

TRAFFIC STUDY

Proposed Delivery Station Building 5 Research Parkway Wallingford, CT



TABLE OF CONTENTS

EXECUTIVE SUMMARY					
I. INTRODUCTION	4				
II. EXISTING CONDITIONS	6				
Access Network	6				
Intersection Characteristics	8				
Access/Egress and Sight Distance	10				
Existing Traffic Volumes	11				
Pedestrian Characteristics	14				
Crash Data Analysis	14				
III. PROJECTED TRAFFIC CONDITIONS	16				
No Build Traffic Volumes	16				
Trip Generation and On-Site Circulation	19				
Trip Distribution	22				
Assigned Site Generated Traffic Volumes	24				
Build Traffic Volumes	27				
IV. ROADWAY ADEQUACY	30				
Signalized Intersections	31				
Unsignalized Intersections	32				
V. CONCLUSIONS AND RECOMMENDATIONS	40				



TABLE OF CONTENTS

ILLUSTRATIONS

FIGURE 1 – LOCATION MAP	5
FIGURE 2.1 – EXISTING TRAFFIC VOLUMES WEEKDAY PEAK HOURS (2020)	12
FIGURE 2.2 – EXISTING TRAFFIC VOLUMES PEAK GENERATOR HOURS (2020)	13
FIGURE 3.1 – NO BUILD TRAFFIC WEEKDAY PEAK HOUR VOLUMES (2021)	17
FIGURE 3.1 – NO BUILD TRAFFIC PEAK GENERATOR HOURS VOLUMES (2021)	18
FIGURE 4 – TRIP DISTRIBUTION	23
FIGURE 5.1 – SITE GENERATED PEAK HOUR TRAFFIC VOLUMES(WEEKDAY)	25
FIGURE 5.2 – SITE GENERATED PEAK GENERATOR HOUR TRAFFIC VOLUMES (WEEKDAY)	26
FIGURE 6.1 – BUILD PEAK HOUR TRAFFIC VOLUMES (WEEKDAY-2021)	28
FIGURE 6.2 – BUILD PEAK GENERATOR HOUR TRAFFIC VOLUMES (WEEKDAY-2021)	29
TABLES	
TABLE 1 – CRASH DATA SUMMARY	15
TABLE 2.1 – PEAK HOUR TRIP GENERATION (WEEKDAY)	21
TABLE 3 – SIGNALIZED INTERSECTION – LEVEL OF SERVICE	31
TABLE 4 – UNSIGNALIZED INTERSECTION – LEVEL OF SERVICE	32
TABLE 5.1 – PEAK HOUR LEVELS OF SERVICE (AM, MD, PM)	33
TABLE 5.2 – PEAK HOUR LEVELS OF SERVICE (AM/ PM PEAK GENERATOR)	36

APPENDIX

TRIP GENERATION
TRAFFIC COUNTS
CAPACITY ANALYSES
HOLIDAY ANALYSIS
TRUCK TURNING TEMPLATES



EXECUTIVE SUMMARY

This traffic study has been prepared for a new tenant and change of use of an existing Site at 5 Research Parkway in Wallingford, CT. The study area is primarily business parks with residential neighborhoods to the south and east. The Site will serve as a package delivery station which will provide "last mile" package delivery services to residences and businesses with an approximate 60-minute driving time radius of the Site. It should be noted that for the Town of Wallingford planning purposes; delivery station shall be interpreted as warehouse.

This study investigated the potential traffic impacts of the proposed development during the weekday morning, mid-day, and evening traffic periods. To assess existing traffic conditions in the vicinity of the Site, peak hour manual turning movement traffic volumes, vehicle classification and pedestrian counts were recorded at key intersections within the study area.

The level of traffic likely generated by the proposed development has been estimated by the tenant to determine the potential traffic impact on the study intersections. The tenant completed a detailed analysis determining the number and time of Site traffic arrivals and departures at the Site, which is a function of the delivery area population and business density. The proposed delivery station is projected to generate 3 (1 enter, 2 exit) vehicle trips, trucks only, during the weekday morning peak hour, 148 (0 enter, 148 exit) vehicle trips during the mid-day peak hour, 136 (91 enter, 45 exit) during the weekday evening peak hour, 427 (113 enter, 314 exit) vehicle trips during am peak generator hour, and 440 (220 enter, 220 exit) vehicle trips during pm peak generator hour.

A holiday season analysis was performed per town peer review request and included in the **Appendix** for comparison. It should be noted CTDOT does not require holiday



analysis per OSTA Major Traffic Generator Administrative Decision Request Guidelines, Section III (Traffic Information) D-3.

A detailed traffic analysis was also conducted at key intersections and roadways in the general vicinity of the Site in accordance with methodologies outlined in the Highway Capacity Manual 2010, published by the Transportation Research Board. At the three signalized intersections along Route 68 (Barnes Road) with overall acceptable traffic operations during all average weekday scenarios analyzed. Some deterioration is observed at specific movements; however, overall intersections performance is acceptable. During some periods, certain movements at signalized intersections are projected to perform at LOS E /F that is generally considered undesirable motorist delay.

At the proposed development driveway (Site #1) formerly signalized intersection that presently operates in "Flash" mode, for all build scenarios, the intersection signal was activated. As such, the LOS for all build scenario periods operates at LOS A and LOS B. At the second access point to the site at Carpenter Lane performs adequately for all movements. The stop-controlled movement from the Site #2 approach performs at LOS A and LOS B.

The following is a summary of the results/recommendations for this Site:

- Capacity analyses indicate that all analyzed intersections, overall, are
 projected to perform at an acceptable Level of Service between all average
 weekday scenarios analyzed.
- The undesirable Levels of Service are observed for individual movements and deterioration occurs between the Existing and No Build scenarios.
- Additional analysis with improved lane configuration on the I-91 northbound
 Off-Ramp approach and optimization of signal phases (only during PM Peak
 hour) was performed to accommodate holiday traffic. Details provided in the
 Appendix.



- Install "Stop" sign and stop bar at the Site drive's access / egress at Carpenter Lane as noted on Site Plans.
- Clear of overgrown shrubs to meet the sight line requirements at the Carpenter Lane Site driveway.
- Clearing of vegetation at the Research Parkway at Carpenter Lane to increase sight lines.
- Move the Research Parkway northbound stop bar at the Site Drive #1 to accommodate truck turns from the Site.
- Route 68 Left Turn into Research Parkway operates with throat width of 27.5'±.
 Current CTDOT guidelines suggest an expanded throat width of 30' to avoid conflicts in turning paths at double left turn. Sketch Plan TT-2 shows WB-67 truck turns with restriped travel lanes to 11ft wide to accommodate the movements without widening of roadway or conflict areas.



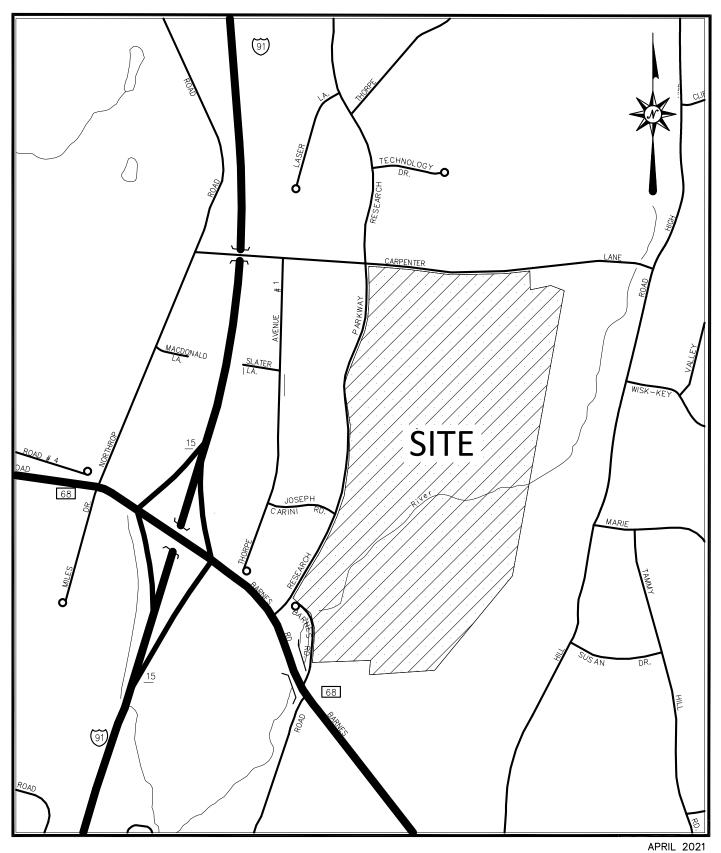
I. INTRODUCTION

This traffic study has been prepared for a new tenant and change of use of an existing building at 5 Research Parkway in Wallingford, CT. The focus of this study was to evaluate the traffic flows and operating conditions on the roadways and intersections projected to be used by motorists traveling to and from the proposed development and to quantify the potential traffic impacts on these roadways and intersections. The study area is primarily business parks with residential neighborhoods to the south and east. See **Figure 1** for a location map.

The Site will serve as a package delivery station which will provide "last mile" package delivery services to residences and businesses with an approximate 60-minute driving time radius of the Site. It should be noted that for the Town of Wallingford planning purposes; delivery station shall be interpreted as warehouse. The project will include proposed redevelopment of the Site with ±219,000 SF warehouse building and will include 1,508 parking spaces. Access to the Site will be via two existing curb cuts on Research Parkway and Carpenter Lane. The Carpenter Lane driveway will be limited to right in only and left out only.

The study investigated the potential traffic impacts associated with the development in the weekday morning, mid-day, and evening peak periods. The greatest cumulative impacts of project related traffic are likely to occur during the weekday morning, mid-day, and evening peak hours, when traffic consists mostly of commuters. As such, traffic operating conditions at the study intersections were analyzed during these peak periods.







LOCATION MAP 5 RESEARCH PARKWAY PROPOSED DEVELOPMENT WALLINGFORD, CT

SCHEMATIC, NOT TO SCALE

FIGURE 1

II. EXISTING CONDITIONS

An investigation of the existing traffic conditions on the adjacent roadway network formed the basis for assessing any traffic issues associated with the proposed development. This investigation included a field reconnaissance, traffic counting, and research of pertinent planning and traffic data available with Connecticut Department of Transportation (CTDOT) and the Town of Wallingford.

Access Network

The project study area consists of signalized intersections at the following locations:

- CT Route 68 (Barnes Road) at I-91 Southbound Exit 15 on/off ramps
- CT Route 68 (Barnes Road) at I-91 Northbound Exit 15 on/off ramps
- CT Route 68 (Barnes Road) at Research Parkway
- Research Parkway at Site #1 Driveway and Connecticut Food Bank Driveway

The project study area also consists of unsignalized intersections at the following locations:

- Research Parkway at Carpenter Lane
- Carpenter Lane at Site #2 Driveway
- Research Parkway at Joseph Carini Road

Major roadways in the vicinity of the project include I-91, CT Route 68 (Barnes Road), Research Parkway, and Carpenter Lane.

I-91 is an urban interstate that originates from a junction with I-95 in New Haven in the south and terminates to the north at an international border with Canada in Derby Line, VT. Along most of its length thru Connecticut, I-91 has three travel lanes in both directions and speed limit of 65 mph. The latest average daily traffic (ADT), provided by CTDOT, was 42,900 vehicles per day (vpd) northbound and 42,500 vpd southbound north of the Route 68 ramps. The on-ramps for both I-91 NB and SB are single lanes. The off ramps for both I-91 NB and SB have posted advisory speeds of 30 mph. The I-91 NB



Exit 15 off-ramp and on-ramp has an ADT of 6,700 vehicles. The I-91 SB Exit 15 off-ramp and on-ramp has an ADT of 6,200 vehicles and 6,600 vehicles, respectively.

CT Route 68 (Barnes Road) is an arterial State Highway routed through the Town of Wallingford in the east/west direction from the Cheshire town line in the west to the Durham town line the east. In the study area, the speed limit is 35 mph and increases to 45 mph west of the intersection of Barnes Road and the Interstate 91 SB Exit 15 On/Off-Ramps. Within the study area, Barnes Road has two through lanes in each direction and exclusive left and right turn lanes at key intersections. Across the I-91 interchange, the ADT varies from 16,100 vehicles to 22,300 vehicles along CT Route 68 with the highest being west of the interchange. All counts were recorded, per volumes collected by the Connecticut Department of Transportation in 2016. There are no observed sidewalks along CT Route 68 and illumination is sporadic within the study area.

Research Parkway is an urban minor arterial that begins at an intersection with East Main Street in the City of Meriden and continues south to its intersection with CT Route 68 (Barnes Road). The only ADT recorded along Research Parkway by CTDOT, in 2016, is just north of its intersection with Carpenter Lane with an average daily traffic of 5,600 vehicles. The speed limit along Research Parkway is 45 mph and has a single through lane in each direction with exclusive left and right turn lanes at key intersections

Carpenter Lane is a 0.8 miles long local road that begins at an intersection with Northrop Road and ends at intersection with High Hill Road. There are no ADT recorded by CTDOT, however our study determined traffic volumes to be at 125 vehicles per direction during peak hour per day.



Intersection Characteristics

Several key intersections were reviewed in this study to determine if they would be impacted by the expected Site traffic volumes. They are as follows:

CT Route 68 (Barnes Road) at Hilton Garden Inn Drive and Research Parkway – At this fully actuated signalized intersection, the Barnes Road eastbound approach consists of dual left-turn lanes for a three-hour window, 6:30AM to 9:30AM, Monday through Friday, and a shared through/right-turn lane. All other times, the approach is an exclusive single left-turn lane, an exclusive through lane, and a shared through/right-turn lane. The westbound approach consists of an exclusive left-turn lane, dual through lanes, and an exclusive right-turn lane. The northbound approach, exiting the hotel property, consists of an exclusive left-turn lane and a shared through/right-turn lane. The Research Parkway southbound approach consists of a shared left-turn/through lane and an exclusive right-turn lane. This intersection operates on two different phasings, one for Monday-Friday 6:30AM to 9:30AM for the dual left-turn lanes, and the other for all other times. Research Parkway southbound has a protected right-turn overlap with the eastbound protected left-turn phase. The signal is part of a closed loop coordinated system along CT Route 68. It has an 80" cycle length in the AM and PM peak hours and 75" in the mid-day peak hour.

CT Route 68 (Barnes Road) at Interstate 91 Northbound Exit 15 On/Off Ramps –

This four phase fully actuated signalized intersection is located about 800' west of the Proposed Site. Barnes Road eastbound consists of an exclusive leading left-turn lane and dual through lanes. Barnes Road westbound consists of two through lanes and a right-turn only lane. The I-91 NB Exit 15 Off-Ramp approach has dual left-turn lanes and a right-turn lane. Turns on red are prohibited on the off-ramp approach. The signal is part of a closed loop coordinated system along CT Route 68. It has an 80" cycle length in the AM and PM peak hours and 75" in the mid-day peak hour.



CT Route 68 (Barnes Road) at Interstate 91 Southbound Exit 15 On/Off Ramps –

This three phase fully signalized intersection is located approximately 1700' northwest of the Proposed Site. The Barnes Road eastbound approach consists of dual through lanes and a right-turn only lane. Barnes Road westbound consists of and exclusive leading left-turn lane and dual through lanes. The I-91 SB Exit 15 Off-Ramp approach consists of an exclusive left-turn lane, a shared left/right-turn lane, and a right-turn only lane. Turns on red are prohibited on the off-ramp approach. The signal is part of a closed loop coordinated system along CT Route 68. It has an 80" cycle length in the AM and PM peak hours and 75" in the mid-day peak hour.

Research Parkway at Connecticut Food Bank Driveway and Proposed Site

Development – this is a stop-controlled intersection where the approaches of Research Parkway have free movements and the approach of Food Bank Driveway and Proposed Site are stop-controlled. The existing signal is flashing yellow on Research Parkway and flashing red on the east-west approaches. There are four exclusive left turn lanes for each approach. Research Parkway has single thru/right turn lanes and in northbound direction has an additional exclusive right turn lane. The approach from CT Food Bank is composed of exclusive left turn lane and thru/right turn lane. At present, the Proposed Site Development consists of an exclusive left-turn lane and a shared through/right-turn lane.

Research Parkway at Carpenter Lane – this is an all way stop-controlled intersection, where all four approaches have a single lane.

Research Parkway at Joseph Carini Road – this is a stop-controlled intersection where the approaches of Research Parkway have free movements and the approach of Joseph Carini Road is stop-controlled.



Access/Egress and Sight Distance

Carpenter Lane – A curb cuts will be provided for employee/visitor driveway used by DSP Vans, associates, and managers. The Carpenter Lane driveway will be limited to right in only and left out only. All truck trips will utilize Research Parkway access/egress point separate from car site traffic. Adequate intersection sight distance should be provided for the prevailing speeds along Carpenter Lane. Sight distance appears good to/from the west but limited due to the crest of a hill several hundred feet to the east. While the speed limit on Carpenter Lane is 35 mph, a speed study conducted for a prior project, indicates the prevailing speed (85th percentile) to be nearly 45 mph. The curb cut for the employee/visitor lot should therefore have 500' of sight distance (based on the CTDOT Highway Design Manual) available in both directions based on current roadway conditions. Measurements indicate the sight distance will be well more than 500' to/from the west and just meet the 500' to/from the east.

5 Research Parkway – The northbound Research Parkway stop bar should be moved to the south slightly to allow for truck turns from the Site.

Route 68 Left Turn into Research Parkway – The part time double left turn from Route 68 into Research Parkway was implemented as a 2004 change order to the traffic signal plan in the I-91/Route 68 interchange project (#148-179). At that time, the double left turn operation was active during both the morning and afternoon peak periods. While the traffic signal plan was modified, the original Research Parkway acceptance width of 27.5'± was not revised. Current CTDOT guidelines suggest a 30' width to accept a double left turn. In a 2008 traffic study for the Hilton Garden Inn, when Bristol Myers was still an important operation, 565 morning peak hour left turns into Research Parkway were counted. The background left turn volume is currently projected to be about 380 AM peak hour trips. The redevelopment of the former Bristol Myers Site into warehouse use will result in increased truck traffic in the "outside" left turn lane on Route 68.



Existing Traffic Volumes

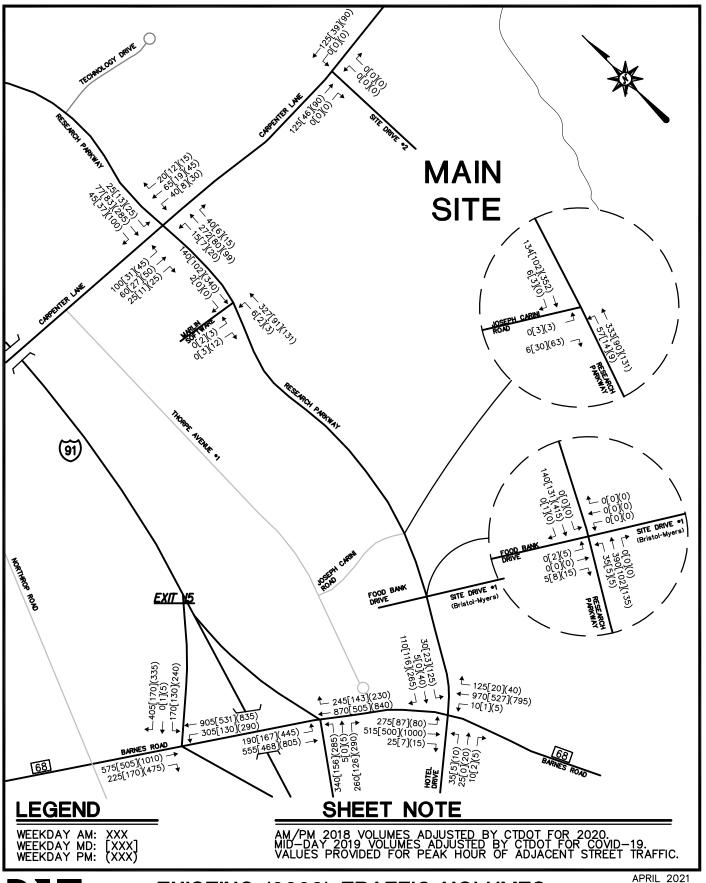
To assess existing traffic conditions in the vicinity of the Site, peak hour manual turning movement traffic volumes, vehicle classification and pedestrian counts were recorded at the intersections above. The counts were recorded during typical weekday morning (7am-9am), evening (4pm-6pm) in October of 2018 and mid-day (11am-1pm) peak traffic periods in October of 2020. It should be noted that during 2018 count collection, a small number of workers were present at the Site and utilizing Site #1 Driveway. These trips were removed from the existing and no build conditions to reflect the vacancy of the Site. The total number of trips were 90 vehicles in the morning and 80 vehicles in the afternoon peak hour. There were no records for the mid-day trips.

For the 2020 mid-day counts, due to the ongoing Coronavirus pandemic, existing traffic volumes were adjusted by CTDOT Bureau of Policy and Planning. After review of the approved CTDOT traffic counts, the 2020 mid-day traffic volumes along Route 68 (Barnes Road) were further adjusted by adding 150 through vehicles in both direction along Route 68 (Barnes Road) to resemble the CTDOT traffic counter (WALL-030 Route 68 - 16.94 milepost - southeast of I-91 NB Off Ramp / Exit 15).

In March of 2021, AM peak generator and PM peak generator manual turning movement traffic volumes, vehicle classification, and pedestrian counts were recorded for the study area. Using the CTDOT traffic counter (WALL-030), the AM peak generator and PM peak generator factors were developed. These counts were adjusted using 1.27 factor for AM peak generator and 1.36 factor for PM peak generator. Detail information on all counts and factor calculation are included in the **Appendix**.

All counts in the study area were further adjusted to ensure continuity of volumes across all studies intersections. The current peak hour traffic volumes for the intersections are illustrated in **Figure 2.1** and **Figure 2.2**.



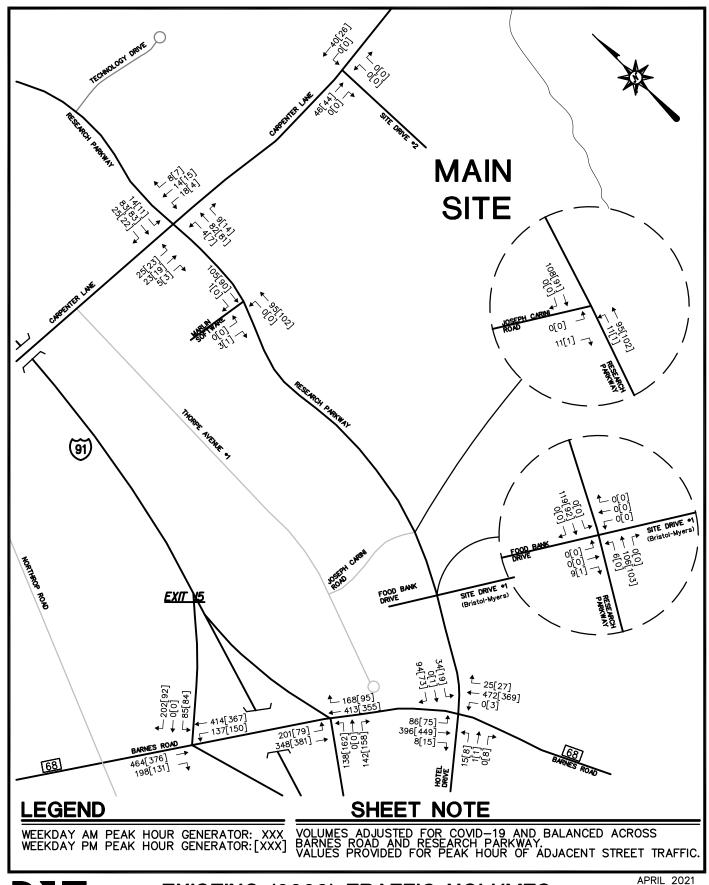




PROPOSED DEVELOPMENT WALLINGFORD, CONNECTICUT

FIGURE 2.1

SCHEMATIC, NOT TO SCALE





EXISTING (2020) TRAFFIC VOLUMES PROPOSED DEVELOPMENT WALLINGFORD, CONNECTICUT

SCHEMATIC, NOT TO SCALE

FIGURE 2.2

Pedestrian Characteristics

Pedestrian counts were collected at the same time as vehicular turning movements and raw counts are included in the **Appendix.** It should be noted that that site location and the study area is located in non-pedestrian zones, where minimal pedestrian / bicycle facilities are provided. Within the study area, only the I-91 overpass viaduct has sidewalk present. The observed pedestrians were minimal and did not trigger further operation analysis.

Crash Data Analysis

As part of the existing conditions analysis, crash data for the most recent three-year period, January 1st, 2017 through December 31st, 2019, was obtained from the Connecticut Crash Data Repository.

Twenty-five (25) crashes in the study area were reviewed, the most common crash was "the front to rear" at forty eight percent (48%). Majority of crashes resulted in "Possible Injury" at forty percent (40%) and "No Apparent Injury" at thirty six percent (36%). There were no fatalities in the corridor for the three-year period.

According to the crash records mentioned above, the intersection of Research Parkway at Carpenter Lane had seven (7) crashes. Four (4) of these crashes were angle collisions and three (3) crashes were rear-end collisions. These crash patterns suggest that there may be sightline or geometric issues where drivers are not aware of the stop-control. Clearing of vegetation at the intersection to increase sight lines is proposed. At the intersection of CT Route 68 (Barnes Road) at Williams Road there were also seven (7) crashes: three (3) front-to-front, two (2) angle, and two (2) other/not applicable. Possible sightlines and geometric issues such as grade could also contribute to crash count. There were no recorded crashes at the proposed Site Driveways. Below in **Table 1** summarizes the crash data.



Table 1 – Crash Data Summary

	Proposed Delivery Station, Wallingford, CT											
Location	CT Route 68 (Barnes Road) at Access to I-91NB	CT Route 68 (Barnes Road) at Exit from I-91SB	CT Route 68 (Barnes Road) at Research Parkway	CT Route 68 (Barnes Road) at Williams Road	Research Parkway at Carpenter Lane	Research Parkway at Joseph Carini Drive	Research Parkway at Marlin Software Driveway	Segment of Research Parkway North of J. Carini Drive and South of Carpenter Lane	Research Parkway at Site Drive #1	Carpenter Lane at Site Drive #2	Total	
Year												
2017	1		3	2							6	
2018			1	2	4	1		1			9	
2019		1		3	3	2		1			10	
<u>Total</u>	<u>1</u>	<u>1</u>	<u>4</u>	<u>7</u>	<u>7</u>	<u>3</u>		<u>2</u>			<u>25</u>	
Crash Type												
Angle		1		2	4						7	
Front to Front	1		4	3	2	1		1			12	
Front to Rear											0	
Not Applicable				1	1	1		1			4	
Other				1							1	
Rear to Rear											0	
Rear to Side											0	
Sideswipe, Opposite Direction											0	
Sideswipe, Same Direction						1					1	
<u>Total</u>	<u>1</u>	<u>1</u>	<u>4</u>	<u>7</u>	<u>7</u>	<u>3</u>		<u>2</u>			<u>25</u>	
Severity												
Fatal Injury (K)											0	
Suspected Serious Injury (A)		1	1	2	1						5	
Suspected Minor Injury (B)				1							1	
Possible Injury (C)	1		3	4	1			1			10	
No Apparent Injury (O)					5	3		1			9	
Unknown											0	
<u>Total</u>	1	1	<u>4</u>	<u>7</u>	<u>7</u>	<u>3</u>		<u>2</u>			<u>25</u>	



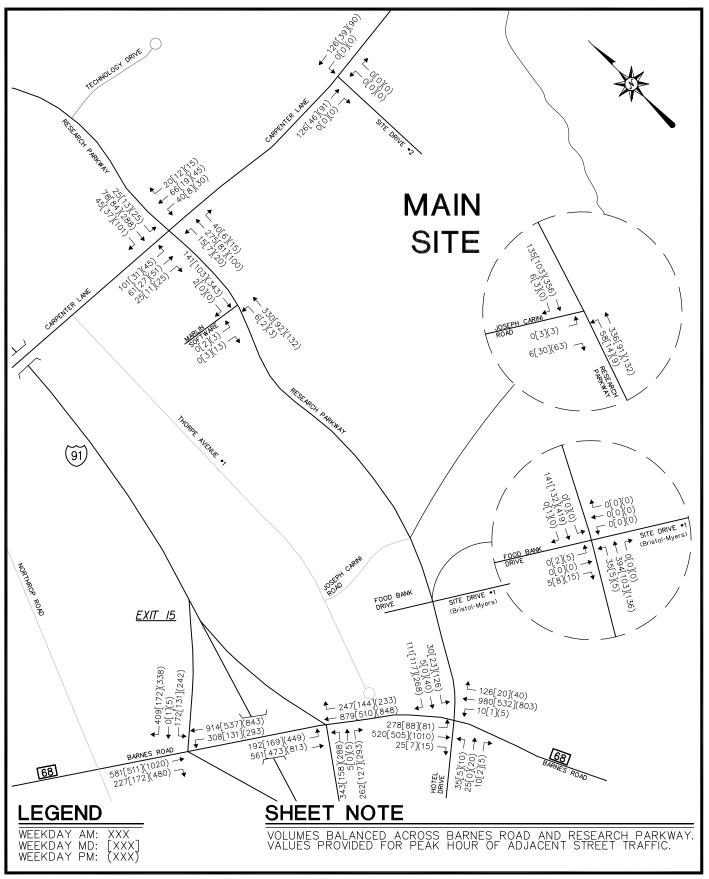
III. PROJECTED TRAFFIC CONDITIONS

In order to evaluate traffic conditions when the proposed development is completed in 2021, current traffic volumes were forecasted to the 2021 No Build Conditions (without the proposed delivery station development) and 2021 Build Conditions (with the proposed delivery station development). The projected traffic volumes on the roadway network under 2021 No Build conditions were assumed to include all existing traffic and new traffic resulting from background sources of traffic growth, independent of the proposed development.

No Build Traffic Volumes

A 1.0% annual growth rate was applied to the existing traffic volumes to develop the 2021 No Build traffic volumes. In addition to applying this growth rate, any approved or pending developments in the area that may add substantial traffic volume to the study intersections were considered. Any additional proposed improvements to the roadway, and intersections were checked with the Office of the State Traffic Administration (OSTA). There were none, thus annual growth volumes were added to the Existing Traffic Volumes to determine the 2021 No Build Traffic Volumes and are graphically illustrated in **Figure 3.1 and Figure 3.2**.





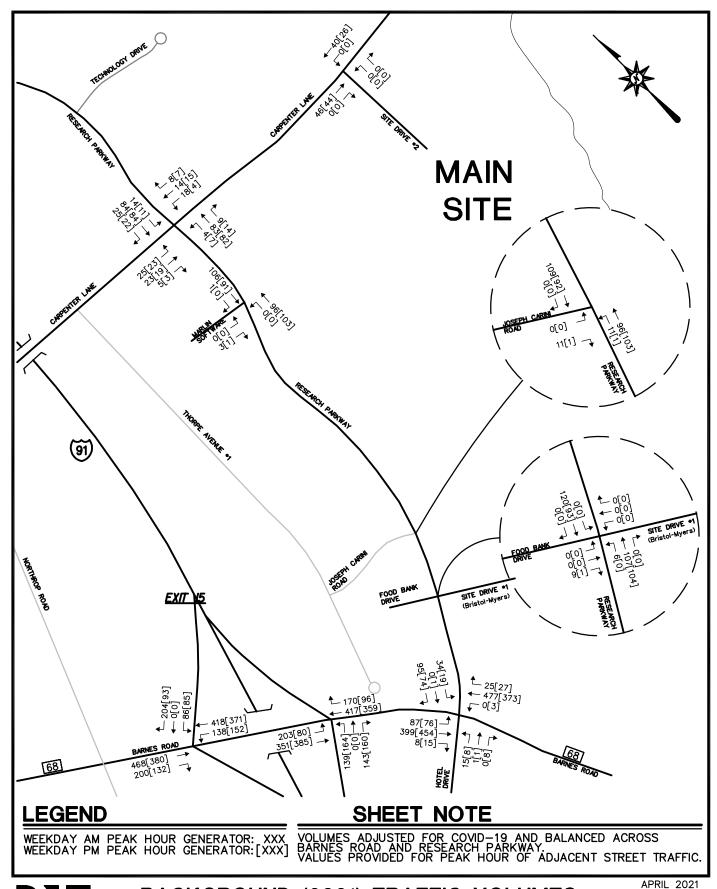


BACKGROUND (2021) TRAFFIC VOLUMES PROPOSED DEVELOPMENT WALLINGFORD, CONNECTICUT

SCHEMATIC, NOT TO SCALE

APRIL 2021

FIGURE 3.1





BACKGROUND (2021) TRAFFIC VOLUMES PROPOSED DEVELOPMENT WALLINGFORD, CONNECTICUT

SCHEMATIC, NOT TO SCALE

FIGURE 3.2

Trip Generation and On-Site Circulation

The level of traffic likely generated by the proposed delivery station has been estimated by the tenant to determine the potential traffic impact on the study intersections. The tenant completed a detailed analysis determining the number and time of the Site traffic arrivals and departures at the Site, which is a function of the delivery area population and business density. The Tenant anticipates that this facility will employ approximately 280 associates/managers on-site over various shifts during the day. All associates/managers will utilize one existing drive on Carpenter Lane.

Delivery stations operate 24/7 to support delivery of packages to at customer locations between 11:00 AM and 9:00 PM. At our proposed Wallingford, CT facility, the client anticipates approximately 32 line haul trucks delivering packages to the delivery station each day, primarily between the hours of 10:00 PM to 8:00 AM. The customer packages are sorted, picked to the delivery routes, placed onto movable racks and staged for dispatch. Approximately 121 associates and 27 managers support this operation and the shift structure is designed between 2:00 AM and 12:30 PM that mitigates traffic impact during rush hour periods. Additionally, there will be approximately 43 managers and dispatchers supervising the delivery operations, arriving at 6:00 AM and departing at 2:30 PM followed by another shift of dispatchers arriving at 1:30 PM and departing at 10:00 PM.

The delivery associates arrive at a delivery station at 9:20 AM. Starting at 9:50 AM and ending at 10:50 AM, 344 delivery vans will load and depart from the delivery station at a rate of 160 vans every 20 minutes to facilitate a regulated traffic flow into the surrounding area. The 1st wave of delivery vans leave at 10:10am. The departure window is designed to mitigate impact on rush hour periods. Approximately 8-10 hours after dispatch, delivery routes are completed, and the vans return to the station between 7:10 PM and 8:50 PM. The drivers park the delivery van on-site and leave using a personal vehicle.



The Client will also use "Flex" to deliver packages from this location. Flex works in concert with an advanced logistics systems and technology that the Client has been building since day one. The Client anticipates approximately 90 traditional passenger vehicles entering the facility staggered between 4:30 PM and 6:00 PM. Flex vehicles will load and depart every 15 minutes.

Approximately 43 associates will work in the delivery station between 12:00 PM and 10:30 PM to support the Flex and DSP drivers as they return to the station. After the check out and release of all delivery vehicles by 9:20 PM, delivery station associates prepare the delivery station for the next day's packages.

The delivery station is anticipated to generate a total of approximately 2,056 trips per day; the majority of which are off-peak hours.

The redevelopment of the Bristol Myers Site for delivery station use is expected to generate significantly less traffic than the historic actual usage. A traffic impact study prepared in 2003 by Wilbur Smith Associates for the Bristol Myers central utility plant (CUP) found the Site generated 620 morning and 535 afternoon peak hour trips, the highest documented volumes. A summary of the trip generation projections for the proposed delivery station is presented in **Table 2.1** during average daily operations. As indicated in this table, the proposed delivery station is projected to generate 3 (1 enter, 2 exit) vehicle trips, trucks only, during the weekday morning peak hour, 148 (0 enter, 148 exit) vehicle trips during the mid-day peak hour, 136 (91 enter, 45 exit) during the weekday evening peak hour, 427 (113 enter, 314 exit) vehicle trips during am peak generator hour, and 440 (220 enter, 220 exit) vehicle trips during pm peak generator hour.



Table 2.1 – Peak Hour Trip Generation (Weekday)

	Table 2.1 Peak Hour Trip Generation - Weekday (Client Provided)														
	Trips														
	Α	M Peak Hou	Jr	Mid-Day Peak Hour			PM Peak Hour			AM Peak Generator Hour			PM Peak Generator Hour		
	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out
LU-156: High-Cube Parcel Hub Warehouse (219 GFA) ¹	153	76	77	No Available Data			140	95	45	193	66	127	155	97	58
Bristol-Myers Squibb Cup Development	620	592	28	No Available Data		533	47	486	No Available Data		No Available Data				
Net Old Trips	<u>620</u>	<u>592</u>	<u>28</u>				<u>533</u>	<u>47</u>	<u>486</u>						
Associates/Managers	0	0	0	148	0	148	0	0	0	0	0	0	0	0	0
DSP	0	0	0	0	0	0	0	0	0	426	113	313	436	218	218
Flex Drivers	0	0	0	0	0	0	135	90	45	0	0	0	0	0	0
Trucks	3	1	2	0	0	0	1	1	0	1	0	1	4	2	2
<u>Net New Trips</u>	<u>3</u>	1	2	<u>148</u>	<u>0</u>	<u>148</u>	<u>136</u>	<u>91</u>	<u>45</u>	<u>427</u>	<u>113</u>	<u>314</u>	<u>440</u>	<u>220</u>	<u>220</u>
<u>Difference</u>	<u>-617</u>	<u>-591</u>	<u>-26</u>	<u>148</u>	<u>0</u>	<u>148</u>	<u>-397</u>	44	<u>-441</u>	<u>427</u>	<u>113</u>	<u>314</u>	440	220	220

Ref: Trip Generation developed by Tenant

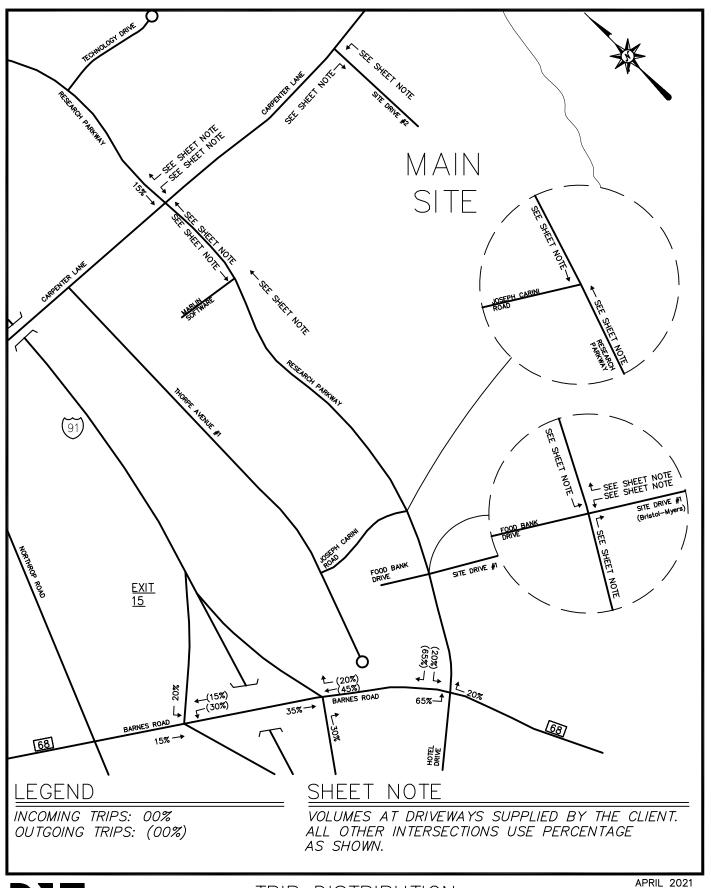
1: ITE Trip Generation Manual, 10th Edition Values for Land Use code: 156: High-Cube Parcel Hub Warehouse. It should be noted there are limited studies available for High-Cube Parcel Warehouse.



Trip Distribution

The directional distribution of traffic is typically a function of population densities, competing opportunities, existing travel patterns adjacent to the Site, and the efficiency and limitations of the existing roadway system. Based upon the Site's close proximity to CT Route 68 and Interstate 91, it is anticipated that the majority of employees/delivery vehicles will utilize these roadways for access and egress from the Site. The distribution of the anticipated traffic volumes was based on arrival / departure patterns shown in **Figure 4**. Note, that the percentages are a rough estimate of where total vehicles trip will be distributed. The distribution patterns was provided for the 2 driveways was based on purpose and usage by vehicle types. Thus, trucks would only utilize access via Site #1 (Research Parkway), associates would only utilize access via Site #2 (Carpenter Lane), while Flex and DSP Vans would enter via Site #1 ((Research Parkway) and leave via the two Site egress points (Site#1 and Site#2).







TRIP DISTRIBUTION
PROPOSED DEVELOPMENT
WALLINGFORD, CONNECTICUT
SCHEMATIC, NOT TO SCALE

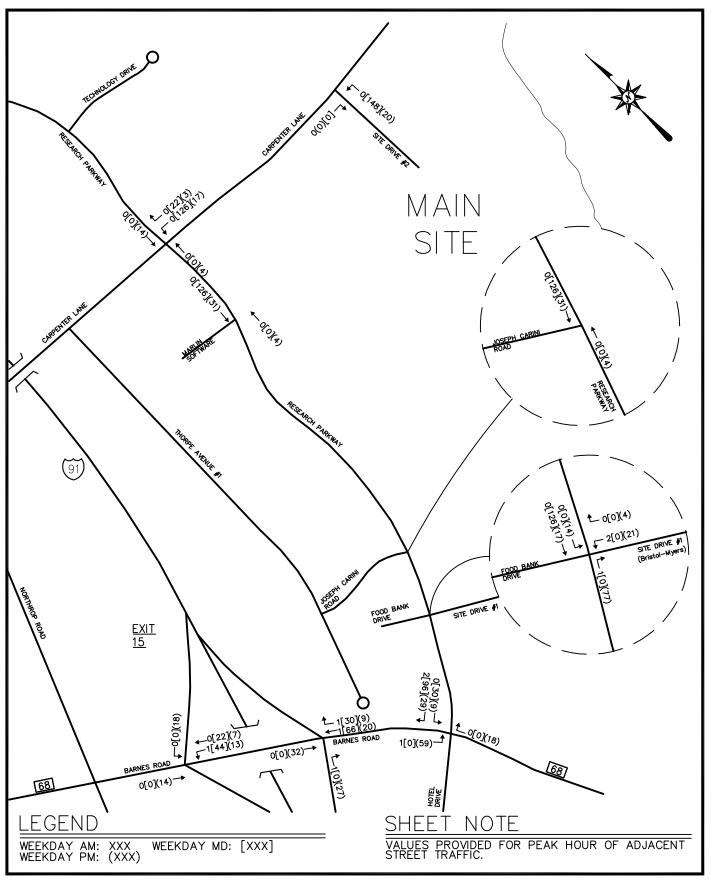
AI NIL 2021

FIGURE 4

Assigned Site Generated Traffic Volumes

The generated trips are multiplied by the corresponding proportions to ascertain the Site-generated traffic volumes. **Figure 5.1 and Figure 5.2** shows the Site generated peak hour traffic assigned to the nearby roadway network during an average weekday. Note, at the Site access / egress, the assigned volumes follow distribution patterns established by the site operations and vehicle types.

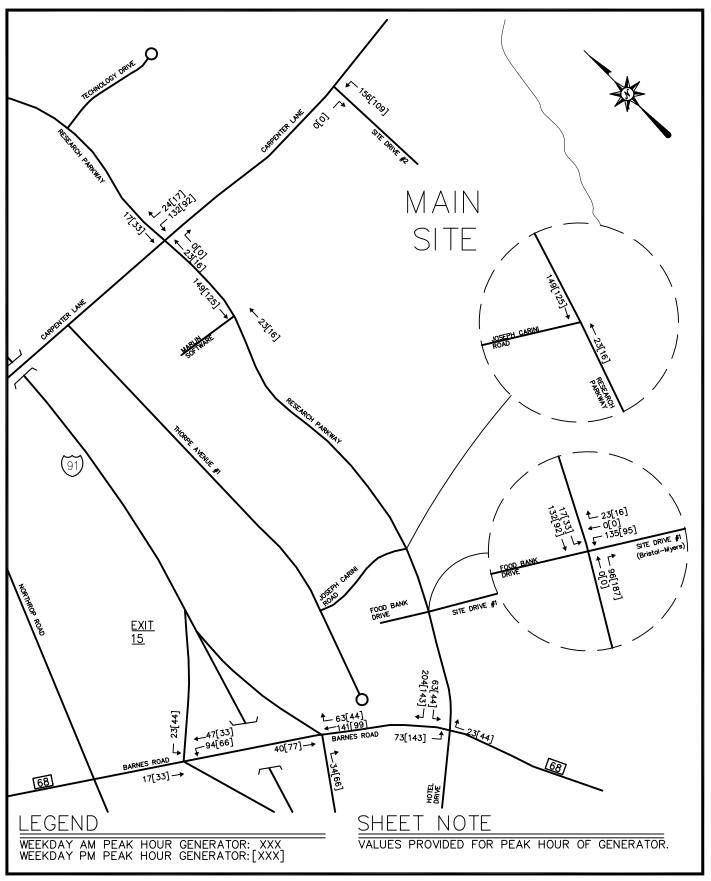






SITE GENERATED TRAFFIC PROPOSED DEVELOPMENT WALLINGFORD, CONNECTICUT SCHEMATIC, NOT TO SCALE APRIL 2021

FIGURE 5.1





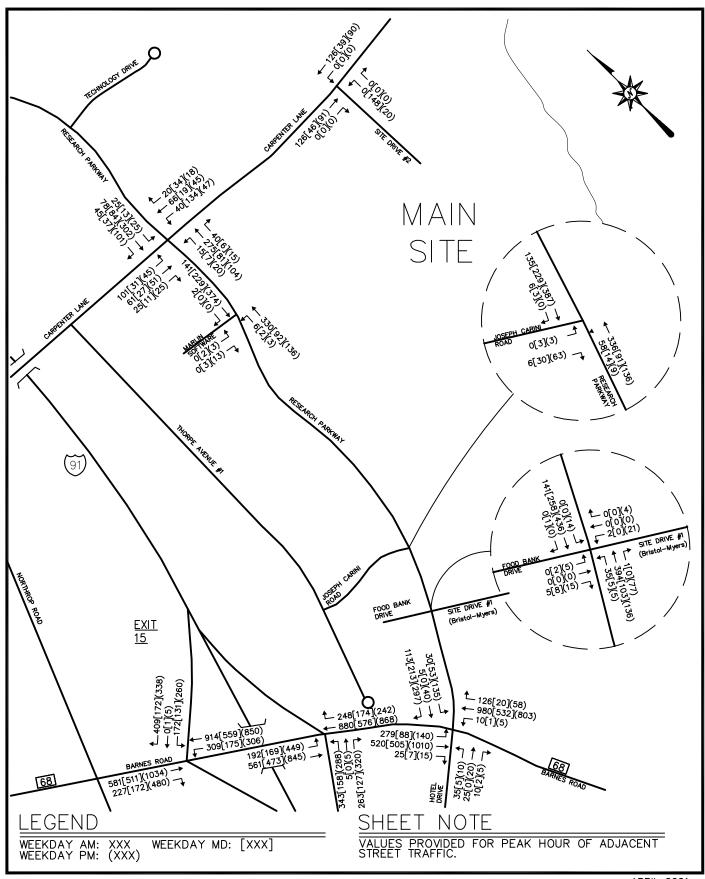
SITE GENERATED TRAFFIC PROPOSED DEVELOPMENT WALLINGFORD, CONNECTICUT SCHEMATIC, NOT TO SCALE APRIL 2021

FIGURE 5.2

Build Traffic Volumes

The assigned site-generated traffic volumes were superimposed onto the 2021 No Build Traffic volumes to establish the future 2021 Build Traffic volumes, as illustrated in **Figure 6.1** and **Figure 6.2**.



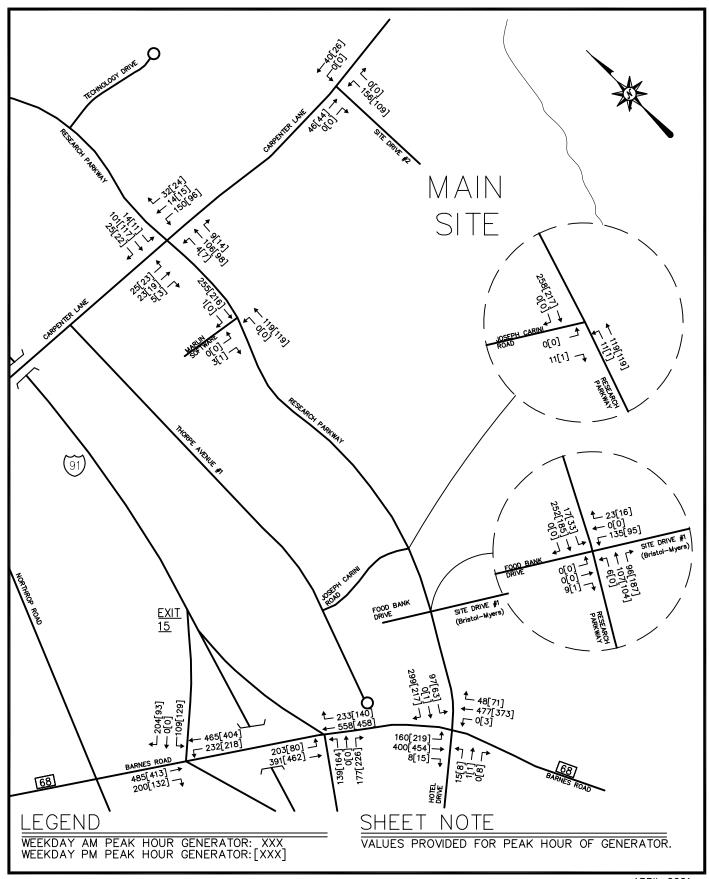




BUILD (2021) TRAFFIC VOLUMES PROPOSED DEVELOPMENT WALLINGFORD, CONNECTICUT SCHEMATIC, NOT TO SCALE

APRIL 2021

FIGURE 6.1





BUILD (2021) TRAFFIC VOLUMES PROPOSED DEVELOPMENT WALLINGFORD, CONNECTICUT SCHEMATIC, NOT TO SCALE

APRIL 2021

FIGURE 6.2

IV. ROADWAY ADEQUACY

The intersection capacity analyses were prepared using the methodology described in the <u>Highway Capacity Manual</u> (HCM), published by the Transportation Research Board (TRB) for the existing and build traffic volume scenarios to simulate the traffic impact of a proposed Delivery Station on the adjacent roadway network. As documented in the HCM, intersection performance is influenced by several factors, including traffic demand; lane configurations; lane widths; turning restrictions; roadway grades; and signal phasing. The existing physical roadway characteristics and signal phasing and timing settings were determined by observing conditions in the field and reviewing the current traffic control signal plans provided by the Connecticut Department of Transportation.

Synchro™ software (Version 9) was used to model the study intersections based on the parameters mentioned above. The Synchro software is widely utilized by the traffic engineering industry and is consistent with the procedures in the HCM.



Signalized Intersections

Signalized intersections are analyzed in terms of vehicle capacity and motorist delay. Capacity is the maximum rate of vehicle flow through an intersection given typical operating conditions. The number of vehicles traveling through an intersection is divided by the capacity of the intersection to determine an overall volume to capacity ratio (v/c). A v/c value under 1.00 indicates that the number of vehicles traveling through an intersection is less than capacity.

As stated in the HCM, level of service for signalized intersections is defined in terms of control delay. Control delay measures the increase in delay a motorist experiences while encountering a traffic control signal. These factors include initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. This delay is measured per vehicle for a 15-minute analysis period and is associated with the levels of service, which are summarized in **Table 3** below:

Table 3 – Signalized Intersection – Level of Service

Level of Service ¹	Average Control Delay (seconds per vehicle)
Α	≤ 10
В	> 10 and ≤ 20
С	> 20 and ≤ 35
D	> 35 and ≤ 55
Е	> 55 and ≤ 80
F	> 80

¹If volume-to-capacity ratio is over 1.0 for a lane group, LOS F. Intersection and approach-based LOS is based solely on control delay.

Level of service A represents the optimum level where most motorists arrive at the subject intersection during the green phase and thus experience virtually no delay. Conversely, level of service F indicates that motorists are delayed over 80 seconds while traveling



through the intersection and can often imply a complete breakdown of that location. Level of service D is generally considered the limit of acceptable motorist delay.

Unsignalized Intersections

Unsignalized intersections are generally evaluated in terms of average side street delay, as well as the capacity of the roadway approach. This analysis is based on the random arrival of vehicles and the associated gaps generated by this random arrival within the traffic stream. There is no overall level of service for unsignalized intersections. The relationship between levels of service and average side street delay are summarized in **Table 4** below:

Table 4 – Unsignalized Intersection – Level of Service

<u> </u>								
<u>Level of Service¹</u>	Average Control Delay (seconds per vehicle)							
Α	≤ 10							
В	> 10 and ≤ 15							
С	> 15 and ≤ 25							
D	> 25 and ≤ 35							
Е	> 35 and ≤ 50							
F	> 50							

¹If volume-to-capacity ratio is over 1.0 for a lane group, LOS F. Intersection and approach-based LOS is based solely on control delay.

It should be noted that unsignalized levels of service do not correspond to those for signalized intersections, nor do they constitute warrants for the installation of traffic control signals. It is also recognized that the methodology is overly conservative and that computations can indicate operations at poor levels of service (E or F) with even very low side street volumes, although they often function without serious problems in the real world. **Table 5.1** through **Table 5.2** shows the levels of service (LOS) at the subject intersections. Synchro result tables provided in the **Appendix**.



Table 5.1 – Peak Hour Levels of Service (AM, Mid-Day, PM)

	<u>AM</u>						<u>-Day</u>		<u>PM</u>			
Intersection	Existing	2021 No Build	2021 Build	2021 Build Improved	Existing	2021 No Build	2021 Build	2021 Build Improved	Existing	2021 No Build	2021 Build	2021 Build Improved
Route 68 (Barnes Road) at Interstate 91 Southbound Exit 15 On/Off-Ramps ¹	C/21.9	C/22.0	C/22.1	C/22.1	B/14.5	B/14.6	B/15.3	B/15.3	C/29.4	C/31.3	C/33.0	C/32.8
Route 68 EB Thru	D/0.73/#260	D/0.75/#265	D/0.75/#265	D/0.75/#265	B/0.40/160	B/0.41/160	B/0.43/160	B/0.43/160	D/0.98/#435	D/1.00/#445	E/1.02/#450	E/1.02/#450
Route 68 EB Right (345')	A/0.41/60	A/0.42/60	A/0.42/60	A/0.42/60	A/0.26/40	A/0.26/40	A/0.27/40	A/0.27/40	A/0.55/55	A/0.55/60	A/0.56/60	A/0.56/60
Route 68 WB Left (910')	C/0.76/m190	C/0.76/m190	C/0.77/m190	C/0.77/m195	C/0.54/65	C/0.54/65	C/0.65/80	C/0.65/80	D/0.82/m140	D/0.82/m160	D/0.86/m145	D/0.86/m145
Route 68 WB Thru	A/0.58/m235	A/0.58/m235	A/0.58/m235	A/0.58/m240	A/0.25/25	A/0.25/25	A/0.26/25	A/0.26/25	A/0.49/m25	A/0.50/m25	A/0.50/m25	A/0.50/m25
Exit 15 Off-Ramp SB Left (240')	C/0.43/120	C/0.43/120	C/0.43/120	C/0.43/120	C/0.43/95	C/0.44/95	C/0.44/95	C/0.44/95	D/0.75/#200	D/0.75/#205	D/0.78/#215	D/0.78/#215
Exit 15 Off-Ramp SB Left/Right	D/0.75/185	D/0.76/185	D/0.76/185	D/0.76/185	D/0.53/100	D/0.54/100	D/0.54/100	D/0.54/100	E/0.83/#220	E/0.84/#225	E/0.85/#235	E/0.85/#235
Exit 15 Off-Ramp SB Right (240')	D/0.69/170	D/0.69/170	D/0.69/170	D/0.69/170	D/0.50/90	D/0.50/90	D/0.50/90	D/0.50/90	D/0.76/#195	D/0.76/#200	D/0.77/#205	D/0.77/#205
Route 68 (Barnes Road) at Interstate 91 Northbound Exit 15 On/Off-Ramps ¹	C/26.5	C/26.7	C/26.8	C/26.9	B/12.8	B/12.8	B/12.8	B/12.9	D/37.4	D/38.2	D/43.6	D/36.2
Route 68 EB Left (910')	D/0.61/m105	D/0.62/m105	D/0.62/m105	D/0.62/m105	C/0.64/55	C/0.64/55	C/0.64/55	C/0.64/55	C/0.84/m115	C/0.84/m115	C/0.84/m115	C/0.84/m115
Route 68 EB Thru	A/0.30/25	A/0.31/25	A/0.31/25	A/0.30/25	A/0.21/25	A/0.21/25	A/0.21/25	A/0.21/25	A/0.49/m25	A/0.49/m25	A/0.51/m25	A/0.50/m25
Route 68 WB Thru	C/0.86/m#275	D/0.87/m#270	D/0.87/m#275	C/0.85/m#275	B/0.38/75	B/0.38/75	B/0.43/95	B/0.43/95	F/1.09/m#345	F/1.10/m#345	F/1.13/m#355	F/1.09/m#355
Route 68 WB Right (480')	B/0.37/m50	B/0.37/m50	B/0.37/m50	B/0.37/m50	A/0.24/25	A/0.24/25	A/0.28/25	A/0.28/25	A/0.39/m35	A/0.40/m30	A/0.41/m35	A/0.40/m35
Exit 15 Off-Ramp NB Left (180')	C/0.53/150	C/0.53/150	C/0.53/150	D/0.68/185	C/0.32/75	C/0.33/75	C/0.33/75	C/0.43/90	C/0.47/135	C/0.47/135	C/0.47/135	D/0.73/195
Exit 15 Off-Ramp NB Thru	C/0.56/150	C/0.56/150	C/0.56/150	D/0.76/195	C/0.35/75	C/0.35/75	C/0.35/75	D/0.50/95	C/0.49/135	C/0.50/135	C/0.50/135	E/0.83/#230
Exit 15 Off-Ramp NB Right (180')	D/0.80/#215	D/0.80/#220	D/0.80/#225	D/0.64/165	D/0.54/105	D/0.54/105	D/0.54/105	C/0.43/85	E/0.93/#300	E/0.94/#305	F/1.03/#340	D/0.70/180

Overall Intersection – X/XX.X - Level of Service/Intersection Signal Delay in sec Approaches - X/X.XX/XXX – Level of Service/Volume to Capacity Ratio/95% Queue Length in ft

Movement (XX') – Storage length



¹ – Signalized Intersection

² – Unsignalized Intersections, controlled movements

^{# – 95}th 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.

		<u>A</u>	M			<u>Mid</u>	-Da <u>y</u>			<u>P</u>	<u>M</u>	
Intersection	Existing	2021 No Build	2021 Build	2021 Build Improved	Existing	2021 No Build	2021 Build	2021 Build Improved	Existing	2021 No Build	2021 Build	2021 Build Improved
Route 68 (Barnes Road) at Hotel Drive and Research Parkway ¹	D/35.7	D/37.5	D/37.5	D/37.6	A/9.3	A/9.3	B/10.6	B/10.6	C/23.5	C/24.0	C/24.8	C/25.1
Route 68 EB Left (570')	C/0.39/m105	C/0.39/m105	C/0.39/m105	C/0.39/110	D/0.47/85	D/0.47/85	D/0.46/90	D/0.46/90	C/0.21/m70	C/0.22/m70	C/0.38/m110	D/0.38/m120
Route 68 EB Thru/Right	B/0.62/130	B/0.62/140	B/0.62/135	B/0.62/145	A/0.24/35	A/0.24/35	A/0.24/40	A/0.24/40	B/0.76/m80	B/0.76/m80	B/0.77/m80	B/0.77/85
Route 68 WB Left (100')	D/0.09/25	D/0.09/25	D/0.09/25	D/0.09/25	C/0.01/25	C/0.01/25	C/0.01/25	C/0.01/25	D/0.05/25	D/0.05/25	D/0.05/25	D/0.05/25
Route 68 WB Thru	E/1.02/#465	E/1.03/#470	E/1.03/#470	E/1.03/#470	A/0.29/130	A/0.29/130	B/0.30/130	B/0.30/130	C/0.87/#315	D/0.88/#320	D/0.89/#320	D/0.89/#320
Route 68 WB Right (250')	A/0.19/35	A/0.19/35	A/0.19/35	A/0.19/35	A/0.02/25	A/0.02/25	A/0.02/25	A/0.02/25	A/0.07/25	A/0.07/25	A/0.10/25	A/0.10/25
Hotel NB Left	D/0.46/40	D/0.46/40	D/0.46/40	D/0.46/40	C/0.09/25	C/0.09/25	C/0.09/25	C/0.09/25	C/0.08/25	C/0.08/25	C/0.09/25	C/0.09/25
Hotel NB Thru/Right	C/0.31/30	C/0.31/30	C/0.31/30	C/0.31/30	A/0.01/25	A/0.01/25	A/0.01/25	A/0.01/25	C/0.10/30	C/0.10/30	C/0.10/30	C/0.10/30
Research Parkway SB Left/Thru (345')	D/0.28/45	D/0.28/45	D/0.28/45	D/0.28/45	C/0.19/35	C/0.19/35	D/0.45/65	D/0.45/65	D/0.80/150	D/0.80/150	E/0.82/#170	E/0.82/#170
Research Parkway SB Right	A/0.19/25	A/0.19/25	A/0.19/30	A/0.19/30	A/0.32/35	A/0.32/35	A/0.49/55	A/0.49/55	B/0.44/105	B/0.44/105	B/0.49/125	B/0.49/125
Research Parkway at Food Bank Drive and Site Drive 1 1-2	-	-	A/1.9	A/1.9	-	-	A/1.9	A/1.9	-	-	A/6.9	A/6.9
Food Bank Drive EB Left	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	B/0.01/25	B/0.01/25	B/0.01/25	B/0.18/25	C/0.04/25	C/0.04/25	C/0.03/25	C/0.03/25
Food Bank Drive EB Right/Thru	A/0.01/25	A/0.01/25	A/0.01/25	A/0.01/25	A/0.01/25	A/0.00/25	A/0.02/25	A/0.18/25	B/0.07/25	B/0.07/25	A/0.07/25	A/0.07/25
Site Drive 1 WB Left	A/0.00/25	A/0.00/25	B/0.01/25	B/0.01/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	C/0.08/30	C/0.08/30
Site Drive 1 WB Thru/Right	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.01/25	A/0.01/25
Research Parkway NB Left (140')	A/0.04/25	A/0.04/25	A/0.05/25	A/0.05/25	A/0.00/25	A/0.00/25	A/0.01/25	A/0.01/25	A/0.01/25	A/0.01/25	A/0.02/25	A/0.02/25
Research Parkway NB Thru	-	-	A/0.34/80	A/0.34/80	-	-	A/0.09/25	A/0.09/25	-	-	A/0.17/40	A/0.17/40
Research Parkway NB Right	-	-	A/0.00/25	A/0.00/25	-	-	A/0.00/25	A/0.00/25	-	-	A/0.10/25	A/0.10/25
Research Parkway SB Left (115')	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.02/25	A/0.02/25
Research Parkway SB Thru/Right	-	-	A/0.12/30	A/0.12/30	-	-	A/0.20/60	A/0.20/60	-	-	A/0.51/140	A/0.51/140
Research Parkway at Joseph Carini Road ²	-	-	-	-	-	-	-	-	-	-	-	-
Joseph Carini Road EB Left/Right	B/0.02/25	B/0.02/25	B/0.02/25	B/0.02/25	A/0.06/25	A/0.06/25	B/0.07/25	B/0.07/25	B/0.20/25	B/0.20/25	B/0.21/25	B/0.21/25
Research Parkway NB Left/Thru	A/0.05/25	A/0.05/25	A/0.05/25	A/0.05/25	A/0.01/25	A/0.01/25	A/0.02/25	A/0.01/25	A/0.01/25	A/0.01/25	A/0.01/25	A/0.01/25
Research Parkway SB Thru/Right	-	-	-	-	-	-	-	-	-	-	-	-

¹ – Signalized Intersection

² – Unsignalized Intersections, controlled movements

– 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.

Movement (XX') – Storage length



		<u>A</u>	<u>.M</u>			<u>Mid</u>	<u>-Day</u>			<u>P</u>	<u>'M</u>	
Intersection	Existing	2021 No Build	2021 Build	2021 Build Improved	Existing	2021 No Build	2021 Build	2021 Build Improved	Existing	2021 No Build	2021 Build	2021 Build Improved
Research Parkway at Marlin Software Driveway ²	-	-	-	-	-	-	-	-	-	-	-	-
Marlin Software Driveway EB Left/Right	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	B/0.01/25	B/0.01/25	B/0.01/25	B/0.01/25	B/0.05/25	B/0.05/25	B/0.05/25	B/0.05/25
Research Parkway NB Left (100')	A/0.01/25	A/0.01/25	A/0.01/25	A/0.01/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25
Research Parkway NB Thru	-	-	-	-	-	-	-	-	-	-	-	-
Research Parkway SB Thru/Right	-	-	-	-	-	-	-	-	-	-	-	-
Research Parkway at Carpenter Lane ²	-	-	-	-	-	-	-	-	-	-	-	-
Carpenter Lane EB Right/Thru/ Left	C/0.53/80	C/0.54/80	C/0.54/80	C/0.54/195	A/0.10/25	A/0.10/25	A/0.11/25	A/0.11/25	B/0.24/25	B/0.24/25	B/0.25/25	B/0.25/40
Carpenter Lane WB Right/Thru/ Left	B/0.33/35	B/0.34/40	B/0.34/40	B/0.34/80	A/0.07/25	A/0.07/25	B/0.34/40	B/0.34/25	B/0.20/25	B/0.21/25	B/0.26/25	B/0.26/25
Research Parkway NB Right/Thru/ Left	D/0.79/190	D/0.79/195	D/0.79/195	D/0.79/40	A/0.13/25	A/0.13/25	A/0.15/25	A/0.15/40	B/0.33/35	B/0.33/35	B/0.35/40	B/0.35/25
Research Parkway SB Right/Thru/ Left	B/0.35/40	B/0.36/40	B/0.36/40	B/0.36/40	A/0.17/25	A/0.18/25	A/0.20/25	A/0.20/25	C/0.78/200	C/0.79/205	D/0.84/240	D/0.84/240
Carpenter Lane at Site Drive 2 ²	-	-	-	-	-	-	-	-	-	-	-	-
Carpenter Lane EB Right/Thru/ Left	-	-	-	-	-	-	-	-	-	-	-	-
Carpenter Lane WB Right/Thru/ Left	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25
Site Drive 2 NB Right/ Left	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.18/25	A/0.18/25	A/0.00/25	A/0.00/25	A/0.03/25	A/0.03/25



¹ – Signalized Intersection

²– Unsignalized Intersections, controlled movements

^{# – 95}th 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.

Movement (XX') – Storage length

Table 5.2 – Peak Hour Levels of Service (AM/PM Peak Hour Generator)

		AM Peak Hou	<u>r Generator</u>			<u>PM Peak Ho</u>	our of Generator	
Intersection	Existing	2021 No Build	2021 Build	2021 Build Improved	Existing	2021 No Build	2021 Build	2021 Build Improved
Route 68 (Barnes Road) at Interstate 91 Southbound Exit 15 On/Off-Ramps ¹	B/15.2	B/15.3	B/17.6	B/17.6	B/13.1	B/13.1	B/14.7	B/14.8
Route 68 EB Thru	B/0.38/145	B/0.38/145	C/0.48/150	C/0.48/150	B/0.27/115	B/0.28/115	B/0.37/125	B/0.37/125
Route 68 EB Right (345')	A/0.30/45	A/0.30/45	A/0.34/45	A/0.34/45	A/0.20/30	A/0.20/30	A/0.23/30	A/0.23/30
Route 68 WB Left (910')	C/0.62/70	C/0.62/75	C/0.77/#200	C/0.77/#200	C/0.61/65	C/0.61/75	C/0.67/90	C/0.67/90
Route 68 WB Thru	A/0.25/25	A/0.25/25	A/0.28/25	A/0.28/25	A/0.22/25	A/0.23/25	A/0.25/25	A/0.25/25
Exit 15 Off-Ramp SB Left (240')	C/0.32/70	C/0.33/70	C/0.40/90	C/0.40/90	C/0.31/65	C/0.31/65	C/0.37/75	C/0.37/75
Exit 15 Off-Ramp SB Left/Right	D/0.57/100	D/0.57/105	D/0.57/105	D/0.57/105	C/0.35/65	C/0.35/70	C/0.40/80	C/0.40/80
Exit 15 Off-Ramp SB Right (240')	C/0.52/95	C/0.52/95	C/0.51/95	C/0.51/95	C/0.32/65	C/0.32/65	C/0.37/70	C/0.37/70
Route 68 (Barnes Road) at Interstate 91 Northbound Exit 15 On/Off-Ramps ¹	B/14.9	B/15.0	B/15.1	B/14.7	B/12.2	B/12.1	B/12.9	B/13.1
Route 68 EB Left (910')	C/0.75/#180	C/0.76/#185	C/0.77/#190	C/0.74/#180	C/0.39/30	C/0.39/30	C/0.36/30	C/0.37/30
Route 68 EB Thru	A/0.17/25	A/0.18/25	A/0.20/25	A/0.19/25	A/0.18/25	A/0.18/25	A/0.23/25	A/0.22/25
Route 68 WB Thru	B/0.34/60	B/0.34/60	B/0.47/110	B/0.45/110	A/0.26/45	A/0.26/45	A/0.36/80	A/0.34/80
Route 68 WB Right (480')	A/0.28/25	A/0.28/25	A/0.37/25	A/0.36/25	A/0.16/25	A/0.16/25	A/0.24/25	A/0.23/25
Exit 15 Off-Ramp NB Left (180')	C/0.27/65	C/0.27/65	C/0.25/65	C/0.45/95	C/0.31/75	C/0.31/75	C/0.27/75	C/0.52/110
Exit 15 Off-Ramp NB Thru	C/0.29/65	C/0.29/65	C/0.27/65	D/0.53/100	C/0.34/75	C/0.34/75	C/0.29/75	D/0.59/115
Exit 15 Off-Ramp NB Right (180')	D/0.57/110	D/0.57/115	D/0.65/135	C/0.44/90	D/0.59/120	D/0.59/125	D/0.73/170	C/0.50/105

Movement (XX') – Storage length



¹ – Signalized Intersection

² – Unsignalized Intersections, controlled movements

^{# – 95}th 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.

		AM Peak Hou	<u>r Generator</u>			PM Peak Ho	our of Generator	
Intersection	Existing	2021 No Build	2021 Build	2021 Build Improved	Existing	2021 No Build	2021 Build	2021 Build Improved
Route 68 (Barnes Road) at Hotel Drive and Research Parkway ¹	B/10.9	B/10.9	B/17.1	B/17.1	A/8.6	A/8.6	B/14.2	B/14.2
Route 68 EB Left (570')	D/0.55/80	D/0.55/80	D/0.74/#190	D/0.74/#190	D/0.42/65	D/0.42/65	D/0.66/#245	D/0.66/#255
Route 68 EB Thru/Right	A/0.23/30	A/0.23/30	A/0.25/35	A/0.25/40	A/0.24/35	A/0.25/35	A/0.27/45	A/0.27/50
Route 68 WB Left (100')	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	C/0.03/25	C/0.03/25	C/0.03/25	C/0.03/25
Route 68 WB Thru	A/0.28/115	A/0.28/115	B/0.35/115	B/0.35/115	A/0.22/85	A/0.22/85	B/0.31/85	B/0.31/85
Route 68 WB Right (250')	A/0.03/25	A/0.03/25	A/0.07/25	A/0.07/25	A/0.03/25	A/0.03/25	A/0.12/25	A/0.12/25
Hotel NB Left	D/0.27/25	D/0.27/25	C/0.24/25	C/0.24/25	C/0.07/25	C/0.07/25	C/0.07/25	C/0.07/25
Hotel NB Thru/Right	C/0.02/25	C/0.02/25	C/0.01/25	C/0.01/25	B/0.07/25	B/0.07/25	B/0.06/25	B/0.06/25
Research Parkway SB Left/Thru (345')	D/0.28/45	D/0.28/45	D/0.63/95	D/0.63/95	C/0.15/30	C/0.15/30	D/0.47/70	D/0.47/70
Research Parkway SB Right	A/0.30/25	A/0.30/25	B/0.63/100	B/0.63/100	A/0.22/25	A/0.23/25	A/0.39/40	A/0.39/40
Research Parkway at Food Bank Drive and Site Drive 1 1-2	-	-	B/10.3	B/10.3	-	-	A/8.7	A/8.7
Food Bank Drive EB Left	A/0.00/25	A/0.00/25	A/0.00/25	A/0.02/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25
Food Bank Drive EB Right/Thru	A/0.02/25	A/0.02/25	A/0.02/25	C/0.49/95	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25
Site Drive 1 WB Left	A/0.00/25	A/0.00/25	C/0.49/95	A/0.03/25	A/0.00/25	A/0.00/25	B/0.35/60	B/0.35/60
Site Drive 1 WB Thru/Right	A/0.00/25	A/0.00/25	A/0.03/25	A/0.02/25	A/0.00/25	A/0.00/25	A/0.02/25	A/0.02/25
Research Parkway NB Left (140')	A/0.01/25	A/0.01/25	A/0.02/25	A/0.24/50	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25
Research Parkway NB Thru	-	-	A/0.24/50	A/0.18/25	-	-	A/0.13/55	A/0.13/55
Research Parkway NB Right	-	-	A/0.18/25	A/0.03/25	-	-	A/0.22/35	A/0.22/35
Research Parkway SB Left (115')	A/0.00/25	A/0.00/25	A/0.03/25	A/0.44/125	A/0.00/25	A/0.00/25	A/0.05/25	A/0.05/25
Research Parkway SB Thru/Right	-	-	B/0.44/125	A/0.00/25	-	-	B/0.24/85	B/0.24/85
Research Parkway at Joseph Carini Road ²	-	-	-	-	-	-	-	-
Joseph Carini Road EB Left/Right	A/0.02/25	A/0.02/25	B/0.03/25	B/0.03/25	A/0.00/25	A/0.00/25	A/0.01/25	A/0.01/25
Research Parkway NB Left/Thru	A/0.01/25	A/0.01/25	A/0.01/25	A/0.01/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25
Research Parkway SB Thru/Right	-	-	-	-	-	-	-	-

¹ – Signalized Intersection

– 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.

Movement (XX') – Storage length



² – Unsignalized Intersections, controlled movements

		<u>AM Peak Hou</u>	<u>r Generator</u>			<u>PM Peak Ho</u>	our of Generator	
Intersection	Existing	2021 No Build	2021 Build	2021 Build Improved	Existing	2021 No Build	2021 Build	2021 Build Improved
Research Parkway at Marlin Software Driveway ²		_	-	-	-	-	-	-
Marlin Software Driveway EB Left/Right	A/0.01/25	A/0.01/25	B/0.01/25	B/0.01/25	A/0.00/25	A/0.00/25	A/0.01/25	A/0.01/25
Research Parkway NB Left (100')	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25
Research Parkway NB Thru	-	-	-	-	-	-	-	-
Research Parkway SB Thru/Right	-	-	-	-	-	-	-	-
						T		
Research Parkway at Carpenter Lane ²	-	-	-	-	-	-	-	-
Carpenter Lane EB Right/Thru/ Left	A/0.12/25	A/0.12/25	B/0.15/25	B/0.15/25	A/0.09/25	A/0.09/25	A/0.10/25	A/0.10/25
Carpenter Lane WB Right/Thru/ Left	A/0.12/25	A/0.12/25	C/0.66/125	C/0.66/125	A/0.05/25	A/0.05/25	A/0.28/30	A/0.28/30
Research Parkway NB Right/Thru/ Left	A/0.17/25	A/0.17/25	B/0.27/30	B/0.27/30	A/0.17/25	A/0.17/25	A/0.22/25	A/0.22/25
Research Parkway SB Right/Thru/ Left	A/0.23/25	A/0.23/25	B/0.34/40	B/0.34/40	A/0.20/25	A/0.21/25	A/0.30/30	A/0.30/30
						_		
Carpenter Lane at Site Drive 2 ²	-	-	-	-	-	-	-	-
Carpenter Lane EB Right/Thru/ Left	-	-	-	-	-	-	-	-
Carpenter Lane WB Right/Thru/ Left	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25
Site Drive 2 NB Right/ Left	A/0.00/25	A/0.00/25	A/0.19/25	A/0.19/25	A/0.00/25	A/0.00/25	A/0.13/25	A/0.13/25

– 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.

Movement (XX') – Storage length



¹ – Signalized Intersection

²– Unsignalized Intersections, controlled movements

As illustrated in **Table 5.1** through **Table 5.2**, there are three signalized intersections along Route 68 (Barnes Road) with overall acceptable traffic operations during AM, Mid-Day, PM, AM Peak Generator, and PM Peak Generator Peak Hour. Some deterioration is observed at specific movements, however overall intersections performance is acceptable. Certain movements at signalized intersections are projected to perform at LOS E /F that is generally considered undesirable motorist delay, these are:

- Route 68 (Barnes Road) at Interstate 91 Southbound Exit 15 On/Off-Ramps:
 - o Route 68 Eastbound Thru (PM Build
 - o Exit 15 Off-Ramp SB Left/Right (All PM Scenarios)
- Route 68 (Barnes Road) at Interstate 91 Northbound Exit 15 On/Off-Ramps
 - o Route 68 WB Thru (All PM Scenarios)
 - o Exit 15 Off-Ramp NB Right (All PM Scenarios)
- Route 68 (Barnes Road) at Hotel Drive and Research Parkway:
 - o Route 68 WB Thru (All AM Scenarios)
 - o Research Parkway SB Left/Thru (PM Build)

From the analysis the Build Scenarios there are low impacts to the roadway network for the proposed delivery station facility. At the proposed development driveway (Site #1) with Research Parkway in the existing and no build conditions, the intersection operates as a two-way stop-controlled intersection with stop-control on the driveways. As this is formerly signalized intersection that operates in "Flash" mode, for all build scenarios, the intersection signal was activated. As such, the LOS for all build scenario periods, weekday operates at LOS A and LOS B. At the second access point to the site at Carpenter Lane performs adequately for all movements. The stop-controlled movement from the Site #2 approach performs at LOS A and LOS B.



V. CONCLUSIONS AND RECOMMENDATIONS

This traffic study has been prepared for a new tenant and change of use of an existing building at 5 Research Parkway in Wallingford, CT. The focus of this study was to evaluate the traffic flows and operating conditions on the roadways and intersections projected to be used by motorists traveling to and from the proposed development and to quantify the potential traffic impacts on these roadways and intersections. After analyses of the Existing and No Build Scenarios of the AM, Mid-Day, PM, AM Peak Generator, and PM Peak Generator Peak Hours there are no notable deterioration from the other proposed developments. For build conditions, a build improved scenario was included.

The redevelopment of the former Bristol Myers Site for package delivery station use is expected to generate significantly less traffic than the historic actual usage, or that would be generated by re-occupancy of the Site by a similar (office) user. The project will not have significant impact on roadway capacity compared to the prior full use of the facility and Site. The existing signalized driveway on Research Parkway will service fewer peak hour trips than under the Bristol Myers use. No large trucks are anticipated at the new access point on Carpenter Lane.

At the three signalized intersections along Route 68 (Barnes Road) with overall acceptable traffic operations during all average weekday scenarios analyzed. Some deterioration is observed at specific movements; however, overall intersections performance is acceptable. During some periods, certain movements at signalized intersections are projected to perform at LOS E /F that is generally considered undesirable motorist delay.

A holiday season analysis was performed per town peer review request and included in the **Appendix** for comparison. It should be noted CTDOT does not require holiday analysis per OSTA Major Traffic Generator Administrative Decision Request Guidelines,



Section III (Traffic Information) D-3. A summary of the results/recommendations for holiday season analysis is included in the **Appendix**.

The following is a summary of the results/recommendations for this Site:

- Capacity analyses indicate that all analyzed intersections, overall, are projected to perform at an acceptable Level of Service between all average weekday scenarios analyzed.
- The undesirable Levels of Service are observed for individual movements and deterioration occurs between the Existing and No Build scenarios.
- Install "Stop" sign and stop bar at the Site drive's access / egress at Carpenter Lane as noted on Site Plans.
- Clear of overgrown shrubs to meet the sight line requirements at the Carpenter Lane Site driveway.
- Clearing of vegetation at the Research Parkway at Carpenter Lane to increase sight lines.
- Move the Research Parkway northbound stop bar at the Site Drive #1 to accommodate truck turns from the Site.
- Route 68 Left Turn into Research Parkway operates with throat width of 27.5'±.
 Current CTDOT guidelines suggest expanded throat width of 30' to avoid conflicts in turning paths at double left turn. Sketch Plan TT-2 shows WB-67 truck turns with restriped travel lanes to 11ft wide to accommodate the movements without widening of roadway or conflict areas.



APPENDIX



TRIP GENERATION



Steady State Operations

Trues No Out No Out								Ē	OB6 in V	Wallingfor	d, CT - Sit	e Specific								
0.000			Associates	;		Trucks		D	SP Driver	S		DSP Vans			Flex			Total		
0.000 0 0 0 0 1 1 1 2 0 0 0 0 0 0 1 1 1 2 0 0 0 0	Time	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
0.150		0																		
0.350	00:30	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2	
0.200	01:00	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2	
0230 0 0 0 0 0 1 1 1 2 0 0 0 0 0 0 1 1 1 2 2 0 0 0 0		1			1	1		0					- 1	I I	I	I	149			
0300		1 1			1	-		1 - 1					- 1		I	I	1		I	
08-30		1			1			1			1		I	I I			1			
04.90		1		· ·	1	- 1		1 -					- 1	· ·	I	I	1			
0430 0 0 0 0 0 1 1 1 2 0 0 0 0 0 0 1 1 1 2 0 0 0 0		1			- 1			1					- 1				1 1		I	
05.00		1 1		l I	1			1 1					I	l I	I	I	1			
0630		1	_			- 1		1 -	-				- 1		- 1	I			I	
0600 0 0 0 0 0 1 1 1 2 0 0 0 0 0 0 0 1 1 1 2 0 0 0 0		1			1			1							I	I	1		I	
0630		1			1	-		1 -			1		- 1	I I	- 1		1			
07:00 0 0 0 0 0 1 1 1 1 2 0 0 0 0 0 0 0 0 0		1	_		1			1 -				-	- 1	I I	- 1	I	1		I	
07:30																	1			
0830 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0																				AM
08:30			0	0	0	0		0	0	0	0		0	0	0		0	0	0	
09:30	08:30	0	0	0	1	0	1	0	0	0	0	0		0	0	0	1	0	1	
1000	09:00	0	0	0	1	1	2	40	0	40	0	0	0	0	0	0	41	1	42	
10:30	09:30	0	0	0	1	1	2	160	0	160	0		0	0	0	0	161		162	
1130		1			1			1					I	l I	I	I	1 1		I	7.M. Clara
11:30	I I I	1 1		0	0		0	1		0			193	I I	I	I	0	193	193	AM Gen.
12:00														I I			1	0		
12:30																	8	1		
13:00																				MD
13:30																				
14:00		1 1		l I	1			1 1					I	I I	I	I	1		I	
14:30		1 1			1								I	I I	I	I	1 1			
15:00								1 - 1			1		- 1	I I			1 1			
15:30		1		l I	1			1 1					- 1	I I	I	I	1		I	
16:00		1			1						1		- 1	I I	I	I	1		I	
17:00	16:00	0	0	0	0	0	0	0	0	0	0	0	0	90	0	90	90	0	90	214
17:30						_		_					0	0			1			PM
18:00																	1			
18:30																				
19:00 0 0 0 1 1 2 0 30 30 30 0 30 0 0 0					1								I	I I		I	1			
19:30		1			1							-	- 1	I I	- 1	I	1			
20:00 0 0 0 0 1 1 2 0 158 158 79 0 79 0 0 0 0 80 159 239 PM Gen. 20:30 0 0 0 0 1 1 2 0 0 49 49 65 0 65 0 0 0 0 0 66 50 116 21:00 0 0 0 0 1 1 1 2 0 16 16 0 0 0 0 0 0 0 1 17 18 21:30 0 0 0 0 1 1 1 2 0 0 0 0 0 0 0 0 0 0 1 1 1 2 22:00 0 43 43 1 1 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 2 22:30 0 8 8 8 1 1 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 2 23:30 0 0 0 0 0 1 1 1 2 0 0 0 0 0 0 0 0 0 0		1			_			1			1									
20:30					1								I	I I	I	I	1		I	PM Gen.
21:00																				
21:30 0 0 0 0 1 1 2 0 0 0 0 0 0 0 0 0		1			1			1 1					I .	I I		I	1		I	
22:00 0 43 43 1 1 2 0 0 0 0 0 0 0 0 0		1 1			1			1 1					I	I I	I	I	1	I	I	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$					1			1 1			1		I	I I		I	1			
$ \begin{bmatrix} 23:00 \\ 23:30 \end{bmatrix} \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \begin{bmatrix} 1 & 1 & 2 \\ 1 & 1 & 2 \\ 0 & 0 & 0 \end{bmatrix} \begin{bmatrix} 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{bmatrix} \begin{bmatrix} 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{bmatrix} \begin{bmatrix} 1 & 1 & 2 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \begin{bmatrix} 1 & 1 & 2 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \begin{bmatrix} 1 & 1 & 2 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 &$		1 1		l I	1			1 -						· · · · · ·	I	I	1		I .	
23:30 1 1 2		1 1		l I	1			0					0	I I	I	I	1		I	
Total 280 280 560 32 32 64 313 313 626 313 313 626 90 90 180 1,028 1,028 2,056	23:30	1	0	0	1	1	2	0	0	0	0	0	o	0	0	o	1	1		
		280	280	560	32	32	64	313	313	626	313	313	626	90	90	180	1,028	1,028	2,056	

Holiday Operations

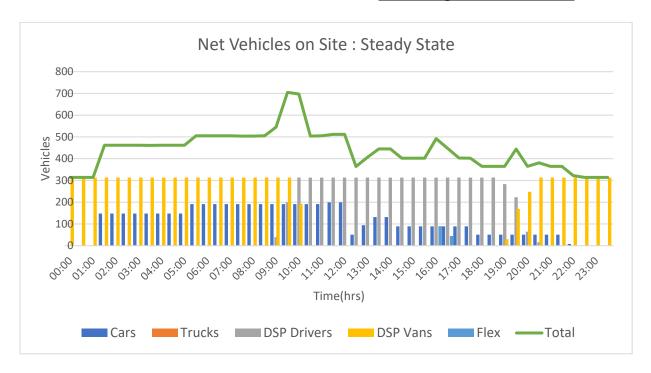
ſ							Ţ.	OB6 in V	Wallingfor	d, CT - Sit	e Specific								
1		Associates			Trucks		Ç	DSP Drivers	s		DSP Vans			Flex			Total		
Time	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
00:00	0	0		1			0	0	0	0	0	0	0	0	0	1	2	3	
00:30	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2	
01:00	0	272	272	1	1 1	2	0	0	0	0	0	0	0	0	0	1	273	274	
01:30	279	0	279	2			0	0	0	0	0	0	0	0	0	281	1	282	ļ.
02:00	0	0	0		1 1		0	0	0	0	0	0	0	0	0	1	2	3	ļ
02:30 03:00	0	0	0	1 1	1 1	2 2	0	0	0	0	0	0	0	0	0	1 1	1 1	2 2	
03:30	0	0	0	2	1 1	3	0	0			0	0	0	0	0	2	1	3	ļ.
04:00	0	0	0		1 1		0	0	0	0	0	0	0	0		1	2	3	ļ
04:30	0	0	0	1	1 1	2	0	0	0	0	0	0	0	0	0	1	1	2	
05:00	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2	ļ.
05:30	43	0	43	1	1	2	0	0	0	0	0	0	0	0	0	44	1	45	ļ
06:00	0	0	0	2		3	0	0	0	0	0	0	0	0	0	2	1	3	
06:30	0	0		1			160	0	160	0	0	0	0	0	0	161	2	163	٦ '
07:00 07:30	0	0	0		1	1	90 6	0	90 6	0	120 120	120 120	0	0	0	91 6	121 121	212 127	AM
08:00	0	0					0	0		0		16	0	0		1	16	17 2	
08:30 09:00	0	0	0	1		2	40	0	40	0	0	0	0	0	0	1 41	1	42	ļ
09.00	0	0	0	1		2 2	160	0	1	0	0	ő	0	0	0	161	1	162	_
10:00 10:30	0	0	0	1		2	(200) (132)	0	200 132	0	(120) (240)	120 240	0	0	0	201 133	121 241	322 374	AM Gen.
11:00	1	0		1	'l <u>-</u>		26	0	26		120	120	<u></u>		0	27	121	148	
11:30	8	0	1	0	1	1	0	0	0	o	78	78	0	o	o	8	79	87	
12:00 12:30	0	0 279	0 279	0	0	00	0	0	0	0	0	0	0	0	0	0	0 279	0 279	MD
13:00	43	0	43	0			0	0		0		0	0	0		43	0	43	_
13:30	39	0	39	0			0	0	0	0	0	0	0	0	0	39	0	39	
14:00	0	0	0	0	1 1	0	0	0	0	0	0	0	0	0	0	0	0	0	
14:30	0	43	43 0	0 0			0	0	0	0	0	0	0	0	0	0	43	43 0	
15:00 15:30	0	0	0		0	0	0	0	0 0	0 0	0	0	0	0	0	0	0	0	
16:00	0	0	0	1			0	0	0	0	0	0	90	0	90	91	0	91	
16:30	0	0	0	2	1	3	0	0	0	30	0	30	0	45	45	32	46	78	<u></u>
17:00 17:30	(272) (0)	0	272 0	2	2 2	4 3	0	90 64	90 64	60 128	0	60 128	0	45 0	45 0	334 129	(137) (66)	471 195	PM
18:00	0	39	1	3	1	4	0	98	98	34	0	34	0	0	0	37	138	175	_
18:30	0	0	0	6			0	4	4	4	0	4	0	0	0	10	7	17	
19:00	0	0		4	6	10	0	30	30	30	0	30	0	0	0	34	36	70	
19:30		·	0	, 3	4	31	0	60	60	150	0	150	2		0	153	64	217	1
20:00	0	0	0	3 2	3	6 5	0	110	210 110	120 190	0	120	0	o o	o o	123	213 113	336 305	PM Gen.
21.00	0	9	0	1 41	2	6	0	130	130	50	, 0	50	9	١	0	54	132	186	•
21:30 22:00	0	0 43	0 43	1 2		5	0	18 0	18	18	0	18	0	0	0	19 2	22 44	41 46	
22:30	0	8	8		1 1	1 1 1	0	0			0	0	0	0		1 1	10	11	
23:00	0	0	0		1 1	2	0	0		0	ا ٥	0	0	ا ٥ ا		1	1	2	
23:30	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	2	1	3	
Total	684	684	1,368	63	63	126	814	814	1,628	814	814	1,628	90	90	180	2,465	2,465	4,930	

			Pe	eak Hour T	rip Gener	ation (con				ersus ITE Tri	p Genera	tion Manu	al			
	A	Trips M Peak Hour Mid-Day Peak Hour PM Peak Hour AM Peak Generator Hour PM Peak Generator Hour In Out Total In Out Total In Out Total In Out Total In Out														
	Total															
LU-156, High-Cube Parcel Hub Warehouse (219 GFA)	153	76	77	No A	Available I	Data	140	95	45	193	66	127	155	97	58	
Client Provided Trip Generation	3	1	2	136	0	148	136	91	45	427	113	314	440	220	220	
<u>Difference</u>	<u>-150</u>	<u>-75</u>	<u>-75</u>	<u>148</u>	<u>0</u>	<u>0</u>	<u>-4</u>	<u>-4</u>	<u>0</u>	<u>234</u>	<u>47</u>	<u>187</u>	<u>285</u>	<u>123</u>	<u>162</u>	

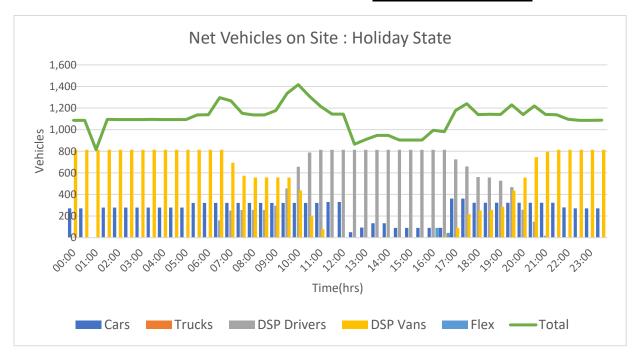
Note: This table summarizes the comparison of trip generation provided by the tenant versus ITE Trip Generation Manual 10th Edition.

It should be noted during AM and PM Peak Generator Hour, the tenant's trip generation is higher than industry standards (ITE Trip Generation Manual). During PM peak the difference is negligible and during AM Peak, the difference is of 150 vehicles.

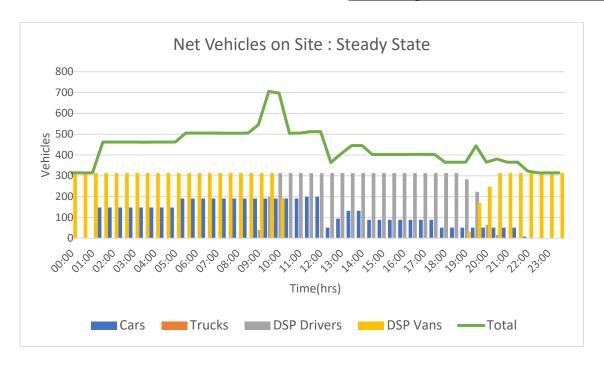
Estimation of Net Vehicles on Site: Average Weekday



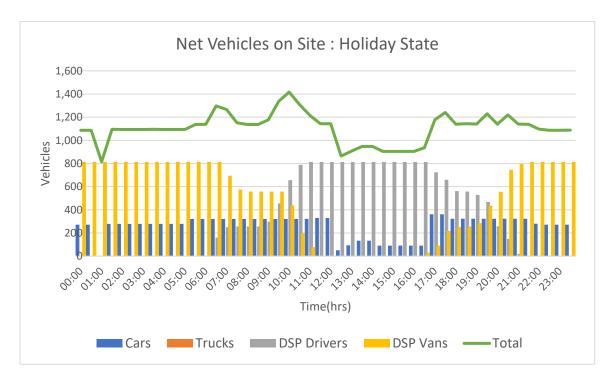
Estimation of Net Vehicles on Site: Holiday Season



Estimation of Net Vehicles on Site: Average Weekday without Flex

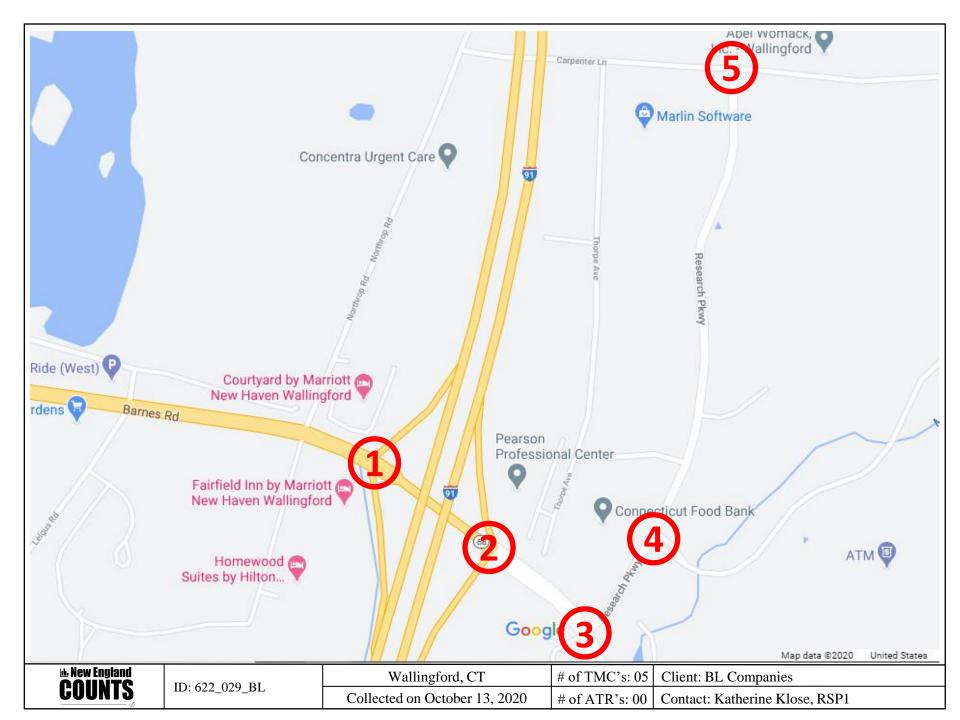


Estimation of Net Vehicles on Site: Holiday Season without Flex



TRAFFIC COUNTS





Client: Katherine Klose, RSP1
Project #: 622_029_BL
BTD #: Location 1
Location: Wallingford, CT

Street 1: CT Route 68 (Barnes Road)
Street 2: I-91 Southbound Exit 15 Ramps

Count Date: 10/13/2020
Day of Week: Tuesday
Weather: Showers, 60°F



PO Box 1723 Framingham, MA 01701

PASSENGER CARS & HEAVY VEHICLES COMBINED

	I-91 S	outhbound	Exit 15 On	Ramp	I-91 S	Southbound	Exit 15 Off	Ramp	СТ	Route 68 (Barnes Roa	ad)	СТ	Route 68 (Barnes Roa	ad)
		North	bound			South	bound			Easth	ound			Westl	oound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	0	0	0	24	0	26	0	0	94	39	0	21	88	0
11:15 AM	0	0	0	0	0	17	1	29	0	0	73	26	0	26	89	0
11:30 AM	0	0	0	0	0	17	0	26	0	0	97	37	0	27	83	0
11:45 AM	0	0	0	0	0	18	0	34	0	0	81	37	0	28	92	0
12:00 PM	0	0	0	0	0	25	0	36	0	0	73	36	0	22	87	0
12:15 PM	0	0	0	0	0	29	0	29	0	0	81	29	0	30	89	0
12:30 PM	0	0	0	0	0	24	0	48	0	0	88	30	0	23	101	0
12:45 PM	0	0	0	0	0	24	1	43	0	0	91	45	0	29	104	0

MID P	EAK HOUR	I-91 S	outhbound	Exit 15 On	Ramp	I-91 S	outhbound	Exit 15 Off	Ramp	СТ	Route 68 (Barnes Roa	ad)	СТ	Route 68 (Barnes Roa	ad)
12	2:00 PM		North	bound			South	bound			Easth	oound			Westl	oound	
	to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
1	:00 PM	0	0	0	0	0	102	1	156	0	0	333	140	0	104	381	0
	PHF	· · · · · · · · · · · · · · · · · · ·	0.	00	•		0.	90			0.	87			0.	91	
	HV %	0.0%	0.0%	0.0%	0.0%	0.0%	15.7%	0.0%	30.8%	0.0%	0.0%	11.7%	11.4%	0.0%	23.1%	7.9%	0.0%

Client: Katherine Klose, RSP1
Project #: 622_029_BL
BTD #: Location 1
Location: Wallingford, CT

Street 1: CT Route 68 (Barnes Road)
Street 2: I-91 Southbound Exit 15 Ramps

Count Date: 10/13/2020
Day of Week: Tuesday
Weather: Showers, 60°F



PO Box 1723 Framingham, MA 01701

HEAVY VEHICLES

	I-91 S	outhbound	Exit 15 On	Ramp	I-91 S	Southbound	Exit 15 Off	Ramp	СТ	Route 68 (Barnes Roa	ad)	СТ	Route 68 (Barnes Roa	ad)
		North	bound			South	bound			Easth	ound			Westl	oound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	0	0	0	7	0	7	0	0	17	11	0	6	12	0
11:15 AM	0	0	0	0	0	3	0	6	0	0	12	4	0	8	13	0
11:30 AM	0	0	0	0	0	2	0	10	0	0	22	14	0	13	6	0
11:45 AM	0	0	0	0	0	3	0	4	0	0	13	5	0	8	14	0
12:00 PM	0	0	0	0	0	1	0	10	0	0	14	4	0	6	10	0
12:15 PM	0	0	0	0	0	4	0	8	0	0	9	2	0	6	9	0
12:30 PM	0	0	0	0	0	5	0	17	0	0	6	3	0	4	7	0
12:45 PM	0	0	0	0	0	6	0	13	0	0	10	7	0	8	4	0

N	MID PEAK HOUR	I-91 S	outhbound	Exit 15 On	Ramp	I-91 S	outhbound	Exit 15 Off	Ramp	СТ	Route 68 (Barnes Roa	ad)	СТ	Route 68 (Barnes Roa	ad)
	11:00 AM		North	bound			South	bound			Eastb	oound			Westh	oound	
	to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	12:00 PM	0	0	0	0	0	15	0	27	0	0	64	34	0	35	45	0
	PHF		0.	00			0.	75			0.	68			0.9	91	

Client: Katherine Klose, RSP1
Project #: 622_029_BL
BTD #: Location 1
Location: Wallingford, CT
Street 1: CT Route 68 (Barnes Roa

Street 1: CT Route 68 (Barnes Road)
Street 2: I-91 Southbound Exit 15 Ramps

Count Date: 10/13/2020
Day of Week: Tuesday
Weather: Showers, 60°F



PO Box 1723 Framingham, MA 01701

PEDESTRIANS & BICYCLES

	I-91 S	Southbound	Exit 15 On	Ramp	I-91 S	Southbound	Exit 15 Off	Ramp	СТ	Route 68 (Barnes Roa	ad)	СТ	Route 68 (Barnes Roa	ad)
		North	bound			South	bound			Eastb	ound			Westl	bound	
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR	I-91 S	outhbound	Exit 15 On	Ramp	I-91 S	outhbound	Exit 15 Off	Ramp	C	Route 68 (Barnes Roa	ad)	C1	Route 68	(Barnes Roa	ad)
12:00 PM		North	oound			South	bound			Easth	oound			West	bound	
to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Client: Katherine Klose, RSP1
Project #: 622_029_BL
BTD #: Location 2
Location: Wallingford, CT

Street 1: CT Route 68 (Barnes Road)
Street 2: I-91 Northbound Exit 15 Ramps

Count Date: 10/13/2020
Day of Week: Tuesday
Weather: Showers, 60°F



PO Box 1723 Framingham, MA 01701

PASSENGER CARS & HEAVY VEHICLES COMBINED

	I-91 N	Vorthbound	Exit 15 Off	Ramp	I-91 N	Northbound	Exit 15 On	Ramp	СТ	Route 68 (Barnes Roa	ad)	СТ	Route 68 (Barnes Roa	ad)
		North	bound	-		South	bound	-		Eastb	ound			Westl	oound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	32	0	18	0	0	0	0	0	38	80	0	0	0	77	20
11:15 AM	0	27	0	17	0	0	0	0	0	30	60	0	0	0	88	26
11:30 AM	0	30	0	25	0	0	0	0	0	41	74	0	0	0	81	26
11:45 AM	0	31	0	24	0	0	0	0	0	23	75	0	0	0	88	15
12:00 PM	0	39	0	26	0	0	0	0	0	35	63	0	0	0	74	23
12:15 PM	0	40	0	28	0	0	0	0	0	23	85	0	0	0	75	27
12:30 PM	0	36	0	35	0	0	0	0	0	25	89	0	0	0	88	19
12:45 PM	0	41	0	37	0	0	0	0	0	34	81	0	0	0	92	24

MII	PEAK HOUR	I-91 N	lorthbound	Exit 15 Off	Ramp	I-91 N	lorthbound	Exit 15 On	Ramp	СТ	Route 68 (Barnes Roa	ad)	СТ	Route 68 (Barnes Roa	ad)
	12:00 PM		North	oound			South	bound			Easth	oound			Westl	bound	
	to	U-Turn	-Turn Left Thru Right				Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	1:00 PM	0	156	0	126	0	0	0	0	0	117	318	0	0	0	329	93
-	PHF	•	0.9	90	•		0.	00			0.	95			0.	91	
	HV %	0.0%	0.90 0.0% 14.1% 0.0% 18.3%				0.0%	0.0%	0.0%	0.0%	25.6%	7.9%	0.0%	0.0%	0.0%	9.7%	22.6%

Client: Katherine Klose, RSP1
Project #: 622_029_BL

BTD #: Location 2
Location: Wallingford, CT
Street 1: CT Route 68 (Barnes Road)

I-91 Northbound Exit 15 Ramps

Count Date: 10/13/2020
Day of Week: Tuesday
Weather: Showers, 60°F

Street 2:



PO Box 1723 Framingham, MA 01701

HEAVY VEHICLES

	I-91 N	lorthbound North	Exit 15 Off	Ramp	I-91 N	lorthbound	Exit 15 On bound	Ramp	СТ		(Barnes Roa	ad)	СТ	Route 68 ((Barnes Roa	ad)
Start Time	U-Turn		Thru	Diabt	U-Turn		Thru	Right	U-Turn		Thru	Right	U-Turn		Thru	Diaht
	U-Turn	Left	Thru	Right	U-Tum	Left	Inru	Right	U-Tum	Left	Thru	Right	U-Tum	Left	Thru	Right
11:00 AM	0	9	0	0	0	0	0	0	0	11	13	0	0	0	8	3
11:15 AM	0	6	0	9	0	0	0	0	0	6	10	0	0	0	15	2
11:30 AM	0	4	0	5	0	0	0	0	0	16	8	0	0	0	16	2
11:45 AM	0	8	0	4	0	0	0	0	0	6	8	0	0	0	14	1
12:00 PM	0	7	0	5	0	0	0	0	0	12	3	0	0	0	9	5
12:15 PM	0	6	0	7	0	0	0	0	0	5	8	0	0	0	8	6
12:30 PM	0	6	0	4	0	0	0	0	0	5	6	0	0	0	6	7
12:45 PM	0	3	0	7	0	0	0	0	0	8	8	0	0	0	9	3

	MID PEAK HOUR	I-91 N	orthbound	Exit 15 Off I	Ramp	I-91 N	lorthbound	Exit 15 On I	Ramp	СТ	Route 68 (Barnes Roa	ad)	CT	Route 68 (Barnes Roa	ad)
	11:00 AM		North	bound			South	bound			Easth	ound			Westl	oound	
	to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	12:00 PM	0	27	0	18	0	0	0	0	0	39	39	0	0	0	53	8
•	PHF		0.	75			0.	00			0.	81			0.	85	

Client: Katherine Klose, RSP1
Project #: 622_029_BL
BTD #: Location 2
Location: Wallingford, CT

Street 1: CT Route 68 (Barnes Road)
Street 2: I-91 Northbound Exit 15 Ramps

Count Date: 10/13/2020
Day of Week: Tuesday
Weather: Showers, 60°F



PO Box 1723 Framingham, MA 01701

PEDESTRIANS & BICYCLES

	I-91 N	Northbound	Exit 15 Off	Ramp	I-91 N	Northbound	Exit 15 On	Ramp	C	Route 68	Barnes Roa	ad)	C	Route 68 (Barnes Roa	ad)
		North	bound	-		South	bound			Easth	oound			West	bound	
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR	I-91 N	lorthbound	Exit 15 Off	Ramp	I-91 N	orthbound	Exit 15 On	Ramp	C	Route 68 (Barnes Roa	ad)	СТ	Route 68	Barnes Roa	ad)
12:00 PM		North	oound			South	bound			Easth	ound			West	bound	
to	Left	Northbound Left Thru Right PED				Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Project #: 622_029_BL
BTD #: Location 3
Location: Wallingford, CT

Street 1: CT Route 68 (Barnes Road)
Street 2: Research Parkway

Count Date: 10/13/2020
Day of Week: Tuesday
Weather: Showers, 60°F



PO Box 1723 Framingham, MA 01701

PASSENGER CARS & HEAVY VEHICLES COMBINED

	Hilton Garden Inn Drive Northbound U-Turn Left Thru Ri 0 2 0 0 4 0 0 4 0 0 2 0					Research	Parkway		СТ	Route 68 (Barnes Roa	ad)	CT	Route 68 (Barnes Roa	ad)
		North	bound			South	bound			Easth	oound			West	bound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	2	0	1	0	6	0	13	0	16	79	3	0	0	82	3
11:15 AM	0	4	0	0	0	7	0	12	0	12	65	0	0	0	98	5
11:30 AM	0	4	0	0	0	8	0	22	0	15	81	2	0	0	81	5
11:45 AM	0	2	0	0	0	6	0	28	0	14	82	2	0	0	77	3
12:00 PM	0	3	0	0	0	7	0	25	0	21	65	2	0	0	69	8
12:15 PM	0	2	0	2	0	6	0	21	0	20	96	2	0	1	79	4
12:30 PM	0	0	0	0	0	4	0	27	0	22	98	0	0	0	85	5
12:45 PM	0	0	0	0	0	6	0	19	0	24	91	3	0	0	90	3

MII	D PEAK HOUR	H	Hilton Garde	en Inn Drive)		Research	Parkway		СТ	Route 68 (Barnes Roa	ad)	СТ	Route 68 (Barnes Roa	ad)
	12:00 PM		North	bound			South	bound			Easth	oound			West	bound	
	to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	1:00 PM	0	5	0	2	0	23	0	92	0	87	350	7	0	1	323	20
	PHF	0.44					0.	90			0.	93	•		0.	92	
	HV %	0.0%	20.0%	0.0%	50.0%	0.0%	21.7%	0.0%	26.1%	0.0%	27.6%	6.6%	14.3%	0.0%	0.0%	8.7%	5.0%

Project #: 622_029_BL
BTD #: Location 3
Location: Wallingford, CT

Street 1: CT Route 68 (Barnes Road)
Street 2: Research Parkway

Count Date: 10/13/2020
Day of Week: Tuesday
Weather: Showers, 60°F



HEAVY VEHICLES

	I	Hilton Gard	en Inn Drive	Э		Research	n Parkway		СТ	Route 68 (Barnes Roa	ad)	CT	Route 68	(Barnes Ro	ad)
		North	bound			South	bound			Easth	oound			West	bound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	1	0	0	0	1	0	5	0	5	7	0	0	0	5	0
11:15 AM	0	0	0	0	0	1	0	7	0	7	12	0	0	0	9	0
11:30 AM	0	0	0	0	0	2	0	10	0	6	6	1	0	0	8	0
11:45 AM	0	0	0	0	0	2	0	7	0	4	9	0	0	0	8	1
12:00 PM	0	0	0	0	0	0	0	7	0	6	2	0	0	0	9	0
12:15 PM	0	1	0	1	0	3	0	5	0	5	9	1	0	0	6	0
12:30 PM	0	0	0	0	0	1	0	8	0	7	3	0	0	0	6	1
12:45 PM	0	0	0	0	0	1	0	4	0	6	9	0	0	0	7	0

Ī	MID PEAK HOUR	H	Hilton Garde	en Inn Drive)		Research	Parkway		СТ	Route 68 (Barnes Roa	ad)	СТ	Route 68 (Barnes Roa	ad)
	11:00 AM		Northl	bound			South	bound			Easth	oound			Westl	oound	
	to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	12:00 PM	0	1	0	0	0	6	0	29	0	22	34	1	0	0	30	1
-	PHF	,	0.	25			0.	73			0.	75			0.	86	

Client: Katherine Klose, RSP1
Project #: 622_029_BL

Project #: 622_029_BL BTD #: Location 3 Location: Wallingford, CT

Street 1: CT Route 68 (Barnes Road)

Street 2: Research Parkway
Count Date: 10/13/2020

Day of Week: Tuesday
Weather: Showers, 60°F



PO Box 1723 Framingham, MA 01701

PEDESTRIANS & BICYCLES

									o a <i>bio i</i>	OLLO						
		Hilton Gard	en Inn Drive	е		Research	n Parkway		C	Γ Route 68	(Barnes Roa	ad)	CT	Γ Route 68	(Barnes Roa	ad)
		North	bound			South	bound			Eastl	oound			West	bound	
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR		Hilton Garde	en Inn Drive)		Research	Parkway		СТ	ΓRoute 68 ((Barnes Roa	ad)	СТ	Route 68 (Barnes Roa	ad)
12:00 PM		North	bound			South	bound			Easth	oound			West	bound	
to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Project #: 622_029_BL
BTD #: Location 4
Location: Wallingford, CT
Street 1: Research Parkway

Street 2: Site #1 Drive & CT Food Bank Drive

Count Date: 10/13/2020
Day of Week: Tuesday
Weather: Showers, 60°F



PO Box 1723 Framingham, MA 01701

PASSENGER CARS & HEAVY VEHICLES COMBINED

		Research	n Parkway			Research	n Parkway		Conn	ecticut Foo	d Bank Driv	reway		Site #1 [Driveway	
		North	bound			South	bound			Easth	oound			Westl	bound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	18	0	0	0	18	1	0	0	0	2	0	0	0	0
11:15 AM	0	0	20	0	0	0	18	0	0	1	0	1	0	0	0	0
11:30 AM	0	0	15	0	0	0	25	0	0	0	0	4	0	0	0	0
11:45 AM	0	0	19	0	0	0	32	0	0	1	0	3	0	0	0	0
12:00 PM	0	1	23	0	0	0	29	1	0	1	0	3	0	0	0	0
12:15 PM	0	1	25	0	0	0	26	0	0	0	0	1	0	0	0	0
12:30 PM	0	3	28	0	0	0	30	0	0	0	0	1	0	0	0	0
12:45 PM	0	8	20	0	0	0	20	2	0	0	0	5	0	0	0	0

M	ID PEAK HOUR		Research	Parkway			Research	Parkway		Conn	ecticut Foo	d Bank Driv	eway		Site #1 [Driveway	
	11:45 AM		North	bound			South	bound			Easth	ound			West	bound	
	to	U-Turn	U-Turn Left Thru Right				Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	12:45 PM	0	5	95	0	0	0	117	1	0	2	0	8	0	0	0	0
	PHF		0.81				0.	92			0.	63	•		0.	00	
	HV %	0.0%					0.0%	28.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Project #: 622_029_BL
BTD #: Location 4
Location: Wallingford, CT
Street 1: Research Parkway

Street 2: Site #1 Drive & CT Food Bank Drive

Count Date: 10/13/2020
Day of Week: Tuesday
Weather: Showers, 60°F



PO Box 1723 Framingham, MA 01701

HEAVY VEHICLES

		Research	Parkway			Research	n Parkway		Conn	ecticut Foo	d Bank Driv	reway		Site #1 I	Driveway	
		North	bound			South	bound			Eastl	oound			West	bound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	5	0	0	0	7	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	7	0	0	0	6	0	0	0	0	1	0	0	0	0
11:30 AM	0	0	6	0	0	0	12	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	5	0	0	0	9	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	6	0	0	0	7	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	5	0	0	0	8	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	8	0	0	0	9	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	6	0	0	0	5	0	0	0	0	0	0	0	0	0

M	ID PEAK HOUR		Research	Parkway			Research	Parkway		Conn	ecticut Foo	d Bank Driv	eway		Site #1 [Driveway	
	11:15 AM		Northbound				South	bound			Easth	ound			West	oound	
	to	U-Turn	J-Turn Left Thru Right				Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	12:15 PM	0	0	24	0	0	0	34	0	0	0	0	1	0	0	0	0
-	PHF		0 0 24 0				0.	71			0.	25			0.	00	

Project #: 622_029_BL
BTD #: Location 4
Location: Wallingford, CT
Street 1: Research Parkway

Street 2: Site #1 Drive & CT Food Bank Drive

Count Date: 10/13/2020
Day of Week: Tuesday
Weather: Showers, 60°F



PO Box 1723 Framingham, MA 01701

PEDESTRIANS & BICYCLES

		Research	n Parkway			Research	n Parkway		Conr	ecticut Foo	d Bank Driv	reway		Site #1 [Driveway	
		North	bound			South	bound			Easth	oound			Westl	bound	
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR		Research	Parkway			Research	Parkway		Conr	ecticut Foo	d Bank Driv	eway		Site #1 I	Driveway	
11:45 AM		Northbound				South	bound			Easth	oound			West	bound	
to	Left					Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Project #: 622_029_BL
BTD #: Location 5
Location: Wallingford, CT
Street 1: Research Parkway
Street 2: Carpenter Lane
Count Date: 10/13/2020
Day of Week: Tuesday

Showers, 60°F

Weather:



PO Box 1723 Framingham, MA 01701

PASSENGER CARS & HEAVY VEHICLES COMBINED

		Research	n Parkway			Research	Parkway			Carpent	ter Lane			Carpent	er Lane	
		North	bound			South	bound			Easth	ound			Westl	oound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	15	2	0	3	16	9	0	6	5	1	0	3	5	1
11:15 AM	0	0	14	1	0	0	10	4	0	1	5	3	0	1	3	0
11:30 AM	0	2	13	1	0	0	20	5	0	4	2	0	0	1	6	1
11:45 AM	0	1	18	1	0	1	20	5	0	4	1	4	0	6	5	0
12:00 PM	0	3	21	3	0	3	24	10	0	10	6	2	0	0	4	5
12:15 PM	0	2	23	1	0	3	19	10	0	4	6	3	0	2	2	4
12:30 PM	0	1	21	1	0	3	23	9	0	9	8	3	0	2	8	3
12:45 PM	0	1	14	1	0	4	16	8	0	8	7	3	0	4	5	0

M	ID PEAK HOUR		Research	Parkway			Research	Parkway			Carpent	ter Lane			Carpen	ter Lane	
	12:00 PM		Northl	bound			South	bound			Eastb	oound			West	bound	
	to	U-Turn	U-Turn Left Thru Right				Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	1:00 PM	0	7	79	6	0	13	82	37	0	31	27	11	0	8	19	12
	PHF	0.85					0.	89			0.	86			0.	75	
	HV %	0.0%					0.0%	37.8%	2.7%	0.0%	3.2%	3.7%	9.1%	0.0%	12.5%	15.8%	0.0%

Project #: 622_029_BL
BTD #: Location 5

Location: Wallingford, CT
Street 1: Research Parkway
Street 2: Carpenter Lane
Count Date: 10/13/2020
Day of Week: Tuesday

Showers, 60°F

Weather:



PO Box 1723 Framingham, MA 01701

HEAVY VEHICLES

		Research North	Parkway				Parkway				ter Lane bound				ter Lane bound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	4	1	0	0	6	0	0	2	1	0	0	0	0	1
11:15 AM	0	0	7	0	0	0	6	1	0	1	0	0	0	0	0	0
11:30 AM	0	0	6	0	0	0	8	1	0	0	0	0	0	1	0	0
11:45 AM	0	0	3	0	0	0	9	0	0	1	0	0	0	0	0	0
12:00 PM	0	0	6	0	0	0	8	0	0	0	0	0	0	0	2	0
12:15 PM	0	0	5	0	0	0	9	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	6	0	0	0	10	1	0	0	1	0	0	1	1	0
12:45 PM	0	0	5	1	0	0	4	0	0	1	0	1	0	0	0	0

Γ	MID PEAK HOUR		Research	Parkway			Research	Parkway			Carpent	er Lane			Carpent	er Lane	
	11:45 AM		Northbound				South	bound			Eastb	ound			Westl	oound	
	to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	12:45 PM	0	0 0 20 0				0	36	1	0	1	1	0	0	1	3	0
_	PHF		0 0 20 0				0.	84	-	_	0.	50			0.	50	

Project #: 622_029_BL BTD #: Location 5 Wallingford, CT Location: Research Parkway Street 1: Street 2: Carpenter Lane 10/13/2020 Count Date: Day of Week: Tuesday Weather: Showers, 60°F



PO Box 1723 Framingham, MA 01701

PEDESTRIANS & BICYCLES

		Research	n Parkway			Research	n Parkway			Carpen	ter Lane			Carpen	ter Lane	
		North	bound			South	bound				oound				bound	
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID	D PEAK HOUR		Research	Parkway			Research	Parkway			Carpen	ter Lane			Carpen	ter Lane	
	12:00 PM		North	bound			South	bound			Easth	oound			West	bound	
	to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Kensington, Connecticut 06037 (860) 828-1693

Route 68 at I-91 NB Ramps Wallingford, Connecticut

File Name: 17900 Site Code: 17900

Start Date : 10/26/2018

Page No : 1

Groups Printed- Lights - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

					Ramp)			rnes F						Ramp)			rnes F			
			<u> </u>	om N	<u>orth</u>			F	rom E	ast			Fr	om So				F	rom W	<u>est</u>		
Į	Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
	06:00 AM	0	0	0	0	0	35	47	0	0	82	29	0	26	0	55	0	49	25	0	74	211
	06:15 AM	0	0	0	0	0	32	83	0	0	115	35	0	29	0	64	0	74	29	0	103	282
	06:30 AM	0	0	0	0	0	59	132	0	0	191	65	0	38	0	103	0	84	31	0	115	409
	06:45 AM	0	0	0	0	0	58	134	0	0	192	74	0	62	0	136	0	106	36	0	142	470
	Total	0	0	0	0	0	184	396	0	0	580	203	0	155	0	358	0	313	121	0	434	1372
	07:00 AM	0	0	0	0	0	55	171	0	0	226	80	0	52	0	132	0	76	64	0	140	498
	07:15 AM	0	0	0	0	0	61	180	0	0	241	66	0	55	0	121	0	101	52	0	153	515
	07:30 AM	0	0	0	0	0	72	175	0	0	247	62	0	106	0	168	0	105	39	0	144	559
	07:45 AM	0	0	0	0	0	61	180	0	0	241	79	0	103	0	182	0	112	54	0	166	589
	Total	0	0	0	0	0	249	706	0	0	955	287	0	316	0	603	0	394	209	0	603	2161
	08:00 AM	0	0	0	0	0	55	174	0	0	229	76	2	75	0	153	0	114	41	0	155	537
	08:15 AM	0	0	0	0	0	58	168	0	0	226	65	0	70	0	135	0	99	47	0	146	507
	08:30 AM	0	0	0	0	0	61	144	0	0	205	46	0	58	0	104	0	89	36	0	125	434
	08:45 AM	0	0	0	0	0	38	133	0	0	171	50	0	66	0	116	0	78	44	0	122	409
	Total	0	0	0	0	0	212	619	0	0	831	237	2	269	0	508	0	380	168	0	548	1887
	,						'															
	Grand Total	0	0	0	0	0	645	1721	0	0	2366	727	2	740	0	1469	0	1087	498	0	1585	5420
	Apprch %	0	0	0	0	_	27.3	72.7	0	0		49.5	0.1	50.4	0		0	68.6	31.4	0		
	Total %	0	0	0	0	0	11.9	31.8	0	0	43.7	13.4	0	13.7	0	27.1	0	20.1	9.2	0	29.2	
	Lights	0	0	0	0	0	590	1594														
	% Lights	0	0	0	0	0	91.5	92.6	0	0	92.3	92.4	100	92.8	0	92.6	0	88.7	79.1	0	85.7	90.5
	Buses	0	0	0	0	0	0	37	0	0	37	3	0	10	0	13	0	5	1	0	6	56
	% Buses	0	0	0	0	0	0	2.1	0	0	1.6	0.4	0	1.4	0	0.9	0	0.5	0.2	0	0.4	1
	Trucks	0	0	0	0	0	55	90	0	0	145	52	0	43	0	95	0	118	103	0	221	461
	% Trucks	0	0	0	0	0	8.5	5.2	0	0	6.1	7.2	0	5.8	0	6.5	0	10.9	20.7	0	13.9	8.5
	Bicycles on Crosswalk																					
	% Bicycles on	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Crosswalk																					
	Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

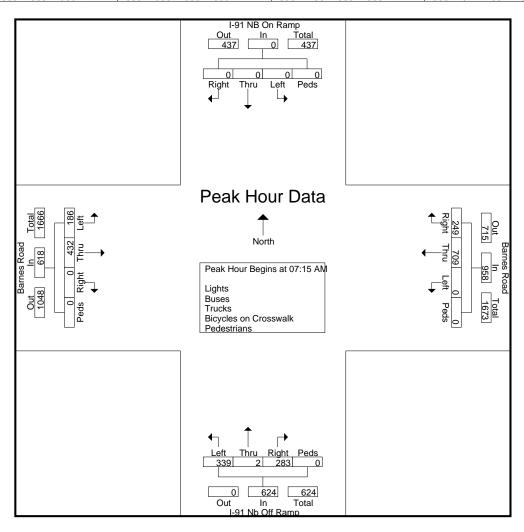
Kensington, Connecticut 06037 (860) 828-1693

> File Name: 17900 Site Code: 17900

Start Date : 10/26/2018

Page No : 2

		I-91 N	NB On	Ramp)		Ва	rnes F	Road			I-91 I	Nb Off	Ramp)		Ва	rnes F	Road		
		Fr	om No	orth			F	rom E	ast			Fr	om So	outh			F	rom W	/est		
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour A	nalysi	s Fron	n 06:00	O AM to	08:45	AM -	Peak 1	of 1													
Peak Hour fo	or Entii	re Inte	rsectio	n Beg	ins at 0	7:15 A	M														
07:15 AM	0	0	0	0	0	61	180	0	0	241	66	0	55	0	121	0	101	52	0	153	515
07:30 AM	0	0	0	0	0	72	175	0	0	247	62	0	106	0	168	0	105	39	0	144	559
07:45 AM	0	0	0	0	0	61	180	0	0	241	79	0	103	0	182	0	112	54	0	166	589
08:00 AM	0	0	0	0	0	55	174	0	0	229	76	2	75	0	153	0	114	41	0	155	537
Total Volume	0	0	0	0	0	249	709	0	0	958	283	2	339	0	624	0	432	186	0	618	2200
% App. Total	0	0	0	0		26	74	0	0		45.4	0.3	54.3	0		0	69.9	30.1	0		
PHF	.000	.000	.000	.000	.000	.865	.985	.000	.000	.970	.896	.250	.800	.000	.857	.000	.947	.861	.000	.931	.934



Kensington, Connecticut 06037 (860) 828-1693

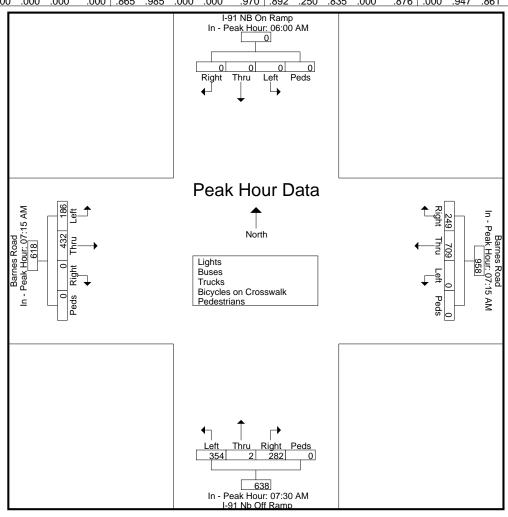
File Name : 17900 Site Code : 17900 Start Date : 10/26/2018

Page No : 3

From North From East From South From West			Road	rnes F	Ba		р	f Ram	Nb Off	I-91 I			Road	rnes F	Bai)						
			/est	rom W	F			outh	om So	Fr			ast	rom E	Fi								
Start Time Right Thru Left Peds App. Total Right Thru Left Ped	Int. Total	App. Total	Peds	Left	Thru	Right	App. Total	Peds	Left	Thru	Right	App. Total	Peds	Left	Thru	Right	App. Total	Peds	Left	Thru	Right	tart Time	

Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:																				
	06:00 AM					07:15 AN	1				07:30 AM					07:15 AN	1			
+0 mins.	0	0	0	0	0	61	180	0	0	241	62	0	106	0	168	0	101	52	0	153
+15 mins.	0	0	0	0	0	72	175	0	0	247	79	0	103	0	182	0	105	39	0	144
+30 mins.	0	0	0	0	0	61	180	0	0	241	76	2	75	0	153	0	112	54	0	166
+45 mins.	0	0	0	0	0	55	174	0	0	229	65	0	70	0	135	0	114	41	0	155
Total Volume	0	0	0	0	0	249	709	0	0	958	282	2	354	0	638	0	432	186	0	618
% App. Total	0	0	0	0		26	74	0	0		44.2	0.3	55.5	0		0	69.9	30.1	0	
PHF	.000	.000	.000	.000	.000	.865	.985	.000	.000	.970	.892	.250	.835	.000	.876	.000	.947	.861	.000	.931



