



Westwood Traffic Calming

Policymaker Update

September 16, 2008





Agenda

1. Introductions

2. Objective

3. Validation

4. Intersection Designs

5. Traffic Calming

6. Analysis

7. Questions



Agenda

1. Introductions

2. Objective



Project Objectives

- “Calm” Traffic
- Reduce Vehicle Speeds on Canton Street
- Reduce Cut-thru traffic on Canton Street
- Discourage Traffic from Westwood Station Boulevard from using Canton Street



Re-Cap of Project

- Collected
 - Traffic count data
 - Origin and destination data
 - Cut thru trips
 - Travel times
 - Automatic traffic counts and vehicle speeds
- Developed a validated SimTraffic model for existing conditions
- Assessed acceptability and priority of various measures
- Survey (by others)
- Initiated designs



Schedule

Data
Collection

Modeling

Validation

Finalize
Measures

Spring '08

Spring '08

Summer '08

September
'08



Schedule

Mobile
Workshops

Formal
Approvals

Design

Build

Late
September

Fall '08

Fall '08

Spring '09



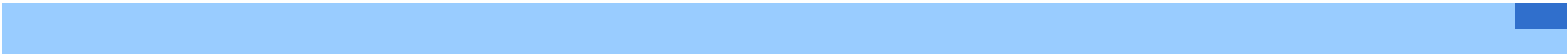
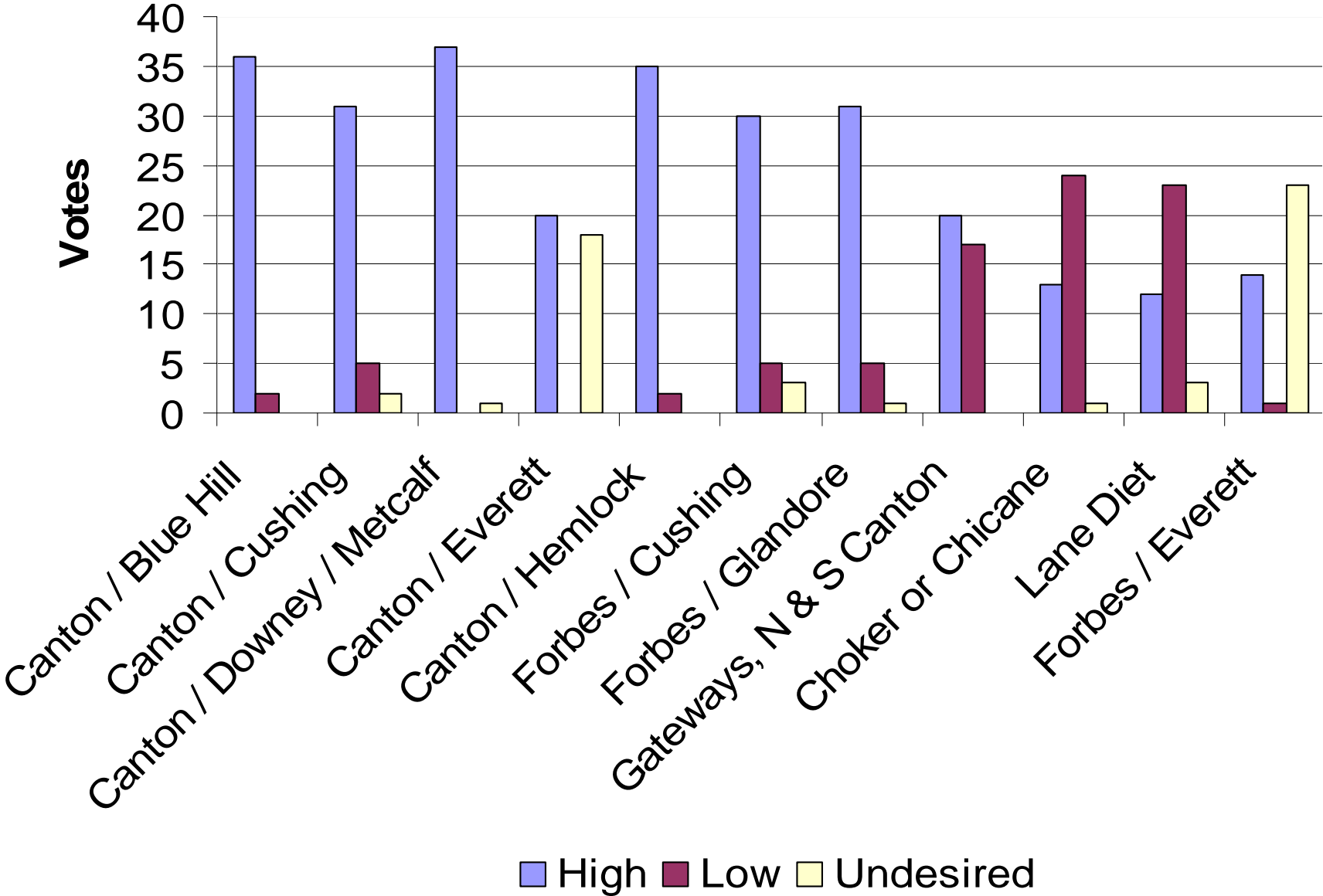
Agenda

1. Introductions

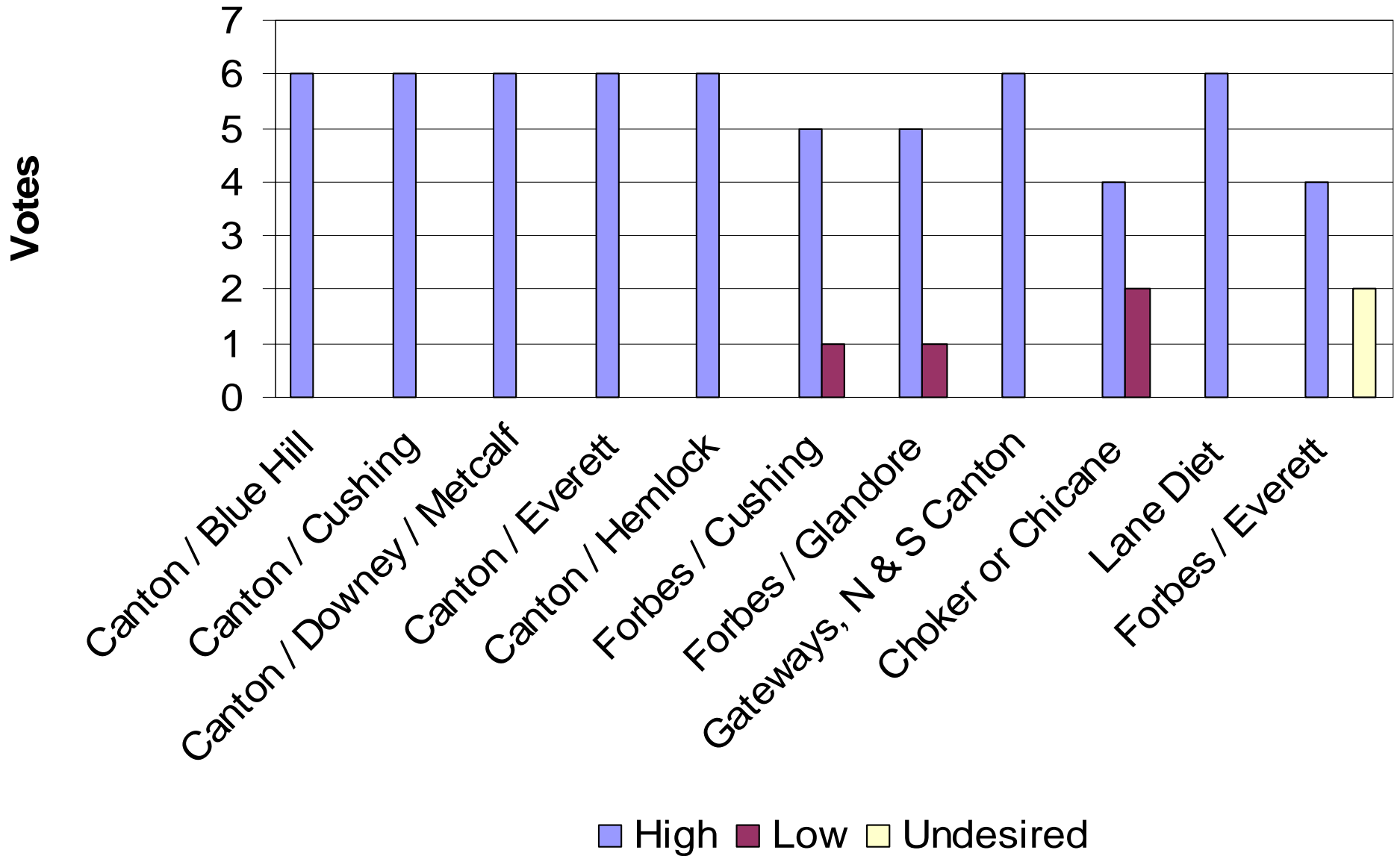
2. Objective

3. Validation

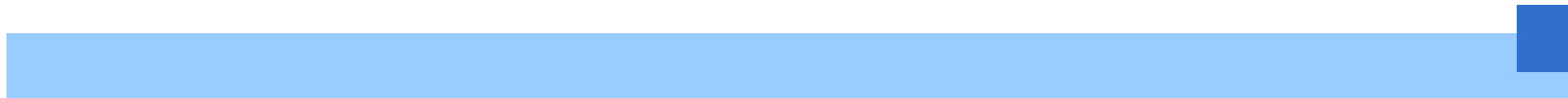
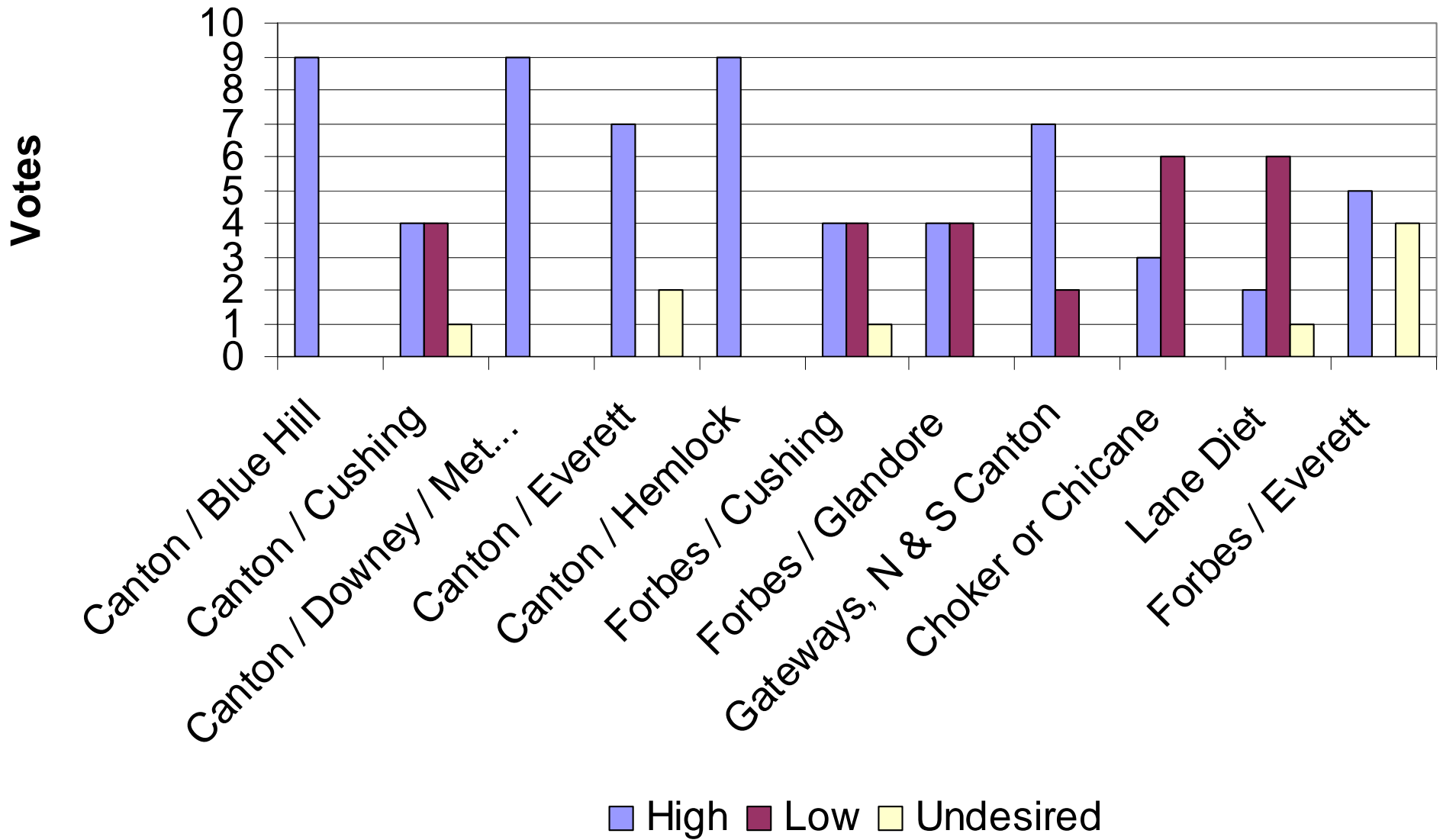
Overall Votes, by Numbers



