# SUMMARY OF ANALYSIS ROUTE 22 AND HAVILLAND HOLLOW RD

# **Existing Conditions:**

The existing intersection is signalized and has four approaches. NY Route 22 approaches from the north and south, Havilland Hollow Rd approaches westbound and a commercial driveway approaches eastbound. There are no pedestrian accommodations at this intersection. The signal has three phases, one for north-south, which also permissively allows left turns, one for east-west, which permissively allows left turns and one for a protected southbound left turn movement (and westbound right turn overlap). Capacity analysis shows that the existing intersection operates at an overall LOC C in both AM and PM peak hours, which is desirable. However, the westbound through movement in the morning and the northbound through movement in the afternoon are approaching capacity (v/c ratio >0.90), which indicates that even a small amount of traffic growth could result in failing conditions in the near future.

# **Signal Warrant Analysis:**

A review of the hourly traffic volumes between 7:00 AM and 8:00 PM show that criteria for Warrant 1 (8-hour warrant), Warrant 2 (4-hour warrant) and Warrant 3 (peak hour warrant) are satisfied for all 13 hours reviewed. As such, all three signal warrants are satisfied. Warrant 7 (crash experience) is not satisfied, as there were not 5 accidents per year susceptible to correction by signalization (left or right turn, or right angle accidents). The satisfaction of Warrants 1, 2 & 3 justify the existing traffic signal, as well as a roundabout as a suitable replacement.

# **Accident Analysis:**

Accident data noted 26 accidents at this location in the 3-year period reviewed. The accident rate calculated for this intersection is 1.34 accidents per million entering vehicles (acc/MEV). Comparing this to the state-wide average for similar intersections of 0.68 acc/MEV, indicates that the accident history warrants further investigation. Upon review of the accident types, the predominate type occurring is rear ends, with 12 of the 26 accidents (46%) being of that type. This is not out of the ordinary as it is common for this type of accident to occur at a traffic signal. The high occurrence rate is most likely caused by the number of and excessive widths of curb cuts/driveways in the vicinity of the intersection. Within 300 feet of the intersection there are 10 existing driveways, a couple of which have widths in excess of 50 feet. The conflicts caused by these driveways, is likely the biggest cause of the high accident rate, as there are no other existing conditions that are out of the ordinary, including geometric factors and sight distances. A summary of the accident types and severity are shown in the table below:

#### **ACCIDENT SUMMARY**

Accident Type	Number of Occurrences	Accident Severity	Number of Occurrences
Right Angle	4	Fatality	0
Left Turn	3	Personal Injury	4
Rear End	12	Property Damage Only	15
Fixed Object	3	Non-Reportable	7
Overtaking	1		
Sideswipe	1		
Other	2		
	26		26

## Field Condition and Right of Way Review:

There are 8'-10' wide shoulders along Route 22, and the northbound striped center median is more than 15' wide, which would provide ample pavement to work with for lane restriping, if needed. For a roundabout installation, there isn't enough existing right of way to construct without some fee taking on the northeast corner, which will cut into a commercial parking lot. However, the parking lot will remain viable for the plaza. While a roundabout should not require right of way taking on the southeast corner, the diner parking lot and a utility pole come very close to the edge of the roundabout, so there may be the need to reconfigure the corner of the parking lot or relocate that utility pole come final design.

## **Design Alternative Consideration:**

Two design alternatives were considered to improve traffic operations at this intersection; restriping to allow for a northbound right turn lane and the construction of a roundabout. The roundabout would also reconstruct driveways, eliminating some and reducing the width of others. The analysis showed that with a fairly simple and relatively inexpensive restriping, levels of service would improve to LOS B in both the AM and PM peak periods, with the worst-case v/c ratio dropping from 0.98 to 0.83, creating a significant improvement in reserve capacity. Restriping would also cut the northbound queue in half from over 800' to just 400'. For a roundabout to provide acceptable capacity at this location a second lane southbound for left turn only traffic and a second lane northbound for right turn only traffic will need to be added to the roundabout configuration. With this done, overall operations would be LOS A in the AM peak and LOS B in the PM peak. Concept sketches for both these alternatives are included subsequently under this tab.

# **Conceptual Cost Estimate:**

Based on our past experience with similar projects, knowledge of construction pricing in this region of New York State and our understanding of the issues, it is estimated that the restriping to create a right turn lane as shown in the concept sketch would cost approximately \$36,500 and a roundabout, because of the right of way cost, additional lanes within the roundabout, and the need to reconstruct several driveways would cost approximately \$2,185,000. These costs include construction of all improvements, as well as costs for design and inspection. A breakdown of the big picture cost items is included later under this tab.

# **Summary & Conclusion:**

The analyses show that the existing traffic signal does adequately accommodate existing traffic, but some movements are at the threshold of capacity. With the wide existing pavement width, the northbound approach could be restriped to allow for a right turn lane that would provide reserve capacity to accommodate future growth at a relatively inexpensive cost.

It is feasible to construct a roundabout at this location, but it does require right of way taking, reduction of adjacent parking lots, and the reconfiguration of site access driveways for several properties.

Because restriping is significantly cheaper, has lest effect on the adjacent properties and provides almost the same level of service as a roundabout, it is recommended that the restriping option, as show in the provided concept sketch, be performed when capacity improvements are desired.

The intersection evaluation worksheet summarizing the lane geometry and traffic operations, traffic volume data sheets, traffic signal warrant analysis sheets, accident summary sheets, capacity analysis worksheets, cost estimate breakdown, roundabout concept sketch, and restriping concept sketch for this intersection can be found on the following pages under this tab.

#### INTERSECTION EVALUATION WORKSHEET

Project: Putnam County Roundabout Evaluation

Location: Putnam County (Various Locations)

Intersection: Route 22 & Havilland Hollow Rd

GPS Coord.: 41°29'3.36"N, 73°34'33.14"W

Traffic Control: Traffic Signal

#### Traffic Control Notes (if applicable):

Prot-Perm LT Turn Phase (SB) with RT Ovlp (WB)
\*NB LT use center median to turn as defacto LT lane.
No Pedestrian Crossings.

# Other Intersection Notes (if applicable):

Radius Flare (WB) can accommodate 1 RT vehicle. Wide shoulders NB & SB could be used by RT vehicles, but crosshatch striping to reinforce not to do it.



#### APPROACH DATA

		Route 22			Route 22		(	Gas Statio	n	Havil	lland Hollo	w Rd
	N	Iorthboun	d	S	outhbour	d		Eastbound	1	1	Nestboun	d
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Assignments:	1*	1->		1	1->			<-1->			<-1->	Flare
Lane Widths:	12'	12'		12'	12'			12'			11'	
Turn Bay Lengths:	50'	-		200'	0=			-	1			25'
Speed Limits:		55 mph			55 mph			15 mph			30 mph	

## TRAFFIC COUNT DATA

## (traffic volumes below represent counted traffic adjusted by 1.05 to account for seasonal variation and annual growth)

AM Peak Hour	Tim	e Period:	7:15	to	8:15				Date	Counted:	4/24	/2018
Volume:	1	327	70	123	760	16	1	3	17	244	14	131
Truck %:	50%	22%	6%	5%	6%	1%	1%	1%	1%	1%	1%	2%
Peds (Bikes):		0 (0)			0 (0)			0 (0)			0 (0)	
PHF = 0.95												
PM Peak Hour	Tim	e Period:	5:00	to	6:00			AI7-44-4-10 10 10 10 10 10 10 10 10 10 10 10 10 1	Date	Counted:	4/24	/2018
Volume:	2	676	306	197	411	7	12	6	14	75	5	146
Truck %:	1%	2%	1%	1%	4%	1%	1%	1%	1%	1%	1%	2%
Peds (Bikes):		0 (0)			0 (0)			1 (1)			0 (0)	
PHF = 0.95												

### **EXISTING CONDITION LEVEL OF SERVICE**

AM Peak Delay (s):	18.3	18.0	10.5	15.6	14.0	50.9	12.0
LOS:	В	В	В	В	В	D	В
v/c:	0.00	0.82	0.34	0.86	0.06	0.91	0.26
95% Queue:	< 25'	200'	30'	295'	< 25'	270'	45'
C (20.8) Overall		B (18.0)	E	3 (14.9)	B (14.0)	D (37.8)	
PM Peak Delay (s):	6.2	37.1	28.5	3.5	30.9	32.1	28.9
LOS:	Α	D	С	А	С	С	С
v/c:	0.00	0.98	0.82	0.32	0.14	0.31	0.50
95% Queue:	< 25'	840'	120'	100'	35'	90'	40'
C (27.6) Overall		D (37.0)		3 (11.5)	C (30.9)	C (30.0)	

Note: LOS calculated using HCM 6 methodologies.

			INTERS	ECTION	EVALUATION V	VORKSHEET		
		Route 22			Route 22	Gas Station	Havilland Hollo	w Rd
	N	lorthbour	ıd	S	outhbound	Eastbound	Westboun	d
	Left	Thru	Right	Left	Thru Right	Left Thru Right	Left Thru	Right
		136	BUILD	ALTERN	ATIVE #1 - LEVEL	OF SERVICE		
Description of Impro	vements	s:	Existing	Traffic Sig	gnal with Added 10	00' Northbound Right Turn	Lane	- Marie
,								
AM Peak Delay (s):	18.0	14.7	11.1	9.2	12.9	14.2	18.1	12.3
LOS:	В	В	В	А	В	В	В	В
v/c:	0.00	0.63	0.14	0.29	0.85	0.05	0.55	0.27
95% Queue:	< 25'	205'	< 25'	45'	430'	< 24'	220'	35'
B (13.7) Overall		B (14.1)			В (12.4)	B (14.2)	B (16.2)	
PM Peak Delay (s):         7.8         16.1         10.2         11.8         4.6         19.7           LOS:         A         B         B         B         A         B           v/c:         0.00         0.83         0.44         0.56         0.37         0.10           95% Queue:         < 25'			19.7	20.6	17.7			
LOS:	Α	В	В	В	Α	В	С	В
v/c:	0.00	0.83	0.44	0.56	0.37	0.10	0.24	0.41
95% Queue:	< 25'	400'	65'	50'	100'	30'	75'	35'
B (12.5) Overall		B (14.2)			A (6.9)	B (19.7)	B (18.7)	
			BUILD	ALTERN	ATIVE #2 - LEVEL	OF SERVICE		
Description of Impro	vement	ç.	Variable	Lane Roi	indabout (130 ft. I	Diameter) With 2-SB Lanes	(LT.TH-RT)	
bescription of impro	veniene.			anes (TH-I		Jameter, With 2 35 Lanes	(21,111 111)	
AM Peak Delay (s):	7	'.0	3.5	4.5	18.5	10.1	9.9	
LOS:		A	A	A	C	В	A	
v/c:	-	.34	0.06	0.12	0.78	0.06	0.46	
95% Queue:		60'	< 25'	< 25'	200'	< 25'	50'	
B (12.6) Overall		A (6.4)			C (16.6)	C (10.1)	A (9.9)	
PM Peak Delay (s):	1:	1.6	5.8	4.1	6.1	6.1	10.8	
LOS:		В	Α	А	А	А	В	
v/c:	0.	.63	0.28	0.16	0.35	0.05	0.37	
95% Queue:	12	25'	25'	25'	50'	< 25'	50'	
A (8.4) Overall		A (9.8)			A (5.5)	A (6.1)	B (10.8)	
	# (		BUULT	ALTERN	ATIVE #3 - LEVEL			
	العدائد		DOILL	ALIENIA	ATTVE IIS LEVEL	or service		
Description of Impro	vements	5:						
AM Peak Delay (s):								
LOS:								
v/c:								
95% Queue:								
Overall								
PM Peak Delay (s):								
LOS:								
v/c:								
95% Queue:								
	THE PERSON NAMED IN	10 10 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		The second second		ADMINISTRAÇÃO DE PARTICIONA DE	more than proceed said to the former than the	