Kensington, Connecticut 06037 (860) 828-1693

Route 68 at I-95 SB Ramps Wallingford, Connecticut

File Name: 17902 Site Code: 17902

Start Date : 10/26/2018

Page No : 1

Groups Printed- Lights - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

	I-91 Sb Off Ramp Barnes Road											I-91 S	SB On	Ramp)		Ba	rnes R	load		
		Fr	om No	orth			F	rom E	ast			Fr	om Sc	outh			Fr	om W	est		
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	37	0	26	0	63	0	47	26	0	73	0	0	0	0	0	32	52	0	0	84	220
06:15 AM	47	0	41	0	88	0	68	44	0	112	0	0	0	0	0	42	65	0	0	107	307
06:30 AM	43	0	45	0	88	0	112	68	0	180	0	0	0	0	0	37	78	0	0	115	383
06:45 AM	68	0	45	0	113	0	137	65	0	202	0	0	0	0	0	43	101	0	0	144	459
Total	195	0	157	0	352	0	364	203	0	567	0	0	0	0	0	154	296	0	0	450	1369
07:00 AM	72	0	27	0	99	0	148	81	0	229	0	0	0	0	0	55	111	0	0	166	494
07:15 AM	86	0	42	0	128	0	163	76	0	239	0	0	0	0	0	63	115	0	0	178	545
07:30 AM	103	0	39	0	142	0	197	77	0	274	0	0	0	0	0	61	95	0	0	156	572
07:45 AM	123	0	57	0	180	0	218	72	0	290	0	0	0	0	0	74	108	0	0	182	652
Total	384	0	165	0	549	0	726	306	0	1032	0	0	0	0	0	253	429	0	0	682	2263
08:00 AM	92	0	45	0	137	0	189	76	0	265	0	0	0	0	0	55	115	0	0	170	572
08:15 AM	113	0	43	0	156	0	172	58	0	230	0	0	0	0	0	52	103	0	0	155	541
08:30 AM	99	0	33	0	132	0	152	56	0	208	0	0	0	0	0	57	98	0	0	155	495
08:45 AM	82	0	31	0	113	0	173	44	0	217	0	0	0	0	0	46	88	0	0	134	464
Total	386	0	152	0	538	0	686	234	0	920	0	0	0	0	0	210	404	0	0	614	2072
Grand Total	965	0	474	0	1439	0	1776	743	0	2519	0	0	0	0	0	617	1129	0	0	1746	5704
Apprch %	67.1	0	32.9	0		0	70.5	29.5	0		0	0	0	0		35.3	64.7	0	0		
Total %	16.9	0	8.3	0	25.2	0	31.1	13	0	44.2	0	0	0	0	0	10.8	19.8	0	0	30.6	
Lights	866	0	406	0	1272	0	1673														
% Lights	89.7	0	85.7	0	88.4	0	94.2	89.6	0	92.9	0	0	0	0	0	90.8	85	0	0	87.1	90
Buses	3	0	1	0	4	0	31	17	0	48	0	0	0	0	0	8	6	0	0	14	66
% Buses	0.3	0	0.2	0	0.3	0	1.7	2.3	0	1.9	0	0	0	0	0	1.3	0.5	0	0	0.8	1.2
Trucks	96	0	67	0	163	0	72	60	0	132	0	0	0	0	0	49	163	0	0	212	507
% Trucks	9.9	0	14.1	0	11.3	0	4.1	8.1	0_	5.2	0	0	0	0_	0	7.9	14.4	0	0_	12.1	8.9
Bicycles on Crosswalk																					
% Bicycles on	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	ı U	U	U	U	U	ı U	U	U	U	U	U	U	U	U	U	ı U	U	U	U	U	U

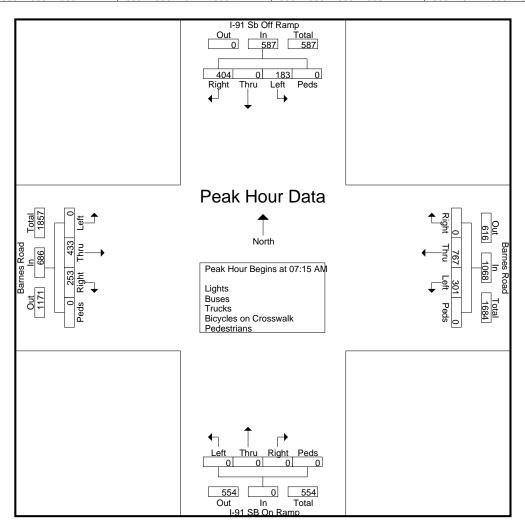
Kensington, Connecticut 06037 (860) 828-1693

> File Name: 17902 Site Code: 17902

Start Date : 10/26/2018

Page No : 2

		I-91	Sb Off	Ramp)		Ва	rnes F	Road			I-91 S	SB On	Ramp)		Ва	rnes F	Road		
		Fr	om No	orth			F	rom E	ast			Fr	om So	outh			Fi	rom W	'est		
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour A	nalysi	s Fron	n 06:0	O AM to	o 08:45	AM -	Peak 1	of 1													
Peak Hour fo	or Enti	re Inte	rsection	n Beg	ins at 0	7:15 A	.M														
07:15 AM	86	0	42	0	128	0	163	76	0	239	0	0	0	0	0	63	115	0	0	178	545
07:30 AM	103	0	39	0	142	0	197	77	0	274	0	0	0	0	0	61	95	0	0	156	572
07:45 AM	123	0	57	0	180	0	218	72	0	290	0	0	0	0	0	74	108	0	0	182	652
MA 00:80	92	0	45	0	137	0	189	76	0	265	0	0	0	0	0	55	115	0	0	170	572
Total Volume	404	0	183	0	587	0	767	301	0	1068	0	0	0	0	0	253	433	0	0	686	2341
_ % App. Total	68.8	0	31.2	0		0	71.8	28.2	0		0	0	0	0		36.9	63.1	0	0		
PHF	.821	.000	.803	.000	.815	.000	.880	.977	.000	.921	.000	.000	.000	.000	.000	.855	.941	.000	.000	.942	.898



Kensington, Connecticut 06037 (860) 828-1693

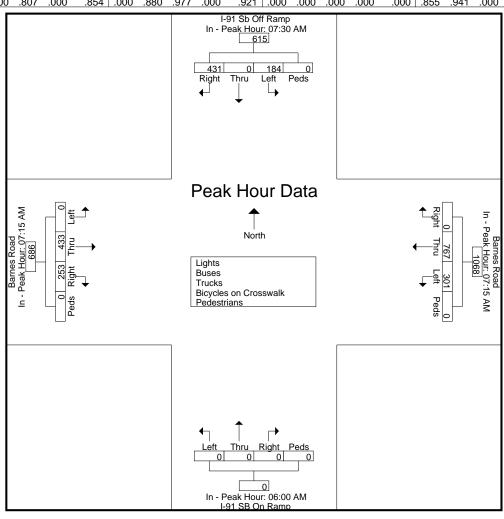
File Name : 17902 Site Code : 17902 Start Date : 10/26/2018

Page No : 3

		I-91 S	Sb Off	Ramp)		Ва	rnes F	Road			I-91 S	SB On	Ramp)		Ва	rnes F	Road		
		Fr	om No	orth			F	rom E	ast			Fr	om So	outh			Fı	rom W	/est		
Start Time	Right	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total			
D I - I I 4	and the second		- 00 0	- ABA (- 00 45	A B 4 I	S I - 4	- (4													

Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour fo	or Eacl	า Appı	roach l	Begins	at:															
	07:30 AM					07:15 AN	1				06:00 AM					07:15 AM	1			
+0 mins.	103	0	39	0	142	0	163	76	0	239	0	0	0	0	0	63	115	0	0	178
+15 mins.	123	0	57	0	180	0	197	77	0	274	0	0	0	0	0	61	95	0	0	156
+30 mins.	92	0	45	0	137	0	218	72	0	290	0	0	0	0	0	74	108	0	0	182
+45 mins.	113	0	43	0	156	0	189	76	0	265	0	0	0	0	0	55	115	0	0	170
Total Volume	431	0	184	0	615	0	767	301	0	1068	0	0	0	0	0	253	433	0	0	686
% App. Total	70.1	0	29.9	0		0	71.8	28.2	0		0	0	0	0		36.9	63.1	0	0	
PHF	.876	.000	.807	.000	.854	.000	.880	.977	.000	.921	.000	.000	.000	.000	.000	.855	.941	.000	.000	.942



Kensington, Connecticut 06037 (860) 828-1693

Route 68 at Research Parkway/Hotel Dr Wallingford, Connecticut

File Name: 17898 Site Code: 17898

Start Date : 10/26/2018

Page No : 1

Groups Printed- Lights - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

Start Time Right Thru Left Peds App. Total Right Thru						arkwa	у			rnes F					otel D					rnes F			
06:00 AM				<u>Fr</u>	rom No	orth			F	rom E	ast			Fr	om So	outh			F	rom W	<u>est</u>		
06:15 AM 23 0 5 0 28 7 96 0 0 103 1 0 2 0 3 3 76 35 0 114 248 06:30 AM 28 0 6 0 34 11 160 0 0 171 2 0 2 0 4 1 96 39 0 136 345 06:45 AM 30 0 7 0 37 22 167 0 0 189 0 0 3 1 112 67 0 180 409 Total 93 0 21 0 114 55 499 0 0 554 3 0 8 0 117 8 0 449 1178 07:00 AM 26 0 8 0 34 22 198 1 0 221 3 0 7		Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru		Peds	App. Total	Int. Total
06:30 AM		06:00 AM	12	0	3	0	15	15	76	0	0	91	0	0	1	0	1	0	45	24	0	69	176
06:45 AM 30 0 7 0 37 22 167 0 0 189 0 0 3 0 3 1 112 67 0 180 409 Total 93 0 21 0 114 55 499 0 0 554 3 0 8 0 11 5 329 165 0 499 1178 07:00 AM 26 0 8 0 34 22 198 1 0 221 3 0 7 0 10 2 82 66 0 150 415 07:15 AM 18 2 12 0 32 24 207 0 0 231 4 0 11 0 15 0 86 67 0 153 431 07:30 AM 29 1 8 0 38 23 205 2 0 <td></td> <td>06:15 AM</td> <td>23</td> <td>0</td> <td>5</td> <td>0</td> <td>28</td> <td>7</td> <td>96</td> <td>0</td> <td>0</td> <td>103</td> <td>1</td> <td>0</td> <td>2</td> <td>0</td> <td>3</td> <td>3</td> <td>76</td> <td>35</td> <td>0</td> <td>114</td> <td>248</td>		06:15 AM	23	0	5	0	28	7	96	0	0	103	1	0	2	0	3	3	76	35	0	114	248
Total 93 0 21 0 114 55 499 0 0 554 3 0 8 0 11 5 329 165 0 499 1178 07:00 AM 26 0 8 0 34 22 198 1 0 221 3 0 7 0 10 2 82 66 0 150 415 07:15 AM 18 2 12 0 32 24 207 0 0 231 4 0 11 0 15 0 86 67 0 153 431 07:30 AM 29 1 8 0 38 23 205 2 0 230 6 3 12 0 21 7 108 63 0 178 467 07:45 AM 27 0 6 0 33 41 219 2 0<		06:30 AM	28	0	6	0	34	11	160	0	0	171	2	0	2	0	4	1	96	39	0	136	345
07:00 AM 26 0 8 0 34 22 198 1 0 221 3 0 7 0 10 2 82 66 0 150 415 07:15 AM 18 2 12 0 32 24 207 0 0 231 4 0 11 0 15 0 86 67 0 153 431 07:30 AM 29 1 8 0 38 23 205 2 0 230 6 3 12 0 21 7 108 63 0 178 467 07:45 AM 27 0 6 0 33 41 219 2 0 262 1 0 4 0 5 3 101 88 0 192 492 Total 100 3 34 0 137 110 829 5 0 </td <td></td> <td>06:45 AM</td> <td>30</td> <td>0</td> <td>7</td> <td>0</td> <td>37</td> <td>22</td> <td>167</td> <td>0</td> <td>0</td> <td>189</td> <td>0</td> <td>0</td> <td>3</td> <td>0</td> <td>3</td> <td>1</td> <td>112</td> <td>67</td> <td>0</td> <td>180</td> <td>409</td>		06:45 AM	30	0	7	0	37	22	167	0	0	189	0	0	3	0	3	1	112	67	0	180	409
07:15 AM 18 2 12 0 32 24 207 0 0 231 4 0 11 0 15 0 86 67 0 153 431 07:30 AM 29 1 8 0 38 23 205 2 0 230 6 3 12 0 21 7 108 63 0 178 467 07:45 AM 27 0 6 0 33 41 219 2 0 262 1 0 4 0 5 3 101 88 0 192 492 Total 100 3 34 0 137 110 829 5 0 944 14 3 34 0 51 12 377 284 0 673 1805 08:00 AM 36 0 5 0 41 33 180 0 <		Total	93	0	21	0	114	55	499	0	0	554	3	0	8	0	11	5	329	165	0	499	1178
07:15 AM 18 2 12 0 32 24 207 0 0 231 4 0 11 0 15 0 86 67 0 153 431 07:30 AM 29 1 8 0 38 23 205 2 0 230 6 3 12 0 21 7 108 63 0 178 467 07:45 AM 27 0 6 0 33 41 219 2 0 262 1 0 4 0 5 3 101 88 0 192 492 Total 100 3 34 0 137 110 829 5 0 944 14 3 34 0 51 12 377 284 0 673 1805 08:00 AM 36 0 5 0 41 33 180 0 <																							
07:30 AM 29 1 8 0 38 23 205 2 0 230 6 3 12 0 21 7 108 63 0 178 467 07:45 AM 27 0 6 0 33 41 219 2 0 262 1 0 4 0 5 3 101 88 0 192 492 Total 100 3 34 0 137 110 829 5 0 944 14 3 34 0 51 12 377 284 0 673 1805 08:00 AM 36 0 5 0 41 33 180 0 0 213 2 2 8 0 12 1 94 82 0 177 443 08:15 AM 33 2 15 0 50 29 197 1 0 227 0 1 4 0 5 6 73 84 0		07:00 AM	26	0	8	0	34	22	198	1	0	221	3	0	7	0	10	2	82	66	0	150	415
07:45 AM 27 0 6 0 33 41 219 2 0 262 1 0 4 0 5 3 101 88 0 192 492 Total 100 3 34 0 137 110 829 5 0 944 14 3 34 0 51 12 377 284 0 673 1805 08:00 AM 36 0 5 0 41 33 180 0 0 213 2 2 8 0 12 1 94 82 0 177 443 08:15 AM 33 2 15 0 50 29 197 1 0 227 0 1 4 0 5 6 73 84 0 163 445 08:30 AM 27 0 8 0 35 19 176 0 0		07:15 AM	18	2	12	0	32	24	207	0	0	231	4	0	11	0	15	0	86	67	0	153	431
Total 100 3 34 0 137 110 829 5 0 944 14 3 34 0 51 12 377 284 0 673 1805 08:00 AM 36 0 5 0 41 33 180 0 0 213 2 2 8 0 12 1 94 82 0 177 443 08:15 AM 33 2 15 0 50 29 197 1 0 227 0 1 4 0 5 6 73 84 0 163 445 08:30 AM 27 0 8 0 35 19 176 0 0 195 1 0 5 0 6 3 93 45 0 141 377		07:30 AM	29	1	8	0	38	23	205	2	0	230	6	3	12	0	21	7	108	63	0	178	467
08:00 AM 36		07:45 AM	27	0	6	0	33	41	219	2	0	262	1	0	4	0	5	3	101	88	0	192	492
08:15 AM 33 2 15 0 50 29 197 1 0 227 0 1 4 0 5 6 73 84 0 163 445 08:30 AM 27 0 8 0 35 19 176 0 0 195 1 0 5 0 6 3 93 45 0 141 377		Total	100	3	34	0	137	110	829	5	0	944	14	3	34	0	51	12	377	284	0	673	1805
08:15 AM 33 2 15 0 50 29 197 1 0 227 0 1 4 0 5 6 73 84 0 163 445 08:30 AM 27 0 8 0 35 19 176 0 0 195 1 0 5 0 6 3 93 45 0 141 377																							
08:30 AM 27		08:00 AM	36	0	5	0	41	33	180	0	0	213	2	2	8	0	12	1	94	82	0	177	443
		08:15 AM	33	2	15	0	50	29	197	1	0	227	0	1	4	0	5	6	73	84	0	163	445
00.45 0 47 0 0 0 05 47 400 4 0 400 0 0 0 0 0 0 0 0 0 0 0 0		08:30 AM	27	0	8	0	35	19	176	0	0	195	1	0	5	0	6	3	93	45	0	141	377
		08:45 AM	17	0	8	0	25	17	162	1	0	180	3	0	3	0	6	3	87	39	0	129	340
Total 113		Total	113	2	36	0	151	98	715	2	0	815	6	3	20	0	29	13	347	250	0	610	1605
Grand Total 306 5 91 0 402 263 2043 7 0 2313 23 6 62 0 91 30 1053 699 0 1782 4588	(Grand Total	306	5	91	0	402	263	2043	7	0	2313	23	6	62	0	91	30	1053	699	0	1782	4588
Apprch % 76.1 1.2 22.6 0 11.4 88.3 0.3 0 25.3 6.6 68.1 0 1.7 59.1 39.2 0		Apprch %	76.1	1.2	22.6	0		11.4	88.3	0.3	0		25.3	6.6	68.1	0		1.7	59.1	39.2	0		
Total % 6.7 0.1 2 0 8.8 5.7 44.5 0.2 0 50.4 0.5 0.1 1.4 0 2 0.7 23 15.2 0 38.8	_	Total %		0.1		0	8.8	5.7	44.5	0.2	0	50.4	0.5	0.1	1.4	0	2	0.7	23	15.2	0	38.8	
Lights 232 5 74 0 311 248 1939		Lights	232	5		0	311	248	1939														
<u>% Lights</u> 75.8 100 81.3 0 77.4 94.3 94.9 100 0 94.9 100 100 95.2 0 96.7 96.7 88.4 92.7 0 90.2 91.6	_	% Lights		100		0		94.3		100	0	94.9	100	100	95.2		96.7	96.7	88.4	92.7	0	90.2	
Buses 27 0 8 0 35 1 10 0 0 11 0 0 0 0 0 0 0 8 1 0 9 55				-		-					-			-		-		0			-	-	
<u>% Buses 8.8 0 8.8 0 8.7 0.4 0.5 0 0 0.5 0 0 0 0 0 0 0 0.8 0.1 0 0.5 1.2</u>	_												_					_					
Trucks 47 0 9 0 56 14 94 0 0 108 0 0 3 0 3 1 114 50 0 165 332				-		-				-	-		-	-		-					-		
% Trucks 15.4 0 9.9 0 13.9 5.3 4.6 0 0 4.7 0 0 4.8 0 3.3 3.3 10.8 7.2 0 9.3 7.2	_	% Trucks	15.4	0	9.9	0	13.9	5.3	4.6	0	0	4.7	0	0	4.8	0	3.3	3.3	10.8	7.2	0	9.3	7.2
Bicycles on Crosswalk		Bicycles on Crosswalk																					
% Biocycles on 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		% Bicycles on	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-	Padastrians		0		0	0	0		0		0	_			0	Λ	0	0		0	0	0
**Pedestrians			_	-	-	-	-	_	-	-	-	-	-	-	-	-	-	_	-		-	-	_

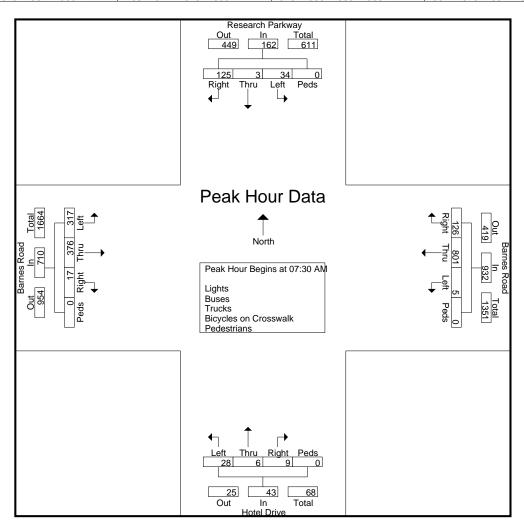
Kensington, Connecticut 06037 (860) 828-1693

> File Name: 17898 Site Code: 17898

Start Date : 10/26/2018

Page No : 2

		Resea	arch P	arkwa	y		Ва	rnes F	Road			Н	otel D	rive			Ва	rnes F	Road]
		Fr	om No	orth			F	rom E	ast			Fr	om So	outh			F	rom W	'est		
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour A	Analysi	s From	n 06:00	O AM to	08:45	AM -	Peak 1	of 1													
Peak Hour fo	or Enti	re Inte	rsectio	n Beg	ins at 0	7:30 A	M														
07:30 AM	29	1	8	0	38	23	205	2	0	230	6	3	12	0	21	7	108	63	0	178	467
07:45 AM	27	0	6	0	33	41	219	2	0	262	1	0	4	0	5	3	101	88	0	192	492
08:00 AM	36	0	5	0	41	33	180	0	0	213	2	2	8	0	12	1	94	82	0	177	443
08:15 AM	33	2	15	0	50	29	197	1	0	227	0	1	4	0	5	6	73	84	0	163	445
Total Volume	125	3	34	0	162	126	801	5	0	932	9	6	28	0	43	17	376	317	0	710	1847
% App. Total	77.2	1.9	21	0		13.5	85.9	0.5	0		20.9	14	65.1	0		2.4	53	44.6	0		
PHF	.868	.375	.567	.000	.810	.768	.914	.625	.000	.889	.375	.500	.583	.000	.512	.607	.870	.901	.000	.924	.939



Kensington, Connecticut 06037 (860) 828-1693

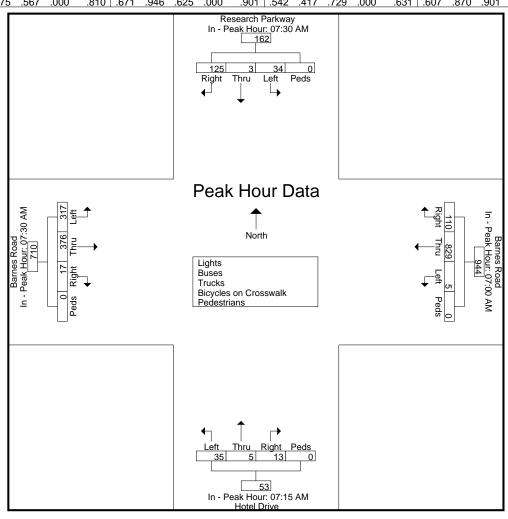
File Name : 17898 Site Code : 17898 Start Date : 10/26/2018

Page No : 3

	R	esea Fro		arkwa orth	У		_	rnes F rom E				_	otel D om So					rnes F rom W	Road /est		
Start Time	Right T	hru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour to	or ⊨aci	n Appi	oach i	Begins	at:															
	07:30 AM					07:00 AN	1				07:15 AM					07:30 AM				
+0 mins.	29	1	8	0	38	22	198	1	0	221	4	0	11	0	15	7	108	63	0	178
+15 mins.	27	0	6	0	33	24	207	0	0	231	6	3	12	0	21	3	101	88	0	192
+30 mins.	36	0	5	0	41	23	205	2	0	230	1	0	4	0	5	1	94	82	0	177
+45 mins.	33	2	15	0	50	41	219	2	0	262	2	2	8	0	12	6	73	84	0	163
Total Volume	125	3	34	0	162	110	829	5	0	944	13	5	35	0	53	17	376	317	0	710
% App. Total	77.2	1.9	21	0		11.7	87.8	0.5	0		24.5	9.4	66	0		2.4	53	44.6	0	
PHF	.868	.375	.567	.000	.810	.671	.946	.625	.000	.901	.542	.417	.729	.000	.631	.607	.870	.901	.000	.924



Kensington, Connecticut 06037 (860) 828-1693

Route 68 at I-91 NB Ramps Wallingford, Connecticut

File Name: 17901 Site Code: 17901

Start Date : 10/25/2018

Page No : 1

Groups Printed- Lights - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

				Ramp)		Вa	rnes F						f Ramp)			rnes F			
			om No					rom E					om So					rom W			
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	0	0	0	0	0	50	129	0	0	179	61	0	66	0	127	0	140	70	0	210	516
03:15 PM	0	0	0	0	0	39	136	0	0	175	48	0	79	0	127	0	122	45	0	167	469
03:30 PM	0	1	0	0	1	44	204	0	0	248	61	0	68	0	129	0	156	79	0	235	613
03:45 PM	0	0	0	0	0	46	135	0	0	181	76	0	72	0	148	0	152	63	0	215	544
Total	0	1	0	0	1	179	604	0	0	783	246	0	285	0	531	0	570	257	0	827	2142
04:00 PM	0	0	0	0	0	70	170	0	0	240	65	0	70	0	135	0	178	118	0	296	671
04:15 PM	0	0	0	0	0	57	154	0	0	211	75	0	76	0	151	0	169	73	0	242	604
04:30 PM	0	0	0	0	0	76	212	0	0	288	71	1	44	0	116	0	171	106	0	277	681
04:45 PM	0	0	0	0	0	52	160	0	0	212	71	0	74	0	145	0	181	114	0	295	652
Total	0	0	0	0	0	255	696	0	0	951	282	1	264	0	547	0	699	411	0	1110	2608
05:00 PM	0	0	0	0	0	63	153	0	0	216	61	0	83	0	144	0	204	126	0	330	690
05:15 PM	0	0	0	0	0	55	196	0	0	251	90	0	83	0	173	0	174	97	0	271	695
05:30 PM	0	0	0	0	0	39	146	0	0	185	71	0	97	0	168	0	175	106	0	281	634
05:45 PM	0	0	0	0	0	42	125	0	0	167	62	0	63	0	125	0	144	73	0	217	509
Total	0	0	0	0	0	199	620	0	0	819	284	0	326	0	610	0	697	402	0	1099	2528
Grand Total	0	1	0	0	1	633	1920	0	0	2553	812	1	875	0	1688	0	1966	1070	0	3036	7278
Apprch %	0	100	0	0		24.8	75.2	0	0		48.1	0.1	51.8	0		0	64.8	35.2	0		
Total %	0	0	0	0	0	8.7	26.4	0	0	35.1	11.2	0	12	0	23.2	0	27	14.7	0	41.7	
Lights	0	1	0	0	1	603	1829										1919	1009			
% Lights	0	100	0	0	100	95.3	95.3	0	0	95.3	93	100	92.3	0	92.7	0	97.6	94.3	0	96.4	95.1
Buses	0	0	0	0	0	0	11	0	0	11	3	0	21	0	24	0	3	4	0	7	42
% Buses	0	0	0	0	0	0	0.6	0	0	0.4	0.4	0	2.4	0	1.4	0	0.2	0.4	0	0.2	0.6
Trucks	0	0	0	0	0	30	80	0	0	110	54	0	46	0	100	0	44	57	0	101	311
% Trucks	0	0	0	0	0	4.7	4.2	0	0	4.3	6.7	0	5.3	0	5.9	0	2.2	5.3	0	3.3	4.3
Bicycles on Crosswalk																					
% Bicycles on	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Crosswalk																					
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

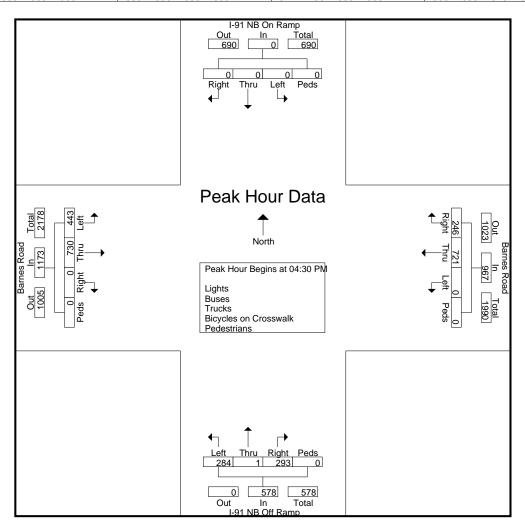
Kensington, Connecticut 06037 (860) 828-1693

> File Name: 17901 Site Code: 17901

Start Date : 10/25/2018

Page No : 2

				Ramp)			rnes F						Ramp)			rnes F			
		Fr	om No	orth			F	rom E	ast			Fr	om So	outh			F	rom W	/est		
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour A	nalysi	s From	n 03:00	0 PM to	o 05:45	PM -	Peak 1	of 1													
Peak Hour fo	or Entii	re Inte	rsectio	n Beg	ins at 0	4:30 P	M														
04:30 PM	0	0	0	0	0	76	212	0	0	288	71	1	44	0	116	0	171	106	0	277	681
04:45 PM	0	0	0	0	0	52	160	0	0	212	71	0	74	0	145	0	181	114	0	295	652
05:00 PM	0	0	0	0	0	63	153	0	0	216	61	0	83	0	144	0	204	126	0	330	690
_05:15 PM	0	0	0	0	0	55	196	0	0	251	90	0	83	0	173	0	174	97	0	271	695
Total Volume	0	0	0	0	0	246	721	0	0	967	293	1	284	0	578	0	730	443	0	1173	2718
_ % App. Total	0	0	0	0		25.4	74.6	0	0		50.7	0.2	49.1	0		0	62.2	37.8	0		
PHF	.000	.000	.000	.000	.000	.809	.850	.000	.000	.839	.814	.250	.855	.000	.835	.000	.895	.879	.000	.889	.978



Kensington, Connecticut 06037 (860) 828-1693

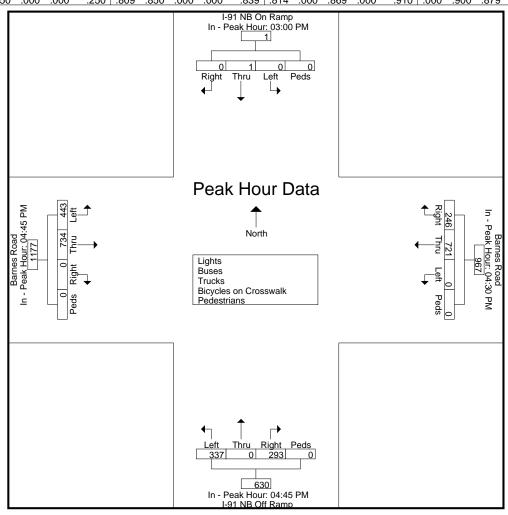
> File Name : 17901 Site Code : 17901 Start Date : 10/25/2018

Page No : 3

		I-91 N	IB On	Ramp)		Ва	rnes F	Road			I-91 N	NB Off	Ramp)		Ba	rnes F	Road		
		Fr	om N	orth			F	rom E	ast			Fr	om So	outh			F	rom W	/est		
Start Time	Right Thru Left Peds App. Total Right							Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour fo	<u>or Eacl</u>	n Appı	roach l	<u>Begins</u>	at:															
	03:00 PM					04:30 PN	4				04:45 PM	1				04:45 PM	1			
+0 mins.	0	0	0	0	0	76	212	0	0	288	71	0	74	0	145	0	181	114	0	295
+15 mins.	0	0	0	0	0	52	160	0	0	212	61	0	83	0	144	0	204	126	0	330
+30 mins.	0	1	0	0	1	63	153	0	0	216	90	0	83	0	173	0	174	97	0	271
+45 mins.	0	0	0	0	0	55	196	0	0	251	71	0	97	0	168	0	175	106	0	281
Total Volume	0	1	0	0	1	246	721	0	0	967	293	0	337	0	630	0	734	443	0	1177
% App. Total	0	100	0	0		25.4	74.6	0	0		46.5	0	53.5	0		0	62.4	37.6	0	
PHF	.000	.250	.000	.000	250	809	850	.000	.000	839	.814	.000	.869	.000	.910	.000	.900	879	.000	892



Kensington, Connecticut 06037 (860) 828-1693

Route 68 at I-91 SB Ramps Wallingford, Connecticut

File Name: 17903 Site Code: 17903

Start Date : 10/25/2018

Page No : 1

Groups Printed- Lights - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

					Ramp)			rnes F						Ramp)			rnes F			
ļ			Fr	om N	orth			F	rom E	ast			Fr	om So	outh			F	rom W	est		
Į	Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
	03:00 PM	49	0	28	0	77	0	135	63	0	198	1	0	0	0	1	78	183	0	0	261	537
	03:15 PM	68	0	48	0	116	0	156	64	0	220	0	0	0	0	0	47	136	0	0	183	519
	03:30 PM	68	0	55	0	123	0	165	107	0	272	0	0	0	0	0	95	192	0	0	287	682
	03:45 PM	82	1	49	0	132	0	150	58	0	208	0	0	0	0	0	64	169	0	0	233	573
	Total	267	1	180	0	448	0	606	292	0	898	1	0	0	0	1	284	680	0	0	964	2311
	04:00 PM	66	0	49	0	115	0	180	76	0	256	l o	0	0	0	0	90	239	0	0	329	700
	04:15 PM	70	0	63	Ő	133	ő	174	58	0	232	0	0	0	0	0	83	199	0	Ô	282	647
	04:30 PM	80	0	54	0	134	ő	181	89	0	270	0	0	0	0	0	138	244	0	0	382	786
	04:45 PM	93	0	75	ő	168	Ö	170	80	0	250	0	0	0	0	0	101	221	0	0	322	740
•	Total	309	0	241	0	550	0	705	303	0	1008	0	0	0	0	0	412	903	0	0	1315	2873
	rotar	000	U	271	O	000		700	000	Ü	1000		Ū	Ū	Ü	O	712	500	O	Ü	1010	2010
	05:00 PM	80	1	56	0	137	0	182	67	0	249	0	0	0	0	0	137	279	0	0	416	802
	05:15 PM	80	0	53	0	133	0	202	70	0	272	0	0	0	0	0	99	231	0	0	330	735
	05:30 PM	59	0	56	0	115	0	181	59	0	240	0	0	0	0	0	77	214	0	0	291	646
	05:45 PM	57	0	63	0	120	0	146	51	0	197	0	0	0	0	0	65	150	0	0	215	532
	Total	276	1	228	0	505	0	711	247	0	958	0	0	0	0	0	378	874	0	0	1252	2715
							i															
	Grand Total	852	2	649	0	1503	0	2022	842	0	2864	1	0	0	0	1	1074	2457	0	0	3531	7899
	Apprch %	56.7	0.1	43.2	0		0	70.6	29.4	0		100	0	0	0		30.4	69.6	0	0		
	Total %	10.8	0	8.2	0	19	0	25.6	10.7	0	36.3	0	0	0	0	0	13.6	31.1	0	0	44.7	
	Lights	748	2	625	0	1375	0	1918									1017	2361				
	% Lights	87.8	100	96.3	0	91.5	0	94.9	94.3	0	94.7	100	0	0	0	100	94.7	96.1	0	0	95.7	94.5
	Buses	3	0	0	0	3	0	29	3	0	32	0	0	0	0	0	3	8	0	0	11	46
	% Buses	0.4	0	0	0	0.2	0	1.4	0.4	0	1.1	0	0	0	0	0	0.3	0.3	0	0	0.3	0.6
	Trucks	101	0	24	0	125	0	75	45	0	120	0	0	0	0	0	54	88	0	0	142	387
	% Trucks	11.9	0	3.7	0	8.3	0	3.7	5.3	0	4.2	0	0	0	0	0	5	3.6	0	0	4	4.9
	Bicycles on Crosswalk																					
	% Bicycles on	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	% Pedestrians	ı U	U	U	U	U	ı U	U	U	U	U	ı U	U	U	U	U	ı U	U	U	U	U	U

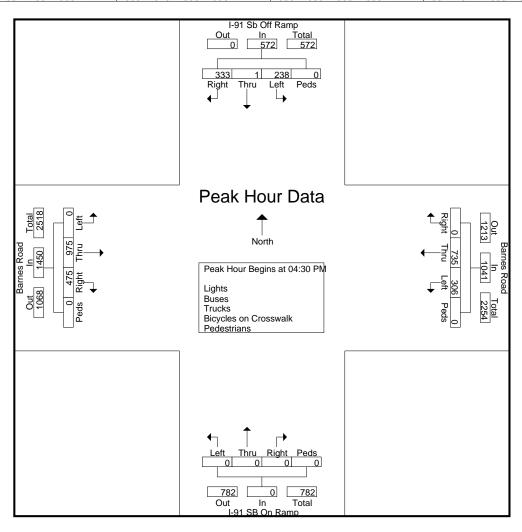
Kensington, Connecticut 06037 (860) 828-1693

> File Name: 17903 Site Code: 17903

Start Date : 10/25/2018

Page No : 2

		I-91 S	Sb Off	Ramp	ı		Ва	rnes F	Road			I-91 S	SB On	Ramp)		Ва	rnes F	Road		
		Fr	om No	orth			F	rom E	ast			Fr	om Sc	outh			Fr	rom W	'est		
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour A	nalysi	s Fron	า 03:00	O PM to	05:45	PM - I	Peak 1	of 1													
Peak Hour fo	or Entii	re Inte	rsectio	n Beg	ins at 0	4:30 P	M														
04:30 PM	80	0	54	0	134	0	181	89	0	270	0	0	0	0	0	138	244	0	0	382	786
04:45 PM	93	0	75	0	168	0	170	80	0	250	0	0	0	0	0	101	221	0	0	322	740
05:00 PM	80	1	56	0	137	0	182	67	0	249	0	0	0	0	0	137	279	0	0	416	802
_05:15 PM	80	0	53	0	133	0	202	70	0	272	0	0	0	0	0	99	231	0	0	330	735
Total Volume	333	1	238	0	572	0	735	306	0	1041	0	0	0	0	0	475	975	0	0	1450	3063
% App. Total	58.2	0.2	41.6	0		0	70.6	29.4	0		0	0	0	0		32.8	67.2	0	0		
PHF	.895	.250	.793	.000	.851	.000	.910	.860	.000	.957	.000	.000	.000	.000	.000	.861	.874	.000	.000	.871	.955



Kensington, Connecticut 06037 (860) 828-1693

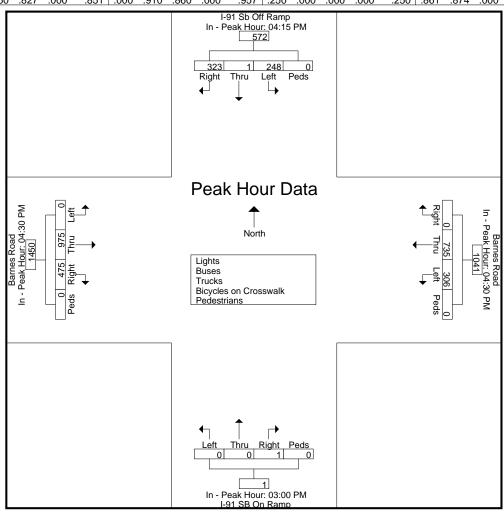
> File Name : 17903 Site Code : 17903 Start Date : 10/25/2018

Page No : 3

		I-91 \$	Sb Off	Ramp)		Ва	rnes F	Road			I-91 S	SB On	Ramp)		Ba	rnes F	Road		
		Fr	rom N	orth			F	rom E	ast			Fr	om So	outh			F	rom W	/est		
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour f	or Eacl	h Appı	roach	Begins	at:															
	04:15 PM	1		_		04:30 PN	1				03:00 PM					04:30 PM	1			
+0 mins.	70	0	63	0	133	0	181	89	0	270	1	0	0	0	1	138	244	0	0	382
+15 mins.	80	0	54	0	134	0	170	80	0	250	0	0	0	0	0	101	221	0	0	322
+30 mins.	93	0	75	0	168	0	182	67	0	249	0	0	0	0	0	137	279	0	0	416
+45 mins.	80	1	56	0	137	0	202	70	0	272	0	0	0	0	0	99	231	0	0	330
Total Volume	323	1	248	0	572	0	735	306	0	1041	1	0	0	0	1	475	975	0	0	1450
% App. Total	56.5	0.2	43.4	0		0	70.6	29.4	0		100	0	0	0		32.8	67.2	0	0	
PHF	.868	.250	.827	.000	.851	.000	.910	.860	.000	.957	.250	.000	.000	.000	.250	.861	.874	.000	.000	.871



Kensington, Connecticut 06037 (860) 828-1693

Route 68 at Research Parkway/Hotel Dr Wallingford, Connecticut

File Name : 17899 Site Code : 17899

Start Date : 10/25/2018

Page No : 1

Groups Printed- Lights - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

				arkwa	у			rnes F					otel D					rnes F			
			rom No					rom E					om So					rom W			
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	60	0	15	0	75	10	109	0	0	119	3	1	6	0	10	3	160	33	0	196	400
03:15 PM	61	0	11	0	72	5	111	0	0	116	0	2	2	0	4	8	142	24	0	174	366
03:30 PM	94	0	26	0	120	8	160	1	0	169	6	2	12	0	20	4	184	30	0	218	527
_03:45 PM	52	1	28	0	81	17	126	1	0	144	0	0	3	0	3	2	197	27	0	226	454
Total	267	1	80	0	348	40	506	2	0	548	9	5	23	0	37	17	683	114	0	814	1747
04:00 PM	71	0	33	0	104	9	175	1	0	185	2	1	11	0	14	9	213	24	0	246	549
04:15 PM	53	1	20	0	74	6	153	1	0	160	1	0	4	0	5	7	195	29	0	231	470
04:30 PM	100	2	33	0	135	13	177	0	0	190	1	1	6	0	8	4	216	22	0	242	575
04:45 PM	67	0	22	0	89	8	141	0	0	149	2	0	5	0	7	10	212	30	0	252	497
Total	291	3	108	0	402	36	646	2	0	684	6	2	26	0	34	30	836	105	0	971	2091
05:00 PM	95	0	42	0	137	3	128	2	0	133	0	0	2	0	2	6	236	27	0	269	541
05:15 PM	52	0	38	0	90	7	187	1	0	195	3	0	4	0	7	7	230	26	0	263	555
05:30 PM	44	0	24	1	69	5	138	0	1	144	1	0	7	0	8	4	230	17	0	251	472
05:45 PM	28	0	16	0	44	6	139	0	0	145	1	0	5	0	6	4	180	23	0	207	402
Total	219	0	120	1	340	21	592	3	1	617	5	0	18	0	23	21	876	93	0	990	1970
Grand Total	777	4	308	1	1090	97	1744	7	1	1849	20	7	67	0	94	68	2395	312	0	2775	5808
Apprch %	71.3	0.4	28.3	0.1		5.2	94.3	0.4	0.1		21.3	7.4	71.3	0		2.5	86.3	11.2	0		
Total %		0.1	5.3	0	18.8	1.7	30	0.1	0	31.8	0.3	0.1	1.2	0	1.6	1.2	41.2	5.4	0	47.8	
Lights	731	4	300	0	1035	83	1669										2342				
% Lights	94.1	100	97.4	0	95	85.6	95.7	100	0	95.1	100	100	97	0	97.9	98.5	97.8	85.9	0	96.5	95.8
Buses	1	0	0	0	1	1	12	0	0	13	0	0	1	0	1	0	4	3	0	7	22
% Buses	0.1	0	0	0	0.1	1	0.7	0	0	0.7	0	0	1.5	0	1.1	0	0.2	1	0	0.3	0.4
Trucks	45	0	8	0	53	13	63	0	0	76	0	0	1	0	1	1	49	41	0	91	221
% Trucks	5.8	0	2.6	0	4.9	13.4	3.6	0	0	4.1	0	0	1.5	0	1.1	1.5	2	13.1	0	3.3	3.8
Bicycles on Crosswalk																					
% Bicycles on	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
% Pedestrians	0	0	0	100	0.1	0	0	0	100	0.1	0	0	0	0	0	0	0	0	0	0	0

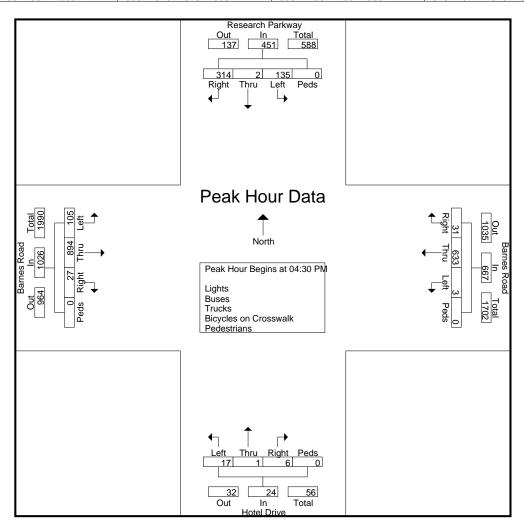
Kensington, Connecticut 06037 (860) 828-1693

File Name: 17899 Site Code: 17899

Start Date : 10/25/2018

Page No : 2

		Resea	arch P	arkwa	у		Ва	rnes F	Road			Н	otel D	rive			Ва	rnes F	Road		
		Fr	om No	orth			F	rom E	ast			Fr	om So	outh			F	rom W	/est		
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour A	nalysi	s Fron	n 03:00	O PM to	o 05:45	PM -	Peak 1	of 1													
Peak Hour f																					
04:30 PM	100	2	33	0	135	13	177	0	0	190	1	1	6	0	8	4	216	22	0	242	575
04:45 PM	67	0	22	0	89	8	141	0	0	149	2	0	5	0	7	10	212	30	0	252	497
05:00 PM	95	0	42	0	137	3	128	2	0	133	0	0	2	0	2	6	236	27	0	269	541
05:15 PM	52	0	38	0	90	7	187	1	0	195	3	0	4	0	7	7	230	26	0	263	555
Total Volume	314	2	135	0	451	31	633	3	0	667	6	1	17	0	24	27	894	105	0	1026	2168
% App. Total	69.6	0.4	29.9	0		4.6	94.9	0.4	0		25	4.2	70.8	0		2.6	87.1	10.2	0		
PHF	.785	.250	.804	.000	.823	.596	.846	.375	.000	.855	.500	.250	.708	.000	.750	.675	.947	.875	.000	.954	.943



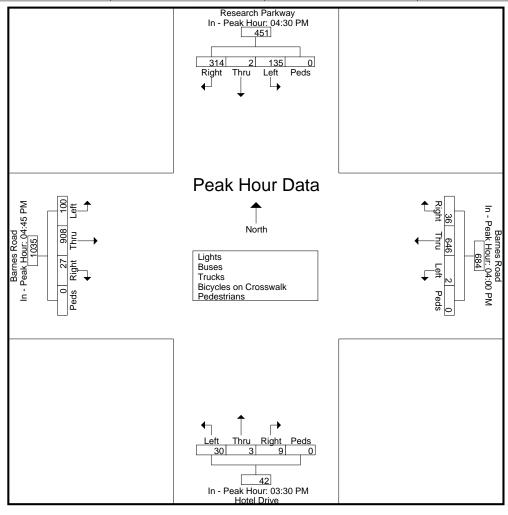
Kensington, Connecticut 06037 (860) 828-1693

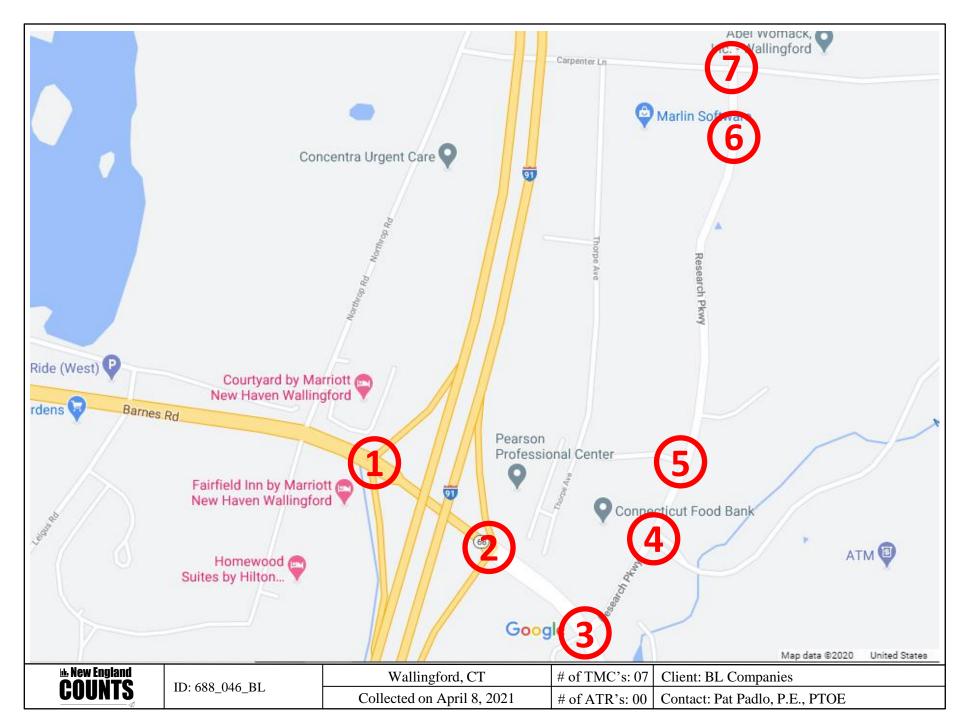
> File Name : 17899 Site Code : 17899 Start Date : 10/25/2018

Page No : 3

		Resea	arch P	arkwa	ıy		Ba	rnes F	Road			Н	otel D	rive			Ва	rnes R	Road		
		Fr	om N	orth			F	rom E	ast			Fr	om So	outh			Fı	rom W	/est		i .
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour A	Analysi	s Fron	n 03:0	0 PM t	o 05:45	PM - I	Peak 1	of 1													

Peak Hour fo	or Eacl	n Appı	roach l	Begins	at:															
	04:30 PM					04:00 PM	1				03:30 PM	1				04:45 PM				
+0 mins.	100	2	33	0	135	9	175	1	0	185	6	2	12	0	20	10	212	30	0	252
+15 mins.	67	0	22	0	89	6	153	1	0	160	0	0	3	0	3	6	236	27	0	269
+30 mins.	95	0	42	0	137	13	177	0	0	190	2	1	11	0	14	7	230	26	0	263
+45 mins.	52	0	38	0	90	8	141	0	0	149	1	0	4	0	5	4	230	17	0	251
Total Volume	314	2	135	0	451	36	646	2	0	684	9	3	30	0	42	27	908	100	0	1035
% App. Total	69.6	0.4	29.9	0		5.3	94.4	0.3	0		21.4	7.1	71.4	0		2.6	87.7	9.7	0	
PHF	.785	.250	.804	.000	.823	.692	.912	.500	.000	.900	.375	.375	.625	.000	.525	.675	.962	.833	.000	.962





 Client:
 Pat Padlo, P.E., PTOE

 Project #:
 688_046_BL

 BTD #:
 Location 1

 Location:
 Wallingford, CT

 Street 1:
 Route 68 (Barnes Road)

 Street 2:
 I-91 Southbound On/Off Ramps

Count Date: 4/8/2021
Day of Week: Thursday
Weather: Mostly Cloudy, 60°F



PO Box 1723 Framingham, MA 01701

	J-9		und On Rar bound	np	I-9	91 Southbor	und Off Rar bound	np	F		arnes Road	l)	F		arnes Road	.)
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
10:00 AM	0	0	0	0	0	16	0	43	0	0	74	46	0	31	80	0
10:15 AM	0	0	0	0	0	14	0	42	0	0	99	36	0	24	77	0
10:30 AM	0	0	0	0	0	17	0	32	0	0	90	34	0	21	76	0
10:45 AM	0	0	0	0	0	20	0	42	0	0	101	40	0	32	93	0
7:00 PM	0	0	0	0	0	11	0	19	0	0	73	16	0	37	85	0
7:15 PM	0	0	0	0	0	16	0	17	0	0	70	33	0	27	77	0
7:30 PM	0	0	0	0	0	16	0	13	0	0	75	19	0	24	56	0
7:45 PM	0	0	0	0	0	19	0	19	0	0	60	28	0	22	53	0
8:00 PM	0	0	0	0	0	18	0	21	0	0	53	15	0	27	58	0
8:15 PM	0	0	0	0	0	7	0	19	0	0	42	17	0	16	63	0
8:30 PM	0	0	0	0	0	14	0	23	0	0	44	21	0	12	34	0
8:45 PM	0	0	0	0	0	13	0	16	0	0	40	13	0	10	42	0

 Client:
 Pat Padlo, P.E., PTOE

 Project #:
 688_046_BL

 BTD #:
 Location 1

 Location:
 Wallingford, CT

 Street 1:
 Route 68 (Barnes Road)

 Street 2:
 I-91 Southbound On/Off Ramps

Count Date: 4/8/2021
Day of Week: Thursday
Weather: Mostly Cloudy, 60°F



PO Box 1723 Framingham, MA 01701

	I-9	1 Southbo	und On Ran	np	J-9	91 Southboo	und Off Ran	np	F	Route 68 (B	arnes Road)	F	Route 68 (B	arnes Road	l)
		North	bound			South	bound			Easth	oound			West	oound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
10:00 AM	0	0	0	0	0	5	0	12	0	0	15	13	0	2	10	0
10:15 AM	0	0	0	0	0	3	0	11	0	0	19	7	0	2	12	0
10:30 AM	0	0	0	0	0	4	0	16	0	0	15	1	0	4	10	0
10:45 AM	0	0	0	0	0	3	0	11	0	0	23	10	0	7	9	0
7:00 PM	0	0	0	0	0	1	0	2	0	0	0	1	0	1	4	0
7:15 PM	0	0	0	0	0	1	0	2	0	0	0	2	0	1	2	0
7:30 PM	0	0	0	0	0	1	0	1	0	0	1	0	0	2	0	0
7:45 PM	0	0	0	0	0	1	0	1	0	0	2	1	0	2	3	0
8:00 PM	0	0	0	0	0	2	0	4	0	0	3	0	0	1	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	2	3	0
8:30 PM	0	0	0	0	0	3	0	4	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	2	0

 Client:
 Pat Padlo, P.E., PTOE

 Project #:
 688_046_BL

 BTD #:
 Location 1

 Location:
 Wallingford, CT

 Street 1:
 Route 68 (Barnes Road)

 Street 2:
 I-91 Southbound On/Off Ramps

Count Date: 4/8/2021
Day of Week: Thursday
Weather: Mostly Cloudy, 60°F



PO Box 1723 Framingham, MA 01701

	I-9	91 Southboo North		np	1-9	91 Southbou South	und Off Ran bound	np	F	Route 68 (B Easth	arnes Road	1)	F		arnes Road bound)
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

 Client:
 Pat Padlo, P.E., PTOE

 Project #:
 688_046_BL

 BTD #:
 Location 2

 Location:
 Wallingford, CT

 Street 1:
 Route 68 (Barnes Road)

 Street 2:
 I-91 Northbound On/Off Ramps

Count Date: 4/8/2021
Day of Week: Thursday
Weather: Mostly Cloudy, 60°F



PO Box 1723 Framingham, MA 01701

	I-9		und Off Ran	np	1-9	91 Northbou South	und On Ran bound	np	F		arnes Road)	F	Route 68 (B West	arnes Road	l)
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
10:00 AM	0	22	0	28	0	0	0	0	0	28	61	0	0	0	87	39
10:15 AM	0	33	0	24	0	0	0	0	0	45	67	0	0	0	68	32
10:30 AM	0	26	0	30	0	0	0	0	0	36	74	0	0	0	78	27
10:45 AM	0	28	0	30	0	0	0	0	0	49	72	0	0	0	92	33
7:00 PM	0	34	0	21	0	0	0	0	0	15	66	0	0	0	88	20
7:15 PM	0	36	0	34	0	0	0	0	0	8	78	0	0	0	69	17
7:30 PM	0	20	0	34	0	0	0	0	0	18	71	0	0	0	56	18
7:45 PM	0	29	0	27	0	0	0	0	0	17	65	0	0	0	48	15
8:00 PM	0	20	0	26	0	0	0	0	0	7	65	0	0	0	60	21
8:15 PM	0	30	0	33	0	0	0	0	0	10	40	0	0	0	53	19
8:30 PM	0	14	0	14	0	0	0	0	0	2	56	0	0	0	34	11
8:45 PM	0	17	0	18	0	0	0	0	0	12	42	0	0	0	34	12

 Client:
 Pat Padlo, P.E., PTOE

 Project #:
 688_046_BL

 BTD #:
 Location 2

 Location:
 Wallingford, CT

 Street 1:
 Route 68 (Barnes Road)

 Street 2:
 I-91 Northbound On/Off Ramps

Count Date: 4/8/2021
Day of Week: Thursday
Weather: Mostly Cloudy, 60°F



PO Box 1723 Framingham, MA 01701

	I-9	91 Northboo		np	1-9	91 Northboo		np	F		arnes Road)	F		arnes Road	1)
		North	bound			South	bound			Easth	ound			West	bound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
10:00 AM	0	7	0	7	0	0	0	0	0	6	10	0	0	0	9	6
10:15 AM	0	6	0	7	0	0	0	0	0	15	8	0	0	0	8	1
10:30 AM	0	4	0	5	0	0	0	0	0	13	8	0	0	0	12	11
10:45 AM	0	3	0	4	0	0	0	0	0	16	10	0	0	0	13	7
7:00 PM	0	3	0	2	0	0	0	0	0	0	1	0	0	0	2	4
7:15 PM	0	2	0	2	0	0	0	0	0	0	1	0	0	0	1	1
7:30 PM	0	2	0	2	0	0	0	0	0	1	1	0	0	0	0	2
7:45 PM	0	4	0	0	0	0	0	0	0	2	1	0	0	0	1	1
8:00 PM	0	0	0	2	0	0	0	0	0	2	3	0	0	0	1	1
8:15 PM	0	2	0	1	0	0	0	0	0	0	1	0	0	0	3	3
8:30 PM	0	0	0	2	0	0	0	0	0	0	3	0	0	0	0	0
8:45 PM	0	2	0	0	0	0	0	0	0	0	2	0	0	0	2	0

 Client:
 Pat Padlo, P.E., PTOE

 Project #:
 688_046_BL

 BTD #:
 Location 2

 Location:
 Wallingford, CT

 Street 1:
 Route 68 (Barnes Road)

 Street 2:
 I-91 Northbound On/Off Ramps

Count Date: 4/8/2021
Day of Week: Thursday
Weather: Mostly Cloudy, 60°F



PO Box 1723 Framingham, MA 01701

	J-9	91 Northbou Northl		np	1-9	91 Northbou South		np	F	Route 68 (B Easth	arnes Road	1)	F		arnes Road bound)
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Client: Pat Padlo, P.E., PTOE 688_046_BL Project #: BTD #: Location 3 Wallingford, CT Location: Street 1: Route 68 (Barnes Road) Research Parkway Street 2: 4/8/2021 Count Date: Day of Week: Thursday Mostly Cloudy, 60°F Weather:



	1	Hilton Gard North	en Inn Drive bound	9		Research South			F		arnes Road	l)	F	Route 68 (B West	arnes Road bound)
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
10:00 AM	0	1	0	0	0	9	0	18	0	18	71	2	0	0	104	5
10:15 AM	0	5	0	0	0	6	0	12	0	14	73	1	0	0	86	4
10:30 AM	0	6	1	0	0	4	0	20	0	15	91	2	0	0	79	6
10:45 AM	0	0	0	0	0	8	0	24	0	21	77	1	0	0	103	5
7:00 PM	0	3	1	1	0	4	1	16	0	8	77	3	0	0	88	6
7:15 PM	0	1	0	2	0	3	0	14	0	15	84	4	0	1	71	4
7:30 PM	0	1	0	2	0	4	0	13	0	19	87	3	0	1	60	4
7:45 PM	0	1	0	1	0	3	0	11	0	13	76	1	0	0	52	6
8:00 PM	0	0	0	0	0	4	0	12	0	11	79	3	0	1	74	3
8:15 PM	0	0	0	0	0	2	0	9	0	11	66	2	0	0	58	3
8:30 PM	0	1	0	0	0	2	0	4	0	7	56	3	0	0	40	1
8:45 PM	0	3	0	2	0	1	0	7	0	1	56	5	0	0	36	3

Client: Pat Padlo, P.E., PTOE 688_046_BL Project #: BTD #: Location 3 Wallingford, CT Location: Street 1: Route 68 (Barnes Road) Research Parkway Street 2: 4/8/2021 Count Date: Thursday Mostly Cloudy, 60°F Day of Week: Weather:



	ı	Hilton Gard North	en Inn Drive bound	9			Parkway		F		arnes Road	1)	F		arnes Road bound	1)
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
10:00 AM	0	0	0	0	0	0	0	6	0	5	12	0	0	0	8	0
10:15 AM	0	0	0	0	0	1	0	2	0	6	10	0	0	0	9	0
10:30 AM	0	1	0	0	0	0	0	8	0	5	6	1	0	0	13	1
10:45 AM	0	0	0	0	0	0	0	10	0	6	9	0	0	0	9	1
7:00 PM	0	0	0	0	0	0	0	3	0	2	2	0	0	0	4	0
7:15 PM	0	0	0	0	0	0	0	1	0	2	1	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	2	0	1	1	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0
8:00 PM	0	0	0	0	0	0	0	1	0	2	2	0	0	0	1	0
8:15 PM	0	0	0	0	0	0	0	4	0	2	0	0	0	0	1	0
8:30 PM	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	2	0	1	3	0	0	0	0	0

Client: Pat Padlo, P.E., PTOE 688_046_BL Project #: BTD #: Location 3 Wallingford, CT Location: Street 1: Route 68 (Barnes Road) Research Parkway Street 2: 4/8/2021 Count Date: Thursday Mostly Cloudy, 60°F Day of Week: Weather:



		Hilton Gard North	en Inn Drive bound	Э			Parkway bound		F		arnes Road	1)	F		arnes Road bound	1)
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Client: Pat Padlo, P.E., PTOE
Project #: 688_046_BL
BTD #: Location 4
Location: Wallingford, CT
Street 1: Research Parkway
Street 2: Site Drive & Food Bank Drive

Count Date: 4/8/2021
Day of Week: Thursday
Weather: Mostly Cloudy, 60°F



PO Box 1723 Framingham, MA 01701

		Research North	Parkway				Parkway bound			Food Ba Easth	nk Drive ound				Drive bound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
10:00 AM	0	3	19	0	0	0	25	0	0	0	0	1	0	0	0	0
10:15 AM	0	0	20	0	0	0	17	0	0	0	0	2	0	0	0	0
10:30 AM	0	1	21	0	0	0	22	0	0	0	0	1	0	0	0	0
10:45 AM	0	1	25	0	0	0	29	0	0	0	0	3	0	0	0	0
7:00 PM	0	0	15	0	0	0	21	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	20	0	0	0	16	0	0	0	0	1	0	0	0	0
7:30 PM	0	0	21	0	0	0	17	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	20	0	0	0	15	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	14	0	0	0	16	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	14	0	0	0	11	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	8	0	0	0	6	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	4	0	0	0	8	0	0	0	0	0	0	0	0	0

Client: Pat Padlo, P.E., PTOE
Project #: 688_046_BL
BTD #: Location 4
Location: Wallingford, CT
Street 1: Research Parkway
Street 2: Site Drive & Food Bank Drive

Count Date: 4/8/2021
Day of Week: Thursday
Weather: Mostly Cloudy, 60°F



								,,,,,								
		Research	Parkway			Research	Parkway			Food Ba	nk Drive			Site	Drive	
		North	bound			South	bound			Eastb	oound			West	bound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
10:00 AM	0	1	4	0	0	0	6	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	6	0	0	0	3	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	6	0	0	0	8	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	7	0	0	0	9	0	0	0	0	1	0	0	0	0
7:00 PM	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0

Client: Pat Padlo, P.E., PTOE
Project #: 688_046_BL
BTD #: Location 4
Location: Wallingford, CT
Street 1: Research Parkway
Street 2: Site Drive & Food Bank Drive

Count Date: 4/8/2021
Day of Week: Thursday
Weather: Mostly Cloudy, 60°F



		Research North	Parkway				n Parkway bound				nk Drive oound				Drive bound	
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Client: Pat Padlo, P.E., PTOE 688_046_BL Project #: BTD #: Location 5 Wallingford, CT Location: Street 1: Research Parkway Joseph Carini Road Street 2: 4/8/2021 Count Date: Thursday Mostly Cloudy, 60°F Day of Week: Weather:



								NO GILL	· · · · · · · · · · · · · · · · · · ·							
		Research	n Parkway			Research	n Parkway			Joseph C	arini Road					
		North	bound			South	bound			East	bound			West	bound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	4	34	0	0	0	22	0	0	0	0	3	0	0	0	0
7:15 AM	0	2	24	0	0	0	20	1	0	0	0	0	0	0	0	0
7:30 AM	0	4	25	0	0	0	21	1	0	0	0	3	0	0	0	0
7:45 AM	0	5	45	0	0	0	34	2	0	0	0	0	0	0	0	0
8:00 AM	0	7	42	0	0	0	31	1	0	0	0	1	0	0	0	0
8:15 AM	0	12	46	0	0	0	57	1	0	0	0	1	0	0	0	0
8:30 AM	0	14	38	0	0	0	19	0	0	0	0	2	0	0	0	0
8:45 AM	0	18	32	0	0	0	23	0	0	0	0	2	0	0	0	0
10:00 AM	0	4	14	0	0	0	22	0	0	0	0	3	0	0	0	0
10:15 AM	0	1	19	0	0	0	17	0	0	0	0	0	0	0	0	0
10:30 AM	0	3	17	0	0	0	19	0	0	0	0	2	0	0	0	0
10:45 AM	0	1	25	0	0	0	26	0	0	0	0	4	0	0	0	0
11:00 AM	0	1	19	0	0	0	24	0	0	0	0	0	0	0	0	0
11:15 AM	0	2	21	0	0	0	20	0	0	0	0	3	0	0	0	0
11:30 AM	0	5	9	0	0	0	22	1	0	0	0	2	0	0	0	0
11:45 AM	0	3	16	0	0	0	43	0	0	0	0	5	0	0	0	0
12:00 PM	0	1	19	0	0	0	55	1	0	0	0	8	0	0	0	0
12:15 PM	0	3	21	0	0	0	27	1	0	0	0	4	0	0	0	0
12:30 PM	0	3	27	0	0	0	23	0	0	2	0	3	0	0	0	0
12:45 PM	0	2	30	0	0	0	38	0	0	0	0	5	0	0	0	0
4:00 PM	0	2	19	0	0	0	42	0	0	1	0	7	0	0	0	0
4:15 PM	0	2	31	0	0	0	36	1	0	1	0	6	0	0	0	0
4:30 PM	0	1	27	0	0	0	51	0	0	2	0	18	0	0	0	0
4:45 PM	0	2	32	0	0	0	41	0	0	0	0	7	0	0	0	0
5:00 PM	0	2	31	0	0	0	62	0	0	0	0	9	0	0	0	0
5:15 PM	0	1	26	0	0	0	45	0	0	0	0	8	0	0	0	0
5:30 PM	0	0	26	0	0	0	37	0	0	0	0	6	0	0	0	0
5:45 PM	0	2	26	0	0	0	28	0	0	0	0	5	0	0	0	0
7:00 PM	0	1	13	0	0	0	20	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	21	0	0	0	17	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	19	0	0	0	15	0	0	0	0	1	0	0	0	0
7:45 PM	0	0	23	0	0	0	16	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	15	0	0	0	15	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	14	0	0	0	10	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	7	0	0	0	6	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	5	0	0	0	8	0	0	0	0	0	0	0	0	0

Client: Pat Padlo, P.E., PTOE 688_046_BL Project #: BTD #: Location 5 Wallingford, CT Location: Street 1: Research Parkway Joseph Carini Road Street 2: 4/8/2021 Count Date: Thursday Mostly Cloudy, 60°F Day of Week: Weather:



		Research	Parkway			Research	Parkway			Joseph C	arini Road					
		North	bound			South	bound			Easth	oound			West	bound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	12	0	0	0	5	0	0	0	0	1	0	0	0	0
7:15 AM	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	1	0	0	0	3	0	0	0	0	2	0	0	0	0
7:45 AM	0	0	6	0	0	0	8	0	0	0	0	0	0	0	0	0
8:00 AM	0	1	5	0	0	0	4	0	0	0	0	1	0	0	0	0
8:15 AM	0	0	4	0	0	0	13	0	0	0	0	1	0	0	0	0
8:30 AM	0	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	2	0	0	0	7	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	5	0	0	0	6	0	0	0	0	1	0	0	0	0
10:15 AM	0	0	6	0	0	0	3	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	6	0	0	0	7	0	0	0	0	1	0	0	0	0
10:45 AM	0	0	7	0	0	0	9	0	0	0	0	0	0	0	0	0
11:00 AM	0	1	5	0	0	0	5	0	0	0	0	0	0	0	0	0
11:15 AM	0	1	6	0	0	0	8	0	0	0	0	0	0	0	0	0
11:30 AM	0	2	1	0	0	0	8	1	0	0	0	1	0	0	0	0
11:45 AM	0	0	3	0	0	0	19	0	0	0	0	1	0	0	0	0
12:00 PM	0	0	2	0	0	0	7	0	0	0	0	2	0	0	0	0
12:15 PM	0	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0
12:45 PM	0	1	4	0	0	0	5	0	0	0	0	1	0	0	0	0
4:00 PM	0	0	5	0	0	0	4	0	0	0	0	1	0	0	0	0
4:15 PM	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	4	0	0	0	5	0	0	1	0	0	0	0	0	0
4:45 PM	0	0	5	0	0	0	4	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	6	0	0	0	8	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	2	0	0	0	6	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	4	0	0	0	5	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	9	0	0	0	3	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0

Client: Pat Padlo, P.E., PTOE 688_046_BL Project #: BTD #: Location 5 Wallingford, CT Location: Street 1: Research Parkway Joseph Carini Road Street 2: 4/8/2021 Count Date: Thursday Mostly Cloudy, 60°F Day of Week: Weather:



								-SINIAIN	3 & DIC I							
			n Parkway				n Parkway				arini Road					
			bound				bound				ound				bound	
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		_	_	-		_		-	-	-	-	-		_	_	
4:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
4:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		<u> </u>		-	-	-						-	-			
7:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.73 F W	U	U	U	U	J	0	U	0	U	U	U	U	U	U	U	J

 Client:
 Pat Padlo, P.E., PTOE

 Project #:
 688_046_BL

 BTD #:
 Location 6

 Location:
 Wallingford, CT

 Street 1:
 Research Parkway

 Street 2:
 #10 Research Parkway Drive

Count Date: 4/8/2021
Day of Week: Thursday
Weather: Mostly Cloudy, 60°F



PO Box 1723 Framingham, MA 01701

Start Time	Thru Right 0 0 0 0 0 0 0 0 0 0 0				IIVE		Research										
Start Time	Thru Right 0 0 0 0 0 0 0 0 0 0 0	Left Thru				nound	Fasth										
7:00 AM	0 0 0 0 0 0 0 0		Left	U-Turn	Right			U-Turn	Right			U-Turn	Right			U-Turn	Start Time
7:15 AM 0 0 24 0 0 0 20 0	0 0 0 0 0 0	0 0							J .								
7:30 AM 0 1 19 0 0 0 22 1 0 0 0 1 0 0 0 1 0	0 0 0																
7:45 AM 0 1 41 0 0 0 35 1 0	0 0	0 0	0	0	1	0	0	0	1		0	0					
8:00 AM 0 1 33 0 0 0 31 0	0 0	0 0	0	0	0	0			1		0				1		
8:15 AM 0 1 40 0 0 0 29 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0	0 0	0	0	0	0	0	0	0	31	0	0	0		1	0	
8:45 AM 0 1 24 0 0 0 22 0	0 0	0 0	0	0	0	0	0	0	0	29	0	0	0		1	0	8:15 AM
10:00 AM 0 0 15 0 0 0 20 0 0 0 0 1 0 0 0 0 1 0 0 0 1 1 0 0 0 1 1 10:15 AM 0 0 18 0 0 0 18 1 0 0 0 0 0 0 0 0 0 0 0	0 0	0 0	0	0	0	0	0	0	0	20	0	0	0	32	1	0	8:30 AM
10:15 AM 0 0 18 0 0 0 18 1 0	0 0	0 0	0	0	0	0	0	0	0	22	0	0	0	24	1	0	8:45 AM
10:15 AM 0 0 18 0 0 18 1 0																	
10:30 AM 0 0 17 0 0 0 16 0	0 0	0 0	0	0	1	0	0	0	0		0	0	0		0	0	10:00 AM
10:45 AM 0 0 23 0 0 0 25 0 0 0 1 0 0 11:00 AM 0 1 21 0 0 0 18 0	0 0	0 0	0	0	0	0	0	0	1	18	0	0	0	18	0	0	10:15 AM
11:00 AM 0 1 21 0 0 0 18 0 0 0 0 0 0 11:15 AM 0 0 22 0 0 0 20 0	0 0																
11:15 AM 0 0 22 0 0 0 20 0 0 0 0 0 0 0 0 1:30 AM 0 0 7 0 0 0 0 25 0 0 0 0 0 1 0 0	0 0	0 0	0	0	1	0	0	0	0	25	0	0	0	23	0	0	10:45 AM
11:30 AM 0 0 7 0 0 0 25 0 0 0 0 1 0 0	0 0	0 0	0	0	0	0	0	0	0		0	0	0		1	0	
	0 0	0 0	0	0	0	0	0	0	0		0	0	0		0	0	
1 11:45 AM	0 0																
	0 0					,											
12:00 PM 0 0 18 0 0 0 52 0 0 0 0 0 0 0	0 0			-	0	_					-						
12:15 PM 0 0 21 0 0 0 25 0 0 0 0 1 0 0	0 0					,					-						
12:30 PM 0 0 29 0 0 0 23 0 0 0 0 0 0	0 0		_	_	_	,			-		-						
12:45 PM 0 1 27 0 0 0 38 0 0 1 0 1 0 0	0 0	0 0	0	0	1	0	1	0	0	38	0	0	0	27	1	0	12:45 PM
4:00 PM 0 0 20 0 0 0 37 0 0 0 0 0 0	0 0	-	_						-		-						
4:15 PM 0 1 37 0 0 0 35 0 0 0 0 2 0 0	0 0								-		-						
4:30 PM 0 0 30 0 0 0 43 0 0 0 0 0 0	0 0										-						
4:45 PM 0 1 37 0 0 0 35 0 0 0 0 2 0 0	0 0		_	_					-								
5:00 PM	0 0								-		-						
5:15 PM 0 0 27 0 0 0 37 0 0 0 0 3 0 0 5:30 PM 0 0 27 0 0 0 34 0 0 0 0 1 0 0	0 0																
	0 0		_	_		_		_	-		-						
5.45 PM 0 0 18 0 0 0 26 0 0 0 1 0 0	0 0	0 0	0	U	- 1	U	U	U	U	∠6	U	U	U	18	U	0	5:45 PM
7:00 PM 0 0 13 0 0 0 21 0 0 0 0 0 0	0 0	0 0	_	_	_	_	0	0	_	21	0	0	0	12	0	0	7:00 DM
7:00 PM	0 0										-						
7:35 PM	0 0		_	_					-		-						
7.35 PM 0 0 0 25 0 0 0 13 0 0 0 0 0 0 0	0 0		_	_	-	_		_	-		-						
8:00 PM 0 0 14 0 0 0 14 0 0 0 0 0 0 0 0 0 0	0 0								-		-						
8:15 PM 0 0 14 0 0 0 11 0 0 0 0 0 0 0 0 0 0 0 0	0 0																
8.30 PM 0 0 7 0 0 0 14 0 0 0 0 0 0 0			_	_	-	,		_	-		·	-					
8.45PM 0 0 4 0 0 0 10 0 0 0 0 0 0 0 0 0 0	0 0										-						

 Client:
 Pat Padlo, P.E., PTOE

 Project #:
 688_046_BL

 BTD #:
 Location 6

 Location:
 Wallingford, CT

 Street 1:
 Research Parkway

 Street 2:
 #10 Research Parkway Drive

 Count Date:
 4/8/2021

Count Date: 4/8/2021 Day of Week: Thursday Weather: Mostly Cloudy, 60°F



		Research	Parkway			Research	Parkway		#10	Research	Parkway D	rive				
		North	bound			South	bound			Easth	oound			West	bound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	11	0	0	0	5	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	5	0	0	0	4	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	6	0	0	0	8	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	2	0	0	0	7	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	5	0	0	0	6	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	5	0	0	0	3	1	0	0	0	0	0	0	0	0
10:30 AM	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	7	0	0	0	8	0	0	0	0	1	0	0	0	0
11:00 AM	0	0	5	0	0	0	4	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	6	0	0	0	8	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	1	0	0	0	9	0	0	0	0	1	0	0	0	0
11:45 AM	0	0	3	0	0	0	17	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	2	0	0	0	9	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	4	0	0	0	5	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	6	0	0	0	2	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	4	0	0	0	6	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	6	0	0	0	4	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	6	0	0	0	8	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	3	0	0	0	5	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	6	0	0	0	3	0	0	0	0	0	0	0	0	0
7.00 PM	0				_	_		_	_	_	_		_		_	_
7:00 PM	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0

 Client:
 Pat Padlo, P.E., PTOE

 Project #:
 688_046_BL

 BTD #:
 Location 6

 Location:
 Wallingford, CT

 Street 1:
 Research Parkway

 Street 2:
 #10 Research Parkway Drive

 Count Date:
 4/8/2021

Count Date: 4/8/2021
Day of Week: Thursday
Weather: Mostly Cloudy, 60°F



Research Parkway						Research	Parkway		#10	Research	Parkway D	rive						
Northbound						South	bound			Easth	oound		Westbound					
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Client: Pat Padlo, P.E., PTOE 688_046_BL Project #: BTD #: Location 7 Wallingford, CT Location: Street 1: Research Parkway Carpenter Lane
4/8/2021 Street 2: Count Date: Thursday Mostly Cloudy, 60°F Day of Week: Weather:



	Research Parkway Northbound					Research Parkway Southbound					ter Lane oound		Carpenter Lane Westbound				
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
10:00 AM	0	0	13	2	0	2	16	5	0	3	6	1	0	3	2	2	
10:15 AM	0	1	15	1	0	4	15	4	0	5	3	2	0	2	8	0	
10:30 AM	0	1	16	1	0	0	9	4	0	8	6	0	0	7	0	3	
10:45 AM	0	1	19	3	0	5	23	7	0	4	3	1	0	2	1	1	
7:00 PM	0	0	12	1	0	3	19	7	0	4	2	1	0	1	3	2	
7:15 PM	0	1	18	3	0	2	15	2	0	6	5	0	0	0	3	1	
7:30 PM	0	1	17	3	0	1	13	3	0	5	3	0	0	2	1	2	
7:45 PM	0	3	18	3	0	2	12	4	0	2	4	1	0	0	4	0	
8:00 PM	0	1	13	0	0	1	10	3	0	0	4	2	0	2	2	0	
8:15 PM	0	2	9	3	0	1	9	5	0	2	4	0	0	3	0	1	
8:30 PM	0	0	6	2	0	0	3	0	0	2	6	1	0	0	1	0	
8:45 PM	0	0	5	0	0	1	2	2	0	3	1	0	0	8	9	1	

Client: Pat Padlo, P.E., PTOE 688_046_BL Project #: BTD #: Location 7 Wallingford, CT Location: Street 1: Research Parkway Carpenter Lane
4/8/2021 Street 2: Count Date: Thursday Mostly Cloudy, 60°F Day of Week: Weather:



	Research Parkway Northbound					Research Parkway Southbound					ter Lane oound		Carpenter Lane Westbound				
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
10:00 AM	0	0	4	0	0	0	6	0	0	1	2	0	0	0	0	1	
10:15 AM	0	0	4	0	0	0	3	2	0	1	0	2	0	0	0	0	
10:30 AM	0	1	6	0	0	0	3	0	0	4	0	0	0	2	0	0	
10:45 AM	0	0	7	0	0	0	9	1	0	0	0	0	0	0	0	0	
7:00 PM	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	
7:15 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	
7:30 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	
7:45 PM	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	
8:00 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	
8:15 PM	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	
8:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 PM	0	0	1	0	0	0	2	1	0	0	0	0	0	0	0	0	

Client: Pat Padlo, P.E., PTOE 688_046_BL Project #: BTD #: Location 7 Wallingford, CT Location: Street 1: Research Parkway Carpenter Lane
4/8/2021 Street 2: Count Date: Thursday Mostly Cloudy, 60°F Day of Week: Weather:



	Research Parkway Northbound						Parkway bound				ter Lane oound		Carpenter Lane Westbound				
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

	Lane Group Data		fro	m west (EB)	fro	m east (\	NB)	fro	m south ((NB)	fro	m north	(SB)	RECORDNAME
	RECORDNAME	INTID	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
AM	HeavyVehicles	1	0	20	11	13	31	0	0	0	0	9	0	17	1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)
AM	HeavyVehicles	2	9	20	0	0	32	12	14	0	14	0	0	0	2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road
AM	HeavyVehicles	3	15	23	1	0	45	6	1	0	1	2	0	7	3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road
AM	HeavyVehicles	4	0	0	0	0	0	0	0	3	0	11	10	0	4: Research Parkway & Food Bank Driv/Site Drive
AM	HeavyVehicles	5	0	0	50	0	0	0	3	12	0	0	19	0	5: Josheph Carini R
AM	HeavyVehicles	6	0	0	0	0	0	0	0	14	0	0	17	0	6: Research Parkway & Private Drive
AM	HeavyVehicles	7	0	5	17	6	2	5	8	3	5	9	4	2	7: Research Parkway & Carpenter Lane
AM	HeavyVehicles	8	Ü	2	2	2	2		2	J	2		•	-	8: Site Drive 2 & Carpenter Lane
****	ricary remoies	٠.		-	_		-		_		_				or one of the 2 decorporate same
						•						•		1	
AM PK Gen	HeavyVehicles	1	0	20	20	14	13	0	0	0	0	22	0	31	1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)
AM PK Gen	HeavyVehicles	2	32	12	0	0	13	19	18	0	21	0	0	0	2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road
AM PK Gen	HeavyVehicles	3	32	12	17	0	10	10	0	0	0	4	0	35	3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road
AM PK Gen	HeavyVehicles	4	0	0	14	0	0	0	20	27	0	0	28	0	4: Research Parkway & Food Bank Driv/Site Drive
AM PK Gen	HeavyVehicles	5	0	0	22	0	0	0	0	32	0	0	30	0	5: Josheph Carini R
AM PK Gen	HeavyVehicles	6	0	0	50	0	0	0	0	32	0	0	29	0	6: Research Parkway & Private Drive
AM PK Gen	HeavyVehicles	7	30	11	50	14	0	17	33	33	0	0	33	15	7: Research Parkway & Carpenter Lane
AM PK Gen	HeavyVehicles	8		2	2	2	2		2		2	l		ļ	8: Site Drive 2 & Carpenter Lane
MD	HeavyVehicles	1	0	12	11	23	8	0	0	0	0	16	0	31	1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)
MD	HeavyVehicles	2	26	8	0	0	10	23	14	0	18	0	0	0	2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road
MD	HeavyVehicles	3	28	7	14	0	9	5	20	0	50	22	0	26	3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road
MD	HeavyVehicles	4	0	0	0	0	0	0	0	25	0	0	28	0	4: Research Parkway & Food Bank Driv/Site Drive
MD	HeavyVehicles	5	0	0	15	0	0	0	11	13	0	0	13	0	5: Josheph Carini R
MD	HeavyVehicles	6	0	0	2	2	2	2	0	13	0	0	15	0	6: Research Parkway & Private Drive
MD	HeavyVehicles	7	3	4	9	13	16	0	0	30	17	0	38	3	7: Research Parkway & Carpenter Lane
MD	HeavyVehicles	8		2	2	2	2		2		2				8: Site Drive 2 & Carpenter Lane
PM	HeavyVehicles	1	15	27	0	0	26	9	12	0	11	0	0	0	1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)
PM	HeavyVehicles	2	0	31	14	11	26	0	0	0	0	8	0	11	2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road
PM	HeavyVehicles	3	5	41	1	0	30	2	2	0	0	5	0	13	3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road
PM	HeavyVehicles	4	0	0	0	0	0	0	0	6	0	0	2	0	4: Research Parkway & Food Bank Driv/Site Drive
PM	HeavyVehicles	5	50	0	0	2	2	2	0	15	0	0	12	0	5: Josheph Carini R
PM	HeavyVehicles	6	0	0	0	2	2	2	0	16	0	0	12	0	6: Research Parkway & Private Drive
PM	HeavyVehicles	7	2	0	0	0	0	0	0	10	0	0	2	1	7: Research Parkway & Carpenter Lane
PM	HeavyVehicles	8	-	2	2	2	2	Ü	2		2	ľ	-	-	8: Site Drive 2 & Carpenter Lane
	•					•						1			•
PM PK Gen	HeavyVehicles	1	0	1	4	5	3	0	0	0	0	6	0	9	1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)
PM PK Gen	HeavyVehicles	2	5	1	0	0	2	11	9	0	5	0	0	0	2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 Off-Ramp & Route 68 (Barnes Road)
PM PK Gen	HeavyVehicles	3	13	1	0	0	2	0	0	0	0	4	0	35	3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road
PM PK Gen	HeavyVehicles	4	0	0	0	0	0	0	0	9	0	0	9	0	4: Research Parkway & Food Bank Driv/Site Drive
PM PK Gen	HeavyVehicles	5	0	0	0	0	0	0	0	9	0	0	9	0	4: Research Parkway & Pood Bank Drivysite Drive 5: Josheph Carini R
PM PK Gen	HeavyVehicles	6	0	0	0	0	0	0	0	9	0	0	9 12	0	6: Research Parkway & Private Drive
PM PK Gen	HeavyVehicles	7	0	0	0	0	0	0	0	9 11	0	0	12	6	7: Research Parkway & Private Drive
PM PK Gen	HeavyVehicles	8	U	2	2	2	2	U	2	11	2	U	12	U	8: Site Drive 2 & Carpenter Lane
PIVI PK GEN	neavyvenicies	ŏ		2	2	2	2				2	ı		ļ	o. Site Drive 2 & Carpenter Lane

Lane	e Group D	ata	fro	m west (EB)	fro	m east (V	VB)	fro	m south (NB)	fro	m north (SB)	RECORDNAME
	RDNAME	INTID	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
AM	PHF	1	0.94	0.94	0.94	0.92	0.92	0.92	0.88	0.88	0.88	0.82	0.82	0.82	1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)
AM	PHF	2	0.93	0.93	0.93	0.97	0.97	0.97	0.86	0.86	0.86	0.88	0.88	0.88	2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road
AM	PHF	3	0.92	0.92	0.92	0.89	0.89	0.89	0.51	0.51	0.51	0.81	0.81	0.81	3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road
AM	PHF	4	0.42	0.42	0.42	0.88	0.88	0.88	0.67	0.67	0.67	0.73	0.73	0.73	4: Research Parkway & Food Bank Driv/Site Drive
AM	PHF	5	0.5	0.5	0.5	0.88	0.88	0.88	0.9	0.9	0.9	0.63	0.63	0.63	5: Josheph Carini R
AM	PHF	6	0.88	0.88	0.88	0.88	0.88	0.88	0.89	0.89	0.89	0.81	0.81	0.81	6: Research Parkway & Private Drive
AM	PHF	7	0.62	0.62	0.62	0.71	0.71	0.71	0.69	0.69	0.69	0.76	0.76	0.76	7: Research Parkway & Carpenter Lane
AM	PHF	8		0.92	0.92	0.92	0.92	-	0.92		0.92				8: Site Drive 2 & Carpenter Lane
								!!				•			
			-		,			,				-			
AM PK Gen	PHF	1	0.94	0.94	0.94	0.74	0.74	0.74	0.88	0.88	0.88	0.89	0.89	0.89	1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)
AM PK Gen	PHF	2	0.88	0.88	0.88	0.94	0.94	0.94	0.95	0.95	0.95	0.88	0.88	0.88	2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road
AM PK Gen	PHF	3	0.81	0.81	0.81	0.86	0.86	0.86	0.38	0.38	0.38	0.81	0.81	0.81	3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road
AM PK Gen	PHF	4	0.58	0.58	0.58	0.88	0.88	0.88	0.63	0.63	0.63	8.0	8.0	8.0	4: Research Parkway & Food Bank Driv/Site Drive
AM PK Gen	PHF	5	0.56	0.56	0.56	0.88	0.88	0.88	0.75	0.75	0.75	0.81	0.81	0.81	5: Josheph Carini R
AM PK Gen	PHF	6	0.5	0.5	0.5	0.88	0.88	0.88	0.79	0.79	0.79	0.79	0.79	0.79	6: Research Parkway & Private Drive
AM PK Gen	PHF	7	0.63	0.63	0.63	0.45	0.45	0.45	0.79	0.79	0.79	0.65	0.65	0.65	7: Research Parkway & Carpenter Lane
AM PK Gen	PHF	8		0.92	0.92	0.92	0.92		0.92		0.92				8: Site Drive 2 & Carpenter Lane
MD	PHF	1	0.87	0.87	0.87	0.91	0.91	0.91	0.88	0.88	0.88	0.9	0.9	0.9	1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)
MD	PHF	2	0.87	0.87	0.87	0.91	0.91	0.91	0.88	0.88	0.88	0.88	0.88	0.88	2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)
MD	PHF	3	0.93	0.93	0.93	0.91	0.91	0.91	0.9	0.9	0.44	0.88	0.88	0.88	3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road
MD	PHF	3 4	0.93	0.93	0.93	0.92	0.92	0.92	0.44	0.44	0.44	0.92	0.92	0.92	4: Research Parkway & Food Bank Driv/Site Drive
MD	PHF	5	0.63			0.88	0.88	0.88		0.83	0.83	0.92		0.92	5: Josheph Carini R
		6		0.69	0.69		0.92	0.92	0.83	0.83	0.83	0.66	0.65 0.66	0.66	·
MD	PHF	7	0.38	0.38	0.38	0.92			0.83			0.89			6: Research Parkway & Private Drive
MD	PHF	8	0.86	0.86	0.86	0.75	0.75	0.75	0.85	0.85	0.85	0.89	0.89	0.89	7: Research Parkway & Carpenter Lane
MD	PHF	8	I	0.92	0.92	0.92	0.92		0.92		0.92	ı		ı	8: Site Drive 2 & Carpenter Lane
PM	PHF	1	0.89	0.89	0.89	0.84	0.84	0.84	0.88	0.88	0.88	0.85	0.85	0.85	1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)
PM	PHF	2	0.87	0.87	0.87	0.96	0.96	0.96	0.84	0.84	0.84	0.88	0.88	0.88	2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road
PM	PHF	3	0.95	0.95	0.95	0.86	0.86	0.86	0.75	0.75	0.75	0.82	0.82	0.82	3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road
PM	PHF	4	0.48	0.48	0.48	0.88	0.88	0.88	0.59	0.59	0.59	0.6	0.6	0.6	4: Research Parkway & Food Bank Driv/Site Drive
PM	PHF	5	0.55	0.55	0.55	0.92	0.92	0.92	0.9	0.9	0.9	0.8	0.8	0.8	5: Josheph Carini R
PM	PHF	6	0.42	0.42	0.42	0.92	0.92	0.92	0.9	0.9	0.9	0.79	0.79	0.79	6: Research Parkway & Private Drive
PM	PHF	7	0.86	0.86	0.86	0.76	0.76	0.76	0.63	0.63	0.63	0.71	0.71	0.71	7: Research Parkway & Carpenter Lane
PM	PHF	8		0.92	0.92	0.92	0.92	••	0.92		0.92	•=		***	8: Site Drive 2 & Carpenter Lane
			•					ļ.				•		•	
					1										
PM PK Gen	PHF	1	0.83	0.83	0.83	0.59	0.59	0.59	0.88	0.88	0.88	0.86	0.86	0.86	1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)
PM PK Gen	PHF	2	0.85	0.85	0.85	0.81	0.81	0.81	0.84	0.84	0.84	0.88	0.88	0.88	2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road
PM PK Gen	PHF	3	0.78	0.78	0.78	0.8	0.8	0.8	0.75	0.75	0.75	0.86	0.86	0.86	3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road
PM PK Gen	PHF	4	0.25	0.25	0.25	0.88	0.88	0.88	0.9	0.9	0.9	0.82	0.82	0.82	4: Research Parkway & Food Bank Driv/Site Drive
PM PK Gen	PHF	5	0.25	0.25	0.25	0.88	0.88	0.88	0.83	0.83	0.83	0.85	0.85	0.85	5: Josheph Carini R
PM PK Gen	PHF	6	0.25	0.25	0.25	0.88	0.88	0.88	0.81	0.81	0.81	0.77	0.77	0.77	6: Research Parkway & Private Drive
PM PK Gen	PHF	7	0.64	0.64	0.64	0.66	0.66	0.66	0.72	0.72	0.72	0.67	0.67	0.67	7: Research Parkway & Carpenter Lane
PM PK Gen	PHF	8	l	0.92	0.92	0.92	0.92		0.92		0.92	I		I	8: Site Drive 2 & Carpenter Lane

CONNECTICUT DEPARTMENT OF TRANSPORTATION BUREAU OF POLICY & PLANNING - ROADWAY INFORMATION SYSTEMS TRAFFIC MONITORING & DATA ANALYSIS SECTION

FACTORS FOR EXPANDING 24-HOUR COUNTS TO ANNUAL AVERAGE DAILY TRAFFIC VOLUMES (BASED ON 2013 & 2014 CONTINUOUS COUNT STATION DATA

GROUP - 1 **INTERSTATE **

INTERSTATE-URBAN(7,24, 30, 31, 32, 45), INTERSTATE- RURAL(54)

STATION(S): 7, 24, 30, 31, 32, 45, 54

	AVG.	WEEKDAY	FRIDAY	SATURDAY	SUNDAY
JANUARY		1.05	0.97	1.22	1.39
FEBRUARY		1.03	0.94	1.17	1.43
MARCH		1.02	0.92	1.10	1.26
APRIL		0.97	0.89	1.03	1.15
MAY		0.94	0.86	0.99	1.08
JUNE		0.93	0.85	0.96	1.04
JULY		0.91	0.85	0.96	1.03
AUGUST		0.91	0.83	0.94	1.02
SEPTEMBER		0.96	0.87	1.02	1.10
OCTOBER		0.97	0.86	1.01	1.10
NOVEMBER		0.99	0.93	1.07	1.24
DECEMBER		1.00	0.91	1.04	1.24

GROUP - 2 * * RURAL * *

MINOR ART-RURAL(4, 10, 13, 16), RURAL PRINC ART-OTHER-RURAL(20), PRINC ART-OTHER EXPY-RURAL(51)

STATION(S): 4, 10, 13, 16, 20, 51

	AVG.	WEEKDAY	FRIDAY	SATURDAY	SUNDAY
JANUARY		1.05	0.99	1.20	1.48
FEBRUARY		1.03	0.98	1.14	1.49
MARCH		1.02	0.95	1.08	1.36
APRIL		0.97	0.91	1.03	1.22
MAY		0.92	0.85	0.95	1.10
JUNE		0.91	0.84	0.91	1.06
JULY		0.91	0.84	0.95	1.10
AUGUST		0.91	0.85	0.95	1.08
SEPTEMBER		0.94	0.84	0.97	1.14
OCTOBER		0.95	0.86	1.01	1.20
NOVEMBER		0.98	0.92	1.08	1.33
DECEMBER		0.99	0.92	1.08	1.39

GROUP - 3 ** INTERSTATE **

INTERSTATE I-84 FROM ROUTE 195 TO MASS STATE LINE(27)

STATION(S): 27 (I-84 FROM ROUTE 195 TO MASS. STATE LINE)

	AVG.	WEEKDAY	FRIDAY	SATURDAY	SUNDAY
JANUARY		1.46	1.12	1.23	1.16
FEBRUARY		1.37	1.02	1.20	1.26
MARCH		1.29	0.99	1.06	0.90
APRIL		1.13	0.87	0.92	0.80
MAY		1.06	0.78	0.84	0.76
JUNE		1.07	0.78	0.83	0.72
JULY		0.97	0.73	0.76	0.67
AUGUST		0.93	0.69	0.70	0.66
SEPTEMBER		1.10	0.82	0.91	0.77
OCTOBER		1.14	0.78	0.84	0.74
NOVEMBER		1.16	0.89	0.97	0.91
DECEMBER		1.17	0.92	0.91	0.91

CONNECTICUT DEPARTMENT OF TRANSPORTATION BUREAU OF POLICY & PLANNING - ROADWAY INFORMATION SYSTEMS TRAFFIC MONITORING & DATA ANALYSIS SECTION

FACTORS FOR EXPANDING 24-HOUR COUNTS TO ANNUAL AVERAGE DAILY TRAFFIC VOLUMES (BASED ON 2013 & 2014 CONTINUOUS COUNT STATION DATA

GROUP - 4 ** URBAN **

PRINC ART-OTHER EXPY-URBAN(15, 17, 19, 23),PRINC ART-OTHER-URBAN(8, 9, 11, 28, 47, 48, 52),MINOR ART-URBAN (2, 22)

STATION(S): 2, 8, 9, 11, 15, 17, 19, 22, 23, 28, 47, 48, 52

	AVG.	WEEKDAY	FRIDAY	SATURDAY	SUNDAY
JANUARY		1.02	0.95	1.23	1.51
FEBRUARY		1.02	0.95	1.17	1.52
MARCH		1.00	0.92	1.12	1.40
APRIL		0.95	0.89	1.06	1.28
MAY		0.91	0.84	1.02	1.19
JUNE		0.90	0.84	0.99	1.18
JULY		0.91	0.86	1.06	1.21
AUGUST		0.93	0.86	1.07	1.27
SEPTEMBER		0.93	0.85	1.04	1.24
OCTOBER		0.93	0.84	1.04	1.23
NOVEMBER		0.93	0.88	1.06	1.32
DECEMBER		0.94	0.89	1.07	1.35

GROUP - 5 **NORTHWEST RECREATIONAL **

MINOR ARTERIAL-RURAL KENT(1)

STATION(S): 1	(AVERAGE OF 2011	-2012, 2012-2013	3 & 2013-2014)	
	AVG. WEEKDAY	FRIDAY	SATURDAY	SUNDAY
JANUARY	1.41	1.16	1.11	1.11
FEBRUARY	1.40	1.06	1.12	1.12
MARCH	1.38	1.11	1.12	1.11
APRIL	1.23	0.98	0.95	0.97
MAY	1.15	0.82	0.83	0.74
JUNE	1.05	0.81	0.72	0.67
JULY	0.95	0.72	0.62	0.60
AUGUST	0.93	0.71	0.66	0.61
SEPTEMBER	1.09	0.83	0.77	0.74
OCTOBER	1.08	0.81	0.65	0.71
NOVEMBER	1.25	1.03	1.04	1.10
DECEMBER	1.26	1.04	1.16	1.32

GROUP - 6 ** SOUTHEAST RECREATIONAL **

MINOR ART-URBAN MONTVILLE(5), INTERSTATE-RURAL EAST LYME(33), GROTON(44), PRINC ART-OTHE-RURAL HEBRON(66)

STATION(S): 5, 33, 44, 46

	AVG.	WEEKDAY	FRIDAY	SATURDAY	SUNDAY
JANUARY		1.16	0.99	1.16	1.32
FEBRUARY		1.12	0.94	1.06	1.36
MARCH		1.10	0.93	1.00	1.16
APRIL		1.05	0.89	0.96	1.09
MAY		0.99	0.83	0.91	1.00
JUNE		0.97	0.82	0.87	0.95
JULY		0.91	0.76	0.83	0.93
AUGUST		0.90	0.77	0.84	0.91
SEPTEMBER		1.01	0.84	0.92	1.03
OCTOBER		1.05	0.87	0.96	1.10
NOVEMBER		1.09	0.93	1.01	1.20
DECEMBER		1.08	0.94	1.05	1.23

WALL-030 - Combined - e/w

	26-Sep	27 Son	29 Sor	20 Son		2	.016 2	016		
N		27-Sep Tue	28-Sep Wed	29-Sep Thu				Vest		
12:00am		x	169	127		169	67	102	0.60)
01:00am		х	130			130	60	70	0.54	
02:00am		х	104			104	32	72	0.69	
03:00am x		X	152			152	52	100	0.66	
04:00am x		192	205			205	83	122	0.60	
05:00am x 06:00am x		518 1247	495 1245			495 1245	265 579	230 666	0.46 0.53	
07:00am x		1907	1918			1918	796	1122	0.58	
08:00am x		1900	1914			1914	891	1023	0.53	
09:00am x	(1360	1294			1294	626	668	0.52	
10:00am x	(968	1034	l .		1034	486	548	0.53	517
11:00am x	(1020	1067	,		1067	519	548	0.51	L
12:00pm x		1218	1233			1233	586	647	0.52	
01:00pm x		1126	1237			1237	611	626	0.51	
02:00pm x		1431	1384			1384	722	662	0.48	
03:00pm x		1779 2153	170: 224			1701 2244	848 1071	853 1173	0.50 0.52	
05:00pm x		2104	2094			2094	1141	953	0.46	
06:00pm x		1268	1223			1221	670	551	0.45	
07:00pm x		940	943			943	549	394	0.42	
08:00pm x	(707	648	3		648	412	236	0.36	5
09:00pm x	(428	472	2		472	310	162	0.34	1
10:00pm x		243	263			263	155	108	0.41	
11:00pm x		213	238			238	110	128	0.54	
Totals	0	22722	23405	5 521		23405	11641	11764	0.50)
						Tot E	· v	v	Year	
WALL-030 -	Combined	- e/w				1034	486	548		5 10-11AM
						1076	506	570	2020)
Tourn		Malling	ford							
Town Station		-				943	549	394	2016	5 7-8PM
Location						981	571	410	2020	
2015-Minor		-								
			16 04:00AM							
End Report.		.29-Sep-20	16 04:00AM							
2016:DURH	I-009 Axle	Correction.	0.96							
Annualized										
).91) = 21182.1							
Day 1		•	•	7						
).9575) = 2033 rt20300	,						
OK 2013 T						1918	796	1122	2016	5 7-8AM
OK 2007 W						1996	828	1168		7-8AM
						2244	4074	4470	2011	A EDM
						2244 2335	1071 1114	1173 1221		5 4-5PM) 4-5PM
Route 68 - 1	16.94 mi	SE of I-91 N	B Off Ramp (Ex	it 15)		2333	1114	1221	2020	7 4-31 IVI
			I- (
						1233	586	647		5 12-1PM
						1283	610	673	2020) 12-1PM
					1					
Tot	E	w	Year	10-11AM		Tot	E	w	Year	7-8PM
1034	486	548	2016	WALL-030		943	549	394	2016	WALL-030
1076	506	570	2020	WALL-030		981	571	410	2020	WALL-030
844	386	458	TMC 3			721	390	331	TMC 3	
1.274882	Facto	or AM Peak	Gen			1.36061	Factor	PM Peak	Gen	
			- =							
Tot	E	W	Year	10-11AM		Tot	E	W	Year	7-8PM
1076	492	584	ADJ TMC3	10-11AM		981	531	450	ADJ TMC3	7-8PM

MID PEAK HOUR	I-91 S	outhbound	Exit 15 On	Ramp	I-91 S	outhbound	Exit 15 Off	Ramp	СТ	Γ Route 68 (Barnes Roa	d)	CT Route 68 (Barnes Road)			
12:00 PM		North	bound			South	bound		Eastbound				Westbound			
to	Left	Left Thru Right PED				Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
1:00 PM	0	0 0 0 0				0	0	0	0	0	0	0	0	0	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Ī	MID PEAK HOUR	I-91 N	orthbound	Exit 15 Off	Ramp	I-91 N	Iorthbound	Exit 15 On	Ramp	C	Γ Route 68 (Barnes Roa	d)	C	Γ Route 68 (Barnes Roa	d)
	12:00 PM		North	bound			South	bound		Eastbound				Westbound			
	to	10 PM Northbound to Left Thru Right PED					Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	1:00 PM	0	0	0	0	0 0 0 0				0 0 0 0			0	0	0	0	

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

MID PEAK HOUR 12:00 PM	ŀ		en Inn Drive bound	!			Parkway bound		С		Barnes Roa ound	d)	CT Route 68 (Barnes Road) Westbound			
to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
1:00 PM	0	0 0 0 0				0	0	0	0	0	0	0	0	0	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Ī	MID PEAK HOUR		Research	Parkway			Research	Parkway		Conr	ecticut Foo	d Bank Driv	eway		Site #1 [Driveway	
	11:45 AM		Northbound				South	bound			Eastb	ound			Westl	bound	
	to	Left				Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	12:45 PM	0	Northbound			0	0	0	0	0	0	0	0	0	0	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

MID PEAK HOUR			Parkway				Parkway				ter Lane			•	ter Lane	
12:00 PM		Northbound				South	bound			Eastb	ound			Westl	bound	
to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

 $NOTE: Peak \ hour \ summaries \ here \ correspond \ to \ peak \ hours \ identified \ for \ passenger \ car \ and \ heavy \ vehicles \ combined.$

ſ	MID PEAK HOUR		Research	Parkway			Research	Parkway			Joseph Ca	arini Road					
	12:00 PM		Northbound				South	bound			Eastb	ound			Westl	bound	
	to	Left				Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

 $NOTE: Peak\ hour\ summaries\ here\ correspond\ to\ peak\ hours\ identified\ for\ passenger\ car\ and\ heavy\ vehicles\ combined.$

MID PEAK HOUR 12:00 PM							Parkway bound		#1		Parkway Dr ound	ive		Westl	bound	
to	Left			Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	
1:00 PM	0	Research Parkway Northbound Left			0	0	0	0	0	0	0	0	0	0	0	0

 $NOTE: Peak\ hour\ summaries\ here\ correspond\ to\ peak\ hours\ identified\ for\ passenger\ car\ and\ heavy\ vehicles\ combined.$

PEDESTRIANS & BICYCLES

							,		J 4 D.O.	OLLU						
	1-9		und On Ram	пр	1-9	1 Southbo		np		Route 68 (B)		Route 68 (B)
		North	bound			South	bound			Eastb	ound			Westl	oound	
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PEDESTRIANS & BICYCLES

	1-9	91 Northbo North	und Off Ran bound	np	1-9	91 Northbo South		пр		Route 68 (B Eastb)	-	Route 68 (B Westl		J
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM						0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PEDESTRIANS & BICYCLES

							I LDL	- O I I NIAIN	J & DIC I	CLLS						
		Hilton Gard	en Inn Drive	2		Research	Parkway			Route 68 (B	arnes Road)		Route 68 (B	arnes Road)
		North	bound			South	bound			Eastb	ound			Westl	oound	
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PEDESTRIANS & BICYCLES

			Parkway bound			Research South					nk Drive ound			Site Westl	Drive oound	
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PEDESTRIANS & BICYCLES

		Research North				Research South				Carpent Eastb				Carpent Westl		
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CAPACITY ANALYSES



EXISTING



Lanes, Volumes, Timings
1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)

	ᄼ	→	•	•	←	•	4	†	~	/	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	ň	^					¥	4	7
Traffic Volume (vph)	0	575	225	305	905	0	0	0	0	170	0	405
Future Volume (vph)	0	575	225	305	905	0	0	0	0	170	0	405
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	0			100			0			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.862	0.850
Flt Protected				0.950						0.950	0.996	
Satd. Flow (prot)	0	3008	1455	1597	2756	0	0	0	0	1678	1318	1442
Flt Permitted				0.950		•	-			0.950	0.996	
Satd. Flow (perm)	0	3008	1455	1597	2756	0	0	0	0	1678	1318	1442
Right Turn on Red			Yes			Yes	•		Yes			No
Satd. Flow (RTOR)			239			. 00			. 00			110
Link Speed (mph)		40			35			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.9			17.8			8.5			11.3	
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	0%	20%	11%	13%	31%	0%	0%	0%	0%	9%	0%	17%
Adj. Flow (vph)	0	612	239	332	984	0	0	0	0	207	0	494
Shared Lane Traffic (%)		• • •								10%	-	48%
Lane Group Flow (vph)	0	612	239	332	984	0	0	0	0	186	258	257
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			24	<u> </u>		14			14	J
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2	2	1	12					4	4	4
Permitted Phases												
Detector Phase		2	2	1	12					4	4	4
Switch Phase												
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		23.0	23.0	26.0						31.0	31.0	31.0
Total Split (%)		28.8%	28.8%	32.5%						38.8%	38.8%	38.8%
Maximum Green (s)		17.5	17.5	22.0						25.5	25.5	25.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)

irnes Road)	Tilling Flan. Alvi	

		-	*	₩		_	7	ı		-	*	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		22.2	22.2	22.0	49.7					20.8	20.8	20.8
Actuated g/C Ratio		0.28	0.28	0.28	0.62					0.26	0.26	0.26
v/c Ratio		0.73	0.41	0.76	0.58					0.43	0.75	0.69
Control Delay		35.4	6.4	30.8	4.7					26.5	40.7	35.6
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		35.4	6.4	30.8	4.7					26.5	40.7	35.6
LOS		D	Α	С	Α					С	D	D
Approach Delay		27.2			11.3						35.1	
Approach LOS		С			В						D	
Queue Length 50th (ft)		158	0	112	43					78	126	117
Queue Length 95th (ft)		#260	56	m189	m235					116	181	167
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		834	576	457	1710					534	420	459
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		0.73	0.41	0.73	0.58					0.35	0.61	0.56

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 78 (98%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 21.9 Intersection LOS: C
Intersection Capacity Utilization 56.2% ICU Level of Service B

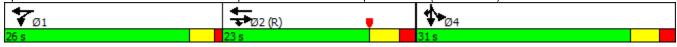
Analysis Period (min) 15

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: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: AM

	۶	→	\rightarrow	•	←	*	4	†	~	-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	^			^	7	*	4	1			
Traffic Volume (vph)	190	555	0	0	870	245	340	5	260	0	0	0
Future Volume (vph)	190	555	0	0	870	245	340	5	260	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			0			100			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950						0.950	0.954				
Satd. Flow (prot)	1656	3008	0	0	2735	1394	1604	1516	1606	0	0	0
Flt Permitted	0.950						0.950	0.954				
Satd. Flow (perm)	1656	3008	0	0	2735	1394	1604	1516	1606	0	0	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)						253						
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			14.9			15.5			11.1	
Peak Hour Factor	0.93	0.93	0.93	0.97	0.97	0.97	0.86	0.86	0.86	0.88	0.88	0.88
Heavy Vehicles (%)	9%	20%	0%	0%	32%	12%	14%	0%	14%	0%	0%	0%
Adj. Flow (vph)	204	597	0	0	897	253	395	6	302	0	0	0
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	204	597	0	0	897	253	201	200	302	0	0	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)		24			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA			NA	Prot	Split	NA	Prot			
Protected Phases	1	12			2	2	4	4	4			
Permitted Phases												
Detector Phase	1	12			2	2	4	4	4			
Switch Phase												
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	25.0				29.0	29.0	26.0	26.0	26.0			
Total Split (%)	31.3%				36.3%	36.3%	32.5%	32.5%	32.5%			
Maximum Green (s)	21.0				23.5	23.5	21.0	21.0	21.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			

Timing Plan: AM

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)

	•	→	*	•	•	•	1	Ť		-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	16.1	52.1			30.5	30.5	18.9	18.9	18.9			
Actuated g/C Ratio	0.20	0.65			0.38	0.38	0.24	0.24	0.24			
v/c Ratio	0.61	0.30			0.86	0.37	0.53	0.56	0.80			
Control Delay	44.2	1.0			34.9	11.2	31.6	32.8	44.9			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	44.2	1.0			34.9	11.2	31.6	32.8	44.9			
LOS	D	Α			С	В	С	С	D			
Approach Delay		12.0			29.7			37.7				
Approach LOS		В			С			D				
Queue Length 50th (ft)	92	4			176	39	89	89	137			
Queue Length 95th (ft)	m105	10			m#271	m49	147	148	#215			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	434	1937			1041	687	421	397	421			
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	0.47	0.31			0.86	0.37	0.48	0.50	0.72			

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 34 (43%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 26.5 Intersection LOS: C
Intersection Capacity Utilization 56.2% 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: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



	϶	→	\rightarrow	•	←	•	4	†	/	>	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻሻ	f _a		*	^	7	ሻ	f.			4	7
Traffic Volume (vph)	275	515	25	10	970	125	35	25	10	30	5	110
Future Volume (vph)	275	515	25	10	970	125	35	25	10	30	5	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	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			0			130		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993				0.850		0.957				0.850
Flt Protected	0.950			0.950			0.950				0.959	
Satd. Flow (prot)	3045	1547	0	1796	2477	1516	1668	1753	0	0	1791	1509
Flt Permitted	0.950			0.950			0.729				0.708	
Satd. Flow (perm)	3045	1547	0	1796	2477	1516	1280	1753	0	0	1322	1509
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				140		20				115
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.51	0.51	0.51	0.81	0.81	0.81
Heavy Vehicles (%)	15%	23%	1%	0%	45%	6%	1%	0%	1%	2%	0%	7%
Adj. Flow (vph)	299	560	27	11	1090	140	69	49	20	37	6	136
Shared Lane Traffic (%)												
Lane Group Flow (vph)	299	587	0	11	1090	140	69	69	0	0	43	136
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)		24			24			10			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		12	15		12	15		12	15		12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm	NA	pt+ov
Protected Phases	7	78		3	38	3 8		4			4	4 7
Permitted Phases							4			4		
Detector Phase	7	7 8		3	38	3 8	4	4		4	4	4 7
Switch Phase												
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	
Total Split (s)	26.0			11.0			19.0	19.0		19.0	19.0	
Total Split (%)	32.5%			13.8%			23.8%	23.8%		23.8%	23.8%	
Maximum Green (s)	20.6			5.7			14.1	14.1		14.1	14.1	
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	
Lost Time Adjust (s)	0.0			0.0			0.0	0.0			0.0	
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												

Lane Group	Ø8	
Lane Configurations	20	
Traffic Volume (vph) Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	8	
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	15.0	
Minimum Split (s)	21.1	
Total Split (s)	24.0	
Total Split (%)	30%	
Maximum Green (s)	17.9	
	4.8	
Yellow Time (s)	1.3	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)	1	
Lead/Lag	Lag	
Lead-Lag Optimize?		