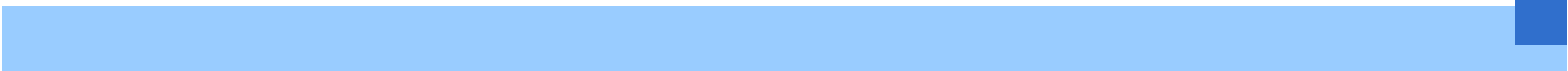
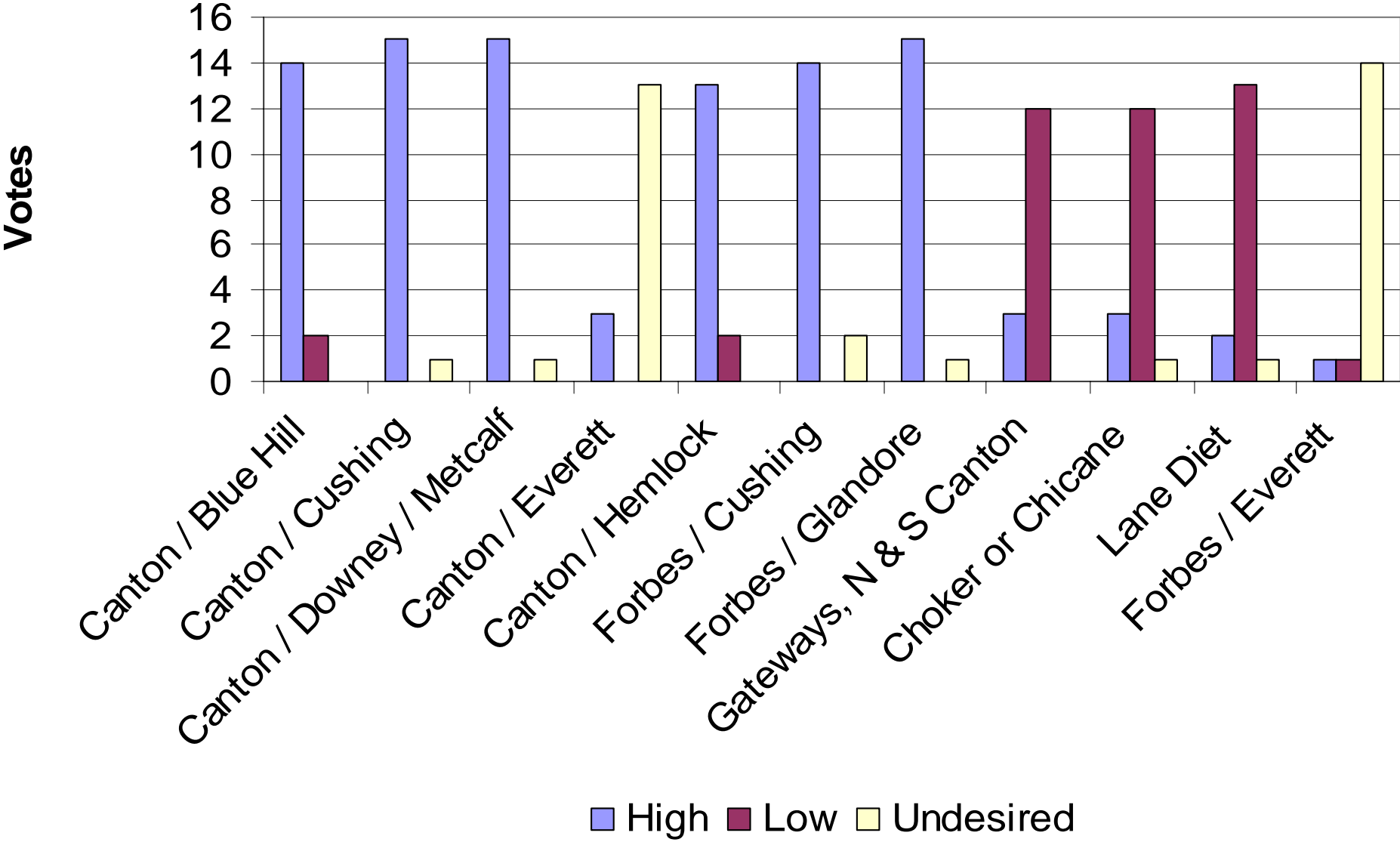
Canton Street Votes



