would be hard to alleviate without signalizing the intersection. As previously mentioned, Woodside Avenue at Route 806 has not met the warrant thresholds for signalization in the past.

If Old Shelter Rock Road were to be signalized, the HART 2 inbound line could be rerouted through Old Shelter Rock Road. A bus egressing from Old Shelter Rock Road to Route 806 under signalized conditions would be expected to encounter less delay and more reliable on time transit service during peak times than would otherwise occur at the unsignalized Woodside Avenue approach to Route 806.

Bus Stops

The two most heavily used stops along Route 806 portion of the HART 2 line are at the Super Stop & Shop Supermarket (Nutmeg Square Shopping Center) and the Wal-Mart Store (Berkshire Shopping Center). The bus exits Route 806 to enter the sites of both stores and makes stops at

the front doors of the stores. The store acts as the bus shelter at both stops. HART staff has suggested that there is only one other location that generates enough ridership which could be served by a traditional bus stop shelter. This shelter would be located at the corner of the McDonald's restaurant and the entrance to the Berkshire Shopping Center on the south side of Route 806, shown conceptually on Figure 15-D.

The lack of pedestrian facilities at many of the designated transit stops relates to the same issues facing pedestrians along the entire Route 806 corridor. Better sidewalks, paved bus stop waiting areas, crosswalks and access to existing buildings would greatly improve transit service user's safety and experience in corridor.

Models Used Elsewhere In Connecticut for Agreement as to Bus Shelter Maintenance

Many similar size regional transit districts do not use bus shelters. The Middletown Area Transit District (MAT) does not even have stops and provides only "flag down" service. The larger systems such as Connecticut Transit (CT Transit) and smaller regional transit systems provide shelters only at stops used by large number of riders or under some other special consideration. Safety, convenience and bus operating characteristics all are considered when selecting a site for a bus stop.

CT Transit and smaller regional transit systems bus stop shelters are maintained by the municipality in which the shelter is located. The host community must agree to provide maintenance and repair of the shelter as documented in a continuing control agreement. Some communities have joined together in a regional consortium to purchase the services of a contractor to maintain and clean the shelters.

5. ENHANCEMENT AND BEAUTIFICATION

Roadway beautification and enhancement can entail multiple aspects including streetscape improvements, tree plantings, pedestrian and bicycle upgrades, and so on. CTDOT has recently been reviewing and revising its policies regarding STP Enhancement Funding and STP Urban Funding for beautification and enhancement. CTDOT is making efforts to be more supportive of non-motorized travel modes, to develop a more balanced multi-modal transportation system, to support state goals of livable and sustainable communities, and to generally make it safer and more convenient for residents to walk and bicycle in Connecticut.

STP – Enhancement Funding

Connecticut Department of Transportation Policy Statement No. P&P – 8, dated April 11, 2011, subject: Administration of the Federal Transportation Enhancement Program addresses the current STP Enhancement Funding policy. A change from past policy with regard to STP Enhancement Funding, in an effort to achieve the aforementioned goals of supporting more non-motorized travel, is that CT DOT *will now reserve 50 percent of the transportation enhancement program funds for bicycle and pedestrian projects to be administered by the Department.* This dedicated source of funds will allow CTDOT to address critical bicycle and pedestrian needs that are difficult to resolve at the regional level.

The remaining 50 percent will be made available for enhancement projects proposed by regions and municipalities. Such enhancement projects will continue to include streetscape and beautification type of improvements.

STP – Urban Funding

The STP-Urban program allocates federal funds to regional planning agencies that are responsible for project selection and program administration. CTDOT has not previously allowed the use of STP-Urban funds for bicycle and pedestrian projects. However, they are

in the process of amending this policy to allow more flexibility to regions to fund bicycle and pedestrian projects.

While prior CTDOT policies disallowed STP-Urban funding to be awarded to enhancement type project (i.e. bicycle and pedestrian related improvements, streetscapes, etc.) and encouraged these applicants to apply for funding under the STP Enhancement Program, CTDOT is now allowing STP-Urban funding to supplement STP-Enhancement funding.

