Technical Report

Professional Services
Delaware Valley Regional Planning Commission
New Jersey Traffic Signal Retiming Initiative

North Olden Avenue, Mercer County Route 622
From Parkway Avenue (CR 634) to Princeton Avenue (CR 583),

In Ewing Township, Mercer County, NJ

November 20, 2019

Prepared For:

Prepared By:

I. Summary

A. *Project Overview*

Under contract with Delaware Valley Regional Planning Commission (DVPRC), in cooperation with Mercer County and the New Jersey Department of Transportation, the Taylor Wiseman & Taylor (TWT) project team has completed traffic signal retiming work at seven (7) signalized intersections along North Olden Avenue (Mercer County Route 622), in Ewing Township, Mercer County. This work started in May 2018, following completion of Phase 1 of the contract which evaluated candidate corridors within Mercer County and established a consensus priority list. In accordance with the process jointly established by DVRPC, Mercer County and the TWT team, updated timing plans, including adjustments to cycle lengths, splits, and offsets, as well as the introduction of additional time-of-day coordination patterns, were implemented by October 31, 2018.

This project involved extensive traffic data collection, including automatic traffic recorder counts, peak hour turning movement counts, controller assessments and 'before' travel time runs. The collected data was analyzed using traffic engineering software including Synchro™ and Tru-Traffic™. New timing plans were developed for the corridor, which were implemented by the consultant team in October 2018. Fine-tuning and field observations were conducted throughout implementation, resulting in minor timing changes to those initially implemented. Final travel time runs were completed, and comparisons made to the 'before' condition. This report summarizes the activities, observations and results of this project.

B. *Results*

With implementation of the 1) updated timing plans, and 2) modifications to the corridor's time-of-day schedule, the TWT team has documented significant reductions in corridor travel times and delay. The configuration of this corridor is unique, as the second signal on the corridor (as one travels southbound) is Pennington Road (NJ Route 31). This signal is maintained by NJDOT and was not included in the project. Hence, the northern-most signal at Parkway Avenue was optimized as a stand-alone intersection. The coordinated corridor segment was defined between Parkside Avenue (CR 636) and Princeton Avenue (CR 583). Even given the presence of a State signal within the corridor, the TWT team reduced overall weekday morning, mid-day, evening and weekend mid-day peak travel times by 11%, 13%, 13%, and 17%, respectively. Cumulative Delay on the corridor was impacted more dramatically, as overall weekday morning, mid-day, evening and weekend delay was reduced by 86%, 48%, 49% and 62%. Summary results for the corridor are presented in **Table 1**. Detailed results, showing a further breakdown of this data is presented later in this report. The Tru-Traffic™ comparison (before retiming/after implementation) reports for the weekday morning, mid-day and evening, as well as Saturday peak hours are presented in **Appendix A**.

Cumulative Delay on the North Olden Avenue Coordinated Segment was reduced in the weekday morning time period by

86%

Photo 1: Looking NB on North Olden Avenue at Artic Parkway/Home Depot Driveway

Table 1
Before Retiming/After Implementation Results for
Coordinated Segment of North Olden Avenue (Parkside Avenue to Princeton Avenue)
Ewing Township, Mercer County

Time Period	Travel Time (% Difference)			Cumulative Delay (% Difference)		
	SB	NB	Combined	SB	NB	Combined
Weekday AM	-10%	-11%	-11%	-64%	-122%	-86%
Weekday Mid-Day	-11%	-14%	-13%	-35%	-66%	-48%
Weekday PM	-4%	-22%	-13%	-14%	-85%	-49%
Saturday Mid-Day	-8%	-26%	-17%	-27%	-93%	-62%

C. Project Description

North Olden Avenue, Mercer County Route 622 is an urban minor arterial with a north to south orientation. Within the project area, the roadway is known as North Olden Avenue. The roadway is known as South Olden Avenue south of Greenwood Avenue (NJ Route 33). The corridor project limits extend 2.21 miles along County Route 622 (North Olden Avenue) from Parkway Avenue (CR 634) at the northern limit to Princeton Avenue (CR 583) at the southern limit. As discussed before, the intersection of North Olden Avenue and Pennington Road (NJ Route 31) is owned and maintained by the New Jersey Department of Transportation. Hence, this signal was not retimed as part of this project.

The entire project corridor is in Ewing Township, Mercer County. US Route 1 is easily accessible from North Olden Avenue, with ramp access less than 0.5 miles to the south. Land use along North Olden Avenue (CR 622) is primarily commercial in nature, although there are some spot residential uses. A Home Depot, Hyundai car dealership, neighborhood shopping center, chain restaurants and small retail line the corridor. Ewing High School is located off North Olden Avenue to the north along Parkway Avenue. Speed limits along the corridor vary from 25 to 40 miles per hour.

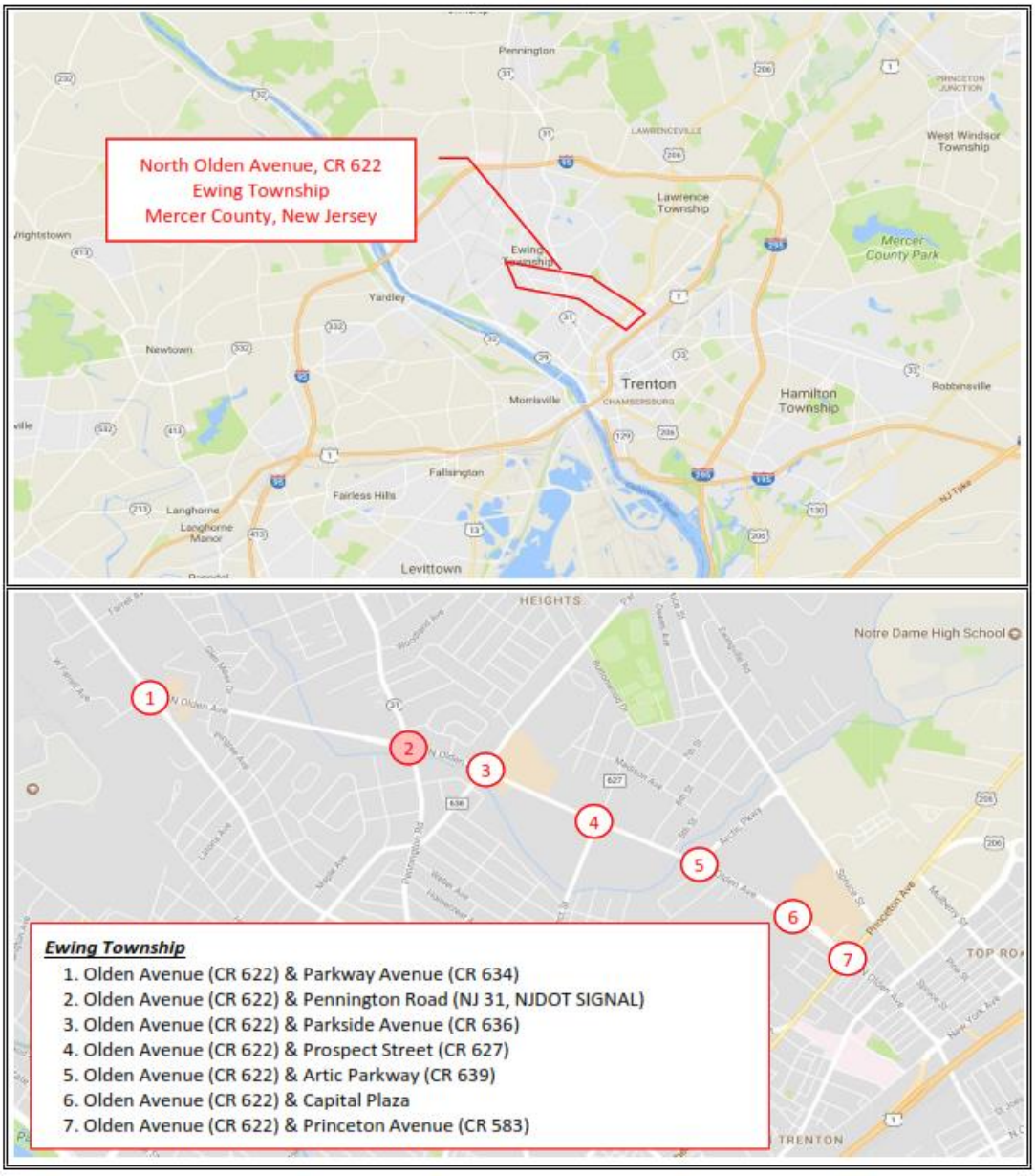
Within the project limits, seven (7) signalized intersections exist; however, the State-maintained signal at Pennington Road has been excluded from the retiming initiative and will maintain signal timing and operational programming set by the NJDOT. The following is a list of signalized intersections within the project limits:

1. North Olden Avenue (CR 622) & Parkway Avenue (CR 634) [MP 6.33]
2. North Olden Avenue (CR 622) & Pennington Road (NJ 31,**NJDOT Maintained Signal**)
3. North Olden Avenue (CR 622) & Parkside Avenue (CR 636)
4. North Olden Avenue (CR 622) & Prospect Street (CR 627)
5. North Olden Avenue (CR 622) & Artic Parkway (CR 639)
6. North Olden Avenue (CR 622) & Capital Plaza
7. North Olden Avenue (CR 622) & Princeton Avenue (CR-583) [MP 4.12]

The project corridor location is shown in **Exhibit 1**.

Exhibit 1 – Project Corridor Location and Intersections

LOCATION MAP
DVRPC NEW JERSEY SIGNAL TIMING INITIATIVE
CR 622 - OLDEN AVENUE
EWING TOWNSHIP, MERCER COUNTY



Of the seven locations, six intersections are included in the retiming work effort. Each of the six project intersections have an electrical plan and layout plan, issued by Mercer County Engineering Department. The existing day plan schedule for the project intersections was straightforward: The existing six signals under Mercer County jurisdiction operated with a single "free" plan 24 hours a day, 7 days per week. The existing timing directives for each intersection are shown in **Appendix B,** except for the Olden

Avenue/Princeton Avenue intersection, which was unavailable fromthe Mercer County Engineering Department.

II. Data Collection

A. Turning Movement Counts

Peak hour intersection counts were conducted at the aforementioned intersections during the weekday morning (7:00 am to 9:00 am), weekday mid-day (11:00 am to 1:00 pm) and evening (4:00 pm to 6:00 pm) peak hour periods. Saturday counts were taken between 11:00 am and 1:00 pm. The manual turning movement counts were taken on Thursday, November 16, 2017 and Saturday, November 18, 2017 by the TWT team. The turning movement counts were conducted in advance of other data collection to fully utilize project funds from 2017 funding. The TMCs are available on the project website, http://www.dvrpc.taylorwiseman.com/.

B. Automatic Traffic Recorder (ATR) Counts

In May/June 2018, automatic traffic recorder counts were taken by the TWT team as presented in Table 2:

Table 2
2018 Average Daily Traffic
North Olden Avenue

Location	Average Daily Traffic
North Olden Avenue, between Sutherland Road & Pennington Road – NB Traffic	7,883 vehicles
North Olden Avenue, between Sutherland Road & Pennington Road – SB Traffic	7,585 vehicles
Total ADT	**15,468 vehicles**
North Olden Avenue, between Parkside Avenue & Prospect Street – NB Traffic	12,493 vehicles
North Olden Avenue, between Parkside Avenue & Prospect Street – SB Traffic	12,046 vehicles
Total ADT	**24,539 vehicles**
North Olden Avenue, between Artic Parkway & Capital Plaza – NB Traffic	12,280 vehicles
North Olden Avenue, between Artic Parkway & Capital Plaza – SB Traffic	13,139 vehicles
Total ADT	**25,419 vehicles**

The twenty-four hour counts clearly show the fluctuation of traffic volumes the project corridor experiences on any given day. The southern segment (South of Pennington Road) of the corridor experiences almost twice as much traffic as the northern section of the corridor. The automatic traffic recorder counts are available on the project website: http://dvrpc.taylorwiseman.com/.

C. *Travel Time Runs*

Travel time runs were collected within the project area both before and after initial timing plan implementation. Using a GPS enabled laptop and the software Tru-Traffic™, trip logs were recorded along northbound and southbound North Olden Avenue. Tru-Traffic™ was also utilized during implementation to fine-tune splits and offsets.

D. *Traffic Signal Timing and Phasing Data*

Traffic signal timing and phasing data were obtained from the Mercer County Engineering Office for the project corridor. Mercer County was unable to provide an existing timing directive for Princeton Avenue. The existing timing directives are presented in **Appendix B**. Movement, sequence and timing information, as well as various NEMA settings and time of day/date were field verified in the existing Econolite ASC/3S controllers. The controller units were set to US Navy observatory time utilizing smart phone applications and time variances were noted. Princeton Avenue was not queried as the contractor was responsible for the operation of the intersection during the construction period.

E. *Field Review of Existing Operations*

Photo 2: NEMA TS-1 controller (Econolite ASC/3S) at Prospect Street

Field notes were collected at the intersection on various intersection, signal, and traffic characteristics to assist in model development and signal optimization. Information gathered included lane geometry, storage lengths, number and types of signal heads, cabinet and pedestrian push button locations, and signal phasing.

Posted speed limits, left turn types (protected, protected/permitted, or permitted), turn restrictions, and the presence of roadway lighting and signal back plates were noted. Vehicle detection was observed for proper operation, both on the street and in the cabinet. Pedestrian push buttons were tested for proper operation during the permit compliance. Any other unique characteristics were also recorded.

All Mercer County project corridor controllers are Econolite ASC/3-2100 in a NEMA TS-1 configuration. All detection on the corridor was functioning at the end of implementation. The controller cabinets, in general, were in good to excellent condition. The controller cabinet at Capital Plaza needs replacement as it was pre-NEMA TS-1, there was no room for expansion of the components and it appeared to be about 40 years old. . The controller unit at Princeton Avenue is brand new as the cabinet assembly was replaced during this project and is an Econolite ASC/3-2100. The consultant team verified that the desired timing scheme/settings was installed by the contractor at Princeton Avenue.

III. Analysis and Implementation

A. *Modeling*

The TWT team developed a set of base Synchro™ models for management of the new traffic data, initial analysis of the intersection with and without various timing changes and a screening level review of each intersection's overall potential for capacity-level improvements using the Intersection Capacity Utilization (ICU) Methodology. Microscopic simulation using SimTraffic™ was used to assess the impact of unmet demand, turn pocket overflow, metering and spillback, and the effects of origin-destination pairs. TruTraffic™ was used to assist in offset determination in order to assess early release issues created when minor phases gap out and unused cycle time is typically sent back to the coordinated phases.

It is important to note that the delay minimization focus of the optimization routine in Synchro™ is helpful to a point in deriving improved cycle lengths and splits; however, this method does not necessarily favor corridor progression and bandwidth requirements. After development of the base models and supplemental evaluations in SimTraffic™, the UTDF file transfer feature with various spreadsheets was used to create base TruTraffic™ models for more in-depth optimization. Synchro summary reports are presented in **Appendix C** of this report.

B. *Implementation*

During the week of October 8, 2018, the consultant team implemented the optimized timing plans into the North Olden Avenue coordinated section (Parkside Avenue to Princeton Avenue), as well as the intersection of North Olden Avenue and Parkway Avenue, which operates in "free" mode. As stated prior in the report, the intersection of North Olden Road and Pennington Road (NJ 31) was not touched by this project as it is maintained by NJDOT. The timing at Princeton Avenue was updated by Mercer County's project contractor after the construction at the intersection, which had been ongoing during this project, was finalized. The consultant team verified that each controller maintained a common time standard.

The consultant team had recommended, through its analysis of traffic data collected to run the intersection at North Olden Avenue & Parkway Avenue/Lexington Avenue as a free standalone intersection. The intersection of Pennington Road (NJ 31), a state-maintained signal, creates a natural break in coordination between Parkway and the rest of the corridor, as this intersection operates on a NJDOT timing plan.

The five signalized intersections on North Olden Avenue south of Pennington Road (NJ Route 31), Parkside Avenue, Prospect Street, Artic Parkway, Capital Plaza and Princeton Avenue all operate in coordination via time base. There are no GPS units to keep the clocks in sync; however, all clocks have been adjusted to a US Navy observatory time, based on coordinated universal time (UTC). The time keeping function of the coordination unit is based on the 60 Hz line frequency of the utility serving the intersection. If the power is interrupted to controllers utilizing Time Based Coordination, the internal clock relies on a battery which may result in time variations. The TWT team has inspected the corridor controllers for inconsistent drift and have found that although the controller clocks are not accurately showing accurate time, the differences between universal time and clock time were consistent among project controllers. In order to maintain maximum efficiency of the coordinated system, Mercer County should inspect controller clocks at least once a year and reset them all to universal time.

Within the North Olden Avenue coordinated section, coordinated operation was installed during the week from 6:00 AM to 9:00 PM, and from 9:00 AM to 8:00 PM on the weekend. The weekday programs include an AM, Mid-Day, PM and PM Off-Peak. The weekend program has a single coordinated timing plan. Cycle

lengths on North Olden Avenue have been held to 75 seconds throughout the AM, Midday, PM, PM off-peak and weekends. The corridor was observed during all (AM, Mid-Day, PM, PM Off-Peak, and weekend) timing plans. Minor changes were made to offset, split and cycle as necessary and were documented so that the final timing directives would reflect field conditions.

C. *Fine-Tuning of Signal Timings*

The TWT team observed each new timing plan at every intersection during its respective peak hour to ensure each phase split was appropriate for the traffic conditions present. If a movement or intersection was over capacity, split adjustments were made to manage queue spillback and blockage.

In addition to fine-tuning splits, offset adjustments often have a larger effect on the performance of the corridor. Offsets were adjusted at the coordinated intersections by conducting field observations along the corridor. During implementation, the TWT team utilized Tru-Traffic ™ in conjunction with a direct connect GPS unit to observe the operation of the progressive system. TWT team engineers can track the system time as well as their location within the time-space diagram for any time period. This effort results in several minor adjustments to split and offset times during a time period.

The revised signal timings are available from the project website, http://www.dvrpc.taylorwiseman.com and are presented in **Appendix D**. Updated signal timing directives were developed by the consultant team, with electronic and paper copies delivered to Mercer County and laminated copies placed in each controller.

IV. Results

A. *Before and After Data*

Travel time data along the corridor was collected before and after implementation of the initial timing plans during the weekday morning, mid-day, evening and the weekend mid-day peak hour periods.

Photo 3: Intersection of North Olden Avenue and Parkway Avenue. This intersection operates "free" throughout the day.

With implementation of the new timing plans and maintenance of a uniform time clock between controllers, progression along North Olden Avenue between Parkside Avenue and Princeton Avenue improved significantly, in both directions. For all four peak hour periods, the implemented retiming is producing positive results and significant savings in travel time, delay, the number of stops, and travel speed in both directions. Refer to **Appendix A** for the travel time summary reports for the time periods.

Table 3 summarizes both the directional and cumulative summary of performance metrics collected on North Olden Avenue.

Table 3
Coordinated Segment of North Olden Avenue (Parkside Avenue to Princeton Avenue)
Ewing Township, Mercer County
Peak Hour Travel Time and Delay Comparison

Direction		AM Peak		Mid-day Peak		PM Peak		Weekend Mid-day Peak	
		Travel Time (s)	Delay (s)	Travel Time (s)	Delay (s)	Travel Time (s)	Delay (s)	Travel Time (s)	Delay (s)
Southbound	Existing	127	20	155	47	153	46	149	42
	Implemented	115	7	138	31	147	39	138	30
	Difference	-13*	-13	-16*	-16	-7*	-7	-11	-11*
	% Difference	**-10%**	**-64%**	**-11.0%**	**-35%**	**-4%**	**-14%**	**-8%**	**-27%**
Northbound	Existing	135	13	157	35	166	44	169	47
	Implemented	120	-3	135	12	129	6	126	3
	Difference	-15	-15*	-23*	-23	-37*	-37*	-44*	-44
	% Difference	**-11%**	**-122%**	**-14.0%**	**-66%**	**-22%**	**-85%**	**-26%**	**-93%**
Both Directions	Existing	131	16	156	41	159	45	159	44
	Implemented	117	2	136	21	138	23	132	17
	Difference	-14	-14	-20	-20	-21	-22	-28*	-28
	% Difference	**-11%**	**-86%**	**-13%**	**-48%**	**-13%**	**-49%**	**-17%**	**-62%**

Southbound: Parkside Avenue to Capital Plaza
Northbound: Capital Plaza to Parkside Avenue

- *Value as reported in Tru-Traffic summary report. Rounding errors possible.*

B. Opportunities for Improvement

North Olden Avenue, Mercer County Route 622, had basic timing in-place at the start of this project. Maintenance of the signal system, as well as the on-street equipment was observed to be very good to excellent. Working with Mercer County Traffic Engineering, the Regional Signal Timing Initiative has shown significant benefit to updated traffic signal timing in reduced delay, travel time and stops by motorists. The updated timing scheme allows the traffic signal controllers an opportunity to better serve peak hour commuter as well as weekend traffic efficiently.

The Regional Traffic Signal Timing Initiative has shown that significant improvement in traffic operations is possible with the introduction of new timing plans as well as a common time standard on the North Olden Avenue (CR 622) corridor. The consultant team recommends the following:

1. Regular surveillance and adjustment of controller clock time to ensure the individual controllers maintain a common time standard. Installation of GPS units in the cabinets would alleviate this need.

2. Consider replacement of the controller assembly at North Olden Avenue and Capital Plaza. This controller is in an outdated cabinet and should be updated.
3. Timing plans on the corridor should be revisited within 3-5 years.
4. Mercer County should consider use of a GPS unit in all future cabinets, ensuring that the controller time clocks are synchronized with atomic time daily.

C. Additional Resources/Project Data

Additional information, including project data, analysis files, and other detailed reports will be available on the project website at: http://www.dvrpc.taylorwiseman.com/

Appendix A

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Travel Time & Delay Report for Olden Avenue

Legend:

CTT:
Summarized Cumulative Travel Time since beginning of Run (seconds)

CTL:
Summarized Cumulative Travel Distance since beginning of Run (feet)

CDL:
Summarized Cumulative User-specified Design Distance since beginning of Run (feet)

CD:
Summarized Cumulative Delay since beginning of Run (seconds) = CTT - CRT

CRT:
Summarized Cumulative Running Time (seconds) = accumulation of DL/DS since beginning of Run

CPLSD:
Summarized Cumulative Posted Speed Limit Delay since beginning of Run (seconds)

CPLRT:
Summarized Cumulative Posted Speed Limit Running Time, or Travel Time since beginning of Run if maintaining Posted Speed Limit (seconds) = accumulation of DL/PLS since beginning of Run

CMxSD:
Summarized Cumulative Maximum-Speed Delay since beginning of Run (seconds)

CMinRT:
Summarized Cumulative Minimum Running Time, or Travel Time since beginning of Run if maintaining Maximum Speed (seconds) = accumulation of DL/MxS since beginning of Run

CStopD:
Summarized Cumulative Stopped Delay since beginning of Run (seconds). The "Stopped Delay" is counted from when the speed drops below 5 mph after exceeding 15 mph until it exceeds 15 mph once again

CBS1T:
Summarized Cumulative Time spent Below Speed #1 (10 mph) since beginning of Run (seconds)

CAS1T:
Summarized Cumulative Free-Flow Travel Time (spent Above Speed #1 (10 mph)) since beginning of Run (seconds) = CTT - CBS1T

CBS2T:
Summarized Cumulative Time spent Below Speed #2 (30 mph) since beginning of Run (seconds)

CAS2T:
Summarized Cumulative Free-Flow Travel Time (spent Above Speed #2 (30 mph)) since beginning of Run (seconds) = CTT - CBS2T

CAS:
Summarized Cumulative Actual Average Speed since beginning of Run (mph) = CTL/CTT

CStops:
Summarized Cumulative number of Stops in Run. A "Stop" is counted when the speed drops below 5 mph after exceeding 15 mph

CGST:
Summarized Cumulative Time Elapsed from presumed Start of Through Green to Vehicle Startup (seconds). A "Stop" is counted when the speed drops below 5 mph after exceeding 15 mph

CGCT:
Summarized Cumulative Time Elapsed from presumed Start of Through Green to this Node Crossing (seconds)

CQDL:
Summarized Cumulative Travel Distance from Vehicle Startup after last Stop to Node Crossing (feet). A "Stop" is counted when the speed drops below 5 mph after exceeding 15 mph

CLN:
Summarized Cumulative Number of Links in Run

TV:
Summarized Through Volume (vph)

Cumulative Summary of runs Eastbound from Parkside Avenue (#3)

8 Before-type runs, collected Tuesday 5/15/2018 to Tuesday 5/15/2018, over day(s) Tue, with starting times during 7:22:35 AM to 8:56:51 AM
9 After-type runs, collected Tuesday 2/5/2019 to Tuesday 2/5/2019, over day(s) Tue, with starting times during 7:08:37 AM to 8:52:31 AM

	CTT	CTL	CDL	CD	CRT	CPLSD	CPLRT	CMxSD	CMinRT	CStopD	CBS1T	CAS1T	CBS2T	CAS2T	CAS	CStops	CGST	CGCT	CQDL	CLN	TV
to Capital Plaza (#6)																					
Average Before (n=8)	127	5512	5514	20	107	-23	150	33	95	13	14	114	43	84	30.4	0.8	22.0	105.8	21	3	0
Std Dev Before (n=8)	*27*	*1*	*0*	*27*	*0*	*27*	*0*	*24*	*5*	*16*	*15*	*15*	*44*	*18*	*5.3*	*0.7*	*25.4*	*25.5*	*22*	*3*	*0*
Average After (n=9)	115	5513	5514	7	107	-36	150	20	95	3	4	111	31	84	33.1	0.3	18.8	121.1	34	3	0
Std Dev After (n=9)	*11*	*1*	*0*	*11*	*0*	*11*	*0*	*9*	*7*	*5*	*5*	*10*	*27*	*18*	*3.2*	*0.5*	*29.8*	*41.5*	*54*	*3*	*0*
Difference	-13	1	0	-13	0	-13	0	-13	0	-10	-10	-3	-12	-1	2.6	-0.4	-3.2	15.2	14	3	0
Std Dev Difference	*29*	*1*	*0*	*29*	*0*	*29*	*0*	*25*	*9*	*17*	*16*	*18*	*52*	*25*	*6.2*	*0.9*	*39.2*	*48.8*	*58*	*3*	*0*
% Difference	-10%	0%	0%	-64%	0%	-56%	0%	-40%	0%	-76%	-72%	-3%	-28%	-1%	8.6%	-55.6%	-14.5%	14.4%	68%	3	0

Cumulative Summary of runs Westbound from Capital Plaza (#6)

8 Before-type runs, 1 of unverifiable origin, collected Tuesday 5/15/2018 to Tuesday 5/15/2018, over day(s) Tue, with starting times during 7:10:39 AM to 8:48:32 AM
9 After-type runs, collected Tuesday 2/5/2019 to Tuesday 2/5/2019, over day(s) Tue, with starting times during 7:00:19 AM to 8:42:50 AM

	CTT	CTL	CDL	CD	CRT	CPLSD	CPLRT	CMxSD	CMinRT	CStopD	CBS1T	CAS1T	CBS2T	CAS2T	CAS	CStops	CGST	CGCT	CQDL	CLN	TV
to Parkside Avenue (#3)																					
Average	135	5524	5514	13	123	-15	150	42	94	25	26	110	48	87	28.7	1.0	54.7	126.9	49	3	0

Before (n=8)																					
Std Dev Before (n=8)	*25*	*1*	*0*	*25*	*0*	*25*	*0*	*25*	*6*	*21*	*21*	*9*	*28*	*6*	*5.3*	*0.9*	*46.9*	*37.7*	*36*	*3*	*0*
Average After (n=9)	120	5521	5514	-3	123	-31	150	25	95	8	9	111	33	87	31.7	0.7	25.3	105.3	51	3	0
Std Dev After (n=9)	*13*	*1*	*0*	*13*	*0*	*13*	*0*	*11*	*5*	*9*	*9*	*9*	*20*	*11*	*3.5*	*0.7*	*31.0*	*43.8*	*60*	*3*	*0*
Difference	-15	-3	0	-15	0	-15	0	-17	1	-17	-17	2	-15	0	3.1	-0.3	-29.3	-21.6	2	3	0
Std Dev Difference	*28*	*2*	*0*	*28*	*0*	*28*	*0*	*28*	*8*	*23*	*23*	*13*	*34*	*13*	*6.3*	*1.2*	*56.2*	*57.9*	*70*	*3*	*0*
% Difference	-11%	0%	0%	-122%	0%	-101%	0%	-40%	1%	-67%	-66%	1%	-32%	0%	10.6%	-33.3%	-53.6%	-17.0%	4%	3	0

Cumulative Summary of all runs, either direction through artery

16 Before-type runs, 1 of unverifiable origin, collected Tuesday 5/15/2018 to Tuesday 5/15/2018, over day(s) Tue, with starting times during 7:11:37 AM to 8:58:00 AM
18 After-type runs, collected Tuesday 2/5/2019 to Tuesday 2/5/2019, over day(s) Tue, with starting times during 7:01:21 AM to 8:53:44 AM

	CTT	CTL	CDL	CD	CRT	CPLSD	CPLRT	CMxSD	CMinRT	CStopD	CBS1T	CAS1T	CBS2T	CAS2T	CAS	CStops	CGST	CGCT	CQDL	CLN	TV
to End of Arterial Section																					
Average Before (n=16)	131	5518	5514	16	115	-19	150	37	94	19	20	112	46	86	29.6	0.9	38.3	116.4	35	6	0
Std Dev Before (n=16)	*25*	*6*	*0*	*25*	*8*	*25*	*0*	*24*	*6*	*19*	*19*	*12*	*36*	*13*	*5.2*	*0.8*	*40.1*	*33.0*	*32*	*6*	*0*
Average After (n=18)	117	5517	5514	2	115	-33	150	22	95	6	6	111	32	85	32.4	0.5	22.1	113.2	43	6	0
Std Dev After (n=18)	*12*	*4*	*0*	*12*	*8*	*12*	*0*	*10*	*6*	*8*	*8*	*9*	*23*	*14*	*3.3*	*0.6*	*29.7*	*42.2*	*56*	*6*	*0*
Difference	-14	-1	0	-14	0	-14	0	-15	1	-13	-13	-1	-14	0	2.8	-0.4	-16.3	-3.2	8	6	0
Std Dev Difference	*28*	*7*	*0*	*28*	*11*	*28*	*0*	*26*	*8*	*21*	*21*	*15*	*43*	*20*	*6.1*	*1.0*	*49.9*	*53.6*	*65*	*6*	*0*
% Difference	-11%	0%	0%	-86%	0%	-74%	0%	-40%	1%	-70%	-68%	-1%	-30%	0%	9.6%	-42.9%	-42.4%	-2.7%	23%	6	0

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Travel Time & Delay Report for Olden Avenue

Legend:

CTT:
Summarized Cumulative Travel Time since beginning of Run (seconds)
CTL:
Summarized Cumulative Travel Distance since beginning of Run (feet)
CDL:
Summarized Cumulative User-specified Design Distance since beginning of Run (feet)
CD:
Summarized Cumulative Delay since beginning of Run (seconds) = CTT - CRT
CRT:
Summarized Cumulative Running Time (seconds) = accumulation of DL/DS since beginning of Run
CPLSD:
Summarized Cumulative Posted Speed Limit Delay since beginning of Run (seconds)
CPLRT:
Summarized Cumulative Posted Speed Limit Running Time, or Travel Time since beginning of Run if maintaining Posted Speed Limit (seconds) = accumulation of DL/PLS since beginning of Run
CMxSD:
Summarized Cumulative Maximum-Speed Delay since beginning of Run (seconds)
CMinRT:
Summarized Cumulative Minimum Running Time, or Travel Time since beginning of Run if maintaining Maximum Speed (seconds) = accumulation of DL/MxS since beginning of Run
CStopD:
Summarized Cumulative Stopped Delay since beginning of Run (seconds). The "Stopped Delay" is counted from when the speed drops below 5 mph after exceeding 15 mph until it exceeds 15 mph once again
CBS1T:
Summarized Cumulative Time spent Below Speed #1 (10 mph) since beginning of Run (seconds)
CAS1T:
Summarized Cumulative Free-Flow Travel Time (spent Above Speed #1 (10 mph)) since beginning of Run (seconds) = CTT - CBS1T
CBS2T:
Summarized Cumulative Time spent Below Speed #2 (30 mph) since beginning of Run (seconds)
CAS2T:
Summarized Cumulative Free-Flow Travel Time (spent Above Speed #2 (30 mph)) since beginning of Run (seconds) = CTT - CBS2T
CAS:
Summarized Cumulative Actual Average Speed since beginning of Run (mph) = CTL/CTT
CStops:
Summarized Cumulative number of Stops in Run. A "Stop" is counted when the speed drops below 5 mph after exceeding 15 mph
CGST:
Summarized Cumulative Time Elapsed from presumed Start of Through Green to Vehicle Startup (seconds). A "Stop" is counted when the speed drops below 5 mph after exceeding 15 mph
CGCT:
Summarized Cumulative Time Elapsed from presumed Start of Through Green to this Node Crossing (seconds)
CQDL:
Summarized Cumulative Travel Distance from Vehicle Startup after last Stop to Node Crossing (feet). A "Stop" is counted when the speed drops below 5 mph after exceeding 15 mph
CLN:
Summarized Cumulative Number of Links in Run
TV:
Summarized Through Volume (vph)

Cumulative Summary of runs Eastbound from Parkside Avenue (#3)

8 Before-type runs, collected Tuesday 5/15/2018 to Tuesday 5/15/2018, over day(s) Tue, with starting times during 11:04:16 AM to 12:56:32 PM
9 After-type runs, collected Tuesday 2/5/2019 to Tuesday 2/5/2019, over day(s) Tue, with starting times during 11:02:13 AM to 12:56:10 PM

	CTT	CTL	CDL	CD	CRT	CPLSD	CPLRT	CMxSD	CMinRT	CStopD	CBS1T	CAS1T	CBS2T	CAS2T	CAS	CStops	CGST	CGCT	CQDL	CLN	TV
to Capital Plaza (#6)																					
Average Before (n=8)	155	5515	5514	47	107	4	150	52	102	28	29	125	85	69	25.2	1.1	39.9	121.1	311	3	0
Std Dev Before (n=8)	*30*	*5*	*0*	*30*	*0*	*30*	*0*	*29*	*6*	*23*	*24*	*10*	*44*	*17*	*5.5*	*0.8*	*40.6*	*17.7*	*560*	*3*	*0*
Average After (n=9)	138	5513	5514	31	107	-12	150	36	102	15	15	123	69	69	27.8	0.8	42.0	123.6	55	3	0
Std Dev After (n=9)	*23*	*2*	*0*	*23*	*0*	*23*	*0*	*22*	*5*	*19*	*19*	*7*	*30*	*12*	*4.2*	*0.8*	*47.0*	*21.0*	*74*	*3*	*0*
Difference	-16	-1	0	-16	0	-16	0	-16	0	-12	-14	-2	-16	0	2.6	-0.3	2.1	2.5	-256	3	0
Std Dev Difference	*38*	*6*	*0*	*38*	*0*	*38*	*0*	*36*	*8*	*30*	*31*	*12*	*53*	*20*	*6.9*	*1.2*	*62.1*	*27.5*	*565*	*3*	*0*
% Difference	-11%	0%	0%	-35%	0%	-382%	0%	-31%	0%	-45%	-48%	-2%	-19%	-1%	10.2%	-30.9%	5.3%	2.0%	-82%	3	0

Cumulative Summary of runs Westbound from Capital Plaza (#6)

8 Before-type runs, collected Tuesday 5/15/2018 to Tuesday 5/15/2018, over day(s) Tue, with starting times during 11:09:36 AM to 1:01:26 PM
9 After-type runs, collected Tuesday 2/5/2019 to Tuesday 2/5/2019, over day(s) Tue, with starting times during 11:07:34 AM to 1:01:25 PM

	CTT	CTL	CDL	CD	CRT	CPLSD	CPLRT	CMxSD	CMinRT	CStopD	CBS1T	CAS1T	CBS2T	CAS2T	CAS	CStops	CGST	CGCT	CQDL	CLN	TV
to Parkside Avenue (#3)																					

Average Before (n=8)	157	5524	5514	35	123	7	150	56	101	34	35	122	79	78	24.8	1.5	63.9	125.9	165	3	0
Std Dev Before (n=8)	*33*	*4*	*0*	*33*	*0*	*33*	*0*	*29*	*6*	*24*	*25*	*13*	*50*	*18*	*5.0*	*1.1*	*43.2*	*28.4*	*224*	*3*	*0*
Average After (n=9)	135	5521	5514	12	123	-16	150	33	101	14	15	119	53	82	28.2	0.8	34.6	115.2	62	3	0
Std Dev After (n=9)	*12*	*1*	*0*	*12*	*0*	*12*	*0*	*13*	*3*	*13*	*12*	*6*	*21*	*12*	*2.5*	*0.7*	*40.3*	*37.3*	*65*	*3*	*0*
Difference	-23	-3	0	-23	0	-23	0	-23	0	-21	-20	-3	-26	4	3.3	-0.7	-29.3	-10.8	-103	3	0
Std Dev Difference	*35*	*4*	*0*	*35*	*0*	*35*	*0*	*32*	*7*	*27*	*27*	*14*	*54*	*22*	*5.5*	*1.3*	*59.1*	*46.9*	*233*	*3*	*0*
% Difference	-14%	0%	0%	-66%	0%	-331%	0%	-41%	0%	-60%	-57%	-2%	-33%	5%	13.5%	-48.1%	-45.9%	-8.5%	-63%	3	0

Cumulative Summary of all runs, either direction through artery

16 Before-type runs, collected Tuesday 5/15/2018 to Tuesday 5/15/2018, over day(s) Tue, with starting times during 11:05:29 AM to 1:03:14 PM

18 After-type runs, collected Tuesday 2/5/2019 to Tuesday 2/5/2019, over day(s) Tue, with starting times during 11:04:28 AM to 1:02:50 PM

	CTT	CTL	CDL	CD	CRT	CPLSD	CPLRT	CMxSD	CMinRT	CStopD	CBS1T	CAS1T	CBS2T	CAS2T	CAS	CStops	CGST	CGCT	CQDL	CLN	TV
to End of Arterial Section																					
Average Before (n=16)	156	5519	5514	41	115	6	150	54	102	31	32	124	82	74	25.0	1.3	51.9	123.5	238	6	0
Std Dev Before (n=16)	*31*	*7*	*0*	*31*	*8*	*31*	*0*	*28*	*6*	*23*	*24*	*11*	*46*	*17*	*5.0*	*0.9*	*42.3*	*23.0*	*419*	*6*	*0*
Average After (n=18)	136	5517	5514	21	115	-14	150	35	102	14	15	121	61	75	28.0	0.8	38.3	119.4	58	6	0
Std Dev After (n=18)	*18*	*4*	*0*	*20*	*8*	*18*	*0*	*17*	*4*	*16*	*15*	*6*	*26*	*13*	*3.3*	*0.7*	*42.7*	*29.7*	*68*	*6*	*0*
Difference	-20	-2	0	-20	0	-20	0	-20	0	-16	-17	-3	-21	2	3.0	-0.5	-13.6	-4.1	-180	6	0
Std Dev Difference	*35*	*8*	*0*	*37*	*11*	*35*	*0*	*33*	*7*	*28*	*28*	*13*	*53*	*22*	*6.0*	*1.2*	*60.1*	*37.5*	*424*	*6*	*0*
% Difference	-13%	0%	0%	-48%	0%	-351%	0%	-36%	0%	-53%	-53%	-2%	-26%	2%	11.8%	-40.7%	-26.2%	-3.4%	-76%	6	0

pref test title

Friday 4/12/2019 1:05:38 PM

Travel Time & Delay Report for Olden Avenue

Legend:

CTT:
Summarized Cumulative Travel Time since beginning of Run (seconds)
CTL:
Summarized Cumulative Travel Distance since beginning of Run (feet)
CDL:
Summarized Cumulative User-specified Design Distance since beginning of Run (feet)
CD:
Summarized Cumulative Delay since beginning of Run (seconds) = CTT - CRT
CRT:
Summarized Cumulative Running Time (seconds) = accumulation of DL/DS since beginning of Run
CPLSD:
Summarized Cumulative Posted Speed Limit Delay since beginning of Run (seconds)
CPLRT:
Summarized Cumulative Posted Speed Limit Running Time, or Travel Time since beginning of Run if maintaining Posted Speed Limit (seconds) = accumulation of DL/PLS since beginning of Run
CMxSD:
Summarized Cumulative Maximum-Speed Delay since beginning of Run (seconds)
CMinRT:
Summarized Cumulative Minimum Running Time, or Travel Time since beginning of Run if maintaining Maximum Speed (seconds) = accumulation of DL/MxS since beginning of Run
CStopD:
Summarized Cumulative Stopped Delay since beginning of Run (seconds). The "Stopped Delay" is counted from when the speed drops below 5 mph after exceeding 15 mph until it exceeds 15 mph once again
CBS1T:
Summarized Cumulative Time spent Below Speed #1 (10 mph) since beginning of Run (seconds)
CAS1T:
Summarized Cumulative Free-Flow Travel Time (spent Above Speed #1 (10 mph)) since beginning of Run (seconds) = CTT - CBS1T
CBS2T:
Summarized Cumulative Time spent Below Speed #2 (30 mph) since beginning of Run (seconds)
CAS2T:
Summarized Cumulative Free-Flow Travel Time (spent Above Speed #2 (30 mph)) since beginning of Run (seconds) = CTT - CBS2T
CAS:
Summarized Cumulative Actual Average Speed since beginning of Run (mph) = CTL/CTT
CStops:
Summarized Cumulative number of Stops in Run. A "Stop" is counted when the speed drops below 5 mph after exceeding 15 mph
CGST:
Summarized Cumulative Time Elapsed from presumed Start of Through Green to Vehicle Startup (seconds). A "Stop" is counted when the speed drops below 5 mph after exceeding 15 mph
CGCT:
Summarized Cumulative Time Elapsed from presumed Start of Through Green to this Node Crossing (seconds)
CQDL:
Summarized Cumulative Travel Distance from Vehicle Startup after last Stop to Node Crossing (feet). A "Stop" is counted when the speed drops below 5 mph after exceeding 15 mph
CLN:
Summarized Cumulative Number of Links in Run
TV:
Summarized Through Volume (vph)

Cumulative Summary of runs Eastbound from Parkside Avenue (#3)

5 Before-type runs, collected Tuesday 5/15/2018 to Tuesday 5/15/2018, over day(s) Tue, with starting times during 4:02:08 PM to 5:11:18 PM
8 After-type runs, collected Tuesday 2/5/2019 to Tuesday 2/5/2019, over day(s) Tue, with starting times during 4:03:27 PM to 5:54:39 PM

	CTT	CTL	CDL	CD	CRT	CPLSD	CPLRT	CMxSD	CMinRT	CStopD	CBS1T	CAS1T	CBS2T	CAS2T	CAS	CStops	CGST	CGCT	CQDL	CLN	TV
to Capital Plaza (#6)																					
Average Before (n=5)	153	5512	5514	46	107	3	150	52	102	31	32	121	77	76	25.4	1.0	40.1	130.1	99	3	0
Std Dev Before (n=5)	*30*	*1*	*0*	*30*	*0*	*30*	*0*	*30*	*7*	*27*	*28*	*9*	*37*	*14*	*5.5*	*0.7*	*42.0*	*23.6*	*72*	*3*	*0*
Average After (n=8)	147	5513	5514	39	107	-4	150	44	103	22	24	123	68	79	26.3	0.9	37.4	116.4	96	3	0
Std Dev After (n=8)	*27*	*5*	*0*	*27*	*0*	*27*	*0*	*28*	*4*	*26*	*28*	*5*	*30*	*8*	*4.5*	*0.8*	*32.8*	*23.0*	*120*	*3*	*0*
Difference	-7	1	0	-7	0	-7	0	-8	2	-8	-8	2	-9	2	0.9	-0.1	-2.7	-13.7	-3	3	0
Std Dev Difference	*40*	*5*	*0*	*40*	*0*	*40*	*0*	*41*	*8*	*38*	*39*	*11*	*47*	*16*	*7.1*	*1.1*	*53.3*	*33.0*	*140*	*3*	*0*
% Difference	-4%	0%	0%	-14%	0%	-220%	0%	-16%	2%	-27%	-26%	1%	-11%	3%	3.7%	-12.5%	-6.8%	-10.5%	-3%	3	0

Cumulative Summary of runs Westbound from Capital Plaza (#6)

4 Before-type runs, collected Tuesday 5/15/2018 to Tuesday 5/15/2018, over day(s) Tue, with starting times during 4:11:04 PM to 5:01:16 PM
8 After-type runs, collected Tuesday 2/5/2019 to Tuesday 2/5/2019, over day(s) Tue, with starting times during 4:08:58 PM to 6:01:24 PM

	CTT	CTL	CDL	CD	CRT	CPLSD	CPLRT	CMxSD	CMinRT	CStopD	CBS1T	CAS1T	CBS2T	CAS2T	CAS	CStops	CGST	CGCT	CQDL	CLN	TV
to Parkside Avenue (#3)																					

Average Before (n=4)	166	5524	5514	44	123	16	150	61	106	34	34	132	103	64	23.6	1.8	59.8	118.8	317	3	0
Std Dev Before (n=4)	*35*	*3*	*0*	*35*	*0*	*35*	*0*	*30*	*7*	*26*	*26*	*13*	*51*	*20*	*6.0*	*1.5*	*42.5*	*14.3*	*351*	*3*	*0*
Average After (n=8)	129	5520	5514	6	123	-21	150	28	101	9	10	119	45	84	29.6	0.6	32.1	140.3	62	3	0
Std Dev After (n=8)	*18*	*1*	*0*	*18*	*0*	*18*	*0*	*17*	*5*	*13*	*12*	*6*	*30*	*12*	*3.4*	*0.7*	*34.5*	*22.4*	*89*	*3*	*0*
Difference	-37	-3	0	-37	0	-37	0	-33	-4	-25	-24	-13	-58	21	6.0	-1.1	-27.7	21.5	-256	3	0
Std Dev Difference	*39*	*3*	*0*	*39*	*0*	*39*	*0*	*34*	*9*	*29*	*28*	*15*	*59*	*23*	*6.9*	*1.7*	*54.7*	*26.5*	*362*	*3*	*0*
% Difference	-22%	0%	0%	-85%	0%	-235%	0%	-55%	-4%	-73%	-70%	-10%	-57%	33%	25.4%	-64.3%	-46.4%	18.1%	-81%	3	0

Cumulative Summary of all runs, either direction through artery

9 Before-type runs, collected Tuesday 5/15/2018 to Tuesday 5/15/2018, over day(s) Tue, with starting times during 4:03:49 PM to 5:13:52 PM

16 After-type runs, collected Tuesday 2/5/2019 to Tuesday 2/5/2019, over day(s) Tue, with starting times during 4:04:56 PM to 6:02:40 PM

	CTT	CTL	CDL	CD	CRT	CPLSD	CPLRT	CMxSD	CMinRT	CStopD	CBS1T	CAS1T	CBS2T	CAS2T	CAS	CStops	CGST	CGCT	CQDL	CLN	TV
to End of Arterial Section																					
Average Before (n=9)	159	5517	5514	45	114	9	150	56	103	32	33	126	88	71	24.6	1.3	48.9	125.1	196	6	0
Std Dev Before (n=9)	*31*	*6*	*0*	*30*	*8*	*31*	*0*	*28*	*7*	*25*	*25*	*12*	*43*	*17*	*5.5*	*1.1*	*40.8*	*19.8*	*249*	*6*	*0*
Average After (n=16)	138	5517	5514	23	115	-12	150	36	102	16	17	121	56	81	27.9	0.8	34.7	128.4	79	6	0
Std Dev After (n=16)	*24*	*5*	*0*	*28*	*8*	*24*	*0*	*24*	*4*	*21*	*22*	*6*	*31*	*11*	*4.2*	*0.8*	*32.6*	*25.2*	*104*	*6*	*0*
Difference	-21	-1	0	-22	1	-21	0	-20	-1	-16	-16	-5	-32	11	3.4	-0.6	-14.1	3.3	-117	6	0
Std Dev Difference	*39*	*8*	*0*	*41*	*11*	*39*	*0*	*37*	*8*	*33*	*33*	*13*	*53*	*20*	*6.9*	*1.4*	*52.3*	*32.0*	*270*	*6*	*0*
% Difference	-13%	0%	0%	-49%	1%	-243%	0%	-36%	-1%	-51%	-49%	-4%	-36%	15%	13.7%	-43.8%	-28.9%	2.6%	-60%	6	0

pref test title

Friday 4/12/2019 1:04:38 PM

Travel Time & Delay Report for Olden Avenue

Legend:

CTT:
Summarized Cumulative Travel Time since beginning of Run (seconds)

CTL:
Summarized Cumulative Travel Distance since beginning of Run (feet)

CDL:
Summarized Cumulative User-specified Design Distance since beginning of Run (feet)

CD:
Summarized Cumulative Delay since beginning of Run (seconds) = CTT - CRT

CRT:
Summarized Cumulative Running Time (seconds) = accumulation of DL/DS since beginning of Run

CPLSD:
Summarized Cumulative Posted Speed Limit Delay since beginning of Run (seconds)

CPLRT:
Summarized Cumulative Posted Speed Limit Running Time, or Travel Time since beginning of Run if maintaining Posted Speed Limit (seconds) = accumulation of DL/PLS since beginning of Run

CMxSD:
Summarized Cumulative Maximum-Speed Delay since beginning of Run (seconds)

CMinRT:
Summarized Cumulative Minimum Running Time, or Travel Time since beginning of Run if maintaining Maximum Speed (seconds) = accumulation of DL/MxS since beginning of Run

CStopD:
Summarized Cumulative Stopped Delay since beginning of Run (seconds). The "Stopped Delay" is counted from when the speed drops below 5 mph after exceeding 15 mph until it exceeds 15 mph once again

CBS1T:
Summarized Cumulative Time spent Below Speed #1 (10 mph) since beginning of Run (seconds)

CAS1T:
Summarized Cumulative Free-Flow Travel Time (spent Above Speed #1 (10 mph)) since beginning of Run (seconds) = CTT - CBS1T

CBS2T:
Summarized Cumulative Time spent Below Speed #2 (30 mph) since beginning of Run (seconds)

CAS2T:
Summarized Cumulative Free-Flow Travel Time (spent Above Speed #2 (30 mph)) since beginning of Run (seconds) = CTT - CBS2T

CAS:
Summarized Cumulative Actual Average Speed since beginning of Run (mph) = CTL/CTT

CStops:
Summarized Cumulative number of Stops in Run. A "Stop" is counted when the speed drops below 5 mph after exceeding 15 mph

CGST:
Summarized Cumulative Time Elapsed from presumed Start of Through Green to Vehicle Startup (seconds). A "Stop" is counted when the speed drops below 5 mph after exceeding 15 mph

CGCT:
Summarized Cumulative Time Elapsed from presumed Start of Through Green to this Node Crossing (seconds)

CQDL:
Summarized Cumulative Travel Distance from Vehicle Startup after last Stop to Node Crossing (feet). A "Stop" is counted when the speed drops below 5 mph after exceeding 15 mph

CLN:
Summarized Cumulative Number of Links in Run

TV:
Summarized Through Volume (vph)

Cumulative Summary of runs Eastbound from Parkside Avenue (#3)

8 Before-type runs, collected Saturday 5/12/2018 to Saturday 5/12/2018, over day(s) Sat, with starting times during 11:10:20 AM to 1:08:34 PM
9 After-type runs, collected Saturday 2/9/2019 to Saturday 2/9/2019, over day(s) Sat, with starting times during 11:09:29 AM to 1:03:24 PM

	CTT	CTL	CDL	CD	CRT	CPLSD	CPLRT	CMxSD	CMinRT	CStopD	CBS1T	CAS1T	CBS2T	CAS2T	CAS	CStops	CGST	CGCT	CQDL	CLN	TV
to Capital Plaza (#6)																					
Average Before (n=8)	149	5512	5514	42	107	-1	150	47	102	26	27	122	70	79	26.4	0.6	21.7	136.3	33	3	0
Std Dev Before (n=8)	*35*	*2*	*0*	*35*	*0*	*35*	*0*	*35*	*4*	*32*	*32*	*10*	*46*	*19*	*5.9*	*0.7*	*27.7*	*35.7*	*41*	*3*	*0*
Average After (n=9)	138	5514	5514	30	107	-13	150	40	98	20	20	118	64	73	28.1	0.9	14.9	113.9	107	3	0
Std Dev After (n=9)	*25*	*1*	*0*	*25*	*0*	*25*	*0*	*27*	*3*	*25*	*24*	*4*	*28*	*11*	*4.6*	*0.9*	*20.4*	*38.2*	*159*	*3*	*0*
Difference	-11	2	0	-11	0	-11	0	-7	-4	-6	-7	-5	-5	-6	1.6	0.3	-6.8	-22.4	74	3	0
Std Dev Difference	*43*	*2*	*0*	*43*	*0*	*43*	*0*	*44*	*5*	*40*	*41*	*11*	*54*	*23*	*7.5*	*1.2*	*34.4*	*52.3*	*164*	*3*	*0*
% Difference	-8%	0%	0%	-27%	0%	-802%	0%	-16%	-4%	-24%	-26%	-4%	-8%	-8%	6.1%	42.2%	-31.4%	-16.4%	225%	3	0

Cumulative Summary of runs Westbound from Capital Plaza (#6)

8 Before-type runs, collected Saturday 5/12/2018 to Saturday 5/12/2018, over day(s) Sat, with starting times during 10:59:54 AM to 12:58:15 PM
9 After-type runs, collected Saturday 2/9/2019 to Saturday 2/9/2019, over day(s) Sat, with starting times during 11:00:11 AM to 12:57:30 PM

	CTT	CTL	CDL	CD	CRT	CPLSD	CPLRT	CMxSD	CMinRT	CStopD	CBS1T	CAS1T	CBS2T	CAS2T	CAS	CStops	CGST	CGCT	CQDL	CLN	TV
to Parkside Avenue (#3)																					

Average Before (n=8)	169	5524	5514	47	123	19	150	67	102	42	45	124	98	71	23.1	1.6	64.2	122.9	98	3	0
Std Dev Before (n=8)	*36*	*4*	*0*	*36*	*0*	*36*	*0*	*37*	*7*	*36*	*35*	*9*	*42*	*16*	*4.7*	*1.3*	*59.0*	*24.8*	*94*	*3*	*0*
Average After (n=9)	126	5521	5514	3	123	-25	150	27	98	10	10	115	41	84	30.2	0.8	33.4	137.7	92	3	0
Std Dev After (n=9)	*10*	*2*	*0*	*10*	*0*	*10*	*0*	*10*	*6*	*8*	*7*	*6*	*15*	*8*	*2.5*	*0.4*	*28.5*	*34.2*	*70*	*3*	*0*
Difference	-44	-4	0	-44	0	-44	0	-40	-4	-32	-34	-9	-56	13	7.0	-0.8	-30.8	14.8	-6	3	0
Std Dev Difference	*37*	*4*	*0*	*37*	*0*	*37*	*0*	*38*	*9*	*37*	*36*	*11*	*45*	*18*	*5.3*	*1.4*	*65.6*	*42.2*	*118*	*3*	*0*
% Difference	-26%	0%	0%	-93%	0%	-232%	0%	-59%	-4%	-77%	-77%	-7%	-58%	18%	30.4%	-52.1%	-48.0%	12.0%	-7%	3	0

Cumulative Summary of all runs, either direction through artery

16 Before-type runs, collected Saturday 5/12/2018 to Saturday 5/12/2018, over day(s) Sat, with starting times during 11:02:03 AM to 1:10:34 PM

18 After-type runs, collected Saturday 2/9/2019 to Saturday 2/9/2019, over day(s) Sat, with starting times during 11:01:23 AM to 1:04:47 PM

	CTT	CTL	CDL	CD	CRT	CPLSD	CPLRT	CMxSD	CMinRT	CStopD	CBS1T	CAS1T	CBS2T	CAS2T	CAS	CStops	CGST	CGCT	CQDL	CLN	TV
to End of Arterial Section																					
Average Before (n=16)	159	5518	5514	44	115	9	150	57	102	34	36	123	84	75	24.8	1.1	43.0	129.6	65	6	0
Std Dev Before (n=16)	*36*	*7*	*0*	*34*	*8*	*36*	*0*	*36*	*5*	*34*	*34*	*9*	*45*	*18*	*5.4*	*1.1*	*49.7*	*30.5*	*78*	*6*	*0*
Average After (n=18)	132	5517	5514	17	115	-19	150	33	98	15	15	116	53	79	29.1	0.8	24.2	125.8	99	6	0
Std Dev After (n=18)	*19*	*4*	*0*	*23*	*8*	*19*	*0*	*20*	*5*	*18*	*18*	*5*	*25*	*11*	*3.7*	*0.7*	*25.9*	*37.3*	*120*	*6*	*0*
Difference	-28	-1	0	-28	0	-28	0	-23	-4	-19	-21	-7	-31	3	4.3	-0.3	-18.8	-3.8	34	6	0
Std Dev Difference	*41*	*8*	*0*	*41*	*11*	*41*	*0*	*42*	*7*	*39*	*38*	*11*	*52*	*21*	*6.6*	*1.3*	*56.0*	*48.1*	*143*	*6*	*0*
% Difference	-17%	0%	0%	-62%	0%	-317%	0%	-41%	-4%	-56%	-58%	-6%	-37%	4%	17.5%	-25.9%	-43.8%	-2.9%	52%	6	0

Appendix B

Parkway & Olden

File # E11
Pole # NO TAG
Controller: 820A (1450700030)
Monitor: EDI NSM-12 (060103210)
Command: FREE PLAN
Ring Sequence: 1234 / 50

TIMING

FLASH	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 7	Ø 8
WALK	7		7	7				
PED CLEAR	13		18	18				
MIN. GREEN	20	5	7	7	20			
EXTENSION		2.0	2.0	2.0				
MAX GREEN	30	15	15	25	30			
MAX II								
MAX STEP								
MAX LIMIT								
AMBER	4.0	4.0	4.0	4.0	4.0			
RED CLEAR	2.0	2.0	2.0	2.0	2.0			

Ø 1 Parkway Ave. (W.B.)
Ø 2 Olden Ave.
Ø 3 Lexington Ave.
Ø 4 Parkway Ave. (E.B.)
Ø 5 Olden Ave. (Right Turn Arrows)

RECALLS

	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 7	Ø 8
MIN RECALL	ON	OFF	OFF	OFF	ON			
PED RECALL	OFF	OFF	OFF	OFF	OFF			
MAX RECALL	OFF	OFF	OFF	OFF	OFF			
MEMORY	OFF	OFF	OFF	OFF	OFF			

Ø 5 amber arrow omitted if Ø 2 is called
Ø 1 ped recycle
DETECTORS (Video detection)

	1	2	3	4	5	6	7	8
DELAY								
INHIBIT DELAY	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
ASSOCIATION	Ø 1&5	Ø2&5	Ø 3	Ø 4	Ø 1&5	Ø 6	Ø 7	Ø 8

Traffic Signal Timing Directive

N Olden Ave. (CR 622) and Parkside Ave. (CR 636)

Township of Ewing, Mercer County

VARIABLE CYCLE LENGTH

VEHICLE ACTUATION

Phase		INDICATIONS 1,2,3	4,5,6	7,8,9	10,11,12	13,14, 15,16	17,18, 19,20	P1,P2, P3,P4	P5,P6, P7,P8	TIMING PLAN 1 (SEC)
A.	**N. Olden Ave EB/WB Lefts**	G	R	G	R	R	R	DW	DW	5-15
	Change	Y	R	Y	R	R	R	DW	DW	3
	Clear	R	R	R	R	R	R	DW	DW	2
B.	**N.Olden Ave EB/WB R.O.W.**	R	G	R	G	R	R	W	DW	25
	Ped Clearance	R	G	R	G	R	R	FDW	DW	20
	Change	R	Y	R	Y	R	R	DW	DW	4
	Clear	R	R	R	R	R	R	DW	DW	2
C.	**Parkside Ave NB/SB R.O.W.**	R	R	R	R	G	G	DW	DW	10-32
	Change	R	R	R	R	Y	Y	DW	DW	3
	Clear	R	R	R	R	R	R	DW	DW	2
EMERGENCY FLASH		**R**	**Y**	**R**	**Y**	**R**	**R**	**DARK**	**DARK**	

NOTES:

1) The memory circuits are to be disconnected.
2) The vehicle extension shall be set at 2.0 seconds
3) The manual control is to be disconnected.
4) Phase A may be skipped in the absence of vehicular demand.
5) Phase C may be skipped in the absence of vehicular demand.
6) The phase A opposing left turns are to operate separately and independently with the non-conflicting through movement commemcing in the absence of vehicle demand.
7) The signal shall rest in Phase B walk.

Traffic Signal Timing Directive

N Olden Ave. (CR 622) and Parkside Ave. (CR 636)

Township of Ewing, Mercer County

VARIABLE CYCLE LENGTH

PEDESTRIAN ACTUATION

Phase		1,2,3	4,5,6	7,8,9	10,11,12	13,14, 15,16	17,18, 19,20	P1,P2, P3,P4	P5,P6, P7,P8	TIMING PLAN 1 (SEC)
		INDICATIONS								
A.	**N. Olden Ave EB/WB Lefts**	G	R	G	R	R	R	DW	DW	5-15
	Change	Y	R	Y	R	R	R	DW	DW	3
	Clear	R	R	R	R	R	R	DW	DW	2
B.	**N.Olden Ave EB/WB R.O.W.**	R	G	R	G	R	R	W	DW	25
	Ped Clearance	R	G	R	G	R	R	FDW	DW	20
	Change	R	Y	R	Y	R	R	DW	DW	4
	Clear	R	R	R	R	R	R	DW	DW	2
C.	**Parkside Ave NB/SB R.O.W.**	R	R	R	R	G	G	DW	W	7
	Ped Clearance	R	R	R	R	G	G	DW	FDW	25
	Change	R	R	R	R	Y	Y	DW	DW	3
	Clear	R	R	R	R	R	R	DW	DW	2
EMERGENCY FLASH		**R**	**Y**	**R**	**Y**	**R**	**R**	**DARK**	**DARK**	

Traffic Signal Timing Directive

N Olden Ave. (CR 622) and Prospect St. (CR 627)

Township of Ewing, Mercer County

VARIABLE CYCLE LENGTH

VEHICLE ACTUATION

Phase		1,2,3	4,5,6	7,8,9	10,11,12	13,14, 15,16	17,18, 19,20	P1,P2, P3,P4	P5,P6, P7,P8	TIMING PLAN 1 (SEC)
	INDICATIONS									
A.	**N. Olden Ave EB/WB Lefts**	G	R	G	R	R	R	DW	DW	5-15
	Change	Y	R	Y	R	R	R	DW	DW	3
	Clear	R	R	R	R	R	R	DW	DW	2
B.	**N.Olden Ave EB/WB R.O.W.**	R	G	R	G	R	R	W	DW	25
	Ped Clearance	R	G	R	G	R	R	FDW	DW	20
	Change	R	Y	R	Y	R	R	DW	DW	4
	Clear	R	R	R	R	R	R	DW	DW	2
C.	**Prospect St. NB/SB R.O.W.**	R	R	R	R	G	G	DW	DW	10-21
	Change	R	R	R	R	Y	Y	DW	DW	3
	Clear	R	R	R	R	R	R	DW	DW	2
EMERGENCY FLASH		**R**	**Y**	**R**	**Y**	**R**	**R**	**DARK**	**DARK**	

NOTES:

1) The memory circuits are to be disconnected.
2) The vehicle extension shall be set at 2.0 seconds
3) The manual control is to be disconnected.
4) Phase A may be skipped in the absence of vehicular demand.
5) Phase C may be skipped in the absence of vehicular demand.
6) The phase A opposing left turns are to operate separately and independently with the non-conflicting through movement commemcing in the absence of vehicle demand.
7) The signal shall rest in Phase B walk.

Traffic Signal Timing Directive

N Olden Ave. (CR 622) and Prospect St. (CR 627)

Township of Ewing, Mercer County

VARIABLE CYCLE LENGTH

PEDESTRIAN ACTUATION

INDICATIONS

Phase		1,2,3	4,5,6	7,8,9	10,11,12	13,14, 15,16	17,18, 19,20	P1,P2, P3,P4	P5,P6, P7,P8	TIMING PLAN 1 (SEC)
A.	**N. Olden Ave EB/WB Lefts**	G	R	G	R	R	R	DW	DW	5-17
	Change	Y	R	Y	R	R	R	DW	DW	3
	Clear	R	R	R	R	R	R	DW	DW	2
B.	**N.Olden Ave EB/WB R.O.W.**	R	G	R	G	R	R	W	DW	25
	Ped Clearance	R	G	R	G	R	R	FDW	DW	20
	Change	R	Y	R	Y	R	R	DW	DW	4
	Clear	R	R	R	R	R	R	DW	DW	2
C.	**Prospect St. NB/SB R.O.W.**	R	R	R	R	G	G	DW	W	7
	Ped Clearance	R	R	R	R	G	G	DW	FDW	21
	Change	R	R	R	R	Y	Y	DW	DW	3
	Clear	R	R	R	R	R	R	DW	DW	2
EMERGENCY FLASH		**R**	**Y**	**R**	**Y**	**R**	**R**	**DARK**	**DARK**	

Arctic & Olden

File # E 01
Pole # 62786EW
Controller: 820A (5258019902)
Monitor: EDI NSM-12 (020819157)
Command: COOR PLAN
Ring Sequence: 241 / 685
Overlap: A (parent Ø 1, 8)

TIMING

FLASH	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 7	Ø 8	A
WALK		7				7		5	
PED CLEAR		18				18		20	
MIN. GREEN	7	15		7	7	15		7	
EXTENSION	2.0			2.0	2.0			2.0	
MAX GREEN	20	25		20	20	25		20	
MAX II									
MAX STEP									
MAX LIMIT									
AMBER	4.0	4.0		3.5	4.0	4.0		3.5	
RED CLEAR	2.0	2.0		2.5	2.0	2.0		2.5	

Ø (1 & 6) Olden Ave. (N.B.)
Ø (2 & 5) Olden Ave. (S.B.)
Ø 4 Arctic Parkway
Ø 8 Home Depot
OLVP A (Right turn from Home Depot)

RECALLS

	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 7	Ø 8
MIN RECALL	OFF	OFF		OFF	OFF	OFF		OFF
PED RECALL	OFF	OFF		OFF	OFF	OFF		OFF
MAX RECALL	OFF	OFF		OFF	OFF	OFF		OFF
MEMORY	OFF	OFF		OFF	OFF	OFF		OFF

C.N.A. Ø 2 & 6

DETECTORS

	1	2	3	4	5	6	7	8
DELAY								
INHIBIT DELAY								
ASSOCIATION	Ø 1	Ø 2	Ø 8	Ø 4	Ø 5	Ø 8	Ø 4	Ø 8

Arctic & Olden

COORDINATION CONSTANTS

TO REFERENCE	**00:00**	DET. ACCUM. INTERVAL	**CYCLE**
OFFSET REFERENCE	**T0**	CYCLES OF DET. ACCUM.	**001**
EXT. COORD. TYPE	**NONE**	MINUTES OF DET. ACCUM.	**001**
CYCLES OF NO SYNC	**000**	COORD. DUAL ENTRY	**4 & 8**

COORDINATION PLAN 1

PERM STATEGY	**T0**	OMIT STRATEGY	**MAX**
TO LOCATION	**END OF STEP 1**	3% WINDOW	**YES**
STRETCH 3% BY	**000**	GBP OMITS	**NO**
EARLY RETURN	**YES**	ONCE AROUND	**YES**
CYCLE LENGTH	**100**	MIN. CYCLE LENGTH	**90**
MAX CYCLE LENGTH	**130**	OFFSET	**000**
EXT. SYNC	**NO**	ACTIVE S.F.C.	
DET. PLAN	**001**	PROT. ONLT ENABLE	
CALC. WALK	**2 & 6**	REST IN WALK	**2 & 6**
NO SKIP			

RING 1: 241

STEP	1	2	3	4	5	6	7	8	9	10
ST PRM	**000**	**000**	**000**	**000**	**000**	**000**	**000**	**000**	**000**	**000**
AC SPLIT	**048**	**074**	**100**	**000**	**000**	**000**	**000**	**000**	**000**	**000**
OPTION	**MAX**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
SPLIT	**GBP**	**REL**	**REL**	**REL**	**REL**	**REL**	**REL**	**REL**	**REL**	**REL**
RESERV	**YES**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
PED?	**YES**	**YES**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

RING 2: 685

STEP	1	2	3	4	5	6	7	8	9	10
ST PRM	**000**	**000**	**000**	**000**	**000**	**000**	**000**	**000**	**000**	**000**
AC SPLIT	**048**	**074**	**100**	**000**	**000**	**000**	**000**	**000**	**000**	**000**
OPTION	**MAX**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
SPLIT	**GBP**	**REL**	**REL**	**REL**	**REL**	**REL**	**REL**	**REL**	**REL**	**REL**
RESERV	**YES**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
PED?	**YES**	**YES**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

Olden @ Capital Plaza

File # E 05
Pole # 64741EW
Controller: 820A (9511-4764)
Monitor: EDI NSM-12 (9601-660)
Command: FREE PLAN
Ring Sequence: 12 / 0

TIMING

FLASH	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 7	Ø 8
WALK								
PED CLEAR								
MIN. GREEN	40	6						
EXTENSION		2.0						
MAX GREEN	40	20						
MAX II								
MAX STEP								
MAX LIMIT								
AMBER	5.0	3.0						
RED CLEAR	2.0	2.0						

Ø 2 Olden Ave.
Ø 4 Capital Plaza entrance

RECALLS

	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 7	Ø 8
MIN RECALL	OFF	OFF						
PED RECALL	OFF	OFF						
MAX RECALL	ON	OFF						
MEMORY	OFF	ON						

DETECTORS

	1	2	3	4	5	6	7	8
DELAY								
INHIBIT DELAY	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
ASSOCIATION	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 7	Ø 8

Appendix C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	29	25	37	22	510	28	426	44	301	235	18
Future Volume (vph)	5	29	25	37	22	510	28	426	44	301	235	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	10	12	12	10	13	13	12	12	12
Grade (%)		-1%			1%			-1%			0%	
Storage Length (ft)	0		0	140		250	58		0	0		275
Storage Lanes	0		0	1		1	1		0	1		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	0.95	0.91	0.91	0.95
Frt		0.944				0.850		0.986			0.993	
Flt Protected		0.996			0.970		0.950			0.950	0.982	
Satd. Flow (prot)	0	1823	0	0	1800	2668	1628	3576	0	1595	3173	0
Flt Permitted		0.996			0.970		0.481			0.130	0.588	
Satd. Flow (perm)	0	1823	0	0	1800	2668	824	3576	0	218	1900	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								9			4	
Link Speed (mph)		25			40			40			40	
Link Distance (ft)		970			366			1060			1006	
Travel Time (s)		26.5			6.2			18.1			17.1	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	20%	3%	20%	3%	0%	6%	4%	3%	7%	3%	8%	11%
Adj. Flow (vph)	6	33	28	42	25	573	31	479	49	338	264	20
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	67	0	0	67	573	31	528	0	169	453	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)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	0.84	0.84	0.84	1.10	1.01	1.01	1.09	0.95	0.95	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	40	40		5	5	5	40	60		5	5	
Trailing Detector (ft)	-5	-5		0	0	0	-5	-5		0	0	
Detector 1 Position(ft)	-5	-5		0	0	0	-5	-5		0	0	
Detector 1 Size(ft)	45	45		5	5	5	45	65		5	5	
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	
Turn Type	custom	NA		Split	NA	custom	Perm	NA		Perm	NA	
Protected Phases	14	14		8	8	8 1		16			1	
Permitted Phases	14					8 1	16			1		
Detector Phase	14	14		8	8	8 1	16	16		1	1	
Switch Phase												

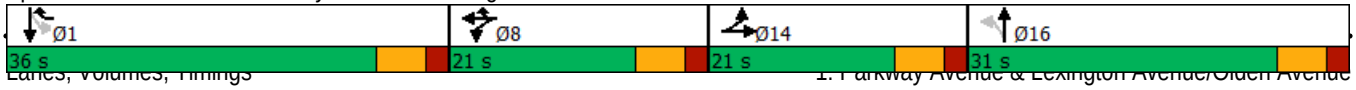
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0		5.0	5.0		7.0	7.0		20.0	20.0	
Minimum Split (s)	13.0	13.0		11.0	11.0		13.0	13.0		26.0	26.0	
Total Split (s)	21.0	21.0		21.0	21.0		31.0	31.0		36.0	36.0	
Total Split (%)	19.3%	19.3%		19.3%	19.3%		28.4%	28.4%		33.0%	33.0%	
Maximum Green (s)	15.0	15.0		15.0	15.0		25.0	25.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		Min	Min	
Act Effct Green (s)		9.2			9.2	46.1	18.3	18.3		30.7	30.7	
Actuated g/C Ratio		0.10			0.10	0.52	0.21	0.21		0.35	0.35	
v/c Ratio		0.35			0.36	0.41	0.18	0.71		2.25	2.09dl	
Control Delay		45.8			45.8	16.1	34.0	38.6		622.8	34.4	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		45.8			45.8	16.1	34.0	38.6		622.8	34.4	
LOS		D			D	B	C	D		F	C	
Approach Delay		45.8			19.2			38.3			194.2	
Approach LOS		D			B			D			F	
Queue Length 50th (ft)		36			36	112	15	145		~173	120	
Queue Length 95th (ft)		84			83	191	43	219		#319	#242	
Internal Link Dist (ft)		890			286			980			926	
Turn Bay Length (ft)						250	58					
Base Capacity (vph)		316			312	1573	238	1040		75	661	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.21			0.21	0.36	0.13	0.51		2.25	0.69	

Intersection Summary

Area Type: Other
Cycle Length: 109
Actuated Cycle Length: 88.6
Natural Cycle: 65
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 2.25
Intersection Signal Delay: 83.5 Intersection LOS: F
Intersection Capacity Utilization 54.7% ICU Level of Service A
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 1: Parkway Avenue & Lexington Avenue/Olden Avenue

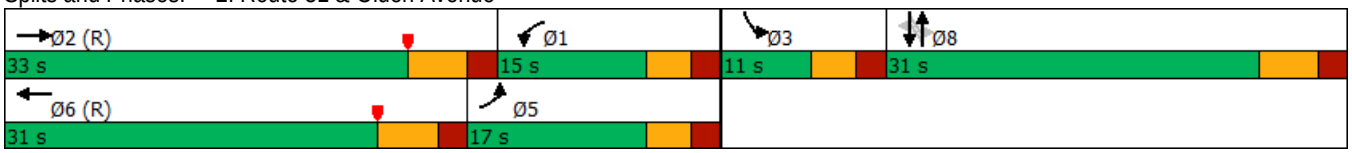


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	359	78	25	484	168	90	389	18	204	383	110
Future Volume (vph)	92	359	78	25	484	168	90	389	18	204	383	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	10	11	11
Grade (%)		0%			1%			1%			-2%	
Storage Length (ft)	100		0	100		0	0		0	63		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.95
Frt		0.973			0.961			0.995			0.967	
Flt Protected	0.950			0.950				0.991		0.950		
Satd. Flow (prot)	1787	3351	0	1589	3242	0	0	3408	0	1636	3246	0
Flt Permitted	0.950			0.950				0.649		0.317		
Satd. Flow (perm)	1787	3351	0	1589	3242	0	0	2232	0	546	3246	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								4			41	
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		319			1184			970			971	
Travel Time (s)		5.4			20.2			18.9			18.9	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	1%	5%	4%	13%	7%	5%	0%	5%	0%	4%	5%	5%
Adj. Flow (vph)	105	408	89	28	550	191	102	442	20	232	435	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	497	0	28	741	0	0	564	0	232	560	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	1.08	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Perm	NA		pm+pt	NA	
Protected Phases	5	2		1	6			8		3	8	
Permitted Phases							8			8		
Detector Phase	5	2		1	6		8	8		3	8	
Switch Phase												
Minimum Initial (s)	5.0	13.0		5.0	13.0		7.0	7.0		6.0	7.0	
Minimum Split (s)	10.0	19.0		10.0	19.0		13.0	13.0		11.0	13.0	
Total Split (s)	17.0	33.0		15.0	31.0		31.0	31.0		11.0	31.0	
Total Split (%)	18.9%	36.7%		16.7%	34.4%		34.4%	34.4%		12.2%	34.4%	
Maximum Green (s)	12.0	27.0		10.0	25.0		25.0	25.0		6.0	25.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0			6.0		5.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	10.0	36.3		7.7	29.6			24.7		31.7	24.7	
Actuated g/C Ratio	0.11	0.40		0.09	0.33			0.27		0.35	0.27	
v/c Ratio	0.53	0.37		0.21	0.70			0.92		0.88	0.61	
Control Delay	47.2	21.6		40.9	32.2			53.6		56.2	29.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	47.2	21.6		40.9	32.2			53.6		56.2	29.5	
LOS	D	C		D	C			D		E	C	
Approach Delay		26.1			32.5			53.6			37.3	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)	57	89		15	202			161		88	134	
Queue Length 95th (ft)	104	165		39	#269			#253		#195	183	
Internal Link Dist (ft)		239			1104			890			891	
Turn Bay Length (ft)	100			100						63		
Base Capacity (vph)	238	1351		176	1066			622		264	931	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.44	0.37		0.16	0.70			0.91		0.88	0.60	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 36.8		Intersection LOS: D	
Intersection Capacity Utilization 71.1%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: Route 31 & Olden Avenue

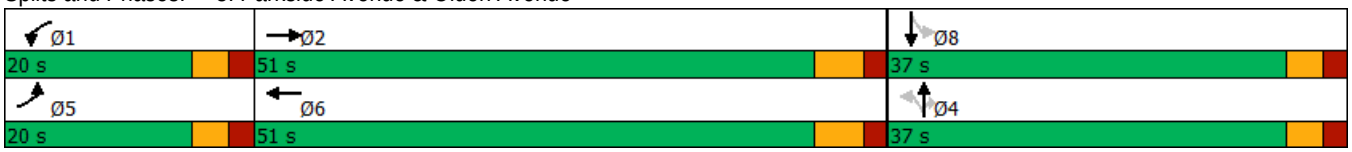


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	438	9	105	525	42	10	189	146	50	184	148
Future Volume (vph)	90	438	9	105	525	42	10	189	146	50	184	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	13	13	11	12	12	11	11	11	13	11	11
Grade (%)		0%			0%			-1%			-1%	
Storage Length (ft)	110		0	117		0	153		190	182		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.989				0.850		0.933	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1631	3545	0	1572	3330	0	1594	1741	1453	1674	1637	0
Flt Permitted	0.950			0.950			0.247			0.518		
Satd. Flow (perm)	1631	3545	0	1572	3330	0	414	1741	1453	913	1637	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			9				154		38	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1184			1902			970			971	
Travel Time (s)		23.1			37.1			18.9			18.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	5%	0%	11%	7%	10%	10%	6%	8%	12%	3%	8%
Adj. Flow (vph)	95	461	9	111	553	44	11	199	154	53	194	156
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	470	0	111	597	0	11	199	154	53	350	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			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.04	0.96	0.96	1.04	1.00	1.00	1.04	1.04	1.04	0.95	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	5		40	5		40	40	40	40	40	
Trailing Detector (ft)	-5	0		-5	0		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	-5	0		-5	0		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	45	5		45	5		45	45	45	45	45	
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	
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		
Detector Phase	5	2		1	6		4	4	4	8	8	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	25.0		5.0	25.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	10.0	31.0		10.0	31.0		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	20.0	51.0		20.0	51.0		37.0	37.0	37.0	37.0	37.0	
Total Split (%)	18.5%	47.2%		18.5%	47.2%		34.3%	34.3%	34.3%	34.3%	34.3%	
Maximum Green (s)	15.0	45.0		15.0	45.0		32.0	32.0	32.0	32.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max		None	Max		None	None	None	None	None	
Act Effct Green (s)	10.9	45.4		11.7	49.0		23.4	23.4	23.4	23.4	23.4	
Actuated g/C Ratio	0.11	0.47		0.12	0.51		0.24	0.24	0.24	0.24	0.24	
v/c Ratio	0.52	0.28		0.59	0.35		0.11	0.47	0.33	0.24	0.83	
Control Delay	52.4	17.7		54.7	17.4		31.2	35.2	6.8	32.3	47.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	52.4	17.7		54.7	17.4		31.2	35.2	6.8	32.3	47.7	
LOS	D	B		D	B		C	D	A	C	D	
Approach Delay		23.5			23.3			23.1			45.6	
Approach LOS		C			C			C			D	
Queue Length 50th (ft)	56	91		66	117		5	105	0	26	183	
Queue Length 95th (ft)	114	152		131	197		20	176	47	61	297	
Internal Link Dist (ft)		1104			1822			890			891	
Turn Bay Length (ft)	110			117			153		190	182		
Base Capacity (vph)	255	1668		246	1692		138	582	588	305	572	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.37	0.28		0.45	0.35		0.08	0.34	0.26	0.17	0.61	