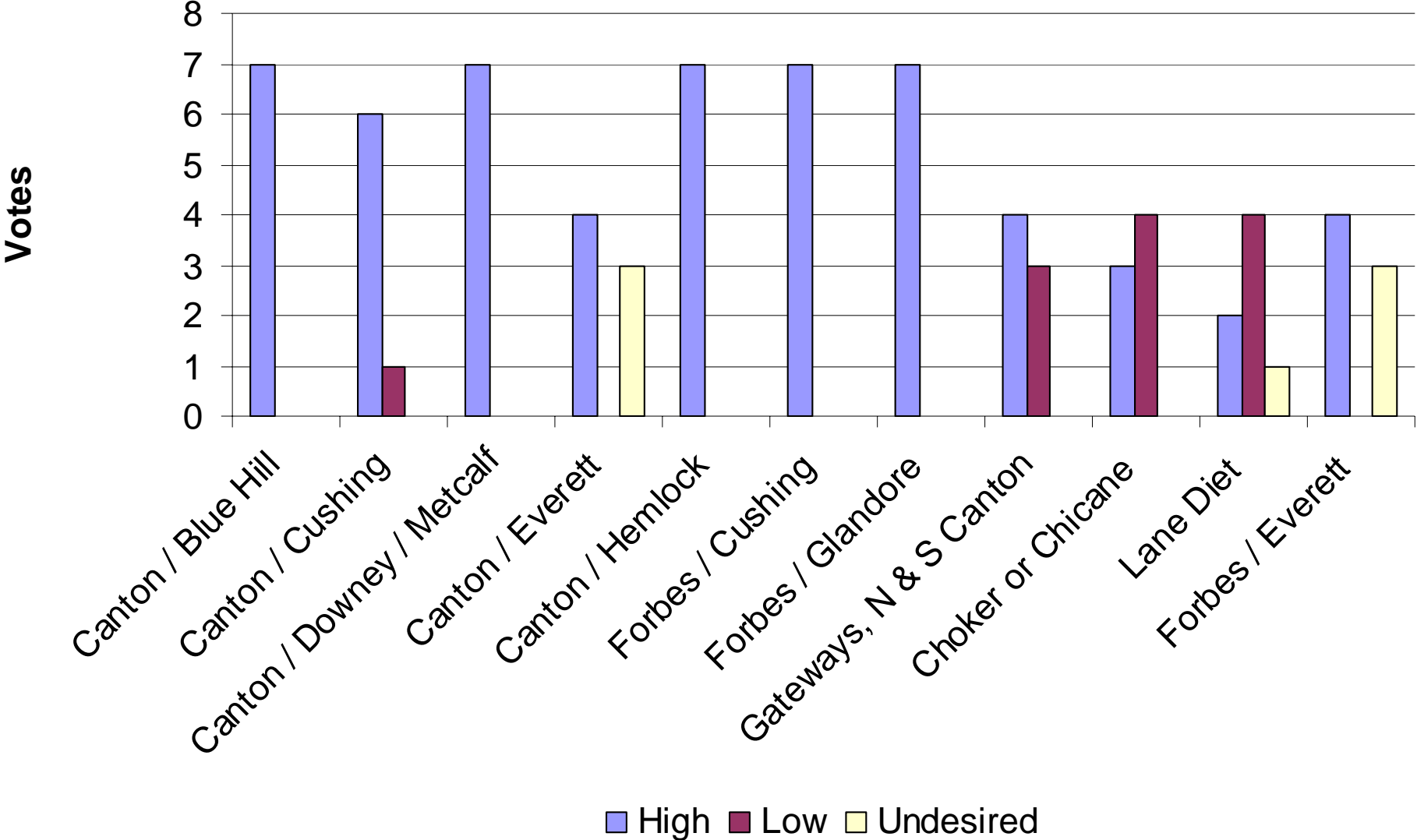
Everett Street Votes



Forbes Street Votes



Other Streets Votes





Agenda

1. Introductions

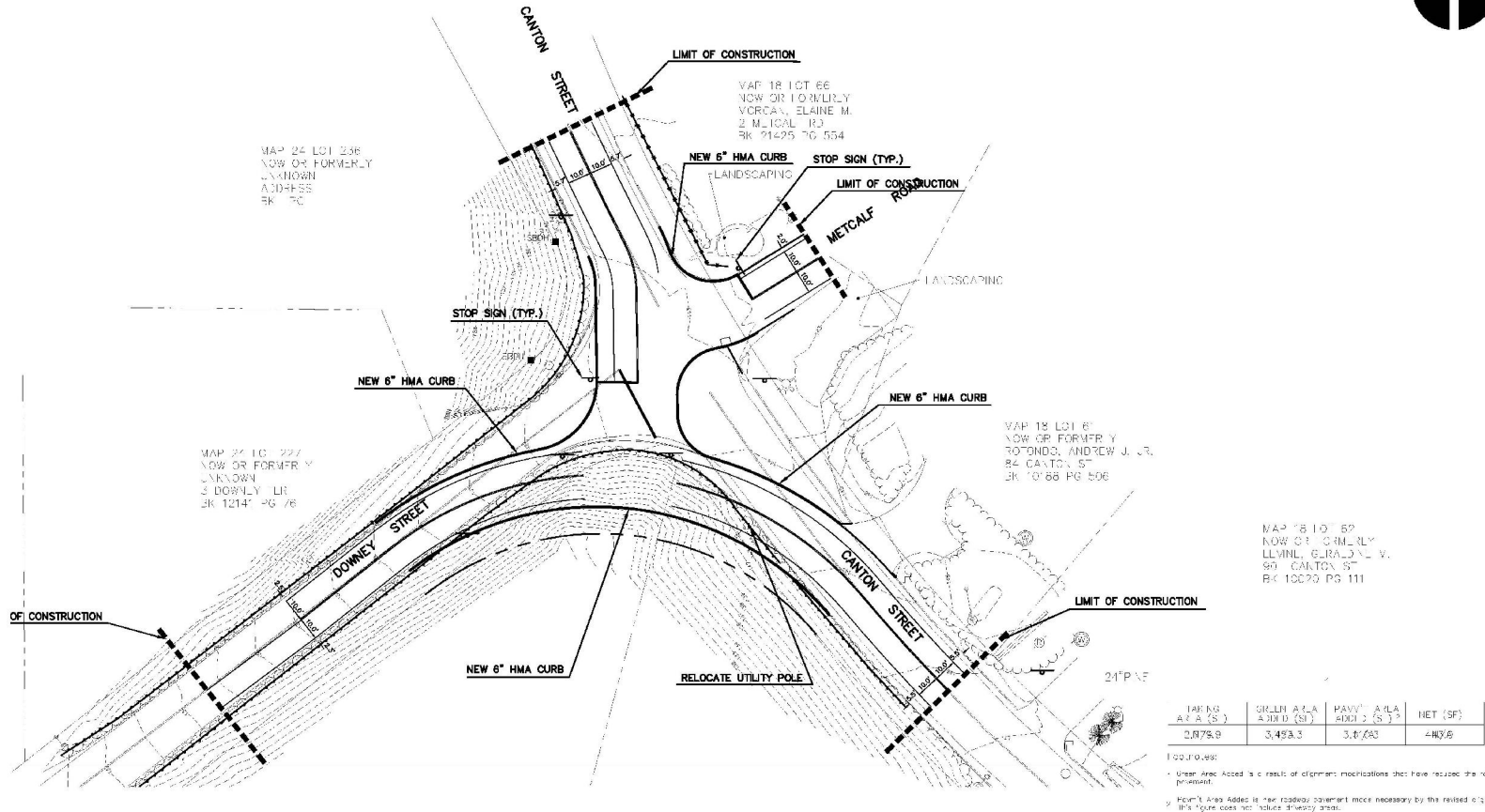
2. Objective

3. Validation

4. Intersection Designs



Canton and Downey/Metcalf

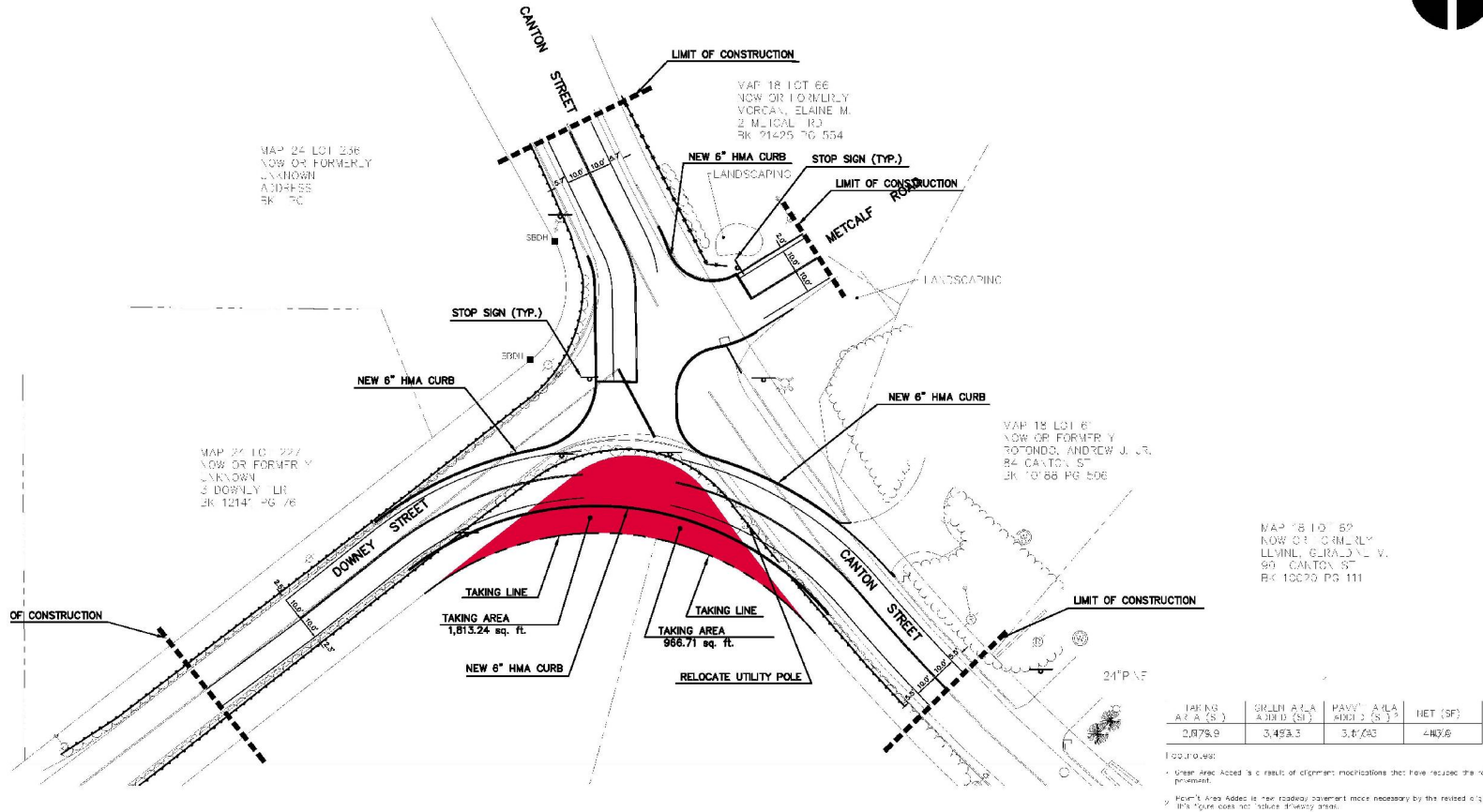


PRELIMINARY-NOT FOR CONSTRUCTION

<p>Town of Westwood, MA Department of Public Works 50 Carby Street, Westwood, MA 02090</p> <p>CANTON, EVERETT, FORBES NEIGHBORHOOD TRAFFIC CALMING</p>	<p>Hartford Square West Suite 2-303 75 Charter Oak Avenue Hartford, Connecticut, 06106 Tel. (860)-246-7200 Fax (860) 246-7211</p>	<p>SCALE: H.F.F.T. 1" = 25'</p>	<p>Sign-Offs By</p> <table border="1"> <tr><td>Drawn</td><td></td></tr> <tr><td>Checked</td><td></td></tr> <tr><td>Submittal</td><td></td></tr> <tr><td>Revised/As-built</td><td></td></tr> <tr><td>Approved</td><td></td></tr> <tr><td>Resubmitted</td><td></td></tr> </table>	Drawn		Checked		Submittal		Revised/As-built		Approved		Resubmitted		<p>CANTON STREET, DOWNEY STREET, AND METCALF ROAD INTERSECTION REALIGNMENT</p>	<p>Revisions</p> <table border="1"> <tr><td></td><td>By</td><td>Sheet No.</td></tr> <tr><td></td><td></td><td></td></tr> </table>		By	Sheet No.			
				Drawn																			
Checked																							
Submittal																							
Revised/As-built																							
Approved																							
Resubmitted																							
	By	Sheet No.																					
<p>Drawing No.</p>	<p>Job No. 8057-00</p>	<p>Date: September 2008</p>		<p>File No.</p>																			



Canton and Downey/Metcalf



TAKING AREA (SQ. FT.)	GREEN AREA ADDED (SQ. FT.)	PAVING AREA ADDED (SQ. FT.)	NET (SQ. FT.)
2,079.9	3,498.3	3,478.3	4,905.6

1.000:1=50'
 * Green Area Added is a result of alignment modifications that have reduced the roadway pavement.
 * Paving Area Added is new roadway pavement (where necessary) by the revised alignment. This figure does not include driveway areas.

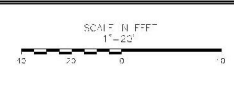
PRELIMINARY-NOT FOR CONSTRUCTION



Town of Westwood, MA
 Department of Public Works
 50 Carby Street, Westwood, MA 02090
CANTON, EVERETT, FORBES
 NEIGHBORHOOD TRAFFIC CALMING



Hartford Square West Suite 2-303
 75 Charter Oak Avenue
 Hartford, Connecticut, 06106
 Tel. (860)-246-7200 Fax (860) 246-7211



Sign-Offs	By
Drawn	
Checked	
Submittal	
Recorded	
Approved	
Revised	

CANTON STREET, DOWNEY STREET, AND
 METCALF ROAD
 INTERSECTION REAJRMENT

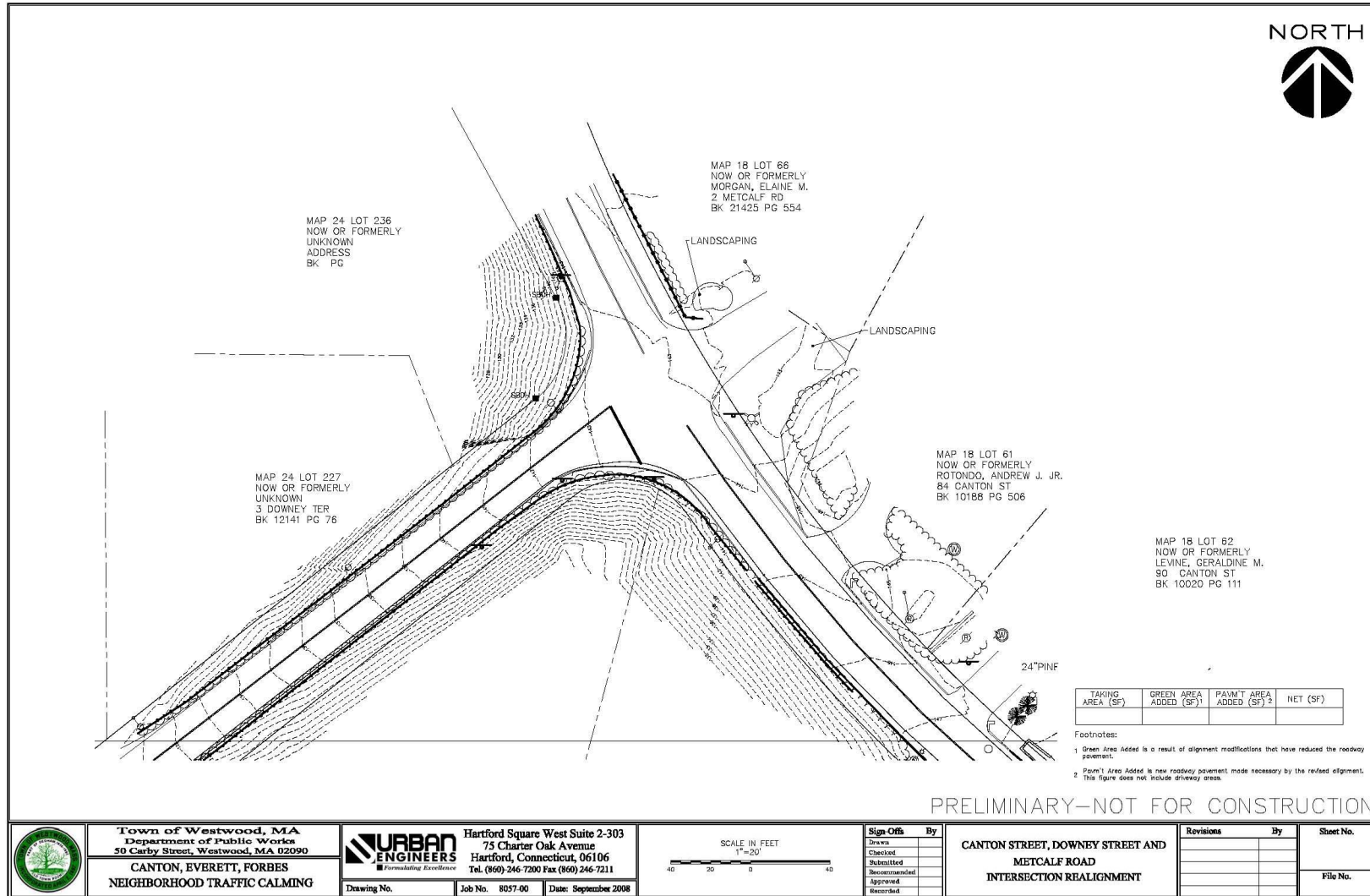
Revisions	By

Sheet No.
 File No.

Drawing No. Job No. 8057-00 Date: September 2008

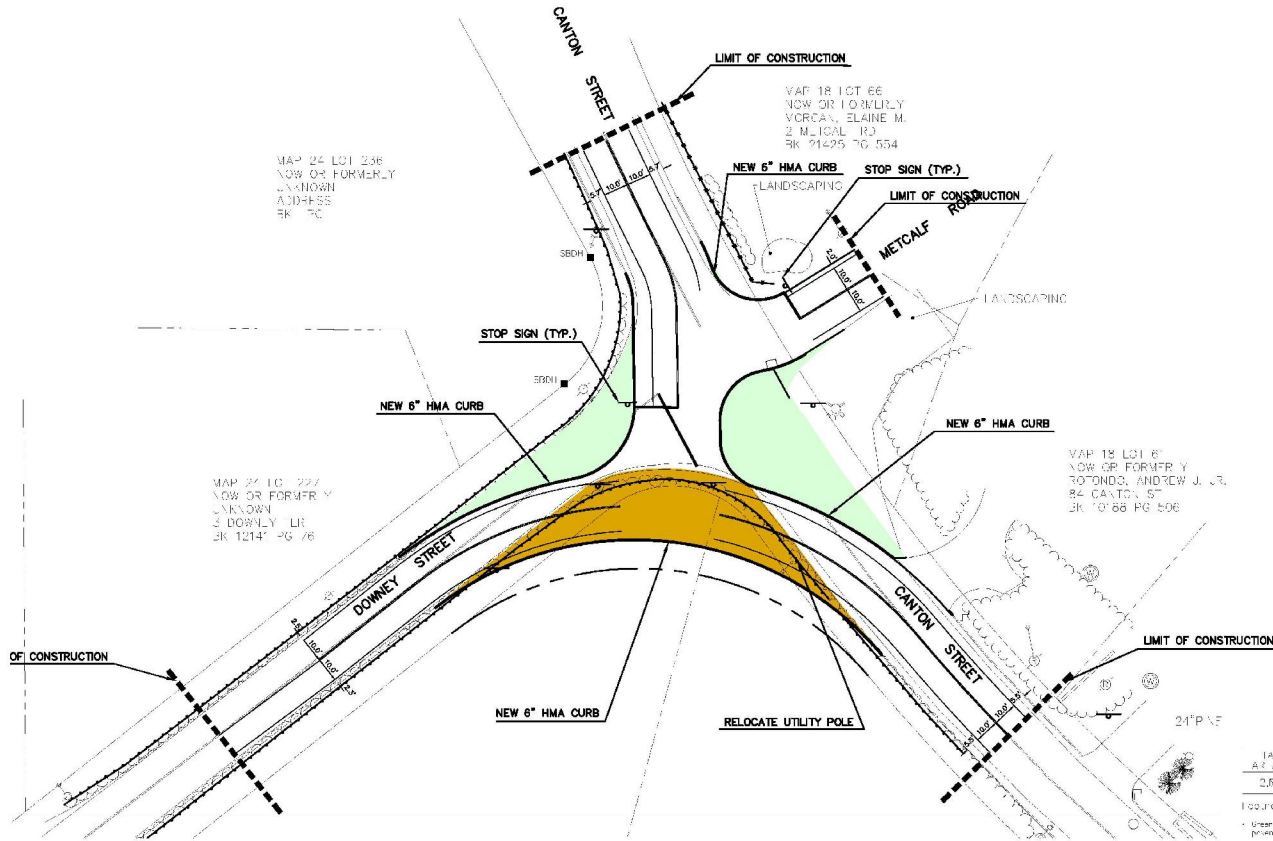


Canton and Downey/Metcalf





Canton and Downey/Metcalf



TOTAL AREA (SQ)	GREEN AREA ADDED (SQ)	PAVING AREA ADDED (SQ)	NET (SQ)
2,075.9	3,483.3	3,074.3	-4,076.6

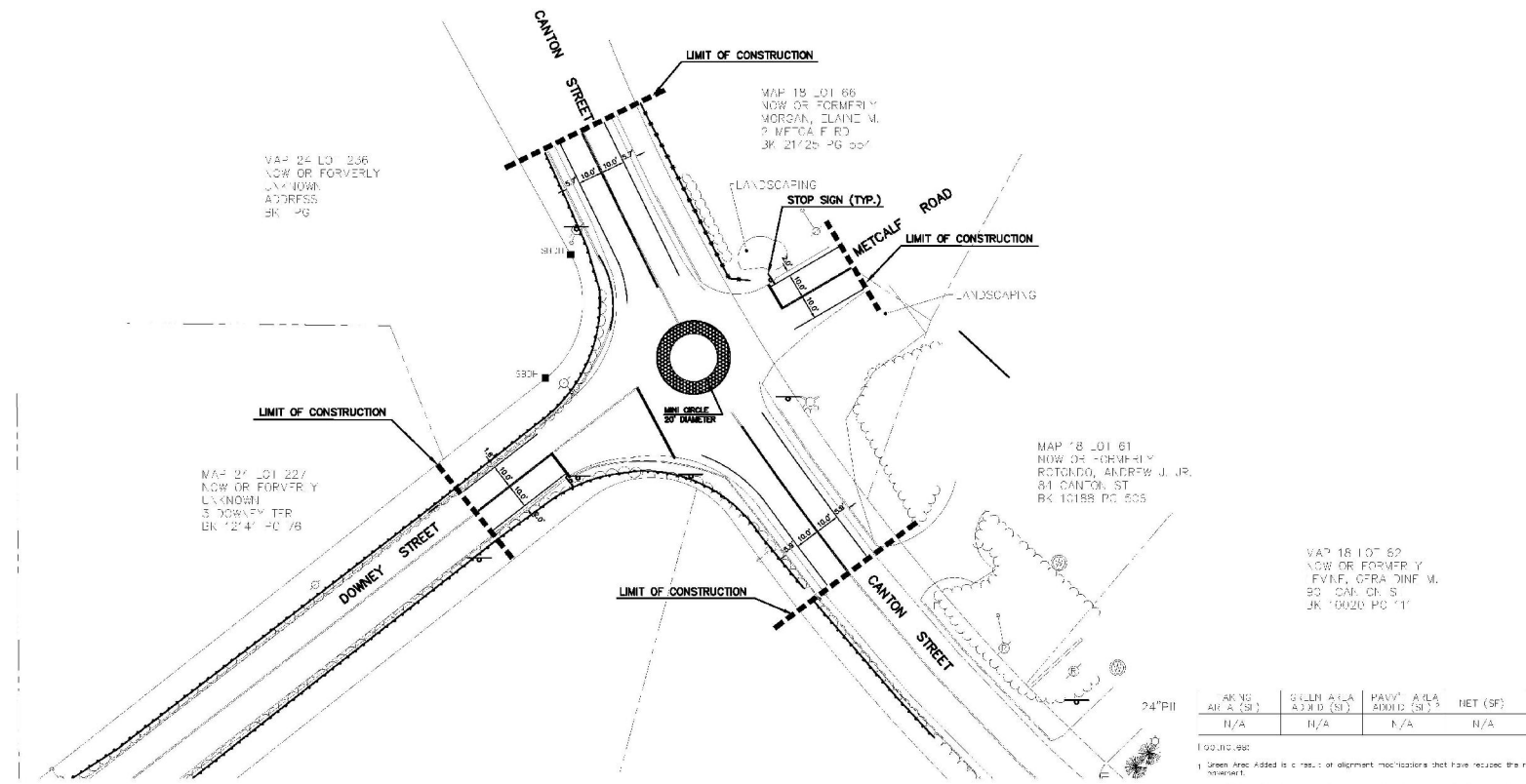
- 100.0000
- Green Area Added is a result of alignment modifications that have reduced the roadway pavement.
 - Paving Area Added is new roadway pavement needed necessary by the revised alignment. If's figure does not reduce driveway areas.