Beautification and Streetscape Improvements

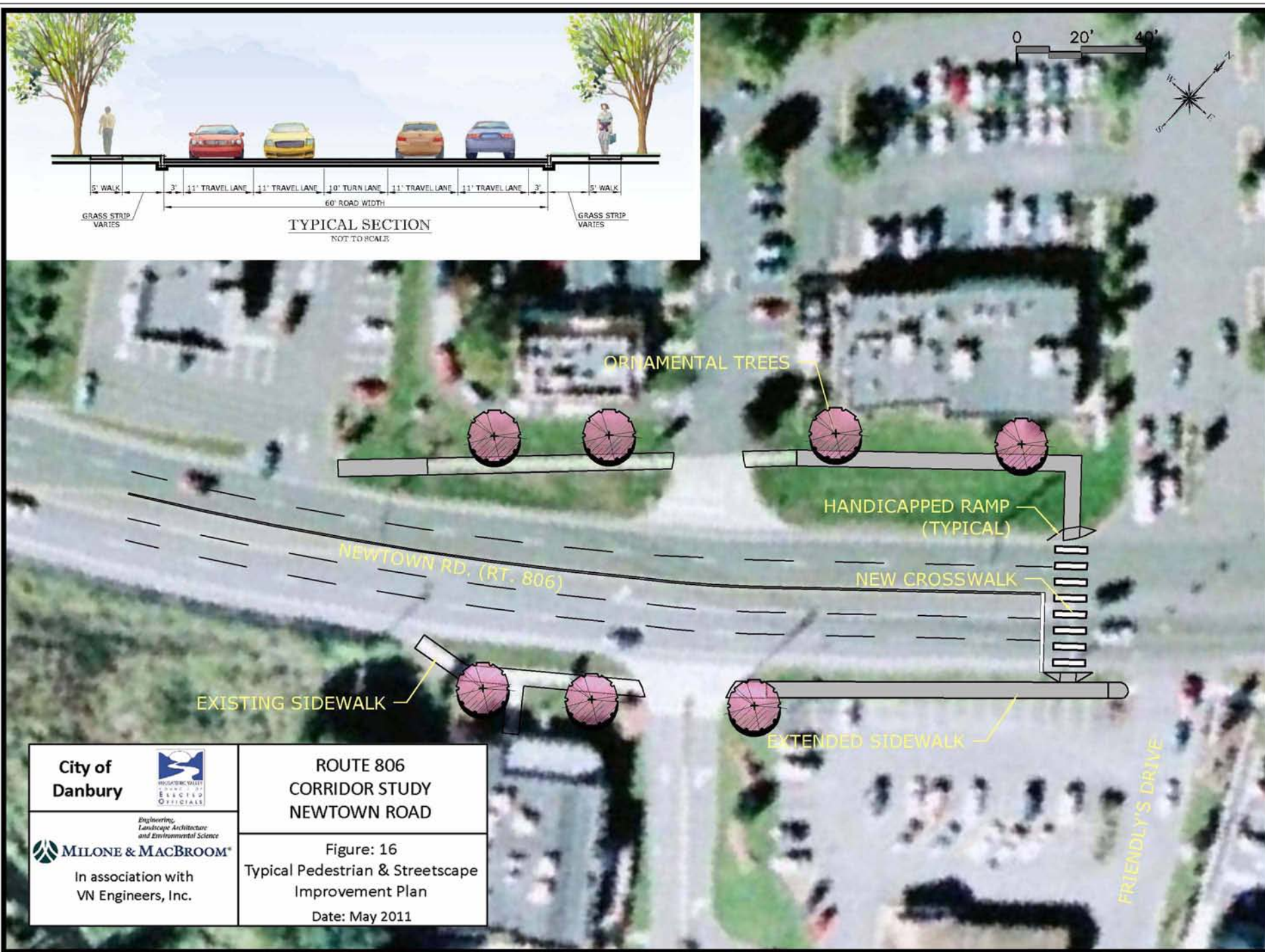
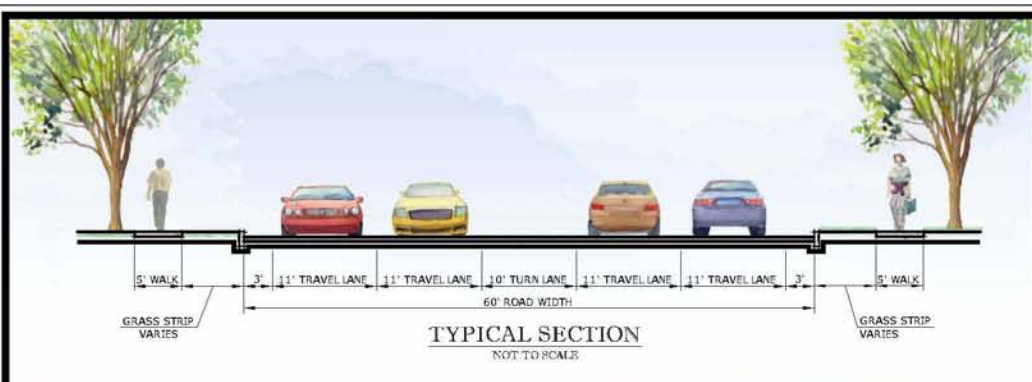
Route 806 has been built out over time and as a result the development pattern reflects the regulations and standards that existed at the time of construction of each parcel. If Route 806 were developed today it would be a “Complete Street”. There would be sidewalks, pedestrian connections between the buildings and the street, crosswalks, access for bicycles, transit stops and landscaping throughout the corridor.