Intersection Summary			
Area Type:	Other		
Cycle Length: 108			
Actuated Cycle Length: 96.6			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 27.7		Intersection LOS: C	
Intersection Capacity Utilization 71.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Parkside Avenue & Olden Avenue

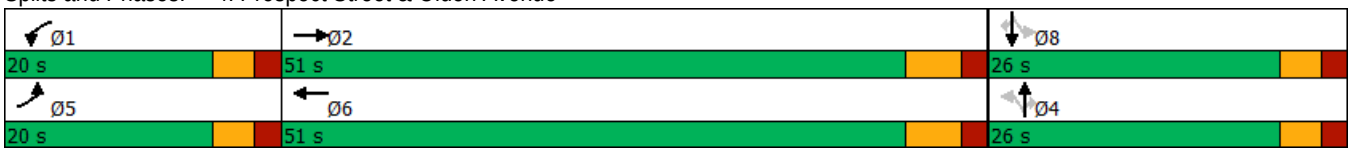


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	625	16	14	553	42	26	90	31	47	77	220
Future Volume (vph)	127	625	16	14	553	42	26	90	31	47	77	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	12	12	12	12	10	11	11	11
Grade (%)		-1%			2%			2%			-3%	
Storage Length (ft)	85		0	235		0	0		100	0		0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.989				0.850			0.850
Flt Protected	0.950			0.950				0.989			0.981	
Satd. Flow (prot)	1525	3368	0	1727	3332	0	0	1735	1357	0	1668	1467
Flt Permitted	0.950			0.950				0.903			0.803	
Satd. Flow (perm)	1525	3368	0	1727	3332	0	0	1584	1357	0	1366	1467
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			11				90			229
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1902			1673			970			971	
Travel Time (s)		37.1			32.6			26.5			26.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	11%	7%	19%	0%	6%	7%	8%	7%	10%	9%	10%	8%
Adj. Flow (vph)	132	651	17	15	576	44	27	94	32	49	80	229
Shared Lane Traffic (%)												
Lane Group Flow (vph)	132	668	0	15	620	0	0	121	32	0	129	229
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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.09	0.99	0.99	1.06	1.01	1.01	1.01	1.01	1.11	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	5		40	5		20	45	45	20	45	20
Trailing Detector (ft)	-5	0		-5	0		0	-5	-5	0	-5	0
Detector 1 Position(ft)	-5	0		-5	0		0	-5	-5	0	-5	0
Detector 1 Size(ft)	45	5		45	5		20	50	50	20	50	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		8
Detector Phase	5	2		1	6		4	4	4	8	8	8
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	25.0		5.0	25.0		10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.0	31.0		10.0	31.0		15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	20.0	51.0		20.0	51.0		26.0	26.0	26.0	26.0	26.0	26.0
Total Split (%)	20.6%	52.6%		20.6%	52.6%		26.8%	26.8%	26.8%	26.8%	26.8%	26.8%
Maximum Green (s)	15.0	45.0		15.0	45.0		21.0	21.0	21.0	21.0	21.0	21.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	6.0		5.0	6.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max		None	None	None	None	None	None
Act Effct Green (s)	12.0	60.0		6.5	45.2			13.9	13.9		13.9	13.9
Actuated g/C Ratio	0.14	0.69		0.07	0.52			0.16	0.16		0.16	0.16
v/c Ratio	0.63	0.29		0.12	0.36			0.48	0.11		0.59	0.54
Control Delay	50.2	7.0		42.2	13.9			40.4	0.8		46.2	9.7
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	50.2	7.0		42.2	13.9			40.4	0.8		46.2	9.7
LOS	D	A		D	B			D	A		D	A
Approach Delay		14.1			14.6			32.1			22.8	
Approach LOS		B			B			C			C	
Queue Length 50th (ft)	69	55		8	98			62	0		67	0
Queue Length 95th (ft)	137	155		29	168			116	0		127	60
Internal Link Dist (ft)		1822			1593			890			891	
Turn Bay Length (ft)	85			235					100			
Base Capacity (vph)	263	2314		298	1732			383	396		330	528
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.50	0.29		0.05	0.36			0.32	0.08		0.39	0.43

Intersection Summary			
Area Type:	Other		
Cycle Length: 97			
Actuated Cycle Length: 87.3			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 17.3		Intersection LOS: B	
Intersection Capacity Utilization 56.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: Prospect Street & Olden Avenue

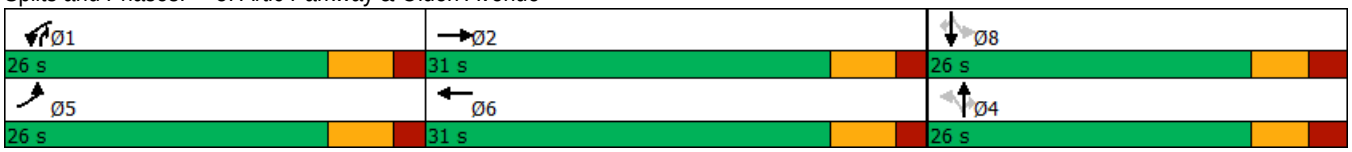


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	566	50	42	554	47	26	19	43	24	37	167
Future Volume (vph)	98	566	50	42	554	47	26	19	43	24	37	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	15
Grade (%)		1%			-2%			-2%			0%	
Storage Length (ft)	90		0	90		0	90		90	40		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.988				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1778	3324	0	1657	3374	0	1628	1919	1496	1492	1900	1725
Flt Permitted	0.950			0.950			0.731			0.744		
Satd. Flow (perm)	1778	3324	0	1657	3374	0	1252	1919	1496	1168	1900	1725
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			11				47			182
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		1673			1939			970			970	
Travel Time (s)		32.6			37.8			26.5			18.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	7%	4%	10%	7%	4%	12%	0%	9%	21%	0%	3%
Adj. Flow (vph)	107	615	54	46	602	51	28	21	47	26	40	182
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	669	0	46	653	0	28	21	47	26	40	182
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		Yes			Yes							
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.00	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	5		40	5		45	45	45	45	45	45
Trailing Detector (ft)	-5	0		-5	0		-5	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	0		-5	0		-5	-5	-5	-5	-5	-5
Detector 1 Size(ft)	45	5		45	5		50	50	50	50	50	50
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases							4		4	8		8
Detector Phase	5	2		1	6		4	4	1	8	8	8
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	21.0		13.0	21.0		13.0	13.0	13.0	13.0	13.0	13.0
Total Split (s)	26.0	31.0		26.0	31.0		26.0	26.0	26.0	26.0	26.0	26.0
Total Split (%)	31.3%	37.3%		31.3%	37.3%		31.3%	31.3%	31.3%	31.3%	31.3%	31.3%
Maximum Green (s)	20.0	25.0		20.0	25.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5	4.0	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5	2.0	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max		None	None	None	None	None	None
Act Effct Green (s)	9.2	29.4		7.8	25.5		7.9	7.9	21.8	7.9	7.9	7.9
Actuated g/C Ratio	0.16	0.51		0.14	0.44		0.14	0.14	0.38	0.14	0.14	0.14
v/c Ratio	0.38	0.39		0.20	0.44		0.16	0.08	0.08	0.16	0.15	0.46
Control Delay	27.2	11.0		26.5	13.5		26.3	24.4	4.9	26.5	25.3	9.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.2	11.0		26.5	13.5		26.3	24.4	4.9	26.5	25.3	9.1
LOS	C	B		C	B		C	C	A	C	C	A
Approach Delay		13.2			14.4			15.4			13.5	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)	35	78		15	81		9	7	0	9	13	0
Queue Length 95th (ft)	78	138		44	146		31	25	17	29	38	48
Internal Link Dist (ft)		1593			1859			890			890	
Turn Bay Length (ft)	90			90			90		90	40		
Base Capacity (vph)	630	1706		587	1501		444	680	912	413	673	728
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.39		0.08	0.44		0.06	0.03	0.05	0.06	0.06	0.25

Intersection Summary			
Area Type:	Other		
Cycle Length: 83			
Actuated Cycle Length: 57.5			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay: 13.8		Intersection LOS: B	
Intersection Capacity Utilization 48.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 5: Artic Parkway & Olden Avenue

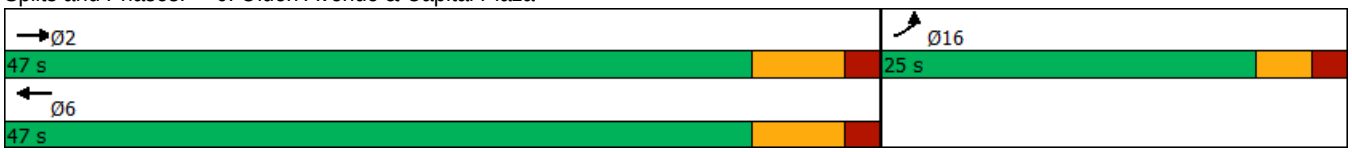


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	72	593	603	29	0	0
Future Volume (vph)	72	593	603	29	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	15	15	16	16
Grade (%)		0%	-1%		0%	
Storage Length (ft)	250			0	0	0
Storage Lanes	2			0	0	0
Taper Length (ft)	45				45	
Lane Util. Factor	0.97	0.95	0.95	0.95	1.00	1.00
Frt			0.993			
Flt Protected	0.950					
Satd. Flow (prot)	3502	3312	3597	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	3502	3312	3597	0	0	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			11			
Link Speed (mph)		35	35		25	
Link Distance (ft)		1939	787		588	
Travel Time (s)		37.8	15.3		16.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	9%	10%	14%	0%	25%
Adj. Flow (vph)	76	624	635	31	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	76	624	666	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.88	0.88	0.85	0.85
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	1	1			
Detector Template	Left	Thru	Thru			
Leading Detector (ft)	45	5	5			
Trailing Detector (ft)	-5	0	0			
Detector 1 Position(ft)	-5	0	0			
Detector 1 Size(ft)	50	5	5			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0			
Turn Type	Prot	NA	NA			
Protected Phases	16	2	6			
Permitted Phases						
Detector Phase	16	2	6			
Switch Phase						

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	6.0	25.0	25.0			
Minimum Split (s)	11.0	32.0	32.0			
Total Split (s)	25.0	47.0	47.0			
Total Split (%)	34.7%	65.3%	65.3%			
Maximum Green (s)	20.0	40.0	40.0			
Yellow Time (s)	3.0	5.0	5.0			
All-Red Time (s)	2.0	2.0	2.0			
Lost Time Adjust (s)	0.0	0.0	0.0			
Total Lost Time (s)	5.0	7.0	7.0			
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	Max	Max			
Act Effct Green (s)	6.9	46.4	46.4			
Actuated g/C Ratio	0.11	0.75	0.75			
v/c Ratio	0.19	0.25	0.25			
Control Delay	25.2	3.7	3.5			
Queue Delay	0.0	0.0	0.0			
Total Delay	25.2	3.7	3.5			
LOS	C	A	A			
Approach Delay		6.0	3.5			
Approach LOS		A	A			
Queue Length 50th (ft)	12	35	37			
Queue Length 95th (ft)	28	58	60			
Internal Link Dist (ft)		1859	707		508	
Turn Bay Length (ft)	250					
Base Capacity (vph)	1137	2487	2703			
Starvation Cap Reductn	0	0	0			
Spillback Cap Reductn	0	0	0			
Storage Cap Reductn	0	0	0			
Reduced v/c Ratio	0.07	0.25	0.25			

Intersection Summary			
Area Type:	Other		
Cycle Length: 72			
Actuated Cycle Length: 61.8			
Natural Cycle: 45			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.25			
Intersection Signal Delay: 4.8		Intersection LOS: A	
Intersection Capacity Utilization 35.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Olden Avenue & Capital Plaza

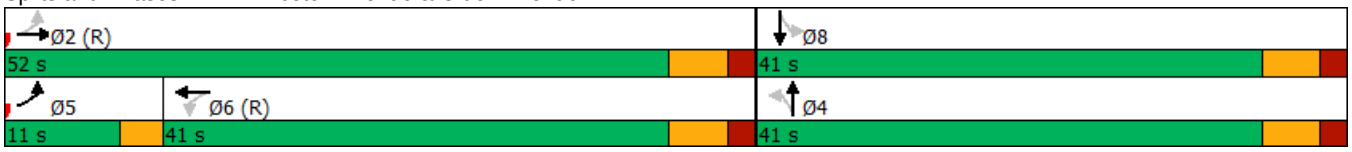


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	288	64	16	490	42	76	170	71	75	180	98
Future Volume (vph)	125	288	64	16	490	42	76	170	71	75	180	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	11	11	11	11	11	11	11	12	12	12
Grade (%)		1%			1%			1%			-1%	
Storage Length (ft)	130		0	65		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.973			0.988			0.967			0.958	
Flt Protected	0.950			0.950				0.988			0.989	
Satd. Flow (prot)	1657	1908	0	868	3116	0	0	2845	0	0	3154	0
Flt Permitted	0.333			0.525				0.761			0.787	
Satd. Flow (perm)	581	1908	0	480	3116	0	0	2191	0	0	2510	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41			11			46			69	
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		787			222			223			971	
Travel Time (s)		15.3			6.1			6.1			26.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	12%	100%	8%	100%	10%	11%	7%	7%	50%	0%	10%	14%
Adj. Flow (vph)	136	313	70	17	533	46	83	185	77	82	196	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	136	383	0	17	579	0	0	345	0	0	385	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)		13			13			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.96	1.01	1.05	1.05	1.05	1.05	1.05	1.05	1.05	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Minimum Split (s)	11.0	26.0		26.0	26.0		26.0	26.0		26.0	26.0	
Total Split (s)	11.0	52.0		41.0	41.0		41.0	41.0		41.0	41.0	
Total Split (%)	11.8%	55.9%		44.1%	44.1%		44.1%	44.1%		44.1%	44.1%	
Maximum Green (s)	8.0	46.0		35.0	35.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	3.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?												
Act Effct Green (s)	49.0	46.0		35.0	35.0			35.0			35.0	
Actuated g/C Ratio	0.53	0.49		0.38	0.38			0.38			0.38	
v/c Ratio	0.34	0.40		0.09	0.49			0.40			0.39	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	13.9	14.5		20.6	23.5			20.0			18.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	13.9	14.5		20.6	23.5			20.0			18.5	
LOS	B	B		C	C			C			B	
Approach Delay		14.4			23.4			20.0			18.5	
Approach LOS		B			C			C			B	
Queue Length 50th (ft)	39	63		6	132			66			68	
Queue Length 95th (ft)	71	98		22	182			104			108	
Internal Link Dist (ft)		707			142			143			891	
Turn Bay Length (ft)	130			65								
Base Capacity (vph)	398	964		180	1179			853			987	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.34	0.40		0.09	0.49			0.40			0.39	

Intersection Summary			
Area Type:	Other		
Cycle Length: 93			
Actuated Cycle Length: 93			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green			
Natural Cycle: 65			
Control Type: Pretimed			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 19.2		Intersection LOS: B	
Intersection Capacity Utilization 86.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: Princeton Avenue & Olden Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	28	15	31	32	566	21	265	43	569	226	18
Future Volume (vph)	13	28	15	31	32	566	21	265	43	569	226	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	10	12	12	10	13	13	12	12	12
Grade (%)		-1%			1%			-1%			0%	
Storage Length (ft)	0		0	140		250	58		0	0		275
Storage Lanes	0		0	1		1	1		0	1		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	0.95	0.91	0.91	0.95
Frt		0.963				0.850		0.979			0.995	
Flt Protected		0.988			0.976		0.950			0.950	0.974	
Satd. Flow (prot)	0	1891	0	0	1765	2719	1485	3608	0	1610	3267	0
Flt Permitted		0.988			0.976		0.436			0.131	0.632	
Satd. Flow (perm)	0	1891	0	0	1765	2719	682	3608	0	222	2120	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								16			3	
Link Speed (mph)		25			40			40			40	
Link Distance (ft)		970			366			1060			1006	
Travel Time (s)		26.5			6.2			18.1			17.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	15%	7%	7%	0%	9%	4%	14%	2%	0%	2%	3%	6%
Adj. Flow (vph)	14	29	16	32	33	590	22	276	45	593	235	19
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	59	0	0	65	590	22	321	0	296	551	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)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	0.84	0.84	0.84	1.10	1.01	1.01	1.09	0.95	0.95	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	40	40		5	5	5	40	60		5	5	
Trailing Detector (ft)	-5	-5		0	0	0	-5	-5		0	0	
Detector 1 Position(ft)	-5	-5		0	0	0	-5	-5		0	0	
Detector 1 Size(ft)	45	45		5	5	5	45	65		5	5	
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	
Turn Type	custom	NA		Split	NA	custom	Perm	NA		Perm	NA	
Protected Phases	14	14		8	8	8 1		16			1	
Permitted Phases	14					8 1	16			1		
Detector Phase	14	14		8	8	8 1	16	16		1	1	
Switch Phase												

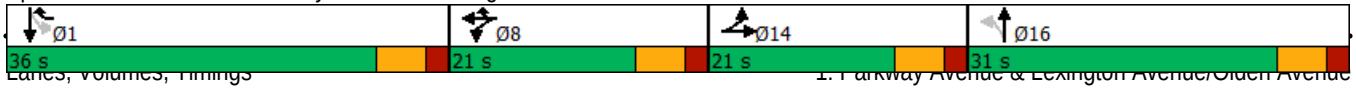
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0		5.0	5.0		7.0	7.0		20.0	20.0	
Minimum Split (s)	13.0	13.0		11.0	11.0		13.0	13.0		26.0	26.0	
Total Split (s)	21.0	21.0		21.0	21.0		31.0	31.0		36.0	36.0	
Total Split (%)	19.3%	19.3%		19.3%	19.3%		28.4%	28.4%		33.0%	33.0%	
Maximum Green (s)	15.0	15.0		15.0	15.0		25.0	25.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		Min	Min	
Act Effct Green (s)		8.5			8.9	45.6	12.4	12.4		30.6	30.6	
Actuated g/C Ratio		0.10			0.11	0.56	0.15	0.15		0.38	0.38	
v/c Ratio		0.30			0.34	0.39	0.21	0.57		3.57	3.38dl	
Control Delay		40.8			41.1	12.5	38.0	35.8		1198.2	29.7	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		40.8			41.1	12.5	38.0	35.8		1198.2	29.7	
LOS		D			D	B	D	D		F	C	
Approach Delay		40.8			15.4			36.0			438.1	
Approach LOS		D			B			D			F	
Queue Length 50th (ft)		29			32	96	10	78		~271	132	
Queue Length 95th (ft)		71			75	164	34	131		#506	#260	
Internal Link Dist (ft)		890			286			980			926	
Turn Bay Length (ft)						250	58					
Base Capacity (vph)		354			331	1734	213	1139		83	797	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.17			0.20	0.34	0.10	0.28		3.57	0.69	

Intersection Summary

Area Type: Other
Cycle Length: 109
Actuated Cycle Length: 81.5
Natural Cycle: 65
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 3.57
Intersection Signal Delay: 207.9 Intersection LOS: F
Intersection Capacity Utilization 50.1% ICU Level of Service A
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 1: Parkway Avenue & Lexington Avenue/Olden Avenue



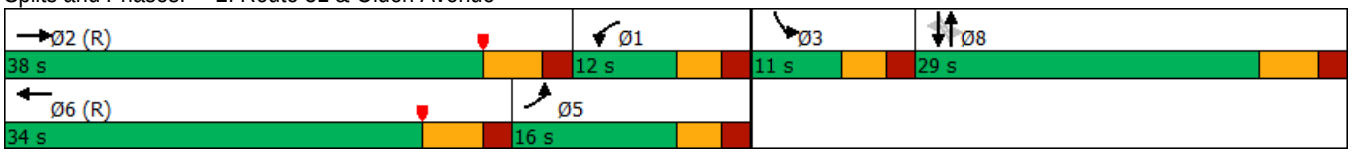
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	556	65	43	587	189	81	223	39	206	236	125
Future Volume (vph)	115	556	65	43	587	189	81	223	39	206	236	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	10	11	11
Grade (%)		0%			1%			1%			-2%	
Storage Length (ft)	100		0	100		0	0		0	63		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.95
Frt		0.984			0.963			0.983			0.948	
Flt Protected	0.950			0.950				0.988		0.950		
Satd. Flow (prot)	1787	3419	0	1796	3343	0	0	3343	0	1668	3212	0
Flt Permitted	0.950			0.950				0.705		0.460		
Satd. Flow (perm)	1787	3419	0	1796	3343	0	0	2385	0	808	3212	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								15			103	
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		319			1184			970			971	
Travel Time (s)		5.4			20.2			18.9			18.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	4%	3%	0%	3%	5%	6%	4%	3%	2%	3%	6%
Adj. Flow (vph)	124	598	70	46	631	203	87	240	42	222	254	134
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	668	0	46	834	0	0	369	0	222	388	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	1.08	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Perm	NA		pm+pt	NA	
Protected Phases	5	2		1	6			8		3	8	
Permitted Phases							8			8		
Detector Phase	5	2		1	6		8	8		3	8	
Switch Phase												
Minimum Initial (s)	5.0	13.0		5.0	13.0		7.0	7.0		6.0	7.0	
Minimum Split (s)	10.0	19.0		10.0	19.0		13.0	13.0		11.0	13.0	
Total Split (s)	16.0	38.0		12.0	34.0		29.0	29.0		11.0	29.0	
Total Split (%)	17.8%	42.2%		13.3%	37.8%		32.2%	32.2%		12.2%	32.2%	
Maximum Green (s)	11.0	32.0		7.0	28.0		23.0	23.0		6.0	23.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0			6.0		5.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	10.0	40.7		6.6	32.9			19.1		26.1	19.1	
Actuated g/C Ratio	0.11	0.45		0.07	0.37			0.21		0.29	0.21	
v/c Ratio	0.63	0.43		0.35	0.68			0.71		0.76	0.51	
Control Delay	52.6	20.1		47.1	28.9			39.1		42.2	24.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	52.6	20.1		47.1	28.9			39.1		42.2	24.4	
LOS	D	C		D	C			D		D	C	
Approach Delay		25.1			29.9			39.1			30.9	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)	68	148		25	215			97		93	73	
Queue Length 95th (ft)	125	212		60	301			140		#153	112	
Internal Link Dist (ft)		239			1104			890			891	
Turn Bay Length (ft)	100			100						63		
Base Capacity (vph)	218	1545		139	1222			620		291	897	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.57	0.43		0.33	0.68			0.60		0.76	0.43	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 30.0 Intersection LOS: C
Intersection Capacity Utilization 69.0% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Route 31 & Olden Avenue

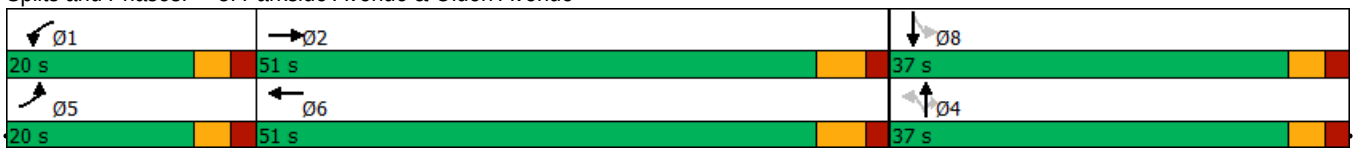


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	660	26	153	587	101	20	134	205	115	214	169
Future Volume (vph)	121	660	26	153	587	101	20	134	205	115	214	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	13	13	11	12	12	11	11	11	13	11	11
Grade (%)		0%			0%			-1%			-1%	
Storage Length (ft)	110		0	117		0	153		190	182		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.978				0.850		0.934	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1694	3604	0	1728	3428	0	1670	1810	1494	1802	1658	0
Flt Permitted	0.950			0.950			0.201			0.634		
Satd. Flow (perm)	1694	3604	0	1728	3428	0	353	1810	1494	1203	1658	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			22				216		37	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1184			1902			970			971	
Travel Time (s)		23.1			37.1			18.9			18.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	3%	0%	1%	3%	3%	5%	2%	5%	4%	4%	4%
Adj. Flow (vph)	127	695	27	161	618	106	21	141	216	121	225	178
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	722	0	161	724	0	21	141	216	121	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			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.04	0.96	0.96	1.04	1.00	1.00	1.04	1.04	1.04	0.95	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	5		40	5		40	40	40	40	40	
Trailing Detector (ft)	-5	0		-5	0		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	-5	0		-5	0		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	45	5		45	5		45	45	45	45	45	
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	
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		
Detector Phase	5	2		1	6		4	4	4	8	8	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	25.0		5.0	25.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	10.0	31.0		10.0	31.0		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	20.0	51.0		20.0	51.0		37.0	37.0	37.0	37.0	37.0	
Total Split (%)	18.5%	47.2%		18.5%	47.2%		34.3%	34.3%	34.3%	34.3%	34.3%	
Maximum Green (s)	15.0	45.0		15.0	45.0		32.0	32.0	32.0	32.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max		None	Max		None	None	None	None	None	
Act Effct Green (s)	12.2	45.3		13.2	46.3		26.7	26.7	26.7	26.7	26.7	
Actuated g/C Ratio	0.12	0.45		0.13	0.46		0.26	0.26	0.26	0.26	0.26	
v/c Ratio	0.62	0.45		0.72	0.46		0.23	0.30	0.39	0.38	0.87	
Control Delay	57.2	21.5		61.5	20.7		36.1	31.5	6.2	34.4	52.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	57.2	21.5		61.5	20.7		36.1	31.5	6.2	34.4	52.3	
LOS	E	C		E	C		D	C	A	C	D	
Approach Delay		26.8			28.1			17.3			48.2	
Approach LOS		C			C			B			D	
Queue Length 50th (ft)	82	177		104	170		11	74	0	65	233	
Queue Length 95th (ft)	146	241		#194	240		34	128	54	119	#380	
Internal Link Dist (ft)		1104			1822			890			891	
Turn Bay Length (ft)	110			117			153		190	182		
Base Capacity (vph)	252	1614		257	1579		112	575	622	382	552	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.50	0.45		0.63	0.46		0.19	0.25	0.35	0.32	0.73	

Intersection Summary			
Area Type:	Other		
Cycle Length: 108			
Actuated Cycle Length: 101.3			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 30.1		Intersection LOS: C	
Intersection Capacity Utilization 76.7%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Parkside Avenue & Olden Avenue



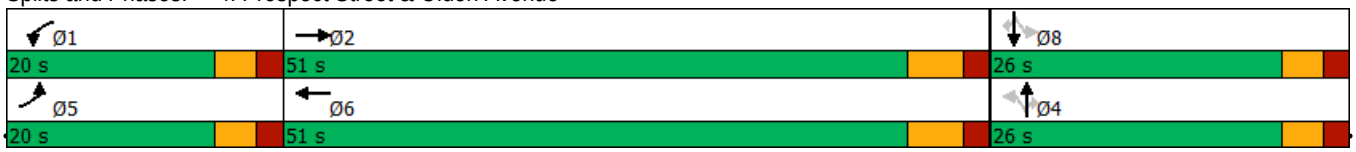
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	840	26	21	847	106	30	57	47	100	64	227
Future Volume (vph)	185	840	26	21	847	106	30	57	47	100	64	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	12	12	12	12	10	11	11	11
Grade (%)		-1%			2%			2%			-3%	
Storage Length (ft)	85		0	235		0	0		100	0		0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.983				0.850			0.850
Flt Protected	0.950			0.950				0.983			0.970	
Satd. Flow (prot)	1553	3503	0	1727	3396	0	0	1715	1463	0	1773	1481
Flt Permitted	0.950			0.950				0.801			0.760	
Satd. Flow (perm)	1553	3503	0	1727	3396	0	0	1397	1463	0	1389	1481
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			19				90			239
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1902			1673			970			971	
Travel Time (s)		37.1			32.6			26.5			26.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	3%	8%	0%	3%	7%	0%	12%	2%	2%	2%	7%
Adj. Flow (vph)	195	884	27	22	892	112	32	60	49	105	67	239
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	911	0	22	1004	0	0	92	49	0	172	239
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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.09	0.99	0.99	1.06	1.01	1.01	1.01	1.01	1.11	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	5		40	5		20	45	45	20	45	20
Trailing Detector (ft)	-5	0		-5	0		0	-5	-5	0	-5	0
Detector 1 Position(ft)	-5	0		-5	0		0	-5	-5	0	-5	0
Detector 1 Size(ft)	45	5		45	5		20	50	50	20	50	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		8
Detector Phase	5	2		1	6		4	4	4	8	8	8
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	25.0		5.0	25.0		10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.0	31.0		10.0	31.0		15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	20.0	51.0		20.0	51.0		26.0	26.0	26.0	26.0	26.0	26.0
Total Split (%)	20.6%	52.6%		20.6%	52.6%		26.8%	26.8%	26.8%	26.8%	26.8%	26.8%
Maximum Green (s)	15.0	45.0		15.0	45.0		21.0	21.0	21.0	21.0	21.0	21.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	6.0		5.0	6.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max		None	None	None	None	None	None
Act Effct Green (s)	14.2	59.4		6.9	45.1			16.1	16.1		16.1	16.1
Actuated g/C Ratio	0.16	0.65		0.08	0.49			0.18	0.18		0.18	0.18
v/c Ratio	0.81	0.40		0.17	0.60			0.38	0.15		0.70	0.52
Control Delay	64.2	10.0		44.1	18.9			37.8	2.6		51.7	8.9
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	64.2	10.0		44.1	18.9			37.8	2.6		51.7	8.9
LOS	E	B		D	B			D	A		D	A
Approach Delay		19.6			19.5			25.6			26.8	
Approach LOS		B			B			C			C	
Queue Length 50th (ft)	111	96		12	212			48	0		96	0
Queue Length 95th (ft)	#235	230		37	302			93	8		165	61
Internal Link Dist (ft)		1822			1593			890			891	
Turn Bay Length (ft)	85			235					100			
Base Capacity (vph)	255	2274		284	1684			321	406		319	524
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.76	0.40		0.08	0.60			0.29	0.12		0.54	0.46

Intersection Summary

Area Type: Other
Cycle Length: 97
Actuated Cycle Length: 91.5
Natural Cycle: 60
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 20.9 Intersection LOS: C
Intersection Capacity Utilization 65.9% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Prospect Street & Olden Avenue

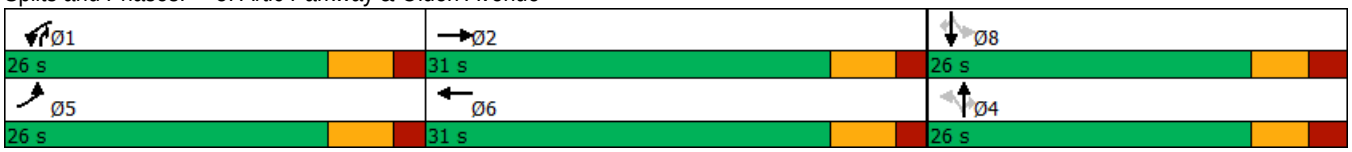


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	744	114	90	690	76	98	40	113	67	35	220
Future Volume (vph)	148	744	114	90	690	76	98	40	113	67	35	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	15
Grade (%)		1%			-2%			-2%			0%	
Storage Length (ft)	90		0	90		0	90		90	40		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.985				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1761	3342	0	1787	3379	0	1770	1919	1568	1719	1792	1725
Flt Permitted	0.950			0.950			0.732			0.729		
Satd. Flow (perm)	1761	3342	0	1787	3379	0	1364	1919	1568	1319	1792	1725
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			14				39			237
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		1673			1939			970			970	
Travel Time (s)		32.6			37.8			26.5			18.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	6%	1%	2%	6%	9%	3%	0%	4%	5%	6%	3%
Adj. Flow (vph)	159	800	123	97	742	82	105	43	122	72	38	237
Shared Lane Traffic (%)												
Lane Group Flow (vph)	159	923	0	97	824	0	105	43	122	72	38	237
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		Yes			Yes							
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.00	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	5		40	5		45	45	45	45	45	45
Trailing Detector (ft)	-5	0		-5	0		-5	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	0		-5	0		-5	-5	-5	-5	-5	-5
Detector 1 Size(ft)	45	5		45	5		50	50	50	50	50	50
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases							4		4	8		8
Detector Phase	5	2		1	6		4	4	1	8	8	8
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	21.0		13.0	21.0		13.0	13.0	13.0	13.0	13.0	13.0
Total Split (s)	26.0	31.0		26.0	31.0		26.0	26.0	26.0	26.0	26.0	26.0
Total Split (%)	31.3%	37.3%		31.3%	37.3%		31.3%	31.3%	31.3%	31.3%	31.3%	31.3%
Maximum Green (s)	20.0	25.0		20.0	25.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5	4.0	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5	2.0	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max		None	None	None	None	None	None
Act Effct Green (s)	11.3	30.1		9.4	25.2		10.7	10.7	26.1	10.7	10.7	10.7
Actuated g/C Ratio	0.17	0.46		0.14	0.39		0.16	0.16	0.40	0.16	0.16	0.16
v/c Ratio	0.52	0.60		0.38	0.63		0.47	0.14	0.19	0.33	0.13	0.49
Control Delay	31.7	17.0		31.1	19.9		32.8	24.9	9.6	29.3	24.9	7.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.7	17.0		31.1	19.9		32.8	24.9	9.6	29.3	24.9	7.8
LOS	C	B		C	B		C	C	A	C	C	A
Approach Delay		19.2			21.0			21.1			14.2	
Approach LOS		B			C			C			B	
Queue Length 50th (ft)	58	143		35	131		38	15	20	26	13	0
Queue Length 95th (ft)	118	254		82	238		87	42	50	63	38	54
Internal Link Dist (ft)		1593			1859			890			890	
Turn Bay Length (ft)	90			90			90		90	40		
Base Capacity (vph)	543	1551		551	1311		420	592	902	406	552	696
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.60		0.18	0.63		0.25	0.07	0.14	0.18	0.07	0.34

Intersection Summary			
Area Type:	Other		
Cycle Length: 83			
Actuated Cycle Length: 65.4			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 19.4		Intersection LOS: B	
Intersection Capacity Utilization 57.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: Artic Parkway & Olden Avenue



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	157	749	737	29	0	0
Future Volume (vph)	157	749	737	29	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	15	15	16	16
Grade (%)		0%	-1%		0%	
Storage Length (ft)	250			0	0	0
Storage Lanes	2			0	0	0
Taper Length (ft)	45				45	
Lane Util. Factor	0.97	0.95	0.95	0.95	1.00	1.00
Frt			0.994			
Flt Protected	0.950					
Satd. Flow (prot)	3400	3343	3713	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	3400	3343	3713	0	0	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			9			
Link Speed (mph)		35	35		25	
Link Distance (ft)		1939	787		588	
Travel Time (s)		37.8	15.3		16.0	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	3%	8%	7%	3%	0%	0%
Adj. Flow (vph)	178	851	838	33	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	178	851	871	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.88	0.88	0.85	0.85
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	1	1			
Detector Template	Left	Thru	Thru			
Leading Detector (ft)	45	5	5			
Trailing Detector (ft)	-5	0	0			
Detector 1 Position(ft)	-5	0	0			
Detector 1 Size(ft)	50	5	5			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0			
Turn Type	Prot	NA	NA			
Protected Phases	16	2	6			
Permitted Phases						
Detector Phase	16	2	6			
Switch Phase						

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	6.0	25.0	25.0			
Minimum Split (s)	11.0	32.0	32.0			
Total Split (s)	25.0	47.0	47.0			
Total Split (%)	34.7%	65.3%	65.3%			
Maximum Green (s)	20.0	40.0	40.0			
Yellow Time (s)	3.0	5.0	5.0			
All-Red Time (s)	2.0	2.0	2.0			
Lost Time Adjust (s)	0.0	0.0	0.0			
Total Lost Time (s)	5.0	7.0	7.0			
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	Max	Max			
Act Effct Green (s)	8.6	40.0	40.0			
Actuated g/C Ratio	0.14	0.66	0.66			
v/c Ratio	0.37	0.39	0.35			
Control Delay	25.7	5.5	5.2			
Queue Delay	0.0	0.0	0.0			
Total Delay	25.7	5.5	5.2			
LOS	C	A	A			
Approach Delay		9.0	5.2			
Approach LOS		A	A			
Queue Length 50th (ft)	30	61	60			
Queue Length 95th (ft)	54	96	93			
Internal Link Dist (ft)		1859	707		508	
Turn Bay Length (ft)	250					
Base Capacity (vph)	1122	2207	2454			
Starvation Cap Reductn	0	0	0			
Spillback Cap Reductn	0	0	0			
Storage Cap Reductn	0	0	0			
Reduced v/c Ratio	0.16	0.39	0.35			

Intersection Summary			
Area Type:	Other		
Cycle Length: 72			
Actuated Cycle Length: 60.6			
Natural Cycle: 45			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.39			
Intersection Signal Delay: 7.3		Intersection LOS: A	
Intersection Capacity Utilization 36.3%		ICU Level of Service A	
Analysis Period (min) 15			

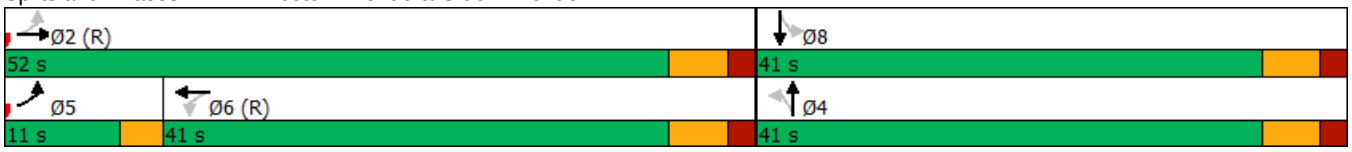
Splits and Phases: 6: Olden Avenue & Capital Plaza