PRELIMINARY-NOT FOR CONSTRUCTION

<p>Town of Westwood, MA Department of Public Works 50 Carby Street, Westwood, MA 02090</p> <p>CANTON, EVERETT, FORBES NEIGHBORHOOD TRAFFIC CALMING</p>	<p>Hartford Square West Suite 2-303 75 Charter Oak Avenue Hartford, Connecticut, 06106 Tel. (860)-246-7200 Fax (860) 246-7211</p>	<p>SCALE IN FEET 1" = 25'</p>	<p>Sign-Offs By</p> <p>Drawn _____</p> <p>Checked _____</p> <p>Submitted _____</p> <p>Revised/Added _____</p> <p>Approved _____</p> <p>Revised _____</p>	<p>CANTON STREET, DOWNY STREET, AND METCALF ROAD INTERSECTION REALIGNMENT</p>	<p>Revisions By</p>	<p>Sheet No.</p>
					<p>Drawing No.</p>	<p>Job No. 8057-00</p>



Canton and Downey/Metcalf



ARKING AREA (SQ)	GREEN AREA ADDED (SQ)	PAVING AREA ADDED (SQ)	NET (SQ)
N/A	N/A	N/A	N/A

1. Green Area Added is a result of alignment modifications that have reduced the roadway pavement.
2. Paving Area added is new proposed pavement needed necessary by the revised alignment. This figure does not include utility work.

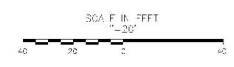
PRELIMINARY-NOT FOR CONSTRUCTION



Town of Westwood, MA
 Department of Public Works
 50 Carby Street, Westwood, MA 02090
CANTON, EVERETT, FORBES
 NEIGHBORHOOD TRAFFIC CALMING



Hartford Square West Suite 2-303
 75 Charter Oak Avenue
 Hartford, Connecticut, 06106
 Tel. (860)-246-7200 Fax (860) 246-7211



Sign-Offs	By
Drawn	
Checked	
Reviewed	
Approved	
Revised	

CANTON STREET, DOWNEY STREET, AND METCALF ROAD INTERSECTION REALIGNMENT

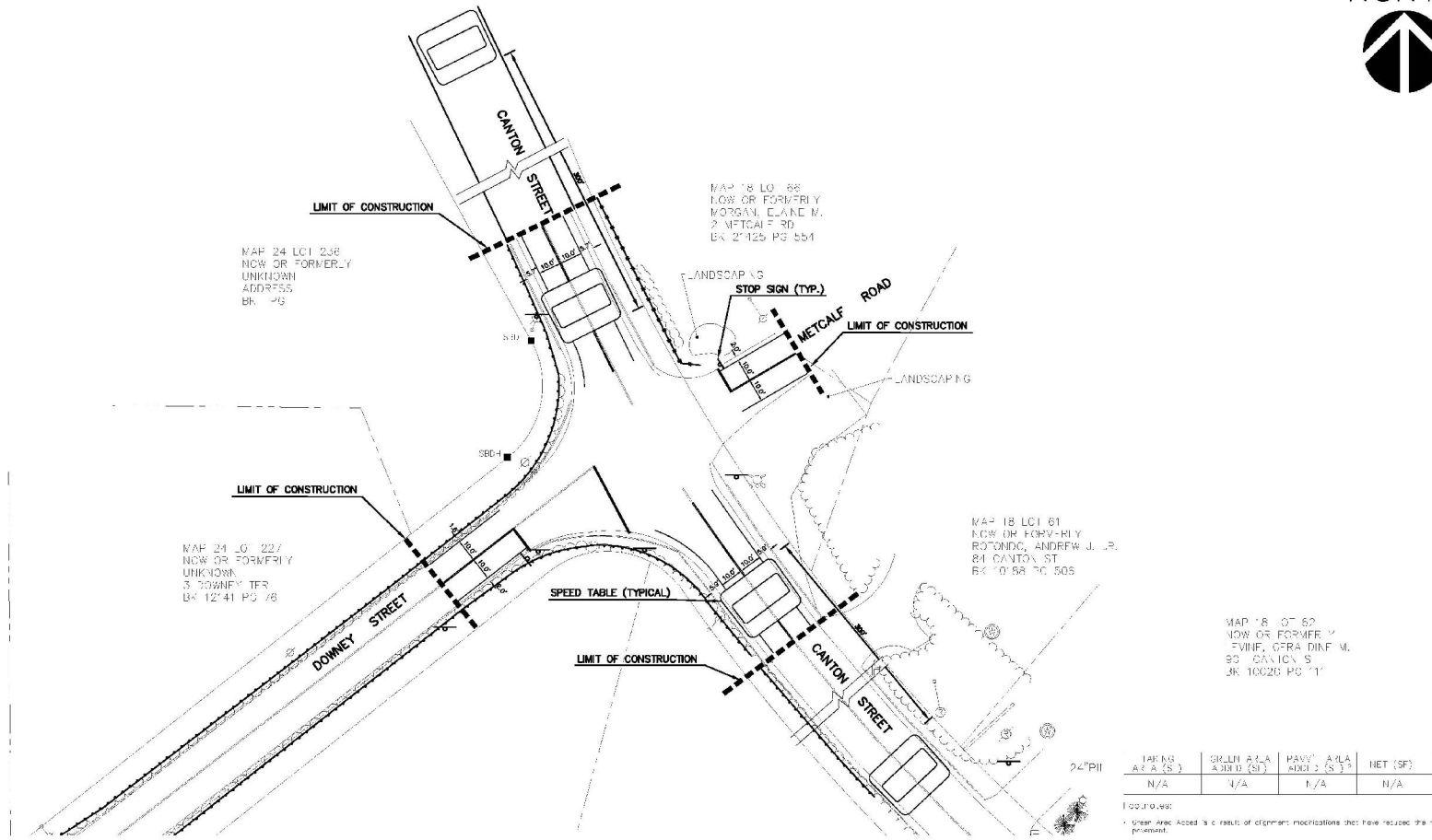
Revisions	By

Sheet No.
File No.

Drawing No. Job No. 8057-00 Date: September 2008



Canton and Downey/Metcalf



PARKS AEA (S)	GREEN AEA ADD'D (SF)	PAV'D AEA ADD'D (S)	NET (SF)
N/A	N/A	N/A	N/A

10000:950
 * Green Area Added is a result of alignment modifications that have reduced the roadway pavement.
 * Paved Area Added is raw roadway pavement made necessary by the revised alignment. PAV figure does not include driveway areas.

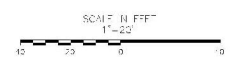
PRELIMINARY-NOT FOR CONSTRUCTION



Town of Westwood, MA
 Department of Public Works
 50 Carly Street, Westwood, MA 02090
 CANTON, EVERETT, FORBES
 NEIGHBORHOOD TRAFFIC CALMING



Hartford Square West Suite 2-303
 75 Charter Oak Avenue
 Hartford, Connecticut, 06106
 Tel. (860)246-7200 Fax (860) 246-7211



Sign-Off	By
Drawn	
Checked	
Submitted	
Recommended	
Approved	
Issued	

CANTON STREET, DOWNEY STREET, AND
 METCALF ROAD
 INTERSECTION REALIGNMENT

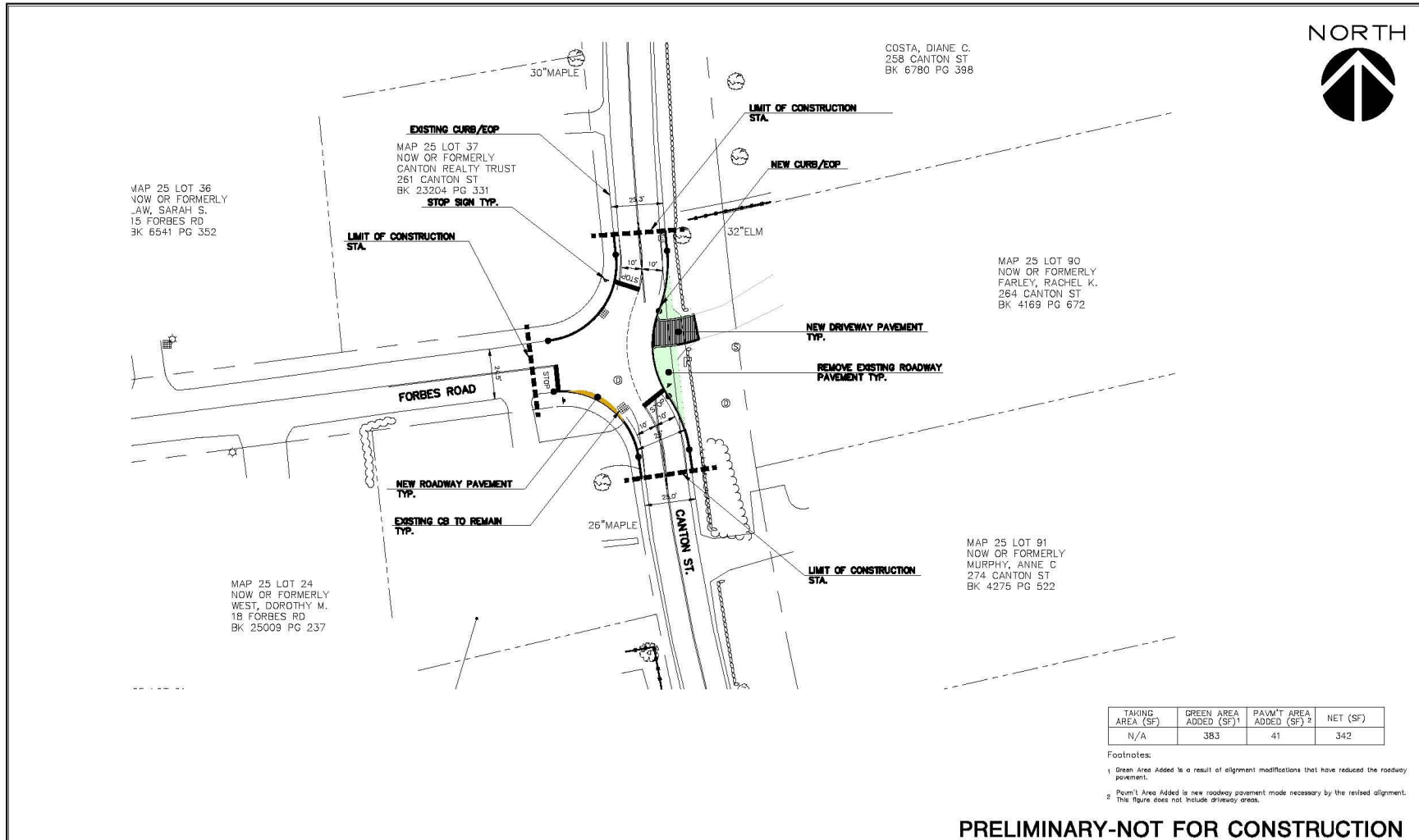
Revisions	By

Sheet No.
File No.

Drawing No. Job No. 8057-00 Date: September 2008



Canton and Forbes



TAKING AREA (SF)	GREEN AREA ADDED (SF) ¹	PAV'T AREA ADDED (SF) ²	NET (SF)
N/A	383	41	342

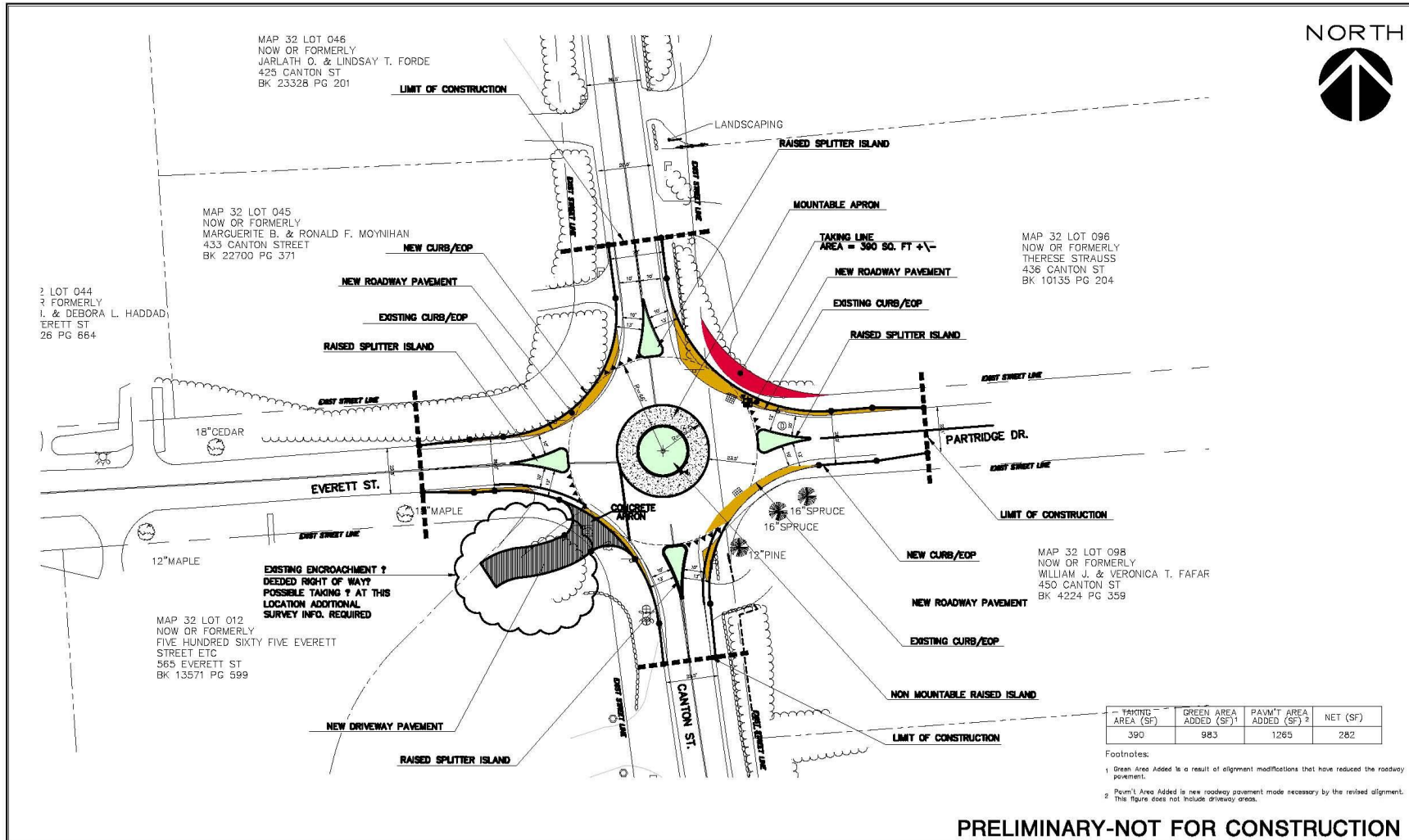
Footnotes:
¹ Green Area Added is a result of alignment modifications that have reduced the roadway pavement.
² Pav't Area Added is new roadway pavement made necessary by the revised alignment. This figure does not include driveway areas.