3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)

	•	→	•	•	•	•	1	†	~	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	
Recall Mode	None			None			None	None		None	None	
Act Effct Green (s)	20.4	49.3		5.7	34.6	34.6	9.4	9.4			9.4	35.2
Actuated g/C Ratio	0.26	0.62		0.07	0.43	0.43	0.12	0.12			0.12	0.44
v/c Ratio	0.39	0.62		0.09	1.02	0.19	0.46	0.31			0.28	0.19
Control Delay	27.3	11.9		36.4	59.1	4.0	41.9	27.3			35.5	3.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	27.3	11.9		36.4	59.1	4.0	41.9	27.3			35.5	3.8
LOS	С	В		D	Е	Α	D	С			D	Α
Approach Delay		17.1			52.6			34.6			11.4	
Approach LOS		В			D			С			В	
Queue Length 50th (ft)	60	66		5	~338	0	33	23			20	5
Queue Length 95th (ft)	m102	130		21	#463	33	37	27			42	25
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	843	940		127	1070	734	225	325			233	738
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	0.35	0.62		0.09	1.02	0.19	0.31	0.21			0.18	0.18

Intersection Summary

Area Type: Other

Cycle Length: 80 Actuated Cycle Length: 80

Offset: 27 (34%), Referenced to phase 8:EBWB, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02 Intersection Signal Delay: 35.7

Intersection LOS: D
ICU Level of Service B

Intersection Capacity Utilization 56.3%

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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø8	
Vehicle Extension (s)	5.0	
Recall Mode	C-Min	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

	۶	→	•	•	+	•	1	†	~	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	, T	ĵ»		¥	ĵ.		*	+	7	, j	ĥ	
Traffic Volume (vph)	0	0	5	0	0	0	35	390	0	0	140	0
Future Volume (vph)	0	0	5	0	0	0	35	390	0	0	140	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	0			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850										
Flt Protected							0.950					
Satd. Flow (prot)	1900	1615	0	1900	1900	0	1805	1845	1900	1712	1727	0
FIt Permitted							0.950					
Satd. Flow (perm)	1900	1615	0	1900	1900	0	1805	1845	1900	1712	1727	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.42	0.42	0.42	0.88	0.88	0.88	0.67	0.67	0.67	0.73	0.73	0.73
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	11%	10%	0%
Adj. Flow (vph)	0	0	12	0	0	0	52	582	0	0	192	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	0	0	52	582	0	0	192	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24			30			12			12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
One-final Transaction alternation												

Control Type: Unsignalized

Intersection Capacity Utilization 37.2% Analysis Period (min) 15

ICU Level of Service A

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	1		ሻ	1		ሻ	1	7	ሻ	<u>\$</u>	
Traffic Vol, veh/h	0	0	5	0	0	0	35	390	0	0	140	0
Future Vol, veh/h	0	0	5	0	0	0	35	390	0	0	140	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	170	-	-	140	-	0	115	-	-
Veh in Median Storage,	# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	42	42	42	88	88	88	67	67	67	73	73	73
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	11	10	0
Mvmt Flow	0	0	12	0	0	0	52	582	0	0	192	0
Major/Minor N	1inor2			Minor1		<u> </u>	Major1			Major2		
Conflicting Flow All	878	878	192	884	878	582	192	0	0	582	0	0
Stage 1	192	192	-	686	686	-	-	-	-	-	-	-
Stage 2	686	686	-	198	192	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.21	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.299	-	-
Pot Cap-1 Maneuver	271	289	855	268	289	517	1394	-	-	949	-	-
Stage 1	814	745	-	441	451	-	-	-	-	-	-	-
Stage 2	441	451	-	808	745	-	-	-	-	-	-	-
Platoon blocked, %	000	070	0==	0==	070	- 4-	400 1	-	-	0.40	-	-
Mov Cap-1 Maneuver	263	278	855	257	278	517	1394	-	-	949	-	-
Mov Cap-2 Maneuver	263	278	-	257	278	-	-	-	-	-	-	-
Stage 1	784	745	-	425	434	-	-	-	-	-	-	-
Stage 2	425	434	-	797	745	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	9.3			0			0.6			0		
HCM LOS	Α			Α								
Minor Lane/Major Mvmt		NBL	NBT	NBR I	EBLn1	EBLn2V	VBL _{n1V}	VBLn2	SBL	SBT	SBR	
Capacity (veh/h)		1394	-	-	-	855	-	-	949	-	-	
HCM Lane V/C Ratio		0.037	-	-	-	0.014	-	-	-	-	-	
HCM Control Delay (s)		7.7	-	-	0	9.3	0	0	0	-	-	
HCM Lane LOS		Α	-	-	Α	Α	Α	Α	Α	-	-	
HCM 95th %tile Q(veh)		0.1	-	-	-	0	-	-	0	-	-	

	•	•	•	†	+	✓
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			ર્ન	ĵ»	
Traffic Volume (vph)	0	6	57	333	134	6
Future Volume (vph)	0	6	57	333	134	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865				0.994	
Flt Protected				0.993		
Satd. Flow (prot)	1096	0	0	1704	1599	0
Flt Permitted				0.993		
Satd. Flow (perm)	1096	0	0	1704	1599	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.50	0.50	0.90	0.90	0.63	0.63
Heavy Vehicles (%)	0%	50%	3%	12%	19%	0%
Adj. Flow (vph)	0	12	63	370	213	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	0	433	223	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utiliza	ation 41.4%			IC	U Level o	of Service
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			र्स	₽	
Traffic Vol, veh/h	0	6	57	333	134	6
Future Vol, veh/h	0	6	57	333	134	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,	# 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	90	90	63	63
Heavy Vehicles, %	0	50	3	12	19	0
Mymt Flow	0	12	63	370	213	10
WWW.CT IOW		12	00	010	210	10
Major/Minor N	/linor2		Major1	N	/lajor2	
Conflicting Flow All	714	218	223	0	-	0
Stage 1	218	-	-	-	-	-
Stage 2	496	-	-	-	-	-
Critical Hdwy	6.4	6.7	4.13	-	-	-
Critical Hdwy Stg 1	5.4	-	-	_	_	-
Critical Hdwy Stg 2	5.4	_	-	_	_	_
Follow-up Hdwy	3.5	3.75	2.227	_	_	_
Pot Cap-1 Maneuver	401	715	1340	_	_	_
Stage 1	823	- 10	-	<u>-</u>	_	_
Stage 2	616		_		_	_
Platoon blocked, %	010	-	-	-		_
	277	715	1240		-	
Mov Cap-1 Maneuver	377	715	1340	-	-	-
Mov Cap-2 Maneuver	377	-	-	-	-	-
Stage 1	774	-	-	-	-	-
Stage 2	616	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	10.1		1.1		0	
HCM LOS	В		1.1		U	
1 TOIVI LOO	U					
Minor Lane/Major Mvmt		NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1340	-	715	-	-
HCM Lane V/C Ratio		0.047	-	0.017	-	-
HCM Control Delay (s)		7.8	0	10.1	-	-
HCM Lane LOS		Α	Α	В	-	-
HCM 95th %tile Q(veh)		0.1	_	0.1	_	-
		J. 1		J.,		

	۶	•	•	†	Ţ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	†	1>	
Traffic Volume (vph)	0	0	6	327	140	2
Future Volume (vph)	0	0	6	327	140	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	0		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.998	
Flt Protected			0.950			
Satd. Flow (prot)	1900	1900	1805	1667	1623	0
Flt Permitted			0.950			
Satd. Flow (perm)	1900	1900	1805	1667	1623	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.25	0.25	0.89	0.89	0.81	0.81
Heavy Vehicles (%)	0%	0%	0%	14%	17%	0%
Adj. Flow (vph)	0	0	7	367	173	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	7	367	175	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop	-		Free	Free	
Intersection Summary						
J 1	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	ion 20.5%			IC	CU Level o	of Service A
Analysis Period (min) 15						

 $\label{thm:companies} G:\label{thm:companies} $$G:\label{thm:companies}$$ G:\label{thm:companies} $$BL\ Companies $$$

Intersection						
Int Delay, s/veh	0.1					
		EDD	NDI	NDT	CDT	CDD
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ች		<u> </u>	↑	- ∱	•
Traffic Vol, veh/h	0	0	6	327	140	2
Future Vol, veh/h	0	0	6	327	140	2
Conflicting Peds, #/hr	0	0	0	0	0	0
	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	-
Veh in Median Storage,	# 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	25	25	89	89	81	81
Heavy Vehicles, %	0	0	0	14	17	0
Mymt Flow	0	0	7	367	173	2
in thick low			•	001	110	_
Major/Minor M	linor2	N	/lajor1	N	//ajor2	
Conflicting Flow All	555	174	175	0	-	0
Stage 1	174	-	-	-	-	-
Stage 2	381	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	_	-	-	_
Critical Hdwy Stg 2	5.4	_	_	_	_	_
Follow-up Hdwy	3.5	3.3	2.2	_	_	_
Pot Cap-1 Maneuver	496	875	1414	_	_	_
Stage 1	861	-	1717	_	_	_
Stage 2	695		_		_	_
Platoon blocked, %	095	-	_	-		
	101	075	1111	-	-	-
Mov Cap-1 Maneuver	494	875	1414	-	-	-
Mov Cap-2 Maneuver	494	-	-	-	-	-
Stage 1	857	-	-	-	-	-
Stage 2	695	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	0		0.1		0	
HCM LOS	A		0.1		U	
TICIVI LOS						
Minor Lane/Major Mvmt		NBL	NBT	EBLn1 E	EBLn2	SBT
Capacity (veh/h)		1414	_	-	-	-
HCM Lane V/C Ratio		0.005	_	-	_	_
HCM Control Delay (s)		7.6	_	0	0	_
HCM Lane LOS		Α.	-	A	A	_
HCM 95th %tile Q(veh)		0				_
How som whe Q(ven)		U	-	-	-	-

	۶	→	•	•	←	4	1	†	/	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	100	60	25	40	65	20	15	272	40	25	77	45
Future Volume (vph)	100	60	25	40	65	20	15	272	40	25	77	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.979			0.983			0.959	
Flt Protected		0.974			0.984			0.998			0.992	
Satd. Flow (prot)	0	1749	0	0	1764	0	0	1801	0	0	1734	0
Flt Permitted		0.974			0.984			0.998			0.992	
Satd. Flow (perm)	0	1749	0	0	1764	0	0	1801	0	0	1734	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.62	0.62	0.62	0.71	0.71	0.71	0.69	0.69	0.69	0.76	0.76	0.76
Heavy Vehicles (%)	0%	5%	17%	6%	2%	5%	8%	3%	5%	9%	4%	2%
Adj. Flow (vph)	161	97	40	56	92	28	22	394	58	33	101	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	298	0	0	176	0	0	474	0	0	193	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilizati	on 42.4%			IC	CU Level	of Service	Α					
Analysis Period (min) 15												

Intersection	
Intersection Delay, s/veh	20.1
Intersection LOS	С

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	100	60	25	40	65	20	15	272	40	25	77	45
Future Vol, veh/h	100	60	25	40	65	20	15	272	40	25	77	45
Peak Hour Factor	0.62	0.62	0.62	0.71	0.71	0.71	0.69	0.69	0.69	0.76	0.76	0.76
Heavy Vehicles, %	0	5	17	6	2	5	8	3	5	9	4	2
Mvmt Flow	161	97	40	56	92	28	22	394	58	33	101	59
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	16.7			13.2			27.8			13		
HCM LOS	С			В			D			В		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	5%	54%	32%	17%	
Vol Thru, %	83%	32%	52%	52%	
Vol Right, %	12%	14%	16%	31%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	327	185	125	147	
LT Vol	15	100	40	25	
Through Vol	272	60	65	77	
RT Vol	40	25	20	45	
Lane Flow Rate	474	298	176	193	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.788	0.534	0.332	0.349	
Departure Headway (Hd)	5.984	6.44	6.795	6.504	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Cap	602	558	528	551	
Service Time	4.03	4.495	4.861	4.566	
HCM Lane V/C Ratio	0.787	0.534	0.333	0.35	
HCM Control Delay	27.8	16.7	13.2	13	
HCM Lane LOS	D	С	В	В	
HCM 95th-tile Q	7.5	3.1	1.4	1.6	

	-	•	•	←		/
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	^			4	¥	7
Traffic Volume (vph)	125	0	0	125	0	0
Future Volume (vph)	125	0	0	125	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	1863	1863
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	1863	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	0	0	136	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	136	0	0	136	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					

Area Type: O

Control Type: Unsignalized

Intersection Capacity Utilization 9.9%

ICU Level of Service A

Analysis Period (min) 15

Intersection							J
Int Delay, s/veh	0						
	EBT	EBR	WBL	WBT	NBL	NBR	
		EDK	WDL				
Lane Configurations	105	٥	۸	405	<u>ች</u>	7	
Traffic Vol, veh/h	125	0	0	125	0	0	
Future Vol, veh/h	125	0	0	125	0	0	
Conflicting Peds, #/hr	_ 0	_ 0	0	_ 0	0	0	
	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-		-		-	None	
Storage Length	-	-	-	-	0	0	
Veh in Median Storage,		-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	136	0	0	136	0	0	
NA - ' /NA' NA	4		M. ' . O		M		
	ajor1		Major2		Minor1		
Conflicting Flow All	0	0	136	0	272	136	
Stage 1	-	-	-	-	136	-	
Stage 2	-	-	-	-	136	-	
Critical Hdwy	-	-	4.12	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	-	-	2.218	-	3.518	3.318	
Pot Cap-1 Maneuver	-	-	1448	-	717	913	
Stage 1	-	-	-	-	890	-	
Stage 2	_	-	_	_	890	-	
Platoon blocked, %	_	_		_			
Mov Cap-1 Maneuver	_	_	1448	_	717	913	
Mov Cap-2 Maneuver	_	_	-	<u>-</u>	717	-	
Stage 1	_		_		890	_	
•		-		_			
Stage 2	-	-	-	-	890	-	
Approach	EB		WB		NB		
HCM Control Delay, s	0		0		0		
HCM LOS					A		
TOM LOO					Λ		
Minor Lane/Major Mvmt	1	NBLn11	NBLn2	EBT	EBR	WBL	
Capacity (veh/h)		-	-	-	-	1448	
HCM Lane V/C Ratio		-	-	-	-	-	
HCM Control Delay (s)		0	0	-	-	0	
HCM Lane LOS		Α	Α	-	-	Α	
HCM 95th %tile Q(veh)		-	-	-	-	0	
(Si)							

Lanes, Volumes, Timings
1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Existing
Timing Plan: MD

	۶	→	•	•	←	•	4	†	~	/	ţ	✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	ሻ	^					ሻ	4	7
Traffic Volume (vph)	0	505	170	130	531	0	0	0	0	130	1	170
Future Volume (vph)	0	505	170	130	531	0	0	0	0	130	1	170
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	0			100			0			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.891	0.850
Flt Protected				0.950						0.950	0.987	
Satd. Flow (prot)	0	3223	1455	1467	3343	0	0	0	0	1577	1239	1288
Flt Permitted				0.950						0.950	0.987	
Satd. Flow (perm)	0	3223	1455	1467	3343	0	0	0	0	1577	1239	1288
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			195									
Link Speed (mph)		45			35			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			17.8			8.5			11.3	
Peak Hour Factor	0.87	0.87	0.87	0.91	0.91	0.91	0.88	0.88	0.88	0.90	0.90	0.90
Heavy Vehicles (%)	0%	12%	11%	23%	8%	0%	0%	0%	0%	16%	0%	31%
Adj. Flow (vph)	0	580	195	143	584	0	0	0	0	144	1	189
Shared Lane Traffic (%)										20%		43%
Lane Group Flow (vph)	0	580	195	143	584	0	0	0	0	115	111	108
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	J		24	J		14	J		14	J
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Prot	NA					Split	NA	Prot
Protected Phases		2		1	12					4	4	4
Permitted Phases			2									
Detector Phase		2	2	1	12					4	4	4
Switch Phase												
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		30.0	30.0	20.0						25.0	25.0	25.0
Total Split (%)		40.0%	40.0%	26.7%						33.3%	33.3%	33.3%
Maximum Green (s)		24.5	24.5	16.0						19.5	19.5	19.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		3	3	,								
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0
										-		

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: MD

				. 9
imin	na E	Dlar	۰ ۱	ΛD

	•	-	•	•	•	•	1	Ť		-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		33.8	33.8	13.5	52.9					12.6	12.6	12.6
Actuated g/C Ratio		0.45	0.45	0.18	0.71					0.17	0.17	0.17
v/c Ratio		0.40	0.26	0.54	0.25					0.43	0.53	0.50
Control Delay		16.6	4.0	28.7	0.8					32.1	37.1	35.4
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		16.6	4.0	28.7	0.8					32.1	37.1	35.4
LOS		В	Α	С	Α					С	D	D
Approach Delay		13.4			6.3						34.8	
Approach LOS		В			Α						С	
Queue Length 50th (ft)		91	0	32	0					51	52	49
Queue Length 95th (ft)		157	38	63	1					91	96	89
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		1453	763	322	2335					410	322	334
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		0.40	0.26	0.44	0.25					0.28	0.34	0.32

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 13 (17%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 50

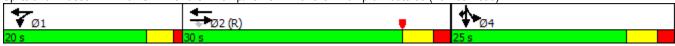
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 14.5 Intersection LOS: B Intersection Capacity Utilization 42.8% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: MD

Lane Configurations		۶	→	•	•	←	*	4	†	/	-	↓	4
Traffic Volume (vph)	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	Lane Configurations	ř	^			^	7	ň	ર્ન	7			
Ideal Flow (yphph)	Traffic Volume (vph)	167		0	0		143	156		126	0	0	0
Lane Worldn' (ft)	Future Volume (vph)	167	468	0	0	505	143	156	0	126	0	0	0
Storage Langth (ft) Storage Langes	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Lanes	Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Taper Length (ft)	Storage Length (ft)	830		0	0		480	180		180	0		0
Lane Util. Factor	Storage Lanes	1		0	0		1	1		0	0		0
Fit Protected 0.950	Taper Length (ft)	25			0			100			0		
Fit Protected 0.950 Satt. Flow (prot) 1433 3343 0 0 3282 1269 1604 1504 1551 0 0 0 0 0 0 0 0 0	Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Satd. Flow (prot)	Frt						0.850			0.850			
Fit Permitted	Flt Protected	0.950						0.950	0.950				
Satd. Flow (perm)	Satd. Flow (prot)	1433	3343	0	0	3282	1269	1604	1504	1551	0	0	0
Right Turn on Red Yes	Flt Permitted	0.950						0.950	0.950				
Satd. Flow (RTOR)	Satd. Flow (perm)	1433	3343	0	0	3282	1269	1604	1504	1551	0	0	0
Link Speed (mph)	Right Turn on Red			Yes			Yes			No			Yes
Link Speed (mph) 35 35 35 30 30 Link Distance (ft) 913 764 683 489 Travel Time (s) 17.8 14.9 15.5 11.1 Peak Hour Factor 0.95 0.95 0.91 0.91 0.91 0.90 0.90 0.90 0.88 0.88 0.88 Heavy Vehicles (%) 26% 8% 0% 0% 10% 23% 14% 0% 18% 0% 0% 0% Ad, Flow (vph) 176 493 0 0 555 157 786 87 140 0 0 0 Shared Lane Traffic (%) 50% 176 493 0 0 555 157 86 87 140 0 </td <td>Satd. Flow (RTOR)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>157</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Satd. Flow (RTOR)						157						
Travel Time (s)	Link Speed (mph)		35			35			30			30	
Peak Hour Factor	Link Distance (ft)		913			764			683			489	
Heavy Vehicles (%)	Travel Time (s)		17.8			14.9			15.5			11.1	
Adj. Flow (vph) 176 493 0 0 555 157 173 0 140 0 0 0 Shared Lane Traffic (%) 50%	Peak Hour Factor	0.95	0.95	0.95	0.91	0.91	0.91	0.90	0.90	0.90	0.88	0.88	0.88
Adj. Flow (vph)	Heavy Vehicles (%)	26%	8%	0%	0%	10%	23%	14%	0%	18%	0%	0%	0%
Shared Lane Traffic (%) Lane Group Flow (vph) 176 493 0 0 555 157 86 87 140 0 0 0 0		176	493	0	0	555	157	173	0	140	0	0	0
Enter Blocked Intersection								50%					
Left Left Right Left Left Left	Lane Group Flow (vph)	176	493	0	0	555	157	86	87	140	0	0	0
Median Width(ft) 24 12 14 14 Link Offset(ft) 0 0 0 0 Crosswalk Width(ft) 16 16 16 16 Two way Left Turn Lane 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85 0.	Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Link Offset(ft) 0 0 0 0 0 Crosswalk Width(ft) 16 16 16 16 16 Two way Left Turn Lane Headway Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85 <td>Lane Alignment</td> <td>Left</td> <td>Left</td> <td>Right</td> <td>Left</td> <td>Left</td> <td>Right</td> <td>Left</td> <td>Left</td> <td>Right</td> <td>Left</td> <td>Left</td> <td>Right</td>	Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Crosswalk Width(ft) 16 16 16 16 16 Two way Left Turn Lane Headway Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85	Median Width(ft)		24			12			14	_		14	
Two way Left Turn Lane Headway Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85 </td <td>Link Offset(ft)</td> <td></td> <td>0</td> <td></td> <td></td> <td>0</td> <td></td> <td></td> <td>0</td> <td></td> <td></td> <td>0</td> <td></td>	Link Offset(ft)		0			0			0			0	
Headway Factor 1.00 1.00 1.00 1.00 1.00 1.04 0.92 1.00 0.85 0.85 0.85 0.85 0.85 Turning Speed (mph) 15	Crosswalk Width(ft)		16			16			16			16	
Turning Speed (mph) 15 9 15 9 15 9 15 9 Turn Type Prot NA NA Prot Split NA Prot Permitted Phases 1 12 2 2 4 4 4 Switch Phase 1 12 2 2 4 4 4 Switch Phase 4	Two way Left Turn Lane												
Turn Type Prot NA NA Prot Split NA Prot Protected Phases 1 12 2 2 4 4 4 Permitted Phases 1 12 2 2 4 4 4 Switch Phase Minimum Initial (s) 7.0 15.0 15.0 9.0 9.0 9.0 Minimum Split (s) 11.0 20.5 20.5 14.0 14.0 14.0 Total Split (s) 20.0 31.0 31.0 24.0 24.0 24.0 Total Split (%) 26.7% 41.3% 41.3% 32.0% 32.0% 32.0% Maximum Green (s) 16.0 25.5 25.5 19.0 19.0 19.0 Yellow Time (s) 3.0 3.5 3.5 3.0 3.0 3.0 All-Red Time (s) 1.0 2.0 2.0 2.0 2.0 2.0 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0	Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Protected Phases 1 12 2 2 4 4 4 4 Permitted Phases Detector Phase 1 12 2 2 2 4 4 4 4 Switch Phase Minimum Initial (s) 7.0 15.0 15.0 9.0 9.0 9.0 9.0 Minimum Split (s) 11.0 20.5 20.5 14.0 14.0 14.0 14.0 14.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15	Turning Speed (mph)	15		9	15		9	15		9	15		9
Permitted Phases 1 12 2 2 4 4 4 Switch Phase Minimum Initial (s) 7.0 15.0 15.0 9.0 9.0 9.0 Minimum Split (s) 11.0 20.5 20.5 14.0 14.0 14.0 Total Split (s) 20.0 31.0 31.0 24.0 24.0 24.0 Total Split (%) 26.7% 41.3% 41.3% 32.0% 32.0% 32.0% Maximum Green (s) 16.0 25.5 25.5 19.0 19.0 19.0 Yellow Time (s) 3.0 3.5 3.5 3.0 3.0 3.0 All-Red Time (s) 1.0 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 Lead/Lag Lead Lag Lag Lag Lag	Turn Type	Prot	NA			NA	Prot	Split	NA	Prot			
Detector Phase 1 1 2 2 2 4 4 4 Switch Phase Minimum Initial (s) 7.0 15.0 15.0 9.0 9.0 9.0 Minimum Split (s) 11.0 20.5 20.5 14.0 14.0 14.0 Total Split (s) 20.0 31.0 31.0 24.0 24.0 24.0 Total Split (%) 26.7% 41.3% 41.3% 32.0% 32.0% 32.0% Maximum Green (s) 16.0 25.5 25.5 19.0 19.0 19.0 Yellow Time (s) 3.0 3.5 3.5 3.0 3.0 3.0 All-Red Time (s) 1.0 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) 4.0 5.5 5.5 5.0 5.0 5.0 Lead/Lag Lead Lag Lag Lag	Protected Phases	1	12			2	2	4	4	4			
Switch Phase Minimum Initial (s) 7.0 15.0 15.0 9.0 9.0 9.0 Minimum Split (s) 11.0 20.5 20.5 14.0 14.0 14.0 Total Split (s) 20.0 31.0 31.0 24.0 24.0 24.0 Total Split (%) 26.7% 41.3% 41.3% 32.0% 32.0% 32.0% Maximum Green (s) 16.0 25.5 25.5 19.0 19.0 19.0 Yellow Time (s) 3.0 3.5 3.5 3.0 3.0 3.0 All-Red Time (s) 1.0 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) 4.0 5.5 5.5 5.0 5.0 5.0 Lead/Lag Lead Lag Lag Lag	Permitted Phases												
Minimum Initial (s) 7.0 15.0 15.0 9.0 9.0 9.0 Minimum Split (s) 11.0 20.5 20.5 14.0 14.0 14.0 Total Split (s) 20.0 31.0 31.0 24.0 24.0 24.0 Total Split (%) 26.7% 41.3% 41.3% 32.0% 32.0% 32.0% Maximum Green (s) 16.0 25.5 25.5 19.0 19.0 19.0 Yellow Time (s) 3.0 3.5 3.5 3.0 3.0 3.0 All-Red Time (s) 1.0 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) 4.0 5.5 5.5 5.0 5.0 5.0 Lead/Lag Lead Lag Lag Lag	Detector Phase	1	12			2	2	4	4	4			
Minimum Split (s) 11.0 20.5 20.5 14.0 14.0 14.0 Total Split (s) 20.0 31.0 31.0 24.0 24.0 24.0 Total Split (%) 26.7% 41.3% 41.3% 32.0% 32.0% 32.0% Maximum Green (s) 16.0 25.5 25.5 19.0 19.0 19.0 Yellow Time (s) 3.0 3.5 3.5 3.0 3.0 3.0 All-Red Time (s) 1.0 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) 4.0 5.5 5.5 5.0 5.0 5.0 Lead/Lag Lead Lag Lag Lag	Switch Phase												
Total Split (s) 20.0 31.0 31.0 24.0 24.0 24.0 Total Split (%) 26.7% 41.3% 41.3% 32.0% 32.0% 32.0% Maximum Green (s) 16.0 25.5 25.5 19.0 19.0 19.0 Yellow Time (s) 3.0 3.5 3.5 3.0 3.0 3.0 All-Red Time (s) 1.0 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) 4.0 5.5 5.5 5.0 5.0 5.0 Lead/Lag Lead Lag Lag Lag Lag Lag	Minimum Initial (s)					15.0	15.0	9.0	9.0	9.0			
Total Split (%) 26.7% 41.3% 41.3% 32.0% 32.0% 32.0% Maximum Green (s) 16.0 25.5 25.5 19.0 19.0 19.0 Yellow Time (s) 3.0 3.5 3.5 3.0 3.0 3.0 All-Red Time (s) 1.0 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) 4.0 5.5 5.5 5.0 5.0 5.0 Lead/Lag Lead Lag Lag Lag	Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Maximum Green (s) 16.0 25.5 25.5 19.0 19.0 19.0 Yellow Time (s) 3.0 3.5 3.5 3.0 3.0 3.0 All-Red Time (s) 1.0 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) 4.0 5.5 5.5 5.0 5.0 5.0 Lead/Lag Lead Lag Lag	Total Split (s)	20.0				31.0	31.0	24.0	24.0	24.0			
Yellow Time (s) 3.0 3.5 3.5 3.0 3.0 3.0 All-Red Time (s) 1.0 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) 4.0 5.5 5.5 5.0 5.0 5.0 Lead/Lag Lag Lag Lag Lag Lag	Total Split (%)	26.7%				41.3%	41.3%	32.0%	32.0%	32.0%			
All-Red Time (s) 1.0 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) 4.0 5.5 5.5 5.0 5.0 5.0 Lead/Lag Lag Lag Lag	Maximum Green (s)	16.0				25.5	25.5	19.0	19.0	19.0			
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 4.0 5.5 5.5 5.0 5.0 5.0 Lead/Lag Lead Lag Lag	Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
Total Lost Time (s) 4.0 5.5 5.5 5.0 5.0 5.0 Lead/Lag Lag Lag	All-Red Time (s)	1.0				2.0	2.0	2.0	2.0	2.0			
Lead/Lag Lag Lag	Lost Time Adjust (s)	0.0				0.0	0.0	0.0	0.0	0.0			
Lead/Lag Lag Lag		4.0				5.5	5.5	5.0	5.0	5.0			
		Lead				Lag	Lag						
Leau-Lay Optimize:	Lead-Lag Optimize?												
Vehicle Extension (s) 3.0 0.2 0.2 3.0 3.0 3.0		3.0				0.2	0.2	3.0	3.0	3.0			

Timing Plan: MD

ı

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)

	•	-	•	•	•	•	1	T		-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	14.4	53.5			33.6	33.6	12.5	12.5	12.5			
Actuated g/C Ratio	0.19	0.71			0.45	0.45	0.17	0.17	0.17			
v/c Ratio	0.64	0.21			0.38	0.24	0.32	0.35	0.54			
Control Delay	28.2	0.9			10.3	1.8	29.6	30.3	35.8			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	28.2	0.9			10.3	1.8	29.6	30.3	35.8			
LOS	С	Α			В	Α	С	С	D			
Approach Delay		8.1			8.5			32.6				
Approach LOS		Α			Α			С				
Queue Length 50th (ft)	35	0			38	1	37	38	61			
Queue Length 95th (ft)	53	1			71	8	72	73	105			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	319	2347			1468	654	406	381	392			
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	0.55	0.21			0.38	0.24	0.21	0.23	0.36			

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 51 (68%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 50

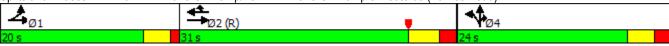
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 12.8 Intersection LOS: B
Intersection Capacity Utilization 42.8% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



Lanes, Volumes, Timings 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)

	۶	→	•	•	-	•	1	†	/	/	Ţ	</th
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	∱ }		*	^	7	*	(Î			ર્ન	7
Traffic Volume (vph)	87	500	7	1	527	20	5	0	2	23	0	116
Future Volume (vph)	87	500	7	1	527	20	5	0	2	23	0	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			0			130		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998				0.850		0.850			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.850
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1410	3364	0	1796	3295	1530	1404	1041	0	0	1480	1282
Flt Permitted	0.950		•	0.950			0.870		•		0.870	
Satd. Flow (perm)	1410	3364	0	1796	3295	1530	1286	1041	0	0	1355	1282
Right Turn on Red		0001	Yes	1100	0200	Yes	.200	1011	Yes		1000	Yes
Satd. Flow (RTOR)		3	100			106		431	100			129
Link Speed (mph)		35			35	100		30			30	120
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.44	0.44	0.44	0.90	0.90	0.90
Heavy Vehicles (%)	28%	7%	14%	0.02	9%	5%	20%	0%	50%	22%	0.30	26%
Adj. Flow (vph)	94	538	8	1	573	22	11	0	5	26	0	129
Shared Lane Traffic (%)	01	000		•	0.0							120
Lane Group Flow (vph)	94	546	0	1	573	22	11	5	0	0	26	129
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)	Loit	12	rugiit	Loit	12	rugiit	Loit	10	rugiit	Loit	0	rugiit
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	1.00	12	15	1.01	12	15	1.01	12	15	1.00	12
Turn Type	Prot	NA	12	Prot	NA	Prot	Perm	NA	12	Perm	NA	pm+ov
Protected Phases	1	12		3	23	23	1 01111	4		1 01111	4	1
Permitted Phases	'	1 4			20		4			4		4
Detector Phase	1	12		3	23	23	4	4		4	4	1
Switch Phase	'	1 2		<u> </u>	2.0	2.0						
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	20.0			12.0			15.0	15.0		15.0	15.0	20.0
Total Split (%)	26.7%			16.0%			20.0%	20.0%		20.0%	20.0%	26.7%
Maximum Green (s)	14.6			6.7			10.1	10.1		10.1	10.1	14.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
							1.3					
All-Red Time (s)	2.4 0.0			1.0 0.0			0.0	1.3 0.0		1.3	1.3	2.4
Lost Time Adjust (s)											0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9		1	4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?												

Lane Group	Ø2	
Lane Configurations	WZ	
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	2	
Permitted Phases		
Detector Phase		
Switch Phase		
	15.0	
Minimum Initial (s)		
Minimum Split (s)	21.1	
Total Split (s)	28.0	
Total Split (%)	37%	
Maximum Green (s)	21.9	
Yellow Time (s)	4.8	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?		

3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)

	•	→	•	•	•	•	1	†	~	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	10.7	51.2		5.5	45.3	45.3	7.4	7.4			7.4	18.2
Actuated g/C Ratio	0.14	0.68		0.07	0.60	0.60	0.10	0.10			0.10	0.24
v/c Ratio	0.47	0.24		0.01	0.29	0.02	0.09	0.01			0.19	0.32
Control Delay	40.8	3.2		32.0	9.7	0.1	31.8	0.0			34.3	5.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	40.8	3.2		32.0	9.7	0.1	31.8	0.0			34.3	5.5
LOS	D	Α		С	Α	Α	С	Α			С	Α
Approach Delay		8.7			9.3			21.9			10.3	
Approach LOS		Α			Α			С			В	
Queue Length 50th (ft)	39	31		0	71	0	5	0			11	0
Queue Length 95th (ft)	84	35		5	126	0	9	0			34	31
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	279	2250		160	2042	988	173	513			182	473
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	0.34	0.24		0.01	0.28	0.02	0.06	0.01			0.14	0.27

Intersection Summary

Area Type: Other

Cycle Length: 75
Actuated Cycle Length: 75

Offset: 42 (56%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 55

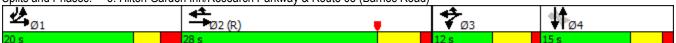
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.47

Intersection Signal Delay: 9.3 Intersection LOS: A Intersection Capacity Utilization 41.3% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø2	
Vehicle Extension (s)	2.5	
Recall Mode	C-Min	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

4: Research Parkway & Food Bank Driv/Site Drive 1

	۶	→	\rightarrow	•	•	•	•	†	/	>	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	ĵ.		ň	î,		7	†	7	ň	£	
Traffic Volume (vph)	2	0	8	0	0	0	5	102	0	0	131	1
Future Volume (vph)	2	0	8	0	0	0	5	102	0	0	131	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	0			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850									0.999	
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1805	1615	0	1900	1900	0	1805	1520	1900	1900	1485	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1805	1615	0	1900	1900	0	1805	1520	1900	1900	1485	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.63	0.63	0.63	0.88	0.88	0.88	0.81	0.81	0.81	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	28%	0%
Adj. Flow (vph)	3	0	13	0	0	0	6	126	0	0	142	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	13	0	0	0	0	6	126	0	0	143	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24			30			12			12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 17.0%

ICU Level of Service A

Analysis Period (min) 15

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ች	₽		ሻ	f		ሻ		7	ሻ	ĵ.	
Traffic Vol, veh/h	2	0	8	0	0	0	5	102	0	0	131	1
Future Vol, veh/h	2	0	8	0	0	0	5	102	0	0	131	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	170	-	-	140	-	0	115	-	-
Veh in Median Storage,	# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	88	88	88	81	81	81	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	25	0	0	28	0
Mvmt Flow	3	0	13	0	0	0	6	126	0	0	142	1
Major/Minor N	/linor2		I	Minor1		I	/lajor1			Major2		
Conflicting Flow All	281	281	143	287	281	126	143	0	0	126	0	0
Stage 1	143	143	-	138	138	-	-	_	_	-	_	_
Stage 2	138	138	-	149	143	-	-	-	_	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	_
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	675	631	910	669	631	930	1452	-	-	1473	_	_
Stage 1	865	782	-	870	786	-	-	-	-	-	-	-
Stage 2	870	786	-	858	782	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	673	628	910	658	628	930	1452	-	-	1473	-	-
Mov Cap-2 Maneuver	673	628	-	658	628	-	-	-	-	-	-	-
Stage 1	862	782	-	867	783	-	-	-	-	-	-	-
Stage 2	866	783	-	846	782	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	9.3			0			0.4			0		
HCM LOS	Α			A								
Minor Lane/Major Mvmt		NBL	NBT	NBR I	EBLn1	EBLn2V	VBLn1V	VBLn2	SBL	SBT	SBR	
Capacity (veh/h)		1452	-	-	673	910	-	-	1473	-	-	
HCM Lane V/C Ratio		0.004	-	_		0.014	-	_	-	-	-	
HCM Control Delay (s)		7.5	-	-	10.4	9	0	0	0	-	-	
HCM Lane LOS		A	-	-	В	A	A	A	A	-	-	
HCM 95th %tile Q(veh)		0	-	-	0	0	-	-	0	-	-	

	۶	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			ર્ન	1>	
Traffic Volume (vph)	3	30	14	90	102	3
Future Volume (vph)	3	30	14	90	102	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.876				0.996	
Flt Protected	0.996			0.993		
Satd. Flow (prot)	1458	0	0	1674	1681	0
FIt Permitted	0.996			0.993		
Satd. Flow (perm)	1458	0	0	1674	1681	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.69	0.69	0.83	0.83	0.65	0.65
Heavy Vehicles (%)	0%	15%	11%	13%	13%	0%
Adj. Flow (vph)	4	43	17	108	157	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	0	0	125	162	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	tion 22.2%			IC	CU Level o	of Service A
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	1.7					
					0==	055
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	f)	
Traffic Vol, veh/h	3	30	14	90	102	3
Future Vol, veh/h	3	30	14	90	102	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,	# 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	83	83	65	65
Heavy Vehicles, %	0	15	11	13	13	0
Mvmt Flow	4	43	17	108	157	5
	•		• •			
		_				
Major/Minor N	/linor2		Major1	١	//ajor2	
Conflicting Flow All	302	160	162	0	-	0
Stage 1	160	-	-	-	-	-
Stage 2	142	-	-	-	-	-
Critical Hdwy	6.4	6.35	4.21	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	_	-	_	-
Follow-up Hdwy	3.5	3.435	2.299	_	_	_
Pot Cap-1 Maneuver	694	852	1364	_	_	_
Stage 1	874	-	-	_	_	_
Stage 2	890	_	_	_	_	_
Platoon blocked, %	000			<u>-</u>	_	_
Mov Cap-1 Maneuver	685	852	1364	_	_	_
	685					
Mov Cap-2 Maneuver		-	-	-	-	-
Stage 1	863	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	9.6		1		0	
HCM LOS	A		•			
TIOWI LOO						
Minor Lane/Major Mvmt	t	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1364	-	834	-	-
HCM Lane V/C Ratio		0.012	-	0.057	-	-
HCM Control Delay (s)		7.7	0	9.6	-	-
HCM Lane LOS		Α	A	Α	_	-
HCM 95th %tile Q(veh)		0	-	0.2	_	-
TOW JOHN JOHN Q(VEII)		U		0.2		

	۶	•	•	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	1	î,	
Traffic Volume (vph)	2	3	2	91	102	0
Future Volume (vph)	2	3	2	91	102	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	0		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1583	1805	1681	1652	0
FIt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1583	1805	1681	1652	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.38	0.38	0.83	0.83	0.66	0.66
Heavy Vehicles (%)	0%	2%	0%	13%	15%	0%
Adj. Flow (vph)	5	8	2	110	155	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	8	2	110	155	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	tion 15.4%			IC	U Level o	of Service A
A selection Desired (selection) 45						

 $\label{thm:companies} G:\label{thm:companies} $$G:\label{thm:companies}$$BL\ Companies$

Analysis Period (min) 15

Intersection							
Int Delay, s/veh	0.5						,
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations						SDR	
	<u>ች</u>		\	↑	102	٥	
Traffic Vol, veh/h	2	3	2	91	102	0	
Future Vol, veh/h	2	3	2	91	102	0	
Conflicting Peds, #/hr	0	0	0	_ 0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	0	0	100	-	-	-	
Veh in Median Storage,		-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	38	38	83	83	66	66	
Heavy Vehicles, %	0	2	0	13	15	0	
Mvmt Flow	5	8	2	110	155	0	
N. A	<i>I</i> : 0						
	/linor2		Major1		Major2	_	
Conflicting Flow All	269	155	155	0	-	0	
Stage 1	155	-	-	-	-	-	
Stage 2	114	-	-	-	-	-	
Critical Hdwy	6.4	6.22	4.1	-	-	-	
Critical Hdwy Stg 1	5.4	-	-	-	-	-	
Critical Hdwy Stg 2	5.4	-	-	-	-	-	
Follow-up Hdwy	3.5	3.318	2.2	-	-	-	
Pot Cap-1 Maneuver	725	891	1438	-	-	-	
Stage 1	878	-	-	-	-	-	
Stage 2	916	-	-	_	_	_	
Platoon blocked, %				_	_	-	
Mov Cap-1 Maneuver	724	891	1438	_	-	_	
Mov Cap-1 Maneuver	724	-	- 100	_	_	_	
Stage 1	877	_	-	-	-	_	
Stage 2	916	-	_		_	_	
Staye 2	910	-	_	_	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	9.5		0.2		0		
HCM LOS	A						
Minor Lane/Major Mvmt		NBL	NBT	EBLn1		SBT	
Capacity (veh/h)		1438	-	724	891	-	
HCM Lane V/C Ratio		0.002	-	0.007	0.009	-	
HCM Control Delay (s)		7.5	_		9.1	_	
TION CONTION DOING (3)		1.0		10	J. I		
HCM Lane LOS		Α.5	-	В	A	-	

	۶	→	•	•	←	4	1	†	~	\	ļ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	31	27	11	8	19	12	7	80	6	13	83	37
Future Volume (vph)	31	27	11	8	19	12	7	80	6	13	83	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.958			0.991			0.962	
FIt Protected		0.978			0.990			0.996			0.995	
Satd. Flow (prot)	0	1741	0	0	1632	0	0	1477	0	0	1462	0
Flt Permitted		0.978			0.990			0.996			0.995	
Satd. Flow (perm)	0	1741	0	0	1632	0	0	1477	0	0	1462	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.86	0.86	0.86	0.75	0.75	0.75	0.85	0.85	0.85	0.89	0.89	0.89
Heavy Vehicles (%)	3%	4%	9%	13%	16%	0%	0%	30%	17%	0%	38%	3%
Adj. Flow (vph)	36	31	13	11	25	16	8	94	7	15	93	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	80	0	0	52	0	0	109	0	0	150	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
	Other											
Control Type: Unsignalized												
Intersection Capacity Utilizati	on 24.5%			IC	CU Level of	of Service	Α					
Analysis Period (min) 15												

Analysis Period (min) 15

Intersection Delay, s/veh 8.1 Intersection LOS A
Intersection LOS A
INCOSCULOTI EOO

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	31	27	11	8	19	12	7	80	6	13	83	37
Future Vol, veh/h	31	27	11	8	19	12	7	80	6	13	83	37
Peak Hour Factor	0.86	0.86	0.86	0.75	0.75	0.75	0.85	0.85	0.85	0.89	0.89	0.89
Heavy Vehicles, %	3	4	9	13	16	0	0	30	17	0	38	3
Mvmt Flow	36	31	13	11	25	16	8	94	7	15	93	42
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	8.1			8			8			8.1		
HCM LOS	Α			Α			Α			Α		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	8%	45%	21%	10%	
Vol Thru, %	86%	39%	49%	62%	
Vol Right, %	6%	16%	31%	28%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	93	69	39	133	
LT Vol	7	31	8	13	
Through Vol	80	27	19	83	
RT Vol	6	11	12	37	
Lane Flow Rate	109	80	52	149	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.132	0.102	0.067	0.174	
Departure Headway (Hd)	4.347	4.577	4.642	4.186	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Cap	827	785	773	859	
Service Time	2.362	2.596	2.663	2.199	
HCM Lane V/C Ratio	0.132	0.102	0.067	0.173	
HCM Control Delay	8	8.1	8	8.1	
HCM Lane LOS	Α	Α	Α	Α	
HCM 95th-tile Q	0.5	0.3	0.2	0.6	

	→	•	•	←	1	/
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	f)			4	ሻ	7
Traffic Volume (vph)	46	0	0	39	0	0
Future Volume (vph)	46	0	0	39	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	1863	1863
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	1863	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	0	0	42	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	0	0	42	0	0
Enter Blocked Intersection		No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 6.7% Analysis Period (min) 15

ICU Level of Service A

Intersection							J
Int Delay, s/veh	0						
	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	<u>⊏ВІ</u>	LDK	VVDL	₩ <u>₩</u>	NDL	INDR	
Traffic Vol, veh/h	46	0	0	4 39	1		
Future Vol, veh/h	46	0	0	39	0	0	
· · · · · · · · · · · · · · · · · · ·	40	0	0	0	0	0	
Conflicting Peds, #/hr							
0	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-		-	None	
Storage Length	- 4	-	-	-	0	0	
Veh in Median Storage, #		-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	50	0	0	42	0	0	
Major/Minor Ma	ajor1	ı	Major2		Minor1		
				0	92	50	
Conflicting Flow All	0	0	50				
Stage 1		-	-	-	50	-	
Stage 2	-	-	- 4.40	-	42	-	
Critical Hdwy	-	-	4.12	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	-	-	2.218	-	3.518		
Pot Cap-1 Maneuver	-	-	1557	-	908	1018	
Stage 1	-	-	-	-	972	-	
Stage 2	-	-	-	-	980	-	
Platoon blocked, %	-	-		-			
Mov Cap-1 Maneuver	-	-	1557	-	908	1018	
Mov Cap-2 Maneuver	-	-	-	-	908	-	
Stage 1	_	-	_	_	972	-	
Stage 2	-	_	_	_	980	_	
J. W. J. Z.					300		
Approach	EB		WB		NB		
HCM Control Delay, s	0		0		0		
HCM LOS					Α		
Minor Lane/Major Mvmt	ı	NBLn11	VRI n2	EBT	EBR	WBL	
	- 1	ADEIIII	ADLIIZ	LDI			
Capacity (veh/h)		-	-	-	-	1557	
HCM Lane V/C Ratio		-	-	-	-	-	
HCM Control Delay (s)		0	0	-	-	0	
HCM Lane LOS		Α	Α	-	-	A	
HCM 95th %tile Q(veh)		-	-	-	-	0	

Lanes, Volumes, Timings
1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)

Lane Group EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SB Lane Configurations ↑↑ ↑ ↑↑
Traffic Volume (vph) 0 1010 475 290 835 0 0 0 240 5 33 Future Volume (vph) 0 1010 475 290 835 0 0 0 240 5 33 Ideal Flow (vphpl) 1900 19
Traffic Volume (vph) 0 1010 475 290 835 0 0 0 240 5 33 Future Volume (vph) 0 1010 475 290 835 0 0 0 240 5 33 Ideal Flow (vphpl) 1900 19
Future Volume (vph)
Ideal Flow (vphpl) 1900 240 244 Storage Length (ft) 0 1 1 0 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 0 1 1 0 0 0 1 0 9 1 0 9 1 0 9 1 0 9 1 0 9 0 9 0 9 0 9 0 9 0 9 0
Lane Width (ft) 12 12 12 12 12 12 12 12 14 13 1 Storage Length (ft) 0 0 830 0 0 0 240 24 Storage Lanes 0 1 1 0 0 0 0 1 Taper Length (ft) 0 100 100 0 0 100 100 Lane Util. Factor 1.00 0.95 1.00 1.00 1.00 1.00 1.00 1.00 0.95 0.91 0.95 Fit 0.850 0.850 0.950 0.950 0.950 0.990 0.98 0.88 0.88 0.85 Fit Protected 0.950 0.950 0.950 0.990 <
Storage Length (ft) 0 0 830 0 0 240 24 Storage Lanes 0 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 0 1 1 0 0 0 1 0 0 1 0 0 1 0 0 0 1 0
Storage Lanes 0 1 1 0 0 0 1 Taper Length (ft) 0 100 0 100 100 100 Lane Util. Factor 1.00 0.95 1.00 1.00 1.00 1.00 1.00 0.95 0.91 0.95 Frt 0.850 0.850 0.950 0.950 0.950 0.990
Taper Length (ft) 0 100 0 100 Lane Util. Factor 1.00 0.95 1.00 1.00 1.00 1.00 0.95 0.91 0.95 Frt 0.850 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.990 Satd. Flow (prot) 0 2843 1615 1805 2865 0 0 0 0 1564 168 Flt Permitted 0.950 0.950 0.950 0.950 0.990 0.990 0.990 0.950 0.990 0.990 0.990 0.950 0.990 <t< td=""></t<>
Lane Util. Factor 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.00 1.00 0.95 0.91 0.95 Frt 0.850 0.850 0.950 0.950 0.950 0.990 0.990 0.950 0.990 0.990 0.990 0.990 0.950 0.990 0.990 0.950 0.990 0.990 0.950 0.990 0.990 0.950 0.990 0.990 0.950 0.990
Frt 0.850 0.854 0.855 Flt Protected 0.950 0.950 0.990 0.990 Satd. Flow (prot) 0 2843 1615 1805 2865 0 0 0 0 1829 1564 168 Flt Permitted 0.950 0.950 0.990<
Fit Protected 0.950 0.950 0.990 Satd. Flow (prot) 0 2843 1615 1805 2865 0 0 0 0 1829 1564 168 Fit Permitted 0.950 0.950 0.950 0.990 Satd. Flow (perm) 0 2843 1615 1805 2865 0 0 0 0 1829 1564 168 Right Turn on Red Yes Yes Yes Yes N Satd. Flow (RTOR) 534 534 534 30 30 30 Link Speed (mph) 45 35 30 30 30 30 Link Distance (ft) 348 913 376 495 495 Travel Time (s) 5.3 17.8 8.5 11.3 Peak Hour Factor 0.89 0.89 0.84 0.84 0.84 0.88 0.88 0.85 0.85 0.85 0.85 0.85
Satd. Flow (prot) 0 2843 1615 1805 2865 0 0 0 1829 1564 168 Flt Permitted 0.950 0.950 0.990 0.990 0.950 0.990 </td
Fit Permitted 0.950 0.950 0.990 Satd. Flow (perm) 0 2843 1615 1805 2865 0 0 0 0 0 1829 1564 168 Right Turn on Red Yes Yes Yes N Satd. Flow (RTOR) 534 534 534 534 534 535 530 30 30 30 530 534 </td
Satd. Flow (perm) 0 2843 1615 1805 2865 0 0 0 1829 1564 168 Right Turn on Red Yes Yes Yes N Satd. Flow (RTOR) 534 Satd. Flow (RTOR) Satd. Fl
Right Turn on Red Yes Yes Yes No. Satd. Flow (RTOR) 534 35 30 30 Link Speed (mph) 45 35 30 30 Link Distance (ft) 348 913 376 495 Travel Time (s) 5.3 17.8 8.5 11.3 Peak Hour Factor 0.89 0.89 0.84 0.84 0.84 0.88 0.88 0.85 0.85 0.8
Satd. Flow (RTOR) 534 Link Speed (mph) 45 35 30 30 Link Distance (ft) 348 913 376 495 Travel Time (s) 5.3 17.8 8.5 11.3 Peak Hour Factor 0.89 0.89 0.84 0.84 0.84 0.88 0.88 0.85 0.85 0.85
Link Speed (mph) 45 35 30 30 Link Distance (ft) 348 913 376 495 Travel Time (s) 5.3 17.8 8.5 11.3 Peak Hour Factor 0.89 0.89 0.89 0.84 0.84 0.84 0.88 0.88 0.85 0.85 0.85
Link Distance (ft) 348 913 376 495 Travel Time (s) 5.3 17.8 8.5 11.3 Peak Hour Factor 0.89 0.89 0.84 0.84 0.84 0.88 0.88 0.85 0.85 0.85
Travel Time (s) 5.3 17.8 8.5 11.3 Peak Hour Factor 0.89 0.89 0.84 0.84 0.84 0.88 0.88 0.85 0.85 0.85
Peak Hour Factor 0.89 0.89 0.89 0.84 0.84 0.84 0.88 0.88 0.88 0.85 0.85 0.8
Adj. Flow (vph) 0 1135 534 345 994 0 0 0 0 282 6 39
Shared Lane Traffic (%) 16% 44 ⁴
Lane Group Flow (vph) 0 1135 534 345 994 0 0 0 0 237 224 22
Enter Blocked Intersection No
Lane Alignment Left Left Right Left Right Left Right Left Right
Median Width(ft) 12 24 14 14
Link Offset(ft) 0 0 0
Crosswalk Width(ft) 16 16 16 16
Two way Left Turn Lane
Headway Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
Turning Speed (mph) 15 9 15 9 15
Turn Type NA Perm Prot NA Split NA Pro
Protected Phases 2 1 1 2 4 4
Permitted Phases 2
Detector Phase 2 2 1 1 2 4 4
Switch Phase
Minimum Initial (s) 15.0 15.0 7.0 9.0 9.0 9.
Minimum Split (s) 20.5 20.5 11.0 14.5 14.5 14.
Total Split (s) 37.0 37.0 23.0 20.0 20.0 20.0
Total Split (%) 46.3% 46.3% 28.8% 25.0% 25.0% 25.0% 25.0%
Maximum Green (s) 31.5 31.5 19.0 14.5 14.5 14.5
Yellow Time (s) 3.5 3.5 3.0 3.5 3.5 3.5
All-Red Time (s) 2.0 2.0 1.0 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) 5.5 5.5 4.0 5.5 5.5 5.
Lead/Lag Lag Lead
Lead-Lag Optimize?
Vehicle Extension (s) 0.2 0.2 3.0 3.0 3.0 3.0 3.0

Timing Plan: PM

ı

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)

		→	•	•	•		1	T		*	¥	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		32.6	32.6	18.6	56.7					13.8	13.8	13.8
Actuated g/C Ratio		0.41	0.41	0.23	0.71					0.17	0.17	0.17
v/c Ratio		0.98	0.55	0.82	0.49					0.75	0.83	0.76
Control Delay		47.9	4.0	45.8	1.1					47.5	58.2	49.5
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		47.9	4.0	45.8	1.1					47.5	58.2	49.5
LOS		D	Α	D	Α					D	Ε	D
Approach Delay		33.9			12.6						51.6	
Approach LOS		С			В						D	
Queue Length 50th (ft)		~300	0	129	6					118	118	110
Queue Length 95th (ft)		#434	55	m137	m6					#200	#219	#193
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		1157	974	428	2015					331	283	305
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		0.98	0.55	0.81	0.49					0.72	0.79	0.72

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 1 (1%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 29.4 Intersection LOS: C
Intersection Capacity Utilization 68.2% ICU Level of Service C

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

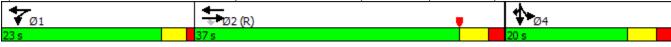
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



Existing Timing Plan: PM 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)

	۶	→	\rightarrow	•	←	•	4	†	/	>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	† †			^	7	ሻ	4	7			
Traffic Volume (vph)	445	805	0	0	840	230	285	5	290	0	0	0
Future Volume (vph)	445	805	0	0	840	230	285	5	290	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			0			100			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950					0.000	0.950	0.954	0.000			
Satd. Flow (prot)	1805	2756	0	0	2865	1561	1829	1722	1830	0	0	0
Flt Permitted	0.950		•	•			0.950	0.954			•	
Satd. Flow (perm)	1805	2756	0	0	2865	1561	1829	1722	1830	0	0	0
Right Turn on Red	1000	2,00	Yes	Ū	2000	Yes	1020	1722	No	•	•	Yes
Satd. Flow (RTOR)			100			240			110			100
Link Speed (mph)		35			35	210		30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			14.9			15.5			11.1	
Peak Hour Factor	0.87	0.87	0.87	0.96	0.96	0.96	0.85	0.85	0.85	0.88	0.88	0.88
Heavy Vehicles (%)	0%	31%	14%	11%	26%	0%	0%	0%	0%	8%	0%	11%
Adj. Flow (vph)	511	925	0	0	875	240	335	6	341	0	0	0
Shared Lane Traffic (%)	011	320	· ·	U	010	240	49%	U	0+1	U	U	U
Lane Group Flow (vph)	511	925	0	0	875	240	171	170	341	0	0	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)	Loit	24	rtigit	Loit	24	rtigit	LOIL	14	ragin	Loit	14	ragin
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15	1.00	9	1.00	1.00	9	15	1.00	9	15	0.00	9
Turn Type	Prot	NA	J	10	NA	Prot	Split	NA	Prot	10		3
Protected Phases	1	12			2	2	4	4	4			
Permitted Phases	•				-	_	•	•	•			
Detector Phase	1	12			2	2	4	4	4			
Switch Phase	.	12					-	-				
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	32.0				27.0	27.0	21.0	21.0	21.0			
Total Split (%)	40.0%				33.8%	33.8%	26.3%	26.3%	26.3%			
Maximum Green (s)	28.0				21.5	21.5	16.0	16.0	16.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag	3.0	3.0	5.0			
Lead-Lag Optimize?	Leau				Lay	Lay						
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			
VEHICLE EXTENSION (S)	ა.0				0.2	U.Z	ა.0	3.0	ა.0			

Timing Plan: PM

ı

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)

		-	•	•	•	_		T		-	¥	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	27.1	55.0			22.4	22.4	16.0	16.0	16.0			
Actuated g/C Ratio	0.34	0.69			0.28	0.28	0.20	0.20	0.20			
v/c Ratio	0.84	0.49			1.09	0.39	0.47	0.49	0.93			
Control Delay	22.6	0.5			83.0	8.3	33.1	34.1	66.6			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	22.6	0.5			83.0	8.3	33.1	34.1	66.6			
LOS	С	Α			F	Α	С	С	Е			
Approach Delay		8.3			66.9			50.1				
Approach LOS		Α			Е			D				
Queue Length 50th (ft)	96	1			~257	15	80	80	169			
Queue Length 95th (ft)	m113	m1			m#344	m34	132	133	#296			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	631	1894			803	610	365	344	366			
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	0.81	0.49			1.09	0.39	0.47	0.49	0.93			

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 39 (49%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.09

Intersection Signal Delay: 37.4 Intersection LOS: D
Intersection Capacity Utilization 68.2% ICU Level of Service C

Analysis Period (min) 15

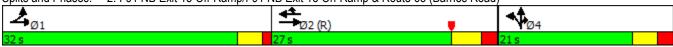
Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



	ᄼ	-	•	•	—	•	•	†	~	/	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	∱ }		ሻ	^	7	ሻ	f)			ર્ન	7
Traffic Volume (vph)	80	1000	15	5	795	40	10	20	5	125	40	265
Future Volume (vph)	80	1000	15	5	795	40	10	20	5	125	40	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			0			130		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998				0.850		0.969				0.850
Flt Protected	0.950			0.950			0.950				0.964	
Satd. Flow (prot)	1719	2566	0	1796	2763	1575	1652	1780	0	0	1765	1429
Flt Permitted	0.950			0.950			0.488				0.756	
Satd. Flow (perm)	1719	2566	0	1796	2763	1575	848	1780	0	0	1384	1429
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				100		7				115
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.95	0.95	0.95	0.86	0.86	0.86	0.75	0.75	0.75	0.82	0.82	0.82
Heavy Vehicles (%)	5%	41%	1%	0%	30%	2%	2%	0%	0%	5%	0%	13%
Adj. Flow (vph)	84	1053	16	6	924	47	13	27	7	152	49	323
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	1069	0	6	924	47	13	34	0	0	201	323
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	, i		10			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		12	15		12	15		12	15		12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm	NA	pm+ov
Protected Phases	1	12		3	23	23		4			4	1
Permitted Phases							4			4		4
Detector Phase	1	12		3	23	23	4	4		4	4	1
Switch Phase												
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	22.0			11.0			22.0	22.0		22.0	22.0	22.0
Total Split (%)	27.5%			13.8%			27.5%	27.5%		27.5%	27.5%	27.5%
Maximum Green (s)	16.6			5.7			17.1	17.1		17.1	17.1	16.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0			0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?							_49	Lug		_ay	Lag	

Lane Configurations	Lane Group	Ø2	
Traffic Volume (vph) deal Flow (vphpt) deal Flow (vphpt) deal Flow (vphpt) Jane Width (ft) Grade (%) Storage Length (ft) Jane Util, Factor Fit Frotected Sadd. Flow (prot) Fit Permitted Sadd. Flow (prot) Fit Permitted Sadd. Flow (vpnt) Fit Remitted Sadd. Flow (vpnt) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Link Opsterting Crosswalk Width(ft) Illink Opsterting Turning Speed (mph) Turning Speed		IJL.	
Future Volume (vph) deal Flow (vphp) Lane Width (ft) Grade (%) Storage Length (ft) Storage Lanes Taper Length (ft) Lane Util. Factor Fit Fit Protected Sadd. Flow (port) Fit Protected Sadd. Flow (port) Fit Permitted Sadd. Flow (port) Fight Turn on Red Sadd. Flow (RTOR) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Finer Blocked Intersection Lane Alignment Hedian Width(ft) Turn Type Frotected Phases Detector Phase Winthum Initial (s) Finer Blocked (mph) Furn Type Frotected Phases Detector Phase Winthum Initial (s) Minimum Spit (s) Jin Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) Last Time Adjust (s) Total Spit (rg) Lost Time Adjust (s) Total Capit (so) Lagd			
Idea Flow (yphp)			
Lane Width (ft) Grade (%) Storage Length (ft) Storage Lanes Taper Length (ft) Lane Util. Factor FTT FTT FTT FTT FTT FTT FTT FTT FTT FT			
Grade (%) Storage Lanes Taper Length (ft) Storage Lanes Taper Length (ft) Lane Util. Factor Frt Frt Frt Fr			
Storage Length (ft)			
Storage Lanes Taper Length (ft)			
Taper Length (ft) Lane Util. Factor Fit Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (prot) Fit Permitted Satd. Flow (prot) Fit Permitted Satd. Flow (PTOR) Fit Permitted Satd. Flow (RTOR) Fit Protected			
Laine Util. Factor Fit Protected Sald. Flow (prot) Fit Permitted Sald. Flow (perm) Right Turn on Red Sald. Flow (RTOR) Link Speed (mph) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Trosswalk Width(ft) Turn Type Protected Phases Detector Phases Switch Phase Minimum Initial (s) Minimum Splitt (s) Total Split (%) Maximum Green (s) 1.3 New Head Imme (s) Maximum Green (s) 1.4 New Head Imme (s) Maximum Green (s) 1.5 New Head Imme Algust (s) Total Lost Time (s) Lead/Lag Lag			
Fit Protected Sald. Flow (prot) Fit Permitted Sald. Flow (perm) Right Turn on Red Sald. Flow (RTOR) Link Speed (mph) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Switch Phase Minimum Inital (s) Minimum Spift (s) Cotal Spift (%) Maximum Green (s) Maximum Age (s) Maximum Green (s) Maximum Green (s) Maximum Hig (s) Maximum Green (s) Maximum Age (s) Maximum Green (s) Maximum Green (s) Maximum Green (s) Maximum Green (s) Maximum Age (s) Maximum			
Fit Protected Sald. Flow (prot) Fit Permitted Sald. Flow (perm) Right Turn on Red Sald. Flow (Prot) Link Speed (mph) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Shared Lane Traffic (%) Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Flow owy Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Which Phase Minimum Initial (s) Minimum Split (s) Total Split (s) Total Split (s) Total Split (s) Total Lost Time (s) Last Time Adjust (s) Total Lost Time (s) Lead/Lag Lag Lag Lag Lag Lag Lag Lag Lag Lag			
Satd. Flow (prort) It Permitted Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Turn Type Protected Phases Detector Phase Minimum Initial (s) Minimum Spilt (s) Total Spilt (s) Total Spilt (s) Total Spilt (s) Total Lost Time (s) Lag All-Red Time (s) Lag Lag Lag Lag Lag Lag Lag La	Frt		
Fit Permitted Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Distance (th) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Turn Vigo Protected Phases Detector Phase Minimum Initial (s) Minimum Spitt (s) Total Spitt (s) Total Spitt (s) Total Lost Time (s) Lead/Lag Lag Ball Head Viso (s) Lag Lag Ball Head Viso (s) Lag Lag Lag Lag Lag Lag Lag	Flt Protected		
Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Winimum Initial (s) Minimum Split (s) Solon S	Satd. Flow (prot)		
Right Turn on Red Sald. Flow (RTOR) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Switch Phase Minimum Spit (s) Minimum Spit (s) 1.1 Total Spit (s) Maximum Green (s) Maximum Maximum Maximum Maximum Maximum Maximum	Flt Permitted		
Right Turn on Red Sald. Flow (RTOR) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Switch Phase Minimum Spit (s) Minimum Spit (s) 1.1 Total Spit (s) Maximum Green (s) Maximum Maximum Maximum Maximum Maximum Maximum	Satd. Flow (perm)		
Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Split (s) Total Split (%) Satisfies Satisf			
Link Deed (mph) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Spit (s) Total Spit (s) Total Spit (s) Self (s) Se	Satd. Flow (RTOR)		
Link Distance (ft)			
Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (yph) Shared Lane Traffic (%) Lane Group Flow (yph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Split (s) Cotal Split (s)			
Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Split (s) Total Split (%) Maximum Green (s) Maximum (s) Lost Time Adjust (s) Total Split (s) Total Split (s) Total Split (s) Maximum Green (s) Max			
Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turning Speed (mph) Turning Speed (mph) Flow Type Protected Phases Detector Phases Detector Phase Whinimum Initial (s) Minimum Split (s) Total Split (s) Zotal Split (%) Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) Lead/Lag Lag			
Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases 2 Permitted Phases Detector Phase Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lag			
Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases 2 Permitted Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Split (s) 25.0 Total Split (%) Maximum Green (s) 18.9 Yellow Time (s) Lad			
Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phases Switch Phase Minimum Initial (s) Minimum Split (s) Total Split (%) 31% Maximum Green (s) 4.8 All-Red Time (s) Lead/Lag Lag			
Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phases Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lag			
Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phases Detector Phase Winimum Initial (s) Minimum Split (s) Total Split (s) Total Split (w) Maximum Green (s) 4.8 All-Red Time (s) Lost Time Adjust (s) Total Lost Time Adjust (s) Lead/Lag Lag			
Median Width(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases 2 Permitted Phases Detector Phase Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lag			
Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Split (s) Total Split (s) Total Split (%) Maximum Green (s) Maximum Green (s) 4.8 All-Red Time (s) Lead/Lag Lag			
Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases 2 Permitted Phases Detector Phase Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 25.0 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lag			
Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases 2 Permitted Phases Detector Phase Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lag			
Headway Factor Turning Speed (mph) Turn Type Protected Phases 2 Permitted Phases Detector Phase Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lag			
Turn Type Protected Phases 2 Permitted Phases Detector Phase Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lag			
Turn Type Protected Phases 2 Permitted Phases Detector Phase Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lag			
Protected Phases Permitted Phases Detector Phase Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lag			
Permitted Phases Detector Phase Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lag	• •	^	
Detector Phase Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lag		2	
Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lag			
Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lag			
Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lag		4= 2	
Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lag			
Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lag			
Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lag			
Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lag			
All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lag	Maximum Green (s)		
Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lag	Yellow Time (s)		
Total Lost Time (s) Lead/Lag Lag	All-Red Time (s)	1.3	
Total Lost Time (s) Lead/Lag Lag	Lost Time Adjust (s)		
Lead/Lag Lag	Total Lost Time (s)		
	Lead/Lag	Lag	
	Lead-Lag Optimize?		

3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)

	•	→	•	•	←	•	1	†		-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	18.2	44.1		5.7	30.8	30.8	14.6	14.6			14.6	37.7
Actuated g/C Ratio	0.23	0.55		0.07	0.38	0.38	0.18	0.18			0.18	0.47
v/c Ratio	0.21	0.76		0.05	0.87	0.07	0.08	0.10			0.80	0.44
Control Delay	32.9	12.7		35.6	34.0	0.6	26.9	22.5			54.1	10.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	32.9	12.7		35.6	34.0	0.6	26.9	22.5			54.1	10.7
LOS	С	В		D	С	Α	С	С			D	В
Approach Delay		14.2			32.4			23.7			27.3	
Approach LOS		В			С			С			С	
Queue Length 50th (ft)	36	68		3	223	0	5	11			94	60
Queue Length 95th (ft)	m67	m80		14	#315	2	17	28			147	103
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	391	1415		127	1062	667	181	385			295	735
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	0.21	0.76		0.05	0.87	0.07	0.07	0.09			0.68	0.44

Intersection Summary

Area Type: Other

Cycle Length: 80 Actuated Cycle Length: 80

Offset: 29 (36%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 23.5 Intersection LOS: C
Intersection Capacity Utilization 61.0% ICU Level of Service B

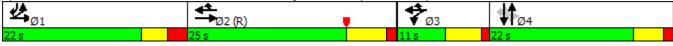
Analysis Period (min) 15

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: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø2	
Vehicle Extension (s)	2.5	
Recall Mode	C-Min	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

4: Research Parkway & Food Bank Driv/Site Drive 1

	۶	→	•	•	←	•	•	†	/	>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	ĵ.		ň	ĵ.		7	†	7	7	ĵ.	
Traffic Volume (vph)	5	0	15	0	0	0	5	135	0	0	415	0
Future Volume (vph)	5	0	15	0	0	0	5	135	0	0	415	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	0			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850										
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1805	1615	0	1900	1900	0	1805	1792	1900	1900	1863	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1805	1615	0	1900	1900	0	1805	1792	1900	1900	1863	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.48	0.48	0.48	0.88	0.88	0.88	0.59	0.59	0.59	0.60	0.60	0.60
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%	2%	0%
Adj. Flow (vph)	10	0	31	0	0	0	8	229	0	0	692	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	31	0	0	0	0	8	229	0	0	692	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24			30			12			12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 31.8%

Analysis Period (min) 15

ICU Level of Service A

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	₽		ሻ	f)		ሻ		7	ሻ	ĵ.	
Traffic Vol, veh/h	5	0	15	0	0	0	5	135	0	0	415	0
Future Vol, veh/h	5	0	15	0	0	0	5	135	0	0	415	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	170	-	-	140	-	0	115	-	-
Veh in Median Storage,	# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	48	48	48	88	88	88	59	59	59	60	60	60
Heavy Vehicles, %	0	0	0	0	0	0	0	6	0	0	2	0
Mvmt Flow	10	0	31	0	0	0	8	229	0	0	692	0
Major/Minor N	/linor2		I	Minor1		N	/lajor1		ı	Major2		
Conflicting Flow All	937	937	692	953	937	229	692	0	0	229	0	0
Stage 1	692	692	-	245	245		-	-	-		-	-
Stage 2	245	245	_	708	692	-	-	_	_	_	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	_	_	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	_	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	247	267	447	241	267	815	912	-	-	1351	-	-
Stage 1	437	448	-	763	707	-	-	-	-	-	-	-
Stage 2	763	707	-	429	448	-	-	-	-	-	-	_
Platoon blocked, %								-	_		-	-
Mov Cap-1 Maneuver	245	265	447	223	265	815	912	-	-	1351	-	_
Mov Cap-2 Maneuver	245	265	-	223	265	-	_	-	-	-	-	-
Stage 1	433	448	-	756	701	-	-	-	-	-	-	_
Stage 2	756	701	-	399	448	-	-	_	-	-	-	-
Ŭ												
Approach	EB			WB			NB			SB		
HCM Control Delay, s	15.4			0			0.3			0		
HCM LOS	С			A								
Minor Lane/Major Mvmt		NBL	NBT	NBR I	EBLn1	EBLn2V	/BLn1V	VBLn2	SBL	SBT	SBR	
Capacity (veh/h)		912	-	-	245	447	-	-	1351	-	-	
HCM Lane V/C Ratio		0.009	-	_	0.043	0.07	-	-		-	-	
HCM Control Delay (s)		9	_	_	20.3	13.7	0	0	0	-	-	
HCM Lane LOS		A	-	-	С	В	A	A	A	_	-	
HCM 95th %tile Q(veh)		0	-	-	0.1	0.2	-	-	0	-	-	

	•	•	•	†	Ţ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			ર્ન	ĵ»	
Traffic Volume (vph)	3	63	9	131	352	0
Future Volume (vph)	3	63	9	131	352	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.871					
Flt Protected	0.998			0.997		
Satd. Flow (prot)	1618	0	0	1661	1696	0
Flt Permitted	0.998			0.997		
Satd. Flow (perm)	1618	0	0	1661	1696	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.55	0.55	0.90	0.90	0.80	0.80
Heavy Vehicles (%)	50%	0%	0%	15%	12%	0%
Adj. Flow (vph)	5	115	10	146	440	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	0	0	156	440	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12	_	_	12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utiliza	tion 29.3%			IC	U Level o	of Service /
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	2.2					
		EDD	NDI	NDT	CDT	CDD
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥	00	_	4	♣	^
Traffic Vol, veh/h	3	63	9	131	352	0
Future Vol, veh/h	3	63	9	131	352	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	55	55	90	90	80	80
Heavy Vehicles, %	50	0	0	15	12	0
Mvmt Flow	5	115	10	146	440	0
N.A (N.A.)	. 0					
	/linor2		Major1		/lajor2	
Conflicting Flow All	606	440	440	0	-	0
Stage 1	440	-	-	-	-	-
Stage 2	166	-	-	-	-	-
Critical Hdwy	6.9	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	391	621	1131	-	_	-
Stage 1	559	-	-	-	-	-
Stage 2	759	_	-	_	-	_
Platoon blocked, %				_	_	_
Mov Cap-1 Maneuver	387	621	1131	_	_	_
Mov Cap-1 Maneuver	387	-		_	_	_
Stage 1	553					_
Stage 2	759	_			_	
Slaye Z	109	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	12.4		0.5		0	
HCM LOS	В				•	
Minor Lane/Major Mvmt	i	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1131	-	•••	-	-
HCM Lane V/C Ratio		0.009	-	0.199	-	-
HCM Control Delay (s)		8.2	0	12.4	-	-
HCM Lane LOS		Α	Α	В	-	-
HCM 95th %tile Q(veh)		0	-	0.7	-	-

	۶	•	4	†	 	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	A	î,	
Traffic Volume (vph)	3	12	3	131	340	0
Future Volume (vph)	3	12	3	131	340	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	0		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	1805	1638	1696	0
FIt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1615	1805	1638	1696	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.42	0.42	0.90	0.90	0.79	0.79
Heavy Vehicles (%)	0%	0%	0%	16%	12%	0%
Adj. Flow (vph)	7	29	3	146	430	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	29	3	146	430	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	tion 27.9%			IC	U Level o	of Service A
Analysis Pariod (min) 15				.0	2 23107	

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	0.7					
	EBL	EBR	NBL	NBT	SBT	SBR
Movement Configurations						SBK
Lane Configurations	<u></u>	7	^	121	}	٨
Traffic Vol, veh/h	3	12	3	131	340	0
Future Vol, veh/h	3	12	3	131	340	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	-
Veh in Median Storage,		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	42	42	90	90	79	79
Heavy Vehicles, %	0	0	0	16	12	0
Mvmt Flow	7	29	3	146	430	0
Major/Minor N	linar?		Aniar1		Majara	
	/linor2		Major1		Major2	
Conflicting Flow All	582	430	430	0	-	0
Stage 1	430	-	-	-	-	-
Stage 2	152	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	479	629	1140	-	-	-
Stage 1	660	-	-	-	-	-
Stage 2	881	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	478	629	1140	_	-	_
Mov Cap-2 Maneuver	478	-	-	_	_	_
Stage 1	658	_	_	_	_	_
Stage 2	881	_	_	<u>_</u>	_	_
Olago Z	001					
Approach	EB		NB		SB	
HCM Control Delay, s	11.3		0.2		0	
HCM LOS	В					
NA:		NDI	NDT	EDL 4 1	ΕDI Δ	CDT
Minor Lane/Major Mvmt		NBL		EBLn1 I		SBT
Capacity (veh/h)		1140	-	., 0	629	-
HCM Lane V/C Ratio		0.003	-	0.015		-
HCM Control Delay (s)		8.2	-		11	-
HCM Lane LOS		Α	-	В	В	-
HCM 95th %tile Q(veh)		0	-	0	0.1	-

	۶	→	•	•	+	4	1	†	/	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	45	50	25	30	45	15	20	99	15	25	285	100
Future Volume (vph)	45	50	25	30	45	15	20	99	15	25	285	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.972			0.977			0.985			0.967	
Flt Protected		0.982			0.984			0.993			0.997	
Satd. Flow (prot)	0	1800	0	0	1827	0	0	1731	0	0	1802	0
FIt Permitted		0.982			0.984			0.993			0.997	
Satd. Flow (perm)	0	1800	0	0	1827	0	0	1731	0	0	1802	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.86	0.86	0.86	0.76	0.76	0.76	0.63	0.63	0.63	0.71	0.71	0.71
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	0%	10%	0%	0%	2%	1%
Adj. Flow (vph)	52	58	29	39	59	20	32	157	24	35	401	141
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	139	0	0	118	0	0	213	0	0	577	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilizat	ion 41.0%			IC	CU Level o	of Service	Α					
Analysis Period (min) 15												

Intersection	
Intersection Delay, s/veh	18
Intersection LOS	С

Mayramant	EDI	EDT	EDD	WDI	WDT	WDD	NDI	NDT	NDD	CDI	CDT	CDD
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			- 40			- ♣	
Traffic Vol, veh/h	45	50	25	30	45	15	20	99	15	25	285	100
Future Vol, veh/h	45	50	25	30	45	15	20	99	15	25	285	100
Peak Hour Factor	0.86	0.86	0.86	0.76	0.76	0.76	0.63	0.63	0.63	0.71	0.71	0.71
Heavy Vehicles, %	2	0	0	0	0	0	0	10	0	0	2	1
Mvmt Flow	52	58	29	39	59	20	32	157	24	35	401	141
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	11.1			10.8			11.2			23.6		
HCM LOS	В			В			В			С		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	15%	38%	33%	6%	
Vol Thru, %	74%	42%	50%	70%	
Vol Right, %	11%	21%	17%	24%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	134	120	90	410	
LT Vol	20	45	30	25	
Through Vol	99	50	45	285	
RT Vol	15	25	15	100	
Lane Flow Rate	213	140	118	577	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.324	0.238	0.203	0.786	
Departure Headway (Hd)	5.48	6.137	6.172	4.902	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Cap	653	583	579	739	
Service Time	3.535	4.2	4.237	2.942	
HCM Lane V/C Ratio	0.326	0.24	0.204	0.781	
HCM Control Delay	11.2	11.1	10.8	23.6	
HCM Lane LOS	В	В	В	С	
HCM 95th-tile Q	1.4	0.9	8.0	7.9	

	-	•	•	•		/
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	ĵ.			4	¥	7
Traffic Volume (vph)	90	0	0	90	0	0
Future Volume (vph)	90	0	0	90	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	1863	1863
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	1863	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	0	0	98	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	98	0	0	98	0	0
Enter Blocked Intersection	-	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Othor					

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 8.1% Analysis Period (min) 15

ICU Level of Service A

Lanes, Volumes, Timings 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)ng Plan: AM Pk Gen

Lane Group EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SB Lane Configurations ↑↑ ↑ ↑↑
Traffic Volume (vph) 0 464 198 137 414 0 0 0 85 0 20 Future Volume (vph) 0 464 198 137 414 0 0 0 0 85 0 20 Ideal Flow (vphpl) 1900
Traffic Volume (vph) 0 464 198 137 414 0 0 0 85 0 20 Future Volume (vph) 0 464 198 137 414 0 0 0 0 85 0 20 Ideal Flow (vphpl) 1900
Future Volume (vph)
Ideal Flow (vphpl)
Lane Width (ft) 12 12 12 12 12 12 12 12 12 12 12 12 12 12 14 13 14 Storage Length (ft) 0 0 1 1 0 0 0 0 1 Taper Length (ft) 0 100 100 0 0 0 1 Lane Util. Factor 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 0.91 0.5 Fit 0.850 0.950 0.950 0.950 0.950 0.996 <td< td=""></td<>
Storage Length (ft) 0 0 830 0 0 0 240 24 Storage Lanes 0 1 1 0 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0
Storage Lanes 0 1 1 0 0 0 1 Taper Length (ft) 0 100 0 100 100 100 Lane Util. Factor 1.00 0.95 1.00 1.00 0.95 0.91 0.5 Frt 0.850 0.850 0.863 0.85 0.863 0.85 Flt Protected 0.950 0.950 0.950 0.996 0.950 0.996 Satd. Flow (prot) 0 3008 1346 1583 3195 0 0 0 1499 1179 128 Flt Permitted 0.950 0.950 0.950 0.996 0.950 0.996 <
Taper Length (ft) 0 100 0 100 Lane Util. Factor 1.00 0.95 1.00 1.00 1.00 1.00 0.95 0.91 0.95 Frt 0.850 0.850 0.950 0.950 0.950 0.963 0.85 Flt Protected 0.950 0.950 0.90 0.950 0.996 0.950 0.996 0.950 0.996 0.950 0.996 0.950 0.996 0.950 0.996 0.950 0.996 0.950 0.996 0.99
Lane Util. Factor 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.00 1.00 0.95 0.91 0.95 Frt 0.850 0.850 0.950 0.950 0.950 0.996 0.950 0.996 0.950 0.996 0.950 0.996 0.950 0.996 0.950 0.996 0.950 0.996 0.950 0.996 0.950 0.996 0.950 0.996 0.950 0.996
Frt 0.850 0.863 0.85 Flt Protected 0.950 0.950 0.996 Satd. Flow (prot) 0 3008 1346 1583 3195 0 0 0 0 1499 1179 128 Flt Permitted 0.950 0.950 0.996 </td
Fit Protected 0.950 0.950 0.996 Satd. Flow (prot) 0 3008 1346 1583 3195 0 0 0 0 1499 1179 128 Flt Permitted 0.950 0.950 0.950 0.996
Satd. Flow (prot) 0 3008 1346 1583 3195 0 0 0 1499 1179 128 Flt Permitted 0.950 0.950 0.950 0.996 </td
Fit Permitted 0.950 0.950 0.996 Satd. Flow (perm) 0 3008 1346 1583 3195 0 0 0 0 1499 1179 128 Right Turn on Red Yes Yes Yes N Satd. Flow (RTOR) 211<
Satd. Flow (perm) 0 3008 1346 1583 3195 0 0 0 1499 1179 128 Right Turn on Red Yes Yes Yes Yes No. Satd. Flow (RTOR) 211 35 30 30 30 Link Speed (mph) 45 348 913 376 495 495 Travel Time (s) 5.3 17.8 8.5 11.3 Peak Hour Factor 0.94 0.94 0.74 0.74 0.88 0.88 0.89 0.89 0.8 Heavy Vehicles (%) 0% 20% 20% 14% 13% 0% 0% 0% 0% 22% 0% 31
Right Turn on Red Yes Yes Yes No.
Satd. Flow (RTOR) 211 Link Speed (mph) 45 35 30 30 Link Distance (ft) 348 913 376 495 Travel Time (s) 5.3 17.8 8.5 11.3 Peak Hour Factor 0.94 0.94 0.94 0.74 0.74 0.74 0.88 0.88 0.88 0.89 0.89 0.8 Heavy Vehicles (%) 0% 20% 20% 14% 13% 0% 0% 0% 0% 22% 0% 31
Link Speed (mph) 45 35 30 30 Link Distance (ft) 348 913 376 495 Travel Time (s) 5.3 17.8 8.5 11.3 Peak Hour Factor 0.94 0.94 0.94 0.74 0.74 0.74 0.88 0.88 0.89 0.89 0.8 Heavy Vehicles (%) 0% 20% 20% 14% 13% 0% 0% 0% 0% 22% 0% 31
Link Distance (ft) 348 913 376 495 Travel Time (s) 5.3 17.8 8.5 11.3 Peak Hour Factor 0.94 0.94 0.94 0.74 0.74 0.74 0.88 0.88 0.88 0.89 0.89 0.8 Heavy Vehicles (%) 0% 20% 20% 14% 13% 0% 0% 0% 0% 22% 0% 31
Travel Time (s) 5.3 17.8 8.5 11.3 Peak Hour Factor 0.94 0.94 0.94 0.74 0.74 0.74 0.88 0.88 0.88 0.89 0.89 0.8 Heavy Vehicles (%) 0% 20% 20% 14% 13% 0% 0% 0% 0% 22% 0% 31
Peak Hour Factor 0.94 0.94 0.94 0.74 0.74 0.74 0.88 0.88 0.89 0.89 0.8 Heavy Vehicles (%) 0% 20% 20% 14% 13% 0% 0% 0% 0% 22% 0% 31
Heavy Vehicles (%) 0% 20% 20% 14% 13% 0% 0% 0% 0% 22% 0% 31
, , ,
Adj. Flow (vph) 0 494 211 185 559 0 0 0 0 96 0 22
Shared Lane Traffic (%) 10% 48
Lane Group Flow (vph) 0 494 211 185 559 0 0 0 0 86 119 11
Enter Blocked Intersection No
Lane Alignment Left Left Right Righ
Median Width(ft) 12 24 14 14 14
Link Offset(ft) 0 0 0
Crosswalk Width(ft) 16 16 16
Two way Left Turn Lane
Headway Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
Turning Speed (mph) 15 9 15 9 15
Turn Type NA Perm Prot NA Split NA Pr
Protected Phases 2 1 1 2 4 4
Permitted Phases 2
Detector Phase 2 2 1 1 2 4 4
Switch Phase
Minimum Initial (s) 15.0 15.0 7.0 9.0 9.0 9
Minimum Split (s) 20.5 20.5 11.0 14.5 14.5 14
Total Split (s) 30.0 30.0 20.0 25.0 25.0 25
Total Split (%) 40.0% 40.0% 26.7% 33.3% 33.3% 33.3% 33.3%
Maximum Green (s) 24.5 24.5 16.0 19.5 19
Yellow Time (s) 3.5 3.5 3.0 3.5 3.5 3
All-Red Time (s) 2.0 2.0 1.0 2.0 2
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0
Total Lost Time (s) 5.5 5.5 4.0 5.5 5.5 5
Lead/Lag Lag Lead
Lead-Lag Optimize?
Vehicle Extension (s) 0.2 0.2 3.0 3.0 3.0 3

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Roaiding Plan: AM Pk Gen

	•	-	*	•	•	•	1	Ť		-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		32.4	32.4	14.2	52.1					13.4	13.4	13.4
Actuated g/C Ratio		0.43	0.43	0.19	0.69					0.18	0.18	0.18
v/c Ratio		0.38	0.30	0.62	0.25					0.32	0.57	0.52
Control Delay		17.4	4.3	30.1	1.5					28.6	37.9	34.9
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		17.4	4.3	30.1	1.5					28.6	37.9	34.9
LOS		В	Α	С	Α					С	D	С
Approach Delay		13.5			8.6						34.4	
Approach LOS		В			Α						С	
Queue Length 50th (ft)		81	0	47	7					37	57	53
Queue Length 95th (ft)		141	44	67	13					69	100	93
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		1298	700	348	2184					389	306	334
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	0.30	0.53	0.26					0.22	0.39	0.35

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 13 (17%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 15.2 Intersection LOS: B
Intersection Capacity Utilization 43.2% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



Lanes, Volumes, Timings 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Roading Plan: AM Pk Gen

	۶	→	\rightarrow	•	←	•	4	†	~	>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	^			^	7	7	ર્ન	7			
Traffic Volume (vph)	201	348	0	0	413	168	138	Ö	142	0	0	0
Future Volume (vph)	201	348	0	0	413	168	138	0	142	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			0			100			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950					0.000	0.950	0.950	0.000			
Satd. Flow (prot)	1367	3223	0	0	3195	1312	1550	1453	1513	0	0	0
Flt Permitted	0.950	0220		•			0.950	0.950			•	
Satd. Flow (perm)	1367	3223	0	0	3195	1312	1550	1453	1513	0	0	0
Right Turn on Red	1007	OLLO	Yes	J	0100	Yes	1000	1 100	No	•	V	Yes
Satd. Flow (RTOR)			100			179			110			100
Link Speed (mph)		35			35	110		30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			14.9			15.5			11.1	
Peak Hour Factor	0.88	0.88	0.88	0.94	0.94	0.94	0.95	0.95	0.95	0.88	0.88	0.88
Heavy Vehicles (%)	32%	12%	0.00	0.54	13%	19%	18%	0.33	21%	0%	0.00	0.00
Adj. Flow (vph)	228	395	0	0	439	179	145	0 /0	149	0 /0	0	0
Shared Lane Traffic (%)	220	000	U	U	700	113	50%	U	173	U	U	U
Lane Group Flow (vph)	228	395	0	0	439	179	72	73	149	0	0	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)	Leit	24	ragni	Leit	24	rtigiit	Leit	14	rtigiit	Leit	14	ragni
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15	1.00	9	1.00	1.00	9	15	1.00	9	15	0.00	9
Turn Type	Prot	NA	3	10	NA	Prot	Split	NA	Prot	10		3
Protected Phases	1	12			2	2	4	4	4			
Permitted Phases		1 2					7	7	7			
Detector Phase	1	12			2	2	4	4	4			
Switch Phase	1	1 2			2	2	4	4	4			
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	20.0				31.0	31.0	24.0	24.0	24.0			
Total Split (%)	26.7%				41.3%	41.3%	32.0%	32.0%	32.0%			
Maximum Green (s)	16.0				25.5	25.5	19.0	19.0	19.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?	2.0				0.0	0.0	2.0	2.0	2.0			
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Rotating Plan: AM Pk Gen

	•	-	*	•	•	•	1	Ť		-	ŧ	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	16.7	52.9			30.8	30.8	13.1	13.1	13.1			
Actuated g/C Ratio	0.22	0.71			0.41	0.41	0.17	0.17	0.17			
v/c Ratio	0.75	0.17			0.34	0.28	0.27	0.29	0.57			
Control Delay	33.4	0.9			11.6	2.1	27.9	28.5	36.2			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	33.4	0.9			11.6	2.1	27.9	28.5	36.2			
LOS	С	Α			В	Α	С	С	D			
Approach Delay		12.8			8.9			32.3				
Approach LOS		В			Α			С				
Queue Length 50th (ft)	38	1			30	0	31	31	65			
Queue Length 95th (ft)	#179	3			60	7	62	63	110			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	321	2243			1310	643	392	368	383			
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	0.71	0.18			0.34	0.28	0.18	0.20	0.39			

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 51 (68%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 14.9 Intersection LOS: B
Intersection Capacity Utilization 43.2% ICU Level of Service A

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



	•	→	\rightarrow	•	•	•	4	†	/	-	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	∱ ∱		7	^	7	Ť	£			ર્ન	7
Traffic Volume (vph)	86	396	8	0	472	25	15	1	0	34	0	94
Future Volume (vph)	86	396	8	0	472	25	15	1	0	34	0	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			0			130		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997				0.850						0.850
Flt Protected	0.950						0.950				0.950	
Satd. Flow (prot)	1367	3211	0	1890	3265	1461	1685	1837	0	0	1736	1196
Flt Permitted	0.950						0.800				0.800	
Satd. Flow (perm)	1367	3211	0	1890	3265	1461	1419	1837	0	0	1462	1196
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				106						122
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.81	0.81	0.81	0.86	0.86	0.86	0.38	0.38	0.38	0.81	0.81	0.81
Heavy Vehicles (%)	32%	12%	17%	0%	10%	10%	0%	0%	0%	4%	0%	35%
Adj. Flow (vph)	106	489	10	0	549	29	39	3	0	42	0	116
Shared Lane Traffic (%)												
Lane Group Flow (vph)	106	499	0	0	549	29	39	3	0	0	42	116
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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		12	15		12	15		12	15		12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm	NA	pm+ov
Protected Phases	1	1 2		3	23	23		4			4	1
Permitted Phases							4			4		4
Detector Phase	1	1 2		3	23	23	4	4		4	4	1
Switch Phase												
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	17.0			11.0			17.0	17.0		17.0	17.0	17.0
Total Split (%)	22.7%			14.7%			22.7%	22.7%		22.7%	22.7%	22.7%
Maximum Green (s)	11.6			5.7			12.1	12.1		12.1	12.1	11.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0			0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?												

Lane Group	Ø2	
Lane t onfigurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type	0	
Protected Phases	2	
Permitted Phases		
Detector Phase		
Switch Phase	45.0	
Minimum Initial (s)	15.0	
Minimum Split (s)	21.1	
Total Split (s)	30.0	
Total Split (%)	40%	
Maximum Green (s)	23.9	
Yellow Time (s)	4.8	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?		

3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)

	•	→	\rightarrow	•	←	•	4	†	/	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	10.6	51.1			45.0	45.0	7.8	7.8			7.8	18.5
Actuated g/C Ratio	0.14	0.68			0.60	0.60	0.10	0.10			0.10	0.25
v/c Ratio	0.55	0.23			0.28	0.03	0.27	0.02			0.28	0.30
Control Delay	43.4	3.1			9.7	0.1	35.3	29.0			35.5	5.3
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	43.4	3.1			9.7	0.1	35.3	29.0			35.5	5.3
LOS	D	Α			Α	Α	D	С			D	Α
Approach Delay		10.2			9.2			34.9			13.3	
Approach LOS		В			Α			С			В	
Queue Length 50th (ft)	48	27			68	0	17	1			19	0
Queue Length 95th (ft)	79	27			111	0	18	4			41	22
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570					250						
Base Capacity (vph)	228	2133			1978	926	228	296			235	414
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	0.46	0.23			0.28	0.03	0.17	0.01			0.18	0.28
Intersection Summary												

intersection Summary

Other Area Type:

Cycle Length: 75 Actuated Cycle Length: 75

Offset: 42 (56%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 60

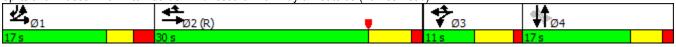
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.55

Intersection LOS: B Intersection Signal Delay: 10.9 Intersection Capacity Utilization 40.0% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø2	
Vehicle Extension (s)	2.5	
Recall Mode	C-Min	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Intersection Capacity Utilization 16.3%

Analysis Period (min) 15

4: Research Parkway & Food Bank Driv/Site Drive 1

	۶	→	•	•	+	•	•	†	~	/	↓	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	ĵ,		, j	ĵ»		7		7	, j	ĥ	
Traffic Volume (vph)	0	0	9	0	0	0	6	106	0	0	119	0
Future Volume (vph)	0	0	9	0	0	0	6	106	0	0	119	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	0			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850										
Flt Protected							0.950					
Satd. Flow (prot)	1900	1417	0	1900	1900	0	1504	1496	1900	1900	1484	0
FIt Permitted							0.950					
Satd. Flow (perm)	1900	1417	0	1900	1900	0	1504	1496	1900	1900	1484	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.58	0.58	0.58	0.88	0.88	0.88	0.63	0.63	0.63	0.80	0.80	0.80
Heavy Vehicles (%)	0%	0%	14%	0%	0%	0%	20%	27%	0%	0%	28%	0%
Adj. Flow (vph)	0	0	16	0	0	0	10	168	0	0	149	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	16	0	0	0	0	10	168	0	0	149	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24			30			12			12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary		<u> </u>										
7 1	Other											
Control Type: Unsignalized												

ICU Level of Service A

 $\label{thm:companies} G: \label{thm:companies} $$G: \label{thm:companies} $$G: \label{thm:companies} $$BL \ Companies $$$

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	f)		*	ĵ.		ሻ		7	ሻ	ĵ.	
Traffic Vol, veh/h	0	0	9	0	0	0	6	106	0	0	119	0
Future Vol, veh/h	0	0	9	0	0	0	6	106	0	0	119	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	_	_	None	-	_	None	-	_	None	_	_	None
Storage Length	0	-	-	170	-	-	140	-	0	115	-	-
Veh in Median Storage,	# -	0	-	_	0	_	-	0	_	-	0	-
Grade, %	_	0	_	_	0	_	_	0	_	_	0	_
Peak Hour Factor	58	58	58	88	88	88	63	63	63	80	80	80
Heavy Vehicles, %	0	0	14	0	0	0	20	27	0	0	28	0
Mymt Flow	0	0	16	0	0	0	10	168	0	0	149	0
Major/Minor M	linor2		1	Minor1		N	/lajor1		N	Major2		
Conflicting Flow All	337	337	149	345	337	168	149	0	0	168	0	0
Stage 1	149	149	-	188	188	-	-	-	-	-	-	-
Stage 2	188	188	_	157	149	_	_	_	_	_	_	_
Critical Hdwy	7.1	6.5	6.34	7.1	6.5	6.2	4.3	-	-	4.1	_	_
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	_	_	- '	_	_
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	_	_	_	_	_	_	-
Follow-up Hdwy	3.5	4	3.426	3.5	4	3.3	2.38	_	_	2.2	_	_
Pot Cap-1 Maneuver	621	587	867	613	587	881	1329	_	_	1422	_	_
Stage 1	858	778	-	818	748	-	-	_	_	-	_	_
Stage 2	818	748	_	850	778	_	_	_	_	_	_	_
Platoon blocked, %	010	140		- 500	. 10			_	_		_	_
Mov Cap-1 Maneuver	617	582	867	598	582	881	1329	_	_	1422	_	_
Mov Cap-2 Maneuver	617	582	-	598	582	-	-	<u>-</u>	_	-	_	_
Stage 1	851	778	_	811	742	_	_	_	_	_	_	_
Stage 2	812	742	_	835	778			_	_	_	_	_
Olago Z	012	172		000	110		_					
Approach	EB			WB			NB			SB		
HCM Control Delay, s	9.2			0			0.4			0		
HCM LOS	Α.Δ			A			J.7			- 0		
	, \			, <u>, , , , , , , , , , , , , , , , , , </u>								
Minor Lane/Major Mvmt		NBL	NBT	NBR I	EBLn1 I	EBLn2V	/BLn1V	VBLn2	SBL	SBT	SBR	
Capacity (veh/h)		1329	-	-	-	867	-	-	1422	-	-	
HCM Lane V/C Ratio		0.007	-	_	_	0.018	-	_	-	-	_	
HCM Control Delay (s)		7.7	_	_	0	9.2	0	0	0	-	-	
HCM Lane LOS		A	-	_	A	A	Ā	A	A	_	_	
HCM 95th %tile Q(veh)		0	-	-	-	0.1	-	-	0	-	-	

	•	•	•	†		4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			ર્ન	ĵ»	
Traffic Volume (vph)	0	11	11	95	108	0
Future Volume (vph)	0	11	11	95	108	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.995		
Satd. Flow (prot)	1347	0	0	1470	1462	0
FIt Permitted				0.995		
Satd. Flow (perm)	1347	0	0	1470	1462	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.56	0.56	0.75	0.75	0.81	0.81
Heavy Vehicles (%)	0%	22%	0%	32%	30%	0%
Adj. Flow (vph)	0	20	15	127	133	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	0	0	142	133	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:						
Control Type: Unsignalized						
Intersection Capacity Utiliza	ation 22.3%			IC	U Level o	of Service
Analysis Period (min) 15						

La Caraca Caraca						
Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			4	î,	
Traffic Vol, veh/h	0	11	11	95	108	0
Future Vol, veh/h	0	11	11	95	108	0
Conflicting Peds, #/hr	0	0	0	0	0	0
9	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	_	_
Veh in Median Storage,		_	_	0	0	-
Grade, %	0	_	_	0	0	_
Peak Hour Factor	56	56	75	75	81	81
Heavy Vehicles, %	0	22	0	32	30	0
Mymt Flow	0	20	15	127	133	0
IVIVIII(I IOW	U	20	10	121	100	U
Major/Minor M	inor2	N	/lajor1	N	/lajor2	
Conflicting Flow All	290	133	133	0	-	0
Stage 1	133	-	-	-	-	-
Stage 2	157	-	-	-	-	-
Critical Hdwy	6.4	6.42	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	_	-	_	-
Critical Hdwy Stg 2	5.4	_	_	-	-	-
Follow-up Hdwy		3.498	2.2	_	_	_
Pot Cap-1 Maneuver	705	865	1464	_	_	_
Stage 1	898	-	-	_	_	_
Stage 2	876	_	_	_	_	_
Platoon blocked, %	010			_	_	_
Mov Cap-1 Maneuver	697	865	1464		_	
	697	000	1404	-	-	-
Mov Cap-2 Maneuver		-	-	-	-	-
Stage 1	888	-	-	-	-	-
Stage 2	876	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	9.3		0.8		0	
HCM LOS	Α					
110111 200	,,					
Minor Lane/Major Mvmt		NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1464	-		-	-
HCM Lane V/C Ratio		0.01	-	0.023	-	-
HCM Control Delay (s)		7.5	0	9.3	-	-
HCM Lane LOS		Α	Α	Α	-	-
HCM 95th %tile Q(veh)		0	-	0.1	-	-

	۶	•	1	†	 	1
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ		1>	
Traffic Volume (vph)	0	3	0	95	105	1
Future Volume (vph)	0	3	0	95	105	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	0		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.999	
Flt Protected						
Satd. Flow (prot)	1900	1077	1900	1439	1474	0
Flt Permitted /						
Satd. Flow (perm)	1900	1077	1900	1439	1474	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.50	0.50	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	0%	50%	0%	32%	29%	0%
Adj. Flow (vph)	0	6	0	120	133	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	6	0	120	134	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
	Other					
Control Type: Unsignalized	/ • ·					
Intersection Capacity Utilizati			IC	CU Level o	of Service A	
into occion capacity offizati	10.070			10	C LOVOI C	JI JOI VIOO /

 $\label{thm:companies} G:\label{thm:companies} $$G:\label{thm:companies} $$G:\label{thm:companies} $$BL\ Companies $$$

Analysis Period (min) 15

Interception						
Intersection	0.2					
Int Delay, s/veh						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥	7	Ţ	^	f)	
Traffic Vol, veh/h	0	3	0	95	105	1
Future Vol, veh/h	0	3	0	95	105	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	-
Veh in Median Storage,	# 0	-	-	0	0	-
Grade, %	0	_	-	0	0	-
Peak Hour Factor	50	50	79	79	79	79
Heavy Vehicles, %	0	50	0	32	29	0
Mymt Flow	0	6	0	120	133	1
WWW. LOW	U	U	U	120	100	
Major/Minor M	linor2	N	Major1	1	Major2	
Conflicting Flow All	254	134	134	0	-	0
Stage 1	134	-	-	-	-	-
Stage 2	120	-	-	-	-	-
Critical Hdwy	6.4	6.7	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	_	-	-	-
Critical Hdwy Stg 2	5.4	-	-	_	_	-
Follow-up Hdwy	3.5	3.75	2.2	_	_	_
Pot Cap-1 Maneuver	739	802	1463	_	_	_
Stage 1	897	- 002	- 100	_	_	_
Stage 2	910		_			
Platoon blocked, %	310		-	_	_	-
	720	000	1460	-	-	_
Mov Cap-1 Maneuver	739	802	1463	-	-	-
Mov Cap-2 Maneuver	739	-	-	-	-	-
Stage 1	897	-	-	-	-	-
Stage 2	910	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	9.5		0		0	
HCM LOS	9.5 A		U		U	
TIOWI LOG	^					
Minor Lane/Major Mvmt		NBL	NBT	EBLn1 I	EBLn2	SBT
Capacity (veh/h)		1463	-	-	802	-
HCM Lane V/C Ratio		-	_	_	0.007	-
HCM Control Delay (s)		0	_	0	9.5	_
HCM Lane LOS		A	_	A	A	_
HCM 95th %tile Q(veh)		0	_	-	0	_
TOWN JOHN JUNIO Q(VOII)		U			U	

	۶	→	•	•	+	•	4	†	/	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	25	23	5	18	14	8	4	82	9	14	83	25
Future Volume (vph)	25	23	5	18	14	8	4	82	9	14	83	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.973			0.988			0.973	
Flt Protected		0.977			0.978			0.998			0.994	
Satd. Flow (prot)	0	1482	0	0	1648	0	0	1441	0	0	1464	0
Flt Permitted		0.977			0.978			0.998			0.994	
Satd. Flow (perm)	0	1482	0	0	1648	0	0	1441	0	0	1464	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.63	0.63	0.63	0.45	0.45	0.45	0.79	0.79	0.79	0.65	0.65	0.65
Heavy Vehicles (%)	30%	11%	50%	14%	0%	17%	33%	33%	0%	0%	33%	15%
Adj. Flow (vph)	40	37	8	40	31	18	5	104	11	22	128	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	85	0	0	89	0	0	120	0	0	188	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
<i>7</i> i	Other											
Control Type: Unsignalized												
Intersection Capacity Utilizati												
Analysis Period (min) 15												

NB

9.1

1

Α

Conflicting Approach Right

Conflicting Lanes Right

HCM Control Delay

HCM LOS

EΒ

8.8

Α

Intersection												
Intersection Delay, s/veh	8.9											
Intersection LOS	Α											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	25	23	5	18	14	8	4	82	9	14	83	25
Future Vol, veh/h	25	23	5	18	14	8	4	82	9	14	83	25
Peak Hour Factor	0.63	0.63	0.63	0.45	0.45	0.45	0.79	0.79	0.79	0.65	0.65	0.65
Heavy Vehicles, %	30	11	50	14	0	17	33	33	0	0	33	15
Mvmt Flow	40	37	8	40	31	18	5	104	11	22	128	38
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		_
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		

SB

8.7

1

Α

WB

9.1

Α

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	47%	45%	11%
Vol Thru, %	86%	43%	35%	68%
Vol Right, %	9%	9%	20%	20%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	95	53	40	122
LT Vol	4	25	18	14
Through Vol	82	23	14	83
RT Vol	9	5	8	25
Lane Flow Rate	120	84	89	188
Geometry Grp	1	1	1	1
Degree of Util (X)	0.169	0.124	0.122	0.23
Departure Headway (Hd)	5.073	5.294	4.954	4.402
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	707	676	722	815
Service Time	3.107	3.335	2.994	2.432
HCM Lane V/C Ratio	0.17	0.124	0.123	0.231
HCM Control Delay	9.1	9.1	8.7	8.8
HCM Lane LOS	Α	Α	Α	Α
HCM 95th-tile Q	0.6	0.4	0.4	0.9

	-	•	•	←	1	_
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	ĥ			4	ሻ	7
Traffic Volume (vph)	46	0	0	40	0	0
Future Volume (vph)	46	0	0	40	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	1863	1863
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	1863	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	0	0	43	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	0	0	43	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
A T	O41					

Area Type: Other

Control Type: Unsignalized
Intersection Capacity Utilization 6.7%
Analysis Period (min) 15

ICU Level of Service A

Intersection							
Int Delay, s/veh	0						
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	₽	LDIX	VVDL	₩ <u>₩</u>	T T	TVDIX	
Traffic Vol, veh/h	46	0	0	4 0	0	0	
Future Vol, veh/h	46	0	0	40	0	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	
	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-		Stop -	None	
	-	None -	-	None -	0	0	
Storage Length	- + 0		-				
Veh in Median Storage, #		-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	50	0	0	43	0	0	
Major/Minor Ma	ajor1	ı	Major2		Minor1		
Conflicting Flow All	0	0	50	0	93	50	
Stage 1	-	-	-	-	50	-	
				-	43		
Stage 2	-	-	4.12			- 00	
Critical Hdwy	-	-		-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	-	-	2.218		3.518		
Pot Cap-1 Maneuver	-	-	1557	-	907	1018	
Stage 1	-	-	-	-	972	-	
Stage 2	-	-	-	-	979	-	
Platoon blocked, %	-	-		-			
Mov Cap-1 Maneuver	-	-	1557	-	907	1018	
Mov Cap-2 Maneuver	-	-	-	-	907	-	
Stage 1	-	-	-	-	972	-	
Stage 2	-	-	-	-	979	-	
, and the second							
Annragah	ED		WD		ND		
Approach	EB		WB		NB		
HCM Control Delay, s	0		0		0		
HCM LOS					Α		
Minor Lane/Major Mvmt	1	NBLn11	NBLn2	EBT	EBR	WBL	
Capacity (veh/h)					-	1557	
HCM Lane V/C Ratio		_	_	_	_	-	
HCM Control Delay (s)		0	0	_	_	0	
HCM Lane LOS		A	A	_	_	A	
HCM 95th %tile Q(veh)		^		_	_	0	
HOW BOUT MILE Q(VEII)			-	_	_	U	

Lanes, volumes, I mings 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Roaiding Plan: PM Pk Gen

	۶	→	•	•	•	•	4	†	/	>	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	7	^					*	4	7
Traffic Volume (vph)	0	376	131	150	367	0	0	0	0	84	0	92
Future Volume (vph)	0	376	131	150	367	0	0	0	0	84	0	92
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	0			100			0			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.907	0.850
Flt Protected				0.950						0.950	0.981	
Satd. Flow (prot)	0	3574	1553	1719	3505	0	0	0	0	1726	1474	1548
Flt Permitted				0.950						0.950	0.981	
Satd. Flow (perm)	0	3574	1553	1719	3505	0	0	0	0	1726	1474	1548
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			158									
Link Speed (mph)		45			35			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			17.8			8.5			11.3	
Peak Hour Factor	0.83	0.83	0.83	0.59	0.59	0.59	0.88	0.88	0.88	0.86	0.86	0.86
Heavy Vehicles (%)	0%	1%	4%	5%	3%	0%	0%	0%	0%	6%	0%	9%
Adj. Flow (vph)	0	453	158	254	622	0	0	0	0	98	0	107
Shared Lane Traffic (%)										27%		39%
Lane Group Flow (vph)	0	453	158	254	622	0	0	0	0	72	68	65
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			24			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Prot	NA					Split	NA	Prot
Protected Phases		2		1	12					4	4	4
Permitted Phases			2									
Detector Phase		2	2	1	12					4	4	4
Switch Phase												
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		30.0	30.0	20.0						25.0	25.0	25.0
Total Split (%)		40.0%	40.0%	26.7%						33.3%	33.3%	33.3%
Maximum Green (s)		24.5	24.5	16.0						19.5	19.5	19.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		2.0	2.2									
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Roaiding Plan: PM Pk Gen

	•	-	•	•	•	•	1	T		-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		34.8	34.8	18.2	59.3					9.9	9.9	9.9
Actuated g/C Ratio		0.46	0.46	0.24	0.79					0.13	0.13	0.13
v/c Ratio		0.27	0.20	0.61	0.22					0.31	0.35	0.32
Control Delay		15.5	4.1	26.6	1.3					32.9	34.4	33.4
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		15.5	4.1	26.6	1.3					32.9	34.4	33.4
LOS		В	Α	С	Α					С	С	С
Approach Delay		12.5			8.6						33.6	
Approach LOS		В			Α						С	
Queue Length 50th (ft)		70	0	84	8					32	32	29
Queue Length 95th (ft)		112	30	63	11					65	65	61
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		1656	804	439	2733					448	383	402
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		0.27	0.20	0.58	0.23					0.16	0.18	0.16

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 13 (17%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 13.1 Intersection LOS: B
Intersection Capacity Utilization 40.8% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



Existing 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Roading Plan: PM Pk Gen

	۶	→	\rightarrow	•	←	•	4	†	/	>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	† †			^	7	ሻ	ર્ન	7			
Traffic Volume (vph)	79	381	0	0	355	95	162	0	158	0	0	0
Future Volume (vph)	79	381	0	0	355	95	162	0	158	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25		-	0		-	100		-	0		-
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.00	1.00	1.00	0.00	0.850	0.00	0.00	0.850	1.00	1.00	1.00
Flt Protected	0.950					0.000	0.950	0.950	0.000			
Satd. Flow (prot)	1719	3574	0	0	3539	1406	1678	1573	1743	0	0	0
Flt Permitted	0.950	007 1		J	0000	1100	0.950	0.950	17 10	•	V	J
Satd. Flow (perm)	1719	3574	0	0	3539	1406	1678	1573	1743	0	0	0
Right Turn on Red	1713	0014	Yes	U	0000	Yes	1070	1070	No	U	U	Yes
Satd. Flow (RTOR)			103			117			140			103
Link Speed (mph)		35			35	111		30			30	
Link Opeca (mph) Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			14.9			15.5			11.1	
Peak Hour Factor	0.85	0.85	0.85	0.81	0.81	0.81	0.84	0.84	0.84	0.88	0.88	0.88
Heavy Vehicles (%)	5%	1%	0.03	0.01	2%	11%	9%	0.04	5%	0.00	0.00	0.00
Adj. Flow (vph)	93	448	0 /8	0 /8	438	117	193	0 /8	188	0 %	0 /8	0 /8
Shared Lane Traffic (%)	90	440	U	U	430	117	50%	U	100	U	U	U
Lane Group Flow (vph)	93	448	0	0	438	117	96	97	188	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
	Left	Left	Right	Left	Left	Right	Left	Left		Left	Left	Right
Lane Alignment	Leit	24	Right	Leit	24	Right	Leit	14	Right	Leit	14	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		16			16			16			16	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane	1.00	1.00	1.00	1 00	1 00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Headway Factor	1.00	1.00		1.00 15	1.00	1.04		1.00			0.00	0.05
Turning Speed (mph)		NΙΛ	9	15	NIA		15	NΙΛ	9	15		9
Turn Type	Prot	NA 1.2			NA	Prot	Split	NA	Prot			
Protected Phases	1	12			2	2	4	4	4			
Permitted Phases	4	4.0			^	^	4	4	4			
Detector Phase	1	12			2	2	4	4	4			
Switch Phase	7.0				45.0	45.0	0.0	0.0	0.0			
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	20.0				31.0	31.0	24.0	24.0	24.0			
Total Split (%)	26.7%				41.3%	41.3%	32.0%	32.0%	32.0%			
Maximum Green (s)	16.0				25.5	25.5	19.0	19.0	19.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Roading Plan: PM Pk Gen

	•	→	*	•	•	•	1	Ť		-	ŧ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	10.4	52.3			36.4	36.4	13.7	13.7	13.7			
Actuated g/C Ratio	0.14	0.70			0.49	0.49	0.18	0.18	0.18			
v/c Ratio	0.39	0.18			0.26	0.16	0.31	0.34	0.59			
Control Delay	22.2	0.9			7.7	1.4	27.9	28.6	35.0			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	22.2	0.9			7.7	1.4	27.9	28.6	35.0			
LOS	С	Α			Α	Α	С	С	D			
Approach Delay		4.5			6.3			31.6				
Approach LOS		Α			Α			С				
Queue Length 50th (ft)	20	0			20	1	41	42	82			
Queue Length 95th (ft)	27	0			45	5	71	72	120			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	366	2463			1717	742	425	398	441			
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	0.25	0.18			0.26	0.16	0.23	0.24	0.43			

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 51 (68%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 50

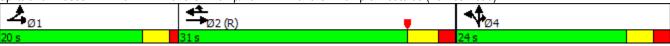
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 12.2 Intersection LOS: B
Intersection Capacity Utilization 40.8% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



	۶	-	\rightarrow	•	←	•	4	†	/	-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	∱ }		7	^	7	ሻ	(î			4	7
Traffic Volume (vph)	75	449	15	3	369	27	8	1	8	19	1	73
Future Volume (vph)	75	449	15	3	369	27	8	1	8	19	1	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			0			130		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995				0.850		0.862				0.850
FIt Protected	0.950			0.950			0.950				0.954	
Satd. Flow (prot)	1597	3558	0	1796	3522	1607	1685	1583	0	0	1746	1196
FIt Permitted	0.950			0.950			0.909				0.889	
Satd. Flow (perm)	1597	3558	0	1796	3522	1607	1612	1583	0	0	1627	1196
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				106		11				122
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.78	0.78	0.78	0.80	0.80	0.80	0.75	0.75	0.75	0.86	0.86	0.86
Heavy Vehicles (%)	13%	1%	0%	0%	2%	0%	0%	0%	0%	4%	0%	35%
Adj. Flow (vph)	96	576	19	4	461	34	11	1	11	22	1	85
Shared Lane Traffic (%)		0.0	. •	•		<u> </u>		•			•	
Lane Group Flow (vph)	96	595	0	4	461	34	11	12	0	0	23	85
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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								. •			. •	
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		12	15		12	15		12	15		12
Turn Type	Prot	NA	· -	Prot	NA	Prot	Perm	NA	· <u>-</u>	Perm	NA	pm+ov
Protected Phases	1	1 2		3	23	23		4			4	1
Permitted Phases	•						4			4	•	4
Detector Phase	1	12		3	23	23	4	4		4	4	1
Switch Phase							•	•		•	•	•
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	17.0			11.0			17.0	17.0		17.0	17.0	17.0
Total Split (%)	22.7%			14.7%			22.7%	22.7%		22.7%	22.7%	22.7%
Maximum Green (s)	11.6			5.7			12.1	12.1		12.1	12.1	11.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0		1.0	0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	5.4
Lead/Lag	Lead			Lead			Lag			Lag		Lead
Lead-Lag Optimize?	Leau			Leau			Lay	Lag		Lay	Lag	Leau
Leau-Lay Optimize?												

Lane Group	Ø2	
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Fit Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	2	
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	15.0	
Minimum Split (s)	21.1	
Total Split (s)	30.0	
Total Split (%)	40%	
Maximum Green (s)	23.9	
Yellow Time (s)	4.8	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?		
O - Fr		

3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)

	•	→	•	•	•	•	1	†		-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	10.7	51.7		5.3	45.5	45.5	7.2	7.2			7.2	18.0
Actuated g/C Ratio	0.14	0.69		0.07	0.61	0.61	0.10	0.10			0.10	0.24
v/c Ratio	0.42	0.24		0.03	0.22	0.03	0.07	0.07			0.15	0.22
Control Delay	38.6	3.0		32.7	8.9	0.1	31.9	19.0			33.4	2.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	38.6	3.0		32.7	8.9	0.1	31.9	19.0			33.4	2.9
LOS	D	Α		С	Α	Α	С	В			С	Α
Approach Delay		7.9			8.5			25.2			9.4	
Approach LOS		Α			Α			С			Α	
Queue Length 50th (ft)	48	35		2	54	0	5	0			10	0
Queue Length 95th (ft)	61	32		10	84	0	16	12			30	12
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	272	2409		139	2112	1006	260	264			262	409
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	0.35	0.25		0.03	0.22	0.03	0.04	0.05			0.09	0.21

Intersection Summary

Area Type: Other

Cycle Length: 75
Actuated Cycle Length: 75

Offset: 42 (56%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 55

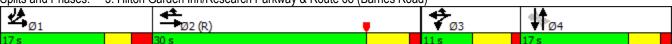
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.42

Intersection Signal Delay: 8.6 Intersection LOS: A Intersection Capacity Utilization 38.1% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø2		
Vehicle Extension (s)	2.5		
Recall Mode	C-Min		
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

4: Research Parkway & Food Bank Driv/Site Drive 1

	•	→	*	•	—	4	1	†	~	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	ĵ.		ň	ĵ.		7	†	7	ň	£	
Traffic Volume (vph)	0	0	1	0	0	0	0	103	0	0	92	0
Future Volume (vph)	0	0	1	0	0	0	0	103	0	0	92	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	0			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850										
FIt Protected												
Satd. Flow (prot)	1900	1615	0	1900	1900	0	1900	1743	1900	1900	1743	0
FIt Permitted												
Satd. Flow (perm)	1900	1615	0	1900	1900	0	1900	1743	1900	1900	1743	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.25	0.25	0.25	0.88	0.88	0.88	0.90	0.90	0.90	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	9%	0%	0%	9%	0%
Adj. Flow (vph)	0	0	4	0	0	0	0	114	0	0	112	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	0	0	0	114	0	0	112	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24			30			12			12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
)thor											

Area Type:

Other

Control Type: Unsignalized

Intersection Capacity Utilization 15.4%

ICU Level of Service A

Analysis Period (min) 15

Existing
Timing Plan: PM Pk Gen HCM 2010 TWSC

Intersection												
Int Delay, s/veh	0.2											
		EDT	EDD	WDL	WDT	WDD	NDI	NDT	NDD	CDI	CDT	CDD
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u>ች</u>	€	1	\	₽	0	<u>ች</u>	102	<u>*</u>	ነ	}	٥
Traffic Vol., veh/h	0	0	1	0	0	0	0	103	0	0	92 92	0
Future Vol, veh/h	0	0	0	0	0	0	0	0	0	0	92	0
Conflicting Peds, #/hr								Free	Free	Free	Free	
Sign Control RT Channelized	Stop	Stop	Stop None	Stop -	Stop -	Stop None	Free -	riee -	None			Free
		-	None	170	_	INOHE -	140	-	0	115	-	None
Storage Length Veh in Median Storage,	0 # -	0	-	170	0	-	140	0	-	115	0	-
Grade, %	# - -	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	88	88	88	90	90	90	82	82	82
Heavy Vehicles, %	0	0	0	0	00	00	0	90	0	02	9	02
Mvmt Flow	0	0	4	0	0	0	0	114	0	0	112	0
IVIVIIIL I IUW	U	U	4	U	U	U	U	114	U	U	112	U
	/linor2			Minor1			Major1			Major2		
Conflicting Flow All	226	226	112	228	226	114	112	0	0	114	0	0
Stage 1	112	112	-	114	114	-	-	-	-	-	-	-
Stage 2	114	114	-	114	112	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	734	677	947	731	677	944	1490	-	-	1488	-	-
Stage 1	898	807	-	896	805	-	-	-	-	-	-	-
Stage 2	896	805	-	896	807	-	-	-	-	-	-	-
Platoon blocked, %	704	077	0.47	700	077	0.4.4	4.400	-	-	4.400	-	-
Mov Cap-1 Maneuver	734	677	947	728	677	944	1490	-	-	1488	-	-
Mov Cap-2 Maneuver	734	677	-	728	677	-	-	-	<u>-</u>	-	-	-
Stage 1	898	807	-	896	805	-	-	-	-	-	-	-
Stage 2	896	805	-	892	807	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	8.8			0			0			0		
HCM LOS	Α			Α								
Minor Lane/Major Mvmt		NBL	NBT	NBR E	EBLn1	EBLn2V	VBLn1V	VBLn2	SBL	SBT	SBR	
Capacity (veh/h)		1490	-	-	-	947	-	-	1488	-	-	
HCM Lane V/C Ratio		-	_	-	_	0.004	-	_	-	_	-	
HCM Control Delay (s)		0	-	-	0	8.8	0	0	0	-	_	
HCM Lane LOS		A	-	-	A	A	A	A	A	-	-	
HCM 95th %tile Q(veh)		0	-	-	-	0	-	-	0	-	-	
(100)												

	•	•	•	†		✓
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			ર્ન	î,	
Traffic Volume (vph)	0	1	1	102	91	0
Future Volume (vph)	0	1	1	102	91	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						
Satd. Flow (prot)	1644	0	0	1744	1743	0
Flt Permitted						
Satd. Flow (perm)	1644	0	0	1744	1743	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.25	0.25	0.83	0.83	0.85	0.85
Heavy Vehicles (%)	0%	0%	0%	9%	9%	0%
Adj. Flow (vph)	0	4	1	123	107	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	124	107	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utiliza				IC	U Level o	of Service
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	0.2					
•		===			057	055
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			4	₽	
Traffic Vol, veh/h	0	1	1	102	91	0
Future Vol, veh/h	0	1	1	102	91	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,	# 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	25	25	83	83	85	85
Heavy Vehicles, %	0	0	0	9	9	0
Mvmt Flow	0	4	1	123	107	0
NA -1 - /NA1 NA	ı O		1.1.4		4	
	linor2		//ajor1		/lajor2	
Conflicting Flow All	232	107	107	0	-	0
Stage 1	107	-	-	-	-	-
Stage 2	125	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	761	953	1497	-	-	-
Stage 1	922	-	-	-	-	-
Stage 2	906	-	-	-	-	
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	760	953	1497	-	-	
Mov Cap-2 Maneuver	760	-	-	-	_	-
Stage 1	921	-	-	_	-	_
Stage 2	906	_	_	_	_	_
	550					
Approach	EB		NB		SB	
HCM Control Delay, s	8.8		0.1		0	
HCM LOS	Α					
Minor Lane/Major Mvmt		NBL	NRT	EBLn1	SBT	SBR
						אומט
Capacity (veh/h)		1497	-		-	-
HCM Cantrol Delay (a)		0.001		0.004	-	-
HCM Control Delay (s)		7.4	0	8.8	-	-
HCM Lane LOS		A	Α	A	-	-
HCM 95th %tile Q(veh)		0	-	0	-	-

	•	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥	7	¥		ĵ.	
Traffic Volume (vph)	0	1	0	102	90	0
Future Volume (vph)	0	1	0	102	90	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	0		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	1900	1615	1900	1743	1696	0
FIt Permitted						
Satd. Flow (perm)	1900	1615	1900	1743	1696	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.25	0.25	0.81	0.81	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	9%	12%	0%
Adj. Flow (vph)	0	4	0	126	117	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	4	0	126	117	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
, , , , , , , , , , , , , , , , , , ,	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	ion 14.7%			IC	U Level	of Service

 $\label{thm:companies} G:\label{thm:companies} $$G:\label{thm:companies} $$G:\label{thm:companies} $$BL\ Companies $$$

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
						SBK
Lane Configurations	ነ	7	*	102	1 → 90	0
Traffic Vol, veh/h Future Vol, veh/h	0	-	0	102 102	90	0
	0	1 0	0	102	90	0
Conflicting Peds, #/hr						
Sign Control RT Channelized	Stop	Stop	Free	Free None	Free	Free
	-	None	100		-	None
Storage Length	0	0		-	-	-
Veh in Median Storage		-	-	0	0	-
Grade, %	0	-	- 04	0	0	- 77
Peak Hour Factor	25	25	81	81	77	77
Heavy Vehicles, %	0	0	0	9	12	0
Mvmt Flow	0	4	0	126	117	0
Major/Minor N	/linor2	N	Major1	N	//ajor2	
Conflicting Flow All	243	117	117	0	-	0
Stage 1	117	- 117	- 117	-		-
Stage 2	126	-		_		
Critical Hdwy	6.4	6.2	4.1	<u>-</u>		
•	5.4	0.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4		-	-		-
Critical Hdwy Stg 2		- 2 2	- 2.2	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	750	941	1484	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	905	-	-	-	-	-
Platoon blocked, %	750	0.44	4.40.4	-	-	-
Mov Cap-1 Maneuver	750	941	1484	-	-	-
Mov Cap-2 Maneuver	750	-	-	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	905	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	8.8		0		0	
HCM LOS	Α		U		U	
TIOIVI LOG						
Minor Lane/Major Mvm		NBL	NBT	EBLn1 E	EBLn2	SBT
Capacity (veh/h)		1484	-	-	941	-
HCM Lane V/C Ratio		-	-	-	0.004	-
HCM Control Delay (s)		0	-	0	8.8	-
HCM Lane LOS		Α	-	Α	Α	-
HCM 95th %tile Q(veh)		0	-	-	0	-

	۶	→	•	•	←	4	1	†	/	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	23	19	3	4	15	7	7	81	14	11	83	22
Future Volume (vph)	23	19	3	4	15	7	7	81	14	11	83	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.963			0.982			0.974	
Flt Protected		0.975			0.993			0.996			0.995	
Satd. Flow (prot)	0	1834	0	0	1817	0	0	1709	0	0	1678	0
FIt Permitted		0.975			0.993			0.996			0.995	
Satd. Flow (perm)	0	1834	0	0	1817	0	0	1709	0	0	1678	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.64	0.64	0.64	0.66	0.66	0.66	0.72	0.72	0.72	0.67	0.67	0.67
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	11%	0%	0%	12%	6%
Adj. Flow (vph)	36	30	5	6	23	11	10	113	19	16	124	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	0	0	40	0	0	142	0	0	173	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											_
Control Type: Unsignalized												
Intersection Capacity Utilizat	ion 21.9%			IC	U Level o	of Service	Α					
Analysis Period (min) 15												

Intersection												
Intersection Delay, s/veh	8.2											
Intersection LOS	0.2 A											
IIILEI SECLIOIT LOS	A											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		- 4			4			4			4	
Traffic Vol, veh/h	23	19	3	4	15	7	7	81	14	11	83	22
Future Vol, veh/h	23	19	3	4	15	7	7	81	14	11	83	22
Peak Hour Factor	0.64	0.64	0.64	0.66	0.66	0.66	0.72	0.72	0.72	0.67	0.67	0.67
Heavy Vehicles, %	0	0	0	0	0	0	0	11	0	0	12	6
Mvmt Flow	36	30	5	6	23	11	10	113	19	16	124	33
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	8.2			7.8			8.2			8.3		
HCM LOS	Α			Α			Α			Α		
Lane		NBLn1	EBLn1	WBLn1	SBLn1							
Vol Left, %		7%	51%	15%	9%							
Vol Thru, %		79%	42%	58%	72%							
Vol Right, %		14%	7%	27%	19%							
Sign Control		Stop	Stop	Stop	Stop							
Traffic Vol by Lane		102	45	26	116							
LT Vol		7	23	4	11							
Through Vol		81	19	15	83							
RT Vol		14	3	7	22							
Lane Flow Rate		142	70	39	173							
Geometry Grp		1	1	1	1							
Degree of Util (X)		0.168	0.092	0.05	0.203							
Departure Headway (Hd)		4.273	4.697	4.544	4.217							
Convergence, Y/N		Yes	Yes	Yes	Yes							
Cap		842	764	789	854							
Service Time		2.289	2.718	2.566	2.231							
HCM Lane V/C Ratio		0.169	0.092	0.049	0.203							
HCM Control Delay		8.2	8.2	7.8	8.3							
110141		J.L	J	0	0.5							

Α

0.6

Α

0.3

Α

0.2

Α

8.0

HCM Lane LOS

HCM 95th-tile Q

	-	•	•	←	1	/
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	1>			ર્ન	ሻ	7
Traffic Volume (vph)	44	0	0	26	0	0
Future Volume (vph)	44	0	0	26	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	1863	1863
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	1863	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	0	0	28	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	0	28	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 6.7% Analysis Period (min) 15

ICU Level of Service A

Intersection							
Int Delay, s/veh	0						
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	1>	LDIX	TTDL	WB1	TYDE	TVDIX	
Traffic Vol, veh/h	44	0	0	26	0	0	
Future Vol, veh/h	44	0	0	26	0	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	-	-	-	0	0	
Veh in Median Storage,		-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	48	0	0	28	0	0	
Major/Minor N	/lajor1	1	Major2		Minor1		
Conflicting Flow All	0	0	48	0	76	48	
Stage 1	-	-	-	-	48	-	
Stage 2	-	-	-	-	28	-	
Critical Hdwy	-	-	4.12	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	-	-	2.218	-	3.518		
Pot Cap-1 Maneuver	-	-	1559	-	927	1021	
Stage 1	-	-	-	-	974	-	
Stage 2	-	-	-	-	995	-	
Platoon blocked, %	-	-		-			
Mov Cap-1 Maneuver	-	-	1559	-	927	1021	
Mov Cap-2 Maneuver	-	-	-	-	927	-	
Stage 1	-	-	-	-	974	-	
Stage 2	-	-	-	-	995	-	
Approach	EB		WB		NB		
HCM Control Delay, s	0		0		0		
HCM LOS					A		
Minor Lane/Major Mvmt		NBLn11	VIRL n2	EBT	EBR	WBL	WBT
Capacity (veh/h)		ADLIIII	ADLIIZ	LDI		1559	VVDI
HCM Lane V/C Ratio		-	-	-	-	1009	-
HCM Control Delay (s)		0	0	_	_	0	_
HCM Lane LOS		A	A	_	_	A	_
HCM 95th %tile Q(veh)		-	-	_	_	0	_
. Tom oour /outo action)							

NO BUILD



Lanes, Volumes, Timings 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)

Timing Plan: AM

	۶	→	•	•	—	•	1	†	~	/	↓	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	ሻ	^					7	4	7
Traffic Volume (vph)	0	581	227	308	914	0	0	0	0	172	0	409
Future Volume (vph)	0	581	227	308	914	0	0	0	0	172	0	409
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	0			100			0			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.862	0.850
Flt Protected				0.950						0.950	0.996	
Satd. Flow (prot)	0	3008	1455	1597	2756	0	0	0	0	1678	1318	1442
FIt Permitted				0.950						0.950	0.996	
Satd. Flow (perm)	0	3008	1455	1597	2756	0	0	0	0	1678	1318	1442
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			241									
Link Speed (mph)		45			35			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			17.8			8.5			11.3	
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	0%	20%	11%	13%	31%	0%	0%	0%	0%	9%	0%	17%
Adj. Flow (vph)	0	618	241	335	993	0	0	0	0	210	0	499
Shared Lane Traffic (%)										10%		48%
Lane Group Flow (vph)	0	618	241	335	993	0	0	0	0	189	261	259
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			24			14			14	<u> </u>
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Prot	Prot	NA	-				Split	NA	Prot
Protected Phases		2	2	1	12					4	4	4
Permitted Phases		_	_	•						•	•	•
Detector Phase		2	2	1	12					4	4	4
Switch Phase		_	_	•						•	•	•
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		23.0	23.0	26.0						31.0	31.0	31.0
Total Split (%)		28.8%	28.8%	32.5%						38.8%	38.8%	38.8%
Maximum Green (s)		17.5	17.5	22.0						25.5	25.5	25.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead						0.0	0.0	5.5
Lead-Lag Optimize?		Lay	Lay	Leau								
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0
venicie Extension (s)		0.2	0.2	ა.0						3.0	ა.0	3.0

Timing Plan: AM

0.35

0.62

0.56

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)

	ᄼ	-	•	•	•	•	1	†		-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		22.1	22.1	22.0	49.6					20.9	20.9	20.9
Actuated g/C Ratio		0.28	0.28	0.28	0.62					0.26	0.26	0.26
v/c Ratio		0.75	0.42	0.76	0.58					0.43	0.76	0.69
Control Delay		35.9	6.5	31.0	4.8					26.6	41.0	35.7
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		35.9	6.5	31.0	4.8					26.6	41.0	35.7
LOS		D	Α	С	Α					С	D	D
Approach Delay		27.7			11.4						35.2	
Approach LOS		С			В						D	
Queue Length 50th (ft)		160	0	114	47					80	128	118
Queue Length 95th (ft)		#263	56	m187	m235					118	183	168
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		829	575	457	1707					534	420	459
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

Intersection Summary

Reduced v/c Ratio

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 78 (98%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 22.0 Intersection LOS: C
Intersection Capacity Utilization 56.7% ICU Level of Service B

0.75

0.42

0.73

0.58

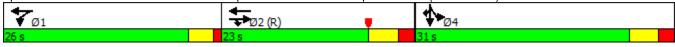
Analysis Period (min) 15

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: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



Lanes, Volumes, Timings 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: AM

	۶	-	•	•	•	•	4	†	/	>	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	Ť	† †			^	7	ř	ર્ન	7			
Traffic Volume (vph)	192	561	0	0	879	247	343	5	262	0	0	0
Future Volume (vph)	192	561	0	0	879	247	343	5	262	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			0			100			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950						0.950	0.954				
Satd. Flow (prot)	1656	3008	0	0	2735	1394	1604	1516	1606	0	0	0
Flt Permitted	0.950						0.950	0.954				
Satd. Flow (perm)	1656	3008	0	0	2735	1394	1604	1516	1606	0	0	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)						255						
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			14.9			15.5			11.1	
Peak Hour Factor	0.93	0.93	0.93	0.97	0.97	0.97	0.86	0.86	0.86	0.88	0.88	0.88
Heavy Vehicles (%)	9%	20%	0%	0%	32%	12%	14%	0%	14%	0%	0%	0%
Adj. Flow (vph)	206	603	0	0	906	255	399	6	305	0	0	0
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	206	603	0	0	906	255	203	202	305	0	0	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)		24	J		24	J		14	J		14	J -
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA			NA	Prot	Split	NA	Prot			
Protected Phases	1	12			2	2	4	4	4			
Permitted Phases												
Detector Phase	1	12			2	2	4	4	4			
Switch Phase	•				_	_	•	-	•			
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	25.0				29.0	29.0	26.0	26.0	26.0			
Total Split (%)	31.3%				36.3%	36.3%	32.5%	32.5%	32.5%			
Maximum Green (s)	21.0				23.5	23.5	21.0	21.0	21.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag	0.0	0.0	0.0			
Lead-Lag Optimize?					_49	_49						
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			
Totalo Exteriora (o)	0.0				0.2	0.2	0.0	0.0	0.0			

Timing Plan: AM

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)

	•	-	*	•	•	•	1	Ť		-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	16.2	52.0			30.4	30.4	19.0	19.0	19.0			
Actuated g/C Ratio	0.20	0.65			0.38	0.38	0.24	0.24	0.24			
v/c Ratio	0.62	0.31			0.87	0.37	0.53	0.56	0.80			
Control Delay	44.2	1.0			35.4	11.2	31.7	32.9	45.3			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	44.2	1.0			35.4	11.2	31.7	32.9	45.3			
LOS	D	Α			D	В	С	С	D			
Approach Delay		12.0			30.1			37.9				
Approach LOS		В			С			D				
Queue Length 50th (ft)	93	4			180	40	90	90	139			
Queue Length 95th (ft)	m104	10			m#270	m48	149	150	#220			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	434	1933			1037	687	421	397	421			
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	0.47	0.31			0.87	0.37	0.48	0.51	0.72			

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 34 (43%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 26.7 Intersection LOS: C
Intersection Capacity Utilization 56.7% ICU Level of Service B

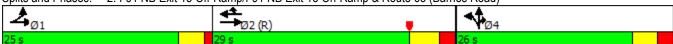
Analysis Period (min) 15

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: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



	۶	-	•	•	—	•	4	†	/	>	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	14.54	ĥ		*	^	7	ሻ	f)			ર્ન	7
Traffic Volume (vph)	278	520	25	10	980	126	35	25	10	30	5	111
Future Volume (vph)	278	520	25	10	980	126	35	25	10	30	5	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			0			130		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993				0.850		0.957				0.850
Flt Protected	0.950			0.950			0.950				0.959	
Satd. Flow (prot)	3045	1547	0	1796	2477	1516	1668	1753	0	0	1791	1509
Flt Permitted	0.950			0.950			0.729				0.708	
Satd. Flow (perm)	3045	1547	0	1796	2477	1516	1280	1753	0	0	1322	1509
Right Turn on Red			Yes			Yes			Yes	-		Yes
Satd. Flow (RTOR)		5				142		20				115
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.51	0.51	0.51	0.81	0.81	0.81
Heavy Vehicles (%)	15%	23%	1%	0%	45%	6%	1%	0%	1%	2%	0%	7%
Adj. Flow (vph)	302	565	27	11	1101	142	69	49	20	37	6	137
Shared Lane Traffic (%)	002	000			1101			10		<u> </u>		.07
Lane Group Flow (vph)	302	592	0	11	1101	142	69	69	0	0	43	137
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)	2010	24	. ugut	20.0	24	. ug.ic	2010	10	ı tığılı	2010	0	. ugiit
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					. •			. •				
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		12	15		12	15		12	15		12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm	NA	pt+ov
Protected Phases	7	7 8		3	38	3 8	1 01111	4		. 0	4	47
Permitted Phases	•	, 0			0.0		4	'		4	•	. ,
Detector Phase	7	7 8		3	38	38	4	4		4	4	4 7
Switch Phase	,	, 0			0.0	0.0						7 /
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	
Total Split (s)	26.0			11.0			19.0	19.0		19.0	19.0	
Total Split (%)	32.5%			13.8%			23.8%	23.8%		23.8%	23.8%	
Maximum Green (s)	20.6			5.7			14.1	14.1		14.1	14.1	
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	
` '	0.0			0.0			0.0	0.0		1.3	0.0	
Lost Time Adjust (s)	5.4			5.3			4.9	4.9			4.9	
Total Lost Time (s)										Log		
Lead/Lag Lead-Lag Optimize?	Lead			Lead			Lag	Lag		Lag	Lag	
Leau-Lay Optimize?												

Lane Group	Ø8	
Lane Configurations	20	
Traffic Volume (vph) Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	8	
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	15.0	
Minimum Split (s)	21.1	
Total Split (s)	24.0	
Total Split (%)	30%	
Maximum Green (s)	17.9	
	4.8	
Yellow Time (s)	1.3	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)	1	
Lead/Lag	Lag	
Lead-Lag Optimize?		