# Greenman-Pedersen, Inc. 80 Wolf Road, Suite 300 Albany, NY 12205 518.453.9431

File Name: Route 22 at Havilland Hollow Road - 13 Hour Data

Site Code : 2018011 Start Date : 4/24/2018

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								Gro	oups P	rinted-	Cars	- Truc	ks								
		F	Route :	22			Havi	lland H	Hollow				Route 2	22			Р	arking	Lot		
		Fr	rom No	orth			F	rom E	ast			F	rom So	uth			F	rom V	<b>Vest</b>		
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Tota
07:00 AM	2	168	26	0	196	37	4	59	0	100	7	54	2	0	63	7	0	1	0	8	367
07:15 AM	2	166	26	0	194	31	3	71	0	105	13	42	0	0	55	4	1	0	0	5	359
07:30 AM	3	188	31	0	222	22	2	60	0	84	24	80	1	0	105	3	2	0	0	5	416
07:45 AM	3	178	35	0	216	41	4	50	. 0	95	14	98	0	0	112	3	0	0	0	3	426
Total	10	700	118	0	828	131	13	240	0	384	58	274	3	0	335	17	3	1	0	21	1568
08:00 AM	7	192	25	0	224	31	4	51	0	86	16	91	0	0	107	6	0	1	0	7	424
08:15 AM	5	128	24	0	157	25	1	52	0	78	14	65	1	0	80	5	1	1	0	7	322
08:30 AM	7	152	30	0	189	35	2	35	0	72	17	77	0	0	94	3	0	2	0	5	360
08:45 AM	4	124	25	0_	153	24	4	37	0	65	13	66	0_	0	79	6	0	1	0	7_	304
Total	23	596	104	0	723	115	11	175	0	301	60	299	1	0	360	20	1	5	0	26	1410
09:00 AM	5	112	19	0	136	29	0	21	0	50	17	76	0	0	93	4	2	2	0	8	287
09:15 AM	4	119	23	0	146	16	3	22	0	41	13	72	0	0	85	3	1	2	0	6	278
09:30 AM	5	107	19	0	131	29	1	25	0	55	9	82	0	0	91	3	2	3	0	8	285
09:45 AM	1	98	21	0	120	22	3	19	0	44	14	80	0	0	94	6	1	3	0	10	268
Total	15	436	82	0	533	96	7	87	0	190	53	310	0	0	363	16	6	10	0	32	1118
10:00 AM	5	101	16	0	122	19	1	17	0	37	14	72	1	0	87	2	2	2	0	6	252
10:15 AM	4	111	15	0	130	21	1	22	0	44	5	57	0	0	62	4	0	1	0	5	241
10:30 AM	3	89	25	0	117	20	2	19	0	41	7	65	1	0	73	5	0	4	1	10	241
10:45 AM	0	92	18	0	110	9	1	18	0	28	9	80	6	0	95	2	0	7	0	9	242
Total	12	393	74	0	479	69	5	76	0	150	35	274	8	0	317	13	2	14	1	30	976
11:00 AM	1	77	17	0	95	18	2	12	0	32	14	85	1	0	100	2	1	7	0	10	237
11:15 AM	2	90	15	0	107	18	3	10	0	31	15	76	3	0	94	3	0	3	0	6	238
11:30 AM	2	92	18	0	112	21	0	12	0	33	15	95	. 3	0	113	4	1	3	0	8	266
11:45 AM	1	82	8	0	91	23	0	17	. 0	40	16	92	4_	0	112	2	1	0	0	3	246
Total	6	341	58	0	405	80	5	51	0	136	60	348	11	0	419	11	3	13	0	27	987
12:00 PM	6	87	18	0	111	25	2	16	0	43	10	100	1	0	111	1	0	5	0	6	271
12:15 PM	5	95	22	Ŏ	122	14	4	12	Õ	30	20	75	Ó	Ö	95	8	3	Ō	0	11	258
12:30 PM	3	87	21	0	111	21	0	13	0	34	20	81	2	0	103	2	2	3	0	7	255
12:45 PM	8	91	24	0	123	13	1	11	0	25	21	79	3	0	103	3	2	0	0	5	256
Total	22	360	85	0	467	73	7	52	0	132	71	335	6	0	412	14	7	8	0	29	1040
01:00 PM	3	111	19	0	133	18	0	8	0	26	16	88	1	2	107	3	3	3	0	9	275
01:15 PM	4	96	30	0	130	18	1	14	0	33	11	103	0	0	114	3	1	1	0	5	282
01:30 PM	1	97	22	1	121	19	2	10	0	31	18	86	0	0	104	4	1	1	1	7	263
01:45 PM	5	96	25	0	126	13	1	17	0	31	20	87	0	0	107	5	0	0	0	5	269
Total	13	400	96	1	510	68	4	49	0	121	65	364	1	2	432	15	5	5	1	26	1089
02:00 PM	5	82	19	0	106	25	2	18	0	45	18	90	2	0	110	3	1	2	0	6	267
02:15 PM	3	71	22	0	96	24	3	12	0	39	17	118	3	2	140	7	2	6	0	15	290
02:30 PM	3	76	26	0	105	19	0	11	0	30	16	105	4	0	125	0	1	4	0	5	265
02:45 PM	1.	75	25	0	101	26	1_	14	0	41	31	117	. 3	0	151	3	0	5	0	8	301
Total	12	304	92	0	408	94	6	55	0	155	82	430	12	2	526	13	4	17	0	34	1123
03:00 PM	3	79	33	0	115	32	2	22	0	56	23	97	2	0	122	2	1	1	0	4	297
03:15 PM	1	95	28	0	124	19	1	19	0	39	19	155	3	0	177	6	1	0	0	7	347
03:30 PM	0	83	47	0	130	24	4	21	0	49	43	171	3	0	217	4	2	3	0	9	405
03:45 PM	2	97	32	0	131	37	2	22	0	61	42	137	1_	0	180	3	4	1	0	8	380
Total	6	354	140	0	500	112	9	84	0	205	127	560	9	0	696	15	8	5	0	28	1429

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File Name: Route 22 at Havilland Hollow Road - 13 Hour Data

Site Code : 2018011 Start Date : 4/24/2018

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								Gr	oups F	Printed-	Cars	Truc	ks								
			Route						Hollow	•			Route					arking			
			rom N	orth			, F	rom E		,			rom S	· · · · · · · · · · · · · · · · · · ·				rom W			
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	98	33	0	131	40	2	21	0	63	37	160	4	0	201	2	3	1	0	6	401
04:15 PM	1	100	45	0	146	31	1	28	0	60	40	192	1	0	233	3	0	1	0	4	443
04:30 PM	2	80	44	0	126	39	0	20	0	59	51	193	2	0	246	1	4	1	0	6	437
04:45 PM	1	74	41	0	116	37	0	21	0	58	43	192	5	0	240	4	1_	2	0	7	421
Total	4	352	163	0	519	147	3	90	0	240	171	737	12	0	920	10	8	5	0	23	1702
05:00 PM	2	91	44	0	137	32	2	16	0	50	68	174	1	0	243	2	2	5	0	9	439
05:15 PM	3	102	43	0	148	34	2	19	0	55	81	177	0	0	258	3	1	3	0	7	468
05:30 PM	2	97	63	0	162	26	0	18	0	44	71	150	0	0	221	5	1	2	1	9	436
05:45 PM	0	101	38	0	139	47	1	18	0	66	71	143	1	0	215	3	2	1	0_	6	426
Total	7	391	188	0	586	139	5	71	0	215	291	644	2	0	937	13	6	11	1	31	1769
06:00 PM	1	81	52	0	134	34	1	16	0	51	55	156	2	0	213	1	2	3	0	6	404
06:15 PM	2	74	42	0	118	28	1	16	0	45	43	156	0	0	199	2	0	0	0	2	364
06:30 PM	2	63	38	0	103	25	1	11	0	37	46	131	0	0	177	1	0	1	0	2	319
06:45 PM	1	73	39	0	113	20	2	14	0	36	29	105	1	0	135	2	3	1	0	6	290
Total	6	291	171	0	468	107	5	57	0	169	173	548	3	0	724	6	5	5	0	16	1377
07:00 PM	1	50	19	0	70	25	2	11	0	38	25	108	1	0	134	0	2	3	0	5	247
07:15 PM	4	40	24	0	68	16	0	9	0	25	29	110	0	0	139	3	1	0	0	4	236
07:30 PM	3	49	21	0	73	23	0	8	0	31	30	84	2	0	116	3	2	0	0	5	225
07:45 PM	3	26	23	0	52	19	1_	9	0	29	24	72	0	0	96	0	1	3	0	4	181
Total	11	165	87	0	263	83	3	37	0	123	108	374	3	0	485	6	6	6	0	18	889
Grand Total	147	5083	1458	1	6689	1314	83	1124	0	2521	1354	5497	71	4	6926	169	64	105	3	341	16477
Apprch %	2.2	76	21.8	0		52.1	3.3	44.6	0		19.5	79.4	1	0.1		49.6	18.8	30.8	0.9		
Total %	0.9	30.8	8.8	0	40.6	8	0.5	6.8	0	15.3	8.2	33.4	0.4	0	42	1	0.4	0.6	0	2.1	
Cars	146	4654	1388			1264		1087			1310	4980									15317
% Cars	99.3	91.6	95.2	100	92.5	96.2	100	96.7	0	96.5	96.8	90.6	94.4	100	91.8	98.2	98.4	96.2	100	97.7	93
Trucks	1	429	70	0	500	50	0	37	0	87	44	517	4	0	565	3	1	4	0	8	1160
% Trucks	0.7	8.4	4.8	0	7.5	3.8	0	3.3	0	3.5	3.2	9.4	5.6	0	8.2	1.8	1.6	3.8	0	2.3	7

			Route :					illand H					Route					arking			
	İ	F	rom No	orth			F	rom E	ast			F	rom So	outh			F	rom W	est		• • • • • • • • • • • • • • • • • • •
Start Time	Right	Thru	I	Peds	App. Total	Right	Thru		Peds	App. Total	Right	Thru		Peds	App. Total	Right	Thru		Peds	App. Total	Int. Total
Peak Hour A	nalysi	s Fron	n 07:0	0 AM to	o 11:45	AM - F	Peak 1	of 1													
Peak Hour fo	or Enti	re Inte	rsectio	n Beg	ins at 0	7:15 A	М														
07:15 AM	2	166	26	οŬ	194	31	3	71	0	105	13	42	0	0	55	4	1	0	0	5	359
07:30 AM	3	188	31	0	222	22	2	60	0	84	24	80	1	0	105	3	2	0	0	5	416
07:45 AM	3	178	35	0	216	41	4	50	0	95	14	98	0	0	112	3	0	0	0	3	426
08:00 AM	7	192	25	0	224	31	4	51	Ō	86	16	91	Ô	Ó	107	6	0	1	0	7	424
Total Volume	15	724	117	0	856	125	13	232	0	370	67	311	1	0	379	16	3	1	0	20	1625
% App. Total	1.8	84.6	13.7	Ó		33.8	3.5	62.7	Ô		17.7	82.1	0.3	0		80	15	5	0		i
PHF	536	943	836	ດດດ	955	762	813	817	ດດດ	881	698	793	250	000	846	667	375	250	000	714	954

# Greenman-Pedersen, Inc. 80 Wolf Road, Suite 300 Albany, NY 12205 518.453.9431

File Name: Route 22 at Havilland Hollow Road - 13 Hour Data

Site Code : 2018011 Start Date : 4/24/2018

Page No : 3

	me Right Thru Left Peds Am rur Analysis From 12:00 PM to 0 rur for Entire Intersection Begins PM 2 91 44 0				lland I rom E	Hollow ast	,			Route					arking rom W						
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	int. Total
Peak Hour A	nalysi	s Fron	n 12:0	PM to	o 07:45	PM - I	Peak 1	of 1													
Peak Hour fe	or Enti	re Inte	rsectio	n Beg	ins at 0	5:00 P	М														
05:00 PM	2	91	44	0	137	32	2	16	0	50	68	174	1	0	243	2	2	5	0	9	439
05:15 PM	3	102	43	0	148	34	2	19	0	55	81	177	0	0	258	3	1	3	0	7	468
05:30 PM	2	97	63	0	162	26	0	18	0	44	71	150	0	0	221	5	1	2	1	9	436
05:45 PM	0	101	38	0	139	47	1	18	0	66	71	143	1	0	215	3	2	1	0	6	426
Total Volume	7	391	188	0	586	139	5	71	0	215	291	644	2	0	937	13	6	11	1	31	1769
% App. Total	1.2	66.7	32.1	0		64.7	2.3	33	0		31.1	68.7	0.2	0		41.9	19.4	35.5	3.2		
PHF	.583	.958	.746	.000	.904	.739	.625	.934	.000	.814	.898	.910	.500	.000	.908	.650	.750	.550	.250	.861	.945