PRELIMINARY-NOT FOR CONSTRUCTION

<p>Town of Westwood, MA Department of Public Works 50 Carby Street, Westwood, MA 02090</p>	<p>Hartford Square West Suite 2-303 75 Charter Oak Avenue Hartford, Connecticut, 06106 Tel. (860) 246-7200 Fax (860) 246-7211</p>	<p>SCALE IN FEET 1"=20'</p>	<table border="1"> <thead> <tr> <th>Sign-Off</th> <th>By</th> </tr> </thead> <tbody> <tr> <td>Drawn</td> <td></td> </tr> <tr> <td>Checked</td> <td></td> </tr> <tr> <td>Submittal</td> <td></td> </tr> <tr> <td>Recommended</td> <td></td> </tr> <tr> <td>Approved</td> <td></td> </tr> <tr> <td>Recorded</td> <td></td> </tr> </tbody> </table>	Sign-Off	By	Drawn		Checked		Submittal		Recommended		Approved		Recorded		<p>CANTON STREET AND FORBES ROAD INTERSECTION REALIGNMENT CONSTRUCTION PLAN</p>	<table border="1"> <thead> <tr> <th>Revisions</th> <th>By</th> <th>Sheet No.</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Revisions	By	Sheet No.									
				Sign-Off	By																										
Drawn																															
Checked																															
Submittal																															
Recommended																															
Approved																															
Recorded																															
Revisions	By	Sheet No.																													
<p>CANTON, EVERETT, FORBES NEIGHBORHOOD TRAFFIC CALMING</p>	<p>Drawing No. Job No. 8057-00 Date: September 2008</p>	<p>File No.</p>																													



Canton and Everett



TAKING AREA (SF)	GREEN AREA ADDED (SF) ¹	PAV'T AREA ADDED (SF) ²	NET (SF)
390	983	1265	282

Footnotes:
 1 Green Area Added is a result of alignment modifications that have reduced the roadway pavement.
 2 Pav't Area Added is new roadway pavement made necessary by the revised alignment. This figure does not include driveway areas.

PRELIMINARY-NOT FOR CONSTRUCTION

<p>Town of Westwood, MA Department of Public Works 50 Carby Street, Westwood, MA 02090</p> <p>CANTON, EVERETT, FORBES NEIGHBORHOOD TRAFFIC CALMING</p>	<p>Hartford Square West Suite 2-303 75 Charter Oak Avenue Hartford, Connecticut, 06106 Tel. (860) 246-7200 Fax (860) 246-7211</p>	<p>SCALE IN FEET 1" = 20'</p>	<p>Sign Off: By</p> <p>Drawn: _____</p> <p>Checked: _____</p> <p>Submitted: _____</p> <p>Recommended: _____</p> <p>Approved: _____</p> <p>Recorded: _____</p>	<p>CANTON STREET AT EVERETT STREET ROUNDABOUT CONSTRUCTION PLAN</p>	<p>Revisions</p> <table border="1"> <tr> <th>By</th> <th>Sheet No.</th> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>	By	Sheet No.								
			By	Sheet No.											
<p>Drawing No.</p>	<p>Job No. 8057-00</p>	<p>Date: September 2008</p>	<p>File No.</p>												



Canton and Hemlock



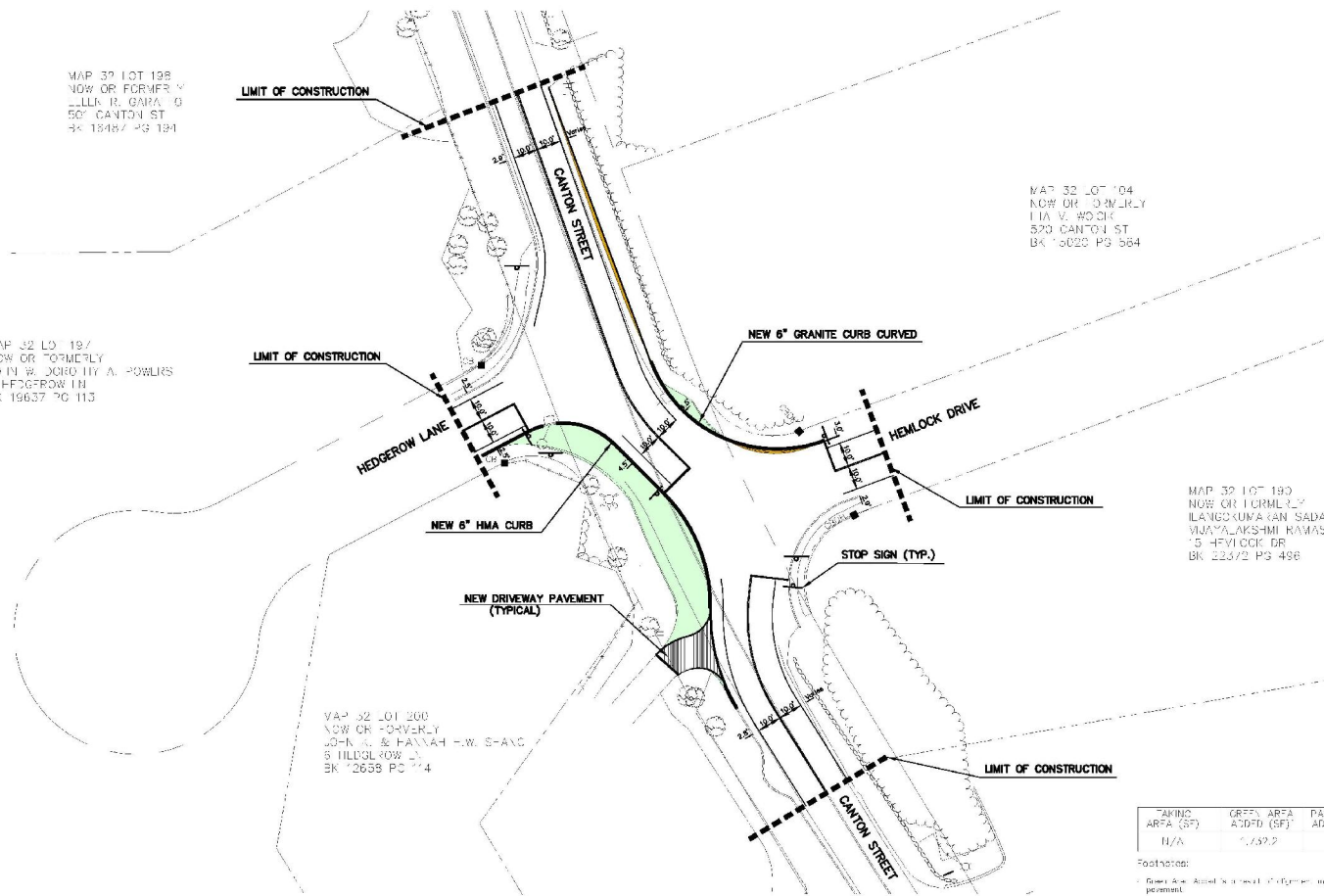
MAP 32 LOT 198
NOW OR FORMERLY
ALLI R. GARLAND
50' CANTON ST
BK 18487 PG 184

MAP 32 LOT 197
NOW OR FORMERLY
JOHN W. JOHNSTON A. POWERS
& HEDGEROW LLC
BK 19637 PG 113

MAP 32 LOT 268
NOW OR FORMERLY
JOHN A. & HANNAH H.W. SHANG
5 HEDGEROW LN
BK 12659 PG 74

MAP 32 LOT 04
NOW OR FORMERLY
LINA V. HOCH
520 CANTON ST
BK 13020 PG 584

MAP 32 LOT 190
NOW OR FORMERLY
ILANGUMA KAN SADA
SUDANAKRISHNI RAMAS
5 HEDGEROW DR
BK 22372 PG 498



TAKING AREA (SF)	GRF. AREA ADD'D (SF)	PAV'T. AREA ADD'D (SF)	N. (SI)
N/A	1,752.2	176.2	1,550.8

Footnotes:

1. Green Area Added is a result of changes and feedback from stakeholders. The necessary pavement.
2. Total Area Added is the roadway pavement made necessary by the related alignment.

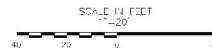
PRELIMINARY-NOT FOR CONSTRUCTION



Town of Westwood, MA
Department of Public Works
50 Carby Street, Westwood, MA 02090
**CANTON, EVERETT, FORBES
NEIGHBORHOOD TRAFFIC CALMING**



Hartford Square West Suite 2-303
75 Charter Oak Avenue
Hartford, Connecticut, 06106
Tel. (860)-246-7200 Fax (860) 246-7211



Sign-Offs	By
Design	
Checked	
Submitted	
Reviewed	
Approved	
Recorded	

**CANTON STREET, HEMLOCK DRIVE AND
HEDGEROW LANE
INTERSECTION REALIGNMENT**

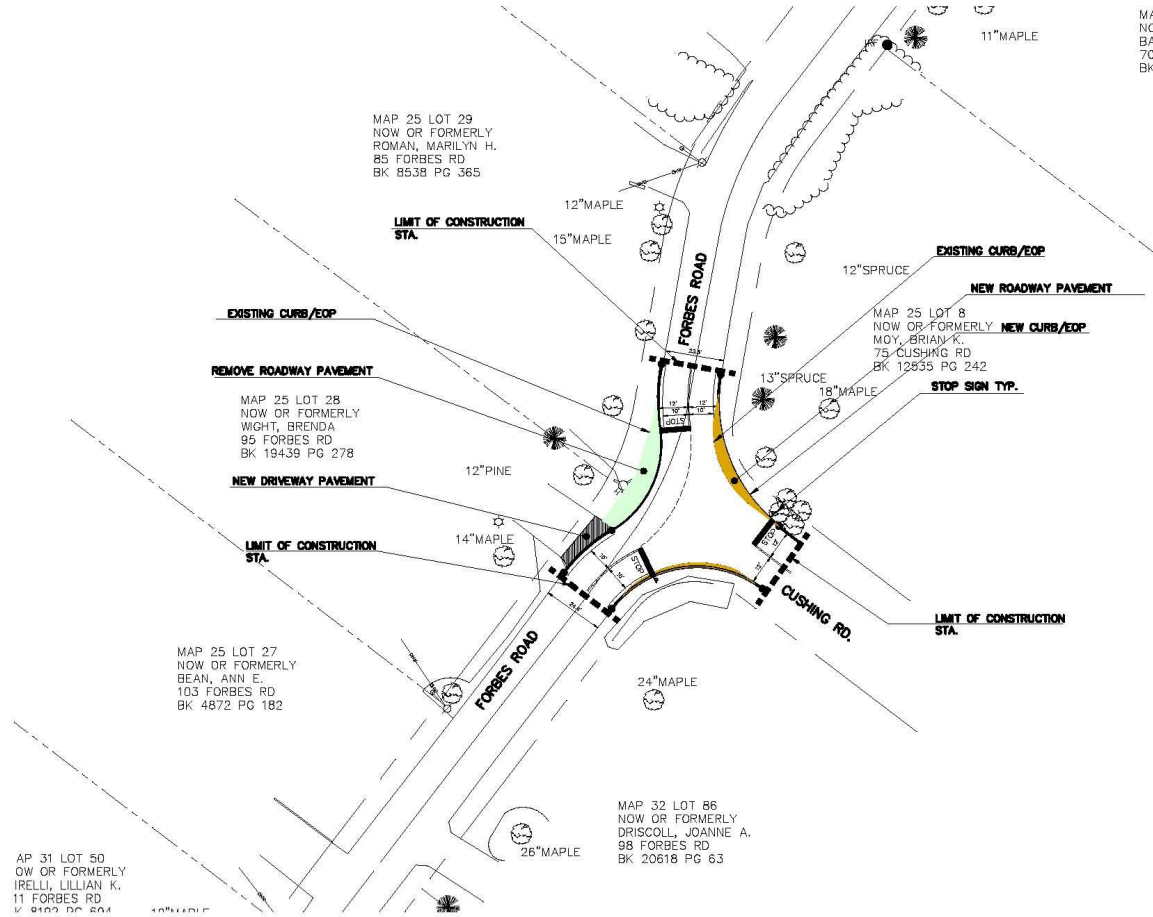
Revisions	By

Sheet No.
File No.

Drawing No.	Job No. 8057-00	Date: September 2008
-------------	-----------------	----------------------



Forbes and Cushing



TAKING AREA (SF)	GREEN AREA ADDED (SF) ¹	PAVMT AREA ADDED (SF) ²	NET (SF)
N/A	311	221	90

Footnotes:
¹ Green Area Added is a result of alignment modifications that have reduced the roadway pavement.
² PAVMT Area Added is new roadway pavement made necessary by the revised alignment. This figure does not include driveway areas.

