



TECHNICAL MEMORANDUM 3 SUPPLEMENT Other Options Considered

To: ***Town of Stow Lower Village Committee and Planning Board***
From: Fay, Spofford & Thorndike
Subject: Additional Pompositticut Road/Great Road Options Evaluated
Date: January 18, 2006

In addition to the modern roundabout and signal options considered, FST also reviewed two other options for the Pompositticut Road/Great Road intersection.

They were as follows:

□ **Eliminate left turns from Great Road into Pompositticut Road.**

This alternative calls for elimination of eastbound left turns from Great Road northeastbound to Pompositticut Road. In order to accomplish this, it would be necessary to construct a median in Great Road across Pompositticut Road to block it or station a police officer at the intersection 24 hours a day. Signs alone will not be effective in restricting left turns into a two way street.

While the diversion of left turning traffic would make the intersection of Pompositticut Road with Great Road operate better than existing, we do not recommend this alternative because:

- It creates potentially serious impacts on emergency access to Pompositticut Road abutters
- It significantly increases vehicle miles traveled by causing approximately 3,400 motorists to change (increase) their travel distances.
- The added traffic to Great Road makes it much more difficult for White Pond Road residents to access Great Road and all other



intersections on Great Road/Route 62 between downtown Maynard (Summer Street) and Pompositticut Road by increasing the eastbound traffic volume by approximately 3,400 vehicles per day.

- Is inconsistent with Pompositticut Road's vehicle classification as a collector street.
- ❑ **Construct a Pompositticut Road diversionary route along the east side of the unnamed pond behind the Stow Cemetery connecting back into Great Road.**

Unless Pompositticut Road is closed to through traffic between Great Road and the junction of the possible diversionary route, the diversion of Pompositticut Road traffic to a Pompositticut Road bypass is *not recommended* because:

- It would be very costly, has potentially significant environmental impacts and sends traffic in a direction that makes for longer travel times. Approximately 350 motorists per day would have shorter travel requirements, while approximately 6,100 motorists per day would have longer travel requirements
- Like the left turn restriction at Pompositticut Road, a Pompositticut Road bypass would increase the difficulty of residents exiting from White Pond Road by increasing the eastbound and westbound traffic volumes in front of it.
- It would increase vehicle miles traveled and fuel consumption, thereby resulting in a loss of productivity/time for all users but a very small minority.

We therefore conclude that the Town of Stow should not pursue either of these options, as their disbenefits far outweigh their benefits.

GLH:gh
PS-026
Tech Memo 3 Supplement.

Stow Lower Village

Pompo left restriction

20: Great Road & Pompositticut Road

2015 AM Balanced

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lanes	0	<1>	0	0	<1>	0	0	<1>	0	0	<1>	0
Sign Control	Free		Free		Stop		Stop					
Grade	0%		0%		0%		0%					
Volume (veh/h)	0	1276	9	10	443	19	6	0	6	7	0	244
Peak Hour Factor	0.98	0.98	0.92	0.92	0.98	0.98	0.92	0.92	0.92	0.98	0.92	0.98
Hourly flow rate (vph)	0	1302	10	11	452	21	7	0	7	8	0	249
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	473			1312			2040	1802	1307	1798	1796	463
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	473			1312			2040	1802	1307	1798	1796	463
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.4	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.8	4.0	3.3
p0 queue free %	100			98			73	100	97	84	100	58
cM capacity (veh/h)	1089			527			24	78	195	51	79	599
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	1312	484	13	257								
Volume Left	0	11	7	8								
Volume Right	10	21	7	249								
cSH	1089	527	43	450								
Volume to Capacity	0.00	0.02	0.30	0.57								
Queue Length 95th (ft)	0	2	26	87								
Control Delay (s)	0.0	0.6	122.5	23.1								
Lane LOS		A	F	C								
Approach Delay (s)	0.0	0.6	122.5	23.1								
Approach LOS			F	C								
Intersection Summary												
Average Delay			3.8									
Intersection Capacity Utilization			89.9%	ICU Level of Service	E							
Analysis Period (min)			15									

Stow Lower Village

Pompo left restriction

4: Great Road & White Pond Road

2015 AM Balanced

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lanes	1>	0	0	<1	1>	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	1272	16	3	443	29	6
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	1311	18	3	457	33	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume						
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol						
tC, single (s)						
tC, 2 stage (s)						
tF (s)						
p0 queue free %						
cM capacity (veh/h)						
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	1329	460	40			
Volume Left	0	3	33			
Volume Right	18	0	7			
cSH	1700	526	93			
Volume to Capacity	0.78	0.01	0.42			
Queue Length 95th (ft)	0	0	44			
Control Delay (s)	0.0	0.2	69.4			
Lane LOS		A	F			
Approach Delay (s)	0.0	0.2	69.4			
Approach LOS			F			
Intersection Summary						
Average Delay						
Intersection Capacity Utilization						
Analysis Period (min)						
ICU Level of Service						

Stow Lower Village
20: Great Road & Pompositticut Rd

Pompo left restriction
 2015 PM Balanced

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lanes	0	<1>	0	0	<1>	0	0	<1>	0	0	<1>	0
Sign Control	Free			Free			Stop			Yield		
Grade	0%			0%			0%			0%		
Volume (veh/h)	0	747	40	38	1120	21	37	0	35	7	0	350
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	812	43	41	1217	25	40	0	38	8	0	380
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type						None			None			
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1217			855			2146	2134	834	2184	2168	1230
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1217			855			2146	2134	834	2184	2168	1230
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			95			0	100	90	71	100	0
cM capacity (veh/h)	580			785			0	47	368	29	44	218
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	855	1284	78	389								
Volume Left	0	41	40	8								
Volume Right	43	25	38	380								
cSH	580	785	0	191								
Volume to Capacity	0.00	0.05	Err	2.04								
Queue Length 95th (ft)	0	4	Err	742								
Control Delay (s)	0.0	2.2	Err	525.9								
Lane LOS		A	F	F								
Approach Delay (s)	0.0	2.2	Err	525.9								
Approach LOS			F	F								
Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization			124.7%			ICU Level of Service			H			
Analysis Period (min)			15									

Stow Lower Village

Pompo left restriction

4: Great Road & White Pond Road

2015 PM Balanced

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lanes	1>	0	0	<1	1>	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	762	25	4	1163	24	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	802	29	5	1224	28	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume						
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol						
tC, single (s)						
tC, 2 stage (s)						
tF (s)						
p0 queue free %						
cM capacity (veh/h)						
Direction, Lane #						
EB 1						
WB 1						
NB 1						
Volume Total	831	1229	30			
Volume Left	0	5	28			
Volume Right	29	0	2			
cSH	1700	810	64			
Volume to Capacity	0.49	0.01	0.47			
Queue Length 95th (ft)	0	0	46			
Control Delay (s)	0.0	0.2	103.0			
Lane LOS		A	F			
Approach Delay (s)	0.0	0.2	103.0			
Approach LOS			F			
Intersection Summary						
Average Delay						
Intersection Capacity Utilization						
Analysis Period (min)						
ICU Level of Service						
D						