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	424	154	37	555	42	153	204	55	159	266	189
Future Volume (vph)	156	424	154	37	555	42	153	204	55	159	266	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	11	11	11	11	11	11	11	12	12	12
Grade (%)		1%			1%			1%			-1%	
Storage Length (ft)	130		0	65		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.960			0.989			0.980			0.954	
Flt Protected	0.950			0.950				0.982			0.987	
Satd. Flow (prot)	1657	3233	0	1072	3199	0	0	3079	0	0	3220	0
Flt Permitted	0.300			0.419				0.574			0.700	
Satd. Flow (perm)	523	3233	0	473	3199	0	0	1799	0	0	2284	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		79			10			21			87	
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		787			222			223			971	
Travel Time (s)		15.3			6.1			6.1			26.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	12%	8%	3%	62%	7%	12%	5%	7%	24%	4%	6%	8%
Adj. Flow (vph)	166	451	164	39	590	45	163	217	59	169	283	201
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	615	0	39	635	0	0	439	0	0	653	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)		13			13			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.96	1.01	1.05	1.05	1.05	1.05	1.05	1.05	1.05	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Minimum Split (s)	11.0	26.0		26.0	26.0		26.0	26.0		26.0	26.0	
Total Split (s)	11.0	52.0		41.0	41.0		41.0	41.0		41.0	41.0	
Total Split (%)	11.8%	55.9%		44.1%	44.1%		44.1%	44.1%		44.1%	44.1%	
Maximum Green (s)	8.0	46.0		35.0	35.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	3.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?												
Act Effct Green (s)	49.0	46.0		35.0	35.0			35.0			35.0	
Actuated g/C Ratio	0.53	0.49		0.38	0.38			0.38			0.38	
v/c Ratio	0.45	0.38		0.22	0.52			0.64			0.72	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	15.6	13.3		23.8	24.1			27.6			26.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	15.6	13.3		23.8	24.1			27.6			26.5	
LOS	B	B		C	C			C			C	
Approach Delay		13.8			24.1			27.6			26.5	
Approach LOS		B			C			C			C	
Queue Length 50th (ft)	49	97		15	147			104			147	
Queue Length 95th (ft)	84	136		42	201			159			216	
Internal Link Dist (ft)		707			142			143			891	
Turn Bay Length (ft)	130			65								
Base Capacity (vph)	373	1639		178	1210			690			913	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.45	0.38		0.22	0.52			0.64			0.72	

Intersection Summary			
Area Type:	Other		
Cycle Length: 93			
Actuated Cycle Length: 93			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green			
Natural Cycle: 65			
Control Type: Pretimed			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 22.2		Intersection LOS: C	
Intersection Capacity Utilization 88.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: Princeton Avenue & Olden Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	40	30	42	30	458	26	313	55	565	353	10
Future Volume (vph)	18	40	30	42	30	458	26	313	55	565	353	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	10	12	12	10	13	13	12	12	12
Grade (%)		-1%			1%			-1%			0%	
Storage Length (ft)	0		0	140		250	58		0	0		275
Storage Lanes	0		0	1		1	1		0	1		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	0.95	0.91	0.91	0.95
Frt		0.953				0.850		0.978			0.998	
Flt Protected		0.990			0.972		0.950			0.950	0.979	
Satd. Flow (prot)	0	2042	0	0	1786	2800	1693	3584	0	1626	3328	0
Flt Permitted		0.990			0.972		0.390			0.130	0.605	
Satd. Flow (perm)	0	2042	0	0	1786	2800	695	3584	0	223	2056	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								17			1	
Link Speed (mph)		25			40			40			40	
Link Distance (ft)		970			366			1060			1006	
Travel Time (s)		26.5			6.2			18.1			17.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	5%	0%	1%	0%	2%	4%	1%	2%	0%
Adj. Flow (vph)	18	41	31	43	31	467	27	319	56	577	360	10
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	90	0	0	74	467	27	375	0	288	659	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)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	0.84	0.84	0.84	1.10	1.01	1.01	1.09	0.95	0.95	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	40	40		5	5	5	40	60		5	5	
Trailing Detector (ft)	-5	-5		0	0	0	-5	-5		0	0	
Detector 1 Position(ft)	-5	-5		0	0	0	-5	-5		0	0	
Detector 1 Size(ft)	45	45		5	5	5	45	65		5	5	
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	
Turn Type	custom	NA		Split	NA	custom	Perm	NA		Perm	NA	
Protected Phases	14	14		8	8	8 1		16			1	
Permitted Phases	14					8 1	16			1		
Detector Phase	14	14		8	8	8 1	16	16		1	1	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0		5.0	5.0		7.0	7.0		20.0	20.0	
Minimum Split (s)	13.0	13.0		11.0	11.0		13.0	13.0		26.0	26.0	
Total Split (s)	21.0	21.0		21.0	21.0		31.0	31.0		36.0	36.0	
Total Split (%)	19.3%	19.3%		19.3%	19.3%		28.4%	28.4%		33.0%	33.0%	
Maximum Green (s)	15.0	15.0		15.0	15.0		25.0	25.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		Min	Min	
Act Effct Green (s)		9.6			9.1	45.9	13.9	13.9		30.7	30.7	
Actuated g/C Ratio		0.11			0.11	0.54	0.16	0.16		0.36	0.36	
v/c Ratio		0.39			0.39	0.31	0.24	0.62		3.56	3.44dl	
Control Delay		42.8			44.0	12.9	38.7	37.1		1202.2	43.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		42.8			44.0	12.9	38.7	37.1		1202.2	43.6	
LOS		D			D	B	D	D		F	D	
Approach Delay		42.8			17.2			37.2			396.0	
Approach LOS		D			B			D			F	
Queue Length 50th (ft)		46			38	77	13	96		~275	186	
Queue Length 95th (ft)		101			87	137	40	155		#513	#374	
Internal Link Dist (ft)		890			286			980			926	
Turn Bay Length (ft)						250	58					
Base Capacity (vph)		371			324	1730	210	1097		81	748	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.24			0.23	0.27	0.13	0.34		3.56	0.88	

Intersection Summary

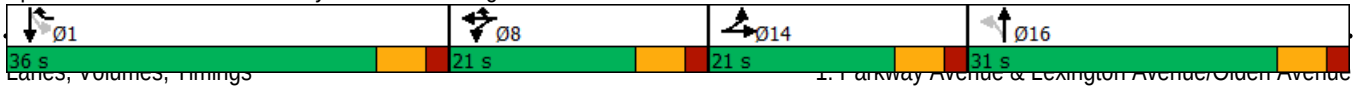
Area Type: Other
Cycle Length: 109
Actuated Cycle Length: 84.4
Natural Cycle: 65
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 3.56
Intersection Signal Delay: 203.6 Intersection LOS: F
Intersection Capacity Utilization 54.7% ICU Level of Service A
Analysis Period (min) 15

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

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 1: Parkway Avenue & Lexington Avenue/Olden Avenue



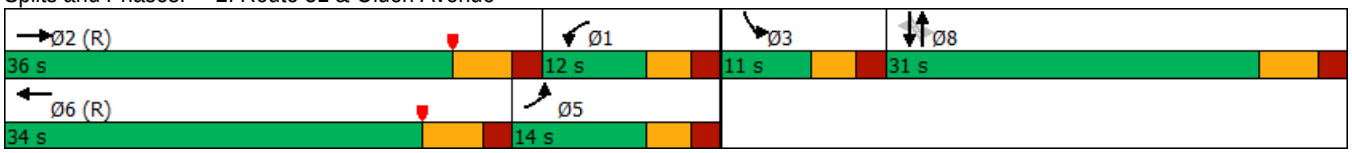
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	600	109	38	570	214	83	356	47	215	375	124
Future Volume (vph)	109	600	109	38	570	214	83	356	47	215	375	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	10	11	11
Grade (%)		0%			1%			1%			-2%	
Storage Length (ft)	100		0	100		0	0		0	63		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.95
Frt		0.977			0.959			0.985			0.963	
Flt Protected	0.950			0.950				0.992		0.950		
Satd. Flow (prot)	1787	3468	0	1796	3411	0	0	3484	0	1685	3328	0
Flt Permitted	0.950			0.950				0.675		0.362		
Satd. Flow (perm)	1787	3468	0	1796	3411	0	0	2371	0	642	3328	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								12			50	
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		319			1184			970			971	
Travel Time (s)		5.4			20.2			18.9			18.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	2%	0%	0%	1%	1%	0%	1%	0%	1%	2%	2%
Adj. Flow (vph)	111	612	111	39	582	218	85	363	48	219	383	127
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	723	0	39	800	0	0	496	0	219	510	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	1.08	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Perm	NA		pm+pt	NA	
Protected Phases	5	2		1	6			8		3	8	
Permitted Phases							8			8		
Detector Phase	5	2		1	6		8	8		3	8	
Switch Phase												
Minimum Initial (s)	5.0	13.0		5.0	13.0		7.0	7.0		6.0	7.0	
Minimum Split (s)	10.0	19.0		10.0	19.0		13.0	13.0		11.0	13.0	
Total Split (s)	14.0	36.0		12.0	34.0		31.0	31.0		11.0	31.0	
Total Split (%)	15.6%	40.0%		13.3%	37.8%		34.4%	34.4%		12.2%	34.4%	
Maximum Green (s)	9.0	30.0		7.0	28.0		25.0	25.0		6.0	25.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0			6.0		5.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	8.6	36.7		6.6	30.3			23.1		30.1	23.1	
Actuated g/C Ratio	0.10	0.41		0.07	0.34			0.26		0.33	0.26	
v/c Ratio	0.65	0.51		0.30	0.70			0.80		0.77	0.57	
Control Delay	58.1	23.4		45.6	30.5			41.2		41.3	28.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	58.1	23.4		45.6	30.5			41.2		41.3	28.6	
LOS	E	C		D	C			D		D	C	
Approach Delay		28.0			31.2			41.2			32.4	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)	62	180		21	213			131		82	115	
Queue Length 95th (ft)	#131	241		53	283			191		#164	166	
Internal Link Dist (ft)		239			1104			890			891	
Turn Bay Length (ft)	100			100						63		
Base Capacity (vph)	178	1414		139	1149			667		284	960	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.62	0.51		0.28	0.70			0.74		0.77	0.53	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 32.3 Intersection LOS: C
Intersection Capacity Utilization 75.9% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Route 31 & Olden Avenue



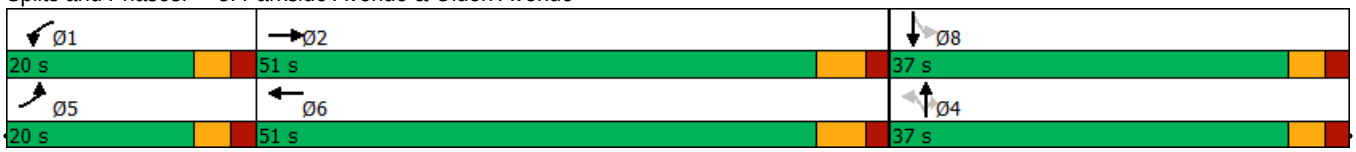
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	678	29	177	659	116	27	233	180	110	278	180
Future Volume (vph)	163	678	29	177	659	116	27	233	180	110	278	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	13	13	11	12	12	11	11	11	13	11	11
Grade (%)		0%			0%			-1%			-1%	
Storage Length (ft)	110		0	117		0	153		190	182		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.978				0.850		0.941	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3673	0	1745	3496	0	1754	1828	1538	1838	1737	0
Flt Permitted	0.950			0.950			0.137			0.478		
Satd. Flow (perm)	1745	3673	0	1745	3496	0	253	1828	1538	925	1737	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			23				184		31	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1184			1902			970			971	
Travel Time (s)		23.1			37.1			18.9			18.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	0%	0%	1%	1%	0%	1%	2%	2%	0%	0%
Adj. Flow (vph)	166	692	30	181	672	118	28	238	184	112	284	184
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	722	0	181	790	0	28	238	184	112	468	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			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.04	0.96	0.96	1.04	1.00	1.00	1.04	1.04	1.04	0.95	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	5		40	5		40	40	40	40	40	
Trailing Detector (ft)	-5	0		-5	0		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	-5	0		-5	0		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	45	5		45	5		45	45	45	45	45	
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	
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		
Detector Phase	5	2		1	6		4	4	4	8	8	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	25.0		5.0	25.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	10.0	31.0		10.0	31.0		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	20.0	51.0		20.0	51.0		37.0	37.0	37.0	37.0	37.0	
Total Split (%)	18.5%	47.2%		18.5%	47.2%		34.3%	34.3%	34.3%	34.3%	34.3%	
Maximum Green (s)	15.0	45.0		15.0	45.0		32.0	32.0	32.0	32.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max		None	Max		None	None	None	None	None	
Act Effct Green (s)	13.5	45.1		13.9	45.5		29.4	29.4	29.4	29.4	29.4	
Actuated g/C Ratio	0.13	0.43		0.13	0.44		0.28	0.28	0.28	0.28	0.28	
v/c Ratio	0.74	0.45		0.78	0.51		0.39	0.46	0.33	0.43	0.92	
Control Delay	64.3	22.7		68.0	23.0		49.2	34.4	5.9	36.7	58.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	64.3	22.7		68.0	23.0		49.2	34.4	5.9	36.7	58.3	
LOS	E	C		E	C		D	C	A	D	E	
Approach Delay		30.4			31.4			23.7			54.1	
Approach LOS		C			C			C			D	
Queue Length 50th (ft)	111	185		122	205		15	133	0	62	289	
Queue Length 95th (ft)	#199	239		#227	264		47	208	51	118	#474	
Internal Link Dist (ft)		1104			1822			890			891	
Turn Bay Length (ft)	110			117			153		190	182		
Base Capacity (vph)	251	1589		251	1535		77	561	599	284	554	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.66	0.45		0.72	0.51		0.36	0.42	0.31	0.39	0.84	

Intersection Summary

Area Type: Other
Cycle Length: 108
Actuated Cycle Length: 104.5
Natural Cycle: 70
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 34.5 Intersection LOS: C
Intersection Capacity Utilization 82.4% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Parkside Avenue & Olden Avenue



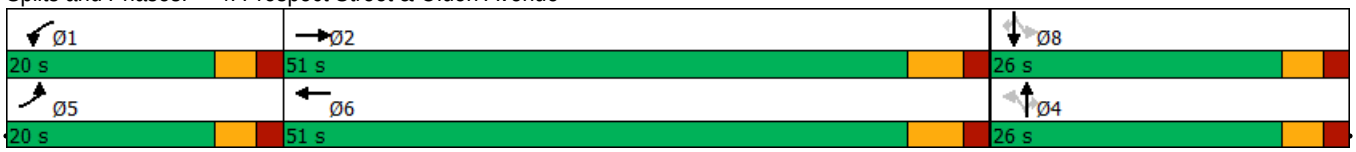
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	222	839	42	28	894	92	42	110	40	119	120	276
Future Volume (vph)	222	839	42	28	894	92	42	110	40	119	120	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	12	12	12	12	10	11	11	11
Grade (%)		-1%			2%			2%			-3%	
Storage Length (ft)	85		0	235		0	0		100	0		0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.986				0.850			0.850
Flt Protected	0.950			0.950				0.986			0.976	
Satd. Flow (prot)	1676	3569	0	1661	3489	0	0	1828	1492	0	1784	1538
Flt Permitted	0.950			0.950				0.669			0.675	
Satd. Flow (perm)	1676	3569	0	1661	3489	0	0	1240	1492	0	1234	1538
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			15				90			285
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1902			1673			970			971	
Travel Time (s)		37.1			32.6			26.5			26.5	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	0%	4%	1%	1%	0%	2%	0%	2%	2%	3%
Adj. Flow (vph)	229	865	43	29	922	95	43	113	41	123	124	285
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	908	0	29	1017	0	0	156	41	0	247	285
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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.09	0.99	0.99	1.06	1.01	1.01	1.01	1.01	1.11	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	5		40	5		20	45	45	20	45	20
Trailing Detector (ft)	-5	0		-5	0		0	-5	-5	0	-5	0
Detector 1 Position(ft)	-5	0		-5	0		0	-5	-5	0	-5	0
Detector 1 Size(ft)	45	5		45	5		20	50	50	20	50	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		8
Detector Phase	5	2		1	6		4	4	4	8	8	8
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	25.0		5.0	25.0		10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.0	31.0		10.0	31.0		15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	20.0	51.0		20.0	51.0		26.0	26.0	26.0	26.0	26.0	26.0
Total Split (%)	20.6%	52.6%		20.6%	52.6%		26.8%	26.8%	26.8%	26.8%	26.8%	26.8%
Maximum Green (s)	15.0	45.0		15.0	45.0		21.0	21.0	21.0	21.0	21.0	21.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	6.0		5.0	6.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max		None	None	None	None	None	None
Act Effct Green (s)	14.7	56.8		7.3	45.0			20.5	20.5		20.5	20.5
Actuated g/C Ratio	0.15	0.59		0.08	0.47			0.21	0.21		0.21	0.21
v/c Ratio	0.89	0.43		0.23	0.62			0.59	0.11		0.94	0.52
Control Delay	76.2	12.7		45.9	21.1			44.5	0.7		81.1	7.7
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	76.2	12.7		45.9	21.1			44.5	0.7		81.1	7.7
LOS	E	B		D	C			D	A		F	A
Approach Delay		25.5			21.8			35.3			41.8	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)	140	168		17	237			87	0		150	0
Queue Length 95th (ft)	#276	231		44	304			155	2		#298	66
Internal Link Dist (ft)		1822			1593			890			891	
Turn Bay Length (ft)	85			235					100			
Base Capacity (vph)	261	2108		258	1638			270	395		269	558
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.88	0.43		0.11	0.62			0.58	0.10		0.92	0.51

Intersection Summary

Area Type: Other
Cycle Length: 97
Actuated Cycle Length: 96.3
Natural Cycle: 65
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 27.8 Intersection LOS: C
Intersection Capacity Utilization 72.8% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Prospect Street & Olden Avenue

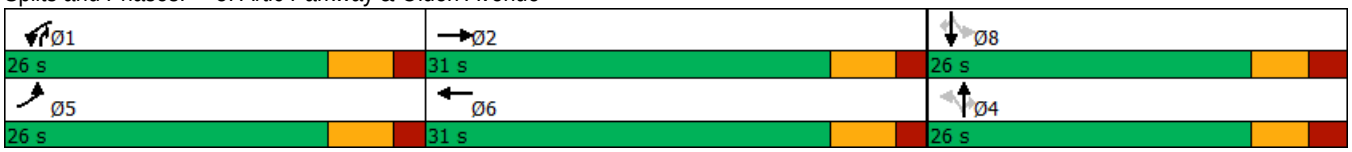


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	830	90	52	755	78	73	42	81	83	39	184
Future Volume (vph)	172	830	90	52	755	78	73	42	81	83	39	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	15
Grade (%)		1%			-2%			-2%			0%	
Storage Length (ft)	90		0	90		0	90		90	40		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.986				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1744	3472	0	1787	3521	0	1823	1881	1631	1770	1845	1742
Flt Permitted	0.950			0.950			0.730			0.728		
Satd. Flow (perm)	1744	3472	0	1787	3521	0	1401	1881	1631	1356	1845	1742
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			13				39			194
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		1673			1939			970			970	
Travel Time (s)		32.6			37.8			26.5			18.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	2%	1%	2%	2%	3%	0%	2%	0%	2%	3%	2%
Adj. Flow (vph)	181	874	95	55	795	82	77	44	85	87	41	194
Shared Lane Traffic (%)												
Lane Group Flow (vph)	181	969	0	55	877	0	77	44	85	87	41	194
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		Yes			Yes							
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.00	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	5		40	5		45	45	45	45	45	45
Trailing Detector (ft)	-5	0		-5	0		-5	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	0		-5	0		-5	-5	-5	-5	-5	-5
Detector 1 Size(ft)	45	5		45	5		50	50	50	50	50	50
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases							4		4	8		8
Detector Phase	5	2		1	6		4	4	1	8	8	8
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	21.0		13.0	21.0		13.0	13.0	13.0	13.0	13.0	13.0
Total Split (s)	26.0	31.0		26.0	31.0		26.0	26.0	26.0	26.0	26.0	26.0
Total Split (%)	31.3%	37.3%		31.3%	37.3%		31.3%	31.3%	31.3%	31.3%	31.3%	31.3%
Maximum Green (s)	20.0	25.0		20.0	25.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5	4.0	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5	2.0	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max		None	None	None	None	None	None
Act Effct Green (s)	12.1	32.2		8.1	25.2		9.9	9.9	24.1	9.9	9.9	9.9
Actuated g/C Ratio	0.19	0.49		0.12	0.39		0.15	0.15	0.37	0.15	0.15	0.15
v/c Ratio	0.56	0.57		0.25	0.64		0.36	0.15	0.14	0.42	0.15	0.45
Control Delay	31.7	14.8		30.6	20.0		30.8	26.2	9.2	32.7	26.1	8.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.7	14.8		30.6	20.0		30.8	26.2	9.2	32.7	26.1	8.3
LOS	C	B		C	C		C	C	A	C	C	A
Approach Delay		17.5			20.6			20.9			17.1	
Approach LOS		B			C			C			B	
Queue Length 50th (ft)	65	141		20	141		28	15	12	32	14	0
Queue Length 95th (ft)	130	241		55	253		68	43	38	76	42	50
Internal Link Dist (ft)		1593			1859			890			890	
Turn Bay Length (ft)	90			90			90		90	40		
Base Capacity (vph)	537	1714		551	1365		432	580	919	418	569	671
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.57		0.10	0.64		0.18	0.08	0.09	0.21	0.07	0.29

Intersection Summary			
Area Type:	Other		
Cycle Length: 83			
Actuated Cycle Length: 65.4			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 18.8		Intersection LOS: B	
Intersection Capacity Utilization 59.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: Artic Parkway & Olden Avenue



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	183	878	693	34	0	0
Future Volume (vph)	183	878	693	34	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	15	15	16	16
Grade (%)		0%	-1%		0%	
Storage Length (ft)	250			0	0	0
Storage Lanes	2			0	0	0
Taper Length (ft)	45				45	
Lane Util. Factor	0.97	0.95	0.95	0.95	1.00	1.00
Frt			0.993			
Flt Protected	0.950					
Satd. Flow (prot)	3467	3574	3853	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	3467	3574	3853	0	0	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			11			
Link Speed (mph)		35	35		25	
Link Distance (ft)		1939	787		588	
Travel Time (s)		37.8	15.3		16.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	3%	0%	0%	0%
Adj. Flow (vph)	189	905	714	35	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	189	905	749	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.88	0.88	0.85	0.85
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	1	1			
Detector Template	Left	Thru	Thru			
Leading Detector (ft)	45	5	5			
Trailing Detector (ft)	-5	0	0			
Detector 1 Position(ft)	-5	0	0			
Detector 1 Size(ft)	50	5	5			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0			
Turn Type	Prot	NA	NA			
Protected Phases	16	2	6			
Permitted Phases						
Detector Phase	16	2	6			
Switch Phase						

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	6.0	25.0	25.0			
Minimum Split (s)	11.0	32.0	32.0			
Total Split (s)	25.0	47.0	47.0			
Total Split (%)	34.7%	65.3%	65.3%			
Maximum Green (s)	20.0	40.0	40.0			
Yellow Time (s)	3.0	5.0	5.0			
All-Red Time (s)	2.0	2.0	2.0			
Lost Time Adjust (s)	0.0	0.0	0.0			
Total Lost Time (s)	5.0	7.0	7.0			
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	Max	Max			
Act Effct Green (s)	8.7	40.0	40.0			
Actuated g/C Ratio	0.14	0.66	0.66			
v/c Ratio	0.38	0.38	0.29			
Control Delay	25.8	5.5	4.9			
Queue Delay	0.0	0.0	0.0			
Total Delay	25.8	5.5	4.9			
LOS	C	A	A			
Approach Delay		9.0	4.9			
Approach LOS		A	A			
Queue Length 50th (ft)	32	65	49			
Queue Length 95th (ft)	58	105	80			
Internal Link Dist (ft)		1859	707		508	
Turn Bay Length (ft)	250					
Base Capacity (vph)	1142	2355	2542			
Starvation Cap Reductn	0	0	0			
Spillback Cap Reductn	0	0	0			
Storage Cap Reductn	0	0	0			
Reduced v/c Ratio	0.17	0.38	0.29			

Intersection Summary			
Area Type:	Other		
Cycle Length: 72			
Actuated Cycle Length: 60.7			
Natural Cycle: 45			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.38			
Intersection Signal Delay: 7.3		Intersection LOS: A	
Intersection Capacity Utilization 36.1%		ICU Level of Service A	
Analysis Period (min) 15			

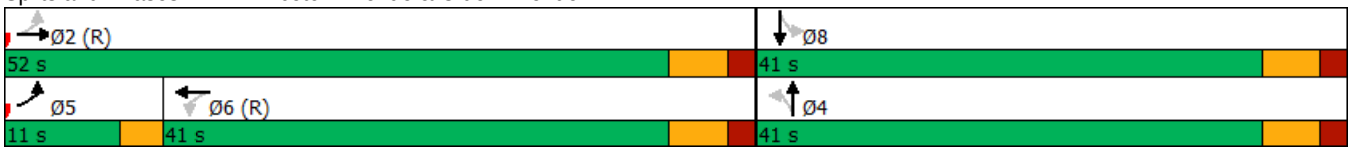
Splits and Phases: 6: Olden Avenue & Capital Plaza

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	451	232	27	584	53	151	274	50	134	406	56
Future Volume (vph)	198	451	232	27	584	53	151	274	50	134	406	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	11	11	11	11	11	11	11	12	12	12
Grade (%)		1%			1%			1%			-1%	
Storage Length (ft)	130		0	65		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.949			0.987			0.984			0.986	
Flt Protected	0.950			0.950				0.984			0.989	
Satd. Flow (prot)	1819	3364	0	1623	3365	0	0	3324	0	0	3511	0
Flt Permitted	0.288			0.384				0.601			0.691	
Satd. Flow (perm)	552	3364	0	656	3365	0	0	2030	0	0	2453	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		139			12			16			14	
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		787			222			223			971	
Travel Time (s)		15.3			6.1			6.1			26.5	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	0%	7%	2%	0%	0%	2%	0%	0%	1%	1%
Adj. Flow (vph)	204	465	239	28	602	55	156	282	52	138	419	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	204	704	0	28	657	0	0	490	0	0	615	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)		13			13			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.96	1.01	1.05	1.05	1.05	1.05	1.05	1.05	1.05	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Minimum Split (s)	11.0	26.0		26.0	26.0		26.0	26.0		26.0	26.0	
Total Split (s)	11.0	52.0		41.0	41.0		41.0	41.0		41.0	41.0	
Total Split (%)	11.8%	55.9%		44.1%	44.1%		44.1%	44.1%		44.1%	44.1%	
Maximum Green (s)	8.0	46.0		35.0	35.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	3.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?												
Act Effct Green (s)	49.0	46.0		35.0	35.0			35.0			35.0	
Actuated g/C Ratio	0.53	0.49		0.38	0.38			0.38			0.38	
v/c Ratio	0.51	0.41		0.11	0.52			0.63			0.66	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	16.7	12.5		20.6	23.8			27.4			27.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	16.7	12.5		20.6	23.8			27.4			27.6	
LOS	B	B		C	C			C			C	
Approach Delay		13.4			23.6			27.4			27.6	
Approach LOS		B			C			C			C	
Queue Length 50th (ft)	61	103		11	152			118			152	
Queue Length 95th (ft)	101	145		30	205			174			213	
Internal Link Dist (ft)		707			142			143			891	
Turn Bay Length (ft)	130			65								
Base Capacity (vph)	399	1734		246	1273			773			931	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.51	0.41		0.11	0.52			0.63			0.66	

Intersection Summary			
Area Type:	Other		
Cycle Length: 93			
Actuated Cycle Length: 93			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green			
Natural Cycle: 65			
Control Type: Pretimed			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 21.8		Intersection LOS: C	
Intersection Capacity Utilization 90.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: Princeton Avenue & Olden Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	46	19	51	37	487	34	224	29	529	233	15
Future Volume (vph)	11	46	19	51	37	487	34	224	29	529	233	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	10	12	12	10	13	13	12	12	12
Grade (%)		-1%			1%			-1%			0%	
Storage Length (ft)	0		0	140		250	58		0	0		275
Storage Lanes	0		0	1		1	1		0	1		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	0.95	0.91	0.91	0.95
Frt		0.965				0.850		0.983			0.996	
Flt Protected		0.993			0.972		0.950			0.950	0.975	
Satd. Flow (prot)	0	2074	0	0	1838	2800	1693	3640	0	1626	3326	0
Flt Permitted		0.993			0.972		0.446			0.131	0.627	
Satd. Flow (perm)	0	2074	0	0	1838	2800	795	3640	0	224	2139	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								12			2	
Link Speed (mph)		25			40			40			40	
Link Distance (ft)		970			366			1060			1006	
Travel Time (s)		26.5			6.2			18.1			17.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	1%	3%	1%	1%	0%
Adj. Flow (vph)	11	47	20	53	38	502	35	231	30	545	240	15
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	78	0	0	91	502	35	261	0	272	528	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)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	0.84	0.84	0.84	1.10	1.01	1.01	1.09	0.95	0.95	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	40	40		5	5	5	40	60		5	5	
Trailing Detector (ft)	-5	-5		0	0	0	-5	-5		0	0	
Detector 1 Position(ft)	-5	-5		0	0	0	-5	-5		0	0	
Detector 1 Size(ft)	45	45		5	5	5	45	65		5	5	
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	
Turn Type	custom	NA		Split	NA	custom	Perm	NA		Perm	NA	
Protected Phases	14	14		8	8	8 1		16			1	
Permitted Phases	14					8 1	16			1		
Detector Phase	14	14		8	8	8 1	16	16		1	1	
Switch Phase												

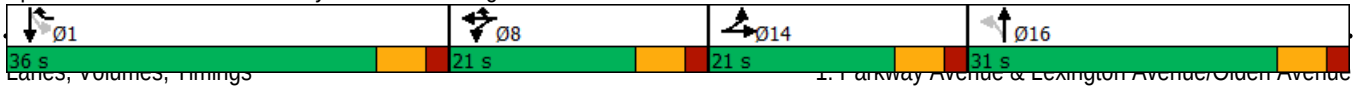
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0		5.0	5.0		7.0	7.0		20.0	20.0	
Minimum Split (s)	13.0	13.0		11.0	11.0		13.0	13.0		26.0	26.0	
Total Split (s)	21.0	21.0		21.0	21.0		31.0	31.0		36.0	36.0	
Total Split (%)	19.3%	19.3%		19.3%	19.3%		28.4%	28.4%		33.0%	33.0%	
Maximum Green (s)	15.0	15.0		15.0	15.0		25.0	25.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		Min	Min	
Act Effct Green (s)		9.0			9.7	46.5	11.2	11.2		30.6	30.6	
Actuated g/C Ratio		0.11			0.12	0.57	0.14	0.14		0.38	0.38	
v/c Ratio		0.34			0.42	0.31	0.32	0.51		3.24	3.07dl	
Control Delay		40.9			41.6	11.3	43.1	36.4		1059.3	28.7	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		40.9			41.6	11.3	43.1	36.4		1059.3	28.7	
LOS		D			D	B	D	D		F	C	
Approach Delay		40.9			15.9			37.2			379.1	
Approach LOS		D			B			D			F	
Queue Length 50th (ft)		39			45	76	17	64		~241	126	
Queue Length 95th (ft)		87			96	131	50	112		#468	#235	
Internal Link Dist (ft)		890			286			980			926	
Turn Bay Length (ft)						250	58					
Base Capacity (vph)		389			345	1787	248	1147		84	804	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.20			0.26	0.28	0.14	0.23		3.24	0.66	

Intersection Summary

Area Type: Other
Cycle Length: 109
Actuated Cycle Length: 81.6
Natural Cycle: 65
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 3.24
Intersection Signal Delay: 185.0 Intersection LOS: F
Intersection Capacity Utilization 50.2% ICU Level of Service A
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 1: Parkway Avenue & Lexington Avenue/Olden Avenue



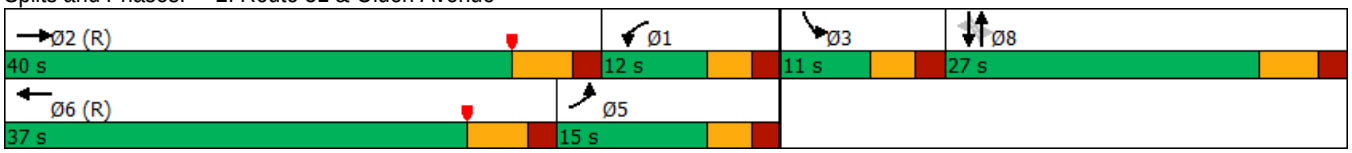
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	625	94	52	536	195	96	198	35	210	219	120
Future Volume (vph)	105	625	94	52	536	195	96	198	35	210	219	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	10	11	11
Grade (%)		0%			1%			1%			-2%	
Storage Length (ft)	100		0	100		0	0		0	63		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.95
Frt		0.980			0.960			0.984			0.947	
Flt Protected	0.950			0.950				0.986		0.950		
Satd. Flow (prot)	1787	3503	0	1796	3381	0	0	3464	0	1685	3305	0
Flt Permitted	0.950			0.950				0.701		0.478		
Satd. Flow (perm)	1787	3503	0	1796	3381	0	0	2463	0	848	3305	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								13			106	
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		319			1184			970			971	
Travel Time (s)		5.4			20.2			18.9			18.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	0%	2%	2%	0%	1%	0%	1%	1%	1%
Adj. Flow (vph)	111	658	99	55	564	205	101	208	37	221	231	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	757	0	55	769	0	0	346	0	221	357	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	1.08	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Perm	NA		pm+pt	NA	
Protected Phases	5	2		1	6			8		3	8	
Permitted Phases							8			8		
Detector Phase	5	2		1	6		8	8		3	8	
Switch Phase												
Minimum Initial (s)	5.0	13.0		5.0	13.0		7.0	7.0		6.0	7.0	
Minimum Split (s)	10.0	19.0		10.0	19.0		13.0	13.0		11.0	13.0	
Total Split (s)	15.0	40.0		12.0	37.0		27.0	27.0		11.0	27.0	
Total Split (%)	16.7%	44.4%		13.3%	41.1%		30.0%	30.0%		12.2%	30.0%	
Maximum Green (s)	10.0	34.0		7.0	31.0		21.0	21.0		6.0	21.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0			6.0		5.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	9.3	39.7		6.7	37.3			17.7		24.7	17.7	
Actuated g/C Ratio	0.10	0.44		0.07	0.41			0.20		0.27	0.20	
v/c Ratio	0.60	0.49		0.41	0.55			0.70		0.77	0.49	
Control Delay	52.4	20.9		49.4	23.8			39.8		43.8	23.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	52.4	20.9		49.4	23.8			39.8		43.8	23.9	
LOS	D	C		D	C			D		D	C	
Approach Delay		24.9			25.5			39.8			31.5	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)	61	168		30	185			91		94	64	
Queue Length 95th (ft)	#115	234		68	256			135		#163	103	
Internal Link Dist (ft)		239			1104			890			891	
Turn Bay Length (ft)	100			100						63		
Base Capacity (vph)	198	1544		139	1400			584		288	852	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.56	0.49		0.40	0.55			0.59		0.77	0.42	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 28.5 Intersection LOS: C
Intersection Capacity Utilization 67.0% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Route 31 & Olden Avenue

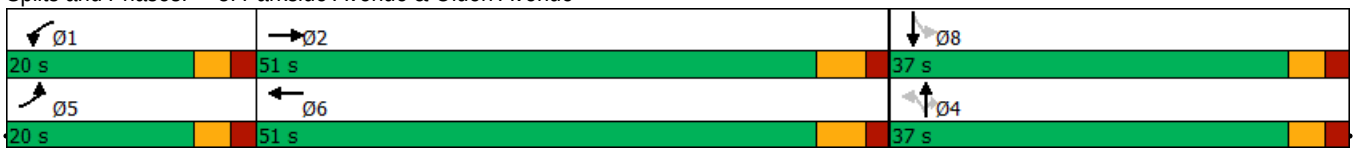


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	678	12	177	608	110	20	170	186	130	181	171
Future Volume (vph)	181	678	12	177	608	110	20	170	186	130	181	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	13	13	11	12	12	11	11	11	13	11	11
Grade (%)		0%			0%			-1%			-1%	
Storage Length (ft)	110		0	117		0	153		190	182		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.977				0.850		0.927	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3642	0	1728	3487	0	1670	1828	1553	1838	1678	0
Flt Permitted	0.950			0.950			0.208			0.550		
Satd. Flow (perm)	1745	3642	0	1728	3487	0	366	1828	1553	1064	1678	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			23				200		45	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1184			1902			970			971	
Travel Time (s)		23.1			37.1			18.9			18.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	2%	8%	1%	1%	2%	5%	1%	1%	2%	2%	2%
Adj. Flow (vph)	195	729	13	190	654	118	22	183	200	140	195	184
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	742	0	190	772	0	22	183	200	140	379	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			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.04	0.96	0.96	1.04	1.00	1.00	1.04	1.04	1.04	0.95	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	5		40	5		40	40	40	40	40	
Trailing Detector (ft)	-5	0		-5	0		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	-5	0		-5	0		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	45	5		45	5		45	45	45	45	45	
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	
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		
Detector Phase	5	2		1	6		4	4	4	8	8	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	25.0		5.0	25.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	10.0	31.0		10.0	31.0		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	20.0	51.0		20.0	51.0		37.0	37.0	37.0	37.0	37.0	
Total Split (%)	18.5%	47.2%		18.5%	47.2%		34.3%	34.3%	34.3%	34.3%	34.3%	
Maximum Green (s)	15.0	45.0		15.0	45.0		32.0	32.0	32.0	32.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max		None	Max		None	None	None	None	None	
Act Effct Green (s)	14.2	45.4		14.0	45.3		24.7	24.7	24.7	24.7	24.7	
Actuated g/C Ratio	0.14	0.45		0.14	0.45		0.25	0.25	0.25	0.25	0.25	
v/c Ratio	0.79	0.45		0.79	0.49		0.24	0.41	0.38	0.53	0.85	
Control Delay	66.1	21.0		66.1	21.0		37.2	34.2	6.3	40.6	49.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	66.1	21.0		66.1	21.0		37.2	34.2	6.3	40.6	49.6	
LOS	E	C		E	C		D	C	A	D	D	
Approach Delay		30.3			29.9			20.6			47.2	
Approach LOS		C			C			C			D	
Queue Length 50th (ft)	123	172		120	177		11	99	0	78	208	
Queue Length 95th (ft)	#251	248		#244	257		35	161	53	140	320	
Internal Link Dist (ft)		1104			1822			890			891	
Turn Bay Length (ft)	110			117			153		190	182		
Base Capacity (vph)	262	1651		260	1587		117	587	634	341	569	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.74	0.45		0.73	0.49		0.19	0.31	0.32	0.41	0.67	

Intersection Summary			
Area Type:	Other		
Cycle Length: 108			
Actuated Cycle Length: 100.2			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 31.9		Intersection LOS: C	
Intersection Capacity Utilization 76.7%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Parkside Avenue & Olden Avenue

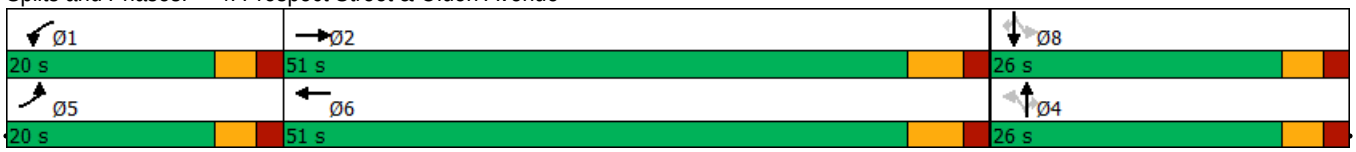


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	839	35	20	938	106	54	59	43	120	96	282
Future Volume (vph)	206	839	35	20	938	106	54	59	43	120	96	282
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	12	12	12	12	10	11	11	11
Grade (%)		-1%			2%			2%			-3%	
Storage Length (ft)	85		0	235		0	0		100	0		0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.985				0.850			0.850
Flt Protected	0.950			0.950				0.977			0.973	
Satd. Flow (prot)	1628	3572	0	1727	3485	0	0	1838	1492	0	1786	1554
Flt Permitted	0.950			0.950				0.545			0.739	
Satd. Flow (perm)	1628	3572	0	1727	3485	0	0	1025	1492	0	1357	1554
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			17				90			297
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1902			1673			970			971	
Travel Time (s)		37.1			32.6			26.5			26.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	1%	0%	0%	1%	1%	0%	0%	0%	2%	1%	2%
Adj. Flow (vph)	217	883	37	21	987	112	57	62	45	126	101	297
Shared Lane Traffic (%)												
Lane Group Flow (vph)	217	920	0	21	1099	0	0	119	45	0	227	297
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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.09	0.99	0.99	1.06	1.01	1.01	1.01	1.01	1.11	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	5		40	5		20	45	45	20	45	20
Trailing Detector (ft)	-5	0		-5	0		0	-5	-5	0	-5	0
Detector 1 Position(ft)	-5	0		-5	0		0	-5	-5	0	-5	0
Detector 1 Size(ft)	45	5		45	5		20	50	50	20	50	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		8
Detector Phase	5	2		1	6		4	4	4	8	8	8
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	25.0		5.0	25.0		10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.0	31.0		10.0	31.0		15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	20.0	51.0		20.0	51.0		26.0	26.0	26.0	26.0	26.0	26.0
Total Split (%)	20.6%	52.6%		20.6%	52.6%		26.8%	26.8%	26.8%	26.8%	26.8%	26.8%
Maximum Green (s)	15.0	45.0		15.0	45.0		21.0	21.0	21.0	21.0	21.0	21.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	6.0		5.0	6.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max		None	None	None	None	None	None
Act Effct Green (s)	14.5	59.5		6.9	45.1			18.8	18.8		18.8	18.8
Actuated g/C Ratio	0.15	0.63		0.07	0.48			0.20	0.20		0.20	0.20
v/c Ratio	0.87	0.41		0.17	0.66			0.59	0.12		0.84	0.54
Control Delay	72.5	10.7		44.8	21.3			46.8	1.6		63.5	8.0
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	72.5	10.7		44.8	21.3			46.8	1.6		63.5	8.0
LOS	E	B		D	C			D	A		E	A
Approach Delay		22.5			21.8			34.4			32.1	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	132	116		12	265			65	0		133	0
Queue Length 95th (ft)	#263	230		36	338			125	5		#250	67
Internal Link Dist (ft)		1822			1593			890			891	
Turn Bay Length (ft)	85			235					100			
Base Capacity (vph)	258	2252		275	1671			228	402		301	577
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.84	0.41		0.08	0.66			0.52	0.11		0.75	0.51