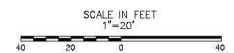
PRELIMINARY-NOT FOR CONSTRUCTION



Town of Westwood, MA
 Department of Public Works
 50 Carby Street, Westwood, MA 02090
CANTON, EVERETT, FORBES
 NEIGHBORHOOD TRAFFIC CALMING



Hartford Square West Suite 2-303
 75 Charter Oak Avenue
 Hartford, Connecticut, 06106
 Tel. (860) 246-7200 Fax (860) 246-7211



Sign Off	By
Drawn	
Checked	
Submitted	
Recommended	
Approved	
Recorded	

FORBES ROAD AND CUSHING ROAD
 INTERSECTION REALIGNMENT
 CONSTRUCTION PLAN

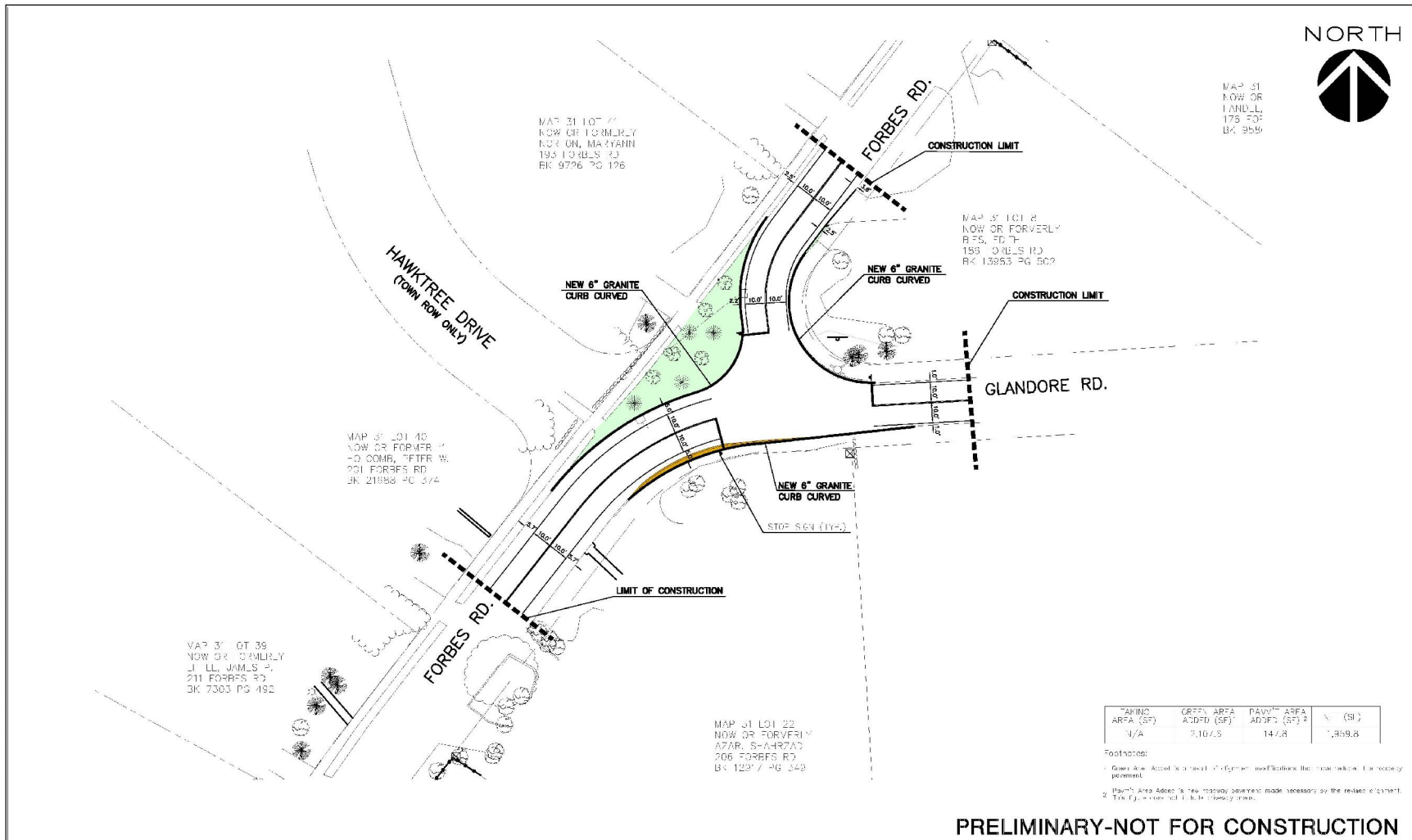
Revisions	By

Sheet No.
File No.

Drawing No. Job No. 8057-00 Date: September 2008



Forbes and Glandore



TAKING AREA (SF)	GREEN AREA ADDED (SF)	PAVING AREA ADDED (SF)	N. (SI)
N/A	2,104.5	142.8	1,369.6

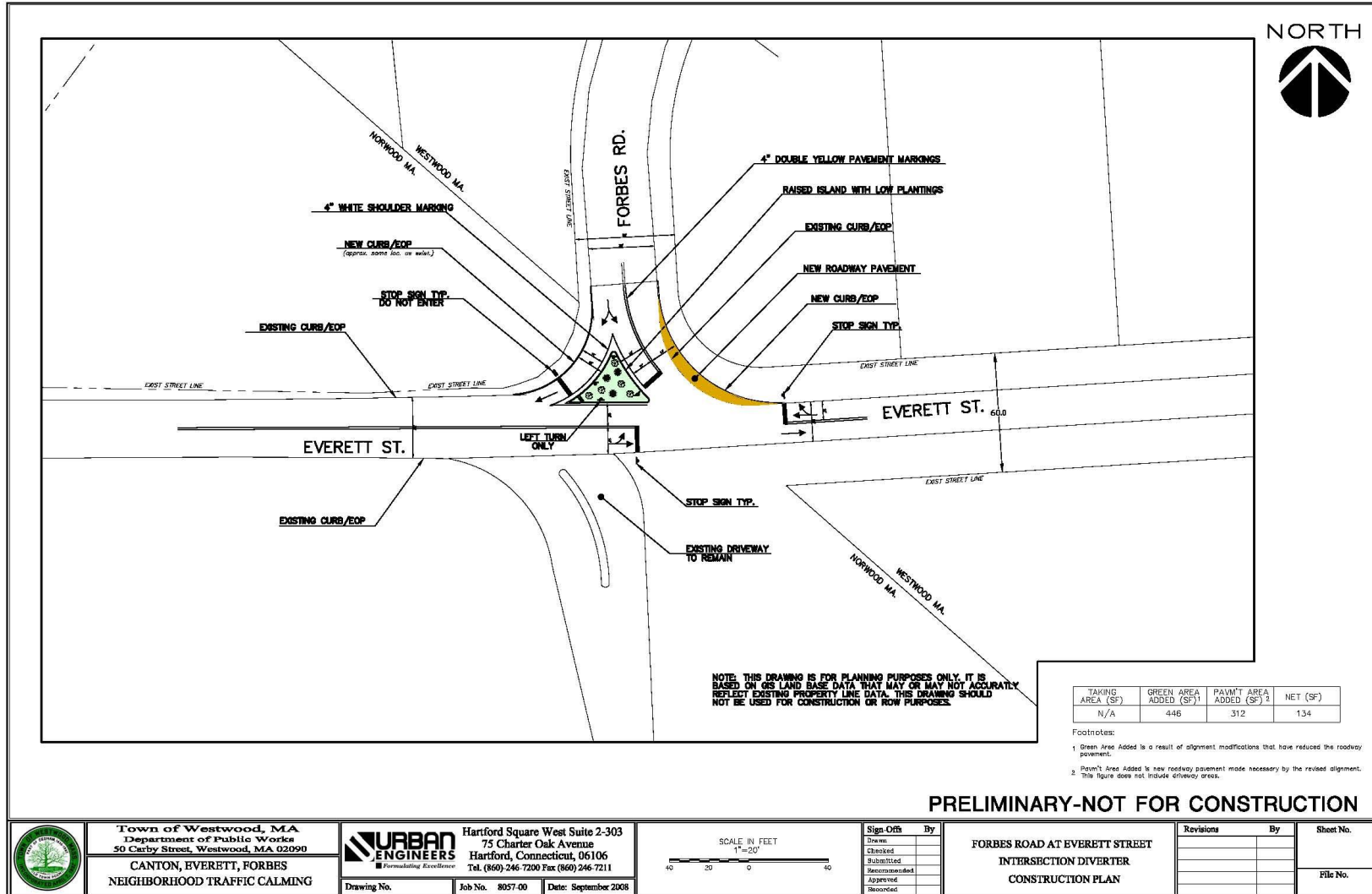
- Footnotes:
 1. Green Area Added is a result of Engineer modifications to the construction file necessary for permit.
 2. Paving Area Added is the quantity determined made necessary by the revised alignment.

PRELIMINARY-NOT FOR CONSTRUCTION

	Town of Westwood, MA Department of Public Works 50 Carby Street, Westwood, MA 02090		Hartford Square West Suite 2-303 75 Charter Oak Avenue Hartford, Connecticut, 06106 Tel. (860) 246-7200 Fax (860) 246-7211	SCALE IN FEET 	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Sign-Offs</th> <th>By</th> </tr> <tr> <td>Drawn</td> <td></td> </tr> <tr> <td>Checked</td> <td></td> </tr> <tr> <td>Submitted</td> <td></td> </tr> <tr> <td>Revised/Revised</td> <td></td> </tr> <tr> <td>Approved</td> <td></td> </tr> <tr> <td>Recorded</td> <td></td> </tr> </table>	Sign-Offs	By	Drawn		Checked		Submitted		Revised/Revised		Approved		Recorded		FORBES ROAD AND GLANDORE ROAD INTERSECTION REALIGNMENT	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Revisions</th> <th>By</th> <th>Sheet No.</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	Revisions	By	Sheet No.						
	Sign-Offs		By																											
Drawn																														
Checked																														
Submitted																														
Revised/Revised																														
Approved																														
Recorded																														
Revisions	By	Sheet No.																												
CANTON, EVERETT, FORBES NEIGHBORHOOD TRAFFIC CALMING	Drawing No. Job No. 8057-00 Date: September 2008				File No.																									



Forbes and Everett

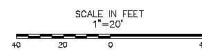


Town of Westwood, MA
 Department of Public Works
 50 Carby Street, Westwood, MA 02090
 CANTON, EVERETT, FORBES
 NEIGHBORHOOD TRAFFIC CALMING



Hartford Square West Suite 2-303
 75 Charter Oak Avenue
 Hartford, Connecticut, 06106
 Tel. (860) 246-7200 Fax (860) 246-7211

Drawing No. Job No. 8057-00 Date: September 2008



Sign Off	By
Drawn	
Checked	
Submitted	
Approved	
Revised	

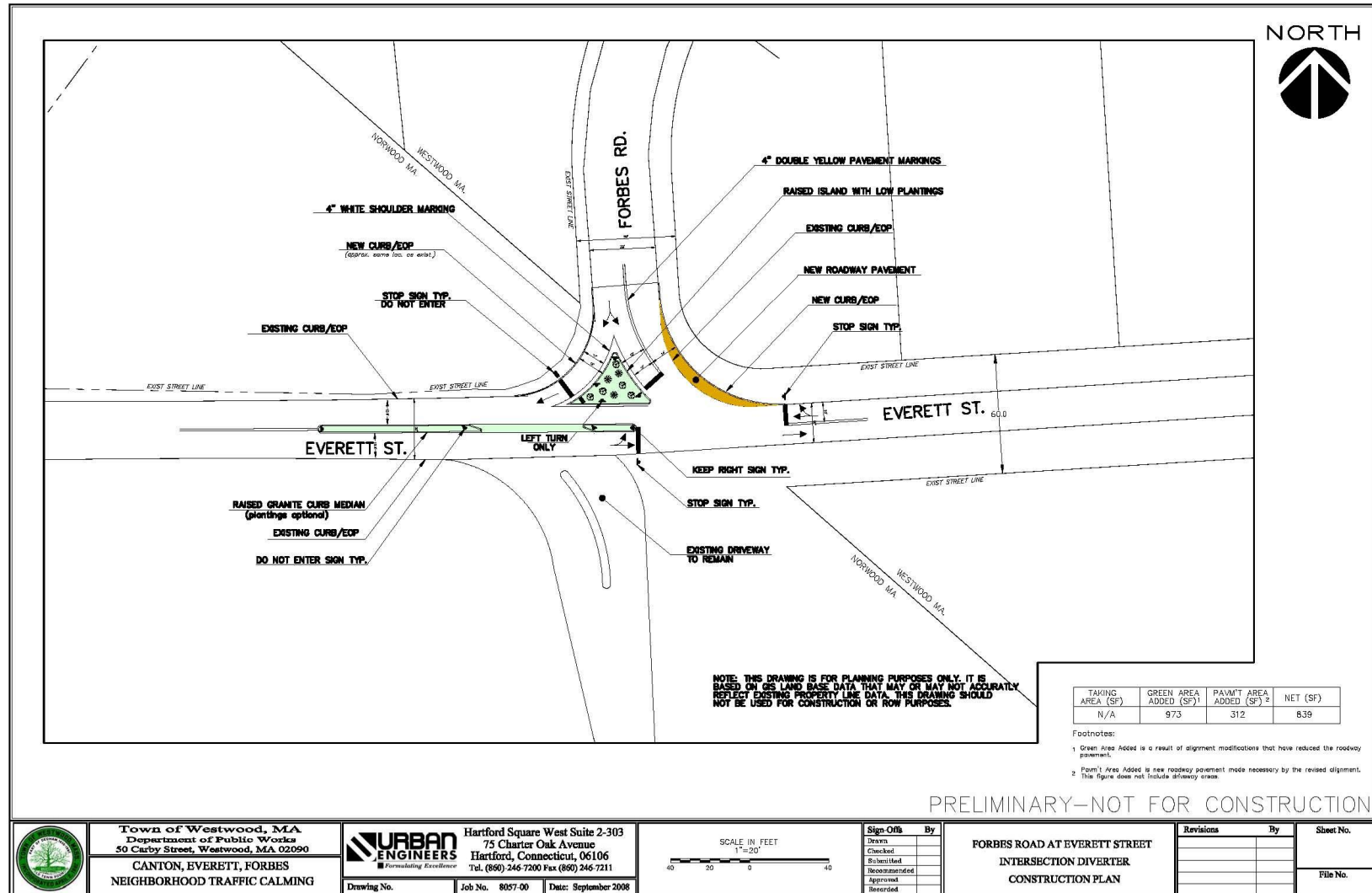
FORBES ROAD AT EVERETT STREET
 INTERSECTION DIVERTER
 CONSTRUCTION PLAN

Revisions	By

Sheet No.
File No.

