

Old Colony Planning Council



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May 29, 2013

Mr. Edwin J. Thorne
Town Administrator – Town of Pembroke
100 Center Street
Pembroke, MA. 02359

RE: Intersection Traffic Study of Route 53 at Route 139

Dear Mr. Thorne,

Per your request, through the Old Colony Planning Council's Local Highway Transportation Planning Technical Assistance Program, OCPC has completed a traffic study of the intersection of Route 53 at Route 139, with specific regard to the feasibility of reconfiguring the traffic signal system at the intersection to provide a protected left turn (left turns on a green arrow) from the approach of Washington Street (Route 53) northbound, into the driveway of a commercial plaza that flanks the western side of the intersection. Please find enclosed our report stating the results of this traffic study, including an appendix with all traffic data and analysis.

This report presents the findings of crash analysis and level of service analysis of the intersection, including conceptual level of service of potential alternatives, prepared by the Old Colony Planning Council. The crash analysis indicates the intersection has a crash rate that is above the average for signalized intersections in the MassDOT District 5 (southeastern Massachusetts) region, although the greatest safety issues appear to be on the Route 139 approach to the intersection.

The analysis indicates that reconfiguring the traffic signals and/or lane assignments at this intersection to include left turn protection from Washington Street (Route 53) northbound into the commercial plaza driveway may be feasible without substantial deterioration of the overall operations and level of service of the intersection. It should be noted that the intersection and the traffic signals are under the jurisdiction of the Massachusetts Department of Transportation (MassDOT) and any alterations to the traffic signals, lane assignments, and/or geometric layout of the intersection must be done so with the knowledge and approval of MassDOT.

If you have any questions, or if any additional information is needed, please contact Bill McNulty at 508.583.1833 x207 or wmcnulty@ocpcrpa.org.

Sincerely,



Charles Kilmer, AICP
Assistant Director / Transportation Program Manager

Cc:

Mr. Daniel Trabucco, Pembroke Board of Selectmen and Old Colony MPO Alternate
Mr. Eugene B. Fulmine, Jr., Department of Public Works Director and JTC Delegate
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Mr. Gerard W. Dempsey, Old Colony MPO Delegate
Mr. Daniel Taylor, Chairman Pembroke Planning Board
Ms. Pamela Haznar, P.E., MassDOT District 5
Mr. Paul Maloney, P.E., FHWA
Mr. Ethan Britland, MassDOT

Enclosures:

Intersection Traffic Study of Route 53 at Route 139

Old Colony Planning Council



Intersection Traffic Study of Route 53 at Route 139

Pembroke, Massachusetts

May 2013



The preparation of this report has been financed in part through grants from the Federal Highway Administration, U.S. Department of Transportation, under Metropolitan Planning Program, Section 104(f) of Title 23, U.S. Code, under Contract 69649. The views and opinions of the Old Colony Planning Council expressed herein do not necessarily state or reflect those of the U.S. Department of Transportation.

Acknowledgements and Title VI Notice of Protection

The preparation of this report has been funded in part through grants from the Federal Highway Administration, U.S. Department of Transportation, under Metropolitan Planning Program, Section 104(f) of Title 23, U.S. Code under Contract #69649.

The views and opinions of the Old Colony Planning Council expressed herein do not necessarily state or reflect those of the U.S. Department of Transportation.

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This Planning Level Traffic Study was prepared by the following members of the Old Colony Planning Council staff under the direction of Pat Ciaramella, Executive Director, and the supervision of Charles Kilmer, Assistant Director / Transportation Program Manager.

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Executive Summary

This Intersection Traffic Study of Route 53 at Route 139 was initiated by request from the Town of Pembroke through the Local Highway Planning Technical Assistance Program, Task 3200 of the Old Colony Unified Planning Work Program.

Specifically, the Town of Pembroke inquired about the feasibility of reconfiguring the traffic signal system at the intersection to provide a protected left turn (left turns on a green arrow) from the approach of Washington Street (Route 53) northbound, into the driveway of a commercial plaza that flanks the western side of the intersection. It should be noted that the intersection and the traffic signals are under the jurisdiction of the Massachusetts Department of Transportation (MassDOT) and any alterations to the traffic signals, lane assignments, and/or geometric layout of the intersection must be done so with the knowledge and approval of MassDOT.

This report presents the findings of crash analysis and level of service analysis of the intersection, including conceptual level of service of potential alternatives, prepared by the Old Colony Planning Council. The crash analysis indicates the intersection has a crash rate that is above the average for signalized intersections in the MassDOT District 5 (southeastern Massachusetts) region, although the greatest safety issues appear to be on the Route 139 approach to the intersection.

The analysis indicates that reconfiguring the traffic signals and/or lane assignments at this intersection to include left turn protection from Washington Street (Route 53) northbound into the commercial plaza driveway may be feasible without substantial deterioration of the overall operations and level of service of the intersection.

Intersection Description and Surrounding Land Use

The intersection of Washington Street (Route 53) at Schoosett Street (Route 139) is a four-legged intersection, with Routes 53 and 139 forming three of the approaches and a commercial plaza driveway forming the fourth approach on the west side of the intersection. Traffic control at the intersection is a combination of traffic signals and YIELD sign control. All except one movement at the intersection are controlled by traffic signals. The right hand turn from Route 139 westbound onto Route 53 northbound is controlled by a YIELD sign.

Currently, the traffic signals operate on three phases. The first phase is a lead-phase that allows the southbound approach to proceed on GREEN providing left-turn protection for Route 53

southbound onto Route 139 eastbound. On the second phase, both approaches of Route 53 are allowed to proceed, with left turns from both directions permitted but not protected. On the third phase, the Route 139 westbound and the commercial plaza driveway eastbound are allowed to proceed.

Land use surrounding the intersection is predominantly commercial, with commercial developments on three corners of the intersection.

Past Study

The intersection was most recently studied in 2010 as part of the Route 139 Corridor Study prepared by Old Colony Planning Council. That Study identified the intersection as having a crash rate that was substantially above the regional MassDOT District 5 average. The majority of crashes were rear-end collisions; many of which were on the Route 139 westbound approach. There were also a significant number of crashes involving an angled collision between vehicles traveling south on Route 53 and vehicles exiting the plaza on the eastbound driveway.

The Study indicated that peak hour delays were moderate, with a level of service rating of “C” during the weekday morning and afternoon peak hours.

The Study recommended the following for the Route 53 at Route 139 intersection:

Short-Term / Lower Cost

- Remove the “free right turn” from Schoosett Street westbound approach, forcing all vehicles to come to a stop
- Make efforts to reduce speed on Schoosett Street westbound approach
- Install back plates on signal heads to prevent accidental red-light running
- Install “No Turn On Red” controls on eastbound exit out of plaza

Longer Term / Higher Cost

- Make geometric improvements on northeastern corner to reduce turn radius and remove “free right-turn” situation
- Create a separate left-turn storage area on northbound approach

Crash Analysis

Crash reports with collision diagrams were obtained from the Pembroke Police Department for the time period of January 2010 through October 2012. Table 1 summarizes this crash data. There were 44 reported crashes in that time period, an average of 15.55 crashes per year. The intersection has a crash rate of 1.52 crashes per million entering vehicles, nearly double the

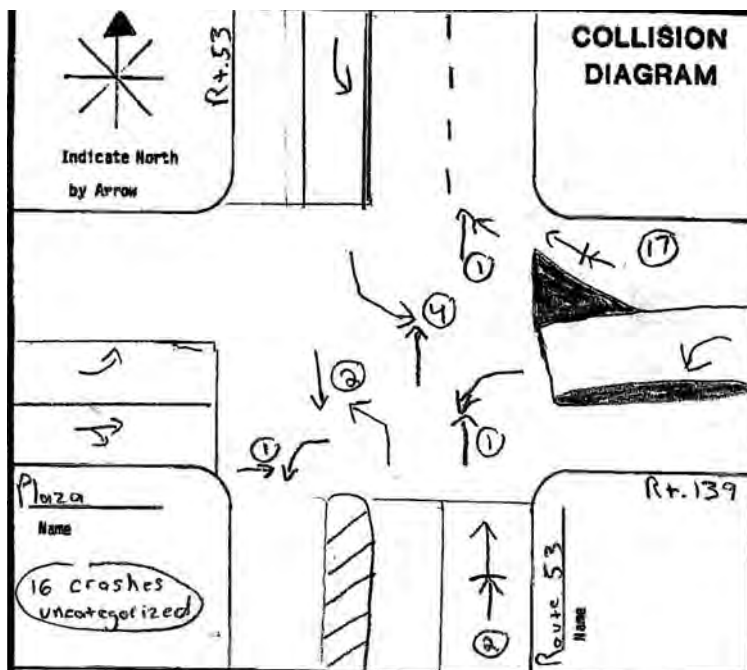
MassDOT District 5 average crash rate of .077/MEV for signalized intersections. Nine (20.45%) of the reported crashes involved personal injury.

Figure 1 provides a collision diagram illustrating the number of crashes per type of reported collision. Similarly to that observed in the 2010 Route 139 Corridor Study, the most frequent manner of collision was rear-end collisions on the Route 139 westbound approach. Two of the reported crashes were between a vehicle turning left into the plaza from Route 53 northbound and oncoming vehicles traveling southbound.

Table 1: Summary of Crashes Occurring at Intersection, January 2010 through October 2012

Analysis of Three Year Crash History (1/2010-10/2012)					
Total # Crashes:	44			Average Per Year:	15.55
Type of Collision	Total	% of Total	Time Of Crash	Total	% of Total
Rear-End Collisions	20	45.45%	12:00-6:00 AM	0	0.00%
Head-On Collisions	7	15.91%	6:00 AM-12:00 PM	19	43.18%
Angled Collisions	2	4.55%	12:00-6:00 PM	19	43.18%
Run-Off Road	1	2.27%	6:00 PM-12:00 AM	6	13.64%
Not Reported	14	31.82%			
			Morning Peak (7:00-9:00)	9	20.45%
			Afternoon Peak (4:00-6:00)	6	13.64%
Crashes With Injury:	9		Crash Rate (2010-2012):	1.52	
% With Injury:	20.45%		2013 MassDOT District 5 Average:	0.77	

Figure 1: Collision Diagram of Crashes Occurring at Intersection



Mainline Traffic Volumes, Speed, and Heavy Vehicle Data

Table 2 summarizes mainline traffic data on the three legs of the intersection. Traffic volumes are highest north of the intersection, and lower to the east and south of the intersection. The data collected in 2009 indicated that traffic speeds were well above the posted speed limit on Schoosett Street east of the intersection. Speed and classification data was not available for the Columbia Road location.

Table 2: Traffic Volumes, Speed, and Heavy Vehicle Data

Location	2012* Weekday ADT Volume	Speed Limit	85th Percentile Speed	% Heavy Vehicles
Columbia Road (Route 53/139), at Hanover Town Line	24,515	n/a	n/a	n/a
Schoosett Street (Route 139), east of Washington Street (Route 53)	17,416	45 MPH	54 MPH	8.7%
Washington Street (Route 52), north of Pleasant Street	16,082	40 MPH	41 MPH	4.2%

** Columbia Road and Schoosett Street ADT figures factored to 2012 from data collected in 2009*

Existing Level of Service

Table 3 summarizes the levels of service at the intersection during four peak demand periods: weekday morning (7:00-9:00 AM), weekday midday (11:00 AM-1:00 PM), weekday afternoon (4:00-6:00 PM), and Saturday midday (11:00 AM-1:00 PM). These levels of service are based on manual turning movement counts conducted during these periods. The intersection has an overall level of service rating of “B” during each of the peak periods. The average delay and level of service by approach is also provided in Table 3.

Table 3: Existing Weekday Morning, Midday, Evening, and Saturday Midday Levels of Service

	Existing Weekday Morning		Existing Weekday Midday		Existing Weekday Evening		Existing Saturday Midday	
	Left Turns	All Combined	Left Turns	All Combined	Left Turns	All Combined	Left Turns	All Combined
Washington Street, Northbound		16.3 (B)		15.2 (B)		14.3 (B)		16.1 (B)
Columbia Road, Southbound	15.0 (B)	11.4 (B)	14.0 (B)	10.2 (B)	14.6 (B)	11.3 (A)	18.0 (B)	12.7 (B)
Plaza Driveway, Eastbound	19.0 (B)	18.5 (B)	19.0 (B)	16.9 (B)	18.7 (B)	13.6 (B)	19.1 (B)	17.6 (B)
Schoosett Street, Westbound	21.8 (C)	11.1 (B)	24.5 (C)	11.9 (B)	29.6 (C)	13.5 (B)	25.7 (C)	12.0 (B)
Intersection LOS	13.2 (B)		11.9 (B)		12.4 (B)		13.2 (B)	

Delay in average seconds per vehicle (LOS Grade)

Left Turning Vehicles from Washington Street (Route 53) Northbound

The numbers of vehicles making left turns from Route 53 Northbound into the commercial plaza driveway are generally light during the peak demand hours and represent a small percentage of all traffic entering the intersection. The following are the volumes of left turns from the northbound approach during the peak hours.

- 5 out of 615 vehicles (0.81%) during the Weekday Morning Peak Hour from 7:45 AM to 8:45 AM
- 5 out of 373 vehicles (1.34%) during the Weekday Midday Peak Hour from 12:00 PM to 1:00 PM
- 7 out of 333 vehicles (2.1%) during the Weekday Afternoon Peak Hour from 4:30 PM to 5:30 PM
- 7 out of 495 vehicles (1.41%) during the Saturday Midday Peak Hour from 11:15 AM to 12:15 PM

Alternatives Analysis

For providing left-turn protection for vehicles turning left from Route 53 northbound into the commercial plaza, the following alternatives were tested:

- Leaving existing geometry and lane assignments largely unchanged, and providing a “lagging” left-turn arrow that comes on near the end of the phase. The signal can be actuated so as to only have the lag phase come on when queued vehicle(s) in the left lane are detected.
- Creating a two-lane approach in which the left lane is exclusive for left turns, and allowing left-turns on a protected phase only. The left turn arrow would only come on when a vehicle was present in the left turn lane. This alternative would require significant restriping and potential widening of the intersection.

These alternatives were tested based on estimated traffic volumes for the year 2017, which were calculated based on a 1 percent average annual growth rate. Tables 4, 5, 6, and 7 summarize the results of the level of service for these alternatives, compared to the existing 2012 level of service and the “no-build” 2017 level of service.

Table 4: Weekday Morning Peak Hour (7:45-8:45 AM) Level of Service Analysis for Existing and Projected Scenarios

	Existing 2012		2017 Forecast No Changes		2017 Forecast Northbound Lag		2017 Forecast Exclusive NB LT Lane	
	Left Turns	All Combined	Left Turns	All Combined	Left Turns	All Combined	Left Turns	All Combined
Washington Street, Northbound		16.3 (B)		17.7 (B)		18.1 (B)	26.2 (C)	17.8 (B)
Columbia Road, Southbound	15.0 (B)	11.4 (B)	18.5 (B)	13.9 (B)	20.2 (C)	15.1 (B)	17.2 (B)	13.4 (B)
Pembroke Point Eastbound	19.0 (B)	18.5 (B)	19.0 (B)	18.5 (B)	18.0 (B)	18.0 (B)	19.0 (B)	18.5 (B)
Schoosett Street, Westbound	21.8 (C)	11.1 (B)	21.9 (C)	11.2 (B)	21.4 (C)	10.9 (B)	21.6 (C)	11.0 (B)
Intersection LOS	13.2 (B)		14.6 (B)		15.1 (B)		14.4 (B)	

Delay in average seconds per vehicle (LOS Grade)

Table 5: Weekday Midday Peak Hour (12:00-1:00 PM) Level of Service Analysis for Existing and Projected Scenarios

	Existing 2012		2017 Forecast No Changes		2017 Forecast Northbound Lag		2017 Forecast Exclusive NB LT Lane	
	Left Turns	All Combined	Left Turns	All Combined	Left Turns	All Combined	Left Turns	All Combined
Washington Street, Northbound		15.2 (B)		15.9 (B)		18.3 (B)	26.8 (C)	17.6 (B)
Columbia Road, Southbound	14.0 (B)	10.2 (B)	17.1 (B)	12.0 (B)	16.6 (B)	11.8 (B)	16.7 (B)	12.8 (B)
Pembroke Point Eastbound	19.0 (B)	16.9 (B)	19.0 (B)	16.9 (B)	19.0 (B)	16.9 (B)	18.2 (B)	16.2 (B)
Schoosett Street, Westbound	24.5 (C)	11.9 (B)	24.8 (C)	12.2 (B)	24.3 (C)	11.9 (B)	23.1 (C)	12.4 (B)
Intersection LOS	11.9 (B)		13.0 (B)		15.3 (B)		13.8 (B)	

Delay in average seconds per vehicle (LOS Grade)

Table 6: Weekday Afternoon Peak Hour (4:30-5:30 PM) Level of Service Analysis for Existing and Projected Scenarios

	Existing 2012		2017 Forecast No Changes		2017 Forecast Northbound Lag		2017 Forecast Exclusive NB LT Lane	
	Left Turns	All Combined	Left Turns	All Combined	Left Turns	All Combined	Left Turns	All Combined
Washington Street, Northbound		14.3 (B)		14.8 (B)		16.9 (B)	27.5 (C)	15.6 (B)
Columbia Road, Southbound	14.6 (B)	11.3 (A)	17.4 (B)	12.9 (B)	15.5 (B)	12.1 (B)	18.0 (B)	15.5 (B)
Pembroke Point Eastbound	18.7 (B)	13.6 (B)	18.9 (B)	13.7 (B)	18.9 (B)	13.7 (B)	18.0 (B)	13.0 (B)
Schoosett Street, Westbound	29.6 (C)	13.5 (B)	30.5 (C)	14.0 (B)	30.4 (C)	13.9 (B)	28.0 (C)	15.4 (B)
Intersection LOS	12.4 (B)		13.5 (B)		13.3 (B)		15.5 (B)	

Delay in average seconds per vehicle (LOS Grade)

Table 7: Saturday Midday Peak Hour (11:15 AM-12:15 PM) Level of Service Analysis for Existing and Projected Scenarios

	Existing 2012		2017 Forecast No Changes		2017 Forecast Northbound Lag		2017 Forecast Exclusive NB LT Lane	
	Left Turns	All Combined	Left Turns	All Combined	Left Turns	All Combined	Left Turns	All Combined
Washington Street, Northbound		16.1 (B)		16.9 (B)		19.3 (B)	27.2 (C)	18.5 (B)
Columbia Road, Southbound	18.0 (B)	12.7 (B)	22.7 (C)	15.5 (B)	21.3 (C)	14.8 (B)	19.5 (B)	14.4 (B)
Pembroke Point, Eastbound	19.1 (B)	17.6 (B)	19.2 (B)	17.7 (B)	19.2 (B)	17.7 (B)	19.2 (B)	17.8 (B)
Schoosett Street, Westbound	25.7 (C)	12.0 (B)	26.2 (C)	12.9 (B)	25.8 (C)	12.2 (B)	25.6 (C)	13.8 (B)
Intersection LOS	13.2 (B)		15.1 (B)		15.1 (B)		15.3 (B)	

Delay in average seconds per vehicle (LOS Grade)

Conclusion

Based on the existing level of service and conceptual levels of service of potential alternatives conducted by the Old Colony Planning Council for this intersection traffic study, reconfiguring the traffic signals and/or lane assignments at this intersection to include left turn protection from Washington Street (Route 53) northbound into the commercial plaza driveway may be feasible without substantial deterioration of the overall operations and level of service of the intersection.

While analysis of crash reports from the Pembroke Police Department indicate the intersection has a crash rate that is well above the regional MassDOT District 5 average crash rate for signalized intersections, it does not appear that the movement from Washington Street northbound into the commercial plaza driveway is a significant contributing factor to the overall crash history.

The roadway approaches to this intersection along with the traffic signal system are owned and maintained by the Massachusetts Department of Transportation. Therefore, the Town of Pembroke must consult with MassDOT before proceeding with any design for alterations to the traffic control system and geometric layout here.

The Old Colony Planning Council recommends that the Town of Pembroke work with MassDOT to address safety at this intersection, particularly with crashes occurring between the Route 139 westbound and Route 53 northbound approaches. The Route 139 Corridor Study developed by Old Colony Planning Council in 2010 presented potential alternatives for improving safety at the intersection. Furthermore, Old Colony Planning Council is available to work with the Town of Pembroke on scheduling a Road Safety Audit at the intersection. A Road Safety Audit is a multidisciplinary approach to examining safety at a roadway location or intersection and can be a very effective tool for identifying safety improvements, many of which are often relatively low-cost and can be implemented in a short period of time. Furthermore, it is recommended the Town work with MassDOT to correct existing lane striping on the Route 139 approach of the intersection. While the left lane is used by both left turns and through movements, the lane is painted with left arrows that would typically indicate left turn only.

Appendix A
2012 Turning Movement Counts



Old Colony Planning Council

70 School Street
 Brockton, MA 02301
 (508) 583-1833
 www.ocpcrpa.org

Community: Pembroke
 Weather: Clear
 Board # & Staff: DB-400 (6) / Jcal
 Traffic Control: Traffic Light

File Name : Washington Street (Route 53) & Schoosett Street (Route 139)_AM
 Site Code : 231
 Start Date : 11/29/2012
 Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	Washington Street (Route 53) Southbound					Schoosett Street (Route 139) Westbound					Washington Street (Route 53) Northbound					Shopping Plaza Driveway Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	0	40	75	0	115	101	0	6	0	107	10	118	0	0	128	0	0	0	0	0	350
07:15 AM	0	36	64	0	100	112	1	5	0	118	8	138	0	0	146	0	0	0	0	0	364
07:30 AM	1	32	85	1	119	111	1	5	0	117	8	137	0	0	145	0	1	1	0	2	383
07:45 AM	1	58	113	0	172	100	0	4	3	107	9	159	2	0	170	0	0	0	0	0	449
Total	2	166	337	1	506	424	2	20	3	449	35	552	2	0	589	0	1	1	0	2	1546
08:00 AM	0	54	102	0	156	107	1	10	0	118	6	136	1	0	143	0	0	0	0	0	417
08:15 AM	0	36	108	0	144	109	0	11	0	120	14	128	1	0	143	0	1	1	0	2	409
08:30 AM	2	49	103	0	154	92	10	10	1	113	11	147	1	0	159	0	0	0	0	0	426
08:45 AM	0	53	105	0	158	110	1	10	0	121	16	140	1	0	157	0	0	1	0	1	437
Total	2	192	418	0	612	418	12	41	1	472	47	551	4	0	602	0	1	2	0	3	1689
Grand Total	4	358	755	1	1118	842	14	61	4	921	82	1103	6	0	1191	0	2	3	0	5	3235
Apprch %	0.4	32	67.5	0.1		91.4	1.5	6.6	0.4		6.9	92.6	0.5	0		0	40	60	0		
Total %	0.1	11.1	23.3	0	34.6	26	0.4	1.9	0.1	28.5	2.5	34.1	0.2	0	36.8	0	0.1	0.1	0	0.2	
Unshifted	4	337	714	0	1055	797	14	52	0	863	78	1078	6	0	1162	0	2	3	0	5	3085
% Unshifted	100	94.1	94.6	0	94.4	94.7	100	85.2	0	93.7	95.1	97.7	100	0	97.6	0	100	100	0	100	95.4
Bank 1	0	3	3	1	7	3	0	3	3	9	0	2	0	0	2	0	0	0	0	0	18
% Bank 1	0	0.8	0.4	100	0.6	0.4	0	4.9	75	1	0	0.2	0	0	0.2	0	0	0	0	0	0.6
Bank 2	0	18	38	0	56	42	0	6	1	49	4	23	0	0	27	0	0	0	0	0	132
% Bank 2	0	5	5	0	5	5	0	9.8	25	5.3	4.9	2.1	0	0	2.3	0	0	0	0	0	4.1

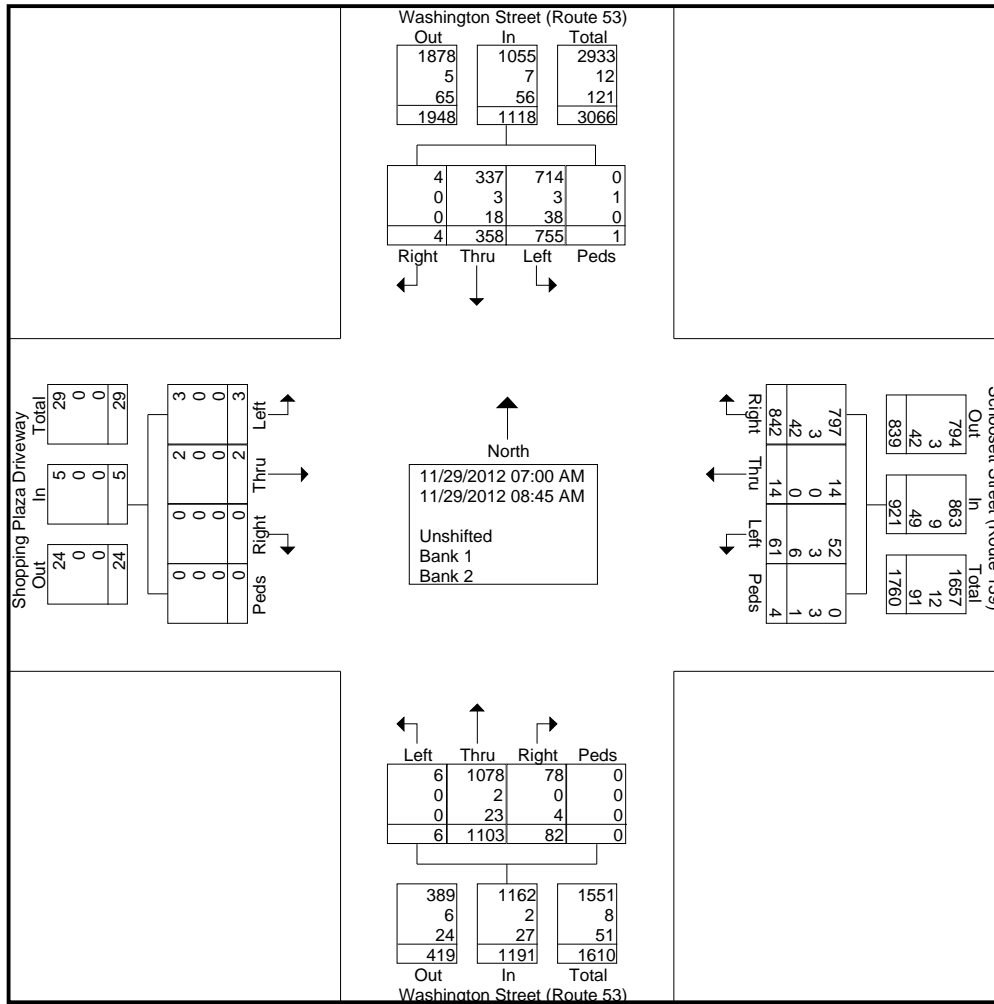


Old Colony Planning Council

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Community: Pembroke
 Weather: Clear
 Board # & Staff: DB-400 (6) / Jcal
 Traffic Control: Traffic Light