	•	-	•	•	•	•	1	†	~	-	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	
Recall Mode	None			None			None	None		None	None	
Act Effct Green (s)	20.5	49.3		5.7	34.5	34.5	9.4	9.4			9.4	35.3
Actuated g/C Ratio	0.26	0.62		0.07	0.43	0.43	0.12	0.12			0.12	0.44
v/c Ratio	0.39	0.62		0.09	1.03	0.19	0.46	0.31			0.28	0.19
Control Delay	27.2	12.1		36.4	63.0	4.0	41.9	27.3			35.5	3.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	27.2	12.1		36.4	63.0	4.0	41.9	27.3			35.5	3.8
LOS	С	В		D	Е	Α	D	С			D	Α
Approach Delay		17.2			56.1			34.6			11.4	
Approach LOS		В			Е			С			В	
Queue Length 50th (ft)	61	68		5	~346	0	33	23			20	5
Queue Length 95th (ft)	m103	136		21	#470	33	37	27			42	25
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	845	939		127	1066	733	225	325			233	739
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	0.36	0.63		0.09	1.03	0.19	0.31	0.21			0.18	0.19

Intersection Summary

Area Type: Other

Cycle Length: 80 Actuated Cycle Length: 80

Offset: 27 (34%), Referenced to phase 8:EBWB, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 37.5 Intersection LOS: D
Intersection Capacity Utilization 56.6% ICU Level of Service B

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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø8	
Vehicle Extension (s)	5.0	
Recall Mode	C-Min	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

	•	→	•	•	+	•	•	†	~	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	£		7	ĵ.		7	†	7	7	ĵ.	
Traffic Volume (vph)	0	0	5	0	0	0	35	394	0	0	141	0
Future Volume (vph)	0	0	5	0	0	0	35	394	0	0	141	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	0			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850										
Flt Protected							0.950					
Satd. Flow (prot)	1900	1615	0	1900	1900	0	1805	1845	1900	1712	1727	0
FIt Permitted							0.950					
Satd. Flow (perm)	1900	1615	0	1900	1900	0	1805	1845	1900	1712	1727	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.42	0.42	0.42	0.88	0.88	0.88	0.67	0.67	0.67	0.73	0.73	0.73
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	11%	10%	0%
Adj. Flow (vph)	0	0	12	0	0	0	52	588	0	0	193	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	0	0	52	588	0	0	193	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24			30			12			12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											

Control Type: Unsignalized

Intersection Capacity Utilization 37.4%

Analysis Period (min) 15

ICU Level of Service A

Int Delay, s/veh
Traffic Vol, veh/h
Lane Configurations
Traffic Vol, veh/h 0 0 5 0 0 0 35 394 0 0 141 0 Future Vol, veh/h 0 0 5 0 0 0 35 394 0 0 141 0 Conflicting Peds, #/hr 0<
Future Vol, veh/h 0 0 5 0 0 0 35 394 0 0 141 0 Conflicting Peds, #/hr 0
Conflicting Peds, #/hr 0
Sign Control Stop Stop Stop Stop Stop Stop Stop Free 20 112 0 <
RT Channelized - None - None - None - None Storage Length 0 - - 170 - - 140 - 0 115 - - Veh in Median Storage, # - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 0 - - 0 0 11 10 0 0 0 0 0 0 0 11 0 0 0 0
Veh in Median Storage, # - 0 - 0
Grade, % - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - 7 3 73
Peak Hour Factor 42 42 42 48 88 88 67 67 67 73 73 73 Heavy Vehicles, % 0 0 0 0 0 0 0 0 11 10 0 Mvmt Flow 0 0 12 0 0 0 52 588 0 0 193 0 Major/Minor Minor1 Major1 Major2 Major2 Conflicting Flow All 885 885 193 891 885 588 193 0 0 588 0 0 Stage 1 193 193 - 692 692 -
Heavy Vehicles, % 0 0 0 0 0 0 0 3 0 11 10 0 Mvmt Flow 0 0 12 0 0 0 52 588 0 0 193 0 Major/Minor Minor1 Major1 Major2 Major2 Conflicting Flow All 885 885 193 0 0 588 0 0 Stage 1 193 193 - 692 692 -
Mount Flow 0 0 12 0 0 52 588 0 0 193 0 Major/Minor Minor1 Major1 Major2 Major3 Major4 Major3 Major4 Major3 Major4 Major4 Major4 Majo
Major/Minor Minor2 Minor1 Major1 Major2 Conflicting Flow All 885 885 193 891 885 588 193 0 0 588 0 0 Stage 1 193 193 - 692 692 -
Conflicting Flow All 885 885 193 891 885 588 193 0 0 588 0 0 Stage 1 193 193 - 692 692 -
Conflicting Flow All 885 885 193 891 885 588 193 0 0 588 0 0 Stage 1 193 193 - 692 692 -
Conflicting Flow All 885 885 193 891 885 588 193 0 0 588 0 0 Stage 1 193 193 - 692 692 -
Stage 1 193 193 - 692 692 -
Critical Hdwy 7.1 6.5 6.2 7.1 6.5 6.2 4.1 4.21
Onition I I I down Oter 4
Critical Hdwy Stg 1 6.1 5.5 - 6.1 5.5
Critical Hdwy Stg 2 6.1 5.5 - 6.1 5.5
Follow-up Hdwy 3.5 4 3.3 3.5 4 3.3 2.2 2.299
Pot Cap-1 Maneuver 268 286 854 265 286 513 1392 944
Stage 1 813 745 - 437 448
Stage 2 437 448 - 807 745
Platoon blocked, %
Mov Cap-1 Maneuver 260 275 854 254 275 513 1392 944
Mov Cap-2 Maneuver 260 275 - 254 275
0
Stage 2 421 431 - 796 745
Approach EB WB NB SB
HCM Control Delay, s 9.3 0 0.6 0
HCM LOS A A
Minor Lane/Major Mvmt NBL NBT NBR EBLn1 EBLn2WBLn1WBLn2 SBL SBT SBR
Capacity (veh/h) 1392 854 944
HCM Lane V/C Ratio 0.038 0.014
HCM Control Delay (s) 7.7 0 9.3 0 0 0
HCM Lane LOS A A A A A
HCM 95th %tile Q(veh) 0.1 0 0

	۶	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			ર્ની	1}•	
Traffic Volume (vph)	0	6	58	336	135	6
Future Volume (vph)	0	6	58	336	135	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865				0.994	
Flt Protected				0.993		
Satd. Flow (prot)	1096	0	0	1705	1598	0
Flt Permitted				0.993		
Satd. Flow (perm)	1096	0	0	1705	1598	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.50	0.50	0.90	0.90	0.63	0.63
Heavy Vehicles (%)	0%	50%	3%	12%	19%	0%
Adj. Flow (vph)	0	12	64	373	214	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	0	437	224	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	_
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utiliza	ation 41.7%			IC	U Level o	of Service
Analysis Period (min) 15						

Intersection Int Delay, s/veh
Movement EBL EBR NBL NBT SBT SBR Lane Configurations Y - ↓
Lane Configurations Y ↓ ↓ Traffic Vol, veh/h 0 6 58 336 135 6 Future Vol, veh/h 0 6 58 336 135 6 Conflicting Peds, #/hr 0 0 0 0 0 0 0 Sign Control Stop Stop Free Free <t< td=""></t<>
Traffic Vol, veh/h 0 6 58 336 135 6 Future Vol, veh/h 0 6 58 336 135 6 Conflicting Peds, #/hr 0 0 0 0 0 0 0 Sign Control Stop Stop Free Ag
Future Vol, veh/h
Conflicting Peds, #/hr 0
Sign Control Stop Stop Free Ree Free Rone None Anne None Anne Polog All Stage 1 Stage 1 Stage 2 Stage 1 Stage 2 Stage 1 Stage 2 Stage 2
RT Channelized - None - None - None Storage Length 0 0 0 - Veh in Median Storage, # 0 0 0 - Grade, % 0 0 0 - Peak Hour Factor 50 50 90 90 63 63 Heavy Vehicles, % 0 50 3 12 19 0 Mvmt Flow 0 12 64 373 214 10 Major/Minor Minor2 Major1 Major2 Major2 Conflicting Flow All 720 219 224 0 - 0 Stage 1 219 - - - - - - Stage 2 501 - - - - - - Critical Hdwy 6.4 6.7 4.13 - - - - Critical Hdwy Stg 1 5.4 - - - -
Storage Length 0 -
Veh in Median Storage, # 0 - - 0 0 - Grade, % 0 - - 0 0 - Peak Hour Factor 50 50 90 90 63 63 Heavy Vehicles, % 0 50 3 12 19 0 Mvmt Flow 0 12 64 373 214 10 Major/Minor Minor2 Major1 Major2 Conflicting Flow All 720 219 224 0 - 0 Stage 1 219 -
Grade, % 0 - - 0 0 - Peak Hour Factor 50 50 90 90 63 63 Heavy Vehicles, % 0 50 3 12 19 0 Mvmt Flow 0 12 64 373 214 10 Major/Minor Minor2 Major1 Major2 Conflicting Flow All 720 219 224 0 - 0 Stage 1 219 - - - - - - Stage 2 501 - - - - - - - Critical Hdwy 6.4 6.7 4.13 -
Peak Hour Factor 50 50 90 90 63 63 Heavy Vehicles, % 0 50 3 12 19 0 Mvmt Flow 0 12 64 373 214 10 Major/Minor Minor2 Major1 Major2 Conflicting Flow All 720 219 224 0 - 0 Stage 1 219 -
Heavy Vehicles, %
Mvmt Flow 0 12 64 373 214 10 Major/Minor Minor2 Major1 Major2 Conflicting Flow All 720 219 224 0 - 0 Stage 1 219 -
Major/Minor Minor2 Major1 Major2 Conflicting Flow All 720 219 224 0 - 0 Stage 1 219 - - - - - Stage 2 501 - - - - - Critical Hdwy 6.4 6.7 4.13 - - - Critical Hdwy Stg 1 5.4 - - - - - Critical Hdwy Stg 2 5.4 - <t< td=""></t<>
Conflicting Flow All 720 219 224 0 - 0 Stage 1 219 -
Conflicting Flow All 720 219 224 0 - 0 Stage 1 219 -
Conflicting Flow All 720 219 224 0 - 0 Stage 1 219 -
Stage 1 219 -
Stage 2 501 -
Critical Hdwy 6.4 6.7 4.13 - - - Critical Hdwy Stg 1 5.4 - - - - - - Critical Hdwy Stg 2 5.4 - <
Critical Hdwy Stg 1 5.4
Critical Hdwy Stg 2 5.4
Follow-up Hdwy 3.5 3.75 2.227
Pot Cap-1 Maneuver 398 714 1339 - - - Stage 1 822 - - - - - Stage 2 613 - - - - - Platoon blocked, % - - - - - - Mov Cap-1 Maneuver 374 714 1339 - - - Stage 1 773 - - - - - Stage 2 613 - - - - - Approach EB NB SB HCM Control Delay, s 10.1 1.2 0
Stage 1 822 - - - - Stage 2 613 - - - - Platoon blocked, % - - - - Mov Cap-1 Maneuver 374 714 1339 - - Mov Cap-2 Maneuver 374 - - - - Stage 1 773 - - - - Stage 2 613 - - - - Approach EB NB SB HCM Control Delay, s 10.1 1.2 0
Stage 2 613 -
Platoon blocked, % - - - Mov Cap-1 Maneuver 374 714 1339 - - Mov Cap-2 Maneuver 374 - - - - Stage 1 773 - - - - Stage 2 613 - - - - Approach EB NB SB HCM Control Delay, s 10.1 1.2 0
Platoon blocked, % - - - - Mov Cap-1 Maneuver 374 714 1339 - - - Mov Cap-2 Maneuver 374 -
Mov Cap-1 Maneuver 374 714 1339 - - - Mov Cap-2 Maneuver 374 - - - - - Stage 1 773 - - - - - Stage 2 613 - - - - - Approach EB NB SB HCM Control Delay, s 10.1 1.2 0
Mov Cap-2 Maneuver 374 -
Stage 1 773 -
Stage 2 613 - - - - - Approach EB NB SB HCM Control Delay, s 10.1 1.2 0
Approach EB NB SB HCM Control Delay, s 10.1 1.2 0
HCM Control Delay, s 10.1 1.2 0
HCM Control Delay, s 10.1 1.2 0
y •
,
TIOM EOO B
Miner Lene/Meier Mirret NDL NDT FDL 14 OPT ODD
Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR
Capacity (veh/h) 1339 - 714
HCM Lane V/C Ratio 0.048 - 0.017
HCM Control Delay (s) 7.8 0 10.1
HCM Lane LOS A A B
HCM 95th %tile Q(veh) 0.2 - 0.1

Analysis Period (min) 15

	•	•	•	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	^	∱	
Traffic Volume (vph)	0	0	6	330	141	2
Future Volume (vph)	0	0	6	330	141	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	0		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.998	
Flt Protected			0.950			
Satd. Flow (prot)	1900	1900	1805	1667	1623	0
FIt Permitted			0.950			
Satd. Flow (perm)	1900	1900	1805	1667	1623	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.25	0.25	0.89	0.89	0.81	0.81
Heavy Vehicles (%)	0%	0%	0%	14%	17%	0%
Adj. Flow (vph)	0	0	7	371	174	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	7	371	176	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
	Other					
Control Type: Unsignalized						
Intersection Capacity Utiliza	tion 20.7%			IC	U Level o	of Service A
Analysis David (min) 15				- 10	2 20.01	. 50. 1.00 /

 $\label{thm:companies} G:\label{thm:companies} $$G:\label{thm:companies}$$G:\label{thm:companies}$$BL\ Companies$

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
						SBK
Lane Configurations	7	*	ዃ	220	141	0
Traffic Vol, veh/h	0	0	6	330	141	2
Future Vol, veh/h	0	0	6	330	141	2
Conflicting Peds, #/hr	0	0	0	_ 0	_ 0	_ 0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	-
Veh in Median Storage,		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	25	25	89	89	81	81
Heavy Vehicles, %	0	0	0	14	17	0
Mvmt Flow	0	0	7	371	174	2
NA = : = = /NA:= = = = = = = = = = = = = = = = = = =	!: O		1-1-4		4-1-0	
	linor2		Major1		Major2	
Conflicting Flow All	560	175	176	0	-	0
Stage 1	175	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	493	874	1412	-	-	-
Stage 1	860	-	-	-	-	-
Stage 2	692	_	-	-	_	_
Platoon blocked, %				_	_	_
Mov Cap-1 Maneuver	491	874	1412	_	_	_
Mov Cap-1 Maneuver	491	-	- 1 1 1 2	_	_	_
Stage 1	856				•	_
Stage 2	692	-	-	-	_	-
Staye 2	092	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	0		0.1		0	
HCM LOS	A					
Minor Lane/Major Mvmt		NBL	NBT	EBLn1 E	EBLn2	SBT
Capacity (veh/h)		1412	-	-	-	-
HCM Lane V/C Ratio		0.005	-	-	-	-
HCM Control Delay (s)		7.6	-	0	0	-
HCM Lane LOS		A	-	A	A	-
HCM 95th %tile Q(veh)		0	-	-	-	-
		U				

	۶	→	•	•	←	4	4	†	/	/		4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	101	61	25	40	66	20	15	275	40	25	78	45
Future Volume (vph)	101	61	25	40	66	20	15	275	40	25	78	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.979			0.984			0.959	
Flt Protected		0.974			0.984			0.998			0.992	
Satd. Flow (prot)	0	1749	0	0	1764	0	0	1803	0	0	1734	0
Flt Permitted		0.974			0.984			0.998			0.992	
Satd. Flow (perm)	0	1749	0	0	1764	0	0	1803	0	0	1734	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.62	0.62	0.62	0.71	0.71	0.71	0.69	0.69	0.69	0.76	0.76	0.76
Heavy Vehicles (%)	0%	5%	17%	6%	2%	5%	8%	3%	5%	9%	4%	2%
Adj. Flow (vph)	163	98	40	56	93	28	22	399	58	33	103	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	301	0	0	177	0	0	479	0	0	195	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilizati	ion 42.7%			IC	CU Level	of Service	Α					
Analysis Period (min) 15												

ntersection	
ntersection Delay, s/veh	20.7
ntersection LOS	С
tersection Delay, s/veh tersection LOS	20.7 C

Movement	EBL	EBI	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	101	61	25	40	66	20	15	275	40	25	78	45
Future Vol, veh/h	101	61	25	40	66	20	15	275	40	25	78	45
Peak Hour Factor	0.62	0.62	0.62	0.71	0.71	0.71	0.69	0.69	0.69	0.76	0.76	0.76
Heavy Vehicles, %	0	5	17	6	2	5	8	3	5	9	4	2
Mvmt Flow	163	98	40	56	93	28	22	399	58	33	103	59
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	17			13.4			28.8			13.2		
HCM LOS	С			В			D			В		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	5%	54%	32%	17%	
Vol Thru, %	83%	33%	52%	53%	
Vol Right, %	12%	13%	16%	30%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	330	187	126	148	
LT Vol	15	101	40	25	
Through Vol	275	61	66	78	
RT Vol	40	25	20	45	
Lane Flow Rate	478	302	177	195	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.799	0.543	0.337	0.354	
Departure Headway (Hd)	6.015	6.478	6.842	6.548	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Cap	603	555	524	547	
Service Time	4.065	4.535	4.909	4.615	
HCM Lane V/C Ratio	0.793	0.544	0.338	0.356	
HCM Control Delay	28.8	17	13.4	13.2	
HCM Lane LOS	D	С	В	В	
HCM 95th-tile Q	7.8	3.2	1.5	1.6	

	-	•	•	←	~	~
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	ĵ»			4	*	7
Traffic Volume (vph)	126	0	0	126	0	0
Future Volume (vph)	126	0	0	126	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	1863	1863
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	1863	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	0	0	137	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	137	0	0	137	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					

Area Type: Oth

Control Type: Unsignalized

Intersection Capacity Utilization 10.0%

ICU Level of Service A

Analysis Period (min) 15

Intersection									
Int Delay, s/veh	0								
		EDD	WDI	WDT	NDI	NDD			
	EBT	EBR	WBL	WBT	NBL	NBR			
Lane Configurations Traffic Vol, veh/h	1 26	٥	٥	र्स 126	<u>ች</u>	7			
Future Vol, veh/h	126	0	0	126	0	0			
Conflicting Peds, #/hr	0	0	0	0	0	0			
	Free	Free	Free	Free	Stop	Stop			
RT Channelized	-	None	-	None	Stop -	None			
Storage Length	_	-	_	-	0	0			
Veh in Median Storage,		_	_	0	0	-			
Grade, %	0	_	_	0	0	_			
Peak Hour Factor	92	92	92	92	92	92			
Heavy Vehicles, %	2	2	2	2	2	2			
Mymt Flow	137	0	0	137	0	0			
WWIIICIIOW	101	U	U	101	U	U			
	ajor1		Major2		Minor1				
Conflicting Flow All	0	0	137	0	274	137			
Stage 1	-	-	-	-	137	-			
Stage 2	-	-	-	-	137	-			
Critical Hdwy	-	-	4.12	-	6.42	6.22			
Critical Hdwy Stg 1	-	-	-	-	5.42	-			
Critical Hdwy Stg 2	-	-	-	-	5.42	-			
Follow-up Hdwy	-	-	2.218	-	3.518				
Pot Cap-1 Maneuver	-	-	1447	-	716	911			
Stage 1	-	-	-	-	890	-			
Stage 2	-	-	-	-	890	-			
Platoon blocked, %	-	-	1117	-	740	044			
Mov Cap-1 Maneuver	-	-	1447	-	716	911			
Mov Cap-2 Maneuver	-	-	-	-	716	-			
Stage 1	-	-	-	-	890	-			
Stage 2	-	-	-	-	890	-			
Approach	EB		WB		NB				
HCM Control Delay, s	0		0		0				
HCM LOS					A				
Minor Long/Major Marest		UDI ~1 N	JDI 20	EDT	EDD	WDI	WDT		
Minor Lane/Major Mvmt	ſ	NBLn11	NDL[12	EBT	EBR	WBL	WBT		
Capacity (veh/h)		-	-	-	-	1447	-		
HCM Central Delay (a)		-	-	-	-	-	-		
HCM Control Delay (s) HCM Lane LOS		0	0	-	-	0	-		
		Α	Α	-	-	A	-		
HCM 95th %tile Q(veh)		-	-	-	-	0	-		

Lanes, Volumes, Timings 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: MD

	۶	→	•	•	←	•	4	†	/	>	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	ሻ	^					*	4	7
Traffic Volume (vph)	0	511	172	131	537	0	0	0	0	131	1	172
Future Volume (vph)	0	511	172	131	537	0	0	0	0	131	1	172
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	0			100			0			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.890	0.850
Flt Protected				0.950						0.950	0.987	
Satd. Flow (prot)	0	3223	1455	1467	3343	0	0	0	0	1577	1237	1288
Flt Permitted				0.950		•	-	-		0.950	0.987	
Satd. Flow (perm)	0	3223	1455	1467	3343	0	0	0	0	1577	1237	1288
Right Turn on Red		0220	Yes			Yes	•	•	Yes			No
Satd. Flow (RTOR)			198									
Link Speed (mph)		45	100		35			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			17.8			8.5			11.3	
Peak Hour Factor	0.87	0.87	0.87	0.91	0.91	0.91	0.88	0.88	0.88	0.90	0.90	0.90
Heavy Vehicles (%)	0%	12%	11%	23%	8%	0%	0%	0%	0%	16%	0%	31%
Adj. Flow (vph)	0	587	198	144	590	0	0	0	0	146	1	191
Shared Lane Traffic (%)	U	001	100	1-1-1	000	U	U	U	0	20%	•	43%
Lane Group Flow (vph)	0	587	198	144	590	0	0	0	0	117	112	109
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)	Loit	12	rtigitt	LOIL	24	ragin	Loit	14	ragin	Loit	14	ragin
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	15	1.00	9	15	1.00	9	15	1.00	9	15	0.50	9
Turn Type	10	NA	Perm	Prot	NA	9	10		J	Split	NA	Prot
Protected Phases		2	1 Cilli	1	12					4	4	4
Permitted Phases			2		1 2					7	7	7
Detector Phase		2	2	1	12					4	4	4
Switch Phase		2	2		1 2					7	7	7
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		30.0	30.0	20.0						25.0	25.0	25.0
Total Split (%)		40.0%	40.0%	26.7%						33.3%	33.3%	33.3%
Maximum Green (s)		24.5	24.5	16.0						19.5	19.5	19.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						2.0	2.0	2.0
()		0.0	0.0	0.0						0.0	0.0	0.0
Lost Time Adjust (s)		5.5	5.5	4.0						5.5	5.5	5.5
Total Lost Time (s)										5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		0.0	0.0	2.0						2.0	2.0	2.0
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)

Timing Plan: MD

ı

	•	-	•	•	•	•	1	T		-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		33.7	33.7	13.6	52.8					12.7	12.7	12.7
Actuated g/C Ratio		0.45	0.45	0.18	0.70					0.17	0.17	0.17
v/c Ratio		0.41	0.26	0.54	0.25					0.44	0.54	0.50
Control Delay		16.8	4.0	29.0	0.8					32.2	37.2	35.4
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		16.8	4.0	29.0	8.0					32.2	37.2	35.4
LOS		В	Α	С	Α					С	D	D
Approach Delay		13.5			6.4						34.9	
Approach LOS		В			Α						С	
Queue Length 50th (ft)		93	0	32	0					52	53	49
Queue Length 95th (ft)		159	38	64	1					92	97	90
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		1448	762	322	2332					410	321	334
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		0.41	0.26	0.45	0.25					0.29	0.35	0.33

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 13 (17%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 14.6 Intersection LOS: B
Intersection Capacity Utilization 43.0% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: MD

	۶	-	•	•	←	•	4	†	/	>	Ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	Ť	† †			^	7	¥	4	7			
Traffic Volume (vph)	169	473	0	0	510	144	158	Ö	127	0	0	0
Future Volume (vph)	169	473	0	0	510	144	158	0	127	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			0			100			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950						0.950	0.950				
Satd. Flow (prot)	1433	3343	0	0	3282	1269	1604	1504	1551	0	0	0
Flt Permitted	0.950		-	-			0.950	0.950				•
Satd. Flow (perm)	1433	3343	0	0	3282	1269	1604	1504	1551	0	0	0
Right Turn on Red		00.0	Yes	•	0202	Yes			No	•		Yes
Satd. Flow (RTOR)						158			1.0			. 00
Link Speed (mph)		35			35	100		30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			14.9			15.5			11.1	
Peak Hour Factor	0.95	0.95	0.95	0.91	0.91	0.91	0.90	0.90	0.90	0.88	0.88	0.88
Heavy Vehicles (%)	26%	8%	0%	0%	10%	23%	14%	0%	18%	0%	0%	0%
Adj. Flow (vph)	178	498	0	0	560	158	176	0	141	0	0	0
Shared Lane Traffic (%)	170	450	0	U	000	100	50%	U	171	· ·	U	U
Lane Group Flow (vph)	178	498	0	0	560	158	88	88	141	0	0	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)	Loit	24	rugiit	Loit	24	rugiit	Loit	14	rugiit	Loit	14	ragne
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15	1.00	9	15	1.00	9	15	1.00	9	15	0.00	9
Turn Type	Prot	NA	· ·	10	NA	Prot	Split	NA	Prot	10		
Protected Phases	1	1.2			2	2	4	4	4			
Permitted Phases	•				_	_	•	•	•			
Detector Phase	1	12			2	2	4	4	4			
Switch Phase	•	. –			_	_	•	•	•			
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	20.0				31.0	31.0	24.0	24.0	24.0			
Total Split (%)	26.7%				41.3%	41.3%	32.0%	32.0%	32.0%			
Maximum Green (s)	16.0				25.5	25.5	19.0	19.0	19.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag	3.0	3.0	J.U			
Lead-Lag Optimize?	Leau				Lay	Lay						
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			
A GUILLIG EVICUSION (2)	3.0				0.2	0.2	3.0	3.0	3.0			

Timing Plan: MD

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)

	•	-	*	•	•	•	1	Ť		-	ŧ	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	14.5	53.4			33.4	33.4	12.6	12.6	12.6			
Actuated g/C Ratio	0.19	0.71			0.45	0.45	0.17	0.17	0.17			
v/c Ratio	0.64	0.21			0.38	0.24	0.33	0.35	0.54			
Control Delay	28.4	0.9			10.4	1.8	29.6	30.3	35.7			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	28.4	0.9			10.4	1.8	29.6	30.3	35.7			
LOS	С	Α			В	Α	С	С	D			
Approach Delay		8.1			8.5			32.5				
Approach LOS		Α			Α			С				
Queue Length 50th (ft)	35	0			38	1	38	38	61			
Queue Length 95th (ft)	54	1			71	8	73	74	105			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	319	2342			1463	653	406	381	392			
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	0.21			0.38	0.24	0.22	0.23	0.36			

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 51 (68%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 50

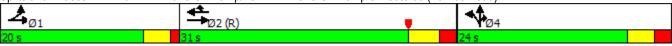
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 12.8 Intersection LOS: B
Intersection Capacity Utilization 43.0% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



Lanes, Volumes, Timings
3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)

	۶	→	•	•	-	•	1	†	/	/	Ţ	</th
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	∱ }		*	^	7	*	f)			ર્ન	7
Traffic Volume (vph)	88	505	7	1	532	20	5	0	2	23	0	117
Future Volume (vph)	88	505	7	1	532	20	5	0	2	23	0	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			0			130		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998				0.850		0.850				0.850
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1410	3364	0	1796	3295	1530	1404	1041	0	0	1480	1282
Flt Permitted	0.950			0.950			0.870				0.870	
Satd. Flow (perm)	1410	3364	0	1796	3295	1530	1286	1041	0	0	1355	1282
Right Turn on Red			Yes			Yes			Yes	-		Yes
Satd. Flow (RTOR)		3				106		428				130
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.44	0.44	0.44	0.90	0.90	0.90
Heavy Vehicles (%)	28%	7%	14%	0%	9%	5%	20%	0%	50%	22%	0%	26%
Adj. Flow (vph)	95	543	8	1	578	22	11	0	5	26	0	130
Shared Lane Traffic (%)		0.0		•	0.0							100
Lane Group Flow (vph)	95	551	0	1	578	22	11	5	0	0	26	130
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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					. •						. •	
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		12	15		12	15		12	15		12
Turn Type	Prot	NA	<u> </u>	Prot	NA	Prot	Perm	NA	<u> </u>	Perm	NA	pm+ov
Protected Phases	1	12		3	23	23		4			4	1
Permitted Phases	·						4			4	•	4
Detector Phase	1	12		3	23	2 3	4	4		4	4	1
Switch Phase	<u> </u>						•				•	
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	20.0			12.0			15.0	15.0		15.0	15.0	20.0
Total Split (%)	26.7%			16.0%			20.0%	20.0%		20.0%	20.0%	26.7%
Maximum Green (s)	14.6			6.7			10.1	10.1		10.1	10.1	14.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0		1.0	0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?	Leau			Leau			Lay	Lay		Lay	Lay	Leau
Leau-Lay Optimize?												

Lane Group	Ø2	
	X)Z	
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	2	
Permitted Phases		
Detector Phase		
Switch Phase		
	15.0	
Minimum Initial (s)		
Minimum Split (s)	21.1	
Total Split (s)	28.0	
Total Split (%)	37%	
Maximum Green (s)	21.9	
Yellow Time (s)	4.8	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?		

	•	-	•	•	←	•	1	†	~	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	10.7	51.2		5.5	45.2	45.2	7.4	7.4			7.4	18.3
Actuated g/C Ratio	0.14	0.68		0.07	0.60	0.60	0.10	0.10			0.10	0.24
v/c Ratio	0.47	0.24		0.01	0.29	0.02	0.09	0.01			0.19	0.32
Control Delay	40.9	3.2		32.0	9.7	0.1	31.8	0.0			34.3	5.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	40.9	3.2		32.0	9.7	0.1	31.8	0.0			34.3	5.4
LOS	D	Α		С	Α	Α	С	Α			С	Α
Approach Delay		8.7			9.4			21.9			10.3	
Approach LOS		Α			Α			С			В	
Queue Length 50th (ft)	39	31		0	72	0	5	0			11	0
Queue Length 95th (ft)	84	35		5	128	0	9	0			34	31
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	279	2250		160	2040	987	173	510			182	474
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	0.34	0.24		0.01	0.28	0.02	0.06	0.01			0.14	0.27

Intersection Summary

Area Type: Other

Cycle Length: 75
Actuated Cycle Length: 75

Offset: 42 (56%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 55

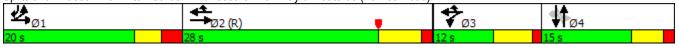
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.47

Intersection Signal Delay: 9.3 Intersection LOS: A Intersection Capacity Utilization 41.5% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø2
Vehicle Extension (s)	2.5
Recall Mode	C-Min
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

	٠	→	•	•	—	4	•	†	/	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ħ	f)		ň	f)		ħ	†	7	Ţ	£	
Traffic Volume (vph)	2	0	8	0	0	0	5	103	0	0	132	1
Future Volume (vph)	2	0	8	0	0	0	5	103	0	0	132	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	0			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850									0.999	
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1805	1615	0	1900	1900	0	1805	1520	1900	1900	1485	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1805	1615	0	1900	1900	0	1805	1520	1900	1900	1485	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.63	0.63	0.63	0.88	0.88	0.88	0.81	0.81	0.81	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	28%	0%
Adj. Flow (vph)	3	0	13	0	0	0	6	127	0	0	143	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	13	0	0	0	0	6	127	0	0	144	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24			30			12			12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											

Area Type:

Control Type: Unsignalized

Intersection Capacity Utilization 17.0%

Analysis Period (min) 15

ICU Level of Service A

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ĵ.		*	f)		ሻ	1	7	*	f)	
Traffic Vol, veh/h	2	0	8	0	0	0	5	103	0	0	132	1
Future Vol, veh/h	2	0	8	0	0	0	5	103	0	0	132	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	170	-	-	140	-	0	115	-	-
Veh in Median Storage,	# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	88	88	88	81	81	81	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	25	0	0	28	0
Mvmt Flow	3	0	13	0	0	0	6	127	0	0	143	1
Major/Minor M	linor2			Minor1		<u> </u>	Major1		<u> </u>	Major2		
Conflicting Flow All	283	283	144	289	283	127	144	0	0	127	0	0
Stage 1	144	144	-	139	139	-	-	-	-	-	-	-
Stage 2	139	139	-	150	144	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	673	629	909	667	629	929	1451	-	-	1472	-	-
Stage 1	864	782	-	869	785	-	-	-	-	-	-	-
Stage 2	869	785	-	857	782	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	671	626	909	656	626	929	1451	-	-	1472	-	-
Mov Cap-2 Maneuver	671	626	-	656	626	-	-	-	-	-	-	-
Stage 1	861	782	-	866	782	-	-	-	-	-	-	-
Stage 2	865	782	-	845	782	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	9.3			0			0.3			0		
HCM LOS	Α			A								
Minor Lane/Major Mvmt		NBL	NBT	NBR I	EBLn1	EBLn2V	VBLn1V	VBLn2	SBL	SBT	SBR	
Capacity (veh/h)		1451	_	-	671	909	-	-	1472	-	_	
HCM Lane V/C Ratio		0.004	-	_	0.005		-	-	-	-	-	
HCM Control Delay (s)		7.5	-	-	10.4	9	0	0	0	-	_	
HCM Lane LOS		Α	-	-	В	A	A	A	A	-	-	
HCM 95th %tile Q(veh)		0	-	-	0	0	-	-	0	-	-	

5: Josheph Carini F	_						Timing Plan: MD
<u> </u>	۶	•	•	†	↓	1	
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	W			4	î.		
Traffic Volume (vph)	3	30	14	91	103	3	
Future Volume (vph)	3	30	14	91	103	3	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	0.876				0.996		
Flt Protected	0.996			0.993			
Satd. Flow (prot)	1458	0	0	1674	1681	0	
Flt Permitted	0.996			0.993			
Satd. Flow (perm)	1458	0	0	1674	1681	0	
Link Speed (mph)	30			30	30		
Link Distance (ft)	609			478	1218		
Travel Time (s)	13.8			10.9	27.7		
Peak Hour Factor	0.69	0.69	0.83	0.83	0.65	0.65	
Heavy Vehicles (%)	0%	15%	11%	13%	13%	0%	
Adj. Flow (vph)	4	43	17	110	158	5	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	47	0	0	127	163	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Right	Right	Left	Right	
Median Width(ft)	12			12	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15	9	15			9	
Sign Control	Stop			Free	Free		
Intersection Summary							
Area Type:	Other			•			
Control Type: Unsignalized							
Intersection Capacity Utiliza	tion 22.2%			IC	CU Level o	of Service	A
Analysis Period (min) 15							
- ,							

No Build

Intersection						
Int Delay, s/veh	1.7					
		EDD	ND	NDT	OPT	000
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Ą			ની	4	
Traffic Vol, veh/h	3	30	14	91	103	3
Future Vol, veh/h	3	30	14	91	103	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,	, # 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	83	83	65	65
Heavy Vehicles, %	0	15	11	13	13	0
Mvmt Flow	4	43	17	110	158	5
,				_		
	/linor2		Major1		//ajor2	
Conflicting Flow All	305	161	163	0	-	0
Stage 1	161	-	-	-	-	-
Stage 2	144	-	-	-	-	-
Critical Hdwy	6.4	6.35	4.21	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	_	-	-	_	-
Follow-up Hdwy	3.5	3.435	2.299	-	-	-
Pot Cap-1 Maneuver	691	851	1363	-	-	-
Stage 1	873	-	-	-	_	-
Stage 2	888	_	_	_	-	_
Platoon blocked, %				_	_	_
Mov Cap-1 Maneuver	682	851	1363	_	_	_
Mov Cap-2 Maneuver	682	-	-	_	_	_
Stage 1	862				_	
Stage 2	888	_	_	-	_	-
Staye 2	000	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	9.6		1		0	
HCM LOS	А					
	, ,					
Minor Lane/Major Mvm	t	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1363	-		-	-
HCM Lane V/C Ratio		0.012	-	0.057	-	-
HCM Control Delay (s)		7.7	0	9.6	-	-
HCM Lane LOS		Α	Α	Α	-	-
HCM 95th %tile Q(veh)		0	-	0.2	-	-
,, ,						

	•	•	•	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	1	î,	
Traffic Volume (vph)	2	3	2	92	103	0
Future Volume (vph)	2	3	2	92	103	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	0		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1583	1805	1681	1652	0
FIt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1583	1805	1681	1652	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.38	0.38	0.83	0.83	0.66	0.66
Heavy Vehicles (%)	0%	2%	0%	13%	15%	0%
Adj. Flow (vph)	5	8	2	111	156	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	8	2	111	156	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary	·					
	Other					
Control Type: Unsignalized	. ,					
Intersection Capacity Utilizat	tion 15.4%			IC	ULevelo	of Service A
Analysis David (vis) 45	10.770			10	O LOVOI (J. JOI VIOC /

 $\label{thm:companies} G:\label{thm:companies} $$G:\label{thm:companies}$$ G:\label{thm:companies} $$BL\ Companies $$$

Analysis Period (min) 15

Intersection							
Int Delay, s/veh	0.5						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	J
Lane Configurations	ሻ	7	ሻ	<u> </u>	<u>₽</u>	ODIT	
Traffic Vol, veh/h	2	3	2	92	103	0	
Future Vol, veh/h	2	3	2	92	103	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	0	0	100	-	_	-	
Veh in Median Storage,		-	-	0	0	-	
Grade, %	0	_	_	0	0	_	
Peak Hour Factor	38	38	83	83	66	66	
Heavy Vehicles, %	0	2	0	13	15	0	
Mymt Flow	5	8	2	111	156	0	
WWITE I IOW	0	U		111	100	U	
	1inor2		Major1		Major2		
Conflicting Flow All	271	156	156	0	-	0	
Stage 1	156	-	-	-	-	-	
Stage 2	115	-	-	-	-	-	
Critical Hdwy	6.4	6.22	4.1	-	-	-	
Critical Hdwy Stg 1	5.4	-	-	-	-	-	
Critical Hdwy Stg 2	5.4	-	-	-	-	-	
Follow-up Hdwy	3.5	3.318	2.2	-	-	-	
Pot Cap-1 Maneuver	723	890	1436	-	-	-	
Stage 1	877	-	-	-	-	-	
Stage 2	915	-	-	-	-	-	
Platoon blocked, %				-	-	-	
Mov Cap-1 Maneuver	722	890	1436	-	-	-	
Mov Cap-2 Maneuver	722	-	-	-	-	-	
Stage 1	876	-	-	-	-	-	
Stage 2	915	-	_	-	-	-	
J. J. J.							
A	ED		ND		OD		
Approach	EB		NB		SB		
HCM Control Delay, s	9.5		0.2		0		
HCM LOS	Α						
Minor Lane/Major Mvmt		NBL	NBT	EBLn1 l	EBLn2	SBT	
Capacity (veh/h)		1436	_	722	890	-	
HCM Lane V/C Ratio		0.002	_	0.007		_	
HCM Control Delay (s)		7.5	_	10	9.1	-	
HCM Lane LOS		A	-	В	A	_	
HCM 95th %tile Q(veh)		0	-	0	0	-	
		U		0	U		

	۶	→	•	•	←	1	4	†	/	\		4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	31	27	11	8	19	12	7	81	6	13	84	37
Future Volume (vph)	31	27	11	8	19	12	7	81	6	13	84	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.958			0.991			0.962	
Flt Protected		0.978			0.990			0.996			0.995	
Satd. Flow (prot)	0	1741	0	0	1632	0	0	1477	0	0	1461	0
Flt Permitted		0.978			0.990			0.996			0.995	
Satd. Flow (perm)	0	1741	0	0	1632	0	0	1477	0	0	1461	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.86	0.86	0.86	0.75	0.75	0.75	0.85	0.85	0.85	0.89	0.89	0.89
Heavy Vehicles (%)	3%	4%	9%	13%	16%	0%	0%	30%	17%	0%	38%	3%
Adj. Flow (vph)	36	31	13	11	25	16	8	95	7	15	94	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	80	0	0	52	0	0	110	0	0	151	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
	Other											
Control Type: Unsignalized												
Intersection Capacity Utilizati	ion 24.5%			IC	CU Level of	of Service	Α					
Analysis Period (min) 15												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	31	27	11	8	19	12	7	81	6	13	84	37
Future Vol, veh/h	31	27	11	8	19	12	7	81	6	13	84	37
Peak Hour Factor	0.86	0.86	0.86	0.75	0.75	0.75	0.85	0.85	0.85	0.89	0.89	0.89
Heavy Vehicles, %	3	4	9	13	16	0	0	30	17	0	38	3
Mvmt Flow	36	31	13	11	25	16	8	95	7	15	94	42
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	8.1			8			8			8.1		
HCM LOS	Α			Α			Α			Α		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	7%	45%	21%	10%	
Vol Thru, %	86%	39%	49%	63%	
Vol Right, %	6%	16%	31%	28%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	94	69	39	134	
LT Vol	7	31	8	13	
Through Vol	81	27	19	84	
RT Vol	6	11	12	37	
Lane Flow Rate	111	80	52	151	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.134	0.102	0.067	0.175	
Departure Headway (Hd)	4.348	4.582	4.648	4.188	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Сар	827	784	772	860	
Service Time	2.363	2.601	2.668	2.202	
HCM Lane V/C Ratio	0.134	0.102	0.067	0.176	
HCM Control Delay	8	8.1	8	8.1	
HCM Lane LOS	Α	Α	Α	Α	
HCM 95th-tile Q	0.5	0.3	0.2	0.6	

	-	•	•	←	1	~
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	1>			4	ሻ	7
Traffic Volume (vph)	46	0	0	39	0	0
Future Volume (vph)	46	0	0	39	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	1863	1863
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	1863	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	0	0	42	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	0	0	42	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type: (Other					

ICU Level of Service A

Intersection Capacity Utilization 6.7% Analysis Period (min) 15

Control Type: Unsignalized

Intersection						
Int Delay, s/veh	0					
		EDE	MD	MADE	ND:	NDD
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	f)			4	1	7
Traffic Vol, veh/h	46	0	0	39	0	0
Future Vol, veh/h	46	0	0	39	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
•	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage,	# 0	-	-	0	0	-
Grade, %	0	-	_	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	0	0	42	0	0
WWITTIOW	00	U	U	72	U	U
Major/Minor M	ajor1	<u> </u>	Major2	ا	Minor1	
Conflicting Flow All	0	0	50	0	92	50
Stage 1	-	-	_	-	50	-
Stage 2	_	_	_	_	42	_
Critical Hdwy	_	_	4.12	_	6.42	6.22
Critical Hdwy Stg 1	_	_		_	5.42	- 0.22
Critical Hdwy Stg 2	-	_	_	_	5.42	-
		-	2.218		3.518	2 210
Follow-up Hdwy	-	-				
Pot Cap-1 Maneuver	-	-	1557	-	908	1018
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	980	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1557	-	908	1018
Mov Cap-2 Maneuver	-	-	-	-	908	-
Stage 1	-	-	-	-	972	-
Stage 2	-	_	-	_	980	-
U -						
			14.5			
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS					Α	
Minor Lane/Major Mvmt	N	NBLn11	VIRI n2	EBT	EBR	WBL
	ľ	NDLIIII	NDLIIZ	EDI		
Capacity (veh/h)		-	-	-	-	1557
HCM Lane V/C Ratio		-	-	-	-	-
HCM Control Delay (s)		0	0	-	-	0
HCM Lane LOS		Α	Α	-	-	Α
HCM 95th %tile Q(veh)		-	-	-	-	0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: PM

	۶	-	•	•	•	•	•	†	/	-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	ሻ	^					ሻ	4	7
Traffic Volume (vph)	0	1020	480	293	843	0	0	0	0	242	5	338
Future Volume (vph)	0	1020	480	293	843	0	0	0	0	242	5	338
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	0			100			0			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.884	0.850
Flt Protected				0.950						0.950	0.990	
Satd. Flow (prot)	0	2843	1615	1805	2865	0	0	0	0	1829	1564	1688
FIt Permitted				0.950						0.950	0.990	
Satd. Flow (perm)	0	2843	1615	1805	2865	0	0	0	0	1829	1564	1688
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			539									
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			20.8			8.5			11.3	
Peak Hour Factor	0.89	0.89	0.89	0.84	0.84	0.84	0.88	0.88	0.88	0.85	0.85	0.85
Heavy Vehicles (%)	15%	27%	0%	0%	26%	9%	12%	0%	11%	0%	0%	0%
Adj. Flow (vph)	0	1146	539	349	1004	0	0	0	0	285	6	398
Shared Lane Traffic (%)										16%		44%
Lane Group Flow (vph)	0	1146	539	349	1004	0	0	0	0	239	227	223
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	•		24			14	•		14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Prot	NA					Split	NA	Prot
Protected Phases		2		1	12					4	4	4
Permitted Phases			2									
Detector Phase		2	2	1	12					4	4	4
Switch Phase												
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		37.0	37.0	23.0						20.0	20.0	20.0
Total Split (%)		46.3%	46.3%	28.8%						25.0%	25.0%	25.0%
Maximum Green (s)		31.5	31.5	19.0						14.5	14.5	14.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)

Timing Plan: PM

ı

Lane Group EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBL Recall Mode C-Max C-Max None None <t< th=""><th>*</th></t<>	*
Act Effct Green (s) 32.3 32.3 18.8 56.6 13.9 13 Actuated g/C Ratio 0.40 0.40 0.24 0.71 0.17 0.1 v/c Ratio 1.00 0.55 0.82 0.50 0.75 0.8 Control Delay 52.5 4.1 49.3 1.1 47.7 59	T SBR
Actuated g/C Ratio 0.40 0.40 0.24 0.71 0.17 0.1 v/c Ratio 1.00 0.55 0.82 0.50 0.75 0.8 Control Delay 52.5 4.1 49.3 1.1 47.7 59	e None
v/c Ratio 1.00 0.55 0.82 0.50 0.75 0.8 Control Delay 52.5 4.1 49.3 1.1 47.7 59	9 13.9
Control Delay 52.5 4.1 49.3 1.1 47.7 59	7 0.17
,	4 0.76
Ougus Delay $0.0 - 0.0 - 0.0 = 0.0$	0 49.8
Queue Delay 0.0 0.0 0.0 0.0 0.0	0.0
Total Delay 52.5 4.1 49.3 1.1 47.7 59	0 49.8
	E D
Approach Delay 37.0 13.5 52	1
Approach LOS D B	D
Queue Length 50th (ft) ~310 0 149 6 120 12	
Queue Length 95th (ft) #441 56 m157 m6 #204 #22	
Internal Link Dist (ft) 268 833 296 41	
Turn Bay Length (ft) 830 240	240
Base Capacity (vph) 1147 973 428 2004 331 28	3 305
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 1.00 0.55 0.82 0.50 0.72 0.8	0 0.73

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 1 (1%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 31.3 Intersection LOS: C
Intersection Capacity Utilization 68.7% ICU Level of Service C

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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: PM

	۶	→	•	•	←	•	4	†	~	/	Ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	^			^	7	7	ર્ન	7			
Traffic Volume (vph)	449	813	0	0	848	233	288	5	293	0	0	0
Future Volume (vph)	449	813	0	0	848	233	288	5	293	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			0			100			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950						0.950	0.954				
Satd. Flow (prot)	1805	2756	0	0	2865	1561	1829	1722	1830	0	0	0
Flt Permitted	0.950						0.950	0.954		•		•
Satd. Flow (perm)	1805	2756	0	0	2865	1561	1829	1722	1830	0	0	0
Right Turn on Red			Yes			Yes	.020		No			Yes
Satd. Flow (RTOR)						243						
Link Speed (mph)		35			40	2.10		30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			13.0			15.5			11.1	
Peak Hour Factor	0.87	0.87	0.87	0.96	0.96	0.96	0.85	0.85	0.85	0.88	0.88	0.88
Heavy Vehicles (%)	0%	31%	14%	11%	26%	0%	0%	0%	0%	8%	0%	11%
Adj. Flow (vph)	516	934	0	0	883	243	339	6	345	0	0	0
Shared Lane Traffic (%)	310	JU T	U	U	000	240	49%	U	040	U	U	U
Lane Group Flow (vph)	516	934	0	0	883	243	173	172	345	0	0	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)	Loit	24	ragin	Loit	24	ragne	Loit	14	rugiit	Loit	14	ragne
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15	1.00	9	15	1.00	9	15	1.00	9	15	0.00	9
Turn Type	Prot	NA		10	NA	Prot	Split	NA	Prot			
Protected Phases	1	1.2			2	2	4	4	4			
Permitted Phases	•	• -			_	_	•	•	•			
Detector Phase	1	12			2	2	4	4	4			
Switch Phase	•				_	_	•	•	•			
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	32.0				27.0	27.0	21.0	21.0	21.0			
Total Split (%)	40.0%				33.8%	33.8%	26.3%	26.3%	26.3%			
Maximum Green (s)	28.0				21.5	21.5	16.0	16.0	16.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag	3.0	0.0	0.0			
Lead-Lag Optimize?	Leau				Lay	Lay						
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			
VEHICLE EXCELLISION (2)	3.0				0.2	0.2	3.0	3.0	3.0			

Lane Group

Recall Mode

v/c Ratio

Control Delay

Queue Delay

Approach Delay

Approach LOS

Queue Length 50th (ft)

Queue Length 95th (ft)

Internal Link Dist (ft)

Turn Bay Length (ft)

Base Capacity (vph)

Starvation Cap Reductn

Spillback Cap Reductn

Storage Cap Reductn

Reduced v/c Ratio

Total Delay

LOS

Act Effct Green (s)

Actuated g/C Ratio

Timing Plan: PM

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)

EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL **SBT SBR** None C-Max C-Max None None None 27.1 55.0 22.4 22.4 16.0 16.0 16.0 0.34 0.69 0.28 0.28 0.20 0.20 0.20 0.84 0.49 0.40 0.47 0.50 0.94 1.10 22.5 0.4 85.7 33.3 34.2 68.8 7.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 34.2 22.5 0.4 85.7 7.0 33.3 68.8 Α С С F Α С Ε 8.3 68.7 51.3 Α Ε D 97 1 ~262 12 81 81 171 m#345 m111 m1 m27 134 134 #301 409 833 684 603

480

612

0

0

0

0.40

801

0

0

0

1.10

180

365

0

0

0

0.47

180

366

0

0

0

0.94

344

0

0

0

0.50

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 39 (49%), Referenced to phase 2:EBWB, Start of Yellow

830

631

0

0

0

0.82

1894

0

0

0

0.49

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.10

Intersection Signal Delay: 38.2
Intersection Capacity Utilization 68.7%

Intersection LOS: D
ICU Level of Service C

Analysis Period (min) 15

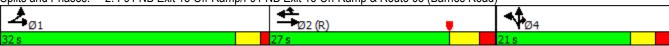
Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



Lanes, Volumes, Timings 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)

	۶	-	•	•	—	•	•	†	~	/	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	∱ }		ሻ	^	7	ሻ	f)			ર્ન	7
Traffic Volume (vph)	81	1010	15	5	803	40	10	20	5	126	40	268
Future Volume (vph)	81	1010	15	5	803	40	10	20	5	126	40	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			0			130		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998				0.850		0.969				0.850
Flt Protected	0.950			0.950			0.950				0.963	
Satd. Flow (prot)	1719	2566	0	1796	2763	1575	1652	1780	0	0	1763	1429
Flt Permitted	0.950			0.950			0.485				0.756	
Satd. Flow (perm)	1719	2566	0	1796	2763	1575	843	1780	0	0	1384	1429
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				100		7				115
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.95	0.95	0.95	0.86	0.86	0.86	0.75	0.75	0.75	0.82	0.82	0.82
Heavy Vehicles (%)	5%	41%	1%	0%	30%	2%	2%	0%	0%	5%	0%	13%
Adj. Flow (vph)	85	1063	16	6	934	47	13	27	7	154	49	327
Shared Lane Traffic (%)												
Lane Group Flow (vph)	85	1079	0	6	934	47	13	34	0	0	203	327
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	, i		10			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		12	15		12	15		12	15		12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm	NA	pm+ov
Protected Phases	1	12		3	23	23		4			4	1
Permitted Phases							4			4		4
Detector Phase	1	12		3	23	23	4	4		4	4	1
Switch Phase												
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	22.0			11.0			22.0	22.0		22.0	22.0	22.0
Total Split (%)	27.5%			13.8%			27.5%	27.5%		27.5%	27.5%	27.5%
Maximum Green (s)	16.6			5.7			17.1	17.1		17.1	17.1	16.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0			0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?	Load						_49	Lug		_ay	Lag	

Lane Group	Ø2	
Lane Configurations	WL.	
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type	^	
Protected Phases	2	
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	15.0	
Minimum Split (s)	21.1	
Total Split (s)	25.0	
Total Split (%)	31%	
Maximum Green (s)	18.9	
Yellow Time (s)	4.8	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?		

3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)

	•	-	•	•	•	•	1	†	1	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	18.2	44.0		5.7	30.7	30.7	14.7	14.7			14.7	37.8
Actuated g/C Ratio	0.23	0.55		0.07	0.38	0.38	0.18	0.18			0.18	0.47
v/c Ratio	0.22	0.76		0.05	0.88	0.07	0.08	0.10			0.80	0.44
Control Delay	33.0	13.0		35.6	35.2	0.6	26.9	22.5			54.3	10.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	33.0	13.0		35.6	35.2	0.6	26.9	22.5			54.3	10.8
LOS	С	В		D	D	Α	С	С			D	В
Approach Delay		14.5			33.5			23.7			27.4	
Approach LOS		В			С			С			С	
Queue Length 50th (ft)	37	68		3	227	0	5	11			95	62
Queue Length 95th (ft)	m67	m80		14	#320	2	17	28			148	105
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	391	1411		127	1058	665	180	385			295	736
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	0.22	0.76		0.05	0.88	0.07	0.07	0.09			0.69	0.44

Intersection Summary

Area Type: Other

Cycle Length: 80 Actuated Cycle Length: 80

Offset: 29 (36%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88 Intersection Signal Delay: 24.0 Intersection Capacity Utilization 61.3%

Intersection LOS: C
ICU Level of Service B

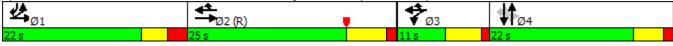
Analysis Period (min) 15

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: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø2	
Vehicle Extension (s)	2.5	
Recall Mode	C-Min	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

4: Research Parkway & Food Bank Driv/Site Drive 1

	۶	→	•	•	←	•	•	†	/	>	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	ĵ.		Ĭ	f)		7	†	7	ň	£	
Traffic Volume (vph)	5	0	15	0	0	0	5	136	0	0	419	0
Future Volume (vph)	5	0	15	0	0	0	5	136	0	0	419	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	0			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850										
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1805	1615	0	1900	1900	0	1805	1792	1900	1900	1863	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1805	1615	0	1900	1900	0	1805	1792	1900	1900	1863	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.48	0.48	0.48	0.88	0.88	0.88	0.59	0.59	0.59	0.60	0.60	0.60
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%	2%	0%
Adj. Flow (vph)	10	0	31	0	0	0	8	231	0	0	698	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	31	0	0	0	0	8	231	0	0	698	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24			30			12			12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												

Intersection Summary

Area Type:

Control Type: Unsignalized

Intersection Capacity Utilization 32.1%

Other

ICU Level of Service A

Analysis Period (min) 15

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		î,		*	f)		ሻ		7	ሻ	ĵ.	
Traffic Vol, veh/h	5	0	15	0	0	0	5	136	0	0	419	0
Future Vol, veh/h	5	0	15	0	0	0	5	136	0	0	419	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	170	-	-	140	-	0	115	-	-
Veh in Median Storage,	# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	48	48	48	88	88	88	59	59	59	60	60	60
Heavy Vehicles, %	0	0	0	0	0	0	0	6	0	0	2	0
Mvmt Flow	10	0	31	0	0	0	8	231	0	0	698	0
Major/Minor N	1inor2		ı	Minor1		N	/lajor1		N	Major2		
Conflicting Flow All	945	945	698	961	945	231	698	0	0	231	0	0
Stage 1	698	698	-	247	247	-	-	-	-	-	-	-
Stage 2	247	247	-	714	698	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	244	264	444	238	264	813	908	-	-	1349	-	-
Stage 1	434	445	-	761	706	-	-	-	-	-	-	-
Stage 2	761	706	-	425	445	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	242	262	444	220	262	813	908	-	-	1349	-	-
Mov Cap-2 Maneuver	242	262	-	220	262	-	-	-	-	-	-	-
Stage 1	430	445	-	754	700	-	-	-	-	-	-	-
Stage 2	754	700	-	395	445	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	15.4			0			0.3			0		
HCM LOS	С			Α								
Minor Lane/Major Mvmt		NBL	NBT	NBR I	EBLn1	EBLn2V	/BLn1V	VBLn2	SBL	SBT	SBR	
Capacity (veh/h)		908		-	242	444		-	1349	-	-	
HCM Lane V/C Ratio		0.009	-	-	0.043	0.07	-	-	-	-	-	
HCM Control Delay (s)		9	-	-	20.5	13.7	0	0	0	-	-	
HCM Lane LOS		Α	-	-	С	В	Α	Α	Α	-	-	
HCM 95th %tile Q(veh)		0	-	-	0.1	0.2	-	-	0	-	-	

	۶	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			ની	1>	
Traffic Volume (vph)	3	63	9	132	356	0
Future Volume (vph)	3	63	9	132	356	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.871					
Flt Protected	0.998			0.997		
Satd. Flow (prot)	1618	0	0	1661	1696	0
Flt Permitted	0.998			0.997		
Satd. Flow (perm)	1618	0	0	1661	1696	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.55	0.55	0.90	0.90	0.80	0.80
Heavy Vehicles (%)	50%	0%	0%	15%	12%	0%
Adj. Flow (vph)	5	115	10	147	445	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	0	0	157	445	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12		_	12	0	_
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	tion 29.5%			IC	U Level o	of Service
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			4	f)	
Traffic Vol, veh/h	3	63	9	132	356	0
Future Vol, veh/h	3	63	9	132	356	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage	, # 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	55	55	90	90	80	80
Heavy Vehicles, %	50	0	0	15	12	0
Mvmt Flow	5	115	10	147	445	0
		_				
	Minor2		Major1		/lajor2	
Conflicting Flow All	612	445	445	0	-	0
Stage 1	445	-	-	-	-	-
Stage 2	167	-	-	-	-	-
Critical Hdwy	6.9	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	_	-	_	-
Follow-up Hdwy	3.95	3.3	2.2	_	-	-
Pot Cap-1 Maneuver	387	617	1126	_	_	_
Stage 1	556	-	-	_	_	_
Stage 2	759	_	_	_	_	_
Platoon blocked, %	100			_	_	_
Mov Cap-1 Maneuver	383	617	1126	_	_	_
Mov Cap-1 Maneuver	383	017		-	-	_
•		-	-			
Stage 1	550	-	-	-	-	-
Stage 2	759	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	12.5		0.5		0	
HCM LOS	В		0.0		•	
Minor Lane/Major Mvm	t	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1126	-	600	-	-
HCM Lane V/C Ratio		0.009	-	0.2	-	-
HCM Control Delay (s)		8.2	0	12.5	-	-
HCM Lane LOS		Α	Α	В	-	-
HCM 95th %tile Q(veh)		0	_	0.7	_	-
Julio Q(VOII)		•		J.1		

	•	•	•	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	†	f)	
Traffic Volume (vph)	3	13	3	132	343	0
Future Volume (vph)	3	13	3	132	343	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	0		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	1805	1638	1696	0
FIt Permitted /	0.950		0.950			
Satd. Flow (perm)	1805	1615	1805	1638	1696	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.42	0.42	0.90	0.90	0.79	0.79
Heavy Vehicles (%)	0%	0%	0%	16%	12%	0%
Adj. Flow (vph)	7	31	3	147	434	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	31	3	147	434	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop	•		Free	Free	
Intersection Summary						
7 I	Other					
Control Type: Unsignalized	_					
Intersection Capacity Utilizat	tion 28.1%			IC	U Level c	of Service A
Analysis Period (min) 15						

 $\label{thm:companies} G:\label{thm:companies} $$G:\label{thm:companies}$$ G:\label{thm:companies} $$BL\ Companies $$$

Intersection							
Int Delay, s/veh	0.7						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	LDL Š	T T	NDL	<u>ND1</u>	3B1 ♣	אומט	
Traffic Vol, veh/h	3	13	3	132	343	0	
Future Vol, veh/h	3	13	3	132	343	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-		-	None	-	None	
Storage Length	0	0	100	-	_	-	
Veh in Median Storage,		-	-	0	0	-	
Grade, %	0	_	_	0	0	-	
Peak Hour Factor	42	42	90	90	79	79	
Heavy Vehicles, %	0	0	0	16	12	0	
Mymt Flow	7	31	3	147	434	0	
	,	01			.07		
N.A ' /N.A.'	1:		4.1.4		4.:-		
	/linor2		//ajor1		Major2		
Conflicting Flow All	587	434	434	0	-	0	
Stage 1	434	-	-	-	-	-	
Stage 2	153	-	-	-	-	-	
Critical Hdwy	6.4	6.2	4.1	-	-	-	
Critical Hdwy Stg 1	5.4	-	-	-	-	-	
Critical Hdwy Stg 2	5.4	-	-	-	-	-	
Follow-up Hdwy	3.5	3.3	2.2	-	-	-	
Pot Cap-1 Maneuver	475	626	1136	-	-	-	
Stage 1	658	-	-	-	-	-	
Stage 2	880	-	-	-	-	-	
Platoon blocked, %	17.1	COC	4400	-	-	-	
Mov Cap-1 Maneuver	474	626	1136	-	-	-	
Mov Cap-2 Maneuver	474	-	-	-	-	-	
Stage 1	656	-	-	-	-	-	
Stage 2	880	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	11.4		0.2		0		
HCM LOS	В						
Minor Lane/Major Mvmt		NBL	NDT	EBLn1 I	ERI n2	SBT	SBR
			INDI			ומט	SDK
Capacity (veh/h) HCM Lane V/C Ratio		1136	-	474 0.015	626	-	-
		0.003	-	12.7	11.1	-	-
HCM Control Delay (s) HCM Lane LOS						-	-
HCM 95th %tile Q(veh)		A 0	-	B 0	0.2	-	-
How som while Q(ven)		U	-	U	U.Z	-	-

	۶	→	•	•	←	4	4	†	/	\	 	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	45	51	25	30	45	15	20	100	15	25	288	101
Future Volume (vph)	45	51	25	30	45	15	20	100	15	25	288	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.972			0.977			0.985			0.967	
Flt Protected		0.982			0.984			0.993			0.997	
Satd. Flow (prot)	0	1800	0	0	1827	0	0	1730	0	0	1802	0
Flt Permitted		0.982			0.984			0.993			0.997	
Satd. Flow (perm)	0	1800	0	0	1827	0	0	1730	0	0	1802	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.86	0.86	0.86	0.76	0.76	0.76	0.63	0.63	0.63	0.71	0.71	0.71
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	0%	10%	0%	0%	2%	1%
Adj. Flow (vph)	52	59	29	39	59	20	32	159	24	35	406	142
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	140	0	0	118	0	0	215	0	0	583	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
	Other											
Control Type: Unsignalized												
Intersection Capacity Utilizat	ion 41.2%			IC	CU Level of	of Service	Α					
Analysis Period (min) 15												

Intersection	
Intersection Delay, s/veh	18.5
Intersection LOS	С

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	45	51	25	30	45	15	20	100	15	25	288	101
Future Vol, veh/h	45	51	25	30	45	15	20	100	15	25	288	101
Peak Hour Factor	0.86	0.86	0.86	0.76	0.76	0.76	0.63	0.63	0.63	0.71	0.71	0.71
Heavy Vehicles, %	2	0	0	0	0	0	0	10	0	0	2	1
Mvmt Flow	52	59	29	39	59	20	32	159	24	35	406	142
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	11.2			10.9			11.2			24.4		
HCM LOS	В			В			В			С		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	15%	37%	33%	6%	
Vol Thru, %	74%	42%	50%	70%	
Vol Right, %	11%	21%	17%	24%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	135	121	90	414	
LT Vol	20	45	30	25	
Through Vol	100	51	45	288	
RT Vol	15	25	15	101	
Lane Flow Rate	214	141	118	583	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.327	0.241	0.204	0.796	
Departure Headway (Hd)	5.498	6.159	6.197	4.913	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Cap	651	580	577	735	
Service Time	3.556	4.226	4.266	2.954	
HCM Lane V/C Ratio	0.329	0.243	0.205	0.793	
HCM Control Delay	11.2	11.2	10.9	24.4	
HCM Lane LOS	В	В	В	С	
HCM 95th-tile Q	1.4	0.9	8.0	8.1	

	-	•	•	←	1	/
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	ĵ»			4	, N	7
Traffic Volume (vph)	91	0	0	90	0	0
Future Volume (vph)	91	0	0	90	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	1863	1863
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	1863	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	0	0	98	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	99	0	0	98	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type: C	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	on 8.1%			IC	U Level	of Service
Analysis Period (min) 15						

G:\JOBS19\14\1901479\TRAF\SYNCHRO\T-1901479-NOBUILD-PM.syn **BL** Companies

Movement
Traffic Vol, veh/h
Traffic Vol, veh/h
Traffic Vol, veh/h 91 0 0 90 0 0 Future Vol, veh/h 91 0 0 90 0 0 Conflicting Peds, #/hr 0 0 0 0 0 0 Sign Control Free Free Free Free Free Stop Stop RT Channelized - None - </td
Future Vol, veh/h 91 0 0 90 0 0 Conflicting Peds, #/hr 0 0 0 0 0 0 0 Sign Control Free Free Free Free Free Stop Stop RT Channelized - None - None
Conflicting Peds, #/hr 0 0 0 0 0 0 Sign Control Free Free Free Free Free Stop Stop RT Channelized - None - None - None Storage Length - - - 0 0 - Veh in Median Storage, # 0 - - 0 0 - Grade, % 0 - - 0 0 - - 0 0 - Peak Hour Factor 92 </td
Sign Control Free Free Free Free Stop Stop RT Channelized - None - None - None Storage Length - - - 0 0 - Veh in Median Storage, # 0 - - 0 0 - Grade, % 0 - - 0 0 - Peak Hour Factor 92 92 92 92 92 92 Heavy Vehicles, % 2
RT Channelized - None - None - None Storage Length 0 0 0 - 0 0 Veh in Median Storage, # 0 0 0 - Grade, % 0 0 0 0 - Peak Hour Factor 92 92 92 92 92 92 92 92 92 92 92 92 92 9
Storage Length - - - 0 0 Veh in Median Storage, # 0 - - 0 0 - Grade, % 0 - - 0 0 - Peak Hour Factor 92 92 92 92 92 92 92 Heavy Vehicles, % 2 3 3 3 3 3 3
Veh in Median Storage, # 0 - - 0 0 - Grade, % 0 - - 0 0 - Peak Hour Factor 92 92 92 92 92 92 Heavy Vehicles, % 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 <td< td=""></td<>
Grade, % 0 - - 0 0 - Peak Hour Factor 92
Peak Hour Factor 92 93 0 0 0 0 0 0 0 0 0 0 0 0 0 197 99 99 0 197 99 199
Heavy Vehicles, % 2 3
Mvmt Flow 99 0 0 98 0 0 Major/Minor Major1 Major2 Minor1 Minor1 Conflicting Flow All 0 0 99 0 197 99 Stage 1 - - - 99 - 99 - 99 - 99 - 99 - 99 - 99 - 99 - 99 - 99 - 99 - 99 - 99 - 99 - 99 - 99 - 99 - 99 - 99 - - - 99 -
Major/Minor Major1 Major2 Minor1 Conflicting Flow All 0 0 99 0 197 99 Stage 1 - - - 99 - Stage 2 - - - 98 - Critical Hdwy - - 4.12 - 6.42 6.22 Critical Hdwy Stg 1 - - - 5.42 - Critical Hdwy Stg 2 - - - 5.42 - Follow-up Hdwy - - 2.218 - 3.518 3.318 Pot Cap-1 Maneuver - 1494 - 792 957 Stage 1 - - - 926 - Platoon blocked, % - - - - Mov Cap-1 Maneuver - 1494 - 792 957 Mov Cap-2 Maneuver - - - - - - - - - <
Conflicting Flow All 0 0 99 0 197 99 Stage 1 - - - - 99 - Stage 2 - - - - 98 - Critical Hdwy - - 4.12 - 6.42 6.22 Critical Hdwy Stg 1 - - - 5.42 - Critical Hdwy Stg 2 - - - 5.42 - Follow-up Hdwy - - 2.218 - 3.518 3.318 Pot Cap-1 Maneuver - 1494 - 792 957 Stage 1 - - - 926 - Platoon blocked, % - - - - Mov Cap-1 Maneuver - 1494 - 792 957 Mov Cap-2 Maneuver - - - - - - - - - - - - - - </td
Conflicting Flow All 0 0 99 0 197 99 Stage 1 - - - - 99 - Stage 2 - - - - 98 - Critical Hdwy - - 4.12 - 6.42 6.22 Critical Hdwy Stg 1 - - - 5.42 - Critical Hdwy Stg 2 - - - 5.42 - Follow-up Hdwy - - 2.218 - 3.518 3.318 Pot Cap-1 Maneuver - - 1494 - 792 957 Stage 1 - - - - 926 - Platoon blocked, % - - - - - - Mov Cap-1 Maneuver - - 1494 - 792 957 Mov Cap-2 Maneuver - - - - - - - - - </td
Stage 1 - - - 99 - Stage 2 - - - 98 - Critical Hdwy - - 4.12 - 6.42 6.22 Critical Hdwy Stg 1 - - - 5.42 - Critical Hdwy Stg 2 - - - 5.42 - Follow-up Hdwy - - 2.218 - 3.518 3.318 Pot Cap-1 Maneuver - 1494 - 792 957 Stage 1 - - - - 926 - Platoon blocked, % - - - - - - Mov Cap-1 Maneuver - - 1494 - 792 957 Mov Cap-2 Maneuver - - - - 792 - Stage 1 -
Stage 1 - - - 99 - Stage 2 - - - 98 - Critical Hdwy - - 4.12 - 6.42 6.22 Critical Hdwy Stg 1 - - - 5.42 - Critical Hdwy Stg 2 - - - 5.42 - Follow-up Hdwy - - 2.218 - 3.518 3.318 Pot Cap-1 Maneuver - 1494 - 792 957 Stage 1 - - - - 926 - Platoon blocked, % - - - - - Mov Cap-1 Maneuver - 1494 - 792 957 Mov Cap-2 Maneuver - - - 792 - Stage 1 -
Stage 2 - - 98 - Critical Hdwy - 4.12 - 6.42 6.22 Critical Hdwy Stg 1 - - - 5.42 - Critical Hdwy Stg 2 - - - 5.42 - Follow-up Hdwy - - 2.218 - 3.518 3.318 Pot Cap-1 Maneuver - 1494 - 792 957 Stage 1 - - - 926 - Stage 2 - - - 926 - Platoon blocked, % - - - - - Mov Cap-1 Maneuver - 1494 - 792 957 Mov Cap-2 Maneuver - - 1494 - 792 - Stage 1 - - - - 792 - - - - - - - - - - - - - - - - - - - -
Critical Hdwy - - 4.12 - 6.42 6.22 Critical Hdwy Stg 1 - - - 5.42 - Critical Hdwy Stg 2 - - - 5.42 - Follow-up Hdwy - - 2.218 - 3.518 3.318 Pot Cap-1 Maneuver - 1494 - 792 957 Stage 1 - - - 926 - Stage 2 - - - 926 - Platoon blocked, % - - - - Mov Cap-1 Maneuver - 1494 - 792 957 Mov Cap-2 Maneuver - - - 792 - Stage 1 - - - 925 -
Critical Hdwy Stg 1 - - - 5.42 - Critical Hdwy Stg 2 - - - 5.42 - Follow-up Hdwy - - 2.218 - 3.518 3.318 Pot Cap-1 Maneuver - - 1494 - 792 957 Stage 1 - - - 926 - Stage 2 - - - 926 - Platoon blocked, % - - - - Mov Cap-1 Maneuver - - 1494 - 792 957 Mov Cap-2 Maneuver - - - 792 - Stage 1 - - - 925 -
Critical Hdwy Stg 2 - - - 5.42 - Follow-up Hdwy - - 2.218 - 3.518 3.318 Pot Cap-1 Maneuver - - 1494 - 792 957 Stage 1 - - - 925 - Stage 2 - - - 926 - Platoon blocked, % - - - - Mov Cap-1 Maneuver - - 1494 - 792 957 Mov Cap-2 Maneuver - - - 792 - Stage 1 - - - 925 -
Follow-up Hdwy 2.218 - 3.518 3.318 Pot Cap-1 Maneuver - 1494 - 792 957 Stage 1 925 - Stage 2 926 - Platoon blocked, % Mov Cap-1 Maneuver - 1494 - 792 957 Mov Cap-2 Maneuver 792 - Stage 1 925 -
Pot Cap-1 Maneuver - - 1494 - 792 957 Stage 1 - - - 925 - Stage 2 - - - 926 - Platoon blocked, % - - - - Mov Cap-1 Maneuver - - 1494 - 792 957 Mov Cap-2 Maneuver - - - 792 - Stage 1 - - - 925 -
Stage 1 - - 925 - Stage 2 - - - 926 - Platoon blocked, % - - - Mov Cap-1 Maneuver - - 1494 - 792 957 Mov Cap-2 Maneuver - - - 792 - Stage 1 - - - 925 -
Stage 2 - - - 926 - Platoon blocked, % - - - - Mov Cap-1 Maneuver - - 1494 - 792 957 Mov Cap-2 Maneuver - - - 792 - Stage 1 - - - 925 -
Platoon blocked, % - - - - Mov Cap-1 Maneuver - - 1494 - 792 957 Mov Cap-2 Maneuver - - - - 792 - Stage 1 - - - 925 -
Mov Cap-1 Maneuver - - 1494 - 792 957 Mov Cap-2 Maneuver - - - - 792 - Stage 1 - - - 925 -
Mov Cap-2 Maneuver 792 - Stage 1 925 -
Stage 1 925 -
•
Staye 2 920 -
Approach EB WB NB
HCM Control Delay, s 0 0 0
HCM LOS A
M. I. /M. M. (NIDI ANDI O EDT EDD M/DI
Minor Lane/Major Mvmt NBLn1 NBLn2 EBT EBR WBL
Capacity (veh/h) 1494
HCM Lane V/C Ratio
HCM Control Delay (s) 0 0 0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Plan: AM Peak Gen

	۶	→	•	•	←	•	4	†	/	>	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	Ť	^					7	4	7
Traffic Volume (vph)	0	468	200	138	418	0	0	0	0	86	0	204
Future Volume (vph)	0	468	200	138	418	0	0	0	0	86	0	204
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	0			100			0			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.862	0.850
Flt Protected				0.950						0.950	0.996	
Satd. Flow (prot)	0	3008	1346	1583	3195	0	0	0	0	1499	1178	1288
Flt Permitted				0.950						0.950	0.996	
Satd. Flow (perm)	0	3008	1346	1583	3195	0	0	0	0	1499	1178	1288
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			213									
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			20.8			8.5			11.3	
Peak Hour Factor	0.94	0.94	0.94	0.74	0.74	0.74	0.88	0.88	0.88	0.89	0.89	0.89
Heavy Vehicles (%)	0%	20%	20%	14%	13%	0%	0%	0%	0%	22%	0%	31%
Adj. Flow (vph)	0	498	213	186	565	0	0	0	0	97	0	229
Shared Lane Traffic (%)										10%		48%
Lane Group Flow (vph)	0	498	213	186	565	0	0	0	0	87	120	119
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			24			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Prot	NA					Split	NA	Prot
Protected Phases		2		1	12					4	4	4
Permitted Phases			2									
Detector Phase		2	2	1	12					4	4	4
Switch Phase												
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		30.0	30.0	20.0						25.0	25.0	25.0
Total Split (%)		40.0%	40.0%	26.7%						33.3%	33.3%	33.3%
Maximum Green (s)		24.5	24.5	16.0						19.5	19.5	19.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Ribrards) Plan: AM Peak Gen

	•	-	•	•	•	•	1	Ť		-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		32.3	32.3	14.3	52.1					13.4	13.4	13.4
Actuated g/C Ratio		0.43	0.43	0.19	0.69					0.18	0.18	0.18
v/c Ratio		0.38	0.30	0.62	0.25					0.33	0.57	0.52
Control Delay		17.5	4.3	30.7	1.4					28.7	38.0	35.0
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		17.5	4.3	30.7	1.4					28.7	38.0	35.0
LOS		В	Α	С	Α					С	D	С
Approach Delay		13.5			8.7						34.4	
Approach LOS		В			Α						С	
Queue Length 50th (ft)		82	0	49	7					37	57	53
Queue Length 95th (ft)		142	44	71	14					70	101	93
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		1295	700	348	2181					389	306	334
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	0.30	0.53	0.26					0.22	0.39	0.36
Intersection Summary												

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 13 (17%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 15.3 Intersection LOS: B
Intersection Capacity Utilization 43.3% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Romand)Plan: AM Peak Gen

	۶	→	•	•	←	•	4	†	~	/	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	^			^	7	, T	4	7			
Traffic Volume (vph)	203	351	0	0	417	170	139	Ō	143	0	0	0
Future Volume (vph)	203	351	0	0	417	170	139	0	143	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			0			100			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950						0.950	0.950				
Satd. Flow (prot)	1367	3223	0	0	3195	1312	1550	1453	1513	0	0	0
Flt Permitted	0.950		•				0.950	0.950		•		-
Satd. Flow (perm)	1367	3223	0	0	3195	1312	1550	1453	1513	0	0	0
Right Turn on Red		00	Yes	•		Yes			No	•		Yes
Satd. Flow (RTOR)			. 00			181			110			. 00
Link Speed (mph)		35			40			30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			13.0			15.5			11.1	
Peak Hour Factor	0.88	0.88	0.88	0.94	0.94	0.94	0.95	0.95	0.95	0.88	0.88	0.88
Heavy Vehicles (%)	32%	12%	0%	0%	13%	19%	18%	0%	21%	0%	0%	0%
Adj. Flow (vph)	231	399	0	0	444	181	146	0	151	0	0	0
Shared Lane Traffic (%)	201	000				101	50%		101		· ·	•
Lane Group Flow (vph)	231	399	0	0	444	181	73	73	151	0	0	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)	Loit	24	ragne	Loit	24	rugiit	Lon	14	rugiit	Loit	14	rugiit
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15	0.00	9
Turn Type	Prot	NA			NA	Prot	Split	NA	Prot			•
Protected Phases	1	1.2			2	2	4	4	4			
Permitted Phases	•	• =			_	_	•	•	•			
Detector Phase	1	12			2	2	4	4	4			
Switch Phase	•	• =			_	_	•	•	•			
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	20.0				31.0	31.0	24.0	24.0	24.0			
Total Split (%)	26.7%				41.3%	41.3%	32.0%	32.0%	32.0%			
Maximum Green (s)	16.0				25.5	25.5	19.0	19.0	19.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag	3.0	3.0	5.0			
Lead-Lag Optimize?	Leau				Lay	Lay						
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			
V GITIOLE EVICTION (2)	5.0				٧.۷	0.2	5.0	5.0	5.0			

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Riorand)Plan: AM Peak Gen

	•	-	•	•	•	•	1	†	~	-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	16.8	52.8			30.6	30.6	13.2	13.2	13.2			
Actuated g/C Ratio	0.22	0.70			0.41	0.41	0.18	0.18	0.18			
v/c Ratio	0.76	0.18			0.34	0.28	0.27	0.29	0.57			
Control Delay	34.0	0.9			11.6	2.2	27.8	28.3	36.2			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	34.0	0.9			11.6	2.2	27.8	28.3	36.2			
LOS	С	Α			В	Α	С	С	D			
Approach Delay		13.0			8.9			32.2				
Approach LOS		В			Α			С				
Queue Length 50th (ft)	39	1			42	0	31	31	66			
Queue Length 95th (ft)	#183	3			57	6	62	63	111			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	320	2270			1302	642	392	368	383			
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	0.72	0.18			0.34	0.28	0.19	0.20	0.39			

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 51 (68%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 15.0 Intersection LOS: B
Intersection Capacity Utilization 43.3% ICU Level of Service A

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



Timing Plan: AM Peak Gen

	۶	→	•	•	+	•	•	†	~	/	+	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	↑ ↑		ሻ	^	7	ሻ	(î			ર્ન	7
Traffic Volume (vph)	87	399	8	0	477	25	15	1	0	34	0	95
Future Volume (vph)	87	399	8	0	477	25	15	1	0	34	0	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)	· -	0%		· -	1%			0%	· <u>-</u>	· -	0%	
Storage Length (ft)	570	0,0	0	100	. , ,	250	0	• 70	0	345	• 70	0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100		•	0			130		•
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.997	0.00	1.00	0.00	0.850	1.00	1.00	1.00	1.00	1.00	0.850
Fit Protected	0.950	0.001				0.000	0.950				0.950	0.000
Satd. Flow (prot)	1367	3211	0	1890	3265	1461	1685	1837	0	0	1736	1196
Flt Permitted	0.950	0211	J	1000	0200	1701	0.800	1007	0	0	0.800	1130
Satd. Flow (perm)	1367	3211	0	1890	3265	1461	1419	1837	0	0	1462	1196
Right Turn on Red	1307	JZII	Yes	1030	3203	Yes	1413	1037	Yes	U	1402	Yes
Satd. Flow (RTOR)		4	163			106			163			122
Link Speed (mph)		35			35	100		30			30	122
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.81	0.81	0.81	0.86	0.86	0.86	0.38	0.38	0.38	0.81	0.81	0.81
			17%	0.00		10%	0.36		0.36		0.61	
Heavy Vehicles (%)	32%	12%			10%			0%		4% 42		35%
Adj. Flow (vph)	107	493	10	0	555	29	39	3	0	42	0	117
Shared Lane Traffic (%)	107	502	^	0	EEE	20	39	2	0	0	40	117
Lane Group Flow (vph)	107	503	0	0	555	29		3	0	0	42	117
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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane	4.00	4.00	4.00	4.04	4.04	4.04	4.00	4.04	4.00	4.00	4.00	4.00
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	NIA	12	15	N I A	12	15	NIA	12	15	NIA	12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm		pm+ov
Protected Phases	1	12		3	23	23		4		4	4	1
Permitted Phases	4	4.0			0.0	0.0	4	4		4		4
Detector Phase	1	12		3	23	23	4	4		4	4	1
Switch Phase				5 0			7.0	7.0		7.0	7.0	5.0
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	17.0			11.0			17.0	17.0		17.0	17.0	17.0
Total Split (%)	22.7%			14.7%			22.7%	22.7%		22.7%	22.7%	22.7%
Maximum Green (s)	11.6			5.7			12.1	12.1		12.1	12.1	11.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0			0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?												

Lane Group	Ø2		
Lanetonfigurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
FIt Protected			
Satd. Flow (prot)			
FIt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Turn Type			
Protected Phases	2		
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	15.0		
Minimum Split (s)	21.1		
Total Split (s)	30.0		
Total Split (%)	40%		
Maximum Green (s)	23.9		
Yellow Time (s)	4.8		
All-Red Time (s)	1.3		
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag		
Lead-Lag Optimize?			

	•	→	•	•	•	•	1	†	~	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	10.6	51.1			45.0	45.0	7.8	7.8			7.8	18.5
Actuated g/C Ratio	0.14	0.68			0.60	0.60	0.10	0.10			0.10	0.25
v/c Ratio	0.55	0.23			0.28	0.03	0.27	0.02			0.28	0.30
Control Delay	43.6	3.1			9.7	0.1	35.3	29.0			35.5	5.4
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	43.6	3.1			9.7	0.1	35.3	29.0			35.5	5.4
LOS	D	Α			Α	Α	D	С			D	Α
Approach Delay		10.2			9.2			34.9			13.3	
Approach LOS		В			Α			С			В	
Queue Length 50th (ft)	48	27			69	0	17	1			19	0
Queue Length 95th (ft)	80	27			112	0	18	4			41	22
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570					250						
Base Capacity (vph)	228	2132			1977	926	228	296			235	414
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	0.47	0.24			0.28	0.03	0.17	0.01			0.18	0.28

Intersection Summary

Area Type: Other

Cycle Length: 75
Actuated Cycle Length: 75

Offset: 42 (56%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 60

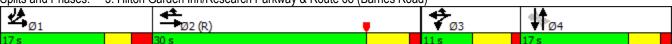
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 10.9 Intersection LOS: B
Intersection Capacity Utilization 40.2% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø2	
Vehicle Extension (s)	2.5	
Recall Mode	C-Min	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

	•		`	_	+	•	•	†	<u></u> ▶	<u> </u>	1	1
	- EDI	EDT	T DD	▼ M/DI	WDT	MDD	\ NDI	I NDT	/	001	▼	000
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u> ነ</u>	(Î		• ኝ	f.		<u> </u>		7	ሻ	(
Traffic Volume (vph)	0	0	9	0	0	0	6	107	0	0	120	0
Future Volume (vph)	0	0	9	0	0	0	6	107	0	0	120	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	0			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850										
Flt Protected							0.950					
Satd. Flow (prot)	1900	1417	0	1900	1900	0	1504	1496	1900	1900	1484	0
Flt Permitted							0.950					
Satd. Flow (perm)	1900	1417	0	1900	1900	0	1504	1496	1900	1900	1484	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.58	0.58	0.58	0.88	0.88	0.88	0.63	0.63	0.63	0.80	0.80	0.80
Heavy Vehicles (%)	0%	0%	14%	0%	0%	0%	20%	27%	0%	0%	28%	0%
Adj. Flow (vph)	0	0	16	0	0	0	10	170	0	0	150	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	16	0	0	0	0	10	170	0	0	150	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24			30			12			12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
- · · / [· ·	Other											
Control Type: Unsignalized												
	10001											

ICU Level of Service A

Intersection Capacity Utilization 16.3% Analysis Period (min) 15

No Build rive 1 Timing Plan: AM Peak Gen

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	4		ሻ	4		ሻ	<u></u>	7	ሻ	(î	
Traffic Vol, veh/h	0	0	9	0	0	0	6	107	0	0	120	0
Future Vol, veh/h	0	0	9	0	0	0	6	107	0	0	120	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	170	-	-	140	-	0	115	-	-
Veh in Median Storage,	# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	58	58	58	88	88	88	63	63	63	80	80	80
Heavy Vehicles, %	0	0	14	0	0	0	20	27	0	0	28	0
Mvmt Flow	0	0	16	0	0	0	10	170	0	0	150	0
Major/Minor N	/linor2			Minor1		<u> </u>	Major1		<u> </u>	Major2		
Conflicting Flow All	340	340	150	348	340	170	150	0	0	170	0	0
Stage 1	150	150	-	190	190	-	-	-	-	-	-	-
Stage 2	190	190	-	158	150	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.1	6.5	6.2	4.3	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.5	4	3.3	2.38	-	-	2.2	-	-
Pot Cap-1 Maneuver	618	585	866	610	585	879	1328	-	-	1420	-	-
Stage 1	857	777	-	816	747	-	-	-	-	-	-	-
Stage 2	816	747	-	849	777	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	614	580	866	595	580	879	1328	-	-	1420	-	-
Mov Cap-2 Maneuver	614	580	-	595	580	-	-	-	-	-	-	-
Stage 1	850	777	-	809	741	-	-	-	-	-	-	-
Stage 2	810	741	-	834	777	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	9.2			0			0.4			0		
HCM LOS	Α			Α								
Minor Lane/Major Mvmt		NBL	NBT	NBR I	EBLn1	EBLn2V	VBLn1V	VBLn2	SBL	SBT	SBR	
Capacity (veh/h)		1328	-	-	-	866	-	-	1420	-	-	
HCM Lane V/C Ratio		0.007	-	-	_	0.018	-	-	-	-	-	
HCM Control Delay (s)		7.7	-	-	0	9.2	0	0	0	-	-	
HCM Lane LOS		Α	-	-	Α	Α	Α	Α	Α	-	-	
HCM 95th %tile Q(veh)		0	-	-	-	0.1	-	-	0	-	-	

	۶	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			4	ĵ»	
Traffic Volume (vph)	0	11	11	96	109	0
Future Volume (vph)	0	11	11	96	109	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.995		
Satd. Flow (prot)	1347	0	0	1470	1462	0
Flt Permitted				0.995		
Satd. Flow (perm)	1347	0	0	1470	1462	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.56	0.56	0.75	0.75	0.81	0.81
Heavy Vehicles (%)	0%	22%	0%	32%	30%	0%
Adj. Flow (vph)	0	20	15	128	135	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	0	0	143	135	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	tion 22.3%			IC	U Level o	of Service A
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	1					
	•	EDD	NE	NET	057	000
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			ની	\$	
Traffic Vol, veh/h	0	11	11	96	109	0
Future Vol, veh/h	0	11	11	96	109	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage	, # 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	56	56	75	75	81	81
Heavy Vehicles, %	0	22	0	32	30	0
Mvmt Flow	0	20	15	128	135	0
	Minor2		Major1		Major2	
Conflicting Flow All	293	135	135	0	-	0
Stage 1	135	-	-	-	-	-
Stage 2	158	-	-	-	-	-
Critical Hdwy	6.4	6.42	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.498	2.2	-	-	-
Pot Cap-1 Maneuver	702	863	1462	-	-	-
Stage 1	896	-	-	-	-	-
Stage 2	875	-	-	-	-	-
Platoon blocked, %	3, 3			_	_	_
Mov Cap-1 Maneuver	694	863	1462	_	_	_
Mov Cap-1 Maneuver	694	-	1 102			
Stage 1	886		_	-		
_			_	-		_
Stage 2	875	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	9.3		0.8		0	
HCM LOS	A		3.0			
	, ,					
Minor Lane/Major Mvm	nt	NBL	NBT I	EBLn1	SBT	SBR
Capacity (veh/h)		1462	-	863	-	-
HCM Lane V/C Ratio		0.01	-	0.023	-	-
HCM Control Delay (s)		7.5	0	9.3	-	-
HCM Lane LOS		A	A	Α	-	-
HCM 95th %tile Q(veh))	0	_	0.1	_	_
TOWN JOHN JOHN & VEIL	,	U		0.1		

	٠	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	^	1>	
Traffic Volume (vph)	0	3	0	96	106	1
Future Volume (vph)	0	3	0	96	106	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	0		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.999	
Flt Protected						
Satd. Flow (prot)	1900	1077	1900	1439	1474	0
FIt Permitted						
Satd. Flow (perm)	1900	1077	1900	1439	1474	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.50	0.50	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	0%	50%	0%	32%	29%	0%
Adj. Flow (vph)	0	6	0	122	134	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	6	0	122	135	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12	, ,		12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:)ther					
Control Type: Unsignalized						
Intersection Capacity Utilizati	on 15.6%			IC	U Level o	of Service A

 $\label{thm:continuous} G:\label{thm:continuous} $$G:\label{thm:continuous} $$G:\label{thm:continuous} $$BL\ Companies $$$

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
						SDK
Lane Configurations	^	<u></u>	<u>ች</u>	↑	100	1
Traffic Vol, veh/h	0	3	0	96	106	1
Future Vol, veh/h	0	3	0	96	106	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	-
Veh in Median Storage,		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	79	79	79	79
Heavy Vehicles, %	0	50	0	32	29	0
Mvmt Flow	0	6	0	122	134	1
Major/Minor N	/linor2		Joier1		//oior0	
			Major1		Major2	
Conflicting Flow All	257	135	135	0	-	0
Stage 1	135	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Critical Hdwy	6.4	6.7	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.75	2.2	-	-	-
Pot Cap-1 Maneuver	736	800	1462	-	-	-
Stage 1	896	-	-	-	-	-
Stage 2	908	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	736	800	1462	_	-	_
Mov Cap-2 Maneuver	736	-	-	_	-	_
Stage 1	896	_	_	_	_	_
Stage 2	908	_	_	_	_	_
Olago Z	300					
Approach	EB		NB		SB	
HCM Control Delay, s	9.5		0		0	
HCM LOS	Α					
NAC 1 /NA - 1 NA 1		NIDI	NDT		-DI 0	ODT
Minor Lane/Major Mvmt		NBL		EBLn1 E		SBT
Capacity (veh/h)		1462	-	-	000	-
HCM Lane V/C Ratio		-	-		0.008	-
HCM Control Delay (s)		0	-	0	9.5	-
HCM Lane LOS		Α	-	Α	Α	-
HCM 95th %tile Q(veh)		0	-	-	0	-

	۶	→	•	•	+	•	1	†	/	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	25	23	5	18	14	8	4	83	9	14	84	25
Future Volume (vph)	25	23	5	18	14	8	4	83	9	14	84	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.973			0.988			0.973	
Flt Protected		0.977			0.978			0.998			0.994	
Satd. Flow (prot)	0	1482	0	0	1648	0	0	1441	0	0	1464	0
Flt Permitted		0.977			0.978			0.998			0.994	
Satd. Flow (perm)	0	1482	0	0	1648	0	0	1441	0	0	1464	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.63	0.63	0.63	0.45	0.45	0.45	0.79	0.79	0.79	0.65	0.65	0.65
Heavy Vehicles (%)	30%	11%	50%	14%	0%	17%	33%	33%	0%	0%	33%	15%
Adj. Flow (vph)	40	37	8	40	31	18	5	105	11	22	129	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	85	0	0	89	0	0	121	0	0	189	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization	tion 22.1%			IC	CU Level	of Service	Α					
Analysis Period (min) 15												

Intersection

Lane Flow Rate

Geometry Grp

Degree of Util (X)

Convergence, Y/N

HCM Lane V/C Ratio

HCM Control Delay

HCM Lane LOS

HCM 95th-tile Q

Service Time

Cap

Departure Headway (Hd)

IIILEI SECLIOII												
Intersection Delay, s/veh	8.9											
Intersection LOS	Α											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	25	23	5	18	14	8	4	83	9	14	84	25
Future Vol, veh/h	25	23	5	18	14	8	4	83	9	14	84	25
Peak Hour Factor	0.63	0.63	0.63	0.45	0.45	0.45	0.79	0.79	0.79	0.65	0.65	0.65
Heavy Vehicles, %	30	11	50	14	0	17	33	33	0	0	33	15
Mvmt Flow	40	37	8	40	31	18	5	105	11	22	129	38
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	9.1			8.7			9.2			8.8		
HCM LOS	Α			Α			Α			Α		
Lane		NBLn1	EBLn1	WBLn1	SBLn1							
Vol Left, %		4%	47%	45%	11%							
Vol Thru, %		86%	43%	35%	68%							
Vol Right, %		9%	9%	20%	20%							
Sign Control		Stop	Stop	Stop	Stop							
Traffic Vol by Lane		96	53	40	123							
LT Vol		4	25	18	14							
Through Vol		83	23	14	84							
RT Vol		9	5	8	25							

89

0.122

4.961

Yes

721

3.002

0.123

8.7

0.4

Α

1

189

0.232

4.405

Yes

814

2.435

0.232

8.8

0.9

Α

84

0.124

5.302

Yes

676

3.342

0.124

9.1

0.4

Α

122

0.171

5.075

Yes

706

3.11

0.173

9.2

Α

0.6

	→	•	•	←	•	/
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	1>			4	ሻ	7
Traffic Volume (vph)	46	0	0	40	0	0
Future Volume (vph)	46	0	0	40	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	1863	1863
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	1863	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	0	0	43	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	0	0	43	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Tyne:	Other					

Area Type:

Control Type: Unsignalized

Intersection Capacity Utilization 6.7% Analysis Period (min) 15

ICU Level of Service A

Intersection							
Int Delay, s/veh	0						
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	\$	LDI	VVDL	WB1	NDL	T T	
Traffic Vol, veh/h	46	0	0	40	0	0	
Future Vol, veh/h	46	0	0	40	0	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	-	-	-	0	0	
Veh in Median Storage,		-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	50	0	0	43	0	0	
Major/Minor M	lajor1	<u> </u>	Major2		Minor1		
Conflicting Flow All	0	0	50	0	93	50	
Stage 1	-	-	-	-	50	-	
Stage 2	-	-	-	-	43	-	
Critical Hdwy	-	-	4.12	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	-	-	2.218	-	3.518		
Pot Cap-1 Maneuver	-	-	1557	-	907	1018	
Stage 1	-	-	-	-	972	-	
Stage 2	-	-	-	-	979	-	
Platoon blocked, %	-	-	1557	-	007	1010	
Mov Cap-1 Maneuver Mov Cap-2 Maneuver	- -	-	1557	-	907 907	1018	
Stage 1	-	-	-	-	972		
Stage 2	_	_	_	-	979	_	
Olaye Z	<u>-</u>	_	_	_	313	_	
Approach	EB		WB		NB		
HCM Control Delay, s	0		0		0		
HCM LOS					Α		
Minor Lane/Major Mvmt	1	NBLn11	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)		-	_	-	-	1557	-
HCM Lane V/C Ratio		-	-	-	-	-	-
HCM Control Delay (s)		0	0	-	-	0	-
HCM Lane LOS		Α	Α	-	-	Α	-
HCM 95th %tile Q(veh)		-	-	-	-	0	-

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Romand) Plan: PM Peak Gen

	۶	→	•	•	•	•	4	†	/	>	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	Ť	^					7	4	7
Traffic Volume (vph)	0	380	132	152	371	0	0	0	0	85	0	93
Future Volume (vph)	0	380	132	152	371	0	0	0	0	85	0	93
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	0			100			0			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.909	0.850
Flt Protected				0.950						0.950	0.981	
Satd. Flow (prot)	0	3574	1553	1719	3505	0	0	0	0	1726	1478	1548
Flt Permitted				0.950						0.950	0.981	
Satd. Flow (perm)	0	3574	1553	1719	3505	0	0	0	0	1726	1478	1548
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			159									
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			20.8			8.5			11.3	
Peak Hour Factor	0.83	0.83	0.83	0.59	0.59	0.59	0.88	0.88	0.88	0.86	0.86	0.86
Heavy Vehicles (%)	0%	1%	4%	5%	3%	0%	0%	0%	0%	6%	0%	9%
Adj. Flow (vph)	0	458	159	258	629	0	0	0	0	99	0	108
Shared Lane Traffic (%)										27%		39%
Lane Group Flow (vph)	0	458	159	258	629	0	0	0	0	72	69	66
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			24			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Prot	NA					Split	NA	Prot
Protected Phases		2		1	12					4	4	4
Permitted Phases			2									
Detector Phase		2	2	1	12					4	4	4
Switch Phase												
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		30.0	30.0	20.0						25.0	25.0	25.0
Total Split (%)		40.0%	40.0%	26.7%						33.3%	33.3%	33.3%
Maximum Green (s)		24.5	24.5	16.0						19.5	19.5	19.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?			2.2	2.2						2.2	2.2	
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Ribraids) Plan: PM Peak Gen

	۶	-	•	•	←	•	1	†	/	-	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		34.4	34.4	18.5	59.2					10.0	10.0	10.0
Actuated g/C Ratio		0.46	0.46	0.25	0.79					0.13	0.13	0.13
v/c Ratio		0.28	0.20	0.61	0.23					0.31	0.35	0.32
Control Delay		15.7	4.1	26.7	1.2					32.9	34.5	33.5
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		15.7	4.1	26.7	1.2					32.9	34.5	33.5
LOS		В	Α	С	Α					С	С	С
Approach Delay		12.7			8.6						33.6	
Approach LOS		В			Α						С	
Queue Length 50th (ft)		71	0	75	9					32	32	30
Queue Length 95th (ft)		113	30	71	12					65	67	62
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		1641	798	444	2768					448	384	402
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		0.28	0.20	0.58	0.23					0.16	0.18	0.16
Intersection Summary												
Aron Typo:	Othor											

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 13 (17%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 13.1 Intersection LOS: B
Intersection Capacity Utilization 40.9% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Romand)Plan: PM Peak Gen

	•	→	•	•	←	•	4	†	~	>	Ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	^			44	7	¥	ર્ન	7			
Traffic Volume (vph)	80	385	0	0	359	96	164	0	160	0	0	0
Future Volume (vph)	80	385	0	0	359	96	164	0	160	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			0			100			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950						0.950	0.950				
Satd. Flow (prot)	1719	3574	0	0	3539	1406	1678	1573	1743	0	0	0
Flt Permitted	0.950						0.950	0.950		•		-
Satd. Flow (perm)	1719	3574	0	0	3539	1406	1678	1573	1743	0	0	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)						119						
Link Speed (mph)		35			40	110		30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			13.0			15.5			11.1	
Peak Hour Factor	0.85	0.85	0.85	0.81	0.81	0.81	0.84	0.84	0.84	0.88	0.88	0.88
Heavy Vehicles (%)	5%	1%	0%	0%	2%	11%	9%	0%	5%	0%	0%	0%
Adj. Flow (vph)	94	453	0	0	443	119	195	0	190	0	0	0
Shared Lane Traffic (%)	0 -1	400	· ·	0	770	110	50%	U	150	U	U	U
Lane Group Flow (vph)	94	453	0	0	443	119	97	98	190	0	0	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)	Loit	24	ragne	Loit	24	rugiit	Loit	14	rugiit	Loit	14	ragne
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15	1.00	9	15	1.00	9	15	1.00	9	15	0.00	9
Turn Type	Prot	NA		10	NA	Prot	Split	NA	Prot			
Protected Phases	1	12			2	2	4	4	4			
Permitted Phases	•	• -			_	_	•	•	•			
Detector Phase	1	12			2	2	4	4	4			
Switch Phase	•	• -			_	_	•	•	•			
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	20.0				31.0	31.0	24.0	24.0	24.0			
Total Split (%)	26.7%				41.3%	41.3%	32.0%	32.0%	32.0%			
Maximum Green (s)	16.0				25.5	25.5	19.0	19.0	19.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag	3.0	0.0	J.U			
Lead-Lag Optimize?	Leau				Lay	Lay						
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			
VEHICLE EXCELLISION (2)	3.0				0.2	0.2	3.0	3.0	3.0			

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Riorand)Plan: PM Peak Gen

	•	→	*	•	•	•	1	Ť		-	ŧ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	10.4	52.2			36.3	36.3	13.8	13.8	13.8			
Actuated g/C Ratio	0.14	0.70			0.48	0.48	0.18	0.18	0.18			
v/c Ratio	0.39	0.18			0.26	0.16	0.31	0.34	0.59			
Control Delay	22.2	0.9			7.3	1.2	27.9	28.6	35.1			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	22.2	0.9			7.3	1.2	27.9	28.6	35.1			
LOS	С	Α			Α	Α	С	С	D			
Approach Delay		4.6			6.0			31.6				
Approach LOS		Α			Α			С				
Queue Length 50th (ft)	20	0			19	1	42	42	82			
Queue Length 95th (ft)	26	0			43	4	71	72	121			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	366	2460			1713	742	425	398	441			
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	0.26	0.18			0.26	0.16	0.23	0.25	0.43			

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 51 (68%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 12.1 Intersection LOS: B
Intersection Capacity Utilization 40.9% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



Timing Plan: PM Peak Gen

	۶	→	•	•	+	•	•	†	~	/	+	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	∱ }		ሻ	^	7	ሻ	(î			ર્ન	7
Traffic Volume (vph)	76	454	15	3	373	27	8	1	8	19	1	74
Future Volume (vph)	76	454	15	3	373	27	8	1	8	19	1	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)	· -	0%	· <u>-</u>	·-	1%			0%	· <u>-</u>	· -	0%	
Storage Length (ft)	570	0,0	0	100	. , ,	250	0	• 70	0	345	• 70	0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100		•	0			130		•
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.995	0.00	1.00	0.00	0.850	1.00	0.862	1.00	1.00	1.00	0.850
Fit Protected	0.950	0.000		0.950		0.000	0.950	0.002			0.954	0.000
Satd. Flow (prot)	1597	3557	0	1796	3522	1607	1685	1583	0	0	1746	1196
Flt Permitted	0.950	0001	0	0.950	00ZZ	1007	0.909	1000	0	0	0.889	1130
Satd. Flow (perm)	1597	3557	0	1796	3522	1607	1612	1583	0	0	1627	1196
Right Turn on Red	1331	3331	Yes	1730	3322	Yes	1012	1303	Yes	U	1021	Yes
Satd. Flow (RTOR)		7	163			106		11	163			122
Link Speed (mph)		35			35	100		30			30	122
,		764			751			251			720	
Link Distance (ft) Travel Time (s)		14.9			14.6			5.7			16.4	
	0.78	0.78	0.78	0.80	0.80	0.80	0.75	0.75	0.75	0.86	0.86	0.86
Peak Hour Factor												
Heavy Vehicles (%)	13%	1%	0%	0%	2%	0%	0%	0%	0%	4%	0%	35%
Adj. Flow (vph)	97	582	19	4	466	34	11	1	11	22	1	86
Shared Lane Traffic (%)	07	004	^	4	400	2.4	4.4	40	^	0	00	0.0
Lane Group Flow (vph)	97	601	0	4	466	34	11 No.	12	0	0	23	86 No.
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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane	4.00	4.00	4.00	4.04	4.04	4.04	4.00	4.04	4.00	4.00	4.00	4.00
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	NIA	12	15	NIA	12	15	NIA	12	15	NIA	12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm		pm+ov
Protected Phases	1	12		3	23	23		4		4	4	1
Permitted Phases	4	4.0			0.0	0.0	4	4		4		4
Detector Phase	1	12		3	23	23	4	4		4	4	1
Switch Phase				5 0			7.0	7.0		7.0	7.0	5.0
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	17.0			11.0			17.0	17.0		17.0	17.0	17.0
Total Split (%)	22.7%			14.7%			22.7%	22.7%		22.7%	22.7%	22.7%
Maximum Green (s)	11.6			5.7			12.1	12.1		12.1	12.1	11.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0			0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?												

Lane Group	Ø2		
Lanetonfigurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
FIt Protected			
Satd. Flow (prot)			
FIt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Turn Type			
Protected Phases	2		
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	15.0		
Minimum Split (s)	21.1		
Total Split (s)	30.0		
Total Split (%)	40%		
Maximum Green (s)	23.9		
Yellow Time (s)	4.8		
All-Red Time (s)	1.3		
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag		
Lead-Lag Optimize?			

	•	-	•	•	•	•	1	†	~	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	10.8	51.7		5.3	45.4	45.4	7.2	7.2			7.2	18.1
Actuated g/C Ratio	0.14	0.69		0.07	0.61	0.61	0.10	0.10			0.10	0.24
v/c Ratio	0.42	0.25		0.03	0.22	0.03	0.07	0.07			0.15	0.23
Control Delay	38.2	3.0		32.7	9.0	0.1	31.9	19.0			33.4	3.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	38.2	3.0		32.7	9.0	0.1	31.9	19.0			33.4	3.0
LOS	D	Α		С	Α	Α	С	В			С	Α
Approach Delay		7.9			8.6			25.2			9.4	
Approach LOS		Α			Α			С			Α	
Queue Length 50th (ft)	47	35		2	55	0	5	0			10	0
Queue Length 95th (ft)	61	32		10	85	0	16	12			30	12
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	273	2408		139	2112	1006	260	264			262	410
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	0.36	0.25		0.03	0.22	0.03	0.04	0.05			0.09	0.21

Intersection Summary

Area Type: Other

Cycle Length: 75
Actuated Cycle Length: 75

Offset: 42 (56%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 55

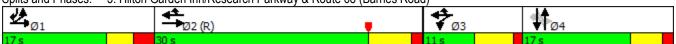
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.42

Intersection Signal Delay: 8.6 Intersection LOS: A Intersection Capacity Utilization 38.1% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø2	
Vehicle Extension (s)	2.5	
Recall Mode	C-Min	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Intersection Capacity Utilization 15.5%

Analysis Period (min) 15

	٠	→	•	•	•	•	4	†	/	\	ļ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	ĵ»		ሻ	ĥ		ሻ	^	7	ሻ	ĥ	
Traffic Volume (vph)	0	0	1	0	0	0	0	104	0	Ö	93	0
Future Volume (vph)	0	0	1	0	0	0	0	104	0	0	93	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	0			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850										
Flt Protected												
Satd. Flow (prot)	1900	1615	0	1900	1900	0	1900	1743	1900	1900	1743	0
FIt Permitted												
Satd. Flow (perm)	1900	1615	0	1900	1900	0	1900	1743	1900	1900	1743	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.25	0.25	0.25	0.88	0.88	0.88	0.90	0.90	0.90	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	9%	0%	0%	9%	0%
Adj. Flow (vph)	0	0	4	0	0	0	0	116	0	0	113	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	0	0	0	116	0	0	113	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24			30			12			12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
71	ther											
Control Type: Unsignalized												

ICU Level of Service A

 $\label{thm:comparison} G:\label{thm:comparison} $$G:\label{thm:comparison} $$G:\label{thm:comparison} $$BL\ Companies $$$

No Build Timing Plan: PM Peak Gen

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ች	1→		*	f)				7	ሻ	f)	
Traffic Vol, veh/h	0	0	1	0	0	0	0	104	0	0	93	0
Future Vol, veh/h	0	0	1	0	0	0	0	104	0	0	93	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	170	-	-	140	-	0	115	-	-
Veh in Median Storage,	# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	88	88	88	90	90	90	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	0	9	0	0	9	0
Mvmt Flow	0	0	4	0	0	0	0	116	0	0	113	0
Major/Minor M	/linor2		ı	Minor1		N	//ajor1		ľ	Major2		
Conflicting Flow All	229	229	113	231	229	116	113	0	0	116	0	0
Stage 1	113	113	-	116	116	-	-	-	-	-	-	-
Stage 2	116	116	-	115	113	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	730	674	945	728	674	942	1489	-	-	1485	-	-
Stage 1	897	806	-	894	803	-	-	-	-	-	-	-
Stage 2	894	803	-	895	806	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	730	674	945	725	674	942	1489	-	-	1485	-	-
Mov Cap-2 Maneuver	730	674	-	725	674	-	-	-	-	-	-	-
Stage 1	897	806	-	894	803	-	-	-	-	-	-	-
Stage 2	894	803	-	891	806	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	8.8			0			0			0		
HCM LOS	Α			A								
Minor Lane/Major Mvmt		NBL	NBT	NBR I	EBLn1	EBLn2V	VBLn1V	VBLn2	SBL	SBT	SBR	
Capacity (veh/h)		1489	-	-	-	945	-	-	1485	-	-	
HCM Lane V/C Ratio		-	-	-	_	0.004	-	-	-	-	-	
HCM Control Delay (s)		0	-	-	0	8.8	0	0	0	-	-	
HCM Lane LOS		A	-	-	A	Α	A	A	A	-	-	
HCM 95th %tile Q(veh)		0	-	-	-	0	-	-	0	-	-	

	۶	\rightarrow	•	†	ļ	✓
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			ની	f)	
Traffic Volume (vph)	0	1	1	103	92	0
Future Volume (vph)	0	1	1	103	92	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						
Satd. Flow (prot)	1644	0	0	1744	1743	0
FIt Permitted						
Satd. Flow (perm)	1644	0	0	1744	1743	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.25	0.25	0.83	0.83	0.85	0.85
Heavy Vehicles (%)	0%	0%	0%	9%	9%	0%
Adj. Flow (vph)	0	4	1	124	108	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	125	108	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12	_		12	0	_
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	ion 16.2%			IC	U Level o	of Service
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	0.2					
		EDD	NDI	NDT	CDT	CDD
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥	4	4	4	4	•
Traffic Vol, veh/h	0	1	1	103	92	0
Future Vol, veh/h	0	1	1	103	92	0
Conflicting Peds, #/hr	0	0	0	_ 0	_ 0	_ 0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	25	25	83	83	85	85
Heavy Vehicles, %	0	0	0	9	9	0
Mvmt Flow	0	4	1	124	108	0
Majay/Minay	lin a nO		1-1-1		1-i0	
	linor2		Major1		/lajor2	
Conflicting Flow All	234	108	108	0	-	0
Stage 1	108	-	-	-	-	-
Stage 2	126	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	759	951	1495	-	-	-
Stage 1	921	-	-	-	-	-
Stage 2	905	-	-	-	-	-
Platoon blocked, %				-	_	-
Mov Cap-1 Maneuver	758	951	1495	-	_	_
Mov Cap-2 Maneuver	758	-	-	_	_	_
Stage 1	920	_	_	_	_	_
Stage 2	905	_	_	_		_
Slaye 2	300	-	-	-	<u>-</u>	-
Approach	EB		NB		SB	
	0.0		0.1		0	
HCM Control Delay, s	8.8					
HCM Control Delay, s HCM LOS	8.8 A					
HCM Control Delay, s HCM LOS	8.8 A					
HCM LOS	Α	NDI	NDT	EDI 51	CDT	QDD.
HCM LOS Minor Lane/Major Mvmt	Α	NBL	NBT	EBLn1	SBT	SBR
Minor Lane/Major Mvmt Capacity (veh/h)	Α	1495	-	951	-	-
Minor Lane/Major Mvmt Capacity (veh/h) HCM Lane V/C Ratio	Α	1495 0.001	-	951 0.004	-	-
Minor Lane/Major Mvmt Capacity (veh/h) HCM Lane V/C Ratio HCM Control Delay (s)	Α	1495 0.001 7.4	- - 0	951 0.004 8.8	- - -	- -
Minor Lane/Major Mvmt Capacity (veh/h) HCM Lane V/C Ratio	Α	1495 0.001	-	951 0.004	-	-

	۶	•	1	<u></u>	 	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	7	^	î,	
Traffic Volume (vph)	0	1	0	103	91	0
Future Volume (vph)	0	1	0	103	91	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	0		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	1900	1615	1900	1743	1696	0
Flt Permitted						
Satd. Flow (perm)	1900	1615	1900	1743	1696	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.25	0.25	0.81	0.81	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	9%	12%	0%
Adj. Flow (vph)	0	4	0	127	118	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	4	0	127	118	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	J
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
	Other					
Control Type: Unsignalized	Julei					
	ion 1/1 00/				Hlovola	of Convince /
Intersection Capacity Utilizati	1011 14.8%			IC	U Level C	of Service A

 $\label{thm:continuous} G:\label{thm:continuous} $$G:\label{thm:continuous} $$G:\label{thm:continuous} $$BL\ Companies $$$

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						אמט
Traffic Vol, veh/h	ነ	7	*	103	1 → 91	0
Future Vol, veh/h	0	1	0	103	91	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control		Stop	Free	Free	Free	Free
RT Channelized	Stop -	None	- Free	None	Free -	None
	0	None 0	100		-	None -
Storage Length Veh in Median Storage		-	100	0	0	-
Grade, %	0	- 25	- 01	0	0	- 77
Peak Hour Factor	25	25	81	81	77	77
Heavy Vehicles, %	0	0	0	9	12	0
Mvmt Flow	0	4	0	127	118	0
Major/Minor N	/linor2	N	Major1	N	//ajor2	
Conflicting Flow All	245	118	118	0	-	0
Stage 1	118	-	-	-		-
Stage 2	127	-		_		
Critical Hdwy	6.4	6.2	4.1	<u>-</u>		
Critical Hdwy Stg 1	5.4	0.2	4.1	-	_	_
	5.4		-	-		-
Critical Hdwy Stg 2		- 2 2	- 2.2	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	748	939	1483	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	904	-	-	-	-	-
Platoon blocked, %		000	1100	-	-	-
Mov Cap-1 Maneuver	748	939	1483	-	-	-
Mov Cap-2 Maneuver	748	-	-	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	904	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	8.9		0		0	
HCM LOS	0.9 A		U		U	
I IOIVI LOS	А					
Minor Lane/Major Mvm	t	NBL	NBT	EBLn1 E	EBLn2	SBT
Capacity (veh/h)		1483	-	-	939	-
HCM Lane V/C Ratio		-	-	-	0.004	-
HCM Control Delay (s)		0	-	0	8.9	-
HCM Lane LOS		Α	-	Α	Α	-
HCM 95th %tile Q(veh)		0	-	-	0	-
(VOII)		_				

	۶	→	•	•	+	•	•	†	/	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	23	19	3	4	15	7	7	82	14	11	84	22
Future Volume (vph)	23	19	3	4	15	7	7	82	14	11	84	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.963			0.982			0.974	
Flt Protected		0.975			0.993			0.997			0.995	
Satd. Flow (prot)	0	1834	0	0	1817	0	0	1710	0	0	1678	0
Flt Permitted		0.975			0.993			0.997			0.995	
Satd. Flow (perm)	0	1834	0	0	1817	0	0	1710	0	0	1678	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.64	0.64	0.64	0.66	0.66	0.66	0.72	0.72	0.72	0.67	0.67	0.67
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	11%	0%	0%	12%	6%
Adj. Flow (vph)	36	30	5	6	23	11	10	114	19	16	125	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	0	0	40	0	0	143	0	0	174	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utiliza	tion 22.0%			IC	CU Level	of Service	Α					
Analysis Period (min) 15												

Intersection												
Intersection Delay, s/veh	8.2											
Intersection LOS	Α											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			44			44			4	
Traffic Vol, veh/h	23	19	3	4	15	7	7	82	14	11	84	22
Future Vol, veh/h	23	19	3	4	15	7	7	82	14	11	84	22
Peak Hour Factor	0.64	0.64	0.64	0.66	0.66	0.66	0.72	0.72	0.72	0.67	0.67	0.67
Heavy Vehicles, %	0	0	0	0	0	0	0	11	0	0	12	6
Mvmt Flow	36	30	5	6	23	11	10	114	19	16	125	33
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	8.2			7.8			8.2			8.3		
HCM LOS	Α			Α			Α			Α		
Lane		NBLn1	EBLn1	WBLn1	SBLn1							
Vol Left, %		7%	51%	15%	9%							
Vol Thru, %		80%	42%	58%	72%							
Vol Right, %		14%	7%	27%	19%							
Sign Control		Stop	Stop	Stop	Stop							
Traffic Vol by Lane		103	45	26	117							
LT Vol		7	23	4	11							
Through Vol		82	19	15	84							
RT Vol		14	3	7	22							
Lane Flow Rate		143	70	39	175							

1

0.205

4.219

Yes

852

2.234

0.205

8.3

8.0

Α

0.05

4.55

Yes

787

2.574

0.05

7.8

0.2

Α

0.092

4.702

Yes

763

2.725

0.092

8.2

0.3

Α

0.17

4.276

Yes

841

2.291

0.17

8.2

0.6

Α

Geometry Grp

Degree of Util (X)

Convergence, Y/N

HCM Lane V/C Ratio

HCM Control Delay

HCM Lane LOS

HCM 95th-tile Q

Service Time

Cap

Departure Headway (Hd)

	-	•	•	←	•	-
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	f)			4	ሻ	7
Traffic Volume (vph)	44	0	0	26	0	0
Future Volume (vph)	44	0	0	26	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	1863	1863
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	1863	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	0	0	28	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	0	28	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					

Control Type: Unsignalized

Intersection Capacity Utilization 6.7% Analysis Period (min) 15

ICU Level of Service A

Intersection							
Int Delay, s/veh	0						
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations		LDIX	VVDL	_{VVD1}	NDL	TION.	
Traffic Vol, veh/h	44	0	0	26	0	0	
Future Vol, veh/h	44	0	0	26	0	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-		-	None	
Storage Length	-	-	-	-	0	0	
Veh in Median Storage,	# 0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	48	0	0	28	0	0	
Major/Minor N	1ajor1	ı	Major2	ı	Minor1		
Conflicting Flow All	0	0	48	0	76	48	
Stage 1	-	-	-	-	48	-	
Stage 2	-	-	-	-	28	-	
Critical Hdwy	-	-	4.12	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	-	-	2.218	-	3.518	3.318	
Pot Cap-1 Maneuver	-	-	1559	-	927	1021	
Stage 1	-	-	-	-	974	-	
Stage 2	-	-	-	-	995	-	
Platoon blocked, %	-	-		-			
Mov Cap-1 Maneuver	-	-	1559	-	927	1021	
Mov Cap-2 Maneuver	-	-	-	-	927	-	
Stage 1	-	-	-	-	974	-	
Stage 2	-	-	-	-	995	-	
Approach	EB		WB		NB		
HCM Control Delay, s	0		0		0		
HCM LOS					Α		
Minor Lane/Major Mvmt	1	NBLn11	VBI n2	EBT	EBR	WBL	WBT
Capacity (veh/h)	<u> </u>	-	TULIIZ	-		1559	-
HCM Lane V/C Ratio		_	_	_	_	-	_
HCM Control Delay (s)		0	0	_	_	0	_
HCM Lane LOS		A	A	_	_	A	_
HCM 95th %tile Q(veh)		-	-	-	-	0	-
, , , , , , , , , , , , , , , ,							

BUILD



1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: AM

	•	→	•	•	—	•	4	†	~	/	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	ň	^					¥	4	7
Traffic Volume (vph)	0	581	227	309	914	0	0	0	0	172	0	409
Future Volume (vph)	0	581	227	309	914	0	0	0	0	172	0	409
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			100			25			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt		0.00	0.850		0.00					0.00	0.862	0.850
Flt Protected			0.000	0.950						0.950	0.996	0.000
Satd. Flow (prot)	0	3008	1455	1597	2756	0	0	0	0	1678	1318	1442
Flt Permitted		0000	1100	0.950	2,00			· ·		0.950	0.996	
Satd. Flow (perm)	0	3008	1455	1597	2756	0	0	0	0	1678	1318	1442
Right Turn on Red	•	0000	Yes	1001	2100	Yes	•	· ·	Yes	1070	1010	No
Satd. Flow (RTOR)			241			103			103			110
Link Speed (mph)		45	271		35			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			17.8			8.5			11.3	
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	0.94	20%	11%	13%	31%	0.92	0.00	0.88	0.00	9%	0.02	17%
• • • •	0 %	618	241	336	993	0 %	0 %	0 /8	0 /8	210	0 /8	499
Adj. Flow (vph) Shared Lane Traffic (%)	U	010	241	330	333	U	U	U	U	10%	U	48%
Lane Group Flow (vph)	0	618	241	336	993	0	0	0	0	189	261	259
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
	Left	Left	Right	Left	Left		Left	Left		Left	Left	
Lane Alignment	Leit	12	Rigiit	Leit	24	Right	Leit	14	Right	Leit	14	Right
Median Width(ft)					0							
Link Offset(ft)		0 16			16			0 16			0 16	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Headway Factor	1.00	1.00	1.00	1.00	1.00	9	1.00	1.00	1.00	15	0.90	9
Turning Speed (mph)	10	NΙΛ			NA	9	10		9		NΙΛ	Prot
Turn Type		NA 2	Prot 2	Prot 1	1 2					Split 4	NA 4	4
Protected Phases		2	2		ΙZ					4	4	4
Permitted Phases		2	2	1	1.0					4	4	4
Detector Phase		2	2	1	12					4	4	4
Switch Phase		1E 0	15.0	7.0						0.0	0.0	0.0
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		23.0	23.0	26.0						31.0	31.0	31.0
Total Split (%)		28.8%	28.8%	32.5%						38.8%	38.8%	38.8%
Maximum Green (s)		17.5	17.5	22.0						25.5	25.5	25.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0

ı

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: AM

	_	-	•	•	•	_		T		-	¥	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		22.0	22.0	22.0	49.6					20.9	20.9	20.9
Actuated g/C Ratio		0.28	0.28	0.28	0.62					0.26	0.26	0.26
v/c Ratio		0.75	0.42	0.77	0.58					0.43	0.76	0.69
Control Delay		36.0	6.5	31.0	4.8					26.6	41.0	35.7
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		36.0	6.5	31.0	4.8					26.6	41.0	35.7
LOS		D	Α	С	Α					С	D	D
Approach Delay		27.7			11.4						35.2	
Approach LOS		С			В						D	
Queue Length 50th (ft)		160	0	115	47					80	128	118
Queue Length 95th (ft)		#263	56	m187	m235					118	183	168
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		829	575	457	1707					534	420	459
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		0.75	0.42	0.74	0.58					0.35	0.62	0.56

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 78 (98%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 22.1 Intersection LOS: C
Intersection Capacity Utilization 56.7% ICU Level of Service B

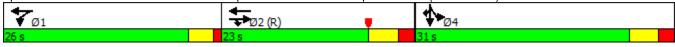
Analysis Period (min) 15

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: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: AM

	۶	-	•	•	←	•	4	†	~	>	Ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	Ť	† †			^	7	ř	ર્ન	7			
Traffic Volume (vph)	192	561	0	0	880	248	343	5	263	0	0	0
Future Volume (vph)	192	561	0	0	880	248	343	5	263	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950						0.950	0.954				
Satd. Flow (prot)	1656	3008	0	0	2735	1394	1604	1516	1606	0	0	0
Flt Permitted	0.950		-				0.950	0.954		•		•
Satd. Flow (perm)	1656	3008	0	0	2735	1394	1604	1516	1606	0	0	0
Right Turn on Red			Yes	•		Yes			No	•	•	Yes
Satd. Flow (RTOR)						256			110			. 00
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			14.9			15.5			11.1	
Peak Hour Factor	0.93	0.93	0.93	0.97	0.97	0.97	0.86	0.86	0.86	0.88	0.88	0.88
Heavy Vehicles (%)	9%	20%	0%	0%	32%	12%	14%	0%	14%	0%	0%	0%
Adj. Flow (vph)	206	603	0	0	907	256	399	6	306	0	0	0
Shared Lane Traffic (%)	200	000	· ·	· ·	001	200	49%	•	000		•	•
Lane Group Flow (vph)	206	603	0	0	907	256	203	202	306	0	0	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)	Lon	24	i ugiit	Lon	24	i tigiit	2011	14	i agiit	Lon	14	i tigirt
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA			NA	Prot	Split	NA	Prot			-
Protected Phases	1	12			2	2	4	4	4			
Permitted Phases												
Detector Phase	1	12			2	2	4	4	4			
Switch Phase												
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	25.0				29.0	29.0	26.0	26.0	26.0			
Total Split (%)	31.3%				36.3%	36.3%	32.5%	32.5%	32.5%			
Maximum Green (s)	21.0				23.5	23.5	21.0	21.0	21.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			
	J. J						•	•				

ı

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: AM

	•	→	•	•	•	•	1	Ť		-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	16.2	52.0			30.3	30.3	19.0	19.0	19.0			
Actuated g/C Ratio	0.20	0.65			0.38	0.38	0.24	0.24	0.24			
v/c Ratio	0.62	0.31			0.87	0.37	0.53	0.56	0.80			
Control Delay	44.2	1.0			35.5	11.2	31.7	32.9	45.5			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	44.2	1.0			35.5	11.2	31.7	32.9	45.5			
LOS	D	Α			D	В	С	С	D			
Approach Delay		12.0			30.2			38.0				
Approach LOS		В			С			D				
Queue Length 50th (ft)	93	4			180	40	90	90	139			
Queue Length 95th (ft)	m104	10			m#271	m49	149	150	#221			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	434	1933			1037	687	421	397	421			
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	0.47	0.31			0.87	0.37	0.48	0.51	0.73			

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 34 (43%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 26.8 Intersection LOS: C
Intersection Capacity Utilization 56.7% ICU Level of Service B

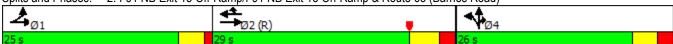
Analysis Period (min) 15

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: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



	۶	→	•	•	+	•	•	†	/	/	+	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1/2	ĵ.		ň	^	7	Ť	f)			4	7
Traffic Volume (vph)	279	520	25	10	980	126	35	25	10	30	5	113
Future Volume (vph)	279	520	25	10	980	126	35	25	10	30	5	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%	'-		0%	
Storage Length (ft)	570	0 70	0	100	170	250	0	070	0	345	0,70	0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100		•	25		· ·	130		•
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.01	0.993	1.00	1.00	0.00	0.850	1.00	0.957	1.00	1.00	1.00	0.850
Fit Protected	0.950	0.550		0.950		0.000	0.950	0.501			0.959	0.000
Satd. Flow (prot)	3045	1547	0	1796	2477	1516	1668	1753	0	0	1791	1509
Flt Permitted	0.950	1041	U	0.950	2411	1310	0.729	1755	U	U	0.708	1303
Satd. Flow (perm)	3045	1547	0	1796	2477	1516	1280	1753	0	0	1322	1509
Right Turn on Red	3043	1547	Yes	1730	2411	Yes	1200	1755	Yes	U	1322	Yes
Satd. Flow (RTOR)		5	165			142		20	165			115
Link Speed (mph)		35			35	142		30			30	113
,		764						251				
Link Distance (ft)					751						720	
Travel Time (s)	0.00	14.9	0.00	0.00	14.6	0.00	0.54	5.7	0.54	0.04	16.4	0.04
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.51	0.51	0.51	0.81	0.81	0.81
Heavy Vehicles (%)	15%	23%	1%	0%	45%	6%	1%	0%	1%	2%	0%	7%
Adj. Flow (vph)	303	565	27	11	1101	142	69	49	20	37	6	140
Shared Lane Traffic (%)	000	500	•	44	4404	4.40	20	00			40	4.40
Lane Group Flow (vph)	303	592	0	11	1101	142	69	69	0	0	43	140
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)		24			24			10			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane	4.00	4.00	4.00				4.00		4.00	4.00	4.00	4.00
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		12	15		12	15		12	15		12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm	NA	pt+ov
Protected Phases	7	7 8		3	3 8	3 8		4			4	4 7
Permitted Phases	_						4			4	_	
Detector Phase	7	7 8		3	3 8	3 8	4	4		4	4	4 7
Switch Phase												
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	
Total Split (s)	26.0			11.0			19.0	19.0		19.0	19.0	
Total Split (%)	32.5%			13.8%			23.8%	23.8%		23.8%	23.8%	
Maximum Green (s)	20.6			5.7			14.1	14.1		14.1	14.1	
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	
Lost Time Adjust (s)	0.0			0.0			0.0	0.0			0.0	
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												

1	~ 0	
Lane Group	Ø8	
LaneConfigurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	8	
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	15.0	
Minimum Split (s)	21.1	
Total Split (s)	24.0	
Total Split (%)	30%	
Maximum Green (s)	17.9	
Yellow Time (s)	4.8	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	9	

	•	-	•	•	•	•	1	†	~	-	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	
Recall Mode	None			None			None	None		None	None	
Act Effct Green (s)	20.5	49.3		5.7	34.5	34.5	9.4	9.4			9.4	35.3
Actuated g/C Ratio	0.26	0.62		0.07	0.43	0.43	0.12	0.12			0.12	0.44
v/c Ratio	0.39	0.62		0.09	1.03	0.19	0.46	0.31			0.28	0.19
Control Delay	27.2	12.1		36.4	63.0	4.0	41.9	27.3			35.5	3.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	27.2	12.1		36.4	63.0	4.0	41.9	27.3			35.5	3.9
LOS	С	В		D	Е	Α	D	С			D	Α
Approach Delay		17.2			56.1			34.6			11.4	
Approach LOS		В			Е			С			В	
Queue Length 50th (ft)	61	68		5	~346	0	33	23			20	6
Queue Length 95th (ft)	m103	135		21	#470	33	37	27			42	27
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	845	939		127	1066	733	225	325			233	739
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	0.36	0.63		0.09	1.03	0.19	0.31	0.21			0.18	0.19

Intersection Summary

Area Type: Other

Cycle Length: 80 Actuated Cycle Length: 80

Offset: 27 (34%), Referenced to phase 8:EBWB, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Intersection Capacity Utilization 56.7%

Maximum v/c Ratio: 1.03
Intersection Signal Delay: 37.5

Intersection LOS: D
ICU Level of Service B

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

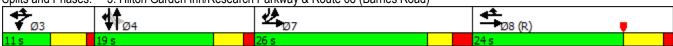
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø8
Vehicle Extension (s)	5.0
Recall Mode	C-Min
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Build Timing Plan: AM

	۶	→	•	•	—	4	•	†	<i>></i>	\	+	- ✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ች	1		*	f		ኝ	†	7	ች	₽	
Traffic Volume (vph)	0	0	5	2	0	0	35	394	1	0	141	0
Future Volume (vph)	0	0	5	2	0	0	35	394	1	0	141	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	1000	0	170	1000	0	140	1000	0	115	1000	0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25		•	25		•	130		•	100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850							0.850	,,,,,		,,,,,,
Flt Protected				0.950			0.950					
Satd. Flow (prot)	1900	1615	0	1805	1900	0	1805	1845	1615	1712	1727	0
FIt Permitted			-			-	0.636					
Satd. Flow (perm)	1900	1615	0	1900	1900	0	1208	1845	1615	1712	1727	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		676							65			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.42	0.42	0.42	0.88	0.88	0.88	0.67	0.67	0.67	0.73	0.73	0.73
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	11%	10%	0%
Adj. Flow (vph)	0	0	12	2	0	0	52	588	1	0	193	0
Shared Lane Traffic (%)			· <u>-</u>	_			<u> </u>					J
Lane Group Flow (vph)	0	12	0	2	0	0	52	588	1	0	193	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24	, i		30			12		Ŭ	12	J
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm			Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	2	
Permitted Phases	4			4			2		2	2		
Detector Phase	4	4		4	4		2	2	2	1	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0	15.0	4.5	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0	21.0	9.0	21.0	
Total Split (s)	40.0	40.0		40.0	40.0		51.0	51.0	51.0	9.0	51.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		51.0%	51.0%	51.0%	9.0%	51.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		45.0	45.0	45.0	5.0	45.0	
Yellow Time (s)	3.0	3.0		3.0	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	1.0	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	5.0		5.0	5.0		6.0	6.0	6.0	4.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		2.0	2.0	2.0	1.0	2.0	
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	

	٠	→	*	•	+	•	4	†	<i>></i>	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)		7.2		7.2			37.5	37.5	37.5		37.5	
Actuated g/C Ratio		0.18		0.18			0.94	0.94	0.94		0.94	
v/c Ratio		0.01		0.01			0.05	0.34	0.00		0.12	
Control Delay		0.0		17.5			1.5	2.1	0.0		1.4	
Queue Delay		0.0		0.0			0.0	0.0	0.0		0.0	
Total Delay		0.0		17.5			1.5	2.1	0.0		1.4	
LOS		Α		В			Α	Α	Α		Α	
Approach Delay					17.5			2.0			1.4	
Approach LOS					В			Α			Α	
Queue Length 50th (ft)		0		0			0	0	0		0	
Queue Length 95th (ft)		0		6			9	76	0		27	
Internal Link Dist (ft)		116			123			640			398	
Turn Bay Length (ft)				170			140					
Base Capacity (vph)		1522		1714			1159	1771	1553		1658	
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		0.01		0.00			0.04	0.33	0.00		0.12	
Intersection Summary												
Area Type:	Other											

Cycle Length: 100

Actuated Cycle Length: 40.1

Natural Cycle: 50

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.34

Intersection Signal Delay: 1.9 Intersection LOS: A Intersection Capacity Utilization 44.1% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Research Parkway & Food Bank Driv/Site Drive 1



	۶	•	4	†		1
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			4	1>	
Traffic Volume (vph)	0	6	58	336	135	6
Future Volume (vph)	0	6	58	336	135	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865				0.994	
Flt Protected				0.993		
Satd. Flow (prot)	1096	0	0	1705	1597	0
Flt Permitted				0.993		
Satd. Flow (perm)	1096	0	0	1705	1597	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.50	0.50	0.90	0.90	0.63	0.63
Heavy Vehicles (%)	0%	50%	3%	12%	19%	2%
Adj. Flow (vph)	0	12	64	373	214	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	0	437	224	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	ion 41.7%			IC	CU Level of	of Service
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	1					
	•					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	₽	
Traffic Vol, veh/h	0	6	58	336	135	6
Future Vol, veh/h	0	6	58	336	135	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage	# 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	90	90	63	63
Heavy Vehicles, %	0	50	3	12	19	2
Mvmt Flow	0	12	64	373	214	10
WWW.CT IOW		12	O I	010	211	10
Major/Minor N	/linor2		Major1	N	/lajor2	
Conflicting Flow All	720	219	224	0	-	0
Stage 1	219	-	-	-	-	-
Stage 2	501	-	-	-	-	-
Critical Hdwy	6.4	6.7	4.13	-	-	_
Critical Hdwy Stg 1	5.4	-	-	_	_	_
Critical Hdwy Stg 2	5.4	_	_	_	_	_
Follow-up Hdwy	3.5	3 75	2.227	_	_	_
Pot Cap-1 Maneuver	398	714	1339	_	_	_
Stage 1	822	7 17	1000	_	_	_
Stage 2	613					_
	013	-	_	-		
Platoon blocked, %	274	744	4220	-	-	-
Mov Cap-1 Maneuver	374	714	1339	-	-	-
Mov Cap-2 Maneuver	374	-	-	-	-	-
Stage 1	773	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	10.1		1.2		0	
HCM LOS	В		1.2		U	
HCWI LOS	D					
Minor Lane/Major Mvm	t	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1339	_	714	_	_
HCM Lane V/C Ratio		0.048	_	0.017	_	_
HCM Control Delay (s)		7.8	0	10.1	_	_
HCM Lane LOS		Α.	A	В	-	_
HCM 95th %tile Q(veh)		0.2	-	0.1		_
How som whe Q(ven)		0.2	-	U. I	-	-

Analysis Period (min) 15

	۶	•	•	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	†	1>	
Traffic Volume (vph)	0	0	6	330	141	2
Future Volume (vph)	0	0	6	330	141	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.998	
Flt Protected			0.950			
Satd. Flow (prot)	1900	1900	1805	1667	1623	0
FIt Permitted			0.950			
Satd. Flow (perm)	1900	1900	1805	1667	1623	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.25	0.25	0.89	0.89	0.81	0.81
Heavy Vehicles (%)	0%	0%	0%	14%	17%	0%
Adj. Flow (vph)	0	0	7	371	174	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	7	371	176	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop	-		Free	Free	-
Intersection Summary						
	Other					
Control Type: Unsignalized	Ouilei					
	tion 20 70/			10	'III avala	of Contine A
Intersection Capacity Utilizat	1011 20.7%			IC	o Level C	of Service A

 $\label{lem:gamma} G:\label{lem:gamma} $$G:\label{lem:gamma} $$BL\companies$$$

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
						אומט
Lane Configurations	\	*	\	220	141	2
Traffic Vol, veh/h	0	0	6	330	141	2
Future Vol, veh/h	0	0	6	330	141	2
Conflicting Peds, #/hr	0	0	0	_ 0	_ 0	0
	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	-
Veh in Median Storage,	# 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	25	25	89	89	81	81
Heavy Vehicles, %	0	0	0	14	17	0
Mymt Flow	0	0	7	371	174	2
IVIVIII(I IOW	U	U		07 1	17-7	
Major/Minor M	inor2	N	Major1	N	Major2	
Conflicting Flow All	560	175	176	0	_	0
Stage 1	175	_	_	_	-	_
Stage 2	385	_	_	_	_	_
Critical Hdwy	6.4	6.2	4.1	_	_	_
Critical Hdwy Stg 1	5.4	- 0.2	-	_	_	<u>-</u>
Critical Hdwy Stg 2	5.4	_	_	_		
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	493	874	1412	-	-	-
Stage 1	860	-	-	-	-	-
Stage 2	692	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	491	874	1412	-	-	-
Mov Cap-2 Maneuver	491	-	-	-	-	-
Stage 1	856	-	_	-	_	_
Stage 2	692	_	_	_	_	_
Jugo 2	552					
Approach	EB		NB		SB	
HCM Control Delay, s	0		0.1		0	
HCM LOS	Α					
NA: 1 /2 1 NA		NE	Not	EDI 4 -	-DI 6	057
Minor Lane/Major Mvmt		NBL	NBT	EBLn1 E	-BLn2	SBT
Capacity (veh/h)		1412	-	-	-	-
HCM Lane V/C Ratio		0.005	-	-	-	-
HCM Control Delay (s)		7.6	-	0	0	-
HCM Lane LOS		Α	-	Α	Α	-
HCM 95th %tile Q(veh)		0	-	-	-	-

	۶	→	•	•	←	4	4	†	/	/		4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	101	61	25	40	66	20	15	275	40	25	78	45
Future Volume (vph)	101	61	25	40	66	20	15	275	40	25	78	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.979			0.984			0.959	
Flt Protected		0.974			0.984			0.998			0.992	
Satd. Flow (prot)	0	1749	0	0	1764	0	0	1803	0	0	1734	0
Flt Permitted		0.974			0.984			0.998			0.992	
Satd. Flow (perm)	0	1749	0	0	1764	0	0	1803	0	0	1734	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.62	0.62	0.62	0.71	0.71	0.71	0.69	0.69	0.69	0.76	0.76	0.76
Heavy Vehicles (%)	0%	5%	17%	6%	2%	5%	8%	3%	5%	9%	4%	2%
Adj. Flow (vph)	163	98	40	56	93	28	22	399	58	33	103	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	301	0	0	177	0	0	479	0	0	195	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilizati	on 42.7%			IC	CU Level of	of Service	Α					
Analysis Period (min) 15												

Intersection												
Intersection Delay, s/veh	20.7											
Intersection LOS	С											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	101	61	25	40	66	20	15	275	40	25	78	45
Future Vol, veh/h	101	61	25	40	66	20	15	275	40	25	78	45
Peak Hour Factor	0.62	0.62	0.62	0.71	0.71	0.71	0.69	0.69	0.69	0.76	0.76	0.76
Heavy Vehicles, %	0	5	17	6	2	5	8	3	5	9	4	2
Mvmt Flow	163	98	40	56	93	28	22	399	58	33	103	59
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	17			13.4			28.8			13.2		
HCM LOS	С			В			D			В		
Lane		NBLn1	EBLn1	WBLn1	SBLn1							
Vol Left, %		5%	54%	32%	17%							
Vol Thru, %		83%	33%	52%	53%							
Vol Right, %		12%	13%	16%	30%							
Sign Control		Stop	Stop	Stop	Stop							
Traffic Vol by Lane		330	187	126	148							
LT Vol		15	101	40	25							
Through Vol		275	61	66	78							
RT Vol		40	25	20	45							
Lane Flow Rate		478	302	177	195							
Geometry Grp		1	1	1	1							
Degree of Util (X)		0.799	0.543	0.337	0.354							
Departure Headway (Hd)		6.015	6.478	6.842	6.548							
Convergence, Y/N		Yes	Yes	Yes	Yes							
Cap		603	555	524	547							
Service Time		4.065	4.535	4.909	4.615							
HCM Lane V/C Ratio		0.793	0.544	0.338	0.356							
110140 4 15 1		00.0	47	40.4	40.0							

28.8

D

7.8

17

С

3.2

13.4

В

1.5

13.2

В

1.6

HCM Control Delay

HCM Lane LOS

HCM 95th-tile Q

	-	•	•	←		/
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	^			ર્ન	ሻ	7
Traffic Volume (vph)	126	0	0	126	0	0
Future Volume (vph)	126	0	0	126	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	1863	1863
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	1863	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	0	0	137	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	137	0	0	137	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 10.0%

ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	1>			4	*	7
Traffic Vol, veh/h	126	0	0	126	0	0
Future Vol. veh/h	126	0	0	126	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-		-	None	-	None
Storage Length	_	-	-	-	0	0
Veh in Median Storage	e,# 0	-	-	0	0	-
Grade, %	0	_	_	0	0	_
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	137	0	0	137	0	0
WWW.CT IOW	101	v		101	· ·	J
Major/Minor	Major1	ľ	Major2		Minor1	
Conflicting Flow All	0	0	137	0	274	137
Stage 1	-	-	-	-	137	-
Stage 2	-	-	-	-	137	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1447	-	716	911
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	890	_
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1447	-	716	911
Mov Cap-2 Maneuver		-	_	-	716	_
Stage 1	-	-	-	-	890	_
Stage 2	_	_	_	_	890	_
01490 2					000	
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS					Α	
Minor Lane/Major Mvn	nt I	NBLn11	VRI n2	EBT	EBR	WBL
Capacity (veh/h)	1		TULIIZ		-	1447
HCM Lane V/C Ratio		-	-	-	<u> </u>	1447
HCM Control Delay (s	1	0	0	-		0
HCM Lane LOS)	A	A	_	<u> </u>	A
HCM 95th %tile Q(veh	1)	Α	Α	-	-	0
	1)	_	_	_		U

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: MD

	ᄼ	→	•	•	←	•	4	†	~	/	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	7	^					7	4	7
Traffic Volume (vph)	0	511	172	175	559	0	0	0	0	131	1	172
Future Volume (vph)	0	511	172	175	559	0	0	0	0	131	1	172
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			100			25			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.890	0.850
Flt Protected				0.950						0.950	0.987	
Satd. Flow (prot)	0	3223	1455	1467	3343	0	0	0	0	1577	1237	1288
Flt Permitted				0.950		•	-	-		0.950	0.987	
Satd. Flow (perm)	0	3223	1455	1467	3343	0	0	0	0	1577	1237	1288
Right Turn on Red		0220	Yes			Yes	•	•	Yes			No
Satd. Flow (RTOR)			198			. 00			. 00			110
Link Speed (mph)		45			35			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			17.8			8.5			11.3	
Peak Hour Factor	0.87	0.87	0.87	0.91	0.91	0.91	0.88	0.88	0.88	0.90	0.90	0.90
Heavy Vehicles (%)	0%	12%	11%	23%	8%	0%	0%	0%	0%	16%	0%	31%
Adj. Flow (vph)	0	587	198	192	614	0	0	0	0	146	1	191
Shared Lane Traffic (%)		001	100	102	VII	· ·	•	J	J	20%	· ·	43%
Lane Group Flow (vph)	0	587	198	192	614	0	0	0	0	117	112	109
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)	Loit	12	rugiit	Lon	24	rugiit	Lon	14	rugiit	Loit	14	rugiit
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Prot	NA					Split	NA	Prot
Protected Phases		2		1	12					4	4	4
Permitted Phases			2									
Detector Phase		2	2	1	12					4	4	4
Switch Phase		<u>-</u>	_	•	· -					•	•	•
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		30.0	30.0	20.0						25.0	25.0	25.0
Total Split (%)		40.0%	40.0%	26.7%						33.3%	33.3%	33.3%
Maximum Green (s)		24.5	24.5	16.0						19.5	19.5	19.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead						0.0	0.0	0.0
Lead-Lag Optimize?		Lug	Lug	Load								
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0
VOLIDIO EXICITISION (3)		0.2	0.2	0.0						5.0	5.0	0.0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: MD

	•	-	•	•	•	•	1	1		-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		32.1	32.1	15.2	52.8					12.7	12.7	12.7
Actuated g/C Ratio		0.43	0.43	0.20	0.70					0.17	0.17	0.17
v/c Ratio		0.43	0.27	0.65	0.26					0.44	0.54	0.50
Control Delay		17.9	4.1	30.7	0.8					32.2	37.2	35.4
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		17.9	4.1	30.7	0.8					32.2	37.2	35.4
LOS		В	Α	С	Α					С	D	D
Approach Delay		14.4			7.9						34.9	
Approach LOS		В			Α						С	
Queue Length 50th (ft)		98	0	38	0					52	53	49
Queue Length 95th (ft)		159	38	77	1					92	97	90
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		1381	736	334	2341					410	321	334
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		0.43	0.27	0.57	0.26					0.29	0.35	0.33
Intersection Summary												

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 13 (17%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 15.3 Intersection LOS: B
Intersection Capacity Utilization 44.9% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: MD

	•	→	•	•	←	•	4	†	~	>	Ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ř	† †			^	7	ř	ર્ન	7			
Traffic Volume (vph)	169	473	0	0	576	174	158	Ö	127	0	0	0
Future Volume (vph)	169	473	0	0	576	174	158	0	127	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25		-	25		-	100		-	25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.00	1.00	1.00	0.00	0.850	0.00	0.00	0.850	1.00	1.00	1.00
Flt Protected	0.950					0.000	0.950	0.950	0.000			
Satd. Flow (prot)	1433	3343	0	0	3282	1269	1604	1504	1551	0	0	0
Flt Permitted	0.950	00+0	U	0	0202	1200	0.950	0.950	1001	U	U	U
Satd. Flow (perm)	1433	3343	0	0	3282	1269	1604	1504	1551	0	0	0
Right Turn on Red	1400	JJ-1J	Yes	U	3202	Yes	1004	1304	No	U	U	Yes
Satd. Flow (RTOR)			168			191			INO			168
		35			35	191		30			30	
Link Speed (mph)					764							
Link Distance (ft)		913						683			489	
Travel Time (s)	0.05	17.8	0.05	0.04	14.9	0.04	0.00	15.5	0.00	0.00	11.1	0.00
Peak Hour Factor	0.95	0.95	0.95	0.91	0.91	0.91	0.90	0.90	0.90	0.88	0.88	0.88
Heavy Vehicles (%)	26%	8%	0%	0%	10%	23%	14%	0%	18%	0%	0%	0%
Adj. Flow (vph)	178	498	0	0	633	191	176	0	141	0	0	0
Shared Lane Traffic (%)							50%				_	
Lane Group Flow (vph)	178	498	0	0	633	191	88	88	141	0	0	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)		24			24			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA			NA	Prot	Split	NA	Prot			
Protected Phases	1	12			2	2	4	4	4			
Permitted Phases												
Detector Phase	1	12			2	2	4	4	4			
Switch Phase												
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	20.0				31.0	31.0	24.0	24.0	24.0			
Total Split (%)	26.7%				41.3%	41.3%	32.0%	32.0%	32.0%			
Maximum Green (s)	16.0				25.5	25.5	19.0	19.0	19.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
							5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?	2.0				0.0	0.0	2.0	2.0	2.0			
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: MD

	•	-	*	•	•	•	1	Ť		-	ŧ	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	14.5	53.4			33.4	33.4	12.6	12.6	12.6			
Actuated g/C Ratio	0.19	0.71			0.45	0.45	0.17	0.17	0.17			
v/c Ratio	0.64	0.21			0.43	0.28	0.33	0.35	0.54			
Control Delay	27.9	0.6			11.5	2.0	29.6	30.3	35.7			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	27.9	0.6			11.5	2.0	29.6	30.3	35.7			
LOS	С	Α			В	Α	С	С	D			
Approach Delay		7.8			9.3			32.5				
Approach LOS		Α			Α			С				
Queue Length 50th (ft)	35	0			53	0	38	38	61			
Queue Length 95th (ft)	54	1			94	9	73	74	105			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	319	2342			1463	671	406	381	392			
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	0.21			0.43	0.28	0.22	0.23	0.36			

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 51 (68%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 50

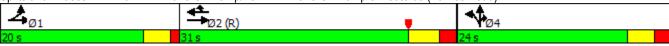
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 12.8 Intersection LOS: B
Intersection Capacity Utilization 44.9% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



Timing Plan: MD

	۶	→	•	•	-	•	1	†	~	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	∱ }		ሻ	^	7	ሻ	ĥ			ર્ન	7
Traffic Volume (vph)	88	505	7	1	532	20	5	0	2	53	0	213
Future Volume (vph)	88	505	7	1	532	20	5	0	2	53	0	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			25			130		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998				0.850		0.850				0.850
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1410	3364	0	1796	3295	1530	1404	1041	0	0	1480	1282
Flt Permitted	0.950		•	0.950			0.719				0.754	
Satd. Flow (perm)	1410	3364	0	1796	3295	1530	1063	1041	0	0	1174	1282
Right Turn on Red		0001	Yes	1100	0200	Yes	1000	1011	Yes			Yes
Satd. Flow (RTOR)		3	100			106		428				205
Link Speed (mph)		35			35	100		30			30	200
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.44	0.44	0.44	0.90	0.90	0.90
Heavy Vehicles (%)	28%	7%	14%	0%	9%	5%	20%	0%	50%	22%	0.30	26%
Adj. Flow (vph)	95	543	8	1	578	22	11	0	5	59	0	237
Shared Lane Traffic (%)	00	0.10		•	010							201
Lane Group Flow (vph)	95	551	0	1	578	22	11	5	0	0	59	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)	Loit	12	rugiit	Loit	12	rugiit	Loit	10	rugiit	Loit	0	rugiit
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	1.00	1.00	1.00	1.01	1.01	1.01	1.05	1.04	12	1.00	1.00	12
Turn Type	Prot	NA	12	Prot	NA	Prot	Perm	NA	12	Perm	NΔ	pm+ov
Protected Phases	1	12		3	23	23	i Giiii	4		i Giiii	4	1
Permitted Phases	ı	1 4		J	2 3	2.3	4	4		4	7	4
Detector Phase	1	1 2		3	23	23	4	4		4	4	1
Switch Phase	ı	1 4		J	2 3	2.3	4	4		7	7	ı
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	20.0			12.0			15.0	15.0		15.0	15.0	20.0
Total Split (%)	26.7%			16.0%			20.0%	20.0%		20.0%	20.0%	26.7%
	14.6			6.7			10.1	10.1			10.1	14.6
Maximum Green (s)	3.0			4.3			3.6	3.6		10.1 3.6	3.6	
Yellow Time (s)												3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0			0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?												