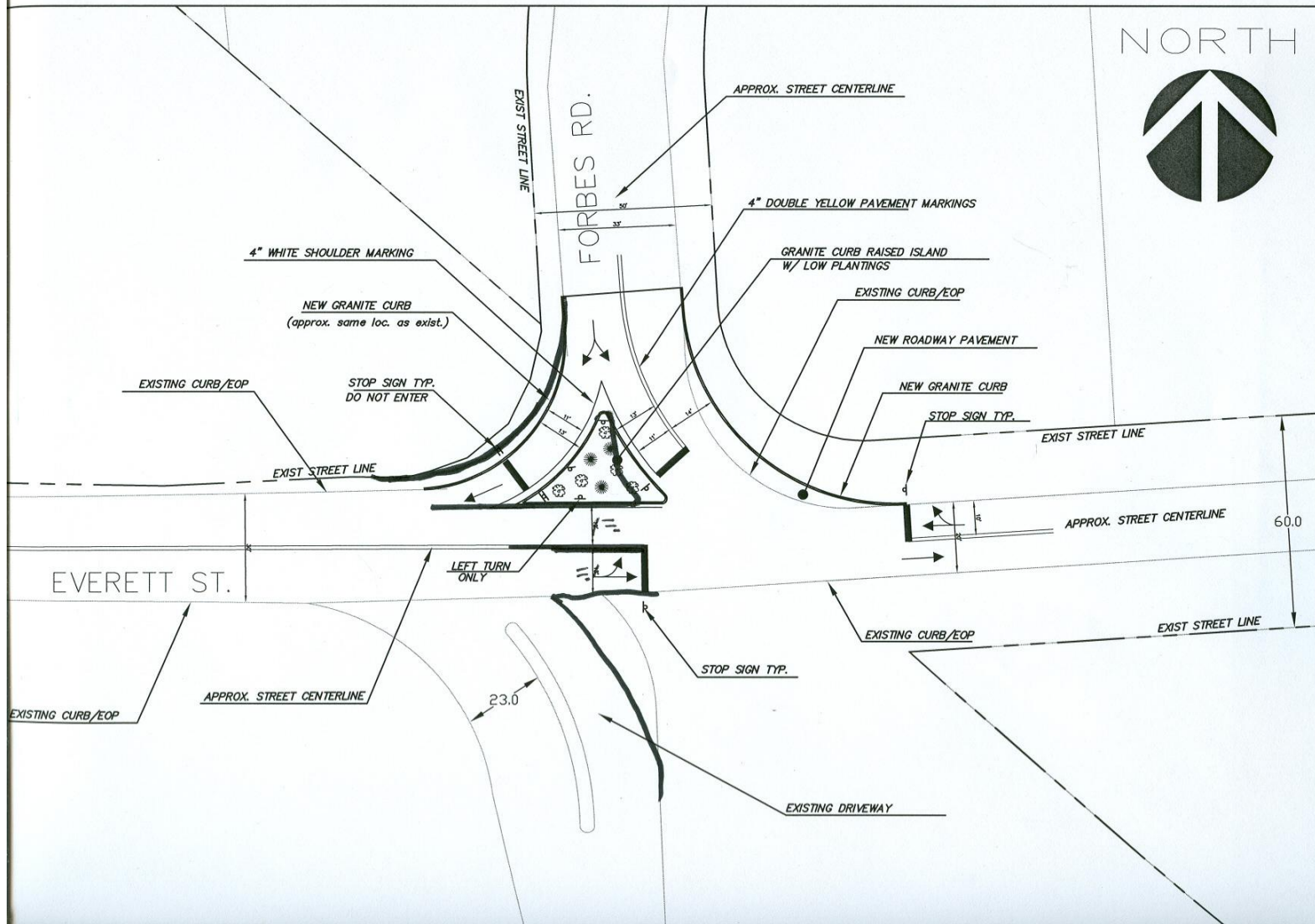


Forbes and Everett





Forbes and Everett





Agenda

1. Introductions

2. Objective

3. validation

4. Intersection Designs

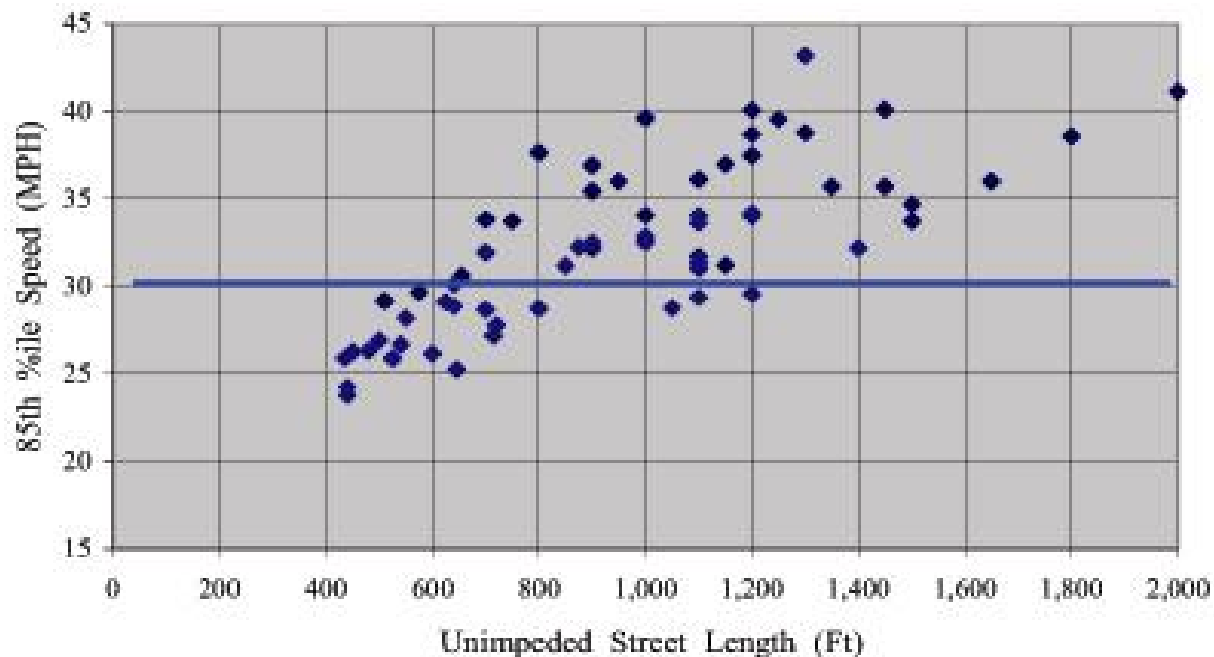
5. Traffic Calming



Sanjar Slide #1

REALIGNED INTERSECTIONS:

- Reduce Speeds
- interrupt long straight sections of road
- Canton, Everett, and Forbes currently have straightaways over 2000' long
- Proposed Intersection realignments are 1,000' apart with medians in between



From "Low Speed Design Criteria for Residential Streets", Ballard and Haldeman

Sanjar's Slide #2

- REALIGNED INTERSECTIONS:



Dublin, Ohio

Sanjar Slide #3

- **REALIGNED INTERSECTIONS:**



Newton, MA



Sanjar Slide #4

■ MEDIAN ISLANDS:

- Provide horizontal deflection, narrow the roadway, and provide a sense of enclosure
- Average speed reduction = 3.3 mph*
- Average volume reduction = 600 vehicles/day*



■ ROUNDABOUTS:

- slow drivers as they approach and traverse an intersection, improve safety, and provide aesthetic benefit
- Average speed reduction = 5.7 mph*
- Average volume reduction = 280 vehicles/day*
- Typical crash reduction = 50% - 90%



* "Survey of Neighborhood Traffic Management Performance and Results", McCourt, ITE 1998



Sanjar Slide #5

LANE DIETS:

- reduce travel lane widths
- drivers feel less comfortable traveling at high speeds
- Approximate 10% reduction in traffic volumes**



Operational Effects of Lane and Shoulder Width on Two-Lane Highways *

Lane width (ft)	Reduction in Free-Flow Speed (mi/h)			
	Shoulder Width (ft)			
	≥0<2	≥2<4	≥4<6	≥6
9<10	6.4	4.8	3.5	2.2
≥10<11	5.3	3.7	2.4	1.1
≥11<12	4.7	3.0	1.7	0.4
≥12	4.2	2.6	1.3	0.0

*From the Federal Highway Administration's "Mitigation Strategies for Design Exceptions – July 2007"

**From "Traffic Calming, State of the Practice", ITE 1999



Sanjar Slide #6





Sanjar Slide #7

- **SPEED TABLES (22ft):**
 - Wider than speed humps
 - Typically 22-32 feet
 - Reduction of approximately 7mph (18%) in the 85% speeds*
 - Reduction of approximately 12% in traffic volumes*



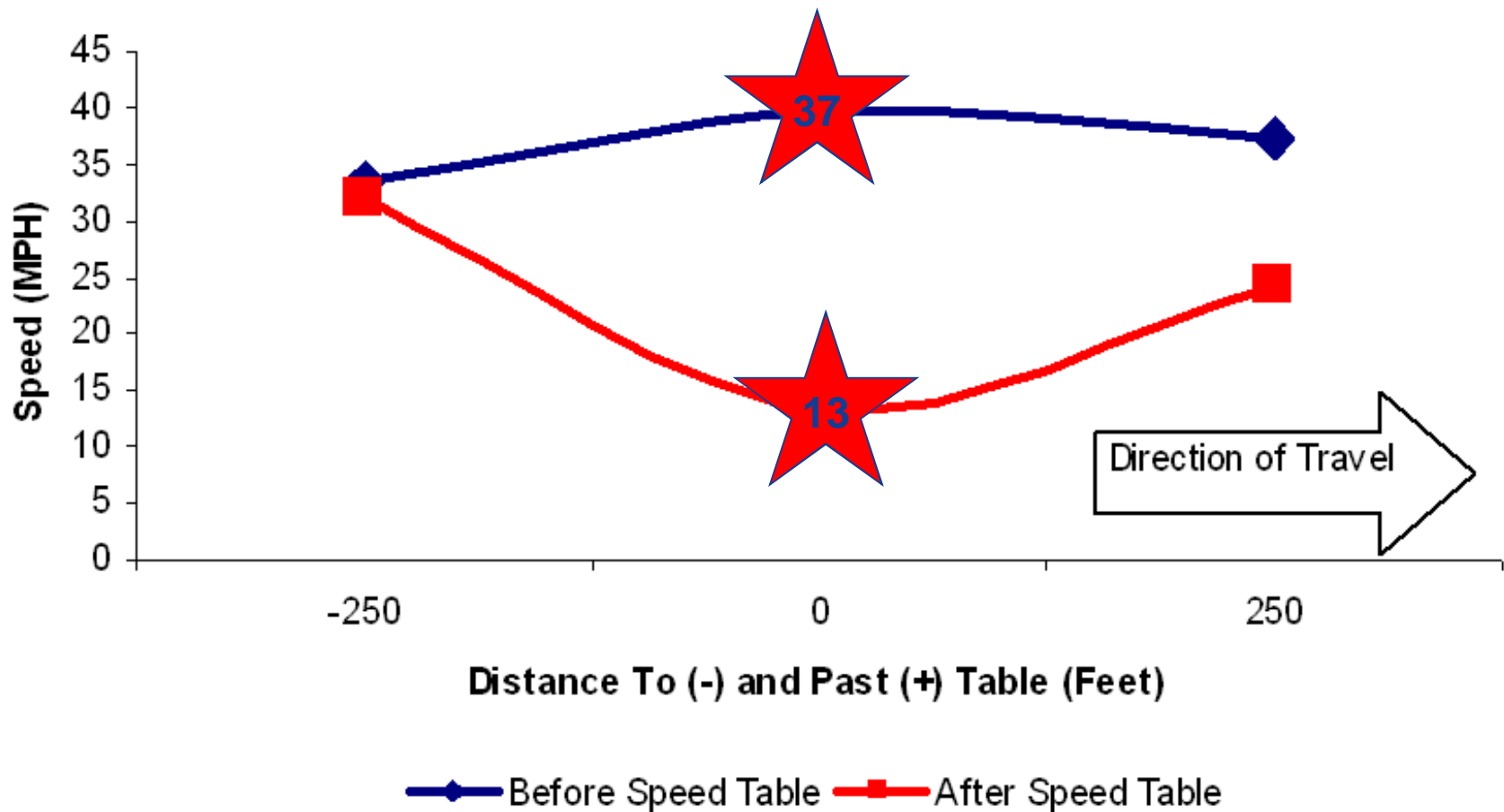
Hartford, CT



Sanjar Slide #8

■ SPEED TABLES:

Saybrooke Street Southbound Speed Profile





Agenda

1. Introductions

2. Objective

3. Validation

4. Intersection Designs

5. Traffic Calming

6. Analysis



Traffic Calming Analysis

Research



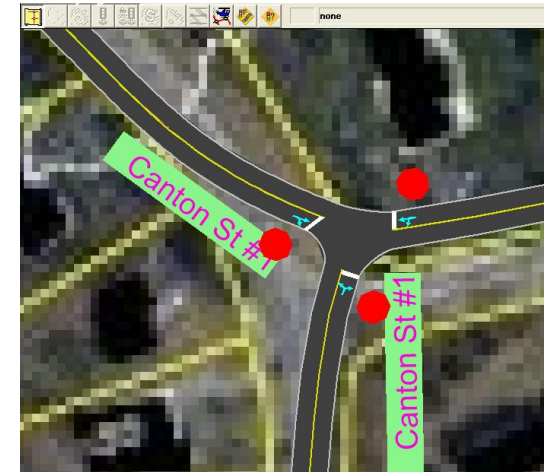
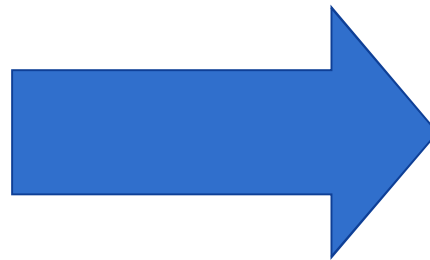
Traffic Data



Homework



Designs

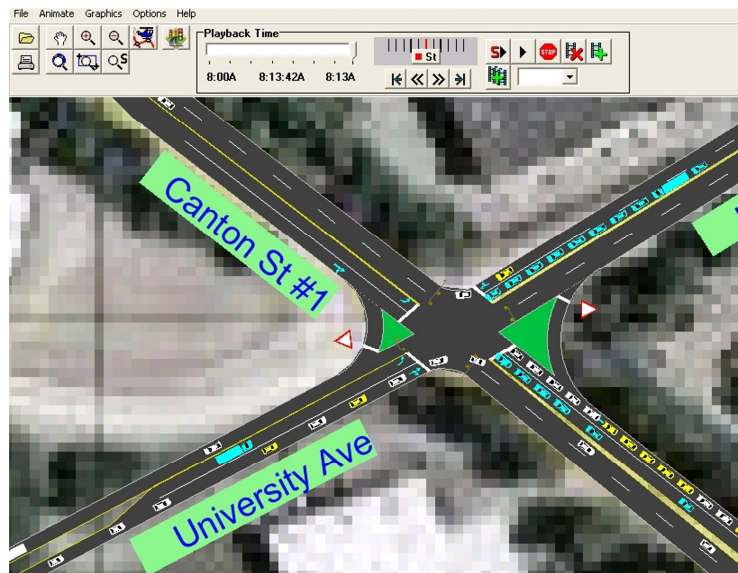
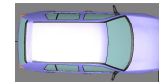


**Simulation
Model**

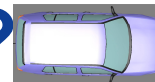


Traffic Calming Analysis

What is Simulation Modeling?