How do we transform Route 806 into a “Complete Street”? STP-Enhancement and STP-Urban funding can be utilized towards improvement projects. Additionally, the Route 806 of today has little vacant land or excess right-of-way. Any new development within the corridor will likely come from the redevelopment of obsolete or underutilized parcels. As these parcels are redeveloped or a change of use proposed or as site plans are modified it will provide an ideal opportunity to begin filling in the gaps in the sidewalk and streetscape network.

The Zoning Regulations could be amended to require a site plan review when a parcel is redeveloped for any new use or for a change of use. As part of the site plan review process, where appropriate, the regulations could require the installation of a 5’ or less snow shelf (grass strip), 5’ wide concrete sidewalks and a pedestrian connection to the building. The regulations could also be amended to require the planting of street trees as part of the site plan review process for any new use or change of use.

The City should work with the CTDOT and ask that the same snow shelf, sidewalk and street trees be installed when portions of Route 806 are reconstructed.

It is recommended that the City of Danbury apply for STP-Enhancement funding and STP – Urban funding for the installation of sidewalks and crosswalks as shown on the Pedestrian Access Plans (Figures 15a – 15f). Figure 16 shows a typical pedestrian access plan and renderings of streetscape improvements for one area of the Route 806 corridor that could be incorporated into a funding application.



<p>City of Danbury</p>  <p>HAZARD PREVENTION SELECTED OFFICIALS</p>	<p>ROUTE 806 CORRIDOR STUDY NEWTOWN ROAD</p>
<p><i>Engineering, Landscape Architecture and Environmental Science</i></p> <p>MILONE & MACBROOM®</p> <p>In association with VN Engineers, Inc.</p>	<p>Figure: 16 Typical Pedestrian & Streetscape Improvement Plan</p> <p>Date: May 2011</p>

6. IMPROVEMENT COST/IMPLEMENTATION MATRIX

An improvement cost / implementation matrix was developed listing each concept and recommendation described in this transportation management plan. It can be seen in Table 7. Separate time frame and cost estimate levels were developed. It should be noted that the cost estimates do not include utility relocation or right of way impacts. As mentioned earlier in the report, if any of these concepts were to move forward they would have to be brought to final design with thorough evaluation of environmental aspects, possible property acquisition and other details that were also not included in these cost estimates.