Lane Group	Ø2	
Lane Configurations	WZ	
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	2	
Permitted Phases		
Detector Phase		
Switch Phase		
	15.0	
Minimum Initial (s)		
Minimum Split (s)	21.1	
Total Split (s)	28.0	
Total Split (%)	37%	
Maximum Green (s)	21.9	
Yellow Time (s)	4.8	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?		

	٠	→	•	•	←	•	4	†	/	\	↓	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	11.0	50.3		5.5	43.9	43.9	8.4	8.4			8.4	19.6
Actuated g/C Ratio	0.15	0.67		0.07	0.59	0.59	0.11	0.11			0.11	0.26
v/c Ratio	0.46	0.24		0.01	0.30	0.02	0.09	0.01			0.45	0.49
Control Delay	41.0	3.5		32.0	10.5	0.1	30.8	0.0			41.9	7.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	41.0	3.5		32.0	10.5	0.1	30.8	0.0			41.9	7.4
LOS	D	Α		С	В	Α	С	Α			D	А
Approach Delay		9.0			10.2			21.2			14.3	
Approach LOS		Α			В			С			В	
Queue Length 50th (ft)	39	31		0	78	0	5	0			26	10
Queue Length 95th (ft)	87	39		5	128	0	9	0			61	52
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	274	2189		160	1984	963	143	510			158	537
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	0.35	0.25		0.01	0.29	0.02	0.08	0.01			0.37	0.44
Intersection Summary												
Area Type:	Other											
Cycle Length: 75												
Actuated Cycle Length: 75	5											
Offset: 42 (56%), Referen	ced to phase	2:EBWB,	Start of \	Yellow								
Natural Cycle: 60												
Control Type: Actuated-Co	oordinated											
Maximum v/c Ratio: 0.49												
Intersection Signal Delay:					tersection							
Intersection Capacity Utiliz	zation 47.4%			IC	CU Level o	of Service	Α					
Analysis Period (min) 15												
Onlite and Discours 0.11	ilian O	la = /D	المحال مامسم			D	١, ١					
Splits and Phases: 3: H	ilton Garden	iiii/Kesea	aich Park	way & RC	oute og (B	arnes Ko	au)					

Lane Group	Ø2
Vehicle Extension (s)	2.5
Recall Mode	C-Min
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

	•	→	•	•	—	•	•	†	<i>></i>	\	Ţ	√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u> </u>	7	LDIX	ሻ	7>	WDIX	ኘ	<u> </u>	7	ሻ	<u> </u>	OBIT
Traffic Volume (vph)	2	0	8	0	0	0	5	103	0	0	258	1
Future Volume (vph)	2	0	8	0	0	0	5	103	0	0	258	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	1300	0	170	1300	0	140	1500	0	115	1500	0
Storage Lanes	1		0	1/0		0	1		1	113		0
Taper Length (ft)	25		0	25		0	130			100		J
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.850	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.999	1.00
FIt Protected	0.950	0.000					0.950				0.000	
Satd. Flow (prot)	1805	1615	0	1900	1900	0	1805	1520	1900	1900	1484	0
FIt Permitted	1000	1010		1000	1000		0.587	.020	1000	1000	1101	J
Satd. Flow (perm)	1900	1615	0	1900	1900	0	1115	1520	1900	1900	1484	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		550										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.63	0.63	0.63	0.88	0.88	0.88	0.81	0.81	0.81	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	28%	0%
Adj. Flow (vph)	3	0	13	0	0	0	6	127	0	0	280	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	13	0	0	0	0	6	127	0	0	281	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24	J •		30			12		<u> </u>	12	J
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm			Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	2	
Permitted Phases	4			4			2		2	2		
Detector Phase	4	4		4	4		2	2	2	1	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0	15.0	4.5	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0	21.0	9.0	21.0	
Total Split (s)	40.0	40.0		40.0	40.0		51.0	51.0	51.0	9.0	51.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		51.0%	51.0%	51.0%	9.0%	51.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		45.0	45.0	45.0	5.0	45.0	
Yellow Time (s)	3.0	3.0		3.0	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	1.0	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	5.0		5.0	5.0		6.0	6.0	6.0	4.0	6.0	
Lead/Lag							Lag	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	3.0	
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	

	۶	-	•	•	←	•	4	†	~	-	↓	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	7.1	7.1					35.6	35.6			35.6	
Actuated g/C Ratio	0.18	0.18					0.92	0.92			0.92	
v/c Ratio	0.01	0.02					0.01	0.09			0.20	
Control Delay	15.5	0.0					2.0	1.7			2.0	
Queue Delay	0.0	0.0					0.0	0.0			0.0	
Total Delay	15.5	0.0					2.0	1.7			2.0	
LOS	В	Α					Α	Α			Α	
Approach Delay		2.9						1.7			2.0	
Approach LOS		Α						Α			Α	
Queue Length 50th (ft)	1	0					0	0			0	
Queue Length 95th (ft)	4	0					3	23			57	
Internal Link Dist (ft)		116			123			640			398	
Turn Bay Length (ft)							140					
Base Capacity (vph)	1753	1532					1100	1499			1464	
Starvation Cap Reductn	0	0					0	0			0	
Spillback Cap Reductn	0	0					0	0			0	
Storage Cap Reductn	0	0					0	0			0	
Reduced v/c Ratio	0.00	0.01					0.01	0.08			0.19	
Intersection Summary												
/I	Other											
Cycle Length: 100												
Actuated Cycle Length: 38.5												
Natural Cycle: 45												
Control Type: Actuated-Unco	ordinated											
Maximum v/c Ratio: 0.20												
Intersection Signal Delay: 1.9				In	tersection	n LOS: A						
Intersection Capacity Utilizat	ion 28.6%			IC	CU Level of	of Service	A					
Analysis Period (min) 15												

Splits and Phases: 4: Research Parkway & Food Bank Driv/Site Drive 1



	•	•	•	†		4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			4	∱	
Traffic Volume (vph)	3	30	14	91	229	3
Future Volume (vph)	3	30	14	91	229	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.876				0.998	
Flt Protected	0.996			0.993		
Satd. Flow (prot)	1458	0	0	1674	1681	0
Flt Permitted	0.996			0.993		
Satd. Flow (perm)	1458	0	0	1674	1681	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.69	0.69	0.83	0.83	0.65	0.65
Heavy Vehicles (%)	0%	15%	11%	13%	13%	0%
Adj. Flow (vph)	4	43	17	110	352	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	0	0	127	357	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12		_	12	0	_
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	tion 26.6%			IC	U Level o	of Service
Analysis Period (min) 15						

Intersection Int Delay, s/veh						
in Dolay, 3/ von	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	14			ની	Þ	
Traffic Vol, veh/h	3	30	14	91	229	3
Future Vol, veh/h	3	30	14	91	229	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	_	-
Veh in Median Storage		-	-	0	0	_
Grade, %	0	-	_	0	0	_
Peak Hour Factor	69	69	83	83	65	65
Heavy Vehicles, %	0	15	11	13	13	0
Mymt Flow	4	43	17	110	352	5
IVIVIIIL I IUW	4	43	- 17	110	JJZ	- 0
Major/Minor I	Minor2	ı	Major1	N	/lajor2	
Conflicting Flow All	499	355	357	0		0
Stage 1	355	-	-	-	-	-
Stage 2	144	_	_	_	_	_
Critical Hdwy	6.4	6.35	4.21	_		_
Critical Hdwy Stg 1	5.4	0.55	4.21		_	_
	5.4	-	-	_	-	
Critical Hdwy Stg 2			2 200		-	-
Follow-up Hdwy	3.5	3.435		-	-	-
Pot Cap-1 Maneuver	535	661	1153	-	-	-
Stage 1	714	-	-	-	-	-
Stage 2	888	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	526	661	1153	-	-	-
	F00					
Mov Cap-2 Maneuver	526	-	-	-	-	-
•	703	-	-	-	-	-
Stage 1	703	- -	- -		- - -	
•		-	- - -		- - -	-
Stage 1 Stage 2	703 888	-	-		-	-
Stage 1	703 888 EB	-	- - NB		- - SB	-
Stage 1 Stage 2	703 888	-	-		-	-
Stage 1 Stage 2 Approach	703 888 EB	-	- - NB		- - SB	-
Stage 1 Stage 2 Approach HCM Control Delay, s	703 888 EB 11	-	- - NB		- - SB	-
Stage 1 Stage 2 Approach HCM Control Delay, s HCM LOS	703 888 EB 11 B	-	- - NB 1.1	-	- - SB 0	-
Stage 1 Stage 2 Approach HCM Control Delay, s HCM LOS Minor Lane/Major Mvm	703 888 EB 11 B	- - NBL	- - NB 1.1	- - - EBLn1	- - SB	-
Stage 1 Stage 2 Approach HCM Control Delay, s HCM LOS Minor Lane/Major Mvm Capacity (veh/h)	703 888 EB 11 B	NBL 1153	NB 1.1	= <u>BLn1</u>	- - SB 0	-
Stage 1 Stage 2 Approach HCM Control Delay, s HCM LOS Minor Lane/Major Mvm Capacity (veh/h) HCM Lane V/C Ratio	703 888 EB 11 B	NBL 1153 0.015	NB 1.1 NBT I	EBLn1 646 0.074	- - SB 0	-
Stage 1 Stage 2 Approach HCM Control Delay, s HCM LOS Minor Lane/Major Mvm Capacity (veh/h) HCM Lane V/C Ratio HCM Control Delay (s)	703 888 EB 11 B	NBL 1153	- - NB 1.1	EBLn1 646 0.074	SB 0	SBR
Stage 1 Stage 2 Approach HCM Control Delay, s HCM LOS Minor Lane/Major Mvm Capacity (veh/h) HCM Lane V/C Ratio	703 888 EB 11 B	NBL 1153 0.015	NB 1.1 NBT I	EBLn1 646 0.074	SB 0	SBR

	•	•	•	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	1	î,	
Traffic Volume (vph)	2	3	2	92	229	0
Future Volume (vph)	2	3	2	92	229	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1583	1805	1681	1652	0
FIt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1583	1805	1681	1652	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.38	0.38	0.83	0.83	0.66	0.66
Heavy Vehicles (%)	0%	2%	0%	13%	15%	0%
Adj. Flow (vph)	5	8	2	111	347	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	8	2	111	347	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12	<u> </u>		12	0	<u> </u>
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15		,,,,,,	9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type: (Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	ion 22.1%			IC	U Level o	of Service A

 $\label{lem:gamma} G:\label{lem:gamma} $$G:\label{lem:gamma} $$BL\companies$$$

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	<u> </u>	\$	
Traffic Vol, veh/h	2	3	2	92	229	0
Future Vol, veh/h	2	3	2	92	229	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	_	-
Veh in Median Storage,		-	-	0	0	_
Grade, %	0	_	_	0	0	_
Peak Hour Factor	38	38	83	83	66	66
Heavy Vehicles, %	0	2	0	13	15	0
Mymt Flow	5	8	2	111	347	0
IVIVIIIL FIOW	5	0	2	111	341	U
Major/Minor N	/linor2	N	Major1	N	Major2	
Conflicting Flow All	462	347	347	0	-	0
Stage 1	347	-	-	-	-	-
Stage 2	115	-	-	-	-	-
Critical Hdwy	6.4	6.22	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	_	-	_	-
Critical Hdwy Stg 2	5.4	_	-	-	-	-
Follow-up Hdwy		3.318	2.2	_	_	_
Pot Cap-1 Maneuver	562	696	1223	_	_	_
Stage 1	720	-	-	_	_	_
Stage 2	915	_	_	_	_	_
Platoon blocked, %	310			_	_	_
Mov Cap-1 Maneuver	561	696	1223	_	_	_
Mov Cap-1 Maneuver	561	- 030	1220	_	_	_
Stage 1	719	-	_			
_				-	-	-
Stage 2	915	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	10.7		0.2		0	
HCM LOS	В					
NA: 1 (NA : NA :		NIDI	NDT	EDI 41	-DI 0	ODT
Minor Lane/Major Mvmt		NBL		EBLn1 I		SBT
Capacity (veh/h)		1223	-	•••	696	-
HCM Lane V/C Ratio		0.002	-	0.009		-
HCM Control Delay (s)		7.9	-		10.2	-
HCM Lane LOS		Α	-	В	В	-
HCM 95th %tile Q(veh)		0	-	0	0	-

	۶	→	•	•	+	4	4	†	~	/	 	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	31	27	11	134	19	34	7	81	6	13	84	37
Future Volume (vph)	31	27	11	134	19	34	7	81	6	13	84	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.976			0.991			0.962	
Flt Protected		0.978			0.965			0.996			0.995	
Satd. Flow (prot)	0	1741	0	0	1613	0	0	1477	0	0	1461	0
Flt Permitted		0.978			0.965			0.996			0.995	
Satd. Flow (perm)	0	1741	0	0	1613	0	0	1477	0	0	1461	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.86	0.86	0.86	0.75	0.75	0.75	0.85	0.85	0.85	0.89	0.89	0.89
Heavy Vehicles (%)	3%	4%	9%	13%	16%	0%	0%	30%	17%	0%	38%	3%
Adj. Flow (vph)	36	31	13	179	25	45	8	95	7	15	94	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	80	0	0	249	0	0	110	0	0	151	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization	on 33.7%			IC	CU Level of	of Service	Α					
Analysis Period (min) 15												

Analysis Period (min) 15

Intersection												
Intersection Delay, s/veh	9.5											
Intersection LOS	Α											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	31	27	11	134	19	34	7	81	6	13	84	37
Future Vol, veh/h	31	27	11	134	19	34	7	81	6	13	84	37
Peak Hour Factor	0.86	0.86	0.86	0.75	0.75	0.75	0.85	0.85	0.85	0.89	0.89	0.89
Heavy Vehicles, %	3	4	9	13	16	0	0	30	17	0	38	3
Mvmt Flow	36	31	13	179	25	45	8	95	7	15	94	42
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	8.6			10.4			8.8			8.9		
HCM LOS	Α			В			Α			Α		
Lane		NBLn1	EBLn1	WBLn1	SBLn1							
Vol Left, %		7%	45%	72%	10%							
Vol Thru, %		86%	39%	10%	63%							
Vol Right, %		6%	16%	18%	28%							
Sign Control		Stop	Stop	Stop	Stop							
Traffic Vol by Lane		0.4	60	197	13/							

INDLIII	CDLIII	VVDLIII	ODLIII	
7%	45%	72%	10%	
86%	39%	10%	63%	
6%	16%	18%	28%	
Stop	Stop	Stop	Stop	
94	69	187	134	
7	31	134	13	
81	27	19	84	
6	11	34	37	
111	80	249	151	
1	1	1	1	
0.15	0.109	0.338	0.197	
4.883	4.887	4.879	4.711	
Yes	Yes	Yes	Yes	
731	729	736	759	
2.936	2.948	2.927	2.762	
0.152	0.11	0.338	0.199	
8.8	8.6	10.4	8.9	
Α	Α	В	Α	
0.5	0.4	1.5	0.7	
	7% 86% 6% Stop 94 7 81 6 111 1 0.15 4.883 Yes 731 2.936 0.152 8.8 A	7% 45% 86% 39% 6% 16% Stop Stop 94 69 7 31 81 27 6 11 111 80 1 1 1 0.15 0.109 4.883 4.887 Yes Yes 731 729 2.936 2.948 0.152 0.11 8.8 8.6 A A	7% 45% 72% 86% 39% 10% 6% 16% 18% Stop Stop Stop 94 69 187 7 31 134 81 27 19 6 11 34 111 80 249 1 1 1 0.15 0.109 0.338 4.883 4.887 4.879 Yes Yes Yes 731 729 736 2.936 2.948 2.927 0.152 0.11 0.338 8.8 8.6 10.4 A A B	7% 45% 72% 10% 86% 39% 10% 63% 6% 16% 18% 28% Stop Stop Stop Stop 94 69 187 134 7 31 134 13 81 27 19 84 6 11 34 37 111 80 249 151 1 1 1 1 0.15 0.109 0.338 0.197 4.883 4.887 4.879 4.711 Yes Yes Yes Yes 731 729 736 759 2.936 2.948 2.927 2.762 0.152 0.11 0.338 0.199 8.8 8.6 10.4 8.9 A A B A

	-	•	•	•	1	~
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	f)		_	ર્ન	ň	7
Traffic Volume (vph)	46	0	0	39	148	0
Future Volume (vph)	46	0	0	39	148	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1863	0	0	1863	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	1863	0	0	1863	1770	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	0	0	42	161	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	0	0	42	161	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 18.2% Analysis Period (min) 15

ICU Level of Service A

Intersection							J
Int Delay, s/veh	6.2						
	EBT	EBR	WBL	WBT	NBL	NBR	
		CDK	WDL				
Lane Configurations	}	٥	۸	4	140	7	
Traffic Vol, veh/h	46 46	0	0	39	148	0	
Future Vol, veh/h		0	0	39	148	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	
<u> </u>	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-		-	None	-	None	
Storage Length	-	-	-	-	0	0	
Veh in Median Storage, #		-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	50	0	0	42	161	0	
Major/Minor Ma	ajor1	ı	Major2		Minor1		Į
Conflicting Flow All	0	0	50	0	92	50	
Stage 1	-	-	-	-	50	-	
Stage 2	-	-	-	-	42	-	
Critical Hdwy	-	-	4.12	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	-	-	2.218	-	3.518		
Pot Cap-1 Maneuver	-	-	1557	-	908	1018	
Stage 1	-	-	-	-	972	-	
Stage 2	-	-	-	-	980	-	
Platoon blocked, %	-	-		-			
Mov Cap-1 Maneuver	-	-	1557	-	908	1018	
Mov Cap-2 Maneuver	_	-	-	-	908	-	
Stage 1	-	_	_	_	972	_	
Stage 2	_	_	_	_	980	_	
Olago Z					300		
Approach	EB		WB		NB		
HCM Control Delay, s	0		0		9.8		
HCM LOS					Α		
Minar Lana/Major Mymt		UDI 51 N	UDI 50	ГОТ	EDD	WBL	
Minor Lane/Major Mvmt		VBLn11	NDLIIZ	EBT	EBR		
Capacity (veh/h)		908	-	-	-	1557	
HCM Lane V/C Ratio		0.177	-	-	-	-	
HCM Control Delay (s)		9.8	0	-	-	0	
HCM Lane LOS		A	Α	-	-	A	
HCM 95th %tile Q(veh)		0.6	-	-	-	0	

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: PM

	۶	-	•	•	—	•	4	†	~	\	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	7	^					7	4	7
Traffic Volume (vph)	0	1034	480	306	850	0	0	0	0	260	5	338
Future Volume (vph)	0	1034	480	306	850	0	0	0	0	260	5	338
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			100			25			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.891	0.850
Flt Protected				0.950						0.950	0.988	
Satd. Flow (prot)	0	2843	1615	1805	2865	0	0	0	0	1829	1573	1688
FIt Permitted				0.950						0.950	0.988	
Satd. Flow (perm)	0	2843	1615	1805	2865	0	0	0	0	1829	1573	1688
Right Turn on Red			Yes			Yes	-	-	Yes			No
Satd. Flow (RTOR)			535									
Link Speed (mph)		45			35			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			17.8			8.5			11.3	
Peak Hour Factor	0.89	0.89	0.89	0.84	0.84	0.84	0.88	0.88	0.88	0.85	0.85	0.85
Heavy Vehicles (%)	15%	27%	0%	0%	26%	9%	12%	0%	11%	0%	0%	0%
Adj. Flow (vph)	0	1162	539	364	1012	0	0	0	0	306	6	398
Shared Lane Traffic (%)							•	•		19%		43%
Lane Group Flow (vph)	0	1162	539	364	1012	0	0	0	0	248	235	227
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	9		24	9		14	9		14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Prot	NA					Split	NA	Prot
Protected Phases		2		1	12					4	4	4
Permitted Phases		_	2	•								
Detector Phase		2	2	1	12					4	4	4
Switch Phase		<u>-</u>	_	•						•	•	•
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		37.0	37.0	23.0						20.0	20.0	20.0
Total Split (%)		46.3%	46.3%	28.8%						25.0%	25.0%	25.0%
Maximum Green (s)		31.5	31.5	19.0						14.5	14.5	14.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead						0.0	0.0	0.0
Lead-Lag Optimize?		Lag	Lag	Load								
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0
V GITIOIS EXTERISION (5)		0.2	۷.۷	5.0						5.0	5.0	5.0

Ī

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: PM

		→	•	•	•		1	T		-	¥	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		32.2	32.2	18.8	56.5					14.0	14.0	14.0
Actuated g/C Ratio		0.40	0.40	0.24	0.71					0.18	0.18	0.18
v/c Ratio		1.02	0.56	0.86	0.50					0.78	0.85	0.77
Control Delay		57.0	4.2	47.0	1.1					49.5	61.1	50.4
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		57.0	4.2	47.0	1.1					49.5	61.1	50.4
LOS		E	Α	D	Α					D	Е	D
Approach Delay		40.3			13.2						53.6	
Approach LOS		D			В						D	
Queue Length 50th (ft)		~334	1	136	6					125	125	113
Queue Length 95th (ft)		#450	57	m142	m6					#214	#232	#201
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		1142	969	428	2000					331	285	305
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		1.02	0.56	0.85	0.51					0.75	0.82	0.74

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 1 (1%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 33.0 Intersection LOS: C Intersection Capacity Utilization 69.9% ICU Level of Service C

Analysis Period (min) 15

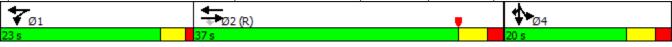
Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: PM

	۶	→	•	•	←	•	4	†	~	/	Ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	^			^	7	7	ર્ન	7			
Traffic Volume (vph)	449	845	0	0	868	242	288	5	320	0	0	0
Future Volume (vph)	449	845	0	0	868	242	288	5	320	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950						0.950	0.954				
Satd. Flow (prot)	1805	2756	0	0	2865	1561	1829	1722	1830	0	0	0
Flt Permitted	0.950						0.950	0.954		•		•
Satd. Flow (perm)	1805	2756	0	0	2865	1561	1829	1722	1830	0	0	0
Right Turn on Red			Yes			Yes	.020		No			Yes
Satd. Flow (RTOR)						252						
Link Speed (mph)		35			35	202		30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			14.9			15.5			11.1	
Peak Hour Factor	0.87	0.87	0.87	0.96	0.96	0.96	0.85	0.85	0.85	0.88	0.88	0.88
Heavy Vehicles (%)	0%	31%	14%	11%	26%	0%	0%	0%	0%	8%	0%	11%
Adj. Flow (vph)	516	971	0	0	904	252	339	6	376	0	0	0
Shared Lane Traffic (%)	310	311	U	U	JU4	202	49%	U	370	U	U	U
Lane Group Flow (vph)	516	971	0	0	904	252	173	172	376	0	0	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)	Loit	24	ragin	Loit	24	rugiit	Loit	14	rugiit	Loit	14	ragne
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15	1.00	9	15	1.00	9	15	1.00	9	15	0.00	9
Turn Type	Prot	NA		10	NA	Prot	Split	NA	Prot			•
Protected Phases	1	1.2			2	2	4	4	4			
Permitted Phases	•	• -			_	_	•	•	•			
Detector Phase	1	12			2	2	4	4	4			
Switch Phase	•				_	_	•	•	•			
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	32.0				27.0	27.0	21.0	21.0	21.0			
Total Split (%)	40.0%				33.8%	33.8%	26.3%	26.3%	26.3%			
Maximum Green (s)	28.0				21.5	21.5	16.0	16.0	16.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag	3.0	0.0	0.0			
Lead-Lag Optimize?	Leau				Lay	Lay						
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			
VEHICLE EXCELLISION (2)	3.0				0.2	0.2	3.0	3.0	3.0			

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: PM

	•	→	*	•	•	•	1	Ť		-	ŧ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	27.1	55.0			22.4	22.4	16.0	16.0	16.0			
Actuated g/C Ratio	0.34	0.69			0.28	0.28	0.20	0.20	0.20			
v/c Ratio	0.84	0.51			1.13	0.41	0.47	0.50	1.03			
Control Delay	22.4	0.4			97.0	8.0	33.3	34.2	88.7			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	22.4	0.4			97.0	8.0	33.3	34.2	88.7			
LOS	С	Α			F	Α	С	С	F			
Approach Delay		8.0			77.6			62.4				
Approach LOS		Α			Е			Е				
Queue Length 50th (ft)	101	1			~274	15	81	81	~197			
Queue Length 95th (ft)	m114	m1			m#355	m33	134	134	#337			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	631	1894			801	618	365	344	366			
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	0.82	0.51			1.13	0.41	0.47	0.50	1.03			

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 39 (49%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.13

Intersection Signal Delay: 43.6 Intersection LOS: D
Intersection Capacity Utilization 69.9% ICU Level of Service C

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

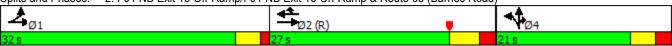
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



Timing Plan: PM

	۶	→	•	•	—	•	•	†	~	/	+	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	ħβ		7	^	7	¥	£			ર્ન	7
Traffic Volume (vph)	140	1010	15	5	803	58	10	20	5	135	40	297
Future Volume (vph)	140	1010	15	5	803	58	10	20	5	135	40	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			25			130		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998				0.850		0.969				0.850
Flt Protected	0.950			0.950			0.950				0.963	
Satd. Flow (prot)	1719	2566	0	1796	2763	1575	1652	1780	0	0	1762	1429
FIt Permitted	0.950			0.950			0.465				0.753	
Satd. Flow (perm)	1719	2566	0	1796	2763	1575	808	1780	0	0	1378	1429
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				100		7				115
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.95	0.95	0.95	0.86	0.86	0.86	0.75	0.75	0.75	0.82	0.82	0.82
Heavy Vehicles (%)	5%	41%	1%	0%	30%	2%	2%	0%	0%	5%	0%	13%
Adj. Flow (vph)	147	1063	16	6	934	67	13	27	7	165	49	362
Shared Lane Traffic (%)												
Lane Group Flow (vph)	147	1079	0	6	934	67	13	34	0	0	214	362
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	, i		10			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		12	15		12	15		12	15		12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm	NA	pm+ov
Protected Phases	1	12		3	23	23		4			4	1
Permitted Phases							4			4		4
Detector Phase	1	12		3	23	23	4	4		4	4	1
Switch Phase												
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	22.0			11.0			22.0	22.0		22.0	22.0	22.0
Total Split (%)	27.5%			13.8%			27.5%	27.5%		27.5%	27.5%	27.5%
Maximum Green (s)	16.6			5.7			17.1	17.1		17.1	17.1	16.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0			0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?												

l O	αn	
Lane Group	Ø2	
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
FIt Protected		
Satd. Flow (prot)		
FIt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
` /		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type	_	
Protected Phases	2	
Permitted Phases		
Detector Phase		
Switch Phase	45.0	
Minimum Initial (s)	15.0	
Minimum Split (s)	21.1	
Total Split (s)	25.0	
Total Split (%)	31%	
Maximum Green (s)	18.9	
Yellow Time (s)	4.8	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?		
<u> </u>		

	•	→	\rightarrow	•	•	•	1	†	~	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	18.0	43.6		5.7	30.5	30.5	15.1	15.1			15.1	38.0
Actuated g/C Ratio	0.22	0.54		0.07	0.38	0.38	0.19	0.19			0.19	0.48
v/c Ratio	0.38	0.77		0.05	0.89	0.10	0.09	0.10			0.82	0.49
Control Delay	34.9	13.4		35.6	35.8	2.1	26.9	22.3			56.5	11.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	34.9	13.4		35.6	35.8	2.1	26.9	22.3			56.5	11.9
LOS	С	В		D	D	Α	С	С			Е	В
Approach Delay		16.0			33.5			23.6			28.5	
Approach LOS		В			С			С			С	
Queue Length 50th (ft)	67	157		3	227	0	5	11			100	75
Queue Length 95th (ft)	m108	m79		14	#320	11	17	28			#170	122
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	386	1398		127	1051	661	172	385			294	740
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	0.38	0.77		0.05	0.89	0.10	0.08	0.09			0.73	0.49

Intersection Summary

Area Type: Other

Cycle Length: 80 Actuated Cycle Length: 80

Offset: 29 (36%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 24.8 Intersection LOS: C
Intersection Capacity Utilization 61.8% ICU Level of Service B

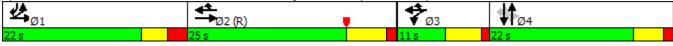
Analysis Period (min) 15

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: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø2
Vehicle Extension (s)	2.5
Recall Mode	C-Min
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

	٠	→	•	•	+	•	4	†	~	/	+	√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	î»		ሻ	f)		ሻ	†	7	ሻ	^	
Traffic Volume (vph)	5	0	15	21	0	4	5	136	77	14	436	0
Future Volume (vph)	5	0	15	21	0	4	5	136	77	14	436	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.850				0.850			
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1615	0	1805	1615	0	1805	1792	1615	1805	1863	0
Flt Permitted							0.303			0.615		
Satd. Flow (perm)	1900	1615	0	1900	1615	0	576	1792	1615	1168	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		226			617				131			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.48	0.48	0.48	0.88	0.88	0.88	0.59	0.59	0.59	0.60	0.60	0.60
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%	2%	0%
Adj. Flow (vph)	10	0	31	24	0	5	8	231	131	23	727	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	31	0	24	5	0	8	231	131	23	727	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24		J	30	, i		12	J		12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	2	
Permitted Phases	4			4	-		2	_	2	2	_	
Detector Phase	4	4		4	4		2	2	2	1	2	
Switch Phase	•			•			_	_	_		_	
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0	15.0	4.5	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0	21.0	9.0	21.0	
Total Split (s)	40.0	40.0		40.0	40.0		51.0	51.0	51.0	9.0	51.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		51.0%	51.0%	51.0%	9.0%	51.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		45.0	45.0	45.0	5.0	45.0	
Yellow Time (s)	3.0	3.0		3.0	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	1.0	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	5.0		5.0	5.0		6.0	6.0	6.0	4.0	6.0	
Lead/Lag	0.0	0.0		5.0	0.0		Lag	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Lug	Lug	Lug	Loud	Lug	
Vehicle Extension (s)	1.0	1.0		1.0	1.0		2.0	2.0	2.0	1.0	2.0	
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	
I VOCAII IVIOUE	INOHE	INOLIG		INOHE	INOHE		IVIIII	IVIIII	IVIIII	INOLIG	IVIIII	

	•	→	\rightarrow	•	←	•	•	†	/	\	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	7.5	7.5		7.5	7.5		37.5	37.5	37.5	37.8	37.5	
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.76	0.76	0.76	0.76	0.76	
v/c Ratio	0.03	0.07		0.08	0.01		0.02	0.17	0.10	0.02	0.51	
Control Delay	25.4	0.3		25.6	0.0		5.4	5.2	1.6	2.3	8.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	25.4	0.3		25.6	0.0		5.4	5.2	1.6	2.3	8.0	
LOS	С	Α		С	Α		Α	Α	Α	Α	Α	
Approach Delay		6.4			21.2			3.9			7.8	
Approach LOS		Α			С			Α			Α	
Queue Length 50th (ft)	2	0		6	0		1	22	0	2	100	
Queue Length 95th (ft)	9	0		29	0		4	40	4	4	136	
Internal Link Dist (ft)		116			123			640			398	
Turn Bay Length (ft)				170			140			115		
Base Capacity (vph)	1435	1275		1435	1371		502	1561	1424	963	1623	
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	0.01	0.02		0.02	0.00		0.02	0.15	0.09	0.02	0.45	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 49.5

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 6.9 Intersection LOS: A Intersection Capacity Utilization 39.9% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Research Parkway & Food Bank Driv/Site Drive 1



	•	•	4	†	Ţ	1
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			4	1>	
Traffic Volume (vph)	3	63	9	136	387	0
Future Volume (vph)	3	63	9	136	387	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.871					
Flt Protected	0.998			0.997		
Satd. Flow (prot)	1618	0	0	1661	1696	0
Flt Permitted	0.998			0.997		
Satd. Flow (perm)	1618	0	0	1661	1696	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.55	0.55	0.90	0.90	0.80	0.80
Heavy Vehicles (%)	50%	0%	0%	15%	12%	0%
Adj. Flow (vph)	5	115	10	151	484	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	0	0	161	484	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	tion 31.1%			IC	U Level o	of Service
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥*	LDIV	NDL	- ND1 - €		אומט
		63	٥		1 → 387	٥
Traffic Vol, veh/h	3		9	136		0
Future Vol, veh/h	3	63	9	136	387	0
Conflicting Peds, #/hr	0	0	0	_ 0	_ 0	_ 0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage	, # 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	55	55	90	90	80	80
Heavy Vehicles, %	50	0	0	15	12	0
Mvmt Flow	5	115	10	151	484	0
	_					-
		_				
	Minor2		//ajor1		/lajor2	
Conflicting Flow All	655	484	484	0	-	0
Stage 1	484	-	-	-	-	-
Stage 2	171	-	-	-	-	-
Critical Hdwy	6.9	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	_	_	-	-	-
Follow-up Hdwy	3.95	3.3	2.2	_	_	_
Pot Cap-1 Maneuver	364	587	1089	_	_	_
Stage 1	531	-		_	_	_
Stage 2	755			_		_
	100	-	-			
Platoon blocked, %	200	F07	4000	-	-	-
Mov Cap-1 Maneuver	360	587	1089	-	-	-
Mov Cap-2 Maneuver	360	-	-	-	-	-
Stage 1	526	-	-	-	-	-
Stage 2	755	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	13		0.5		0	
HCM LOS	В					
Minor Lane/Major Mvm	nt	NBL	NBT I	EBLn1	SBT	SBR
Capacity (veh/h)		1089	-	571	-	UDIT
HCM Lane V/C Ratio		0.009	_	0.21	_	_
HCM Control Delay (s)		8.3	0	13	-	-
3 ()			~			
HCM Lane LOS	\	A	Α	В	-	-
HCM 95th %tile Q(veh))	0	-	0.8	-	-

	•	•	•	†		√			
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations	ሻ	7	ሻ	^	∱				
Traffic Volume (vph)	3	13	3	136	374	0			
Future Volume (vph)	3	13	3	136	374	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	0	0	100			0			
Storage Lanes	1	1	1			0			
Taper Length (ft)	25		50						
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Ped Bike Factor									
Frt		0.850							
Flt Protected	0.950		0.950						
Satd. Flow (prot)	1805	1615	1805	1638	1696	0			
Flt Permitted	0.950		0.950						
Satd. Flow (perm)	1805	1615	1805	1638	1696	0			
Link Speed (mph)	30			30	30				
Link Distance (ft)	308			752	493				
Travel Time (s)	7.0			17.1	11.2				
Confl. Peds. (#/hr)	3								
Peak Hour Factor	0.42	0.42	0.90	0.90	0.79	0.79			
Heavy Vehicles (%)	0%	0%	0%	16%	12%	0%			
Adj. Flow (vph)	7	31	3	151	473	0			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	7	31	3	151	473	0			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Right	Right	Left	Right			
Median Width(ft)	12			12	0				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)	15	9	15			9			
Sign Control	Stop			Free	Free				
Intersection Summary									
Area Type:	Other								
Control Type: Unsignalized									
Intersection Capacity Utilizat	tion 29.7%			IC	U Level o	of Service A			

Analysis Period (min) 15

Int Delay, s/veh
BBL BBR NBL NBT SBR SBR Lane Configurations Traffic Vol, veh/h 3 13 3 136 374 0 0 0 0 0 0 0 0 0
Lane Configurations
Traffic Vol, veh/h 3 13 3 136 374 0 Future Vol, veh/h 3 13 3 136 374 0 Conflicting Peds, #/hr 3 0 0 0 0 0 Sign Control Stop Stop Free Free <t< td=""></t<>
Future Vol, veh/h 3 13 3 136 374 0 Conflicting Peds, #/hr 3 0 0 0 0 0 Sign Control Stop Stop Free <
Conflicting Peds, #/hr 3 0 0 0 0 Sign Control Stop Stop Free
Sign Control Stop RT Channelized Stop None Free Free Free Free Free Free RT Channelized - None - None - None - None None None None None None None None - None Po Po Po Po Po Po Pol Pol Pol None Pol Pol Pol Pol Pol None None None None Pol None None None None None None None None None
RT Channelized
Storage Length 0 0 100 - - - - - - - - - - - - - - - 0 0 - - - 0 0 - - - 0 0 - - 0 0 - - 0 0 - - 0 0 - - 0 0 - - 0 0 - - 9 79 79 Heavy Vehicles, % 0 0 0 16 12 0 Mwmt Flow 7 31 3 151 473 0 0 0 16 12 0 Mownt Flow A1 633 473 473 0 - 0 0 0 3 473 10 0 0 0 1 4473 0 - 0 0 0 0 0 0
Veh in Median Storage, # 0 - - 0 0 - Grade, % 0 - - 0 0 - Peak Hour Factor 42 42 90 90 79 79 Heavy Vehicles, % 0 0 0 16 12 0 Mvmt Flow 7 31 3 151 473 0 Conflicting Flow All 633 473 473 0 - 0 Stage 1 473 -
Grade, % 0 - - 0 0 - Peak Hour Factor 42 42 90 90 79 79 Heavy Vehicles, % 0 0 0 16 12 0 Mvmt Flow 7 31 3 151 473 0 Major/Minor Minor Major1 Major2 Conflicting Flow All 633 473 473 0 - 0 Stage 1 473 -
Peak Hour Factor 42 42 90 90 79 79 Heavy Vehicles, % 0 0 0 16 12 0 Mvmt Flow 7 31 3 151 473 0 Conflicting Flow All 633 473 473 0 - 0 Stage 1 473 - - - - - - Stage 2 160 -
Heavy Vehicles, %
Mymt Flow 7 31 3 151 473 0 Major/Minor Minor2 Major1 Major2 Conflicting Flow All 633 473 473 0 - 0 Stage 1 473 -
Major/Minor Minor2 Major1 Major2 Conflicting Flow All 633 473 473 0 0 Stage 1 473 - - - - Stage 2 160 - - - - Critical Hdwy 6.4 6.2 4.1 - - Critical Hdwy Stg 1 5.4 - - - - Critical Hdwy Stg 2 5.4 - - - - - Critical Hdwy Stg 2 5.4 - <t< td=""></t<>
Conflicting Flow All 633 473 473 0 - 0 Stage 1 473 -
Conflicting Flow All 633 473 473 0 - 0 Stage 1 473 -
Conflicting Flow All 633 473 473 0 - 0 Stage 1 473 -
Stage 1 473 -
Stage 2 160 -
Critical Hdwy 6.4 6.2 4.1 - - Critical Hdwy Stg 1 5.4 - - - - Critical Hdwy Stg 2 5.4 - - - - Follow-up Hdwy 3.5 3.3 2.2 - - - Pot Cap-1 Maneuver 447 595 1099 - - - - Stage 1 631 -
Critical Hdwy Stg 1 5.4 - - - - Critical Hdwy Stg 2 5.4 - - - - Follow-up Hdwy 3.5 3.3 2.2 - - - Pot Cap-1 Maneuver 447 595 1099 - - - - Stage 1 631 -
Critical Hdwy Stg 2 5.4 -
Follow-up Hdwy 3.5 3.3 2.2 Stage 1 631
Pot Cap-1 Maneuver 447 595 1099 -
Stage 1 631 -
Stage 2 874 -
Stage 2 874 -
Platoon blocked, %
Mov Cap-1 Maneuver 446 595 1099 - - - Mov Cap-2 Maneuver 446 -
Mov Cap-2 Maneuver 446 -
Stage 1 629 -
Stage 2 874 -
Approach EB NB SB HCM Control Delay, s 11.7 0.2 0 HCM LOS B Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT Capacity (veh/h) 1099 - 446 595 - HCM Lane V/C Ratio 0.003 - 0.016 0.052 - HCM Control Delay (s) 8.3 - 13.2 11.4 -
HCM Control Delay, s 11.7 0.2 0
HCM Control Delay, s 11.7 0.2 0
Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT Capacity (veh/h) 1099 - 446 595 - HCM Lane V/C Ratio 0.003 - 0.016 0.052 - HCM Control Delay (s) 8.3 - 13.2 11.4 -
Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT Capacity (veh/h) 1099 - 446 595 - HCM Lane V/C Ratio 0.003 - 0.016 0.052 - HCM Control Delay (s) 8.3 - 13.2 11.4 -
Capacity (veh/h) 1099 - 446 595 - HCM Lane V/C Ratio 0.003 - 0.016 0.052 - HCM Control Delay (s) 8.3 - 13.2 11.4 -
Capacity (veh/h) 1099 - 446 595 - HCM Lane V/C Ratio 0.003 - 0.016 0.052 - HCM Control Delay (s) 8.3 - 13.2 11.4 -
Capacity (veh/h) 1099 - 446 595 - HCM Lane V/C Ratio 0.003 - 0.016 0.052 - HCM Control Delay (s) 8.3 - 13.2 11.4 -
HCM Lane V/C Ratio 0.003 - 0.016 0.052 - HCM Control Delay (s) 8.3 - 13.2 11.4 -
HCM Control Delay (s) 8.3 - 13.2 11.4 -
HCM Lane LOS A - B B -
HCM 95th %tile Q(veh) 0 - 0 0.2 -

	۶	→	•	•	+	4	4	†	~	/		4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	45	51	25	47	45	18	20	104	15	25	302	101
Future Volume (vph)	45	51	25	47	45	18	20	104	15	25	302	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.972			0.978			0.985			0.968	
Flt Protected		0.982			0.979			0.993			0.997	
Satd. Flow (prot)	0	1800	0	0	1819	0	0	1729	0	0	1804	0
Flt Permitted		0.982			0.979			0.993			0.997	
Satd. Flow (perm)	0	1800	0	0	1819	0	0	1729	0	0	1804	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.86	0.86	0.86	0.76	0.76	0.76	0.63	0.63	0.63	0.71	0.71	0.71
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	0%	10%	0%	0%	2%	1%
Adj. Flow (vph)	52	59	29	62	59	24	32	165	24	35	425	142
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	140	0	0	145	0	0	221	0	0	602	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilizati	on 41.2%			IC	CU Level	of Service	Α					
Analysis Period (min) 15												

M	EDI	EDT	EDD	WDI	WDT	MDD	NDI	NDT	NDD	ODL	ODT	000
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			₩.			₩.			₩.	
Traffic Vol, veh/h	45	51	25	47	45	18	20	104	15	25	302	101
Future Vol, veh/h	45	51	25	47	45	18	20	104	15	25	302	101
Peak Hour Factor	0.86	0.86	0.86	0.76	0.76	0.76	0.63	0.63	0.63	0.71	0.71	0.71
Heavy Vehicles, %	2	0	0	0	0	0	0	10	0	0	2	1
Mvmt Flow	52	59	29	62	59	24	32	165	24	35	425	142
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	11.5			11.6			11.8			29.3		
HCM LOS	В			В			В			D		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	14%	37%	43%	6%	
Vol Thru, %	75%	42%	41%	71%	
Vol Right, %	11%	21%	16%	24%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	139	121	110	428	
LT Vol	20	45	47	25	
Through Vol	104	51	45	302	
RT Vol	15	25	18	101	
Lane Flow Rate	221	141	145	603	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.348	0.248	0.255	0.844	
Departure Headway (Hd)	5.67	6.348	6.34	5.043	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Сар	631	561	563	717	
Service Time	3.745	4.434	4.426	3.098	
HCM Lane V/C Ratio	0.35	0.251	0.258	0.841	
HCM Control Delay	11.8	11.5	11.6	29.3	
HCM Lane LOS	В	В	В	D	
HCM 95th-tile Q	1.6	1	1	9.6	

	-	•	•	—	1	~
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	£			र्स	ħ	7
Traffic Volume (vph)	91	0	0	90	20	0
Future Volume (vph)	91	0	0	90	20	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1863	0	0	1863	1770	1863
FIt Permitted					0.950	
Satd. Flow (perm)	1863	0	0	1863	1770	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	0	0	98	22	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	99	0	0	98	22	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
into cootion cuminary						

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 14.8% Analysis Period (min) 15

ICU Level of Service A

Intersection							
Int Delay, s/veh	1						
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	- ₽			- 4		7	
Traffic Vol, veh/h	91	0	0	90	20	0	
Future Vol, veh/h	91	0	0	90	20	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	-	-	-	0	0	
Veh in Median Storage,	# 0	-	-	0	0	-	
Grade, %	0	_	_	0	0	_	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	99	0	0	98	22	0	
WWITCH IOW	55	U	U	30	22	U	
Major/Minor N	/lajor1	<u> </u>	Major2	ا	Minor1		
Conflicting Flow All	0	0	99	0	197	99	
Stage 1	-	-	_	-	99	-	
Stage 2	-	_	-	-	98	-	
Critical Hdwy	_	_	4.12	_	6.42	6.22	
Critical Hdwy Stg 1	_	_	- 1.12	_	5.42	-	
Critical Hdwy Stg 2	_	_	_	_	5.42	_	
Follow-up Hdwy	<u>-</u>	_	2.218		3.518		
Pot Cap-1 Maneuver			1494		792	957	
		_	1434	_	925	901	
Stage 1	-	-			925		
Stage 2	-	-	-	-	926	-	
Platoon blocked, %	-	-	1101	-	700	0.53	
Mov Cap-1 Maneuver	-	-	1494	-	792	957	
Mov Cap-2 Maneuver	-	-	-	-	792	-	
Stage 1	-	-	-	-	925	-	
Stage 2	-	-	-	-	926	-	
Approach	EB		WB		NB		
HCM Control Delay, s	0		0		9.7		
HCM LOS	U		U				
HOIVI LUS					Α		
Minor Lane/Major Mvmt	t 1	NBLn11	VBLn2	EBT	EBR	WBL	
Capacity (veh/h)		792	_	_	-	1494	
HCM Lane V/C Ratio		0.027	_	_	_	-	
HCM Control Delay (s)		9.7	0	_	_	0	
HCM Lane LOS		Α.	A	_	_	A	
HCM 95th %tile Q(veh)		0.1		_	_	0	
How som whe Q(ven)		U. I	-	-	-	U	

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Roaidh)ng Plan: AM Pk Gen

	•	→	•	•	←	•	4	†	~	/	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	ř	^					¥	4	7
Traffic Volume (vph)	0	485	200	232	465	0	0	0	0	109	0	204
Future Volume (vph)	0	485	200	232	465	0	0	0	0	109	0	204
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	14	13	15
Storage Length (ft)	0		0	705		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			100			25			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.865	0.850
Flt Protected				0.950						0.950	0.995	
Satd. Flow (prot)	0	3008	1346	1583	3195	0	0	0	0	1499	1182	1288
Flt Permitted			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.950		•	-			0.950	0.995	
Satd. Flow (perm)	0	3008	1346	1583	3195	0	0	0	0	1499	1182	1288
Right Turn on Red			Yes			Yes	•		Yes			No
Satd. Flow (RTOR)			213									
Link Speed (mph)		45			35			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			17.8			8.5			11.3	
Peak Hour Factor	0.94	0.94	0.94	0.74	0.74	0.74	0.88	0.88	0.88	0.89	0.89	0.89
Heavy Vehicles (%)	0%	20%	20%	14%	13%	0%	0%	0%	0%	22%	0%	31%
Adj. Flow (vph)	0	516	213	314	628	0	0	0	0	122	0	229
Shared Lane Traffic (%)	•	010	210	O I I	020	•	J	· ·	J	10%	•	48%
Lane Group Flow (vph)	0	516	213	314	628	0	0	0	0	110	122	119
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)	Lon	12	rugiit	Lon	24	rugiit	Lon	14	rugiit	Loit	14	rugiit
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	15	1.00	9	15	1.00	9	15	1.00	9	15	0.00	9
Turn Type	10	NA	Perm	Prot	NA	•	10		J	Split	NA	Prot
Protected Phases		2	1 01111	1	12					4	4	4
Permitted Phases		_	2	·	1 2					•	•	•
Detector Phase		2	2	1	12					4	4	4
Switch Phase				•	12					-	-	-
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		30.0	30.0	20.0						25.0	25.0	25.0
Total Split (%)		40.0%	40.0%	26.7%						33.3%	33.3%	33.3%
Maximum Green (s)		24.5	24.5	16.0						19.5	19.5	19.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
										5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		0.0	0.0	2.0						2.0	2.0	2.0
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Roaiding Plan: AM Pk Gen

	•	-	•	•	•	•	1	Ť		-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		27.0	27.0	19.3	51.8					13.7	13.7	13.7
Actuated g/C Ratio		0.36	0.36	0.26	0.69					0.18	0.18	0.18
v/c Ratio		0.48	0.34	0.77	0.28					0.40	0.57	0.51
Control Delay		21.2	4.7	33.9	1.6					30.3	37.5	34.3
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		21.2	4.7	33.9	1.6					30.3	37.5	34.3
LOS		С	Α	С	Α					С	D	С
Approach Delay		16.4			12.4						34.2	
Approach LOS		В			В						С	
Queue Length 50th (ft)		101	0	63	8					48	58	53
Queue Length 95th (ft)		147	44	#199	14					86	102	93
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				705						240		240
Base Capacity (vph)		1082	621	408	2208					389	307	334
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		0.48	0.34	0.77	0.28					0.28	0.40	0.36

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 13 (17%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 17.6 Intersection LOS: B
Intersection Capacity Utilization 46.3% ICU Level of Service A

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Roading Plan: AM Pk Gen

	•	-	•	•	←	•	4	†	/	>	Ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	Ť	† †			† †	7	, j	4	7			
Traffic Volume (vph)	203	391	0	0	558	233	139	Ö	177	0	0	0
Future Volume (vph)	203	391	0	0	558	233	139	0	177	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	630		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950						0.950	0.950				
Satd. Flow (prot)	1367	3223	0	0	3195	1312	1550	1453	1513	0	0	0
Flt Permitted	0.950		-	-			0.950	0.950				•
Satd. Flow (perm)	1367	3223	0	0	3195	1312	1550	1453	1513	0	0	0
Right Turn on Red		00	Yes	•	0.00	Yes			No	•		Yes
Satd. Flow (RTOR)						248						
Link Speed (mph)		35			35	2.10		30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			14.9			15.5			11.1	
Peak Hour Factor	0.88	0.88	0.88	0.94	0.94	0.94	0.95	0.95	0.95	0.88	0.88	0.88
Heavy Vehicles (%)	32%	12%	0%	0%	13%	19%	18%	0%	21%	0%	0%	0%
Adj. Flow (vph)	231	444	0	0	594	248	146	0	186	0	0	0
Shared Lane Traffic (%)	201		J	· ·	001	210	50%	•	100	•	•	v
Lane Group Flow (vph)	231	444	0	0	594	248	73	73	186	0	0	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)	Loit	24	i ugiit	2010	24	i ugiit	Lon	14	rugiit	Lon	14	i tigirt
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA			NA	Prot	Split	NA	Prot			
Protected Phases	1	12			2	2	4	4	4			
Permitted Phases												
Detector Phase	1	12			2	2	4	4	4			
Switch Phase												
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	20.0				31.0	31.0	24.0	24.0	24.0			
Total Split (%)	26.7%				41.3%	41.3%	32.0%	32.0%	32.0%			
Maximum Green (s)	16.0				25.5	25.5	19.0	19.0	19.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?					3	3						
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			
	J. .						-	•	•			

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Rotating Plan: AM Pk Gen

	•	→	•	•	•	•	1	Ť		-	ŧ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	16.5	51.8			29.8	29.8	14.2	14.2	14.2			
Actuated g/C Ratio	0.22	0.69			0.40	0.40	0.19	0.19	0.19			
v/c Ratio	0.77	0.20			0.47	0.37	0.25	0.27	0.65			
Control Delay	34.7	0.5			13.6	2.6	26.4	26.8	38.2			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	34.7	0.5			13.6	2.6	26.4	26.8	38.2			
LOS	С	Α			В	Α	С	С	D			
Approach Delay		12.2			10.4			33.1				
Approach LOS		В			В			С				
Queue Length 50th (ft)	39	1			68	3	30	30	80			
Queue Length 95th (ft)	#188	4			108	18	62	62	134			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	630					480	180		180			
Base Capacity (vph)	316	2224			1267	670	392	368	383			
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	0.73	0.20			0.47	0.37	0.19	0.20	0.49			

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 51 (68%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 15.1 Intersection LOS: B
Intersection Capacity Utilization 46.3% ICU Level of Service A

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



Timing Plan: AM Pk Gen

	۶	→	•	•	+	•	•	†	~	/	+	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	↑ ↑		ሻ	^	7	ሻ	(î			ર્ન	7
Traffic Volume (vph)	160	400	8	0	477	48	15	1	0	97	0	299
Future Volume (vph)	160	400	8	0	477	48	15	1	0	97	0	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)	· -	0%		· -	1%			0%	· <u>-</u>	· -	0%	
Storage Length (ft)	570	0,0	0	100	. , ,	250	0	• 70	0	345	• 70	0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100		•	25			130		•
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.997	0.00	1.00	0.00	0.850	1.00	1.00	1.00	1.00	1.00	0.850
Fit Protected	0.950	0.001				0.000	0.950				0.950	0.000
Satd. Flow (prot)	1367	3211	0	1890	3265	1461	1685	1837	0	0	1736	1196
Flt Permitted	0.950	0211	J	1000	0200	1701	0.680	1007	0	0	0.756	1130
Satd. Flow (perm)	1367	3211	0	1890	3265	1461	1206	1837	0	0	1381	1196
Right Turn on Red	1307	JZII	Yes	1030	3203	Yes	1200	1037	Yes	U	1301	Yes
Satd. Flow (RTOR)		4	163			106			163			230
Link Speed (mph)		35			35	100		30			30	230
,		764			751			251			720	
Link Distance (ft) Travel Time (s)		14.9			14.6			5.7			16.4	
	0.81	0.81	0.81	0.86	0.86	0.86	0.38	0.38	0.38	0.81	0.81	0.81
Peak Hour Factor												
Heavy Vehicles (%)	32%	12%	17%	0%	10%	10%	0%	0%	0%	4%	0%	35%
Adj. Flow (vph)	198	494	10	0	555	56	39	3	0	120	0	369
Shared Lane Traffic (%)	400	F0.4	^	0		F.C.	20	2	^	0	400	200
Lane Group Flow (vph)	198	504	0	0	555	56	39	3	0	0	120	369
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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane	4.00	4.00	4.00	4.04	4.04	4.04	4.00	4.04	4.00	4.00	4.00	4.00
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	N I A	12	15	N I A	12	15	NIA	12	15	NIA	12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm		pm+ov
Protected Phases	1	12		3	23	23	4	4		4	4	1
Permitted Phases	4	4.0		_	0.0	0.0	4	4		4		4
Detector Phase	1	12		3	23	23	4	4		4	4	1
Switch Phase				5 0			7.0	7.0		7.0	7.0	5.0
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	17.0			11.0			17.0	17.0		17.0	17.0	17.0
Total Split (%)	22.7%			14.7%			22.7%	22.7%		22.7%	22.7%	22.7%
Maximum Green (s)	11.6			5.7			12.1	12.1		12.1	12.1	11.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0			0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?												

Lane Group	Ø2
LaneConfigurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm) Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s) Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	45.0
Minimum Initial (s)	15.0
Minimum Split (s)	21.1
Total Split (s)	30.0
Total Split (%)	40%
Maximum Green (s)	23.9
Yellow Time (s)	4.8
All-Red Time (s)	1.3
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	

	•	-	•	•	•	•	1	†	~	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	14.7	46.2			36.0	36.0	10.3	10.3			10.3	27.5
Actuated g/C Ratio	0.20	0.62			0.48	0.48	0.14	0.14			0.14	0.37
v/c Ratio	0.74	0.25			0.35	0.07	0.24	0.01			0.63	0.63
Control Delay	50.6	4.4			14.3	0.8	31.5	27.0			45.6	12.0
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	50.6	4.4			14.3	0.8	31.5	27.0			45.6	12.0
LOS	D	Α			В	Α	С	С			D	В
Approach Delay		17.5			13.1			31.2			20.2	
Approach LOS		В			В			С			С	
Queue Length 50th (ft)	73	30			97	0	16	1			53	38
Queue Length 95th (ft)	#186	35			112	4	17	4			91	99
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570					250						
Base Capacity (vph)	268	2060			1507	731	197	300			225	584
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	0.74	0.24			0.37	0.08	0.20	0.01			0.53	0.63

Intersection Summary

Area Type: Other

Cycle Length: 75 Actuated Cycle Length: 75

Offset: 42 (56%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

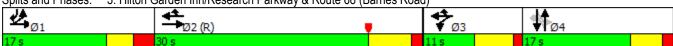
Maximum v/c Ratio: 0.74

Intersection LOS: B Intersection Signal Delay: 17.1 Intersection Capacity Utilization 51.2% ICU Level of Service A

Analysis Period (min) 15

Queue shown is maximum after two cycles.

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



^{# 95}th percentile volume exceeds capacity, queue may be longer.

Lane Group	Ø2	
Vehicle Extension (s)	2.5	
Recall Mode	C-Min	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Build Timing Plan: AM Pk Gen

T. INCOCATOTT ATKW		ou bu		.,								
	•	-	•	•	←	•	1	†	/	-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	f)		7	f)		ሻ	†	7	ሻ	^	
Traffic Volume (vph)	0	0	9	135	0	23	6	107	96	17	252	0
Future Volume (vph)	0	0	9	135	0	23	6	107	96	17	252	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.850				0.850			
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	1900	1417	0	1805	1615	0	1504	1496	1615	1805	1484	0
FIt Permitted				0.747			0.569			0.650		
Satd. Flow (perm)	1900	1417	0	1419	1615	0	901	1496	1615	1235	1484	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		507			715				152			. 00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.58	0.58	0.58	0.88	0.88	0.88	0.63	0.63	0.63	0.80	0.80	0.80
Heavy Vehicles (%)	0%	0%	14%	0%	0%	0%	20%	27%	0%	0%	28%	0%
Adj. Flow (vph)	0	0	16	153	0	26	10	170	152	21	315	0
Shared Lane Traffic (%)			10	100	U	20	10	170	102		010	J
Lane Group Flow (vph)	0	16	0	153	26	0	10	170	152	21	315	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)	Loit	24	rtigiit	rtigitt	30	rtigit	LOIL	12	rtigrit	rtigitt	12	rtigiti
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	1.00	9	15	1.00	9	15	1.00	9	15	1.00	9
Turn Type	Perm	NA	<u> </u>	Perm	NA	<u> </u>	Perm	NA	Perm	pm+pt	NA	J
Protected Phases	1 01111	4		1 01111	4		1 01111	2	1 01111	1	2	
Permitted Phases	4			4	- Т		2		2	2		
Detector Phase	4	4		4	4		2	2	2	1	2	
Switch Phase					- Т							
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0	15.0	4.5	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0	21.0	9.0	21.0	
Total Split (s)	40.0	40.0		40.0	40.0		51.0	51.0	51.0	9.0	51.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		51.0%	51.0%	51.0%	9.0%	51.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		45.0	45.0	45.0	5.0	45.0	
Yellow Time (s)	3.0	3.0		3.0	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	1.0	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	5.0		5.0	5.0		6.0	6.0	6.0	4.0	6.0	
Lead/Lag	3.0	5.0		5.0	5.0		Lag	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Lay	Lay	Lay	Leau	Lay	
Vehicle Extension (s)	1.0	1.0		1.0	1.0		2.0	2.0	2.0	1.0	2.0	
Recall Mode	None	None			None		Z.U Min	Z.U Min	Z.U Min	None	Z.U Min	
Necali Mode	NOHE	NOHE		None	NOHE		IVIIII	IVIIII	(VIII)	NOTIE	IVIIII	

	۶	→	\rightarrow	•	←	•	4	†	~	-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)		9.5		9.5	9.5		20.6	20.6	20.6	23.4	20.6	
Actuated g/C Ratio		0.22		0.22	0.22		0.48	0.48	0.48	0.55	0.48	
v/c Ratio		0.02		0.49	0.03		0.02	0.24	0.18	0.03	0.44	
Control Delay		0.1		20.5	0.0		8.5	9.2	2.8	5.1	11.3	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		0.1		20.5	0.0		8.5	9.2	2.8	5.1	11.3	
LOS		Α		С	Α		Α	Α	Α	Α	В	
Approach Delay		0.1			17.6			6.2			10.9	
Approach LOS		Α			В			Α			В	
Queue Length 50th (ft)		0		24	0		1	17	0	2	35	
Queue Length 95th (ft)		0		91	0		7	49	9	8	122	
Internal Link Dist (ft)		116			123			640			398	
Turn Bay Length (ft)				170			140			115		
Base Capacity (vph)		1268		1187	1468		845	1404	1525	744	1393	
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		0.01		0.13	0.02		0.01	0.12	0.10	0.03	0.23	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 42.9

Natural Cycle: 45

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.49

Intersection Signal Delay: 10.3 Intersection LOS: B
Intersection Capacity Utilization 36.6% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Research Parkway & Food Bank Driv/Site Drive 1



	۶	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			4	f)	
Traffic Volume (vph)	0	11	11	119	258	0
Future Volume (vph)	0	11	11	119	258	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.996		
Satd. Flow (prot)	1347	0	0	1464	1462	0
Flt Permitted				0.996		
Satd. Flow (perm)	1347	0	0	1464	1462	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.56	0.56	0.75	0.75	0.81	0.81
Heavy Vehicles (%)	0%	22%	0%	32%	30%	0%
Adj. Flow (vph)	0	20	15	159	319	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	0	0	174	319	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	tion 25.4%			IC	U Level o	of Service A
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	0.6					
		EDD	NDi	NDT	CDT	CDD
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	À			4	♣	
Traffic Vol, veh/h	0	11	11	119	258	0
Future Vol, veh/h	0	11	11	119	258	0
Conflicting Peds, #/hr	0	0	0	_ 0	0	_ 0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	56	56	75	75	81	81
Heavy Vehicles, %	0	22	0	32	30	0
Mvmt Flow	0	20	15	159	319	0
N.A. ': /N.A':	<i>I</i> : 0					
	Minor2		Major1		//ajor2	_
Conflicting Flow All	508	319	319	0	-	0
Stage 1	319	-	-	-	-	-
Stage 2	189	-	-	-	-	-
Critical Hdwy	6.4	6.42	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.498	2.2	-	-	-
Pot Cap-1 Maneuver	528	678	1252	-	_	-
Stage 1	741	-	-	-	-	-
Stage 2	848	_	-	_	-	_
Platoon blocked, %				_	_	_
Mov Cap-1 Maneuver	521	678	1252	_	_	_
Mov Cap-1 Maneuver	521	-	- 1202	_	_	_
Stage 1	731	_	_	-	-	_
Stage 2	848	-	-	_	_	_
Staye 2	040	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	10.5		0.7		0	
HCM LOS	В					
					055	055
Minor Lane/Major Mvm	t	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1252	-		-	-
HCM Lane V/C Ratio		0.012	-	0.029	-	-
HCM Control Delay (s)		7.9	0	10.5	-	-
HCM Lane LOS		Α	Α	В	-	-
HCM 95th %tile Q(veh)		0	-	0.1	-	-

	۶	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	, j	7	*		f)	
Traffic Volume (vph)	0	3	0	119	255	1
Future Volume (vph)	0	3	0	119	255	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	1900	1077	1900	1439	1474	0
Flt Permitted						
Satd. Flow (perm)	1900	1077	1900	1439	1474	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Confl. Peds. (#/hr)	3					
Peak Hour Factor	0.50	0.50	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	0%	50%	0%	32%	29%	0%
Adj. Flow (vph)	0	6	0	151	323	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	6	0	151	324	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12	, i		12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	tion 23.5%			IC	U Level o	of Service A

 $\label{thm:continuous} G:\label{thm:chrolt-1901479-BUILD-AM_PkGen.syn} $$BL\ Companies$

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	0.1					
-		===			055	055
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	<u>ች</u>	7	<u>ነ</u>		ĵ.	
Traffic Vol, veh/h	0	3	0	119	255	1
Future Vol, veh/h	0	3	0	119	255	1
Conflicting Peds, #/hr	3	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	-
Veh in Median Storage,	# 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	79	79	79	79
Heavy Vehicles, %	0	50	0	32	29	0
Mvmt Flow	0	6	0	151	323	1
	1inor2		Major1		//ajor2	
Conflicting Flow All	478	324	324	0	-	0
Stage 1	324	-	-	-	-	-
Stage 2	154	-	-	-	-	-
Critical Hdwy	6.4	6.7	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.75	2.2	-	-	-
Pot Cap-1 Maneuver	550	619	1247	-	-	-
Stage 1	738	-	-	-	_	-
Stage 2	879	_	_	_	_	_
Platoon blocked, %	010			_	_	_
Mov Cap-1 Maneuver	550	619	1247		•	_
	550	019	1241	_	-	-
Mov Cap-2 Maneuver		-	-	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	879	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	10.9		0		0	
HCM LOS	В					
Minor Lane/Major Mvmt		NBL	NBT	EBLn1 E		SBT
Capacity (veh/h)		1247	-	-	619	-
HCM Lane V/C Ratio		-	-	-	0.01	-
HCM Control Delay (s)		0	-	0	10.9	-
HCM Lane LOS		Α	-	Α	В	-
HCM 95th %tile Q(veh)		0	-	-	0	-
		_				

	۶	→	•	•	+	•	1	†	/	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	25	23	5	150	14	32	4	106	9	14	101	25
Future Volume (vph)	25	23	5	150	14	32	4	106	9	14	101	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.978			0.990			0.976	
Flt Protected		0.977			0.963			0.998			0.995	
Satd. Flow (prot)	0	1477	0	0	1577	0	0	1438	0	0	1459	0
Flt Permitted		0.977			0.963			0.998			0.995	
Satd. Flow (perm)	0	1477	0	0	1577	0	0	1438	0	0	1459	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.63	0.63	0.63	0.45	0.45	0.45	0.79	0.79	0.79	0.65	0.65	0.65
Heavy Vehicles (%)	31%	11%	50%	14%	0%	17%	33%	33%	0%	0%	33%	15%
Adj. Flow (vph)	40	37	8	333	31	71	5	134	11	22	155	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	85	0	0	435	0	0	150	0	0	215	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:)ther											
Control Type: Unsignalized												
Intersection Capacity Utilizati	on 37.2%			IC	CU Level	of Service	Α					
Analysis Period (min) 15												

Intersection

Convergence, Y/N

HCM Lane V/C Ratio

HCM Control Delay

HCM Lane LOS

HCM 95th-tile Q

Service Time

Cap

Intersection												
Intersection Delay, s/veh	14.8											
Intersection LOS	В											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			€	
Traffic Vol, veh/h	25	23	5	150	14	32	4	106	9	14	101	25
Future Vol, veh/h	25	23	5	150	14	32	4	106	9	14	101	25
Peak Hour Factor	0.63	0.63	0.63	0.45	0.45	0.45	0.79	0.79	0.79	0.65	0.65	0.65
Heavy Vehicles, %	31	11	50	14	0	17	33	33	0	0	33	15
Mvmt Flow	40	37	8	333	31	71	5	134	11	22	155	38
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	10.5			18.4			11.6			11.5		
HCM LOS	В			С			В			В		
Lane		NBLn1	EBLn1	WBLn1	SBLn1							
Vol Left, %		3%	47%	77%	10%							
Vol Thru, %		89%	43%	7%	72%							
Vol Right, %		8%	9%	16%	18%							
Sign Control		Stop	Stop	Stop	Stop							
Traffic Vol by Lane		119	53	196	140							
LT Vol		4	25	150	14							
Through Vol		106	23	14	101							
RT Vol		9	5	32	25							
Lane Flow Rate		151	84	436	215							
Geometry Grp		1	1	1	1							
Degree of Util (X)		0.264	0.147	0.659	0.336							
Departure Headway (Hd)		6.321	6.31	5.448	5.613							

Yes

566

4.374

0.267

11.6

В

1.1

Yes

567

4.367

0.148

10.5

В

0.5

Yes

662

3.485

0.659

18.4

С

4.9

Yes

640

3.661

0.336

11.5

В

1.5

	→	•	•	•	4	~
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	ĥ			ર્ન	, j	7
Traffic Volume (vph)	46	0	0	40	156	0
Future Volume (vph)	46	0	0	40	156	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1863	0	0	1863	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	1863	0	0	1863	1770	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	0	0	43	170	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	0	0	43	170	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 18.6%

ICU Level of Service A

Analysis Period (min) 15

luture estima							
Intersection	C 4						
Int Delay, s/veh	6.4						
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	(î			4	ሻ	7	
Traffic Vol, veh/h	46	0	0	40	156	0	
Future Vol, veh/h	46	0	0	40	156	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	
	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	-	-	-	0	0	
Veh in Median Storage,	# 0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	50	0	0	43	170	0	
		<u> </u>	· ·			•	
		_					
	ajor1		Major2		Minor1		
Conflicting Flow All	0	0	50	0	93	50	
Stage 1	-	-	-	-	50	-	
Stage 2	-	-	-	-	43	-	
Critical Hdwy	-	-	4.12	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	-	-	2.218	-	3.518		
Pot Cap-1 Maneuver	-	-	1557	-	907	1018	
Stage 1	-	-	-	-	972	-	
Stage 2	-	-	-	-	979	-	
Platoon blocked, %	-	-		-			
Mov Cap-1 Maneuver	-	-	1557	-	907	1018	
Mov Cap-2 Maneuver	-	-	-	-	907	-	
Stage 1	-	_	_	_	972	_	
Stage 2	_	_	-	-	979	-	
					- · •		
Λ	ED.		14/5		, LID		
Approach	EB		WB		NB		
HCM Control Delay, s	0		0		9.9		
HCM LOS					Α		
Minor Lane/Major Mvmt	ı	NBLn11	VRI n2	EBT	EBR	WBL	
Capacity (veh/h)	<u> </u>	907	NDLIIZ -	LDI	LDIX	1557	
HCM Lane V/C Ratio		0.187	-	-	-		
HCM Control Delay (s)		9.9	0			0	
				-		A	
HCM Lane LOS		A	Α	-	-		
HCM 95th %tile Q(veh)		0.7	-	-	-	0	

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Romand) Plan: PM Peak Gen

	۶	→	•	•	•	•	•	†	/	>	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	7	^					*	4	7
Traffic Volume (vph)	0	413	132	218	404	0	0	0	0	129	0	93
Future Volume (vph)	0	413	132	218	404	0	0	0	0	129	0	93
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	0			100			0			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.953	0.850
Flt Protected				0.950						0.950	0.967	
Satd. Flow (prot)	0	3574	1553	1719	3505	0	0	0	0	1726	1540	1548
Flt Permitted				0.950						0.950	0.967	
Satd. Flow (perm)	0	3574	1553	1719	3505	0	0	0	0	1726	1540	1548
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			159									
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			20.8			8.5			11.3	
Peak Hour Factor	0.83	0.83	0.83	0.59	0.59	0.59	0.88	0.88	0.88	0.86	0.86	0.86
Heavy Vehicles (%)	0%	1%	4%	5%	3%	0%	0%	0%	0%	6%	0%	9%
Adj. Flow (vph)	0	498	159	369	685	0	0	0	0	150	0	108
Shared Lane Traffic (%)	•	100	100	000	000			· ·		40%		25%
Lane Group Flow (vph)	0	498	159	369	685	0	0	0	0	90	87	81
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			24			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								. •				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	15		9	15		9	15		9	15	0.00	9
Turn Type		NA	Perm	Prot	NA		10			Split	NA	Prot
Protected Phases		2		1	12					4	4	4
Permitted Phases		_	2	•						•	•	•
Detector Phase		2	2	1	12					4	4	4
Switch Phase		_	-	•	1 2					•	•	•
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		30.0	30.0	20.0						25.0	25.0	25.0
Total Split (%)		40.0%	40.0%	26.7%						33.3%	33.3%	33.3%
Maximum Green (s)		24.5	24.5	16.0						19.5	19.5	19.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag				Lead						0.0	5.5	5.5
Lead-Lag Optimize?		Lag	Lag	Leau								
•		0.0	0.0	2.0						2.0	2.0	2.0
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Ribrards) Plan: PM Peak Gen

	•	-	•	•	•	•	1	†	1	-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		28.2	28.2	24.1	58.6					10.6	10.6	10.6
Actuated g/C Ratio		0.38	0.38	0.32	0.78					0.14	0.14	0.14
v/c Ratio		0.37	0.23	0.67	0.25					0.37	0.40	0.37
Control Delay		19.4	4.4	24.8	1.2					32.9	34.3	33.5
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		19.4	4.4	24.8	1.2					32.9	34.3	33.5
LOS		В	Α	С	Α					С	С	С
Approach Delay		15.8			9.5						33.6	
Approach LOS		В			Α						С	
Queue Length 50th (ft)		94	0	89	12					41	41	36
Queue Length 95th (ft)		122	30	90	13					75	78	70
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		1341	682	552	2736					448	400	402
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	0.23	0.67	0.25					0.20	0.22	0.20
Intersection Summary												

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 13 (17%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 55

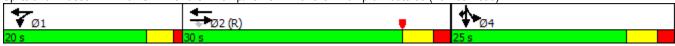
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 14.7 Intersection LOS: B
Intersection Capacity Utilization 44.6% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)Plan: PM Peak Gen

	۶	→	•	•	←	•	4	†	~	>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	^			^	7	ሻ	ર્ન	7			
Traffic Volume (vph)	80	462	0	0	458	140	164	0	226	0	0	0
Future Volume (vph)	80	462	0	0	458	140	164	0	226	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0	·-	480	180	· -	180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			0			100			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.00			0.00	0.850	0.00	0.00	0.850			
Flt Protected	0.950					0.000	0.950	0.950	0.000			
Satd. Flow (prot)	1719	3574	0	0	3539	1406	1678	1573	1743	0	0	0
Flt Permitted	0.950	0011		•	0000	1100	0.950	0.950	11 10	•		J
Satd. Flow (perm)	1719	3574	0	0	3539	1406	1678	1573	1743	0	0	0
Right Turn on Red	11 10	0011	Yes	•	0000	Yes	1010	1010	No	•		Yes
Satd. Flow (RTOR)			100			173			110			100
Link Speed (mph)		35			40	110		30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			13.0			15.5			11.1	
Peak Hour Factor	0.85	0.85	0.85	0.81	0.81	0.81	0.84	0.84	0.84	0.88	0.88	0.88
Heavy Vehicles (%)	5%	1%	0.00	0.01	2%	11%	9%	0%	5%	0%	0.00	0.00
Adj. Flow (vph)	94	544	0 /0	0	565	173	195	0	269	0 /0	0	0
Shared Lane Traffic (%)	∪ ∓	UTT	U	U	000	170	50%	U	200	U	U	U
Lane Group Flow (vph)	94	544	0	0	565	173	97	98	269	0	0	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)	Leit	24	rtigiit	Leit	24	rtigrit	Leit	14	rtigiit	Leit	14	ragni
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15	1.00	9	1.00	1.00	9	15	1.00	9	15	0.00	9
Turn Type	Prot	NA	3	10	NA	Prot	Split	NA	Prot	10		3
Protected Phases	1	12			2	2	4	4	4			
Permitted Phases		1 2			2	2	7	7	7			
Detector Phase	1	12			2	2	4	4	4			
Switch Phase		1 2			2	2	7	7	7			
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	20.0				31.0	31.0	24.0	24.0	24.0			
Total Split (%)	26.7%				41.3%	41.3%	32.0%	32.0%	32.0%			
Maximum Green (s)	16.0				25.5	25.5	19.0	19.0	19.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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			
• • • •	4.0				5.5	5.5	5.0	5.0				
Total Lost Time (s)							5.0	5.0	5.0			
Lead/Lag Lead-Lag Optimize?	Lead				Lag	Lag						
•	2.0				0.0	0.2	2.0	2.0	2.0			
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Riorand)Plan: PM Peak Gen

	•	→	*	•	•	•	1	Ť		-	ŧ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	11.6	50.1			33.0	33.0	15.9	15.9	15.9			
Actuated g/C Ratio	0.15	0.67			0.44	0.44	0.21	0.21	0.21			
v/c Ratio	0.36	0.23			0.36	0.24	0.27	0.29	0.73			
Control Delay	21.9	0.6			9.8	1.6	25.6	26.1	39.1			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	21.9	0.6			9.8	1.6	25.6	26.1	39.1			
LOS	С	Α			Α	Α	С	С	D			
Approach Delay		3.8			7.9			33.5				
Approach LOS		Α			Α			С				
Queue Length 50th (ft)	20	0			40	1	38	40	116			
Queue Length 95th (ft)	30	0			76	4	71	72	170			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	366	2336			1558	716	425	398	441			
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	0.26	0.23			0.36	0.24	0.23	0.25	0.61			

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 51 (68%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 50

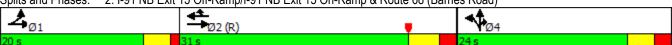
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 12.9 Intersection LOS: B
Intersection Capacity Utilization 44.6% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



Timing Plan: PM Peak Gen

	۶	→	•	•	+	•	•	†	~	\	+	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ች	↑ 1>		ሻ	^	7	ሻ	f)			सी	7
Traffic Volume (vph)	219	454	15	3	373	71	8	1	8	63	1	217
Future Volume (vph)	219	454	15	3	373	71	8	1	8	63	1	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			0			130		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995				0.850		0.862				0.850
Flt Protected	0.950			0.950			0.950				0.953	
Satd. Flow (prot)	1597	3557	0	1796	3522	1607	1685	1583	0	0	1742	1196
FIt Permitted /	0.950			0.950			0.709				0.721	
Satd. Flow (perm)	1597	3557	0	1796	3522	1607	1257	1583	0	0	1318	1196
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				106		11				252
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.78	0.78	0.78	0.80	0.80	0.80	0.75	0.75	0.75	0.86	0.86	0.86
Heavy Vehicles (%)	13%	1%	0%	0%	2%	0%	0%	0%	0%	4%	0%	35%
Adj. Flow (vph)	281	582	19	4	466	89	11	1	11	73	1	252
Shared Lane Traffic (%)												
Lane Group Flow (vph)	281	601	0	4	466	89	11	12	0	0	74	252
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	<u> </u>		12			10	<u> </u>		0	J
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		12	15		12	15		12	15		12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm	NA	pm+ov
Protected Phases	1	12		3	23	23		4			4	1
Permitted Phases	-	· -					4	-		4	-	4
Detector Phase	1	12		3	23	23	4	4		4	4	1
Switch Phase												•
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	17.0			11.0			17.0	17.0		17.0	17.0	17.0
Total Split (%)	22.7%			14.7%			22.7%	22.7%		22.7%	22.7%	22.7%
Maximum Green (s)	11.6			5.7			12.1	12.1		12.1	12.1	11.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0		1.0	0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?								~9		~9		

Long Croup	(X)	
Lane Group	Ø2	
LaneConfigurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
FIt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
()		
Two way Left Turn Lane Headway Factor		
Turning Speed (mph)		
Turn Type	0	
Protected Phases	2	
Permitted Phases		
Detector Phase		
Switch Phase	45.0	
Minimum Initial (s)	15.0	
Minimum Split (s)	21.1	
Total Split (s)	30.0	
Total Split (%)	40%	
Maximum Green (s)	23.9	
Yellow Time (s)	4.8	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?		
- U - p - ····		

	•	→	•	•	•	•	1	†	~	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	20.1	47.5		5.3	31.9	31.9	9.0	9.0			9.0	31.6
Actuated g/C Ratio	0.27	0.63		0.07	0.43	0.43	0.12	0.12			0.12	0.42
v/c Ratio	0.66	0.27		0.03	0.31	0.12	0.07	0.06			0.47	0.39
Control Delay	38.8	4.2		32.7	15.4	2.5	28.9	16.7			40.1	4.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	38.8	4.2		32.7	15.4	2.5	28.9	16.7			40.1	4.2
LOS	D	Α		С	В	Α	С	В			D	Α
Approach Delay		15.2			13.4			22.5			12.3	
Approach LOS		В			В			С			В	
Queue Length 50th (ft)	99	38		2	82	0	5	0			33	0
Queue Length 95th (ft)	#241	43		10	84	13	15	11			66	38
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	427	2429		139	1455	726	202	264			212	649
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	0.25		0.03	0.32	0.12	0.05	0.05			0.35	0.39

Intersection Summary

Area Type: Other

Cycle Length: 75
Actuated Cycle Length: 75

Offset: 42 (56%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

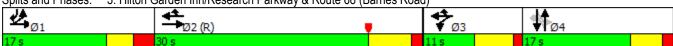
Maximum v/c Ratio: 0.66

Intersection Signal Delay: 14.2 Intersection LOS: B
Intersection Capacity Utilization 48.5% ICU Level of Service A

Analysis Period (min) 15

Queue shown is maximum after two cycles.

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



^{# 95}th percentile volume exceeds capacity, queue may be longer.

Lane Group	Ø2
Vehicle Extension (s)	2.5
Recall Mode	C-Min
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Build

Timing Plan: PM Peak Gen

	۶	→	•	€	←	•	4	†	~	\	↓	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	1		ች	₽.		ች	†	7	*	1>	
Traffic Volume (vph)	0	0	1	95	0	16	0	104	187	33	185	0
Future Volume (vph)	0	0	1	95	0	16	0	104	187	33	185	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	1000	0	170	1000	0	140	1000	0	115	1000	0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	0		•	25		J	130		•	100		J
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.850	1.00	1.00	0.850	1.00	1.00	1.00	0.850	1.00	1.00	1.00
Flt Protected		0.000		0.950	0.000				0.000	0.950		
Satd. Flow (prot)	1900	1615	0	1805	1615	0	1900	1743	1615	1805	1743	0
Flt Permitted	1000	1010		0.755	1010		1000	17 10	1010	0.682	17 10	
Satd. Flow (perm)	1900	1615	0	1434	1615	0	1900	1743	1615	1296	1743	0
Right Turn on Red	1000	1010	Yes	1101	1010	Yes	1000	17 10	Yes	1200	17 10	Yes
Satd. Flow (RTOR)		625	100		816	100			208			100
Link Speed (mph)		30			30			30	200		30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.25	0.25	0.25	0.88	0.88	0.88	0.90	0.90	0.90	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	9%	0%	0%	9%	0%
Adj. Flow (vph)	0	0	4	108	0	18	0	116	208	40	226	0
Shared Lane Traffic (%)			'	100				110	200	10		
Lane Group Flow (vph)	0	4	0	108	18	0	0	116	208	40	226	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24			30			12			12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	2	
Permitted Phases	4			4			2		2	2		
Detector Phase	4	4		4	4		2	2	2	1	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0	15.0	4.5	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0	21.0	9.0	21.0	
Total Split (s)	40.0	40.0		40.0	40.0		51.0	51.0	51.0	9.0	51.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		51.0%	51.0%	51.0%	9.0%	51.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		45.0	45.0	45.0	5.0	45.0	
Yellow Time (s)	3.0	3.0		3.0	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	1.0	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	5.0		5.0	5.0		6.0	6.0	6.0	4.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	2.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
VOITIGIC EXTOTISION (3)	3.0	3.0		5.0	3.0		0.0	0.0	5.0	5.0	5.0	

4: Research Parkway & Food Bank Driv/Site Drive 1

	•	-	•	•	←	•	•	†	~	-	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0		7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0		0	
Act Effct Green (s)		8.9		8.9	8.9			21.6	21.6	24.0	21.6	
Actuated g/C Ratio		0.22		0.22	0.22			0.53	0.53	0.59	0.53	
v/c Ratio		0.00		0.35	0.02			0.13	0.22	0.05	0.24	
Control Delay		0.0		17.8	0.1			9.9	3.0	4.7	10.5	
Queue Delay		0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay		0.0		17.8	0.1			9.9	3.0	4.7	10.5	
LOS		Α		В	Α			Α	Α	Α	В	
Approach Delay					15.2			5.5			9.6	
Approach LOS					В			Α			Α	
Queue Length 50th (ft)		0		16	0			12	0	3	24	
Queue Length 95th (ft)		0		58	0			51	32	12	82	
Internal Link Dist (ft)		116			123			640			398	
Turn Bay Length (ft)				170						115		
Base Capacity (vph)		1488		1250	1512			1708	1587	826	1708	
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		0.00		0.09	0.01			0.07	0.13	0.05	0.13	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 40.8

Natural Cycle: 45

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.35

Intersection Signal Delay: 8.7 Intersection LOS: A ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Research Parkway & Food Bank Driv/Site Drive 1



	۶	•	•	†	Ţ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			4	₽	
Traffic Volume (vph)	0	1	1	119	217	0
Future Volume (vph)	0	1	1	119	217	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						
Satd. Flow (prot)	1644	0	0	1744	1743	0
Flt Permitted						
Satd. Flow (perm)	1644	0	0	1744	1743	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.25	0.25	0.83	0.83	0.85	0.85
Heavy Vehicles (%)	0%	0%	0%	9%	9%	0%
Adj. Flow (vph)	0	4	1	143	255	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	144	255	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
	Other					
Control Type: Unsignalized						
Intersection Capacity Utiliza	tion 21.4%			IC	U Level o	of Service A
Analysis Period (min) 15						

Interception						
Intersection	0.1					
Int Delay, s/veh						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			4	f)	
Traffic Vol, veh/h	0	1	1	119	217	0
Future Vol, veh/h	0	1	1	119	217	0
Conflicting Peds, #/hr	0	0	0	0	0	0
	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	25	25	83	83	85	85
Heavy Vehicles, %	0	0	0	9	9	0
Mymt Flow	0	4	1	143	255	0
IVIVIIILIIOVV	U	7		140	200	U
Major/Minor Mir	nor2	N	/lajor1	N	/lajor2	
Conflicting Flow All	400	255	255	0	-	0
Stage 1	255	-	-	-	-	-
Stage 2	145	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	_	-	_	-
Critical Hdwy Stg 2	5.4	_	_	_	_	_
Follow-up Hdwy	3.5	3.3	2.2	_	_	_
	610	789	1322	_	_	_
	792	-	-	_	_	_
<u>_</u>	887		_		_	
Platoon blocked, %	007	_	_	-	-	_
-	600	700	1222	-	-	-
•	609	789	1322	-	-	-
	609	-	-	-	-	-
9	791	-	-	-	-	-
Stage 2	887	-	-	-	-	-
Approach	ЕВ		NB		SB	
HCM Control Delay, s	9.6		0.1		0	
HCM LOS	Α.		J. 1		- 0	
TIOWI LOO						
Minor Lane/Major Mvmt		NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1322	-	789	-	-
HCM Lane V/C Ratio		0.001	_	0.005	-	-
HCM Control Delay (s)		7.7	0	9.6	-	-
HCM Lane LOS		Α	A	A	_	_
HCM 95th %tile Q(veh)		0	- '.	0	_	_
ricini ootii /otilo Q(voli)		v		U		

	•	•	•	†		4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	7	7	ሻ	*	f	
Traffic Volume (vph)	0	1	0	119	216	0
Future Volume (vph)	0	1	0	119	216	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	0		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	1900	1615	1900	1743	1696	0
FIt Permitted						
Satd. Flow (perm)	1900	1615	1900	1743	1696	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.25	0.25	0.81	0.81	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	9%	12%	0%
Adj. Flow (vph)	0	4	0	147	281	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	4	0	147	281	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
, i	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	ion 21.4%			IC	U Level o	of Service A

 $\label{thm:continuous} G: \label{thm:chrolt-1901479-BUILD-PM_PkGen.syn} $$BL\ Companies$

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	<u> </u>	7	ሻ	<u></u>	<u>₽</u>	
Traffic Vol, veh/h	0	1	0	119	216	0
Future Vol, veh/h	0	1	0	119	216	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	_	-
Veh in Median Storage		-	-	0	0	-
Grade, %	0	_	_	0	0	_
Peak Hour Factor	25	25	81	81	77	77
Heavy Vehicles, %	0	0	0	9	12	0
Mymt Flow	0	4	0	147	281	0
WWW.CT IOW		•			201	•
	Minor2		/lajor1		//ajor2	
Conflicting Flow All	428	281	281	0	-	0
Stage 1	281	-	-	-	-	-
Stage 2	147	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	588	763	1293	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	885	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	588	763	1293	-	-	-
Mov Cap-2 Maneuver	588	-	-	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	885	-	-	-	-	-
A	ED		ND		CD	
Approach	EB		NB		SB	
HCM Control Delay, s	9.7		0		0	
HCM LOS	Α					
Minor Lane/Major Mvm	t	NBL	NBT	EBLn1 E	EBLn2	SBT
Capacity (veh/h)		1293	-	-	763	-
HCM Lane V/C Ratio		-	-	-	0.005	-
HCM Control Delay (s)		0	-	0	9.7	-
HCM Lane LOS		Α	-	Α	Α	-
HCM 95th %tile Q(veh)		0	-	-	0	-

	۶	→	•	•	←	4	•	†	/	\	ļ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	23	19	3	96	15	24	7	98	14	11	117	22
Future Volume (vph)	23	19	3	96	15	24	7	98	14	11	117	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.976			0.984			0.980	
Flt Protected		0.975			0.966			0.997			0.996	
Satd. Flow (prot)	0	1834	0	0	1791	0	0	1709	0	0	1682	0
Flt Permitted		0.975			0.966			0.997			0.996	
Satd. Flow (perm)	0	1834	0	0	1791	0	0	1709	0	0	1682	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.64	0.64	0.64	0.66	0.66	0.66	0.72	0.72	0.72	0.67	0.67	0.67
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	11%	0%	0%	12%	6%
Adj. Flow (vph)	36	30	5	145	23	36	10	136	19	16	175	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	0	0	204	0	0	165	0	0	224	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
	Other											
Control Type: Unsignalized												
Intersection Capacity Utilizati	on 28.5%			IC	CU Level of	of Service	Α					
Analysis Period (min) 15												

Analysis Period (min) 15

Intersection							
Intersection Delay, s/veh	9.6						
Intersection LOS	Α						

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	23	19	3	96	15	24	7	98	14	11	117	22
Future Vol, veh/h	23	19	3	96	15	24	7	98	14	11	117	22
Peak Hour Factor	0.64	0.64	0.64	0.66	0.66	0.66	0.72	0.72	0.72	0.67	0.67	0.67
Heavy Vehicles, %	0	0	0	0	0	0	0	11	0	0	12	6
Mvmt Flow	36	30	5	145	23	36	10	136	19	16	175	33
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	8.8			10			9.2			9.8		
HCM LOS	Α			Α			Α			Α		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	6%	51%	71%	7%	
Vol Thru, %	82%	42%	11%	78%	
Vol Right, %	12%	7%	18%	15%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	119	45	135	150	
LT Vol	7	23	96	11	
Through Vol	98	19	15	117	
RT Vol	14	3	24	22	
Lane Flow Rate	165	70	205	224	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.221	0.101	0.281	0.294	
Departure Headway (Hd)	4.807	5.161	4.946	4.722	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Сар	742	688	722	757	
Service Time	2.872	3.242	3.014	2.782	
HCM Lane V/C Ratio	0.222	0.102	0.284	0.296	
HCM Control Delay	9.2	8.8	10	9.8	
HCM Lane LOS	Α	Α	Α	Α	
HCM 95th-tile Q	8.0	0.3	1.2	1.2	

	-	•	•	←	1	_
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	f)			ર્ન	ሻ	7
Traffic Volume (vph)	44	0	0	26	109	0
Future Volume (vph)	44	0	0	26	109	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1863	0	0	1863	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	1863	0	0	1863	1770	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	0	0	28	118	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	0	28	118	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type: (Other					

ICU Level of Service A

Intersection Capacity Utilization 16.0% Analysis Period (min) 15

Control Type: Unsignalized

Intersection						
Int Delay, s/veh	5.8					
		EDD	///DI	WDT	NIDI	NDD
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	14	•		વ	1 00	7
Traffic Vol, veh/h	44	0	0	26	109	0
Future Vol, veh/h	44	0	0	26	109	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-		-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	0	0	28	118	0
NA -:/NA:	1-1-4		M-:- C		A! 4	
	Major1		Major2		Minor1	
Conflicting Flow All	0	0	48	0	76	48
Stage 1	-	-	-	-	48	-
Stage 2	-	-	-	-	28	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	
Pot Cap-1 Maneuver	-	-	1559	-	927	1021
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	995	-
Platoon blocked, %	_	_		-		
Mov Cap-1 Maneuver	-	-	1559	_	927	1021
Mov Cap-2 Maneuver	_	_	-	_	927	-
Stage 1	_	_	_	_	974	_
Stage 2	_	_	_	_	995	_
Olaye Z					J3J	
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		9.5	
HCM LOS					Α	
Minor Long /Mailer M		VIDL 4 P	UDL O	EDT	EDD	WDI
Minor Lane/Major Mvm	t ſ	VBLn11	NRLN2	EBT	EBR	WBL
Capacity (veh/h)		927	-	-	-	1559
HCM Lane V/C Ratio		0.128	-	-	-	-
HCM Control Delay (s)		9.5	0	-	-	0
HCM Lane LOS		Α	Α	-	-	Α
HCM 95th %tile Q(veh)		0.4	-	-	-	0

BUILD IMPROVED



Timing Plan: AM 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)

Future Volume (vph)		ᄼ	→	•	•	—	•	•	†	~	>	ţ	4
Traffic Volume (vph) 0 581 227 309 914 0 0 0 172 0 409 Future Volume (vph) 0 581 227 309 914 0 0 0 172 0 409 Ideal Flow (vphpl) 1900 19	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph) 0 581 227 309 914 0 0 0 172 0 409 Future Volume (vph) 0 581 227 309 914 0 0 0 172 0 409 Ideal Flow (vphpl) 1900 19	Lane Configurations		^	7	ř	^					ř	4	7
Future Volume (vph)		0		227	309		0	0	0	0	172		409
Ideal Flow (vphpl)		0	581	227		914	0	0	0	0	172	0	409
Lane Width (fit)		1900				1900		1900		1900		1900	
Storage Length (ftt)													
Storage Lanes	,							0					
Taper Length (ft)				1						0			
Lane Util. Factor		25			100			25			100		
Fith			0.95	1.00		0.95	1.00		1.00	1.00		0.91	0.95
Fit Protected													
Satd. Flow (prot) 0 3008 1455 1597 2756 0 0 0 1678 1318 1442 Fit Permitted 0.950 0.950 0.950 0.996 0.986 0.986 0.987 0.998 0.998 0.998 0.998 0.998 0.998 0.998 0.998 0.898 0.882<					0.950						0.950		
Fit Permitted		0	3008	1455		2756	0	0	0	0			1442
Satd. Flow (perm) 0 3008 1455 1597 2756 0 0 0 1678 1318 1442 Right Turn on Red Yes Yes Yes Yes No Satd. Flow (RTOR) 241		•					•	•	•	•			
Right Turn on Red Yes Yes Yes No Satd. Flow (RTOR) 241 241 241 30 30 30 Link Speed (mph) 45 35 35 30 495 30 495 11.3 17.8 8.5 11.3		0	3008	1455		2756	0	0	0	0			1442
Satd. Flow (RTOR) 241 Link Speed (mph) 45 35 30 30 Link Distance (ft) 348 913 376 495 Travel Time (s) 5.3 17.8 8.5 11.3 Peak Hour Factor 0.94 0.94 0.92 0.92 0.88 0.88 0.82 0.82 0.82 Heavy Vehicles (%) 0% 20% 11% 13% 31% 0% 0% 0% 9% 0% 17% Adj. Flow (vph) 0 618 241 336 993 0 0 0 0 9% 0% 17% Adj. Flow (vph) 0 618 241 336 993 0 0 0 210 0 499 Shared Lane Traffic (%) 10% 48% Lane Group Flow (vph) 0 618 241 336 993 0 0 0 189 261 259 Enter Blocked Intersection No<									•				
Link Speed (mph) 45 35 30 30 Link Distance (ft) 348 913 376 495 Travel Time (s) 5.3 17.8 8.5 11.3 Peak Hour Factor 0.94 0.94 0.92 0.92 0.92 0.88 0.88 0.82 0.82 0.82 Heavy Vehicles (%) 0% 20% 11% 13% 31% 0% 0% 0% 9% 0% 17% Adj. Flow (vph) 0 618 241 336 993 0 0 0 0 9% 0% 17% Adj. Flow (vph) 0 618 241 336 993 0 0 0 210 0 48% Lane Group Flow (vph) 0 618 241 336 993 0 0 0 189 261 259 Enter Blocked Intersection No No No No No No No No No	•						. 00						110
Link Distance (ft) 348 913 376 495 Travel Time (s) 5.3 17.8 8.5 11.3 Peak Hour Factor 0.94 0.94 0.92 0.92 0.92 0.88 0.88 0.82 0.82 0.82 Heavy Vehicles (%) 0% 20% 11% 13% 31% 0% 0% 0% 9% 0% 17% Adj. Flow (vph) 0 618 241 336 993 0 0 0 0 210 0 499 Shared Lane Traffic (%) 10% 10% 48% Lane Group Flow (vph) 0 618 241 336 993 0 0 0 189 261 259 Enter Blocked Intersection No N			45			35			30			30	
Travel Time (s) 5.3 17.8 8.5 11.3 Peak Hour Factor 0.94 0.94 0.92 0.92 0.92 0.88 0.88 0.88 0.82 0.82 Heavy Vehicles (%) 0% 20% 11% 13% 31% 0% 0% 0% 9% 0% 17% Adj. Flow (vph) 0 618 241 336 993 0 0 0 0 210 0 499 Shared Lane Traffic (%) 10% 10% 48% Lane Group Flow (vph) 0 618 241 336 993 0 0 0 189 261 259 Enter Blocked Intersection No	,												
Peak Hour Factor 0.94 0.94 0.94 0.92 0.92 0.92 0.88 0.88 0.88 0.82 0.82 0.82 Heavy Vehicles (%) 0% 0% 11% 13% 31% 0% 0% 0% 9% 0% 17% Adj. Flow (vph) 0 618 241 336 993 0 0 0 0 210 0 499 Shared Lane Traffic (%) 10% 10% 0 0 0 0 0 10% 48% Lane Group Flow (vph) 0 618 241 336 993 0 0 0 189 261 259 Enter Blocked Intersection No													
Heavy Vehicles (%) 0% 20% 11% 13% 31% 0% 0% 0% 9% 0% 17% Adj. Flow (vph) 0 618 241 336 993 0 0 0 0 210 0 499 Shared Lane Traffic (%) 10% 48% Lane Group Flow (vph) 0 618 241 336 993 0 0 0 189 261 259 Enter Blocked Intersection No 14 14 14		0 94		0 94	0.92		0.92	0.88		0.88	0.82		0.82
Adj. Flow (vph) 0 618 241 336 993 0 0 0 210 0 499 Shared Lane Traffic (%) Lane Group Flow (vph) 0 618 241 336 993 0 0 0 0 189 261 259 Enter Blocked Intersection No													
Shared Lane Traffic (%) 10% 48% Lane Group Flow (vph) 0 618 241 336 993 0 0 0 189 261 259 Enter Blocked Intersection No													
Lane Group Flow (vph) 0 618 241 336 993 0 0 0 189 261 259 Enter Blocked Intersection No No <t< td=""><td></td><td></td><td>010</td><td>211</td><td>000</td><td>000</td><td>•</td><td>•</td><td>J</td><td>· ·</td><td></td><td>•</td><td></td></t<>			010	211	000	000	•	•	J	· ·		•	
Enter Blocked Intersection No		0	618	241	336	993	0	0	0	0		261	
Lane Alignment Left Left Right Left Left Right Left Left Right Left Le	,												
Median Width(ft) 12 24 14 14 Link Offset(ft) 0 0 0 0 Crosswalk Width(ft) 16 16 16 Two way Left Turn Lane													
Link Offset(ft) 0 0 0 0 Crosswalk Width(ft) 16 16 16 16 Two way Left Turn Lane 16 16 16 16	•												
Crosswalk Width(ft) 16 16 16 16 Two way Left Turn Lane													
Two way Left Turn Lane													
	. ,												
Headway Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
,													9
	• • • • •		NA	Prot		NA						NA	Prot
Protected Phases 2 2 1 12 4 4 4						12							
Permitted Phases													
Detector Phase 2 2 1 1 2 4 4 4	Detector Phase		2	2	1	12					4	4	4
Switch Phase	Switch Phase												
			15.0	15.0	7.0						9.0	9.0	9.0
													14.5
			23.0	23.0	26.0						31.0	31.0	31.0
, , ,			28.8%										38.8%
, , ,													25.5
											3.5		3.5
	. ,										2.0		2.0
				0.0							0.0		0.0
													5.5
Lead/Lag Lag Lead													
Lead-Lag Optimize?													
			0.2	0.2	3.0						3.0	3.0	3.0

ı

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: AM

	_	-	•	•	•	_		T		-	¥	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		22.0	22.0	22.0	49.6					20.9	20.9	20.9
Actuated g/C Ratio		0.28	0.28	0.28	0.62					0.26	0.26	0.26
v/c Ratio		0.75	0.42	0.77	0.58					0.43	0.76	0.69
Control Delay		36.0	6.5	30.6	4.9					26.6	41.0	35.7
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		36.0	6.5	30.6	4.9					26.6	41.0	35.7
LOS		D	Α	С	Α					С	D	D
Approach Delay		27.7			11.4						35.2	
Approach LOS		С			В						D	
Queue Length 50th (ft)		160	0	119	60					80	128	118
Queue Length 95th (ft)		#263	56	m195	m239					118	183	168
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		829	575	457	1707					534	420	459
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		0.75	0.42	0.74	0.58					0.35	0.62	0.56

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 78 (98%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 22.1 Intersection LOS: C
Intersection Capacity Utilization 59.4% ICU Level of Service B

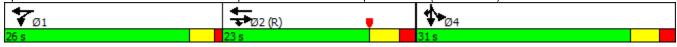
Analysis Period (min) 15

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: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: AM

	۶	→	•	•	←	•	•	†	~	>	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ř	† †			^	7	*	4	7			
Traffic Volume (vph)	192	561	0	0	880	248	343	5	263	0	0	0
Future Volume (vph)	192	561	0	0	880	248	343	5	263	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.91	0.95	1.00	1.00	1.00
Frt						0.850		0.948	0.850			
Flt Protected	0.950						0.950	0.969				
Satd. Flow (prot)	1656	3008	0	0	2735	1394	1604	1398	1525	0	0	0
Flt Permitted	0.950			-			0.950	0.969		•		
Satd. Flow (perm)	1656	3008	0	0	2735	1394	1604	1398	1525	0	0	0
Right Turn on Red			Yes			Yes			No	•		Yes
Satd. Flow (RTOR)			. 00			256						. 00
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			14.9			15.5			11.1	
Peak Hour Factor	0.93	0.93	0.93	0.97	0.97	0.97	0.86	0.86	0.86	0.88	0.88	0.88
Heavy Vehicles (%)	9%	20%	0%	0%	32%	12%	14%	0%	14%	0%	0%	0%
Adj. Flow (vph)	206	603	0	0	907	256	399	6	306	0	0	0
Shared Lane Traffic (%)	200	000	U	U	301	200	38%	U	27%	· ·	U	U
Lane Group Flow (vph)	206	603	0	0	907	256	247	241	223	0	0	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)	Loit	24	rugiit	Loit	24	rugiit	Lon	14	rugiit	Loit	14	ragne
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15	1.00	9	15	1.00	9	15	1.00	9	15	0.00	9
Turn Type	Prot	NA		10	NA	Prot	Split	NA	Prot	10		Ū
Protected Phases	1	1.2			2	2	4	4	4			
Permitted Phases	•	• -			_	_	•	•	•			
Detector Phase	1	12			2	2	4	4	4			
Switch Phase	•	• -			_	_	•	•	•			
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	25.0				29.0	29.0	26.0	26.0	26.0			
Total Split (%)	31.3%				36.3%	36.3%	32.5%	32.5%	32.5%			
Maximum Green (s)	21.0				23.5	23.5	21.0	21.0	21.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead						5.0	5.0	5.0			
	Leau				Lag	Lag						
Lead-Lag Optimize?	3.0				0.2	0.2	3.0	3.0	3.0			
Vehicle Extension (s)	ა.0				0.2	0.2	ა.0	ა.0	ა.0			

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: AM

	WBR C-Max 31.2	NBL None	NBT None	NBR	SBL	SBT	CDD
	31.2		None			ושט	SBR
		40.0		None			
Act Effct Green (s) 16.2 52.8 31.2		18.2	18.2	18.2			
Actuated g/C Ratio 0.20 0.66 0.39	0.39	0.23	0.23	0.23			
v/c Ratio 0.62 0.30 0.85	0.37	0.68	0.76	0.64			
Control Delay 46.0 1.0 34.4	11.2	37.7	44.6	36.5			
Queue Delay 0.0 0.0 0.0	0.0	0.0	0.0	0.0			
Total Delay 46.0 1.0 34.4	11.2	37.7	44.6	36.5			
LOS D A C	В	D	D	D			
Approach Delay 12.4 29.3			39.6				
Approach LOS B C			D				
Queue Length 50th (ft) 96 4 180	40	113	118	102			
Queue Length 95th (ft) m104 10 m#271	m49	181	192	165			
Internal Link Dist (ft) 833 684			603			409	
Turn Bay Length (ft) 830	480	180		180			
Base Capacity (vph) 434 1964 1065	699	421	366	400			
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 0.47 0.31 0.85	0.37	0.59	0.66	0.56			

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 34 (43%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85
Intersection Signal Delay: 26.9

Intersection Signal Delay: 26.9 Intersection LOS: C
Intersection Capacity Utilization 59.4% ICU Level of Service B

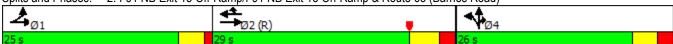
Analysis Period (min) 15

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: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



Lane Configurations		۶	-	•	•	—	•	4	†	/	>	ļ	1
Traffic Volume (vph)	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	Lane Configurations	ሻሻ	ĵ.		ሻ	^	7	ሻ	ĵ.			सी	7
Future Volume (vph) 279 520 25				25			126			10	30		
Ideal Flow (ryphp) 1900 1000		279	520	25		980	126	35	25	10	30	5	
Lane Width (ft)													1900
Storage Length (ft) 570 0 1 1 1 0 0 345 0 1 1 1 1 0 1 1 1 1													
Storage Lanes	. ,		0%			1%			0%			0%	
Storage Lanes	` '	570		0	100		250	0		0	345		0
Taper Length (ft)		1		0	1		1	1		0	1		1
Lane Util. Factor	•	50			100			25			130		
Fit Protected 0.950 0.950 2477 1516 1668 1753 0 0 1791 1509		0.97	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot) 3045 1547 0 1796 2477 1516 1668 1753 0 0 1791 1509 1510 1510 1509 1753 0 0 1791 1509 1510 1510 1509 1753 0 0 0 1791 1509 1510 1510 1509 1753 0 0 0 1322 1509 1515 1510 1509 1753 0 0 0 1322 1509 1515 1510 1509 1	Frt		0.993				0.850		0.957				0.850
Fit Permitted	Flt Protected	0.950			0.950			0.950				0.959	
Fit Permitted 0,950 0,950 0,796 0,729 0,708 0,708 0,709 0,708 0,709 0,700 0,70	Satd. Flow (prot)	3045	1547	0	1796	2477	1516	1668	1753	0	0	1791	1509
Pight Turn on Red Yes Ye		0.950			0.950			0.729				0.708	
Pight Turn on Red Yes Ye	Satd. Flow (perm)		1547	0		2477	1516		1753	0	0		1509
Satd. Flow (RTOR)				Yes						Yes			Yes
Link Speed (mph) 35 35 35 30 30 Link Distance (ft) 764 751 251 720 Travel Time (s) 14.9 14.6 5.7 16.4 Peak Hour Factor 0.92 0.92 0.89 0.89 0.51 0.51 0.51 0.81 0.81 0.81 Heavy Vehicles (%) 15% 23% 1% 0% 45% 6% 1% 0% 1% 0% 7% Adj. Flow (vph) 303 565 27 11 1101 142 69 69 0 0 43 140 Shared Lane Traffic (%) Lane Group Flow (vph) 303 592 0 11 1101 142 69 69 0 0 43 140 Eane Group Flow (vph) 303 592 0 11 1101 142 69 69 0 0 0 0 140 140 140 140 140 140 <t< td=""><td></td><td></td><td>5</td><td></td><td></td><td></td><td></td><td></td><td>20</td><td></td><td></td><td></td><td></td></t<>			5						20				
Link Distance (ft)	, ,					35						30	
Travel Time (s)	,												
Peak Hour Factor	. ,												
Heavy Vehicles (%)	` ,	0.92		0.92	0.89		0.89	0.51		0.51	0.81		0.81
Adj. Flow (vph) 303 565 27 11 1101 142 69 49 20 37 6 140													
Shared Lane Traffic (%) Lane Group Flow (yph) 303 592 0 11 1101 142 69 69 0 0 0 43 140	, ,												
Lane Group Flow (vph) 303 592 0					• •						<u> </u>		
Enter Blocked Intersection		303	592	0	11	1101	142	69	69	0	0	43	140
Left Left Right Left Right Left Right Left Right Left Left Right Left Left Right Left Right Left Left Right Left Left Left Left Right Left										-			
Median Width(fft) 24 24 10 0 Link Offset(fft) 0 0 0 0 Crosswalk Width(fft) 16 16 16 16 Two way Left Turn Lane 1.00 1.00 1.01 1.01 1.09 1.04 1.00 1.00 1.00 Headway Factor 1.00 1.00 1.01 1.01 1.09 1.04 1.00 1.00 1.00 Turning Speed (mph) 15 12 1													
Link Offset(ft) 0 0 0 0 0 Crosswalk Width(ft) 16 16 16 16 16 Two way Left Turn Lane Headway Factor 1.00 1.00 1.01 1.01 1.09 1.04 1.00 1.00 1.00 Turn Type Prot NA Prot NA Perm NA Perm NA Perm NA Perm NA pt-vo Protected Phases 7 78 3 38 38 4 7 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>													
Crosswalk Width(ft) 16 16 16 16 16 16 16 16 16 16 16 Two way Left Turn Lane 100 1.00 1.00 1.00 1.01 1.01 1.01 1.09 1.04 1.00													
Two way Left Turn Lane Headway Factor 1.00 1.00 1.01 1.01 1.01 1.09 1.04 1.00 1.00 1.00 Turning Speed (mph) 15 12 12 15 12 15 12 12 15 12 </td <td>. ,</td> <td></td>	. ,												
Headway Factor 1.00 1.00 1.00 1.01 1.01 1.01 1.09 1.04 1.00	` ,		. •			. •							
Turning Speed (mph) 15 12 15 14 7 7 8 3 8 <th< td=""><td></td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.01</td><td>1.01</td><td>1.01</td><td>1.09</td><td>1.04</td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.00</td></th<>		1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turn Type Prot NA Prot NA Perm NA Perm NA pt-ov Protected Phases 7 78 3 38 38 4 4 4 4 4 7 70			1.00			1.01			1.01			1.00	
Protected Phases 7 78 3 38 38 4 4 4 Permitted Phases 4 4 4 4 4 4 4 4 4 4 4 7 8 3 38 38 4 4 4 4 4 4 7 7 8 3 38 38 4 4 4 4 4 4 7 7 8 3 38 38 4 4 4 4 4 4 7 8 3 38 38 4 4 4 4 4 7 8 3 8 3 8 4 4 4 4 4 7 7 8 3 8 3 8 4 4 4 7 7 7 7 7 0 7 7 7 0 7 10 1 19 19 19 19			NA			NA			NA			NA	
Permitted Phases 4 4 Detector Phase 7 78 3 38 38 4 4 4 4 4 7 Switch Phase Minimum Initial (s) 5.0 5.0 7.0								1 01111			. 0		
Detector Phase 7 78 3 38 38 4 1 1 1 1 1 1 1 1		•						4	•		4		
Switch Phase Minimum Initial (s) 5.0 5.0 7.0 7.0 7.0 7.0 Minimum Split (s) 10.4 10.3 11.9 11.9 11.9 11.9 Total Split (s) 26.0 11.0 19.0 19.0 19.0 19.0 Total Split (%) 32.5% 13.8% 23.8% 23.8% 23.8% 23.8% Maximum Green (s) 20.6 5.7 14.1 14.1 14.1 14.1 Yellow Time (s) 3.0 4.3 3.6 3.6 3.6 3.6 All-Red Time (s) 2.4 1.0 1.3 1.3 1.3 1.3 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.4 5.3 4.9 4.9 4.9 Lead/Lag Lead Lead Lag Lag Lag Lag		7	7.8		3	3.8	3.8		4			4	4 7
Minimum Initial (s) 5.0 5.0 7.0 7.0 7.0 7.0 Minimum Split (s) 10.4 10.3 11.9 11.9 11.9 11.9 Total Split (s) 26.0 11.0 19.0 19.0 19.0 19.0 Total Split (%) 32.5% 13.8% 23.8% 23.8% 23.8% 23.8% Maximum Green (s) 20.6 5.7 14.1 14.1 14.1 14.1 Yellow Time (s) 3.0 4.3 3.6 3.6 3.6 All-Red Time (s) 2.4 1.0 1.3 1.3 1.3 1.3 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.4 5.3 4.9 4.9 4.9 Lead/Lag Lead Lead Lag Lag Lag		•						•	•		•		
Minimum Split (s) 10.4 10.3 11.9 11.9 11.9 11.9 11.9 Total Split (s) 26.0 11.0 19.0 19.0 19.0 19.0 Total Split (%) 32.5% 13.8% 23.8% 23.8% 23.8% 23.8% Maximum Green (s) 20.6 5.7 14.1 14.1 14.1 14.1 Yellow Time (s) 3.0 4.3 3.6 3.6 3.6 3.6 All-Red Time (s) 2.4 1.0 1.3 1.3 1.3 1.3 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.4 5.3 4.9 4.9 4.9 Lead/Lag Lead Lead Lag Lag Lag		5.0			5.0			7.0	7.0		7.0	7.0	
Total Split (s) 26.0 11.0 19.0 19.0 19.0 19.0 Total Split (%) 32.5% 13.8% 23.8% 23.8% 23.8% 23.8% Maximum Green (s) 20.6 5.7 14.1 14.1 14.1 14.1 Yellow Time (s) 3.0 4.3 3.6 3.6 3.6 3.6 All-Red Time (s) 2.4 1.0 1.3 1.3 1.3 1.3 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.4 5.3 4.9 4.9 4.9 Lead/Lag Lead Lead Lag Lag Lag	. ,												
Total Split (%) 32.5% 13.8% 23.8% 23.8% 23.8% 23.8% Maximum Green (s) 20.6 5.7 14.1 14.1 14.1 14.1 Yellow Time (s) 3.0 4.3 3.6 3.6 3.6 3.6 All-Red Time (s) 2.4 1.0 1.3 1.3 1.3 1.3 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.4 5.3 4.9 4.9 4.9 Lead/Lag Lead Lead Lag Lag Lag Lag	,												
Maximum Green (s) 20.6 5.7 14.1 14.1 14.1 14.1 Yellow Time (s) 3.0 4.3 3.6 3.6 3.6 3.6 All-Red Time (s) 2.4 1.0 1.3 1.3 1.3 1.3 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.4 5.3 4.9 4.9 4.9 Lead/Lag Lead Lead Lag Lag Lag Lag													
Yellow Time (s) 3.0 4.3 3.6 3.6 3.6 3.6 All-Red Time (s) 2.4 1.0 1.3 1.3 1.3 1.3 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.4 5.3 4.9 4.9 4.9 Lead/Lag Lead Lag Lag Lag Lag													
All-Red Time (s) 2.4 1.0 1.3 1.3 1.3 1.3 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.4 5.3 4.9 4.9 4.9 Lead/Lag Lead Lead Lag Lag Lag Lag	. ,												
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.4 5.3 4.9 4.9 4.9 Lead/Lag Lead Lead Lag Lag Lag Lag													
Total Lost Time (s) 5.4 5.3 4.9 4.9 4.9 Lead/Lag Lead Lead Lag Lag Lag Lag											1.0		
Lead/Lag Lag Lag Lag Lag Lag													
											Lag		
	Lead-Lag Optimize?	Leau			Leau			Lay	Lay		Lay	Lay	

Lane Group	Ø8	
LaneConfigurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type	•	
Protected Phases	8	
Permitted Phases		
Detector Phase		
Switch Phase	45.0	
Minimum Initial (s)	15.0	
Minimum Split (s)	21.1	
Total Split (s)	24.0	
Total Split (%)	30%	
Maximum Green (s)	17.9	
Yellow Time (s)	4.8	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?		

