

*Vanasse & Associates
2001*

VOLUME II

TRAFFIC DATA TECHNICAL DATA

APPENDIX E

PHASED REVIEW DOCUMENT: PHASE III
THE PINEHILLS
PLYMOUTH, MASSACHUSETTS

Prepared for:

PINE HILLS L.L.C.
Plymouth, Massachusetts

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Prepared by:

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HCS: Signalized Intersections Release 3.2

Inter: Route 3A/Beaver Dam Road City/St: Plymouth, MA
 Analyst: MT Proj #: 2073 Phase III
 Date: 2001 Existing Weekday AM - 5xa Period: 1/23/01
 E/W St: Beaver Dam Rd./White Horse Rd. N/S St: Route 3A

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	1	1	0	1	1	0
LGConfig	LTR			LTR			L	TR		L	TR	
Volume	122	23	72	33	66	67	205	839	36	17	194	41
Lane Width	15.5			16.0			10.0	11.0		10.5	10.5	
RTOR Vol	0			0			0			0		

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left		A			NB Left	A		
Thru		A			Thru	A		
Right		A			Right	A		
Peds					Peds			
WB Left		A			SB Left	A		
Thru		A			Thru	A		
Right		A			Right	A		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	25.0				45.0			
Yellow	3.0				3.0			
All Red	2.0				2.0			
Cycle Length:	80.0 secs							

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios		Lane Group		Approach	
			v/c	g/C	Delay	LOS	Delay	LOS
Eastbound								
LTR	361	1154	0.77	0.313	35.1	D	35.1	D
Westbound								
LTR	490	1569	0.43	0.313	22.5	C	22.5	C
Northbound								
L	511	909	0.44	0.563	10.8	B		
TR	1004	1785	0.96	0.563	44.6	D	38.2	D
Southbound								
	90	137	0.22	0.563	10.0+	B		
TR	908	1614	0.31	0.563	9.5	A	9.5	A

Intersection Delay = 31.7 (sec/veh) Intersection LOS = C

HCS: Signalized Intersections Release 3.2

Phone:
E-Mail:

Fax:

OPERATIONAL ANALYSIS

Intersection: Route 3A/Beaver Dam Road
 City/State: Plymouth, MA
 Analyst: MT
 Project No: 2073 Phase III
 Time Period Analyzed: 1/23/01
 Date: 2001 Existing Weekday AM - 5xa
 East/West Street Name: Beaver Dam Rd./White Horse Rd.
 North/South Street Name: Route 3A

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	122	23	72	33	66	67	205	839	36	17	194	41
PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.91	0.91	0.91	0.84	0.84	0.84
PK 15 Vol	39	7	23	11	21	21	56	230	10	5	58	12
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900		1900	1900		1900	1900	
ParkExist												
NumPark												
% Heavy Veh	1	6	15	0	6	6	11	2	8	17	7	18
No. Lanes	0	1	0	0	1	0	1	1	0	1	1	0
LGConfig		LTR			LTR		L	TR		L	TR	
Lane Width		15.5			16.0		10.0	11.0		10.5	10.5	
RTOR Vol			0			0			0			0
Adj Flow		277			213		225	962		20	280	
%InSharedLn												
Prop Turns	0.56		0.33	0.20		0.40			0.04			0.17
NumPeds			0			0			0			0
NumBus		0			0		0	0		0	0	
%RightsInProtPhase			0			0			0			0
Duration	1.00			Area Type: All other areas								

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0			0.0			0.0	0.0	0.0			0.0
Arriv. Type	3			3			3	3	3			3
Unit Ext.	3.0			3.0			3.0	3.0	3.0			3.0
I Factor	1.000			1.000			1.000			1.000		
Lost Time	2.0			2.0			2.0	2.0	2.0			2.0
Ext of g	2.0			2.0			2.0	2.0	2.0			2.0
Ped Min g	3.0			3.0			3.0			3.0		

PHASE DATA

Phase Combination 1 2 3 4 | 5 6 7 8

EB Left	A				NB Left	A			
Thru	A				Thru	A			
Right	A				Right	A			
Peds					Peds				
WB Left	A				SB Left	A			
Thru	A				Thru	A			
Right	A				Right	A			
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	25.0					45.0			
Yellow	3.0					3.0			
All Red	2.0					2.0			