## TRAFFIC SIGNAL WARRANT SUMMARY

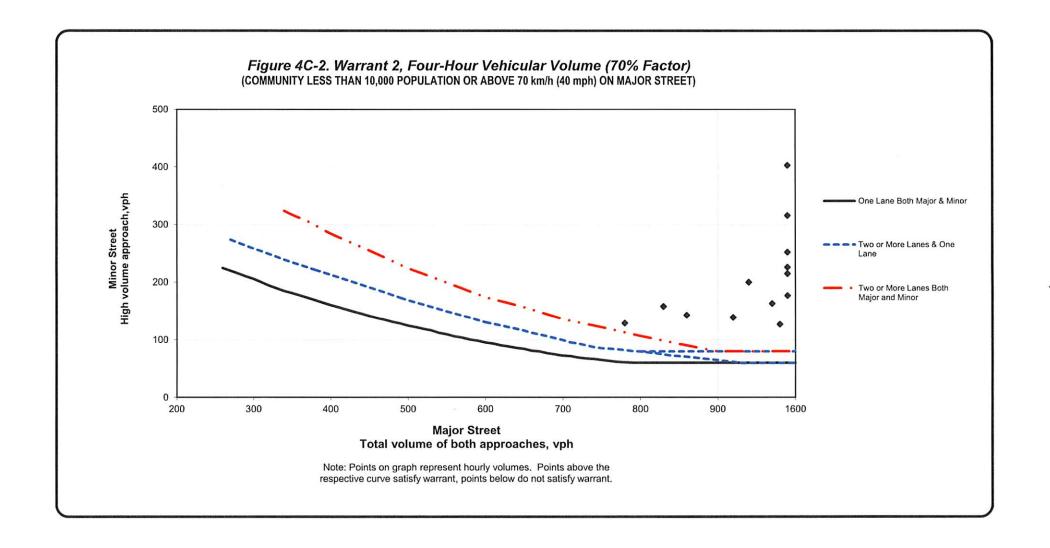
Project:	Putnam County Roundabout Evaluation	Condition:	2019	Existing Con	dition	
Location:	Route 22 and Havilland Hollow Rd	_	Date:	April 2	9, 2019	
Major Street:	Route 6N	Lanes: 1	Critical Appro	ach Speed:	55	mph
Minor Street:	Havilland Hollow Rd	Lanes: 1				_
Volume Level Criteria						
1. Is the critic	cal speed of major street traffic greater than 40 mph?				Y	'es
2. Is the inter	section in a built-up area of an isolated community with	population less than 10,000	0?		<u>r</u>	No
If either Qu	estion 1 or Question 2 is answered "Yes", then use the 70	0% volume level.	Cr	iteria used:	7	0%
WARRANT 1 - EIGHT	HOUR VEHICULAR VOLUME			Narrant 1 S	atisfied:	YES
	EITHER Condition A OR Condition B is 100% satisfied.					
Warrant 1 is also satisfic	ed if <u>BOTH</u> Condition A <u>AND</u> Condition B are satisfied to	the 80% volume level.				
	Condition 1A - Minimum Vehicular Volume	Condition 1B - Interuption	of Continuous Traffic	Total Satis	fied Hours	(8 required)
	( X indicates that criteria is met for specified condition	) ( X indicates that criteria is m	et for specified condition)	13	13	13

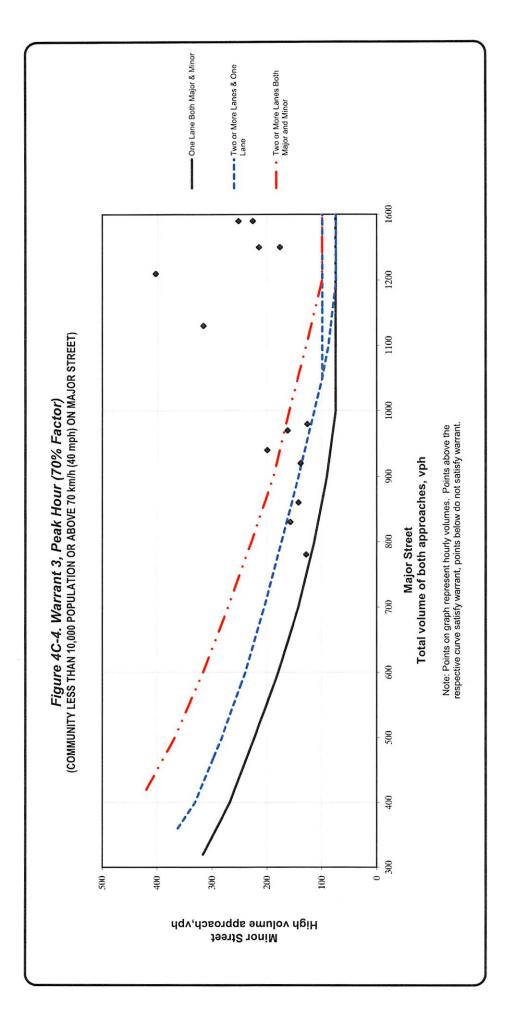
			Condition	n 1A - Minim	um Vehicular	Volume	Condition	1B - Interupti	on of Continu	ous Traffic	Total Satis	fied Hours (	8 required)
			( X indicates	that criteria is	met for specifi	ed condition)	( X indicates	s that criteria is	met for specifi	ed condition)	13	13	13
N	/linimum Volu	me Criteria:	350	105	280	84	525	53	420	42	Condition	Condition	80% for
Start	Major St.	Minor St.	Major St.	Minor St.	Major St.	Minor St.	Major St.	Minor St.	Major St.	Minor St.	1A	1B	Both
Time	Volume <sup>1</sup>	Volume <sup>2</sup>	100%	100%	80%	80%	100%	100%	80%	80%	Satisfied	Satisfied	Satisfied
12:00 AM			-		•	-	•	-	-	•	-	-	-
1:00 AM			-	-	•	-	•	-	-	-	-	•	•
2:00 AM			-	-	•	-		•	-	-	•		-
3:00 AM			-	•	•	-	•	•	-	•	•	-	-
4:00 AM			-	•	-	•	•	-	-	•	•	-	•
5:00 AM			•	-	-	-	-	•	•	•	•	-	•
6:00 AM				-		•	•	•	•			•	
7:00 AM	1211	403	Х	Х	Х	X	X	Х	Х	Х	1	1	1
8:00 AM	1137	316	Х	Х	Х	Х	Х	Х	Х	Х	1	1	1
9:00 AM	941	200	Х	X	X	X	Х	Х	Х	Х	1	1	1
10:00 AM	836	158	X	X	X	X	X	Х	Х	Х	1	1	1
11:00 AM	865	143	X	Х	Х	Х	Х	Х	Х	Х	1	1	1
12:00 PM	923	139	Х	Х	X	X	Х	Х	Х	Х	1	1	1
1:00 PM	986	127	Х	Х	X	X	X	Х	Х	Х	1	1	1
2:00 PM	979	163	X	Х	X	X	Х	Х	X	Х	1	1	1
3:00 PM	1256	215	X	X	X	X	Х	Х	Х	X	1	1	1
4:00 PM	1511	252	Х	Х	Х	Х	X	Х	Х	Х	1	1	1
5:00 PM	1599	226	Х	Х	Х	Х	Х	Х	Х	Х	1	1	1
6:00 PM		177	Х	Х	X	Х	Х	Х	Х	Х	1	1	1
7:00 PM		129	Х	Х	Х	Х	Х	Х	Х	Х	1	1	1
8:00 PM			•	-	-	•	<u>-</u>	•	-	-	-	-	-
9:00 PM			•	•		•	-	-		•	<u> </u>	-	-
10:00 PM			•		-	•	•	-	-	-	<u> </u>	-	-
11:00 PM			-	i -			-	-				-	

<sup>&</sup>lt;sup>1</sup> Major Street Volume is the total combined volume of both mainline approaches.

<sup>&</sup>lt;sup>2</sup> Minor Street volumes is the highest single side street approach volume.

<u> VARRANT 2 -</u>	FOUR HOUR VEHICULAR VOLUME	Warrant 2 Satisfied:	YES
	sfied if four (4) or more hours satisfy the volume requirements		
lepicted on the	e four hour warranting graph (see page 2).	No. of Points Above Criteria Curve:	13
WARRANT 3 -	PEAK HOUR VEHICULAR VOLUME	Warrant 3 Satisfied:	YES
Varrant is satis	sfied if any hour satisfy the volume requirements depicted on the		
eak hour warr	ranting graph (see page 3), and ALL three of the following requirement are met.	No. of Points Above Criteria Curve:	13
1. To	otal stopped time delay on Minor Street equals or exceeds 4 VHD (single lane) or 5 VHD (two lanes	):69.4VHD Max	c. Yes
2. Va	plume on Minor Street equals or exceeds 100 vehicles (single lane) or 150 vehicles (two lanes):	<del></del>	Yes
3. To	tal intersection volume serviced during the hour equals or exceeds 650 veh. (3-leg) or 800 veh. (4	-leg or more)·	Yes





# 4: Route 22 & Havilland Hollow Rd

	<b>→</b>	<b>←</b>	*	4	<b>†</b>	-	Į.
Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	22	272	138	1	418	129	817
v/c Ratio	0.05	0.86	0.30	0.01	0.69	0.26	0.82
Control Delay	12.8	53.9	8.4	11.0	21.3	6.1	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	53.9	8.4	11.0	21.3	6.1	17.4
Queue Length 50th (ft)	1	87	3	0	114	16	188
Queue Length 95th (ft)	19	#273	48	3	206	33	309
Internal Link Dist (ft)	154	465			669		427
Turn Bay Length (ft)			25	50		200	
Base Capacity (vph)	410	316	463	212	878	569	1483
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.86	0.30	0.00	0.48	0.23	0.55
Intersection Summary							

<sup># 95</sup>th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

	<u></u>	<b>→</b>	*	•	-	*	4	<b>†</b>	1	-	<b></b>	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			र्स	7	7	₽		7	₽	
Traffic Volume (veh/h)	1	3	17	244	14	131	1	327	70	123	760	16
Future Volume (veh/h)	1	3	17	244	14	131	1	327	70	123	760	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		AND SO AT PROPERTY PROPERTY AND ADDRESS OF THE PARTY AND ADDRESS OF THE	No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1870	1159	1574	1574	1826	1811	1811
Adj Flow Rate, veh/h	1	3	18	257	15	138	1	344	74	129	800	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	2	50	22	22	5	6	6
Cap, veh/h	73	60	269	275	8	402	200	442	95	385	939	20
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.35	0.35	0.35	0.08	0.53	0.53
Sat Flow, veh/h	0	236	1060	545	32	1585	414	1255	270	1739	1766	38
Grp Volume(v), veh/h	22	0	0	272	0	138	1	0	418	129	0	817
Grp Sat Flow(s),veh/h/ln	1296	0	0	577	0	1585	414	0	1525	1739	0	1803
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	3.6	0.1	0.0	12.5	2.2	0.0	19.9
Cycle Q Clear(g_c), s	13.0	0.0	0.0	13.0	0.0	3.6	10.8	0.0	12.5	2.2	0.0	19.9
Prop In Lane	0.05		0.82	0.94		1.00	1.00		0.18	1.00		0.02
Lane Grp Cap(c), veh/h	402	0	0	283	0	402	200	0	537	385	0	959
V/C Ratio(X)	0.05	0.00	0.00	0.96	0.00	0.34	0.00	0.00	0.78	0.34	0.00	0.85
Avail Cap(c_a), veh/h	402	0	0	283	0	402	297	0	892	615	0	1618
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.5	0.0	0.0	22.1	0.0	15.6	18.8	0.0	14.8	10.1	0.0	10.3
Incr Delay (d2), s/veh	0.1	0.0	0.0	43.0	0.0	0.5	0.0	0.0	2.5	0.5	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	6.5	0.0	1.2	0.0	0.0	3.4	0.5	0.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.6	0.0	0.0	65.2	0.0	16.1	18.8	0.0	17.3	10.6	0.0	12.6
LnGrp LOS	В	Α	Α	E	Α	В	В	Α	В	В	Α	В
Approach Vol, veh/h		22			410			419			946	
Approach Delay, s/veh		14.6			48.7			17.3			12.3	
Approach LOS		В			D			В			В	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	9.2	24.1		18.0		33.3		18.0				
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0		5.0				
Max Green Setting (Gmax), s	11.0	30.0		13.0		46.0		13.0				
Max Q Clear Time (g_c+I1), s	4.2	14.5		15.0		21.9		15.0				
Green Ext Time (p_c), s	0.1	2.0		0.0		5.4		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			21.8									
HCM 6th LOS			С									