The three time frames developed for the improvements are:

- Short-term: Less than 3 years
- Mid-term: 3 to 10 years
- Long-term: more than 10 years

These are estimates that include the amount of time it may take for a concept to get through funding, design, approvals, construction and so on.

The three cost estimate levels developed for the improvements are:

- Low-cost: less than \$100,000
- Medium-cost: \$100,000 - \$500,000
- High-cost: more than \$500,000

In the case of the corridor-wide improvement concepts, the cost estimate is the total of each isolated improvement.

Table 7
Route 806 Corridor Study - Improvement Cost / Implementation Matrix

Concept	Location	Description	Timeframe	Cost Estimate	Notes
1	Route 806 at Eagle Road	Widen Eagle Road approach from three (3) lanes to four (4) lanes.	Mid	High	May require widening of Route 806 east of signal for standard double left acceptance
2	Route 806 at Old Newtown Road	CTDOT improvement to reconfigure the intersection. Includes widening and realignment. City also seeks to construct new DPW driveway opposite Old Newtown Road.	Mid-Long	High	
3-A	Route 806 at Old Shelter Rock Road and Woodside Avenue	CTDOT improvement to signalize both intersections. Widening of Route 806 and realignment of Old Shelter Rock Road included.	Mid-Long	High	
3-B	Route 806 between Old Newtown Road and Old Shelter Rock Road	Widen Route 806 along this area to facilitate bypass of motorists turning onto side streets and driveways.	Mid	High	
4-A	Route 806 at Triangle Street, Beaver Brook Road and White Street	Widen Triangle Street approach from one (1) lane to two (2) lanes. On the opposite approach, includes widening and restriping for alignment purposes.	Mid	High	
4-B	Route 806 at Triangle Street, Beaver Brook Road and White Street	Make Triangle Street one-way southbound from Route 806 to Purcell Drive / Byron Street. Includes some widening along Route 806 and White Street.	Mid	High	Entails some re-routing of traffic along nearby streets
4-C	Route 806 at Triangle Street, Beaver Brook Road and White Street	Make Triangle Street one-way northbound from Purcell Drive / Byron Street to Route 806. Includes some widening along Route 806 and White Street.	Mid	Medium	Entails some re-routing of traffic along nearby streets
4-D	Route 806 at Triangle Street, Beaver Brook Road and White Street	Realign the Triangle Street and Beaver Brook Road approaches at Route 806 to create two closely spaced "T" intersections operating on one controller. Includes some widening along Route 806 and White Street.	Long	High	
Access Management Recommendations	Corridor - Wide	Manage curb cuts / driveways throughout the corridor by means of consolidation, turn restrictions, creation of shared access roads and through interconnecting adjacent parcels.	Long	High	
"Short-Term" Sidewalk Recommendations	Corridor – Wide	Install sidewalks, as feasible, along Route 806 in order to join together missing segments such that a single continuous walkway could exist along the entire corridor	Short-Mid	High	
"Long-Term" Sidewalk Recommendations	Corridor – Wide	Install sidewalks to join together remaining missing segments of sidewalk network throughout the corridor.	Long	High	
Crosswalk Recommendations	Corridor – Wide	Install crosswalks, as feasible, throughout the corridor.	Short	Medium	
Bus Routing Recommendation	Inbound HART 2 service along Woodside Avenue	Re-route the segment of this inbound bus line so that egress to Route 806 is made at a signalized Old Shelter Rock Road intersection instead of at an unsignalized Woodside Avenue.	Short	Low	Unnecessary if Concept 3-A implemented
Bus Stop Recommendation	Route 806 at McDonald's Restaurant	Install bus shelter at corner of the McDonald's Restaurant and entrance to the Berkshire Shopping Center.	Short	Low	

APPENDIX

REPORT OF MEETING

PROJECT NO.: 3101-10

PROJECT NAME: Transportation Management Plan for
1.54-Mile Route 806 (Newtown Road)
Danbury, Connecticut

DATE OF MEETING: June 20, 2011, 10:00 a.m. to 12:30 p.m.