File Name : Washington Street (Route 53) & Schoosett Street (Route 139)_AM
 Site Code : 231
 Start Date : 11/29/2012
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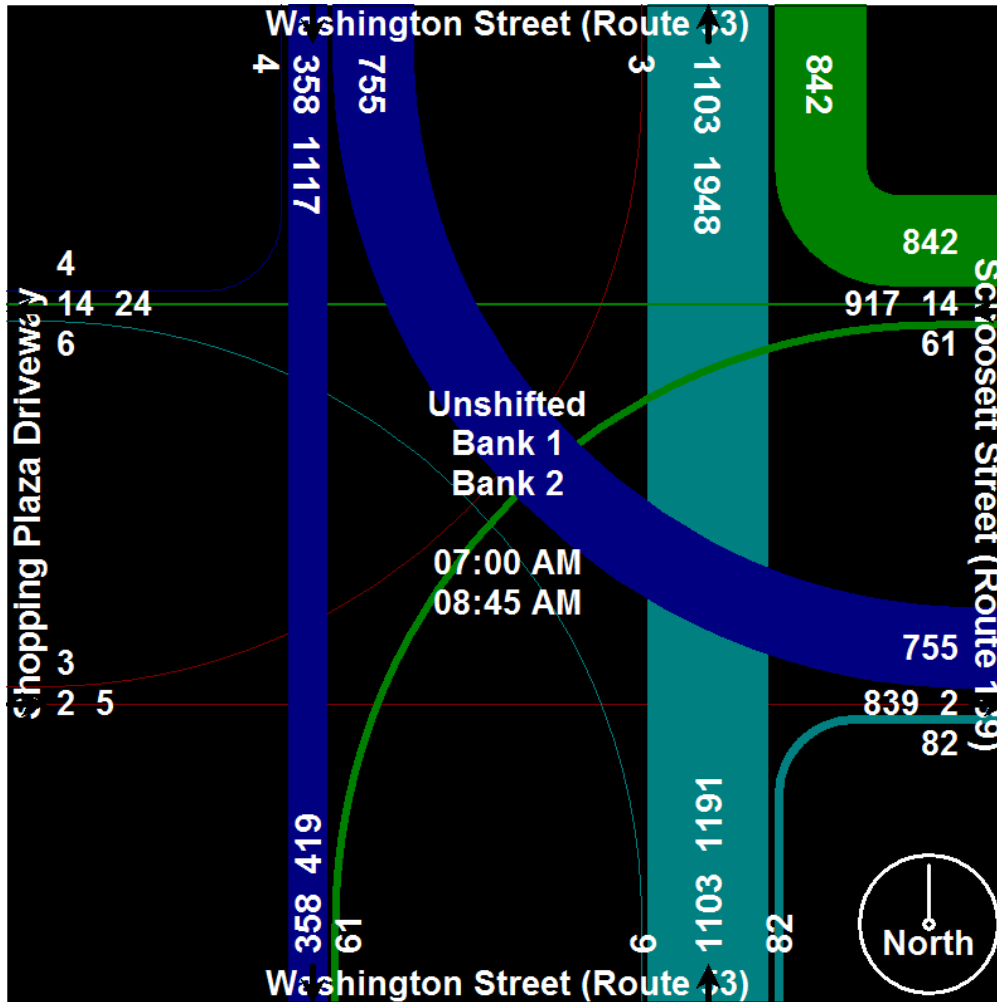


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File Name : Washington Street (Route 53) & Schoosett Street (Route 139)_AM
 Site Code : 231
 Start Date : 11/29/2012
 Page No : 4

Start Time	Washington Street (Route 53) Southbound					Schoosett Street (Route 139) Westbound					Washington Street (Route 53) Northbound					Shopping Plaza Driveway Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	1	58	113	0	172	100	0	4	3	107	9	159	2	0	170	0	0	0	0	0	449
08:00 AM	0	54	102	0	156	107	1	10	0	118	6	136	1	0	143	0	0	0	0	0	417
08:15 AM	0	36	108	0	144	109	0	11	0	120	14	128	1	0	143	0	1	1	0	2	409
08:30 AM	2	49	103	0	154	92	10	10	1	113	11	147	1	0	159	0	0	0	0	0	426
Total Volume	3	197	426	0	626	408	11	35	4	458	40	570	5	0	615	0	1	1	0	2	1701
% App. Total	0.5	31.5	68.1	0		89.1	2.4	7.6	0.9		6.5	92.7	0.8	0		0	50	50	0		
PHF	.375	.849	.942	.000	.910	.936	.275	.795	.333	.954	.714	.896	.625	.000	.904	.000	.250	.250	.000	.250	.947
Unshifted	3	186	410	0	599	383	11	30	0	424	37	555	5	0	597	0	1	1	0	2	1622
% Unshifted	100	94.4	96.2	0	95.7	93.9	100	85.7	0	92.6	92.5	97.4	100	0	97.1	0	100	100	0	100	95.4
Bank 1	0	2	1	0	3	1	0	2	3	6	0	1	0	0	1	0	0	0	0	0	10
% Bank 1	0	1.0	0.2	0	0.5	0.2	0	5.7	75.0	1.3	0	0.2	0	0	0.2	0	0	0	0	0	0.6
Bank 2	0	9	15	0	24	24	0	3	1	28	3	14	0	0	17	0	0	0	0	0	69
% Bank 2	0	4.6	3.5	0	3.8	5.9	0	8.6	25.0	6.1	7.5	2.5	0	0	2.8	0	0	0	0	0	4.1

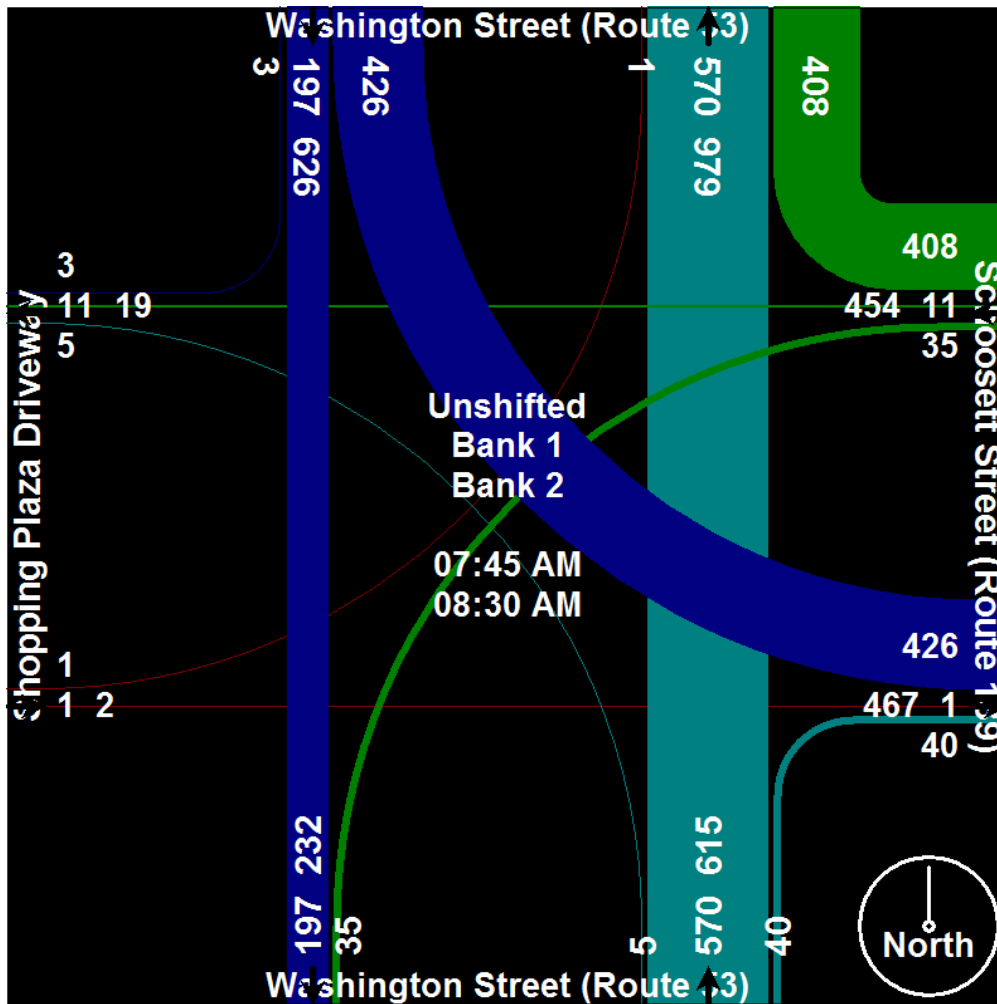


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File Name : Washington Street (Route 53) & Schoosett Street (Route 139)_AM
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File Name : Washington Street (Route 53) & Schoosett Street (Route 139)_Mid-Day
 Site Code : 231
 Start Date : 11/28/2012
 Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	Washington Street (Route 53) Southbound					Schoosett Street (Route 139) Westbound					Washington Street (Route 53) Northbound					Shopping Plaza Driveway Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
11:00 AM	4	68	100	0	172	108	1	14	0	123	15	62	2	0	79	2	4	1	0	7	381
11:15 AM	3	76	118	0	197	113	3	22	0	138	12	83	0	0	95	1	3	3	0	7	437
11:30 AM	3	76	106	0	185	119	1	21	0	141	9	85	3	0	97	1	2	1	0	4	427
11:45 AM	4	75	109	0	188	132	3	25	0	160	15	91	3	0	109	2	2	2	0	6	463
Total	14	295	433	0	742	472	8	82	0	562	51	321	8	0	380	6	11	7	0	24	1708
12:00 PM	1	85	105	0	191	143	5	15	0	163	6	76	1	0	83	2	5	3	0	10	447
12:15 PM	2	100	130	0	232	101	2	25	0	128	13	99	3	0	115	1	0	3	0	4	479
12:30 PM	4	99	142	0	245	138	0	13	0	151	9	74	0	0	83	0	0	1	0	1	480
12:45 PM	3	109	127	0	239	126	7	20	0	153	20	71	1	0	92	1	2	2	0	5	489
Total	10	393	504	0	907	508	14	73	0	595	48	320	5	0	373	4	7	9	0	20	1895
Grand Total	24	688	937	0	1649	980	22	155	0	1157	99	641	13	0	753	10	18	16	0	44	3603
Apprch %	1.5	41.7	56.8	0		84.7	1.9	13.4	0		13.1	85.1	1.7	0		22.7	40.9	36.4	0		
Total %	0.7	19.1	26	0	45.8	27.2	0.6	4.3	0	32.1	2.7	17.8	0.4	0	20.9	0.3	0.5	0.4	0	1.2	
Unshifted	21	662	886	0	1569	934	22	140	0	1096	90	620	13	0	723	9	17	16	0	42	3430
% Unshifted	87.5	96.2	94.6	0	95.1	95.3	100	90.3	0	94.7	90.9	96.7	100	0	96	90	94.4	100	0	95.5	95.2
Bank 1	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
% Bank 1	0	0.1	0	0	0.1	0	0	0	0	0	0	0.2	0	0	0.1	0	0	0	0	0	0.1
Bank 2	3	25	51	0	79	46	0	15	0	61	9	20	0	0	29	1	1	0	0	2	171
% Bank 2	12.5	3.6	5.4	0	4.8	4.7	0	9.7	0	5.3	9.1	3.1	0	0	3.9	10	5.6	0	0	4.5	4.7

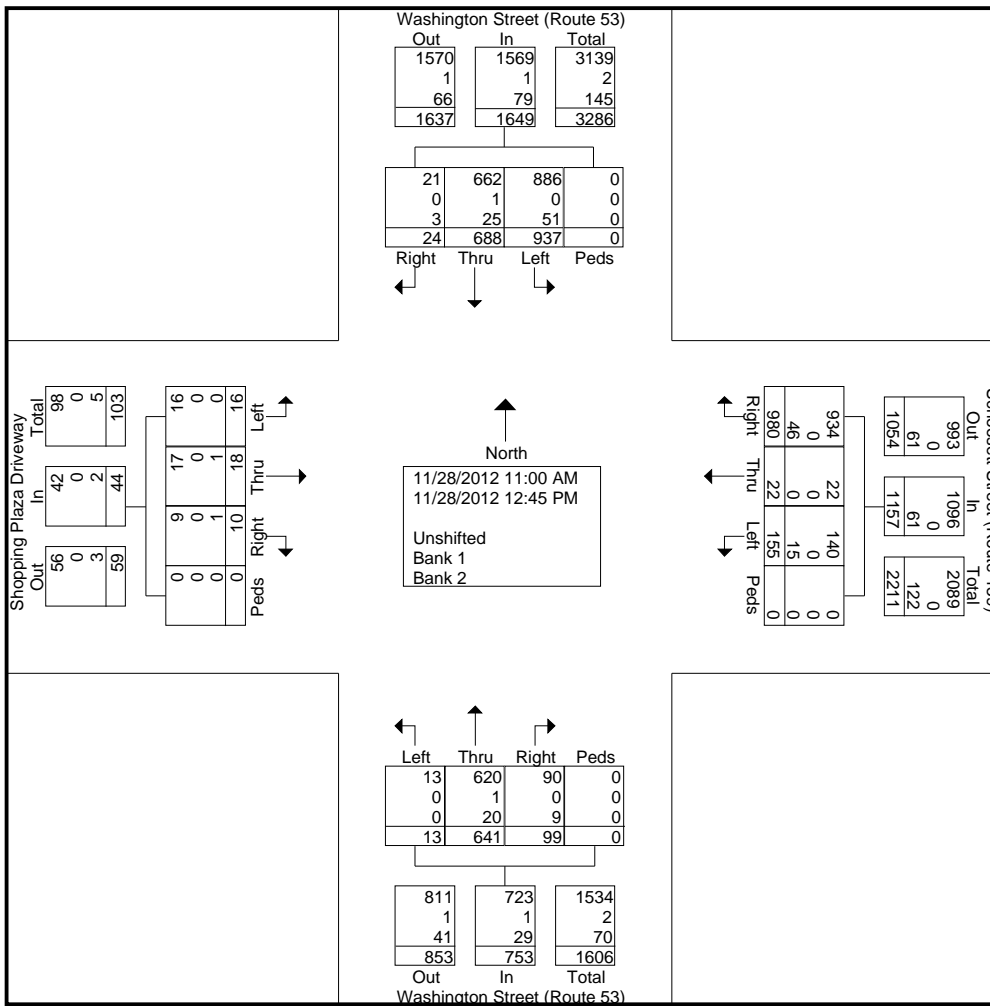


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 Traffic Control: Traffic Light

File Name : Washington Street (Route 53) & Schoosett Street (Route 139)_Mid-Day
 Site Code : 231
 Start Date : 11/28/2012
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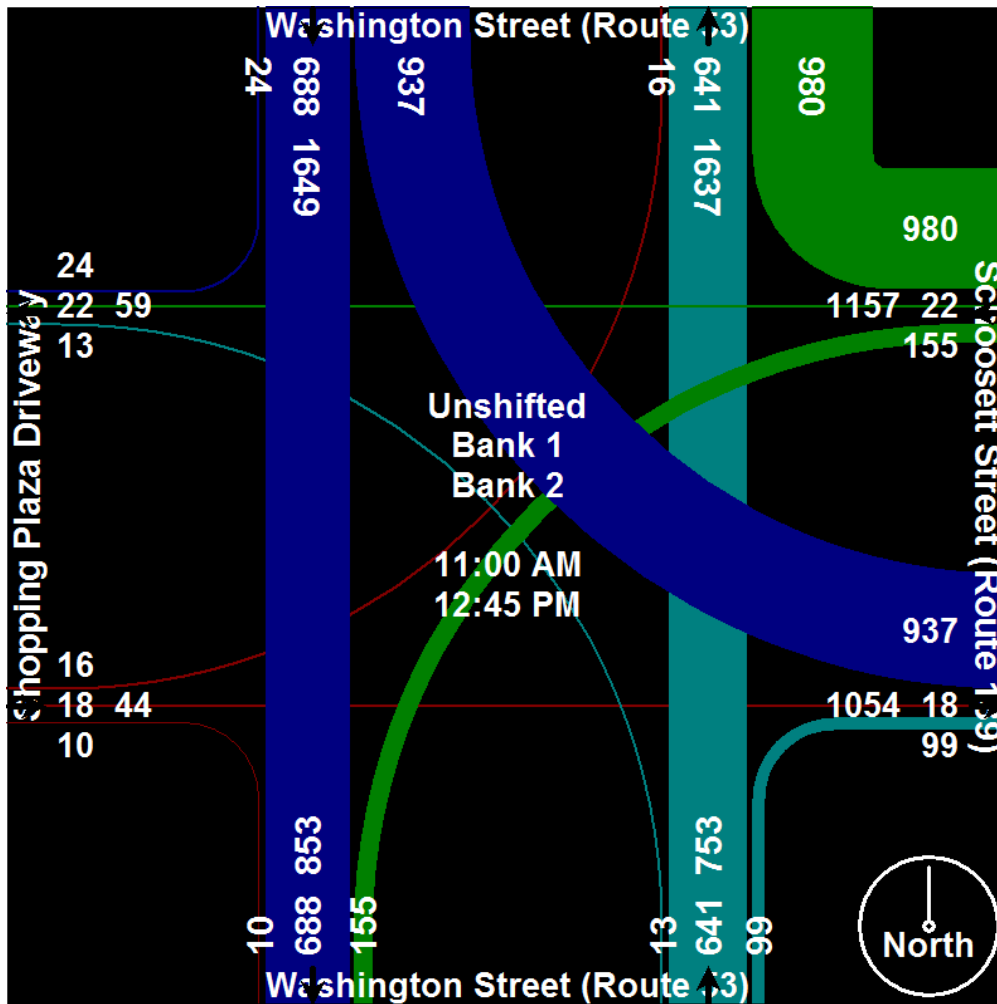


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 Start Date : 11/28/2012
 Page No : 4

Start Time	Washington Street (Route 53) Southbound					Schoosett Street (Route 139) Westbound					Washington Street (Route 53) Northbound					Shopping Plaza Driveway Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	1	85	105	0	191	143	5	15	0	163	6	76	1	0	83	2	5	3	0	10	447
12:15 PM	2	100	130	0	232	101	2	25	0	128	13	99	3	0	115	1	0	3	0	4	479
12:30 PM	4	99	142	0	245	138	0	13	0	151	9	74	0	0	83	0	0	1	0	1	480
12:45 PM	3	109	127	0	239	126	7	20	0	153	20	71	1	0	92	1	2	2	0	5	489
Total Volume	10	393	504	0	907	508	14	73	0	595	48	320	5	0	373	4	7	9	0	20	1895
% App. Total	1.1	43.3	55.6	0		85.4	2.4	12.3	0		12.9	85.8	1.3	0		20	35	45	0		
PHF	.625	.901	.887	.000	.926	.888	.500	.730	.000	.913	.600	.808	.417	.000	.811	.500	.350	.750	.000	.500	.969
Unshifted	9	380	482	0	871	482	14	70	0	566	43	309	5	0	357	4	7	9	0	20	1814
% Unshifted	90.0	96.7	95.6	0	96.0	94.9	100	95.9	0	95.1	89.6	96.6	100	0	95.7	100	100	100	0	100	95.7
Bank 1	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
% Bank 1	0	0.3	0	0	0.1	0	0	0	0	0	0	0.3	0	0	0.3	0	0	0	0	0	0.1
Bank 2	1	12	22	0	35	26	0	3	0	29	5	10	0	0	15	0	0	0	0	0	79
% Bank 2	10.0	3.1	4.4	0	3.9	5.1	0	4.1	0	4.9	10.4	3.1	0	0	4.0	0	0	0	0	0	4.2

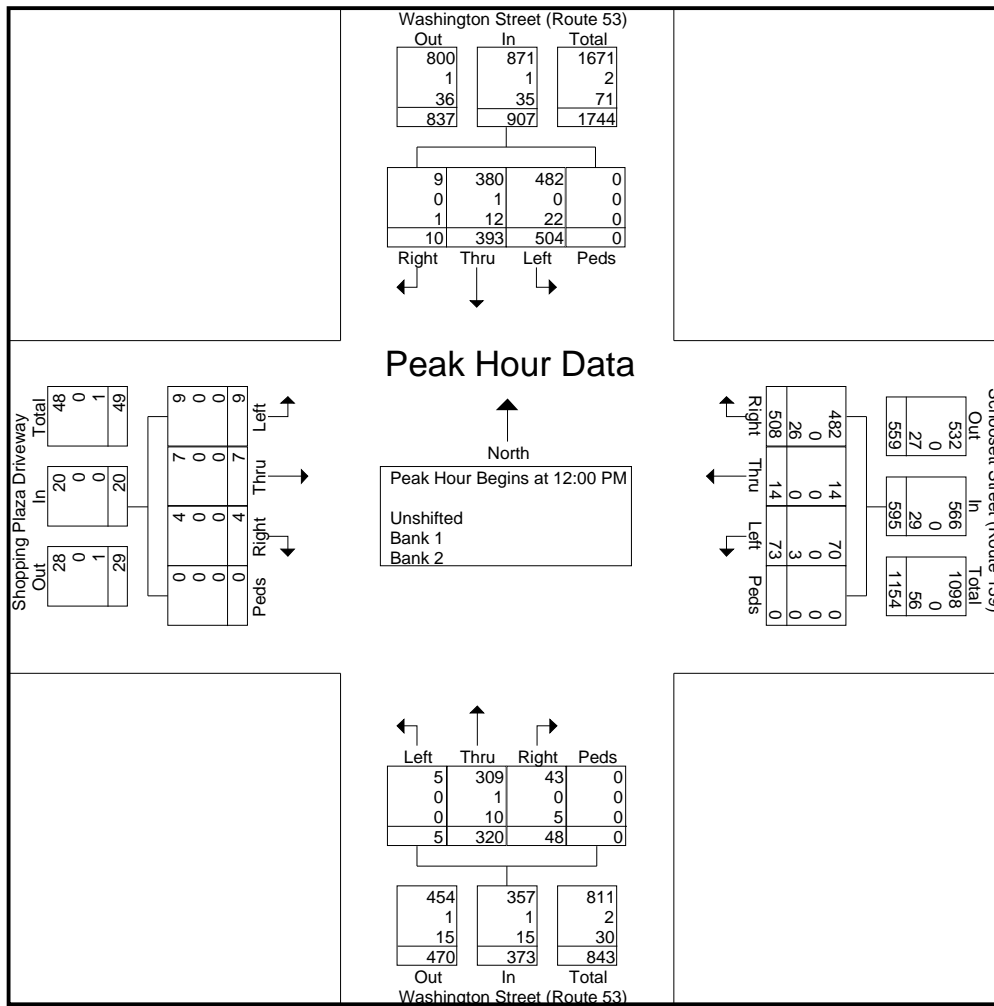


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File Name : Washington Street (Route 53) & Schoosett Street (Route 139)_Mid-Day
 Site Code : 231
 Start Date : 11/28/2012
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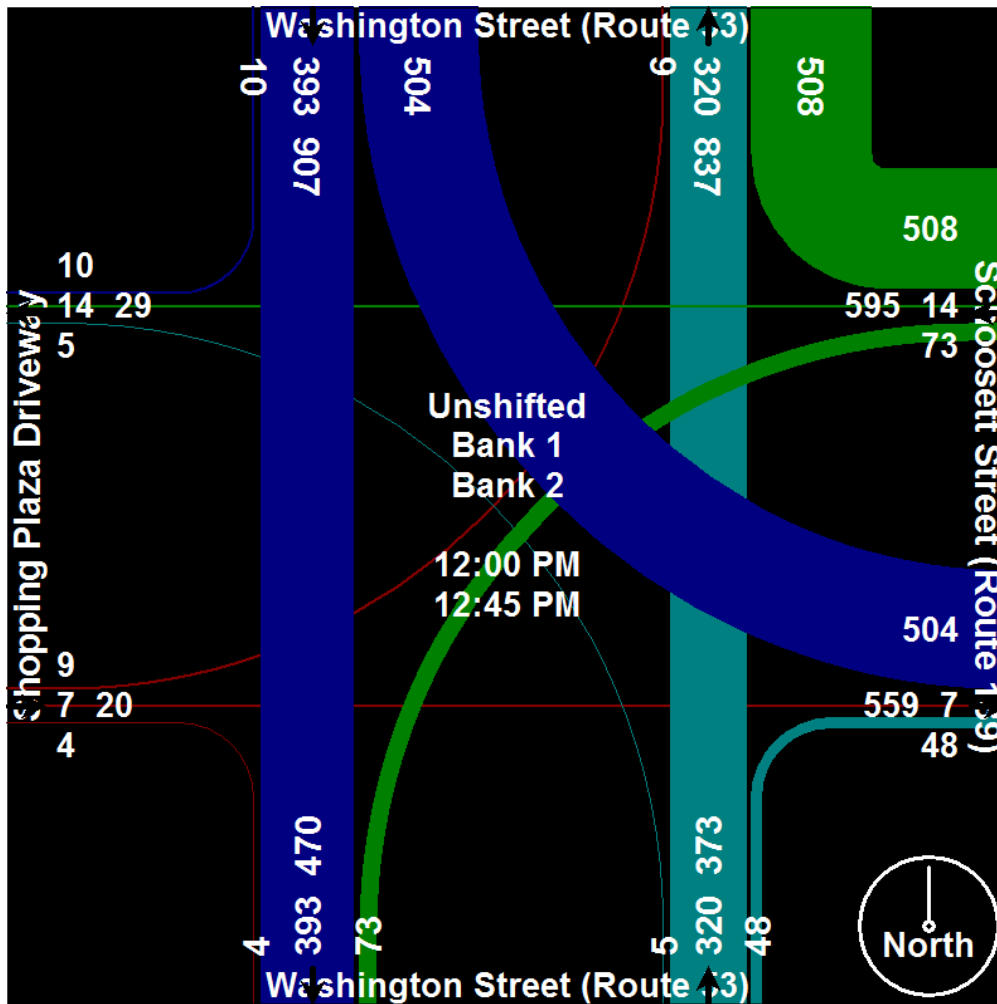


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Site Code : 231
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Community: Pembroke
 Weather: Clear
 Board # & Staff: DB-400 (5) / JC
 Traffic Control: Traffic Light

File Name : Washington Street (Route 53) & Schoosett Street (Route 139)_PM
 Site Code : 231
 Start Date : 11/28/2012
 Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	Washington Street (Route 53) Southbound					Schoosett Street (Route 139) Westbound					Washington Street (Route 53) Northbound					Shopping Plaza Driveway Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	4	144	169	0	317	138	7	34	0	179	13	90	4	0	107	4	2	6	0	12	615
04:15 PM	7	137	171	0	315	145	1	28	0	174	11	89	4	0	104	3	2	5	0	10	603
04:30 PM	2	164	143	0	309	138	1	39	0	178	8	77	1	0	86	2	4	4	0	10	583
04:45 PM	5	146	153	0	304	135	1	31	0	167	18	57	2	0	77	2	1	1	0	4	552
Total	18	591	636	0	1245	556	10	132	0	698	50	313	11	0	374	11	9	16	0	36	2353
05:00 PM	1	191	143	0	335	162	2	33	0	197	16	67	2	0	85	3	0	0	0	3	620
05:15 PM	4	182	146	0	332	160	4	36	0	200	17	66	2	0	85	4	0	2	0	6	623
05:30 PM	5	118	133	0	256	119	0	31	0	150	10	82	1	0	93	5	2	2	0	9	508
05:45 PM	4	159	117	0	280	112	2	20	0	134	14	61	1	0	76	2	0	2	0	4	494
Total	14	650	539	0	1203	553	8	120	0	681	57	276	6	0	339	14	2	6	0	22	2245
Grand Total	32	1241	1175	0	2448	1109	18	252	0	1379	107	589	17	0	713	25	11	22	0	58	4598
Apprch %	1.3	50.7	48	0		80.4	1.3	18.3	0		15	82.6	2.4	0		43.1	19	37.9	0		
Total %	0.7	27	25.6	0	53.2	24.1	0.4	5.5	0	30	2.3	12.8	0.4	0	15.5	0.5	0.2	0.5	0	1.3	
Unshifted	29	1231	1153	0	2413	1087	18	244	0	1349	105	581	17	0	703	24	10	21	0	55	4520
% Unshifted	90.6	99.2	98.1	0	98.6	98	100	96.8	0	97.8	98.1	98.6	100	0	98.6	96	90.9	95.5	0	94.8	98.3
Bank 1	0	0	1	0	1	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
% Bank 1	0	0	0.1	0	0	0.3	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0.1
Bank 2	3	10	21	0	34	19	0	8	0	27	2	8	0	0	10	1	1	1	0	3	74
% Bank 2	9.4	0.8	1.8	0	1.4	1.7	0	3.2	0	2	1.9	1.4	0	0	1.4	4	9.1	4.5	0	5.2	1.6