Intersection Summary			
Area Type:	Other		
Cycle Length: 97			
Actuated Cycle Length: 94.5			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 24.6		Intersection LOS: C	
Intersection Capacity Utilization 72.4%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 4: Prospect Street & Olden Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	805	122	123	735	74	107	77	139	70	74	206
Future Volume (vph)	211	805	122	123	735	74	107	77	139	70	74	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	15
Grade (%)		1%			-2%			-2%			0%	
Storage Length (ft)	90		0	90		0	90		90	40		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.986				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1778	3460	0	1753	3531	0	1805	1919	1615	1787	1900	1759
Flt Permitted	0.950			0.950			0.706			0.704		
Satd. Flow (perm)	1778	3460	0	1753	3531	0	1341	1919	1615	1324	1900	1759
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			13				39			219
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		1673			1939			970			970	
Travel Time (s)		32.6			37.8			26.5			18.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	2%	0%	4%	2%	0%	1%	0%	1%	1%	0%	1%
Adj. Flow (vph)	224	856	130	131	782	79	114	82	148	74	79	219
Shared Lane Traffic (%)												
Lane Group Flow (vph)	224	986	0	131	861	0	114	82	148	74	79	219
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		Yes			Yes							
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.00	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	5		40	5		45	45	45	45	45	45
Trailing Detector (ft)	-5	0		-5	0		-5	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	0		-5	0		-5	-5	-5	-5	-5	-5
Detector 1 Size(ft)	45	5		45	5		50	50	50	50	50	50
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases							4		4	8		8
Detector Phase	5	2		1	6		4	4	1	8	8	8
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	21.0		13.0	21.0		13.0	13.0	13.0	13.0	13.0	13.0
Total Split (s)	26.0	31.0		26.0	31.0		26.0	26.0	26.0	26.0	26.0	26.0
Total Split (%)	31.3%	37.3%		31.3%	37.3%		31.3%	31.3%	31.3%	31.3%	31.3%	31.3%
Maximum Green (s)	20.0	25.0		20.0	25.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5	4.0	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5	2.0	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max		None	None	None	None	None	None
Act Effct Green (s)	13.8	28.4		10.8	25.3		11.5	11.5	28.3	11.5	11.5	11.5
Actuated g/C Ratio	0.20	0.41		0.16	0.37		0.17	0.17	0.41	0.17	0.17	0.17
v/c Ratio	0.63	0.69		0.48	0.66		0.51	0.26	0.22	0.34	0.25	0.46
Control Delay	34.0	20.4		33.6	22.3		35.4	27.7	10.1	30.5	27.6	7.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.0	20.4		33.6	22.3		35.4	27.7	10.1	30.5	27.6	7.7
LOS	C	C		C	C		D	C	B	C	C	A
Approach Delay		22.9			23.8			22.7			16.4	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	86	166		51	151		44	30	28	28	29	0
Queue Length 95th (ft)	165	296		109	272		98	71	61	68	69	53
Internal Link Dist (ft)		1593			1859			890			890	
Turn Bay Length (ft)	90			90			90		90	40		
Base Capacity (vph)	523	1438		515	1306		394	564	904	389	559	672
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.69		0.25	0.66		0.29	0.15	0.16	0.19	0.14	0.33

Intersection Summary			
Area Type:	Other		
Cycle Length: 83			
Actuated Cycle Length: 68.8			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 22.4		Intersection LOS: C	
Intersection Capacity Utilization 62.0%		ICU Level of Service B	
Analysis Period (min) 15			

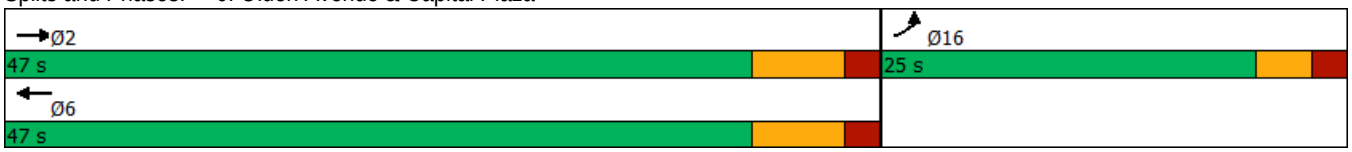
Splits and Phases: 5: Artic Parkway & Olden Avenue

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	188	902	695	48	0	0
Future Volume (vph)	188	902	695	48	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	15	15	16	16
Grade (%)		0%	-1%		0%	
Storage Length (ft)	250			0	0	0
Storage Lanes	2			0	0	0
Taper Length (ft)	45				45	
Lane Util. Factor	0.97	0.95	0.95	0.95	1.00	1.00
Frt			0.990			
Flt Protected	0.950					
Satd. Flow (prot)	3467	3539	3843	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	3467	3539	3843	0	0	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			16			
Link Speed (mph)		35	35		25	
Link Distance (ft)		1939	787		588	
Travel Time (s)		37.8	15.3		16.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	2%	3%	0%	0%	0%
Adj. Flow (vph)	198	949	732	51	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	198	949	783	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.88	0.88	0.85	0.85
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	1	1			
Detector Template	Left	Thru	Thru			
Leading Detector (ft)	45	5	5			
Trailing Detector (ft)	-5	0	0			
Detector 1 Position(ft)	-5	0	0			
Detector 1 Size(ft)	50	5	5			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0			
Turn Type	Prot	NA	NA			
Protected Phases	16	2	6			
Permitted Phases						
Detector Phase	16	2	6			
Switch Phase						

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	6.0	25.0	25.0			
Minimum Split (s)	11.0	32.0	32.0			
Total Split (s)	25.0	47.0	47.0			
Total Split (%)	34.7%	65.3%	65.3%			
Maximum Green (s)	20.0	40.0	40.0			
Yellow Time (s)	3.0	5.0	5.0			
All-Red Time (s)	2.0	2.0	2.0			
Lost Time Adjust (s)	0.0	0.0	0.0			
Total Lost Time (s)	5.0	7.0	7.0			
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			
Recall Mode	None	Max	Max			
Act Effct Green (s)	8.9	40.0	40.0			
Actuated g/C Ratio	0.15	0.66	0.66			
v/c Ratio	0.39	0.41	0.31			
Control Delay	25.9	5.7	5.0			
Queue Delay	0.0	0.0	0.0			
Total Delay	25.9	5.7	5.0			
LOS	C	A	A			
Approach Delay		9.2	5.0			
Approach LOS		A	A			
Queue Length 50th (ft)	34	71	52			
Queue Length 95th (ft)	61	114	85			
Internal Link Dist (ft)		1859	707		508	
Turn Bay Length (ft)	250					
Base Capacity (vph)	1139	2325	2531			
Starvation Cap Reductn	0	0	0			
Spillback Cap Reductn	0	0	0			
Storage Cap Reductn	0	0	0			
Reduced v/c Ratio	0.17	0.41	0.31			

Intersection Summary			
Area Type:	Other		
Cycle Length: 72			
Actuated Cycle Length: 60.9			
Natural Cycle: 45			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 7.5		Intersection LOS: A	
Intersection Capacity Utilization 36.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Olden Avenue & Capital Plaza

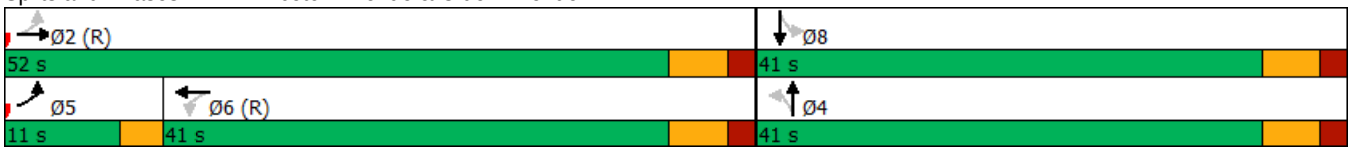


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	189	483	213	43	584	60	197	212	57	199	316	148
Future Volume (vph)	189	483	213	43	584	60	197	212	57	199	316	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	11	11	11	11	11	11	11	12	12	12
Grade (%)		1%			1%			1%			-1%	
Storage Length (ft)	130		0	65		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.954			0.986			0.982			0.966	
Flt Protected	0.950			0.950				0.979			0.985	
Satd. Flow (prot)	1802	3370	0	1702	3363	0	0	3293	0	0	3394	0
Flt Permitted	0.288			0.382				0.557			0.665	
Satd. Flow (perm)	546	3370	0	684	3363	0	0	1874	0	0	2292	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		106			13			19			46	
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		787			222			223			971	
Travel Time (s)		15.3			6.1			6.1			26.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	2%	1%	2%	2%	0%	1%	1%	4%	1%	2%	2%
Adj. Flow (vph)	193	493	217	44	596	61	201	216	58	203	322	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	193	710	0	44	657	0	0	475	0	0	676	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)		13			13			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.96	1.01	1.05	1.05	1.05	1.05	1.05	1.05	1.05	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Minimum Split (s)	11.0	26.0		26.0	26.0		26.0	26.0		26.0	26.0	
Total Split (s)	11.0	52.0		41.0	41.0		41.0	41.0		41.0	41.0	
Total Split (%)	11.8%	55.9%		44.1%	44.1%		44.1%	44.1%		44.1%	44.1%	
Maximum Green (s)	8.0	46.0		35.0	35.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	3.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?												
Act Effct Green (s)	49.0	46.0		35.0	35.0			35.0			35.0	
Actuated g/C Ratio	0.53	0.49		0.38	0.38			0.38			0.38	
v/c Ratio	0.49	0.41		0.17	0.52			0.93dl			0.76	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	16.2	13.3		21.6	23.7			28.5			30.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	16.2	13.3		21.6	23.7			28.5			30.1	
LOS	B	B		C	C			C			C	
Approach Delay		13.9			23.6			28.5			30.1	
Approach LOS		B			C			C			C	
Queue Length 50th (ft)	57	111		17	152			115			168	
Queue Length 95th (ft)	96	155		43	205			173			240	
Internal Link Dist (ft)		707			142			143			891	
Turn Bay Length (ft)	130			65								
Base Capacity (vph)	395	1720		257	1273			717			891	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.49	0.41		0.17	0.52			0.66			0.76	

Intersection Summary	
Area Type:	Other
Cycle Length: 93	
Actuated Cycle Length: 93	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green	
Natural Cycle: 65	
Control Type: Pretimed	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 22.9	Intersection LOS: C
Intersection Capacity Utilization 92.7%	ICU Level of Service F
Analysis Period (min) 15	
dl Defacto Left Lane. Recode with 1 though lane as a left lane.	

Splits and Phases: 7: Princeton Avenue & Olden Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	29	25	37	22	510	28	426	44	301	235	18
Future Volume (vph)	5	29	25	37	22	510	28	426	44	301	235	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	10	12	12	10	13	13	12	12	12
Grade (%)		-1%			1%			-1%			0%	
Storage Length (ft)	0		0	140		250	58		0	0		275
Storage Lanes	0		0	1		1	1		0	1		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	0.95	0.91	0.91	0.95
Frt		0.944				0.850		0.986			0.993	
Flt Protected		0.996			0.970		0.950			0.950	0.982	
Satd. Flow (prot)	0	1823	0	0	1800	2668	1628	3576	0	1595	3173	0
Flt Permitted		0.996			0.970		0.481			0.165	0.600	
Satd. Flow (perm)	0	1823	0	0	1800	2668	824	3576	0	277	1939	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								13			6	
Link Speed (mph)		25			40			40			40	
Link Distance (ft)		970			366			1060			1006	
Travel Time (s)		26.5			6.2			18.1			17.1	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	20%	3%	20%	3%	0%	6%	4%	3%	7%	3%	8%	11%
Adj. Flow (vph)	6	33	28	42	25	573	31	479	49	338	264	20
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	67	0	0	67	573	31	528	0	169	453	0
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	40	40		5	5	5	40	60		5	5	
Trailing Detector (ft)	-5	-5		0	0	0	-5	-5		0	0	
Detector 1 Position(ft)	-5	-5		0	0	0	-5	-5		0	0	
Detector 1 Size(ft)	45	45		5	5	5	45	65		5	5	
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	
Turn Type	custom	NA		Split	NA	custom	Perm	NA		Perm	NA	
Protected Phases	14	14		8	8	8 1		16			1	
Permitted Phases	14					8 1	16			1		
Detector Phase	14	14		8	8	8 1	16	16		1	1	
Switch Phase												
Minimum Initial (s)	7.0	7.0		5.0	5.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	13.0	13.0		11.0	11.0		13.0	13.0		13.0	13.0	
Total Split (s)	13.0	13.0		12.0	12.0		20.0	20.0		30.0	30.0	
Total Split (%)	17.3%	17.3%		16.0%	16.0%		26.7%	26.7%		40.0%	40.0%	
Maximum Green (s)	7.0	7.0		6.0	6.0		14.0	14.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		Min	Min	
Act Effct Green (s)		7.1			6.1	36.3	13.3	13.3		24.2	24.2	
Actuated g/C Ratio		0.10			0.09	0.51	0.19	0.19		0.34	0.34	
v/c Ratio		0.37			0.44	0.42	0.20	0.78		1.82	1.67dl	
Control Delay		38.5			42.7	13.4	29.7	37.3		430.4	28.1	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		38.5			42.7	13.4	29.7	37.3		430.4	28.1	
LOS		D			D	B	C	D		F	C	
Approach Delay		38.5			16.5			36.9			137.4	
Approach LOS		D			B			D			F	
Queue Length 50th (ft)		30			30	94	12	121		~135	100	
Queue Length 95th (ft)		66			68	136	36	#186		#220	154	
Internal Link Dist (ft)		890			286			980			926	
Turn Bay Length (ft)						250	58					
Base Capacity (vph)		179			152	1351	162	715		93	658	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.37			0.44	0.42	0.19	0.74		1.82	0.69	

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 71.7
Natural Cycle: 55
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.82
Intersection Signal Delay: 63.1 Intersection LOS: E
Intersection Capacity Utilization 51.9% ICU Level of Service A
Analysis Period (min) 15

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

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 1: Parkway Avenue & Lexington Avenue/Olden Avenue

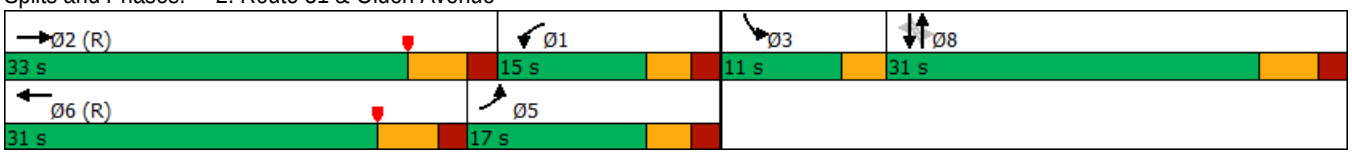
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	359	78	25	484	168	90	389	18	204	383	110
Future Volume (vph)	92	359	78	25	484	168	90	389	18	204	383	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	10	11	11
Grade (%)		0%			1%			1%			-2%	
Storage Length (ft)	100		0	100		0	0		0	63		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.95
Frt		0.973			0.961			0.995			0.967	
Flt Protected	0.950			0.950				0.991		0.950		
Satd. Flow (prot)	1787	3351	0	1589	3242	0	0	3408	0	1636	3246	0
Flt Permitted	0.950			0.950				0.649		0.317		
Satd. Flow (perm)	1787	3351	0	1589	3242	0	0	2232	0	546	3246	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								4			41	
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		319			1184			970			971	
Travel Time (s)		5.4			20.2			18.9			18.9	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	1%	5%	4%	13%	7%	5%	0%	5%	0%	4%	5%	5%
Adj. Flow (vph)	105	408	89	28	550	191	102	442	20	232	435	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	497	0	28	741	0	0	564	0	232	560	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA		Perm	NA		pm+pt	NA	
Protected Phases	5	2		1	6			8		3	8	
Permitted Phases							8			8		
Detector Phase	5	2		1	6		8	8		3	8	
Switch Phase												
Minimum Initial (s)	5.0	13.0		5.0	13.0		7.0	7.0		6.0	7.0	
Minimum Split (s)	10.0	19.0		10.0	19.0		13.0	13.0		9.0	13.0	
Total Split (s)	17.0	33.0		15.0	31.0		31.0	31.0		11.0	31.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	18.9%	36.7%		16.7%	34.4%		34.4%	34.4%		12.2%	34.4%	
Maximum Green (s)	12.0	27.0		10.0	25.0		25.0	25.0		8.0	25.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0			6.0		3.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	10.0	36.3		7.7	29.6			24.7		35.7	24.7	
Actuated g/C Ratio	0.11	0.40		0.09	0.33			0.27		0.40	0.27	
v/c Ratio	0.53	0.37		0.21	0.70			0.92		0.74	0.61	
Control Delay	47.2	21.6		40.9	32.2			53.6		34.6	29.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	47.2	21.6		40.9	32.2			53.6		34.6	29.5	
LOS	D	C		D	C			D		C	C	
Approach Delay		26.1			32.5			53.6			31.0	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)	57	89		15	202			161		85	134	
Queue Length 95th (ft)	104	165		39	#269			#253		#155	183	
Internal Link Dist (ft)		239			1104			890			891	
Turn Bay Length (ft)	100			100						63		
Base Capacity (vph)	238	1351		176	1066			622		313	931	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.44	0.37		0.16	0.70			0.91		0.74	0.60	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 35.0 Intersection LOS: D
Intersection Capacity Utilization 71.1% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Route 31 & Olden Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	438	9	105	525	42	10	189	146	50	184	148
Future Volume (vph)	90	438	9	105	525	42	10	189	146	50	184	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	13	13	11	12	12	11	11	11	13	11	11
Grade (%)		0%			0%			-1%			-1%	
Storage Length (ft)	110		0	117		0	153		190	182		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.989				0.850		0.933	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1631	3545	0	1572	3330	0	1594	1741	1453	1674	1637	0
Flt Permitted	0.950			0.950			0.254			0.549		
Satd. Flow (perm)	1631	3545	0	1572	3330	0	426	1741	1453	967	1637	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			13				154		51	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1184			1902			970			971	
Travel Time (s)		23.1			37.1			18.9			18.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	5%	0%	11%	7%	10%	10%	6%	8%	12%	3%	8%
Adj. Flow (vph)	95	461	9	111	553	44	11	199	154	53	194	156
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	470	0	111	597	0	11	199	154	53	350	0
Number of Detectors	1	1		1	1		1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	5		40	5		40	40	40	40	40	
Trailing Detector (ft)	-5	0		-5	0		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	-5	0		-5	0		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	45	5		45	5		45	45	45	45	45	
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	
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		
Detector Phase	5	2		1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	10.0	31.0		10.0	31.0		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	15.0	37.0		15.0	37.0		23.0	23.0	23.0	23.0	23.0	
Total Split (%)	20.0%	49.3%		20.0%	49.3%		30.7%	30.7%	30.7%	30.7%	30.7%	
Maximum Green (s)	10.0	31.0		10.0	31.0		18.0	18.0	18.0	18.0	18.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	8.8	35.4		9.0	35.6		16.8	16.8	16.8	16.8	16.8	
Actuated g/C Ratio	0.12	0.47		0.12	0.47		0.22	0.22	0.22	0.22	0.22	
v/c Ratio	0.50	0.28		0.59	0.38		0.12	0.51	0.35	0.25	0.86	
Control Delay	40.1	14.0		53.6	7.3		25.8	30.2	6.8	26.5	46.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	40.1	14.0		53.6	7.3		25.8	30.2	6.8	26.5	46.0	
LOS	D	B		D	A		C	C	A	C	D	
Approach Delay		18.4			14.6			20.2			43.4	
Approach LOS		B			B			C			D	
Queue Length 50th (ft)	42	74		56	35		4	80	0	20	132	
Queue Length 95th (ft)	86	108		107	64		17	141	43	49	#269	
Internal Link Dist (ft)		1104			1822			890			891	
Turn Bay Length (ft)	110			117			153		190	182		
Base Capacity (vph)	217	1676		209	1588		102	417	465	232	431	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.44	0.28		0.53	0.38		0.11	0.48	0.33	0.23	0.81	

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 22.3 Intersection LOS: C
Intersection Capacity Utilization 71.2% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Parkside Avenue & Olden Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	438	9	105	525	42	10	189	146	50	184	148
Future Volume (veh/h)	90	438	9	105	525	42	10	189	146	50	184	148
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1884	1976	1712	1772	1900	1736	1801	1768	1773	1815	1910
Adj Flow Rate, veh/h	95	461	9	111	553	44	11	199	154	53	194	156
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	5	5	11	7	7	10	6	8	12	3	3
Cap, veh/h	121	1667	33	137	1507	120	133	429	358	236	222	179
Arrive On Green	0.07	0.46	0.46	0.17	0.95	0.95	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1691	3591	70	1630	3160	251	957	1801	1503	975	932	750
Grp Volume(v), veh/h	95	230	240	111	294	303	11	199	154	53	0	350
Grp Sat Flow(s),veh/h/ln	1691	1789	1871	1630	1683	1728	957	1801	1503	975	0	1682
Q Serve(g_s), s	4.1	5.9	5.9	4.9	0.9	0.9	0.8	7.1	6.5	3.7	0.0	15.0
Cycle Q Clear(g_c), s	4.1	5.9	5.9	4.9	0.9	0.9	15.8	7.1	6.5	10.8	0.0	15.0
Prop In Lane	1.00		0.04	1.00		0.15	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	121	831	869	137	803	824	133	429	358	236	0	401
V/C Ratio(X)	0.79	0.28	0.28	0.81	0.37	0.37	0.08	0.46	0.43	0.22	0.00	0.87
Avail Cap(c_a), veh/h	225	831	869	217	803	824	134	432	361	238	0	404
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	0.91	0.91	0.91	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.3	12.3	12.3	30.6	0.9	0.9	35.1	24.5	24.2	29.1	0.0	27.5
Incr Delay (d2), s/veh	9.4	0.7	0.7	10.6	1.2	1.2	0.3	0.8	0.8	0.5	0.0	18.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.0	5.5	5.7	4.7	1.0	1.0	0.4	6.5	5.0	1.8	0.0	13.9
LnGrp Delay(d),s/veh	43.6	13.1	13.0	41.2	2.1	2.1	35.4	25.2	25.1	29.6	0.0	45.9
LnGrp LOS	D	B	B	D	A	A	D	C	C	C		D
Approach Vol, veh/h		565			708			364			403	
Approach Delay, s/veh		18.2			8.2			25.5			43.8	
Approach LOS		B			A			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.3	40.8		22.9	10.4	41.8		22.9
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	10.0	31.0		18.0	10.0	31.0		18.0
Max Q Clear Time (g_c+I1), s	6.9	7.9		17.8	6.1	2.9		17.0
Green Ext Time (p_c), s	0.1	1.1		0.0	0.1	1.5		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	21.1
HCM 2010 LOS	C

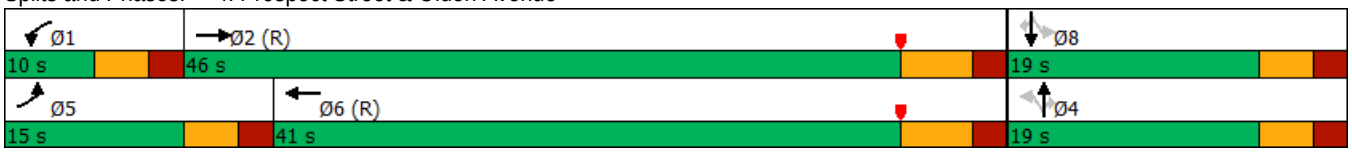
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	625	16	14	553	42	26	90	31	47	77	220
Future Volume (vph)	127	625	16	14	553	42	26	90	31	47	77	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	12	12	12	12	10	11	11	11
Grade (%)		-1%			2%			2%			-3%	
Storage Length (ft)	85		0	235		0	0		100	0		0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.989				0.850			0.850
Flt Protected	0.950			0.950				0.989			0.981	
Satd. Flow (prot)	1525	3368	0	1727	3332	0	0	1735	1357	0	1668	1467
Flt Permitted	0.950			0.950				0.901			0.824	
Satd. Flow (perm)	1525	3368	0	1727	3332	0	0	1581	1357	0	1401	1467
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			14				116			229
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1902			1673			215			971	
Travel Time (s)		37.1			32.6			5.9			26.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	11%	7%	19%	0%	6%	7%	8%	7%	10%	9%	10%	8%
Adj. Flow (vph)	132	651	17	15	576	44	27	94	32	49	80	229
Shared Lane Traffic (%)												
Lane Group Flow (vph)	132	668	0	15	620	0	0	121	32	0	129	229
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	5		40	5		20	45	45	20	45	20
Trailing Detector (ft)	-5	0		-5	0		0	-5	-5	0	-5	0
Detector 1 Position(ft)	-5	0		-5	0		0	-5	-5	0	-5	0
Detector 1 Size(ft)	45	5		45	5		20	50	50	20	50	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		8
Detector Phase	5	2		1	6		4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0		10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.0	31.0		10.0	31.0		15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	15.0	46.0		10.0	41.0		19.0	19.0	19.0	19.0	19.0	19.0
Total Split (%)	20.0%	61.3%		13.3%	54.7%		25.3%	25.3%	25.3%	25.3%	25.3%	25.3%
Maximum Green (s)	10.0	40.0		5.0	35.0		14.0	14.0	14.0	14.0	14.0	14.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	5.0	6.0		5.0	6.0			5.0	5.0		5.0	5.0
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	3.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	9.5	49.9		5.0	37.5			12.1	12.1		12.1	12.1
Actuated g/C Ratio	0.13	0.67		0.07	0.50			0.16	0.16		0.16	0.16
v/c Ratio	0.69	0.30		0.13	0.37			0.48	0.10		0.57	0.54
Control Delay	63.9	3.6		47.4	8.9			34.8	0.6		39.4	9.2
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	63.9	3.6		47.4	8.9			34.8	0.6		39.4	9.2
LOS	E	A		D	A			C	A		D	A
Approach Delay		13.5			9.8			27.7			20.1	
Approach LOS		B			A			C			C	
Queue Length 50th (ft)	66	18		7	108			52	0		56	0
Queue Length 95th (ft)	#136	44		m19	162			98	0		106	55
Internal Link Dist (ft)		1822			1593			135			891	
Turn Bay Length (ft)	85			235					100			
Base Capacity (vph)	203	2244		115	1672			295	347		261	460
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.65	0.30		0.13	0.37			0.41	0.09		0.49	0.50

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 47 (63%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 14.6 Intersection LOS: B
Intersection Capacity Utilization 56.1% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Prospect Street & Olden Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	625	16	14	553	42	26	90	31	47	77	220
Future Volume (veh/h)	127	625	16	14	553	42	26	90	31	47	77	220
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1720	1780	1910	1881	1773	1881	1881	1754	1710	1928	1759	1786
Adj Flow Rate, veh/h	132	651	17	15	576	44	27	94	32	49	80	229
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	11	7	7	0	6	6	7	7	10	10	10	8
Cap, veh/h	163	1960	51	32	1588	121	59	135	271	66	74	283
Arrive On Green	0.10	0.58	0.58	0.01	0.17	0.17	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1638	3367	88	1791	3173	242	0	724	1454	0	396	1518
Grp Volume(v), veh/h	132	327	341	15	305	315	121	0	32	129	0	229
Grp Sat Flow(s),veh/h/ln	1638	1691	1764	1791	1685	1731	724	0	1454	396	0	1518
Q Serve(g_s), s	5.9	7.5	7.5	0.6	12.1	12.1	0.0	0.0	1.4	0.0	0.0	10.8
Cycle Q Clear(g_c), s	5.9	7.5	7.5	0.6	12.1	12.1	14.0	0.0	1.4	14.0	0.0	10.8
Prop In Lane	1.00		0.05	1.00		0.14	0.22		1.00	0.38		1.00
Lane Grp Cap(c), veh/h	163	984	1027	32	843	866	194	0	271	140	0	283
V/C Ratio(X)	0.81	0.33	0.33	0.47	0.36	0.36	0.62	0.00	0.12	0.92	0.00	0.81
Avail Cap(c_a), veh/h	218	984	1027	119	843	866	194	0	271	140	0	283
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	0.94	0.94	0.94	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.1	8.1	8.1	36.9	20.7	20.7	27.1	0.0	25.4	30.4	0.0	29.2
Incr Delay (d2), s/veh	14.6	0.9	0.8	9.6	1.1	1.1	6.1	0.0	0.2	52.7	0.0	15.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.0	6.6	6.9	0.7	9.8	10.0	4.5	0.0	1.0	8.3	0.0	9.7
LnGrp Delay(d),s/veh	47.6	9.0	9.0	46.5	21.8	21.8	33.2	0.0	25.6	83.1	0.0	45.0
LnGrp LOS	D	A	A	D	C	C	C		C	F		D
Approach Vol, veh/h		800			635			153			358	
Approach Delay, s/veh		15.4			22.4			31.6			58.7	
Approach LOS		B			C			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.3	49.7		19.0	12.5	43.5		19.0
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	5.0	40.0		14.0	10.0	35.0		14.0
Max Q Clear Time (g_c+I1), s	2.6	9.5		16.0	7.9	14.1		16.0
Green Ext Time (p_c), s	0.0	1.7		0.0	0.1	1.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.9
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	566	50	42	554	47	26	19	43	24	37	167
Future Volume (vph)	98	566	50	42	554	47	26	19	43	24	37	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	15
Grade (%)		1%			-2%			-2%			0%	
Storage Length (ft)	90		0	90		0	90		90	40		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.988				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1778	3324	0	1657	3374	0	1628	1919	1496	1492	1900	1725
Flt Permitted	0.950			0.950			0.731			0.744		
Satd. Flow (perm)	1778	3324	0	1657	3374	0	1252	1919	1496	1168	1900	1725
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			17				47			182
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		1673			1939			970			970	
Travel Time (s)		32.6			37.8			26.5			18.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	7%	4%	10%	7%	4%	12%	0%	9%	21%	0%	3%
Parking (#/hr)			0									
Adj. Flow (vph)	107	615	54	46	602	51	28	21	47	26	40	182
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	669	0	46	653	0	28	21	47	26	40	182
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	5		40	5		45	45	45	45	45	45
Trailing Detector (ft)	-5	0		-5	0		-5	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	0		-5	0		-5	-5	-5	-5	-5	-5
Detector 1 Size(ft)	45	5		45	5		50	50	50	50	50	50
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases							4		4	8		8
Detector Phase	5	2		1	6		4	4	1	8	8	8
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	21.0		13.0	21.0		13.0	13.0	13.0	13.0	13.0	13.0
Total Split (s)	15.0	47.0		13.0	45.0		15.0	15.0	13.0	15.0	15.0	15.0
Total Split (%)	20.0%	62.7%		17.3%	60.0%		20.0%	20.0%	17.3%	20.0%	20.0%	20.0%
Maximum Green (s)	9.0	41.0		7.0	39.0		9.0	9.0	7.0	9.0	9.0	9.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5	4.0	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5	2.0	2.5	2.5	2.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	8.5	44.9		7.0	43.4		7.7	7.7	20.7	7.7	7.7	7.7
Actuated g/C Ratio	0.11	0.60		0.09	0.58		0.10	0.10	0.28	0.10	0.10	0.10
v/c Ratio	0.54	0.34		0.30	0.33		0.22	0.11	0.11	0.22	0.21	0.53
Control Delay	52.2	3.9		46.6	2.5		34.8	31.3	7.2	35.0	33.1	11.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.2	3.9		46.6	2.5		34.8	31.3	7.2	35.0	33.1	11.7
LOS	D	A		D	A		C	C	A	D	C	B
Approach Delay		10.6			5.4			20.5			17.6	
Approach LOS		B			A			C			B	
Queue Length 50th (ft)	48	40		22	17		12	9	0	11	18	0
Queue Length 95th (ft)	105	22		53	34		35	29	23	34	45	54
Internal Link Dist (ft)		1593			1859			890			890	
Turn Bay Length (ft)	90			90			90		90	40		
Base Capacity (vph)	213	1996		154	1960		150	230	447	140	228	367
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.34		0.30	0.33		0.19	0.09	0.11	0.19	0.18	0.50

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 5 (7%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 10.0 Intersection LOS: B
Intersection Capacity Utilization 48.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 5: Artic Parkway & Olden Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	566	50	42	554	47	26	19	43	24	37	167
Future Volume (veh/h)	98	566	50	42	554	47	26	19	43	24	37	167
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1872	1771	1890	1745	1797	1919	1713	1919	1761	1570	1900	1918
Adj Flow Rate, veh/h	107	615	54	46	602	0	28	21	47	26	40	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	7	7	10	7	7	12	0	9	21	0	3
Cap, veh/h	148	1818	159	96	2003	0	184	173	221	186	171	147
Arrive On Green	0.17	1.00	1.00	0.06	0.59	0.00	0.09	0.09	0.09	0.09	0.09	0.00
Sat Flow, veh/h	1783	2970	260	1661	3505	0	1252	1919	1496	1119	1900	1631
Grp Volume(v), veh/h	107	348	321	46	602	0	28	21	47	26	40	0
Grp Sat Flow(s),veh/h/ln	1783	1682	1548	1661	1708	0	1252	1919	1496	1119	1900	1631
Q Serve(g_s), s	4.3	0.0	0.0	2.0	6.6	0.0	1.6	0.8	2.1	1.6	1.5	0.0
Cycle Q Clear(g_c), s	4.3	0.0	0.0	2.0	6.6	0.0	3.1	0.8	2.1	2.4	1.5	0.0
Prop In Lane	1.00		0.17	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	1030	948	96	2003	0	184	173	221	186	171	147
V/C Ratio(X)	0.72	0.34	0.34	0.48	0.30	0.00	0.15	0.12	0.21	0.14	0.23	0.00
Avail Cap(c_a), veh/h	214	1030	948	155	2003	0	222	230	266	219	228	196
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.4	0.0	0.0	34.3	7.8	0.0	33.1	31.4	28.1	32.5	31.7	0.0
Incr Delay (d2), s/veh	6.2	0.9	0.9	3.7	0.4	0.0	0.4	0.3	0.5	0.3	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.2	0.4	0.4	1.8	5.8	0.0	1.0	0.8	1.6	0.9	1.4	0.0
LnGrp Delay(d),s/veh	36.7	0.9	0.9	38.0	8.2	0.0	33.5	31.7	28.6	32.8	32.4	0.0
LnGrp LOS	D	A	A	D	A		C	C	C	C	C	
Approach Vol, veh/h		776			648			96			66	
Approach Delay, s/veh		5.8			10.3			30.7			32.6	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.3	51.9		12.8	12.2	50.0		12.8
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	7.0	41.0		9.0	9.0	39.0		9.0
Max Q Clear Time (g_c+I1), s	4.0	2.0		5.1	6.3	8.6		4.4
Green Ext Time (p_c), s	0.0	1.7		0.1	0.1	1.9		0.1

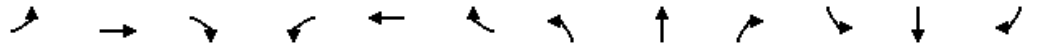
Intersection Summary	
HCM 2010 Ctrl Delay	10.3
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	72	593	603	29	0	0	
Future Volume (vph)	72	593	603	29	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	15	15	16	16	
Grade (%)		0%	-1%		0%		
Storage Length (ft)	250			0	0	0	
Storage Lanes	2			0	0	0	
Taper Length (ft)	45				45		
Lane Util. Factor	0.97	0.95	0.95	0.95	1.00	1.00	
Frt			0.993				
Flt Protected	0.950						
Satd. Flow (prot)	3502	3312	3597	0	0	0	
Flt Permitted	0.950						
Satd. Flow (perm)	3502	3312	3597	0	0	0	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			13				
Link Speed (mph)		35	35		25		
Link Distance (ft)		1939	787		588		
Travel Time (s)		37.8	15.3		16.0		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Heavy Vehicles (%)	0%	9%	10%	14%	0%	25%	
Adj. Flow (vph)	76	624	635	31	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	76	624	666	0	0	0	
Number of Detectors	1	1	1				
Detector Template	Left	Thru	Thru				
Leading Detector (ft)	45	5	5				
Trailing Detector (ft)	-5	0	0				
Detector 1 Position(ft)	-5	0	0				
Detector 1 Size(ft)	50	5	5				
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex				
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0				
Detector 1 Queue (s)	0.0	0.0	0.0				
Detector 1 Delay (s)	0.0	0.0	0.0				
Turn Type	Prot	NA	NA				
Protected Phases	16	2 16	6				2
Permitted Phases							
Detector Phase	16	2 16	6				
Switch Phase							
Minimum Initial (s)	6.0		25.0				25.0
Minimum Split (s)	11.0		32.0				32.0
Total Split (s)	19.0		56.0				56.0
Total Split (%)	25.3%		74.7%				75%
Maximum Green (s)	14.0		49.0				54.0
Yellow Time (s)	3.0		5.0				2.0
All-Red Time (s)	2.0		2.0				0.0
Lost Time Adjust (s)	0.0		0.0				

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Total Lost Time (s)	5.0		7.0				
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0				3.0
Recall Mode	None		C-Max				Max
Act Effct Green (s)	8.0	75.0	55.0				
Actuated g/C Ratio	0.11	1.00	0.73				
v/c Ratio	0.20	0.19	0.25				
Control Delay	21.4	0.1	1.0				
Queue Delay	0.0	0.0	0.0				
Total Delay	21.4	0.1	1.0				
LOS	C	A	A				
Approach Delay		2.4	1.0				
Approach LOS		A	A				
Queue Length 50th (ft)	17	0	9				
Queue Length 95th (ft)	28	0	17				
Internal Link Dist (ft)		1859	707		508		
Turn Bay Length (ft)	250						
Base Capacity (vph)	653	3312	2642				
Starvation Cap Reductn	0	0	0				
Spillback Cap Reductn	0	0	0				
Storage Cap Reductn	0	0	0				
Reduced v/c Ratio	0.12	0.19	0.25				

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 33 (44%), Referenced to phase 6:WBT, Start of Yellow			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.25			
Intersection Signal Delay: 1.7		Intersection LOS: A	
Intersection Capacity Utilization 34.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Olden Avenue & Capital Plaza