Cycle Length: 80.0 secs

VOLUME ADJUSTMENT WORKSHEET

Appr./ Movement	Mvt Volume	PHF	Flow Rate	No. Lanes	Lane Group	RTOR	Adjusted Flow Rate In Lane Grp	Prop: Left Turns	Prop. Right Turns
Eastbound									
Left	122	0.78	156	0					
Thru	23	0.78	29	1	LTR		277	0.56	0.33
Right	72	0.78	92	0		0			
Westbound									
Left	33	0.78	42	0					
Thru	66	0.78	85	1	LTR		213	0.20	0.40
Right	67	0.78	86	0		0			
Northbound									
Left	205	0.91	225	1	L		225		
Thru	839	0.91	922	1	TR		962		0.04
Right	36	0.91	40	0		0			
Southbound									
Left	17	0.84	20	1	L		20		
Thru	194	0.84	231	1	TR		280		0.17
Right	41	0.84	49	0		0			

* Value entered by user.

SATURATION FLOW ADJUSTMENT WORKSHEET

Appr/ Lane Group	Ideal Sat Flow	f W	f HV	f G	f P	f BB	f A	f LU	f RT	f LT	Adj Sat Flow
Eastbound											
										Sec LT Adj/LT Sat:	
LTR	1900	1.117	0.942	1.000	1.000	1.000	1.00	1.00	0.855	0.675	1154

Westbound											
										Sec LT Adj/LT Sat:	
LTR	1900	1.133	0.954	1.000	1.000	1.000	1.00	1.00	0.845	0.903	1569

Northbound											
										Sec LT Adj/LT Sat:	
L	1900	0.933	0.901	1.000	1.000	1.000	1.00	1.00	-----	0.569	909
TR	1900	0.967	0.978	1.000	1.000	1.000	1.00	1.00	0.994	1.000	1785

Southbound											
										Sec LT Adj/LT Sat:	
L	1900	0.950	0.855	1.000	1.000	1.000	1.00	1.00	-----	0.089	137
TR	1900	0.950	0.918	1.000	1.000	1.000	1.00	1.00	0.974	1.000	1614

CAPACITY ANALYSIS WORKSHEET

Appr/ Mvmt	Lane Group	Adj Flow Rate (v)	Adj Sat Flow Rate (s)	Flow Ratio (v/s)	Green Ratio (g/C)	--Lane Group-- Capacity (c)	v/c Ratio
Eastbound							
Pri.							
Sec.							
Left							
Thru	LTR	277	1154	# 0.24	0.313	361	0.77
Right							
Westbound							
Pri.							
Sec.							
Left							
Thru	LTR	213	1569	0.14	0.313	490	0.43
Right							
Northbound							
Pri.							
Sec.							
Left	L	225	909	0.25	0.563	511	0.44
Thru	TR	962	1785	# 0.54	0.563	1004	0.96
Right							
Southbound							
Pri.							
Sec.							
Left	L	20	137	0.15	0.563	90	0.22
Thru	TR	280	1614	0.17	0.563	908	0.31
Right							

Sum (v/s) critical = 0.78

Lost Time/Cycle, L = 10.00 sec Critical v/c(X) = 0.89

LEVEL OF SERVICE WORKSHEET

Appr/ Lane Grp	Ratios v/c	Unf Del d1	Prog Adj Fact	Lane Grp Cap	Incremental Factor k	Res Del d2	Res Del d3	Lane Group Delay LOS	Approach Delay LOS
Eastbound									
LTR	0.77	0.313	24.9	1.000	361	0.32	10.2	0.0	35.1 D 35.1 D
Westbound									
LTR	0.43	0.313	21.9	1.000	490	0.11	0.6	0.0	22.5 C 22.5 C
Northbound									
L	0.44	0.563	10.2	1.000	511	0.11	0.6	0.0	10.8 B
TR	0.96	0.563	16.6	1.000	1004	0.47	28.0	0.0	44.6 D 38.2 D
Southbound									
L	0.22	0.563	8.8	1.000	90	0.11	1.3	0.0	10.0+ B
TR	0.31	0.563	9.3	1.000	908	0.11	0.2	0.0	9.5 A 9.5 A

Intersection Delay = 31.7 (sec/veh) Intersection LOS = C

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