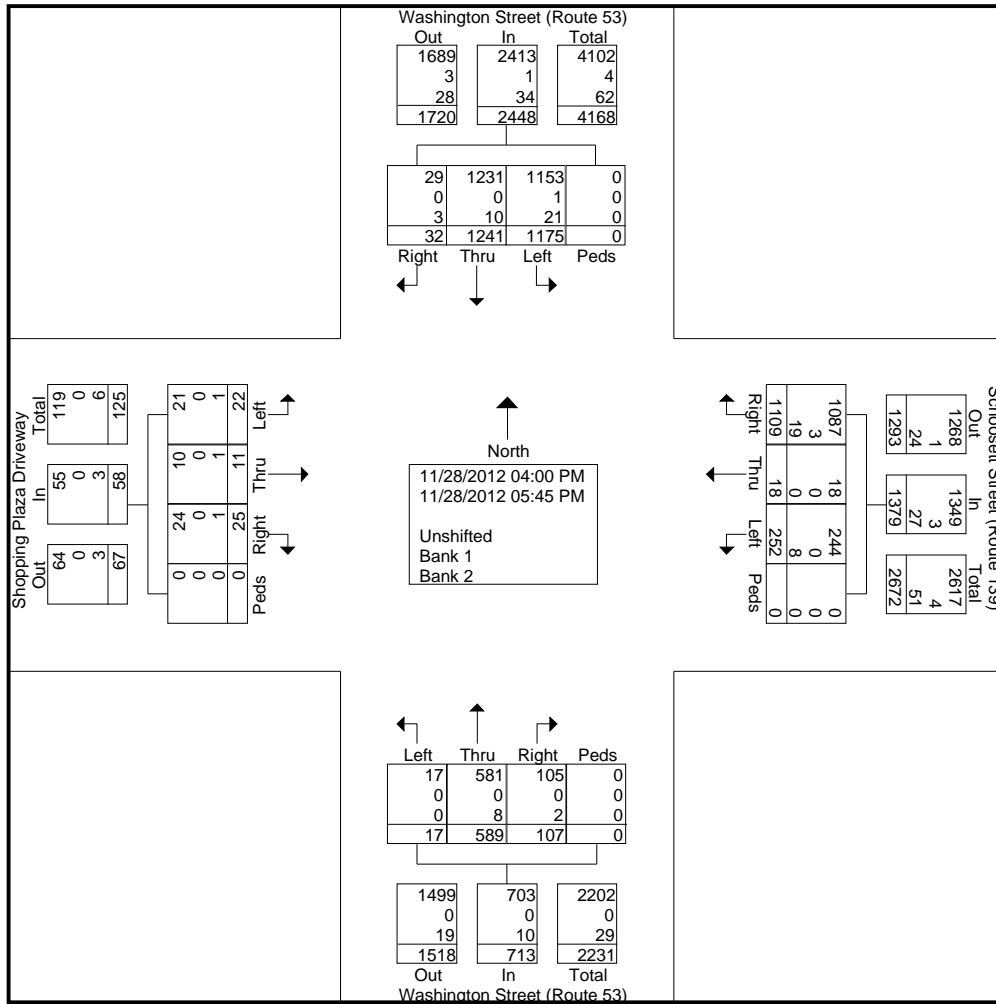


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 Site Code : 231
 Start Date : 11/28/2012
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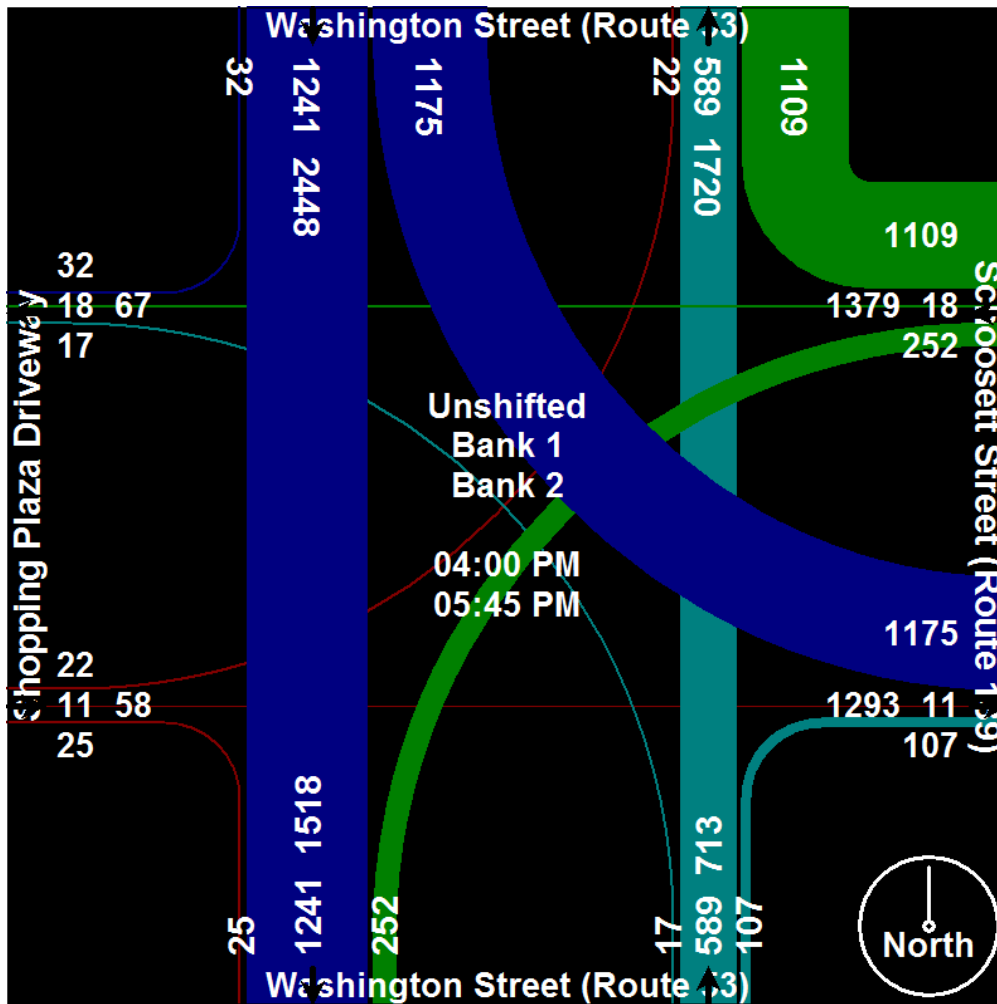


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Start Time	Washington Street (Route 53) Southbound					Schoosett Street (Route 139) Westbound					Washington Street (Route 53) Northbound					Shopping Plaza Driveway Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	2	164	143	0	309	138	1	39	0	178	8	77	1	0	86	2	4	4	0	10	583
04:45 PM	5	146	153	0	304	135	1	31	0	167	18	57	2	0	77	2	1	1	0	4	552
05:00 PM	1	191	143	0	335	162	2	33	0	197	16	67	2	0	85	3	0	0	0	3	620
05:15 PM	4	182	146	0	332	160	4	36	0	200	17	66	2	0	85	4	0	2	0	6	623
Total Volume	12	683	585	0	1280	595	8	139	0	742	59	267	7	0	333	11	5	7	0	23	2378
% App. Total	0.9	53.4	45.7	0		80.2	1.1	18.7	0		17.7	80.2	2.1	0		47.8	21.7	30.4	0		
PHF	.600	.894	.956	.000	.955	.918	.500	.891	.000	.928	.819	.867	.875	.000	.968	.688	.313	.438	.000	.575	.954
Unshifted	10	679	578	0	1267	585	8	134	0	727	58	264	7	0	329	10	4	6	0	20	2343
% Unshifted	83.3	99.4	98.8	0	99.0	98.3	100	96.4	0	98.0	98.3	98.9	100	0	98.8	90.9	80.0	85.7	0	87.0	98.5
Bank 1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Bank 1	0	0	0	0	0	0.2	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0.0
Bank 2	2	4	7	0	13	9	0	5	0	14	1	3	0	0	4	1	1	1	0	3	34
% Bank 2	16.7	0.6	1.2	0	1.0	1.5	0	3.6	0	1.9	1.7	1.1	0	0	1.2	9.1	20.0	14.3	0	13.0	1.4

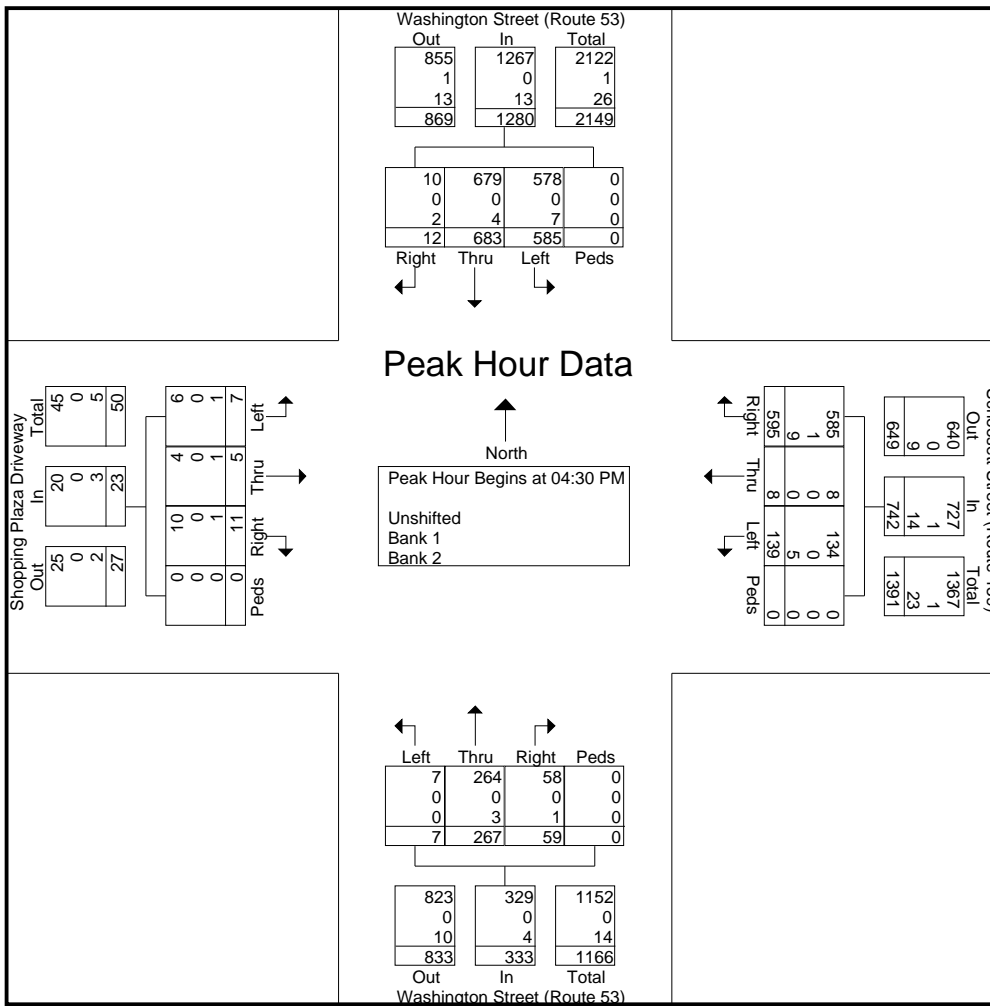


Old Colony Planning Council

70 School Street
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 www.ocpcrpa.org

Community: Pembroke
 Weather: Clear
 Board # & Staff: DB-400 (5) / JC
 Traffic Control: Traffic Light

File Name : Washington Street (Route 53) & Schoosett Street (Route 139)_PM
 Site Code : 231
 Start Date : 11/28/2012
 Page No : 5



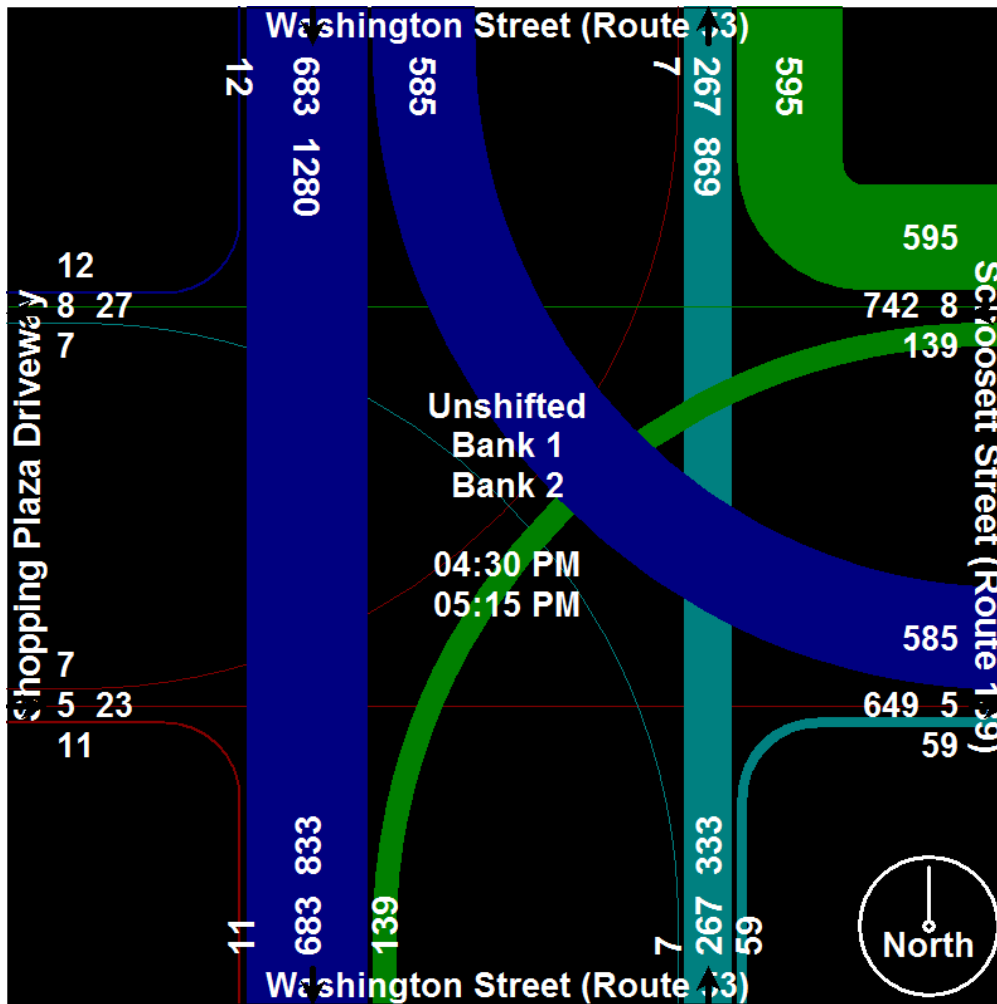


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Community: Pembroke
 Weather: Light Snow
 Board # & Staff: DB-400 (5) / KM
 Traffic Control: Traffic Light

File Name : Washington Street (Route 53) & Schoosett Street (Route 139)_Sat_Mid-Day
 Site Code : 231
 Start Date : 12/1/2012
 Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	Washington Street (Route 53) Southbound					Schoosett Street (Route 139) Westbound					Washington Street (Route 53) Northbound					Shopping Plaza Driveway Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
11:00 AM	2	110	135	0	247	124	4	28	0	156	15	109	5	0	129	1	2	3	0	6	538
11:15 AM	3	96	121	0	220	134	3	29	0	166	16	111	4	0	131	0	0	5	0	5	522
11:30 AM	9	75	128	0	212	121	8	17	0	146	21	98	0	0	119	2	4	4	0	10	487
11:45 AM	7	101	137	0	245	116	3	16	0	135	22	102	2	0	126	1	2	3	0	6	512
Total	21	382	521	0	924	495	18	90	0	603	74	420	11	0	505	4	8	15	0	27	2059
12:00 PM	4	84	154	0	242	143	5	25	0	173	15	103	1	0	119	1	5	4	0	10	544
12:15 PM	5	88	143	0	236	135	4	24	0	163	20	102	3	0	125	2	3	4	0	9	533
12:30 PM	4	73	146	0	223	135	6	26	0	167	19	100	5	0	124	1	6	3	0	10	524
12:45 PM	6	89	137	0	232	138	7	20	0	165	21	105	6	0	132	2	5	5	0	12	541
Total	19	334	580	0	933	551	22	95	0	668	75	410	15	0	500	6	19	16	0	41	2142
Grand Total	40	716	1101	0	1857	1046	40	185	0	1271	149	830	26	0	1005	10	27	31	0	68	4201
Apprch %	2.2	38.6	59.3	0		82.3	3.1	14.6	0		14.8	82.6	2.6	0		14.7	39.7	45.6	0		
Total %	1	17	26.2	0	44.2	24.9	1	4.4	0	30.3	3.5	19.8	0.6	0	23.9	0.2	0.6	0.7	0	1.6	
Unshifted	40	712	1095	0	1847	1034	40	180	0	1254	148	820	26	0	994	10	27	31	0	68	4163
% Unshifted	100	99.4	99.5	0	99.5	98.9	100	97.3	0	98.7	99.3	98.8	100	0	98.9	100	100	100	0	100	99.1
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank 2	0	4	6	0	10	12	0	5	0	17	1	10	0	0	11	0	0	0	0	0	38
% Bank 2	0	0.6	0.5	0	0.5	1.1	0	2.7	0	1.3	0.7	1.2	0	0	1.1	0	0	0	0	0	0.9

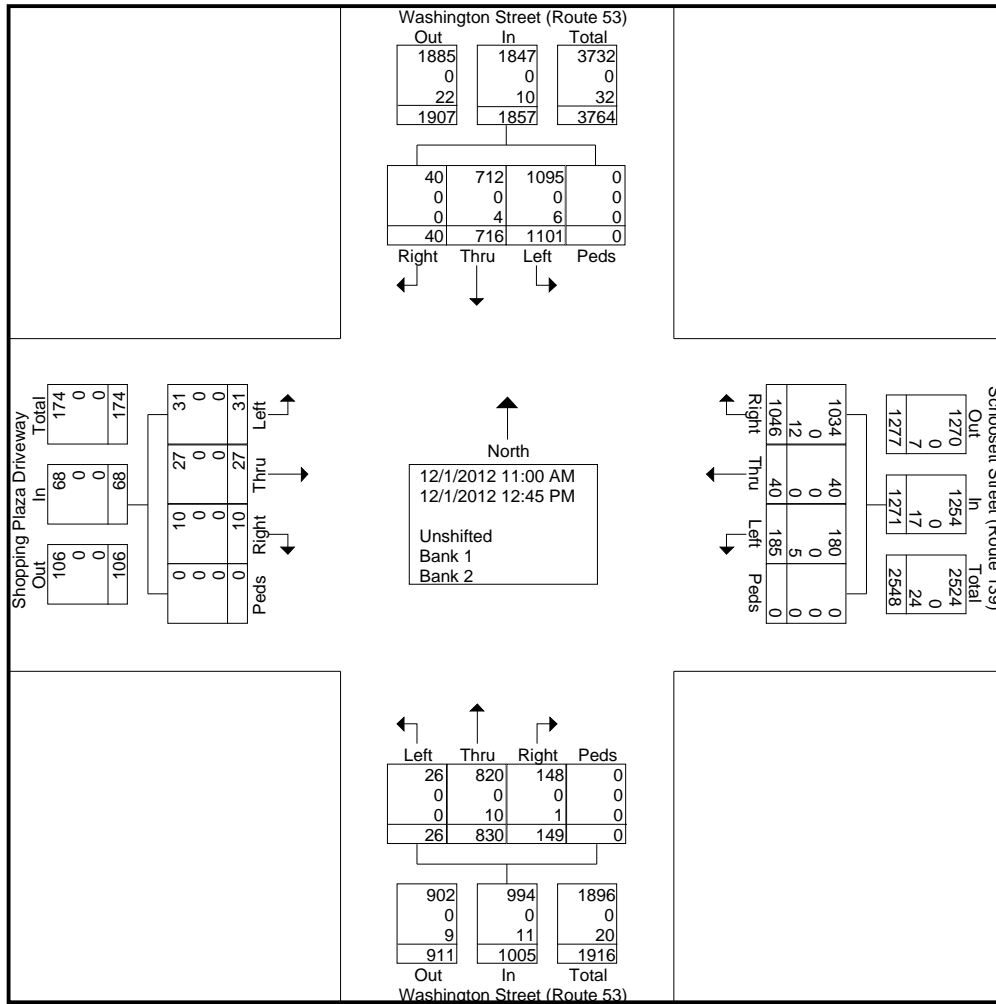


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File Name : Washington Street (Route 53) & Schoosett Street (Route 139)_Sat_Mid-Day
 Site Code : 231
 Start Date : 12/1/2012
 Page No : 2



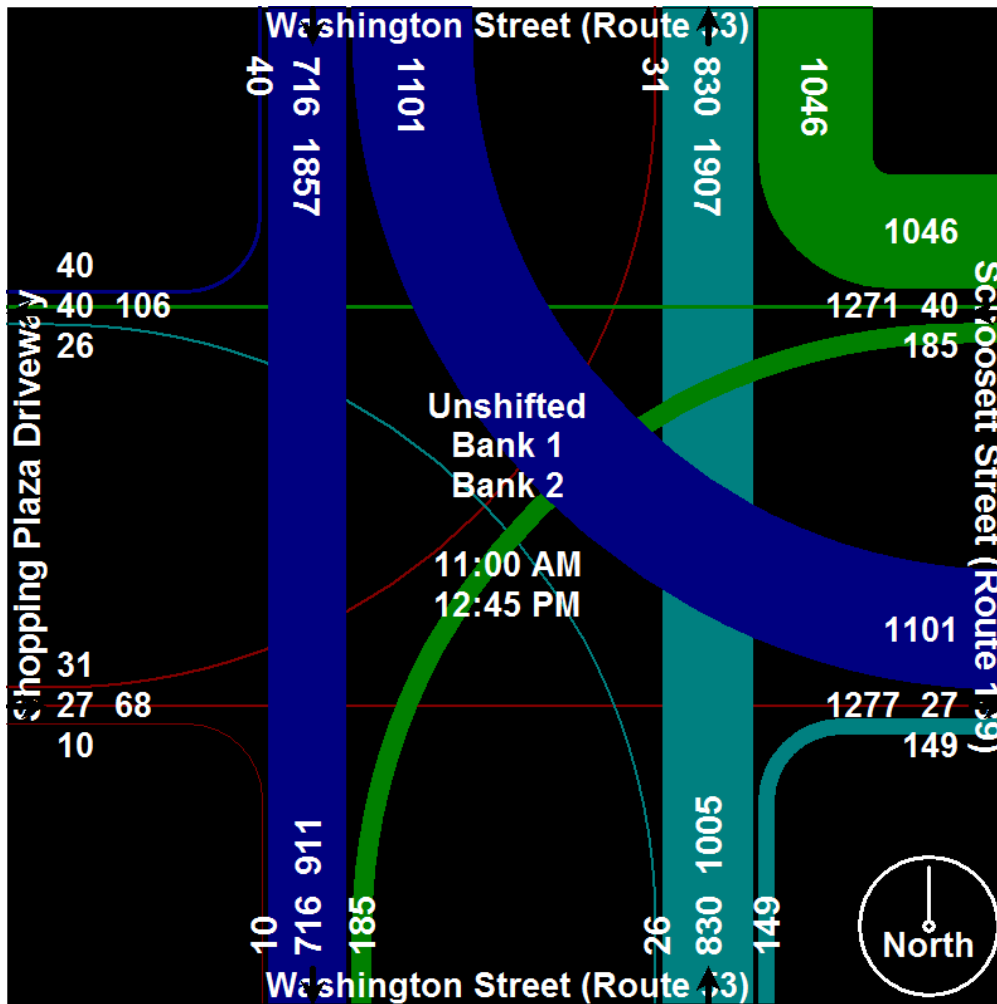


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 Site Code : 231
 Start Date : 12/1/2012
 Page No : 4

Start Time	Washington Street (Route 53) Southbound					Schoosett Street (Route 139) Westbound					Washington Street (Route 53) Northbound					Shopping Plaza Driveway Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 12:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:15 AM																					
11:15 AM	3	96	121	0	220	134	3	29	0	166	16	111	4	0	131	0	0	5	0	5	522
11:30 AM	9	75	128	0	212	121	8	17	0	146	21	98	0	0	119	2	4	4	0	10	487
11:45 AM	7	101	137	0	245	116	3	16	0	135	22	102	2	0	126	1	2	3	0	6	512
12:00 PM	4	84	154	0	242	143	5	25	0	173	15	103	1	0	119	1	5	4	0	10	544
Total Volume	23	356	540	0	919	514	19	87	0	620	74	414	7	0	495	4	11	16	0	31	2065
% App. Total	2.5	38.7	58.8	0		82.9	3.1	14	0		14.9	83.6	1.4	0		12.9	35.5	51.6	0		
PHF	.639	.881	.877	.000	.938	.899	.594	.750	.000	.896	.841	.932	.438	.000	.945	.500	.550	.800	.000	.775	.949
Unshifted	23	354	535	0	912	505	19	86	0	610	73	410	7	0	490	4	11	16	0	31	2043
% Unshifted	100	99.4	99.1	0	99.2	98.2	100	98.9	0	98.4	98.6	99.0	100	0	99.0	100	100	100	0	100	98.9
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank 2	0	2	5	0	7	9	0	1	0	10	1	4	0	0	5	0	0	0	0	0	22
% Bank 2	0	0.6	0.9	0	0.8	1.8	0	1.1	0	1.6	1.4	1.0	0	0	1.0	0	0	0	0	0	1.1

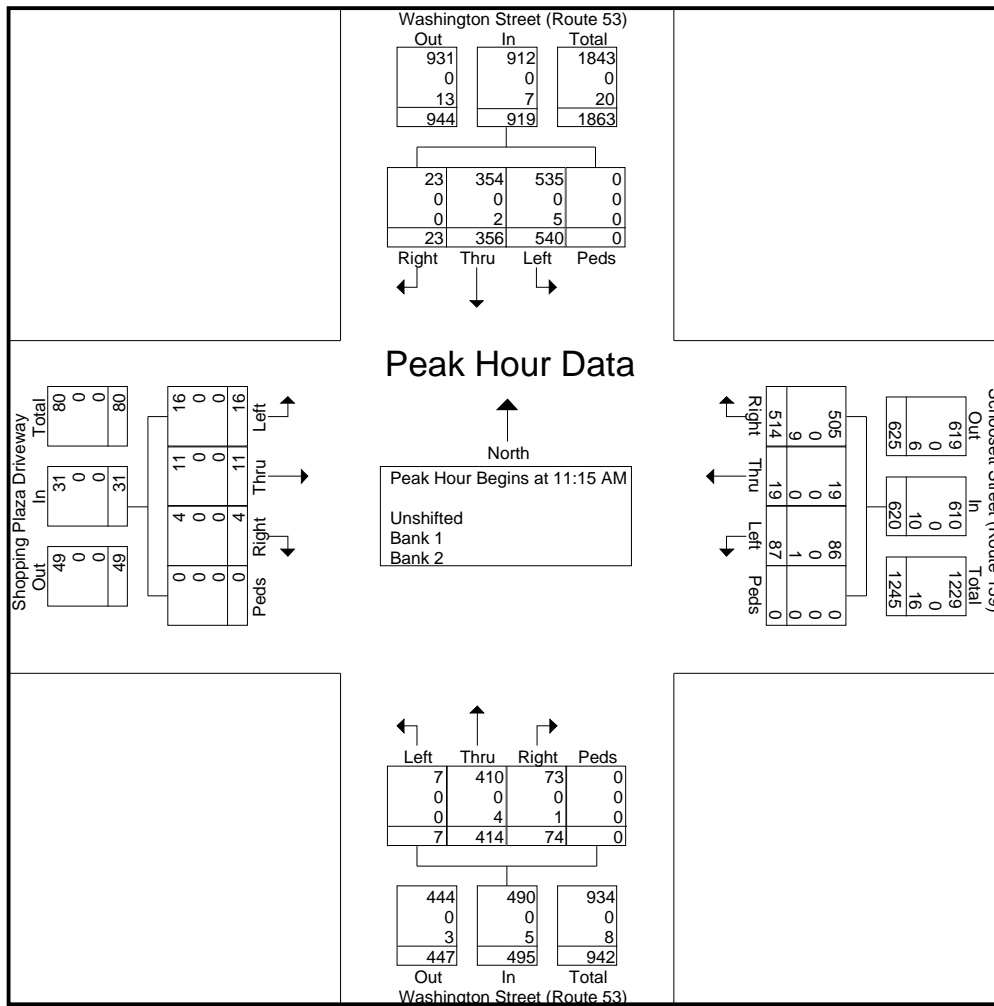


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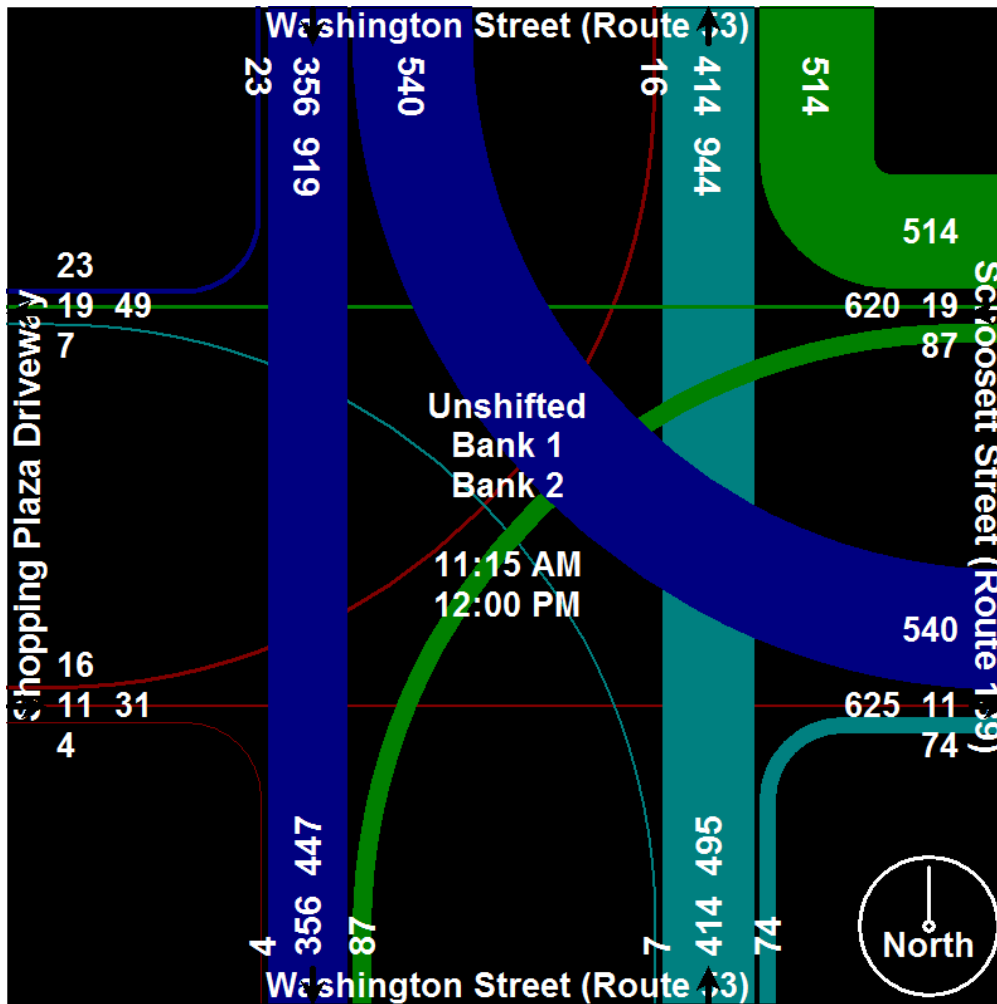