	-	<b>—</b>	*	1	<b>†</b>	1	-	Ţ	
Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Group Flow (vph)	22	272	138	1	344	74	129	817	
v/c Ratio	0.05	0.76	0.17	0.01	0.61	0.12	0.25	0.86	
Control Delay	10.9	37.6	4.5	15.0	22.9	2.2	7.9	23.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	10.9	37.6	4.5	15.0	22.9	2.2	7.9	23.1	
Queue Length 50th (ft)	1	97	7	0	113	0	22	250	
Queue Length 95th (ft)	16	#222	34	3	204	14	44	#432	
Internal Link Dist (ft)	154	465			669			427	
Turn Bay Length (ft)			25	50			200		
Base Capacity (vph)	567	441	873	150	694	740	564	1257	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.04	0.62	0.16	0.01	0.50	0.10	0.23	0.65	
Intersection Summary									

<sup># 95</sup>th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

THOUGH 22 G HAVIII	۶	<b>→</b>	*	•	4-	4	1	†	1	1	Ţ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			ન	7	7	<b>^</b>	7	7	1	
Traffic Volume (veh/h)	1	3	17	244	14	131	1	327	70	123	760	16
Future Volume (veh/h)	1	3	17	244	14	131	1	327	70	123	760	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1870	1159	1574	1811	1826	1811	1811
Adj Flow Rate, veh/h	1	3	18	257	15	138	1	344	74	129	800	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	2	50	22	6	5	6	6
Cap, veh/h	81	68	326	474	19	520	207	542	528	447	938	20
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.34	0.34	0.34	0.08	0.53	0.53
Sat Flow, veh/h	16	281	1338	1359	79	1585	414	1574	1533	1739	1766	38
Grp Volume(v), veh/h	22	0	0	272	0	138	1	344	74	129	0	817
Grp Sat Flow(s),veh/h/ln	1636	0	0	1438	0	1585	414	1574	1533	1739	0	1803
Q Serve(g_s), s	0.0	0.0	0.0	8.1	0.0	3.1	0.1	9.0	1.6	2.1	0.0	19.0
Cycle Q Clear(g_c), s	0.5	0.0	0.0	8.6	0.0	3.1	9.9	9.0	1.6	2.1	0.0	19.0
Prop In Lane	0.05		0.82	0.94		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	475	0	0	493	0	520	207	542	528	447	0	958
V/C Ratio(X)	0.05	0.00	0.00	0.55	0.00	0.27	0.00	0.63	0.14	0.29	0.00	0.85
Avail Cap(c_a), veh/h	710	0	0	701	0	751	276	806	785	656	0	1478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.2	0.0	0.0	17.2	0.0	12.1	18.0	13.4	11.0	8.8	0.0	9.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.0	0.0	0.3	0.0	1.2	0.1	0.4	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	2.6	0.0	1.0	0.0	2.3	0.4	0.5	0.0	4.3
Unsig. Movement Delay, s/veh												-
LnGrp Delay(d),s/veh	14.2	0.0	0.0	18.1	0.0	12.3	18.0	14.7	11.1	9.2	0.0	12.9
LnGrp LOS	В	Α	Α	В	Α	В	В	В	В	Α	Α	В
Approach Vol, veh/h		22			410			419			946	
Approach Delay, s/veh		14.2			16.2			14.1			12.4	-
Approach LOS		В			В			В			В	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	9.1	22.8		16.9		31.9		16.9				
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0		5.0				
Max Green Setting (Gmax), s	10.0	25.0		19.0		40.0		19.0				
Max Q Clear Time (g_c+l1), s	4.1	11.9		2.5		21.0		10.6				
Green Ext Time (p_c), s	0.1	1.6		0.0		5.0		1.3				
Intersection Summary			DOM:									
HCM 6th Ctrl Delay			13.7									
HCM 6th LOS			В									

Intersection							
Intersection Delay, s/veh	12.6						
Intersection LOS	В						
Approach	EB	WB		NB		SB	
Entry Lanes	1	1		2		2	
Conflicting Circle Lanes	1	1		1		1	
Adj Approach Flow, veh/h	22	410		419		946	
Demand Flow Rate, veh/h	22	416		500		1000	
Vehicles Circulating, veh/h	1243	422		139		276	
Vehicles Exiting, veh/h	33	216		1126		562	
Ped Vol Crossing Leg, #/h	1	0		0		0	
Ped Cap Adj	1.000	1.000	1	.000		1.000	
Approach Delay, s/veh	10.1	9.9		6.4		16.6	
Approach LOS	В	Α		Α		С	
Lane	Left	Left	Left F	Right	Left	Right	
Designated Moves	LTR	LTR	LT	R	L	TR	
Assumed Moves	LTR	LTR	LT	R	L	TR	
RT Channelized							
Lane Util	1.000	1.000	0.844 0	.156	0.135	0.865	
Follow-Up Headway, s	2.609	2.609	2.535 2	535	2.535	2.535	
Critical Headway, s	4.976	4.976	4.544 4	.544	4.544	4.544	
Entry Flow, veh/h	22	416	422	78	135	865	
Cap Entry Lane, veh/h	388	897	1251	1251	1105	1105	
Entry HV Adj Factor	0.999	0.985	0.818 0	.949	0.956	0.945	
Lilly IIV Auj I actor	0.000	01000					
	22	410	345	74	129	817	
Flow Entry, veh/h				74 1187	129 1056	817 1043	
Flow Entry, veh/h Cap Entry, veh/h	22	410	1024				
Flow Entry, veh/h Cap Entry, veh/h V/C Ratio Control Delay, s/veh	22 388	410 884	1024	1187	1056	1043	
Flow Entry, veh/h Cap Entry, veh/h V/C Ratio	22 388 0.057	410 884 0.464	1024 0.337 0	1187 0.062	1056 0.122	1043 0.783	

4: Route 22 & Havilland Hollow Rd

	<b>→</b>	←	*	4	<b>†</b>	1	ļ
Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	34	84	154	2	1034	207	440
v/c Ratio	0.17	0.55	0.30	0.00	0.96	0.67	0.30
Control Delay	24.6	48.8	5.4	9.0	39.4	25.8	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	48.8	5.4	9.0	39.4	25.8	3.9
Queue Length 50th (ft)	9	41	0	1	~570	49	62
Queue Length 95th (ft)	35	89	40	4	#838	121	99
Internal Link Dist (ft)	154	465			669		427
Turn Bay Length (ft)			25	50		200	
Base Capacity (vph)	224	183	570	564	1072	367	1477
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.46	0.27	0.00	0.96	0.56	0.30

## Intersection Summary

Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

<sup># 95</sup>th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

	۶	<b>→</b>	*	•	<b>—</b>	*	1	†	1	<b>&gt;</b>	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4	7	7	₽.		7	ĵ»	
Traffic Volume (veh/h)	12	6	14	75	5	146	2	676	306	197	411	7
Future Volume (veh/h)	12	6	14	75	5	146	2	676	306	197	411	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00	SAN AND SAN AN	0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	Name and Address of the Owner, where	No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1870	1885	1870	1870	1885	1841	1841
Adj Flow Rate, veh/h	13	6	15	79	5	154	2	712	322	207	433	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	2	1	2	2	1	4	4
Cap, veh/h	106	55	75	258	14	307	665	728	329	252	1338	22
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.60	0.60	0.60	0.08	0.74	0.74
Sat Flow, veh/h	352	477	655	1448	119	1585	956	1219	551	1795	1806	29
Grp Volume(v), veh/h	34	0	0	84	0	154	2	0	1034	207	0	440
Grp Sat Flow(s),veh/h/ln	1484	0	0	1567	0	1585	956	0	1771	1795	0	1835
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	6.6	0.1	0.0	43.3	3.8	0.0	6.3
Cycle Q Clear(g_c), s	3.3	0.0	0.0	3.3	0.0	6.6	0.1	0.0	43.3	3.8	0.0	6.3
Prop In Lane	0.38		0.44	0.94		1.00	1.00		0.31	1.00		0.02
Lane Grp Cap(c), veh/h	236	0	0	272	0	307	665	0	1058	252	0	1360
V/C Ratio(X)	0.14	0.00	0.00	0.31	0.00	0.50	0.00	0.00	0.98	0.82	0.00	0.32
Avail Cap(c_a), veh/h	278	0	0	312	0	352	668	0	1063	393	0	1509
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.6	0.0	0.0	31.4	0.0	27.6	6.2	0.0	14.9	20.8	0.0	3.4
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.6	0.0	1.3	0.0	0.0	22.1	7.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	1.5	0.0	2.5	0.0	0.0	17.9	2.5	0.0	0.9
Unsig. Movement Delay, s/veh		0.0	0.0	004	0.0	00.0	0.0	0.0	07.4	00.5	0.0	0.5
LnGrp Delay(d),s/veh	30.9	0.0	0.0	32.1	0.0	28.9	6.2	0.0	37.1	28.5	0.0	3.5
LnGrp LOS	С	A	Α	С	A	С	Α	Α	D	С	Α	A
Approach Vol, veh/h		34			238			1036			647	
Approach Delay, s/veh		30.9			30.0			37.0			11.5	
Approach LOS		С			С			D			В	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	11.0	51.8		13.8		62.8		13.8				
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0		5.0				
Max Green Setting (Gmax), s	12.0	46.0		11.0		63.0		11.0				
Max Q Clear Time (g_c+I1), s	5.8	45.3		5.3		8.3		8.6				
Green Ext Time (p_c), s	0.3	0.5		0.0		2.5		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			27.6									
HCM 6th LOS			С									

	-	<b>←</b>	*	1	<b>†</b>	-	1	<b>↓</b>	
Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Group Flow (vph)	34	84	154	2	712	322	207	440	
v/c Ratio	0.13	0.44	0.26	0.00	0.80	0.36	0.48	0.32	
Control Delay	19.8	34.2	4.5	9.0	22.2	4.8	7.5	4.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	19.8	34.2	4.5	9.0	22.2	4.8	7.5	4.7	
Queue Length 50th (ft)	7	31	0	0	221	20	22	58	
Queue Length 95th (ft)	31	75	34	4	#399	63	48	97	
Internal Link Dist (ft)	154	465			669			427	
Turn Bay Length (ft)			25	50		100	200		
Base Capacity (vph)	286	240	653	592	1158	1079	504	1473	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.12	0.35	0.24	0.00	0.61	0.30	0.41	0.30	
Intersection Summary									

<sup># 95</sup>th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

	۶	<b>→</b>	*	•	<b>—</b>	4	1	†	~	1	ļ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			ર્લ	7	7	<b>^</b>	7	7	F)	
Traffic Volume (veh/h)	12	6	14	75	5	146	2	676	306	197	411	7
Future Volume (veh/h)	12	6	14	75	5	146	2	676	306	197	411	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1870	1885	1870	1885	1885	1841	1841
Adj Flow Rate, veh/h	13	6	15	79	5	154	2	712	322	207	433	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	2	1	2	1	1	4	4
Cap, veh/h	148	76	103	332	17	380	574	857	731	369	1163	19
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.46	0.46	0.46	0.09	0.64	0.64
Sat Flow, veh/h	366	510	692	1352	116	1585	956	1870	1596	1795	1806	29
Grp Volume(v), veh/h	34	0	0	84	0	154	2	712	322	207	0	440
Grp Sat Flow(s),veh/h/ln	1569	0	0	1468	0	1585	956	1870	1596	1795	0	1835
Q Serve(g_s), s	0.0	0.0	0.0	1.7	0.0	4.3	0.1	17.6	7.3	2.8	0.0	5.9
Cycle Q Clear(g_c), s	0.9	0.0	0.0	2.6	0.0	4.3	0.1	17.6	7.3	2.8	0.0	5.9
Prop In Lane	0.38		0.44	0.94		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	327	0	0	350	0	380	574	857	731	369	0	1182
V/C Ratio(X)	0.10	0.00	0.00	0.24	0.00	0.41	0.00	0.83	0.44	0.56	0.00	0.37
Avail Cap(c_a), veh/h	386	0	0	407	0	444	750	1201	1024	544	0	1697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.6	0.0	0.0	20.2	0.0	17.0	7.8	12.5	9.7	10.5	0.0	4.4
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.4	0.0	0.7	0.0	3.6	0.4	1.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	0.9	0.0	1.5	0.0	5.4	1.7	0.6	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.7	0.0	0.0	20.6	0.0	17.7	7.8	16.1	10.2	11.8	0.0	4.6
LnGrp LOS	В	Α	Α	С	Α	В	Α	В	В	В	Α	A
Approach Vol, veh/h		34			238			1036			647	
Approach Delay, s/veh		19.7			18.7			14.2			6.9	
Approach LOS		В			В			В			Α	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	9.8	30.3		12.9		40.1		12.9				
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0		5.0				
Max Green Setting (Gmax), s	10.0	34.0		10.0		49.0		10.0				
Max Q Clear Time (g_c+l1), s	4.8	19.6		2.9		7.9		6.3				
Green Ext Time (p_c), s	0.2	4.6		0.0		2.5		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			12.5									
HCM 6th LOS			В									