SUBJECT OF MEETING: Meeting to Present and Discuss the Draft Plan

LOCATION OF MEETING: 3rd Floor Conference Room, Danbury City Hall,
155 Deer Hill Avenue, Danbury, Connecticut

ATTENDEES: Jonathan Chew – HVCEO
Dennis Elpern – City of Danbury (Planning & Zoning)
Sharon Calitro – City of Danbury (Planning & Zoning)
Abdul Barry Mohamed – City of Danbury (Traffic Engineering)
Mark Makuch – Connecticut Department of Transportation
(CTDOT) – Traffic
Rick Jacobson – CTDOT – Planning
Carla Iezzi – CTDOT – Planning
Tom Borden – CTDOT – Project Development Unit
Erik Jarboe – CTDOT – Project Development Unit
Dick Harrall – Milone & MacBroom, Inc. (MMI)
Stuart Popper – MMI
Dave Sullivan – MMI
Neil Olinski – MMI

The meeting began with each attendee introducing themselves. The focus of the meeting centered around the analysis and recommendations portion (Section Two) of the draft plan.

Traffic/Capacity Upgrade Recommendations

- The presentation began by Dave Sullivan going over the traffic forecasts, capacity upgrade recommendations, and access management recommendations.
- Rick Jacobson informed the group that CTDOT recently counted traffic volume turning movements at the intersection of Route 806 and Old Newtown Road. 2011 existing, 2014 projected, and 2030 projected weekday morning and afternoon peak hour traffic volumes were provided by Rick.
- With traffic volume information now available for this location, capacity analyses can be performed. Tom Borden mentioned that CTDOT would like to review any assessment by

MMI of whether Route 806 at this location may need to be four or five lanes wide. Such assessment may be incorporated by the CTDOT Project Development Unit into their conceptual improvement plans for this location.

- Discussion of whether or not this section of Route 806 may need to be four or five lanes paralleled discussion of where a sidewalk should be installed on the south side of the road at this location. The initial CTDOT concept drawing for improvement to this location (seen on page 9 of the draft report) did not show a sidewalk proposed for the south side of Route 806. MMI's recommendation for this portion of Route 806, however, is to include a sidewalk along this stretch (Figures 15C and D of the draft report).

Meanwhile, the City of Danbury is currently in the process of reviewing a small expansion proposal for the Plumtrees Plaza and has posed the question of where they should require the property owner to build a sidewalk along the south side of Route 806 between Old Newtown Road and Plumtrees Road. The city's initial concern is to not have a sidewalk installed that would have to get ripped up when the state widens this portion of Route 806. The soonest it was estimated that the CTDOT improvement for this portion of Route 806 may actually get built is five to 10 years from now. Dennis Elpern concluded that the sidewalk, regardless of whether it needs to be ripped up in the future, should be installed now upon expansion of the Plumtrees Plaza.

- With regard to the Old Shelter Rock Road intersection, Carla Iezzi mentioned that Sue Labatque at CTDOT should be contacted. There may be recently updated state improvement plans for this intersection. Carla stressed the importance of consistency between the Route 806 report and any projects or initiatives along the corridor that are already underway. (Editor's Note: Previously, it had been indicated that the state improvement project for this intersection had stalled due to funding issues. The section of the draft 806 report dealing with this intersection was quite general. We will review the new information and update this section if need be.)
- The report section dealing with the four improvement concepts for the intersection of Route 806/Triangle Street/Beaver Brook Road/White Street was agreed to be adequate.

Access Management Recommendations

- With regard to access management, Tom Border suggested that a center median be placed along portions of the eastern half of Route 806. Specifically, a center median would work along areas fronting the Berkshire Shopping Center and also Dunkin' Donuts/Taco Bell.
- Abdul Mohamed asked if the city would be adopting the access management recommendations into the Zoning Regulations. Planning Department staff indicated that there were no plans to adopt new zoning regulations addressing access management. Instead, the recommendations may be used as necessary on a case-by-case type basis in their review of zoning applications for development and redevelopment along the corridor.