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Site Code : 231
Start Date : 12/1/2012
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Appendix B
Existing 2012 Levels of Service

Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Existing 2012 AM Peak Hour LOS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	0	35	11	408	5	570	40	426	197	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	0		0	0		0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Fr _t						0.850		0.990			0.998	
Fl _t Protected	0.950				0.964					0.950		
Satd. Flow (prot)	1805	1900	0	0	1728	1524	0	3470	0	1736	1823	0
Fl _t Permitted	0.725				0.798			0.953		0.260		
Satd. Flow (perm)	1377	1900	0	0	1430	1524	0	3307	0	475	1823	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						429		12				2
Link Speed (mph)		30			30			30				30
Link Distance (ft)		145			443			596				735
Travel Time (s)		3.3			10.1			13.5				16.7
Peak Hour Factor	0.25	0.25	0.25	0.95	0.95	0.95	0.90	0.90	0.90	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	6%	6%	6%	3%	3%	3%	4%	4%	4%
Adj. Flow (vph)	4	4	0	37	12	429	6	633	44	468	216	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	4	0	0	49	429	0	683	0	468	219	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		

Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Existing 2012 AM Peak Hour LOS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	4.0	4.0		6.0	4.0	
Minimum Split (s)	18.0	18.0		18.0	18.0	18.0	20.0	20.0		10.0	10.0	
Total Split (s)	18.0	18.0		18.0	18.0	18.0	22.0	22.0		20.0	42.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	36.7%	36.7%		33.3%	70.0%	
Maximum Green (s)	14.0	14.0		14.0	14.0	14.0	18.0	18.0		16.0	38.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max		None	Max	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effct Green (s)	8.8	8.8			8.8	8.8		21.1		38.1	38.1	
Actuated g/C Ratio	0.16	0.16			0.16	0.16		0.38		0.69	0.69	
v/c Ratio	0.02	0.01			0.21	0.71		0.53		0.75	0.17	
Control Delay	19.0	18.0			21.8	9.9		16.3		15.0	3.8	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	19.0	18.0			21.8	9.9		16.3		15.0	3.8	
LOS	B	B			C	A		B		B	A	
Approach Delay		18.5			11.1			16.3			11.4	
Approach LOS		B			B			B			B	

Intersection Summary





















Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 54.9
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 13.2
 Intersection Capacity Utilization 60.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 3: Route 53 & Plaza/Route 139



Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Existing 2012 Midday Peak Hour LOS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	7	4	73	14	508	5	320	48	504	393	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	0		0	0		0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.945				0.850		0.981			0.996	
Flt Protected	0.950				0.960			0.999		0.950		
Satd. Flow (prot)	1805	1796	0	0	1737	1538	0	3402	0	1736	1820	0
Flt Permitted	0.695				0.744			0.950		0.376		
Satd. Flow (perm)	1320	1796	0	0	1346	1538	0	3235	0	687	1820	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8				558		28			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		145			443			596			735	
Travel Time (s)		3.3			10.1			13.5			16.7	
Peak Hour Factor	0.50	0.50	0.50	0.91	0.91	0.91	0.81	0.81	0.81	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	5%	5%	5%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	18	14	8	80	15	558	6	395	59	542	423	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	22	0	0	95	558	0	460	0	542	434	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		

Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Existing 2012 Midday Peak Hour LOS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	4.0	4.0		6.0	4.0	
Minimum Split (s)	18.0	18.0		18.0	18.0	18.0	20.0	20.0		10.0	10.0	
Total Split (s)	18.0	18.0		18.0	18.0	18.0	22.0	22.0		20.0	42.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	36.7%	36.7%		33.3%	70.0%	
Maximum Green (s)	14.0	14.0		14.0	14.0	14.0	18.0	18.0		16.0	38.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max		None	Max	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effct Green (s)	10.5	10.5			10.5	10.5		20.5		38.1	38.1	
Actuated g/C Ratio	0.19	0.19			0.19	0.19		0.36		0.67	0.67	
v/c Ratio	0.07	0.06			0.38	0.75		0.39		0.76	0.35	
Control Delay	19.0	15.1			24.5	9.8		15.2		14.0	5.5	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	19.0	15.1			24.5	9.8		15.2		14.0	5.5	
LOS	B	B			C	A		B		B	A	
Approach Delay		16.9			11.9			15.2			10.2	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 56.7
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 11.9
 Intersection Capacity Utilization 59.9%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 3: Route 53 & Plaza/Route 139



Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Existing 2012 PM Peak Hour LOS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	5	11	139	8	595	7	267	59	585	683	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	0		0	0		0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.897				0.850		0.973			0.998	
Flt Protected	0.950				0.955			0.999		0.950		
Satd. Flow (prot)	1597	1508	0	0	1779	1583	0	3474	0	1787	1877	0
Flt Permitted	0.633				0.717			0.942		0.447		
Satd. Flow (perm)	1064	1508	0	0	1336	1583	0	3276	0	841	1877	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20				640		44				3
Link Speed (mph)		30			30			30				30
Link Distance (ft)		145			443			596				735
Travel Time (s)		3.3			10.1			13.5				16.7
Peak Hour Factor	0.56	0.56	0.56	0.93	0.93	0.93	0.97	0.97	0.97	0.96	0.96	0.96
Heavy Vehicles (%)	13%	13%	13%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	12	9	20	149	9	640	7	275	61	609	711	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	29	0	0	158	640	0	343	0	609	723	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		

Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Existing 2012 PM Peak Hour LOS

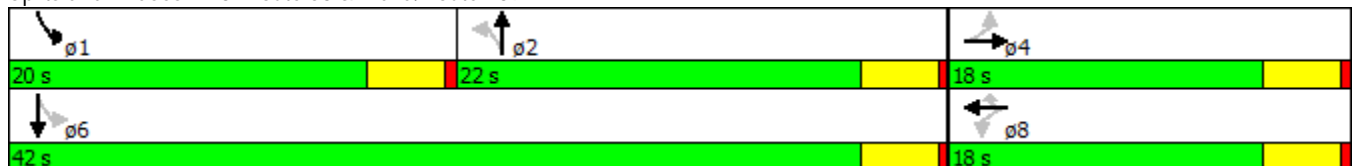


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	4.0	4.0		6.0	4.0	
Minimum Split (s)	18.0	18.0		18.0	18.0	18.0	20.0	20.0		10.0	10.0	
Total Split (s)	18.0	18.0		18.0	18.0	18.0	22.0	22.0		20.0	42.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	36.7%	36.7%		33.3%	70.0%	
Maximum Green (s)	14.0	14.0		14.0	14.0	14.0	18.0	18.0		16.0	38.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max		None	Max	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effct Green (s)	12.0	12.0			12.0	12.0		19.7		38.1	38.1	
Actuated g/C Ratio	0.21	0.21			0.21	0.21		0.34		0.66	0.66	
v/c Ratio	0.05	0.09			0.58	0.77		0.30		0.78	0.59	
Control Delay	18.7	11.5			29.6	9.5		14.3		14.6	8.5	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	18.7	11.5			29.6	9.5		14.3		14.6	8.5	
LOS	B	B			C	A		B		B	A	
Approach Delay		13.6			13.5			14.3			11.3	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	58.1
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.78
Intersection Signal Delay:	12.4
Intersection LOS:	B
Intersection Capacity Utilization:	70.9%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 3: Route 53 & Plaza/Route 139



Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Existing 2012 Saturday Peak Hour LOS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	11	4	87	19	514	7	414	74	540	356	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	0		0	0		0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.961				0.850		0.978			0.991	
Flt Protected	0.950				0.961			0.999		0.950		
Satd. Flow (prot)	1805	1826	0	0	1790	1583	0	3492	0	1787	1864	0
Flt Permitted	0.681				0.751			0.950		0.330		
Satd. Flow (perm)	1294	1826	0	0	1399	1583	0	3321	0	621	1864	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				571		34			10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		145			443			596			735	
Travel Time (s)		3.3			10.1			13.5			16.7	
Peak Hour Factor	0.78	0.78	0.78	0.90	0.90	0.90	0.95	0.95	0.95	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	21	14	5	97	21	571	7	436	78	574	379	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	19	0	0	118	571	0	521	0	574	403	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		

Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Existing 2012 Saturday Peak Hour LOS

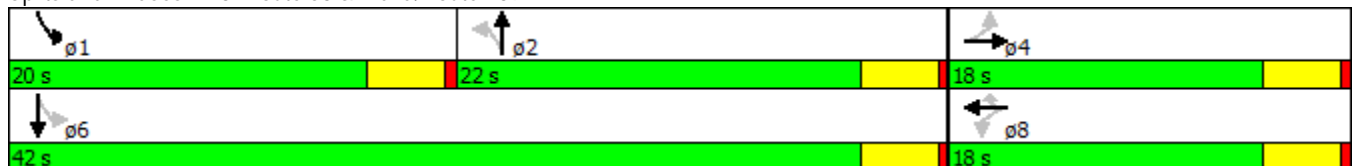


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	4.0	4.0		6.0	4.0	
Minimum Split (s)	18.0	18.0		18.0	18.0	18.0	20.0	20.0		10.0	10.0	
Total Split (s)	18.0	18.0		18.0	18.0	18.0	22.0	22.0		20.0	42.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	36.7%	36.7%		33.3%	70.0%	
Maximum Green (s)	14.0	14.0		14.0	14.0	14.0	18.0	18.0		16.0	38.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max		None	Max	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effct Green (s)	10.9	10.9			10.9	10.9		19.8		38.1	38.1	
Actuated g/C Ratio	0.19	0.19			0.19	0.19		0.35		0.67	0.67	
v/c Ratio	0.09	0.05			0.44	0.75		0.44		0.81	0.32	
Control Delay	19.1	16.0			25.7	9.2		16.1		18.0	5.3	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	19.1	16.0			25.7	9.2		16.1		18.0	5.3	
LOS	B	B			C	A		B		B	A	
Approach Delay		17.6			12.0			16.1			12.7	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	57
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.81
Intersection Signal Delay:	13.4
Intersection LOS:	B
Intersection Capacity Utilization:	66.4%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 3: Route 53 & Plaza/Route 139



Appendix C
Estimated 2017 Levels of Service – No Build

Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 AM Peak Hour LOS - No Build



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	0	35	11	408	5	570	40	426	197	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	0		0	0		0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Fr _t						0.850		0.990			0.998	
Fl _t Protected	0.950				0.963					0.950		
Satd. Flow (prot)	1805	1900	0	0	1726	1524	0	3470	0	1736	1823	0
Fl _t Permitted	0.724				0.794			0.953		0.233		
Satd. Flow (perm)	1376	1900	0	0	1423	1524	0	3307	0	426	1823	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						451		12				2
Link Speed (mph)		30			30			30				30
Link Distance (ft)		145			443			596				735
Travel Time (s)		3.3			10.1			13.5				16.7
Peak Hour Factor	0.25	0.25	0.25	0.95	0.95	0.95	0.90	0.90	0.90	0.91	0.91	0.91
Growth Factor	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%
Heavy Vehicles (%)	0%	0%	0%	6%	6%	6%	3%	3%	3%	4%	4%	4%
Adj. Flow (vph)	4	4	0	39	12	451	6	665	47	492	227	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	4	0	0	51	451	0	718	0	492	230	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1		6

Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 AM Peak Hour LOS - No Build

	↖		→		↗		↖		←		↗		↖		↑		↗		↘		↓		↘			
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR														
Permitted Phases	4				8				8		2				6											
Detector Phase	4	4			8	8	8	2	2			1	6													
Switch Phase																										
Minimum Initial (s)	6.0	6.0			6.0	6.0	6.0	4.0	4.0			6.0	4.0													
Minimum Split (s)	18.0	18.0			18.0	18.0	18.0	20.0	20.0			10.0	10.0													
Total Split (s)	18.0	18.0			18.0	18.0	18.0	22.0	22.0			20.0	42.0													
Total Split (%)	30.0%	30.0%			30.0%	30.0%	30.0%	36.7%	36.7%			33.3%	70.0%													
Maximum Green (s)	14.0	14.0			14.0	14.0	14.0	18.0	18.0			16.0	38.0													
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5	3.5	3.5			3.5	3.5													
All-Red Time (s)	0.5	0.5			0.5	0.5	0.5	0.5	0.5			0.5	0.5													
Lost Time Adjust (s)	0.0	0.0					0.0	0.0			0.0	0.0														
Total Lost Time (s)	4.0	4.0					4.0	4.0			4.0	4.0														
Lead/Lag													Lag	Lag	Lead											
Lead-Lag Optimize?													Yes	Yes	Yes											
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			3.0	3.0			3.0	3.0									
Recall Mode	None	None			None	None	None	Max	Max			None	Max			None	Max									
Walk Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			5.0	5.0													
Flash Dont Walk (s)	11.0	11.0			11.0	11.0	11.0	11.0	11.0			11.0	11.0													
Pedestrian Calls (#/hr)	0	0			0	0	0	0	0			0	0													
Act Effect Green (s)	8.9	8.9					8.9	8.9			20.1	38.1	38.1													
Actuated g/C Ratio	0.16	0.16					0.16	0.16			0.37	0.69	0.69													
v/c Ratio	0.02	0.01			0.22	0.72			0.59			0.78	0.18													
Control Delay	19.0	18.0			21.9	10.0			17.7			18.5	3.9													
Queue Delay	0.0	0.0			0.0	0.0			0.0			0.0	0.0													
Total Delay	19.0	18.0			21.9	10.0			17.7			18.5	3.9													
LOS	B	B			C	B			B			B	A													
Approach Delay	18.5				11.2				17.7				13.9													
Approach LOS	B				B				B				B													

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 55
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 14.6
 Intersection LOS: B
 Intersection Capacity Utilization 62.1%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 3: Route 53 & Plaza/Route 139



Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 Midday Peak Hour LOS - No Build



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	7	4	73	14	508	5	320	48	504	393	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	0		0	0		0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.948				0.850		0.981			0.996	
Flt Protected	0.950				0.960			0.999		0.950		
Satd. Flow (prot)	1805	1801	0	0	1737	1538	0	3402	0	1736	1820	0
Flt Permitted	0.692				0.744			0.950		0.355		
Satd. Flow (perm)	1315	1801	0	0	1346	1538	0	3235	0	649	1820	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8				586		28			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		145			443			596			735	
Travel Time (s)		3.3			10.1			13.5			16.7	
Peak Hour Factor	0.50	0.50	0.50	0.91	0.91	0.91	0.81	0.81	0.81	0.93	0.93	0.93
Growth Factor	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%
Heavy Vehicles (%)	0%	0%	0%	5%	5%	5%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	19	15	8	84	16	586	6	415	62	569	444	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	19	23	0	0	100	586	0	483	0	569	455	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	

Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

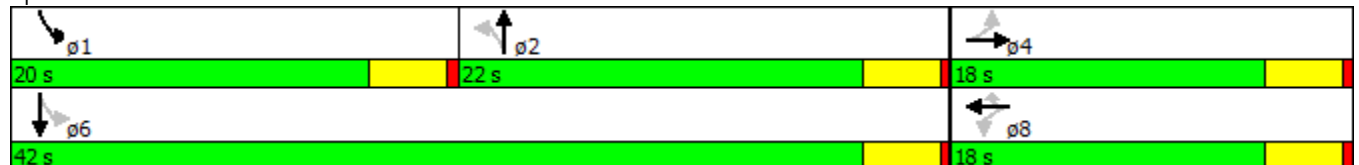
Route 53 at Route 139
Estimated 2017 Midday Peak Hour LOS - No Build

	↖		→		↗		↖		←		↗		↖		↑		↗		↘		↓		↘		
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR													
Permitted Phases	4			8		8	2			6															
Detector Phase	4	4		8	8	8	2	2		1	6														
Switch Phase																									
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	4.0	4.0		6.0	4.0														
Minimum Split (s)	18.0	18.0		18.0	18.0	18.0	20.0	20.0		10.0	10.0														
Total Split (s)	18.0	18.0		18.0	18.0	18.0	22.0	22.0		20.0	42.0														
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	36.7%	36.7%		33.3%	70.0%														
Maximum Green (s)	14.0	14.0		14.0	14.0	14.0	18.0	18.0		16.0	38.0														
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5														
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5														
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0														
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0														
Lead/Lag							Lag	Lag		Lead															
Lead-Lag Optimize?							Yes	Yes		Yes															
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0														
Recall Mode	None	None		None	None	None	Max	Max		None	Max														
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0			5.0														
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0			11.0														
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0														
Act Effct Green (s)	10.6	10.6			10.6	10.6		19.8		38.1	38.1														
Actuated g/C Ratio	0.19	0.19			0.19	0.19		0.35		0.67	0.67														
v/c Ratio	0.08	0.07			0.40	0.77		0.42		0.80	0.37														
Control Delay	19.0	15.1			24.8	10.1		15.9		17.1	5.7														
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0														
Total Delay	19.0	15.1			24.8	10.1		15.9		17.1	5.7														
LOS	B	B			C	B		B		B	A														
Approach Delay		16.9			12.2			15.9			12.0														
Approach LOS		B			B			B			B														

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 56.8
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 13.0
 Intersection LOS: B
 Intersection Capacity Utilization 62.1%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 3: Route 53 & Plaza/Route 139



Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 PM Peak Hour LOS - No Build



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	5	11	139	8	595	7	267	59	585	683	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	0		0	0		0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.895				0.850		0.973			0.997	
Flt Protected	0.950				0.955			0.999		0.950		
Satd. Flow (prot)	1597	1505	0	0	1779	1583	0	3474	0	1787	1876	0
Flt Permitted	0.615				0.716			0.939		0.430		
Satd. Flow (perm)	1034	1505	0	0	1334	1583	0	3266	0	809	1876	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21				672		44			3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		145			443			596			735	
Travel Time (s)		3.3			10.1			13.5			16.7	
Peak Hour Factor	0.56	0.56	0.56	0.93	0.93	0.93	0.97	0.97	0.97	0.96	0.96	0.96
Growth Factor	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%
Heavy Vehicles (%)	13%	13%	13%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	13	9	21	157	9	672	8	289	64	640	747	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	30	0	0	166	672	0	361	0	640	760	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	

Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 PM Peak Hour LOS - No Build

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	4.0	4.0		6.0	4.0	
Minimum Split (s)	18.0	18.0		18.0	18.0	18.0	20.0	20.0		10.0	10.0	
Total Split (s)	18.0	18.0		18.0	18.0	18.0	22.0	22.0		20.0	42.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	36.7%	36.7%		33.3%	70.0%	
Maximum Green (s)	14.0	14.0		14.0	14.0	14.0	18.0	18.0		16.0	38.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max		None	Max	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effct Green (s)	12.1	12.1			12.1	12.1		19.1		38.1	38.1	
Actuated g/C Ratio	0.21	0.21			0.21	0.21		0.33		0.65	0.65	
v/c Ratio	0.06	0.09			0.60	0.78		0.33		0.82	0.62	
Control Delay	18.9	11.4			30.5	9.9		14.8		17.4	9.1	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	18.9	11.4			30.5	9.9		14.8		17.4	9.1	
LOS	B	B			C	A		B		B	A	
Approach Delay		13.7			14.0			14.8			12.9	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 58.2
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 13.5
 Intersection LOS: B
 Intersection Capacity Utilization 73.6%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 3: Route 53 & Plaza/Route 139



Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 Saturday Peak Hour LOS - No Build



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	11	4	87	19	514	7	414	74	540	356	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	0		0	0		0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.962				0.850		0.978			0.991	
Flt Protected	0.950				0.960			0.999		0.950		
Satd. Flow (prot)	1805	1828	0	0	1788	1583	0	3492	0	1787	1864	0
Flt Permitted	0.677				0.750			0.949		0.307		
Satd. Flow (perm)	1286	1828	0	0	1397	1583	0	3317	0	578	1864	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				591		34			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		145			443			596			735	
Travel Time (s)		3.3			10.1			13.5			16.7	
Peak Hour Factor	0.78	0.78	0.78	0.90	0.90	0.90	0.95	0.95	0.95	0.94	0.94	0.94
Growth Factor	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	22	15	5	102	22	600	8	458	82	603	398	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	20	0	0	124	600	0	548	0	603	424	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	

Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 Saturday Peak Hour LOS - No Build

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	4.0	4.0		6.0	4.0	
Minimum Split (s)	18.0	18.0		18.0	18.0	18.0	20.0	20.0		10.0	10.0	
Total Split (s)	18.0	18.0		18.0	18.0	18.0	22.0	22.0		20.0	42.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	36.7%	36.7%		33.3%	70.0%	
Maximum Green (s)	14.0	14.0		14.0	14.0	14.0	18.0	18.0		16.0	38.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max		None	Max	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effect Green (s)	10.9	10.9			10.9	10.9		19.1		38.1	38.1	
Actuated g/C Ratio	0.19	0.19			0.19	0.19		0.33		0.67	0.67	
v/c Ratio	0.09	0.06			0.46	0.77		0.48		0.86	0.34	
Control Delay	19.2	16.1			26.2	10.2		16.9		22.7	5.4	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	19.2	16.1			26.2	10.2		16.9		22.7	5.4	
LOS	B	B			C	B		B		C	A	
Approach Delay		17.7			12.9			16.9			15.5	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 57.1
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 15.1
 Intersection LOS: B
 Intersection Capacity Utilization 68.9%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 3: Route 53 & Plaza/Route 139



Appendix D

Estimated 2017 Levels of Service – Actuated Northbound Lag

Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 AM Peak Hour LOS w LT Arrow Lag



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	0	35	11	408	5	570	40	426	197	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	75		0	0		0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Fr _t						0.850		0.990			0.998	
Fl _t Protected	0.950				0.963					0.950		
Satd. Flow (prot)	1805	1900	0	0	1726	1524	0	3470	0	1736	1823	0
Fl _t Permitted	0.724				0.795			0.953		0.224		
Satd. Flow (perm)	1376	1900	0	0	1425	1524	0	3307	0	409	1823	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						451		12				2
Link Speed (mph)		30			30			30				30
Link Distance (ft)		145			443			596				735
Travel Time (s)		3.3			10.1			13.5				16.7
Peak Hour Factor	0.25	0.25	0.25	0.95	0.95	0.95	0.90	0.90	0.90	0.91	0.91	0.91
Growth Factor	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%
Heavy Vehicles (%)	0%	0%	0%	6%	6%	6%	3%	3%	3%	4%	4%	4%
Adj. Flow (vph)	4	4	0	39	12	451	6	665	47	492	227	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	4	0	0	51	451	0	718	0	492	230	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	

Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 AM Peak Hour LOS w LT Arrow Lag

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	4.0	4.0		6.0	4.0	
Minimum Split (s)	18.0	18.0		18.0	18.0	18.0	8.0	20.0		10.0	10.0	
Total Split (s)	18.0	18.0		18.0	18.0	18.0	8.0	22.0		20.0	34.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	13.3%	36.7%		33.3%	56.7%	
Maximum Green (s)	14.0	14.0		14.0	14.0	14.0	4.0	18.0		16.0	30.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Max		None	Max	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	
Act Effect Green (s)	8.8	8.8			8.8	8.8		18.2		35.6	35.6	
Actuated g/C Ratio	0.17	0.17			0.17	0.17		0.35		0.68	0.68	
v/c Ratio	0.02	0.01			0.21	0.71		0.62		0.80	0.19	
Control Delay	18.0	18.0			21.4	9.7		18.1		20.2	4.0	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	18.0	18.0			21.4	9.7		18.1		20.2	4.0	
LOS	B	B			C	A		B		C	A	
Approach Delay		18.0			10.9			18.1			15.1	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 52.5
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 15.1
 Intersection Capacity Utilization 62.1%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 3: Route 53 & Plaza/Route 139



Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 Midday PH LOS w LT Arrow Lag



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	7	4	73	14	508	5	320	48	504	393	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	75		0	0		0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.948				0.850		0.981			0.996	
Flt Protected	0.950				0.960			0.999		0.950		
Satd. Flow (prot)	1805	1801	0	0	1737	1538	0	3435	0	1736	1820	0
Flt Permitted	0.692				0.744			0.949		0.327		
Satd. Flow (perm)	1315	1801	0	0	1346	1538	0	3263	0	597	1820	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8				586		26			3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		145			443			596			735	
Travel Time (s)		3.3			10.1			13.5			16.7	
Peak Hour Factor	0.50	0.50	0.50	0.91	0.91	0.91	0.81	0.81	0.81	0.93	0.93	0.93
Growth Factor	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%
Heavy Vehicles (%)	0%	0%	0%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Adj. Flow (vph)	19	15	8	84	16	586	6	415	62	569	444	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	19	23	0	0	100	586	0	483	0	569	455	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8			5		2		6

Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 Midday PH LOS w LT Arrow Lag

	↖		→		↘		↙		←		↖		↗		↑		↘		↓		↙			
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR												
Permitted Phases	4				8				8		2				6									
Detector Phase	4	4			8	8	8	5	2			1	6											
Switch Phase																								
Minimum Initial (s)	6.0	6.0			6.0	6.0	6.0	4.0	4.0			6.0	4.0											
Minimum Split (s)	18.0	18.0			18.0	18.0	18.0	8.0	20.0			10.0	10.0											
Total Split (s)	18.0	18.0			18.0	18.0	18.0	8.0	20.0			22.0	34.0											
Total Split (%)	30.0%	30.0%			30.0%	30.0%	30.0%	13.3%	33.3%			36.7%	56.7%											
Maximum Green (s)	14.0	14.0			14.0	14.0	14.0	4.0	16.0			18.0	30.0											
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5	3.5	3.5			3.5	3.5											
All-Red Time (s)	0.5	0.5			0.5	0.5	0.5	0.5	0.5			0.5	0.5											
Lost Time Adjust (s)	0.0	0.0					0.0	0.0			0.0	0.0												
Total Lost Time (s)	4.0	4.0					4.0	4.0			4.0	4.0												
Lead/Lag							Lag	Lag							Lead	Lead								
Lead-Lag Optimize?							Yes	Yes							Yes	Yes								
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			3.0	3.0											
Recall Mode	None	None			None	None	None	None	Max			None	Max											
Walk Time (s)	5.0	5.0			5.0	5.0	5.0			5.0			5.0											
Flash Dont Walk (s)	11.0	11.0			11.0	11.0	11.0			11.0			11.0											
Pedestrian Calls (#/hr)	0	0			0	0	0			0			0											
Act Effect Green (s)	10.6	10.6					10.6	10.6			16.2	36.1	36.1											
Actuated g/C Ratio	0.19	0.19					0.19	0.19			0.30	0.66	0.66											
v/c Ratio	0.08	0.07					0.39	0.76			0.49	0.79	0.38											
Control Delay	19.0	15.2					24.3	9.8			18.3	16.6	5.8											
Queue Delay	0.0	0.0					0.0	0.0			0.0	0.0	0.0											
Total Delay	19.0	15.2					24.3	9.8			18.3	16.6	5.8											
LOS	B	B					C	A			B	B	A											
Approach Delay	16.9						11.9				18.3										11.8			
Approach LOS	B						B				B										B			