Intersection									
Intersection Delay, s/veh	8.4								
Intersection LOS	Α								
Approach		EB		WB		NB		SB	
Entry Lanes		1		1		2		2	
Conflicting Circle Lanes		1		1		1		1	
Adj Approach Flow, veh/h		34		238		1036		647	
Demand Flow Rate, veh/h		34		242		1053		666	
Vehicles Circulating, veh/h		739		741		228		87	
Vehicles Exiting, veh/h		14		540		545		896	
Ped Vol Crossing Leg, #/h		1		0		0		0	
Ped Cap Adj		1.000		1.000		1.000		1.000	
Approach Delay, s/veh		6.1		10.8		9.8		5.5	
Approach LOS		Α		В		Α		Α	
Lane	Left		Left		Left	Right	Left	Right	
Designated Moves	LTR		LTR		LT	R	L	TR	
Assumed Moves	LTR		LTR		LT	R	L	TR	
RT Channelized									
Lane Util	1.000		1.000		0.691	0.309	0.314	0.686	
Follow-Up Headway, s	2.609		2.609		2.535	2.535	2.535	2.535	
Critical Headway, s	4.976		4.976		4.544	4.544	4.544	4.544	
Entry Flow, veh/h	34		242		728	325	209	457	
Cap Entry Lane, veh/h	649		648		1154	1154	1312	1312	
Entry HV Adj Factor	0.998		0.983		0.980	0.991	0.990	0.962	
Flow Entry, veh/h	34		238		714	322	207	440	
Cap Entry, veh/h	648		637		1131	1143	1299	1262	
V/C Ratio	0.052		0.373		0.631	0.282	0.159	0.348	
Control Delay, s/veh	6.1		10.8		11.6	5.8	4.1	6.1	
LOS	Α		В		В	Α	Α	Α	

# **NYSDOT QRA ACCIDENT VERBAL DESCRIPTION**

				Print Date 4/24/2019	Print Time 10:53:20AM
Query Number/Name	Query Type	Query	<u>SubType</u>	Accident Da	ate Range
4567922 at haviland	AttributeQuery		None	1/1/2016 12:00:00AM To	12/31/2018 12:00:00AM
<u>Case Number</u> 36075591	Accident Date 13-January-2016	Region/County PUTNAM	Municipality/Type Patterson Town	Street ROUTE 22	Reference Marker 22 84031119
Road Surface	Road Cond	<u>Weather</u>	<u>TrafficControls</u>	<b>Location Ped/Bike</b>	Action of Ped/Bike
DRY	STRAIGHT AND LEVEL	CLOUDY	TRAFFIC SIGNAL	NOT APPLICABLE	NOT APPLICABLE
<u>Number of</u> Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u> <u>Injury</u>	Ext of Injuries
2	PROPERTY DAMAGE	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	0 0	
<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered Weight	Drivers Age Sex
<i>Number</i> 1	5	WEST	MAKING LEFT TURN	0	20 M
	Vehicle Type	State of Registration	<b>Citation Issued</b>	<b>School Bus Involved</b>	Property Damage
	CAR/VAN/PICKUP	СТ	N	N	N
	Apparent Factor Sequence Number	Apparent Factor			
	1	FAILURE TO YIELD RIGHT O	F WAY		
	2	NOT APPLICABLE			

<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered Weight	t <u>Drivers Age</u>	<u>Sex</u>
Number <sup>2</sup>	1	SOUTH	GOING STRAIGHT AHEAD	3100	24	М
	Vehicle Type	State of Registration	Citation Issued	School Bus Involv	red Property Damage	<u>e</u>
	CAR/VAN/PICKUP	NY	N	N	N	
	Apparent Factor Sequence Number	Apparent Factor				
	1	NOT APPLICABLE				
	2	NOT APPLICABLE				
<u>Case Number</u> 36079092	Accident Date 01-February-2016	Region/County PUTNAM	Municipality/Type Patterson Town	Street HAVILAND HOLLOW	Reference Marke	er
Road Surface	Road Cond	<u>Weather</u>	<u>TrafficControls</u>	Location Ped/Bike	Action of Ped/Bil	ke
DRY	STRAIGHT AND LEVEL	CLOUDY	NO PASSING ZONE	NOT APPLICABLE	NOT APPLICABLE	
Number of Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u> <u>In</u>	njury <u>Ext of Injuries</u>	
1	PROPERTY DAMAGE	COLL. W/EARTH ELE./ROCK CUT/DITCH	OTHER	0 0	)	
<u>Vehicle</u>	Number of Occupants	<b>Dir of Travel</b>	Pre-Accd Action	Registered Weight	<u>Drivers Age</u>	<u>Sex</u>
<i>Number</i> 1	1	WEST	GOING STRAIGHT AHEAD	4166	49	М
	Vehicle Type	State of Registration	<b>Citation Issued</b>	School Bus Involv	ved Property Damage	<u>e</u>
	CAR/VAN/PICKUP	NY	N	N	N	
	Apparent Factor Sequence Number	Apparent Factor				
	1	DRIVER INATTENTION				
	2	NOT APPLICABLE				

4/24/2019 Print Time

10:53:20AM

**Print Date** 

<b>Print Date</b>	4/24/2019	Print Time	10:53:2UAM

<b>Case Number</b> 36122246	Accident Date 02-March-2016	Region/County PUTNAM	Municipality/Type Patterson Town	Street ROUTE 22		Reference Mai 22 84031119	<u>rker</u>
Road Surface	Road Cond	<u>Weather</u>	<b>TrafficControls</b>	Location Pe	<u>d/Bike</u>	Action of Ped/	Bike
WET	STRAIGHT AND LEVEL	CLOUDY	TRAFFIC SIGNAL	NOT APPLICA	BLE	NOT APPLICABL	E
Number of Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u>	<u>Injury</u>	Ext of Injuries	
2	PROPERTY DAMAGE	COLLISION WITH MOTOR VEHICLE	LEFT TURN (AGAINST OTHER CAR)	0	0		
<u>Vehicle</u>	<b>Number of Occupants</b>	Dir of Travel	Pre-Accd Action	Registered !	<u>Weight</u>	<b>Drivers Age</b>	<u>Sex</u>
Number 1	1	SOUTH	MAKING LEFT TURN	3223		30	М
•	Vehicle Type	State of Registration	Citation Issued	School Bus	Involved	Property Dam	age
	CAR/VAN/PICKUP	NY	Y	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	FAILURE TO YIELD RIGHT (	OF WAY				
	2	NOT APPLICABLE					
Vehicle_	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered	Weight	Drivers Age	<u>Sex</u>
Number 2	1.	EAST	GOING STRAIGHT AHEAD	2800		50	F
	Vehicle Type	State of Registration	<b>Citation Issued</b>	School Bus	Involved	Property Dam	age
	CAR/VAN/PICKUP	NY	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	NOT APPLICABLE					

NOT	APPI	ICARI I	-

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<u>Case Number</u> 36217933	Accident Date 19-May-2016	Region/County PUTNAM	Municipality/Type Patterson Town	Street ROUTE 22		Reference Mai 22 84031119	<u>rker</u>
Road Surface	Road Cond	<u>Weather</u>	<b>TrafficControls</b>	Location Ped	<del>l/Bike</del>	Action of Ped/	<u>Bike</u>
DRY	STRAIGHT AND LEVEL	CLEAR	TRAFFIC SIGNAL	NOT APPLICAE	BLE	NOT APPLICABL	Е
<u>Number of</u> Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u>	<u>Injury</u>	Ext of Injuries	
2	NON-REPORTABLE	COLLISION WITH MOTOR VEHICLE	REAR END	0	0		
<u>Vehicle</u>	Number of Occupants	<b>Dir of Travel</b>	Pre-Accd Action	Registered V	<u>Veight</u>	<b>Drivers Age</b>	<u>Sex</u>
Number 1	1	NORTH	SLOWED OR STOPPING	0		52	М
	Vehicle Type	State of Registration	Citation Issued	School Bus	Involved	<b>Property Dam</b>	age
	CAR/VAN/PICKUP	NY	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	FOLLOWING TOO CLOSELY					
	2	NOT APPLICABLE					
<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered V	Veight	Drivers Age	Sex
Number <sup>2</sup>	1	NORTH	STOPPED IN TRAFFIC	0		46	F
	Vehicle Type	State of Registration	Citation Issued	School Bus	Involved	Property Dam	age
	CAR/VAN/PICKUP	NY	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					

Print Date 4/24/2019 Print Time 10:53:20AM

	2	NOT APPLICABLE	V				
<u>Case Number</u> 36284910	Accident Date 30-June-2016	Region/County PUTNAM	Municipality/Type Patterson Town	Street [Route] 22		Reference Ma 22 84031119	<u>rker</u>
Road Surface	Road Cond	<u>Weather</u>	<b>TrafficControls</b>	<b>Location Ped</b>	<u>d/Bike</u>	Action of Ped	/Bike
DRY	STRAIGHT AND LEVEL	CLEAR	NO PASSING ZONE	NOT APPLICAE	BLE	NOT APPLICABL	.E
Number of Vehicles 2	Accident Class PROPERTY DAMAGE	Type of Accident  COLLISION WITH  MOTOR VEHICLE	Manner of Collision SIDESWIPE	Fatality 0	<u>Injury</u> 0	Ext of Injuries	i
<u>Vehicle</u> Number 1	Number of Occupants	Dir of Travel EAST	Pre-Accd Action  GOING STRAIGHT AHEAD	Registered V	<u>Veight</u>	Drivers Age 49	<u>Sex</u> M
	Vehicle Type	State of Registration	Citation Issued	School Bus	<u>Involved</u>	<b>Property Dam</b>	age
	CAR/VAN/PICKUP	NY	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	PASSING OR LANE USAGE	IMPROPERLY				
	2	NOT APPLICABLE					

NOT APPLICABLE

1

<u>Vehicle</u> Number	Number of Occupants	Dir of Travel	Pre-Accd Action	Print Date 4/24/1 Registered Weight	Drivers Age Sex
2	2	NORTH	MAKING LEFT TURN	0	68 F
	Vehicle Type	State of Registration	Citation Issued	School Bus Involved	Property Damage
	CAR/VAN/PICKUP	СТ	N	N	N
	Apparent Factor Sequence Number	Apparent Factor			
	1	NOT APPLICABLE			
	2	NOT APPLICABLE			
Case Number	Accident Date	Region/County	Municipality/Type	<u>Street</u>	Reference Marker
36345499	14-August-2016	PUTNAM	Patterson Town	ROUTE 22	22 84031119
Road Surface	Road Cond	<u>Weather</u>	<u>TrafficControls</u>	<b>Location Ped/Bike</b>	Action of Ped/Bike
DRY	STRAIGHT AND LEVEL	CLEAR	NONE	NOT APPLICABLE	NOT APPLICABLE
<u>Number of</u> Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u> <u>Injury</u>	Ext of Injuries
2	PROPERTY DAMAGE	COLLISION WITH MOTOR VEHICLE	OVERTAKING	0 0	
<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered Weight	<u>Drivers Age</u> <u>Sex</u>
Number	1	NORTH	MAKING LEFT TURN	3293	58 M
1	Vehicle Type	State of Registration	Citation Issued	School Bus Involved	Property Damage
	CAR/VAN/PICKUP	NY	Y	N	N
	Apparent Factor Sequence Number	Apparent Factor			
	1	FAILURE TO YIELD RIGHT (	OF WAY		
	2	NOT APPLICABLE			

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<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered Weight	Drivers Age Sex
Number <sup>2</sup>	1	NORTH	GOING STRAIGHT AHEAD	3355	64 F
	Vehicle Type	State of Registration	Citation Issued	<b>School Bus Involved</b>	<b>Property Damage</b>
	CAR/VAN/PICKUP	NY	N	N	N
	Apparent Factor Sequence Number	Apparent Factor			
	1	NOT APPLICABLE			
	2	NOT APPLICABLE			
Case Number	Accident Date	Region/County	Municipality/Type	Street	Reference Marker
36473073	21-October-2016	PUTNAM	Patterson Town	ROUTE 22	22 84031119
Road Surface	Road Cond	<u>Weather</u>	<b>TrafficControls</b>	Location Ped/Bike	Action of Ped/Bike
DRY	STRAIGHT AND LEVEL	CLEAR	TRAFFIC SIGNAL	NOT APPLICABLE	NOT APPLICABLE
<u>Number of</u> Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u> <u>Injury</u>	Ext of Injuries
2	PROPERTY DAMAGE	COLLISION WITH MOTOR VEHICLE	REAR END	0 0	
<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered Weight	Drivers Age Sex
Number 1	1	NORTH	SLOWED OR STOPPING	4196	31 F
•	Vehicle Type	State of Registration	Citation Issued	School Bus Involved	Property Damage
	CAR/VAN/PICKUP	NY	N	N	N
	Apparent Factor Sequence Number	Apparent Factor			
	1	FOLLOWING TOO CLOSELY			