3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)

	•	\rightarrow	•	•	•	•	1	†		-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	
Recall Mode	None			None			None	None		None	None	
Act Effct Green (s)	20.5	49.3		5.7	34.5	34.5	9.4	9.4			9.4	35.3
Actuated g/C Ratio	0.26	0.62		0.07	0.43	0.43	0.12	0.12			0.12	0.44
v/c Ratio	0.39	0.62		0.09	1.03	0.19	0.46	0.31			0.28	0.19
Control Delay	27.6	12.5		36.4	63.0	4.0	41.9	27.3			35.5	3.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	27.6	12.5		36.4	63.0	4.0	41.9	27.3			35.5	3.9
LOS	С	В		D	Е	Α	D	С			D	Α
Approach Delay		17.6			56.1			34.6			11.4	
Approach LOS		В			Е			С			В	
Queue Length 50th (ft)	63	68		5	~346	0	33	23			20	6
Queue Length 95th (ft)	109	143		21	#470	33	37	27			42	27
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	845	939		127	1066	733	225	325			233	739
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	0.36	0.63		0.09	1.03	0.19	0.31	0.21			0.18	0.19

Intersection Summary

Area Type: Other

Cycle Length: 80 Actuated Cycle Length: 80

Offset: 27 (34%), Referenced to phase 8:EBWB, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03 Intersection Signal Delay: 37.6

Intersection LOS: D Intersection Capacity Utilization 56.7% ICU Level of Service B

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.

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø8		
Vehicle Extension (s)	5.0		
Recall Mode	C-Min		
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

	۶	-	•	•	←	•	•	†	~	/	↓	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	f)		ሻ	^		ሻ	^	7	ሻ	^	
Traffic Volume (vph)	Ö	0	5	2	0	0	35	394	1	Ö	141	0
Future Volume (vph)	0	0	5	2	0	0	35	394	1	0	141	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850							0.850			
Flt Protected				0.950			0.950					
Satd. Flow (prot)	1900	1615	0	1805	1900	0	1805	1845	1615	1712	1727	0
FIt Permitted /							0.636					
Satd. Flow (perm)	1900	1615	0	1900	1900	0	1208	1845	1615	1712	1727	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		676							65			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.42	0.42	0.42	0.88	0.88	0.88	0.67	0.67	0.67	0.73	0.73	0.73
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	11%	10%	0%
Adj. Flow (vph)	0	0	12	2	0	0	52	588	1	0	193	0
Shared Lane Traffic (%)			'-	_			02	000	•		.00	
Lane Group Flow (vph)	0	12	0	2	0	0	52	588	1	0	193	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24			30			12			12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	1.00	9	15	1.00	9	15	1.00	9	15	1.00	9
Turn Type	Perm	NA		Perm			Perm	NA	Perm	pm+pt	NA	
Protected Phases	1 01111	4		. 0	4		. 0	2	1 01111	1	2	
Permitted Phases	4	•		4			2	_	2	2	_	
Detector Phase	4	4		4	4		2	2	2	1	2	
Switch Phase	'	'		'								
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0	15.0	4.5	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0	21.0	9.0	21.0	
Total Split (s)	40.0	40.0		40.0	40.0		51.0	51.0	51.0	9.0	51.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		51.0%	51.0%	51.0%	9.0%	51.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		45.0	45.0	45.0	5.0	45.0	
Yellow Time (s)	3.0	3.0		3.0	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	1.0	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	5.0		5.0	5.0		6.0	6.0	6.0	4.0	6.0	
Lead/Lag	5.0	5.0		5.0	5.0			Lag		Lead		
Lead-Lag Optimize?							Lag	Lay	Lag	Leau	Lag	
	1.0	1.0		1.0	1.0		2.0	2.0	2.0	1.0	2.0	
Vehicle Extension (s)												
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	

4: Research Parkway & Food Bank Driv/Site Drive 1

	•	-	•	1	•	•	4	†	/	-	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)		7.2		7.2			37.5	37.5	37.5		37.5	
Actuated g/C Ratio		0.18		0.18			0.94	0.94	0.94		0.94	
v/c Ratio		0.01		0.01			0.05	0.34	0.00		0.12	
Control Delay		0.0		17.5			1.5	2.1	0.0		1.4	
Queue Delay		0.0		0.0			0.0	0.0	0.0		0.0	
Total Delay		0.0		17.5			1.5	2.1	0.0		1.4	
LOS		Α		В			Α	Α	Α		Α	
Approach Delay					17.5			2.0			1.4	
Approach LOS					В			Α			Α	
Queue Length 50th (ft)		0		0			0	0	0		0	
Queue Length 95th (ft)		0		6			9	76	0		27	
Internal Link Dist (ft)		116			123			640			398	
Turn Bay Length (ft)				170			140					
Base Capacity (vph)		1522		1714			1159	1771	1553		1658	
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		0.01		0.00			0.04	0.33	0.00		0.12	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 40.1

Natural Cycle: 50

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.34

Intersection Signal Delay: 1.9 Intersection LOS: A Intersection Capacity Utilization 44.1% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Research Parkway & Food Bank Driv/Site Drive 1



	۶	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			ર્ન	1>	
Traffic Volume (vph)	0	6	58	336	135	6
Future Volume (vph)	0	6	58	336	135	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865				0.994	
Flt Protected				0.993		
Satd. Flow (prot)	1096	0	0	1705	1597	0
Flt Permitted				0.993		
Satd. Flow (perm)	1096	0	0	1705	1597	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.50	0.50	0.90	0.90	0.63	0.63
Heavy Vehicles (%)	0%	50%	3%	12%	19%	2%
Adj. Flow (vph)	0	12	64	373	214	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	0	437	224	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utiliza	tion 41.7%			IC	U Level o	of Service
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	1					
	EDI	EDD	NDI	NDT	CDT	CDD
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			ન	- î∍	
Traffic Vol, veh/h	0	6	58	336	135	6
Future Vol, veh/h	0	6	58	336	135	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage	, # 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	90	90	63	63
Heavy Vehicles, %	0	50	3	12	19	2
Mvmt Flow	0	12	64	373	214	10
		-		_		
	Minor2		Major1		//ajor2	
Conflicting Flow All	720	219	224	0	-	0
Stage 1	219	-	-	-	-	-
Stage 2	501	-	-	-	-	-
Critical Hdwy	6.4	6.7	4.13	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.75	2.227	-	-	-
Pot Cap-1 Maneuver	398	714	1339	-	-	-
Stage 1	822	-	-	-	_	-
Stage 2	613	_	_	_	_	_
Platoon blocked, %	0.0			_	_	_
Mov Cap-1 Maneuver	374	714	1339	_	_	_
Mov Cap-1 Maneuver	374	- 11-	1000	_	_	_
	773	-	-	-	-	-
Stage 1			_	-	-	-
Stage 2	613	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	10.1		1.2		0	
HCM LOS	В				*	
110111 200						
Minor Lane/Major Mvm	t	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1339	-		-	-
HCM Lane V/C Ratio		0.048	-	0.017	-	-
HCM Control Delay (s)		7.8	0	10.1	-	-
HCM Lane LOS		Α	Α	В	-	-
HCM 95th %tile Q(veh)		0.2	-	0.1	-	-
. S. M. Sour Found Q(VOII)		٥.٢		J. 1		

Analysis Period (min) 15

	٠	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	, j	7	¥	†	ĵ.	
Traffic Volume (vph)	0	0	6	330	141	2
Future Volume (vph)	0	0	6	330	141	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.998	
Flt Protected			0.950			
Satd. Flow (prot)	1900	1900	1805	1667	1623	0
FIt Permitted			0.950			
Satd. Flow (perm)	1900	1900	1805	1667	1623	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.25	0.25	0.89	0.89	0.81	0.81
Heavy Vehicles (%)	0%	0%	0%	14%	17%	0%
Adj. Flow (vph)	0	0	7	371	174	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	7	371	176	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12		ŭ	12	0	Ĭ
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	ion 20.7%			IC	CU Level	of Service

Movement
Movement
Cane Configurations
Fraffic Vol, veh/h Future Vol,
Future Vol, veh/h
Conflicting Peds, #/hr O O O O O O O O O
Stop Stop Free
None
Storage Length
Veh in Median Storage, # 0
Grade, % 0 - - 0 0 - Peak Hour Factor 25 25 89 89 81 81 Heavy Vehicles, % 0 0 0 14 17 0 Mymt Flow 0 0 7 371 174 2 Major/Minor Minor Minor Major1 Major2 Major/Minor Minor Major1 Major2 Major/Minor Minor Major1 Major2 Major/Minor Minor Major1 Major2 Major/Minor Minor Major1 Major2 Major Minor Major1 Major2 Major Minor Major1 Major2 Major Minor Major1 Major2 Major2 Major Minor Major1 Major2 Ma
Peak Hour Factor 25 25 89 89 81 81 Heavy Vehicles, % 0 0 0 14 17 0 Mover Flow 0 0 0 7 371 174 2 Major/Minor Minor Major1 Major2 Conflicting Flow All 560 175 176 0 - 0 Stage 1 175 - - - - - Stage 2 385 - - - - - Critical Hdwy 6.4 6.2 4.1 - - - Critical Hdwy Stg 1 5.4 -
Heavy Vehicles, %
Major/Minor Minor2 Major1 Major2 Conflicting Flow All 560 175 176 0 - 0 Stage 1 175 - - - - - Stage 2 385 - - - - - Critical Hdwy 6.4 6.2 4.1 - - - Critical Hdwy Stg 1 5.4 -
Major/Minor Minor2 Major1 Major2 Conflicting Flow All 560 175 176 0 0 Stage 1 175 - - - - Stage 2 385 - - - - Critical Hdwy 6.4 6.2 4.1 - - - Critical Hdwy Stg 1 5.4 -
Stage 1
Stage 1
Stage 1
Stage 1 175 -
Stage 2 385 -
Critical Hdwy Stg 1 5.4
Critical Hdwy Stg 1 5.4
Critical Hdwy Stg 2 5.4 -
Follow-up Hdwy 3.5 3.3 2.2
Stage 1
Stage 1
Stage 2 692 -
Platoon blocked, % Mov Cap-1 Maneuver
Platoon blocked, %
Mov Cap-1 Maneuver 491 874 1412 -
Mov Cap-2 Maneuver
Stage 1 856 -
Stage 2 692 -
Approach EB NB SB HCM Control Delay, s 0 0.1 0 HCM LOS A Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT Capacity (veh/h) 1412 HCM Lane V/C Ratio 0.005 HCM Control Delay (s) 7.6 - 0 0 - HCM Lane LOS A - A A -
CARD Control Delay, s 0 0.1 0 0.1 0 0.1 0 0.1 0 0.1 0 0.1 0 0.1 0 0.1 0 0.1 0 0.1
CARD Control Delay, s 0 0.1 0 0.1 0 0.1 0 0.1 0 0.1 0 0.1 0 0.1 0 0.1 0 0.1 0 0.1
Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT Capacity (veh/h) 1412 - - - HCM Lane V/C Ratio 0.005 - - - - HCM Control Delay (s) 7.6 - 0 0 - HCM Lane LOS A - A A -
Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT Capacity (veh/h) 1412 - - - HCM Lane V/C Ratio 0.005 - - - - HCM Control Delay (s) 7.6 - 0 0 - HCM Lane LOS A - A A -
Capacity (veh/h) 1412 -
Capacity (veh/h) 1412 -
Capacity (veh/h) 1412 -
HCM Lane V/C Ratio 0.005
HCM Control Delay (s) 7.6 - 0 0 - HCM Lane LOS A - A A
HCM Lane LOS A - A A -
HCM 95th %tile Q(veh) 0

	۶	→	•	•	+	4	1	†	/	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	101	61	25	40	66	20	15	275	40	25	78	45
Future Volume (vph)	101	61	25	40	66	20	15	275	40	25	78	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.979			0.984			0.959	
Flt Protected		0.974			0.984			0.998			0.992	
Satd. Flow (prot)	0	1749	0	0	1764	0	0	1803	0	0	1734	0
FIt Permitted		0.974			0.984			0.998			0.992	
Satd. Flow (perm)	0	1749	0	0	1764	0	0	1803	0	0	1734	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.62	0.62	0.62	0.71	0.71	0.71	0.69	0.69	0.69	0.76	0.76	0.76
Heavy Vehicles (%)	0%	5%	17%	6%	2%	5%	8%	3%	5%	9%	4%	2%
Adj. Flow (vph)	163	98	40	56	93	28	22	399	58	33	103	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	301	0	0	177	0	0	479	0	0	195	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											_
Control Type: Unsignalized												
Intersection Capacity Utilizati	on 42.7%			IC	CU Level o	of Service	Α					
Analysis Period (min) 15												

EBL

EBT

Movement

SBT

SBR

NBR

SBL

Intersection Delay, s/veh 20.7	Intersection	
Intersection LOS	Intersection Delay, s/veh	20.7
IIIGISECTION FOS	Intersection LOS	С

WBT

WBR

NBL

NBT

WBL

EBR

Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	101	61	25	40	66	20	15	275	40	25	78	45
Future Vol, veh/h	101	61	25	40	66	20	15	275	40	25	78	45
Peak Hour Factor	0.62	0.62	0.62	0.71	0.71	0.71	0.69	0.69	0.69	0.76	0.76	0.76
Heavy Vehicles, %	0	5	17	6	2	5	8	3	5	9	4	2
Mvmt Flow	163	98	40	56	93	28	22	399	58	33	103	59
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	17			13.4			28.8			13.2		
HCM LOS	С			В			D			В		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	5%	54%	32%	17%	
Vol Thru, %	83%	33%	52%	53%	
Vol Right, %	12%	13%	16%	30%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	330	187	126	148	
LT Vol	15	101	40	25	
Through Vol	275	61	66	78	
RT Vol	40	25	20	45	
Lane Flow Rate	478	302	177	195	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.799	0.543	0.337	0.354	
Departure Headway (Hd)	6.015	6.478	6.842	6.548	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Сар	603	555	524	547	
Service Time	4.065	4.535	4.909	4.615	
HCM Lane V/C Ratio	0.793	0.544	0.338	0.356	
HCM Control Delay	28.8	17	13.4	13.2	
HCM Lane LOS	D	С	В	В	
HCM 95th-tile Q	7.8	3.2	1.5	1.6	

	-	•	•	•	1	1
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	f)			4	7	7
Traffic Volume (vph)	126	0	0	126	0	0
Future Volume (vph)	126	0	0	126	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	1863	1863
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	1863	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	0	0	137	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	137	0	0	137	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 10.0% Analysis Period (min) 15

ICU Level of Service A

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	<u>₽</u>	LDIK	**DL	₩	T T	TVDIX
Traffic Vol, veh/h	126	0	0	126	0	0
Future Vol, veh/h	126	0	0	126	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
	Free	Free	Free	Free	Stop	Stop
RT Channelized	-		-	None	-	None
Storage Length	_	-	_	-	0	0
Veh in Median Storage, #	# 0	-	_	0	0	-
Grade, %	0	_	_	0	0	_
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	137	0	0	137	0	0
IVIVIIIL I IOW	101	U	U	137	U	U
		_				
	ajor1		Major2		Minor1	
Conflicting Flow All	0	0	137	0	274	137
Stage 1	-	-	-	-	137	-
Stage 2	-	-	-	-	137	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	_
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1447	-	716	911
Stage 1	-	-	-	-	890	-
Stage 2	_	-	_	-	890	-
Platoon blocked, %	_	_		-		
Mov Cap-1 Maneuver	_	_	1447	_	716	911
Mov Cap-2 Maneuver	_	_	-	_	716	-
Stage 1	_	_	_	_	890	_
Stage 2	_	_	_	_	890	_
Olage 2		_		_	030	
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS					Α	
Minor Lane/Major Mymt		VIDI n 1 I	VIDI n2	ERT	ERD	\\/\PI
Minor Lane/Major Mvmt	1	NBLn1 I		EBT	EBR	WBL
Capacity (veh/h)	1	-	NBLn2 -	-	-	1447
Capacity (veh/h) HCM Lane V/C Ratio	1	-	-	-	-	1447 -
Capacity (veh/h) HCM Lane V/C Ratio HCM Control Delay (s)	ľ	- - 0	- - 0	- - -	- - -	1447 - 0
Capacity (veh/h) HCM Lane V/C Ratio		-	-	-	-	1447 -

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: PM

	•	→	•	•	←	•	4	†	/	>	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	ሻ	^					ሻ	4	7
Traffic Volume (vph)	0	1034	480	306	850	0	0	0	0	260	5	338
Future Volume (vph)	0	1034	480	306	850	0	0	0	0	260	5	338
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			100			25			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.891	0.850
Flt Protected			0.000	0.950						0.950	0.988	0.000
Satd. Flow (prot)	0	2843	1615	1805	2865	0	0	0	0	1829	1573	1688
Flt Permitted	•			0.950		•	•		•	0.950	0.988	
Satd. Flow (perm)	0	2843	1615	1805	2865	0	0	0	0	1829	1573	1688
Right Turn on Red	J	2010	Yes	1000	2000	Yes	J	J	Yes	1020	1010	No
Satd. Flow (RTOR)			535			100			100			110
Link Speed (mph)		45	000		35			30			30	
Link Opeca (mph) Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			17.8			8.5			11.3	
Peak Hour Factor	0.89	0.89	0.89	0.84	0.84	0.84	0.88	0.88	0.88	0.85	0.85	0.85
Heavy Vehicles (%)	15%	27%	0.03	0%	26%	9%	12%	0%	11%	0.03	0.00	0.00
Adj. Flow (vph)	0	1162	539	364	1012	0	0	0	0	306	6	398
Shared Lane Traffic (%)	U	1102	555	304	1012	U	U	U	U	19%	U	43%
Lane Group Flow (vph)	0	1162	539	364	1012	0	0	0	0	248	235	227
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)	Leit	12	rtigitt	LGIL	24	rtigrit	Leit	14	rtigiit	Leit	14	rtigitt
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	1.00	1.00	9	1.00	1.00	9	1.00	1.00	9	15	0.90	9
Turn Type	13	NA	Perm	Prot	NA	9	13		9	Split	NA	Prot
Protected Phases		2	reiiii	1	12					Split 4	4	4
Permitted Phases		2	2	1	1 2					4	4	4
Detector Phase		2	2	1	12					4	4	4
Switch Phase		Z	Z	I	1 2					4	4	4
		15.0	15.0	7.0						9.0	9.0	0.0
Minimum Initial (s)		15.0 20.5		11.0								9.0
Minimum Split (s)			20.5							14.5	14.5	14.5
Total Split (s)		37.0	37.0	23.0						20.0	20.0	20.0
Total Split (%)		46.3%	46.3%	28.8%						25.0%	25.0%	25.0%
Maximum Green (s)		31.5	31.5	19.0						14.5	14.5	14.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: PM

	•	-	•	•	•	•	1	Ť		-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		32.2	32.2	18.8	56.5					14.0	14.0	14.0
Actuated g/C Ratio		0.40	0.40	0.24	0.71					0.18	0.18	0.18
v/c Ratio		1.02	0.56	0.86	0.50					0.78	0.85	0.77
Control Delay		57.0	4.2	45.8	1.0					49.5	61.1	50.4
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		57.0	4.2	45.8	1.0					49.5	61.1	50.4
LOS		E	Α	D	Α					D	E	D
Approach Delay		40.3			12.9						53.6	
Approach LOS		D			В						D	
Queue Length 50th (ft)		~334	1	136	6					125	125	113
Queue Length 95th (ft)		#450	57	m144	m6					#214	#232	#201
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		1142	969	428	2000					331	285	305
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		1.02	0.56	0.85	0.51					0.75	0.82	0.74

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 1 (1%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 32.8 Intersection LOS: C
Intersection Capacity Utilization 72.3% ICU Level of Service C

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

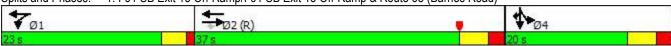
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: PM

	۶	→	•	•	←	•	4	†	/	>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	^			^	7	ሻ	4	7			
Traffic Volume (vph)	449	845	0	0	868	242	288	5	320	0	0	0
Future Volume (vph)	449	845	0	0	868	242	288	5	320	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.91	0.95	1.00	1.00	1.00
Frt		0.00			0.00	0.850	0.00	0.909	0.850			
Flt Protected	0.950					0.000	0.950	0.982	0.000			
Satd. Flow (prot)	1805	2756	0	0	2865	1561	1829	1543	1739	0	0	0
Flt Permitted	0.950		•	•			0.950	0.982			•	
Satd. Flow (perm)	1805	2756	0	0	2865	1561	1829	1543	1739	0	0	0
Right Turn on Red	1000	2,00	Yes	, and the second	2000	Yes	1020	1010	No	•	•	Yes
Satd. Flow (RTOR)			100			252			110			100
Link Speed (mph)		35			35	202		30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			14.9			15.5			11.1	
Peak Hour Factor	0.87	0.87	0.87	0.96	0.96	0.96	0.85	0.85	0.85	0.88	0.88	0.88
Heavy Vehicles (%)	0.07	31%	14%	11%	26%	0.30	0%	0.00	0%	8%	0.00	11%
Adj. Flow (vph)	516	971	0	0	904	252	339	6	376	0	0 /0	0
Shared Lane Traffic (%)	310	311	U	U	304	202	26%	U	39%	U	U	U
Lane Group Flow (vph)	516	971	0	0	904	252	251	241	229	0	0	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)	Leit	24	rtigiit	Leit	24	rtigiit	Leit	14	rtigrit	Leit	14	ragni
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15	1.00	9	1.00	1.00	9	15	1.00	9	15	0.00	9
Turn Type	Prot	NA	3	10	NA	Prot	Split	NA	Prot	10		3
Protected Phases	1	12			2	2	4	4	4			
Permitted Phases		1 2			2		7	7	4			
Detector Phase	1	12			2	2	4	4	4			
Switch Phase	1	1 2			2	2	4	4	4			
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	32.0				27.0	27.0	21.0	21.0	21.0			
,	40.0%				33.8%	33.8%	26.3%	26.3%	26.3%			
Total Split (%) Maximum Green (s)	28.0				21.5	21.5	16.0	16.0	16.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?	2.0				0.0	0.0	2.0	2.0	2.0			
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: PM

		→	*	•	•		7	T		*	¥	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	27.1	55.8			23.2	23.2	15.2	15.2	15.2			
Actuated g/C Ratio	0.34	0.70			0.29	0.29	0.19	0.19	0.19			
v/c Ratio	0.84	0.50			1.09	0.40	0.73	0.83	0.70			
Control Delay	22.5	0.4			81.8	7.9	43.6	55.3	42.3			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	22.5	0.4			81.8	7.9	43.6	55.3	42.3			
LOS	С	Α			F	Α	D	Ε	D			
Approach Delay		8.0			65.7			47.1				
Approach LOS		Α			Е			D				
Queue Length 50th (ft)	101	1			~274	15	123	126	111			
Queue Length 95th (ft)	m114	m1			m#355	m33	191	#227	176			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	631	1923			831	632	365	308	347			
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	0.82	0.50			1.09	0.40	0.69	0.78	0.66			

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 39 (49%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.09

Intersection Signal Delay: 36.2 Intersection LOS: D
Intersection Capacity Utilization 72.3% ICU Level of Service C

Analysis Period (min) 15

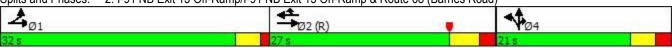
Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



	۶	→	•	•	•	•	4	†	~	/	ļ	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	∱ }		ሻ	^	7	ሻ	(Î			ર્ન	7
Traffic Volume (vph)	140	1010	15	5	803	58	10	20	5	135	40	297
Future Volume (vph)	140	1010	15	5	803	58	10	20	5	135	40	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			25			130		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998	0.00			0.850		0.969				0.850
Flt Protected	0.950			0.950			0.950				0.963	
Satd. Flow (prot)	1719	2566	0	1796	2763	1575	1652	1780	0	0	1762	1429
Flt Permitted	0.950		•	0.950			0.465				0.753	0
Satd. Flow (perm)	1719	2566	0	1796	2763	1575	808	1780	0	0	1378	1429
Right Turn on Red		2000	Yes		2.00	Yes	000		Yes		10.0	Yes
Satd. Flow (RTOR)		3	100			100		7				115
Link Speed (mph)		35			35	100		30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.95	0.95	0.95	0.86	0.86	0.86	0.75	0.75	0.75	0.82	0.82	0.82
Heavy Vehicles (%)	5%	41%	1%	0%	30%	2%	2%	0%	0%	5%	0.02	13%
Adj. Flow (vph)	147	1063	16	6	934	67	13	27	7	165	49	362
Shared Lane Traffic (%)	,	1000			001	O1	10	<u>-</u> ,	,	100	10	002
Lane Group Flow (vph)	147	1079	0	6	934	67	13	34	0	0	214	362
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)	LOIL	12	rtigitt	LOIL	12	rtigit	Loit	10	ragin	LOIL	0	rtigitt
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	1.00	12	15	1.01	12	15	1.01	12	15	1.00	12
Turn Type	Prot	NA	12	Prot	NA	Prot	Perm	NA	12	Perm	NA	pm+ov
Protected Phases	1	12		3	23	23	1 01111	4		1 01111	4	1
Permitted Phases	'	1 4			20	20	4	-т		4		4
Detector Phase	1	12		3	23	23	4	4		4	4	1
Switch Phase	'	1 2		<u> </u>	2.0	2.0	7					'
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	22.0			11.0			22.0	22.0		22.0	22.0	22.0
Total Split (%)	27.5%			13.8%			27.5%	27.5%		27.5%	27.5%	27.5%
Maximum Green (s)	16.6			5.7			17.1	17.1		17.1	17.1	16.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
	2.4			1.0						1.3		
All-Red Time (s)				0.0			1.3	1.3 0.0		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			5.3							0.0	0.0
Total Lost Time (s)	5.4						4.9	4.9		1.00	4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?												

LangEndingurations Traffic Volume (vph) Future Volume (vph) Ideal Flow (vphp) Lane Widnt (ft) Grade (%) Storage Lanes Taper Length (ft) Storage Lanes Taper Length (ft) Lane Util Tactor Fit Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Right Tum on Red Satd. Flow (perm) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Tum Lane Headway Factor Tuming Speed (mph) Tum Type Protected Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Spit (s) 2.1 Total Spit (%) Maximum Green (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s)	Lane Group	Ø2	
Traffic Volume (vph) Ideal Flow (vphpl)			
Future Volume (vph) Ideal Flow (vphpl) Lane Width (th) Grade (%) Storage Langth (th) Storage Langth (th) Storage Langth (th) Taper Length (th) Lane Util, Factor Fit Fit Protected Satcl. Flow (prot) Fit Permitted Satcl. Flow (prot) Satcl. Flow (prot) Fit Permitted Satcl. Flow (prot) Satcl. Flow (prot) Satcl. Flow (prot) Fin Permitted Satcl. Flow (prot) Fin Permitted Satcl. Flow (prot) Satcl. Flow (
Ideal Flow (vphp)			
Lane Width (ft) Grade (%) Storage Lanes Taper Length (ft) Storage Lanes Taper Length (ft) Lane Util. Factor Frt Frt Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Right Turn on Red Satd. Flow (prot) Link Distance (ft) Link Speed (mph) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (ph) Shared Lane Traffic (%) Lane Group Flow (ph) Enter Blocked Intersection Lane Alignment Median Width(ft) Crosswalk Width(ft) Turn way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Switch Phase Minimum Inital (s) Minimum Splitt (s) Total Split (s) Total Split (s) Total Split (s) Total Call Irme (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) 1.4 Lane Adjust (s) Total Lost Time (s) 1.5 Lane Adjust (s) Total Split (s) Total Lost Time (s) 1.5 Lost Time Adjust (s) Total Lost Time (s)			
Grade (%) Storage Langth (ft) Storage Langth (ft) Storage Langth (ft) Lane Util. Factor Fit Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (prot) Right Turn on Red Satd. Flow (prom) Right Turn on Red Satd. Flow (prom) Right Turn on Red Satd. Flow (RTOR) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (Ptph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Turn Type Protected Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Split (s) Total Lost Time (s) Last Time Adjust (s) Total Lost Time (s) 4.8 All-Red Time (s) Last Time (s) Last Time (s) Last Time Adjust (s) Total Lost Time (s)			
Storage Length (ft)			
Storage Lanes Taper Length (ft) Lane Util. Factor Frit Frit Frotected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Operation Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offsel(ft) Crosswalk Width(ft) Turn vay Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases 2 Permitted Phases Detector Phase Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (s) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lost Time (s) Lost Time Adjust (s) Total Lost Time (s) Lost Time (s			
Taper Length (ft) Lane Util. Factor Frt Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (prot) Fit Permitted Satd. Flow (prot) Fit Permitted Satd. Flow (RTOR) Link Speed (mph) Link Speed (mph) Link Speed (mph) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Minimum Initial (s) Minimum Split (s) Total Split (s) Total Split (s) Maximum Green (s) Las Hase Minimum Green (s) Las Hase Las Hase Minimum Green (s) Las Hase Las Has			
Lane Util. Factor Fit Ftr Fit Protected Satc. Flow (prot) Fit Permitted Satc. Flow (perm) Right Turn on Red Satc. Flow (prot) Link Speed (mph) Link Distance (tt) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(tt) Link Offset(ft) Crosswalk Width(tt) Turn way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Minimum Initial (s) Minimum Spitt (s) 21.1 Total Spitt (s) 25.0 Total Spitt (s) 31% Maximum Green (s) 4.8 All Red Time (s) 4.8 All Red Time (s) 4.8 All Red Time (s) 515 Lot Time Adjust (s) Total Lost Time (s)			
Fit Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (prot) Fit Permitted Satd. Flow (prot) Fit Permitted Satd. Flow (RTOR) Link Speed (mph) Link Speed (mph) Link Distance (th) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Turm Type Protected Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Spitt (s) 1.5.0 Minimum Spitt (s) 2.5.0 Total Spitt (%) 3.1% Maximum Green (s) 4.8 All-Red Time (s) 4.8 All-Red Time (s) 5.15 Lost Time Adjust (s) Total Lost Time (s) 4.8 All-Red Time (s) 5.15 Lost Time (s) 5.15 Lost Time (s) 5.16 Lost Time (s) 5.17 Lost Time (s) 5.17 Lost Time (s) 5.18 Lost Time Adjust (s) 5.17 Lost Time (s) 5.18 Lost Time Adjust (s) 5.19 Lost Time (s) 5.20 Lost Time (s) 5.20 Lost Time (s) 5.21 Lost Time (s) 5.22 Lost Time (s) 5.24 Lost Time (s) 5.25 Lost Time (s) 5.26 Lost Time (s) 5.27 Lost Lost Time (s) 5.28 Lost Time (s) 5.29 Lost Time (s) 5.20			
Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Trosswalk Width(ft) Turn Type Protected Phases Detector Phase Switch Phase Minimum Split (s) Minimum Split (s) Total Split (%) Maximum Green (s) 1.3 Lend Group (s) 1.3 Lend Group Flow (s) Lend Group Fl			
Satd. Flow (prot) FIT Permitted Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Spift (s) 15.0 Minimum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 15.1 Lost Time Adjust (s) Total Lost Time (s)			
Fit Permitted Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Speed (mph) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detected Phases Detector Phase Switch Phase Minimum Spit (s) 15.0 Minimum Spit (s) 21.1 Total Spit (s) 31% Maximum Green (s) 4.8 All-Red Time (s) Link Speed (mpl) 1			
Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Aignment Median Width(ft) Link Offset(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turning Speed (mph) Turning Speed (mph) Furmitted Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Spitt (s) Total Spitt (s) Total Spitt (s) 3 1% Maximum Green (s) 4 .8 All-Red Time (s) Link Offset (s) Total Lost Time (s) Link Offset (s) Li			
Right Turn on Red Satd. Flow (RTOR) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Tro way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Spit (s) Total Spit (s) Total Spit (w) Maximum Green (s) 1.3 Lost Time (s) Link Offset (s			
Satd. Flow (RTOR) Link Speed (mph) Link Speed (mph) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Split (s) Total Split (%) Maximum Green (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lost Time Adjust (s) Total Time (s) Lost Time Adjust (s) Total Lost Time (s) Lost Time Adjust (s) Total Lost Time Adjust (s) Total Lost Time (s)	Satd. Flow (perm)		
Link Speed (mph) Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Trwo way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Spit (s) Total Spit (s) Total Spit (%) Maximum Green (s) 1.3 Lost Time Adjust (s) Total Lost Time (s) Lost Time Adjust (s) Total Lost Time Adjust (s)	Right Turn on Red		
Link Distance (ft) Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turni Type Protected Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Split (s) Total Split (%) St. 31% Maximum Green (s) Yellow Time (s) Adj. Flow (w) Adj. Flow (w	Satd. Flow (RTOR)		
Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Trosw way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Spit (s) Total Spit (s) Total Spit (%) Maximum Green (s) Yellow Time (s) Adj. Flow Width (s) Total Lost Time (s) Total Lost Time (s) Total Lost Time (s) Total Tyme (s) Total Tyme (s) Total Spit (s) Total Tyme (s) Total Lost Time (s)	Link Speed (mph)		
Travel Time (s) Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Trosw way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Spit (s) Total Spit (s) Total Spit (%) Maximum Green (s) Yellow Time (s) Adj. Flow Width (s) Total Lost Time (s) Total Lost Time (s) Total Lost Time (s) Total Tyme (s) Total Tyme (s) Total Spit (s) Total Tyme (s) Total Lost Time (s)	Link Distance (ft)		
Peak Hour Factor Heavy Vehicles (%) Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phases Switch Phase Minimum Initial (s) 15.0 Minimum Spit (s) 21.1 Total Spit (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s)			
Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Spit (s) Total Spit (%) Maximum Green (s) Yellow Time (s) All-Red Time (s) Lane Alignment Lane Alignment Lane Alignment Median With(ft) Link Offset(ft) Link Offset(ft)			
Adj. Flow (vph) Shared Lane Traffic (%) Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Spit (s) Total Spit (%) Maximum Green (s) Yellow Time (s) All-Red Time (s) Lane Alignment Lane Alignment Lane Alignment Median With(ft) Link Offset(ft) Link Offset(ft)			
Shared Lane Traffic (%) Lane Group Flow (yph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases 2 Permitted Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Spitt (s) 15.0 Minimum Spitt (s) 25.0 Total Spitt (%) 31% Maximum Green (s) 4.8 All-Red Time (s) Lost Time Adjust (s) Total Lost Time (s)			
Lane Group Flow (vph) Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phases Switch Phase Minimum Initial (s) Minimum Split (s) Total Split (%) Maximum Green (s) All-Red Time (s) Lost Time Adjust (s) Total Lost Time (s)			
Enter Blocked Intersection Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phases Switch Phase Minimum Initial (s) Minimum Split (s) Total Split (s) Total Split (%) Maximum Green (s) 4.8 All-Red Time (s) Lost Time Adjust (s) Total Lost Time (s)			
Lane Alignment Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases 2 Permitted Phases Detector Phase Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s)			
Median Width(ft) Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases 2 Permitted Phases Detector Phase Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s)			
Link Offset(ft) Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases Detector Phases Switch Phase Switch Phase Minimum Initial (s) Minimum Split (s) Total Split (s) Total Split (%) Maximum Green (s) 4.8 All-Red Time (s) Link Offset(ft) Crosswalk Width(ft) Tun Type Protected Phase (s) 15.0 Minimum Split (s) 15.0 Minimum Split (s) 25.0 Total Split (%) All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s)			
Crosswalk Width(ft) Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases 2 Permitted Phases Detector Phase Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s)			
Two way Left Turn Lane Headway Factor Turning Speed (mph) Turn Type Protected Phases 2 Permitted Phases Detector Phase Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s)			
Headway Factor Turning Speed (mph) Turn Type Protected Phases 2 Permitted Phases Detector Phase Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s)			
Turning Speed (mph) Turn Type Protected Phases 2 Permitted Phases Detector Phase Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s)			
Turn Type Protected Phases 2 Permitted Phases Detector Phase Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s)			
Protected Phases 2 Permitted Phases Detector Phase Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s)			
Permitted Phases Detector Phase Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s)		^	
Detector Phase Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s)			
Switch Phase Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s)			
Minimum Initial (s) 15.0 Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s)			
Minimum Split (s) 21.1 Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s)			
Total Split (s) 25.0 Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s)			
Total Split (%) 31% Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s)			
Maximum Green (s) 18.9 Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s)			
Yellow Time (s) 4.8 All-Red Time (s) 1.3 Lost Time Adjust (s) Total Lost Time (s)	Total Split (%)		
All-Red Time (s) Lost Time Adjust (s) Total Lost Time (s)			
Lost Time Adjust (s) Total Lost Time (s)	Yellow Time (s)	4.8	
Lost Time Adjust (s) Total Lost Time (s)	All-Red Time (s)	1.3	
Total Lost Time (s)			
Leag/Lag Lag	Lead/Lag	Lag	
Lead-Lag Optimize?			

3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)

	•	\rightarrow	•	•	•	•	1	†		-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	18.0	43.6		5.7	30.5	30.5	15.1	15.1			15.1	38.0
Actuated g/C Ratio	0.22	0.54		0.07	0.38	0.38	0.19	0.19			0.19	0.48
v/c Ratio	0.38	0.77		0.05	0.89	0.10	0.09	0.10			0.82	0.49
Control Delay	35.2	14.2		35.6	35.8	2.1	26.9	22.3			56.5	11.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	35.2	14.2		35.6	35.8	2.1	26.9	22.3			56.5	11.9
LOS	D	В		D	D	Α	С	С			Е	В
Approach Delay		16.7			33.5			23.6			28.5	
Approach LOS		В			С			С			С	
Queue Length 50th (ft)	73	70		3	227	0	5	11			100	75
Queue Length 95th (ft)	m120	84		14	#320	11	17	28			#170	122
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	386	1398		127	1051	661	172	385			294	740
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	0.38	0.77		0.05	0.89	0.10	0.08	0.09			0.73	0.49

Intersection Summary

Area Type: Other

Cycle Length: 80 Actuated Cycle Length: 80

Offset: 29 (36%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89 Intersection Signal Delay: 25.1 Intersection Capacity Utilization 61.8%

Intersection LOS: C
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: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø2		
Vehicle Extension (s)	2.5		
Recall Mode	C-Min		
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings 4: Research Parkway & Food Bank Driv/Site Drive 1

	۶	→	•	•	←	•	1	†	<i>></i>	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	f)		ሻ	f)		ሻ	†	7	ሻ	ą.	
Traffic Volume (vph)	5	0	15	21	0	4	5	136	77	14	436	0
Future Volume (vph)	5	0	15	21	0	4	5	136	77	14	436	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.850				0.850			
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1615	0	1805	1615	0	1805	1792	1615	1805	1863	0
FIt Permitted							0.303			0.615		
Satd. Flow (perm)	1900	1615	0	1900	1615	0	576	1792	1615	1168	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		226			617				131			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.48	0.48	0.48	0.88	0.88	0.88	0.59	0.59	0.59	0.60	0.60	0.60
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%	2%	0%
Adj. Flow (vph)	10	0	31	24	0	5	8	231	131	23	727	0
Shared Lane Traffic (%)	.,		<u> </u>	'								J
Lane Group Flow (vph)	10	31	0	24	5	0	8	231	131	23	727	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24			30			12			12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								. •				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	J
Protected Phases		4		. •	4			2		1	2	
Permitted Phases	4	-		4	-		2		2	2		
Detector Phase	4	4		4	4		2	2	2	1	2	
Switch Phase	•						_	_	_		_	
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0	15.0	4.5	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0	21.0	9.0	21.0	
Total Split (s)	40.0	40.0		40.0	40.0		51.0	51.0	51.0	9.0	51.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		51.0%	51.0%	51.0%	9.0%	51.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		45.0	45.0	45.0	5.0	45.0	
Yellow Time (s)	3.0	3.0		3.0	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	1.0	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	5.0		5.0	5.0		6.0	6.0	6.0	4.0	6.0	
Lead/Lag	0.0	0.0		0.0	0.0		Lag	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Lug	Lug	Lug	Loud	Lug	
Vehicle Extension (s)	1.0	1.0		1.0	1.0		2.0	2.0	2.0	1.0	2.0	
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	
130dii Wodo	INOLIG	140116		110116	140116		IVIIII	IVIIII	IVIIII	110110	19/1111	

4: Research Parkway & Food Bank Driv/Site Drive 1

	•	-	•	•	←	•	1	†	1	-	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	7.5	7.5		7.5	7.5		37.5	37.5	37.5	37.8	37.5	
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.76	0.76	0.76	0.76	0.76	
v/c Ratio	0.03	0.07		0.08	0.01		0.02	0.17	0.10	0.02	0.51	
Control Delay	25.4	0.3		25.6	0.0		5.4	5.2	1.6	2.3	8.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	25.4	0.3		25.6	0.0		5.4	5.2	1.6	2.3	8.0	
LOS	С	Α		С	Α		Α	Α	Α	Α	Α	
Approach Delay		6.4			21.2			3.9			7.8	
Approach LOS		Α			С			Α			Α	
Queue Length 50th (ft)	2	0		6	0		1	22	0	2	100	
Queue Length 95th (ft)	9	0		29	0		4	40	4	4	136	
Internal Link Dist (ft)		116			123			640			398	
Turn Bay Length (ft)				170			140			115		
Base Capacity (vph)	1435	1275		1435	1371		502	1561	1424	963	1623	
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	0.01	0.02		0.02	0.00		0.02	0.15	0.09	0.02	0.45	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 49.5

Natural Cycle: 60

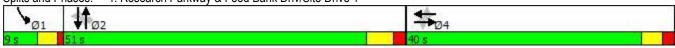
Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 6.9 Intersection LOS: A Intersection Capacity Utilization 39.9% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Research Parkway & Food Bank Driv/Site Drive 1



	۶	•	4	†	ļ	√
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			4	ĵ»	
Traffic Volume (vph)	3	63	9	136	387	0
Future Volume (vph)	3	63	9	136	387	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.871					
Flt Protected	0.998			0.997		
Satd. Flow (prot)	1618	0	0	1661	1696	0
FIt Permitted	0.998			0.997		
Satd. Flow (perm)	1618	0	0	1661	1696	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.55	0.55	0.90	0.90	0.80	0.80
Heavy Vehicles (%)	50%	0%	0%	15%	12%	0%
Adj. Flow (vph)	5	115	10	151	484	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	0	0	161	484	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	tion 31.1%			IC	U Level o	of Service
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	2.1					
		EDD	NDI	NDT	CDT	CDD
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	À	CO	0	4100	∱	^
Traffic Vol, veh/h	3	63	9	136	387	0
Future Vol, veh/h	3	63	9	136	387	0
Conflicting Peds, #/hr	0	0	_ 0	_ 0	_ 0	_ 0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	55	55	90	90	80	80
Heavy Vehicles, %	50	0	0	15	12	0
Mvmt Flow	5	115	10	151	484	0
NA - ' /NA' NA			1.1.4		40	
	inor2		Major1		/lajor2	
Conflicting Flow All	655	484	484	0	-	0
Stage 1	484	-	-	-	-	-
Stage 2	171	-	-	-	-	-
Critical Hdwy	6.9	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	364	587	1089	-	-	-
Stage 1	531	-	-	-	-	-
Stage 2	755	-	_	-	_	-
Platoon blocked, %				_	_	_
Mov Cap-1 Maneuver	360	587	1089	_	_	_
Mov Cap-2 Maneuver	360	-	-	_	_	_
Stage 1	526					
Stage 2	755	-	-	-		_
Stage 2	155	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	13		0.5		0	
HCM LOS	В					
		NIDI	NET	-	057	000
Minor Lane/Major Mvmt		NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1089	-	*	-	-
HCM Lane V/C Ratio		0.009	-	0.21	-	-
HCM Control Delay (s)		8.3	0	13	-	-
HCM Lane LOS		Α	Α	В	-	-
HCM 95th %tile Q(veh)		0	-	8.0	-	-

	•	•	•	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	†	^	
Traffic Volume (vph)	3	13	3	136	374	0
Future Volume (vph)	3	13	3	136	374	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	1805	1638	1696	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1615	1805	1638	1696	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Confl. Peds. (#/hr)	3					
Peak Hour Factor	0.42	0.42	0.90	0.90	0.79	0.79
Heavy Vehicles (%)	0%	0%	0%	16%	12%	0%
Adj. Flow (vph)	7	31	3	151	473	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	31	3	151	473	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane					. •	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary	3.06					
•	Oll					
Area Type:	Other					

Control Type: Unsignalized

Intersection Capacity Utilization 29.7%

ICU Level of Service A

Analysis Period (min) 15

Intersection							
Int Delay, s/veh	0.7						•
Movement	EBL	EBR	NBL	NBT	SBT	SBR	Ī
Lane Configurations		7	ሻ	†	ĵ.		
Traffic Vol, veh/h	3	13	3	136	374	0	
Future Vol., veh/h	3	13	3	136	374	0	
Conflicting Peds, #/hr	3	0	0	0	0	0	
	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	0	0	100	-	-	-	
Veh in Median Storage,		-	-	0	0	_	
Grade, %	0	_	_	0	0	_	
Peak Hour Factor	42	42	90	90	79	79	
Heavy Vehicles, %	0	0	0	16	12	0	
Mymt Flow	7	31	3	151	473	0	
IVIVIII(I IOW	- 1	01	J	101	770	U	
Major/Minor M	linor2	1	Major1	1	Major2		
Conflicting Flow All	633	473	473	0	-	0	
Stage 1	473	-	-	-	-	-	
Stage 2	160	-	-	-	-	-	
Critical Hdwy	6.4	6.2	4.1	-	-	-	
Critical Hdwy Stg 1	5.4	-	-	-	-	-	
Critical Hdwy Stg 2	5.4	-	-	-	-	-	
Follow-up Hdwy	3.5	3.3	2.2	-	-	-	
Pot Cap-1 Maneuver	447	595	1099	-	-	-	
Stage 1	631	-	-	-	-	-	
Stage 2	874	-	_	-	-	-	
Platoon blocked, %				-	-	-	
Mov Cap-1 Maneuver	446	595	1099	-	-	-	
Mov Cap-2 Maneuver	446	-	-	_	_	_	
Stage 1	629	_	_	_	_	_	
Stage 2	874	_	_	_	_	_	
Olago Z	0, 1						
Approach	EB		NB		SB		
HCM Control Delay, s	11.7		0.2		0		
HCM LOS	В						
Minor Lane/Major Mvmt		NBL	NRT	EBLn1 I	FRI n2	SBT	
		1099	NDI	446	595		
Capacity (veh/h) HCM Lane V/C Ratio		0.003	-	0.016		-	
		8.3	-	13.2		-	
HCM Control Delay (s) HCM Lane LOS					11.4		
HCM 95th %tile Q(veh)		A 0	-	B 0	0.2	-	
		U	-	U	0.2	-	

	۶	→	•	•	+	4	1	†	/	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	45	51	25	47	45	18	20	104	15	25	302	101
Future Volume (vph)	45	51	25	47	45	18	20	104	15	25	302	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.972			0.978			0.985			0.968	
Flt Protected		0.982			0.979			0.993			0.997	
Satd. Flow (prot)	0	1800	0	0	1819	0	0	1729	0	0	1804	0
Flt Permitted		0.982			0.979			0.993			0.997	
Satd. Flow (perm)	0	1800	0	0	1819	0	0	1729	0	0	1804	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.86	0.86	0.86	0.76	0.76	0.76	0.63	0.63	0.63	0.71	0.71	0.71
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	0%	10%	0%	0%	2%	1%
Adj. Flow (vph)	52	59	29	62	59	24	32	165	24	35	425	142
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	140	0	0	145	0	0	221	0	0	602	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilizati	ion 41.2%			IC	CU Level	of Service	Α					
Analysis Period (min) 15												

Intersection	
Intersection Delay, s/veh	21.2
Intersection LOS	С

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	45	51	25	47	45	18	20	104	15	25	302	101
Future Vol, veh/h	45	51	25	47	45	18	20	104	15	25	302	101
Peak Hour Factor	0.86	0.86	0.86	0.76	0.76	0.76	0.63	0.63	0.63	0.71	0.71	0.71
Heavy Vehicles, %	2	0	0	0	0	0	0	10	0	0	2	1
Mvmt Flow	52	59	29	62	59	24	32	165	24	35	425	142
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	11.5			11.6			11.8			29.3		
HCM LOS	В			В			В			D		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	14%	37%	43%	6%	
Vol Thru, %	75%	42%	41%	71%	
Vol Right, %	11%	21%	16%	24%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	139	121	110	428	
LT Vol	20	45	47	25	
Through Vol	104	51	45	302	
RT Vol	15	25	18	101	
Lane Flow Rate	221	141	145	603	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.348	0.248	0.255	0.844	
Departure Headway (Hd)	5.67	6.348	6.34	5.043	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Cap	631	561	563	717	
Service Time	3.745	4.434	4.426	3.098	
HCM Lane V/C Ratio	0.35	0.251	0.258	0.841	
HCM Control Delay	11.8	11.5	11.6	29.3	
HCM Lane LOS	В	В	В	D	
HCM 95th-tile Q	1.6	1	1	9.6	

	-	•	•	•	1	~
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	f)			ર્ન	ħ	7
Traffic Volume (vph)	91	0	0	90	20	0
Future Volume (vph)	91	0	0	90	20	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1863	0	0	1863	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	1863	0	0	1863	1770	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	0	0	98	22	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	99	0	0	98	22	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 14.8% Analysis Period (min) 15

ICU Level of Service A

Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	7>		,,,,,,,	4	ሻ	7
Traffic Vol, veh/h	91	0	0	90	20	0
Future Vol, veh/h	91	0	0	90	20	0
Conflicting Peds, #/hr	0	0	0	0	0	0
	Free	Free	Free	Free	Stop	Stop
RT Channelized	-		-	None	-	None
Storage Length	_	-	_	-	0	0
Veh in Median Storage,	# 0	_	_	0	0	-
Grade, %	0	_	_	0	0	_
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	99	0	0	98	22	0
IVIVIIIL I IOW	33	U	U	30	22	U
		_				
	1ajor1		Major2		Minor1	
Conflicting Flow All	0	0	99	0	197	99
Stage 1	-	-	-	-	99	-
Stage 2	-	-	-	-	98	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1494	-	792	957
Stage 1	-	-	-	-	925	-
Stage 2	_	-	_	-	926	-
Platoon blocked, %	_	_		_	0_0	
Mov Cap-1 Maneuver	_	_	1494	_	792	957
Mov Cap-2 Maneuver	_	_	-	_	792	-
Stage 1	_	_	_	_	925	_
Stage 2		_	_		926	
Stage 2	-	_	-	-	920	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		9.7	
					Α	
HCM LOS						
HCM LOS		NDI 51 I	NIDI 20	ГОТ	EDD	WDI
HCM LOS Minor Lane/Major Mvmt		NBLn1 I		EBT	EBR	WBL
Minor Lane/Major Mvmt Capacity (veh/h)		792	-	-	-	WBL 1494
Minor Lane/Major Mvmt Capacity (veh/h) HCM Lane V/C Ratio		792 0.027	-	-	-	1494 -
Minor Lane/Major Mvmt Capacity (veh/h) HCM Lane V/C Ratio HCM Control Delay (s)		792 0.027 9.7	- - 0	- - -	- - -	1494 - 0
Minor Lane/Major Mvmt Capacity (veh/h) HCM Lane V/C Ratio		792 0.027	-	-	-	1494 -

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: MD

	۶	→	•	•	—	•	•	†	/	/	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	ř	^					7	4	7
Traffic Volume (vph)	0	511	172	175	559	0	0	0	0	131	1	172
Future Volume (vph)	0	511	172	175	559	0	0	0	0	131	1	172
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			100			25			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt		0.00	0.850		0.00					0.00	0.890	0.850
Flt Protected			0.000	0.950						0.950	0.987	0.000
Satd. Flow (prot)	0	3223	1455	1467	3343	0	0	0	0	1577	1237	1288
Flt Permitted		0220	1100	0.950	0010	•	•	· ·	Ū	0.950	0.987	1200
Satd. Flow (perm)	0	3223	1455	1467	3343	0	0	0	0	1577	1237	1288
Right Turn on Red	•	OLLO	Yes	1 107	0010	Yes	· ·	J	Yes	1011	1201	No
Satd. Flow (RTOR)			198			100			100			110
Link Speed (mph)		45	100		35			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			17.8			8.5			11.3	
Peak Hour Factor	0.87	0.87	0.87	0.91	0.91	0.91	0.88	0.88	0.88	0.90	0.90	0.90
Heavy Vehicles (%)	0.07	12%	11%	23%	8%	0.91	0.00	0.00	0.00	16%	0.30	31%
Adj. Flow (vph)	0 / 0	587	198	192	614	0	0	0	0	146	1	191
Shared Lane Traffic (%)	U	301	130	132	014	U	U	U	U	20%	1	43%
Lane Group Flow (vph)	0	587	198	192	614	0	0	0	0	117	112	109
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)	Leit	12	rtigrit	LGIL	24	Night	Leit	14	Right	Leit	14	Nigit
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	15	1.00	9	1.00	1.00	9	1.00	1.00	9	15	0.50	9
Turn Type	10	NA	Perm	Prot	NA	3	10		3	Split	NA	Prot
Protected Phases		2	1 Cilli	1	12					4	4	4
Permitted Phases		2	2		1 2					7	7	7
Detector Phase		2	2	1	12					4	4	4
Switch Phase		2	2	ı	1 2					7	7	7
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		30.0	30.0	20.0						25.0	25.0	25.0
Total Split (%)		40.0%	40.0%	26.7%						33.3%	33.3%	33.3%
Maximum Green (s)		24.5	24.5	16.0						19.5	19.5	19.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead						0.0	0.0	0.0
Lead-Lag Optimize?		Lay	Lay	Leau								
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0
venicle Extension (2)		0.2	0.2	3.0						3.0	ა.0	3.0

ı

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: MD

	_	→	•	•	•	•	1	T		-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		32.1	32.1	15.2	52.8					12.7	12.7	12.7
Actuated g/C Ratio		0.43	0.43	0.20	0.70					0.17	0.17	0.17
v/c Ratio		0.43	0.27	0.65	0.26					0.44	0.54	0.50
Control Delay		17.9	4.1	30.7	0.9					32.2	37.2	35.4
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		17.9	4.1	30.7	0.9					32.2	37.2	35.4
LOS		В	Α	С	Α					С	D	D
Approach Delay		14.4			8.0						34.9	
Approach LOS		В			Α						С	
Queue Length 50th (ft)		98	0	38	0					52	53	49
Queue Length 95th (ft)		159	38	77	1					92	97	90
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		1381	736	334	2341					410	321	334
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		0.43	0.27	0.57	0.26					0.29	0.35	0.33

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 13 (17%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 50

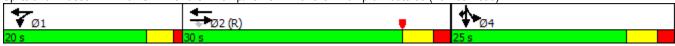
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 15.3 Intersection LOS: B
Intersection Capacity Utilization 44.9% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: MD

	۶	→	\rightarrow	•	←	•	4	†	~	>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	^			^	7	ሻ	4	7			
Traffic Volume (vph)	169	473	0	0	576	174	158	0	127	0	0	0
Future Volume (vph)	169	473	0	0	576	174	158	0	127	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.91	0.95	1.00	1.00	1.00
Frt		0.00			0.00	0.850	0.00	0.943	0.850			
Flt Protected	0.950					0.000	0.950	0.970	0.000			
Satd. Flow (prot)	1433	3343	0	0	3282	1269	1604	1369	1474	0	0	0
Flt Permitted	0.950	0010		, and the second	0202	1200	0.950	0.970		•	· ·	J
Satd. Flow (perm)	1433	3343	0	0	3282	1269	1604	1369	1474	0	0	0
Right Turn on Red	1100	0010	Yes	J	OLOL	Yes	1001	1000	No	•	v	Yes
Satd. Flow (RTOR)			100			191			110			100
Link Speed (mph)		35			35	101		30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			14.9			15.5			11.1	
Peak Hour Factor	0.95	0.95	0.95	0.91	0.91	0.91	0.90	0.90	0.90	0.88	0.88	0.88
Heavy Vehicles (%)	26%	8%	0.33	0.51	10%	23%	14%	0.50	18%	0.00	0.00	0.00
Adj. Flow (vph)	178	498	0	0	633	191	176	0 / 0	141	0 /0	0 /0	0 /0
Shared Lane Traffic (%)	170	430	U	U	000	131	38%	U	29%	U	U	U
Lane Group Flow (vph)	178	498	0	0	633	191	109	108	100	0	0	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)	LGIL	24	rtigrit	Leit	24	rtigrit	Leit	14	rtigiit	Leit	14	ragni
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	1.00	1.00	9	1.00	1.00	9	15	1.00	9	15	0.00	9
Turn Type	Prot	NA	9	10	NA	Prot	Split	NA	Prot	10		3
Protected Phases	1	12			2	2	4	4	4			
Permitted Phases	·	1 2			2	2	7	7	7			
Detector Phase	1	12			2	2	4	4	4			
Switch Phase	·	1 2			2	2	7	7	7			
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	20.0				31.0	31.0	24.0	24.0	24.0			
Total Split (%)	26.7%				41.3%	41.3%	32.0%	32.0%	32.0%			
Maximum Green (s)	16.0				25.5	25.5	19.0	19.0	19.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?	2.0				0.0	0.0	2.0	2.0	2.0			
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: MD

	•	→	*	•	•	•	1	Ť		-	ŧ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	14.6	54.1			34.0	34.0	11.9	11.9	11.9			
Actuated g/C Ratio	0.19	0.72			0.45	0.45	0.16	0.16	0.16			
v/c Ratio	0.64	0.21			0.43	0.28	0.43	0.50	0.43			
Control Delay	27.3	0.6			11.2	1.9	32.9	36.2	33.4			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	27.3	0.6			11.2	1.9	32.9	36.2	33.4			
LOS	С	Α			В	Α	С	D	С			
Approach Delay		7.6			9.1			34.2				
Approach LOS		Α			Α			С				
Queue Length 50th (ft)	36	0			53	0	49	51	45			
Queue Length 95th (ft)	54	1			94	9	89	94	84			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	323	2374			1486	679	406	346	373			
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	0.55	0.21			0.43	0.28	0.27	0.31	0.27			
Reduced v/c Ratio	0.55	0.21			0.43	0.28	0.27	0.31	0.27			

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 51 (68%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 50

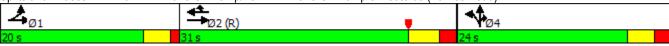
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 12.9 Intersection LOS: B
Intersection Capacity Utilization 44.9% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



	۶	-	•	•	—	•	•	†	~	>	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	∱ }		ሻ	^	7	ሻ	f)			ર્ન	7
Traffic Volume (vph)	88	505	7	1	532	20	5	0	2	53	Ö	213
Future Volume (vph)	88	505	7	1	532	20	5	0	2	53	0	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			25			130		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998				0.850		0.850				0.850
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1410	3364	0	1796	3295	1530	1404	1041	0	0	1480	1282
Flt Permitted	0.950			0.950			0.719				0.754	
Satd. Flow (perm)	1410	3364	0	1796	3295	1530	1063	1041	0	0	1174	1282
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				106		428				205
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.44	0.44	0.44	0.90	0.90	0.90
Heavy Vehicles (%)	28%	7%	14%	0%	9%	5%	20%	0%	50%	22%	0%	26%
Adj. Flow (vph)	95	543	8	1	578	22	11	0	5	59	0	237
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	551	0	1	578	22	11	5	0	0	59	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	J		12	J		10	, i		0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		12	15		12	15		12	15		12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm	NA	pm+ov
Protected Phases	1	12		3	23	23		4			4	1
Permitted Phases							4			4		4
Detector Phase	1	12		3	23	23	4	4		4	4	1
Switch Phase												
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	20.0			12.0			15.0	15.0		15.0	15.0	20.0
Total Split (%)	26.7%			16.0%			20.0%	20.0%		20.0%	20.0%	26.7%
Maximum Green (s)	14.6			6.7			10.1	10.1		10.1	10.1	14.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0			0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?				_000			_49	_49		_49	Lag	

Lane Group	Ø2	
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	2	
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	15.0	
Minimum Split (s)	21.1	
Total Split (s)	28.0	
Total Split (%)	37% 21.9	
Maximum Green (s)		
Yellow Time (s)	4.8	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?		

	۶	-	\rightarrow	•	←	•	~	†	~	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	11.0	50.3		5.5	43.9	43.9	8.4	8.4			8.4	19.6
Actuated g/C Ratio	0.15	0.67		0.07	0.59	0.59	0.11	0.11			0.11	0.26
v/c Ratio	0.46	0.24		0.01	0.30	0.02	0.09	0.01			0.45	0.49
Control Delay	41.1	3.6		32.0	10.5	0.1	30.8	0.0			41.9	7.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	41.1	3.6		32.0	10.5	0.1	30.8	0.0			41.9	7.4
LOS	D	Α		С	В	Α	С	Α			D	Α
Approach Delay		9.1			10.2			21.2			14.3	
Approach LOS		Α			В			С			В	
Queue Length 50th (ft)	39	31		0	78	0	5	0			26	10
Queue Length 95th (ft)	90	40		5	128	0	9	0			61	52
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	274	2189		160	1984	963	143	510			158	537
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	0.35	0.25		0.01	0.29	0.02	0.08	0.01			0.37	0.44

Intersection Summary

Area Type: Other

Cycle Length: 75
Actuated Cycle Length: 75

Offset: 42 (56%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 60

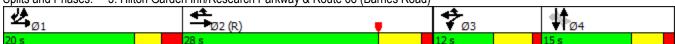
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.49

Intersection Signal Delay: 10.6 Intersection LOS: B
Intersection Capacity Utilization 47.4% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø2	
Vehicle Extension (s)	2.5	
Recall Mode	C-Min	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

	۶	→	•	•	+	•	•	†	~	/	ţ	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	f)		ሻ	f)		ሻ	^	7	ሻ	^	
Traffic Volume (vph)	2	0	8	0	0	0	5	103	0	0	258	1
Future Volume (vph)	2	0	8	0	0	0	5	103	0	0	258	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850									0.999	
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1805	1615	0	1900	1900	0	1805	1520	1900	1900	1484	0
Flt Permitted							0.587					
Satd. Flow (perm)	1900	1615	0	1900	1900	0	1115	1520	1900	1900	1484	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		550										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.63	0.63	0.63	0.88	0.88	0.88	0.81	0.81	0.81	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	28%	0%
Adj. Flow (vph)	3	0	13	0	0	0	6	127	0	0	280	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	13	0	0	0	0	6	127	0	0	281	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24	_		30	_		12		_	12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm			Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	2	
Permitted Phases	4			4			2		2	2		
Detector Phase	4	4		4	4		2	2	2	1	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0	15.0	4.5	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0	21.0	9.0	21.0	
Total Split (s)	40.0	40.0		40.0	40.0		51.0	51.0	51.0	9.0	51.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		51.0%	51.0%	51.0%	9.0%	51.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		45.0	45.0	45.0	5.0	45.0	
Yellow Time (s)	3.0	3.0		3.0	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	1.0	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	5.0		5.0	5.0		6.0	6.0	6.0	4.0	6.0	
Lead/Lag							Lag	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	3.0	
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	

4: Research Parkway & Food Bank Driv/Site Drive 1

	•	-	•	•	•	•	1	Ť	/	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	7.1	7.1					35.6	35.6			35.6	
Actuated g/C Ratio	0.18	0.18					0.92	0.92			0.92	
v/c Ratio	0.01	0.02					0.01	0.09			0.20	
Control Delay	15.5	0.0					2.0	1.7			2.0	
Queue Delay	0.0	0.0					0.0	0.0			0.0	
Total Delay	15.5	0.0					2.0	1.7			2.0	
LOS	В	Α					Α	Α			Α	
Approach Delay		2.9						1.7			2.0	
Approach LOS		Α						Α			Α	
Queue Length 50th (ft)	1	0					0	0			0	
Queue Length 95th (ft)	4	0					3	23			57	
Internal Link Dist (ft)		116			123			640			398	
Turn Bay Length (ft)							140					
Base Capacity (vph)	1753	1532					1100	1499			1464	
Starvation Cap Reductn	0	0					0	0			0	
Spillback Cap Reductn	0	0					0	0			0	
Storage Cap Reductn	0	0					0	0			0	
Reduced v/c Ratio	0.00	0.01					0.01	0.08			0.19	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 38.5

Natural Cycle: 45

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.20

Intersection Signal Delay: 1.9 Intersection LOS: A Intersection Capacity Utilization 28.6% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Research Parkway & Food Bank Driv/Site Drive 1



	۶	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			ર્ન	1>	
Traffic Volume (vph)	3	30	14	91	229	3
Future Volume (vph)	3	30	14	91	229	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.876				0.998	
Flt Protected	0.996			0.993		
Satd. Flow (prot)	1458	0	0	1674	1681	0
Flt Permitted	0.996			0.993		
Satd. Flow (perm)	1458	0	0	1674	1681	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.69	0.69	0.83	0.83	0.65	0.65
Heavy Vehicles (%)	0%	15%	11%	13%	13%	0%
Adj. Flow (vph)	4	43	17	110	352	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	0	0	127	357	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	tion 26.6%			IC	U Level o	of Service A
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	1.3					
		EDD	NDI	NDT	CDT	SBR
Movement Configurations	EBL	EBR	NBL	NBT	SBT	SBK
Lane Configurations	¥	20	4.4	ન	220	2
Traffic Vol, veh/h	3	30	14	91	229	3
Future Vol, veh/h	3	30	14	91	229	3
Conflicting Peds, #/hr	0	0	_ 0	_ 0	_ 0	_ 0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,	, # 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	83	83	65	65
Heavy Vehicles, %	0	15	11	13	13	0
Mvmt Flow	4	43	17	110	352	5
	•					
		_		_		
	/linor2		Major1	N	//ajor2	
Conflicting Flow All	499	355	357	0	-	0
Stage 1	355	-	-	-	-	-
Stage 2	144	-	-	-	-	-
Critical Hdwy	6.4	6.35	4.21	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	_	_	_	_	_
Follow-up Hdwy	3.5	3.435	2.299	_	_	_
Pot Cap-1 Maneuver	535	661	1153	_	_	_
Stage 1	714	-	-	_	_	_
Stage 2	888	_			_	_
Platoon blocked, %	000	-	_	-	_	-
	EOG	664	1150	_	_	_
Mov Cap-1 Maneuver	526	661	1153	-	-	-
Mov Cap-2 Maneuver	526	-	-	-	-	-
Stage 1	703	-	-	-	-	-
Stage 2	888	-	-	-	-	-
Approach	EB		NB		SB	
	11		1.1		0	
HCM LOS			1.1		U	
HCM LOS	В					
Minor Lane/Major Mvmt	t	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1153	-		-	-
HCM Lane V/C Ratio		0.015		0.074	_	_
HCM Control Delay (s)		8.2	0	11	_	_
HCM Lane LOS		0.2 A	A	В	_	_
HCM 95th %tile Q(veh)		0	-	0.2	-	-

	۶	•	4	†	ļ	✓
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	*	†	f)	
Traffic Volume (vph)	2	3	2	92	229	0
Future Volume (vph)	2	3	2	92	229	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1583	1805	1681	1652	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1583	1805	1681	1652	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.38	0.38	0.83	0.83	0.66	0.66
Heavy Vehicles (%)	0%	2%	0%	13%	15%	0%
Adj. Flow (vph)	5	8	2	111	347	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	8	2	111	347	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12	J .	J -	12	0	J -
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
	0.00					
Intersection Summary						
) -	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	tion 22.1%			IC	U Level c	of Service A
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	†	1	
Traffic Vol, veh/h	2	3	2	92	229	0
Future Vol, veh/h	2	3	2	92	229	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	-
Veh in Median Storage		_	-	0	0	-
Grade, %	0	_	-	0	0	-
Peak Hour Factor	38	38	83	83	66	66
Heavy Vehicles, %	0	2	0	13	15	0
Mvmt Flow	5	8	2	111	347	0
in thing i lott		J	_		011	
	Minor2		Major1		Major2	
Conflicting Flow All	462	347	347	0	-	0
Stage 1	347	-	-	-	-	-
Stage 2	115	-	-	-	-	-
Critical Hdwy	6.4	6.22	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	2.2	-	-	-
Pot Cap-1 Maneuver	562	696	1223	-	-	-
Stage 1	720	-	-	-	-	-
Stage 2	915	_	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	561	696	1223	-	-	-
Mov Cap-2 Maneuver	561	_	_	_	_	-
Stage 1	719	_	-	-	-	-
Stage 2	915	_	_	_	_	_
otago 2	0.0					
Approach	EB		NB		SB	
HCM Control Delay, s	10.7		0.2		0	
HCM LOS	В					
Minor Lane/Major Mvm	t	NBL	NRT	EBLn1 I	FRI n2	SBT
		1223	-		696	-
Capacity (veh/h) HCM Lane V/C Ratio				0.009		
		0.002 7.9			10.2	-
HCM Control Delay (s) HCM Lane LOS			-			-
		A	-	В	В	-
HCM 95th %tile Q(veh)		0	-	0	0	-

	۶	→	•	•	+	4	1	†	/	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	31	27	11	134	19	34	7	81	6	13	84	37
Future Volume (vph)	31	27	11	134	19	34	7	81	6	13	84	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.976			0.991			0.962	
Flt Protected		0.978			0.965			0.996			0.995	
Satd. Flow (prot)	0	1741	0	0	1613	0	0	1477	0	0	1461	0
Flt Permitted		0.978			0.965			0.996			0.995	
Satd. Flow (perm)	0	1741	0	0	1613	0	0	1477	0	0	1461	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.86	0.86	0.86	0.75	0.75	0.75	0.85	0.85	0.85	0.89	0.89	0.89
Heavy Vehicles (%)	3%	4%	9%	13%	16%	0%	0%	30%	17%	0%	38%	3%
Adj. Flow (vph)	36	31	13	179	25	45	8	95	7	15	94	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	80	0	0	249	0	0	110	0	0	151	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilizati	on 33.7%			IC	CU Level o	of Service	Α					
Analysis Period (min) 15												

Movement	EBL	EBI	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	31	27	11	134	19	34	7	81	6	13	84	37
Future Vol, veh/h	31	27	11	134	19	34	7	81	6	13	84	37
Peak Hour Factor	0.86	0.86	0.86	0.75	0.75	0.75	0.85	0.85	0.85	0.89	0.89	0.89
Heavy Vehicles, %	3	4	9	13	16	0	0	30	17	0	38	3
Mvmt Flow	36	31	13	179	25	45	8	95	7	15	94	42
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	8.6			10.4			8.8			8.9		
HCM LOS	Α			В			Α			Α		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	7%	45%	72%	10%	
Vol Thru, %	86%	39%	10%	63%	
Vol Right, %	6%	16%	18%	28%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	94	69	187	134	
LT Vol	7	31	134	13	
Through Vol	81	27	19	84	
RT Vol	6	11	34	37	
Lane Flow Rate	111	80	249	151	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.15	0.109	0.338	0.197	
Departure Headway (Hd)	4.883	4.887	4.879	4.711	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Cap	731	729	736	759	
Service Time	2.936	2.948	2.927	2.762	
HCM Lane V/C Ratio	0.152	0.11	0.338	0.199	
HCM Control Delay	8.8	8.6	10.4	8.9	
HCM Lane LOS	Α	Α	В	Α	
HCM 95th-tile Q	0.5	0.4	1.5	0.7	

	-	•	•	←	1	
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	f)			ર્ન	ň	7
Traffic Volume (vph)	46	0	0	39	148	0
Future Volume (vph)	46	0	0	39	148	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1863	0	0	1863	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	1863	0	0	1863	1770	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	0	0	42	161	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	0	0	42	161	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 18.2% Analysis Period (min) 15

ICU Level of Service A

Intersection						
Int Delay, s/veh	6.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	\$	LDIX	VVDL	_{VVD1}	NDL 1	NDK **
Traffic Vol, veh/h	46	0	0	39	148	0
Future Vol, veh/h	46	0	0	39	148	0
Conflicting Peds, #/hr	0	0	0	0	0	0
	Free	Free	Free	Free	Stop	Stop
RT Channelized	-			None	Stop -	None
Storage Length	_	-	_	INOHE -	0	0
Veh in Median Storage,		_	_	0	0	-
Grade, %	# 0 0	-		0	0	
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	0	0	42	161	0
Major/Minor M	ajor1	ľ	Major2		Minor1	
Conflicting Flow All	0	0	50	0	92	50
Stage 1	_	-	_	_	50	-
Stage 2	_	_	_	_	42	_
Critical Hdwy	_	_	4.12	_	6.42	6.22
Critical Hdwy Stg 1	_	_	1.12	_	5.42	0.22
Critical Hdwy Stg 2	_	_	_	_	5.42	_
Follow-up Hdwy	_	_	2.218			3.318
Pot Cap-1 Maneuver	_	_	1557	_	908	1018
Stage 1	_		1001	_	972	1010
Stage 2	- -	<u>-</u>	-	_	980	_
Platoon blocked, %	-	-	-	-	300	-
		-	1557		000	1018
Mov Cap-1 Maneuver	-	-	1007	-	908	IUIŏ
Mov Cap-2 Maneuver	-	-	-	-	908	-
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	980	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		9.8	
HCM LOS	U		U		Α	
TIOW EOO					, · ·	
Minor Lane/Major Mvmt	1	NBLn11	VBLn2	EBT	EBR	WBL
Capacity (veh/h)		908	-	-	-	1557
HCM Lane V/C Ratio		0.177	-	-	-	-
HCM Control Delay (s)		9.8	0	-	-	0
HCM Lane LOS		Α	Α	-	-	Α
HCM 95th %tile Q(veh)		0.6	-	-	-	0
,						

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Roaidh)ng Plan: AM Pk Gen

	۶	→	•	•	—	•	•	†	/	/	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	ř	^					7	4	7
Traffic Volume (vph)	0	485	200	232	465	0	0	0	0	109	0	204
Future Volume (vph)	0	485	200	232	465	0	0	0	0	109	0	204
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	14	13	15
Storage Length (ft)	0		0	705		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			100			25			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt		0.00	0.850		0.00					0.00	0.865	0.850
Flt Protected			0.000	0.950						0.950	0.995	0.000
Satd. Flow (prot)	0	3008	1346	1583	3195	0	0	0	0	1499	1182	1288
Flt Permitted		0000	1010	0.950	0.00	•	•	· ·	Ū	0.950	0.995	1200
Satd. Flow (perm)	0	3008	1346	1583	3195	0	0	0	0	1499	1182	1288
Right Turn on Red		0000	Yes	1000	0.00	Yes	•		Yes	1100	1102	No
Satd. Flow (RTOR)			213			100			100			110
Link Speed (mph)		45	210		35			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			17.8			8.5			11.3	
Peak Hour Factor	0.94	0.94	0.94	0.74	0.74	0.74	0.88	0.88	0.88	0.89	0.89	0.89
Heavy Vehicles (%)	0.34	20%	20%	14%	13%	0.74	0.00	0.00	0.00	22%	0.03	31%
Adj. Flow (vph)	0 /0	516	213	314	628	0	0	0	0	122	0	229
Shared Lane Traffic (%)	U	310	210	314	020	U	U	U	U	10%	U	48%
Lane Group Flow (vph)	0	516	213	314	628	0	0	0	0	110	122	119
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)	Leit	12	rtigrit	LGIL	24	Night	Leit	14	Right	Leit	14	Night
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	15	1.00	9	1.00	1.00	9	1.00	1.00	9	15	0.50	9
Turn Type	10	NA	Perm	Prot	NA	3	10		3	Split	NA	Prot
Protected Phases		2	1 Cilli	1	12					4	4	4
Permitted Phases		2	2		1 2					7	7	7
Detector Phase		2	2	1	12					4	4	4
Switch Phase		2	2	ı	1 2					7	7	7
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		30.0	30.0	20.0						25.0	25.0	25.0
Total Split (%)		40.0%	40.0%	26.7%						33.3%	33.3%	33.3%
Maximum Green (s)		24.5	24.5	16.0						19.5	19.5	19.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						2.0	2.0	2.0
		0.0	0.0							0.0	0.0	
Lost Time Adjust (s)			5.5	0.0								0.0
Total Lost Time (s)		5.5		4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		0.2	0.0	2.0						2.0	2.0	2.0
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Roaiding Plan: AM Pk Gen

	•	-	*	•	•	•	1	Ť		-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		27.0	27.0	19.3	51.8					13.7	13.7	13.7
Actuated g/C Ratio		0.36	0.36	0.26	0.69					0.18	0.18	0.18
v/c Ratio		0.48	0.34	0.77	0.28					0.40	0.57	0.51
Control Delay		21.2	4.7	34.2	1.5					30.3	37.5	34.3
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		21.2	4.7	34.2	1.5					30.3	37.5	34.3
LOS		С	Α	С	Α					С	D	С
Approach Delay		16.4			12.4						34.2	
Approach LOS		В			В						С	
Queue Length 50th (ft)		101	0	63	8					48	58	53
Queue Length 95th (ft)		147	44	#199	13					86	102	93
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				705						240		240
Base Capacity (vph)		1082	621	408	2208					389	307	334
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		0.48	0.34	0.77	0.28					0.28	0.40	0.36

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 13 (17%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 17.6 Intersection LOS: B
Intersection Capacity Utilization 46.3% ICU Level of Service A

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Roading Plan: AM Pk Gen

Lane Configurations		•	→	•	•	←	•	4	†	/	/	ţ	1
Traffic Volume (vph)	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	Lane Configurations	*	^			44	7	7	4	7			
Ideal Flow (yphpi) 1900	Traffic Volume (vph)	203		0	0		233	139		177	0	0	0
Ideal Flow (yphpi) 1900		203	391	0	0	558	233	139	0	177	0	0	0
Lane Width (ft)		1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft) 630 0 0 480 180 180 0 0 0 0 0 0 0 0 0													
Storage Lanes	. ,			0	0		480	180					
Taper Length (ft)	,			0			1						
Lane Util. Factor		25			25			100			25		
Fit Protected			0.95	1.00		0.95	1.00		0.91	0.95		1.00	1.00
Fit Protected 0.950 Satd. Flow (prot) 1367 3223 0 0 3195 1312 1550 1266 1437 0 0 0 0 0 0 0 0 0													
Satd. Flow (prot) 1367 3223 0 0 3195 1312 1550 1266 1437 0 0 0 0 0 0 0 0 0		0.950						0.950					
Fit Permitted			3223	0	0	3195	1312			1437	0	0	0
Satd. Flow (perm) 1367 3223 0 0 3195 1312 1550 1266 1437 0 0 0 0 Right Turn on Red Yes Yes 248	,		0220		•	0.00						•	·
Right Turn on Red Satd. Flow (RTOR) Yes			3223	0	0	3195	1312			1437	0	0	0
Satd. Flow (RTOR) 248 Link Speed (mph) 35 35 683 30 489		1001	0220			0100		1000	1200		•		
Link Speed (mph) 35 35 35 35 30 30 Link Distance (ft) 913 764 683 489 Travel Time (s) 17.8 14.9 15.5 11.1 Peak Hour Factor 0.88 0.88 0.88 0.94 0.94 0.95 0.95 0.95 0.88 0.88 0.88 Heavy Vehicles (%) 32% 12% 0% 0% 13% 19% 18% 0% 21% 0% 0% 0% Adj. Flow (vph) 231 444 0 0 594 248 146 0 186 0 0 0 Shared Lane Traffic (%) 231 444 0 0 594 248 115 111 106 0	•			100						110			100
Link Distance (ft)	, ,		35			35	240		30			30	
Travel Time (s)													
Peak Hour Factor 0.88 0.88 0.88 0.94 0.94 0.94 0.95 0.95 0.95 0.88 0.86 0.80 0.80 0.80 0.80 0.80 0.80 0.85 0.	` ,												
Heavy Vehicles (%) 32% 12% 0% 0% 13% 19% 18% 0% 21% 0% 0% 0% 0% Adj. Flow (vph) 231 444 0 0 594 248 146 0 186 0 0 0 0 0 0 0 0 0	. ,	0.88		0.88	0.04		0.04	0.05		0.05	U 88		0.88
Adj. Flow (vph) 231 444 0 0 594 248 146 0 186 0 0 0 Shared Lane Traffic (%) 21% 43% Lane Group Flow (vph) 231 444 0 0 594 248 115 111 106 0 0 0 Enter Blocked Intersection No													
Shared Lane Traffic (%) 231 444 0 0 594 248 115 111 106 0 0 0 0	• • • • • • • • • • • • • • • • • • • •												
Lane Group Flow (vph) 231 444 0 0 594 248 115 111 106 0 0 0		231	444	U	U	594	240		U		U	U	U
Enter Blocked Intersection No No <th< td=""><td></td><td>004</td><td>111</td><td>٥</td><td>٥</td><td>E04</td><td>040</td><td></td><td>111</td><td></td><td>٥</td><td>0</td><td>0</td></th<>		004	111	٥	٥	E04	040		111		٥	0	0
Left Alignment Left Left Right Left Left Right Left Right Left Left Left Left Right Left Left Left Right Left	,												
Median Width(ft) 24 24 14 14 Link Offset(ft) 0 0 0 0 Crosswalk Width(ft) 16 16 16 16 Two way Left Turn Lane Headway Factor 1.00 1.00 1.00 1.00 1.00 1.00 0.85 0.85 0.85 0.85 Turning Speed (mph) 15 9 15 10 15 10 10													
Link Offset(ft) 0 0 0 0 Crosswalk Width(ft) 16 16 16 16 Two way Left Turn Lane Headway Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85 0.85 0.85 0.85 Turning Speed (mph) 15 9 15 10 10 10 10	•	Leπ		Right	Lett		Right	Lett		Right	Lett		Right
Crosswalk Width(fft) 16 16 16 16 16 Two way Left Turn Lane Headway Factor 1.00 1.00 1.00 1.00 1.04 0.92 1.00 0.85 0.85 0.85 0.85 Turning Speed (mph) 15 9 15 9 15 9 15 9 Turn Type Prot NA NA Prot Split NA Prot Permitted Phases 1 12 2 2 4 4 4 Permitted Phases 1 12 2 2 4 4 4 Switch Phase 1 12 2 2 2 4 4 4 Minimum Initial (s) 7.0 15.0 9.0 9.0 9.0 9.0 Minimum Split (s) 11.0 20.5 20.5 14.0 14.0 14.0 Total Split (%) 26.7% 41.3% 41.3% 32.0% 32.0% 32.0%	. ,												
Two way Left Turn Lane Headway Factor 1.00 1.00 1.00 1.00 1.00 1.04 0.92 1.00 0.85 0.85 0.85 0.85 Turning Speed (mph) 15 9 15 9 15 9 15 9 15 9 15 9 15 9 15													
Headway Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85	. ,		16			16			16			16	
Turning Speed (mph) 15 9 15 9 15 9 15 9 Turn Type Prot NA NA Prot Split NA Prot Protected Phases 1 12 2 2 4 4 4 Permitted Phases 1 12 2 2 4 4 4 Switch Phase 1 12 15.0 9.0 9.0 9.0 Minimum Initial (s) 7.0 15.0 9.0 9.0 9.0 Minimum Split (s) 11.0 20.5 20.5 14.0 14.0 14.0 Total Split (s) 20.0 31.0 31.0 24.0 24.0 24.0 Total Split (%) 26.7% 41.3% 41.3% 32.0% 32.0% 32.0%		4.00	4.00	4.00	4.00	4.00	4.04	0.00	4.00		0.05	0.05	2.25
Turn Type Prot NA NA Prot Split NA Prot Protected Phases 1 1 2 2 2 4 4 4 Permitted Phases 1 1 2 2 2 4 4 4 Switch Phase 4 <			1.00			1.00			1.00			0.85	
Protected Phases 1 12 2 2 4 4 4 4 Permitted Phases Detector Phase 1 12 2 2 4 4 4 4 Switch Phase Minimum Initial (s) 7.0 15.0 15.0 9.0 9.0 9.0 Minimum Split (s) 11.0 20.5 20.5 14.0 14.0 14.0 Total Split (s) 20.0 31.0 31.0 24.0 24.0 24.0 Total Split (%) 26.7% 41.3% 41.3% 32.0% 32.0% 32.0%	• ,			9	15						15		9
Permitted Phases Detector Phase 1 1 2 2 2 4 4 4 Switch Phase Minimum Initial (s) 7.0 15.0 15.0 9.0 9.0 9.0 Minimum Split (s) 11.0 20.5 20.5 14.0 14.0 14.0 Total Split (s) 20.0 31.0 31.0 24.0 24.0 24.0 Total Split (%) 26.7% 41.3% 41.3% 32.0% 32.0% 32.0%													
Detector Phase 1 1 2 2 2 4 4 4 Switch Phase Switch Phase 15.0 15.0 9.0 9.0 9.0 Minimum Initial (s) 7.0 15.0 15.0 9.0 9.0 9.0 Minimum Split (s) 11.0 20.5 20.5 14.0 14.0 14.0 Total Split (s) 20.0 31.0 31.0 24.0 24.0 24.0 Total Split (%) 26.7% 41.3% 41.3% 32.0% 32.0% 32.0%		1	12			2	2	4	4	4			
Switch Phase Minimum Initial (s) 7.0 15.0 15.0 9.0 9.0 Minimum Split (s) 11.0 20.5 20.5 14.0 14.0 14.0 Total Split (s) 20.0 31.0 31.0 24.0 24.0 24.0 Total Split (%) 26.7% 41.3% 41.3% 32.0% 32.0% 32.0%													
Minimum Initial (s) 7.0 15.0 15.0 9.0 9.0 Minimum Split (s) 11.0 20.5 20.5 14.0 14.0 14.0 Total Split (s) 20.0 31.0 31.0 24.0 24.0 24.0 Total Split (%) 26.7% 41.3% 41.3% 32.0% 32.0% 32.0%		1	12			2	2	4	4	4			
Minimum Split (s) 11.0 20.5 20.5 14.0 14.0 14.0 Total Split (s) 20.0 31.0 31.0 24.0 24.0 24.0 Total Split (%) 26.7% 41.3% 41.3% 32.0% 32.0% 32.0%						4= 0							
Total Split (s) 20.0 31.0 31.0 24.0 24.0 24.0 Total Split (%) 26.7% 41.3% 41.3% 32.0% 32.0% 32.0%	` ,												
Total Split (%) 26.7% 41.3% 41.3% 32.0% 32.0% 32.0%	,												
, , ,													
Maximum Green (s) 16 0 25 5 25 5 10 0 10 0	,												
	Maximum Green (s)	16.0				25.5	25.5	19.0	19.0	19.0			
Yellow Time (s) 3.0 3.0 3.0 3.0	. ,												
All-Red Time (s) 1.0 2.0 2.0 2.0 2.0 2.0													
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0	Lost Time Adjust (s)												
Total Lost Time (s) 4.0 5.5 5.5 5.0 5.0 5.0		4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag Lag Lag		Lead				Lag	Lag						
Lead-Lag Optimize?													
Vehicle Extension (s) 3.0 0.2 0.2 3.0 3.0 3.0		3.0				0.2	0.2	3.0	3.0	3.0			

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Rotating Plan: AM Pk Gen

•	-	•	•	•	•	1	Ť	~	-	ŧ	4
EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
None				C-Max	C-Max	None	None	None			
17.3	53.5			30.8	30.8	12.5	12.5	12.5			
0.23	0.71			0.41	0.41	0.17	0.17	0.17			
0.74	0.19			0.45	0.36	0.45	0.53	0.44			
31.0	0.4			13.2	2.5	32.8	37.0	33.1			
0.0	0.0			0.0	0.0	0.0	0.0	0.0			
31.0	0.4			13.2	2.5	32.8	37.0	33.1			
С	Α			В	Α	С	D	С			
	10.9			10.0			34.3				
	В			В			С				
43	1			65	3	51	52	47			
#178	3			108	18	92	96	87			
	833			684			603			409	
630					480	180		180			
329	2299			1310	684	392	320	364			
0	0			0	0	0	0	0			
0	0			0	0	0	0	0			
0	0			0	0	0	0	0			
0.70	0.19			0.45	0.36	0.29	0.35	0.29			
	None 17.3 0.23 0.74 31.0 0.0 31.0 C 43 #178 630 329 0 0	None 17.3 53.5 0.23 0.71 0.74 0.19 31.0 0.4 0.0 0.0 31.0 0.4 C A 10.9 B 43 1 #178 3 833 630 329 2299 0 0 0 0 0 0	None 17.3 53.5 0.23 0.71 0.74 0.19 31.0 0.4 0.0 0.0 31.0 0.4 C A 10.9 B 43 1 #178 3 833 630 329 2299 0 0 0 0 0 0	None 17.3 53.5 0.23 0.71 0.74 0.19 31.0 0.4 0.0 0.0 31.0 0.4 C A 10.9 B 43 1 #178 3 833 630 329 2299 0 0 0 0 0 0	None C-Max 17.3 53.5 30.8 0.23 0.71 0.41 0.74 0.19 0.45 31.0 0.4 13.2 0.0 0.0 0.0 31.0 0.4 13.2 C A B 10.9 10.0 B B B B 43 1 65 #178 3 108 833 684 630 329 2299 1310 0 0 0 0 0 0 0 0 0 0 0 0	None C-Max C-Max 17.3 53.5 30.8 30.8 0.23 0.71 0.41 0.41 0.74 0.19 0.45 0.36 31.0 0.4 13.2 2.5 0.0 0.0 0.0 0.0 31.0 0.4 13.2 2.5 C A B A 10.9 10.0 B B B B B B 43 1 65 3 #178 3 108 18 833 684 80 329 2299 1310 684 0 0 0 0 0 0 0 0 0 0 0 0	None C-Max C-Max None 17.3 53.5 30.8 30.8 12.5 0.23 0.71 0.41 0.41 0.17 0.74 0.19 0.45 0.36 0.45 31.0 0.4 13.2 2.5 32.8 0.0 0.0 0.0 0.0 0.0 31.0 0.4 13.2 2.5 32.8 C A B A C 10.9 10.0 B B A C 10.9 10.0 B B B A C 43 1 65 3 51 #178 3 108 18 92 833 684 480 180 329 2299 1310 684 392 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <td>None C-Max C-Max None None 17.3 53.5 30.8 30.8 12.5 12.5 0.23 0.71 0.41 0.41 0.17 0.17 0.74 0.19 0.45 0.36 0.45 0.53 31.0 0.4 13.2 2.5 32.8 37.0 0.0 0.0 0.0 0.0 0.0 0.0 31.0 0.4 13.2 2.5 32.8 37.0 C A B A C D 10.9 10.0 34.3 34.3 34.3 B B B C C 43 1 65 3 51 52 #178 3 108 18 92 96 833 684 603 603 329 2299 1310 684 392 320 0 0 0 0 0 <</td> <td>None C-Max C-Max None None None 17.3 53.5 30.8 30.8 12.5 12.5 12.5 0.23 0.71 0.41 0.41 0.17 0.17 0.17 0.74 0.19 0.45 0.36 0.45 0.53 0.44 31.0 0.4 13.2 2.5 32.8 37.0 33.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 31.0 0.4 13.2 2.5 32.8 37.0 33.1 C A B A C D C 10.9 10.0 34.3 S 34.3 S C 43 1 65 3 51 52 47 #178 3 108 18 92 96 87 833 684 603 603 603 603 603 603 603 603 <td< td=""><td>None C-Max C-Max None None 17.3 53.5 30.8 30.8 12.5 12.5 12.5 0.23 0.71 0.41 0.41 0.17 0.17 0.17 0.74 0.19 0.45 0.36 0.45 0.53 0.44 31.0 0.4 13.2 2.5 32.8 37.0 33.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 31.0 0.4 13.2 2.5 32.8 37.0 33.1 C A B A C D C 10.9 10.0 34.3 S 33.3 S C D C 43 1 65 3 51 52 47 #178 3 108 18 92 96 87 #178 3 10 684 392 320 364 0 0 0</td><td>None C-Max C-Max None None None 17.3 53.5 30.8 30.8 12.5 12.5 12.5 0.23 0.71 0.41 0.41 0.17 0.17 0.17 0.74 0.19 0.45 0.36 0.45 0.53 0.44 31.0 0.4 13.2 2.5 32.8 37.0 33.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 31.0 0.4 13.2 2.5 32.8 37.0 33.1 C A B A C D C 10.9 10.0 34.3 S 34.3 S S C C C C C C A B B B C C C C A 48.1 A C D C A A A C D D C A B</td></td<></td>	None C-Max C-Max None None 17.3 53.5 30.8 30.8 12.5 12.5 0.23 0.71 0.41 0.41 0.17 0.17 0.74 0.19 0.45 0.36 0.45 0.53 31.0 0.4 13.2 2.5 32.8 37.0 0.0 0.0 0.0 0.0 0.0 0.0 31.0 0.4 13.2 2.5 32.8 37.0 C A B A C D 10.9 10.0 34.3 34.3 34.3 B B B C C 43 1 65 3 51 52 #178 3 108 18 92 96 833 684 603 603 329 2299 1310 684 392 320 0 0 0 0 0 <	None C-Max C-Max None None None 17.3 53.5 30.8 30.8 12.5 12.5 12.5 0.23 0.71 0.41 0.41 0.17 0.17 0.17 0.74 0.19 0.45 0.36 0.45 0.53 0.44 31.0 0.4 13.2 2.5 32.8 37.0 33.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 31.0 0.4 13.2 2.5 32.8 37.0 33.1 C A B A C D C 10.9 10.0 34.3 S 34.3 S C 43 1 65 3 51 52 47 #178 3 108 18 92 96 87 833 684 603 603 603 603 603 603 603 603 <td< td=""><td>None C-Max C-Max None None 17.3 53.5 30.8 30.8 12.5 12.5 12.5 0.23 0.71 0.41 0.41 0.17 0.17 0.17 0.74 0.19 0.45 0.36 0.45 0.53 0.44 31.0 0.4 13.2 2.5 32.8 37.0 33.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 31.0 0.4 13.2 2.5 32.8 37.0 33.1 C A B A C D C 10.9 10.0 34.3 S 33.3 S C D C 43 1 65 3 51 52 47 #178 3 108 18 92 96 87 #178 3 10 684 392 320 364 0 0 0</td><td>None C-Max C-Max None None None 17.3 53.5 30.8 30.8 12.5 12.5 12.5 0.23 0.71 0.41 0.41 0.17 0.17 0.17 0.74 0.19 0.45 0.36 0.45 0.53 0.44 31.0 0.4 13.2 2.5 32.8 37.0 33.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 31.0 0.4 13.2 2.5 32.8 37.0 33.1 C A B A C D C 10.9 10.0 34.3 S 34.3 S S C C C C C C A B B B C C C C A 48.1 A C D C A A A C D D C A B</td></td<>	None C-Max C-Max None None 17.3 53.5 30.8 30.8 12.5 12.5 12.5 0.23 0.71 0.41 0.41 0.17 0.17 0.17 0.74 0.19 0.45 0.36 0.45 0.53 0.44 31.0 0.4 13.2 2.5 32.8 37.0 33.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 31.0 0.4 13.2 2.5 32.8 37.0 33.1 C A B A C D C 10.9 10.0 34.3 S 33.3 S C D C 43 1 65 3 51 52 47 #178 3 108 18 92 96 87 #178 3 10 684 392 320 364 0 0 0	None C-Max C-Max None None None 17.3 53.5 30.8 30.8 12.5 12.5 12.5 0.23 0.71 0.41 0.41 0.17 0.17 0.17 0.74 0.19 0.45 0.36 0.45 0.53 0.44 31.0 0.4 13.2 2.5 32.8 37.0 33.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 31.0 0.4 13.2 2.5 32.8 37.0 33.1 C A B A C D C 10.9 10.0 34.3 S 34.3 S S C C C C C C A B B B C C C C A 48.1 A C D C A A A C D D C A B

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 51 (68%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 14.7 Intersection LOS: B
Intersection Capacity Utilization 46.3% ICU Level of Service A

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



	۶	-	•	•	—	•	4	†	/	>	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	↑ ↑		ሻ	^	7	ሻ	f)			ર્ન	7
Traffic Volume (vph)	160	400	8	0	477	48	15	1	0	97	Ö	299
Future Volume (vph)	160	400	8	0	477	48	15	1	0	97	0	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			25			130		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997				0.850						0.850
Flt Protected	0.950						0.950				0.950	
Satd. Flow (prot)	1367	3211	0	1890	3265	1461	1685	1837	0	0	1736	1196
Flt Permitted	0.950						0.680				0.756	
Satd. Flow (perm)	1367	3211	0	1890	3265	1461	1206	1837	0	0	1381	1196
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				106						230
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.81	0.81	0.81	0.86	0.86	0.86	0.38	0.38	0.38	0.81	0.81	0.81
Heavy Vehicles (%)	32%	12%	17%	0%	10%	10%	0%	0%	0%	4%	0%	35%
Adj. Flow (vph)	198	494	10	0	555	56	39	3	0	120	0	369
Shared Lane Traffic (%)												
Lane Group Flow (vph)	198	504	0	0	555	56	39	3	0	0	120	369
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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		12	15		12	15		12	15		12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm	NA	pm+ov
Protected Phases	1	12		3	23	2 3		4			4	1
Permitted Phases							4			4		4
Detector Phase	1	12		3	23	2 3	4	4		4	4	1
Switch Phase												
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	17.0			11.0			17.0	17.0		17.0	17.0	17.0
Total Split (%)	22.7%			14.7%			22.7%	22.7%		22.7%	22.7%	22.7%
Maximum Green (s)	11.6			5.7			12.1	12.1		12.1	12.1	11.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0			0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?												

Lane Group	Ø2	
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	2	
Permitted Phases		
Detector Phase		
Switch Phase		
	1E O	
Minimum Initial (s)	15.0	
Minimum Split (s)	21.1	
Total Split (s)	30.0	
Total Split (%)	40%	
Maximum Green (s)	23.9	
Yellow Time (s)	4.8	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?		

3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)

	•	→	•	•	•	•	1	Ť		-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	14.7	46.2			36.0	36.0	10.3	10.3			10.3	27.5
Actuated g/C Ratio	0.20	0.62			0.48	0.48	0.14	0.14			0.14	0.37
v/c Ratio	0.74	0.25			0.35	0.07	0.24	0.01			0.63	0.63
Control Delay	50.9	4.6			14.3	8.0	31.5	27.0			45.6	12.0
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	50.9	4.6			14.3	8.0	31.5	27.0			45.6	12.0
LOS	D	Α			В	Α	С	С			D	В
Approach Delay		17.7			13.1			31.2			20.2	
Approach LOS		В			В			С			С	
Queue Length 50th (ft)	74	30			97	0	16	1			53	38
Queue Length 95th (ft)	#190	38			112	4	17	4			91	99
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570					250						
Base Capacity (vph)	268	2060			1507	731	197	300			225	584
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	0.74	0.24			0.37	0.08	0.20	0.01			0.53	0.63

Intersection Summary

Area Type: Other

Cycle Length: 75
Actuated Cycle Length: 75

Offset: 42 (56%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

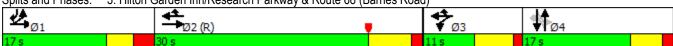
Maximum v/c Ratio: 0.74

Intersection Signal Delay: 17.1 Intersection LOS: B
Intersection Capacity Utilization 51.2% ICU Level of Service A

Analysis Period (min) 15

Queue shown is maximum after two cycles.

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



^{# 95}th percentile volume exceeds capacity, queue may be longer.

Lane Group	Ø2	
Vehicle Extension (s)	2.5	
Recall Mode	C-Min	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lane Group EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT Lane Configurations 1 252 252 1 1 1 1 1 252 252 1 1 1 1 1 1 252 2 1 1 1 1 1 1 252 1 <th>0 0 1900 0 0</th>	0 0 1900 0 0
Traffic Volume (vph) 0 0 9 135 0 23 6 107 96 17 252 Future Volume (vph) 0 0 9 135 0 23 6 107 96 17 252 Ideal Flow (vphpl) 1900 <th>0 1900 0</th>	0 1900 0
Traffic Volume (vph) 0 0 9 135 0 23 6 107 96 17 252 Future Volume (vph) 0 0 9 135 0 23 6 107 96 17 252 Ideal Flow (vphpl) 1900 <td>0 1900 0</td>	0 1900 0
Ideal Flow (vphpl) 1900 <td>1900</td>	1900
Storage Length (ft) 0 0 170 0 140 0 115 Storage Lanes 1 0 1 0 1 1 1 1 Taper Length (ft) 25 25 130 100 1 100 1 100 1 100 1 100 1 100 1 <t< td=""><td>0</td></t<>	0
Storage Length (ft) 0 0 170 0 140 0 115 Storage Lanes 1 0 1 0 1 1 1 1 Taper Length (ft) 25 25 130 100 1 100 1 100 1 100 1 100 1 100 1 <t< td=""><td>0</td></t<>	0
Storage Lanes 1 0 1 0 1 1 1 1 Taper Length (ft) 25 25 130 100	
Taper Length (ft) 25 25 130 100 Lane Util. Factor 1.00	1.00
Lane Util. Factor 1.00	1.00
Flt Protected 0.950 0.950 0.950 Satd. Flow (prot) 1900 1417 0 1805 1615 0 1504 1496 1615 1805 1484	
Satd. Flow (prot) 1900 1417 0 1805 1615 0 1504 1496 1615 1805 1484	
\mathcal{N}	
	0
Flt Permitted 0.747 0.569 0.650	
Satd. Flow (perm) 1900 1417 0 1419 1615 0 901 1496 1615 1235 1484	0
Right Turn on Red Yes Yes Yes	Yes
Satd. Flow (RTOR) 507 715 152	
Link Speed (mph) 30 30 30	
Link Distance (ft) 196 203 720 478	
Travel Time (s) 4.5 4.6 16.4 10.9	
Peak Hour Factor 0.58 0.58 0.58 0.88 0.88 0.88 0.63 0.63 0.63 0.80 0.80	0.80
Heavy Vehicles (%) 0% 0% 14% 0% 0% 0% 20% 27% 0% 0% 28%	0%
Adj. Flow (vph) 0 0 16 153 0 26 10 170 152 21 315	0
Shared Lane Traffic (%)	
Lane Group Flow (vph) 0 16 0 153 26 0 10 170 152 21 315	0
Enter Blocked Intersection No	No
Lane Alignment Left Left Right Right Right Right Left Left Right Right	Right
Median Width(ft) 24 30 12 12	
Link Offset(ft) 0 12 0 0	
Crosswalk Width(ft) 16 16 16	
Two way Left Turn Lane	
Headway Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	1.00
Turning Speed (mph) 15 9 15 9 15	9
Turn Type Perm NA Perm NA Perm pm+pt NA	
Protected Phases 4 4 2 1 2	
Permitted Phases 4 4 2 2 2	
Detector Phase 4 4 4 4 2 2 2 1 2	
Switch Phase	
Minimum Initial (s) 7.0 7.0 7.0 15.0 15.0 4.5 15.0	
Minimum Split (s) 12.0 12.0 12.0 21.0 21.0 21.0 9.0 21.0	
Total Split (s) 40.0 40.0 40.0 51.0 51.0 51.0 9.0 51.0	
Total Split (%) 40.0% 40.0% 40.0% 51.0% 51.0% 51.0% 51.0% 51.0%	
Maximum Green (s) 35.0 35.0 35.0 45.0 45.0 45.0 5.0 45.0	
Yellow Time (s) 3.0 3.0 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 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 5.0 5.0 5.0 6.0 6.0 6.0 6.0 6.0	
Lead/Lag Lag Lag Lag Lag Lag Lag Lag Lag Lag	
Lead-Lag Optimize?	
Vehicle Extension (s) 1.0 1.0 1.0 2.0 2.0 2.0 1.0 2.0	
Recall Mode None None None Min Min Min None Min	

4: Research Parkway & Food Bank Driv/Site Drive 1

	•	-	•	•	←	•	1	†	1	-	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)		9.5		9.5	9.5		20.6	20.6	20.6	23.4	20.6	
Actuated g/C Ratio		0.22		0.22	0.22		0.48	0.48	0.48	0.55	0.48	
v/c Ratio		0.02		0.49	0.03		0.02	0.24	0.18	0.03	0.44	
Control Delay		0.1		20.5	0.0		8.5	9.2	2.8	5.1	11.3	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		0.1		20.5	0.0		8.5	9.2	2.8	5.1	11.3	
LOS		Α		С	Α		Α	Α	Α	Α	В	
Approach Delay		0.1			17.6			6.2			10.9	
Approach LOS		Α			В			Α			В	
Queue Length 50th (ft)		0		24	0		1	17	0	2	35	
Queue Length 95th (ft)		0		91	0		7	49	9	8	122	
Internal Link Dist (ft)		116			123			640			398	
Turn Bay Length (ft)				170			140			115		
Base Capacity (vph)		1268		1187	1468		845	1404	1525	744	1393	
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		0.01		0.13	0.02		0.01	0.12	0.10	0.03	0.23	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 42.9

Natural Cycle: 45

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.49

Intersection Signal Delay: 10.3 Intersection LOS: B
Intersection Capacity Utilization 36.6% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Research Parkway & Food Bank Driv/Site Drive 1



	۶	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			ર્ન	ĵ»	
Traffic Volume (vph)	0	11	11	119	258	0
Future Volume (vph)	0	11	11	119	258	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.996		
Satd. Flow (prot)	1347	0	0	1464	1462	0
Flt Permitted				0.996		
Satd. Flow (perm)	1347	0	0	1464	1462	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.56	0.56	0.75	0.75	0.81	0.81
Heavy Vehicles (%)	0%	22%	0%	32%	30%	0%
Adj. Flow (vph)	0	20	15	159	319	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	0	0	174	319	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utiliza	tion 25.4%			IC	U Level o	of Service
Analysis Period (min) 15						

Intersection	0.0					
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			सी	Ą.	
Traffic Vol, veh/h	0	11	11	119	258	0
Future Vol, veh/h	0	11	11	119	258	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	_	None
Storage Length	0	-	-	-	_	-
Veh in Median Storage,		_	_	0	0	-
Grade, %	0	_	_	0	0	_
Peak Hour Factor	56	56	75	75	81	81
Heavy Vehicles, %	0	22	0	32	30	0
Mymt Flow	0	20	15	159	319	0
IVIVIII(I IOW	U	20	10	100	010	U
Major/Minor M	linor2	N	/lajor1	N	/lajor2	
Conflicting Flow All	508	319	319	0	-	0
Stage 1	319	-	-	-	-	-
Stage 2	189	-	-	-	-	-
Critical Hdwy	6.4	6.42	4.1	-	_	-
Critical Hdwy Stg 1	5.4	-	_	_	-	_
Critical Hdwy Stg 2	5.4	_	_	_	_	_
Follow-up Hdwy		3.498	2.2	_	_	_
Pot Cap-1 Maneuver	528	678	1252	_	_	_
Stage 1	741	-	1202	_	_	_
Stage 2	848					
Platoon blocked, %	040	_	_	_	_	_
	521	678	1252	-	-	-
Mov Cap-1 Maneuver		0/0	1232	-	-	
Mov Cap-2 Maneuver	521	-	-	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	848	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	10.5		0.7		0	
HCM LOS	В		0.1			
110111 200						
Minor Lane/Major Mvmt		NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1252	-		-	-
HCM Lane V/C Ratio		0.012	-	0.029	-	-
HCM Control Delay (s)		7.9	0	10.5	-	-
HCM Lane LOS		Α	Α	В	-	-
HCM 95th %tile Q(veh)		0	-	0.1	-	-

	•	•	•	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	†	f)	
Traffic Volume (vph)	0	3	0	119	255	1
Future Volume (vph)	0	3	0	119	255	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	1900	1077	1900	1439	1474	0
Flt Permitted						
Satd. Flow (perm)	1900	1077	1900	1439	1474	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Confl. Peds. (#/hr)	3					
Peak Hour Factor	0.50	0.50	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	0%	50%	0%	32%	29%	0%
Adj. Flow (vph)	0	6	0	151	323	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	6	0	151	324	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
\						
	1.00	1.00	1.00	1.00	1.00	1.00
	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
	Other					
/ I	Caro					
Two way Left Turn Lane Headway Factor Turning Speed (mph) Sign Control Intersection Summary	1.00 15			1.00	1.00	

Intersection Capacity Utilization 23.5%

ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	0.1					
		EDD	NDI	NDT	CDT	CDD
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	<u>ች</u>	7	<u>ች</u>	110	1	A
Traffic Vol, veh/h	0	3	0	119	255	1
Future Vol, veh/h	0	3	0	119	255	1
Conflicting Peds, #/hr	3	0	0	_ 0	_ 0	_ 0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-		-	None
Storage Length	0	0	100	-	-	-
Veh in Median Storage		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	79	79	79	79
Heavy Vehicles, %	0	50	0	32	29	0
Mvmt Flow	0	6	0	151	323	1
Majau/Mina	Min e "O		1-14		Ania TO	
	Minor2		Major1		//ajor2	
Conflicting Flow All	478	324	324	0	-	0
Stage 1	324	-	-	-	-	-
Stage 2	154	-	-	-	-	-
Critical Hdwy	6.4	6.7	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.75	2.2	-	-	-
Pot Cap-1 Maneuver	550	619	1247	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	879	-	-	-	-	-
Platoon blocked, %				-	-	_
Mov Cap-1 Maneuver	550	619	1247	-	_	-
Mov Cap-2 Maneuver	550	-		_	_	_
Stage 1	738	_	_	_	_	_
Stage 2	879	_				
Glaye Z	013	<u>-</u>	_	-	-	_
Approach	EB		NB		SB	
HCM Control Delay, s	10.9		0		0	
HCM LOS	В					
Minor Lone/Major Mayer		NDI	NDT	EDI 51 F	EDI ~2	CDT
Minor Lane/Major Mvm	ι	NBL	MRI	EBLn1 E		SBT
Capacity (veh/h)		1247	-	-	619	-
HCM Lane V/C Ratio		-	-	-	0.01	-
HCM Control Delay (s)		0	-	0	10.9	-
HCM Lane LOS		Α	-	Α	В	-
HCM 95th %tile Q(veh)		0	-	-	0	-

	۶	→	•	•	+	4	1	†	/	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	25	23	5	150	14	32	4	106	9	14	101	25
Future Volume (vph)	25	23	5	150	14	32	4	106	9	14	101	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.978			0.990			0.976	
Flt Protected		0.977			0.963			0.998			0.995	
Satd. Flow (prot)	0	1477	0	0	1577	0	0	1438	0	0	1459	0
Flt Permitted		0.977			0.963			0.998			0.995	
Satd. Flow (perm)	0	1477	0	0	1577	0	0	1438	0	0	1459	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.63	0.63	0.63	0.45	0.45	0.45	0.79	0.79	0.79	0.65	0.65	0.65
Heavy Vehicles (%)	31%	11%	50%	14%	0%	17%	33%	33%	0%	0%	33%	15%
Adj. Flow (vph)	40	37	8	333	31	71	5	134	11	22	155	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	85	0	0	435	0	0	150	0	0	215	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type: C)ther											
Control Type: Unsignalized												
Intersection Capacity Utilizati	on 37.2%			IC	CU Level o	of Service	Α					
Analysis Period (min) 15												

Intersection Delay, s/veh Intersection LOS	14.8
Intersection LOS	В

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	25	23	5	150	14	32	4	106	9	14	101	25
Future Vol, veh/h	25	23	5	150	14	32	4	106	9	14	101	25
Peak Hour Factor	0.63	0.63	0.63	0.45	0.45	0.45	0.79	0.79	0.79	0.65	0.65	0.65
Heavy Vehicles, %	31	11	50	14	0	17	33	33	0	0	33	15
Mvmt Flow	40	37	8	333	31	71	5	134	11	22	155	38
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	10.5			18.4			11.6			11.5		
HCM LOS	В			С			В			В		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	3%	47%	77%	10%	
Vol Thru, %	89%	43%	7%	72%	
Vol Right, %	8%	9%	16%	18%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	119	53	196	140	
LT Vol	4	25	150	14	
Through Vol	106	23	14	101	
RT Vol	9	5	32	25	
Lane Flow Rate	151	84	436	215	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.264	0.147	0.659	0.336	
Departure Headway (Hd)	6.321	6.31	5.448	5.613	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Сар	566	567	662	640	
Service Time	4.374	4.367	3.485	3.661	
HCM Lane V/C Ratio	0.267	0.148	0.659	0.336	
HCM Control Delay	11.6	10.5	18.4	11.5	
HCM Lane LOS	В	В	С	В	
HCM 95th-tile Q	1.1	0.5	4.9	1.5	

	-	•	•	←	1	
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	f)			ર્ન	J.	7
Traffic Volume (vph)	46	0	0	40	156	0
Future Volume (vph)	46	0	0	40	156	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1863	0	0	1863	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	1863	0	0	1863	1770	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	0	0	43	170	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	0	0	43	170	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 18.6%

ICU Level of Service A

Analysis Period (min) 15

Intersection							
Int Delay, s/veh	6.4						
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
		LDK	VVDL				
Lane Configurations	1₃ 46	0	0	र्स	ነ	ř	
Traffic Vol, veh/h		0	0	40	156	0	
Future Vol, veh/h	46	0	0	40	156	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	-	-	-	0	0	
Veh in Median Storage		-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	50	0	0	43	170	0	
Major/Minor	Anian1		Maicro		Mineral		
	Major1		Major2		Minor1		
Conflicting Flow All	0	0	50	0	93	50	
Stage 1	-	-	-	-	50	-	
Stage 2	-	-	-	-	43	-	
Critical Hdwy	-	-	4.12	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	-	-	2.218	-	3.518		
Pot Cap-1 Maneuver	-	-	1557	-	907	1018	
Stage 1	-	-	-	-	972	-	
Stage 2	-	-	-	-	979	-	
Platoon blocked, %	-	-		-			
Mov Cap-1 Maneuver	-	-	1557	-	907	1018	
Mov Cap-2 Maneuver	_	-	-	-	907	-	
Stage 1	-	_	-	-	972	-	
Stage 2	_	_	_	_	979	_	
J					310		
Approach	EB		WB		NB		
HCM Control Delay, s	0		0		9.9		
HCM LOS					Α		
Minor Long /Mailer M		UDL 4 1	VIDL O	EDT	EDD	MDI	WDT
Minor Lane/Major Mvm	ı I	VBLn1 I		EBT	EBR	WBL	WBT
Capacity (veh/h)		907	-	-	-	1557	-
HCM Lane V/C Ratio		0.187	-	-	-	-	-
HCM Control Delay (s)		9.9	0	-	-	0	-
HCM Lane LOS		Α	Α	-	-	Α	-
HCM 95th %tile Q(veh)		0.7	-	-	-	0	-

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Romand) Plan: PM Peak Gen

	۶	→	•	•	—	•	•	†	/	>	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	ሻ	^					ሻ	4	7
Traffic Volume (vph)	0	413	132	218	404	0	0	0	0	129	0	93
Future Volume (vph)	0	413	132	218	404	0	0	0	0	129	0	93
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	0			100			0			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.953	0.850
Flt Protected				0.950						0.950	0.967	
Satd. Flow (prot)	0	3574	1553	1719	3505	0	0	0	0	1726	1540	1548
Flt Permitted				0.950						0.950	0.967	
Satd. Flow (perm)	0	3574	1553	1719	3505	0	0	0	0	1726	1540	1548
Right Turn on Red		• • • • • • • • • • • • • • • • • • • •	Yes			Yes		•	Yes	0		No
Satd. Flow (RTOR)			159									
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			20.8			8.5			11.3	
Peak Hour Factor	0.83	0.83	0.83	0.59	0.59	0.59	0.88	0.88	0.88	0.86	0.86	0.86
Heavy Vehicles (%)	0%	1%	4%	5%	3%	0%	0%	0%	0%	6%	0%	9%
Adj. Flow (vph)	0	498	159	369	685	0	0	0	0	150	0	108
Shared Lane Traffic (%)		100	100	000	000	•	•	· ·	· ·	40%		25%
Lane Group Flow (vph)	0	498	159	369	685	0	0	0	0	90	87	81
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)	Zon	12	rugiit	2010	24	rugiit	20.0	14	rugiit	2010	14	. ugni
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Prot	NA	-				Split	NA	Prot
Protected Phases		2		1	12					4	4	4
Permitted Phases		_	2	•						-	•	
Detector Phase		2	2	1	12					4	4	4
Switch Phase		_	_	•	. –					•	•	•
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		30.0	30.0	20.0						25.0	25.0	25.0
Total Split (%)		40.0%	40.0%	26.7%						33.3%	33.3%	33.3%
Maximum Green (s)		24.5	24.5	16.0						19.5	19.5	19.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead						0.0	0.0	0.0
Lead-Lag Optimize?		Lag	Lag	Loud								
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0
VOLIDIO EXICIISIOTI (3)		0.2	0.2	0.0						0.0	0.0	0.0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Ribrards) Plan: PM Peak Gen

	•	-	•	•	←	•	1	†	/	-	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		28.2	28.2	24.1	58.6					10.6	10.6	10.6
Actuated g/C Ratio		0.38	0.38	0.32	0.78					0.14	0.14	0.14
v/c Ratio		0.37	0.23	0.67	0.25					0.37	0.40	0.37
Control Delay		19.4	4.4	25.0	1.2					32.9	34.3	33.5
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		19.4	4.4	25.0	1.2					32.9	34.3	33.5
LOS		В	Α	С	Α					С	С	С
Approach Delay		15.8			9.5						33.6	
Approach LOS		В			Α						С	
Queue Length 50th (ft)		94	0	89	10					41	41	36
Queue Length 95th (ft)		122	30	90	14					75	78	70
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		1341	682	552	2736					448	400	402
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	0.23	0.67	0.25					0.20	0.22	0.20
Intersection Summary												
Aron Tuno:	Othor											

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 13 (17%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 14.8 Intersection LOS: B
Intersection Capacity Utilization 44.6% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Romand)Plan: PM Peak Gen

	۶	-	•	•	←	•	4	†	/	/	Ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	Ť	† †			† †	7	ř	4	7			
Traffic Volume (vph)	80	462	0	0	458	140	164	0	226	0	0	0
Future Volume (vph)	80	462	0	0	458	140	164	0	226	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			0			100			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.91	0.95	1.00	1.00	1.00
Frt						0.850		0.884	0.850			
Flt Protected	0.950						0.950	0.989				
Satd. Flow (prot)	1719	3574	0	0	3539	1406	1678	1427	1656	0	0	0
Flt Permitted	0.950		-	-			0.950	0.989		•		
Satd. Flow (perm)	1719	3574	0	0	3539	1406	1678	1427	1656	0	0	0
Right Turn on Red			Yes	•		Yes			No	•		Yes
Satd. Flow (RTOR)						173						
Link Speed (mph)		35			40	110		30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			13.0			15.5			11.1	
Peak Hour Factor	0.85	0.85	0.85	0.81	0.81	0.81	0.84	0.84	0.84	0.88	0.88	0.88
Heavy Vehicles (%)	5%	1%	0%	0%	2%	11%	9%	0%	5%	0%	0%	0%
Adj. Flow (vph)	94	544	0	0	565	173	195	0	269	0	0	0
Shared Lane Traffic (%)	JŦ	J 1 1	U	U	303	170	18%	U	44%	U	U	U
Lane Group Flow (vph)	94	544	0	0	565	173	160	153	151	0	0	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)	Loit	24	rugiit	Loit	24	rugiit	Loit	14	rugiit	Loit	14	ragne
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15	1.00	9	15	1.00	9	15	1.00	9	15	0.00	9
Turn Type	Prot	NA		10	NA	Prot	Split	NA	Prot	10		•
Protected Phases	1	1.2			2	2	4	4	4			
Permitted Phases	•				_	_	•	•	•			
Detector Phase	1	12			2	2	4	4	4			
Switch Phase	•				_	_	•	•	•			
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	20.0				31.0	31.0	24.0	24.0	24.0			
Total Split (%)	26.7%				41.3%	41.3%	32.0%	32.0%	32.0%			
Maximum Green (s)	16.0				25.5	25.5	19.0	19.0	19.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag	3.0	3.0	5.0			
Lead-Lag Optimize?	Leau				Lay	Lay						
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			
V GITIOLE LATERISION (9)	3.0				0.۷	0.۷	3.0	5.0	5.0			

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Roand)Plan: PM Peak Gen

	•	→	*	•	•	•	1	Ť		-	ŧ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	11.2	52.3			35.6	35.6	13.7	13.7	13.7			
Actuated g/C Ratio	0.15	0.70			0.47	0.47	0.18	0.18	0.18			
v/c Ratio	0.37	0.22			0.34	0.23	0.52	0.59	0.50			
Control Delay	28.7	0.5			9.0	1.5	33.0	36.5	32.4			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	28.7	0.5			9.0	1.5	33.0	36.5	32.4			
LOS	С	Α			Α	Α	С	D	С			
Approach Delay		4.7			7.2			33.9				
Approach LOS		Α			Α			С				
Queue Length 50th (ft)	35	0			37	1	72	72	67			
Queue Length 95th (ft)	30	0			76	4	109	114	104			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	366	2444			1677	757	425	361	419			
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	0.26	0.22			0.34	0.23	0.38	0.42	0.36			

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 51 (68%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 13.1 Intersection LOS: B
Intersection Capacity Utilization 44.6% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



	ၨ	→	\rightarrow	•	←	•	4	†	/	>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	Ť	∱ }		7	^	7	*	£			र्स	7
Traffic Volume (vph)	219	454	15	3	373	71	8	1	8	63	1	217
Future Volume (vph)	219	454	15	3	373	71	8	1	8	63	1	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			0			130		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995				0.850		0.862				0.850
Flt Protected	0.950			0.950			0.950				0.953	
Satd. Flow (prot)	1597	3557	0	1796	3522	1607	1685	1583	0	0	1742	1196
FIt Permitted	0.950			0.950			0.709				0.721	
Satd. Flow (perm)	1597	3557	0	1796	3522	1607	1257	1583	0	0	1318	1196
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				106		11				252
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.78	0.78	0.78	0.80	0.80	0.80	0.75	0.75	0.75	0.86	0.86	0.86
Heavy Vehicles (%)	13%	1%	0%	0%	2%	0%	0%	0%	0%	4%	0%	35%
Adj. Flow (vph)	281	582	19	4	466	89	11	1	11	73	1	252
Shared Lane Traffic (%)												
Lane Group Flow (vph)	281	601	0	4	466	89	11	12	0	0	74	252
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	J -		0	J
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		12	15		12	15		12	15		12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm	NA	pm+ov
Protected Phases	1	12		3	23	23		4			4	1
Permitted Phases							4			4		4
Detector Phase	1	12		3	23	23	4	4		4	4	1
Switch Phase												
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	17.0			11.0			17.0	17.0		17.0	17.0	17.0
Total Split (%)	22.7%			14.7%			22.7%	22.7%		22.7%	22.7%	22.7%
Maximum Green (s)	11.6			5.7			12.1	12.1		12.1	12.1	11.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0			0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?				_544			-~9	9		-49	~9	_500
=344 -49 Optimeo.												

Lane Group	Ø2	
Lane Configurations	WZ	
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	2	
Permitted Phases	2	
Detector Phase Switch Phase		
	15.0	
Minimum Initial (s)		
Minimum Split (s)	21.1	
Total Split (s)	30.0	
Total Split (%)	40%	
Maximum Green (s)	23.9	
Yellow Time (s)	4.8	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?		

	۶	→	•	•	←	•	4	†	/	\	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	20.1	47.5		5.3	31.9	31.9	9.0	9.0			9.0	31.6
Actuated g/C Ratio	0.27	0.63		0.07	0.43	0.43	0.12	0.12			0.12	0.42
v/c Ratio	0.66	0.27		0.03	0.31	0.12	0.07	0.06			0.47	0.39
Control Delay	38.0	4.4		32.7	15.4	2.5	28.9	16.7			40.1	4.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	38.0	4.4		32.7	15.4	2.5	28.9	16.7			40.1	4.2
LOS	D	Α		С	В	Α	С	В			D	Α
Approach Delay		15.1			13.4			22.5			12.3	
Approach LOS		В			В			С			В	
Queue Length 50th (ft)	99	38		2	82	0	5	0			33	0
Queue Length 95th (ft)	#251	47		10	84	13	15	11			66	38
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	427	2429		139	1455	726	202	264			212	649
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	0.25		0.03	0.32	0.12	0.05	0.05			0.35	0.39

Intersection Summary

Area Type: Other

Cycle Length: 75 Actuated Cycle Length: 75

Offset: 42 (56%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

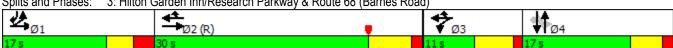
Maximum v/c Ratio: 0.66

Intersection Signal Delay: 14.2 Intersection LOS: B Intersection Capacity Utilization 48.5% ICU Level of Service A

Analysis Period (min) 15

Queue shown is maximum after two cycles.