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 54.8
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 13.3
 Intersection Capacity Utilization 62.1%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 3: Route 53 & Plaza/Route 139



Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 PM Peak Hour LOS w Lag LT Arrow



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	5	11	139	8	595	7	267	59	585	683	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	75		0	0		0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.895				0.850		0.973			0.997	
Flt Protected	0.950				0.955			0.999		0.950		
Satd. Flow (prot)	1597	1505	0	0	1779	1583	0	3474	0	1787	1876	0
Flt Permitted	0.616				0.716			0.938		0.404		
Satd. Flow (perm)	1036	1505	0	0	1334	1583	0	3262	0	760	1876	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21				672		42			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		145			443			596			735	
Travel Time (s)		3.3			10.1			13.5			16.7	
Peak Hour Factor	0.56	0.56	0.56	0.93	0.93	0.93	0.97	0.97	0.97	0.96	0.96	0.96
Growth Factor	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%
Heavy Vehicles (%)	13%	13%	13%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	13	9	21	157	9	672	8	289	64	640	747	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	30	0	0	166	672	0	361	0	640	760	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	

Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 PM Peak Hour LOS w Lag LT Arrow

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	4.0	4.0		6.0	4.0	
Minimum Split (s)	18.0	18.0		18.0	18.0	18.0	8.0	20.0		10.0	10.0	
Total Split (s)	18.0	18.0		18.0	18.0	18.0	8.0	20.0		22.0	34.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	13.3%	33.3%		36.7%	56.7%	
Maximum Green (s)	14.0	14.0		14.0	14.0	14.0	4.0	16.0		18.0	30.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Max		None	Max	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	
Act Effect Green (s)	12.0	12.0			12.0	12.0		16.0		37.8	37.8	
Actuated g/C Ratio	0.21	0.21			0.21	0.21		0.28		0.65	0.65	
v/c Ratio	0.06	0.09			0.60	0.78		0.39		0.79	0.62	
Control Delay	18.9	11.4			30.4	9.8		16.9		15.5	9.1	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	18.9	11.4			30.4	9.8		16.9		15.5	9.1	
LOS	B	B			C	A		B		B	A	
Approach Delay		13.7			13.9			16.9			12.1	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 57.9
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 13.3
 Intersection LOS: B
 Intersection Capacity Utilization 73.6%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 3: Route 53 & Plaza/Route 139



Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 Saturday Peak Hour LOS w LT Arrow Lag



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	11	4	87	19	514	7	414	74	540	356	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	75		0	0		0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.962				0.850		0.978			0.991	
Flt Protected	0.950				0.960			0.999		0.950		
Satd. Flow (prot)	1805	1828	0	0	1788	1583	0	3492	0	1787	1864	0
Flt Permitted	0.677				0.750			0.948		0.281		
Satd. Flow (perm)	1286	1828	0	0	1397	1583	0	3314	0	529	1864	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				600		33			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		145			443			596			735	
Travel Time (s)		3.3			10.1			13.5			16.7	
Peak Hour Factor	0.78	0.78	0.78	0.90	0.90	0.90	0.95	0.95	0.95	0.94	0.94	0.94
Growth Factor	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	22	15	5	102	22	600	8	458	82	603	398	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	20	0	0	124	600	0	548	0	603	424	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	

Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

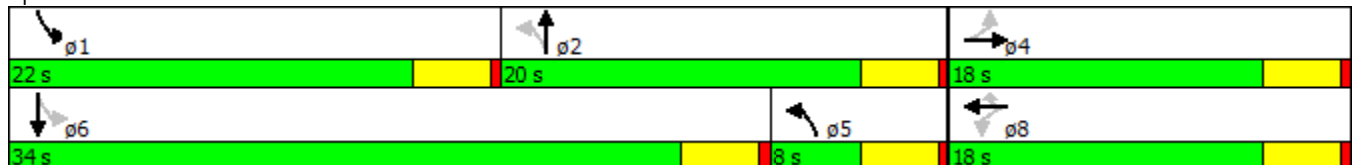
Route 53 at Route 139
Estimated 2017 Saturday Peak Hour LOS w LT Arrow Lag

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	4.0	4.0		6.0	4.0	
Minimum Split (s)	18.0	18.0		18.0	18.0	18.0	8.0	20.0		10.0	10.0	
Total Split (s)	18.0	18.0		18.0	18.0	18.0	8.0	20.0		22.0	34.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	13.3%	33.3%		36.7%	56.7%	
Maximum Green (s)	14.0	14.0		14.0	14.0	14.0	4.0	16.0		18.0	30.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Max		None	Max	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	
Act Effect Green (s)	10.9	10.9			10.9	10.9		16.1		36.7	36.7	
Actuated g/C Ratio	0.20	0.20			0.20	0.20		0.29		0.66	0.66	
v/c Ratio	0.09	0.06			0.46	0.76		0.56		0.84	0.34	
Control Delay	19.2	16.1			25.8	9.4		19.3		21.3	5.5	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	19.2	16.1			25.8	9.4		19.3		21.3	5.5	
LOS	B	B			C	A		B		C	A	
Approach Delay		17.7			12.2			19.3			14.8	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 55.6
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 15.1
 Intersection LOS: B
 Intersection Capacity Utilization 68.9%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 3: Route 53 & Plaza/Route 139



Appendix E
Estimated 2017 Levels of Service –
Exclusive Northbound LT Lane and Arrow

Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 AM Peak Hour LOS w LT Arrow



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	0	35	11	408	5	570	40	426	197	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	75		0	0		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Fr _t						0.850		0.990			0.998	
Fl _t Protected	0.950				0.963		0.950			0.950		
Satd. Flow (prot)	1805	1900	0	0	1726	1524	1752	3470	0	1736	1823	0
Fl _t Permitted	0.724				0.792		0.950			0.245		
Satd. Flow (perm)	1376	1900	0	0	1420	1524	1752	3470	0	448	1823	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						451		12				2
Link Speed (mph)		30			30			30				30
Link Distance (ft)		145			443			596				735
Travel Time (s)		3.3			10.1			13.5				16.7
Peak Hour Factor	0.25	0.25	0.25	0.95	0.95	0.95	0.90	0.90	0.90	0.91	0.91	0.91
Growth Factor	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%
Heavy Vehicles (%)	0%	0%	0%	6%	6%	6%	3%	3%	3%	4%	4%	4%
Adj. Flow (vph)	4	4	0	39	12	451	6	665	47	492	227	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	4	0	0	51	451	6	712	0	492	230	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases		4			8			5		2		1
												6

Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 AM Peak Hour LOS w LT Arrow

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		8			8		6				
Detector Phase	4	4	8			8	8	5	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0			6.0	6.0	4.0	4.0	6.0	4.0	
Minimum Split (s)	18.0	18.0	18.0			18.0	18.0	8.0	20.0	10.0	10.0	
Total Split (s)	18.0	18.0	18.0			18.0	18.0	8.0	22.0	20.0	34.0	
Total Split (%)	30.0%	30.0%	30.0%			30.0%	30.0%	13.3%	36.7%	33.3%	56.7%	
Maximum Green (s)	14.0	14.0	14.0			14.0	14.0	4.0	18.0	16.0	30.0	
Yellow Time (s)	3.5	3.5	3.5			3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5			0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0				4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lag	Lead		Lag	
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None			None	None	None	Max	None	Max	
Walk Time (s)	5.0	5.0	5.0			5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0			11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0			0	0	0	0	0	0	
Act Effect Green (s)	8.8	8.8	8.8			8.8	8.8	4.0	18.2	36.1	34.7	
Actuated g/C Ratio	0.17	0.17	0.17			0.17	0.17	0.08	0.34	0.68	0.65	
v/c Ratio	0.02	0.01	0.22			0.72	0.05	0.59	0.77	0.19		
Control Delay	19.0	18.0	21.6			9.8	26.2	17.7	17.2	5.5		
Queue Delay	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	19.0	18.0	21.6			9.8	26.2	17.7	17.2	5.5		
LOS	B	B	C			A	C	B	B	A		
Approach Delay	18.5		11.0			17.8		13.4				
Approach LOS	B		B			B		B				

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 53
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 14.4
 Intersection LOS: B
 Intersection Capacity Utilization 62.0%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 3: Route 53 & Plaza/Route 139



Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 Midday PH LOS w LT Arrow



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	7	4	73	14	508	5	320	48	504	393	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	75		0	0		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.948				0.850		0.981			0.996	
Flt Protected	0.950				0.960		0.950			0.950		
Satd. Flow (prot)	1805	1801	0	0	1737	1538	1752	3438	0	1736	1820	0
Flt Permitted	0.692				0.744		0.950			0.355		
Satd. Flow (perm)	1315	1801	0	0	1346	1538	1752	3438	0	649	1820	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8				566		27			3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		145			443			596			735	
Travel Time (s)		3.3			10.1			13.5			16.7	
Peak Hour Factor	0.50	0.50	0.50	0.91	0.91	0.91	0.81	0.81	0.81	0.93	0.93	0.93
Growth Factor	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%
Heavy Vehicles (%)	0%	0%	0%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Adj. Flow (vph)	19	15	8	84	16	586	6	415	62	569	444	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	19	23	0	0	100	586	6	477	0	569	455	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	

Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

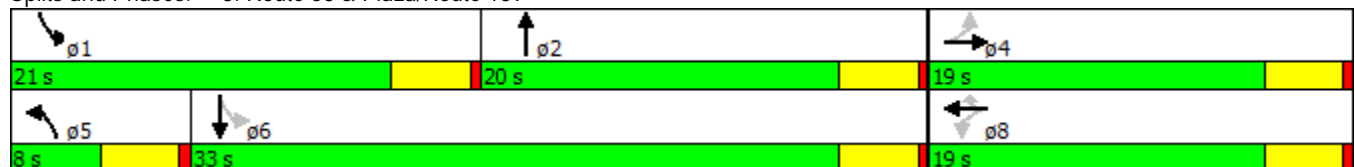
Route 53 at Route 139
Estimated 2017 Midday PH LOS w LT Arrow

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8				6		
Detector Phase	4	4		8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	4.0	4.0		6.0	4.0	
Minimum Split (s)	18.0	18.0		18.0	18.0	18.0	8.0	20.0		10.0	10.0	
Total Split (s)	19.0	19.0		19.0	19.0	19.0	8.0	20.0		21.0	33.0	
Total Split (%)	31.7%	31.7%		31.7%	31.7%	31.7%	13.3%	33.3%		35.0%	55.0%	
Maximum Green (s)	15.0	15.0		15.0	15.0	15.0	4.0	16.0		17.0	29.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Max		None	Max	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	
Act Effct Green (s)	10.9	10.9			10.9	10.9	4.1	16.2		35.1	33.7	
Actuated g/C Ratio	0.20	0.20			0.20	0.20	0.08	0.30		0.65	0.62	
v/c Ratio	0.07	0.06			0.37	0.77	0.05	0.45		0.79	0.40	
Control Delay	18.2	14.5			23.1	10.5	26.8	17.5		16.7	8.0	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	18.2	14.5			23.1	10.5	26.8	17.5		16.7	8.0	
LOS	B	B			C	B	C	B		B	A	
Approach Delay		16.2			12.4			17.6			12.8	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 54.1
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 13.8
 Intersection LOS: B
 Intersection Capacity Utilization 61.9%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 3: Route 53 & Plaza/Route 139



Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 PM Peak Hour LOS w LT Arrow



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	5	11	139	8	595	7	267	59	585	683	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	75		0	0		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.895				0.850		0.973			0.997	
Flt Protected	0.950				0.955		0.950			0.950		
Satd. Flow (prot)	1597	1505	0	0	1779	1583	1787	3478	0	1787	1876	0
Flt Permitted	0.609				0.716		0.950			0.439		
Satd. Flow (perm)	1024	1505	0	0	1334	1583	1787	3478	0	826	1876	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21				621		44				2
Link Speed (mph)		30			30			30				30
Link Distance (ft)		145			443			596				735
Travel Time (s)		3.3			10.1			13.5				16.7
Peak Hour Factor	0.56	0.56	0.56	0.93	0.93	0.93	0.97	0.97	0.97	0.96	0.96	0.96
Growth Factor	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%
Heavy Vehicles (%)	13%	13%	13%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	13	9	21	157	9	672	8	289	64	640	747	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	30	0	0	166	672	8	353	0	640	760	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	

Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 PM Peak Hour LOS w LT Arrow

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8				6		
Detector Phase	4	4		8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	4.0	4.0		6.0	4.0	
Minimum Split (s)	18.0	18.0		18.0	18.0	18.0	8.0	20.0		10.0	10.0	
Total Split (s)	19.0	19.0		19.0	19.0	19.0	8.0	21.0		20.0	33.0	
Total Split (%)	31.7%	31.7%		31.7%	31.7%	31.7%	13.3%	35.0%		33.3%	55.0%	
Maximum Green (s)	15.0	15.0		15.0	15.0	15.0	4.0	17.0		16.0	29.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Max		None	Max	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	
Act Effct Green (s)	12.5	12.5			12.5	12.5	4.0	17.1		36.2	34.7	
Actuated g/C Ratio	0.22	0.22			0.22	0.22	0.07	0.30		0.64	0.61	
v/c Ratio	0.06	0.09			0.56	0.81	0.06	0.33		0.82	0.66	
Control Delay	18.0	10.9			28.0	12.3	27.5	15.3		18.0	13.4	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	18.0	10.9			28.0	12.3	27.5	15.3		18.0	13.4	
LOS	B	B			C	B	C	B		B	B	
Approach Delay		13.0			15.4			15.6			15.5	
Approach LOS		B			B			B			B	

Intersection Summary























Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 56.8
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 15.5
 Intersection LOS: B
 Intersection Capacity Utilization 69.0%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 3: Route 53 & Plaza/Route 139



Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 Saturday Peak Hour LOS w LT Arrow

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	11	4	87	19	514	7	414	74	540	356	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	75		0	0		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.962				0.850		0.977			0.991	
Flt Protected	0.950				0.960		0.950			0.950		
Satd. Flow (prot)	1805	1828	0	0	1788	1583	1787	3492	0	1787	1864	0
Flt Permitted	0.677				0.750		0.950			0.312		
Satd. Flow (perm)	1286	1828	0	0	1397	1583	1787	3492	0	587	1864	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				569		33			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		145			443			596			735	
Travel Time (s)		3.3			10.1			13.5			16.7	
Peak Hour Factor	0.78	0.78	0.78	0.90	0.90	0.90	0.95	0.95	0.95	0.94	0.94	0.94
Growth Factor	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	22	15	5	102	22	600	8	458	82	603	398	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	20	0	0	124	600	8	540	0	603	424	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	

Lanes, Volumes, Timings
3: Route 53 & Plaza/Route 139

Route 53 at Route 139
Estimated 2017 Saturday Peak Hour LOS w LT Arrow

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8				6		
Detector Phase	4	4		8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	4.0	4.0		6.0	4.0	
Minimum Split (s)	18.0	18.0		18.0	18.0	18.0	8.0	20.0		10.0	10.0	
Total Split (s)	18.0	18.0		18.0	18.0	18.0	8.0	20.0		22.0	34.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	13.3%	33.3%		36.7%	56.7%	
Maximum Green (s)	14.0	14.0		14.0	14.0	14.0	4.0	16.0		18.0	30.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Max		None	Max	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	
Act Effct Green (s)	10.8	10.8			10.8	10.8	4.1	16.2		36.1	34.6	
Actuated g/C Ratio	0.20	0.20			0.20	0.20	0.07	0.29		0.66	0.63	
v/c Ratio	0.09	0.05			0.45	0.78	0.06	0.51		0.83	0.36	
Control Delay	19.2	16.2			25.6	11.4	27.2	18.3		19.5	7.2	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	19.2	16.2			25.6	11.4	27.2	18.3		19.5	7.2	
LOS	B	B			C	B	C	B		B	A	
Approach Delay		17.8			13.8			18.5			14.4	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 55
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 15.3
 Intersection LOS: B
 Intersection Capacity Utilization 68.7%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 3: Route 53 & Plaza/Route 139



Appendix F
Intersection Crash History and Crash Rate

Crash History for Route 53 at Route 139, Pembroke (2010-2012)

Crashes Highlighted In Yellow Indicate Crashes Involving Vehicles Turning Left From Route 53 Into Plaza

Date	Day of Week	Time	# Vehicles	Injury	Manner	Description	Other Info
January 10, 2010	Sunday	18:00	2	No	n/a	n/a	
January 22, 2010	Friday	9:52	2	Yes	Rear-End	139W-->53N	Wide Right From 139 to 53
January 26, 2010	Tuesday	13:15	n/a	No	n/a	n/a	
February 25, 2010	Thursday	16:10	1	No	Run-Off Road	n/a	
March 18, 2010	Thursday	7:20	n/a	No	n/a	n/a	
April 27, 2010	Tuesday	12:20	2	No	Rear-End	139W-->53N	Wide Right From 139 to 53
May 11, 2010	Tuesday	8:55	2	No	Rear-End	139W-->53N	Wide Right From 139 to 53
October 4, 2010	Monday	13:13	n/a	No	n/a	n/a	
October 19, 2010	Tuesday	9:00	2	No	Rear-End	139W-->53N	Wide Right From 139 to 53
November 2, 2010	Tuesday	21:17	n/a	No	n/a	n/a	Minor MVA
November 24, 2010	Wednesday	11:03	2	Yes	Head-On	53N<-->53S	V1 headed south struck V2 headed north, lost control and hit building
December 5, 2010	Sunday	11:26	2	No	Rear-End	139W-->53N	Wide Right From 139 to 53
December 20, 2010	Monday	16:00	n/a	No	n/a	n/a	Minor MVA
January 13, 2011	Thursday	8:33	2	No	Rear-End	139W-->53N	Wide Right From 139 to 53
January 19, 2011	Wednesday	22:20	2	No	Rear-End	n/a	Minor MVA; paperwork exchanged
March 2, 2011	Wednesday	13:22	2	No	Angled	53N<-->53S	V1 turned left from 53N into Pembroke Pointe, into oncoming traffic
March 18, 2011	Friday	12:19	2	Yes	Rear-End	139W-->53N	Wide Right From 139 to 53
May 6, 2011	Friday	11:02	n/a	No	n/a	n/a	Minor MVA; paperwork exchanged
June 24, 2011	Friday	14:30	2	No	Rear-End	139W-->53N	Wide Right From 139 to 53
August 31, 2011	Wednesday	7:08	2	No	Head-On	53N<-->53S	V1 turning from 53S onto 139E struck V2 headed north
September 1, 2011	Thursday	17:35	n/a	No	n/a	n/a	Minor MVA; paperwork exchanged
September 16, 2011	Friday	14:12	2	No	Head-On	Plaza<-->139W	V1 exited Plaza, headed straight onto 139E. Struck V2 headed from 139W onto 53S
September 21, 2011	Wednesday	7:46	2	Yes	Rear-End	139W-->53N	Wide Right From 139 to 53
October 16, 2011	Sunday	10:45	3	Yes	Rear-End	139W-->53N	Wide Right From 139 to 53
November 20, 2011	Sunday	9:04	2	No	Head-On	53N<-->53S	V1 was traveling north on 53; V2 was trying to turn left from 53S onto 139 and struck V1
November 23, 2011	Wednesday	7:05	2	No	Rear-End	139W-->53N	Wide Right From 139 to 53
December 21, 2011	Wednesday	17:18	2	No	n/a	n/a	Minor MVA
December 25, 2011	Sunday	16:19	2	No	Head-On	53N<-->53S	V1 turning from 53S onto 139E struck V2 headed north
December 28, 2011	Wednesday	13:54	2	No	Rear-End	139W-->53N	Wide Right From 139 to 53
February 14, 2012	Tuesday	15:30	n/a	No	n/a	n/a	Minor MVA; paperwork exchanged
February 19, 2012	Sunday	9:48	2	No	Head-On	53N<-->53S	V1 turning from 53S onto 139E struck V2 headed north
March 16, 2012	Friday	12:41	2	No	Rear-End	139W-->53N	Wide Right From 139 to 53
March 31, 2012	Saturday	16:58	2	No	Head-On	53N<-->53S	V1 turned left from 53N into Pembroke Pointe, into oncoming traffic
April 4, 2012	Wednesday	7:10	n/a	No	n/a	n/a	Minor MVA; paperwork exchanged
June 18, 2012	Monday	14:53	n/a	No	n/a	n/a	Minor MVA; paperwork exchanged
June 30, 2012	Saturday	13:05	n/a	No	n/a	n/a	Minor MVA; paperwork exchanged
July 12, 2012	Thursday	8:49	2	Yes	Rear-End	139W-->53N	Wide Right From 139 to 53
August 2, 2012	Thursday	12:50	3	Yes	Rear-End	53N	Rear-End Collision at red-light between 3 vehicles headed NB on 53
August 18, 2012	Saturday	10:15	2	No	Rear-End	139W-->53N	Wide Right From 139 to 53
September 10, 2012	Monday	9:26	2	Yes	Rear-End	139W-->53N	Wide Right From 139 to 53
September 14, 2012	Friday	19:59	2	No	Angled	139W-->53N	V1 entered 53N from 139W without yielding to ROW; collided with V2 on 53N
October 8, 2012	Monday	8:49	2	No	Rear-End	139W-->53N	Wide Right From 139 to 53
October 11, 2012	Thursday	19:45	n/a	No	n/a	n/a	Minor MVA; paperwork exchanged
October 20, 2012	Saturday	19:45	4	Yes	Rear-End	53N	Rear-End Collision at red-light between 4 vehicles headed NB on 53. Fire and damage to roadway

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Pembroke COUNTY : DA1 DATE : 11/28/2012

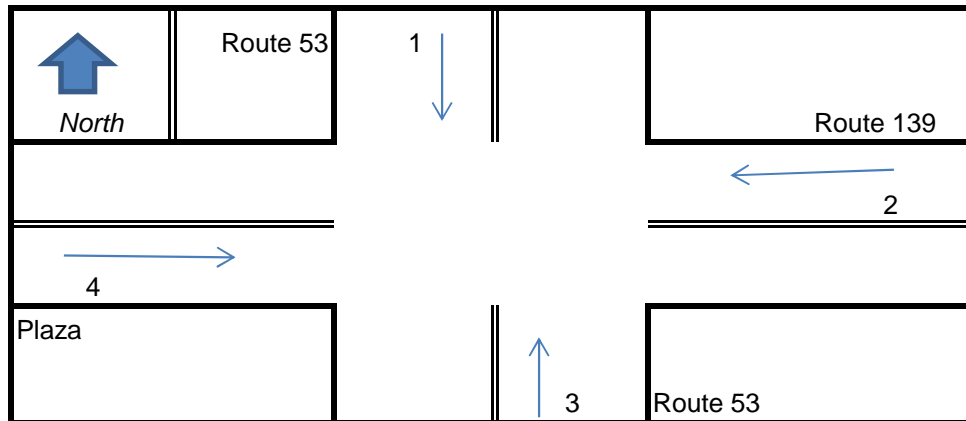
DISTRICT : 5 UNSIGNALIZED : X SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street / Columbia Road (Route 53)

MINOR STREET(S) : Schoosett Street (Route 139) / Pembroke Pointe Plaza

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	SB	WB	NB	EB		
PEAK HOURLY VOLUMES (AM/PM) :	1,280	742	333	23		2,378

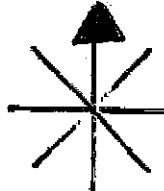
" K " FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

CRASH RATE CALCULATION : RATE = $\frac{(A * 1,000,000)}{(V * 365)}$


Comments : _____

Project Title & Date : Route 53 at Route 139 Traffic Signal Safety Study

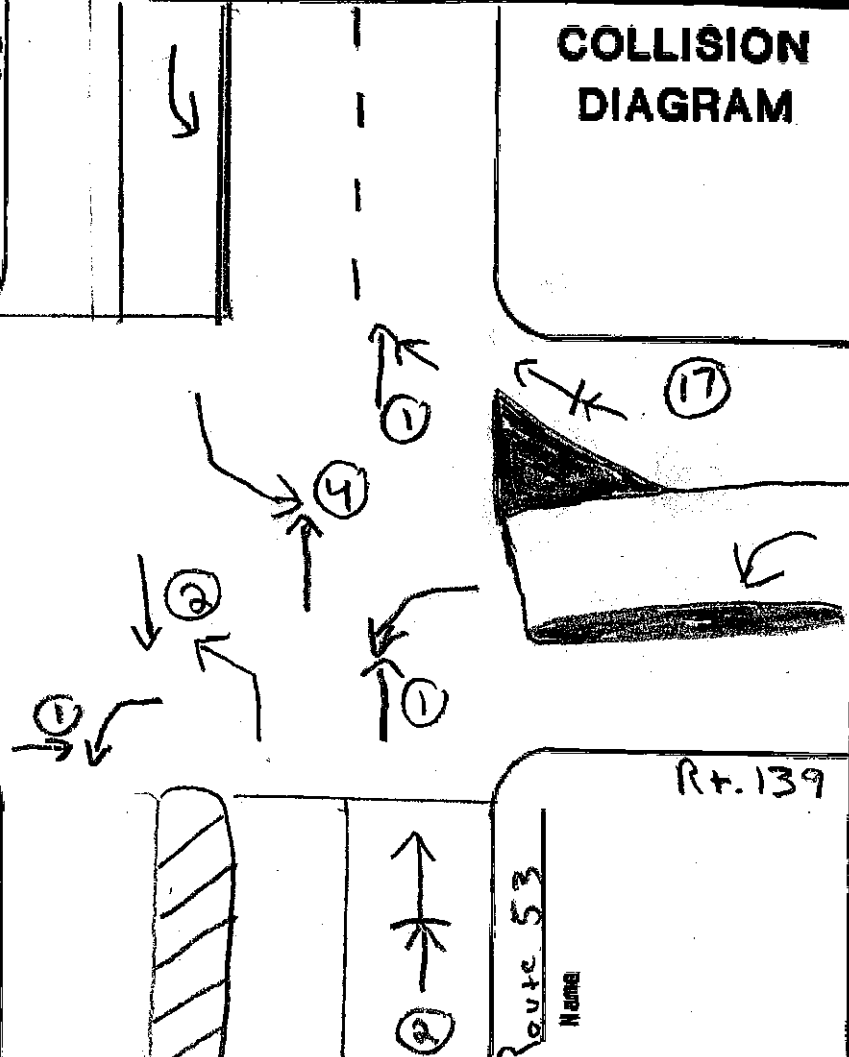


Indicate North
by Arrow

Rt. 53



COLLISION DIAGRAM



Plaza

Name

16 crashes
Uncategorized

Route 53

Name

Rt. 139

SYMBOLS	TYPES OF COLLISIONS	SHOW FOR EACH ACCIDENT
<ul style="list-style-type: none"> Moving Vehicle Backing Vehicle Non-Involved Vehicle Pedestrian Parked Vehicle Fixed Object 	<ul style="list-style-type: none"> Rear-End Head On Side Swipe Out of Control Left Turn Right Angle 	<ol style="list-style-type: none"> 1. Approximate location of accident 2. Type of collision and vehicles involved. 3. Time, Day, Date 4. Any other pertinent factors mentioned on the report (i.e. presence of oil on road, ruts, etc.)