Pedestrian/Transit Recommendations

- Stuart Popper presented the Pedestrian and Transit Recommendations. Several review comments were made:
 - Short-term versus long-term recommendations should be better defined (in terms of time frame, north side is short term/south side is mostly long term, etc.).
 - Bus stop waiting/standing areas should have paved platforms.
 - Dennis and Sharon mentioned that some areas of recommended sidewalks are not necessary, e.g., near the I-84 off ramp.
 - At the west end of the corridor, a pedestrian bridge over the Still River on the north side of Route 806 should be a short-term recommendation. Sidewalks leading to and from the pedestrian bridge along this section should be short-term instead of long-term recommendations.
 - Crosswalks that have been recommended to go across Route 806 are not needed at all locations. Abdul had concerns that pedestrian-activated walk phasing at each signal along the corridor would negatively affect coordination and traffic progression.
 - Crosswalks that have been recommended going across side streets should be defined as all short-term recommendations.

Enhancement and Beautification Recommendations

- Tom mentioned that Figure 16 showing a Typical Pedestrian and Streetscape Improvement Plan should be revised to show 11-foot travel lanes with four- or five-foot shoulders (for bicycles) instead of the 12-foot travel lanes with no shoulders.
- Carla clarified that that STP-Urban funding money may be used to supplement STP-Enhancement funding money.

Submitted by: 
Neil Olinski, Transportation Planner
Milone & MacBroom, Inc.

Date: 6/28/11

Jonathan Chew

From: Iezzi, Carla A [Carla.Iezzi@ct.gov]
Sent: Tuesday, June 28, 2011 3:00 PM
To: Jonathan Chew (jchew@hvceo.org)
Cc: Moberg, Phillip B; Sojka, Gary J; Jacobson, Richard C; Borden, Thomas E.; Makuch, Mark F.; Head, David M; Zimyeski, Melanie S; Talarico, Peter E; Gaffey, Timothy J; Hams, David W; Jonathan Chew (jchew@hvceo.org); Dave Hannon (dhannon@hvceo.org); 'Neil Olinski'; Stuart Popper
Subject: FW: Danbury - Route 806 Study

Recipients: Consultant, Region and CT DOT Staff

Thank you for the opportunity to review the *Draft Report Transportation Management Plan Newtown Road (Route 806) Danbury, Connecticut*, dated May 2011. The following considerations are suggested.

- Page 14, statement appears to be outdated and possibly a remnant from the interim draft of this report section:

"Intersection Level of Service (LOS) analyses have not been performed at this time due to ongoing collection of peak hour turning movement traffic volume data. Existing condition LOS results shall be incorporated into the subsequent report detailing proposed improvements."

- Page 46, "By 2030 the intersection is anticipated to operate at LOS F during peak periods" – a question was raised by Department staff regarding this statement as to whether the 2030 traffic capacity analysis include traffic from "full build out potential" scenario. If so, please clarify the statement to indicate that the conditions leading to the LOS F is based on a build out scenario. If not, please clarify as to how this LOS F was predicted.
- Spot Improvement Concept 4D (Figure 13): as is stated in Section Two, Chapter 3, access management should be encouraged where possible.
- In roadway sections where there are concentrations of left turning accidents, consideration should be given to recommending a raised center median. It appears that the area east of Eagle Road (east of the bridge) would be a good candidate for this treatment.
- It is suggested that the concept shown in Figure 11 be modified to include a two lane approach on the proposed public works drive. Although turning volumes might not justify an exclusive left turn lane on this leg, its inclusion would provide the safety benefits of head to head left turn lanes, provide more flexibility in the choice of signal phasing, and allow for increased storage/capacity on this leg which could be utilized by a potential connection to commercial property to the east.
- As discussed, the report contains insufficient information for the Department to approve of the traffic volumes as shown although no major traffic volume discrepancies were found. As indicated in the prior submittal of comments on interim draft report sections, the following statement remains applicable:

"We understand that this study is in the preliminary planning phase from a traffic volume standpoint. Based on a cursory review of the existing volumes provided we find them to be acceptable at this time. With that said, we would like to stress that if this study should move from a planning study into an actual design project with additional lanes and proposed turning lanes as mentioned in the report, new turning movement counts at all intersections within the corridor will need to be taken. These volumes would also have to be projected for a twenty year design horizon. If this project should move in that direction this office would like to be involved in the development of said volumes."