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	2	NOT APPLICABLE				
<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered Weight	Drivers Age	<u>Sex</u>
Number 2	1	NORTH	SLOWED OR STOPPING	4528	37	М
	Vehicle Type	State of Registration	<b>Citation Issued</b>	School Bus Involved	Property Dam	age_
	CAR/VAN/PICKUP	NY	N	N	N	
	Apparent Factor Sequence Number	Apparent Factor				
	1	NOT APPLICABLE				
	2	NOT APPLICABLE				
Case Number	Accident Date	Region/County	Municipality/Type	Street	Reference Ma	rker
36478074	08-November-2016	PUTNAM	Patterson Town	HAVILAND HOLLOW RD	22 84031119	
Road Surface	Road Cond	<u>Weather</u>	<b>TrafficControls</b>	Location Ped/Bike	<b>Action of Ped</b>	/Bike
DRY	STRAIGHT AND LEVEL	CLEAR	TRAFFIC SIGNAL	NOT APPLICABLE	NOT APPLICABL	Æ
Number of Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u> <u>Injury</u>	Ext of Injuries	<u> </u>
2	NON-REPORTABLE	COLLISION WITH MOTOR VEHICLE	REAR END	0 0		
<u>Vehicle</u>	<b>Number of Occupants</b>	<b>Dir of Travel</b>	Pre-Accd Action	Registered Weight	<b>Drivers Age</b>	<u>Sex</u>
Number 1	1	WEST	GOING STRAIGHT AHEAD	0	61	F
	Vehicle Type	State of Registration	<b>Citation Issued</b>	School Bus Involved	Property Dam	<u>age</u>
	CAR/VAN/PICKUP	СТ	N	N	N	
	Apparent Factor Sequence Number	Apparent Factor				

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	1	FOLLOWING TOO CLOSELY	,				
	2	NOT APPLICABLE					
<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered Weig	aht	Drivers Age	<u>Sex</u>
Number <sup>2</sup>	1	WEST	SLOWED OR STOPPING	0		28	М
2	Vehicle Type	State of Registration	Citation Issued	School Bus Inve	olved	Property Dam	age
	CAR/VAN/PICKUP	NY	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	NOT APPLICABLE					
	2	NOT APPLICABLE					
<u>Case Number</u> 36522075	Accident Date 14-December-2016	Region/County PUTNAM	Municipality/Type Patterson	Street		Reference Ma 22 84031119	rker
<u>Case Number</u> 36522075	Accident Date 14-December-2016	Region/County PUTNAM		Street [Route] 22		22 84031119	<del>.</del>
	Accident Date	Region/County	Patterson		ike		<del></del>
36522075	Accident Date 14-December-2016	Region/County PUTNAM	Patterson Town	[Route] 22	ike	22 84031119	/Bike
36522075  Road Surface	Accident Date 14-December-2016  Road Cond	Region/County PUTNAM Weather	Patterson Town TrafficControls	[Route] 22	ike Injury	22 84031119  Action of Ped	<b>/Bike</b> .E

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<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered Weigh	<u>1t</u>	<b>Drivers Age</b>	<u>Sex</u>
<i>Number</i> 1	2	EAST	GOING STRAIGHT AHEAD	2483		19	M
	Vehicle Type	State of Registration	Citation Issued	School Bus Involv	<u>ved</u>	Property Da	<u>mage</u>
	CAR/VAN/PICKUP	NY	Y	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	FAILURE TO YIELD RIGHT O	F WAY				
	2	NOT APPLICABLE					
<u>Vehicle</u>	Number of Occupants	<u>Dir of Travel</u>	Pre-Accd Action	Registered Weigh	<u>nt</u>	Drivers Age	Sex
<u>Vehicle</u> Number	Number of Occupants	Dir of Travel SOUTH	Pre-Accd Action GOING STRAIGHT AHEAD	Registered Weigh	<u>nt</u>	Drivers Age	<u>Sex</u> M
Number	Number of Occupants  1  Vehicle Type		GOING STRAIGHT		_		М
Number	1	SOUTH	GOING STRAIGHT AHEAD	4139	_	59	М
Number	1 <u>Vehicle Type</u>	SOUTH  State of Registration	GOING STRAIGHT AHEAD Citation Issued	4139 School Bus Involv	_	59  Property Da	М
Number	Vehicle Type  CAR/VAN/PICKUP  Apparent Factor	State of Registration NY	GOING STRAIGHT AHEAD Citation Issued	4139 School Bus Involv	_	59  Property Da	М

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<u>Case Number</u> 36586243	Accident Date 30-January-2017	Region/County PUTNAM	Municipality/Type Patterson Town	Street ROUTE 22		Reference M	<u>larker</u>
Road Surface	Road Cond	<u>Weather</u>	<b>TrafficControls</b>	<b>Location Ped/B</b>	<u>ike</u>	Action of Pe	d/Bike
DRY	STRAIGHT AND LEVEL	CLEAR	TRAFFIC SIGNAL	NOT APPLICABLE		NOT APPLICAL	BLE
<u>Number of</u> Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u>	<u>Injury</u>	Ext of Injurio	<u>es</u>
2	NON-REPORTABLE	COLLISION WITH MOTOR VEHICLE	LEFT TURN (WITH OTHER CAR)	0	0		
<u>Vehicle</u>	Number of Occupants	<b>Dir of Travel</b>	Pre-Accd Action	Registered Wei	<u>ght</u>	<b>Drivers Age</b>	<u>Sex</u>
<i>Number</i> 1	1	EAST	BACKING	0		65	М
	Vehicle Type	State of Registration	<b>Citation Issued</b>	School Bus Inv	olved	Property Da	<u>mage</u>
	CAR/VAN/PICKUP	NY	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	BACKING UNSAFELY					
	2	NOT APPLICABLE				· <u>· · · · · · · · · · · · · · · · · · </u>	
<u>Vehicle</u>	Number of Occupants	<b>Dir of Travel</b>	Pre-Accd Action	Registered Wei	<u>ight</u>	<b>Drivers Age</b>	<u>Sex</u>
Number 2	1	NORTH-EAST	STOPPED IN TRAFFIC	0		31	М
	Vehicle Type	State of Registration	<b>Citation Issued</b>	School Bus Inv	olved	Property Da	<u>mage</u>
	CAR/VAN/PICKUP	NY	N	N		N	
	Apparent Factor	Apparent Factor					
	Sequence Number	Apparent Factor					
	Sequence Number  1	NOT APPLICABLE					

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<b>Case Number</b> 36605856	Accident Date 18-January-2017	Region/County PUTNAM	Municipality/Type Patterson Town	Street [Route] 22		Reference Ma 22 84031119	<u>ırker</u>
Road Surface	Road Cond	<u>Weather</u>	<b>TrafficControls</b>	Location Ped/E	<u> Bike</u>	Action of Ped	/Bike
WET	STRAIGHT/ GRADE	CLEAR	TRAFFIC SIGNAL	NOT APPLICABLE	1	NOT APPLICABI	Æ
Number of Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u>	<u>Injury</u>	Ext of Injuries	<u> </u>
2	PROPERTY DAMAGE	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	0	0		
<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered We	<u>ight</u>	<b>Drivers Age</b>	<u>Sex</u>
Number 1	1	SOUTH	STARTING IN TRAFFIC	3557		24	F
	Vehicle Type	State of Registration	Citation Issued	School Bus Inv	olved/	Property Dan	<u>ıage</u>
	CAR/VAN/PICKUP	NY	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	DRIVER INATTENTION					
	2	NOT APPLICABLE					
Vehicle	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered We	ight	Drivers Age	Sex
Number <sup>2</sup>	1	NORTH-WEST	MAKING LEFT TURN	3569		62	М
	Vehicle Type	State of Registration	Citation Issued	School Bus Inv	volved	Property Dan	<u>nage</u>
	CAR/VAN/PICKUP	NY	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	NOT APPLICABLE					
	2	NOT APPLICABLE					

<b>Case Number</b> 36668304	Accident Date 26-March-2017	Region/County PUTNAM	Municipality/Type Patterson Town	Street ROUTE 22		<b>Reference Ma</b> 22 84031119	<u>rker</u>
Road Surface	Road Cond	<u>Weather</u>	<b>TrafficControls</b>	Location Pe	d/Bike	Action of Ped	/Bike
DRY	STRAIGHT AND LEVEL	CLOUDY	NONE	NOT APPLICAL	BLE	NOT APPLICABL	E
Number of Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u>	<u>Injury</u>	Ext of Injuries	ļ.
2	NON-REPORTABLE	COLLISION WITH MOTOR VEHICLE	REAR END	0	0		
<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered \	<u> Weight</u>	<b>Drivers Age</b>	<u>Sex</u>
Number 1	i	NORTH	GOING STRAIGHT AHEAD	0		25	М
	Vehicle Type	State of Registration	<b>Citation Issued</b>	<b>School Bus Involved</b>		<b>Property Damage</b>	
	CAR/VAN/PICKUP	NY	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	FOLLOWING TOO CLOSELY					
	2	NOT APPLICABLE					
<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered \	<u>Weight</u>	Drivers Age	Sex
Number	1	NORTH	SLOWED OR STOPPING	0		52	F
2	Vehicle Type	State of Registration	Citation Issued	School Bus	Involved	Property Dam	age
	CAR/VAN/PICKUP	NY	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					

2	NOT APPLICABLE

Case Number	Accident Date	Region/County	Municipality/Type	<u>Street</u>		Reference Mar	<u>ker</u>
36679067	02-April-2017	PUTNAM	Patterson Town	ROUTE 22		22 84031119	
Road Surface	Road Cond	<u>Weather</u>	<b>TrafficControls</b>	<b>Location Ped/Bi</b>	<u>ike</u>	Action of Ped/	<u>Bike</u>
ORY	STRAIGHT/ GRADE	CLOUDY	NO PASSING ZONE	NOT APPLICABLE		NOT APPLICABLE	E
Number of Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u>	<u>Injury</u>	Ext of Injuries	
2	PROPERTY DAMAGE	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	0	0		
<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered Weight	<u>ght</u>	<b>Drivers Age</b>	<u>Sex</u>
Number 1	2	EAST	MAKING RIGHT TURN	0		24	F
	Vehicle Type	State of Registration	<b>Citation Issued</b>	<b>School Bus Involved</b>		<b>Property Damage</b>	
	CAR/VAN/PICKUP	MI	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	FAILURE TO YIELD RIGHT (	OF WAY				
	2	NOT APPLICABLE					
Vehicle_	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered Wei	ght	Drivers Age	Sex
Number <sup>2</sup>	1	SOUTH	GOING STRAIGHT AHEAD	5796		73	F
	Vehicle Type	State of Registration	<b>Citation Issued</b>	School Bus Inve	<u>olved</u>	<b>Property Dama</b>	age
	CAR/VAN/PICKUP	NY	Y	N		N	
	Apparent Factor Sequence Number	Apparent Factor					

<u>Case Number</u> 36747551	Accident Date 30-May-2017	Region/County PUTNAM	Municipality/Type Patterson Town	Street [Route] 22		<b>Reference Ma</b> 22 84031119	<u>rker</u>
Road Surface	Road Cond	<u>Weather</u>	<b>TrafficControls</b>	Location Ped/Bike		Action of Ped/Bike	
WET	STRAIGHT AND LEVEL	CLOUDY	NO PASSING ZONE	NOT APPLICA	BLE	NOT APPLICABL	E
<u>Number of</u> Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u>	<u>Injury</u>	Ext of Injuries	ï
1	PROPERTY DAMAGE AND INJURY	COLLISION WITH GUIDE RAIL	OTHER	0	1	INCAPA <sup>,</sup>	
<u>Vehicle</u>	<b>Number of Occupants</b>	<b>Dir of Travel</b>	Pre-Accd Action	Registered Weight		<b>Drivers Age</b>	Sex
Number 1	1	SOUTH	GOING STRAIGHT AHEAD	107000		54	М
	Vehicle Type	State of Registration	<b>Citation Issued</b>	School Bus Involved		<b>Property Damage</b>	
	TRUCK	NY	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	PASSING OR LANE USAGE	IMPROPERLY				
	2	NOT APPLICABLE					