INTERSECTION Route 53 and Route 139

PERIOD FROM: 1/2010 to 10/2012

Appendix G
Automated Traffic Recorder (ATR) Data

Massachusetts Highway Department
 Statewide Traffic Data Collection
 FACTORS = *90 (N/A)*
 WEEKLY SUMMARY FOR LANE
 Starting: 6/15/2009

ADT = *21,400*
 Page: 3

14 U3 6

051

Site Reference: 000000000765
 Site ID: 110000704901
 Location: RTES 53 & 139 AT HANOVER T.L.
 Direction: ROAD TOTAL

File: CLC7049.prn
 City: PEMBROKE
 Folder Name: CLASS N&S

TIME	MON 15	TUE 16	WED 17	THU 18	FRI	WKDAY AVG	SAT	SUN	WEEK AVG	TOTAL
01:00	90	119	138	130		119			119	477
02:00	57	59	56	72		61			61	244
03:00	28	36	43	41		37			37	148
04:00	48	54	55	49		51			51	206
05:00	124	115	102	115		114			114	456
06:00	408	395	402	405		402			402	1610
07:00	914	948	926	889		919			919	3677
08:00	1337	1418	1408	1399		1390			1390	5562
09:00	1445	1494	1435	1401		1443			1443	5775
10:00	1230	1261	1381	1262		1283			1283	5134
11:00	1345	1355	1486			1395			1395	4186
12:00	1515	1485	1523			1507			1507	4523
13:00	1514	1594	1601			1569			1569	4709
14:00	1542	1588	1578			1569			1569	4708
15:00	1669	1776	1726			1723			1723	5171
16:00	1755	1942	1821			1839			1839	5518
17:00	1792	1915	1873			1860			1860	5580
18:00	1832	1924	1974			1910			1910	5730
19:00	1405	1359	1561			1441			1441	4325
20:00	952	1084	1219			1085			1085	3255
21:00	797	829	973			866			866	2599
22:00	559	614	681			618			618	1854
23:00	332	356	438			375			375	1126
24:00	221	228	228			225			225	677

TOTALS	22911	23948	24628	5763	0	<u>23801</u>	0	0	23801	77250

AVG WKDY	96.2	100.6	103.4	24.2						
AVG WEEK	96.2	100.6	103.4	24.2						

M Times	12:00	09:00	12:00	09:00		12:00			12:00	
M Peaks	1515	1494	1523	1401		1507			1507	

'M Times	18:00	16:00	18:00			18:00			18:00	
'M Peaks	1832	1942	1974			1910			1910	

D%	60	55	<u>55</u>	60						
K%	8	8	<u>8</u>	24						

7049 C

06-23900

Massachusetts Highway Department
 Statewide Traffic Data Collection
 FACTORS = ADT =
 WEEKLY SUMMARY FOR LANE 1
 Starting: 6/15/2009

Site Reference: 000000000765
 Site ID: 110000704901
 Location: RTES 53 & 139 AT HANOVER T.L.
 Direction: NORTH

File: CLC7049.prn
 City: PEMBROKE
 Folder Name: CLASS N&S

TIME	MON 15	TUE 16	WED 17	THU 18	FRI	WKDAY AVG	SAT	SUN	WEEK AVG	TOTAL
01:00	23	45	52	44		41			41	164
02:00	19	17	21	26		20			20	83
03:00	10	19	20	18		16			16	67
04:00	23	24	21	25		23			23	93
05:00	75	69	70	75		72			72	289
06:00	302	296	279	301		294			294	1178
07:00	591	588	601	567		586			586	2347
08:00	848	895	874	901		879			879	3518
09:00	855	876	806	808		836			836	3345
10:00	665	672	720	695		688			688	2752
11:00	683	691	713			695			695	2087
12:00	763	753	762			759			759	2278
13:00	757	765	777			766			766	2299
14:00	795	764	772			777			777	2331
15:00	785	856	842			827			827	2483
16:00	822	903	845			856			856	2570
17:00	804	847	879			843			843	2530
18:00	757	828	857			814			814	2442
19:00	632	603	687			640			640	1922
20:00	444	417	547			469			469	1408
21:00	320	373	457			383			383	1150
22:00	242	254	294			263			263	790
23:00	132	141	170			147			147	443
24:00	81	79	78			79			79	238
TOTALS	11428	11775	12144	3460	0	11773	0	0	11773	38807
Avg WKDY	97	100	103.1	29.3						
Avg WEEK	97	100	103.1	29.3						
M Times	09:00	08:00	08:00	08:00		08:00			08:00	
M Peaks	855	895	874	901		879			879	
M Times	16:00	16:00	17:00			16:00			16:00	
M Peaks	822	903	879			856			856	

Massachusetts Highway Department
 Statewide Traffic Data Collection
 FACTORS = WEEKLY SUMMARY FOR LANE 2 ADT =
 Starting: 6/15/2009

Site Reference: 00000000765
 Site ID: 110000704901
 Location: RTES 53 & 139 AT HANOVER T.L.
 Direction: SOUTH

File: CLC7049.prn
 City: PEMBROKE
 Folder Name: CLASS N&S

TIME	MON 15	TUE 16	WED 17	THU 18	FRI	WKDAY AVG	SAT	SUN	WEEK AVG	TOTAL
01:00	67	74	86	86		78			78	313
02:00	38	42	35	46		40			40	161
03:00	18	17	23	23		20			20	81
04:00	25	30	34	24		28			28	113
05:00	49	46	32	40		41			41	167
06:00	106	99	123	104		108			108	432
07:00	323	360	325	322		332			332	1330
08:00	489	523	534	498		511			511	2044
09:00	590	618	629	593		607			607	2430
10:00	565	589	661	567		595			595	2382
11:00	662	664	773			699			699	2099
12:00	752	732	761			748			748	2245
13:00	757	829	824			803			803	2410
14:00	747	824	806			792			792	2377
15:00	884	920	884			896			896	2688
16:00	933	1039	976			982			982	2948
17:00	988	1068	994			1016			1016	3050
18:00	1075	1096	1117			1096			1096	3288
19:00	773	756	874			801			801	2403
20:00	508	667	672			615			615	1847
21:00	477	456	516			483			483	1449
22:00	317	360	387			354			354	1064
23:00	200	215	268			227			227	683
24:00	140	149	150			146			146	439
<hr/>										
TOTALS	11483	12173	12484	2303	0	12018	0	0	12018	38443
<hr/>										
AVG WKDY	95.5	101.2	103.8	19.1						
AVG WEEK	95.5	101.2	103.8	19.1						
<hr/>										
AM Times	12:00	12:00	11:00	09:00		12:00			12:00	
AM Peaks	752	732	773	593		748			748	
<hr/>										
PM Times	18:00	18:00	18:00			18:00			18:00	
PM Peaks	1075	1096	1117			1096			1096	

Old Colony Planning Council
70 School Street
Brockton, MA 02301
(508) 583-1833
www.ocpcrpa.org

Community: Pembroke
 Com#_UR/FC: 231_U5
 Recorder #: Jamar #12
 Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 28-Mar-12
 Date End: 29-Mar-12
 Washington St (53), north of Pleasant St

Start Time	28-Mar-12		SB		NB		Combined		29-Mar-		SB		NB		Combined	
	Wed		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Thu		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00			18	124	4	131	22	255			20	137	5	113	25	250
12:15			12	123	5	118	17	241			14	125	2	109	16	234
12:30			14	131	5	119	19	250			10	130	1	114	11	244
12:45			5	108	3	108	8	216			7	123	3	135	10	258
01:00			10	131	4	93	14	224			9	154	5	103	14	257
01:15			2	115	2	96	4	211			6	125	1	123	7	248
01:30			5	117	2	118	7	235			6	130	4	107	10	237
01:45			0	117	1	113	1	230			1	145	2	138	3	283
02:00			2	144	2	120	4	264			3	144	1	109	4	253
02:15			2	159	1	119	3	278			4	149	2	109	6	258
02:30			3	148	1	115	4	263			9	168	2	111	11	279
02:45			1	169	0	126	1	295			3	139	1	130	4	269
03:00			4	173	2	130	6	303			1	181	1	129	2	310
03:15			1	196	5	114	6	310			3	189	6	136	9	325
03:30			1	205	2	109	3	314			6	176	7	123	13	299
03:45			1	196	7	138	8	334			3	210	4	126	7	336
04:00			1	189	7	129	8	318			2	209	9	134	11	343
04:15			4	221	11	131	15	352			5	214	13	142	18	356
04:30			3	211	25	117	28	328			2	213	24	129	26	342
04:45			2	205	34	137	36	342			3	211	29	116	32	327
05:00			6	249	41	110	47	359			7	233	33	113	40	346
05:15			7	253	46	117	53	370			12	256	52	113	64	369
05:30			5	244	68	112	73	356			9	222	85	104	94	326
05:45			13	195	102	96	115	291			11	215	91	92	102	307
06:00			17	198	84	113	101	311			10	167	90	103	100	270
06:15			23	200	109	102	132	302			23	184	97	103	120	287
06:30			43	194	122	88	165	282			35	186	131	86	166	272
06:45			46	144	149	86	195	230			52	160	162	91	214	251
07:00			57	150	148	75	205	225			53	144	142	90	195	234
07:15			74	133	169	70	243	203			79	151	178	87	257	238
07:30			70	139	170	67	240	206			77	106	195	70	272	176
07:45			80	93	225	59	305	152			75	124	202	53	277	177
08:00			78	84	182	40	260	124			75	126	171	46	246	172
08:15			83	121	176	53	259	174			73	104	176	58	249	162
08:30			74	109	180	37	254	146			94	87	182	37	276	124
08:45			104	93	173	25	277	118			90	98	188	37	278	135
09:00			77	82	156	30	233	112			69	80	144	43	213	123
09:15			73	69	122	32	195	101			66	77	149	36	215	113
09:30			70	68	124	36	194	104			69	61	146	21	215	82
09:45			98	71	114	34	212	105			95	59	106	31	201	90
10:00			89	48	129	28	218	76			92	66	125	17	217	83
10:15			97	39	129	15	226	54			96	40	113	19	209	59
10:30			131	42	96	16	227	58			97	46	130	12	227	58
10:45			86	31	114	19	200	50			100	35	129	14	229	49
11:00			97	27	122	14	219	41			111	25	107	12	218	37
11:15			104	17	132	9	236	26			103	21	123	10	226	31
11:30			113	17	116	7	229	24			117	23	125	11	242	34
11:45			125	22	123	5	248	27			140	22	121	5	261	27
Total			2031	6314	3744	3876	5775	10190			2047	6390	3815	3950	5862	10340
Day Total			8345		7620		15965				8437		7765		16202	
% Total			12.7%	39.5%	23.5%	24.3%					12.6%	39.4%	23.5%	24.4%		
Peak			11:00	04:45	07:45	03:45	07:45	04:45			11:00	05:00	07:15	03:45	07:15	04:30
Vol.			439	951	763	515	1078	1427			471	926	746	531	1052	1384
P.H.F.			0.878	0.940	0.848	0.933	0.884	0.964			0.841	0.904	0.923	0.935	0.949	0.938

Old Colony Planning Council
70 School Street
Brockton, MA 02301
(508) 583-1833
www.ocpcrpa.org

Community: Pembroke
 Com#_UR/FC: 231_U5
 Recorder #: Jamar #12
 Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 28-Mar-12
 Date End: 29-Mar-12
 Washington St (53), north of Pleasant St

Start Time	26-Mar-12 Mon	27-Mar-12 Tue	28-Mar-12 Wed	29-Mar-12 Thu	30-Mar-12 Fri	31-Mar-12 Sat	01-Apr-12 Sun	Week Average
12:00 AM	*	*	66	62	*	*	*	64
01:00	*	*	26	34	*	*	*	30
02:00	*	*	12	25	*	*	*	18
03:00	*	*	23	31	*	*	*	27
04:00	*	*	87	87	*	*	*	87
05:00	*	*	288	300	*	*	*	294
06:00	*	*	593	600	*	*	*	596
07:00	*	*	993	1001	*	*	*	997
08:00	*	*	1050	1049	*	*	*	1050
09:00	*	*	834	844	*	*	*	839
10:00	*	*	871	882	*	*	*	876
11:00	*	*	932	947	*	*	*	940
12:00 PM	*	*	962	986	*	*	*	974
01:00	*	*	900	1025	*	*	*	962
02:00	*	*	1100	1059	*	*	*	1080
03:00	*	*	1261	1270	*	*	*	1266
04:00	*	*	1340	1368	*	*	*	1354
05:00	*	*	1376	1348	*	*	*	1362
06:00	*	*	1125	1080	*	*	*	1102
07:00	*	*	786	825	*	*	*	806
08:00	*	*	562	593	*	*	*	578
09:00	*	*	422	408	*	*	*	415
10:00	*	*	238	249	*	*	*	244
11:00	*	*	118	129	*	*	*	124
Total	0	0	15965	16202	0	0	0	16085
Percentage	0.0%	0.0%	99.3%	100.7%	0.0%	0.0%	0.0%	
AM Peak			08:00	08:00				08:00
Vol.			1050	1049				1050
PM Peak			17:00	16:00				17:00
Vol.			1376	1368				1362

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 Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 28-Mar-12
 Date End: 29-Mar-12
 Washington St (53), north of Pleasant St

SB

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total
	15	20	25	30	35	40	45	50	55	60	65	70	75	999	
03/28/1															
2	0	0	0	4	6	9	21	5	1	3	0	0	0	0	49
01:00	0	0	0	2	4	1	6	4	0	0	0	0	0	0	17
02:00	0	0	0	0	1	1	5	1	0	0	0	0	0	0	8
03:00	0	0	0	2	0	3	1	1	0	0	0	0	0	0	7
04:00	0	0	0	2	0	3	3	2	0	0	0	0	0	0	10
05:00	3	0	0	3	6	7	8	4	0	0	0	0	0	0	31
06:00	5	0	1	7	29	32	42	10	3	0	0	0	0	0	129
07:00	17	0	4	26	56	79	70	25	4	0	0	0	0	0	281
08:00	38	2	15	31	74	107	57	15	0	0	0	0	0	0	339
09:00	17	1	4	33	70	98	80	15	0	0	0	0	0	0	318
10:00	27	4	5	30	73	151	93	19	1	0	0	0	0	0	403
11:00	18	0	4	35	94	172	107	7	2	0	0	0	0	0	439
12 PM	30	6	1	52	145	137	96	18	1	0	0	0	0	0	486
13:00	17	0	5	50	112	182	101	13	0	0	0	0	0	0	480
14:00	45	3	7	74	206	197	80	8	0	0	0	0	0	0	620
15:00	51	8	43	107	218	249	84	10	0	0	0	0	0	0	770
16:00	58	11	28	87	259	270	100	13	0	0	0	0	0	0	826
17:00	54	7	33	125	303	306	104	8	1	0	0	0	0	0	941
18:00	27	0	10	65	201	279	129	24	1	0	0	0	0	0	736
19:00	14	0	1	45	133	195	116	11	0	0	0	0	0	0	515
20:00	5	0	3	16	100	160	109	13	1	0	0	0	0	0	407
21:00	0	0	4	21	68	97	78	20	2	0	0	0	0	0	290
22:00	0	0	1	13	23	45	59	17	2	0	0	0	0	0	160
23:00	1	0	1	10	15	10	27	14	5	0	0	0	0	0	83
Total	427	42	170	840	2196	2790	1576	277	24	3	0	0	0	0	8345

Daily

15th Percentile : 26 MPH
 50th Percentile : 35 MPH
 85th Percentile : 41 MPH
 95th Percentile : 45 MPH

Mean Speed(Average) : 34 MPH
 10 MPH Pace Speed : 32-41 MPH
 Number in Pace : 4561
 Percent in Pace : 54.7%
 Number of Vehicles > 40 MPH : 1941
 Percent of Vehicles > 40 MPH : 23.3%

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www.ocpcrpa.org

Community: Pembroke
 Com#_UR/FC: 231_U5
 Recorder #: Jamar #12
 Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 28-Mar-12
 Date End: 29-Mar-12
 Washington St (53), north of Pleasant St

SB

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total
	15	20	25	30	35	40	45	50	55	60	65	70	75	999	
03/29/1															
2	0	0	0	0	12	12	11	11	4	1	0	0	0	0	51
01:00	0	0	0	1	6	6	6	3	0	0	0	0	0	0	22
02:00	0	0	0	1	1	4	11	2	0	0	0	0	0	0	19
03:00	0	0	0	1	3	1	2	4	1	1	0	0	0	0	13
04:00	0	0	0	0	3	1	4	3	1	0	0	0	0	0	12
05:00	1	0	0	5	8	9	10	3	3	0	0	0	0	0	39
06:00	9	0	1	7	15	39	39	9	1	0	0	0	0	0	120
07:00	14	0	5	24	63	85	65	24	4	0	0	0	0	0	284
08:00	31	14	6	40	78	86	62	13	2	0	0	0	0	0	332
09:00	13	0	0	28	62	98	81	14	3	0	0	0	0	0	299
10:00	20	0	4	22	108	99	107	24	0	1	0	0	0	0	385
11:00	22	1	7	46	94	165	119	17	0	0	0	0	0	0	471
12 PM	22	1	4	47	156	156	107	21	1	0	0	0	0	0	515
13:00	31	1	5	64	151	166	121	14	1	0	0	0	0	0	554
14:00	40	0	2	63	144	196	138	17	0	0	0	0	0	0	600
15:00	67	28	15	77	207	256	94	12	0	0	0	0	0	0	756
16:00	36	0	10	134	261	293	106	6	1	0	0	0	0	0	847
17:00	59	19	44	114	282	292	109	7	0	0	0	0	0	0	926
18:00	28	3	3	55	216	271	114	7	0	0	0	0	0	0	697
19:00	15	0	3	30	147	219	98	10	1	2	0	0	0	0	525
20:00	6	1	3	29	99	153	101	22	1	0	0	0	0	0	415
21:00	1	0	0	10	62	83	101	18	2	0	0	0	0	0	277
22:00	4	0	2	13	28	40	75	23	2	0	0	0	0	0	187
23:00	0	0	0	4	17	14	35	15	5	1	0	0	0	0	91
Total	419	68	114	815	2223	2744	1716	299	33	6	0	0	0	0	8437

Daily
 15th Percentile : 27 MPH
 50th Percentile : 35 MPH
 85th Percentile : 42 MPH
 95th Percentile : 45 MPH

 Mean Speed(Average) : 34 MPH
 10 MPH Pace Speed : 32-41 MPH
 Number in Pace : 4568
 Percent in Pace : 54.1%
 Number of Vehicles > 40 MPH : 2086
 Percent of Vehicles > 40 MPH : 24.7%

Grand Total	846	110	284	1655	4419	5534	3292	576	57	9	0	0	0	0	16782
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Overall
 15th Percentile : 26 MPH
 50th Percentile : 35 MPH
 85th Percentile : 41 MPH
 95th Percentile : 45 MPH

 Mean Speed(Average) : 34 MPH
 10 MPH Pace Speed : 32-41 MPH
 Number in Pace : 9129
 Percent in Pace : 54.4%
 Number of Vehicles > 40 MPH : 4027
 Percent of Vehicles > 40 MPH : 24.0%

Old Colony Planning Council
70 School Street
Brockton, MA 02301
(508) 583-1833
www.ocpcrpa.org

Community: Pembroke
 Com#_UR/FC: 231_U5
 Recorder #: Jamar #12
 Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 28-Mar-12
 Date End: 29-Mar-12
 Washington St (53), north of Pleasant St

NB

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total
03/28/1	2	0	0	0	1	4	4	6	2	0	0	0	0	0	17
01:00	0	0	0	3	2	1	2	1	0	0	0	0	0	0	9
02:00	0	0	0	1	0	0	1	2	0	0	0	0	0	0	4
03:00	0	0	0	1	5	2	5	3	0	0	0	0	0	0	16
04:00	0	0	0	4	17	15	27	11	3	0	0	0	0	0	77
05:00	2	0	0	21	42	64	92	30	4	1	1	0	0	0	257
06:00	8	0	4	27	111	170	126	16	2	0	0	0	0	0	464
07:00	13	1	6	72	212	276	117	13	2	0	0	0	0	0	712
08:00	39	0	20	112	254	206	66	13	1	0	0	0	0	0	711
09:00	16	0	3	48	163	175	95	14	2	0	0	0	0	0	516
10:00	24	0	3	43	162	141	84	11	0	0	0	0	0	0	468
11:00	28	0	6	63	151	160	75	10	0	0	0	0	0	0	493
12 PM	30	1	6	42	130	182	76	9	0	0	0	0	0	0	476
13:00	24	1	7	40	135	134	71	8	0	0	0	0	0	0	420
14:00	31	0	0	42	169	181	51	6	0	0	0	0	0	0	480
15:00	38	0	6	64	170	166	42	4	1	0	0	0	0	0	491
16:00	43	1	7	57	181	179	40	6	0	0	0	0	0	0	514
17:00	53	0	1	32	143	140	64	2	0	0	0	0	0	0	435
18:00	26	0	3	38	128	133	55	5	1	0	0	0	0	0	389
19:00	8	0	4	35	92	90	37	4	0	1	0	0	0	0	271
20:00	5	0	6	11	32	60	38	3	0	0	0	0	0	0	155
21:00	2	0	0	9	29	44	39	9	0	0	0	0	0	0	132
22:00	2	0	0	13	20	21	19	2	1	0	0	0	0	0	78
23:00	1	0	0	3	9	4	13	2	1	2	0	0	0	0	35
Total	393	4	82	782	2361	2548	1241	186	18	4	1	0	0	0	7620

Daily

15th Percentile : 27 MPH
 50th Percentile : 35 MPH
 85th Percentile : 41 MPH
 95th Percentile : 44 MPH

Mean Speed(Average) : 34 MPH
 10 MPH Pace Speed : 32-41 MPH
 Number in Pace : 4387
 Percent in Pace : 57.6%
 Number of Vehicles > 40 MPH : 1543
 Percent of Vehicles > 40 MPH : 20.2%

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Community: Pembroke
 Com#_UR/FC: 231_U5
 Recorder #: Jamar #12
 Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 28-Mar-12
 Date End: 29-Mar-12
 Washington St (53), north of Pleasant St

NB

Start Time	15	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	56	60	61	65	66	70	71	75	76	999	Total
03/29/1	2	0	0	1	0	3	2	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
01:00	0	0	0	1	3	0	2	3	1	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	12
02:00	0	0	0	0	0	1	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
03:00	0	0	0	1	3	3	4	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
04:00	0	0	0	1	2	16	17	23	11	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75
05:00	1	0	0	0	12	44	71	94	30	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	261
06:00	7	0	0	2	46	123	171	106	22	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	480
07:00	16	1	0	9	68	249	257	109	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	717
08:00	33	2	0	17	114	241	231	74	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	717
09:00	18	0	0	7	71	179	191	67	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	545
10:00	19	5	0	5	62	158	176	64	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	497
11:00	26	1	0	11	83	142	152	59	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	476
12 PM	25	0	0	6	60	131	182	61	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	471
13:00	34	0	0	4	53	162	157	56	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	471
14:00	38	0	0	2	29	157	166	63	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	459
15:00	45	1	0	12	64	189	151	48	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	514
16:00	52	0	0	8	68	197	147	45	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	521
17:00	58	2	0	2	48	123	126	55	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	422
18:00	32	0	0	3	33	117	148	45	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	383
19:00	18	0	0	0	40	80	113	39	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	300
20:00	6	0	0	8	17	46	58	36	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	178
21:00	1	0	0	2	19	25	44	32	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	131
22:00	3	0	0	1	7	11	23	12	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62
23:00	0	0	0	0	4	8	9	12	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38
Total	432	12	103	906	2405	2599	1116	164	26	1	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	7765

Daily
 15th Percentile : 26 MPH
 50th Percentile : 34 MPH
 85th Percentile : 40 MPH
 95th Percentile : 44 MPH
 Mean Speed(Average) : 33 MPH
 10 MPH Pace Speed : 31-40 MPH
 Number in Pace : 4445
 Percent in Pace : 57.2%
 Number of Vehicles > 40 MPH : 1422
 Percent of Vehicles > 40 MPH : 18.3%

Grand Total	825	16	185	1688	4766	5147	2357	350	44	5	1	1	0	0	0	15385
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Overall
 15th Percentile : 27 MPH
 50th Percentile : 34 MPH
 85th Percentile : 40 MPH
 95th Percentile : 44 MPH
 Mean Speed(Average) : 34 MPH
 10 MPH Pace Speed : 31-40 MPH
 Number in Pace : 8826
 Percent in Pace : 57.4%
 Number of Vehicles > 40 MPH : 2964
 Percent of Vehicles > 40 MPH : 19.3%

Old Colony Planning Council
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Community: Pembroke
 Com#_UR/FC: 231_U5
 Recorder #: Jamar #12
 Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 28-Mar-12
 Date End: 29-Mar-12
 Washington St (53), north of Pleasant St

SB, NB

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total
	15	20	25	30	35	40	45	50	55	60	65	70	75	999	
03/28/1															
2	0	0	0	5	10	13	27	7	1	3	0	0	0	0	66
01:00	0	0	0	5	6	2	8	5	0	0	0	0	0	0	26
02:00	0	0	0	1	1	1	6	3	0	0	0	0	0	0	12
03:00	0	0	0	3	5	5	6	4	0	0	0	0	0	0	23
04:00	0	0	0	6	17	18	30	13	3	0	0	0	0	0	87
05:00	5	0	0	24	48	71	100	34	4	1	1	0	0	0	288
06:00	13	0	5	34	140	202	168	26	5	0	0	0	0	0	593
07:00	30	1	10	98	268	355	187	38	6	0	0	0	0	0	993
08:00	77	2	35	143	328	313	123	28	1	0	0	0	0	0	1050
09:00	33	1	7	81	233	273	175	29	2	0	0	0	0	0	834
10:00	51	4	8	73	235	292	177	30	1	0	0	0	0	0	871
11:00	46	0	10	98	245	332	182	17	2	0	0	0	0	0	932
12 PM	60	7	7	94	275	319	172	27	1	0	0	0	0	0	962
13:00	41	1	12	90	247	316	172	21	0	0	0	0	0	0	900
14:00	76	3	7	116	375	378	131	14	0	0	0	0	0	0	1100
15:00	89	8	49	171	388	415	126	14	1	0	0	0	0	0	1261
16:00	101	12	35	144	440	449	140	19	0	0	0	0	0	0	1340
17:00	107	7	34	157	446	446	168	10	1	0	0	0	0	0	1376
18:00	53	0	13	103	329	412	184	29	2	0	0	0	0	0	1125
19:00	22	0	5	80	225	285	153	15	0	1	0	0	0	0	786
20:00	10	0	9	27	132	220	147	16	1	0	0	0	0	0	562
21:00	2	0	4	30	97	141	117	29	2	0	0	0	0	0	422
22:00	2	0	1	26	43	66	78	19	3	0	0	0	0	0	238
23:00	2	0	1	13	24	14	40	16	6	2	0	0	0	0	118
Total	820	46	252	1622	4557	5338	2817	463	42	7	1	0	0	0	15965

Daily

15th Percentile : 27 MPH
 50th Percentile : 35 MPH
 85th Percentile : 41 MPH
 95th Percentile : 44 MPH

Mean Speed(Average) : 34 MPH
 10 MPH Pace Speed : 32-41 MPH
 Number in Pace : 8948
 Percent in Pace : 56.0%
 Number of Vehicles > 40 MPH : 3484
 Percent of Vehicles > 40 MPH : 21.8%

Old Colony Planning Council
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Community: Pembroke
 Com#_UR/FC: 231_U5
 Recorder #: Jamar #12
 Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 28-Mar-12
 Date End: 29-Mar-12
 Washington St (53), north of Pleasant St

SB, NB

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total
03/29/1															
2	0	0	1	0	15	14	15	12	4	1	0	0	0	0	62
01:00	0	0	1	4	6	8	9	4	1	0	0	1	0	0	34
02:00	0	0	0	1	2	5	13	3	1	0	0	0	0	0	25
03:00	0	0	1	4	6	5	9	4	1	1	0	0	0	0	31
04:00	0	0	1	2	19	18	27	14	6	0	0	0	0	0	87
05:00	2	0	0	17	52	80	104	33	12	0	0	0	0	0	300
06:00	16	0	3	53	138	210	145	31	4	0	0	0	0	0	600
07:00	30	1	14	92	312	342	174	32	4	0	0	0	0	0	1001
08:00	64	16	23	154	319	317	136	18	2	0	0	0	0	0	1049
09:00	31	0	7	99	241	289	148	26	3	0	0	0	0	0	844
10:00	39	5	9	84	266	275	171	32	0	1	0	0	0	0	882
11:00	48	2	18	129	236	317	178	19	0	0	0	0	0	0	947
12 PM	47	1	10	107	287	338	168	27	1	0	0	0	0	0	986
13:00	65	1	9	117	313	323	177	19	1	0	0	0	0	0	1025
14:00	78	0	4	92	301	362	201	21	0	0	0	0	0	0	1059
15:00	112	29	27	141	396	407	142	16	0	0	0	0	0	0	1270
16:00	88	0	18	202	458	440	151	10	1	0	0	0	0	0	1368
17:00	117	21	46	162	405	418	164	15	0	0	0	0	0	0	1348
18:00	60	3	6	88	333	419	159	11	0	1	0	0	0	0	1080
19:00	33	0	3	70	227	332	137	20	1	2	0	0	0	0	825
20:00	12	1	11	46	145	211	137	28	2	0	0	0	0	0	593
21:00	2	0	2	29	87	127	133	25	3	0	0	0	0	0	408
22:00	7	0	3	20	39	63	87	26	4	0	0	0	0	0	249
23:00	0	0	0	8	25	23	47	17	8	1	0	0	0	0	129
Total	851	80	217	1721	4628	5343	2832	463	59	7	0	1	0	0	16202