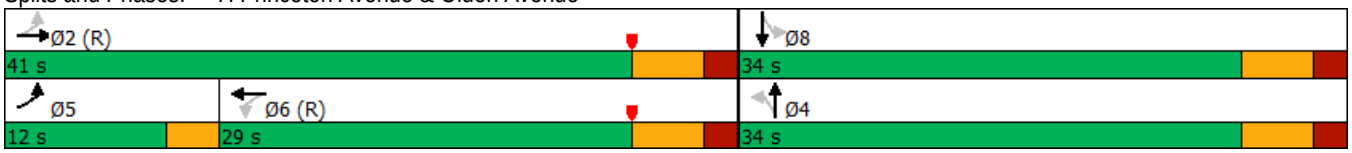


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	288	64	16	490	42	76	170	71	75	180	98
Future Volume (vph)	125	288	64	16	490	42	76	170	71	75	180	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	11	11	11	11	11	11	11	12	12	12
Grade (%)		1%			1%			1%			-1%	
Storage Length (ft)	130		0	65		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.973			0.988			0.967			0.958	
Flt Protected	0.950			0.950				0.988			0.989	
Satd. Flow (prot)	1657	1908	0	868	3116	0	0	2845	0	0	3154	0
Flt Permitted	0.307			0.525				0.767			0.792	
Satd. Flow (perm)	535	1908	0	480	3116	0	0	2209	0	0	2526	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48			12			56			85	
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		787			222			223			971	
Travel Time (s)		15.3			6.1			6.1			26.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	12%	100%	8%	100%	10%	11%	7%	7%	50%	0%	10%	14%
Adj. Flow (vph)	136	313	70	17	533	46	83	185	77	82	196	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	136	383	0	17	579	0	0	345	0	0	385	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Minimum Split (s)	11.0	26.0		26.0	26.0		26.0	26.0		26.0	26.0	
Total Split (s)	12.0	41.0		29.0	29.0		34.0	34.0		34.0	34.0	
Total Split (%)	16.0%	54.7%		38.7%	38.7%		45.3%	45.3%		45.3%	45.3%	
Maximum Green (s)	9.0	35.0		23.0	23.0		28.0	28.0		28.0	28.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	3.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?												
Act Effct Green (s)	38.0	35.0		23.0	23.0			28.0			28.0	
Actuated g/C Ratio	0.51	0.47		0.31	0.31			0.37			0.37	
v/c Ratio	0.34	0.42		0.12	0.60			0.40			0.39	
Control Delay	7.2	6.2		21.2	24.8			16.0			14.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	7.2	6.2		21.2	24.8			16.0			14.5	
LOS	A	A		C	C			B			B	
Approach Delay		6.5			24.7			16.0			14.5	
Approach LOS		A			C			B			B	
Queue Length 50th (ft)	10	11		6	116			50			51	
Queue Length 95th (ft)	23	22		21	168			84			86	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		707			142			143			891	
Turn Bay Length (ft)	130			65								
Base Capacity (vph)	405	916		147	963			859			996	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.34	0.42		0.12	0.60			0.40			0.39	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 1 (1%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 65			
Control Type: Pretimed			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 15.8		Intersection LOS: B	
Intersection Capacity Utilization 86.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: Princeton Avenue & Olden Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	288	64	16	490	42	76	170	71	75	180	98
Future Volume (veh/h)	125	288	64	16	490	42	76	170	71	75	180	98
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1755	1032	1890	945	1717	1890	1890	1621	1890	1910	1752	1910
Adj Flow Rate, veh/h	136	313	70	17	533	46	83	185	77	82	196	0
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	12	100	100	100	10	10	7	7	7	10	10	10
Cap, veh/h	421	746	164	251	933	80	257	534	231	290	738	0
Arrive On Green	0.12	0.47	0.47	0.31	0.31	0.31	0.37	0.37	0.37	0.37	0.37	0.00
Sat Flow, veh/h	1672	1598	352	505	3041	262	499	1429	619	571	2055	0
Grp Volume(v), veh/h	136	190	193	17	285	294	175	0	170	136	142	0
Grp Sat Flow(s),veh/h/ln	1672	980	970	505	1632	1671	1181	0	1366	1032	1515	0
Q Serve(g_s), s	3.6	9.6	9.9	1.8	11.0	11.1	5.0	0.0	6.7	4.5	4.9	0.0
Cycle Q Clear(g_c), s	3.6	9.6	9.9	1.8	11.0	11.1	9.8	0.0	6.7	11.2	4.9	0.0
Prop In Lane	1.00		0.36	1.00		0.16	0.47		0.45	0.60		0.00
Lane Grp Cap(c), veh/h	421	458	453	251	500	512	512	0	510	462	565	0
V/C Ratio(X)	0.32	0.42	0.43	0.07	0.57	0.57	0.34	0.00	0.33	0.29	0.25	0.00
Avail Cap(c_a), veh/h	421	458	453	251	500	512	512	0	510	462	565	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.6	13.2	13.3	18.7	21.8	21.9	17.9	0.0	16.8	18.9	16.2	0.0
Incr Delay (d2), s/veh	2.0	2.8	2.9	0.5	4.7	4.6	1.8	0.0	1.8	1.6	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.4	5.3	5.4	0.5	9.4	9.6	5.4	0.0	5.0	4.3	3.9	0.0
LnGrp Delay(d),s/veh	15.6	16.0	16.2	19.2	26.5	26.5	19.8	0.0	18.6	20.6	17.3	0.0
LnGrp LOS	B	B	B	B	C	C	B		B	C	B	
Approach Vol, veh/h		519			596			345			278	
Approach Delay, s/veh		16.0			26.3			19.2			18.9	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		41.0		34.0	12.0	29.0		34.0
Change Period (Y+Rc), s		6.0		6.0	3.0	6.0		6.0
Max Green Setting (Gmax), s		35.0		28.0	9.0	23.0		28.0
Max Q Clear Time (g_c+I1), s		0.0		0.0	0.0	0.0		0.0
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	20.6
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	28	15	31	32	566	21	265	43	569	226	18
Future Volume (vph)	13	28	15	31	32	566	21	265	43	569	226	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	10	12	12	10	13	13	12	12	12
Grade (%)		-1%			1%			-1%			0%	
Storage Length (ft)	0		0	140		250	58		0	0		275
Storage Lanes	0		0	1		1	1		0	1		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	0.95	0.91	0.91	0.95
Frt		0.963				0.850		0.979			0.995	
Flt Protected		0.988			0.976		0.950			0.950	0.974	
Satd. Flow (prot)	0	1891	0	0	1765	2719	1485	3608	0	1610	3267	0
Flt Permitted		0.988			0.976		0.436			0.147	0.639	
Satd. Flow (perm)	0	1891	0	0	1765	2719	682	3608	0	249	2144	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								20			5	
Link Speed (mph)		25			40			40			40	
Link Distance (ft)		970			366			1060			1006	
Travel Time (s)		26.5			6.2			18.1			17.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	15%	7%	7%	0%	9%	4%	14%	2%	0%	2%	3%	6%
Adj. Flow (vph)	14	29	16	32	33	590	22	276	45	593	235	19
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	59	0	0	65	590	22	321	0	296	551	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)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	0.84	0.84	0.84	1.10	1.01	1.01	1.09	0.95	0.95	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	40	40		5	5	5	40	60		5	5	
Trailing Detector (ft)	-5	-5		0	0	0	-5	-5		0	0	
Detector 1 Position(ft)	-5	-5		0	0	0	-5	-5		0	0	
Detector 1 Size(ft)	45	45		5	5	5	45	65		5	5	
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	
Turn Type	custom	NA		Split	NA	custom	Perm	NA		Perm	NA	
Protected Phases	14	14		8	8	8 1		16			1	
Permitted Phases	14					8 1	16			1		
Detector Phase	14	14		8	8	8 1	16	16		1	1	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0		5.0	5.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	13.0	13.0		11.0	11.0		13.0	13.0		13.0	13.0	
Total Split (s)	13.0	13.0		13.0	13.0		16.0	16.0		33.0	33.0	
Total Split (%)	17.3%	17.3%		17.3%	17.3%		21.3%	21.3%		44.0%	44.0%	
Maximum Green (s)	7.0	7.0		7.0	7.0		10.0	10.0		27.0	27.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		Min	Min	
Act Effct Green (s)		7.1			6.9	40.3	9.5	9.5		27.3	27.3	
Actuated g/C Ratio		0.10			0.10	0.58	0.14	0.14		0.40	0.40	
v/c Ratio		0.31			0.37	0.37	0.24	0.63		3.02	2.83dl	
Control Delay		35.8			37.9	9.7	36.1	33.5		954.1	22.7	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		35.8			37.9	9.7	36.1	33.5		954.1	22.7	
LOS		D			D	A	D	C		F	C	
Approach Delay		35.8			12.5			33.6			348.2	
Approach LOS		D			B			C			F	
Queue Length 50th (ft)		26			29	86	9	71		~235	117	
Queue Length 95th (ft)		61			66	125	31	112		#398	178	
Internal Link Dist (ft)		890			286			980			926	
Turn Bay Length (ft)						250	58					
Base Capacity (vph)		193			180	1593	99	545		98	851	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.31			0.36	0.37	0.22	0.59		3.02	0.65	

Intersection Summary

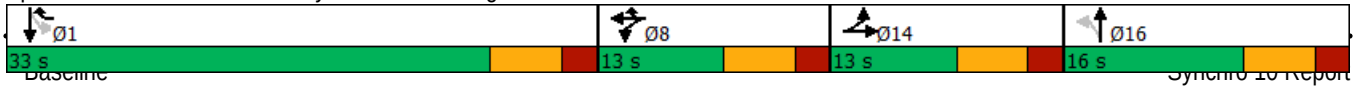
Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 69.1
Natural Cycle: 55
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 3.02
Intersection Signal Delay: 166.4 Intersection LOS: F
Intersection Capacity Utilization 49.3% ICU Level of Service A
Analysis Period (min) 15

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

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 1: Parkway Avenue & Lexington Avenue/Olden Avenue

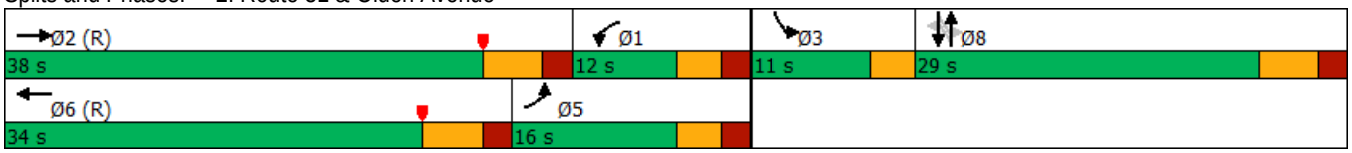


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	556	65	43	587	189	81	223	39	206	236	125
Future Volume (vph)	115	556	65	43	587	189	81	223	39	206	236	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	10	11	11
Grade (%)		0%			1%			1%			-2%	
Storage Length (ft)	100		0	100		0	0		0	63		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.95
Frt		0.984			0.963			0.983			0.948	
Flt Protected	0.950			0.950				0.988		0.950		
Satd. Flow (prot)	1787	3419	0	1796	3343	0	0	3343	0	1668	3212	0
Flt Permitted	0.950			0.950				0.705		0.460		
Satd. Flow (perm)	1787	3419	0	1796	3343	0	0	2385	0	808	3212	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								15			103	
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		319			1184			970			971	
Travel Time (s)		5.4			20.2			18.9			18.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	4%	3%	0%	3%	5%	6%	4%	3%	2%	3%	6%
Adj. Flow (vph)	124	598	70	46	631	203	87	240	42	222	254	134
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	668	0	46	834	0	0	369	0	222	388	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	1.08	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Perm	NA		pm+pt	NA	
Protected Phases	5	2		1	6			8		3	8	
Permitted Phases							8			8		
Detector Phase	5	2		1	6		8	8		3	8	
Switch Phase												
Minimum Initial (s)	5.0	13.0		5.0	13.0		7.0	7.0		4.0	7.0	
Minimum Split (s)	10.0	19.0		10.0	19.0		13.0	13.0		9.0	13.0	
Total Split (s)	16.0	38.0		12.0	34.0		29.0	29.0		11.0	29.0	
Total Split (%)	17.8%	42.2%		13.3%	37.8%		32.2%	32.2%		12.2%	32.2%	
Maximum Green (s)	11.0	32.0		7.0	28.0		23.0	23.0		8.0	23.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0			6.0		3.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	10.0	40.7		6.6	32.9			19.1		30.1	19.1	
Actuated g/C Ratio	0.11	0.45		0.07	0.37			0.21		0.33	0.21	
v/c Ratio	0.63	0.43		0.35	0.68			0.71		0.64	0.51	
Control Delay	52.6	20.1		47.1	28.9			39.1		30.1	24.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	52.6	20.1		47.1	28.9			39.1		30.1	24.4	
LOS	D	C		D	C			D		C	C	
Approach Delay		25.1			29.9			39.1			26.5	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)	68	148		25	215			97		89	73	
Queue Length 95th (ft)	125	212		60	301			140		139	112	
Internal Link Dist (ft)		239			1104			890			891	
Turn Bay Length (ft)	100			100						63		
Base Capacity (vph)	218	1545		139	1222			620		346	897	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.57	0.43		0.33	0.68			0.60		0.64	0.43	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 29.0		Intersection LOS: C	
Intersection Capacity Utilization 69.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: Route 31 & Olden Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	660	26	153	587	101	20	134	205	115	214	169
Future Volume (vph)	121	660	26	153	587	101	20	134	205	115	214	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	13	13	11	12	12	11	11	11	13	11	11
Grade (%)		0%			0%			-1%			-1%	
Storage Length (ft)	110		0	117		0	153		190	182		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.978				0.850		0.934	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1694	3604	0	1728	3428	0	1670	1810	1494	1802	1492	0
Flt Permitted	0.950			0.950			0.217			0.667		
Satd. Flow (perm)	1694	3604	0	1728	3428	0	381	1810	1494	1265	1492	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			32				216		51	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1184			1902			970			971	
Travel Time (s)		23.1			37.1			18.9			18.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	3%	0%	1%	3%	3%	5%	2%	5%	4%	4%	4%
Parking (#/hr)											0	
Adj. Flow (vph)	127	695	27	161	618	106	21	141	216	121	225	178
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	722	0	161	724	0	21	141	216	121	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			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.04	0.96	0.96	1.04	1.00	1.00	1.04	1.04	1.04	0.95	1.19	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	5		40	5		40	40	40	40	40	
Trailing Detector (ft)	-5	0		-5	0		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	-5	0		-5	0		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	45	5		45	5		45	45	45	45	45	
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	
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		
Detector Phase	5	2		1	6		4	4	4	8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	10.0	31.0		10.0	31.0		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	13.0	38.0		13.0	38.0		24.0	24.0	24.0	24.0	24.0	
Total Split (%)	17.3%	50.7%		17.3%	50.7%		32.0%	32.0%	32.0%	32.0%	32.0%	
Maximum Green (s)	8.0	32.0		8.0	32.0		19.0	19.0	19.0	19.0	19.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	7.8	32.0		8.0	32.2		19.0	19.0	19.0	19.0	19.0	
Actuated g/C Ratio	0.10	0.43		0.11	0.43		0.25	0.25	0.25	0.25	0.25	
v/c Ratio	0.72	0.47		0.88	0.49		0.22	0.31	0.40	0.38	0.97	
Control Delay	57.0	16.5		85.2	6.3		29.0	24.9	6.1	27.3	64.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	57.0	16.5		85.2	6.3		29.0	24.9	6.1	27.3	64.3	
LOS	E	B		F	A		C	C	A	C	E	
Approach Delay		22.6			20.7			14.4			55.7	
Approach LOS		C			C			B			E	
Queue Length 50th (ft)	58	121		82	24		8	53	0	47	165	
Queue Length 95th (ft)	#138	167		m#182	46		28	100	49	93	#341	
Internal Link Dist (ft)		1104			1822			890			891	
Turn Bay Length (ft)	110			117			153		190	182		
Base Capacity (vph)	180	1541		184	1487		96	458	539	320	416	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.71	0.47		0.88	0.49		0.22	0.31	0.40	0.38	0.97	

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 27.4 Intersection LOS: C
Intersection Capacity Utilization 76.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Parkside Avenue & Olden Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	660	26	153	587	101	20	134	205	115	214	169
Future Volume (veh/h)	121	660	26	153	587	101	20	134	205	115	214	169
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1921	1976	1881	1845	1900	1819	1872	1819	1909	1836	1910
Adj Flow Rate, veh/h	127	695	27	161	618	106	21	141	216	121	225	178
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	1	3	3	5	2	5	4	4	4
Cap, veh/h	160	1528	59	191	1325	227	117	474	392	297	241	191
Arrive On Green	0.09	0.43	0.43	0.21	0.88	0.88	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1757	3581	139	1792	2994	513	955	1872	1546	1046	951	752
Grp Volume(v), veh/h	127	354	368	161	361	363	21	141	216	121	0	403
Grp Sat Flow(s),veh/h/ln	1757	1825	1896	1792	1752	1754	955	1872	1546	1046	0	1703
Q Serve(g_s), s	5.3	10.3	10.4	6.5	3.0	3.0	1.6	4.6	9.1	7.9	0.0	17.4
Cycle Q Clear(g_c), s	5.3	10.3	10.4	6.5	3.0	3.0	19.0	4.6	9.1	12.5	0.0	17.4
Prop In Lane	1.00		0.07	1.00		0.29	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	160	778	809	191	775	776	117	474	392	297	0	432
V/C Ratio(X)	0.80	0.45	0.46	0.84	0.47	0.47	0.18	0.30	0.55	0.41	0.00	0.93
Avail Cap(c_a), veh/h	187	778	809	191	775	776	117	474	392	297	0	432
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	0.77	0.77	0.77	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.4	15.3	15.3	28.9	2.6	2.6	36.7	22.6	24.3	27.7	0.0	27.4
Incr Delay (d2), s/veh	16.1	1.7	1.6	22.3	1.6	1.6	0.7	0.3	1.7	0.9	0.0	27.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.9	9.2	9.5	7.4	2.9	2.9	0.8	4.3	7.2	4.2	0.0	17.0
LnGrp Delay(d),s/veh	49.5	17.0	16.9	51.2	4.1	4.1	37.4	23.0	26.0	28.5	0.0	54.9
LnGrp LOS	D	B	B	D	A	A	D	C	C	C		D
Approach Vol, veh/h		849			885			378			524	
Approach Delay, s/veh		21.8			12.7			25.5			48.8	
Approach LOS		C			B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.0	38.0		24.0	11.8	39.2		24.0
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	8.0	32.0		19.0	8.0	32.0		19.0
Max Q Clear Time (g_c+I1), s	8.5	12.4		21.0	7.3	5.0		19.4
Green Ext Time (p_c), s	0.0	1.7		0.0	0.0	1.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	24.6
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	840	26	21	847	106	30	57	47	100	64	227
Future Volume (vph)	185	840	26	21	847	106	30	57	47	100	64	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	12	12	12	12	10	11	11	11
Grade (%)		-1%			2%			2%			-3%	
Storage Length (ft)	85		0	235		0	0		100	0		0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.983				0.850			0.850
Flt Protected	0.950			0.950				0.983			0.970	
Satd. Flow (prot)	1553	3503	0	1727	3396	0	0	1715	1463	0	1773	1481
Flt Permitted	0.950			0.950				0.839			0.760	
Satd. Flow (perm)	1553	3503	0	1727	3396	0	0	1464	1463	0	1389	1481
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			24				116			239
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1902			1673			176			971	
Travel Time (s)		37.1			32.6			4.8			26.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	3%	8%	0%	3%	7%	0%	12%	2%	2%	2%	7%
Adj. Flow (vph)	195	884	27	22	892	112	32	60	49	105	67	239
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	911	0	22	1004	0	0	92	49	0	172	239
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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.09	0.99	0.99	1.06	1.01	1.01	1.01	1.01	1.11	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	5		40	5		20	45	45	20	45	20
Trailing Detector (ft)	-5	0		-5	0		0	-5	-5	0	-5	0
Detector 1 Position(ft)	-5	0		-5	0		0	-5	-5	0	-5	0
Detector 1 Size(ft)	45	5		45	5		20	50	50	20	50	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		8
Detector Phase	5	2		1	6		4	4	4	8	8	8
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	25.0		5.0	25.0		10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.0	31.0		10.0	31.0		15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	15.0	44.0		12.0	41.0		19.0	19.0	19.0	19.0	19.0	19.0
Total Split (%)	20.0%	58.7%		16.0%	54.7%		25.3%	25.3%	25.3%	25.3%	25.3%	25.3%
Maximum Green (s)	10.0	38.0		7.0	35.0		14.0	14.0	14.0	14.0	14.0	14.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	6.0		5.0	6.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	10.0	46.3		6.4	36.1			12.9	12.9		12.9	12.9
Actuated g/C Ratio	0.13	0.62		0.09	0.48			0.17	0.17		0.17	0.17
v/c Ratio	0.94	0.42		0.15	0.61			0.37	0.14		0.72	0.53
Control Delay	92.0	5.7		36.2	9.3			31.5	0.9		47.6	8.8
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	92.0	5.7		36.2	9.3			31.5	0.9		47.6	8.8
LOS	F	A		D	A			C	A		D	A
Approach Delay		20.9			9.9			20.8			25.0	
Approach LOS		C			A			C			C	
Queue Length 50th (ft)	99	46		9	113			38	0		75	0
Queue Length 95th (ft)	#222	86		m18	114			79	0		#157	57
Internal Link Dist (ft)		1822			1593			96			891	
Turn Bay Length (ft)	85			235					100			
Base Capacity (vph)	207	2164		161	1647			273	367		259	470
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.94	0.42		0.14	0.61			0.34	0.13		0.66	0.51

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 38 (51%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 17.3 Intersection LOS: B
Intersection Capacity Utilization 65.9% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Prospect Street & Olden Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	840	26	21	847	106	30	57	47	100	64	227
Future Volume (veh/h)	185	840	26	21	847	106	30	57	47	100	64	227
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1752	1851	1910	1881	1818	1881	1881	1744	1844	1928	1891	1802
Adj Flow Rate, veh/h	195	884	27	22	892	112	32	60	49	105	67	239
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	9	3	3	0	3	3	12	12	2	2	2	7
Cap, veh/h	222	2005	61	44	1442	181	65	83	293	77	25	286
Arrive On Green	0.27	1.00	1.00	0.01	0.15	0.15	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1668	3485	106	1791	3089	388	0	444	1568	0	133	1532
Grp Volume(v), veh/h	195	446	465	22	499	505	92	0	49	172	0	239
Grp Sat Flow(s),veh/h/ln	1668	1759	1832	1791	1727	1750	444	0	1568	133	0	1532
Q Serve(g_s), s	8.4	0.0	0.0	0.9	20.2	20.2	0.0	0.0	2.0	0.0	0.0	11.3
Cycle Q Clear(g_c), s	8.4	0.0	0.0	0.9	20.2	20.2	14.0	0.0	2.0	14.0	0.0	11.3
Prop In Lane	1.00		0.06	1.00		0.22	0.35		1.00	0.61		1.00
Lane Grp Cap(c), veh/h	222	1012	1055	44	806	817	148	0	293	102	0	286
V/C Ratio(X)	0.88	0.44	0.44	0.50	0.62	0.62	0.62	0.00	0.17	1.68	0.00	0.84
Avail Cap(c_a), veh/h	222	1012	1055	167	806	817	148	0	293	102	0	286
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	0.85	0.85	0.85	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.9	0.0	0.0	36.7	25.5	25.5	26.9	0.0	25.6	34.2	0.0	29.4
Incr Delay (d2), s/veh	27.7	1.3	1.2	7.3	3.0	3.0	7.9	0.0	0.3	346.7	0.0	18.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.2	0.6	0.6	1.0	15.2	15.4	3.5	0.0	1.6	21.5	0.0	10.4
LnGrp Delay(d),s/veh	54.6	1.3	1.2	44.0	28.5	28.5	34.8	0.0	25.9	380.9	0.0	48.3
LnGrp LOS	D	A	A	D	C	C	C		C	F		D
Approach Vol, veh/h		1106			1026			141			411	
Approach Delay, s/veh		10.6			28.8			31.7			187.5	
Approach LOS		B			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.8	49.2		19.0	15.0	41.0		19.0
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	7.0	38.0		14.0	10.0	35.0		14.0
Max Q Clear Time (g_c+I1), s	2.9	2.0		16.0	10.4	22.2		16.0
Green Ext Time (p_c), s	0.0	2.4		0.0	0.0	2.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	45.8
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	744	114	90	690	76	98	40	113	67	35	220
Future Volume (vph)	148	744	114	90	690	76	98	40	113	67	35	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	15
Grade (%)		1%			-2%			-2%			0%	
Storage Length (ft)	90		0	90		0	90		90	40		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.985				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1761	3342	0	1787	3379	0	1770	1919	1568	1719	1792	1725
Flt Permitted	0.950			0.950			0.732			0.729		
Satd. Flow (perm)	1761	3342	0	1787	3379	0	1364	1919	1568	1319	1792	1725
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			22				122			237
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		1673			1939			970			970	
Travel Time (s)		32.6			37.8			26.5			18.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	6%	1%	2%	6%	9%	3%	0%	4%	5%	6%	3%
Adj. Flow (vph)	159	800	123	97	742	82	105	43	122	72	38	237
Shared Lane Traffic (%)												
Lane Group Flow (vph)	159	923	0	97	824	0	105	43	122	72	38	237
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		Yes			Yes							
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.00	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	5		40	5		45	45	45	45	45	45
Trailing Detector (ft)	-5	0		-5	0		-5	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	0		-5	0		-5	-5	-5	-5	-5	-5
Detector 1 Size(ft)	45	5		45	5		50	50	50	50	50	50
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases							4		4	8		8
Detector Phase	5	2		1	6		4	4	1	8	8	8
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	21.0		13.0	21.0		13.0	13.0	13.0	13.0	13.0	13.0
Total Split (s)	17.0	46.0		14.0	43.0		15.0	15.0	14.0	15.0	15.0	15.0
Total Split (%)	22.7%	61.3%		18.7%	57.3%		20.0%	20.0%	18.7%	20.0%	20.0%	20.0%
Maximum Green (s)	11.0	40.0		8.0	37.0		9.0	9.0	8.0	9.0	9.0	9.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5	4.0	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5	2.0	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	10.2	43.2		7.8	38.2		8.6	8.6	22.4	8.6	8.6	8.6
Actuated g/C Ratio	0.14	0.58		0.10	0.51		0.11	0.11	0.30	0.11	0.11	0.11
v/c Ratio	0.67	0.48		0.52	0.48		0.67	0.20	0.22	0.48	0.19	0.58
Control Delay	51.7	4.6		36.3	9.0		54.7	32.1	5.2	42.0	32.1	11.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.7	4.6		36.3	9.0		54.7	32.1	5.2	42.0	32.1	11.1
LOS	D	A		D	A		D	C	A	D	C	B
Approach Delay		11.5			11.9			28.8			19.8	
Approach LOS		B			B			C			B	
Queue Length 50th (ft)	67	82		43	80		47	18	0	32	16	0
Queue Length 95th (ft)	m#145	43		89	90		#117	47	35	72	43	61
Internal Link Dist (ft)		1593			1859			890			890	
Turn Bay Length (ft)	90			90			90		90	40		
Base Capacity (vph)	258	1939		190	1732		163	230	557	158	215	415
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.48		0.51	0.48		0.64	0.19	0.22	0.46	0.18	0.57

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 68 (91%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 14.5		Intersection LOS: B	
Intersection Capacity Utilization 57.1%		ICU Level of Service B	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: Artic Parkway & Olden Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	744	114	90	690	76	98	40	113	67	35	220
Future Volume (veh/h)	148	744	114	90	690	76	98	40	113	67	35	220
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1853	1795	1890	1881	1805	1919	1863	1919	1845	1810	1792	1918
Adj Flow Rate, veh/h	159	800	123	97	742	0	105	43	122	72	38	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	6	6	2	6	6	3	0	4	5	6	3
Cap, veh/h	194	1657	255	145	1819	0	234	230	315	214	215	196
Arrive On Green	0.22	1.00	1.00	0.08	0.53	0.00	0.12	0.12	0.12	0.12	0.12	0.00
Sat Flow, veh/h	1765	2964	456	1792	3520	0	1364	1919	1568	1181	1792	1631
Grp Volume(v), veh/h	159	460	463	97	742	0	105	43	122	72	38	0
Grp Sat Flow(s),veh/h/ln	1765	1705	1714	1792	1715	0	1364	1919	1568	1181	1792	1631
Q Serve(g_s), s	6.4	0.0	0.0	3.9	9.7	0.0	5.6	1.5	5.1	4.4	1.4	0.0
Cycle Q Clear(g_c), s	6.4	0.0	0.0	3.9	9.7	0.0	7.1	1.5	5.1	5.9	1.4	0.0
Prop In Lane	1.00		0.27	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	194	953	958	145	1819	0	234	230	315	214	215	196
V/C Ratio(X)	0.82	0.48	0.48	0.67	0.41	0.00	0.45	0.19	0.39	0.34	0.18	0.00
Avail Cap(c_a), veh/h	259	953	958	191	1819	0	234	230	315	214	215	196
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.6	0.0	0.0	33.5	10.6	0.0	32.8	29.7	26.0	32.4	29.7	0.0
Incr Delay (d2), s/veh	13.2	1.6	1.6	5.5	0.7	0.0	1.4	0.4	0.8	0.9	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.9	0.8	0.8	3.9	8.3	0.0	4.0	1.5	4.0	2.7	1.3	0.0
LnGrp Delay(d),s/veh	41.8	1.6	1.6	39.0	11.2	0.0	34.2	30.1	26.7	33.3	30.1	0.0
LnGrp LOS	D	A	A	D	B		C	C	C	C	C	
Approach Vol, veh/h		1082			839			270			110	
Approach Delay, s/veh		7.5			14.4			30.2			32.2	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.1	47.9		15.0	14.2	45.8		15.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	8.0	40.0		9.0	11.0	37.0		9.0
Max Q Clear Time (g_c+I1), s	5.9	2.0		9.1	8.4	11.7		7.9
Green Ext Time (p_c), s	0.0	2.5		0.0	0.1	2.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.9
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	157	749	737	29	0	0	
Future Volume (vph)	157	749	737	29	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	15	15	16	16	
Grade (%)		0%	-1%		0%		
Storage Length (ft)	250			0	0	0	
Storage Lanes	2			0	0	0	
Taper Length (ft)	45				45		
Lane Util. Factor	0.97	0.95	0.95	0.95	1.00	1.00	
Frt			0.994				
Flt Protected	0.950						
Satd. Flow (prot)	3400	3343	3713	0	0	0	
Flt Permitted	0.950						
Satd. Flow (perm)	3400	3343	3713	0	0	0	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			10				
Link Speed (mph)		35	35		25		
Link Distance (ft)		1939	787		588		
Travel Time (s)		37.8	15.3		16.0		
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	
Heavy Vehicles (%)	3%	8%	7%	3%	0%	0%	
Adj. Flow (vph)	178	851	838	33	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	178	851	871	0	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		24	24		0		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	0.88	0.88	0.85	0.85	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	1	1				
Detector Template	Left	Thru	Thru				
Leading Detector (ft)	45	5	5				
Trailing Detector (ft)	-5	0	0				
Detector 1 Position(ft)	-5	0	0				
Detector 1 Size(ft)	50	5	5				
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex				
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0				
Detector 1 Queue (s)	0.0	0.0	0.0				
Detector 1 Delay (s)	0.0	0.0	0.0				
Turn Type	Prot	NA	NA				
Protected Phases	16	2 16	6				2
Permitted Phases							
Detector Phase	16	2 16	6				
Switch Phase							

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Minimum Initial (s)	6.0		25.0				25.0
Minimum Split (s)	11.0		32.0				32.0
Total Split (s)	21.0		54.0				54.0
Total Split (%)	28.0%		72.0%				72%
Maximum Green (s)	16.0		47.0				52.0
Yellow Time (s)	3.0		5.0				2.0
All-Red Time (s)	2.0		2.0				0.0
Lost Time Adjust (s)	0.0		0.0				
Total Lost Time (s)	5.0		7.0				
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0				3.0
Recall Mode	None		C-Max				Max
Act Effct Green (s)	11.7	75.0	51.3				
Actuated g/C Ratio	0.16	1.00	0.68				
v/c Ratio	0.34	0.25	0.34				
Control Delay	26.2	0.2	1.8				
Queue Delay	0.0	0.0	0.0				
Total Delay	26.2	0.2	1.8				
LOS	C	A	A				
Approach Delay		4.7	1.8				
Approach LOS		A	A				
Queue Length 50th (ft)	42	0	12				
Queue Length 95th (ft)	65	0	29				
Internal Link Dist (ft)		1859	707		508		
Turn Bay Length (ft)	250						
Base Capacity (vph)	725	3343	2543				
Starvation Cap Reductn	0	0	0				
Spillback Cap Reductn	0	0	0				
Storage Cap Reductn	0	0	0				
Reduced v/c Ratio	0.25	0.25	0.34				

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 47 (63%), Referenced to phase 6:WBT, Start of Yellow			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.34			
Intersection Signal Delay: 3.3		Intersection LOS: A	
Intersection Capacity Utilization 36.3%		ICU Level of Service A	
Analysis Period (min) 15			

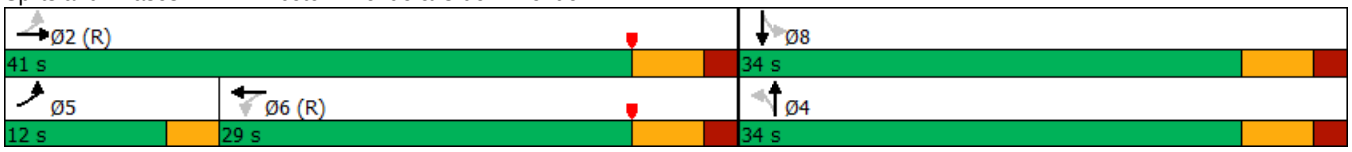
Splits and Phases: 6: Olden Avenue & Capital Plaza

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	424	154	37	555	42	153	204	55	159	266	189
Future Volume (vph)	156	424	154	37	555	42	153	204	55	159	266	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	11	11	11	11	11	11	11	12	12	12
Grade (%)		1%			1%			1%			-1%	
Storage Length (ft)	130		0	65		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.960			0.989			0.980			0.954	
Flt Protected	0.950			0.950				0.982			0.987	
Satd. Flow (prot)	1657	3233	0	1072	3199	0	0	3079	0	0	3220	0
Flt Permitted	0.271			0.419				0.586			0.717	
Satd. Flow (perm)	473	3233	0	473	3199	0	0	1837	0	0	2339	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		92			11			26			108	
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		787			222			223			971	
Travel Time (s)		15.3			6.1			6.1			26.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	12%	8%	3%	62%	7%	12%	5%	7%	24%	4%	6%	8%
Adj. Flow (vph)	166	451	164	39	590	45	163	217	59	169	283	201
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	615	0	39	635	0	0	439	0	0	653	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)		13			13			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.96	1.01	1.05	1.05	1.05	1.05	1.05	1.05	1.05	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Minimum Split (s)	11.0	26.0		26.0	26.0		26.0	26.0		26.0	26.0	
Total Split (s)	12.0	41.0		29.0	29.0		34.0	34.0		34.0	34.0	
Total Split (%)	16.0%	54.7%		38.7%	38.7%		45.3%	45.3%		45.3%	45.3%	
Maximum Green (s)	9.0	35.0		23.0	23.0		28.0	28.0		28.0	28.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	3.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?												
Act Effct Green (s)	38.0	35.0		23.0	23.0			28.0			28.0	
Actuated g/C Ratio	0.51	0.47		0.31	0.31			0.37			0.37	
v/c Ratio	0.44	0.39		0.27	0.64			0.63			0.69	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	10.4	8.3		25.6	25.6			22.8			21.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	10.4	8.3		25.6	25.6			22.8			21.1	
LOS	B	A		C	C			C			C	
Approach Delay		8.7			25.6			22.8			21.1	
Approach LOS		A			C			C			C	
Queue Length 50th (ft)	39	83		14	130			80			110	
Queue Length 95th (ft)	69	124		40	185			130			171	
Internal Link Dist (ft)		707			142			143			891	
Turn Bay Length (ft)	130			65								
Base Capacity (vph)	381	1557		145	988			702			940	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.44	0.39		0.27	0.64			0.63			0.69	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 7 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 65			
Control Type: Pretimed			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 18.8		Intersection LOS: B	
Intersection Capacity Utilization 88.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: Princeton Avenue & Olden Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	424	154	37	555	42	153	204	55	159	266	189
Future Volume (veh/h)	156	424	154	37	555	42	153	204	55	159	266	189
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1755	1772	1890	1167	1761	1890	1890	1742	1890	1910	1800	1910
Adj Flow Rate, veh/h	166	451	164	39	590	45	163	217	59	169	283	0
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	12	8	8	62	7	7	7	7	7	6	6	6
Cap, veh/h	406	1132	408	250	966	74	317	494	142	325	654	0
Arrive On Green	0.12	0.47	0.47	0.31	0.31	0.31	0.37	0.37	0.37	0.37	0.37	0.00
Sat Flow, veh/h	1672	2426	875	504	3152	240	618	1323	381	639	1834	0
Grp Volume(v), veh/h	166	312	303	39	313	322	204	0	235	212	240	0
Grp Sat Flow(s),veh/h/ln	1672	1684	1618	504	1673	1719	804	0	1518	835	1556	0
Q Serve(g_s), s	4.5	9.1	9.2	4.4	12.0	12.0	11.5	0.0	8.6	11.5	8.6	0.0
Cycle Q Clear(g_c), s	4.5	9.1	9.2	4.4	12.0	12.0	20.1	0.0	8.6	20.1	8.6	0.0
Prop In Lane	1.00		0.54	1.00		0.14	0.80		0.25	0.80		0.00
Lane Grp Cap(c), veh/h	406	786	755	250	513	527	387	0	567	398	581	0
V/C Ratio(X)	0.41	0.40	0.40	0.16	0.61	0.61	0.53	0.00	0.41	0.53	0.41	0.00
Avail Cap(c_a), veh/h	406	786	755	250	513	527	387	0	567	398	581	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.1	13.1	13.1	19.5	22.2	22.2	24.0	0.0	17.4	24.1	17.4	0.0
Incr Delay (d2), s/veh	3.0	1.5	1.6	1.3	5.3	5.2	5.1	0.0	2.2	5.0	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.3	8.0	7.8	1.3	10.3	10.6	7.7	0.0	7.1	7.9	7.2	0.0
LnGrp Delay(d),s/veh	17.2	14.6	14.7	20.9	27.5	27.4	29.1	0.0	19.7	29.1	19.6	0.0
LnGrp LOS	B	B	B	C	C	C	C		B	C	B	
Approach Vol, veh/h		781			674			439			452	
Approach Delay, s/veh		15.2			27.1			24.1			24.0	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		41.0		34.0	12.0	29.0		34.0
Change Period (Y+Rc), s		6.0		6.0	3.0	6.0		6.0
Max Green Setting (Gmax), s		35.0		28.0	9.0	23.0		28.0
Max Q Clear Time (g_c+I1), s		0.0		0.0	0.0	0.0		0.0
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	22.0
HCM 2010 LOS	C