- Table 7: Timeframe, Cost Estimate and Constructability columns are incomplete.
- With respect to the Pedestrian and Transit Facilities discussion, specifically regarding Enhancement and Beautification, the following recommendations are offered. Such as provided by the first two cited paragraphs, a general discussion of the Department's transition within various program areas to allow more flexibility and focus on non-motorized transportation is acceptable - however, please remove the recitation of the draft discussion points and related paragraphs. This

6/28/2011

information was provided as a means of educating the project team but is not formal policy and predate changes to several relevant policy statements. Reference to the actual elements of the widely distributed and new/updated policies for transportation enhancements and sidewalks is more appropriate.

- The terminology "section" is used to refer to both the report outline and separately for specific corridor segments. Consider referring to the report in "parts", the corridor in "segments", or using an alphabetic reference for one set versus numeric for both.

It is suggested that a general statement be incorporated at the end of the Introduction in Section Two similar to the following:

"The TRANSPORTATION MANAGEMENT PLAN NEWTOWN ROAD (ROUTE 806) DANBURY, CONNECTICUT is intended to compliment and support but not supersede current and ongoing activities to implement transportation system improvements in the corridor. The process of developing conceptual plans and/or design documents to advance projects to construction includes public involvement components as well as an evaluation of feasible and prudent alternatives. As such, any endeavors in the corridor will be based on well documented and coordinated efforts.

- With respect to the **DOT00340309PE Danbury Route 806 (Newtown Road) Add Signal and Westbound Left Turn Lane at Old Shelter Rock Road**, there is considerable information available in the files. It was suggested that the consultant coordinate with the project staff to review the materials and have copies prepared. The contact is Mr. David Harms:

David HARMS Engineering 3401 NWA 860-594-3291 David.Harms@ct.gov

- Acronyms should be spelled out on the first use but there are occasions where the spelled out instance follows use of the acronym, likely the result of text editing over time.
- It is recommended that overtly subjective phrases like "quite a bit" be avoided – "considerable" or "significant, although still subjective, are typically more acceptable for a technical paper when describing trends anecdotally. Similarly, there are better substitutions for the word "around" when referring to measurements, quantities or estimates.
- Please also ensure that any verbal comments received from Department staff attending the June 20, 2011 meeting with the study team and City staff, are also fully incorporated if not already highlighted herein.

Please contact me if you have any questions. Thanks, again.

From: Iezzi, Carla A

Sent: Friday, June 24, 2011 10:07 AM

To: Gaffey, Timothy J; Harms, David W

Cc: 'Neil Olinski'; 'Richard Harrall'; 'Dave Sullivan'; 'Stuart Popper'; 'jchew@hvceo.org'; 'Dave Hannon (dhannon@hvceo.org)'

Subject: Danbury - Route 806 Study

Recipients: Consultant, Region and CT DOT Staff

Regarding the Danbury - Route 806 Study, the consultant has requested additional information on **DOT00340309PE** including, as available, traffic volumes, layout drawings/plans, and copies of correspondence to be forwarded with the consolidated agency comments. Is any of this information readily available and easily transmitted? Let me know. Thanks.

From: Neil Olinski [mailto:nello@miloneandmacbroom.com]

Sent: Friday, June 24, 2011 9:53 AM

To: Iezzi, Carla A

Cc: Richard Harrall; Dave Sullivan; Stuart Popper

Subject: RE: Danbury - Route 806 Study

6/28/2011