NOT APPLICABLE

NOT APPLICABLE

1

2

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<u>Case Number</u> 36796310	Accident Date 04-July-2017	Region/County PUTNAM	Municipality/Type Patterson Town	Street [Route] 22		22 84031119	<u>Marker</u>
Road Surface	Road Cond	<u>Weather</u>	<b>TrafficControls</b>	<b>Location Ped/B</b>	<u>ike</u>	Action of P	ed/Bike
DRY	STRAIGHT AND LEVEL	CLEAR	NONE	NOT APPLICABLE		NOT APPLICA	ABLE
<u>Number of</u> Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u>	<u>Injury</u>	Ext of Injur	<u>ies</u>
2	NON-REPORTABLE	COLLISION WITH MOTOR VEHICLE	HEAD ON	0	0		
<u>Vehicle</u>	Number of Occupants	<b>Dir of Travel</b>	Pre-Accd Action	Registered Wei	<u>ght</u>	<b>Drivers Age</b>	<u>e Sex</u>
<i>Number</i> 1	1	WEST	MAKING LEFT TURN	0		37	М
	Vehicle Type	State of Registration	<b>Citation Issued</b>	School Bus Inv	<u>olved</u>	Property D	<u>amage</u>
	CAR/VAN/PICKUP	СТ	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	TURNING IMPROPER					
	2	NOT APPLICABLE					
<u>Vehicle</u>	Number of Occupants	<b>Dir of Travel</b>	Pre-Accd Action	Registered Wei	<u>ght</u>	<b>Drivers Age</b>	<u>e Sex</u>
Number 2	1	EAST	GOING STRAIGHT AHEAD	0		30	М
	Vehicle Type	State of Registration	<b>Citation Issued</b>	School Bus Inv	<u>olved</u>	Property D	<u>amage</u>
	CAR/VAN/PICKUP	NY	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	NOT APPLICABLE					
	2	NOT APPLICABLE					

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<u>Case Number</u> 36857754	Accident Date 20-August-2017	Region/County PUTNAM	Municipality/Type Patterson Town	Street [Route] 22		Reference N 22 84031118	<u>Narker</u>
Road Surface	Road Cond	<u>Weather</u>	<u>TrafficControls</u>	Location Ped/B	<u>ike</u>	Action of Pe	ed/Bike
DRY	STRAIGHT AND LEVEL	CLEAR	NO PASSING ZONE	NOT APPLICABLE		NOT APPLICA	BLE
<u>Number of</u> Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u>	<u>Injury</u>	Ext of Injuri	<u>es</u>
1	NON-REPORTABLE	COLLISION WITH SIGN POST	OTHER	0	0		
<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered Wei	<u>ght</u>	Drivers Age	<u>Sex</u>
<i>Number</i> 1	1	NORTH	GOING STRAIGHT AHEAD	0		48	М
	Vehicle Type	State of Registration	<b>Citation Issued</b>	School Bus Inve	olved	Property Da	mage
	CAR/VAN/PICKUP	NY	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	OTHER (VEHICLE)					
	2	NOT APPLICABLE					
<u>Case Number</u> 36920268	Accident Date 06-October-2017	Region/County PUTNAM	Municipality/Type Patterson Town	Street ROUTE 22		Reference N 22 84031119	<u>Marker</u>
Road Surface	Road Cond	<u>Weather</u>	<b>TrafficControls</b>	Location Ped/B	<u>ike</u>	Action of Po	ed/Bike
DRY	CURVE AND GRADE	CLOUDY	TRAFFIC SIGNAL	NOT APPLICABLE		NOT APPLICA	BLE
Number of Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u>	<u>Injury</u>	Ext of Injuri	<u>es</u>
2	NON-REPORTABLE	COLLISION WITH MOTOR VEHICLE	REAR END	0	0		

<u>Vehicle</u> Number	Number of Occupants	Dir of Travel NORTH	Pre-Accd Action SLOWED OR STOPPING	Print Date 4/24/20 Registered Weight  0	Print Time 10:53:20AM  Drivers Age Sex  48 F
1	Vehicle Type  CAR/VAN/PICKUP	State of Registration	Citation Issued	School Bus Involved	Property Damage
	Apparent Factor Sequence Number	Apparent Factor			
	1	FOLLOWING TOO CLOSELY			
	2	NOT APPLICABLE			
					·····
<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered Weight	<u>Drivers Age</u> <u>Sex</u>
Number	Number of Occupants 2	Dir of Travel NORTH	Pre-Accd Action STOPPED IN TRAFFIC	Registered Weight 0	<u>Drivers Age</u> <u>Sex</u> 39 F
Number	2	NORTH	STOPPED IN TRAFFIC	0	39 F
Number	2 Vehicle Type	NORTH  State of Registration	STOPPED IN TRAFFIC  Citation Issued	0 School Bus Involved	39 F Property Damage
Number	2  Vehicle Type  CAR/VAN/PICKUP  Apparent Factor	NORTH  State of Registration  CT	STOPPED IN TRAFFIC  Citation Issued	0 School Bus Involved	39 F Property Damage

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<u>Case Number</u> 36973466	Accident Date 05-November-2017	Region/County PUTNAM	Municipality/Type Patterson Town	Street ROUTE 22		Reference Ma 22 84031119	<u>arker</u>
Road Surface	Road Cond	<u>Weather</u>	<u>TrafficControls</u>	<b>Location Ped/B</b>	<u>ike</u>	Action of Peo	<u>l/Bike</u>
WET	STRAIGHT/ GRADE	RAIN	TRAFFIC SIGNAL	NOT APPLICABLE		NOT APPLICAB	LE
<u>Number of</u> Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u>	<u>Injury</u>	Ext of Injurie	<u>s</u>
3	PROPERTY DAMAGE AND INJURY	COLLISION WITH MOTOR VEHICLE	OTHER	0	2		
<u>Vehicle</u>	Number of Occupants	<b>Dir of Travel</b>	Pre-Accd Action	Registered Wei	<u>ght</u>	<b>Drivers Age</b>	<u>Sex</u>
<i>Number</i> 1	4	SOUTH	GOING STRAIGHT AHEAD	3490		31	М
	Vehicle Type	State of Registration	<b>Citation Issued</b>	School Bus Inv	<u>olved</u>	Property Dan	<u>nage</u>
	CAR/VAN/PICKUP	NY	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	NOT APPLICABLE					
	2	NOT APPLICABLE					
<u>Vehicle</u>	Number of Occupants	<b>Dir of Travel</b>	Pre-Accd Action	Registered Wei	<u>ght</u>	<b>Drivers Age</b>	<u>Sex</u>
Number							
2	1	WEST	MAKING LEFT TURN	4300		41	F
2	l <u>Vehicle Type</u>	WEST State of Registration	MAKING LEFT TURN  Citation Issued	4300 School Bus Inv	<u>olved</u>	41  Property Dar	
2					<u>olved</u>		
2	Vehicle Type	State of Registration	Citation Issued	School Bus Inv	<u>olved</u>	Property Dar	
2	Vehicle Type  CAR/VAN/PICKUP  Apparent Factor	State of Registration	<u>Citation Issued</u> Y	School Bus Inv	<u>olved</u>	Property Dar	

<u>Vehicle</u> Number 3	Number of Occupants  1  Vehicle Type  CAR/VAN/PICKUP  Apparent Factor  Sequence Number	Dir of Travel  EAST  State of Registration  OT  Apparent Factor	Pre-Accd Action STOPPED IN TRAFFIC Citation Issued N	Print Date 4/24/2019 Registered Weight  0 School Bus Involved N	Print Time 10:53:20AM  Drivers Age Sex  27 M  Property Damage  N
	1 2	NOT APPLICABLE			
<b>Case Number</b> 36989847	Accident Date 18-November-2017	Region/County PUTNAM	Municipality/Type Patterson Town	Street [Route] 22	Reference Marker 22 84031119
Road Surface	Road Cond	<u>Weather</u>	<u>TrafficControls</u>	Location Ped/Bike	Action of Ped/Bike
WET	STRAIGHT AND LEVEL	RAIN	TRAFFIC SIGNAL	NOT APPLICABLE	NOT APPLICABLE
<u>Number of</u> Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u> <u>Injury</u>	Ext of Injuries
2	PROPERTY DAMAGE AND INJURY	COLLISION WITH MOTOR VEHICLE	REAR END	0 1	POSSIBL
<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered Weight	<u>Drivers Age</u> <u>Sex</u>
<i>Number</i> 1	1	SOUTH	SLOWED OR STOPPING	0	65 M
	Vehicle Type	State of Registration	Citation Issued	<b>School Bus Involved</b>	<b>Property Damage</b>
	CAR/VAN/PICKUP	CT	N	N	N
	Apparent Factor Sequence Number	Apparent Factor			
	1	DRIVER INATTENTION			
	2	FOLLOWING TOO CLOSELY			

		·		Print Date	4/24/2019	Print Time	10:53:20AM
<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered Weig	<u>aht</u>	Drivers Age	<u>Sex</u>
Number 2	1	SOUTH	STOPPED IN TRAFFIC	4175		49	F
	Vehicle Type	State of Registration	<u>Citation Issued</u>	School Bus Invo	olved	Property Da	<u>mage</u>
	CAR/VAN/PICKUP	NY	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	NOT APPLICABLE					
	2	NOT APPLICABLE					
Case Number	Accident Date	Region/County	Municipality/Type	Street		Reference N	larker
37236544	12-April-2018	PUTNAM	Patterson Town	HAVILAND HOLLO	W RD	22 84031119	
Road Surface	Road Cond	<u>Weather</u>	<u>TrafficControls</u>	<b>Location Ped/Bi</b>	<u>ike</u>	Action of Pe	ed/Bike
WET	CURVE AND GRADE	CLOUDY	TRAFFIC SIGNAL	NOT APPLICABLE		NOT APPLICA	BLE
Number of Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u>	<u>Injury</u>	Ext of Injuri	<u>es</u>
2	PROPERTY DAMAGE	COLLISION WITH MOTOR VEHICLE	REAR END	0	0		
<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered Weig	<u>aht</u>	<b>Drivers Age</b>	<u>Sex</u>
Number 1	1	WEST	SLOWED OR STOPPING	3519		18	F
•	Vehicle Type	State of Registration	Citation Issued	School Bus Inve	olved	Property Da	mage
	CAR/VAN/PICKUP	NY	Y	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	FOLLOWING TOO CLOSELY					

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	2	NOT APPLICABLE				
<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered Weight	Drivers Age	Sex
Number 2	1	WEST	STOPPED IN TRAFFIC	3248	24	F
	Vehicle Type	State of Registration	Citation Issued	School Bus Involved	<b>Property Dam</b>	<u>age</u>
	CAR/VAN/PICKUP	NY	N	N	N	
	Apparent Factor Sequence Number	Apparent Factor				
	1	NOT APPLICABLE				
	2	NOT APPLICABLE				
Case Number	Accident Date	Region/County	Municipality/Type	Street	Reference Ma	rker
37349217	22-June-2018	PUTNAM	Patterson Town	HAVILAND HOLLOW RD	22 84031119	
Road Surface	Road Cond	<u>Weather</u>	<b>TrafficControls</b>	Location Ped/Bike	<b>Action of Ped</b>	/Bike
DRY	STRAIGHT AND LEVEL	CLEAR	TRAFFIC SIGNAL	NOT APPLICABLE	NOT APPLICABI	LE
Number of Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u> <u>Injury</u>	Ext of Injuries	<u> </u>
2	NON-REPORTABLE	COLLISION WITH MOTOR VEHICLE	REAR END	0 0		
<u>Vehicle</u>	<b>Number of Occupants</b>	<b>Dir of Travel</b>	Pre-Accd Action	Registered Weight	<b>Drivers Age</b>	<u>Sex</u>
Number 1	2	WEST	STARTING IN TRAFFIC	0	37	М
•	Vehicle Type	State of Registration	Citation Issued	School Bus Involved	Property Dam	nage
	CAR/VAN/PICKUP	NY	N	N	N	
	Apparent Factor Sequence Number	Apparent Factor				