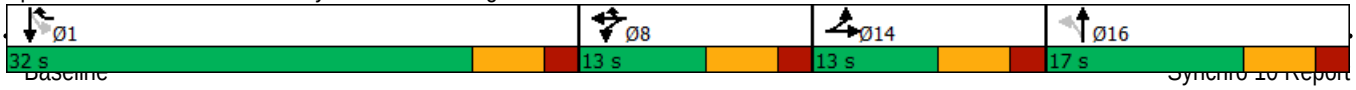
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	40	30	42	30	458	26	313	55	565	353	10
Future Volume (vph)	18	40	30	42	30	458	26	313	55	565	353	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	10	12	12	10	13	13	12	12	12
Grade (%)		-1%			1%			-1%			0%	
Storage Length (ft)	0		0	140		250	58		0	0		275
Storage Lanes	0		0	1		1	1		0	1		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	0.95	0.91	0.91	0.95
Frt		0.953				0.850		0.978			0.998	
Flt Protected		0.990			0.972		0.950			0.950	0.979	
Satd. Flow (prot)	0	2042	0	0	1786	2800	1693	3584	0	1626	3328	0
Flt Permitted		0.990			0.972		0.390			0.152	0.613	
Satd. Flow (perm)	0	2042	0	0	1786	2800	695	3584	0	260	2084	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								22			2	
Link Speed (mph)		25			40			40			40	
Link Distance (ft)		970			366			1060			1006	
Travel Time (s)		26.5			6.2			18.1			17.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	5%	0%	1%	0%	2%	4%	1%	2%	0%
Adj. Flow (vph)	18	41	31	43	31	467	27	319	56	577	360	10
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	90	0	0	74	467	27	375	0	288	659	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)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	0.84	0.84	0.84	1.10	1.01	1.01	1.09	0.95	0.95	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	40	40		5	5	5	40	60		5	5	
Trailing Detector (ft)	-5	-5		0	0	0	-5	-5		0	0	
Detector 1 Position(ft)	-5	-5		0	0	0	-5	-5		0	0	
Detector 1 Size(ft)	45	45		5	5	5	45	65		5	5	
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	
Turn Type	custom	NA		Split	NA	custom	Perm	NA		Perm	NA	
Protected Phases	14	14		8	8	8 1		16			1	
Permitted Phases	14					8 1	16			1		
Detector Phase	14	14		8	8	8 1	16	16		1	1	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0		5.0	5.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	13.0	13.0		11.0	11.0		13.0	13.0		13.0	13.0	
Total Split (s)	13.0	13.0		13.0	13.0		17.0	17.0		32.0	32.0	
Total Split (%)	17.3%	17.3%		17.3%	17.3%		22.7%	22.7%		42.7%	42.7%	
Maximum Green (s)	7.0	7.0		7.0	7.0		11.0	11.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		Min	Min	
Act Effct Green (s)		7.1			6.8	39.2	10.5	10.5		26.3	26.3	
Actuated g/C Ratio		0.10			0.09	0.55	0.15	0.15		0.37	0.37	
v/c Ratio		0.45			0.44	0.31	0.27	0.69		3.03	2.89dl	
Control Delay		40.0			40.8	10.5	36.0	35.5		957.3	36.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		40.0			40.8	10.5	36.0	35.5		957.3	36.6	
LOS		D			D	B	D	D		F	D	
Approach Delay		40.0			14.6			35.5			316.6	
Approach LOS		D			B			D			F	
Queue Length 50th (ft)		41			33	66	11	83		~225	157	
Queue Length 95th (ft)		84			73	98	35	127		#386	#270	
Internal Link Dist (ft)		890			286			980			926	
Turn Bay Length (ft)						250	58					
Base Capacity (vph)		201			175	1538	107	573		95	764	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.45			0.42	0.30	0.25	0.65		3.03	0.86	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 71.7			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 3.03			
Intersection Signal Delay: 164.4		Intersection LOS: F	
Intersection Capacity Utilization 54.7%		ICU Level of Service A	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 1: Parkway Avenue & Lexington Avenue/Olden Avenue

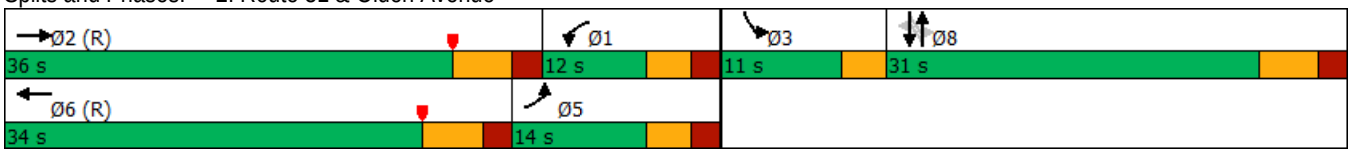


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	600	109	38	570	214	83	356	47	215	375	124
Future Volume (vph)	109	600	109	38	570	214	83	356	47	215	375	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	10	11	11
Grade (%)		0%			1%			1%			-2%	
Storage Length (ft)	100		0	100		0	0		0	63		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.95
Frt		0.977			0.959			0.985			0.963	
Flt Protected	0.950			0.950				0.992		0.950		
Satd. Flow (prot)	1787	3468	0	1796	3411	0	0	3484	0	1685	3328	0
Flt Permitted	0.950			0.950				0.675		0.362		
Satd. Flow (perm)	1787	3468	0	1796	3411	0	0	2371	0	642	3328	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								12			50	
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		319			1184			970			971	
Travel Time (s)		5.4			20.2			18.9			18.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	2%	0%	0%	1%	1%	0%	1%	0%	1%	2%	2%
Adj. Flow (vph)	111	612	111	39	582	218	85	363	48	219	383	127
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	723	0	39	800	0	0	496	0	219	510	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	1.08	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Perm	NA		pm+pt	NA	
Protected Phases	5	2		1	6			8		3	8	
Permitted Phases							8			8		
Detector Phase	5	2		1	6		8	8		3	8	
Switch Phase												
Minimum Initial (s)	5.0	13.0		5.0	13.0		7.0	7.0		6.0	7.0	
Minimum Split (s)	10.0	19.0		10.0	19.0		13.0	13.0		9.0	13.0	
Total Split (s)	14.0	36.0		12.0	34.0		31.0	31.0		11.0	31.0	
Total Split (%)	15.6%	40.0%		13.3%	37.8%		34.4%	34.4%		12.2%	34.4%	
Maximum Green (s)	9.0	30.0		7.0	28.0		25.0	25.0		8.0	25.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0			6.0		3.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	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	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	8.6	36.7		6.6	30.3			23.1		34.1	23.1	
Actuated g/C Ratio	0.10	0.41		0.07	0.34			0.26		0.38	0.26	
v/c Ratio	0.65	0.51		0.30	0.70			0.80		0.65	0.57	
Control Delay	58.1	23.4		45.6	30.5			41.2		28.4	28.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	58.1	23.4		45.6	30.5			41.2		28.4	28.6	
LOS	E	C		D	C			D		C	C	
Approach Delay		28.0			31.2			41.2			28.5	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)	62	180		21	213			131		79	115	
Queue Length 95th (ft)	#131	241		53	283			191		131	166	
Internal Link Dist (ft)		239			1104			890			891	
Turn Bay Length (ft)	100			100						63		
Base Capacity (vph)	178	1414		139	1149			667		336	960	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.62	0.51		0.28	0.70			0.74		0.65	0.53	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 31.3		Intersection LOS: C	
Intersection Capacity Utilization 75.9%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: Route 31 & Olden Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	678	29	177	659	116	27	233	180	110	278	180
Future Volume (vph)	163	678	29	177	659	116	27	233	180	110	278	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	13	13	11	12	12	11	11	11	13	11	11
Grade (%)		0%			0%			-1%			-1%	
Storage Length (ft)	110		0	117		0	153		190	182		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.978				0.850		0.941	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3673	0	1745	3496	0	1754	1828	1538	1838	1737	0
Flt Permitted	0.950			0.950			0.195			0.512		
Satd. Flow (perm)	1745	3673	0	1745	3496	0	360	1828	1538	990	1737	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			32				184		43	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1184			1902			970			971	
Travel Time (s)		23.1			37.1			18.9			18.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	0%	0%	1%	1%	0%	1%	2%	2%	0%	0%
Adj. Flow (vph)	166	692	30	181	672	118	28	238	184	112	284	184
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	722	0	181	790	0	28	238	184	112	468	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			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.04	0.96	0.96	1.04	1.00	1.00	1.04	1.04	1.04	0.95	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	5		40	5		40	40	40	40	40	
Trailing Detector (ft)	-5	0		-5	0		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	-5	0		-5	0		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	45	5		45	5		45	45	45	45	45	
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	
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		
Detector Phase	5	2		1	6		4	4	4	8	8	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	25.0		5.0	25.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	10.0	31.0		10.0	31.0		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	13.0	36.0		13.0	36.0		26.0	26.0	26.0	26.0	26.0	
Total Split (%)	17.3%	48.0%		17.3%	48.0%		34.7%	34.7%	34.7%	34.7%	34.7%	
Maximum Green (s)	8.0	30.0		8.0	30.0		21.0	21.0	21.0	21.0	21.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	8.0	30.5		8.0	30.5		20.5	20.5	20.5	20.5	20.5	
Actuated g/C Ratio	0.11	0.41		0.11	0.41		0.27	0.27	0.27	0.27	0.27	
v/c Ratio	0.89	0.48		0.97	0.55		0.29	0.48	0.33	0.41	0.93	
Control Delay	79.6	17.7		101.0	7.8		30.3	26.4	5.5	27.7	51.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	79.6	17.7		101.0	7.8		30.3	26.4	5.5	27.7	51.7	
LOS	E	B		F	A		C	C	A	C	D	
Approach Delay		29.3			25.2			18.1			47.0	
Approach LOS		C			C			B			D	
Queue Length 50th (ft)	78	126		93	36		10	91	0	42	191	
Queue Length 95th (ft)	#186	174		m#183	74		34	156	44	89	#368	
Internal Link Dist (ft)		1104			1822			890			891	
Turn Bay Length (ft)	110			117			153		190	182		
Base Capacity (vph)	186	1499		186	1442		100	511	563	277	517	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.89	0.48		0.97	0.55		0.28	0.47	0.33	0.40	0.91	

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 29.7 Intersection LOS: C
Intersection Capacity Utilization 82.4% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Parkside Avenue & Olden Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	678	29	177	659	116	27	233	180	110	278	180
Future Volume (veh/h)	163	678	29	177	659	116	27	233	180	110	278	180
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1957	1976	1900	1881	1900	1910	1891	1872	1947	1910	1910
Adj Flow Rate, veh/h	166	692	30	181	672	118	28	238	184	112	284	184
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	1	0	1	1	0	1	2	2	0	0
Cap, veh/h	193	1453	63	193	1216	213	119	529	446	273	303	197
Arrive On Green	0.11	0.40	0.40	0.04	0.13	0.13	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1810	3631	157	1810	3041	533	944	1891	1591	1005	1084	702
Grp Volume(v), veh/h	166	354	368	181	395	395	28	238	184	112	0	468
Grp Sat Flow(s),veh/h/ln	1810	1859	1929	1810	1787	1787	944	1891	1591	1005	0	1786
Q Serve(g_s), s	6.8	10.6	10.6	7.5	15.5	15.5	1.8	7.8	7.1	7.8	0.0	19.2
Cycle Q Clear(g_c), s	6.8	10.6	10.6	7.5	15.5	15.5	21.0	7.8	7.1	15.5	0.0	19.2
Prop In Lane	1.00		0.08	1.00		0.30	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	193	744	772	193	715	715	119	529	446	273	0	500
V/C Ratio(X)	0.86	0.48	0.48	0.94	0.55	0.55	0.24	0.45	0.41	0.41	0.00	0.94
Avail Cap(c_a), veh/h	193	744	772	193	715	715	119	529	446	273	0	500
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.82	0.82	0.82	0.68	0.68	0.68	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.9	16.7	16.7	35.9	26.3	26.3	36.8	22.2	22.0	28.6	0.0	26.3
Incr Delay (d2), s/veh	26.0	1.8	1.7	37.1	2.1	2.1	1.0	0.6	0.6	1.0	0.0	25.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.0	9.4	9.6	9.0	11.9	12.0	1.1	7.4	5.7	4.0	0.0	18.8
LnGrp Delay(d),s/veh	59.0	18.5	18.4	73.1	28.4	28.4	37.8	22.8	22.6	29.6	0.0	51.6
LnGrp LOS	E	B	B	E	C	C	D	C	C	C		D
Approach Vol, veh/h		888			971			450			580	
Approach Delay, s/veh		26.0			36.7			23.7			47.4	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.0	36.0		26.0	13.0	36.0		26.0
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	8.0	30.0		21.0	8.0	30.0		21.0
Max Q Clear Time (g_c+I1), s	9.5	12.6		23.0	8.8	17.5		21.2
Green Ext Time (p_c), s	0.0	1.7		0.0	0.0	1.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	33.5
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	222	839	42	28	894	92	42	110	40	119	120	276
Future Volume (vph)	222	839	42	28	894	92	42	110	40	119	120	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	12	12	12	12	10	11	11	11
Grade (%)		-1%			2%			2%			-3%	
Storage Length (ft)	85		0	235		0	0		100	0		0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.986				0.850			0.850
Flt Protected	0.950			0.950				0.986			0.976	
Satd. Flow (prot)	1676	3569	0	1661	3315	0	0	1828	1492	0	1784	1538
Flt Permitted	0.950			0.950				0.711			0.732	
Satd. Flow (perm)	1676	3569	0	1661	3315	0	0	1318	1492	0	1338	1538
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			18				189			223
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1902			1673			225			971	
Travel Time (s)		37.1			32.6			6.1			26.5	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	0%	4%	1%	1%	0%	2%	0%	2%	2%	3%
Parking (#/hr)					0							
Adj. Flow (vph)	229	865	43	29	922	95	43	113	41	123	124	285
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	908	0	29	1017	0	0	156	41	0	247	285
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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.09	0.99	0.99	1.06	1.08	1.01	1.01	1.01	1.11	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	5		40	5		20	45	45	20	45	20
Trailing Detector (ft)	-5	0		-5	0		0	-5	-5	0	-5	0
Detector 1 Position(ft)	-5	0		-5	0		0	-5	-5	0	-5	0
Detector 1 Size(ft)	45	5		45	5		20	50	50	20	50	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		8
Detector Phase	5	2		1	6		4	4	4	8	8	8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0		10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.0	31.0		10.0	31.0		15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	16.0	44.0		10.0	38.0		21.0	21.0	21.0	21.0	21.0	21.0
Total Split (%)	21.3%	58.7%		13.3%	50.7%		28.0%	28.0%	28.0%	28.0%	28.0%	28.0%
Maximum Green (s)	11.0	38.0		5.0	32.0		16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	6.0		5.0	6.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	11.0	44.5		5.0	32.5			15.5	15.5		15.5	15.5
Actuated g/C Ratio	0.15	0.59		0.07	0.43			0.21	0.21		0.21	0.21
v/c Ratio	0.93	0.43		0.26	0.70			0.57	0.09		0.89	0.58
Control Delay	86.1	5.6		44.2	8.7			35.9	0.4		64.2	12.2
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	86.1	5.6		44.2	8.7			35.9	0.4		64.2	12.2
LOS	F	A		D	A			D	A		E	B
Approach Delay		21.8			9.7			28.5			36.4	
Approach LOS		C			A			C			D	
Queue Length 50th (ft)	116	47		15	54			65	0		112	24
Queue Length 95th (ft)	#246	85		m30	74			124	0		#237	92
Internal Link Dist (ft)		1822			1593			145			891	
Turn Bay Length (ft)	85			235					100			
Base Capacity (vph)	245	2120		110	1445			281	466		285	503
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.93	0.43		0.26	0.70			0.56	0.09		0.87	0.57

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 37 (49%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 20.5 Intersection LOS: C
Intersection Capacity Utilization 72.8% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Prospect Street & Olden Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	839	42	28	894	92	42	110	40	119	120	276
Future Volume (veh/h)	222	839	42	28	894	92	42	110	40	119	120	276
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1891	1891	1910	1809	1862	1881	1881	1854	1881	1928	1891	1872
Adj Flow Rate, veh/h	229	865	43	29	922	95	43	113	41	123	124	285
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	4	1	1	2	2	0	2	2	3
Cap, veh/h	263	1892	94	52	1384	143	61	120	341	72	21	340
Arrive On Green	0.29	1.00	1.00	0.03	0.43	0.43	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1801	3485	173	1723	3239	334	0	563	1599	0	98	1591
Grp Volume(v), veh/h	229	446	462	29	504	513	156	0	41	247	0	285
Grp Sat Flow(s),veh/h/ln	1801	1797	1861	1723	1769	1803	563	0	1599	98	0	1591
Q Serve(g_s), s	9.1	0.0	0.0	1.2	17.1	17.1	0.0	0.0	1.6	0.0	0.0	12.9
Cycle Q Clear(g_c), s	9.1	0.0	0.0	1.2	17.1	17.1	16.0	0.0	1.6	16.0	0.0	12.9
Prop In Lane	1.00		0.09	1.00		0.19	0.28		1.00	0.50		1.00
Lane Grp Cap(c), veh/h	263	976	1011	52	756	770	181	0	341	93	0	340
V/C Ratio(X)	0.87	0.46	0.46	0.56	0.67	0.67	0.86	0.00	0.12	2.66	0.00	0.84
Avail Cap(c_a), veh/h	264	976	1011	115	756	770	181	0	341	93	0	340
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	0.85	0.85	0.85	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.9	0.0	0.0	35.9	17.2	17.2	27.1	0.0	23.8	34.0	0.0	28.3
Incr Delay (d2), s/veh	23.3	1.4	1.3	7.7	3.9	3.9	31.7	0.0	0.2	776.7	0.0	16.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.9	0.7	0.7	1.3	13.6	13.8	8.4	0.0	1.3	39.5	0.0	11.6
LnGrp Delay(d),s/veh	49.1	1.4	1.3	43.6	21.1	21.1	58.8	0.0	24.0	810.7	0.0	45.1
LnGrp LOS	D	A	A	D	C	C	E		C	F		D
Approach Vol, veh/h		1137			1046			197			532	
Approach Delay, s/veh		11.0			21.7			51.5			400.6	
Approach LOS		B			C			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.3	46.7		21.0	16.0	38.0		21.0
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	5.0	38.0		16.0	11.0	32.0		16.0
Max Q Clear Time (g_c+I1), s	3.2	2.0		18.0	11.1	19.1		18.0
Green Ext Time (p_c), s	0.0	2.4		0.0	0.0	2.4		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		88.8
HCM 2010 LOS		F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	830	90	52	755	78	73	42	81	83	39	184
Future Volume (vph)	172	830	90	52	755	78	73	42	81	83	39	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	15
Grade (%)		1%			-2%			-2%			0%	
Storage Length (ft)	90		0	90		0	90		90	40		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.986				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1744	3472	0	1787	3521	0	1823	1881	1631	1770	1845	1742
Flt Permitted	0.950			0.950			0.730			0.728		
Satd. Flow (perm)	1744	3472	0	1787	3521	0	1401	1881	1631	1356	1845	1742
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			18				131			218
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		1673			1939			970			970	
Travel Time (s)		32.6			37.8			26.5			18.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	2%	1%	2%	2%	3%	0%	2%	0%	2%	3%	2%
Adj. Flow (vph)	181	874	95	55	795	82	77	44	85	87	41	194
Shared Lane Traffic (%)												
Lane Group Flow (vph)	181	969	0	55	877	0	77	44	85	87	41	194
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		Yes			Yes							
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.00	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	5		40	5		45	45	45	45	45	45
Trailing Detector (ft)	-5	0		-5	0		-5	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	0		-5	0		-5	-5	-5	-5	-5	-5
Detector 1 Size(ft)	45	5		45	5		50	50	50	50	50	50
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases							4		4	8		8
Detector Phase	5	2		1	6		4	4	1	8	8	8
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	21.0		13.0	21.0		13.0	13.0	13.0	13.0	13.0	13.0
Total Split (s)	21.0	47.0		13.0	39.0		15.0	15.0	13.0	15.0	15.0	15.0
Total Split (%)	28.0%	62.7%		17.3%	52.0%		20.0%	20.0%	17.3%	20.0%	20.0%	20.0%
Maximum Green (s)	15.0	41.0		7.0	33.0		9.0	9.0	7.0	9.0	9.0	9.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5	4.0	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5	2.0	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	12.4	44.1		7.0	36.1		8.5	8.5	21.5	8.5	8.5	8.5
Actuated g/C Ratio	0.17	0.59		0.09	0.48		0.11	0.11	0.29	0.11	0.11	0.11
v/c Ratio	0.63	0.47		0.33	0.51		0.49	0.21	0.15	0.57	0.20	0.50
Control Delay	37.9	10.0		43.4	9.6		42.0	32.5	2.2	46.9	32.3	8.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.9	10.0		43.4	9.6		42.0	32.5	2.2	46.9	32.3	8.5
LOS	D	B		D	A		D	C	A	D	C	A
Approach Delay		14.4			11.6			23.5			21.9	
Approach LOS		B			B			C			C	
Queue Length 50th (ft)	73	186		28	74		34	19	0	39	18	0
Queue Length 95th (ft)	m97	m253		64	71		75	48	13	#91	45	44
Internal Link Dist (ft)		1593			1859			890			890	
Turn Bay Length (ft)	90			90			90		90	40		
Base Capacity (vph)	348	2051		166	1703		168	225	561	162	221	400
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.47		0.33	0.51		0.46	0.20	0.15	0.54	0.19	0.48

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 11 (15%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 15.1 Intersection LOS: B
Intersection Capacity Utilization 59.1% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Artic Parkway & Olden Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	830	90	52	755	78	73	42	81	83	39	184
Future Volume (veh/h)	172	830	90	52	755	78	73	42	81	83	39	184
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1835	1855	1890	1881	1880	1919	1919	1881	1919	1863	1845	1937
Adj Flow Rate, veh/h	181	874	95	55	795	0	77	44	85	87	41	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	2	2	2	2	0	2	0	2	3	2
Cap, veh/h	219	1864	203	114	1855	0	229	217	292	214	213	190
Arrive On Green	0.25	1.00	1.00	0.06	0.52	0.00	0.12	0.12	0.12	0.12	0.12	0.00
Sat Flow, veh/h	1748	3208	349	1792	3665	0	1402	1881	1631	1256	1845	1647
Grp Volume(v), veh/h	181	480	489	55	795	0	77	44	85	87	41	0
Grp Sat Flow(s),veh/h/ln	1748	1762	1794	1792	1786	0	1402	1881	1631	1256	1845	1647
Q Serve(g_s), s	7.3	0.0	0.0	2.2	10.3	0.0	3.9	1.6	3.4	5.1	1.5	0.0
Cycle Q Clear(g_c), s	7.3	0.0	0.0	2.2	10.3	0.0	5.5	1.6	3.4	6.6	1.5	0.0
Prop In Lane	1.00		0.19	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	219	1024	1042	114	1855	0	229	217	292	214	213	190
V/C Ratio(X)	0.83	0.47	0.47	0.48	0.43	0.00	0.34	0.20	0.29	0.41	0.19	0.00
Avail Cap(c_a), veh/h	350	1024	1042	167	1855	0	236	226	300	220	221	198
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.3	0.0	0.0	33.9	11.1	0.0	32.5	30.1	26.7	33.1	30.0	0.0
Incr Delay (d2), s/veh	8.0	1.4	1.4	3.1	0.7	0.0	0.9	0.5	0.5	1.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.1	0.7	0.7	2.2	9.0	0.0	2.8	1.5	2.8	3.3	1.4	0.0
LnGrp Delay(d),s/veh	35.3	1.4	1.4	37.1	11.9	0.0	33.3	30.5	27.2	34.3	30.5	0.0
LnGrp LOS	D	A	A	D	B		C	C	C	C	C	
Approach Vol, veh/h		1150			850			206			128	
Approach Delay, s/veh		6.7			13.5			30.2			33.1	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.8	49.6		14.6	15.4	45.0		14.6
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	7.0	41.0		9.0	15.0	33.0		9.0
Max Q Clear Time (g_c+I1), s	4.2	2.0		7.5	9.3	12.3		8.6
Green Ext Time (p_c), s	0.0	2.6		0.1	0.3	2.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.7
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	183	878	693	34	0	0	
Future Volume (vph)	183	878	693	34	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	15	15	16	16	
Grade (%)		0%	-1%		0%		
Storage Length (ft)	250			0	0	0	
Storage Lanes	2			0	0	0	
Taper Length (ft)	45				45		
Lane Util. Factor	0.97	0.95	0.95	0.95	1.00	1.00	
Frt			0.993				
Flt Protected	0.950						
Satd. Flow (prot)	3467	3574	3853	0	0	0	
Flt Permitted	0.950						
Satd. Flow (perm)	3467	3574	3853	0	0	0	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			12				
Link Speed (mph)		35	35		25		
Link Distance (ft)		1939	787		588		
Travel Time (s)		37.8	15.3		16.0		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	
Heavy Vehicles (%)	1%	1%	3%	0%	0%	0%	
Adj. Flow (vph)	189	905	714	35	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	189	905	749	0	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		24	24		0		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	0.88	0.88	0.85	0.85	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	1	1				
Detector Template	Left	Thru	Thru				
Leading Detector (ft)	45	5	5				
Trailing Detector (ft)	-5	0	0				
Detector 1 Position(ft)	-5	0	0				
Detector 1 Size(ft)	50	5	5				
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex				
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0				
Detector 1 Queue (s)	0.0	0.0	0.0				
Detector 1 Delay (s)	0.0	0.0	0.0				
Turn Type	Prot	NA	NA				
Protected Phases	16	2 16	6				2
Permitted Phases							
Detector Phase	16	2 16	6				
Switch Phase							

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Minimum Initial (s)	6.0		25.0				25.0
Minimum Split (s)	11.0		32.0				32.0
Total Split (s)	22.0		53.0				53.0
Total Split (%)	29.3%		70.7%				71%
Maximum Green (s)	17.0		46.0				51.0
Yellow Time (s)	3.0		5.0				2.0
All-Red Time (s)	2.0		2.0				0.0
Lost Time Adjust (s)	0.0		0.0				
Total Lost Time (s)	5.0		7.0				
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0				3.0
Recall Mode	None		C-Max				Max
Act Effct Green (s)	12.4	75.0	50.6				
Actuated g/C Ratio	0.17	1.00	0.67				
v/c Ratio	0.33	0.25	0.29				
Control Delay	22.6	0.2	1.6				
Queue Delay	0.0	0.0	0.0				
Total Delay	22.6	0.2	1.6				
LOS	C	A	A				
Approach Delay		4.0	1.6				
Approach LOS		A	A				
Queue Length 50th (ft)	45	0	9				
Queue Length 95th (ft)	74	0	26				
Internal Link Dist (ft)		1859	707		508		
Turn Bay Length (ft)	250						
Base Capacity (vph)	785	3574	2604				
Starvation Cap Reductn	0	0	0				
Spillback Cap Reductn	0	0	0				
Storage Cap Reductn	0	0	0				
Reduced v/c Ratio	0.24	0.25	0.29				

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 50 (67%), Referenced to phase 6:WBT, Start of Yellow			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.33			
Intersection Signal Delay: 3.1		Intersection LOS: A	
Intersection Capacity Utilization 36.1%		ICU Level of Service A	
Analysis Period (min) 15			

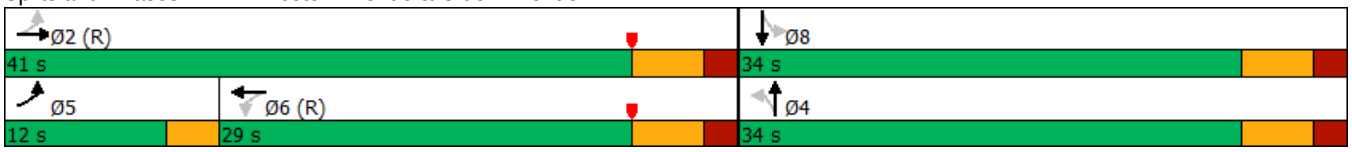
Splits and Phases: 6: Olden Avenue & Capital Plaza

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	451	232	27	584	53	151	274	50	134	406	56
Future Volume (vph)	198	451	232	27	584	53	151	274	50	134	406	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	11	11	11	11	11	11	11	12	12	12
Grade (%)		1%			1%			1%			-1%	
Storage Length (ft)	130		0	65		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.949			0.987			0.984			0.986	
Flt Protected	0.950			0.950				0.984			0.989	
Satd. Flow (prot)	1819	3364	0	1623	3365	0	0	3324	0	0	3511	0
Flt Permitted	0.257			0.384				0.615			0.708	
Satd. Flow (perm)	492	3364	0	656	3365	0	0	2077	0	0	2513	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		163			13			19			17	
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		787			222			223			971	
Travel Time (s)		15.3			6.1			6.1			26.5	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	0%	7%	2%	0%	0%	2%	0%	0%	1%	1%
Adj. Flow (vph)	204	465	239	28	602	55	156	282	52	138	419	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	204	704	0	28	657	0	0	490	0	0	615	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)		13			13			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.96	1.01	1.05	1.05	1.05	1.05	1.05	1.05	1.05	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Minimum Split (s)	11.0	26.0		26.0	26.0		26.0	26.0		26.0	26.0	
Total Split (s)	12.0	41.0		29.0	29.0		34.0	34.0		34.0	34.0	
Total Split (%)	16.0%	54.7%		38.7%	38.7%		45.3%	45.3%		45.3%	45.3%	
Maximum Green (s)	9.0	35.0		23.0	23.0		28.0	28.0		28.0	28.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	3.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?												
Act Effct Green (s)	38.0	35.0		23.0	23.0			28.0			28.0	
Actuated g/C Ratio	0.51	0.47		0.31	0.31			0.37			0.37	
v/c Ratio	0.50	0.43		0.14	0.63			0.62			0.65	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	10.3	5.4		21.1	25.1			22.6			22.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	10.3	5.4		21.1	25.1			22.6			22.8	
LOS	B	A		C	C			C			C	
Approach Delay		6.5			25.0			22.6			22.8	
Approach LOS		A			C			C			C	
Queue Length 50th (ft)	18	1		9	134			92			118	
Queue Length 95th (ft)	38	11		29	189			142			174	
Internal Link Dist (ft)		707			142			143			891	
Turn Bay Length (ft)	130			65								
Base Capacity (vph)	408	1656		201	1040			787			948	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.50	0.43		0.14	0.63			0.62			0.65	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 14 (19%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 65			
Control Type: Pretimed			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 17.8		Intersection LOS: B	
Intersection Capacity Utilization 90.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: Princeton Avenue & Olden Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	198	451	232	27	584	53	151	274	50	134	406	56
Future Volume (veh/h)	198	451	232	27	584	53	151	274	50	134	406	56
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1928	1866	1890	1767	1856	1890	1890	1869	1890	1910	1895	1910
Adj Flow Rate, veh/h	204	465	239	28	602	55	156	282	52	138	419	0
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	7	2	2	2	2	2	1	1	1
Cap, veh/h	436	1061	542	311	1003	91	273	591	117	247	818	0
Arrive On Green	0.12	0.47	0.47	0.31	0.31	0.31	0.37	0.37	0.37	0.37	0.37	0.00
Sat Flow, veh/h	1836	2273	1161	702	3269	298	511	1583	313	466	2276	0
Grp Volume(v), veh/h	204	362	342	28	324	333	217	0	273	265	292	0
Grp Sat Flow(s),veh/h/ln	1836	1773	1661	702	1764	1804	762	0	1646	1018	1638	0
Q Serve(g_s), s	5.1	10.3	10.4	2.2	11.7	11.8	12.1	0.0	9.4	10.6	10.2	0.0
Cycle Q Clear(g_c), s	5.1	10.3	10.4	2.2	11.7	11.8	22.4	0.0	9.4	20.0	10.2	0.0
Prop In Lane	1.00		0.70	1.00		0.17	0.72		0.19	0.52		0.00
Lane Grp Cap(c), veh/h	436	827	775	311	541	553	367	0	614	453	612	0
V/C Ratio(X)	0.47	0.44	0.44	0.09	0.60	0.60	0.59	0.00	0.44	0.58	0.48	0.00
Avail Cap(c_a), veh/h	436	827	775	311	541	553	367	0	614	453	612	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.3	13.4	13.4	18.8	22.1	22.1	25.0	0.0	17.7	22.8	17.9	0.0
Incr Delay (d2), s/veh	3.6	1.7	1.8	0.6	4.9	4.8	6.8	0.0	2.3	5.4	2.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.3	9.2	8.9	0.8	10.6	10.8	8.5	0.0	8.2	9.4	8.7	0.0
LnGrp Delay(d),s/veh	17.9	15.1	15.3	19.3	26.9	26.9	31.8	0.0	20.0	28.2	20.6	0.0
LnGrp LOS	B	B	B	B	C	C	C		B	C	C	
Approach Vol, veh/h		908			685			490			557	
Approach Delay, s/veh		15.8			26.6			25.2			24.2	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		41.0		34.0	12.0	29.0		34.0
Change Period (Y+Rc), s		6.0		6.0	3.0	6.0		6.0
Max Green Setting (Gmax), s		35.0		28.0	9.0	23.0		28.0
Max Q Clear Time (g_c+I1), s		0.0		0.0	0.0	0.0		0.0
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	22.1
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	46	19	51	37	487	34	224	29	529	233	15
Future Volume (vph)	11	46	19	51	37	487	34	224	29	529	233	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	10	12	12	10	13	13	12	12	12
Grade (%)		-1%			1%			-1%			0%	
Storage Length (ft)	0		0	140		250	58		0	0		275
Storage Lanes	0		0	1		1	1		0	1		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	0.95	0.91	0.91	0.95
Frt		0.965				0.850		0.983			0.996	
Flt Protected		0.993			0.972		0.950			0.950	0.975	
Satd. Flow (prot)	0	2074	0	0	1838	2800	1693	3640	0	1626	3326	0
Flt Permitted		0.993			0.972		0.465			0.147	0.633	
Satd. Flow (perm)	0	2074	0	0	1838	2800	829	3640	0	252	2159	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								15			4	
Link Speed (mph)		25			40			40			40	
Link Distance (ft)		970			366			1060			1006	
Travel Time (s)		26.5			6.2			18.1			17.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	1%	3%	1%	1%	0%
Adj. Flow (vph)	11	47	20	53	38	502	35	231	30	545	240	15
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	78	0	0	91	502	35	261	0	272	528	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)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	0.84	0.84	0.84	1.10	1.01	1.01	1.09	0.95	0.95	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	40	40		5	5	5	40	60		5	5	
Trailing Detector (ft)	-5	-5		0	0	0	-5	-5		0	0	
Detector 1 Position(ft)	-5	-5		0	0	0	-5	-5		0	0	
Detector 1 Size(ft)	45	45		5	5	5	45	65		5	5	
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	
Turn Type	custom	NA		Split	NA	custom	Perm	NA		Perm	NA	
Protected Phases	14	14		8	8	8 1		16			1	
Permitted Phases	14					8 1	16			1		
Detector Phase	14	14		8	8	8 1	16	16		1	1	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0		5.0	5.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	13.0	13.0		11.0	11.0		13.0	13.0		13.0	13.0	
Total Split (s)	13.0	13.0		14.0	14.0		15.0	15.0		33.0	33.0	
Total Split (%)	17.3%	17.3%		18.7%	18.7%		20.0%	20.0%		44.0%	44.0%	
Maximum Green (s)	7.0	7.0		8.0	8.0		9.0	9.0		27.0	27.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		Min	Min	
Act Effct Green (s)		7.1			7.6	40.9	8.6	8.6		27.3	27.3	
Actuated g/C Ratio		0.10			0.11	0.57	0.12	0.12		0.38	0.38	
v/c Ratio		0.38			0.47	0.31	0.35	0.58		2.86	2.68dl	
Control Delay		37.9			40.1	9.5	41.0	34.5		877.5	23.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		37.9			40.1	9.5	41.0	34.5		877.5	23.6	
LOS		D			D	A	D	C		F	C	
Approach Delay		37.9			14.2			35.3			313.9	
Approach LOS		D			B			D			F	
Queue Length 50th (ft)		35			41	67	15	57		~206	110	
Queue Length 95th (ft)		75			85	99	43	94		#364	169	
Internal Link Dist (ft)		890			286			980			926	
Turn Bay Length (ft)						250	58					
Base Capacity (vph)		204			207	1619	105	475		95	824	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.38			0.44	0.31	0.33	0.55		2.86	0.64	

Intersection Summary

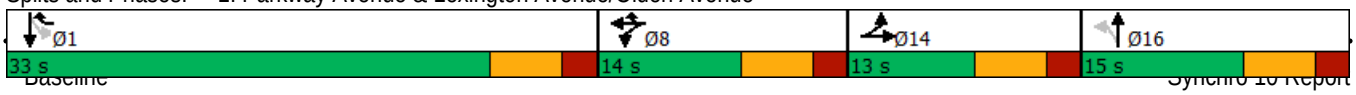
Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 71.6
Natural Cycle: 55
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 2.86
Intersection Signal Delay: 154.5 Intersection LOS: F
Intersection Capacity Utilization 48.4% ICU Level of Service A
Analysis Period (min) 15

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

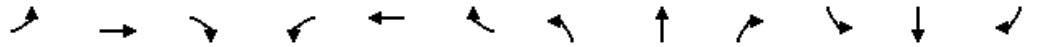
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 1: Parkway Avenue & Lexington Avenue/Olden Avenue



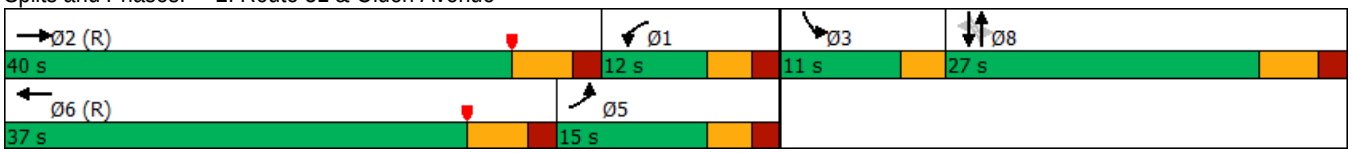
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	625	94	52	536	195	96	198	35	210	219	120
Future Volume (vph)	105	625	94	52	536	195	96	198	35	210	219	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	10	11	11
Grade (%)		0%			1%			1%			-2%	
Storage Length (ft)	100		0	100		0	0		0	63		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.95
Frt		0.980			0.960			0.984			0.947	
Flt Protected	0.950			0.950				0.986		0.950		
Satd. Flow (prot)	1787	3503	0	1796	3381	0	0	3464	0	1685	3305	0
Flt Permitted	0.950			0.950				0.701		0.478		
Satd. Flow (perm)	1787	3503	0	1796	3381	0	0	2463	0	848	3305	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								13			106	
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		319			1184			970			971	
Travel Time (s)		5.4			20.2			18.9			18.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	0%	2%	2%	0%	1%	0%	1%	1%	1%
Adj. Flow (vph)	111	658	99	55	564	205	101	208	37	221	231	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	757	0	55	769	0	0	346	0	221	357	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	1.08	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Perm	NA		pm+pt	NA	
Protected Phases	5	2		1	6			8		3	8	
Permitted Phases							8			8		
Detector Phase	5	2		1	6		8	8		3	8	
Switch Phase												
Minimum Initial (s)	5.0	13.0		5.0	13.0		7.0	7.0		6.0	7.0	
Minimum Split (s)	10.0	19.0		10.0	19.0		13.0	13.0		9.0	13.0	
Total Split (s)	15.0	40.0		12.0	37.0		27.0	27.0		11.0	27.0	
Total Split (%)	16.7%	44.4%		13.3%	41.1%		30.0%	30.0%		12.2%	30.0%	
Maximum Green (s)	10.0	34.0		7.0	31.0		21.0	21.0		8.0	21.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0			6.0		3.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	9.3	39.7		6.7	37.3			17.7		28.7	17.7	
Actuated g/C Ratio	0.10	0.44		0.07	0.41			0.20		0.32	0.20	
v/c Ratio	0.60	0.49		0.41	0.55			0.70		0.64	0.49	
Control Delay	52.4	20.9		49.4	23.8			39.8		31.3	23.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	52.4	20.9		49.4	23.8			39.8		31.3	23.9	
LOS	D	C		D	C			D		C	C	
Approach Delay		24.9			25.5			39.8			26.7	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)	61	168		30	185			91		90	64	
Queue Length 95th (ft)	#115	234		68	256			135		144	103	
Internal Link Dist (ft)		239			1104			890			891	
Turn Bay Length (ft)	100			100						63		
Base Capacity (vph)	198	1544		139	1400			584		345	852	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.56	0.49		0.40	0.55			0.59		0.64	0.42	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 27.5		Intersection LOS: C	
Intersection Capacity Utilization 67.0%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: Route 31 & Olden Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	678	12	177	608	110	20	170	186	130	181	171
Future Volume (vph)	181	678	12	177	608	110	20	170	186	130	181	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	13	13	11	12	12	11	11	11	13	11	11
Grade (%)		0%			0%			-1%			-1%	
Storage Length (ft)	110		0	117		0	153		190	182		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.977				0.850		0.927	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3642	0	1728	3487	0	1670	1828	1553	1838	1678	0
Flt Permitted	0.950			0.950			0.234			0.584		
Satd. Flow (perm)	1745	3642	0	1728	3487	0	411	1828	1553	1130	1678	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			32				200		60	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1184			1902			970			971	
Travel Time (s)		23.1			37.1			18.9			18.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	2%	8%	1%	1%	2%	5%	1%	1%	2%	2%	2%
Adj. Flow (vph)	195	729	13	190	654	118	22	183	200	140	195	184
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	742	0	190	772	0	22	183	200	140	379	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			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.04	0.96	0.96	1.04	1.00	1.00	1.04	1.04	1.04	0.95	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	5		40	5		40	40	40	40	40	
Trailing Detector (ft)	-5	0		-5	0		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	-5	0		-5	0		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	45	5		45	5		45	45	45	45	45	
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	
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		
Detector Phase	5	2		1	6		4	4	4	8	8	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	25.0		5.0	25.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	10.0	31.0		10.0	31.0		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	17.0	35.0		17.0	35.0		23.0	23.0	23.0	23.0	23.0	
Total Split (%)	22.7%	46.7%		22.7%	46.7%		30.7%	30.7%	30.7%	30.7%	30.7%	
Maximum Green (s)	12.0	29.0		12.0	29.0		18.0	18.0	18.0	18.0	18.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	11.4	30.5		11.3	30.5		17.1	17.1	17.1	17.1	17.1	
Actuated g/C Ratio	0.15	0.41		0.15	0.41		0.23	0.23	0.23	0.23	0.23	
v/c Ratio	0.74	0.50		0.73	0.54		0.24	0.44	0.39	0.54	0.88	
Control Delay	48.5	18.4		58.4	8.1		30.4	28.2	6.4	33.9	47.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	48.5	18.4		58.4	8.1		30.4	28.2	6.4	33.9	47.2	
LOS	D	B		E	A		C	C	A	C	D	
Approach Delay		24.7			18.1			17.6			43.6	
Approach LOS		C			B			B			D	
Queue Length 50th (ft)	87	135		97	38		8	72	0	57	143	
Queue Length 95th (ft)	#177	186		m#146	75		29	129	48	113	#292	
Internal Link Dist (ft)		1104			1822			890			891	
Turn Bay Length (ft)	110			117			153		190	182		
Base Capacity (vph)	279	1484		276	1436		98	438	524	271	448	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.70	0.50		0.69	0.54		0.22	0.42	0.38	0.52	0.85	