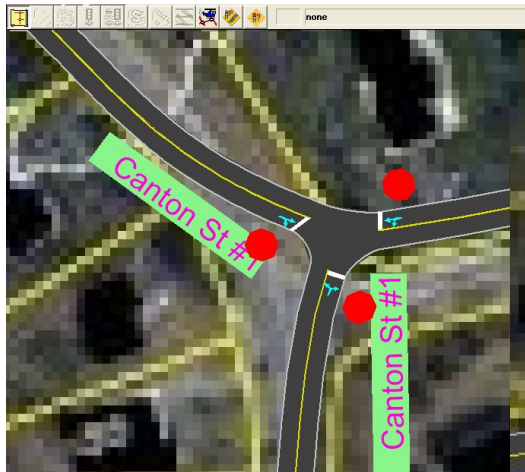


And how does it help us?



Traffic Calming Analysis

- **2015** Volumes (Corresponds to major completion of the Westwood Station development)
- Examined the Proposed Traffic Calming Devices in 2 phases





Traffic Calming Analysis

Levels of Improvements on Canton Street

	Locations	Proposed Treatment
Level 1	Canton Street at Blue Hill Drive	Realigned Intersection
	Canton Street at Cushing Rd/Perry Dr	Realigned Intersection
	Canton Street at Downey St/Metcalf Rd	Speed Tables
	Canton Street at Hemlock Dr	Realigned Intersection
	Canton Street at Forbes Road	Realigned Intersection
	Canton Street at Everett Street	Roundabout
Level 2	Midblock - 8 Locations	Medians
	Canton St	Lane Diets



AM Northbound Analysis Results

Travel Time (seconds)	<i>Without Traffic Calming</i>	<i>Level 1</i>	<i>Level 1+2</i>
<i>WWSB – Everett</i>	76	99 (+30%)	109 (+43%)
<i>Everett – Forbes</i>	43	75 (+74%)	77 (+79%)
<i>Forbes – Rotary</i>	70	84 (+20%)	92 (+31%)
<i>Total</i>	189	258 (+37%)	278 (+47%)

Average Speed (mph)	<i>Without Traffic Calming</i>	<i>Level 1</i>	<i>Level 1+2</i>
<i>WWSB – Everett</i>	33	25 (-23%)	23 (-30%)
<i>Everett – Forbes</i>	33	19 (-43%)	19 (-44%)
<i>Forbes – Rotary</i>	36	30 (-17%)	27 (-24%)
<i>Total</i>	34	25 (-27%)	23 (-32%)



PM Northbound Analysis Results

Travel Time (seconds)	<i>Without Traffic Calming</i>	<i>Level 1</i>	<i>Level 1+2</i>
<i>WWSB – Everett</i>	77	96 (+25%)	107 (+39%)
<i>Everett – Forbes</i>	42	70 (+67%)	74 (+76%)
<i>Forbes – Rotary</i>	67	80 (+19%)	89 (+33%)
<i>Total</i>	186	246 (+32%)	270 (+45%)

Average Speed (mph)	<i>Without Traffic Calming</i>	<i>Level 1</i>	<i>Level 1+2</i>
<i>WWSB – Everett</i>	33	26 (-20%)	24 (-28%)
<i>Everett – Forbes</i>	34	21 (-40%)	19 (-43%)
<i>Forbes – Rotary</i>	38	32 (-16%)	28 (-25%)
<i>Total</i>	35	26 (-24%)	24 (-31%)



AM Southbound Analysis Results

Travel Time (seconds)	<i>Without Traffic Calming</i>	<i>Level 1</i>	<i>Level 1+2</i>
<i>Rotary – Forbes</i>	65	87 (+33%)	95 (+46%)
<i>Forbes – Everett</i>	42	58 (+38%)	63 (+50%)
<i>Everett – WWSB</i>	79	93 (+18%)	104 (+32%)
<i>Total</i>	186	238 (+28%)	262 (+41%)

Average Speed (mph)	<i>Without Traffic Calming</i>	<i>Level 1</i>	<i>Level 1+2</i>
<i>Rotary – Forbes</i>	39	29 (-25%)	27 (-31%)
<i>Forbes – Everett</i>	34	25 (-28%)	23 (-23%)
<i>Everett – WWSB</i>	32	27 (-15%)	24 (-24%)
<i>Total</i>	35	27 (-22%)	25 (-29%)



PM Southbound Analysis Results

Travel Time (seconds)	<i>Without Traffic Calming</i>	<i>Level 1</i>	<i>Level 1+2</i>
<i>Rotary – Forbes</i>	70	99 (+41%)	108 (+54%)
<i>Forbes – Everett</i>	44	61 (+39%)	65 (+48%)
<i>Everett – WWSB</i>	90	105 (+17%)	118 (+31%)
<i>Total</i>	204	265 (+30%)	291 (+41%)

Average Speed (mph)	<i>Without Traffic Calming</i>	<i>Level 1</i>	<i>Level 1+2</i>
<i>Rotary – Forbes</i>	36	25 (-29%)	23 (-35%)
<i>Forbes – Everett</i>	33	24 (-28%)	22 (-32%)
<i>Everett – WWSB</i>	28	24 (-14%)	21 (-24%)
<i>Total</i>	32	24 (-23%)	22 (-30%)



Traffic Analysis Summary

- Summary
 - Average Canton Street speeds decrease by 22% to 32% (32-35mph to 22-27mph)
 - Canton Street travel times increase by 28% to 47% (1-1½ minutes)





Potential Volume Reduction

	Traffic Control Devices	Potential Volume Reduction
Level 1	Realigned Intersection	?
	Speed Tables	12%
	Roundabout	5-6%
	Total	17%
Level 2	Medians	10% (similar to lane narrowing)
	Lane Diets	10%
	Total	20%



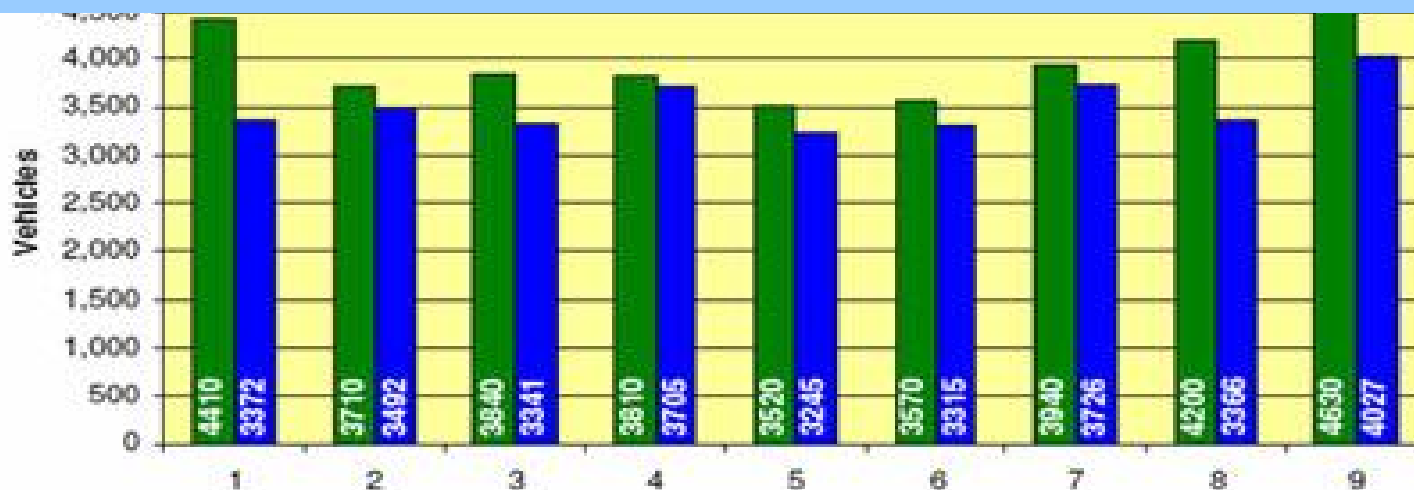
Potential Volume Reduction

Tara Hill Drive, Dublin, Ohio

<http://www.dublin.oh.us/engineering/tarahill/tarahill.php>



Volumes reduced between 13% and 24%





Potential Volume Reduction

Canton Street, Westwood, Massachusetts

	2015 (No TC)	13% (Ohio- low)	17% (Level 1)	20% (Level 2)	24% (Ohio- Hi)	37% (Level 1+2)
AM Peak	910	-118	-155	-182	-218	-337
PM Peak	1070	-139	-182	-214	-257	-396
Daily (2008)	8126	-1056	-1381	-1625	-1950	-3006

Potential Volume Reduction between 13% and 37%

Additional Measures

- Reflectorized Sign Posts





Pace Car Program

Keep Kids Safe

As drivers, cyclists, and pedestrians of the Town of Greenwich it is our responsibility to share the road.

The Greenwich Pace Car Pledge is a citizen-based traffic calming initiative of cars calming other cars. It is a promise to set the "pace" for other drivers and a reminder to share the road and take responsibility for safer streets and neighborhoods.

The NTCP Pace Car Program needs people who:

- Drive the speed limit;
- Are not afraid to put a Pace Car Sticker on their car;
- Set a good example of what a courteous driver is and not purposely anger or punish other drivers;
- Are willing to show they care about neighborhoods;
- Are willing to be part of the solution;
- Know that each individual is responsible for their driving habits.

Become a Pace Car Driver and learn how to make positive traffic changes!



Neighborhood Traffic Calming Program
Town of Greenwich, CT
101 Field Point Road
Greenwich, CT 06830

WELCOME to the Greenwich Pace Car Program



Take the Pledge and become a Greenwich Pace Car Driver today!

Frequently Asked Questions

Will my car really make a difference?

Yes. We only need a small percentage of vehicles acting as Pace Cars to slow traffic town wide. This starts a positive cycle. People feel more comfortable walking or cycling, which reduces traffic levels, making streets even safer, meaning even more people can walk or cycle.

Does the Pace Car provoke road rage?

No. Many people who sign up for the Pace Car Program have already been acting as unofficial Pace Cars. The Pace Car sticker credentials your car, explaining to following motorists that there is a reason for your courtesy and safe driving speed.

What happens if I accidentally speed?

Take a breath and slow down. The Pace Car pledge is a declaration of intent, not a legally binding contract. Kicking the speeding habit can be hard work. Allow yourself more time to get places so you won't be so tempted to speed.

Do I only act as a Pace Car in my neighborhood or on all streets?

On all town streets. The Pace Car is a kind of treaty between neighborhoods: you respect the quality of life in our neighborhood and we will do the same for you. The Pace Car promotes a new civility and mutual respect on our streets.

Pace Car Registration Form Town of Greenwich, CT



Name: _____

Address: _____

Phone: _____

E-mail: _____

Greenwich Pace Car Pledge

I want to be part of the solution to Town of Greenwich's traffic problem. I recognize that my driving affects the safety and livability of other people's neighborhoods, just as other people's driving affects my neighborhood.

I hereby pledge to:

- Drive within the speed limit and obey all traffic regulations;
- Share the road safely with pedestrians, bicyclists and other drivers;
- Stop for all school buses and be extra cautious near schools and children;
- Walk, bike, bus or share a ride when possible to help reduce traffic;
- Display my **PACE CAR** sticker and encourage others to take the pledge.

Signed _____

Dated _____



Please return this form to: NTCP Dept. of Public Works,
101 Field Point Road Greenwich, CT 06830



Lawn Sign Program



Radar Speed Signs





Level 1 Measures

Locations	Proposed Treatment
Canton Street at Blue Hill Drive	Realigned Intersection
Canton Street at Cushing Rd/Perry Dr	Realigned Intersection
Canton Street at Downey St/Metcalf Rd	Speed Tables
Canton Street at Hemlock Dr	Realigned Intersection
Canton Street at Forbes Road	Realigned Intersection
Canton Street at Everett Street	Roundabout
Forbes Road and Cushing Rd	Realigned Intersection
Forbes Road and Everett Street	Median/Channelized Intersection
Forbes Road and Glandore Road	Realigned Intersection

Results



Do you approve the level 1 measures (shown on the previous chart) and also some measure on Everett Street?

“Yes” votes: 29

“No” votes: 1

Note: Committee members also expressed a desire for speed tables on Everett Street



Agenda

1. Introductions

2. Objective

3. Validation

4. Intersection Designs

5. Traffic Calming

6. Analysis

7. Questions