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



^{# 95}th percentile volume exceeds capacity, queue may be longer.

Lane Group	Ø2		
Vehicle Extension (s)	2.5		
Recall Mode	C-Min		
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings 4: Research Parkway & Food Bank Driv/Site Drive 1

	۶	→	•	•	+	•	•	†	~	/		-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	f)		ሻ	f)		ሻ	†	7	ሻ	f)	
Traffic Volume (vph)	0	0	1	95	0	16	0	104	187	33	185	0
Future Volume (vph)	0	0	1	95	0	16	0	104	187	33	185	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	0			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.850				0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	1900	1615	0	1805	1615	0	1900	1743	1615	1805	1743	0
FIt Permitted				0.755						0.682		
Satd. Flow (perm)	1900	1615	0	1434	1615	0	1900	1743	1615	1296	1743	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		625			816				208			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.25	0.25	0.25	0.88	0.88	0.88	0.90	0.90	0.90	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	9%	0%	0%	9%	0%
Adj. Flow (vph)	0	0	4	108	0	18	0	116	208	40	226	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	108	18	0	0	116	208	40	226	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24		, ,	30			12	, ,		12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	2	
Permitted Phases	4			4			2		2	2		
Detector Phase	4	4		4	4		2	2	2	1	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0	15.0	4.5	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0	21.0	9.0	21.0	
Total Split (s)	40.0	40.0		40.0	40.0		51.0	51.0	51.0	9.0	51.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		51.0%	51.0%	51.0%	9.0%	51.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		45.0	45.0	45.0	5.0	45.0	
Yellow Time (s)	3.0	3.0		3.0	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	1.0	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	5.0		5.0	5.0		6.0	6.0	6.0	4.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	

4: Research Parkway & Food Bank Driv/Site Drive 1

	•	-	•	•	•	•	1	†	~	-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0		7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0		0	
Act Effct Green (s)		8.9		8.9	8.9			21.6	21.6	24.0	21.6	
Actuated g/C Ratio		0.22		0.22	0.22			0.53	0.53	0.59	0.53	
v/c Ratio		0.00		0.35	0.02			0.13	0.22	0.05	0.24	
Control Delay		0.0		17.8	0.1			9.9	3.0	4.7	10.5	
Queue Delay		0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay		0.0		17.8	0.1			9.9	3.0	4.7	10.5	
LOS		Α		В	Α			Α	Α	Α	В	
Approach Delay					15.2			5.5			9.6	
Approach LOS					В			Α			Α	
Queue Length 50th (ft)		0		16	0			12	0	3	24	
Queue Length 95th (ft)		0		58	0			51	32	12	82	
Internal Link Dist (ft)		116			123			640			398	
Turn Bay Length (ft)				170						115		
Base Capacity (vph)		1488		1250	1512			1708	1587	826	1708	
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		0.00		0.09	0.01			0.07	0.13	0.05	0.13	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 40.8

Natural Cycle: 45

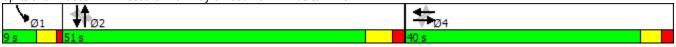
Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.35 Intersection Signal Delay: 8.7

Intersection LOS: A Intersection Capacity Utilization 34.6% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Research Parkway & Food Bank Driv/Site Drive 1



	۶	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			ની	ĵ»	
Traffic Volume (vph)	0	1	1	119	217	0
Future Volume (vph)	0	1	1	119	217	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						
Satd. Flow (prot)	1644	0	0	1744	1743	0
Flt Permitted						
Satd. Flow (perm)	1644	0	0	1744	1743	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.25	0.25	0.83	0.83	0.85	0.85
Heavy Vehicles (%)	0%	0%	0%	9%	9%	0%
Adj. Flow (vph)	0	4	1	143	255	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	144	255	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12	_	_	12	0	_
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utiliza	tion 21.4%			IC	U Level o	of Service A
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	0.1					
•	EDI	EDD	NDI	NDT	CDT	CDD
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			<u>4</u>	4	•
Traffic Vol, veh/h	0	1	1	119	217	0
Future Vol, veh/h	0	1	1	119	217	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,	# 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	25	25	83	83	85	85
Heavy Vehicles, %	0	0	0	9	9	0
Mvmt Flow	0	4	1	143	255	0
	-	-	-			
	1inor2		/lajor1		/lajor2	
Conflicting Flow All	400	255	255	0	-	0
Stage 1	255	-	-	-	-	-
Stage 2	145	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	_	-	_	-
Follow-up Hdwy	3.5	3.3	2.2	_	-	-
Pot Cap-1 Maneuver	610	789	1322	_	_	_
Stage 1	792	-	-	_	_	_
Stage 2	887	_	_	_	_	_
Platoon blocked, %	001				_	_
Mov Cap-1 Maneuver	609	789	1322	_	_	_
Mov Cap-1 Maneuver	609	709	1022	_	-	-
			-	_		-
Stage 1	791	-	-	-	-	-
Stage 2	887	-	-	_	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	9.6		0.1		0	
HCM LOS	9.0 A		0.1		U	
I IOIVI LOO	^					
Minor Lane/Major Mvmt		NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1322	-	789	-	-
HCM Lane V/C Ratio		0.001	-	0.005	-	-
HCM Control Delay (s)		7.7	0	9.6	-	-
HCM Lane LOS		Α	A	A	_	-
HCM 95th %tile Q(veh)		0	-	0	_	-
7000 4(1011)		Ū		J		

	۶	•	4	†	ļ	✓
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	7	†	f)	
Traffic Volume (vph)	0	1	0	119	216	0
Future Volume (vph)	0	1	0	119	216	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	0		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	1900	1615	1900	1743	1696	0
Flt Permitted						
Satd. Flow (perm)	1900	1615	1900	1743	1696	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.25	0.25	0.81	0.81	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	9%	12%	0%
Adj. Flow (vph)	0	4	0	147	281	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	4	0	147	281	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	<u> </u>
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop	-		Free	Free	
Intersection Summary						
<i>J</i> 1	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	ion 21.4%			IC	U Level c	of Service A
Analysis Period (min) 15						

Movement
Movement
Transition of the following problem of the fol
Traffic Vol, veh/h Future Vol,
Future Vol, veh/h 0 1 0 119 216 0 Conflicting Peds, #/hr 0 0 0 0 0 0 Sign Control Stop Stop Free Free <t< td=""></t<>
Conflicting Peds, #/hr O O O O O O O O O
Stop Stop Free
None
Storage Length
Veh in Median Storage, # 0
Grade, % 0 - - 0 0 - Peak Hour Factor 25 25 81 81 77 77 Heavy Vehicles, % 0 0 0 9 12 0 Mover Flow 0 4 0 147 281 0 Conflicting Flow All 428 281 281 0 - 0 Stage 1 281 - - - - - - Stage 2 147 -
Peak Hour Factor 25 25 81 81 77 77 Heavy Vehicles, % 0 0 0 9 12 0 Move the following flow 0 4 0 147 281 0 Conflicting Flow All 428 281 281 0 - 0 Stage 1 281 - - - - - - Stage 2 147 - - - - - - Critical Hdwy 6.4 6.2 4.1 - - - - Critical Hdwy Stg 1 5.4 - <th< td=""></th<>
Reavy Vehicles, %
Major/Minor Minor2 Major1 Major2 Conflicting Flow All 428 281 281 0 - 0 Stage 1 281 - - - - - Critical Hdwy 6.4 6.2 4.1 - - - Critical Hdwy Stg 1 5.4 - - - - - - Critical Hdwy Stg 2 5.4 -
Major/Minor Minor2 Major1 Major2 Conflicting Flow All 428 281 281 0 0 Stage 1 281 - - - - Stage 2 147 - - - - Critical Hdwy 6.4 6.2 4.1 - - - Critical Hdwy Stg 1 5.4 -
Stage 1
Stage 1
Stage 1
Stage 1 281 - - - - Stage 2 147 - - - - Critical Hdwy 6.4 6.2 4.1 - - - Critical Hdwy Stg 1 5.4 - - - - - - Critical Hdwy Stg 2 5.4 - - - - - - - - - - - - - - - - - -
Stage 2 147 - - - - Critical Hdwy 6.4 6.2 4.1 - - - Critical Hdwy Stg 1 5.4 - - - - - Critical Hdwy Stg 2 5.4 - - - - - - Collow-up Hdwy 3.5 3.3 2.2 - -
Critical Hdwy Stg 1 5.4
Critical Hdwy Stg 1 5.4
Critical Hdwy Stg 2 5.4 - - - - Follow-up Hdwy 3.5 3.3 2.2 - - Pot Cap-1 Maneuver 588 763 1293 - - Stage 2 885 - - - - Platoon blocked, % - - - - Mov Cap-1 Maneuver 588 763 1293 - - Stage 1 771 - - - - Stage 2 885 - - - - - Approach EB NB SB HCM Control Delay, s 9.7 0 0 0 HCM LOS A - - 763 - Alinor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT Capacity (veh/h) 1293 - - 763 - HCM Lane V/C Ratio - - - 0 9.7 - HCM Control Delay (s) 0 - 0 9.7 - H
Stage 1
Stage 1
Stage 1 771 -
Stage 2 885 -
Platoon blocked, %
Mov Cap-1 Maneuver 588 763 1293 -
Stage 1
Stage 1
Stage 1 771 -
Stage 2 885 -
Approach EB NB SB HCM Control Delay, s 9.7 0 0 HCM LOS A Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT Capacity (veh/h) 1293 - 763 - HCM Lane V/C Ratio - 0.005 - HCM Control Delay (s) 0 - 0 9.7 - HCM Lane LOS A - A A -
AICM Control Delay, s 9.7 0 0 AICM LOS A AICM LOS A AICM LOS A AICM LOS A AICM Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT Capacity (veh/h) 1293 763 - HCM Lane V/C Ratio 0.005 - HCM Control Delay (s) 0 - 0 9.7 - HCM Lane LOS A - A A -
AICM Control Delay, s 9.7 0 0 AICM LOS A AICM LOS A AICM LOS A AICM LOS A AICM Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT Capacity (veh/h) 1293 763 - HCM Lane V/C Ratio 0.005 - HCM Control Delay (s) 0 - 0 9.7 - HCM Lane LOS A - A A -
A A A A A A A A A A
Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT Capacity (veh/h) 1293 - - 763 - HCM Lane V/C Ratio - - - 0.005 - HCM Control Delay (s) 0 - 0 9.7 - HCM Lane LOS A - A A -
Capacity (veh/h) 1293 - - 763 - HCM Lane V/C Ratio - - - 0.005 - HCM Control Delay (s) 0 - 0 9.7 - HCM Lane LOS A - A A -
Capacity (veh/h) 1293 - - 763 - HCM Lane V/C Ratio - - - 0.005 - HCM Control Delay (s) 0 - 0 9.7 - HCM Lane LOS A - A A -
Capacity (veh/h) 1293 - - 763 - HCM Lane V/C Ratio - - - 0.005 - HCM Control Delay (s) 0 - 0 9.7 - HCM Lane LOS A - A A -
HCM Lane V/C Ratio 0.005 - HCM Control Delay (s) 0 - 0 9.7 - HCM Lane LOS A - A A -
HCM Control Delay (s) 0 - 0 9.7 - HCM Lane LOS A - A A
HCM Lane LOS A - A A -
HCM 95th %tile Q(veh) 0 0 -

	۶	→	\rightarrow	•	←	•	•	†	<i>></i>	>	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	23	19	3	96	15	24	7	98	14	11	117	22
Future Volume (vph)	23	19	3	96	15	24	7	98	14	11	117	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.976			0.984			0.980	
Flt Protected		0.975			0.966			0.997			0.996	
Satd. Flow (prot)	0	1834	0	0	1791	0	0	1709	0	0	1682	0
Flt Permitted		0.975			0.966			0.997			0.996	
Satd. Flow (perm)	0	1834	0	0	1791	0	0	1709	0	0	1682	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.64	0.64	0.64	0.66	0.66	0.66	0.72	0.72	0.72	0.67	0.67	0.67
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	11%	0%	0%	12%	6%
Adj. Flow (vph)	36	30	5	145	23	36	10	136	19	16	175	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	0	0	204	0	0	165	0	0	224	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilizati	on 28.5%			IC	CU Level o	of Service	Α					
Analysis Period (min) 15												

NB

8.8

1

Α

Conflicting Approach Right

Conflicting Lanes Right

HCM Control Delay

HCM LOS

ΕВ

9.8

Α

1

Intersection												
Intersection Delay, s/veh	9.6											
Intersection LOS	Α											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	23	19	3	96	15	24	7	98	14	11	117	22
Future Vol, veh/h	23	19	3	96	15	24	7	98	14	11	117	22
Peak Hour Factor	0.64	0.64	0.64	0.66	0.66	0.66	0.72	0.72	0.72	0.67	0.67	0.67
Heavy Vehicles, %	0	0	0	0	0	0	0	11	0	0	12	6
Mvmt Flow	36	30	5	145	23	36	10	136	19	16	175	33
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		

SB

1

Α

10

WB

9.2

1

Α

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	51%	71%	7%
Vol Thru, %	82%	42%	11%	78%
Vol Right, %	12%	7%	18%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	119	45	135	150
LT Vol	7	23	96	11
Through Vol	98	19	15	117
RT Vol	14	3	24	22
Lane Flow Rate	165	70	205	224
Geometry Grp	1	1	1	1
Degree of Util (X)	0.221	0.101	0.281	0.294
Departure Headway (Hd)	4.807	5.161	4.946	4.722
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	742	688	722	757
Service Time	2.872	3.242	3.014	2.782
HCM Lane V/C Ratio	0.222	0.102	0.284	0.296
HCM Control Delay	9.2	8.8	10	9.8
HCM Lane LOS	Α	Α	Α	Α
HCM 95th-tile Q	8.0	0.3	1.2	1.2

	-	•	•	•	1	~
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	f)			ર્ન	ň	7
Traffic Volume (vph)	44	0	0	26	109	0
Future Volume (vph)	44	0	0	26	109	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1863	0	0	1863	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	1863	0	0	1863	1770	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	0	0	28	118	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	0	28	118	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 16.0%

ICU Level of Service A

Analysis Period (min) 15

latana atian							
Intersection	F 0						
Int Delay, s/veh	5.8						
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	f)			4	Ĭ	7	
Traffic Vol, veh/h	44	0	0	26	109	0	
Future Vol, veh/h	44	0	0	26	109	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	
	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	-	-	-	0	0	
Veh in Median Storage,	# 0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	48	0	0	28	118	0	
Major/Minor Ma	ajor1		Major2		Minor1		
	0	0	48	0	76	48	
Conflicting Flow All Stage 1		U	40		48		
•	-	-	_	-	28	-	
Stage 2 Critical Hdwy	-	-	4.12	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	4.12	-	5.42	0.22	
, ,	-	-	-		5.42	-	
Critical Hdwy Stg 2	-	-	2.218	-	3.518	2 210	
Follow-up Hdwy		-	1559		927	1021	
Pot Cap-1 Maneuver	-	-	1339	-	974	1021	
Stage 1	-	-	-	-	974	-	
Stage 2 Platoon blocked, %	_	-	-	-	993	-	
	-	-	1550	-	007	1021	
Mov Cap-1 Maneuver	-	-	1559	-	927	1021	
Mov Cap-2 Maneuver	-	-	-	-	927	-	
Stage 1	-	-	-	-	974	-	
Stage 2	-	-	-	-	995	-	
Approach	EB		WB		NB		
HCM Control Delay, s	0		0		9.5		
HCM LOS					Α		
Minor Long/Major My		JDL 4 P	UDLO	EDT	EDD	WDI	WDT
Minor Lane/Major Mvmt	ſ	VBLn11		EBT	EBR	WBL	WBT
Capacity (veh/h)		927	-	-	-	1559	-
HCM Lane V/C Ratio		0.128	-	-	-	-	-
HCM Control Delay (s)		9.5	0	-	-	0	-
HCM Lane LOS		Α	Α	-	-	Α	-
HCM 95th %tile Q(veh)		0.4	-	-	-	0	-

HOLIDAY ANALYSIS



Introduction

A holiday season analysis was performed per town peer review request. It should be noted CTDOT does not require holiday analysis per OSTA Major Traffic Generator Administrative Decision Request Guidelines, Section III (Traffic Information) D-3: "Trip generation for the Christmas Season, as defined by ITE, is not currently required. Trip generation shall reflect a successful day, not abnormally high-peak periods such as holiday weekends."

Holiday Projected Traffic Conditions

No Build Volumes

For holiday peak patterns, to stay conservative, the existing and no build volumes were determined to have a factor of 1 and thus remain the same as average weekday traffic. This was determined using seasonal adjustments factors provided by the State. Generally, December is a time of a year where volumes are lower. Of course, the exception be in retail corridors, which is not the case for the study area. The CTDOT conversion factoring for all states routes is attached in the main report **Appendix – Traffic Counts**, which was used to determine the seasonal adjustments for December. These factors were derived from a set of sites with permanent count stations that are considered similar to the location of the temporary count.

Trip Generation

The level of traffic likely generated by the proposed delivery station during holiday season has been estimated by the tenant to determine the potential traffic impact on the study intersections. The tenant completed a detailed analysis determining the number and time of the Site traffic arrivals and departures at the Site, which is a function of the delivery area population and business density. The Tenant anticipates that this facility will employ approximately 680 associates/managers on-site over various shifts during the day. All associates/managers will utilize one existing drive on Carpenter Lane.



During the holiday season the proposed delivery station is projected to generate: 339 (97 enter, 242 exit) vehicle trips during the morning peak hour, 279 (0 enter, 279 exit) vehicle trips during the mid-day peak hour, 913 (587 enter, 326 exit) during the weekday evening peak hour, 697 (334 enter, 362 exit) vehicle trips during AM peak generator hour, and 641 (315 enter, 326 exit) vehicle trips during PM peak generator hour.

Table 2.2 provides a summary of the trip generation projections for the proposed delivery station during holiday provided by the tenant. It should be noted that ITE Trip Generation does not provide holiday trip generation estimate and thus no comparisons could be made.

Trip Distribution

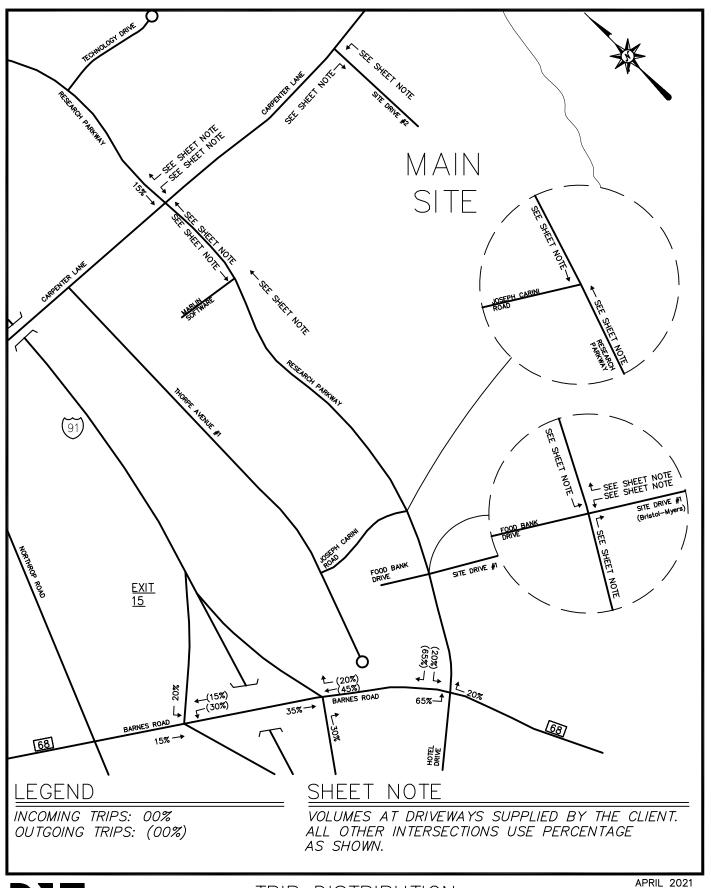
The directional distribution of traffic is typically a function of population densities, competing opportunities, existing travel patterns adjacent to the Site, and the efficiency and limitations of the existing roadway system. Based upon the Site's close proximity to CT Route 68 and Interstate 91, it is anticipated that the majority of employees/delivery vehicles will utilize these roadways for access and egress from the Site. The distribution of the anticipated traffic volumes was based on arrival / departure patterns shown in **Figure 4**. These patterns are the same as for average weekday presented in the main report.



Table 2.2 – Peak Hour Trip Generation (Holiday)

		Table 2.2 Peak Hour Trip Generation - Holiday (Client Provided)														
								Trips								
	A	M Peak Hou	ır	Mid-D	Day Peak H	our	P	M Peak Hou	Jr	AM Peak	Generato	r Hour	PM Peak Generator Hour			
	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	ln	Out	
LU-156: High-Cube Parcel Hub Warehouse (219 GFA) ¹	No /	Available Do	ata	No A	No Available Data			Available D	pata	No A	vailable Do	ata	No Available Data			
							1									
Bristol-Myers Squibb Cup Development	No /	Available Do	ata	No A	vailable Do	ata	No	Available D	ata	No A	vailable Do	ata	No Av	vailable Do	ata	
Net Old Trips																
Associates/Managers	0	0	0	279	0	279	272	272	0	0	0	0	0	0	0	
DSP	336	96	240	0	0	0	630	310	320	692	332	360	630	310	320	
Flex Drivers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Trucks	3	1	2	0	0	0	11	5	6	4	2	2	11	5	6	
Net New Trips	<u>339</u>	<u>97</u>	<u>242</u>	<u>279</u>	<u>0</u>	<u>279</u>	<u>913</u>	<u>587</u>	<u>326</u>	<u>696</u>	<u>334</u>	<u>362</u>	<u>641</u>	<u>315</u>	<u>326</u>	
<u>Difference</u>	<u>339</u>	<u>97</u>	242	<u>279</u>	<u>0</u>	<u>279</u>	<u>913</u>	<u>587</u>	<u>326</u>	<u>696</u>	<u>334</u>	<u>362</u>	<u>641</u>	<u>315</u>	326	

Ref: Trip Generation developed by Tenant
1: ITE Trip Generation Manual, 10th Edition Values for Land Use code: 156: High-Cube Parcel Hub Warehouse. It should be noted there are limited studies available for High-Cube Parcel Warehouse.





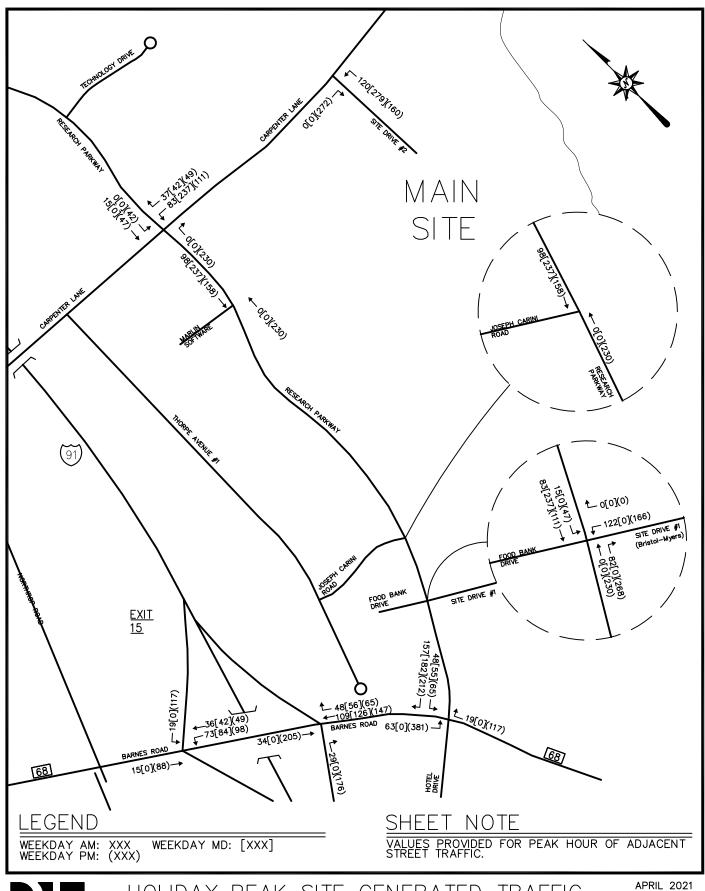
TRIP DISTRIBUTION
PROPOSED DEVELOPMENT
WALLINGFORD, CONNECTICUT
SCHEMATIC, NOT TO SCALE

AI NIL 2021

FIGURE 4

Assigned Site Generated Traffic Volumes

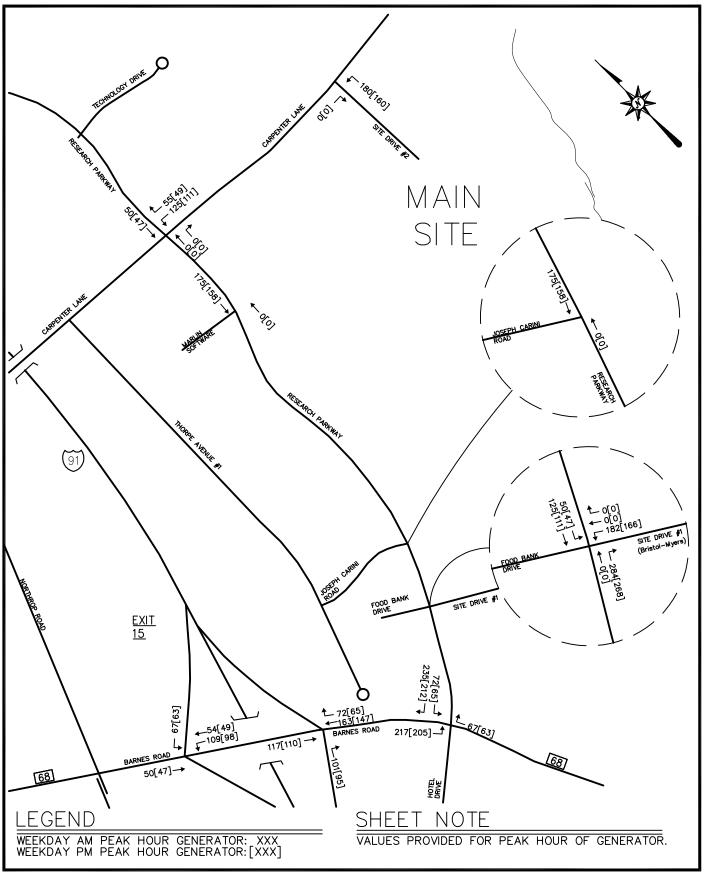
The generated trips are multiplied by the corresponding proportions to ascertain the Site-generated traffic volumes. **Figure 5.3 and Figure 5.4** shows the Site generated peak hour traffic generated by the Site assigned to the nearby roadway network during a Holiday weekday. Note, at the Site access / egress, the assigned volumes follow distribution patterns established by the site operations and vehicle types.





HOLIDAY PEAK SITE GENERATED TRAFFIC PROPOSED DEVELOPMENT WALLINGFORD, CONNECTICUT SCHEMATIC, NOT TO SCALE

FIGURE 5.3





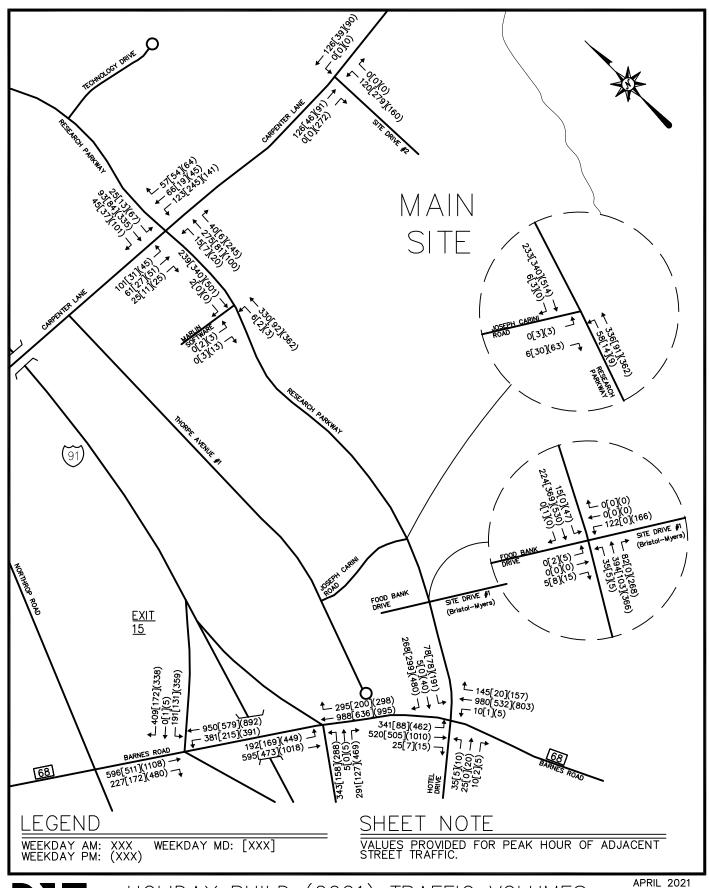
HOLIDAY SITE GENERATED TRAFFIC PROPOSED DEVELOPMENT WALLINGFORD, CONNECTICUT SCHEMATIC, NOT TO SCALE

APRIL 2021

FIGURE 5.4

Build Traffic Volumes

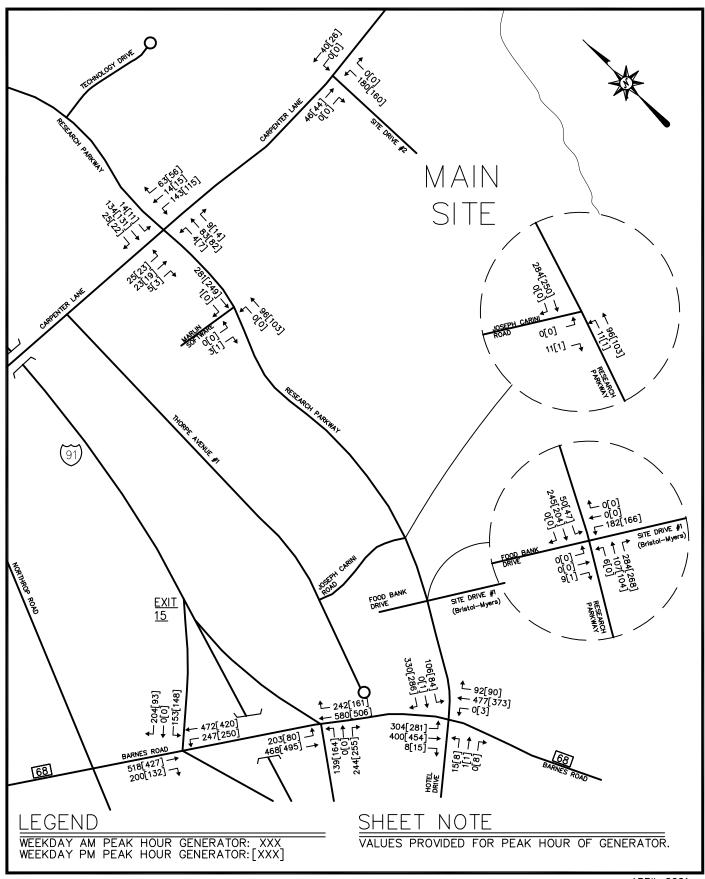
The assigned site-generated traffic volumes were superimposed onto the 2021 No Build Traffic volumes to establish the future 2021 Build Traffic volumes, as illustrated in **Figure 6.3** through **Figure 6.4** for holiday season.





HOLIDAY BUILD (2021) TRAFFIC VOLUMES PROPOSED DEVELOPMENT WALLINGFORD, CONNECTICUT SCHEMATIC, NOT TO SCALE

FIGURE 6.3





HOLIDAY BUILD (2021) TRAFFIC VOLUMES PROPOSED DEVELOPMENT WALLINGFORD, CONNECTICUT SCHEMATIC, NOT TO SCALE

APRIL 2021

FIGURE 6.4

Roadway Adequacy

Similarly, to average weekday conditions, Synchro™ software (Version 9) was used to model the study intersections based on the parameters mentioned. The Synchro software is widely utilized by the traffic engineering industry and is consistent with the procedures in the HCM.

Table 5.3 shows the levels of service (LOS) at the subject intersections. Synchro result tables provided in the **Appendix**.

Table 5.3 – Holiday Levels of Service (AM, Mid-Day, PM, AM/PM Peak Hour Generator)

			HOLIDAY		HOLIDAY IMPROVED						
Intersection	AM	Mid-Day	PM	AM Peak Hour Generator	PM Peak Hour Generator	АМ	Mid-Day	PM	AM Peak Hour Generator	PM Peak Hour Generator	
	T			Τ				T		T	
Route 68 (Barnes Road) at Interstate 91 Southbound Exit 15 On/Off-Ramps ¹	C/24.3	B/15.9	D/50.2	B/18.7	B/15.8	C/24.4	B/15.9	D/50.5	B/18.7	B/15.8	
Route 68 EB Thru	D/0.86/#275	B/0.46/160	F/1.11/#500	C/0.54/160	C/0.42/130	D/0.86/#275	B/0.46/160	F/1.11/#500	C/0.54/160	C/0.42/130	
Route 68 EB Right (345')	A/0.45/60	A/0.28/40	A/0.58/75	A/0.35/45	A/0.25/30	A/0.45/60	A/0.28/40	A/0.58/75	A/0.35/45	A/0.25/30	
Route 68 WB Left (910')	C/0.85/m#265	C/0.69/#185	F/1.09/m#160	C/0.77/#215	C/0.71/110	C/0.85/m#275	C/0.69/#185	F/1.09/m#290	C/0.77/#215	C/0.71/110	
Route 68 WB Thru	A/0.61/m90	A/0.27/25	A/0.53/m25	A/0.29/25	A/0.26/25	A/0.61/m185	A/0.27/25	A/0.53/m25	A/0.29/25	A/0.26/25	
Exit 15 Off-Ramp SB Left (240')	C/0.48/135	C/0.44/95	E/0.87/#265	C/0.50/105	C/0.38/80	C/0.48/135	C/0.44/95	E/0.87/#265	C/0.50/105	C/0.38/80	
Exit 15 Off-Ramp SB Left/Right	D/0.76/185	D/0.54/100	E/0.95/#285	D/0.59/110	C/0.43/85	D/0.76/185	D/0.54/100	E/0.95/#285	D/0.59/110	C/0.43/85	
Exit 15 Off-Ramp SB Right (240')	D/0.69/170	D/0.50/90	E/0.86/#250	C/0.54/105	C/0.39/75	D/0.69/170	D/0.50/90	E/0.86/#250	C/0.54/105	C/0.39/75	
			•								
Route 68 (Barnes Road) at Interstate 91 Northbound Exit 15 On/Off-Ramps ¹	D/35.0	B/12.7	F/89.6	B/16.8	B/13.5	C/31.7	B/12.9	D/39.2	B/15.5	B/13.1	
Route 68 EB Left (910')	D/0.60/m100	C/0.64/55	C/0.83/m115	D/0.82/#195	C/0.34/35	D/0.60/m100	C/0.64/55	E/1.09/m#240	D/0.76/#195	C/0.35/35	
Route 68 EB Thru	A/0.33/m25	A/0.21/25	A/0.62/m25	A/0.25/25	A/0.25/25	A/0.32/m25	A/0.21/25	A/0.61/m25	A/0.24/25	A/0.24/25	
Route 68 WB Thru	E/1.02/m#335	B/0.48/120	F/1.31/m#440	B/0.51/120	B/0.42/95	D/0.98/m#335	B/0.47/120	D/0.95/m#360	B/0.48/120	B/0.38/95	
Route 68 WB Right (480')	B/0.43/m50	A/0.32/25	A/0.47/m30	A/0.39/25	A/0.28/25	B/0.42/m50	A/0.32/25	A/0.40/m30	A/0.38/25	A/0.26/25	
Exit 15 Off-Ramp NB Left (180')	C/0.52/150	C/0.33/75	C/0.47/135	C/0.21/65	C/0.26/75	D/0.69/190	C/0.43/90	E/0.89/#280	C/0.46/105	C/0.54/120	
Exit 15 Off-Ramp NB Thru	C/0.54/150	C/0.35/75	C/0.50/135	C/0.23/65	C/0.28/75	D/0.78/#205	D/0.50/95	F/1.07/#320	D/0.60/115	D/0.60/125	
Exit 15 Off-Ramp NB Right (180')	D/0.86/#270	D/0.54/105	F/1.51/#535	D/0.77/#205	D/0.77/195	D/0.67/175	C/0.43/85	E/0.90/#275	C/0.51/110	C/0.51/115	

Overall Intersection – X/XX.X - Level of Service/Intersection Signal Delay in sec Approaches - X/X.XX/XXX – Level of Service/Volume to Capacity Ratio/95% Queue Length in ft

Movement (XX') – Storage length



¹ – Signalized Intersection

²– Unsignalized Intersections, controlled movements

^{# – 95}th 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.

			HOLIDAY		HOLIDAY IMPROVED						
Intersection	АМ	Mid-Day	PM	AM Peak Hour Generator	PM Peak Hour Generator	АМ	Mid-Day	PM	AM Peak Hour Generator	PM Peak Hour Generator	
Route 68 (Barnes Road) at Hotel Drive and Research Parkway ¹	D/42.0	B/13.1	D/52.2	C/26.7	B/16.4	D/42.2	B/13.1	D/53.4	C/26.9	B/16.5	
Route 68 EB Left (570')	C/0.49/m125	D/0.44/90	F/1.37/m#400	F/1.01/#380	D/0.74/#325	C/0.49/135	D/0.44/90	F/1.37/m#465	F/1.01/#390	D/0.74/#335	
Route 68 EB Thru/Right	B/0.65/m115	A/0.26/40	B/0.81/m80	A/0.26/40	A/0.27/45	B/0.65/130	A/0.26/40	B/0.81/m85	A/0.26/45	A/0.27/50	
Route 68 WB Left (100')	D/0.09/25	C/0.01/25	D/0.05/25	A/0.00/25	C/0.03/25	D/0.09/25	C/0.01/25	D/0.05/25	A/0.00/25	C/0.03/25	
Route 68 WB Thru	E/1.08/#470	B/0.33/130	D/0.91/#320	B/0.43/115	B/0.35/85	E/1.08/#470	B/0.33/130	D/0.91/#320	B/0.43/115	B/0.35/85	
Route 68 WB Right (250')	A/0.23/40	A/0.03/25	A/0.26/35	A/0.17/25	A/0.17/25	A/0.23/40	A/0.03/25	A/0.26/35	A/0.17/25	A/0.17/25	
Hotel NB Left	D/0.40/40	C/0.09/25	C/0.10/25	C/0.23/25	C/0.07/25	D/0.40/40	C/0.09/25	C/0.10/25	C/0.23/25	C/0.07/25	
Hotel NB Thru/Right	C/0.26/30	A/0.01/25	C/0.09/30	C/0.01/25	B/0.06/25	C/0.26/30	A/0.01/25	C/0.09/30	C/0.01/25	B/0.06/25	
Research Parkway SB Left/Thru (345')	D/0.56/85	D/0.60/#95	F/0.98/#255	D/0.66/100	D/0.58/85	D/0.56/85	D/0.60/#95	F/0.98/#255	D/0.66/100	D/0.58/85	
Research Parkway SB Right	B/0.44/100	B/0.61/110	C/0.78/275	B/0.61/125	A/0.46/60	B/0.44/100	B/0.61/110	C/0.78/275	B/0.61/125	A/0.46/60	
Research Parkway at Food Bank Drive and Site Drive 1 $^{1\text{-}2}$	B/10.4	A/2.0	B/17.4	B/11.8	B/11.4	B/10.4	A/2.0	B/17.4	B/11.8	B/11.4	
Food Bank Drive EB Left	A/0.00/25	B/0.01/25	C/0.04/25	A/0.00/25	A/0.00/25	A/0.00/25	B/0.01/25	C/0.04/25	A/0.00/25	A/0.00/25	
Food Bank Drive EB Right/Thru	A/0.02/25	A/0.02/25	A/0.07/25	A/0.02/25	A/0.00/25	A/0.02/25	A/0.02/25	A/0.07/25	A/0.02/25	A/0.00/25	
Site Drive 1 WB Left	C/0.46/110	A/0.00/25	D/0.76/155	C/0.60/130	C/0.52/105	C/0.46/110	A/0.00/25	D/0.76/155	C/0.60/130	C/0.52/105	
Site Drive 1 WB Thru/Right	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	
Research Parkway NB Left (140')	A/0.08/25	A/0.01/25	B/0.05/25	B/0.03/25	A/0.00/25	A/0.08/25	A/0.01/25	B/0.05/25	B/0.03/25	A/0.00/25	
Research Parkway NB Thru	B/0.52/175	A/0.09/25	B/0.58/185	B/0.27/60	B/0.17/60	B/0.52/175	A/0.09/25	B/0.58/185	B/0.27/60	B/0.17/60	
Research Parkway NB Right	A/0.12/25	A/0.00/25	A/0.40/25	A/0.48/25	A/0.36/45	A/0.12/25	A/0.00/25	A/0.40/25	A/0.48/25	A/0.36/45	
Research Parkway SB Left (115')	A/0.04/25	A/0.00/25	A/0.16/25	A/0.09/25	A/0.08/25	A/0.04/25	A/0.00/25	A/0.16/25	A/0.09/25	A/0.08/25	
Research Parkway SB Thru/Right	A/0.29/100	A/0.29/85	C/0.80/290	B/0.49/135	B/0.35/105	A/0.29/100	A/0.29/85	C/0.80/290	B/0.49/135	B/0.35/105	
Research Parkway at J. Carini Road ²	-	-	-	-	-	-	-	-	-	-	
Joseph Carini Road EB Left/Right	B/0.02/25	B/0.09/25	C/0.27/25	B/0.03/25	A/0.01/25	B/0.02/25	B/0.09/25	C/0.27/30	B/0.03/25	A/0.01/25	
Research Parkway NB Left/Thru	A/0.06/25	A/0.02/25	A/0.01/25	A/0.01/25	A/0.00/25	A/0.00/25	A/0.02/25	A/0.01/25	A/0.01/25	A/0.00/25	
Research Parkway SB Thru/Right	-	-	-	-	-	-	-	-	-	-	

Overall Intersection – X/XX.X - Level of Service/Intersection Signal Delay in sec Approaches - X/X.XX/XXX – Level of Service/Volume to Capacity Ratio/95% Queue Length in ft

– 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.

Movement (XX') – Storage length



¹ – Signalized Intersection

² – Unsignalized Intersections, controlled movements

			HOLIDAY			HOLIDAY IMPROVED						
Intersection	АМ	Mid-Day	PM	AM Peak Hour Generator	PM Peak Hour Generator	АМ	Mid-Day	PM	AM Peak Hour Generator	PM Peak Hour Generator		
Research Parkway at Marlin Software Driveway ²	-	-	-	-	-	-	-	-	-	-		
Marlin Software Driveway EB Left/Right	A/0.00/25	B/0.01/25	C/0.03/25	B/0.01/25	B/0.01/25	A/0.00/25	B/0.01/25	C/0.03/25	B/0.01/25	B/0.01/25		
Research Parkway NB Left (100')	A/0.01/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.01/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25		
Research Parkway NB Thru	-	-	-	-	-	-	-	-	-	-		
Research Parkway SB Thru/Right	-	-	-	-	-	-	-	1	-	-		
Research Parkway at Carpenter Lane ²	-	-	-	-	-	-	-	-	-	-		
Carpenter Lane EB Right/Thru/ Left	C/0.65/115	A/0.12/25	C/0.39/40	B/0.15/25	A/0.11/25	C/0.65/115	A/0.12/25	C/0.39/40	B/0.15/25	A/0.11/25		
Carpenter Lane WB Right/Thru/ Left	D/0.74/155	B/0.59/95	D/0.80/135	C/0.74/165	B/0.39/45	D/0.74/155	B/0.59/95	D/0.80/135	C/0.74/165	B/0.39/45		
Research Parkway NB Right/Thru/ Left	F/0.95/310	A/0.17/25	F/1.19/430	B/0.23/25	A/0.20/25	F/0.95/310	A/0.17/25	F/1.19/430	B/0.23/25	A/0.20/25		
Research Parkway SB Right/Thru/ Left	C/0.48/65	A/0.22/25	F/1.43/790	B/0.43/55	B/0.34/40	C/0.48/65	A/0.22/25	F/1.43/790	B/0.43/55	B/0.34/40		
Carpenter Lane at Site Drive 2 ²	-	-	-	-	-	-	-	-	-	-		
Carpenter Lane EB Right/Thru/ Left	-	-	-	-	-	-	-	-	-	-		
Carpenter Lane WB Right/Thru/ Left	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25		
Site Drive 2 NB Right/ Left	B/0.18/25	A/0.33/25	B/0.27/30	B/0.22/25	A/0.19/25	B/0.18/25	B/0.33/40	B/0.27/25	B/0.22/25	A/0.19/25		

Overall Intersection – X/XX.X - Level of Service/Intersection Signal Delay in sec Approaches - X/X.XX/XXX – Level of Service/Volume to Capacity Ratio/95% Queue Length in ft

– 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.



¹ – Signalized Intersection

² – Unsignalized Intersections, controlled movements

As illustrated in **Table 5.3**, there are three signalized intersections along Route 68 (Barnes Road) with overall acceptable traffic operations during AM, Mid-Day, PM, AM Peak Generator, and PM Peak Generator Peak Hour. Some deterioration is observed at specific movements, however overall intersections performance is acceptable. Only during PM Build Holiday Peak Hour, the intersection of Route 68 (Barnes Road) at Interstate 91 Northbound Exit 15 On/Off-Ramps perform at LOS F with 90 second delay. Certain movements at signalized intersections are projected to perform at LOS E /F that is generally considered the limit of acceptable motorist delay, these are:

- Route 68 (Barnes Road) at Interstate 91 Southbound Exit 15 On/Off-Ramps:
 - o Route 68 Eastbound Thru (PM Build Holiday)
 - o Route 68 Westbound Left (PM Build Holiday)
 - o Exit 15 Off-Ramp SB Left (PM Build Holiday)
 - o Exit 15 Off-Ramp SB Left/Right (PM Build Holiday)
 - o Exit 15 Off-Ramp SB Right (PM Build Holiday)
- Route 68 (Barnes Road) at Interstate 91 Northbound Exit 15 On/Off-Ramps
 - o Route 68 WB Thru (AM / PM Build Holiday
 - o Exit 15 Off-Ramp NB Right (AM Build Holiday)
- Route 68 (Barnes Road) at Hotel Drive and Research Parkway:
 - o Route 68 EB Left (PM Build Holiday and AM Peak Generator Build Holiday)
 - o Route 68 WB Thru (AM Build Holiday)
 - o Research Parkway SB Left/Thru (PM Build Holiday)

From the analysis the Build Scenarios there are low impacts to the roadway network for the proposed delivery station facility. At the proposed development driveway (Site #1) with Research Parkway in the existing and no build conditions, the intersection operates as a two-way stop-controlled intersection with stop-control on the driveways. As this is formerly signalized intersection that operates in "Flash" mode, for all build scenarios, the intersection signal was activated. As such, the LOS for all build scenario periods, weekday and holiday, operates at LOS A and LOS B. At the second access point to

the site at Carpenter Lane performs adequately for all movements. The stop-controlled movement from the Site #2 approach performs at LOS A and LOS B.

Only during Holiday Build scenario in the PM Peak Hour at the intersection of Route 68 (Barnes Road) at Interstate 91 Northbound Exit 15 On/Off-Ramps the overall intersection LOS is F. This is caused by high volumes and the lack of right turn on red on the northbound right approach. The Build with the improvements results are summarized and provided. The improvements to the intersection included adjustments to lane configuration on the I-91 northbound Off-Ramp approach and only during PM Peak optimization of signal phases. The LOS improves from LOS F to LOS D.

Conclusions and Recommendations

A holiday season analysis was performed per town peer review request. The focus of this study was to evaluate the traffic flows and operating conditions on the roadways and intersections projected to be used by motorists traveling to and from the proposed development and to quantify the potential traffic impacts on these roadways and intersections. After analyses of the Existing and No Build Scenarios of the AM, Mid-Day, AM Peak Generator, and PM Peak Generator Peak Hours there are no notable deterioration from the other proposed developments. For holiday conditions, a Build and Build Improved scenario was included.

Only during the PM Build Holiday Peak Hour, the intersection of Route 68 (Barnes Road) at Interstate 91 Northbound Exit 15 On/Off-Ramps perform at LOS F with 90 second delay. During some periods, certain movements at signalized intersections are projected to perform at LOS E /F, which is generally considered undesirable motorist delay.

The following is a summary of the results/recommendations for this Site based on both average weekday and holiday season analysis:

 Capacity analyses indicate that all analyzed intersections, overall, are projected to perform at an acceptable Level of Service between all average weekday scenarios analyzed.

- The undesirable Levels of Service are observed for individual movements and deterioration occurs between the Existing and No Build scenarios. Only during the PM Build Holiday Peak Hour, the intersection of Route 68 (Barnes Road) at Interstate 91 Northbound Exit 15 On/Off-Ramps perform at LOS F, thus additional analysis with improved lane configuration on the I-91 northbound Off-Ramp approach and optimization of signal phases (only during PM Peak hour).
- Install "Stop" sign and stop bar at the Site drive's access / egress at Carpenter Lane as noted on Site Plans.
- Clear of overgrown shrubs to meet the sight line requirements at the Carpenter Lane Site driveway.
- Clearing of vegetation at the Research Parkway at Carpenter Lane to increase sight lines.
- Move the Research Parkway northbound stop bar at the Site Drive #1 to accommodate truck turns from the Site.
- Route 68 Left Turn into Research Parkway operates with throat width of 27.5'±.
 Current CTDOT guidelines suggest expanded throat width of 30' to avoid conflicts in turning paths at double left turn. Sketch Plan TT-2 shows WB-67 truck turns with restriped travel lanes to 11ft wide to accommodate the movements without widening of roadway or conflict areas.

Lanes, Volumes, Timings 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: AM

	۶	→	•	•	•	•	•	†	/	>	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	7	^					ň	4	7
Traffic Volume (vph)	0	596	227	381	950	0	0	0	0	191	0	409
Future Volume (vph)	0	596	227	381	950	0	0	0	0	191	0	409
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			100			25			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.863	0.850
Flt Protected			0.000	0.950						0.950	0.996	0.000
Satd. Flow (prot)	0	3008	1455	1597	2756	0	0	0	0	1678	1320	1442
Flt Permitted	•			0.950		•	•		•	0.950	0.996	
Satd. Flow (perm)	0	3008	1455	1597	2756	0	0	0	0	1678	1320	1442
Right Turn on Red	J	0000	Yes	1001	2100	Yes	J	J	Yes	1010	1020	No
Satd. Flow (RTOR)			241			100			100			110
Link Speed (mph)		45	- ! !		35			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			17.8			8.5			11.3	
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	0.54	20%	11%	13%	31%	0%	0%	0%	0.00	9%	0.02	17%
Adj. Flow (vph)	0 /0	634	241	414	1033	0	0 / 0	0 /0	0 /0	233	0	499
Shared Lane Traffic (%)	U	004	271	717	1000	U	U	U	U	10%	U	48%
Lane Group Flow (vph)	0	634	241	414	1033	0	0	0	0	210	263	259
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)	Leit	12	rtigitt	Leit	24	rtigrit	Leit	14	rtigiit	Leit	14	rtigiit
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	1.00	1.00	1.00	1.00	1.00	9	1.00	1.00	9	15	0.90	9
Turn Type	13	NA	Prot	Prot	NA	9	13		9	Split	NA	Prot
Protected Phases		2	2	1	12					Spiit 4	4	4
Permitted Phases		2	2		1 2					4	4	4
Detector Phase		2	2	1	12					4	4	4
Switch Phase		2	2	ı	1 2					4	4	4
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	0.0
` ,		15.0 20.5		11.0								9.0
Minimum Split (s)			20.5	26.0						14.5 31.0	14.5	14.5
Total Split (s)		23.0									31.0	31.0
Total Split (%)		28.8%	28.8%	32.5%						38.8%	38.8%	38.8%
Maximum Green (s)		17.5	17.5	22.0						25.5	25.5	25.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)

	•	-	•	•	•	•	1	Ť		-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		19.5	19.5	24.5	49.5					21.0	21.0	21.0
Actuated g/C Ratio		0.24	0.24	0.31	0.62					0.26	0.26	0.26
v/c Ratio		0.86	0.45	0.85	0.61					0.48	0.76	0.69
Control Delay		44.7	6.9	32.3	4.9					27.6	41.1	35.5
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		44.7	6.9	32.3	4.9					27.6	41.1	35.5
LOS		D	Α	С	Α					С	D	D
Approach Delay		34.3			12.8						35.3	
Approach LOS		С			В						D	
Queue Length 50th (ft)		165	0	156	35					90	128	118
Queue Length 95th (ft)		#273	56	m#263	m90					131	184	168
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		734	537	488	1705					534	420	459
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		0.86	0.45	0.85	0.61					0.39	0.63	0.56

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 78 (98%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 24.3 Intersection LOS: C
Intersection Capacity Utilization 59.7% ICU Level of Service B

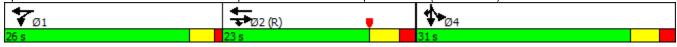
Analysis Period (min) 15

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: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: AM

	۶	-	•	•	•	•	4	†	/	>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	Ť	^			^	7	ř	ર્ન	7			
Traffic Volume (vph)	192	595	0	0	988	295	343	5	291	0	0	0
Future Volume (vph)	192	595	0	0	988	295	343	5	291	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950						0.950	0.954				
Satd. Flow (prot)	1656	3008	0	0	2735	1394	1604	1516	1606	0	0	0
Flt Permitted	0.950						0.950	0.954				
Satd. Flow (perm)	1656	3008	0	0	2735	1394	1604	1516	1606	0	0	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)						304						
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			14.9			15.5			11.1	
Peak Hour Factor	0.93	0.93	0.93	0.97	0.97	0.97	0.86	0.86	0.86	0.88	0.88	0.88
Heavy Vehicles (%)	9%	20%	0%	0%	32%	12%	14%	0%	14%	0%	0%	0%
Adj. Flow (vph)	206	640	0	0	1019	304	399	6	338	0	0	0
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	206	640	0	0	1019	304	203	202	338	0	0	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)		24			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA			NA	Prot	Split	NA	Prot			
Protected Phases	1	12			2	2	4	4	4			
Permitted Phases												
Detector Phase	1	12			2	2	4	4	4			
Switch Phase												
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	25.0				29.0	29.0	26.0	26.0	26.0			
Total Split (%)	31.3%				36.3%	36.3%	32.5%	32.5%	32.5%			
Maximum Green (s)	21.0				23.5	23.5	21.0	21.0	21.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			

Lane Group
Recall Mode
Act Effct Green (s)
Actuated g/C Ratio

v/c Ratio Control Delay Queue Delay Total Delay LOS

Approach Delay
Approach LOS
Queue Length 50th (ft)
Queue Length 95th (ft)
Internal Link Dist (ft)
Turn Bay Length (ft)
Base Capacity (vph)

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: AM

٠	→	•	•	←	•	4	†	/	>	↓	4
EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
None				C-Max	C-Max	None	None	None			
16.7	51.3			29.1	29.1	19.7	19.7	19.7			
0.21	0.64			0.36	0.36	0.25	0.25	0.25			
0.60	0.33			1.02	0.43	0.52	0.54	0.86			
45.3	1.1			57.8	10.5	30.8	31.9	50.6			
0.0	0.0			0.0	0.0	0.0	0.0	0.0			
45.3	1.1			57.8	10.5	30.8	31.9	50.6			
D	Α			Е	В	С	С	D			
	11.8			47.0			40.1				
	В			D			D				
90	5			~298	41	90	90	158			
m96	m10			m#333	m46	149	150	#269			
	833			684			603			409	
830					480	180		180			
434	1895			996	701	421	397	421			

0

0

0

0.43

0

0

0

0.48

0

0

0

0.51

0

0

0

0.80

0

0

0

1.02

Intersection Summary

Starvation Cap Reductn

Spillback Cap Reductn

Storage Cap Reductn

Reduced v/c Ratio

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 34 (43%), Referenced to phase 2:EBWB, Start of Yellow

0

0

0

0.47

0

0

0

0.34

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 35.0 Intersection LOS: D
Intersection Capacity Utilization 59.7% ICU Level of Service B

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

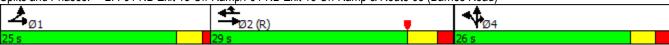
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



Lanes, Volumes, Timings 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)

	•	-	•	•	—	•	•	†	~	/	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1/4	ĥ		ሻ	^	7	ሻ	f)			4	7
Traffic Volume (vph)	341	520	25	10	980	145	35	25	10	78	5	268
Future Volume (vph)	341	520	25	10	980	145	35	25	10	78	5	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			25			130		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993				0.850		0.957				0.850
Flt Protected	0.950			0.950			0.950				0.955	
Satd. Flow (prot)	3045	1547	0	1796	2477	1516	1668	1753	0	0	1781	1509
Flt Permitted	0.950			0.950			0.691				0.689	
Satd. Flow (perm)	3045	1547	0	1796	2477	1516	1213	1753	0	0	1285	1509
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				163		20				115
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.51	0.51	0.51	0.81	0.81	0.81
Heavy Vehicles (%)	15%	23%	1%	0%	45%	6%	1%	0%	1%	2%	0%	7%
Adj. Flow (vph)	371	565	27	11	1101	163	69	49	20	96	6	331
Shared Lane Traffic (%)												
Lane Group Flow (vph)	371	592	0	11	1101	163	69	69	0	0	102	331
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)		24			24	, i		10			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		12	15		12	15		12	15		12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm	NA	pt+ov
Protected Phases	7	7 8		3	38	38		4			4	4 7
Permitted Phases							4			4		
Detector Phase	7	7 8		3	38	38	4	4		4	4	4 7
Switch Phase												
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	
Total Split (s)	26.0			11.0			19.0	19.0		19.0	19.0	
Total Split (%)	32.5%			13.8%			23.8%	23.8%		23.8%	23.8%	
Maximum Green (s)	20.6			5.7			14.1	14.1		14.1	14.1	
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	
Lost Time Adjust (s)	0.0			0.0			0.0	0.0			0.0	
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	
Lead-Lag Optimize?				_544				9		-49	~9	

Lane Group	Ø8	
Lane Configurations	DU	
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
FIt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	8	
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	15.0	
Minimum Split (s)	21.1	
Total Split (s)	24.0	
Total Split (%)	30%	
Maximum Green (s)	17.9	
Yellow Time (s)	4.8	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	Lug	
Load Lag Optimizo:		

	•	\rightarrow	•	•	•	•	1	†	~	-	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	
Recall Mode	None			None			None	None		None	None	
Act Effct Green (s)	20.0	47.3		5.7	33.0	33.0	11.4	11.4			11.4	36.8
Actuated g/C Ratio	0.25	0.59		0.07	0.41	0.41	0.14	0.14			0.14	0.46
v/c Ratio	0.49	0.65		0.09	1.08	0.23	0.40	0.26			0.56	0.44
Control Delay	29.0	13.4		36.4	78.3	4.0	37.4	24.9			43.4	10.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	29.0	13.4		36.4	78.3	4.0	37.4	24.9			43.4	10.4
LOS	С	В		D	Е	Α	D	С			D	В
Approach Delay		19.4			68.4			31.1			18.2	
Approach LOS		В			Е			С			В	
Queue Length 50th (ft)	86	73		5	~356	0	32	22			48	60
Queue Length 95th (ft)	m123	m112		21	#470	36	37	27			83	98
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	807	917		127	1022	721	213	325			226	765
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	0.46	0.65		0.09	1.08	0.23	0.32	0.21			0.45	0.43

Intersection Summary

Area Type: Other

Cycle Length: 80 Actuated Cycle Length: 80

Offset: 27 (34%), Referenced to phase 8:EBWB, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08 Intersection Signal Delay: 42.0 Intersection Capacity Utilization 62.1%

Intersection LOS: D
ICU Level of Service B

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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø8	
Vehicle Extension (s)	5.0	
Recall Mode	C-Min	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

	۶	→	•	•	+	•	•	†	~	/	+	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	ĵ.		ች	f)		ሻ	↑	7	ች	₽	
Traffic Volume (vph)	0	0	5	122	0	0	35	394	82	15	224	0
Future Volume (vph)	0	0	5	122	0	0	35	394	82	15	224	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850							0.850			
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	1900	1615	0	1805	1900	0	1805	1845	1615	1626	1727	0
FIt Permitted				0.750			0.573			0.353		
Satd. Flow (perm)	1900	1615	0	1425	1900	0	1089	1845	1615	604	1727	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		517							122			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.42	0.42	0.42	0.88	0.88	0.88	0.67	0.67	0.67	0.73	0.73	0.73
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	11%	10%	0%
Adj. Flow (vph)	0	0	12	139	0	0	52	588	122	21	307	0
Shared Lane Traffic (%)			· <u>-</u>				<u> </u>					
Lane Group Flow (vph)	0	12	0	139	0	0	52	588	122	21	307	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24		J	30			12	J ·	<u> </u>	12	J
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm			Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2	. •	1	2	
Permitted Phases	4			4			2		2	2		
Detector Phase	4	4		4	4		2	2	2	1	2	
Switch Phase	•				-		_	_	_	-	_	
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0	15.0	4.5	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0	21.0	9.0	21.0	
Total Split (s)	40.0	40.0		40.0	40.0		51.0	51.0	51.0	9.0	51.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		51.0%	51.0%	51.0%	9.0%	51.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		45.0	45.0	45.0	5.0	45.0	
Yellow Time (s)	3.0	3.0		3.0	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	1.0	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	5.0		5.0	5.0		6.0	6.0	6.0	4.0	6.0	
Lead/Lag	0.0	0.0		0.0	0.0		Lag	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Lag	Lug	Lag	Load	Lug	
Vehicle Extension (s)	1.0	1.0		1.0	1.0		2.0	2.0	2.0	1.0	2.0	
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	
I TOOLII IVIOUT	INOLIG	INOILE		INOUE	INOILE		IVIIII	IVIIII	IVIIII	INOUE	IVIIII	

4: Research Parkway & Food Bank Driv/Site Drive 1

	•	-	•	•	←	•	1	†		/	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)		10.2		10.2			29.1	29.1	29.1	30.2	29.1	
Actuated g/C Ratio		0.21		0.21			0.61	0.61	0.61	0.64	0.61	
v/c Ratio		0.02		0.46			0.08	0.52	0.12	0.04	0.29	
Control Delay		0.0		24.6			7.4	10.5	2.2	4.6	8.2	
Queue Delay		0.0		0.0			0.0	0.0	0.0	0.0	0.0	
Total Delay		0.0		24.6			7.4	10.5	2.2	4.6	8.2	
LOS		Α		С			Α	В	Α	Α	Α	
Approach Delay					24.6			9.0			7.9	
Approach LOS					С			Α			Α	
Queue Length 50th (ft)		0		26			5	81	0	2	35	
Queue Length 95th (ft)		0		106			20	175	9	7	98	
Internal Link Dist (ft)		116			123			640			398	
Turn Bay Length (ft)				170			140			115		
Base Capacity (vph)		1396		1141			970	1643	1451	501	1538	
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		0.01		0.12			0.05	0.36	80.0	0.04	0.20	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 47.5

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 10.4 Intersection LOS: B
Intersection Capacity Utilization 51.7% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Research Parkway & Food Bank Driv/Site Drive 1



	۶	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			ર્ન	ĵ»	
Traffic Volume (vph)	0	6	58	336	233	6
Future Volume (vph)	0	6	58	336	233	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865				0.996	
Flt Protected				0.993		
Satd. Flow (prot)	1096	0	0	1705	1596	0
Flt Permitted				0.993		
Satd. Flow (perm)	1096	0	0	1705	1596	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.50	0.50	0.90	0.90	0.63	0.63
Heavy Vehicles (%)	0%	50%	3%	12%	19%	2%
Adj. Flow (vph)	0	12	64	373	370	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	0	437	380	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	tion 46.9%			IC	U Level o	of Service A
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	0.8					
		E55	ND	NDT	057	000
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			4	- ∱	
Traffic Vol, veh/h	0	6	58	336	233	6
Future Vol, veh/h	0	6	58	336	233	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,	# 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	90	90	63	63
Heavy Vehicles, %	0	50	3	12	19	2
Mvmt Flow	0	12	64	373	370	10
				_		
	1inor2		Major1		//ajor2	
Conflicting Flow All	876	375	380	0	-	0
Stage 1	375	-	-	-	-	-
Stage 2	501	-	-	-	-	-
Critical Hdwy	6.4	6.7	4.13	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.75	2.227	-	-	-
Pot Cap-1 Maneuver	322	577	1173	_	_	_
Stage 1	699	-	-	_	_	_
Stage 2	613	_	_	_	_	_
Platoon blocked, %	010			_	_	_
Mov Cap-1 Maneuver	300	577	1173	_	_	_
Mov Cap-1 Maneuver	300	311	1113		_	
		-	-	_	-	-
Stage 1	651	-	-		-	-
Stage 2	613	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	11.4		1.2		0	
HCM LOS	В		1.4		- 0	
TIOIVI LOO	ט					
Minor Lane/Major Mvmt		NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1173	-	577	-	_
HCM Lane V/C Ratio		0.055	-	0.021	-	-
HCM Control Delay (s)		8.2	0		_	_
HCM Lane LOS		A	A	В	_	_
HCM 95th %tile Q(veh)		0.2	-	0.1	_	_
HOW Jour Julie Q(Veri)		0.2		0.1		

Analysis Period (min) 15

	۶	•	1	†	↓	1
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	+	1	
Traffic Volume (vph)	0	0	6	330	239	2
Future Volume (vph)	0	0	6	330	239	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.999	
Flt Protected			0.950			
Satd. Flow (prot)	1900	1900	1805	1667	1624	0
Flt Permitted			0.950			
Satd. Flow (perm)	1900	1900	1805	1667	1624	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.25	0.25	0.89	0.89	0.81	0.81
Heavy Vehicles (%)	0%	0%	0%	14%	17%	0%
Adj. Flow (vph)	0	0	7	371	295	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	7	371	297	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
<i>,</i> ,	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	on 20.7%			IC	CU Level of	of Service /

 $\label{thm:continuous} G:\label{thm:chrolinday} $$G:\label{thm:chrolinday}$$ Peak\T-1901479-HOLIDAY BUILD-AM.syn BL Companies$

	۶	→	•	•	+	4	1	†	/	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	101	61	25	123	66	57	15	275	40	25	93	45
Future Volume (vph)	101	61	25	123	66	57	15	275	40	25	93	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.969			0.984			0.963	
Flt Protected		0.974			0.976			0.998			0.992	
Satd. Flow (prot)	0	1749	0	0	1716	0	0	1803	0	0	1742	0
FIt Permitted		0.974			0.976			0.998			0.992	
Satd. Flow (perm)	0	1749	0	0	1716	0	0	1803	0	0	1742	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.62	0.62	0.62	0.71	0.71	0.71	0.69	0.69	0.69	0.76	0.76	0.76
Heavy Vehicles (%)	0%	5%	17%	6%	2%	5%	8%	3%	5%	9%	4%	2%
Adj. Flow (vph)	163	98	40	173	93	80	22	399	58	33	122	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	301	0	0	346	0	0	479	0	0	214	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											_
Control Type: Unsignalized												
Intersection Capacity Utilizat	ion 42.4%			IC	CU Level o	of Service	Α					
Analysis Period (min) 15												

ntersection	
ntersection Delay, s/veh	37.1
ntersection LOS	Е

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	101	61	25	123	66	57	15	275	40	25	93	45
Future Vol, veh/h	101	61	25	123	66	57	15	275	40	25	93	45
Peak Hour Factor	0.62	0.62	0.62	0.71	0.71	0.71	0.69	0.69	0.69	0.76	0.76	0.76
Heavy Vehicles, %	0	5	17	6	2	5	8	3	5	9	4	2
Mvmt Flow	163	98	40	173	93	80	22	399	58	33	122	59
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	24.3			29.5			59			18.4		
HCM LOS	С			D			F			С		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	5%	54%	50%	15%	
Vol Thru, %	83%	33%	27%	57%	
Vol Right, %	12%	13%	23%	28%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	330	187	246	163	
LT Vol	15	101	123	25	
Through Vol	275	61	66	93	
RT Vol	40	25	57	45	
Lane Flow Rate	478	302	346	214	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.964	0.651	0.739	0.48	
Departure Headway (Hd)	7.255	7.773	7.681	8.059	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Сар	502	464	471	446	
Service Time	5.279	5.848	5.717	6.142	
HCM Lane V/C Ratio	0.952	0.651	0.735	0.48	
HCM Control Delay	59	24.3	29.5	18.4	
HCM Lane LOS	F	С	D	С	
HCM 95th-tile Q	12.3	4.6	6.1	2.5	

	-	•	•	←	1	_
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	1>			ર્ન	ሻ	7
Traffic Volume (vph)	126	0	0	126	120	0
Future Volume (vph)	126	0	0	126	120	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1863	0	0	1863	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	1863	0	0	1863	1770	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	0	0	137	130	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	137	0	0	137	130	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
)					

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 19.9%

ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	3.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	₽	LDIK	TTDL	₩	ሻ	T T
Traffic Vol, veh/h	126	0	0	126	120	0
Future Vol, veh/h	126	0	0	126	120	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-		-	None	-	None
Storage Length	_	-	_	-	0	0
Veh in Median Storage	# 0	_	_	0	0	-
Grade, %	0	<u>-</u>	_	0	0	<u>-</u>
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	137	0	0	137	130	0
IVIVIIIL FIOW	131	U	U	131	130	U
Major/Minor N	/lajor1		Major2		Minor1	
Conflicting Flow All	0	0	137	0	274	137
Stage 1	-	-	-	-	137	-
Stage 2	-	-	-	-	137	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	_	-	-	5.42	-
Critical Hdwy Stg 2	_	_	_	_	5.42	_
Follow-up Hdwy	_	_	2.218	_	3.518	3.318
Pot Cap-1 Maneuver	_	_	1447	_	716	911
Stage 1	_	_	-	_	890	-
Stage 2	_	_	_	_	890	_
Platoon blocked, %	_	_		_	000	
Mov Cap-1 Maneuver	_	_	1447	_	716	911
Mov Cap-1 Maneuver	_	_	-	_	716	-
		-			890	
Stage 1	-	-	-	-	890	
Stage 2	-	-	-	-	090	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		11.1	
HCM LOS					В	
NA: 1 (NA : NA :		UDL 41	UDI O	EDT	EDD	M/DI
Minor Lane/Major Mvm	i ľ	NBLn11		EBT	EBR	WBL
Capacity (veh/h)		716	-	-	-	1447
HCM Lane V/C Ratio		0.182	-	-	-	-
HCM Control Delay (s)		11.1	0	-	-	0
HCM Lane LOS		В	Α	-	-	Α
HCM 95th %tile Q(veh)		0.7	-	-	-	0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: MD

Lane Configurations ## F ## F </th <th></th> <th>•</th> <th>-</th> <th>•</th> <th>•</th> <th>•</th> <th>*</th> <th>•</th> <th>†</th> <th>/</th> <th>-</th> <th>ţ</th> <th>4</th>		•	-	•	•	•	*	•	†	/	-	ţ	4
Traffic Volume (vph) 0 511 172 215 579 0 0 0 131 1 17 Future Volume (vph) 0 511 172 215 579 0 0 0 131 1 17 Ideal Flow (vphpl) 1900	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph) 0 511 172 215 579 0 0 0 131 1 17 Future Volume (vph) 0 511 172 215 579 0 0 0 131 1 17 Ideal Flow (vphpl) 1900	Lane Configurations		^	7	ሻ	^					ሻ	43-	7
Future Volume (vph) 0 511 172 215 579 0 0 0 131 1 17 Ideal Flow (vphpl) 1900		0		172	215		0	0	0	0	131		172
Lane Width (ft) 12 12 12 12 12 12 12 12 12 12 12 12 14 13 1 Storage Length (ft) 0 0 0 0 0 0 240 24 Storage Lanes 0 1 1 0 0 0 0 1 Taper Length (ft) 25 100 25 100 1 100		0	511	172	215	579	0	0	0	0	131	1	172
Lane Width (ft) 12 12 12 12 12 12 12 12 12 12 12 14 13 1 Storage Length (ft) 0 0 0 0 0 240 24 Storage Lanes 0 1 1 0 0 0 0 1 Taper Length (ft) 25 100 25 100 1 100 1.00 0.95 1.00 1.00 0.95 0.91 0.99 Lane Util. Factor 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 0.91 0.99 Fit Protected 0.950 0.950 0.950 0.950 0.950 0.950 0.987 1.28	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft) 0 0 830 0 0 0 240 24 Storage Lanes 0 1 1 0 0 0 1 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 0 1 0		12	12	12	12	12	12	12	12	12	14	13	15
Storage Lanes 0 1 1 0 0 0 1 Taper Length (ft) 25 100 25 100 1		0		0	830		0	0		0	240		240
Lane Util. Factor 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00 0.95 0.91 0.95 Frt 0.850 0.95		0		1	1		0	0		0	1		1
Frt 0.850 0.890 0.85 Flt Protected 0.950 0.950 0.950 0.987 Satd. Flow (prot) 0 3223 1455 1467 3343 0 0 0 0 1577 1237 128 Flt Permitted 0.950 </td <td>Taper Length (ft)</td> <td>25</td> <td></td> <td></td> <td>100</td> <td></td> <td></td> <td>25</td> <td></td> <td></td> <td>100</td> <td></td> <td></td>	Taper Length (ft)	25			100			25			100		
Fit Protected 0.950 0.950 0.987 Satd. Flow (prot) 0 3223 1455 1467 3343 0 0 0 0 1577 1237 128 Flt Permitted 0.950 0.950 0.987 Satd. Flow (perm) 0 3223 1455 1467 3343 0 0 0 0 1577 1237 128 Right Turn on Red Yes Yes Yes N	Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Satd. Flow (prot) 0 3223 1455 1467 3343 0 0 0 0 1577 1237 128 Flt Permitted 0.950 0.950 0.950 0.987 Satd. Flow (perm) 0 3223 1455 1467 3343 0 0 0 0 1577 1237 128 Right Turn on Red Yes Yes Yes Yes N	Frt			0.850								0.890	0.850
Fit Permitted 0.950 0.950 0.950 0.987 Satd. Flow (perm) 0 3223 1455 1467 3343 0 0 0 0 1577 1237 128 Right Turn on Red Yes Yes Yes N	Flt Protected				0.950						0.950	0.987	
Satd. Flow (perm) 0 3223 1455 1467 3343 0 0 0 0 1577 1237 128 Right Turn on Red Yes Yes Yes N	Satd. Flow (prot)	0	3223	1455	1467	3343	0	0	0	0	1577	1237	1288
Right Turn on Red Yes Yes Yes N	Flt Permitted				0.950						0.950	0.987	
•	Satd. Flow (perm)	0	3223	1455	1467	3343	0	0	0	0	1577	1237	1288
	Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR) 198	Satd. Flow (RTOR)			198									
Link Speed (mph) 45 35 30 30			45			35			30			30	
Link Distance (ft) 348 913 376 495	Link Distance (ft)		348			913			376			495	
Travel Time (s) 5.3 17.8 8.5 11.3	Travel Time (s)		5.3			17.8			8.5			11.3	
Peak Hour Factor 0.87 0.87 0.87 0.91 0.91 0.91 0.88 0.88 0.88 0.90 0.90 0.9	Peak Hour Factor	0.87	0.87	0.87	0.91	0.91	0.91	0.88	0.88	0.88	0.90	0.90	0.90
Heavy Vehicles (%) 0% 12% 11% 23% 8% 0% 0% 0% 0% 16% 0% 319	Heavy Vehicles (%)	0%	12%	11%	23%	8%	0%	0%	0%	0%	16%	0%	31%
		0	587	198	236	636	0	0	0	0	146	1	191
Shared Lane Traffic (%) 20% 439	Shared Lane Traffic (%)										20%		43%
Lane Group Flow (vph) 0 587 198 236 636 0 0 0 117 112 10	Lane Group Flow (vph)	0	587	198	236	636	0	0	0	0	117	112	109
Enter Blocked Intersection No	Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment Left Left Right Left Right Left Right Left Righ	Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft) 24 24 14 14	Median Width(ft)		24	_		24			14	_		14	
Link Offset(ft) 0 0 0	Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft) 16 16 16	Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane	Two way Left Turn Lane												
Headway Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph) 15 9 15 9 15	Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type NA Perm Prot NA Split NA Pro	Turn Type		NA	Perm	Prot	NA					Split	NA	Prot
Protected Phases 2 1 1 2 4 4	Protected Phases		2		1	12					4	4	4
Permitted Phases 2	Permitted Phases			2									
Detector Phase 2 2 1 1 2 4 4	Detector Phase		2	2	1	12					4	4	4
Switch Phase	Switch Phase												
Minimum Initial (s) 15.0 15.0 7.0 9.0 9.0 9.	Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s) 20.5 20.5 11.0 14.5 14.5 14.	Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s) 30.0 30.0 20.0 25.0 25.0 25.	Total Split (s)		30.0	30.0	20.0						25.0	25.0	25.0
Total Split (%) 40.0% 40.0% 26.7% 33.3% 33.3% 33.3% 33.3%	Total Split (%)		40.0%	40.0%	26.7%						33.3%	33.3%	33.3%
Maximum Green (s) 24.5 24.5 16.0 19.5 19.5 19.	Maximum Green (s)		24.5	24.5	16.0						19.5	19.5	19.5
Yellow Time (s) 3.5 3.5 3.0 3.5 3.5 3.	Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s) 2.0 2.0 1.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2	All-Red Time (s)		2.0	2.0	1.0						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	Lost Time Adjust (s)		0.0	0.0	0.0						0.0	0.0	0.0
			5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag Lag Lead													
Lead-Lag Optimize?													
			0.2	0.2	3.0						3.0	3.0	3.0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)

	•	-	•	•	•	•	1	Ť		-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		29.8	29.8	17.5	52.8					12.7	12.7	12.7
Actuated g/C Ratio		0.40	0.40	0.23	0.70					0.17	0.17	0.17
v/c Ratio		0.46	0.28	0.69	0.27					0.44	0.54	0.50
Control Delay		19.5	4.3	30.4	8.0					32.2	37.2	35.4
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		19.5	4.3	30.4	0.8					32.2	37.2	35.4
LOS		В	Α	С	Α					С	D	D
Approach Delay		15.7			8.8						34.9	
Approach LOS		В			Α						С	
Queue Length 50th (ft)		108	0	39	0					52	53	49
Queue Length 95th (ft)		159	38	#185	1					92	97	90
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		1280	697	357	2352					410	321	334
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		0.46	0.28	0.66	0.27					0.29	0.35	0.33

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 13 (17%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 15.9 Intersection LOS: B
Intersection Capacity Utilization 46.5% ICU Level of Service A

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: MD

	•	→	•	•	←	•	1	†	/	-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	^			^	7	Ť	ર્ન	7			
Traffic Volume (vph)	169	473	0	0	636	200	158	Ö	127	0	0	0
Future Volume (vph)	169	473	0	0	636	200	158	0	127	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950						0.950	0.950				
Satd. Flow (prot)	1433	3343	0	0	3282	1269	1604	1504	1551	0	0	0
FIt Permitted	0.950						0.950	0.950				
Satd. Flow (perm)	1433	3343	0	0	3282	1269	1604	1504	1551	0	0	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)						220						
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			14.9			15.5			11.1	
Peak Hour Factor	0.95	0.95	0.95	0.91	0.91	0.91	0.90	0.90	0.90	0.88	0.88	0.88
Heavy Vehicles (%)	26%	8%	0%	0%	10%	23%	14%	0%	18%	0%	0%	0%
Adj. Flow (vph)	178	498	0	0	699	220	176	0	141	0	0	0
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	178	498	0	0	699	220	88	88	141	0	0	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)		24			24			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA			NA	Prot	Split	NA	Prot			
Protected Phases	1	12			2	2	4	4	4			
Permitted Phases												
Detector Phase	1	12			2	2	4	4	4			
Switch Phase												
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	20.0				31.0	31.0	24.0	24.0	24.0			
Total Split (%)	26.7%				41.3%	41.3%	32.0%	32.0%	32.0%			
Maximum Green (s)	16.0				25.5	25.5	19.0	19.0	19.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: MD

	•	-	•	•	•	•	1	Ť		-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	14.5	53.4			33.4	33.4	12.6	12.6	12.6			
Actuated g/C Ratio	0.19	0.71			0.45	0.45	0.17	0.17	0.17			
v/c Ratio	0.64	0.21			0.48	0.32	0.33	0.35	0.54			
Control Delay	27.6	0.4			12.1	2.0	29.6	30.3	35.7			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	27.6	0.4			12.1	2.0	29.6	30.3	35.7			
LOS	С	Α			В	Α	С	С	D			
Approach Delay		7.5			9.6			32.5				
Approach LOS		Α			Α			С				
Queue Length 50th (ft)	35	0			72	1	38	38	61			
Queue Length 95th (ft)	54	1			118	11	73	74	105			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	319	2342			1463	687	406	381	392			
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	0.21			0.48	0.32	0.22	0.23	0.36			

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 51 (68%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 12.7 Intersection LOS: B
Intersection Capacity Utilization 46.5% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



	۶	→	•	•	-	•	1	†	/	/	Ţ	</th
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	∱ ∱		ች	^	7	ሻ	f)			4	7
Traffic Volume (vph)	88	505	7	1	532	20	5	0	2	78	0	299
Future Volume (vph)	88	505	7	1	532	20	5	0	2	78	0	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			25			130		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998				0.850		0.850				0.850
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1410	3364	0	1796	3295	1530	1404	1041	0	0	1480	1282
FIt Permitted	0.950			0.950			0.701				0.754	
Satd. Flow (perm)	1410	3364	0	1796	3295	1530	1036	1041	0	0	1174	1282
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				106		428				205
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.44	0.44	0.44	0.90	0.90	0.90
Heavy Vehicles (%)	28%	7%	14%	0%	9%	5%	20%	0%	50%	22%	0%	26%
Adj. Flow (vph)	95	543	8	1	578	22	11	0	5	87	0	332
Shared Lane Traffic (%)		0.0		•	0.0					0,		002
Lane Group Flow (vph)	95	551	0	1	578	22	11	5	0	0	87	332
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	1		12			10			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					. •			. •				
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	1.00	12	15	1.01	12	15	1.01	12	15	1.00	12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm	NA	pm+ov
Protected Phases	1	12		3	23	23	1 01111	4		. 0	4	1
Permitted Phases	<u>'</u>				20		4	'		4	•	4
Detector Phase	1	12		3	23	23	4	4		4	4	1
Switch Phase	<u>'</u>				20		•	'		•	•	
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	20.0			12.0			15.0	15.0		15.0	15.0	20.0
Total Split (%)	26.7%			16.0%			20.0%	20.0%		20.0%	20.0%	26.7%
Maximum Green (s)	14.6			6.7			10.1	10.1		10.1	10.1	14.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0		1.3	0.0	0.0
- , ,	5.4			5.3			4.9	4.9			4.9	5.4
Total Lost Time (s)										Log		
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?												

Lane Group	Ø2	
	X)Z	
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	2	
Permitted Phases		
Detector Phase		
Switch Phase		
	15.0	
Minimum Initial (s)		
Minimum Split (s)	21.1	
Total Split (s)	28.0	
Total Split (%)	37%	
Maximum Green (s)	21.9	
Yellow Time (s)	4.8	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?		

3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)

	•	→	•	•	←	•	1	†		-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	11.6	47.0		5.5	40.1	40.1	9.3	9.3			9.3	23.4
Actuated g/C Ratio	0.15	0.63		0.07	0.53	0.53	0.12	0.12			0.12	0.31
v/c Ratio	0.44	0.26		0.01	0.33	0.03	0.09	0.01			0.60	0.61
Control Delay	40.1	4.3		32.0	12.3	0.1	29.8	0.0			48.9	12.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	40.1	4.3		32.0	12.3	0.1	29.8	0.0			48.9	12.3
LOS	D	Α		С	В	Α	С	Α			D	В
Approach Delay		9.6			11.9			20.5			19.9	
Approach LOS		Α			В			С			В	
Queue Length 50th (ft)	39	31		0	84	0	5	0			38	41
Queue Length 95th (ft)	87	39		5	128	0	9	0			#94	110
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	274	2073		160	1762	867	143	512			162	584
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	0.35	0.27		0.01	0.33	0.03	0.08	0.01			0.54	0.57

Intersection Summary

Area Type: Other

Cycle Length: 75
Actuated Cycle Length: 75

Offset: 42 (56%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

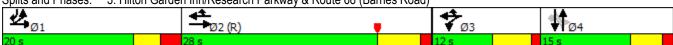
Maximum v/c Ratio: 0.61

Intersection Signal Delay: 13.1 Intersection LOS: B
Intersection Capacity Utilization 52.7% ICU Level of Service A

Analysis Period (min) 15

Queue shown is maximum after two cycles.

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



^{# 95}th percentile volume exceeds capacity, queue may be longer.

Lane Group	Ø2
Vehicle Extension (s)	2.5
Recall Mode	C-Min
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

	ၨ	→	•	•	←	•	•	†	~	/		-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	f)		ሻ	f)		ሻ		7	ሻ	₽	
Traffic Volume (vph)	2	0	8	0	0	0	5	103	0	0	369	1
Future Volume (vph)	2	0	8	0	0	0	5	103	0	0	369	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850										
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1805	1615	0	1900	1900	0	1805	1520	1900	1900	1485	0
FIt Permitted							0.526					
Satd. Flow (perm)	1900	1615	0	1900	1900	0	999	1520	1900	1900	1485	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		419										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.63	0.63	0.63	0.88	0.88	0.88	0.81	0.81	0.81	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	28%	0%
Adj. Flow (vph)	3	0	13	0	0	0	6	127	0	0	401	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	13	0	0	0	0	6	127	0	0	402	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24	Ŭ		30			12		Ŭ	12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm			Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	2	
Permitted Phases	4			4			2		2	2		
Detector Phase	4	4		4	4		2	2	2	1	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0	15.0	4.5	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0	21.0	9.0	21.0	
Total Split (s)	40.0	40.0		40.0	40.0		51.0	51.0	51.0	9.0	51.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		51.0%	51.0%	51.0%	9.0%	51.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		45.0	45.0	45.0	5.0	45.0	
Yellow Time (s)	3.0	3.0		3.0	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	1.0	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	5.0		5.0	5.0		6.0	6.0	6.0	4.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?									9			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	

4: Research Parkway & Food Bank Driv/Site Drive 1

	•	-	•	•	•	•	1	Ť	/	-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	7.2	7.2					36.9	36.9			36.9	
Actuated g/C Ratio	0.18	0.18					0.93	0.93			0.93	
v/c Ratio	0.01	0.02					0.01	0.09			0.29	
Control Delay	17.0	0.0					1.8	1.5			2.1	
Queue Delay	0.0	0.0					0.0	0.0			0.0	
Total Delay	17.0	0.0					1.8	1.5			2.1	
LOS	В	Α					Α	Α			Α	
Approach Delay		3.2						1.5			2.1	
Approach LOS		Α						Α			Α	
Queue Length 50th (ft)	1	0					0	0			0	
Queue Length 95th (ft)	5	0					3	22			85	
Internal Link Dist (ft)		116			123			640			398	
Turn Bay Length (ft)							140					
Base Capacity (vph)	1725	1504					967	1471			1437	
Starvation Cap Reductn	0	0					0	0			0	
Spillback Cap Reductn	0	0					0	0			0	
Storage Cap Reductn	0	0					0	0			0	
Reduced v/c Ratio	0.00	0.01					0.01	0.09			0.28	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 39.5

Natural Cycle: 45

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.29

Intersection Signal Delay: 2.0 Intersection LOS: A Intersection Capacity Utilization 34.5% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Research Parkway & Food Bank Driv/Site Drive 1



	۶	•	•	†	ļ	✓			
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations	W			ર્ન	1>				
Traffic Volume (vph)	3	30	14	91	340	3			
Future Volume (vph)	3	30	14	91	340	3			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt	0.876				0.999				
Flt Protected	0.996			0.993					
Satd. Flow (prot)	1458	0	0	1674	1682	0			
Flt Permitted	0.996			0.993					
Satd. Flow (perm)	1458	0	0	1674	1682	0			
Link Speed (mph)	30			30	30				
Link Distance (ft)	609			478	1218				
Travel Time (s)	13.8			10.9	27.7				
Peak Hour Factor	0.69	0.69	0.83	0.83	0.65	0.65			
Heavy Vehicles (%)	0%	15%	11%	13%	13%	0%			
Adj. Flow (vph)	4	43	17	110	523	5			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	47	0	0	127	528	0			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Right	Right	Left	Right			
Median Width(ft)	12		· ·	12	0				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)	15	9	15			9			
Sign Control	Stop			Free	Free				
Intersection Summary									
Area Type: Other									
Control Type: Unsignalized									
Intersection Capacity Utilizat	ion 28.1%			IC	U Level o	of Service			
Analysis Period (min) 15									

Intersection						
Int Delay, s/veh	1.1					
		EDD	ND	NET	057	000
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			4		
Traffic Vol, veh/h	3	30	14	91	340	3
Future Vol, veh/h	3	30	14	91	340	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,	# 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	83	83	65	65
Heavy Vehicles, %	0	15	11	13	13	0
Mvmt Flow	4	43	17	110	523	5
	linor2		Major1		//ajor2	
Conflicting Flow All	670	526	528	0	-	0
Stage 1	526	-	-	-	-	-
Stage 2	144	-	-	-	-	-
Critical Hdwy	6.4	6.35	4.21	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.435	2.299	-	-	-
Pot Cap-1 Maneuver	425	527	995	-	-	-
Stage 1	597	-	-	-	_	-
Stage 2	888	_	_	_	_	_
Platoon blocked, %	000			_	_	_
Mov Cap-1 Maneuver	417	527	995	_	_	_
Mov Cap-1 Maneuver	417	521	333		_	
Stage 1	586	-	-	-	-	-
•			-	-	-	
Stage 2	888	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	12.7		1.2		0	
HCM LOS	В					
110111 200						
Minor Lane/Major Mvmt		NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		995	-	515	-	-
HCM Lane V/C Ratio		0.017	-	0.093	-	-
HCM Control Delay (s)		8.7	0	12.7	-	-
HCM Lane LOS		Α	A	В	-	-
HCM 95th %tile Q(veh)		0.1	_	0.3	_	_

Analysis Period (min) 15

	•	•	•	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	1	î,	
Traffic Volume (vph)	2	3	2	92	340	0
Future Volume (vph)	2	3	2	92	340	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1583	1805	1681	1652	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1583	1805	1681	1652	0
Link Speed (mph) 30				30	30	
Link Distance (ft)	308			752	493	
Fravel Time (s) 7.0				17.1	11.2	
Peak Hour Factor	0.38	0.38	0.83	0.83	0.66	0.66
Heavy Vehicles (%)	0%	2%	0%	13%	15%	0%
Adj. Flow (vph)	5	8	2	111	515	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	8	2	111	515	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12	<u> </u>	J	12	0	J
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	ion 27.9%			IC	U Level o	of Service A

 $\label{thm:comparison} G:\label{thm:chrolinday} $$G:\label{thm:chrolinday}$$ Peak\T-1901479-HOLIDAY BUILD-MD.syn BL Companies$

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
						אמט
Lane Configurations	\f		ነ 2	↑ 92	♣ 340	0
Traffic Vol, veh/h	2	3				0
Future Vol, veh/h	2	3	2	92	340	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	400	None	-	None
Storage Length	0	0	100	-	-	-
Veh in Median Storage,		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	38	38	83	83	66	66
Heavy Vehicles, %	0	2	0	13	15	0
Mvmt Flow	5	8	2	111	515	0
Major/Minor M	1inor2	ľ	Major1	N	Major2	
Conflicting Flow All	630	515	515	0	-	0
Stage 1	515	-	-	-	_	-
Stage 2	115	_	-	-	_	-
Critical Hdwy	6.4	6.22	4.1	-		-
•	5.4		4.1	-	-	-
Critical Hdwy Stg 1		-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	2.2	-	-	-
Pot Cap-1 Maneuver	449	560	1061	-	-	-
Stage 1	604	-	-	-	-	-
Stage 2	915	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	448	560	1061	-	-	-
Mov Cap-2 Maneuver	448	-	-	-	-	-
Stage 1	603	-	-	-	-	-
Stage 2	915	-	-	-	-	-
Annroach	EB		NB		SB	
Approach						
HCM Control Delay, s	12.1		0.2		0	
HCM LOS	В					
Minor Lane/Major Mvmt		NBL	NBT	EBLn1 I	EBLn2	SBT
Capacity (veh/h)		1061	_		560	_
HCM Lane V/C Ratio		0.002	_	0.012		_
HCM Control Delay (s)		8.4	_		11.5	_
HCM Lane LOS		A	_	В	В	_
HCM 95th %tile Q(veh)		0	_	0	0	_
TOW JOHN JOHN Q(VOII)		U		U	U	

	۶	→	•	•	-	•	1	†	/	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	31	27	11	245	19	54	7	81	6	13	84	37
Future Volume (vph)	31	27	11	245	19	54	7	81	6	13	84	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.977			0.991			0.962	
Flt Protected		0.978			0.963			0.996			0.995	
Satd. Flow (prot)	0	1741	0	0	1611	0	0	1477	0	0	1461	0
Flt Permitted		0.978			0.963			0.996			0.995	
Satd. Flow (perm)	0	1741	0	0	1611	0	0	1477	0	0	1461	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.86	0.86	0.86	0.75	0.75	0.75	0.85	0.85	0.85	0.89	0.89	0.89
Heavy Vehicles (%)	3%	4%	9%	13%	16%	0%	0%	30%	17%	0%	38%	3%
Adj. Flow (vph)	36	31	13	327	25	72	8	95	7	15	94	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	80	0	0	424	0	0	110	0	0	151	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type: Other												
Control Type: Unsignalized												
Intersection Capacity Utilizati	ion 41.6%			IC	CU Level o	of Service	Α					
Analysis Period (min) 15												

ntersection	
ntersection Delay, s/veh	12.4
ntersection LOS	В

Marramana	EDI	EDT	EDD	WDI	WDT	WDD	MDI	NDT	NDD	CDI	CDT	CDD
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			- ♣			- ♣			- 4	
Traffic Vol, veh/h	31	27	11	245	19	54	7	81	6	13	84	37
Future Vol, veh/h	31	27	11	245	19	54	7	81	6	13	84	37
Peak Hour Factor	0.86	0.86	0.86	0.75	0.75	0.75	0.85	0.85	0.85	0.89	0.89	0.89
Heavy Vehicles, %	3	4	9	13	16	0	0	30	17	0	38	3
Mvmt Flow	36	31	13	327	25	72	8	95	7	15	94	42
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay				14.8			9.6			9.7		
HCM LOS	Α			В			Α			Α		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	7%	45%	77%	10%	
Vol Thru, %	86%	39%	6%	63%	
Vol Right, %	6%	16%	17%	28%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	94	69	318	134	
LT Vol	7	31	245	13	
Through Vol	81	27	19	84	
RT Vol	6	11	54	37	
Lane Flow Rate	111	80	424	151	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.168	0.117	0.582	0.217	
Departure Headway (Hd)	5.46	5.271	4.942	5.177	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Сар	661	684	721	685	
Service Time	3.46	3.278	3.026	3.277	
HCM Lane V/C Ratio	0.168	0.117	0.588	0.22	
HCM Control Delay	9.6	9	14.8	9.7	
HCM Lane LOS	Α	Α	В	Α	
HCM 95th-tile Q	0.6	0.4	3.8	0.8	

	→	•	•	•	1	_
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	ĵ»			ર્ન	ሻ	7
Traffic Volume (vph)	46	0	0	39	279	0
Future Volume (vph)	46	0	0	39	279	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1863	0	0	1863	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	1863	0	0	1863	1770	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	0	0	42	303	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	0	0	42	303	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 25.5% Analysis Period (min) 15

ICU Level of Service A

Intersection							
Int Delay, s/veh	8.4						
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	\$	LDIX	VVDL	₩ <u>₩</u>	ivol.	TVDIX	
Traffic Vol, veh/h	46	0	0	39	279	0	
Future Vol, veh/h	46	0	0	39	279	0	
<u> </u>			0			0	
Conflicting Peds, #/hr	0 Eroo	0 Eroo		0 Eroo	0 Stop		
0	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-		-		-	None	
Storage Length	-	-	-	-	0	0	
Veh in Median Storage, #		-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	50	0	0	42	303	0	
Major/Minor Ma	ajor1	ı	Major2		Minor1		Į
Conflicting Flow All	0	0	50	0	92	50	
Stage 1	-	-	-	-	50	-	
Stage 2	-	-	-	-	42	-	
Critical Hdwy	-	-	4.12	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	-	-	2.218	-	3.518		
Pot Cap-1 Maneuver	-	-	1557	-	908	1018	
Stage 1	-	-	-	-	972	-	
Stage 2	-	-	-	-	980	-	
Platoon blocked, %	-	-		-			
Mov Cap-1 Maneuver	-	-	1557	_	908	1018	
Mov Cap-2 Maneuver	_	_	-	_	908	-	
Stage 1	_	_	_	_	972	_	
Stage 2	_		_		980	_	
Slaye Z	_	-	-	-	900	<u>-</u>	
Approach	EB		WB		NB		
HCM Control Delay, s	0		0		10.9		
HCM LOS					В		
Minor Long/Maior M.		MDL 4 N	JDL O	EDT	EDD	WDI	
Minor Lane/Major Mvmt		NBLn11	NDL[12	EBT	EBR	WBL	
Capacity (veh/h)		908	-	-	-	1557	
HCM Lane V/C Ratio		0.334	-	-	-	-	
HCM Control Delay (s)		10.9	0	-	-	0	
HCM Lane LOS		В	Α	-	-	Α	
HCM 95th %tile Q(veh)		1.5	-	-	-	0	

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: PM

	۶	→	•	•	←	*	4	†	/	-	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	ሻ	^					ሻ	4	7
Traffic Volume (vph)	0	1108	480	391	892	0	0	0	0	359	5	338
Future Volume (vph)	0	1108	480	391	892	0	0	0	0	359	5	338
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			100			25			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.927	0.850
Flt Protected				0.950						0.950	0.976	
Satd. Flow (prot)	0	2843	1615	1805	2865	0	0	0	0	1829	1616	1688
FIt Permitted				0.950						0.950	0.976	
Satd. Flow (perm)	0	2843	1615	1805	2865	0	0	0	0	1829	1616	1688
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			498									
Link Speed (mph)		45			35			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			17.8			8.5			11.3	
Peak Hour Factor	0.89	0.89	0.89	0.84	0.84	0.84	0.88	0.88	0.88	0.85	0.85	0.85
Heavy Vehicles (%)	15%	27%	0%	0%	26%	9%	12%	0%	11%	0%	0%	0%
Adj. Flow (vph)	0	1245	539	465	1062	0	0	0	0	422	6	398
Shared Lane Traffic (%)										32%		34%
Lane Group Flow (vph)	0	1245	539	465	1062	0	0	0	0	287	276	263
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)		24	•		24	•		14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Prot	NA					Split	NA	Prot
Protected Phases		2		1	12					4	4	4
Permitted Phases			2									
Detector Phase		2	2	1	12					4	4	4
Switch Phase												
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		37.0	37.0	23.0						20.0	20.0	20.0
Total Split (%)		46.3%	46.3%	28.8%						25.0%	25.0%	25.0%
Maximum Green (s)		31.5	31.5	19.0						14.5	14.5	14.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		- 0	- J									
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0

Lane Group
Recall Mode
Act Effct Green (s)
Actuated g/C Ratio

v/c Ratio Control Delay Queue Delay Total Delay LOS

Approach Delay
Approach LOS
Queue Length 50th (ft)
Queue Length 95th (ft)
Internal Link Dist (ft)
Turn Bay Length (ft)

240

331

0

0

0

0.87

292

0

0

0

0.95

240

305

0

0

0

0.86

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)

830

428

0

0

0

1.09

2005

0

0

0

0.53

937

0

0

0

0.58

1119

0

0

0

1.11

۶	→	•	•	←	•	4	†	<i>></i>	/	Ţ	4
EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
	C-Max	C-Max	None						None	None	None
	31.5	31.5	19.0	56.0					14.5	14.5	14.5
	0.39	0.39	0.24	0.70					0.18	0.18	0.18
	1.11	0.58	1.09	0.53					0.87	0.95	0.86
	89.0	5.2	84.0	1.2					59.1	75.7	60.2
	0.0	0.0	0.0	0.0					0.0	0.0	0.0
	89.0	5.2	84.0	1.2					59.1	75.7	60.2
	F	Α	F	Α					Е	Ε	Е
	63.7			26.4						65.0	
	Е			С						Е	
	~381	12	~245	7					148	151	135
	#497	74	m#160	m6					#264	#282	#248
	268			833			296			415	

Intersection Summary

Base Capacity (vph)

Starvation Cap Reductn

Spillback Cap Reductn

Storage Cap Reductn

Reduced v/c Ratio

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 1 (1%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.11

Intersection Signal Delay: 50.2 Intersection LOS: D
Intersection Capacity Utilization 78.3% ICU Level of Service D

Analysis Period (min) 15

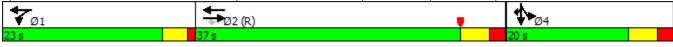
Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: PM

	۶	-	•	•	←	•	4	†	~	>	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ř	† †			^	7	ň	ર્ન	7			
Traffic Volume (vph)	449	1018	0	0	995	298	288	5	469	0	0	0
Future Volume (vph)	449	1018	0	0	995	298	288	5	469	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950						0.950	0.954				
Satd. Flow (prot)	1805	2756	0	0	2865	1561	1829	1722	1830	0	0	0
Flt Permitted	0.950						0.950	0.954				
Satd. Flow (perm)	1805	2756	0	0	2865	1561	1829	1722	1830	0	0	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)						310						
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			14.9			15.5			11.1	
Peak Hour Factor	0.87	0.87	0.87	0.96	0.96	0.96	0.85	0.85	0.85	0.88	0.88	0.88
Heavy Vehicles (%)	0%	31%	14%	11%	26%	0%	0%	0%	0%	8%	0%	11%
Adj. Flow (vph)	516	1170	0	0	1036	310	339	6	552	0	0	0
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	516	1170	0	0	1036	310	173	172	552	0	0	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)		24			24			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA			NA	Prot	Split	NA	Prot			
Protected Phases	1	12			2	2	4	4	4			
Permitted Phases												
Detector Phase	1	12			2	2	4	4	4			
Switch Phase												
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	32.0				27.0	27.0	21.0	21.0	21.0			
Total Split (%)	40.0%				33.8%	33.8%	26.3%	26.3%	26.3%			
Maximum Green (s)	28.0				21.5	21.5	16.0	16.0	16.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?					J							
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			
(-)								-				

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: PM

	•	→	*	•	•	•	1	Ť		-	ŧ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	27.4	55.0			22.1	22.1	16.0	16.0	16.0			
Actuated g/C Ratio	0.34	0.69			0.28	0.28	0.20	0.20	0.20			
v/c Ratio	0.83	0.62			1.31	0.47	0.47	0.50	1.51			
Control Delay	20.7	0.2			172.2	6.2	33.3	34.2	270.0			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	20.7	0.2			172.2	6.2	33.3	34.2	270.0			
LOS	С	Α			F	Α	С	С	F			
Approach Delay		6.5			134.0			179.1				
Approach LOS		Α			F			F				
Queue Length 50th (ft)	123	1			~352	13	81	81	~390			
Queue Length 95th (ft)	m114	m1			m#440	m27	134	134	#535			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	631	1886			790	655	365	344	366			
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	0.82	0.62			1.31	0.47	0.47	0.50	1.51			

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 39 (49%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.51

Intersection Signal Delay: 89.6 Intersection LOS: F
Intersection Capacity Utilization 78.3% ICU Level of Service D

Analysis Period (min) 15

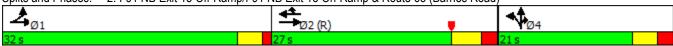
Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



Lanes, Volumes, Timings 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)

	۶	→	•	•	—	•	1	†	/	/	Ţ	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	ħβ			^	7	ሻ	ĵ.			4	7
Traffic Volume (vph)	462	1010	15	5	803	157	10	20	5	191	40	480
Future Volume (vph)	462	1010	15	5	803	157	10	20	5	191	40	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			25			130		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998				0.850		0.969				0.850
Flt Protected	0.950			0.950			0.950				0.960	
Satd. Flow (prot)	1719	2566	0	1796	2763	1575	1652	1780	0	0	1752	1429
FIt Permitted	0.950			0.950			0.354				0.740	
Satd. Flow (perm)	1719	2566	0	1796	2763	1575	615	1780	0	0	1350	1429
Right Turn on Red			Yes			Yes			Yes	-		Yes
Satd. Flow (RTOR)		3				183		7				115
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.95	0.95	0.95	0.86	0.86	0.86	0.75	0.75	0.75	0.82	0.82	0.82
Heavy Vehicles (%)	5%	41%	1%	0%	30%	2%	2%	0%	0%	5%	0%	13%
Adj. Flow (vph)	486	1063	16	6	934	183	13	27	7	233	49	585
Shared Lane Traffic (%)	.00	1000				100	10		•	200		
Lane Group Flow (vph)	486	1079	0	6	934	183	13	34	0	0	282	585
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	1		12			10			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		. •			. •						. •	
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	1.00	12	15	1.01	12	15	1.01	12	15	1.00	12
Turn Type	Prot	NA	· -	Prot	NA	Prot	Perm	NA	· <u>-</u>	Perm	NA	pm+ov
Protected Phases	1	12		3	23	23	1 01111	4		. 0	4	1
Permitted Phases	<u> </u>						4			4	•	4
Detector Phase	1	12		3	23	2 3	4	4		4	4	1
Switch Phase	<u> </u>						•				•	
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	22.0			11.0			22.0	22.0		22.0	22.0	22.0
Total Split (%)	27.5%			13.8%			27.5%	27.5%		27.5%	27.5%	27.5%
Maximum Green (s)	16.6			5.7			17.1	17.1		17.1	17.1	16.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0		1.0	0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	5.4
Lead/Lag	Lead			5.5 Lead						Lag		Lead
	Leau			Ledu			Lag	Lag		Lag	Lag	Leau
Lead-Lag Optimize?												

Lane Group	Ø2	
	, DL	
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	2	
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	15.0	
Minimum Split (s)	21.1	
Total Split (s)	25.0	
Total Split (%)	31%	
Maximum Green (s)	18.9	
Yellow Time (s)	4.8	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	–~⊎	
Loud Lag Optimizo:		

3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)

	•	→	•	•	•	•	1	†	~	-	↓	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	16.6	41.6		5.7	29.9	29.9	17.1	17.1			17.1	38.6
Actuated g/C Ratio	0.21	0.52		0.07	0.37	0.37	0.21	0.21			0.21	0.48
v/c Ratio	1.37	0.81		0.05	0.91	0.26	0.10	0.09			0.98	0.78
Control Delay	202.4	14.8		35.6	37.8	3.9	27.7	22.2			82.6	22.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	202.4	14.8		35.6	37.8	3.9	27.7	22.2			82.6	22.7
LOS	F	В		D	D	Α	С	С			F	С
Approach Delay		73.0			32.2			23.7			42.2	
Approach LOS		Е			С			С			D	
Queue Length 50th (ft)	~331	74		3	227	0	5	11			141	188
Queue Length 95th (ft)	m#400	m76		14	#320	34	17	28			#252	272
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	356	1335		127	1032	703	131	385			288	749
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	1.37	0.81		0.05	0.91	0.26	0.10	0.09			0.98	0.78

Intersection Summary

Area Type: Other

Cycle Length: 80 Actuated Cycle Length: 80

Offset: 29 (36%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.37 Intersection Signal Delay: 52.2 Intersection Capacity Utilization 80.8%

Intersection LOS: D
ICU Level of Service D

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

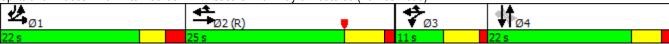
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø2	
Vehicle Extension (s)	2.5	
Recall Mode	C-Min	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

T. INCOCATOTT ATKW		ou bu	211	,, O.10								
	•	→	*	•	•	•	1	Ť		-	ŧ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	f)		7	f)		7	†	7	7	ĵ.	
Traffic Volume (vph)	5	0	15	166	0	0	5	366	268	47	530	0
Future Volume (vph)	5	0	15	166	0	0	5	366	268	47	530	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850							0.850			
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1615	0	1805	1900	0	1805	1792	1615	1805	1863	0
FIt Permitted	0.757			0.737			0.153			0.327		
Satd. Flow (perm)	1438	1615	0	1400	1900	0	291	1792	1615	621	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		181							454			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.48	0.48	0.48	0.88	0.88	0.88	0.59	0.59	0.59	0.60	0.60	0.60
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%	2%	0%
Adj. Flow (vph)	10	0	31	189	0	0	8	620	454	78	883	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	31	0	189	0	0	8	620	454	78	883	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24		Ŭ	30			12	, i	Ŭ	12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm			Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	2	
Permitted Phases	4			4			2		2	2		
Detector Phase	4	4		4	4		2	2	2	1	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0	15.0	4.5	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0	21.0	9.0	21.0	
Total Split (s)	40.0	40.0		40.0	40.0		51.0	51.0	51.0	9.0	51.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		51.0%	51.0%	51.0%	9.0%	51.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		45.0	45.0	45.0	5.0	45.0	
Yellow Time (s)	3.0	3.0		3.0	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	1.0	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	5.0		5.0	5.0		6.0	6.0	6.0	4.0	6.0	
Lead/Lag	3.0	3.0		3.0	0.0		Lag	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Lag	Lag	Lag		Lag	
Vehicle Extension (s)	1.0	1.0		1.0	1.0		2.0	2.0	2.0	1.0	2.0	
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	
1 COUIT MOUC	140116	140110		140110	140110		141111	141111	141111	140110	141111	

4: Research Parkway & Food Bank Driv/Site Drive 1

	•	-	•	•	•	•	4	†	/	-	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	14.0	14.0		14.0			46.7	46.7	46.7	52.4	46.7	
Actuated g/C Ratio	0.18	0.18		0.18			0.59	0.59	0.59	0.67	0.59	
v/c Ratio	0.04	0.07		0.76			0.05	0.58	0.40	0.16	0.80	
Control Delay	26.0	0.3		50.2			10.4	14.6	2.2	5.4	21.9	
Queue Delay	0.0	0.0		0.0			0.0	0.0	0.0	0.0	0.0	
Total Delay	26.0	0.3		50.2			10.4	14.6	2.2	5.4	21.9	
LOS	С	Α		D			В	В	Α	Α	С	
Approach Delay		6.6			50.2			9.4			20.6	
Approach LOS		Α			D			Α			С	
Queue Length 50th (ft)	4	0		89			2	181	0	10	320	
Queue Length 95th (ft)	9	0		153			6	182	0	19	288	
Internal Link Dist (ft)		116			123			640			398	
Turn Bay Length (ft)				170			140			115		
Base Capacity (vph)	643	822		626			172	1065	1143	491	1107	
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	0.02	0.04		0.30			0.05	0.58	0.40	0.16	0.80	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 78.6

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 17.4 Intersection LOS: B
Intersection Capacity Utilization 64.1% ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Research Parkway & Food Bank Driv/Site Drive 1



	۶	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			4	ĵ»	
Traffic Volume (vph)	3	63	9	362	514	0
Future Volume (vph)	3	63	9	362	514	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.871					
Flt Protected	0.998			0.999		
Satd. Flow (prot)	1618	0	0	1656	1696	0
Flt Permitted	0.998			0.999		
Satd. Flow (perm)	1618	0	0	1656	1696	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.55	0.55	0.90	0.90	0.80	0.80
Heavy Vehicles (%)	50%	0%	0%	15%	12%	0%
Adj. Flow (vph)	5	115	10	402	643	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	0	0	412	643	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	tion 37.8%			IC	U Level o	of Service A
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	1.7					
		EDD	NDI	NDT	CDT	CDD
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	À	00	^	4	Þ	^
Traffic Vol, veh/h	3	63	9	362	514	0
Future Vol, veh/h	3	63	9	362	514	0
Conflicting Peds, #/hr	0	0	_ 0	_ 0	_ 0	_ 0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	55	55	90	90	80	80
Heavy Vehicles, %	50	0	0	15	12	0
Mvmt Flow	5	115	10	402	643	0
NA = : = = /NA:= = =	l: 0		1-:- 4		4-i- C	
	linor2		//ajor1		/lajor2	
Conflicting Flow All	1065	643	643	0	-	0
Stage 1	643	-	-	-	-	-
Stage 2	422	-	-	-	-	-
Critical Hdwy	6.9	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	201	477	951	-	-	-
Stage 1	443	-	-	-	-	-
Stage 2	570	-	-	-	-	-
Platoon blocked, %				-	-	_
Mov Cap-1 Maneuver	198	477	951	-	_	-
Mov Cap-2 Maneuver	198	-		_	_	_
Stage 1	437	_	_	_	_	_
Stage 2	570	_	_	_	_	_
Olaye 2	510	_	-	_	-	<u>-</u>
Approach	EB		NB		SB	
HCM Control Delay, s	16		0.2		0	
HCM LOS	С					
					055	055
Minor Lane/Major Mvmt		NBL		EBLn1	SBT	SBR
Capacity (veh/h)		951	-		-	-
HCM Lane V/C Ratio		0.011		0.268	-	-
HCM Control Delay (s)		8.8	0	16	-	-
HCM Lane LOS		Α	Α	С	-	-
HCM 95th %tile Q(veh)		0	-	1.1	-	-
()						

Analysis Period (min) 15

	۶	•	1	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	7	7	, Y		ĵ»	
Traffic Volume (vph)	3	13	3	362	501	0
Future Volume (vph)	3	13	3	362	501	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	1805	1638	1696	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1615	1805	1638	1696	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Confl. Peds. (#/hr)	3					
Peak Hour Factor	0.42	0.42	0.90	0.90	0.79	0.79
Heavy Vehicles (%)	0%	0%	0%	16%	12%	0%
Adj. Flow (vph)	7	31	3	402	634	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	31	3	402	634	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop	-		Free	Free	-
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	tion 36.4%			IC	U Level o	of Service A

 $\label{thm:continuous} G:\label{thm:chrolinday} $$G:\label{thm:chrolinday}$$ Peak\T-1901479-HOLIDAY BUILD-PM.syn BL Companies$

Intersection							
Int Delay, s/veh	0.5						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	CDL	EDK 7	NDL	<u> </u>		SDR	
Traffic Vol, veh/h	1	13	1	T 362	Љ 501	0	
Future Vol, veh/h	3	13	3	362	501	0	
<u>'</u>	3	0	0	302	0	0	
Conflicting Peds, #/hr Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	Stop -	None	Free -	None	Free -	None	
Storage Length	0	0	100	None -	_	NUTIE	
Veh in Median Storage,		-	100	0	0	-	
Grade, %	# 0	-	-	0	0	-	
Peak Hour Factor	42	42	90	90	79	79	
	42	42		16	12		
Heavy Vehicles, %	7	31	0		634	0	
Mvmt Flow	1	31	3	402	034	0	
Major/Minor M	/linor2	N	//ajor1	ľ	Major2		
Conflicting Flow All	1045	634	634	0	-	0	
Stage 1	634	_	-	-	-	-	
Stage 2	411	-	-	-	-	-	
Critical Hdwy	6.4	6.2	4.1	-	-	-	
Critical Hdwy Stg 1	5.4	-	-	-	-	-	
Critical Hdwy Stg 2	5.4	_	_	-	_	-	
Follow-up Hdwy	3.5	3.3	2.2	_	_	_	
Pot Cap-1 Maneuver	256	483	959	-	_	-	
Stage 1	532	-	_	_	_	_	
Stage 2	674	_	_	-	_	-	
Platoon blocked, %				_	-	_	
Mov Cap-1 Maneuver	255	483	959	_	-	-	
Mov Cap-2 Maneuver	255	-	-	_	_	_	
Stage 1	530	_	_	_	_	-	
Stage 2	674	_	_	_	_	_	
Olago Z	014	_	_	_	_	_	
			L ID		0.5		
Approach	EB		NB		SB		
HCM Control Delay, s	14.2		0.1		0		
HCM LOS	В						
Minor Lane/Major Mvmt		NBL	NBT	EBLn1 l	EBLn2	SBT	
Capacity (veh/h)		959		255	483		
HCM Lane V/C Ratio		0.003	_	0.028		-	
HCM Control Delay (s)		8.8	_	19.5	13	-	
HCM Lane LOS		Α	_	C	В	-	
HCM 95th %tile Q(veh)		0		0.1	0.2	_	
HOW JOHN JOHNE W(VEII)		U	_	0.1	0.2	_	

	۶	→	•	•	+	4	1	†	/	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	45	51	25	141	45	64	20	100	245	67	335	101
Future Volume (vph)	45	51	25	141	45	64	20	100	245	67	335	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.972			0.966			0.909			0.973	
Flt Protected		0.982			0.973			0.997			0.993	
Satd. Flow (prot)	0	1800	0	0	1786	0	0	1676	0	0	1808	0
FIt Permitted		0.982			0.973			0.997			0.993	
Satd. Flow (perm)	0	1800	0	0	1786	0	0	1676	0	0	1808	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.86	0.86	0.86	0.76	0.76	0.76	0.63	0.63	0.63	0.71	0.71	0.71
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	0%	10%	0%	0%	2%	1%
Adj. Flow (vph)	52	59	29	186	59	84	32	159	389	94	472	142
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	140	0	0	329	0	0	580	0	0	708	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											_
Control Type: Unsignalized												
Intersection Capacity Utilizat	ion 75.0%			IC	CU Level o	of Service	D					
Analysis Period (min) 15												

Intersection			
Intersection Delay, s/veh	122.4		
Intersection LOS	F		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	45	51	25	141	45	64	20	100	245	67	335	101
Future Vol, veh/h	45	51	25	141	45	64	20	100	245	67	335	101
Peak Hour Factor	0.86	0.86	0.86	0.76	0.76	0.76	0.63	0.63	0.63	0.71	0.71	0.71
Heavy Vehicles, %	2	0	0	0	0	0	0	10	0	0	2	1
Mvmt Flow	52	59	29	186	59	84	32	159	389	94	472	142
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	18.3			30.7			96.4			207		
HCM LOS	С			D			F			F		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	5%	37%	56%	13%	
Vol Thru, %	27%	42%	18%	67%	
Vol Right, %	67%	21%	26%	20%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	365	121	250	503	
LT Vol	20	45	141	67	
Through Vol	100	51	45	335	
RT Vol	245	25	64	101	
Lane Flow Rate	579	141	329	708	
Geometry Grp	1	1	1	1	
Degree of Util (X)	1.095	0.345	0.71	1.385	
Departure Headway (Hd)	7.508	10.087	8.832	7.375	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Сар	487	359	411	496	
Service Time	5.508	8.087	6.832	5.375	
HCM Lane V/C Ratio	1.189	0.393	0.8	1.427	
HCM Control Delay	96.4	18.3	30.7	207	
HCM Lane LOS	F	С	D	F	
HCM 95th-tile Q	17.2	1.5	5.4	31.5	

	-	•	•	•	•	/
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	f)			ર્ન	ሻ	7
Traffic Volume (vph)	91	272	0	90	160	0
Future Volume (vph)	91	272	0	90	160	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.899					
Flt Protected					0.950	
Satd. Flow (prot)	1675	0	0	1863	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	1675	0	0	1863	1770	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	296	0	98	174	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	395	0	0	98	174	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					

Control Type: Unsignalized

Intersection Capacity Utilization 37.1%

ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	3.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
		EDK	WDL			
Lane Configurations	}	070	۸	4	100	7
Traffic Vol, veh/h	91	272	0	90	160	0
Future Vol, veh/h	91	272	0	90	160	0
Conflicting Peds, #/hr	0	0	0	0	0	0
0	Free	Free	Free	Free	Stop	Stop
RT Channelized	-		-		-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage,		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	296	0	98	174	0
Major/Minor Ma	ajor1	ı	Major2		Minor1	
						0.47
Conflicting Flow All	0	0	395	0	345	247
Stage 1	-	-	-	-	247	-
Stage 2	-	-	-	-	98	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	
Pot Cap-1 Maneuver	-	-	1164	-	652	792
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	926	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1164	-	652	792
Mov Cap-2 Maneuver	-	-	-	-	652	-
Stage 1	-	-	_	-	794	-
Stage 2	_	_	-	_	926	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		12.5	
HCM LOS					В	
Minor Lane/Major Mvmt		NBLn11	VIRI n2	EBT	EBR	WBL
	<u> </u>			LDI		1164
Capacity (veh/h)		652 0.267	-		-	
HCM Control Doloy (a)			-	-	-	-
HCM Long LOS		12.5	0	-	-	0
HCM CEth (/tile O/yeh)		В	Α	-	-	A
HCM 95th %tile Q(veh)		1.1	-	-	-	0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Roaidi)ng Plan: AM Pk Gen

	۶	→	•	•	←	•	1	†	<i>></i>	/	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		† †	7	ሻ	† †					ሻ	4	7
Traffic Volume (vph)	0	518	200	247	472	0	0	0	0	153	0	204
Future Volume (vph)	0	518	200	247	472	0	0	0	0	153	0	204
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	14	13	15
Storage Length (ft)	0		0	830	· <u>-</u>	0	0	· <u>-</u>	0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25		•	100			25			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt	1.00	0.00	0.850	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.887	0.850
Flt Protected			0.000	0.950						0.950	0.988	0.000
Satd. Flow (prot)	0	3008	1346	1583	3195	0	0	0	0	1499	1216	1288
Flt Permitted		0000	1010	0.950	0100	•	•		•	0.950	0.988	1200
Satd. Flow (perm)	0	3008	1346	1583	3195	0	0	0	0	1499	1216	1288
Right Turn on Red	•	0000	Yes	1000	0100	Yes	V	•	Yes	1100	1210	No
Satd. Flow (RTOR)			213			100			100			140
Link Speed (mph)		45	210		35			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			17.8			8.5			11.3	
Peak Hour Factor	0.94	0.94	0.94	0.74	0.74	0.74	0.88	0.88	0.88	0.89	0.89	0.89
Heavy Vehicles (%)	0.94	20%	20%	14%	13%	0.74	0.00	0.00	0.00	22%	0.09	31%
Adj. Flow (vph)	0 /8	551	213	334	638	0 %	0 /8	0 /8	0 /8	172	0 /0	229
Shared Lane Traffic (%)	U	331	213	334	030	U	U	U	U	19%	U	44%
Lane Group Flow (vph)	0	551	213	334	638	0	0	0	0	139	134	128
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)	Leit	12	Rigiti	Leit	24	Rigiit	Leit	14	Right	Leit	14	Rigit
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	1.00	1.00	1.00	1.00	1.00	9	1.00	1.00	1.00	15	0.90	9
,	15	NA	Perm	Prot	NA	9	10		9	Split	NA	Prot
Turn Type Protected Phases		2	reiiii	1	12					Spiit 4	1NA 4	710t
Permitted Phases		2	2	1	1 2					4	4	4
Detector Phase		2	2	1	12					4	4	4
Switch Phase		2	2	1	1 2					4	4	4
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
· · · · · · · · · · · · · · · · · · ·		20.5	20.5	11.0						14.5	14.5	
Minimum Split (s)		30.0	30.0							25.0		14.5
Total Split (s)		40.0%	40.0%	20.0 26.7%							25.0	25.0
Total Split (%)										33.3% 19.5	33.3%	33.3%
Maximum Green (s)		24.5	24.5	16.0							19.5	19.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		0.0	0.0	2.0						2.0	2.0	2.0
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Roaiding Plan: AM Pk Gen

	•	-	•	•	•	•	1	Ť		-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		25.6	25.6	20.4	51.5					14.0	14.0	14.0
Actuated g/C Ratio		0.34	0.34	0.27	0.69					0.19	0.19	0.19
v/c Ratio		0.54	0.35	0.77	0.29					0.50	0.59	0.54
Control Delay		22.7	4.9	33.6	1.5					32.6	38.0	35.0
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		22.7	4.9	33.6	1.5					32.6	38.0	35.0
LOS		С	Α	С	Α					С	D	С
Approach Delay		17.7			12.6						35.2	
Approach LOS		В			В						D	
Queue Length 50th (ft)		110	0	66	10					62	63	57
Queue Length 95th (ft)		158	44	#213	14					105	110	101
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		1026	600	431	2195					389	316	334
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		0.54	0.35	0.77	0.29					0.36	0.42	0.38

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 13 (17%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 18.7 Intersection LOS: B
Intersection Capacity Utilization 48.0% ICU Level of Service A

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) ng Plan: AM Pk Gen

	۶	→	•	•	←	•	4	†	/	/	Ţ	✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	† †			^	7	ሻ	4	7			
Traffic Volume (vph)	203	468	0	0	580	242	139	0	244	0	0	0
Future Volume (vph)	203	468	0	0	580	242	139	0	244	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0	•-	480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			25		•	100			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.50	1.00	1.00	0.50	0.850	0.50	0.00	0.850	1.00	1.00	1.00
Flt Protected	0.950					0.000	0.950	0.950	0.000			
Satd. Flow (prot)	1367	3223	0	0	3195	1312	1550	1453	1513	0	0	0
Flt Permitted	0.950	3223	U	U	3133	1312	0.950	0.950	1010	U	U	U
Satd. Flow (perm)	1367	3223	0	0	3195	1312	1550	1453	1513	0	0	0
,, ,	1301	3223	Yes	U	3193	Yes	1550	1400		U	U	Yes
Right Turn on Red			res			257			No			res
Satd. Flow (RTOR)		25			25	257		20			20	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8		2.21	14.9	2.21		15.5			11.1	
Peak Hour Factor	0.88	0.88	0.88	0.94	0.94	0.94	0.95	0.95	0.95	0.88	0.88	0.88
Heavy Vehicles (%)	32%	12%	0%	0%	13%	19%	18%	0%	21%	0%	0%	0%
Adj. Flow (vph)	231	532	0	0	617	257	146	0	257	0	0	0
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	231	532	0	0	617	257	73	73	257	0	0	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)		24			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA			NA	Prot	Split	NA	Prot			
Protected Phases	1	12			2	2	4	4	4			
Permitted Phases												
Detector Phase	1	12			2	2	4	4	4			
Switch Phase	•	. –			_	_	•	•	•			
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	20.0				31.0	31.0	24.0	24.0	24.0			
Total Split (%)	26.7%				41.3%	41.3%	32.0%	32.0%	32.0%			
Maximum Green (s)	16.0				25.5	25.5	19.0	19.0	19.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
	1.0				2.0	2.0	2.0	2.0	2.0			
All-Red Time (s)												
Lost Time Adjust (s)	0.0				0.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Rotating Plan: AM Pk Gen

		→	*	•	•			T		*	+	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	15.6	49.5			28.5	28.5	16.5	16.5	16.5			
Actuated g/C Ratio	0.21	0.66			0.38	0.38	0.22	0.22	0.22			
v/c Ratio	0.82	0.25			0.51	0.39	0.21	0.23	0.77			
Control Delay	41.2	0.6			14.4	2.7	24.4	24.8	43.8			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	41.2	0.6			14.4	2.7	24.4	24.8	43.8			
LOS	D	Α			В	Α	С	С	D			
Approach Delay		12.9			11.0			36.8				
Approach LOS		В			В			D				
Queue Length 50th (ft)	43	2			76	6	28	28	110			
Queue Length 95th (ft)	#191	4			116	19	62	62	#202			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	298	2128			1213	657	392	368	383			
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	0.78	0.25			0.51	0.39	0.19	0.20	0.67			

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 51 (68%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 16.8 Intersection LOS: B
Intersection Capacity Utilization 48.0% ICU Level of Service A

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



	۶	→	•	•	-	•	1	†	~	/	ţ	</th
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	∱ }		ሻ	^	7	ሻ	(î			4	7
Traffic Volume (vph)	304	400	8	0	477	92	15	1	0	106	0	330
Future Volume (vph)	304	400	8	0	477	92	15	1	0	106	0	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			25			130		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997				0.850						0.850
Flt Protected	0.950						0.950				0.950	
Satd. Flow (prot)	1367	3211	0	1890	3265	1461	1685	1837	0	0	1736	1196
Flt Permitted	0.950						0.655				0.756	
Satd. Flow (perm)	1367	3211	0	1890	3265	1461	1162	1837	0	0	1381	1196
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				107						230
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.81	0.81	0.81	0.86	0.86	0.86	0.38	0.38	0.38	0.81	0.81	0.81
Heavy Vehicles (%)	32%	12%	17%	0%	10%	10%	0%	0%	0%	4%	0%	35%
Adj. Flow (vph)	375	494	10	0	555	107	39	3	0	131	0	407
Shared Lane Traffic (%)	0.0				000	101						101
Lane Group Flow (vph)	375	504	0	0	555	107	39	3	0	0	131	407
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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					. •			. •				
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	1.00	12	15	1.01	12	15	1.01	12	15	1.00	12
Turn Type	Prot	NA	· -	Prot	NA	Prot	Perm	NA		Perm	NA	pm+ov
Protected Phases	1	12		3	23	23	1 01111	4		1 01111	4	1
Permitted Phases							4	•		4	•	4
Detector Phase	1	12		3	23	23	4	4		4	4	1
Switch Phase							•	•		•	•	
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	17.0			11.0			17.0	17.0		17.0	17.0	17.0
Total Split (%)	22.7%			14.7%			22.7%	22.7%		22.7%	22.7%	22.7%
Maximum Green (s)	11.6			5.7			12.1	12.1		12.1	12.1	11.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0		1.0	0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?	Leau			Leau			Lay	Lay		Lay	Lay	Leau
Leau-Lay Optimize?												