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 24.9 Intersection LOS: C
Intersection Capacity Utilization 76.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Parkside Avenue & Olden Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	181	678	12	177	608	110	20	170	186	130	181	171
Future Volume (veh/h)	181	678	12	177	608	110	20	170	186	130	181	171
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1935	1976	1881	1878	1900	1819	1891	1891	1947	1872	1910
Adj Flow Rate, veh/h	195	729	13	190	654	118	22	183	200	140	195	184
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	1	1	1	5	1	1	2	2	2
Cap, veh/h	237	1543	28	231	1256	226	121	454	386	261	213	201
Arrive On Green	0.13	0.42	0.42	0.13	0.42	0.42	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1810	3696	66	1792	3022	545	976	1891	1607	1041	887	837
Grp Volume(v), veh/h	195	363	379	190	386	386	22	183	200	140	0	379
Grp Sat Flow(s),veh/h/ln	1810	1838	1924	1792	1784	1782	976	1891	1607	1041	0	1724
Q Serve(g_s), s	7.9	10.7	10.7	7.7	12.1	12.1	1.7	6.1	8.1	9.8	0.0	16.1
Cycle Q Clear(g_c), s	7.9	10.7	10.7	7.7	12.1	12.1	17.7	6.1	8.1	15.9	0.0	16.1
Prop In Lane	1.00		0.03	1.00		0.31	1.00		1.00	1.00		0.49
Lane Grp Cap(c), veh/h	237	768	803	231	742	741	121	454	386	261	0	414
V/C Ratio(X)	0.82	0.47	0.47	0.82	0.52	0.52	0.18	0.40	0.52	0.54	0.00	0.92
Avail Cap(c_a), veh/h	290	768	803	287	742	741	121	454	386	261	0	414
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	0.66	0.66	0.66	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.7	15.9	15.9	31.8	16.3	16.3	36.4	24.0	24.7	30.7	0.0	27.8
Incr Delay (d2), s/veh	12.5	1.7	1.7	9.9	1.7	1.7	0.7	0.6	1.2	2.2	0.0	24.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.0	9.4	9.8	7.3	9.6	9.6	0.9	5.9	6.6	5.3	0.0	15.7
LnGrp Delay(d),s/veh	44.2	17.6	17.5	41.7	18.1	18.1	37.1	24.6	26.0	32.8	0.0	52.6
LnGrp LOS	D	B	B	D	B	B	D	C	C	C		D
Approach Vol, veh/h		937			962			405			519	
Approach Delay, s/veh		23.1			22.7			25.9			47.3	
Approach LOS		C			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.7	37.3		23.0	14.8	37.2		23.0
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	12.0	29.0		18.0	12.0	29.0		18.0
Max Q Clear Time (g_c+I1), s	9.7	12.7		19.7	9.9	14.1		18.1
Green Ext Time (p_c), s	0.1	1.7		0.0	0.1	1.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	27.8
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	839	35	20	938	106	54	59	43	120	96	282
Future Volume (vph)	206	839	35	20	938	106	54	59	43	120	96	282
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	12	12	12	12	10	11	11	11
Grade (%)		-1%			2%			2%			-3%	
Storage Length (ft)	85		0	235		0	0		100	0		0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.985				0.850			0.850
Flt Protected	0.950			0.950				0.977			0.973	
Satd. Flow (prot)	1628	3572	0	1727	3485	0	0	1838	1492	0	1786	1554
Flt Permitted	0.950			0.950				0.603			0.763	
Satd. Flow (perm)	1628	3572	0	1727	3485	0	0	1134	1492	0	1401	1554
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			20				189			213
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1902			1673			185			971	
Travel Time (s)		37.1			32.6			5.0			26.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	1%	0%	0%	1%	1%	0%	0%	0%	2%	1%	2%
Adj. Flow (vph)	217	883	37	21	987	112	57	62	45	126	101	297
Shared Lane Traffic (%)												
Lane Group Flow (vph)	217	920	0	21	1099	0	0	119	45	0	227	297
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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.09	0.99	0.99	1.06	1.01	1.01	1.01	1.01	1.11	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	5		40	5		20	45	45	20	45	20
Trailing Detector (ft)	-5	0		-5	0		0	-5	-5	0	-5	0
Detector 1 Position(ft)	-5	0		-5	0		0	-5	-5	0	-5	0
Detector 1 Size(ft)	45	5		45	5		20	50	50	20	50	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		8
Detector Phase	5	2		1	6		4	4	4	8	8	8
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	25.0		5.0	25.0		10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.0	31.0		10.0	31.0		15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	16.0	44.0		10.0	38.0		21.0	21.0	21.0	21.0	21.0	21.0
Total Split (%)	21.3%	58.7%		13.3%	50.7%		28.0%	28.0%	28.0%	28.0%	28.0%	28.0%
Maximum Green (s)	11.0	38.0		5.0	32.0		16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	6.0		5.0	6.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	11.0	45.1		5.0	33.1			14.9	14.9		14.9	14.9
Actuated g/C Ratio	0.15	0.60		0.07	0.44			0.20	0.20		0.20	0.20
v/c Ratio	0.91	0.43		0.18	0.71			0.53	0.10		0.82	0.62
Control Delay	82.1	5.7		51.4	12.2			35.8	0.4		52.9	14.7
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	82.1	5.7		51.4	12.2			35.8	0.4		52.9	14.7
LOS	F	A		D	B			D	A		D	B
Approach Delay		20.3			12.9			26.1			31.3	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)	111	50		10	220			49	0		100	33
Queue Length 95th (ft)	#236	85		m20	283			100	0		#207	107
Internal Link Dist (ft)		1822			1593			105			891	
Turn Bay Length (ft)	85			235					100			
Base Capacity (vph)	238	2150		115	1548			241	466		298	499
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.91	0.43		0.18	0.71			0.49	0.10		0.76	0.60

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 38 (51%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 19.7 Intersection LOS: B
Intersection Capacity Utilization 72.4% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Prospect Street & Olden Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	206	839	35	20	938	106	54	59	43	120	96	282
Future Volume (veh/h)	206	839	35	20	938	106	54	59	43	120	96	282
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1836	1891	1910	1881	1862	1881	1881	1881	1881	1928	1899	1891
Adj Flow Rate, veh/h	217	883	37	21	987	112	57	62	45	126	101	297
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	1	1	0	1	1	0	0	0	1	1	2
Cap, veh/h	250	1932	81	42	1379	156	71	54	341	75	19	343
Arrive On Green	0.29	1.00	1.00	0.01	0.14	0.14	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1749	3515	147	1791	3204	363	0	254	1599	0	89	1607
Grp Volume(v), veh/h	217	451	469	21	545	554	119	0	45	227	0	297
Grp Sat Flow(s),veh/h/ln	1749	1797	1865	1791	1769	1798	254	0	1599	89	0	1607
Q Serve(g_s), s	8.8	0.0	0.0	0.9	22.1	22.1	0.0	0.0	1.7	0.0	0.0	13.4
Cycle Q Clear(g_c), s	8.8	0.0	0.0	0.9	22.1	22.1	16.0	0.0	1.7	16.0	0.0	13.4
Prop In Lane	1.00		0.08	1.00		0.20	0.48		1.00	0.56		1.00
Lane Grp Cap(c), veh/h	250	988	1025	42	761	774	125	0	341	94	0	343
V/C Ratio(X)	0.87	0.46	0.46	0.50	0.72	0.72	0.95	0.00	0.13	2.43	0.00	0.87
Avail Cap(c_a), veh/h	256	988	1025	119	761	774	125	0	341	94	0	343
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	0.81	0.81	0.81	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.1	0.0	0.0	36.8	27.8	27.8	30.7	0.0	23.9	34.3	0.0	28.5
Incr Delay (d2), s/veh	22.5	1.3	1.3	7.1	4.7	4.6	64.8	0.0	0.2	672.9	0.0	20.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.4	0.7	0.7	0.9	16.9	17.1	8.3	0.0	1.4	34.9	0.0	12.5
LnGrp Delay(d),s/veh	48.6	1.3	1.3	43.9	32.5	32.4	95.5	0.0	24.1	707.3	0.0	48.6
LnGrp LOS	D	A	A	D	C	C	F		C	F		D
Approach Vol, veh/h		1137			1120			164			524	
Approach Delay, s/veh		10.3			32.6			75.9			333.9	
Approach LOS		B			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.8	47.2		21.0	15.7	38.3		21.0
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	5.0	38.0		16.0	11.0	32.0		16.0
Max Q Clear Time (g_c+I1), s	2.9	2.0		18.0	10.8	24.1		18.0
Green Ext Time (p_c), s	0.0	2.4		0.0	0.0	2.2		0.0

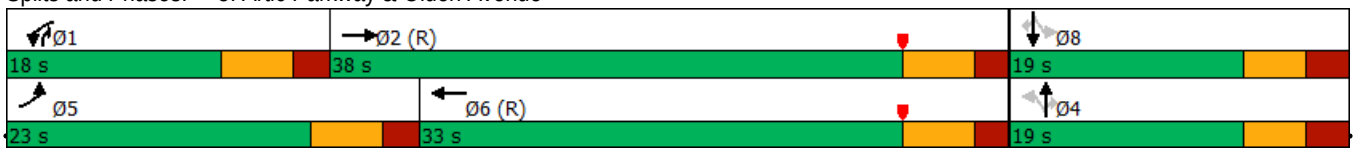
Intersection Summary		
HCM 2010 Ctrl Delay		80.0
HCM 2010 LOS		F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	805	122	123	735	74	107	77	139	70	74	206
Future Volume (vph)	211	805	122	123	735	74	107	77	139	70	74	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	15
Grade (%)		1%			-2%			-2%			0%	
Storage Length (ft)	90		0	90		0	90		90	40		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.986				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1778	3460	0	1753	3531	0	1805	1919	1615	1787	1900	1759
Flt Permitted	0.950			0.950			0.706			0.704		
Satd. Flow (perm)	1778	3460	0	1753	3531	0	1341	1919	1615	1324	1900	1759
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			16				75			219
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		1673			1939			970			970	
Travel Time (s)		32.6			37.8			26.5			18.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	2%	0%	4%	2%	0%	1%	0%	1%	1%	0%	1%
Adj. Flow (vph)	224	856	130	131	782	79	114	82	148	74	79	219
Shared Lane Traffic (%)												
Lane Group Flow (vph)	224	986	0	131	861	0	114	82	148	74	79	219
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		Yes			Yes							
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.00	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	5		40	5		45	45	45	45	45	45
Trailing Detector (ft)	-5	0		-5	0		-5	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	0		-5	0		-5	-5	-5	-5	-5	-5
Detector 1 Size(ft)	45	5		45	5		50	50	50	50	50	50
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases							4		4	8		8
Detector Phase	5	2		1	6		4	4	1	8	8	8
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	21.0		13.0	21.0		13.0	13.0	13.0	13.0	13.0	13.0
Total Split (s)	23.0	38.0		18.0	33.0		19.0	19.0	18.0	19.0	19.0	19.0
Total Split (%)	30.7%	50.7%		24.0%	44.0%		25.3%	25.3%	24.0%	25.3%	25.3%	25.3%
Maximum Green (s)	17.0	32.0		12.0	27.0		13.0	13.0	12.0	13.0	13.0	13.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5	4.0	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5	2.0	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	14.1	35.8		10.3	32.0		10.9	10.9	27.2	10.9	10.9	10.9
Actuated g/C Ratio	0.19	0.48		0.14	0.43		0.15	0.15	0.36	0.15	0.15	0.15
v/c Ratio	0.67	0.59		0.55	0.57		0.59	0.29	0.23	0.39	0.29	0.50
Control Delay	45.0	9.7		38.5	13.1		42.0	30.6	8.8	34.3	30.4	8.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.0	9.7		38.5	13.1		42.0	30.6	8.8	34.3	30.4	8.6
LOS	D	A		D	B		D	C	A	C	C	A
Approach Delay		16.2			16.5			25.0			18.3	
Approach LOS		B			B			C			B	
Queue Length 50th (ft)	93	102		61	98		50	34	21	31	33	0
Queue Length 95th (ft)	m160	173		119	115		98	71	54	68	69	55
Internal Link Dist (ft)		1593			1859			890			890	
Turn Bay Length (ft)	90			90			90		90	40		
Base Capacity (vph)	403	1667		280	1517		232	332	668	229	329	485
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.59		0.47	0.57		0.49	0.25	0.22	0.32	0.24	0.45

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 69 (92%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 17.6		Intersection LOS: B	
Intersection Capacity Utilization 62.0%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: Artic Parkway & Olden Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	805	122	123	735	74	107	77	139	70	74	206
Future Volume (veh/h)	211	805	122	123	735	74	107	77	139	70	74	206
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1872	1858	1890	1845	1885	1919	1900	1919	1900	1881	1900	1956
Adj Flow Rate, veh/h	224	856	130	131	782	0	114	82	148	74	79	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	2	2	4	2	2	1	0	1	1	0	1
Cap, veh/h	264	1584	241	167	1653	0	248	288	395	226	285	249
Arrive On Green	0.30	1.00	1.00	0.09	0.46	0.00	0.15	0.15	0.15	0.15	0.15	0.00
Sat Flow, veh/h	1783	3074	467	1757	3675	0	1341	1919	1615	1157	1900	1663
Grp Volume(v), veh/h	224	492	494	131	782	0	114	82	148	74	79	0
Grp Sat Flow(s),veh/h/ln	1783	1765	1776	1757	1791	0	1341	1919	1615	1157	1900	1663
Q Serve(g_s), s	8.9	0.0	0.0	5.5	11.3	0.0	6.2	2.8	5.7	4.5	2.8	0.0
Cycle Q Clear(g_c), s	8.9	0.0	0.0	5.5	11.3	0.0	8.9	2.8	5.7	7.4	2.8	0.0
Prop In Lane	1.00		0.26	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	264	909	915	167	1653	0	248	288	395	226	285	249
V/C Ratio(X)	0.85	0.54	0.54	0.79	0.47	0.00	0.46	0.28	0.37	0.33	0.28	0.00
Avail Cap(c_a), veh/h	404	909	915	281	1653	0	279	333	433	253	329	288
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.6	0.0	0.0	33.2	13.9	0.0	32.2	28.3	23.5	31.6	28.3	0.0
Incr Delay (d2), s/veh	9.2	2.1	2.1	7.9	1.0	0.0	1.3	0.5	0.6	0.8	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.5	1.0	1.0	5.4	9.7	0.0	4.3	2.8	4.7	2.7	2.7	0.0
LnGrp Delay(d),s/veh	34.7	2.1	2.1	41.1	14.9	0.0	33.6	28.8	24.1	32.4	28.8	0.0
LnGrp LOS	C	A	A	D	B		C	C	C	C	C	
Approach Vol, veh/h		1210			913			344			153	
Approach Delay, s/veh		8.1			18.6			28.4			30.5	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.1	44.6		17.3	17.1	40.6		17.3
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	32.0		13.0	17.0	27.0		13.0
Max Q Clear Time (g_c+I1), s	7.5	2.0		10.9	10.9	13.3		9.4
Green Ext Time (p_c), s	0.1	2.7		0.3	0.4	2.2		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	15.8
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	188	902	695	48	0	0	
Future Volume (vph)	188	902	695	48	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	15	15	16	16	
Grade (%)		0%	-1%		0%		
Storage Length (ft)	250			0	0	0	
Storage Lanes	2			0	0	0	
Taper Length (ft)	45				45		
Lane Util. Factor	0.97	0.95	0.95	0.95	1.00	1.00	
Frt			0.990				
Flt Protected	0.950						
Satd. Flow (prot)	3467	3539	3843	0	0	0	
Flt Permitted	0.950						
Satd. Flow (perm)	3467	3539	3843	0	0	0	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			18				
Link Speed (mph)		35	35		25		
Link Distance (ft)		1939	787		588		
Travel Time (s)		37.8	15.3		16.0		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Heavy Vehicles (%)	1%	2%	3%	0%	0%	0%	
Adj. Flow (vph)	198	949	732	51	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	198	949	783	0	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		24	24		0		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	0.88	0.88	0.85	0.85	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	1	1				
Detector Template	Left	Thru	Thru				
Leading Detector (ft)	45	5	5				
Trailing Detector (ft)	-5	0	0				
Detector 1 Position(ft)	-5	0	0				
Detector 1 Size(ft)	50	5	5				
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex				
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0				
Detector 1 Queue (s)	0.0	0.0	0.0				
Detector 1 Delay (s)	0.0	0.0	0.0				
Turn Type	Prot	NA	NA				
Protected Phases	16	2 16	6				2
Permitted Phases							
Detector Phase	16	2 16	6				
Switch Phase							

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Minimum Initial (s)	6.0		25.0				25.0
Minimum Split (s)	11.0		32.0				32.0
Total Split (s)	22.0		53.0				53.0
Total Split (%)	29.3%		70.7%				71%
Maximum Green (s)	17.0		46.0				51.0
Yellow Time (s)	3.0		5.0				2.0
All-Red Time (s)	2.0		2.0				0.0
Lost Time Adjust (s)	0.0		0.0				
Total Lost Time (s)	5.0		7.0				
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0				3.0
Recall Mode	None		C-Max				Max
Act Effct Green (s)	12.5	75.0	50.5				
Actuated g/C Ratio	0.17	1.00	0.67				
v/c Ratio	0.34	0.27	0.30				
Control Delay	22.2	0.2	1.9				
Queue Delay	0.0	0.0	0.0				
Total Delay	22.2	0.2	1.9				
LOS	C	A	A				
Approach Delay		4.0	1.9				
Approach LOS		A	A				
Queue Length 50th (ft)	44	0	10				
Queue Length 95th (ft)	71	0	29				
Internal Link Dist (ft)		1859	707		508		
Turn Bay Length (ft)	250						
Base Capacity (vph)	785	3539	2594				
Starvation Cap Reductn	0	0	0				
Spillback Cap Reductn	0	0	0				
Storage Cap Reductn	0	0	0				
Reduced v/c Ratio	0.25	0.27	0.30				

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 48 (64%), Referenced to phase 6:WBT, Start of Yellow			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.34			
Intersection Signal Delay: 3.1		Intersection LOS: A	
Intersection Capacity Utilization 36.2%		ICU Level of Service A	
Analysis Period (min) 15			

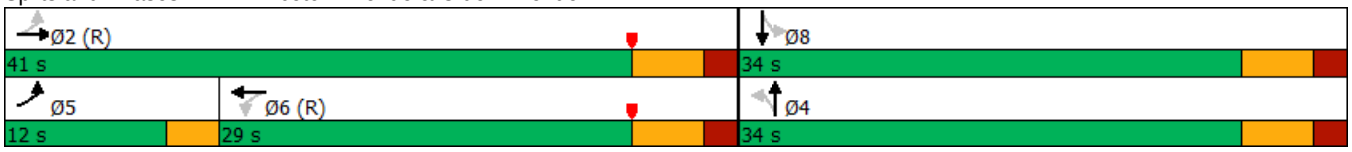
Splits and Phases: 6: Olden Avenue & Capital Plaza

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	189	483	213	43	584	60	197	212	57	199	316	148
Future Volume (vph)	189	483	213	43	584	60	197	212	57	199	316	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	11	11	11	11	11	11	11	12	12	12
Grade (%)		1%			1%			1%			-1%	
Storage Length (ft)	130		0	65		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	45			45			45			45		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.954			0.986			0.982			0.966	
Flt Protected	0.950			0.950				0.979			0.985	
Satd. Flow (prot)	1802	3370	0	1702	3363	0	0	3293	0	0	3394	0
Flt Permitted	0.257			0.382				0.568			0.681	
Satd. Flow (perm)	487	3370	0	684	3363	0	0	1911	0	0	2347	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		124			15			23			56	
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		787			222			223			971	
Travel Time (s)		15.3			6.1			6.1			26.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	2%	1%	2%	2%	0%	1%	1%	4%	1%	2%	2%
Adj. Flow (vph)	193	493	217	44	596	61	201	216	58	203	322	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	193	710	0	44	657	0	0	475	0	0	676	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)		13			13			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.96	1.01	1.05	1.05	1.05	1.05	1.05	1.05	1.05	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Minimum Split (s)	11.0	26.0		26.0	26.0		26.0	26.0		26.0	26.0	
Total Split (s)	12.0	41.0		29.0	29.0		34.0	34.0		34.0	34.0	
Total Split (%)	16.0%	54.7%		38.7%	38.7%		45.3%	45.3%		45.3%	45.3%	
Maximum Green (s)	9.0	35.0		23.0	23.0		28.0	28.0		28.0	28.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	3.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?												
Act Effct Green (s)	38.0	35.0		23.0	23.0			28.0			28.0	
Actuated g/C Ratio	0.51	0.47		0.31	0.31			0.37			0.37	
v/c Ratio	0.48	0.43		0.21	0.63			0.89dl			0.74	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	8.7	5.7		22.6	25.1			23.6			24.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	8.7	5.7		22.6	25.1			23.6			24.6	
LOS	A	A		C	C			C			C	
Approach Delay		6.3			24.9			23.6			24.6	
Approach LOS		A			C			C			C	
Queue Length 50th (ft)	29	55		15	133			89			128	
Queue Length 95th (ft)	32	44		41	188			142			194	
Internal Link Dist (ft)		707			142			143			891	
Turn Bay Length (ft)	130			65								
Base Capacity (vph)	404	1638		209	1041			727			911	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.48	0.43		0.21	0.63			0.65			0.74	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 8 (11%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 65			
Control Type: Pretimed			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 18.5		Intersection LOS: B	
Intersection Capacity Utilization 92.7%		ICU Level of Service F	
Analysis Period (min) 15			
dl Defacto Left Lane. Recode with 1 though lane as a left lane.			

Splits and Phases: 7: Princeton Avenue & Olden Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	189	483	213	43	584	60	197	212	57	199	316	148
Future Volume (veh/h)	189	483	213	43	584	60	197	212	57	199	316	148
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1909	1859	1890	1853	1857	1890	1890	1865	1890	1910	1878	1910
Adj Flow Rate, veh/h	193	493	217	44	596	61	201	216	58	203	322	0
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	2	2	2	2	2	1	1	1	2	2	2
Cap, veh/h	433	1117	489	321	991	101	340	493	135	339	665	0
Arrive On Green	0.12	0.47	0.47	0.31	0.31	0.31	0.37	0.37	0.37	0.37	0.37	0.00
Sat Flow, veh/h	1818	2393	1048	733	3232	330	662	1320	362	673	1868	0
Grp Volume(v), veh/h	193	363	347	44	325	332	213	0	262	244	281	0
Grp Sat Flow(s),veh/h/ln	1818	1766	1674	733	1764	1799	710	0	1633	833	1623	0
Q Serve(g_s), s	4.9	10.4	10.5	3.3	11.7	11.8	13.7	0.0	9.0	13.7	9.8	0.0
Cycle Q Clear(g_c), s	4.9	10.4	10.5	3.3	11.7	11.8	23.5	0.0	9.0	22.7	9.8	0.0
Prop In Lane	1.00		0.63	1.00		0.18	0.94		0.22	0.83		0.00
Lane Grp Cap(c), veh/h	433	824	781	321	541	552	358	0	610	399	606	0
V/C Ratio(X)	0.45	0.44	0.44	0.14	0.60	0.60	0.60	0.00	0.43	0.61	0.46	0.00
Avail Cap(c_a), veh/h	433	824	781	321	541	552	358	0	610	399	606	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.2	13.4	13.5	19.2	22.1	22.1	26.5	0.0	17.5	25.5	17.8	0.0
Incr Delay (d2), s/veh	3.3	1.7	1.8	0.9	4.9	4.8	7.1	0.0	2.2	6.8	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.0	9.3	9.0	1.4	10.6	10.7	8.5	0.0	7.8	9.3	8.4	0.0
LnGrp Delay(d),s/veh	17.5	15.1	15.3	20.1	27.0	26.9	33.6	0.0	19.7	32.3	20.3	0.0
LnGrp LOS	B	B	B	C	C	C	C		B	C	C	
Approach Vol, veh/h		903			701			475			525	
Approach Delay, s/veh		15.7			26.5			26.0			25.9	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		41.0		34.0	12.0	29.0		34.0
Change Period (Y+Rc), s		6.0		6.0	3.0	6.0		6.0
Max Green Setting (Gmax), s		35.0		28.0	9.0	23.0		28.0
Max Q Clear Time (g_c+I1), s		0.0		0.0	0.0	0.0		0.0
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	22.5
HCM 2010 LOS	C

Appendix D

Olden Avenue (CR 622) and Parkway Avenue/Lexington Avenue

Ewing Township, Mercer County, New Jersey
File: E11
Controller: ASC/3-2100
Monitor: EDI NSM-12

TIMING

FLASH	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM	20	5	7	7	20			
EXTENSION	2	2	2	2	2			
MAX I	33	14	13	20	47			
MAX II								
PED WALK		7		7				
PED CLEAR		21		30				
AMBER	4	4	4	4	4			
RED	2	2	2	2	2			
MIN RECALL	ON	OFF	OFF	OFF	OFF			
PED RECALL	OFF	OFF	OFF	OFF	OFF			
MAX RECALL	OFF	OFF	OFF	OFF	OFF			
MEMORY	OFF	OFF	OFF	OFF	OFF			

Ø 1 Parkway Avenue WB
Ø 2 Olden Avenue
Ø 3 Lexington Avenue
Ø 4 Parkway Avenue EB
Ø 5 Olden Avenue (Right Turn Arrow)

1 Phase 5 amber arrow omitted if Phase 2 is actuated
2 The signal shall rest in Phases 1+5

PROGRAM

PROGRAM/ SPLITS	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	CYCLE	OFFSET	OFFSET REFERENCE
1	-	-	-	-	-				-	-	-
2	-	-	-	-	-				-	-	-
3	-	-	-	-	-				-	-	-
4	-	-	-	-	-				-	-	-

WEEKLY PROGRAM CHART

EVENT	DAY	TIME	PROGRAM	REMARKS
1	1-7	00:00	FREE	FREE

Day 1 = MONDAY

Olden Avenue (CR 622) and Parkside Avenue (CR 636)

Ewing Township, Mercer County, New Jersey
File: 458
Controller: ASC/3-2100
Monitor: EDI SSM-12 LE

TIMING

FLASH	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM	5	28		5	5	28		5
EXTENSION	2			2	2			2
MAX I	15	45		32	15	45		32
MAX II								
PED WALK		7		7		7		7
PED CLEAR		21		24		21		24
AMBER	3	4		4	3	4		4
RED	2	2		2	2	2		2
MIN RECALL	OFF	OFF		OFF	OFF	OFF		OFF
PED RECALL	OFF	ON		OFF	OFF	ON		OFF
MAX RECALL	OFF	OFF		OFF	OFF	OFF		OFF
MEMORY	OFF	OFF		OFF	OFF	OFF		OFF

Ø 1 Olden Avenue WB LEFT
Ø 2 Olden Avenue EB
Ø 4 Parkside Avenue NB
Ø 5 Olden Avenue EB LEFT
Ø 6 Olden Avenue WB
Ø 8 Parkside Avenue SB

1 Phases 1+5 may be skipped in the absence of vehicular demand
2 Phases 1+5 opposing left turns are to operate separately and independently with the non-conflicting through movement
3 Phases 4+8 may be skipped in the absence of vehicular demand
4 The signal shall rest in Phases 2+6 Walk

PROGRAM

PROGRAM / SPLITS	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	CYCLE	OFFSET	OFFSET REFERENCE
1	15 (LEAD)	37		23	15 (LEAD)	37		23	75	0	Start of Yellow Phase 2+6
2	13 (LEAD)	38		24	13 (LEAD)	38		24	75	0	Start of Yellow Phase 2+6
3	13 (LEAD)	36		26	13 (LEAD)	36		26	75	0	Start of Yellow Phase 2+6
4	17 (LEAD)	35		23	17 (LEAD)	35		23	75	0	Start of Yellow Phase 2+6

WEEKLY PROGRAM CHART

EVENT	DAY	TIME	PROGRAM	REMARKS
1	1-5	00:00	FREE	FREE/WEEKDAY OVERNIGHT
2	1-5	06:00	1	WEEKDAY AM
3	1-5	10:00	2	WEEKDAY MIDDAY
4	1-5	14:00	3	WEEKDAY PM
5	1-'5	19:00	2	WEEKDAY EVENING
6	1-5	21:00	FREE	FREE/WEEKDAY OVERNIGHT
7	6-7	09:00	4	WEEKEND PEAK
8	6-7	20:00	FREE	FREE/WEEKDAY OVERNIGHT

Day 1 = MONDAY

Olden Avenue (CR 622) and Prospect Street (CR 627)

Ewing Township, Mercer County, New Jersey
File: 8-21
Controller: ASC/3-2100
Monitor: EDI SSM-12LE

TIMING

FLASH	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM	5	25		5	5	25		5
EXTENSION	2			2	2			2
MAX I	15	45		21	15	45		21
MAX II								
PED WALK		7		7		7		7
PED CLEAR		18		24		18		24
AMBER	3	4		4	3	4		4
RED	2	2		2	2	2		2
MIN RECALL	OFF	OFF		OFF	OFF	OFF		OFF
PED RECALL	OFF	ON		OFF	OFF	ON		OFF
MAX RECALL	OFF	OFF		OFF	OFF	OFF		OFF
MEMORY	OFF	OFF		OFF	OFF	OFF		OFF

Ø 1 Olden Avenue WB LEFT
Ø 2 Olden Avenue EB
Ø 4 Prospect Avenue NB
Ø 5 Olden Avenue EB LEFT
Ø 6 Olden Avenue WB
Ø 8 Prospect Avenue SB

1 Phases 1+5 may be skipped in the absence of vehicular demand
2 Phases 1+5 opposing left turns are to operate separately and independently with the non-conflicting through movement
3 Phases 4+8 may be skipped in the absence of vehicular demand
4 The signal shall rest in Phases 2+6 Walk

PROGRAM

PROGRAM / SPLITS	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	CYCLE	OFFSET	OFFSET REFERENCE
1	10 (LEAD)	46		19	15 (LEAD)	41		19	75	47	Start of Yellow Phase 2+6
2	12 (LEAD)	44		19	15 (LEAD)	41		19	75	38	Start of Yellow Phase 2+6
3	10 (LEAD)	44		21	16 (LEAD)	38		21	75	37	Start of Yellow Phase 2+6
4	10 (LEAD)	44		21	16 (LEAD)	38		21	75	38	Start of Yellow Phase 2+6

WEEKLY PROGRAM CHART

EVENT	DAY	TIME	PROGRAM	REMARKS
1	1-5	00:00	FREE	FREE/WEEKDAY OVERNIGHT
2	1-5	06:00	1	WEEKDAY AM
3	1-5	10:00	2	WEEKDAY MIDDAY
4	1-5	14:00	3	WEEKDAY PM
5	1-'5	19:00	2	WEEKDAY EVENING
6	1-5	21:00	FREE	FREE/WEEKDAY OVERNIGHT
7	6-7	09:00	4	WEEKEND PEAK
8	6-7	20:00	FREE	FREE/WEEKDAY OVERNIGHT

Day 1 = MONDAY

Olden Avenue (CR 622) and Arctic Parkway

Ewing Township, Mercer County, New Jersey
File: E 01
Controller: ASC/3-2100
Monitor: EDI NSM-12

TIMING

FLASH	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM	7	26		7	7	26		7
EXTENSION	2			2	2			2
MAX I	20	26		20	20	26		20
MAX II								
PED WALK		7		7		7		7
PED CLEAR		19		20		19		20
AMBER	4	4		4	4	4		4
RED	2	2		2	2	2		2
MIN RECALL	OFF	OFF		OFF	OFF	OFF		OFF
PED RECALL	OFF	ON		OFF	OFF	ON		OFF
MAX RECALL	OFF	OFF		OFF	OFF	OFF		OFF
MEMORY	OFF	OFF		OFF	OFF	OFF		OFF

Ø 1	Olden Avenue WB LEFT
Ø 2	Olden Avenue EB
Ø 4	Home Depot NB
Ø 5	Olden Avenue EB LEFT
Ø 6	Olden Avenue WB
Ø 8	Arctic Parkway SB
OVERLAP	Right turn from Home Depot

1 Phases 1+5 may be skipped in the absence of vehicular demand
2 Phases 1+5 opposing left turns are to operate separately and independently with the non-conflicting through movement
3 Overlap phase opperates with Phases 1+5 and 1+6 only.
4 Phases 4+8 may be skipped in the absence of vehicular demand
5 The signal shall rest in Phases 2+6 Walk

PROGRAM

PROGRAM / SPLITS	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	CYCLE	OFFSET	OFFSET REFERENCE
1	13	47		15	15	45		15	75	5	Start of Yellow Phase 2+6
2	14	46		15	17	43		15	75	68	Start of Yellow Phase 2+6
3	13	47		15	21	39		15	75	11	Start of Yellow Phase 2+6
4	18	38		19	23	33		19	75	69	Start of Yellow Phase 2+6

WEEKLY PROGRAM CHART

EVENT	DAY	TIME	PROGRAM	REMARKS
1	1-5	00:00	FREE	FREE/WEEKDAY OVERNIGHT
2	1-5	06:00	1	WEEKDAY AM
3	1-5	10:00	2	WEEKDAY MIDDAY
4	1-5	14:00	3	WEEKDAY PM
5	1-5	19:00	2	WEEKDAY EVENING
6	1-5	21:00	FREE	FREE/WEEKDAY OVERNIGHT
7	6-7	09:00	4	WEEKEND PEAK
8	6-7	20:00	FREE	FREE/WEEKDAY OVERNIGHT

Day 1 = MONDAY

Olden Avenue (CR 622) and Capital Plaza

Ewing Township, Mercer County, New Jersey
File: E 05
Controller: ASC/3-2100
Monitor: EDI NSM-12

TIMING

FLASH	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM	25	6						
EXTENSION		2						
MAX I	40	20						
MAX II								
PED WALK								
PED CLEAR								
AMBER	4	3						
RED	2	2						
MIN RECALL	OFF	ON						
PED RECALL	OFF	OFF						
MAX RECALL	ON	OFF						
MEMORY	OFF	ON						

Ø 1 Olden Avenue WB
Ø 2 Olden Avenue EB LEFT

1 Phase 2 may be skipped in the absence of vehicular demand
2 The signal shall rest in Phase 1

PROGRAM

PROGRAM / SPLITS	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	CYCLE	OFFSET	OFFSET REFERENCE
1	19	56							75	33	Start of Yellow Phase 1
2	21	54							75	47	Start of Yellow Phase 1
3	22	53							75	50	Start of Yellow Phase 1
4	22	53							75	48	Start of Yellow Phase 1

WEEKLY PROGRAM CHART

EVENT	DAY	TIME	PROGRAM	REMARKS
1	1-5	00:00	FREE	FREE/WEEKDAY OVERNIGHT
2	1-5	06:00	1	WEEKDAY AM
3	1-5	10:00	2	WEEKDAY MIDDAY
4	1-5	14:00	3	WEEKDAY PM
5	1-'5	19:00	2	WEEKDAY EVENING
6	1-5	21:00	FREE	FREE/WEEKDAY OVERNIGHT
7	6-7	09:00	4	WEEKEND PEAK
8	6-7	20:00	FREE	FREE/WEEKDAY OVERNIGHT

Day 1 = MONDAY

Olden Avenue (CR 622) and Princeton Avenue

Ewing Township, Mercer County, New Jersey
File: -
Controller: ASC/3-2100
Monitor: EDI NSM-12

TIMING

FLASH	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM	7	23	7	7	7	23	7	7
EXTENSION	2		2	2	2		2	2
MAX I	10	35	10	35	10	35	10	35
MAX II								
PED WALK		7		7		7		7
PED CLEAR		16		18		16		16
AMBER	3	4	3	3	3	4	3	3
RED		3		3		3		3
MIN RECALL	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PED RECALL	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
MAX RECALL	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
MEMORY	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

Ø 1 Olden Avenue EB LEFT
Ø 2 Olden Avenue WB
Ø 3 Princeton Avenue SB LEFT
Ø 4 Princeton Avenue NB
Ø 5 Olden Avenue WB LEFT
Ø 6 Olden Avenue EB
Ø 7 Princeton Avenue NB LEFT
Ø 8 Princeton Avenue SB

1 Phases 1+5, 3+7 and 4+8 may be skipped in the absence of vehicular demand
2 Phases 1+5 opposing lefts are to operate separately and independently with the non-conflicting through movement
3 Phases 3+7 opposing lefts are to operate separately and independently with the non-conflicting through movement
4 The signal shall rest in Phases 2+6 Walk

PROGRAM

PROGRAM / SPLITS	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	CYCLE	OFFSET	OFFSET REFERENCE
1	10	34	10	21	10	34	10	21	75	8	Start of Yellow Phase 2+6
2	11	32	10	22	10	33	10	22	75	3	Start of Yellow Phase 2+6
3	10	29	10	26	10	29	10	26	75	4	Start of Yellow Phase 2+6
4	11	31	10	23	10	32	10	23	75	4	Start of Yellow Phase 2+6

WEEKLY PROGRAM CHART

EVENT	DAY	TIME	PROGRAM	REMARKS
1	1-5	00:00	FREE	FREE/WEEKDAY OVERNIGHT
2	1-5	06:00	1	WEEKDAY AM
3	1-5	10:00	2	WEEKDAY MIDDAY
4	1-5	14:00	3	WEEKDAY PM
5	1-5	19:00	2	WEEKDAY EVENING
6	1-5	21:00	FREE	FREE/WEEKDAY OVERNIGHT
7	6-7	09:00	4	WEEKEND PEAK
8	6-7	20:00	FREE	FREE/WEEKDAY OVERNIGHT

Day 1 = MONDAY