Daily

15th Percentile : 26 MPH
 50th Percentile : 35 MPH
 85th Percentile : 41 MPH
 95th Percentile : 44 MPH

Mean Speed(Average) : 34 MPH
 10 MPH Pace Speed : 32-41 MPH
 Number in Pace : 8995
 Percent in Pace : 55.5%
 Number of Vehicles > 40 MPH : 3507
 Percent of Vehicles > 40 MPH : 21.6%

Grand Total	1671	126	469	3343	9185	10681	5649	926	101	14	1	1	0	0	32167
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Overall

15th Percentile : 27 MPH
 50th Percentile : 35 MPH
 85th Percentile : 41 MPH
 95th Percentile : 44 MPH

Mean Speed(Average) : 34 MPH
 10 MPH Pace Speed : 32-41 MPH
 Number in Pace : 17943
 Percent in Pace : 55.8%
 Number of Vehicles > 40 MPH : 6992
 Percent of Vehicles > 40 MPH : 21.7%

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Community: Pembroke
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 Recorder #: Jamar #12
 Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 28-Mar-12
 Date End: 29-Mar-12
 Washington St (53), north of Pleasant St

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total	Truck Total
03/28/12	0	44	5	0	0	0	0	0	0	0	0	0	0	49	0
01:00	0	14	2	0	1	0	0	0	0	0	0	0	0	17	1
02:00	0	6	1	0	1	0	0	0	0	0	0	0	0	8	1
03:00	0	4	2	0	0	0	0	0	1	0	0	0	0	7	1
04:00	0	6	3	0	1	0	0	0	0	0	0	0	0	10	1
05:00	0	18	11	1	0	0	0	0	0	0	0	0	0	30	1
06:00	0	85	34	5	2	2	0	0	0	0	0	0	0	128	9
07:00	0	187	70	3	15	5	0	0	0	0	0	0	0	280	23
08:00	4	207	94	12	15	2	0	0	3	0	0	0	0	337	32
09:00	1	204	91	3	9	3	0	0	4	0	0	0	0	315	19
10:00	2	263	107	1	21	5	0	0	1	0	0	0	0	400	28
11:00	3	306	105	3	16	3	0	2	1	0	0	0	0	439	25
12 PM	2	332	121	5	18	3	0	1	3	0	0	0	0	485	30
13:00	3	333	119	2	15	3	0	2	2	0	0	0	0	479	24
14:00	1	455	133	4	15	4	0	2	4	0	0	0	0	618	29
15:00	5	547	180	2	26	6	0	1	1	0	0	0	0	768	36
16:00	4	602	191	1	18	4	0	2	0	0	0	0	0	822	25
17:00	3	708	205	0	13	5	0	4	2	0	0	0	0	940	24
18:00	1	577	140	1	10	0	0	4	1	0	0	0	0	734	16
19:00	1	409	95	0	9	0	0	0	0	0	0	0	0	514	9
20:00	0	324	75	0	7	1	0	0	0	0	0	0	0	407	8
21:00	1	236	51	1	1	0	0	0	0	0	0	0	0	290	2
22:00	0	126	30	2	2	0	0	0	0	0	0	0	0	160	4
23:00	1	65	15	0	2	0	0	0	0	0	0	0	0	83	2
Total	32	6058	1880	46	217	46	0	18	23	0	0	0	0	8320	350
Percent	0.4%	72.8%	22.6%	0.6%	2.6%	0.6%	0.0%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%		4.2%
AM Peak	08:00	11:00	10:00	08:00	10:00	07:00		11:00	09:00					11:00	08:00
Vol.	4	306	107	12	21	5		2	4					439	32
PM Peak	15:00	17:00	17:00	12:00	15:00	15:00		17:00	14:00					17:00	15:00
Vol.	5	708	205	5	26	6		4	4					940	36

Old Colony Planning Council
70 School Street
Brockton, MA 02301
(508) 583-1833
www.ocpcrpa.org

Community: Pembroke
 Com#_UR/FC: 231_U5
 Recorder #: Jamar #12
 Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 28-Mar-12
 Date End: 29-Mar-12
 Washington St (53), north of Pleasant St

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total	Truck Total
03/29/12	0	43	8	0	0	0	0	0	0	0	0	0	0	51	0
01:00	0	18	4	0	0	0	0	0	0	0	0	0	0	22	0
02:00	0	13	3	1	2	0	0	0	0	0	0	0	0	19	3
03:00	0	10	2	0	0	0	0	0	1	0	0	0	0	13	1
04:00	0	10	1	0	1	0	0	0	0	0	0	0	0	12	1
05:00	0	27	10	0	2	0	0	0	0	0	0	0	0	39	2
06:00	0	72	33	4	5	2	0	1	3	0	0	0	0	120	15
07:00	1	193	64	4	15	3	0	0	3	0	0	0	0	283	25
08:00	0	212	84	4	22	4	0	1	3	0	0	0	0	330	34
09:00	1	182	88	2	15	6	1	1	2	0	0	0	0	298	27
10:00	1	254	103	4	12	4	0	0	4	1	0	0	0	383	25
11:00	1	305	122	5	27	4	0	3	1	0	0	0	0	468	40
12 PM	2	358	123	4	19	4	0	3	1	0	0	0	0	514	31
13:00	3	390	139	2	12	2	0	4	2	0	0	0	0	554	22
14:00	4	413	153	5	21	2	0	1	0	0	0	0	0	599	29
15:00	4	549	169	0	21	5	0	6	1	0	0	0	0	755	33
16:00	2	615	188	2	31	2	0	6	0	0	0	0	0	846	41
17:00	5	738	165	1	12	4	0	1	0	0	0	0	0	926	18
18:00	2	531	148	1	11	1	0	1	1	0	0	0	0	696	15
19:00	2	413	99	1	8	1	0	0	0	0	0	0	0	524	10
20:00	0	338	66	0	7	0	0	3	0	0	0	0	0	414	10
21:00	0	230	45	0	2	0	0	0	0	0	0	0	0	277	2
22:00	0	154	27	2	4	0	0	0	0	0	0	0	0	187	6
23:00	0	65	25	1	0	0	0	0	0	0	0	0	0	91	1
Total	28	6133	1869	43	249	44	1	31	22	1	0	0	0	8421	391
Percent	0.3%	72.8%	22.2%	0.5%	3.0%	0.5%	0.0%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%		4.6%
AM Peak	07:00	11:00	11:00	11:00	11:00	09:00	09:00	11:00	10:00	10:00				11:00	11:00
Vol.	1	305	122	5	27	6	1	3	4	1				468	40
PM Peak	17:00	17:00	16:00	14:00	16:00	15:00		15:00	13:00					17:00	16:00
Vol.	5	738	188	5	31	5		6	2					926	41
Grand Total	60	12191	3749	89	466	90	1	49	45	1	0	0	0	16741	741
Percent	0.4%	72.8%	22.4%	0.5%	2.8%	0.5%	0.0%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%		4.4%

Old Colony Planning Council
70 School Street
Brockton, MA 02301
(508) 583-1833
www.ocpcrpa.org

Community: Pembroke
 Com#_UR/FC: 231_U5
 Recorder #: Jamar #12
 Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 28-Mar-12
 Date End: 29-Mar-12
 Washington St (53), north of Pleasant St

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total	Truck Total
03/28/12	0	13	4	0	0	0	0	0	0	0	0	0	0	17	0
01:00	0	7	1	0	1	0	0	0	0	0	0	0	0	9	1
02:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4	0
03:00	0	12	2	0	1	0	0	0	1	0	0	0	0	16	2
04:00	0	45	29	0	2	0	0	0	1	0	0	0	0	77	3
05:00	0	173	75	1	8	0	0	0	0	0	0	0	0	257	9
06:00	0	314	123	4	16	3	0	0	3	0	0	0	0	463	26
07:00	0	509	177	4	13	3	0	3	1	0	0	0	0	710	24
08:00	3	535	141	3	24	0	0	3	0	0	0	0	0	709	30
09:00	2	377	114	6	12	2	0	0	1	0	0	0	0	514	21
10:00	2	330	112	2	13	3	0	1	4	0	0	0	0	467	23
11:00	1	360	104	2	14	2	0	5	3	0	0	0	0	491	26
12 PM	0	323	125	5	15	4	0	1	2	0	0	0	0	475	27
13:00	1	306	96	1	11	2	0	1	2	0	0	0	0	420	17
14:00	2	344	107	4	15	5	0	2	0	0	0	0	0	479	26
15:00	4	381	86	2	11	2	0	0	2	0	0	0	0	488	17
16:00	3	392	104	0	10	3	0	1	0	0	0	0	0	513	14
17:00	1	329	92	1	9	2	0	0	0	0	0	0	0	434	12
18:00	1	292	86	0	5	3	0	0	1	0	0	0	0	388	9
19:00	2	204	56	1	5	2	0	0	0	0	0	0	0	270	8
20:00	1	119	31	0	1	1	0	0	0	0	0	0	0	153	2
21:00	0	103	28	0	1	0	0	0	0	0	0	0	0	132	1
22:00	0	66	10	0	2	0	0	0	0	0	0	0	0	78	2
23:00	0	26	9	0	0	0	0	0	0	0	0	0	0	35	0
Total	23	5563	1713	36	189	37	0	17	21	0	0	0	0	7599	300
Percent	0.3%	73.2%	22.5%	0.5%	2.5%	0.5%	0.0%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%		3.9%
AM Peak	08:00	08:00	07:00	09:00	08:00	06:00		11:00	10:00					07:00	08:00
Vol.	3	535	177	6	24	3		5	4					710	30
PM Peak	15:00	16:00	12:00	12:00	12:00	14:00		14:00	12:00					16:00	12:00
Vol.	4	392	125	5	15	5		2	2					513	27

Old Colony Planning Council
70 School Street
Brockton, MA 02301
(508) 583-1833
www.ocpcrpa.org

Community: Pembroke
 Com#_UR/FC: 231_U5
 Recorder #: Jamar #12
 Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 28-Mar-12
 Date End: 29-Mar-12
 Washington St (53), north of Pleasant St

NB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total	Truck Total
	03/29/12	0	9	1	1	0	0	0	0	0	0	0	0	0	11	1
	01:00	0	9	2	0	1	0	0	0	0	0	0	0	0	12	1
	02:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6	0
	03:00	0	14	2	0	2	0	0	0	0	0	0	0	0	18	2
	04:00	0	46	28	0	0	0	0	0	1	0	0	0	0	75	1
	05:00	0	169	81	0	11	0	0	0	0	0	0	0	0	261	11
	06:00	0	320	143	4	8	2	0	1	0	0	0	0	0	478	15
	07:00	1	521	173	3	15	0	0	3	0	0	0	0	0	716	21
	08:00	2	537	144	3	23	3	0	4	1	0	0	0	0	717	34
	09:00	0	389	131	2	16	3	0	2	1	0	0	0	0	544	24
	10:00	0	353	121	2	14	3	0	1	2	0	0	0	0	496	22
	11:00	0	326	123	5	15	3	0	0	3	0	0	0	0	475	26
	12 PM	1	350	97	2	16	1	0	3	1	0	0	0	0	471	23
	13:00	1	334	114	4	13	4	0	0	0	0	0	0	0	470	21
	14:00	0	338	100	5	10	2	0	1	1	0	0	0	0	457	19
	15:00	6	379	100	4	12	6	0	2	3	0	0	0	0	512	27
	16:00	2	391	106	2	16	1	0	2	0	0	0	0	0	520	21
	17:00	2	309	99	0	11	1	0	1	0	0	0	0	0	423	13
	18:00	1	284	81	3	11	2	0	0	0	0	0	0	0	382	16
	19:00	3	232	60	0	3	1	0	0	0	0	0	0	0	299	4
	20:00	0	139	33	0	4	0	0	1	0	0	0	0	0	177	5
	21:00	0	105	21	0	5	0	0	0	0	0	0	0	0	131	5
	22:00	1	48	11	0	1	0	0	0	0	0	0	0	0	61	1
	23:00	0	34	3	0	1	0	0	0	0	0	0	0	0	38	1
	Total	20	5641	1775	40	208	32	0	21	13	0	0	0	0	7750	314
	Percent	0.3%	72.8%	22.9%	0.5%	2.7%	0.4%	0.0%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	4.1%	4.1%
	AM Peak	08:00	08:00	07:00	11:00	08:00	08:00		08:00	11:00					08:00	08:00
	Vol.	2	537	173	5	23	3		4	3					717	34
	PM Peak	15:00	16:00	13:00	14:00	12:00	15:00		12:00	15:00					16:00	15:00
	Vol.	6	391	114	5	16	6		3	3					520	27
	Grand Total	43	11204	3488	76	397	69	0	38	34	0	0	0	0	15349	614
	Percent	0.3%	73.0%	22.7%	0.5%	2.6%	0.4%	0.0%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	4.0%	4.0%

Old Colony Planning Council
70 School Street
Brockton, MA 02301
(508) 583-1833
www.ocpcrpa.org

Community: Pembroke
 Com#_UR/FC: 231_U5
 Recorder #: Jamar #12
 Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 28-Mar-12
 Date End: 29-Mar-12
 Washington St (53), north of Pleasant St

SB, NB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total	Truck Total
	03/28/12	0	57	9	0	0	0	0	0	0	0	0	0	0	66	0
	01:00	0	21	3	0	2	0	0	0	0	0	0	0	0	26	2
	02:00	0	9	2	0	1	0	0	0	0	0	0	0	0	12	1
	03:00	0	16	4	0	1	0	0	0	2	0	0	0	0	23	3
	04:00	0	51	32	0	3	0	0	0	1	0	0	0	0	87	4
	05:00	0	191	86	2	8	0	0	0	0	0	0	0	0	287	10
	06:00	0	399	157	9	18	5	0	0	3	0	0	0	0	591	35
	07:00	0	696	247	7	28	8	0	3	1	0	0	0	0	990	47
	08:00	7	742	235	15	39	2	0	3	3	0	0	0	0	1046	62
	09:00	3	581	205	9	21	5	0	0	5	0	0	0	0	829	40
	10:00	4	593	219	3	34	8	0	1	5	0	0	0	0	867	51
	11:00	4	666	209	5	30	5	0	7	4	0	0	0	0	930	51
	12 PM	2	655	246	10	33	7	0	2	5	0	0	0	0	960	57
	13:00	4	639	215	3	26	5	0	3	4	0	0	0	0	899	41
	14:00	3	799	240	8	30	9	0	4	4	0	0	0	0	1097	55
	15:00	9	928	266	4	37	8	0	1	3	0	0	0	0	1256	53
	16:00	7	994	295	1	28	7	0	3	0	0	0	0	0	1335	39
	17:00	4	1037	297	1	22	7	0	4	2	0	0	0	0	1374	36
	18:00	2	869	226	1	15	3	0	4	2	0	0	0	0	1122	25
	19:00	3	613	151	1	14	2	0	0	0	0	0	0	0	784	17
	20:00	1	443	106	0	8	2	0	0	0	0	0	0	0	560	10
	21:00	1	339	79	1	2	0	0	0	0	0	0	0	0	422	3
	22:00	0	192	40	2	4	0	0	0	0	0	0	0	0	238	6
	23:00	1	91	24	0	2	0	0	0	0	0	0	0	0	118	2
	Total	55	11621	3593	82	406	83	0	35	44	0	0	0	0	15919	650
	Percent	0.3%	73.0%	22.6%	0.5%	2.6%	0.5%	0.0%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%		4.1%
	AM Peak	08:00	08:00	07:00	08:00	08:00	07:00		11:00	09:00					08:00	08:00
	Vol.	7	742	247	15	39	8		7	5					1046	62
	PM Peak	15:00	17:00	17:00	12:00	15:00	14:00		14:00	12:00					17:00	12:00
	Vol.	9	1037	297	10	37	9		4	5					1374	57

Old Colony Planning Council
70 School Street
Brockton, MA 02301
(508) 583-1833
www.ocpcrpa.org

Community: Pembroke
 Com#_UR/FC: 231_U5
 Recorder #: Jamar #12
 Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 28-Mar-12
 Date End: 29-Mar-12
 Washington St (53), north of Pleasant St

SB, NB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total	Truck Total
	03/29/12	0	52	9	1	0	0	0	0	0	0	0	0	0	62	1
	01:00	0	27	6	0	1	0	0	0	0	0	0	0	0	34	1
	02:00	0	18	4	1	2	0	0	0	0	0	0	0	0	25	3
	03:00	0	24	4	0	2	0	0	0	1	0	0	0	0	31	3
	04:00	0	56	29	0	1	0	0	0	1	0	0	0	0	87	2
	05:00	0	196	91	0	13	0	0	0	0	0	0	0	0	300	13
	06:00	0	392	176	8	13	4	0	2	3	0	0	0	0	598	30
	07:00	2	714	237	7	30	3	0	3	3	0	0	0	0	999	46
	08:00	2	749	228	7	45	7	0	5	4	0	0	0	0	1047	68
	09:00	1	571	219	4	31	9	1	3	3	0	0	0	0	842	51
	10:00	1	607	224	6	26	7	0	1	6	1	0	0	0	879	47
	11:00	1	631	245	10	42	7	0	3	4	0	0	0	0	943	66
	12 PM	3	708	220	6	35	5	0	6	2	0	0	0	0	985	54
	13:00	4	724	253	6	25	6	0	4	2	0	0	0	0	1024	43
	14:00	4	751	253	10	31	4	0	2	1	0	0	0	0	1056	48
	15:00	10	928	269	4	33	11	0	8	4	0	0	0	0	1267	60
	16:00	4	1006	294	4	47	3	0	8	0	0	0	0	0	1366	62
	17:00	7	1047	264	1	23	5	0	2	0	0	0	0	0	1349	31
	18:00	3	815	229	4	22	3	0	1	1	0	0	0	0	1078	31
	19:00	5	645	159	1	11	2	0	0	0	0	0	0	0	823	14
	20:00	0	477	99	0	11	0	0	4	0	0	0	0	0	591	15
	21:00	0	335	66	0	7	0	0	0	0	0	0	0	0	408	7
	22:00	1	202	38	2	5	0	0	0	0	0	0	0	0	248	7
	23:00	0	99	28	1	1	0	0	0	0	0	0	0	0	129	2
	Total	48	11774	3644	83	457	76	1	52	35	1	0	0	0	16171	705
	Percent	0.3%	72.8%	22.5%	0.5%	2.8%	0.5%	0.0%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%		4.4%
	AM Peak	07:00	08:00	11:00	11:00	08:00	09:00	09:00	08:00	10:00	10:00				08:00	08:00
	Vol.	2	749	245	10	45	9	1	5	6	1				1047	68
	PM Peak	15:00	17:00	16:00	14:00	16:00	15:00		15:00	15:00					16:00	16:00
	Vol.	10	1047	294	10	47	11		8	4					1366	62
	Grand Total	103	23395	7237	165	863	159	1	87	79	1	0	0	0	32090	1355
	Percent	0.3%	72.9%	22.6%	0.5%	2.7%	0.5%	0.0%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%		4.2%

Old Colony Planning Council
 70 School Street
 Brockton, MA 02301
 508-583-1833

Community: Pembroke
 Com #_U/RFC: 231_U3
 Recorder #: Jamar #10
 Tube Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 16-Jun-09
 Date End: 17-Jun-09
 Schooset (139), east of Washington (53)

Start Time	15-Jun-09		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB
12:00 AM	*	*	31	41	43	37	*	*	*	*	*	*	*	*	37	39
01:00	*	*	16	22	15	20	*	*	*	*	*	*	*	*	16	21
02:00	*	*	14	10	15	13	*	*	*	*	*	*	*	*	14	12
03:00	*	*	20	18	21	24	*	*	*	*	*	*	*	*	20	21
04:00	*	*	27	27	28	25	*	*	*	*	*	*	*	*	28	26
05:00	*	*	95	66	81	76	*	*	*	*	*	*	*	*	88	71
06:00	*	*	244	221	239	218	*	*	*	*	*	*	*	*	242	220
07:00	*	*	513	349	528	352	*	*	*	*	*	*	*	*	520	350
08:00	*	*	573	501	536	452	*	*	*	*	*	*	*	*	554	476
09:00	*	*	510	398	572	438	*	*	*	*	*	*	*	*	541	418
10:00	*	*	543	455	507	499	*	*	*	*	*	*	*	*	525	477
11:00	*	*	602	496	550	543	*	*	*	*	*	*	*	*	576	520
12:00 PM	*	*	628	531	629	541	*	*	*	*	*	*	*	*	628	536
01:00	*	*	595	553	585	501	*	*	*	*	*	*	*	*	590	527
02:00	*	*	627	590	676	521	*	*	*	*	*	*	*	*	652	556
03:00	*	*	736	637	709	592	*	*	*	*	*	*	*	*	722	614
04:00	*	*	736	625	786	613	*	*	*	*	*	*	*	*	761	619
05:00	*	*	745	715	755	675	*	*	*	*	*	*	*	*	750	695
06:00	*	*	487	518	561	525	*	*	*	*	*	*	*	*	524	522
07:00	*	*	351	399	443	430	*	*	*	*	*	*	*	*	397	414
08:00	*	*	292	277	344	323	*	*	*	*	*	*	*	*	318	300
09:00	*	*	192	214	232	259	*	*	*	*	*	*	*	*	212	236
10:00	*	*	138	141	150	150	*	*	*	*	*	*	*	*	144	146
11:00	*	*	61	61	74	70	*	*	*	*	*	*	*	*	68	66
Total	0	0	8776	7865	9079	7897	0	0	0	0	0	0	0	0	8927	7882
Day	0	0	16641		16976		0	0	0	0	0	0	0	0	16809	
AM Peak			11:00	08:00	09:00	11:00									11:00	11:00
Vol.			602	501	572	543									576	520
PM Peak			17:00	17:00	16:00	17:00									16:00	17:00
Vol.			745	715	786	675									761	695

Comb. Total 0 16641 16976 0 0 0 0 16809

Old Colony Planning Council
 70 School Street
 Brockton, MA 02301
 508-583-1833

Community: Pembroke
 Com #_U/RFC: 231_U3
 Recorder #: Jamar #10
 Tube Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 16-Jun-09
 Date End: 17-Jun-09
 Schooset (139), east of Washington (53)

Start Time	15-Jun-09 Mon	16-Jun-09 Tue	17-Jun-09 Wed	18-Jun-09 Thu	19-Jun-09 Fri	20-Jun-09 Sat	21-Jun-09 Sun	Week Average
12:00 AM	*	72	80	*	*	*	*	76
01:00	*	38	35	*	*	*	*	36
02:00	*	24	28	*	*	*	*	26
03:00	*	38	45	*	*	*	*	42
04:00	*	54	53	*	*	*	*	54
05:00	*	161	157	*	*	*	*	159
06:00	*	465	457	*	*	*	*	461
07:00	*	862	880	*	*	*	*	871
08:00	*	1074	988	*	*	*	*	1031
09:00	*	908	1010	*	*	*	*	959
10:00	*	998	1006	*	*	*	*	1002
11:00	*	1098	1093	*	*	*	*	1096
12:00 PM	*	1159	1170	*	*	*	*	1164
01:00	*	1148	1086	*	*	*	*	1117
02:00	*	1217	1197	*	*	*	*	1207
03:00	*	1373	1301	*	*	*	*	1337
04:00	*	1361	1399	*	*	*	*	1380
05:00	*	1460	1430	*	*	*	*	1445
06:00	*	1005	1086	*	*	*	*	1046
07:00	*	750	873	*	*	*	*	812
08:00	*	569	667	*	*	*	*	618
09:00	*	406	491	*	*	*	*	448
10:00	*	279	300	*	*	*	*	290
11:00	*	122	144	*	*	*	*	133
Total	0	16641	16976	0	0	0	0	16810
Percentage	0.0%	99.0%	101.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		11:00	11:00					11:00
Vol.		1098	1093					1096
PM Peak		17:00	17:00					17:00
Vol.		1460	1430					1445

Old Colony Planning Council
 70 School Street
 Brockton, MA 02301
 508-583-1833

Community: Pembroke
 Com #_U/RFC: 231_U3
 Recorder #: Jamar #10
 Tube Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 16-Jun-09
 Date End: 17-Jun-09
 Schooset (139), east of Washington (53)

WB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
06/16/09	1	0	0	0	0	0	0	9	11	5	4	0	1	0	31
01:00	0	0	0	0	0	0	2	5	9	0	0	0	0	0	16
02:00	0	0	0	0	0	0	0	6	5	1	2	0	0	0	14
03:00	1	0	0	0	0	2	5	6	4	2	0	0	0	0	20
04:00	1	0	0	0	0	0	3	9	10	2	2	0	0	0	27
05:00	3	0	0	0	0	0	8	16	34	24	7	3	0	0	95
06:00	20	0	0	0	1	2	19	39	102	46	10	4	1	0	244
07:00	48	0	0	0	1	5	28	132	194	85	15	3	1	1	513
08:00	60	0	0	1	4	8	80	151	212	47	9	1	0	0	573
09:00	57	0	1	2	4	1	36	140	189	70	8	2	0	0	510
10:00	63	0	0	1	3	14	123	151	143	36	9	0	0	0	543
11:00	71	2	1	4	0	5	88	149	217	51	14	0	0	0	602
12 PM	78	0	0	1	0	3	59	187	225	65	9	1	0	0	628
13:00	47	0	0	0	0	5	63	193	214	58	13	2	0	0	595
14:00	61	0	0	0	0	6	61	201	235	55	7	1	0	0	627
15:00	64	0	0	0	2	7	92	275	225	60	10	1	0	0	736
16:00	58	0	0	0	4	7	73	232	273	78	10	1	0	0	736
17:00	73	0	0	0	2	7	48	226	298	73	16	2	0	0	745
18:00	22	0	0	0	0	0	38	157	170	85	12	2	1	0	487
19:00	20	0	0	0	0	0	25	98	136	56	12	1	3	0	351
20:00	21	0	0	0	0	6	25	93	104	33	9	1	0	0	292
21:00	6	0	0	0	0	2	19	59	66	33	6	0	0	1	192
22:00	4	0	0	0	0	2	26	43	39	20	4	0	0	0	138
23:00	0	0	0	0	0	0	5	18	22	11	5	0	0	0	61
Total	779	2	2	9	21	82	926	2595	3137	996	193	25	7	2	8776

Daily
 15th Percentile : 43 MPH
 50th Percentile : 50 MPH
 85th Percentile : 55 MPH
 95th Percentile : 59 MPH

 Mean Speed(Average) : 47 MPH
 10 MPH Pace Speed : 46-55 MPH
 Number in Pace : 5732
 Percent in Pace : 65.3%
 Number of Vehicles > 45 MPH : 6955
 Percent of Vehicles > 45 MPH : 79.3%

Old Colony Planning Council
70 School Street
Brockton, MA 02301
508-583-1833

Community: Pembroke
Com #_U/RFC: 231_U3
Recorder #: Jamar #10
Tube Layout: L6 Basic (2')

Station ID:
Site Code: 231
Date Start: 16-Jun-09
Date End: 17-Jun-09
Schooset (139), east of Washington (53)

WB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
06/17/09	0	0	0	0	0	2	4	7	15	9	5	1	0	0	43
01:00	0	0	0	0	0	0	2	8	4	1	0	0	0	0	15
02:00	0	0	0	0	0	0	3	3	4	2	2	1	0	0	15
03:00	1	0	0	0	0	0	5	7	3	3	1	1	0	0	21
04:00	1	0	0	0	0	0	4	11	9	2	1	0	0	0	28
05:00	1	0	0	0	0	1	3	14	24	30	7	1	0	0	81
06:00	21	0	0	0	0	7	6	51	75	57	16	5	0	1	239
07:00	48	0	0	0	0	4	23	106	224	99	23	1	0	0	528
08:00	70	0	0	0	0	5	36	164	197	45	19	0	0	0	536
09:00	86	0	0	0	0	1	53	157	222	47	6	0	0	0	572
10:00	46	0	0	0	0	2	60	157	175	63	2	2	0	0	507
11:00	50	0	0	0	0	9	74	186	186	39	5	1	0	0	550
12 PM	74	0	0	0	0	5	100	202	186	57	4	0	0	1	629
13:00	65	0	0	0	0	13	124	193	135	48	6	1	0	0	585
14:00	50	0	0	0	0	8	93	235	225	60	5	0	0	0	676
15:00	66	0	0	0	1	14	134	258	189	43	4	0	0	0	709
16:00	82	0	0	0	0	5	105	259	254	69	12	0	0	0	786
17:00	76	0	0	0	0	8	108	268	227	58	6	4	0	0	755
18:00	41	0	0	0	0	5	62	202	204	41	5	1	0	0	561
19:00	20	0	0	0	1	7	50	150	153	52	9	0	1	0	443
20:00	16	0	0	0	0	3	36	121	127	37	3	0	0	1	344
21:00	9	0	0	0	0	4	43	98	58	16	3	1	0	0	232
22:00	4	0	0	0	0	2	26	52	44	16	4	2	0	0	150
23:00	1	0	0	0	0	3	6	27	22	12	1	1	1	0	74
Total	828	0	0	0	2	108	1160	2936	2962	906	149	23	2	3	9079