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	1 2	FOLLOWING TOO CLOSELY	,		
<u>Vehicle</u> Number	Number of Occupants	<u>Dir of Travel</u> WEST	Pre-Accd Action STOPPED IN TRAFFIC	Registered Weight	Drivers Age Sex 29 M
2	Vehicle Type  CAR/VAN/PICKUP  Apparent Factor	State of Registration NY	<u>Citation Issued</u> N	School Bus Involved	Property Damage
	Sequence Number  1 2	Apparent Factor  NOT APPLICABLE  NOT APPLICABLE			
<u>Case Number</u> 37366469	Accident Date 01-July-2018	Region/County PUTNAM	Municipality/Type Patterson Town	Street HAVILAND HOLLOW RD	Reference Marker
Road Surface	Road Cond	<u>Weather</u>	<b>TrafficControls</b>	<b>Location Ped/Bike</b>	Action of Ped/Bike
DRY	STRAIGHT AND LEVEL	CLEAR	NONE	NOT APPLICABLE	NOT APPLICABLE
<u>Number of</u> Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u> <u>Injury</u>	Ext of Injuries

REAR END

**COLLISION WITH** 

MOTOR VEHICLE

PROPERTY DAMAGE

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0

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Mahiala	Number of Occupants	Die of Terror	Due Acad Action	Print Date	4/24/2019		10:53:20AM
<u>Vehicle</u> Number	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered Weig	<u>nt</u>	<u>Drivers Age</u>	<u>Sex</u>
1	1	WEST	MAKING RIGHT TURN	0		52	M
	Vehicle Type	State of Registration	Citation Issued	School Bus Invo	lved	Property Dar	<u>nage</u>
	CAR/VAN/PICKUP	СТ	Y	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	FOLLOWING TOO CLOSELY					
	2	NOT APPLICABLE					
<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered Weig	<u>ht</u>	Drivers Age	<u>Sex</u>
Number	1	WEST	MAKING RIGHT TURN	3571		58	F
2	Vehicle Type	State of Registration	Citation Issued	School Bus Invo	lved	Property Dar	mage
	CAR/VAN/PICKUP	NY	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	NOT APPLICABLE					
	•	NOT ALL EIGHBEE					

				Print Date	4/24/2019	Print Time	10:53:20AM
<b>Case Number</b> 37378518	Accident Date 12-July-2018	Region/County PUTNAM	Municipality/Type Patterson Town	Street [Route] 22		<b>Reference</b> 22 84031119	
Road Surface	Road Cond	<u>Weather</u>	<u>TrafficControls</u>	<b>Location Ped/B</b>	<u>ike</u>	Action of F	Ped/Bike
DRY	STRAIGHT AND LEVEL	CLEAR	NONE	NOT APPLICABLE		NOT APPLIC	ABLE
Number of Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u>	<u>Injury</u>	Ext of Inju	<u>ries</u>
2	PROPERTY DAMAGE	COLLISION WITH MOTOR VEHICLE	UNKNOWN	0	0		
<u>Vehicle</u>	Number of Occupants	<b>Dir of Travel</b>	Pre-Accd Action	<b>Registered Wei</b>	<u>ght</u>	Drivers Ag	<u>ie Sex</u>
<i>Number</i> 1	0	UNKNOWN	UNKNOWN	0		0	
	Vehicle Type	<b>State of Registration</b>	<b>Citation Issued</b>	School Bus Inv	olved	Property D	<u>)amage</u>
	OTHER			N		N	
	Apparent Factor	Annanant Pastan					
	Sequence Number	Apparent Factor					
		TURNING IMPROPER					
	Sequence Number						
<u>Vehicle</u>	Sequence Number	TURNING IMPROPER	Pre-Accd Action	Registered Wei	ght .	Drivers Ac	qe <u>Sex</u>
<u>Vehicle</u> Number	Sequence Number  1 2	TURNING IMPROPER	Pre-Accd Action PARKED	Registered Wei	ght	Drivers Ac	<u>qe Sex</u>
Number	Sequence Number  1 2  Number of Occupants	TURNING IMPROPER UNKNOWN  Dir of Travel					
Number	Sequence Number  1 2  Number of Occupants 1	TURNING IMPROPER UNKNOWN  Dir of Travel WEST	PARKED	2900		0	
Number	Sequence Number  1 2  Number of Occupants 1  Vehicle Type	TURNING IMPROPER UNKNOWN  Dir of Travel WEST	PARKED	2900 School Bus Inv		0 Property D	
Number	Sequence Number  1 2  Number of Occupants  1  Vehicle Type  CAR/VAN/PICKUP  Apparent Factor	TURNING IMPROPER UNKNOWN  Dir of Travel WEST  State of Registration	PARKED	2900 School Bus Inv		0 Property D	

				Print Date	4/24/2019	Print Time I	U:53:2UAM
Case Number	Accident Date	Region/County	Municipality/Type	<u>Street</u>		Reference Ma	arker
37423355	03-August-2018	PUTNAM	Patterson Town	HAVILAND HOLLO	W RD		
Road Surface	Road Cond	<u>Weather</u>	<u>TrafficControls</u>	<b>Location Ped/Bi</b>	<u>ke</u>	Action of Peo	I/Bike
DRY	STRAIGHT AND LEVEL	CLEAR	TRAFFIC SIGNAL	NOT APPLICABLE		NOT APPLICAB	LE
Number of Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u>	<u>Injury</u>	Ext of Injurie	<u>s</u>
2	PROPERTY DAMAGE AND INJURY	COLLISION WITH MOTOR VEHICLE	REAR END	0	1	POSSIBL	
<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered Weig	<u>aht</u>	<b>Drivers Age</b>	<u>Sex</u>
Number 1	1	WEST	GOING STRAIGHT AHEAD	3346		33	F
	Vehicle Type	State of Registration	Citation Issued	School Bus Inve	olved	Property Damage	
	CAR/VAN/PICKUP	NY	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	FOLLOWING TOO CLOSELY					
	2	NOT APPLICABLE					
<u>Vehicle</u>	Number of Occupants	<b>Dir of Travel</b>	Pre-Accd Action	Registered Weig	<u>aht</u>	<b>Drivers Age</b>	<u>Sex</u>
Number 2	1	WEST	MAKING RIGHT TURN	0		67	М
	Vehicle Type	State of Registration	Citation Issued	School Bus Inve	olved	Property Dan	<u>nage</u>
	CAR/VAN/PICKUP	СТ	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	NOT APPLICABLE					
	2	NOT APPLICABLE					

70 / June 1				Print Date	4/24/2019	Print Time	10:53:2UAM
<b>Case Number</b> 37576663	Accident Date 06-November-2018	Region/County PUTNAM	Municipality/Type Patterson Town	Street ROUTE 22		Reference M 22 84031119	arker
Road Surface	Road Cond	<u>Weather</u>	<b>TrafficControls</b>	Location Ped/	<u>Bike</u>	Action of Pe	d/Bike
WET	STRAIGHT AND LEVEL	RAIN	NO PASSING ZONE	NOT APPLICABL	,E	NOT APPLICAE	BLE
Number of Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u>	<u>Injury</u>	Ext of Injurie	<u>es</u>
2	PROPERTY DAMAGE	COLLISION WITH MOTOR VEHICLE	REAR END	0	0		
<u>Vehicle</u>	Number of Occupants	<b>Dir of Travel</b>	Pre-Accd Action	Registered W	eight	<b>Drivers Age</b>	<u>Sex</u>
Number 1	3	SOUTH	GOING STRAIGHT AHEAD	0		23	F
	Vehicle Type	State of Registration	<b>Citation Issued</b>	School Bus In	School Bus Involved		Property Damage
	CAR/VAN/PICKUP	СТ	Y	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	FAILURE TO YIELD RIGHT (	OF WAY				
	2	PASSING OR LANE USAGE	IMPROPERLY				
<u>Vehicle</u>	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered W	<u>eight</u>	Drivers Age	<u>Sex</u>
Number 2	1	SOUTH	GOING STRAIGHT AHEAD	7200		69	М
	Vehicle Type	<b>State of Registration</b>	<b>Citation Issued</b>	School Bus Ir	volved	Property Dai	mage
	CAR/VAN/PICKUP	NY	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					

**Sequence Number** 

**NOT APPLICABLE** 

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Case Number	Accident Date	Region/County	Municipality/Type	<u>Street</u>		Reference Mai	<u>rker</u>
37636995	06-December-2018	PUTNAM	Patterson Town	[Route] 22		22 84031119	
Road Surface	Road Cond	<u>Weather</u>	<b>TrafficControls</b>	<b>Location Pe</b>	d/Bike	Action of Ped/	<u>Bike</u>
DRY	STRAIGHT AND LEVEL	CLEAR	TRAFFIC SIGNAL	NOT APPLICABLE		NOT APPLICABLE	
Number of Vehicles	Accident Class	Type of Accident	Manner of Collision	<u>Fatality</u>	<u>Injury</u>	Ext of Injuries	
2	PROPERTY DAMAGE	COLLISION WITH MOTOR VEHICLE	REAR END	0	0		
<u>Vehicle</u>	<b>Number of Occupants</b>	<b>Dir of Travel</b>	Pre-Accd Action	Registered V	<u> Veight</u>	<b>Drivers Age</b>	<u>Sex</u>
Number 1	1	SOUTH	GOING STRAIGHT AHEAD	0		29	M
	Vehicle Type	State of Registration	<u>Citation Issued</u>	School Bus	Involved	<b>Property Dam</b>	age
	TRUCK	NY	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					
	1	FOLLOWING TOO CLOSELY					
	2	NOT APPLICABLE					
Vehicle_	Number of Occupants	Dir of Travel	Pre-Accd Action	Registered V	<u>Neight</u>	Drivers Age	Sex
Number 2	1	SOUTH	GOING STRAIGHT AHEAD	4154		52	M
	Vehicle Type	<b>State of Registration</b>	<b>Citation Issued</b>	School Bus	Involved	<b>Property Dam</b>	age
	CAR/VAN/PICKUP	NY	N	N		N	
	Apparent Factor Sequence Number	Apparent Factor					

NOT APPLICABLE



Intersection: NY Route 22 & Havilland Hollow Rd

Client: Putnam County
Calculated By: D. Creen
Checked By: M. Wieszchowski

GPI No. 2019058.00 Date: 6/27/2019 Date: 6/28/2019

## EXISTING TRAFFIC SIGNAL WITH ADDED 100' NORTHBOUND RIGHT TURN LANE

DESCRIPTION	TOTAL QUANTITY	UNIT	UNIT PRICE	TOTAL COST
CLEANING AND PREPARATION OF PAVEMENT	8,000	LF	\$0	\$2,000
PAVEMENT STRIPES	4,500	LF	\$0	\$1,000
PAVEMENT LETTERING	12	EA	\$40	\$500
PAVEMENT SYMBOLS	7	EA	\$100	\$1,000
WORK ZONE TRAFFIC CONTROL	1	LS	\$20,000	\$20,000
	ESTIMATED C	ONSTRUCTION (	OST (CONCEPTUAL)	\$24,500
CONTIGENCY (20%)	1	LS	\$4,900	\$5,000
DESIGN AND INSPECTION (25%)	1	LS	\$6,125	\$7,000
			FINAL TOTAL	\$36,500

## TWO LANE ROUNDABOUT (130 FT DIAMETER)

DESCRIPTION	TOTAL QUANTITY	UNIT	UNIT PRICE	TOTAL COST
TWO LANE ROUNDABOUT 1	1	EA	\$1,000,000	\$1,000,000
UTILITY RELOCATION 2	1	EA	\$75,000	\$75,000
PYLON SIGN RELOCATION	1	EA	\$10,000	\$10,000
STORMWATER AND TREATMENT 3	1	LS	\$100,000	\$100,000
WORK ZONE TRAFFIC CONTROL	1	LS	\$300,000	\$300,000
	ESTIMATED C	ONSTRUCTION C	OST (CONCEPTUAL)	\$1,485,000
RIGHT OF WAY	0.066	ACRE	\$340,000	\$25,000
CONTIGENCY (20%)	1	LS	\$297,000	\$300,000
DESIGN AND INSPECTION (25%)	1	LS	\$371,250	\$375,000
			FINAL TOTAL	\$2,185,000

<sup>1</sup> INCLUDES TYPICAL COST FOR PAVEMENT, CURB, EARTHWORK, DRAINAGE, LANDSCAPING, ETC., FOR A TWO LANE ROUNDABOUT.

<sup>&</sup>lt;sup>2</sup> ELECTRIC AND GAS RELOCATIONS ARE ASSUMED NO COST FOR MUNICIPAL PROJECTS. WATER AND SEWER RELOCATIONS ARE ASSUMED AT \$75,000 EACH.

<sup>&</sup>lt;sup>3</sup> IMPACTS OVER 5,000 SF WITHIN DEP WATERSHEDS REQUIRE POST STORMWATER TREATMENT. \$100,000 ALLOWANCE FOR EXTRA ROW OR WORK REQUIRED.