Daily
 15th Percentile : 42 MPH
 50th Percentile : 50 MPH
 85th Percentile : 55 MPH
 95th Percentile : 59 MPH

 Mean Speed(Average) : 47 MPH
 10 MPH Pace Speed : 46-55 MPH
 Number in Pace : 5898
 Percent in Pace : 65.0%
 Number of Vehicles > 45 MPH : 6981
 Percent of Vehicles > 45 MPH : 76.9%

Grand Total	1607	2	2	9	23	190	2086	5531	6099	1902	342	48	9	5	17855
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Overall
 15th Percentile : 43 MPH
 50th Percentile : 50 MPH
 85th Percentile : 55 MPH
 95th Percentile : 59 MPH

 Mean Speed(Average) : 47 MPH
 10 MPH Pace Speed : 46-55 MPH
 Number in Pace : 11630
 Percent in Pace : 65.1%
 Number of Vehicles > 45 MPH : 13936
 Percent of Vehicles > 45 MPH : 78.1%

Old Colony Planning Council
 70 School Street
 Brockton, MA 02301
 508-583-1833

Community: Pembroke
 Com #_U/RFC: 231_U3
 Recorder #: Jamar #10
 Tube Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 16-Jun-09
 Date End: 17-Jun-09
 Schooset (139), east of Washington (53)

EB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
06/16/09	20	0	0	0	0	0	13	6	2	0	0	0	0	0	41
01:00	13	0	0	0	0	2	1	5	0	1	0	0	0	0	22
02:00	5	0	0	0	0	0	4	0	1	0	0	0	0	0	10
03:00	8	0	0	0	0	3	5	2	0	0	0	0	0	0	18
04:00	11	0	0	0	0	2	8	5	1	0	0	0	0	0	27
05:00	29	0	0	0	0	1	16	16	3	1	0	0	0	0	66
06:00	96	0	0	0	0	8	60	51	6	0	0	0	0	0	221
07:00	138	0	0	0	1	7	111	76	15	1	0	0	0	0	349
08:00	192	0	0	0	1	31	182	85	10	0	0	0	0	0	501
09:00	141	0	3	1	4	21	133	88	7	0	0	0	0	0	398
10:00	150	0	4	15	32	87	117	45	5	0	0	0	0	0	455
11:00	263	0	0	0	0	17	126	84	6	0	0	0	0	0	496
12 PM	240	0	0	0	1	22	180	75	12	1	0	0	0	0	531
13:00	133	0	0	0	1	26	209	162	20	2	0	0	0	0	553
14:00	133	0	0	0	2	19	219	176	36	5	0	0	0	0	590
15:00	121	0	0	0	0	33	228	209	40	6	0	0	0	0	637
16:00	122	0	0	0	2	14	181	227	69	10	0	0	0	0	625
17:00	99	0	0	0	1	22	265	271	55	2	0	0	0	0	715
18:00	85	0	0	0	1	17	204	175	31	4	1	0	0	0	518
19:00	94	0	0	0	0	11	146	127	20	1	0	0	0	0	399
20:00	68	0	0	0	1	12	125	64	7	0	0	0	0	0	277
21:00	62	0	0	1	0	18	90	36	7	0	0	0	0	0	214
22:00	56	0	0	0	0	10	45	27	3	0	0	0	0	0	141
23:00	32	0	0	0	0	2	14	9	4	0	0	0	0	0	61
Total	2311	0	7	17	47	385	2682	2021	360	34	1	0	0	0	7865

Daily
 15th Percentile : 8 MPH
 50th Percentile : 43 MPH
 85th Percentile : 49 MPH
 95th Percentile : 51 MPH

 Mean Speed(Average) : 34 MPH
 10 MPH Pace Speed : 41-50 MPH
 Number in Pace : 4703
 Percent in Pace : 59.8%
 Number of Vehicles > 45 MPH : 2416
 Percent of Vehicles > 45 MPH : 30.7%

Old Colony Planning Council
 70 School Street
 Brockton, MA 02301
 508-583-1833

Community: Pembroke
 Com #_U/RFC: 231_U3
 Recorder #: Jamar #10
 Tube Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 16-Jun-09
 Date End: 17-Jun-09
 Schooset (139), east of Washington (53)

EB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
06/17/09	16	0	0	0	0	4	10	5	1	1	0	0	0	0	37
01:00	9	0	0	0	0	1	6	3	0	1	0	0	0	0	20
02:00	4	0	1	1	0	3	2	2	0	0	0	0	0	0	13
03:00	8	0	0	0	0	0	6	9	1	0	0	0	0	0	24
04:00	11	0	0	0	0	2	2	6	4	0	0	0	0	0	25
05:00	39	0	0	0	0	0	15	18	3	1	0	0	0	0	76
06:00	120	0	0	0	0	2	47	40	9	0	0	0	0	0	218
07:00	174	0	0	0	0	11	97	51	18	1	0	0	0	0	352
08:00	203	0	0	0	0	11	141	85	12	0	0	0	0	0	452
09:00	209	0	0	0	0	16	112	89	11	1	0	0	0	0	438
10:00	155	0	0	0	3	19	161	140	19	2	0	0	0	0	499
11:00	132	0	0	0	3	19	188	167	33	1	0	0	0	0	543
12 PM	171	0	0	0	0	29	164	138	35	3	0	0	0	1	541
13:00	136	0	0	0	0	13	142	166	39	5	0	0	0	0	501
14:00	156	0	0	0	1	22	139	158	43	2	0	0	0	0	521
15:00	137	0	0	4	0	19	190	191	46	5	0	0	0	0	592
16:00	145	0	0	0	0	16	172	223	50	7	0	0	0	0	613
17:00	152	0	0	0	1	18	200	232	66	6	0	0	0	0	675
18:00	93	0	0	0	0	18	152	207	50	5	0	0	0	0	525
19:00	54	0	0	0	3	8	138	162	63	2	0	0	0	0	430
20:00	36	0	0	0	3	13	98	143	26	4	0	0	0	0	323
21:00	27	0	0	0	1	4	99	92	34	2	0	0	0	0	259
22:00	9	0	0	0	0	4	65	50	21	1	0	0	0	0	150
23:00	5	0	0	0	0	1	24	25	10	5	0	0	0	0	70
Total	2201	0	1	5	15	253	2370	2402	594	55	0	0	0	1	7897

Daily
 15th Percentile : 9 MPH
 50th Percentile : 44 MPH
 85th Percentile : 49 MPH
 95th Percentile : 53 MPH
 Mean Speed(Average) : 35 MPH
 10 MPH Pace Speed : 41-50 MPH
 Number in Pace : 4772
 Percent in Pace : 60.4%
 Number of Vehicles > 45 MPH : 3052
 Percent of Vehicles > 45 MPH : 38.6%

Grand Total	4512	0	8	22	62	638	5052	4423	954	89	1	0	0	1	15762
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Overall
 15th Percentile : 8 MPH
 50th Percentile : 43 MPH
 85th Percentile : 49 MPH
 95th Percentile : 52 MPH
 Mean Speed(Average) : 35 MPH
 10 MPH Pace Speed : 41-50 MPH
 Number in Pace : 9475
 Percent in Pace : 60.1%
 Number of Vehicles > 45 MPH : 5468
 Percent of Vehicles > 45 MPH : 34.7%

Old Colony Planning Council
 70 School Street
 Brockton, MA 02301
 508-583-1833

Community: Pembroke
 Com #_U/RFC: 231_U3
 Recorder #: Jamar #10
 Tube Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 16-Jun-09
 Date End: 17-Jun-09
 Schooset (139), east of Washington (53)

WB, EB

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total
06/16/09	21	0	0	0	0	0	13	15	13	5	4	0	1	0	72
01:00	13	0	0	0	0	2	3	10	9	1	0	0	0	0	38
02:00	5	0	0	0	0	0	4	6	6	1	2	0	0	0	24
03:00	9	0	0	0	0	5	10	8	4	2	0	0	0	0	38
04:00	12	0	0	0	0	2	11	14	11	2	2	0	0	0	54
05:00	32	0	0	0	0	1	24	32	37	25	7	3	0	0	161
06:00	116	0	0	0	1	10	79	90	108	46	10	4	1	0	465
07:00	186	0	0	0	2	12	139	208	209	86	15	3	1	1	862
08:00	252	0	0	1	5	39	262	236	222	47	9	1	0	0	1074
09:00	198	0	4	3	8	22	169	228	196	70	8	2	0	0	908
10:00	213	0	4	16	35	101	240	196	148	36	9	0	0	0	998
11:00	334	2	1	4	0	22	214	233	223	51	14	0	0	0	1098
12 PM	318	0	0	1	1	25	239	262	237	66	9	1	0	0	1159
13:00	180	0	0	0	1	31	272	355	234	60	13	2	0	0	1148
14:00	194	0	0	0	2	25	280	377	271	60	7	1	0	0	1217
15:00	185	0	0	0	2	40	320	484	265	66	10	1	0	0	1373
16:00	180	0	0	0	6	21	254	459	342	88	10	1	0	0	1361
17:00	172	0	0	0	3	29	313	497	353	75	16	2	0	0	1460
18:00	107	0	0	0	1	17	242	332	201	89	13	2	1	0	1005
19:00	114	0	0	0	0	11	171	225	156	57	12	1	3	0	750
20:00	89	0	0	0	1	18	150	157	111	33	9	1	0	0	569
21:00	68	0	0	1	0	20	109	95	73	33	6	0	0	1	406
22:00	60	0	0	0	0	12	71	70	42	20	4	0	0	0	279
23:00	32	0	0	0	0	2	19	27	26	11	5	0	0	0	122
Total	3090	2	9	26	68	467	3608	4616	3497	1030	194	25	7	2	16641

Daily
 15th Percentile : 13 MPH
 50th Percentile : 47 MPH
 85th Percentile : 54 MPH
 95th Percentile : 58 MPH

 Mean Speed(Average) : 41 MPH
 10 MPH Pace Speed : 41-50 MPH
 Number in Pace : 8224
 Percent in Pace : 49.4%
 Number of Vehicles > 45 MPH : 9371
 Percent of Vehicles > 45 MPH : 56.3%

Old Colony Planning Council
 70 School Street
 Brockton, MA 02301
 508-583-1833

Community: Pembroke
 Com #_U/RFC: 231_U3
 Recorder #: Jamar #10
 Tube Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 16-Jun-09
 Date End: 17-Jun-09
 Schooset (139), east of Washington (53)

WB, EB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
06/17/09	16	0	0	0	0	6	14	12	16	10	5	1	0	0	80
01:00	9	0	0	0	0	1	8	11	4	2	0	0	0	0	35
02:00	4	0	1	1	0	3	5	5	4	2	2	1	0	0	28
03:00	9	0	0	0	0	0	11	16	4	3	1	1	0	0	45
04:00	12	0	0	0	0	2	6	17	13	2	1	0	0	0	53
05:00	40	0	0	0	0	1	18	32	27	31	7	1	0	0	157
06:00	141	0	0	0	0	9	53	91	84	57	16	5	0	1	457
07:00	222	0	0	0	0	15	120	157	242	100	23	1	0	0	880
08:00	273	0	0	0	0	16	177	249	209	45	19	0	0	0	988
09:00	295	0	0	0	0	17	165	246	233	48	6	0	0	0	1010
10:00	201	0	0	0	3	21	221	297	194	65	2	2	0	0	1006
11:00	182	0	0	0	3	28	262	353	219	40	5	1	0	0	1093
12 PM	245	0	0	0	0	34	264	340	221	60	4	0	0	2	1170
13:00	201	0	0	0	0	26	266	359	174	53	6	1	0	0	1086
14:00	206	0	0	0	1	30	232	393	268	62	5	0	0	0	1197
15:00	203	0	0	4	1	33	324	449	235	48	4	0	0	0	1301
16:00	227	0	0	0	0	21	277	482	304	76	12	0	0	0	1399
17:00	228	0	0	0	1	26	308	500	293	64	6	4	0	0	1430
18:00	134	0	0	0	0	23	214	409	254	46	5	1	0	0	1086
19:00	74	0	0	0	4	15	188	312	216	54	9	0	1	0	873
20:00	52	0	0	0	3	16	134	264	153	41	3	0	0	1	667
21:00	36	0	0	0	1	8	142	190	92	18	3	1	0	0	491
22:00	13	0	0	0	0	6	91	102	65	17	4	2	0	0	300
23:00	6	0	0	0	0	4	30	52	32	17	1	1	1	0	144
Total	3029	0	1	5	17	361	3530	5338	3556	961	149	23	2	4	16976

Daily
 15th Percentile : 13 MPH
 50th Percentile : 47 MPH
 85th Percentile : 54 MPH
 95th Percentile : 57 MPH

 Mean Speed(Average) : 41 MPH
 10 MPH Pace Speed : 46-55 MPH
 Number in Pace : 8894
 Percent in Pace : 52.4%
 Number of Vehicles > 45 MPH : 10033
 Percent of Vehicles > 45 MPH : 59.1%

Grand Total	6119	2	10	31	85	828	7138	9954	7053	1991	343	48	9	6	33617
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Overall
 15th Percentile : 13 MPH
 50th Percentile : 47 MPH
 85th Percentile : 54 MPH
 95th Percentile : 57 MPH

 Mean Speed(Average) : 41 MPH
 10 MPH Pace Speed : 41-50 MPH
 Number in Pace : 17092
 Percent in Pace : 50.8%
 Number of Vehicles > 45 MPH : 19404
 Percent of Vehicles > 45 MPH : 57.7%

Old Colony Planning Council
 70 School Street
 Brockton, MA 02301
 508-583-1833

Community: Pembroke
 Com #_U/RFC: 231_U3
 Recorder #: Jamar #10
 Tube Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 16-Jun-09
 Date End: 17-Jun-09
 Schooset (139), east of Washington (53)

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total	Truck Total
06/16/09	0	15	11	0	5	0	0	0	0	0	0	0	0	31	5
01:00	0	10	4	0	1	0	0	0	1	0	0	0	0	16	2
02:00	0	8	4	0	2	0	0	0	0	0	0	0	0	14	2
03:00	0	11	7	0	1	1	0	0	0	0	0	0	0	20	2
04:00	1	17	4	0	3	2	0	0	0	0	0	0	0	27	5
05:00	0	35	42	0	17	0	0	1	0	0	0	0	0	95	18
06:00	0	116	85	2	37	2	0	0	1	0	0	0	0	243	42
07:00	0	242	185	2	73	5	1	2	2	0	0	0	0	512	85
08:00	2	273	207	8	74	4	0	3	1	0	0	0	0	572	90
09:00	0	232	201	4	60	7	0	6	0	0	0	0	0	510	77
10:00	0	253	207	10	64	4	0	3	1	0	0	0	0	542	82
11:00	1	293	227	9	65	4	0	3	0	0	0	0	0	602	81
12 PM	3	293	247	4	76	0	0	3	1	0	0	0	0	627	84
13:00	1	274	246	5	60	3	1	4	0	0	0	0	0	594	73
14:00	2	306	249	2	59	3	0	4	2	0	0	0	0	627	70
15:00	6	358	263	6	98	1	0	3	1	0	0	0	0	736	109
16:00	3	350	301	2	72	2	0	4	2	0	0	0	0	736	82
17:00	2	401	269	3	68	0	0	1	0	0	0	0	0	744	72
18:00	4	255	178	0	49	0	0	1	0	0	0	0	0	487	50
19:00	2	165	157	0	26	0	0	0	0	0	0	0	0	350	26
20:00	2	152	109	0	27	0	0	1	0	0	0	0	0	291	28
21:00	1	105	71	0	15	0	0	0	0	0	0	0	0	192	15
22:00	0	79	47	2	9	0	0	0	0	0	0	0	0	137	11
23:00	0	34	21	0	6	0	0	0	0	0	0	0	0	61	6
Total	30	4277	3342	59	967	38	2	39	12	0	0	0	0	8766	1117
Percent	0.3%	48.8%	38.1%	0.7%	11.0%	0.4%	0.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%		12.7%
AM Peak	08:00	11:00	11:00	10:00	08:00	09:00	07:00	09:00	07:00					11:00	08:00
Vol.	2	293	227	10	74	7	1	6	2					602	90
PM Peak	15:00	17:00	16:00	15:00	15:00	13:00	13:00	13:00	14:00					17:00	15:00
Vol.	6	401	301	6	98	3	1	4	2					744	109

Old Colony Planning Council
 70 School Street
 Brockton, MA 02301
 508-583-1833

Community: Pembroke
 Com #_U/RFC: 231_U3
 Recorder #: Jamar #10
 Tube Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 16-Jun-09
 Date End: 17-Jun-09
 Schooset (139), east of Washington (53)

WB	Start Time	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total	Truck Total
	06/17/09	0	18	21	1	3	0	0	0	0	0	0	0	43	4
	01:00	0	10	3	0	2	0	0	0	0	0	0	0	15	2
	02:00	0	5	6	1	3	0	0	0	0	0	0	0	15	4
	03:00	0	13	6	1	0	0	0	1	0	0	0	0	21	2
	04:00	0	15	9	0	4	0	0	0	0	0	0	0	28	4
	05:00	0	30	34	1	13	2	0	1	0	0	0	0	81	17
	06:00	1	92	98	4	41	0	0	2	0	0	0	0	238	47
	07:00	0	249	208	3	62	1	1	2	0	0	0	0	527	70
	08:00	1	252	206	5	63	2	0	5	1	0	0	0	535	76
	09:00	1	273	225	9	57	1	0	5	0	0	0	0	571	72
	10:00	0	219	213	4	66	1	0	2	1	0	0	0	506	74
	11:00	4	280	198	4	52	7	1	2	0	0	0	0	548	66
	12 PM	6	335	225	6	53	1	0	2	0	0	0	0	628	62
	13:00	2	299	209	5	64	2	0	4	0	0	0	0	585	75
	14:00	7	326	242	4	84	1	0	7	3	0	0	0	674	99
	15:00	3	387	221	3	82	2	0	10	1	0	0	0	709	98
	16:00	6	428	268	2	75	2	0	5	0	0	0	0	786	84
	17:00	5	421	272	2	53	0	0	1	0	0	0	0	754	56
	18:00	4	314	194	0	46	1	0	1	0	0	0	0	560	48
	19:00	2	231	172	0	33	0	0	3	1	0	0	0	442	37
	20:00	4	184	130	0	24	0	0	2	0	0	0	0	344	26
	21:00	2	137	76	0	17	0	0	1	0	0	0	0	233	18
	22:00	1	93	45	1	9	0	0	0	0	0	0	0	149	10
	23:00	0	50	18	1	5	0	0	0	0	0	0	0	74	6
	Total	49	4661	3299	57	911	23	2	53	11	0	0	0	9066	1057
	Percent	0.5%	51.4%	36.4%	0.6%	10.0%	0.3%	0.0%	0.6%	0.1%	0.0%	0.0%	0.0%		11.7%
	AM Peak	11:00	11:00	09:00	09:00	10:00	11:00	07:00	08:00	07:00				09:00	08:00
	Vol.	4	280	225	9	66	7	1	5	2				571	76
	PM Peak	14:00	16:00	17:00	12:00	14:00	13:00	15:00	14:00					16:00	14:00
	Vol.	7	428	272	6	84	2	10	3					786	99
	Grand Total	79	8938	6641	116	1878	61	4	92	23	0	0	0	17832	2174
	Percent	0.4%	50.1%	37.2%	0.7%	10.5%	0.3%	0.0%	0.5%	0.1%	0.0%	0.0%	0.0%		12.2%

Old Colony Planning Council
 70 School Street
 Brockton, MA 02301
 508-583-1833

Community: Pembroke
 Com #_U/RFC: 231_U3
 Recorder #: Jamar #10
 Tube Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 16-Jun-09
 Date End: 17-Jun-09
 Schooset (139), east of Washington (53)

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total	Truck Total
06/16/09	0	32	7	0	1	0	0	0	0	0	0	0	0	40	1
01:00	0	15	6	0	1	0	0	0	0	0	0	0	0	22	1
02:00	0	7	2	0	0	0	0	0	0	0	0	0	0	9	0
03:00	0	14	3	0	1	0	0	0	0	0	0	0	0	18	1
04:00	0	20	6	0	1	0	0	0	0	0	0	0	0	27	1
05:00	0	41	22	0	2	0	0	0	0	0	0	0	0	65	2
06:00	1	138	64	2	14	1	0	1	0	0	0	0	0	221	18
07:00	0	244	78	2	21	0	0	3	0	0	0	0	0	348	26
08:00	0	364	103	4	28	0	0	0	0	0	0	0	0	499	32
09:00	0	306	72	2	14	1	0	1	0	0	0	0	0	396	18
10:00	0	329	100	4	20	1	0	0	0	0	0	0	0	454	25
11:00	0	351	114	4	24	0	0	0	0	0	0	0	0	493	28
12 PM	0	386	113	6	24	0	0	0	0	0	0	0	0	529	30
13:00	0	413	109	3	24	0	0	2	0	0	0	0	0	551	29
14:00	0	451	108	3	25	0	0	1	0	0	0	0	0	588	29
15:00	1	490	119	3	21	0	0	1	0	0	0	0	0	635	25
16:00	0	498	104	2	16	1	0	2	1	0	0	0	0	624	22
17:00	0	564	120	1	29	0	0	0	0	0	0	0	0	714	30
18:00	0	405	100	1	12	0	0	0	0	0	0	0	0	518	13
19:00	0	325	60	1	12	0	0	0	0	0	0	0	0	398	13
20:00	0	214	55	1	7	0	0	0	0	0	0	0	0	277	8
21:00	0	172	35	1	5	0	0	0	0	0	0	0	0	213	6
22:00	0	114	22	1	4	0	0	0	0	0	0	0	0	141	5
23:00	0	46	12	0	2	0	0	0	0	0	0	0	0	60	2
Total	2	5939	1534	41	308	4	0	11	1	0	0	0	0	7840	365
Percent	0.0%	75.8%	19.6%	0.5%	3.9%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%		4.7%
AM Peak	06:00	08:00	11:00	08:00	08:00	06:00		07:00						08:00	08:00
Vol.	1	364	114	4	28	1		3						499	32
PM Peak	15:00	17:00	17:00	12:00	17:00	16:00		13:00	16:00					17:00	12:00
Vol.	1	564	120	6	29	1		2	1					714	30

Old Colony Planning Council
 70 School Street
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Community: Pembroke
 Com #_U/RFC: 231_U3
 Recorder #: Jamar #10
 Tube Layout: L6 Basic (2')

Station ID:
 Site Code: 231
 Date Start: 16-Jun-09
 Date End: 17-Jun-09
 Schooset (139), east of Washington (53)

WB, EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total	Truck Total
06/16/09	0	47	18	0	6	0	0	0	0	0	0	0	0	71	6
01:00	0	25	10	0	2	0	0	0	1	0	0	0	0	38	3
02:00	0	15	6	0	2	0	0	0	0	0	0	0	0	23	2
03:00	0	25	10	0	2	1	0	0	0	0	0	0	0	38	3
04:00	1	37	10	0	4	2	0	0	0	0	0	0	0	54	6
05:00	0	76	64	0	19	0	0	1	0	0	0	0	0	160	20
06:00	1	254	149	4	51	3	0	1	1	0	0	0	0	464	60
07:00	0	486	263	4	94	5	1	5	2	0	0	0	0	860	111
08:00	2	637	310	12	102	4	0	3	1	0	0	0	0	1071	122
09:00	0	538	273	6	74	8	0	7	0	0	0	0	0	906	95
10:00	0	582	307	14	84	5	0	3	1	0	0	0	0	996	107
11:00	1	644	341	13	89	4	0	3	0	0	0	0	0	1095	109
12 PM	3	679	360	10	100	0	0	3	1	0	0	0	0	1156	114
13:00	1	687	355	8	84	3	1	6	0	0	0	0	0	1145	102
14:00	2	757	357	5	84	3	0	5	2	0	0	0	0	1215	99
15:00	7	848	382	9	119	1	0	4	1	0	0	0	0	1371	134
16:00	3	848	405	4	88	3	0	6	3	0	0	0	0	1360	104
17:00	2	965	389	4	97	0	0	1	0	0	0	0	0	1458	102
18:00	4	660	278	1	61	0	0	1	0	0	0	0	0	1005	63
19:00	2	490	217	1	38	0	0	0	0	0	0	0	0	748	39
20:00	2	366	164	1	34	0	0	1	0	0	0	0	0	568	36
21:00	1	277	106	1	20	0	0	0	0	0	0	0	0	405	21
22:00	0	193	69	3	13	0	0	0	0	0	0	0	0	278	16
23:00	0	80	33	0	8	0	0	0	0	0	0	0	0	121	8
Total	32	10216	4876	100	1275	42	2	50	13	0	0	0	0	16606	1482
Percent	0.2%	61.5%	29.4%	0.6%	7.7%	0.3%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%		8.9%
AM Peak	08:00	11:00	11:00	10:00	08:00	09:00	07:00	09:00	07:00					11:00	08:00
Vol.	2	644	341	14	102	8	1	7	2					1095	122
PM Peak	15:00	17:00	16:00	12:00	15:00	13:00	13:00	13:00	16:00					17:00	15:00
Vol.	7	965	405	10	119	3	1	6	3					1458	134

Old Colony Planning Council
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Station ID:
 Site Code: 231
 Date Start: 16-Jun-09
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 Schooset (139), east of Washington (53)

WB, EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total	Truck Total
06/17/09	0	46	29	1	4	0	0	0	0	0	0	0	0	80	5
01:00	0	26	7	0	3	0	0	0	0	0	0	0	0	36	3
02:00	0	14	8	2	3	0	0	0	0	0	0	0	0	27	5
03:00	0	32	10	1	1	0	0	0	1	0	0	0	0	45	3
04:00	0	29	17	1	6	0	0	0	0	0	0	0	0	53	7
05:00	0	78	54	1	19	2	0	1	1	0	0	0	0	156	24
06:00	1	227	163	5	55	0	0	3	0	0	0	0	0	454	63
07:00	0	484	300	5	81	1	1	3	2	0	0	0	0	877	93
08:00	1	583	296	10	85	2	0	7	1	0	0	0	0	985	105
09:00	1	583	325	12	80	1	0	6	0	0	0	0	0	1008	99
10:00	0	578	321	9	90	2	0	3	1	0	0	0	0	1004	105
11:00	4	684	311	7	70	7	1	5	0	0	0	0	0	1089	90
12 PM	6	747	323	10	75	2	0	5	0	0	0	0	0	1168	92
13:00	2	669	317	6	83	3	0	4	0	0	0	0	0	1084	96
14:00	7	703	357	9	105	2	0	8	3	0	0	0	0	1194	127
15:00	3	841	333	5	102	2	0	13	1	0	0	0	0	1300	123
16:00	6	875	400	5	102	3	0	6	0	0	0	0	0	1397	116
17:00	5	957	387	4	73	0	0	2	0	0	0	0	0	1428	79
18:00	4	744	273	1	57	1	0	5	0	0	0	0	0	1085	64
19:00	2	582	235	1	47	0	0	4	1	0	0	0	0	872	53
20:00	4	465	163	0	31	0	0	3	0	0	0	0	0	666	34
21:00	3	351	116	0	21	0	0	1	0	0	0	0	0	492	22
22:00	1	222	63	1	12	0	0	0	1	0	0	0	0	300	14
23:00	0	107	28	1	5	0	0	2	0	0	0	0	0	143	8
Total	50	10627	4836	97	1210	28	2	81	12	0	0	0	0	16943	1430
Percent	0.3%	62.7%	28.5%	0.6%	7.1%	0.2%	0.0%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%		8.4%
AM Peak	11:00	11:00	09:00	09:00	10:00	11:00	07:00	08:00	07:00					11:00	08:00
Vol.	4	684	325	12	90	7	1	7	2					1089	105
PM Peak	14:00	17:00	16:00	12:00	14:00	13:00		15:00	14:00					17:00	14:00
Vol.	7	957	400	10	105	3		13	3					1428	127
Grand Total	82	20843	9712	197	2485	70	4	131	25	0	0	0	0	33549	2912
Percent	0.2%	62.1%	28.9%	0.6%	7.4%	0.2%	0.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%		8.7%