Lane Group	Ø2		
Lanetonfigurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
FIt Protected			
Satd. Flow (prot)			
FIt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Turn Type			
Protected Phases	2		
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	15.0		
Minimum Split (s)	21.1		
Total Split (s)	30.0		
Total Split (%)	40%		
Maximum Green (s)	23.9		
Yellow Time (s)	4.8		
All-Red Time (s)	1.3		
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag		
Lead-Lag Optimize?			

	•	→	•	•	•	•	1	†	~	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	20.4	45.6			29.8	29.8	10.7	10.7			10.7	33.7
Actuated g/C Ratio	0.27	0.61			0.40	0.40	0.14	0.14			0.14	0.45
v/c Ratio	1.01	0.26			0.43	0.17	0.23	0.01			0.66	0.61
Control Delay	85.6	4.8			17.0	3.4	31.2	26.0			47.1	12.1
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	85.6	4.8			17.0	3.4	31.2	26.0			47.1	12.1
LOS	F	Α			В	Α	С	С			D	В
Approach Delay		39.3			14.8			30.8			20.6	
Approach LOS		D			В			С			С	
Queue Length 50th (ft)	~217	32			97	0	16	1			58	50
Queue Length 95th (ft)	#376	38			112	22	17	4			98	125
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570					250						
Base Capacity (vph)	372	2160			1275	635	192	304			228	663
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	1.01	0.23			0.44	0.17	0.20	0.01			0.57	0.61

Intersection Summary

Area Type: Other

Cycle Length: 75
Actuated Cycle Length: 75

Offset: 42 (56%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 26.7 Intersection LOS: C
Intersection Capacity Utilization 56.2% ICU Level of Service B

Analysis Period (min) 15

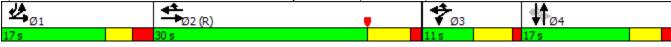
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø2	
Vehicle Extension (s)	2.5	
Recall Mode	C-Min	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

	•	→	•	•	←	•	•	†	<i>></i>	\	+	√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	7>	LDIX	ኘ	1	WER	ኘ	<u>↑</u>	7	<u> </u>	1	ODIT
Traffic Volume (vph)	0	0	9	182	0	0	6	107	284	50	245	0
Future Volume (vph)	0	0	9	182	0	0	6	107	284	50	245	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	1300	0	170	1300	0	140	1300	0	115	1300	0
Storage Lanes	1		0	170		0	1		1	1 1		0
Taper Length (ft)	25		U	25		0	130		'	100		U
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.850	1.00	1.00	1.00	1.00	1.00	1.00	0.850	1.00	1.00	1.00
Flt Protected		0.000		0.950			0.950		0.000	0.950		
Satd. Flow (prot)	1900	1417	0	1805	1900	0	1504	1496	1615	1805	1484	0
Flt Permitted	1000	1717		0.747	1000	<u> </u>	0.574	1430	1010	0.650	1404	
Satd. Flow (perm)	1900	1417	0	1419	1900	0	909	1496	1615	1235	1484	0
Right Turn on Red	1000	1717	Yes	1710	1000	Yes	303	1430	Yes	1200	1404	Yes
Satd. Flow (RTOR)		518	100			100			451			100
Link Speed (mph)		30			30			30	401		30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.58	0.58	0.58	0.88	0.88	0.88	0.63	0.63	0.63	0.80	0.80	0.80
Heavy Vehicles (%)	0%	0%	14%	0%	0%	0%	20%	27%	0%	0%	28%	0.00
Adj. Flow (vph)	0	0	16	207	0	0	10	170	451	63	306	0
Shared Lane Traffic (%)	0	U	10	201	- U	U	10	170	701	00	300	
Lane Group Flow (vph)	0	16	0	207	0	0	10	170	451	63	306	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)	Lon	24	ı üğili	. ug.ic	30	, agaic	2010	12	r tigrit	, agaic	12	ragne
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm			Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	2	
Permitted Phases	4	-		4	-		2	_	2	2	_	
Detector Phase	4	4		4	4		2	2	2	1	2	
Switch Phase		-		-	-		_	_	_		_	
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0	15.0	4.5	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0	21.0	9.0	21.0	
Total Split (s)	40.0	40.0		40.0	40.0		51.0	51.0	51.0	9.0	51.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		51.0%	51.0%	51.0%	9.0%	51.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		45.0	45.0	45.0	5.0	45.0	
Yellow Time (s)	3.0	3.0		3.0	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	1.0	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	5.0		5.0	5.0		6.0	6.0	6.0	4.0	6.0	
Lead/Lag				0.0			Lag	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							9	_~g	_~9	_500		
Vehicle Extension (s)	1.0	1.0		1.0	1.0		2.0	2.0	2.0	1.0	2.0	
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	
- 155411 111040							141111	141111	441111		.*****	

	۶	→	\rightarrow	•	←	•	1	†	/	-	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)		11.7		11.7			20.3	20.3	20.3	24.9	20.3	
Actuated g/C Ratio		0.24		0.24			0.42	0.42	0.42	0.52	0.42	
v/c Ratio		0.02		0.60			0.03	0.27	0.48	0.09	0.49	
Control Delay		0.0		25.9			11.5	12.9	3.5	5.9	15.6	
Queue Delay		0.0		0.0			0.0	0.0	0.0	0.0	0.0	
Total Delay		0.0		25.9			11.5	12.9	3.5	5.9	15.6	
LOS		Α		С			В	В	Α	Α	В	
Approach Delay					25.9			6.1			14.0	
Approach LOS					С			Α			В	
Queue Length 50th (ft)		0		50			2	33	0	6	65	
Queue Length 95th (ft)		0		129			7	56	0	21	134	
Internal Link Dist (ft)		116			123			640			398	
Turn Bay Length (ft)				170			140			115		
Base Capacity (vph)		1207		1087			809	1333	1488	704	1322	
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		0.01		0.19			0.01	0.13	0.30	0.09	0.23	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 48.3

Natural Cycle: 55

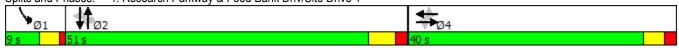
Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 11.8 Intersection LOS: B
Intersection Capacity Utilization 39.7% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Research Parkway & Food Bank Driv/Site Drive 1



	۶	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			ની	ĵ»	
Traffic Volume (vph)	0	11	11	96	284	0
Future Volume (vph)	0	11	11	96	284	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.995		
Satd. Flow (prot)	1347	0	0	1470	1462	0
Flt Permitted				0.995		
Satd. Flow (perm)	1347	0	0	1470	1462	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.56	0.56	0.75	0.75	0.81	0.81
Heavy Vehicles (%)	0%	22%	0%	32%	30%	0%
Adj. Flow (vph)	0	20	15	128	351	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	0	0	143	351	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utiliza	tion 24.9%			IC	U Level o	of Service A
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	0.6					
					055	055
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			र्स	4	
Traffic Vol, veh/h	0	11	11	96	284	0
Future Vol, veh/h	0	11	11	96	284	0
Conflicting Peds, #/hr	0	0	0	_ 0	0	_ 0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	56	56	75	75	81	81
Heavy Vehicles, %	0	22	0	32	30	0
Mvmt Flow	0	20	15	128	351	0
Major/Minor N	1inor2	A	Major1	N	/lajor2	
						^
Conflicting Flow All	509	351	351	0	-	0
Stage 1	351	-	-	-	-	-
Stage 2	158	-	-	-	-	-
Critical Hdwy	6.4	6.42	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy		3.498	2.2	-	-	-
Pot Cap-1 Maneuver	528	650	1219	-	-	-
Stage 1	717	-	-	-	-	-
Stage 2	875	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	521	650	1219	-	-	-
Mov Cap-2 Maneuver	521	-	-	-	-	-
Stage 1	708	-	-	-	-	-
Stage 2	875	-	-	-	-	-
<u> </u>						
Δ			NE		0.0	
Approach	EB		NB		SB	
HCM Control Delay, s	10.7		0.8		0	
HCM LOS	В					
Minor Lane/Major Mvmt		NBL	NRT	EBLn1	SBT	SBR
Capacity (veh/h)		1219	-	650		ופט
HCM Lane V/C Ratio		0.012	_	0.03	_	_
HCM Control Delay (s)		8	0	10.7	-	
HCM Lane LOS		A	A	10.7		
HCM 95th %tile Q(veh)		0 0	A -	0.1	-	-
HOW SOUT WILLE Q(VEII)		U	-	0.1	-	-

Analysis Period (min) 15

	•	•	1	†	ţ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	↑	f)	
Traffic Volume (vph)	0	3	Ö	96	281	1
Future Volume (vph)	0	3	0	96	281	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	1900	1077	1900	1439	1474	0
Flt Permitted						
Satd. Flow (perm)	1900	1077	1900	1439	1474	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Confl. Peds. (#/hr)	3					
Peak Hour Factor	0.50	0.50	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	0%	50%	0%	32%	29%	0%
Adj. Flow (vph)	0	6	0	122	356	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	6	0	122	357	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
J 1	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	tion 24.9%			IC	U Level c	of Service A

Intersection						
Int Delay, s/veh	0.1					
		EDD	NDI	NDT	CDT	CDD
Movement Configurations	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	\	<u></u>	^	†	∱	1
Traffic Vol, veh/h	0	3	0	96	281	1
Future Vol, veh/h	0	3	0	96	281	1
Conflicting Peds, #/hr	3	0	_ 0	_ 0	_ 0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	-
Veh in Median Storage		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	79	79	79	79
Heavy Vehicles, %	0	50	0	32	29	0
Mvmt Flow	0	6	0	122	356	1
Major/Minor	Minor2		/lajor1		/aior?	
					//ajor2	
Conflicting Flow All	482	357	357	0	-	0
Stage 1	357	-	-	-	-	-
Stage 2	125	-	-	-	-	-
Critical Hdwy	6.4	6.7	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.75	2.2	-	-	-
Pot Cap-1 Maneuver	547	592	1213	-	-	-
Stage 1	713	-	-	-	-	-
Stage 2	906	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	547	592	1213	-	-	-
Mov Cap-2 Maneuver	547	-	-	_	-	-
Stage 1	713	_	_	-	_	_
Stage 2	906	-	-	-	_	_
Jugo 2	300					
Approach	EB		NB		SB	
HCM Control Delay, s	11.1		0		0	
HCM LOS	В					
Minor Lane/Major Mvn	nt	NBL	NRT	EBLn1 E	FRI n2	SBT
	IL.	1213	INDI		592	ושט
Capacity (veh/h)			-	-		-
HCM Cantral Dalay (a)		-	-	-	0.01	-
HCM Control Delay (s)		0	-	0	11.1	-
HCM Lane LOS	,	A	-	Α	В	-
HCM 95th %tile Q(veh)	0	-	-	0	-

	۶	→	•	•	←	4	1	†	/	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	25	23	5	143	14	63	4	83	9	14	134	25
Future Volume (vph)	25	23	5	143	14	63	4	83	9	14	134	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.961			0.988			0.981	
Flt Protected		0.977			0.969			0.998			0.996	
Satd. Flow (prot)	0	1477	0	0	1552	0	0	1441	0	0	1454	0
Flt Permitted		0.977			0.969			0.998			0.996	
Satd. Flow (perm)	0	1477	0	0	1552	0	0	1441	0	0	1454	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.63	0.63	0.63	0.45	0.45	0.45	0.79	0.79	0.79	0.65	0.65	0.65
Heavy Vehicles (%)	31%	11%	50%	14%	0%	17%	33%	33%	0%	0%	33%	15%
Adj. Flow (vph)	40	37	8	318	31	140	5	105	11	22	206	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	85	0	0	489	0	0	121	0	0	266	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilizati	ion 38.9%			IC	CU Level o	of Service	Α					
Analysis Period (min) 15												

Intersection												
Intersection Delay, s/veh	17.3											
Intersection LOS	С											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	25	23	5	143	14	63	4	83	9	14	134	25
Future Vol, veh/h	25	23	5	143	14	63	4	83	9	14	134	25
Peak Hour Factor	0.63	0.63	0.63	0.45	0.45	0.45	0.79	0.79	0.79	0.65	0.65	0.65
Heavy Vehicles, %	31	11	50	14	0	17	33	33	0	0	33	15
Mvmt Flow	40	37	8	318	31	140	5	105	11	22	206	38
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	10.7			22.3			11.5			13		
HCM LOS	В			С			В			В		
Lane		NBLn1	EBLn1	WBLn1	SBLn1							
Vol Left, %		4%	47%	65%	8%							
Vol Thru, %		86%	43%	6%	77%							
Vol Right, %		9%	9%	29%	14%							
Sign Control		Stop	Stop	Stop	Stop							
Traffic Vol by Lane		96	53	220	173							
LT Vol		4	25	143	14							
Through Vol		83	23	14	134							
RT Vol		9	5	63	25							
Lane Flow Rate		122	84	489	266							
Geometry Grp		1	1	1	1							
Degree of Util (X)		0.222	0.152	0.738	0.424							
Departure Headway (Hd)		6.582	6.494	5.436	5.731							
Convergence, Y/N		Yes	Yes	Yes	Yes							
Сар		543	549	665	625							
Service Time		4.654	4.567	3.483	3.79							
HCM Lane V/C Ratio		0.225	0.153	0.735	0.426							
HCM Control Delay		11.5	10.7	22.3	13							

В

0.5

8.0

С

6.5

В

2.1

HCM Lane LOS

HCM 95th-tile Q

	-	•	•	•	1	~
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	f)			4	ħ	7
Traffic Volume (vph)	46	0	0	40	180	0
Future Volume (vph)	46	0	0	40	180	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1863	0	0	1863	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	1863	0	0	1863	1770	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	0	0	43	196	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	0	0	43	196	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						

Area Type:

Control Type: Unsignalized

Intersection Capacity Utilization 20.0%

Other

ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	6.8					
Movement	EBT	EBR	WBL	\\/DT	NBL	NBR
		EBK	WBL	WBT		
Lane Configurations	}	0	^	<u>ર્</u> ન	100	
Traffic Vol, veh/h	46	0	0	40	180	0
Future Vol, veh/h	46	0	0	40	180	0
Conflicting Peds, #/hr	0	0	_ 0	_ 0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-		-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage,		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	0	0	43	196	0
NA - :/NA:	A - ! - A		M-:- C		A: 1	
	/lajor1		Major2		Minor1	
Conflicting Flow All	0	0	50	0	93	50
Stage 1	-	-	-	-	50	-
Stage 2	-	-	-	-	43	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	
Pot Cap-1 Maneuver	-	-	1557	-	907	1018
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	979	-
Platoon blocked, %	_	_		-		
Mov Cap-1 Maneuver	_	-	1557	_	907	1018
Mov Cap-2 Maneuver	_	_	_	_	907	
Stage 1	_	_	_	_	972	-
Stage 2	_	_	_	_	979	_
Olago Z					313	
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		10.1	
HCM LOS					В	
Minor Long /Maior M		UDL 4 P	UDL O	EDT	EDD	WDI
Minor Lane/Major Mvmt		VBLn11	NRLN2	EBT	EBR	WBL
Capacity (veh/h)		907	-	-	-	1557
HCM Lane V/C Ratio		0.216	-	-	-	-
HCM Control Delay (s)		10.1	0	-	-	0
HCM Lane LOS		В	Α	-	-	Α
HCM 95th %tile Q(veh)		0.8	-	-	-	0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Romind) Plan: PM Peak Gen

	ᄼ	→	•	•	—	•	4	†	~	/	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	*	ň	^					7	4	7
Traffic Volume (vph)	0	427	132	250	420	0	0	0	0	148	0	93
Future Volume (vph)	0	427	132	250	420	0	0	0	0	148	0	93
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	0			100			0			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.968	0.850
Flt Protected				0.950						0.950	0.962	
Satd. Flow (prot)	0	3574	1553	1719	3505	0	0	0	0	1726	1560	1548
Flt Permitted				0.950		•	-			0.950	0.962	
Satd. Flow (perm)	0	3574	1553	1719	3505	0	0	0	0	1726	1560	1548
Right Turn on Red		•	Yes			Yes	•		Yes			No
Satd. Flow (RTOR)			159			. 00						110
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			20.8			8.5			11.3	
Peak Hour Factor	0.83	0.83	0.83	0.59	0.59	0.59	0.88	0.88	0.88	0.86	0.86	0.86
Heavy Vehicles (%)	0%	1%	4%	5%	3%	0%	0%	0%	0%	6%	0%	9%
Adj. Flow (vph)	0	514	159	424	712	0	0	0	0	172	0	108
Shared Lane Traffic (%)			, , ,				-		-	44%	-	19%
Lane Group Flow (vph)	0	514	159	424	712	0	0	0	0	96	97	87
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			24	<u> </u>		14			14	J
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Prot	NA					Split	NA	Prot
Protected Phases		2		1	12					4	4	4
Permitted Phases			2									
Detector Phase		2	2	1	12					4	4	4
Switch Phase												
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		30.0	30.0	20.0						25.0	25.0	25.0
Total Split (%)		40.0%	40.0%	26.7%						33.3%	33.3%	33.3%
Maximum Green (s)		24.5	24.5	16.0						19.5	19.5	19.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Ribrards) Plan: PM Peak Gen

	•	-	•	•	•	•	1	†	~	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		25.7	25.7	26.3	58.3					10.9	10.9	10.9
Actuated g/C Ratio		0.34	0.34	0.35	0.78					0.15	0.15	0.15
v/c Ratio		0.42	0.25	0.71	0.26					0.38	0.43	0.39
Control Delay		20.7	4.6	26.8	1.3					32.9	34.6	33.5
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		20.7	4.6	26.8	1.3					32.9	34.6	33.5
LOS		С	Α	С	Α					С	С	С
Approach Delay		16.9			10.8						33.6	
Approach LOS		В			В						С	
Queue Length 50th (ft)		97	0	100	13					44	46	40
Queue Length 95th (ft)		127	30	108	14					78	83	73
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		1225	637	601	2723					448	405	402
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		0.42	0.25	0.71	0.26					0.21	0.24	0.22
Intersection Summary												

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 13 (17%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 15.8 Intersection LOS: B Intersection Capacity Utilization 46.4% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Route)Plan: PM Peak Gen

	•	→	•	•	←	•	4	†	~	>	Ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	^			44	7	¥	ર્ન	7			
Traffic Volume (vph)	80	495	0	0	506	161	164	0	255	0	0	0
Future Volume (vph)	80	495	0	0	506	161	164	0	255	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			0			100			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950						0.950	0.950				
Satd. Flow (prot)	1719	3574	0	0	3539	1406	1678	1573	1743	0	0	0
Flt Permitted	0.950						0.950	0.950		•		•
Satd. Flow (perm)	1719	3574	0	0	3539	1406	1678	1573	1743	0	0	0
Right Turn on Red			Yes			Yes			No	•	•	Yes
Satd. Flow (RTOR)						199						
Link Speed (mph)		35			40	100		30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			13.0			15.5			11.1	
Peak Hour Factor	0.85	0.85	0.85	0.81	0.81	0.81	0.84	0.84	0.84	0.88	0.88	0.88
Heavy Vehicles (%)	5%	1%	0%	0%	2%	11%	9%	0%	5%	0%	0%	0%
Adj. Flow (vph)	94	582	0	0	625	199	195	0	304	0	0	0
Shared Lane Traffic (%)	0 -1	002	· ·	0	020	100	50%	U	004	U	U	U
Lane Group Flow (vph)	94	582	0	0	625	199	97	98	304	0	0	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)	Loit	24	ragin	Loit	12	rugiit	Loit	14	rugiit	Loit	14	ragne
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15	1.00	9	15	1.00	9	15	1.00	9	15	0.00	9
Turn Type	Prot	NA		10	NA	Prot	Split	NA	Prot			•
Protected Phases	1	1.2			2	2	4	4	4			
Permitted Phases	•	• -			_	_	•	•	•			
Detector Phase	1	12			2	2	4	4	4			
Switch Phase	•				_	_	•	•	•			
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	20.0				31.0	31.0	24.0	24.0	24.0			
Total Split (%)	26.7%				41.3%	41.3%	32.0%	32.0%	32.0%			
Maximum Green (s)	16.0				25.5	25.5	19.0	19.0	19.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag	3.0	0.0	0.0			
Lead-Lag Optimize?	Leau				Lay	Lay						
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			
VEHICLE EXCELLISION (2)	3.0				0.2	0.2	3.0	3.0	3.0			

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Route)Plan: PM Peak Gen

	•	→	*	•	•	•	1	Ť		-	ŧ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	12.0	49.1			31.6	31.6	16.9	16.9	16.9			
Actuated g/C Ratio	0.16	0.65			0.42	0.42	0.23	0.23	0.23			
v/c Ratio	0.34	0.25			0.42	0.28	0.26	0.28	0.77			
Control Delay	20.9	0.3			11.4	1.8	24.8	25.3	41.3			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	20.9	0.3			11.4	1.8	24.8	25.3	41.3			
LOS	С	Α			В	Α	С	С	D			
Approach Delay		3.1			9.1			34.9				
Approach LOS		Α			Α			С				
Queue Length 50th (ft)	19	0			56	0	37	37	128			
Queue Length 95th (ft)	31	0			94	7	71	72	194			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	366	2320			1490	707	425	398	441			
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	0.26	0.25			0.42	0.28	0.23	0.25	0.69			

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 51 (68%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 50

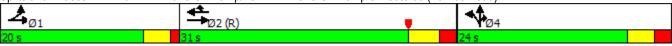
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 13.5 Intersection LOS: B
Intersection Capacity Utilization 46.4% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



	۶	-	•	•	—	•	4	†	~	>	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	ħβ			^	7	ሻ	f)			4	7
Traffic Volume (vph)	281	454	15	3	373	90	8	1	8	84	1	286
Future Volume (vph)	281	454	15	3	373	90	8	1	8	84	1	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			0			130		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995				0.850		0.862				0.850
Flt Protected	0.950			0.950			0.950				0.953	
Satd. Flow (prot)	1597	3557	0	1796	3522	1607	1685	1583	0	0	1742	1196
Flt Permitted	0.950			0.950			0.693				0.720	
Satd. Flow (perm)	1597	3557	0	1796	3522	1607	1229	1583	0	0	1316	1196
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				113		11				297
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.78	0.78	0.78	0.80	0.80	0.80	0.75	0.75	0.75	0.86	0.86	0.86
Heavy Vehicles (%)	13%	1%	0%	0%	2%	0%	0%	0%	0%	4%	0%	35%
Adj. Flow (vph)	360	582	19	4	466	113	11	1	11	98	1	333
Shared Lane Traffic (%)												
Lane Group Flow (vph)	360	601	0	4	466	113	11	12	0	0	99	333
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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		12	15		12	15		12	15		12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm	NA	pm+ov
Protected Phases	1	12		3	23	23		4			4	1
Permitted Phases							4			4		4
Detector Phase	1	12		3	23	23	4	4		4	4	1
Switch Phase												
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	17.0			11.0			17.0	17.0		17.0	17.0	17.0
Total Split (%)	22.7%			14.7%			22.7%	22.7%		22.7%	22.7%	22.7%
Maximum Green (s)	11.6			5.7			12.1	12.1		12.1	12.1	11.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0			0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?				_544			9	-~9		-49	~9	

Lane Group	Ø2		
Lanetonfigurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
FIt Protected			
Satd. Flow (prot)			
FIt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Turn Type			
Protected Phases	2		
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	15.0		
Minimum Split (s)	21.1		
Total Split (s)	30.0		
Total Split (%)	40%		
Maximum Green (s)	23.9		
Yellow Time (s)	4.8		
All-Red Time (s)	1.3		
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag		
Lead-Lag Optimize?			

Holiday Bulid	
Timing Plan: PM Peak Gen	

	•	→	•	•	•	•	1	†	~	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	22.8	46.8		5.2	28.4	28.4	9.8	9.8			9.8	35.1
Actuated g/C Ratio	0.30	0.62		0.07	0.38	0.38	0.13	0.13			0.13	0.47
v/c Ratio	0.74	0.27		0.03	0.35	0.17	0.07	0.06			0.58	0.46
Control Delay	41.9	4.4		33.0	16.9	3.4	28.1	16.3			43.9	5.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	41.9	4.4		33.0	16.9	3.4	28.1	16.3			43.9	5.4
LOS	D	Α		С	В	Α	С	В			D	Α
Approach Delay		18.5			14.4			22.0			14.2	
Approach LOS		В			В			С			В	
Queue Length 50th (ft)	128	39		2	82	0	5	0			44	8
Queue Length 95th (ft)	#323	44		10	84	18	15	11			84	57
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	484	2504		136	1344	683	198	264			212	717
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	0.24		0.03	0.35	0.17	0.06	0.05			0.47	0.46

Intersection Summary

Area Type: Other

Cycle Length: 75 Actuated Cycle Length: 75

Offset: 42 (56%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

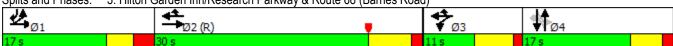
Maximum v/c Ratio: 0.74

Intersection LOS: B Intersection Signal Delay: 16.4 Intersection Capacity Utilization 53.1% ICU Level of Service A

Analysis Period (min) 15

Queue shown is maximum after two cycles.

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



^{# 95}th percentile volume exceeds capacity, queue may be longer.

Lane Group	Ø2	
Vehicle Extension (s)	2.5	
Recall Mode	C-Min	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Holiday Build Timing Plan: PM Peak Gen

	۶	→	•	•	+	•	•	†	<i>></i>	/	+	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	f)		ኻ	f)		ሻ		7	ሻ	f)	
Traffic Volume (vph)	0	0	1	166	0	0	0	104	268	47	204	0
Future Volume (vph)	0	0	1	166	0	0	0	104	268	47	204	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	0			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850							0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	1900	1615	0	1805	1900	0	1900	1743	1615	1805	1743	0
FIt Permitted			•	0.755						0.682		
Satd. Flow (perm)	1900	1615	0	1434	1900	0	1900	1743	1615	1296	1743	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		591							298			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.25	0.25	0.25	0.88	0.88	0.88	0.90	0.90	0.90	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	9%	0%	0%	9%	0.02
Adj. Flow (vph)	0	0	4	189	0	0	0	116	298	57	249	0
Shared Lane Traffic (%)	U	U	7	103	U	U	U	110	230	Ji	243	U
Lane Group Flow (vph)	0	4	0	189	0	0	0	116	298	57	249	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)	Leit	24	rtigiit	rtigrit	30	rtigrit	Leit	12	rtigrit	rtigrit	12	rtigrit
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	1.00	1.00	9	1.00	1.00	9	1.00	1.00	9	1.00	1.00	9
Turn Type	Perm	NA	3	Perm		9	Perm	NA	Perm	pm+pt	NA	9
Protected Phases	r c iiii	4		r C illi	4		r c iiii	2	r C illi	pili+pt 1	2	
Permitted Phases	4	4		4	7		2		2	2		
Detector Phase	4	4		4	4		2	2	2	1	2	
Switch Phase	4	4		4	4					1		
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0	15.0	4.5	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0	21.0	9.0	21.0	
Total Split (s)	40.0	40.0		40.0	40.0		51.0	51.0	51.0	9.0	51.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		51.0%	51.0%	51.0%	9.0%	51.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		45.0	45.0	45.0	5.0	45.0	
	3.0	3.0		3.0	3.0		4.0	4.0	4.0	3.0	4.0	
Yellow Time (s) All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	1.0	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	5.0		5.0	5.0		6.0	6.0	6.0	4.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	0.0	0.0			0.0		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	

4: Research Parkway & Food Bank Driv/Site Drive 1

	۶	→	•	•	←	4	4	†	/	/	+	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0		7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0		0	
Act Effct Green (s)		12.0		12.0				19.1	19.1	23.9	19.1	
Actuated g/C Ratio		0.25		0.25				0.40	0.40	0.51	0.40	
v/c Ratio		0.00		0.52				0.17	0.36	0.08	0.35	
Control Delay		0.0		21.6				12.5	3.4	6.0	13.9	
Queue Delay		0.0		0.0				0.0	0.0	0.0	0.0	
Total Delay		0.0		21.6				12.5	3.4	6.0	13.9	
LOS		Α		С				В	Α	Α	В	
Approach Delay					21.6			6.0			12.5	
Approach LOS					С			Α			В	
Queue Length 50th (ft)		0		44				22	0	6	51	
Queue Length 95th (ft)		0		105				58	41	20	104	
Internal Link Dist (ft)		116			123			640			398	
Turn Bay Length (ft)				170						115		
Base Capacity (vph)		1371		1093				1604	1510	709	1604	
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		0.00		0.17				0.07	0.20	0.08	0.16	
Intersection Summary												
Area Type:	Other											
Cycle Length: 100												

Cycle Length: 100

Actuated Cycle Length: 47.3

Natural Cycle: 45

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 11.4 Intersection LOS: B
Intersection Capacity Utilization 38.7% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Research Parkway & Food Bank Driv/Site Drive 1



	۶	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			ન	₽	
Traffic Volume (vph)	0	1	1	103	250	0
Future Volume (vph)	0	1	1	103	250	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						
Satd. Flow (prot)	1644	0	0	1744	1743	0
Flt Permitted						
Satd. Flow (perm)	1644	0	0	1744	1743	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.25	0.25	0.83	0.83	0.85	0.85
Heavy Vehicles (%)	0%	0%	0%	9%	9%	0%
Adj. Flow (vph)	0	4	1	124	294	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	125	294	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utiliza	tion 23.2%			IC	U Level o	of Service A
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	0.1					
			ND	NDT	057	000
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	À			. ની	\$	•
Traffic Vol, veh/h	0	1	1	103	250	0
Future Vol, veh/h	0	1	1	103	250	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,	# 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	25	25	83	83	85	85
Heavy Vehicles, %	0	0	0	9	9	0
Mvmt Flow	0	4	1	124	294	0
	linor2		Major1		//ajor2	
Conflicting Flow All	420	294	294	0	-	0
Stage 1	294	-	-	-	-	-
Stage 2	126	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	594	750	1279	-	-	-
Stage 1	761	-	-	-	-	-
Stage 2	905	-	_	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	593	750	1279	_	_	_
Mov Cap-2 Maneuver	593	-		_	_	_
Stage 1	760					
Stage 2	905	_				_
Slaye Z	300	<u>-</u>	-	_	_	-
Approach	EB		NB		SB	
HCM Control Delay, s	9.8		0.1		0	
HCM LOS	Α					
		NE	Not	EDL 4	057	000
Minor Lane/Major Mvmt		NBL		EBLn1	SBT	SBR
Capacity (veh/h)		1279	-		-	-
HCM Lane V/C Ratio		0.001		0.005	-	-
HCM Control Delay (s)		7.8	0	9.8	-	-
HCM Lane LOS		Α	Α	Α	-	-
HCM 95th %tile Q(veh)		0	-	0	-	-
. ,						

	٠	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	7	7	7		ĵ.	
Traffic Volume (vph)	0	1	0	103	249	0
Future Volume (vph)	0	1	0	103	249	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	0		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	1900	1615	1900	1743	1696	0
Flt Permitted						
Satd. Flow (perm)	1900	1615	1900	1743	1696	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.25	0.25	0.81	0.81	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	9%	12%	0%
Adj. Flow (vph)	0	4	0	127	323	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	4	0	127	323	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
•	Other					
Control Type: Unsignalized	Julei					
	ion 22 10/			10	lll ovol s	of Service A
Intersection Capacity Utilizat	1011 23.1%			IC	U Level (oervice A
Analysis Period (min) 15						

 $\label{thm:continuous} G:\label{thm:continuous} $$G:\label{thm:continuous} $$G:\label{thm:continuous} $$BL\ Companies $$$

Int Delay, s/veh	Intersection							
Lane Configurations	Int Delay, s/veh	0.1						
Lane Configurations	Movement	EBI	FBF	EBR I	NBI	NBT	SBT	SBR
Traffic Vol, veh/h 0 1 0 103 249 0 Future Vol, veh/h 0 1 0 103 249 0 Conflicting Peds, #/hr 0 0 0 0 0 0 Sign Control Stop Stop Free B								OBIT
Future Vol, veh/h 0 1 0 103 249 0 Conflicting Peds, #/hr 0 0 0 0 0 0 Sign Control Stop Stop Free Free <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>0</td></t<>								0
Conflicting Peds, #/hr 0 0 0 0 0 0 Sign Control Stop Stop Free								
Sign Control Stop RT Channelized Stop None Free Free Free Free Free Free RT Channelized - None - None <td><u> </u></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	<u> </u>							
RT Channelized - None - None - None Storage Length 0 0 100								
Storage Length								
Veh in Median Storage, # 0 - - 0 0 - Grade, % 0 - - 0 0 - Peak Hour Factor 25 25 81 81 77 77 Heavy Vehicles, % 0 0 0 9 12 0 Mwmt Flow 0 4 0 127 323 0 Minor Lane/Major Mvmt Minor Major1 Major2 Major2 0 Major/Minor Minor Major3 Major3 0 0 Major Minor Minor Major1 Major2 0 Conflicting Flow All 450 323 323 0 0 0 Stage 1 323 - <td< td=""><td></td><td>0</td><td></td><td></td><td></td><td></td><td>_</td><td>-</td></td<>		0					_	-
Grade, % 0 - - 0 0 - Peak Hour Factor 25 25 81 81 77 77 Heavy Vehicles, % 0 0 0 9 12 0 Mvmt Flow 0 4 0 127 323 0 Major/Minor Minor Major1 Major2 Conflicting Flow All 450 323 323 0 - 0 Stage 1 323 -							0	_
Peak Hour Factor 25 25 81 81 77 77 Heavy Vehicles, % 0 0 0 9 12 0 Mwmt Flow 0 4 0 127 323 0 Major/Minor Minor Major1 Major2 Conflicting Flow All 450 323 323 0 0 Stage 1 323 - - - - Stage 2 127 - - - - Critical Hdwy 6.4 6.2 4.1 - - - Critical Hdwy Stg 1 5.4 - - - - - Critical Hdwy Stg 2 5.4 - - - - - Critical Hdwy Stg 2 5.4 - - - - - Follow-up Hdwy 3.5 3.3 2.2 - - - Stage 1 738 - - - <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>								
Heavy Vehicles, %								
Momental Flow 0 4 0 127 323 0 Major/Minor Minor2 Major1 Major2 Conflicting Flow All 450 323 323 0 - 0 Stage 1 323 -								
Major/Minor Minor2 Major1 Major2 Conflicting Flow All 450 323 323 0 0 Stage 1 323 - - - - Stage 2 127 - - - - Critical Hdwy 6.4 6.2 4.1 - - - Critical Hdwy Stg 1 5.4 -								
Conflicting Flow All 450 323 323 0 - 0 Stage 1 323 -	MAINT LIOM	U		4	U	121	323	U
Conflicting Flow All 450 323 323 0 - 0 Stage 1 323 -								
Stage 1 323 - - - - Stage 2 127 - - - - Critical Hdwy 6.4 6.2 4.1 - - - Critical Hdwy Stg 1 5.4 - - - - - - Critical Hdwy Stg 2 5.4 - - - - - - - - - - - - - - - - - -	Major/Minor M	/linor2		Ma	ajor1	N	Major2	
Stage 1 323 -	Conflicting Flow All	450	32	323	323	0	-	0
Stage 2 127 -		323		-	-	-	-	-
Critical Hdwy 6.4 6.2 4.1 - - Critical Hdwy Stg 1 5.4 - - - - Critical Hdwy Stg 2 5.4 - - - - Follow-up Hdwy 3.5 3.3 2.2 - - - Pot Cap-1 Maneuver 571 723 1248 - - - - Stage 1 738 -		127		-	-	-	-	-
Critical Hdwy Stg 1 5.4 -		6.4	6.:	6.2	4.1	-	_	-
Critical Hdwy Stg 2 5.4 -	•				_	-	-	-
Follow-up Hdwy 3.5 3.3 2.2 Stage 1 738				_	_	_	_	_
Pot Cap-1 Maneuver 571 723 1248 - <td></td> <td></td> <td></td> <td>3.3</td> <td>22</td> <td>_</td> <td>_</td> <td>_</td>				3.3	22	_	_	_
Stage 1 738 -						_	_	_
Stage 2 904 -	•			-	_	_	_	_
Platoon blocked, %				_	_	_	_	_
Mov Cap-1 Maneuver 571 723 1248 - - - Mov Cap-2 Maneuver 571 - <td></td> <td>JU-1</td> <td></td> <td></td> <td></td> <td>_</td> <td>_</td> <td>_</td>		JU-1				_	_	_
Mov Cap-2 Maneuver 571 -	-	571	72	723 1	12/18	_		
Stage 1 738 -			12		1240	_	_	_
Stage 2 904 -					_	_	-	-
Approach EB NB SB HCM Control Delay, s 10 0 0 HCM LOS B Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT Capacity (veh/h) 1248 - - 723 - HCM Lane V/C Ratio - - 0.006 - HCM Control Delay (s) 0 - 0 10 -	•					-	-	-
HCM Control Delay, s 10 0 0	Stage 2	904		-	-	-	-	-
HCM Control Delay, s 10 0 0								
HCM Control Delay, s 10 0 0 HCM LOS B Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT Capacity (veh/h) 1248 - - 723 - HCM Lane V/C Ratio - - 0.006 - HCM Control Delay (s) 0 - 0 10 -	Approach	EB			NB		SB	
Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT Capacity (veh/h) 1248 - - 723 - HCM Lane V/C Ratio - - - 0.006 - HCM Control Delay (s) 0 - 0 10 -		10			0		0	
Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT Capacity (veh/h) 1248 - - 723 - HCM Lane V/C Ratio - - - 0.006 - HCM Control Delay (s) 0 - 0 10 -								
Capacity (veh/h) 1248 723 - HCM Lane V/C Ratio 0.006 - HCM Control Delay (s) 0 - 0 10 -		_						
Capacity (veh/h) 1248 723 - HCM Lane V/C Ratio 0.006 - HCM Control Delay (s) 0 - 0 10 -	N4: 1 / / / N4 : N4		NE	NDI .	NDT	-DL 4 5	-DL 2	OPT
HCM Lane V/C Ratio 0.006 - HCM Control Delay (s) 0 - 0 10 -								
HCM Control Delay (s) 0 - 0 10 -			124	1248	-			-
				-	-			-
					-			-
	HCM Lane LOS			Α	-	Α	В	-
HCM 95th %tile Q(veh) 0 0 -	HCM 95th %tile Q(veh)			0	-	-	0	-

	۶	→	•	•	←	•	1	†	/	/	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	23	19	3	115	15	56	7	82	14	11	131	22
Future Volume (vph)	23	19	3	115	15	56	7	82	14	11	131	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.959			0.982			0.982	
Flt Protected		0.975			0.970			0.997			0.997	
Satd. Flow (prot)	0	1834	0	0	1767	0	0	1710	0	0	1685	0
Flt Permitted		0.975			0.970			0.997			0.997	
Satd. Flow (perm)	0	1834	0	0	1767	0	0	1710	0	0	1685	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.64	0.64	0.64	0.66	0.66	0.66	0.72	0.72	0.72	0.67	0.67	0.67
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	11%	0%	0%	12%	6%
Adj. Flow (vph)	36	30	5	174	23	85	10	114	19	16	196	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	0	0	282	0	0	143	0	0	245	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
71	Other											
Control Type: Unsignalized												
Intersection Capacity Utilizati	on 32.3%			IC	CU Level o	of Service	Α					
Analysis Period (min) 15												

Intersection												
Intersection Delay, s/veh	10.3											
Intersection LOS	В											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	23	19	3	115	15	56	7	82	14	11	131	22
Future Vol, veh/h	23	19	3	115	15	56	7	82	14	11	131	22
Peak Hour Factor	0.64	0.64	0.64	0.66	0.66	0.66	0.72	0.72	0.72	0.67	0.67	0.67
Heavy Vehicles, %	0	0	0	0	0	0	0	11	0	0	12	6
Mvmt Flow	36	30	5	174	23	85	10	114	19	16	196	33
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	C
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	9			11			9.4			10.4		
HCM LOS	Α			В			Α			В		
Lane		NBLn1	EBLn1	WBLn1	SBLn1							
Vol Left, %		7%	51%	62%	7%							
Vol Thru, %		80%	42%	8%	80%							
Vol Right, %		14%	7%	30%	13%							
Sign Control		Stop	Stop	Stop	Stop							
Traffic Vol by Lane		103	45	186	164							
LT Vol		7	23	115	11							
Through Vol		82	19	15	131							
RT Vol		14	3	56	22							
Lane Flow Rate		143	70	282	245							
Geometry Grp		1	1	1	1							
Degree of Util (X)		0.2	0.105	0.382	0.333							
Departure Headway (Hd)		0.2 5.023	0.105 5.393	0.382 4.878	4.891							
		0.2 5.023 Yes	0.105	0.382								
Departure Headway (Hd) Convergence, Y/N Cap		0.2 5.023 Yes 705	0.105 5.393 Yes 669	0.382 4.878 Yes 730	4.891 Yes 727							
Departure Headway (Hd) Convergence, Y/N		0.2 5.023 Yes 705 3.119	0.105 5.393 Yes 669 3.393	0.382 4.878 Yes 730 2.96	4.891 Yes 727 2.976							
Departure Headway (Hd) Convergence, Y/N Cap		0.2 5.023 Yes 705	0.105 5.393 Yes 669	0.382 4.878 Yes 730	4.891 Yes 727							
Departure Headway (Hd) Convergence, Y/N Cap Service Time		0.2 5.023 Yes 705 3.119	0.105 5.393 Yes 669 3.393	0.382 4.878 Yes 730 2.96	4.891 Yes 727 2.976 0.337 10.4							
Departure Headway (Hd) Convergence, Y/N Cap Service Time HCM Lane V/C Ratio		0.2 5.023 Yes 705 3.119 0.203	0.105 5.393 Yes 669 3.393 0.105	0.382 4.878 Yes 730 2.96 0.386	4.891 Yes 727 2.976 0.337							

	-	•	•	•		
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	f)			ર્ન	ħ	7
Traffic Volume (vph)	44	0	0	26	160	0
Future Volume (vph)	44	0	0	26	160	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1863	0	0	1863	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	1863	0	0	1863	1770	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	0	0	28	174	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	0	28	174	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 18.9%

ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	6.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	\$		1,02	ન	ሻ	7
Traffic Vol, veh/h	44	0	0	26	160	0
Future Vol, veh/h	44	0	0	26	160	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage,	, # 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	0	0	28	174	0
Major/Minor N	//ajor1		Major2		Minor1	
						40
Conflicting Flow All	0	0	48	0	76	48
Stage 1	-	-	-	-	48	-
Stage 2	-	-	4.12	-	28	6.00
Critical Hdwy	-	-		-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 5.42	-
Critical Hdwy Stg 2	-	-	2.218	-	3.518	2 240
Follow-up Hdwy	-	-	1559		927	1021
Pot Cap-1 Maneuver	-	-		-	974	
Stage 1	-		-	-	974	-
Stage 2 Platoon blocked, %		-	-	-	990	-
Mov Cap-1 Maneuver	-	-	1559	-	927	1021
Mov Cap-1 Maneuver		_	1009	-	927	1021
	-	-	-	-	974	-
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	990	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		9.8	
HCM LOS					Α	
Minor Lane/Major Mvmt	t I	NBLn11	NBLn2	EBT	EBR	WBL
Capacity (veh/h)		927	-		-	1559
HCM Lane V/C Ratio		0.188	-	_	_	-
HCM Control Delay (s)		9.8	0	-	_	0
HCM Lane LOS		A	A	-	_	A
HCM 95th %tile Q(veh)		0.7	-	-	-	0
7000 000		9 .,				

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: AM

	۶	→	•	•	•	•	4	†	/	>	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	7	^					7	4	7
Traffic Volume (vph)	0	596	227	381	950	0	0	0	0	191	0	409
Future Volume (vph)	0	596	227	381	950	0	0	0	0	191	0	409
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			100			25			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.863	0.850
Flt Protected			0.000	0.950						0.950	0.996	0.000
Satd. Flow (prot)	0	3008	1455	1597	2756	0	0	0	0	1678	1320	1442
Flt Permitted	•			0.950		•	•		•	0.950	0.996	
Satd. Flow (perm)	0	3008	1455	1597	2756	0	0	0	0	1678	1320	1442
Right Turn on Red	J	0000	Yes	1001	2100	Yes	J	J	Yes	1010	1020	No
Satd. Flow (RTOR)			241			100			100			110
Link Speed (mph)		45	- ! !		35			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			17.8			8.5			11.3	
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.88	0.88	0.88	0.82	0.82	0.82
Heavy Vehicles (%)	0.54	20%	11%	13%	31%	0%	0%	0%	0.00	9%	0.02	17%
Adj. Flow (vph)	0 /0	634	241	414	1033	0	0 / 0	0 /0	0 /0	233	0	499
Shared Lane Traffic (%)	U	004	271	717	1000	U	U	U	U	10%	U	48%
Lane Group Flow (vph)	0	634	241	414	1033	0	0	0	0	210	263	259
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)	Leit	12	rtigitt	Leit	24	rtigrit	Leit	14	rtigiit	Leit	14	rtigiit
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	1.00	1.00	9	1.00	1.00	9	1.00	1.00	9	15	0.90	9
Turn Type	13	NA	Prot	Prot	NA	9	13		9	Split	NA	Prot
Protected Phases		2	2	1	12					Spiit 4	4	4
Permitted Phases		2	2		1 2					4	4	4
Detector Phase		2	2	1	12					4	4	4
Switch Phase		2	2	ı	1 2					4	4	4
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	0.0
` ,		15.0 20.5		11.0								9.0
Minimum Split (s)			20.5	26.0						14.5 31.0	14.5	14.5
Total Split (s)		23.0									31.0	31.0
Total Split (%)		28.8%	28.8%	32.5%						38.8%	38.8%	38.8%
Maximum Green (s)		17.5	17.5	22.0						25.5	25.5	25.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0

 $\label{thm:comparison} G:\label{thm:comparison} $$G:\label{thm:comparison} $$G:\label{thm:comparison} $$BL\ Companies $$$

04/20/2021

ı

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: AM

	•	-	*	•	•	•	1	T		-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		19.5	19.5	24.5	49.5					21.0	21.0	21.0
Actuated g/C Ratio		0.24	0.24	0.31	0.62					0.26	0.26	0.26
v/c Ratio		0.86	0.45	0.85	0.61					0.48	0.76	0.69
Control Delay		44.7	6.9	32.1	5.2					27.6	41.1	35.5
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		44.7	6.9	32.1	5.2					27.6	41.1	35.5
LOS		D	Α	С	Α					С	D	D
Approach Delay		34.3			12.9						35.3	
Approach LOS		С			В						D	
Queue Length 50th (ft)		165	0	156	35					90	128	118
Queue Length 95th (ft)		#273	56	m#274	m184					131	184	168
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		734	537	488	1705					534	420	459
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		0.86	0.45	0.85	0.61					0.39	0.63	0.56

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 78 (98%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 24.4 Intersection LOS: C
Intersection Capacity Utilization 62.6% ICU Level of Service B

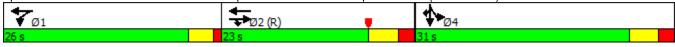
Analysis Period (min) 15

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: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: AM

	•	-	•	•	←	•	4	†	~	>	Ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ř	† †			^	7	ř	4	7			
Traffic Volume (vph)	192	595	0	0	988	295	343	5	291	0	0	0
Future Volume (vph)	192	595	0	0	988	295	343	5	291	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.91	0.95	1.00	1.00	1.00
Frt						0.850		0.940	0.850			
Flt Protected	0.950						0.950	0.972				
Satd. Flow (prot)	1656	3008	0	0	2735	1394	1604	1390	1525	0	0	0
Flt Permitted	0.950		-				0.950	0.972		•	•	•
Satd. Flow (perm)	1656	3008	0	0	2735	1394	1604	1390	1525	0	0	0
Right Turn on Red			Yes	•		Yes			No			Yes
Satd. Flow (RTOR)						304			110			. 00
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			14.9			15.5			11.1	
Peak Hour Factor	0.93	0.93	0.93	0.97	0.97	0.97	0.86	0.86	0.86	0.88	0.88	0.88
Heavy Vehicles (%)	9%	20%	0%	0%	32%	12%	14%	0%	14%	0%	0%	0%
Adj. Flow (vph)	206	640	0	0	1019	304	399	6	338	0	0	0
Shared Lane Traffic (%)	200	0.10	· ·	· ·	1010	001	36%	•	30%			•
Lane Group Flow (vph)	206	640	0	0	1019	304	255	251	237	0	0	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)		24			24			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA			NA	Prot	Split	NA	Prot			-
Protected Phases	1	12			2	2	4	4	4			
Permitted Phases												
Detector Phase	1	12			2	2	4	4	4			
Switch Phase												
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	25.0				29.0	29.0	26.0	26.0	26.0			
Total Split (%)	31.3%				36.3%	36.3%	32.5%	32.5%	32.5%			
Maximum Green (s)	21.0				23.5	23.5	21.0	21.0	21.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag			- 0.0			
Lead-Lag Optimize?					_∝9	_~9						
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			
	0.0				0.2	0.2	0.0	0.0	0.0			

ı

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: AM

		-	•	•	•	_		T		-	¥	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	16.7	52.5			30.3	30.3	18.5	18.5	18.5			
Actuated g/C Ratio	0.21	0.66			0.38	0.38	0.23	0.23	0.23			
v/c Ratio	0.60	0.32			0.98	0.42	0.69	0.78	0.67			
Control Delay	45.5	1.0			48.2	10.5	37.7	46.1	37.5			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	45.5	1.0			48.2	10.5	37.7	46.1	37.5			
LOS	D	Α			D	В	D	D	D			
Approach Delay		11.9			39.5			40.5				
Approach LOS		В			D			D				
Queue Length 50th (ft)	90	5			~298	41	117	124	108			
Queue Length 95th (ft)	m96	m10			m#333	m46	187	#202	175			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	434	1938			1036	716	421	364	400			
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	0.47	0.33			0.98	0.42	0.61	0.69	0.59			

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 34 (43%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 31.7
Intersection Capacity Utilization 62.6%

Intersection LOS: C ICU Level of Service B

Analysis Period (min) 15

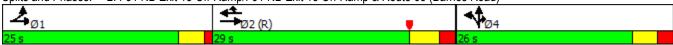
Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



Timing Plan: AM

	۶	→	•	•	—	•	•	†	/	/	↓	✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	77	ĥ		ሻ	^	7	ሻ	f)			4	7
Traffic Volume (vph)	341	520	25	10	980	145	35	25	10	78	5	268
Future Volume (vph)	341	520	25	10	980	145	35	25	10	78	5	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			25			130		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993				0.850		0.957				0.850
Flt Protected	0.950			0.950			0.950				0.955	
Satd. Flow (prot)	3045	1547	0	1796	2477	1516	1668	1753	0	0	1781	1509
FIt Permitted	0.950			0.950			0.691				0.689	
Satd. Flow (perm)	3045	1547	0	1796	2477	1516	1213	1753	0	0	1285	1509
Right Turn on Red			Yes			Yes			Yes	-		Yes
Satd. Flow (RTOR)		5				163		20				115
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.51	0.51	0.51	0.81	0.81	0.81
Heavy Vehicles (%)	15%	23%	1%	0%	45%	6%	1%	0%	1%	2%	0%	7%
Adj. Flow (vph)	371	565	27	11	1101	163	69	49	20	96	6	331
Shared Lane Traffic (%)	<u> </u>											
Lane Group Flow (vph)	371	592	0	11	1101	163	69	69	0	0	102	331
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)	LOIC	24	rugiit	20.0	24	. ug.ic	2010	10	ı üğric	2010	0	, agait
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10						10				
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	1.00	12	15	1.01	12	15	1.01	12	15	1.00	12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm	NA	pt+ov
Protected Phases	7	7 8		3	38	3 8	1 01111	4		. 0	4	4 7
Permitted Phases	•	, 0			0.0		4	'		4	•	
Detector Phase	7	7 8		3	38	38	4	4		4	4	4 7
Switch Phase	•	, 0			0.0		•	'		•	•	
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	
Total Split (s)	26.0			11.0			19.0	19.0		19.0	19.0	
Total Split (%)	32.5%			13.8%			23.8%	23.8%		23.8%	23.8%	
Maximum Green (s)	20.6			5.7			14.1	14.1		14.1	14.1	
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	
Lost Time Adjust (s)	0.0			0.0			0.0	0.0		1.3	0.0	
• , ,	5.4			5.3			4.9	4.9			4.9	
Total Lost Time (s)										Loa		
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												

Lane Group	Ø8	
LanerConfigurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Fit Protected		
Satd. Flow (prot)		
Fit Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	8	
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	15.0	
Minimum Split (s)	21.1	
Total Split (s)	24.0	
Total Split (%)	30%	
Maximum Green (s)	17.9	
Yellow Time (s)	4.8	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	Lug	

	•	-	•	•	•	•	1	†	~	-	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	
Recall Mode	None			None			None	None		None	None	
Act Effct Green (s)	20.0	47.3		5.7	33.0	33.0	11.4	11.4			11.4	36.8
Actuated g/C Ratio	0.25	0.59		0.07	0.41	0.41	0.14	0.14			0.14	0.46
v/c Ratio	0.49	0.65		0.09	1.08	0.23	0.40	0.26			0.56	0.44
Control Delay	29.5	14.0		36.4	78.3	4.0	37.4	24.9			43.4	10.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	29.5	14.0		36.4	78.3	4.0	37.4	24.9			43.4	10.4
LOS	С	В		D	Е	Α	D	С			D	В
Approach Delay		20.0			68.4			31.1			18.2	
Approach LOS		С			Е			С			В	
Queue Length 50th (ft)	93	73		5	~356	0	32	22			48	60
Queue Length 95th (ft)	133	129		21	#470	36	37	27			83	98
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	807	917		127	1022	721	213	325			226	765
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	0.46	0.65		0.09	1.08	0.23	0.32	0.21			0.45	0.43

Intersection Summary

Area Type: Other

Cycle Length: 80 Actuated Cycle Length: 80

Offset: 27 (34%), Referenced to phase 8:EBWB, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08 Intersection Signal Delay: 42.2

Intersection LOS: D Intersection Capacity Utilization 62.1% ICU Level of Service B

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.

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø8
Vehicle Extension (s)	5.0
Recall Mode	C-Min
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

4: Research Parkway & Food Bank Driv/Site Drive 1

Lane Configurations		۶	→	•	•	+	•	1	†	~	/	+	-√
Traffic Volume (yph) 0 0 5 122 0 0 0 35 394 82 15 224 0 Ideal Flow (yphpi) 1900 1900 1900 1900 1900 1900 1900 190	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph) 0 0 5 122 0 0 0 35 394 82 15 224 0 1 104 15 15 15 15 15 15 15 15 15 15 15 15 15	Lane Configurations	ř	ĵ,		ሻ	£		ň	+	7	ř	ĵ.	
Ideal Flow (ryphpi)				5	122		0	35		82	15		0
Storage Length (fit) 0	Future Volume (vph)	0	0	5	122	0	0	35	394	82	15	224	0
Storage Length (fit) 0	· · · /	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Lanes	(,			0	170		0	140		0	115		0
Taper Length (ff)		1		0	1		0	1		1	1		0
Lane Util. Factor		25			25			130			100		
Fit Protected 1900 1615 0 1805 1900 0 1805 1805 1900 0 1805	Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot) 1900 1615 0 1805 1900 0 1805 1845 1615 1626 1727 0 0 0 1805 1845 1615 1626 1727 0 0 0 1805 1845 1615 1626 1727 0 0 0 1805 1845 1615 1626 1727 0 0 0 1805 1845 1615 1626 1727 0 0 1805 1845 1615 1626 1727 0 0 1805 1845 1615 1626 1727 0 0 1805 1845 1615 1626 1727 0 0 1805 1845 1615 1626 1727 0 0 1805 1845 1615 1626 1727 0 0 1805 1845 1615 1626 1727 0 0 1805 1845 1615 1626 1727 0 0 1805 1845 1615 1626 1727 0 1727 0 1805 1845 1615 1626 1727 0 1727 0 1805 1845 1615 1626 1727 0 1727 0 1805 1845 1615 1626 1727 0 1727 0 1805 1845 1615 1626 1727 0 1805 1845 1615 1626 1727 0 1727 0 1805 1845 1615 1626 1727 0 1727 0 1805 1845 1615 1626 1727 0 1727 0 1805 1845 1615 1626 1727 0 1727 0 1805 1845 1615 1626 1727 0 1727 0 1805 1845 1615 1626 1727 0 1727 0 1805 1845 1615 1626 1727 0 1805 1845 1615 1626 1727 0 1805 1845 1615 1626 1727 0 1805 1845 1615 1626 1727 0 1805 1845 1615 1626 1727 0 1805 1845 1615 1626 1727 1805 1805 1805 1805 1845 1727 1805 1	Frt		0.850							0.850			
Fit Permitted	Flt Protected				0.950			0.950			0.950		
Satd. Flow (perm) 1900 1615 7es	Satd. Flow (prot)	1900	1615	0	1805	1900	0	1805	1845	1615	1626	1727	0
Right Turn on Red					0.750			0.573			0.353		
Satd. Flow (RTOR) 517	Satd. Flow (perm)	1900	1615	0	1425	1900	0	1089	1845	1615	604	1727	0
Link Speed (mph)	Right Turn on Red			Yes			Yes			Yes			Yes
Link Distance (ft)	•		517							122			
Travel Time (s)	, ,		30			30			30			30	
Peak Hour Factor	Link Distance (ft)		196			203			720			478	
Heavy Vehicles (%)			4.5			4.6			16.4			10.9	
Adj. Flow (vph) 0		0.42		0.42	0.88	0.88	0.88	0.67	0.67	0.67	0.73	0.73	0.73
Adj. Flow (vph) 0	Heavy Vehicles (%)	0%		0%		0%	0%	0%		0%			
Shared Lane Traffic (%) Lane Group Flow (vph) 0 12 0 139 0 0 52 588 122 21 307 0 2 2 2 2 307 0 2 2 2 307 0 2 2 2 3 3 3 3 3 3 3	, ,												
Lane Group Flow (vph)													
Enter Blocked Intersection No No No No No No No	` ,	0	12	0	139	0	0	52	588	122	21	307	0
Left Left Left Right Right Right Right Right Left Left Left Right Right Right Right Median Width(ft) 24 30 12 12 12 12 12 12 12 1		No		No		No	No		No		No	No	No
Median Width(ft) 24 30 12 12 Link Offset(ft) 0 12 0 0 Crosswalk Width(ft) 16 16 16 16 Two way Left Turn Lane 1.00 1													
Link Offset(ft) 0 12 0 0 Crosswalk Width(ft) 16 16 16 16 Two way Left Turn Lane 1.00 1.			24		, i				12	, i			
Crosswalk Width(ft) 16 16 16 16 16 16 16 16 16 16 16 Two way Left Turn Lane 100 1.00			0			12			0			0	
Two way Left Turn Lane Headway Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	. ,		16			16			16			16	
Headway Factor 1.00	` ,												
Turning Speed (mph) 15 9 15 9 15 9 15 9 Turn Type Perm NA Perm Perm NA Perm pm+pt NA Protected Phases 4 4 4 2 2 2 2 Detector Phase 4 4 4 4 2 2 2 1 2 Switch Phase Winimum Initial (s) 7.0 7.0 7.0 15.0 15.0 4.5 15.0 Minimum Split (s) 12.0 12.0 12.0 12.0 21.0 21.0 21.0 9.0 21.0 Total Split (s) 40.0 40.0 40.0 51.0 51.0 51.0 9.0 51.0 Total Split (%) 40.0% 40.0% 40.0% 51.0% 51.0% 51.0% 9.0% 51.0% Maximum Green (s) 35.0 35.0 35.0 35.0 35.0 45.0 45.0 45.0 45.0 <t< td=""><td></td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.00</td></t<>		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turn Type Perm NA Perm Perm NA Perm pm+pt NA Protected Phases 4 4 2 2 2 2 Permitted Phases 4 4 4 2 2 2 2 Detector Phase 4 4 4 4 2 2 2 1 2 Switch Phase Winimum Initial (s) 7.0 7.0 7.0 15.0 15.0 15.0 4.5 15.0 Minimum Initial (s) 7.0 7.0 7.0 15.0 15.0 15.0 4.5 15.0 Minimum Split (s) 12.0 12.0 12.0 21.0 21.0 21.0 9.0 21.0 Minimum Split (s) 12.0 12.0 12.0 21.0 21.0 21.0 9.0 21.0 Minimum Split (s) 12.0 12.0 12.0 21.0 21.0 21.0 9.0 21.0 Total Split (s) 40.0 40.0 <td></td> <td>15</td> <td></td> <td>9</td> <td>15</td> <td></td> <td>9</td> <td>15</td> <td></td> <td>9</td> <td>15</td> <td></td> <td></td>		15		9	15		9	15		9	15		
Protected Phases 4 4 2 1 2 Permitted Phases 4 4 4 2 2 2 2 Detector Phase 4 4 4 4 2 2 2 1 2 Switch Phase Winimum Initial (s) 7.0 7.0 7.0 7.0 15.0 15.0 15.0 4.5 15.0 Minimum Initial (s) 7.0 7.0 7.0 15.0 15.0 15.0 4.5 15.0 Minimum Split (s) 12.0 12.0 12.0 21.0 21.0 21.0 9.0 21.0 Total Split (s) 40.0 40.0 40.0 51.0 51.0 51.0 9.0 51.0 Total Split (%) 40.0% 40.0% 40.0% 51.0% 51.0% 51.0% 9.0% 51.0% Maximum Green (s) 35.0 35.0 35.0 35.0 45.0 45.0 45.0 45.0 45.0 45.0 45	<u> </u>	Perm	NA		Perm			Perm	NA	Perm	pm+pt	NA	
Detector Phase 4 4 4 4 4 2 2 2 1 2 Switch Phase Minimum Initial (s) 7.0 7.0 7.0 7.0 15.0 15.0 15.0 4.5 15.0 Minimum Split (s) 12.0 12.0 12.0 21.0 21.0 21.0 9.0 21.0 Total Split (s) 40.0 40.0 40.0 51.0 51.0 51.0 9.0 51.0 Total Split (%) 40.0% 40.0% 40.0% 51.0% 51.0% 51.0% 9.0% 51.0% Maximum Green (s) 35.0 35.0 35.0 35.0 35.0 45.0 45.0 45.0 5.0 45.0 Yellow Time (s) 3.0 3.0 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 1.0 2.0 Lost Time (s) 5.0 5.0			4			4					1		
Detector Phase 4 4 4 4 4 2 2 2 1 2 Switch Phase Minimum Initial (s) 7.0 7.0 7.0 7.0 15.0 15.0 15.0 4.5 15.0 Minimum Split (s) 12.0 12.0 12.0 21.0 21.0 21.0 9.0 21.0 Total Split (s) 40.0 40.0 40.0 51.0 51.0 51.0 9.0 51.0 Total Split (%) 40.0% 40.0% 40.0% 51.0% 51.0% 51.0% 9.0% 51.0% Maximum Green (s) 35.0 35.0 35.0 35.0 35.0 45.0 45.0 45.0 5.0 45.0 Yellow Time (s) 3.0 3.0 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 1.0 2.0 Lost Time (s) 5.0 5.0		4			4			2		2	2		
Switch Phase Minimum Initial (s) 7.0 7.0 7.0 7.0 15.0 15.0 15.0 4.5 15.0 Minimum Split (s) 12.0 12.0 12.0 12.0 21.0 21.0 21.0 9.0 21.0 Total Split (s) 40.0 40.0 40.0 51.0 51.0 51.0 9.0 51.0 Total Split (%) 40.0% 40.0% 40.0% 51.0% 51.0% 51.0% 9.0% 51.0% Maximum Green (s) 35.0 35.0 35.0 35.0 45.0 45.0 45.0 50.0 45.0 Yellow Time (s) 3.0 3.0 3.0 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 1.0 2.0 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 <td></td> <td>4</td> <td>4</td> <td></td> <td>4</td> <td>4</td> <td></td> <td></td> <td>2</td> <td></td> <td></td> <td>2</td> <td></td>		4	4		4	4			2			2	
Minimum Initial (s) 7.0 7.0 7.0 7.0 15.0 15.0 15.0 4.5 15.0 Minimum Split (s) 12.0 12.0 12.0 12.0 21.0 21.0 21.0 9.0 21.0 Total Split (s) 40.0 40.0 40.0 51.0 51.0 51.0 9.0 51.0 Total Split (%) 40.0% 40.0% 40.0% 51.0% 51.0% 51.0% 9.0% 51.0% Maximum Green (s) 35.0 35.0 35.0 35.0 45.0 45.0 45.0 45.0 Yellow Time (s) 3.0 3.0 3.0 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 2.0 1.0 2.0 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0													
Minimum Split (s) 12.0 12.0 12.0 12.0 21.0 21.0 21.0 21.0 9.0 21.0 Total Split (s) 40.0 40.0 40.0 51.0 51.0 51.0 9.0 51.0 Total Split (%) 40.0% 40.0% 40.0% 51.0% 51.0% 51.0% 9.0% 51.0% Maximum Green (s) 35.0 35.0 35.0 35.0 45.0 45.0 45.0 45.0 Yellow Time (s) 3.0 3.0 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 1.0 2.0 Lost Time Adjust (s) 0.0		7.0	7.0		7.0	7.0		15.0	15.0	15.0	4.5	15.0	
Total Split (s) 40.0 40.0 40.0 40.0 51.0 51.0 9.0 51.0 Total Split (%) 40.0% 40.0% 40.0% 51.0% 51.0% 51.0% 9.0% 51.0% Maximum Green (s) 35.0 35.0 35.0 35.0 45.0 45.0 45.0 45.0 Yellow Time (s) 3.0 3.0 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 1.0 2.0 Lost Time Adjust (s) 0.0													
Total Split (%) 40.0% 40.0% 40.0% 40.0% 51.0% 51.0% 51.0% 9.0% 51.0% Maximum Green (s) 35.0 35.0 35.0 45.0 45.0 45.0 45.0 Yellow Time (s) 3.0 3.0 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 1.0 2.0 Lost Time Adjust (s) 0.0 <td></td>													
Maximum Green (s) 35.0 35.0 35.0 35.0 45.0 45.0 45.0 5.0 45.0 Yellow Time (s) 3.0 3.0 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 1.0 2.0 Lost Time Adjust (s) 0.0													
Yellow Time (s) 3.0 3.0 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 1.0 2.0 Lost Time Adjust (s) 0.0 <													
All-Red Time (s) 2.0 <td>. ,</td> <td></td>	. ,												
Lost Time Adjust (s) 0.0	. ,												
Total Lost Time (s) 5.0 5.0 5.0 6.0 6.0 6.0 4.0 6.0 Lag	. ,												
Lead/Lag Lag Lag Lead Lag	2 ()												
								-~9	-~9	_~9		9	
Vehicle Extension (s) 1.0 1.0 1.0 2.0 2.0 2.0 1.0 2.0		1.0	1.0		1.0	1.0		2.0	2.0	2.0	1.0	2.0	
Recall Mode None None None Min Min Min None Min													

•		
Timing	Plan:	AM

	•	-	•	•	←	•	1	†	~	-	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)		10.2		10.2			29.1	29.1	29.1	30.2	29.1	
Actuated g/C Ratio		0.21		0.21			0.61	0.61	0.61	0.64	0.61	
v/c Ratio		0.02		0.46			0.08	0.52	0.12	0.04	0.29	
Control Delay		0.0		24.6			7.4	10.5	2.2	4.6	8.2	
Queue Delay		0.0		0.0			0.0	0.0	0.0	0.0	0.0	
Total Delay		0.0		24.6			7.4	10.5	2.2	4.6	8.2	
LOS		Α		С			Α	В	Α	Α	Α	
Approach Delay					24.6			9.0			7.9	
Approach LOS					С			Α			Α	
Queue Length 50th (ft)		0		26			5	81	0	2	35	
Queue Length 95th (ft)		0		106			20	175	9	7	98	
Internal Link Dist (ft)		116			123			640			398	
Turn Bay Length (ft)				170			140			115		
Base Capacity (vph)		1396		1141			970	1643	1451	501	1538	
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		0.01		0.12			0.05	0.36	0.08	0.04	0.20	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 47.5

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 10.4 Intersection LOS: B
Intersection Capacity Utilization 51.7% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Research Parkway & Food Bank Driv/Site Drive 1



	•	•	•	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			ર્ન	ĵ.	
Traffic Volume (vph)	0	6	58	336	233	6
Future Volume (vph)	0	6	58	336	233	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865				0.996	
Flt Protected				0.993		
Satd. Flow (prot)	1096	0	0	1705	1596	0
Flt Permitted				0.993		
Satd. Flow (perm)	1096	0	0	1705	1596	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.50	0.50	0.90	0.90	0.63	0.63
Heavy Vehicles (%)	0%	50%	3%	12%	19%	2%
Adj. Flow (vph)	0	12	64	373	370	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	0	437	380	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	ion 46.9%			IC	U Level c	of Service A
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	0.8					
		EDD	NDI	NDT	CDT	CDD
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Å	_	=-	4	4	
Traffic Vol, veh/h	0	6	58	336	233	6
Future Vol, veh/h	0	6	58	336	233	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	90	90	63	63
Heavy Vehicles, %	0	50	3	12	19	2
Mvmt Flow	0	12	64	373	370	10
	linor2		Major1		/lajor2	
Conflicting Flow All	876	375	380	0	-	0
Stage 1	375	-	-	-	-	-
Stage 2	501	-	-	-	-	-
Critical Hdwy	6.4	6.7	4.13	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.75	2.227	-	-	-
Pot Cap-1 Maneuver	322	577	1173	_	-	-
Stage 1	699	_	-	_	_	-
Stage 2	613	_	_	_	_	_
Platoon blocked, %	010			_	_	_
Mov Cap-1 Maneuver	300	577	1173			_
Mov Cap-1 Maneuver	300	JII	11/3		-	_
		-	-	-	-	-
Stage 1	651	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	11.4		1.2		0	
HCM LOS	В		1.2			
TIOW EOO						
Minor Lane/Major Mvmt		NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1173	-	577	-	-
HCM Lane V/C Ratio		0.055	-	0.021	-	-
HCM Control Delay (s)		8.2	0	11.4	_	_
HCM Lane LOS		A	A	В	_	_
HCM 95th %tile Q(veh)		0.2	-	0.1	_	_
HOW JOHN JUHIE Q(VEII)		0.2		0.1		

Analysis Period (min) 15

	۶	•	1	†	Ţ	1
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	+	1	
Traffic Volume (vph)	0	0	6	330	239	2
Future Volume (vph)	0	0	6	330	239	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.999	
Flt Protected			0.950			
Satd. Flow (prot)	1900	1900	1805	1667	1624	0
Flt Permitted			0.950			
Satd. Flow (perm)	1900	1900	1805	1667	1624	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.25	0.25	0.89	0.89	0.81	0.81
Heavy Vehicles (%)	0%	0%	0%	14%	17%	0%
Adj. Flow (vph)	0	0	7	371	295	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	7	371	297	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
<i>,</i> ,	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	on 20.7%			IC	CU Level of	of Service /

 $\label{thm:companies} G:\label{thm:companies} $$G:\label{thm:companies} $$G:\label{thm:companies} $$BL\ Companies $$$

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ħ	T T	NDL	<u> </u>	<u>361</u>	אופט
Traffic Vol, veh/h	0	0	6	330	239	2
Future Vol, veh/h	0	0	6	330	239	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	_	-
Veh in Median Storage,		-	-	0	0	-
Grade, %	0	-	_	0	0	-
Peak Hour Factor	25	25	89	89	81	81
Heavy Vehicles, %	0	0	0	14	17	0
Mvmt Flow	0	0	7	371	295	2
	-					
N. 4	0					
	linor2		Major1		//ajor2	
Conflicting Flow All	681	296	297	0	-	0
Stage 1	296	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	419	748	1276	-	-	-
Stage 1	759	-	-	-	-	-
Stage 2	692	-	-	-	-	-
Platoon blocked, %	44-	7.40	4070	-	-	-
Mov Cap-1 Maneuver	417	748	1276	-	-	-
Mov Cap-2 Maneuver	417	-	-	-	-	-
Stage 1	755	-	-	-	-	-
Stage 2	692	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	0		0.1		0	
HCM LOS	A					
Minor Lane/Major Mvmt		NBL	NBT	EBLn1 E	EBLn2	SBT
Capacity (veh/h)		1276				
HCM Lane V/C Ratio		0.005	_	-	_	_
HCM Control Delay (s)		7.8	_	0	0	_
HCM Lane LOS		Α.	_	A	A	_
HCM 95th %tile Q(veh)		0	_	-	-	_
How Jour June Q(veri)		U				

	۶	→	•	•	+	4	1	†	/	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	101	61	25	123	66	57	15	275	40	25	93	45
Future Volume (vph)	101	61	25	123	66	57	15	275	40	25	93	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.969			0.984			0.963	
Flt Protected		0.974			0.976			0.998			0.992	
Satd. Flow (prot)	0	1749	0	0	1716	0	0	1803	0	0	1742	0
Flt Permitted		0.974			0.976			0.998			0.992	
Satd. Flow (perm)	0	1749	0	0	1716	0	0	1803	0	0	1742	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.62	0.62	0.62	0.71	0.71	0.71	0.69	0.69	0.69	0.76	0.76	0.76
Heavy Vehicles (%)	0%	5%	17%	6%	2%	5%	8%	3%	5%	9%	4%	2%
Adj. Flow (vph)	163	98	40	173	93	80	22	399	58	33	122	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	301	0	0	346	0	0	479	0	0	214	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
	Other											
Control Type: Unsignalized												
Intersection Capacity Utilizati	on 42.4%			IC	CU Level of	of Service	Α					
Analysis Period (min) 15												

Intersection	
Intersection Delay, s/veh	37.1
Intersection LOS	Е

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	101	61	25	123	66	57	15	275	40	25	93	45
Future Vol, veh/h	101	61	25	123	66	57	15	275	40	25	93	45
Peak Hour Factor	0.62	0.62	0.62	0.71	0.71	0.71	0.69	0.69	0.69	0.76	0.76	0.76
Heavy Vehicles, %	0	5	17	6	2	5	8	3	5	9	4	2
Mvmt Flow	163	98	40	173	93	80	22	399	58	33	122	59
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	24.3			29.5			59			18.4		
HCM LOS	С			D			F			С		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	5%	54%	50%	15%	
Vol Thru, %	83%	33%	27%	57%	
Vol Right, %	12%	13%	23%	28%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	330	187	246	163	
LT Vol	15	101	123	25	
Through Vol	275	61	66	93	
RT Vol	40	25	57	45	
Lane Flow Rate	478	302	346	214	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.964	0.651	0.739	0.48	
Departure Headway (Hd)	7.255	7.773	7.681	8.059	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Cap	502	464	471	446	
Service Time	5.279	5.848	5.717	6.142	
HCM Lane V/C Ratio	0.952	0.651	0.735	0.48	
HCM Control Delay	59	24.3	29.5	18.4	
HCM Lane LOS	F	С	D	С	
HCM 95th-tile Q	12.3	4.6	6.1	2.5	

	-	•	•	•	1	~
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	f)			ર્ન	ሻ	7
Traffic Volume (vph)	126	0	0	126	120	0
Future Volume (vph)	126	0	0	126	120	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1863	0	0	1863	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	1863	0	0	1863	1770	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	0	0	137	130	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	137	0	0	137	130	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Tyne:	Other					

Area Type: Oth

Control Type: Unsignalized

Intersection Capacity Utilization 19.9%

ICU Level of Service A

Analysis Period (min) 15

Intersection							
Int Delay, s/veh	3.6						
		EDD	WDI	WDT	NDI	NDD	ſ
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	\$	0	^	4	\	7	
Traffic Vol, veh/h	126	0	0	126	120	0	
Future Vol, veh/h	126	0	0	126	120	0	
Conflicting Peds, #/hr	_ 0	_ 0	0	_ 0	0	0	
Sign Control	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	-	-	-	0	0	
Veh in Median Storage,		-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	137	0	0	137	130	0	
	/lajor1		Major2		Minor1		
Conflicting Flow All	0	0	137	0	274	137	
Stage 1	-	-	-	-	137	-	
Stage 2	-	-	-	-	137	-	
Critical Hdwy	-	-	4.12	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	-	-	2.218	-	3.518	3.318	
Pot Cap-1 Maneuver	-	-	1447	-	716	911	
Stage 1	_	-	_	-	890	-	
Stage 2	-	_	_	_	890	_	
Platoon blocked, %	_	_		_			
Mov Cap-1 Maneuver	_	_	1447	_	716	911	
Mov Cap-2 Maneuver	_	_	-	_	716	-	
Stage 1	_		_	_	890	_	
•	_	-	_	-	890	-	
Stage 2	-	-	_	_	090	-	
Approach	EB		WB		NB		
HCM Control Delay, s	0		0		11.1		
HCM LOS					В		
Minor Lane/Major Mvmt	t l	NBLn11	NBLn2	EBT	EBR	WBL	
Capacity (veh/h)		716	-	-	-	1447	
HCM Lane V/C Ratio		0.182	-	-	-	-	
HCM Control Delay (s)		11.1	0	-	-	0	
HCM Lane LOS		В	Α	-	-	Α	
HCM 95th %tile Q(veh)		0.7	-	-	-	0	
, , ,							

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: MD

	ᄼ	→	•	•	←	•	4	†	~	/	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	ሻ	^					ሻ	4	7
Traffic Volume (vph)	0	511	172	215	579	0	0	0	0	131	1	172
Future Volume (vph)	0	511	172	215	579	0	0	0	0	131	1	172
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			100			25			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt		0.00	0.850		0.00					0.00	0.890	0.850
Flt Protected			0.000	0.950						0.950	0.987	0.000
Satd. Flow (prot)	0	3223	1455	1467	3343	0	0	0	0	1577	1237	1288
Flt Permitted		0220	1100	0.950	0010	•	· ·	· ·		0.950	0.987	1200
Satd. Flow (perm)	0	3223	1455	1467	3343	0	0	0	0	1577	1237	1288
Right Turn on Red	•	OLLO	Yes	1 107	0010	Yes	J	J	Yes	1077	1201	No
Satd. Flow (RTOR)			198			100			100			110
Link Speed (mph)		45	100		35			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			17.8			8.5			11.3	
Peak Hour Factor	0.87	0.87	0.87	0.91	0.91	0.91	0.88	0.88	0.88	0.90	0.90	0.90
Heavy Vehicles (%)	0%	12%	11%	23%	8%	0%	0%	0%	0%	16%	0%	31%
Adj. Flow (vph)	0	587	198	236	636	0	0	0	0	146	1	191
Shared Lane Traffic (%)		001	100	200		•	· ·	· ·		20%	•	43%
Lane Group Flow (vph)	0	587	198	236	636	0	0	0	0	117	112	109
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)		24			24			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Prot	NA					Split	NA	Prot
Protected Phases		2		1	12					4	4	4
Permitted Phases			2									
Detector Phase		2	2	1	12					4	4	4
Switch Phase		<u>-</u>	_	•	· -					•	•	•
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		30.0	30.0	20.0						25.0	25.0	25.0
Total Split (%)		40.0%	40.0%	26.7%						33.3%	33.3%	33.3%
Maximum Green (s)		24.5	24.5	16.0						19.5	19.5	19.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead						0.0	0.0	3.0
Lead-Lag Optimize?		9	_~9	_500								
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0
=======================================		V	V. <u>L</u>	0.0						0.0		

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road) Timing Plan: MD

	•	-	•	•	•	•	1	Ť		-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		29.8	29.8	17.5	52.8					12.7	12.7	12.7
Actuated g/C Ratio		0.40	0.40	0.23	0.70					0.17	0.17	0.17
v/c Ratio		0.46	0.28	0.69	0.27					0.44	0.54	0.50
Control Delay		19.5	4.3	30.4	8.0					32.2	37.2	35.4
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		19.5	4.3	30.4	0.8					32.2	37.2	35.4
LOS		В	Α	С	Α					С	D	D
Approach Delay		15.7			8.8						34.9	
Approach LOS		В			Α						С	
Queue Length 50th (ft)		108	0	39	0					52	53	49
Queue Length 95th (ft)		159	38	#185	1					92	97	90
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		1280	697	357	2352					410	321	334
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		0.46	0.28	0.66	0.27					0.29	0.35	0.33

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 13 (17%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 15.9 Intersection LOS: B
Intersection Capacity Utilization 46.5% ICU Level of Service A

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: MD

	•	→	•	•	←	•	4	†	~	/	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	^			^	7	, T	4	7			
Traffic Volume (vph)	169	473	0	0	636	200	158	0	127	0	0	0
Future Volume (vph)	169	473	0	0	636	200	158	0	127	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.91	0.95	1.00	1.00	1.00
Frt						0.850		0.943	0.850			
Flt Protected	0.950						0.950	0.970				
Satd. Flow (prot)	1433	3343	0	0	3282	1269	1604	1369	1474	0	0	0
Flt Permitted	0.950						0.950	0.970				
Satd. Flow (perm)	1433	3343	0	0	3282	1269	1604	1369	1474	0	0	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)						220						
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			14.9			15.5			11.1	
Peak Hour Factor	0.95	0.95	0.95	0.91	0.91	0.91	0.90	0.90	0.90	0.88	0.88	0.88
Heavy Vehicles (%)	26%	8%	0%	0%	10%	23%	14%	0%	18%	0%	0%	0%
Adj. Flow (vph)	178	498	0	0	699	220	176	0	141	0	0	0
Shared Lane Traffic (%)		,,,,	•				38%		29%		•	•
Lane Group Flow (vph)	178	498	0	0	699	220	109	108	100	0	0	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)		24	9		24			14			14	9
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA			NA	Prot	Split	NA	Prot			
Protected Phases	1	12			2	2	4	4	4			
Permitted Phases	•				_	_		•	•			
Detector Phase	1	12			2	2	4	4	4			
Switch Phase	•	• =			_	_	•	•	•			
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	20.0				31.0	31.0	24.0	24.0	24.0			
Total Split (%)	26.7%				41.3%	41.3%	32.0%	32.0%	32.0%			
Maximum Green (s)	16.0				25.5	25.5	19.0	19.0	19.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag	3.0	3.0	5.0			
Lead-Lag Optimize?	Leau				Lay	Lay						
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			
VEHICLE EXTENSION (2)	ა.0				0.2	0.2	ა.0	3.0	3.0			

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: MD

	•	-	•	•	•	•	1	Ť		-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	14.6	54.1			34.0	34.0	11.9	11.9	11.9			
Actuated g/C Ratio	0.19	0.72			0.45	0.45	0.16	0.16	0.16			
v/c Ratio	0.64	0.21			0.47	0.32	0.43	0.50	0.43			
Control Delay	28.0	0.4			11.8	1.9	32.9	36.2	33.4			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	28.0	0.4			11.8	1.9	32.9	36.2	33.4			
LOS	С	Α			В	Α	С	D	С			
Approach Delay		7.7			9.4			34.2				
Approach LOS		Α			Α			С				
Queue Length 50th (ft)	39	0			71	1	49	51	45			
Queue Length 95th (ft)	54	1			118	11	89	94	84			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	323	2374			1486	695	406	346	373			
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	0.55	0.21			0.47	0.32	0.27	0.31	0.27			

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 51 (68%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 55

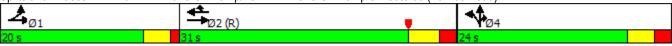
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 12.9 Intersection LOS: B
Intersection Capacity Utilization 46.5% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



Timing Plan: MD

	۶	→	•	•	-	•	1	†	/	/	Ţ	</th
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	∱ }		*	^	7	ሻ	(î			ર્ન	7
Traffic Volume (vph)	88	505	7	1	532	20	5	0	2	78	0	299
Future Volume (vph)	88	505	7	1	532	20	5	0	2	78	0	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100	.,,	250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100		•	25			130		-
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998	0.00		0.00	0.850		0.850				0.850
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1410	3364	0	1796	3295	1530	1404	1041	0	0	1480	1282
Flt Permitted	0.950		•	0.950			0.701		•		0.754	
Satd. Flow (perm)	1410	3364	0	1796	3295	1530	1036	1041	0	0	1174	1282
Right Turn on Red		0001	Yes	1100	0200	Yes	1000	1011	Yes			Yes
Satd. Flow (RTOR)		3	100			106		428	100			205
Link Speed (mph)		35			35	100		30			30	200
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.44	0.44	0.44	0.90	0.90	0.90
Heavy Vehicles (%)	28%	7%	14%	0%	9%	5%	20%	0%	50%	22%	0.30	26%
Adj. Flow (vph)	95	543	8	1	578	22	11	0	5	87	0	332
Shared Lane Traffic (%)		0.10		•	010					O1		002
Lane Group Flow (vph)	95	551	0	1	578	22	11	5	0	0	87	332
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)	Loit	12	rugiit	Loit	12	rugiit	Loit	10	rugiit	Loit	0	ragin
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	1.00	12	15	1.01	12	15	1.01	12	15	1.00	12
Turn Type	Prot	NA	12	Prot	NA	Prot	Perm	NA	12	Perm	NA	pm+ov
Protected Phases	1	12		3	23	23	1 01111	4		1 01111	4	1
Permitted Phases	'	1 4			20		4	7		4		4
Detector Phase	1	12		3	23	23	4	4		4	4	1
Switch Phase	'	1 2		<u> </u>	2.0	2.0						
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	20.0			12.0			15.0	15.0		15.0	15.0	20.0
Total Split (%)	26.7%			16.0%			20.0%	20.0%		20.0%	20.0%	26.7%
Maximum Green (s)	14.6			6.7			10.1	10.1		10.1	10.1	14.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
	2.4			1.0			1.3	1.3		1.3	1.3	2.4
All-Red Time (s)								0.0		1.3		
Lost Time Adjust (s)	0.0			0.0			0.0				0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9		1	4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?												

Lane Group	Ø2	
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Fit Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	2	
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	15.0	
Minimum Split (s)	21.1	
Total Split (s)	28.0	
Total Split (%)	37%	
Maximum Green (s)	21.9	
Yellow Time (s)	4.8	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	Lug	

	•	-	•	•	←	•	1	†	~	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	11.6	47.0		5.5	40.1	40.1	9.3	9.3			9.3	23.4
Actuated g/C Ratio	0.15	0.63		0.07	0.53	0.53	0.12	0.12			0.12	0.31
v/c Ratio	0.44	0.26		0.01	0.33	0.03	0.09	0.01			0.60	0.61
Control Delay	40.0	4.4		32.0	12.3	0.1	29.8	0.0			48.9	12.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	40.0	4.4		32.0	12.3	0.1	29.8	0.0			48.9	12.3
LOS	D	Α		С	В	Α	С	Α			D	В
Approach Delay		9.6			11.9			20.5			19.9	
Approach LOS		Α			В			С			В	
Queue Length 50th (ft)	39	31		0	84	0	5	0			38	41
Queue Length 95th (ft)	90	40		5	128	0	9	0			#94	110
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	274	2073		160	1762	867	143	512			162	584
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	0.35	0.27		0.01	0.33	0.03	0.08	0.01			0.54	0.57

Intersection Summary

Area Type: Other

Cycle Length: 75
Actuated Cycle Length: 75

Offset: 42 (56%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

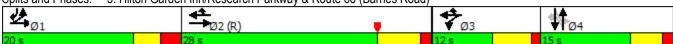
Maximum v/c Ratio: 0.61

Intersection Signal Delay: 13.1 Intersection LOS: B
Intersection Capacity Utilization 52.7% ICU Level of Service A

Analysis Period (min) 15

Queue shown is maximum after two cycles.

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



^{# 95}th percentile volume exceeds capacity, queue may be longer.

Lane Group	Ø2		
Vehicle Extension (s)	2.5		
Recall Mode	C-Min		
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

4: Research Parkway & Food Bank Driv/Site Drive 1

	ၨ	→	\rightarrow	•	←	•	4	†	<i>></i>	>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	f)		ሻ	^		ሻ	^	7	ሻ	f.	
Traffic Volume (vph)	2	0	8	0	0	0	5	103	0	0	369	1
Future Volume (vph)	2	0	8	0	0	0	5	103	0	0	369	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850										
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1805	1615	0	1900	1900	0	1805	1520	1900	1900	1485	0
Flt Permitted							0.526					
Satd. Flow (perm)	1900	1615	0	1900	1900	0	999	1520	1900	1900	1485	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		419										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.63	0.63	0.63	0.88	0.88	0.88	0.81	0.81	0.81	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	28%	0%
Adj. Flow (vph)	3	0	13	0	0	0	6	127	0	0	401	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	13	0	0	0	0	6	127	0	0	402	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24			30			12			12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm			Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	2	
Permitted Phases	4			4			2		2	2		
Detector Phase	4	4		4	4		2	2	2	1	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0	15.0	4.5	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0	21.0	9.0	21.0	
Total Split (s)	40.0	40.0		40.0	40.0		51.0	51.0	51.0	9.0	51.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		51.0%	51.0%	51.0%	9.0%	51.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		45.0	45.0	45.0	5.0	45.0	
Yellow Time (s)	3.0	3.0		3.0	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	1.0	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	5.0		5.0	5.0		6.0	6.0	6.0	4.0	6.0	
Lead/Lag							Lag	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	3.0	
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	

4: Research Parkway & Food Bank Driv/Site Drive 1

	۶	-	•	•	←	•	•	†	~	>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	7.2	7.2					36.9	36.9			36.9	
Actuated g/C Ratio	0.18	0.18					0.93	0.93			0.93	
v/c Ratio	0.01	0.02					0.01	0.09			0.29	
Control Delay	17.0	0.0					1.8	1.5			2.1	
Queue Delay	0.0	0.0					0.0	0.0			0.0	
Total Delay	17.0	0.0					1.8	1.5			2.1	
LOS	В	Α					Α	Α			Α	
Approach Delay		3.2						1.5			2.1	
Approach LOS		Α						Α			Α	
Queue Length 50th (ft)	1	0					0	0			0	
Queue Length 95th (ft)	5	0					3	22			85	
Internal Link Dist (ft)		116			123			640			398	
Turn Bay Length (ft)							140					
Base Capacity (vph)	1725	1504					967	1471			1437	
Starvation Cap Reductn	0	0					0	0			0	
Spillback Cap Reductn	0	0					0	0			0	
Storage Cap Reductn	0	0					0	0			0	
Reduced v/c Ratio	0.00	0.01					0.01	0.09			0.28	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 39.5

Natural Cycle: 45

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.29

Intersection Signal Delay: 2.0 Intersection LOS: A Intersection Capacity Utilization 34.5% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Research Parkway & Food Bank Driv/Site Drive 1



	•	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			ર્ન	1>	
Traffic Volume (vph)	3	30	14	91	340	3
Future Volume (vph)	3	30	14	91	340	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.876				0.999	
Flt Protected	0.996			0.993		
Satd. Flow (prot)	1458	0	0	1674	1682	0
FIt Permitted	0.996			0.993		
Satd. Flow (perm)	1458	0	0	1674	1682	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.69	0.69	0.83	0.83	0.65	0.65
Heavy Vehicles (%)	0%	15%	11%	13%	13%	0%
Adj. Flow (vph)	4	43	17	110	523	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	0	0	127	528	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	ion 28.1%			IC	CU Level o	of Service
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	1.1					
		EDD	ND	NET	057	000
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			4	- ∱	
Traffic Vol, veh/h	3	30	14	91	340	3
Future Vol, veh/h	3	30	14	91	340	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,	# 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	83	83	65	65
Heavy Vehicles, %	0	15	11	13	13	0
Mvmt Flow	4	43	17	110	523	5
	linor2		Major1		//ajor2	
Conflicting Flow All	670	526	528	0	-	0
Stage 1	526	-	-	-	-	-
Stage 2	144	-	-	-	-	-
Critical Hdwy	6.4	6.35	4.21	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.435	2.299	-	-	-
Pot Cap-1 Maneuver	425	527	995	-	-	-
Stage 1	597	-	-	-	_	-
Stage 2	888	_	_	_	_	_
Platoon blocked, %	000			_	_	_
Mov Cap-1 Maneuver	417	527	995	_	_	_
Mov Cap-1 Maneuver	417	521	333		_	
Stage 1	586	-	-	-	-	-
•			-	-	-	
Stage 2	888	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	12.7		1.2		0	
HCM LOS	В					
110111 200						
Minor Lane/Major Mvmt		NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		995	-	515	-	-
HCM Lane V/C Ratio		0.017	-	0.093	-	-
HCM Control Delay (s)		8.7	0	12.7	-	-
HCM Lane LOS		Α	A	В	-	-
HCM 95th %tile Q(veh)		0.1	_	0.3	_	_

	•	*	1	†	+	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	7	7	ሻ	*	£	
Traffic Volume (vph)	2	3	2	92	340	0
Future Volume (vph)	2	3	2	92	340	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1583	1805	1681	1652	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1583	1805	1681	1652	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.38	0.38	0.83	0.83	0.66	0.66
Heavy Vehicles (%)	0%	2%	0%	13%	15%	0%
Adj. Flow (vph)	5	8	2	111	515	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	8	2	111	515	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12	, i	Ĭ	12	0	, i
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
J 1	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	ion 27.9%			IC	U Level o	of Service A

Analysis Period (min) 15

Intersection							
Int Delay, s/veh	0.3						
		EDD	NDI	NDT	CDT	CDD	
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	<u>ነ</u>	<u>*</u>	ኘ	↑	}	0	
Traffic Vol, veh/h	2	3	2	92	340	0	
Future Vol, veh/h	2	3	2	92	340	0	
Conflicting Peds, #/hr	0	0	_ 0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	0	0	100	-	-	-	
Veh in Median Storage		-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	38	38	83	83	66	66	
Heavy Vehicles, %	0	2	0	13	15	0	
Mvmt Flow	5	8	2	111	515	0	
Major/Minor	Minor2		laior1		Majara		
			Major1		Major2		
Conflicting Flow All	630	515	515	0	-	0	
Stage 1	515	-	-	-	-	-	
Stage 2	115	-	-	-	-	-	
Critical Hdwy	6.4	6.22	4.1	-	-	-	
Critical Hdwy Stg 1	5.4	-	-	-	-	-	
Critical Hdwy Stg 2	5.4	-	-	-	-	-	
Follow-up Hdwy	3.5	3.318	2.2	-	-	-	
Pot Cap-1 Maneuver	449	560	1061	-	-	-	
Stage 1	604	-	-	-	-	-	
Stage 2	915	-	-	-	-	-	
Platoon blocked, %				-	-	-	
Mov Cap-1 Maneuver	448	560	1061	-	-	-	
Mov Cap-2 Maneuver	448	-	_	-	-	-	
Stage 1	603	_	_	-	-	-	
Stage 2	915	_	_	_	_	_	
olago 2	0.0						
Approach	EB		NB		SB		
HCM Control Delay, s	12.1		0.2		0		
HCM LOS	В						
Minor Lane/Major Mvm	nt	NBL	NRT	EBLn1 I	FRI n2	SBT	
	ıı	1061	NDT	448	560	001	
Capacity (veh/h)			-			-	
HCM Cantrol Dalay (a)		0.002	-	0.012		-	
HCM Control Delay (s)		8.4	-	13.1	11.5	-	
HCM Lane LOS	\	A	-	В	В	-	
HCM 95th %tile Q(veh))	0	-	0	0	-	

Timing	Plan: MD

	۶	→	•	•	+	•	4	†	/	/	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	31	27	11	245	19	54	7	81	6	13	84	37
Future Volume (vph)	31	27	11	245	19	54	7	81	6	13	84	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.977			0.991			0.962	
Flt Protected		0.978			0.963			0.996			0.995	
Satd. Flow (prot)	0	1741	0	0	1611	0	0	1477	0	0	1461	0
FIt Permitted		0.978			0.963			0.996			0.995	
Satd. Flow (perm)	0	1741	0	0	1611	0	0	1477	0	0	1461	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.86	0.86	0.86	0.75	0.75	0.75	0.85	0.85	0.85	0.89	0.89	0.89
Heavy Vehicles (%)	3%	4%	9%	13%	16%	0%	0%	30%	17%	0%	38%	3%
Adj. Flow (vph)	36	31	13	327	25	72	8	95	7	15	94	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	80	0	0	424	0	0	110	0	0	151	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilizati	on 41.6%			IC	CU Level o	of Service	Α					
Analysis Period (min) 15												

ntersection	
ntersection Delay, s/veh	12.4
ntersection LOS	В

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	31	27	11	245	19	54	7	81	6	13	84	37
Future Vol, veh/h	31	27	11	245	19	54	7	81	6	13	84	37
Peak Hour Factor	0.86	0.86	0.86	0.75	0.75	0.75	0.85	0.85	0.85	0.89	0.89	0.89
Heavy Vehicles, %	3	4	9	13	16	0	0	30	17	0	38	3
Mvmt Flow	36	31	13	327	25	72	8	95	7	15	94	42
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	9			14.8			9.6			9.7		
HCM LOS	Α			В			Α			Α		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	7%	45%	77%	10%	
Vol Thru, %	86%	39%	6%	63%	
Vol Right, %	6%	16%	17%	28%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	94	69	318	134	
LT Vol	7	31	245	13	
Through Vol	81	27	19	84	
RT Vol	6	11	54	37	
Lane Flow Rate	111	80	424	151	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.168	0.117	0.582	0.217	
Departure Headway (Hd)	5.46	5.271	4.942	5.177	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Cap	661	684	721	685	
Service Time	3.46	3.278	3.026	3.277	
HCM Lane V/C Ratio	0.168	0.117	0.588	0.22	
HCM Control Delay	9.6	9	14.8	9.7	
HCM Lane LOS	Α	Α	В	Α	
HCM 95th-tile Q	0.6	0.4	3.8	0.8	

	-	\rightarrow	•	←	•	/
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	1>			4	ሻ	7
Traffic Volume (vph)	46	0	0	39	279	0
Future Volume (vph)	46	0	0	39	279	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1863	0	0	1863	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	1863	0	0	1863	1770	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	0	0	42	303	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	0	0	42	303	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Aroa Typo:	Othor					

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 25.5%

ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	8.4					
		EDD	\\/DI	\\/DT	NDI	NDD
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	}			<u>ન</u>	070	7
Traffic Vol, veh/h	46	0	0	39	279	0
Future Vol, veh/h	46	0	0	39	279	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-		-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage,		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	0	0	42	303	0
Major/Minor	10ia-1		Mais -0		Mineral	
	1ajor1		Major2		Minor1	
Conflicting Flow All	0	0	50	0	92	50
Stage 1	-	-	-	-	50	-
Stage 2	-	-	-	-	42	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	
Pot Cap-1 Maneuver	-	-	1557	-	908	1018
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	980	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	_	_	1557	_	908	1018
Mov Cap-2 Maneuver	_	_		_	908	
Stage 1	_	_	_	_	972	_
Stage 2	_				980	_
Glaye Z	_	_	_	_	900	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		10.9	
HCM LOS					В	
Minariana /Mariana		UDI 4	UDL C		EDD	MDI
Minor Lane/Major Mvmt		VBLn11	NBLN2	EBT	EBR	WBL
Capacity (veh/h)		908	-	-	-	1557
HCM Lane V/C Ratio		0.334	-	-	-	-
HCM Control Delay (s)		10.9	0	-	-	0
HCM Lane LOS		В	Α	-	-	Α
HCM 95th %tile Q(veh)		1.5	-	-	-	0

Timing Plan: PM 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)

	۶	→	*	•	—	•	1	†	/	/	↓	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	ሻ	^					7	4	7
Traffic Volume (vph)	0	1108	480	391	892	0	0	0	0	359	5	338
Future Volume (vph)	0	1108	480	391	892	0	0	0	0	359	5	338
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			100			25			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.927	0.850
Flt Protected				0.950						0.950	0.976	
Satd. Flow (prot)	0	2843	1615	1805	2865	0	0	0	0	1829	1616	1688
Flt Permitted				0.950				•	•	0.950	0.976	
Satd. Flow (perm)	0	2843	1615	1805	2865	0	0	0	0	1829	1616	1688
Right Turn on Red		2010	Yes	1000	2000	Yes		· ·	Yes	1020	1010	No
Satd. Flow (RTOR)			498			. 00						110
Link Speed (mph)		45	100		35			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			17.8			8.5			11.3	
Peak Hour Factor	0.89	0.89	0.89	0.84	0.84	0.84	0.88	0.88	0.88	0.85	0.85	0.85
Heavy Vehicles (%)	15%	27%	0%	0%	26%	9%	12%	0%	11%	0%	0%	0%
Adj. Flow (vph)	0	1245	539	465	1062	0	0	0	0	422	6	398
Shared Lane Traffic (%)	•	1210	000	100	1002	•	· ·	· ·	· ·	32%	J	34%
Lane Group Flow (vph)	0	1245	539	465	1062	0	0	0	0	287	276	263
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)	Loit	24	rugiit	LOIL	24	rugiit	Loit	14	rugiit	Loit	14	ragin
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	1.00	1.00	9	1.00	1.00	9	1.00	1.00	9	15	0.50	9
Turn Type	10	NA	Perm	Prot	NA	J	10		J	Split	NA	Prot
Protected Phases		2	1 Cilli	1 101	12					4	4	1100
Permitted Phases			2		1 2					7	7	7
Detector Phase		2	2	1	12					4	4	4
Switch Phase					1 2					7	7	7
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		37.0	37.0	23.0						20.0	20.0	20.0
Total Split (%)		46.3%	46.3%	28.8%						25.0%	25.0%	25.0%
Maximum Green (s)		31.5	31.5	19.0						14.5	14.5	14.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0 5.5	0.0 4.0						0.0 5.5	0.0	0.0
Total Lost Time (s)		5.5								5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		0.0	0.0	2.0						2.0	2.0	2.0
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0

ı

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)

إكالاها	, 50	ııı u
Timing	Plan:	PM

	_	→	•	•	•	_		T		-	¥	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		31.5	31.5	19.0	56.0					14.5	14.5	14.5
Actuated g/C Ratio		0.39	0.39	0.24	0.70					0.18	0.18	0.18
v/c Ratio		1.11	0.58	1.09	0.53					0.87	0.95	0.86
Control Delay		89.0	5.2	87.3	0.9					59.1	75.7	60.2
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		89.0	5.2	87.3	0.9					59.1	75.7	60.2
LOS		F	Α	F	Α					E	Е	Е
Approach Delay		63.7			27.2						65.0	
Approach LOS		Е			С						Е	
Queue Length 50th (ft)		~381	12	~254	7					148	151	135
Queue Length 95th (ft)		#497	74	m#286	m7					#264	#282	#248
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		1119	937	428	2005					331	292	305
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		1.11	0.58	1.09	0.53					0.87	0.95	0.86

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 1 (1%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.11

Intersection Signal Delay: 50.5 Intersection LOS: D
Intersection Capacity Utilization 78.3% ICU Level of Service D

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.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: PM

	•	-	•	•	←	•	4	†	~	>	Ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	Ť	† †			44	7	7	4	7			
Traffic Volume (vph)	449	1018	0	0	995	298	288	5	469	0	0	0
Future Volume (vph)	449	1018	0	0	995	298	288	5	469	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.91	0.95	1.00	1.00	1.00
Frt						0.850		0.870	0.850			
Flt Protected	0.950						0.950	0.994				
Satd. Flow (prot)	1805	2756	0	0	2865	1561	1829	1495	1739	0	0	0
Flt Permitted	0.950			-			0.950	0.994		•		•
Satd. Flow (perm)	1805	2756	0	0	2865	1561	1829	1495	1739	0	0	0
Right Turn on Red	1000	2,00	Yes	Ū	2000	Yes	1020	1 100	No		•	Yes
Satd. Flow (RTOR)			100			310			110			100
Link Speed (mph)		35			35	010		30			30	
Link Opeca (mpn) Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			14.9			15.5			11.1	
Peak Hour Factor	0.87	0.87	0.87	0.96	0.96	0.96	0.85	0.85	0.85	0.88	0.88	0.88
Heavy Vehicles (%)	0.07	31%	14%	11%	26%	0.30	0.03	0.03	0.03	8%	0.00	11%
Adj. Flow (vph)	516	1170	0	0	1036	310	339	6	552	0	0 /8	0
Shared Lane Traffic (%)	310	1170	U	U	1030	310	10%	U	47%	U	U	U
Lane Group Flow (vph)	516	1170	0	0	1036	310	305	299	293	0	0	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)	Leit	24	Rigit	Leit	24	Nigiti	Leit	14	Rigiit	Leit	14	Night
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	1.00	1.00	9	1.00	1.00	1.04	15	1.00	9	15	0.00	0.03
Turn Type	Prot	NA	9	15	NA	Prot	Split	NA	Prot	10		9
Protected Phases	1	12			2	2	Split 4	4	4			
		1 2			2	2	4	4	4			
Permitted Phases	1	12			2	2	4	4	4			
Detector Phase Switch Phase	l l	1 2			Z	2	4	4	4			
	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Initial (s)	11.0											
Minimum Split (s)					20.5	20.5	14.0	14.0	14.0			
Total Split (s)	25.0				35.0	35.0	20.0	20.0	20.0			
Total Split (%)	31.3%				43.8%	43.8%	25.0%	25.0%	25.0%			
Maximum Green (s)	21.0				29.5	29.5	15.0	15.0	15.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road) Timing Plan: PM

	•	-	*	•	•	•	•	T		-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	21.0	56.0			29.5	29.5	15.0	15.0	15.0			
Actuated g/C Ratio	0.26	0.70			0.37	0.37	0.19	0.19	0.19			
v/c Ratio	1.09	0.61			0.98	0.40	0.89	1.07	0.90			
Control Delay	75.9	0.2			41.7	5.2	61.8	107.5	64.0			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	75.9	0.2			41.7	5.2	61.8	107.5	64.0			
LOS	Е	Α			D	Α	Е	F	Е			
Approach Delay		23.4			33.3			77.7				
Approach LOS		С			С			Е				
Queue Length 50th (ft)	~284	1			202	13	157	~184	151			
Queue Length 95th (ft)	m#237	m1			m#356	m27	#280	#320	#274			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	473	1929			1056	771	342	280	326			
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	1.09	0.61			0.98	0.40	0.89	1.07	0.90			

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 39 (49%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.09

Intersection Signal Delay: 39.2 Intersection LOS: D
Intersection Capacity Utilization 78.3% ICU Level of Service D

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

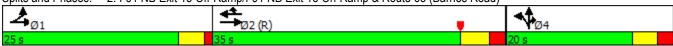
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



	۶	→	•	•	—	•	1	†	/	/	Ţ	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	ħβ		ሻ	^	7	ሻ	ĵ.			4	7
Traffic Volume (vph)	462	1010	15	5	803	157	10	20	5	191	40	480
Future Volume (vph)	462	1010	15	5	803	157	10	20	5	191	40	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			25			130		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998				0.850		0.969				0.850
Flt Protected	0.950			0.950			0.950				0.960	
Satd. Flow (prot)	1719	2566	0	1796	2763	1575	1652	1780	0	0	1752	1429
FIt Permitted	0.950			0.950			0.354				0.740	
Satd. Flow (perm)	1719	2566	0	1796	2763	1575	615	1780	0	0	1350	1429
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				183		7				115
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.95	0.95	0.95	0.86	0.86	0.86	0.75	0.75	0.75	0.82	0.82	0.82
Heavy Vehicles (%)	5%	41%	1%	0%	30%	2%	2%	0%	0%	5%	0%	13%
Adj. Flow (vph)	486	1063	16	6	934	183	13	27	7	233	49	585
Shared Lane Traffic (%)												
Lane Group Flow (vph)	486	1079	0	6	934	183	13	34	0	0	282	585
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	<u> </u>		12			10	<u> </u>		0	J
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		12	15		12	15		12	15		12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm	NA	pm+ov
Protected Phases	1	12		3	23	23		4			4	1
Permitted Phases							4			4		4
Detector Phase	1	12		3	23	23	4	4		4	4	1
Switch Phase	•						•	-		-	•	
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	22.0			11.0			22.0	22.0		22.0	22.0	22.0
Total Split (%)	27.5%			13.8%			27.5%	27.5%		27.5%	27.5%	27.5%
Maximum Green (s)	16.6			5.7			17.1	17.1		17.1	17.1	16.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0		1.0	0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?	Leau			Leau			Lay	Lay		Lay	Lay	Leau
Leau-Lay Optimize?												

Lane Group	Ø2	
)DL	
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
FIt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type	_	
Protected Phases	2	
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	15.0	
Minimum Split (s)	21.1	
Total Split (s)	25.0	
Total Split (%)	31%	
Maximum Green (s)	18.9	
Yellow Time (s)	4.8	
All-Red Time (s)	1.3	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?		

	•	→	•	•	•	•	1	†	~	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	16.6	41.6		5.7	29.9	29.9	17.1	17.1			17.1	38.6
Actuated g/C Ratio	0.21	0.52		0.07	0.37	0.37	0.21	0.21			0.21	0.48
v/c Ratio	1.37	0.81		0.05	0.91	0.26	0.10	0.09			0.98	0.78
Control Delay	207.1	16.6		35.6	37.8	3.9	27.7	22.2			82.6	22.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	207.1	16.6		35.6	37.8	3.9	27.7	22.2			82.6	22.7
LOS	F	В		D	D	Α	С	С			F	С
Approach Delay		75.8			32.2			23.7			42.2	
Approach LOS		Е			С			С			D	
Queue Length 50th (ft)	~332	74		3	227	0	5	11			141	188
Queue Length 95th (ft)	m#462	m85		14	#320	34	17	28			#252	272
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	356	1335		127	1032	703	131	385			288	749
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	1.37	0.81		0.05	0.91	0.26	0.10	0.09			0.98	0.78

Intersection Summary

Area Type: Other

Cycle Length: 80 Actuated Cycle Length: 80

Offset: 29 (36%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.37

Intersection Signal Delay: 53.4 Intersection LOS: D
Intersection Capacity Utilization 80.8% ICU Level of Service D

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

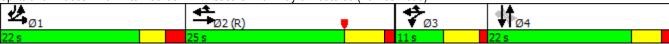
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø2	
Vehicle Extension (s)	2.5	
Recall Mode	C-Min	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

	۶	→	•	•	+	•	•	†	~	/	ţ	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	ĵ.		ች	f)		ሻ	↑	7	ች	₽	
Traffic Volume (vph)	5	0	15	166	0	0	5	366	268	47	530	0
Future Volume (vph)	5	0	15	166	0	0	5	366	268	47	530	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850							0.850			
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1615	0	1805	1900	0	1805	1792	1615	1805	1863	0
Flt Permitted	0.757			0.737			0.153			0.327		
Satd. Flow (perm)	1438	1615	0	1400	1900	0	291	1792	1615	621	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		181							454			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.48	0.48	0.48	0.88	0.88	0.88	0.59	0.59	0.59	0.60	0.60	0.60
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%	2%	0%
Adj. Flow (vph)	10	0	31	189	0	0	8	620	454	78	883	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	31	0	189	0	0	8	620	454	78	883	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24			30			12			12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm			Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	2	
Permitted Phases	4			4			2		2	2		
Detector Phase	4	4		4	4		2	2	2	1	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0	15.0	4.5	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0	21.0	9.0	21.0	
Total Split (s)	40.0	40.0		40.0	40.0		51.0	51.0	51.0	9.0	51.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		51.0%	51.0%	51.0%	9.0%	51.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		45.0	45.0	45.0	5.0	45.0	
Yellow Time (s)	3.0	3.0		3.0	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	1.0	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	5.0		5.0	5.0		6.0	6.0	6.0	4.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		2.0	2.0	2.0	1.0	2.0	
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	

4: Research Parkway & Food Bank Driv/Site Drive 1

	•	-	•	•	•	•	4	†	/	-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	14.0	14.0		14.0			46.7	46.7	46.7	52.4	46.7	
Actuated g/C Ratio	0.18	0.18		0.18			0.59	0.59	0.59	0.67	0.59	
v/c Ratio	0.04	0.07		0.76			0.05	0.58	0.40	0.16	0.80	
Control Delay	26.0	0.3		50.2			10.4	14.6	2.2	5.4	21.9	
Queue Delay	0.0	0.0		0.0			0.0	0.0	0.0	0.0	0.0	
Total Delay	26.0	0.3		50.2			10.4	14.6	2.2	5.4	21.9	
LOS	С	Α		D			В	В	Α	Α	С	
Approach Delay		6.6			50.2			9.4			20.6	
Approach LOS		Α			D			Α			С	
Queue Length 50th (ft)	4	0		89			2	181	0	10	320	
Queue Length 95th (ft)	9	0		153			6	182	0	19	288	
Internal Link Dist (ft)		116			123			640			398	
Turn Bay Length (ft)				170			140			115		
Base Capacity (vph)	643	822		626			172	1065	1143	491	1107	
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	0.02	0.04		0.30			0.05	0.58	0.40	0.16	0.80	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 78.6

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 17.4 Intersection LOS: B
Intersection Capacity Utilization 64.1% ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Research Parkway & Food Bank Driv/Site Drive 1



	۶	•	•	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			ર્ન	∱	
Traffic Volume (vph)	3	63	9	362	514	0
Future Volume (vph)	3	63	9	362	514	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.871					
Flt Protected	0.998			0.999		
Satd. Flow (prot)	1618	0	0	1656	1696	0
Flt Permitted	0.998			0.999		
Satd. Flow (perm)	1618	0	0	1656	1696	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.55	0.55	0.90	0.90	0.80	0.80
Heavy Vehicles (%)	50%	0%	0%	15%	12%	0%
Adj. Flow (vph)	5	115	10	402	643	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	0	0	412	643	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	ion 37.8%			IC	U Level o	of Service
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	1.7					
		EDD	ND	NDT	0.0.7	000
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			4	₽	
Traffic Vol, veh/h	3	63	9	362	514	0
Future Vol, veh/h	3	63	9	362	514	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage	e, # 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	55	55	90	90	80	80
Heavy Vehicles, %	50	0	0	15	12	0
Mvmt Flow	5	115	10	402	643	0
					0.0	
Major/Minor	Minor2		//ajor1	N	/lajor2	
Conflicting Flow All	1065	643	643	0	-	0
Stage 1	643	-	-	-	-	-
Stage 2	422	-	-	-	-	-
Critical Hdwy	6.9	6.2	4.1	-	-	_
Critical Hdwy Stg 1	5.9	-	_	-	_	-
Critical Hdwy Stg 2	5.9	-	_	-	_	-
Follow-up Hdwy	3.95	3.3	2.2	_	_	_
Pot Cap-1 Maneuver	201	477	951	_	_	_
Stage 1	443	-	-	_	_	_
Stage 2	570		_			_
Platoon blocked, %	310				_	
-	198	477	951	-		-
Mov Cap-1 Maneuver		4//		-	-	-
Mov Cap-2 Maneuver	198	-	-	-	-	-
Stage 1	437	-	-	-	-	-
Stage 2	570	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	16		0.2		0	
HCM LOS	C		0.2		U	
I IOWI LOS	U					
Minor Lane/Major Mvn	nt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		951	-		-	-
HCM Lane V/C Ratio		0.011		0.268	_	_
HCM Control Delay (s	_	8.8	0	16	_	_
HCM Lane LOS		Α	A	C	_	_
HCM 95th %tile Q(veh)	0		1.1		_
HOW JOHN JOHNE W(VEI)	1	U	_	1.1	_	_

Analysis Period (min) 15

	۶	•	1	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	7	7	, j		ĵ»	
Traffic Volume (vph)	3	13	3	362	501	0
Future Volume (vph)	3	13	3	362	501	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	1805	1638	1696	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1615	1805	1638	1696	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Confl. Peds. (#/hr)	3					
Peak Hour Factor	0.42	0.42	0.90	0.90	0.79	0.79
Heavy Vehicles (%)	0%	0%	0%	16%	12%	0%
Adj. Flow (vph)	7	31	3	402	634	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	31	3	402	634	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop	-		Free	Free	-
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	tion 36.4%			IC	U Level o	of Service A

 $\label{thm:charter} \textbf{G:\logs19\label{thm:charter} Build imp-pm1.syn} \textbf{BL Companies}$

Intersection							J
Int Delay, s/veh	0.5						١
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	*	7	ሻ		ĵ.		
Traffic Vol, veh/h	3	13	3	362	501	0	
Future Vol, veh/h	3	13	3	362	501	0	
Conflicting Peds, #/hr	3	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	0	0	100	-	_	-	
Veh in Median Storage		-	-	0	0	_	
Grade, %	0	_	_	0	0	_	
Peak Hour Factor	42	42	90	90	79	79	
Heavy Vehicles, %	0	0	0	16	12	0	
Mymt Flow	7	31	3	402	634	0	
IVIVIIIL FIOW	1	31	J	402	034	U	
Major/Minor I	Minor2	N	//ajor1	1	Major2		ĺ
Conflicting Flow All	1045	634	634	0	-	0	
Stage 1	634	-	_	-	-	-	
Stage 2	411	-	_	-	_	_	
Critical Hdwy	6.4	6.2	4.1	-	-	-	
Critical Hdwy Stg 1	5.4	-	-	_	_	_	
Critical Hdwy Stg 2	5.4	_	_	_	_	_	
Follow-up Hdwy	3.5	3.3	2.2	_	_	_	
Pot Cap-1 Maneuver	256	483	959	_	_	_	
Stage 1	532	-	-	_	_	_	
Stage 2	674	_	_	_	_	_	
Platoon blocked, %	014			_	_	_	
Mov Cap-1 Maneuver	255	483	959		-		
	255		909	-	-	-	
Mov Cap-2 Maneuver		-	-	-	-	-	
Stage 1	530	-	-	-	-	-	
Stage 2	674	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	14.2		0.1		0		
HCM LOS	В				*		
NA: I /NA		ND	NET	EDL 4	-DL 2	OPT	
Minor Lane/Major Mvm	<u>it</u>	NBL		EBLn1 I		SBT	
Capacity (veh/h)		959	-	255	483	-	
HCM Lane V/C Ratio		0.003	-	0.028		-	
HCM Control Delay (s)		8.8	-	19.5	13	-	
HCM Lane LOS		Α	-	С	В	-	
HCM 95th %tile Q(veh))	0	-	0.1	0.2	-	

	۶	→	•	•	←	4	1	†	~	-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	45	51	25	141	45	64	20	100	245	67	335	101
Future Volume (vph)	45	51	25	141	45	64	20	100	245	67	335	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.972			0.966			0.909			0.973	
Flt Protected		0.982			0.973			0.997			0.993	
Satd. Flow (prot)	0	1800	0	0	1786	0	0	1676	0	0	1808	0
Flt Permitted		0.982			0.973			0.997			0.993	
Satd. Flow (perm)	0	1800	0	0	1786	0	0	1676	0	0	1808	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.86	0.86	0.86	0.76	0.76	0.76	0.63	0.63	0.63	0.71	0.71	0.71
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	0%	10%	0%	0%	2%	1%
Adj. Flow (vph)	52	59	29	186	59	84	32	159	389	94	472	142
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	140	0	0	329	0	0	580	0	0	708	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilizati	on 75.0%			IC	U Level o	of Service	D					
Analysis Period (min) 15												

Intersection	
Intersection Delay, s/veh	122.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	45	51	25	141	45	64	20	100	245	67	335	101
Future Vol, veh/h	45	51	25	141	45	64	20	100	245	67	335	101
Peak Hour Factor	0.86	0.86	0.86	0.76	0.76	0.76	0.63	0.63	0.63	0.71	0.71	0.71
Heavy Vehicles, %	2	0	0	0	0	0	0	10	0	0	2	1
Mvmt Flow	52	59	29	186	59	84	32	159	389	94	472	142
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	18.3			30.7			96.4			207		
HCM LOS	С			D			F			F		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	5%	37%	56%	13%	
Vol Thru, %	27%	42%	18%	67%	
Vol Right, %	67%	21%	26%	20%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	365	121	250	503	
LT Vol	20	45	141	67	
Through Vol	100	51	45	335	
RT Vol	245	25	64	101	
Lane Flow Rate	579	141	329	708	
Geometry Grp	1	1	1	1	
Degree of Util (X)	1.095	0.345	0.71	1.385	
Departure Headway (Hd)	7.508	10.087	8.832	7.375	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Сар	487	359	411	496	
Service Time	5.508	8.087	6.832	5.375	
HCM Lane V/C Ratio	1.189	0.393	0.8	1.427	
HCM Control Delay	96.4	18.3	30.7	207	
HCM Lane LOS	F	С	D	F	
HCM 95th-tile Q	17.2	1.5	5.4	31.5	

	-	•	•	←	1	~
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	f)			ર્ન	ሻ	7
Traffic Volume (vph)	91	272	0	90	160	0
Future Volume (vph)	91	272	0	90	160	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.899					
Flt Protected					0.950	
Satd. Flow (prot)	1675	0	0	1863	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	1675	0	0	1863	1770	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	296	0	98	174	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	395	0	0	98	174	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 37.1% Analysis Period (min) 15

ICU Level of Service A

Intersection						
Int Delay, s/veh	3.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
		EDK	WDL			
Lane Configurations	}	070	۸	4	100	7
Traffic Vol, veh/h	91	272	0	90	160	0
Future Vol, veh/h	91	272	0	90	160	0
Conflicting Peds, #/hr	0	0	0	0	0	0
0	Free	Free	Free	Free	Stop	Stop
RT Channelized	-		-		-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage,		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	296	0	98	174	0
Major/Minor Ma	ajor1	ı	Major2		Minor1	
						0.47
Conflicting Flow All	0	0	395	0	345	247
Stage 1	-	-	-	-	247	-
Stage 2	-	-	-	-	98	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	
Pot Cap-1 Maneuver	-	-	1164	-	652	792
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	926	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1164	-	652	792
Mov Cap-2 Maneuver	-	-	-	-	652	-
Stage 1	-	-	_	-	794	-
Stage 2	_	_	-	_	926	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		12.5	
HCM LOS					В	
Minor Lane/Major Mvmt		NBLn11	VIRI n2	EBT	EBR	WBL
	<u> </u>			LDI		1164
Capacity (veh/h)		652 0.267	-		-	
HCM Control Doloy (a)			-	-	-	-
HCM Long LOS		12.5	0	-	-	0
HCM CEth (/tile O/yeh)		В	Α	-	-	A
HCM 95th %tile Q(veh)		1.1	-	-	-	0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Roaidh)ng Plan: AM Pk Gen

	۶	→	•	•	←	•	4	†	/	>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	7	ň	^					*	4	7
Traffic Volume (vph)	0	518	200	247	472	0	0	0	0	153	0	204
Future Volume (vph)	0	518	200	247	472	0	0	0	0	153	0	204
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			100			25			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.887	0.850
Flt Protected				0.950						0.950	0.988	
Satd. Flow (prot)	0	3008	1346	1583	3195	0	0	0	0	1499	1216	1288
Flt Permitted				0.950						0.950	0.988	
Satd. Flow (perm)	0	3008	1346	1583	3195	0	0	0	0	1499	1216	1288
Right Turn on Red			Yes		0.00	Yes	•	•	Yes			No
Satd. Flow (RTOR)			213									
Link Speed (mph)		45	210		35			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			17.8			8.5			11.3	
Peak Hour Factor	0.94	0.94	0.94	0.74	0.74	0.74	0.88	0.88	0.88	0.89	0.89	0.89
Heavy Vehicles (%)	0%	20%	20%	14%	13%	0%	0%	0%	0%	22%	0%	31%
Adj. Flow (vph)	0	551	213	334	638	0	0	0	0	172	0	229
Shared Lane Traffic (%)	U	001	210	004	000	U	U	U	0	19%	0	44%
Lane Group Flow (vph)	0	551	213	334	638	0	0	0	0	139	134	128
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)	LOIL	12	rtigitt	LOIL	24	rugiit	Loit	14	ragin	Loit	14	rtigitt
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	1.00	1.00	9	1.00	1.00	9	1.00	1.00	9	15	0.50	9
Turn Type	10	NA	Perm	Prot	NA	3	10		9	Split	NA	Prot
Protected Phases		2	i Giiii	1	12					4	4	4
Permitted Phases		2	2		1 2					7	4	4
Detector Phase		2	2	1	12					4	4	4
Switch Phase		2	2	1	1 2					4	4	4
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
		30.0	30.0	20.0						25.0	25.0	25.0
Total Split (s)		40.0%	40.0%	26.7%						33.3%	33.3%	33.3%
Total Split (%)		24.5	24.5	16.0						19.5		
Maximum Green (s)											19.5	19.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		0.0		0.0						0.0	0.0	0.0
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Roaiding Plan: AM Pk Gen

	•	-	•	•	•	•	1	Ť		-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		25.6	25.6	20.4	51.5					14.0	14.0	14.0
Actuated g/C Ratio		0.34	0.34	0.27	0.69					0.19	0.19	0.19
v/c Ratio		0.54	0.35	0.77	0.29					0.50	0.59	0.54
Control Delay		22.7	4.9	34.0	1.5					32.6	38.0	35.0
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		22.7	4.9	34.0	1.5					32.6	38.0	35.0
LOS		С	Α	С	Α					С	D	С
Approach Delay		17.7			12.6						35.2	
Approach LOS		В			В						D	
Queue Length 50th (ft)		110	0	66	8					62	63	57
Queue Length 95th (ft)		158	44	#213	14					105	110	101
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		1026	600	431	2195					389	316	334
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		0.54	0.35	0.77	0.29					0.36	0.42	0.38

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 13 (17%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 18.7 Intersection LOS: B
Intersection Capacity Utilization 48.0% ICU Level of Service A

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Roading Plan: AM Pk Gen

	۶	-	•	•	←	•	4	†	~	>	Ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	Ť	† †			† †	7	ř	4	7			
Traffic Volume (vph)	203	468	0	0	580	242	139	0	244	0	0	0
Future Volume (vph)	203	468	0	0	580	242	139	0	244	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.91	0.95	1.00	1.00	1.00
Frt						0.850		0.867	0.850			
Flt Protected	0.950						0.950	0.995				
Satd. Flow (prot)	1367	3223	0	0	3195	1312	1550	1236	1437	0	0	0
Flt Permitted	0.950		-	-			0.950	0.995		•		•
Satd. Flow (perm)	1367	3223	0	0	3195	1312	1550	1236	1437	0	0	0
Right Turn on Red		00	Yes	•	0.00	Yes		00	No			Yes
Satd. Flow (RTOR)						257			110			. 00
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			14.9			15.5			11.1	
Peak Hour Factor	0.88	0.88	0.88	0.94	0.94	0.94	0.95	0.95	0.95	0.88	0.88	0.88
Heavy Vehicles (%)	32%	12%	0%	0%	13%	19%	18%	0%	21%	0%	0%	0%
Adj. Flow (vph)	231	532	0	0	617	257	146	0	257	0	0	0
Shared Lane Traffic (%)	201	002	· ·	Ū	011	201	10%	•	47%		•	•
Lane Group Flow (vph)	231	532	0	0	617	257	131	136	136	0	0	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)		24			24			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA			NA	Prot	Split	NA	Prot			-
Protected Phases	1	12			2	2	4	4	4			
Permitted Phases												
Detector Phase	1	12			2	2	4	4	4			
Switch Phase												
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	20.0				31.0	31.0	24.0	24.0	24.0			
Total Split (%)	26.7%				41.3%	41.3%	32.0%	32.0%	32.0%			
Maximum Green (s)	16.0				25.5	25.5	19.0	19.0	19.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag	0.0	0.0	0.0			
Lead-Lag Optimize?	_000				_49	_~9						
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			
=	3.0				٧.٢	٧.٢	J.0	0.0	0.0			

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Rotating Plan: AM Pk Gen

	•	-	•	•	•	•	1	1		-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	16.7	52.2			30.0	30.0	13.8	13.8	13.8			
Actuated g/C Ratio	0.22	0.70			0.40	0.40	0.18	0.18	0.18			
v/c Ratio	0.76	0.24			0.48	0.38	0.46	0.60	0.51			
Control Delay	35.6	0.5			13.8	2.6	31.4	38.3	33.6			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	35.6	0.5			13.8	2.6	31.4	38.3	33.6			
LOS	D	Α			В	Α	С	D	С			
Approach Delay		11.1			10.5			34.5				
Approach LOS		В			В			С				
Queue Length 50th (ft)	44	1			74	6	57	64	61			
Queue Length 95th (ft)	#191	4			116	19	101	114	106			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	319	2241			1277	678	392	313	364			
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	0.72	0.24			0.48	0.38	0.33	0.43	0.37			

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 51 (68%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 15.5 Intersection LOS: B
Intersection Capacity Utilization 48.0% ICU Level of Service A

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



Timing Plan: AM Pk Gen

	۶	→	*	•	-	•	4	†	<i>></i>	/	↓	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	∱ }		ሻ	^	7	ሻ	f)			ર્ન	7
Traffic Volume (vph)	304	400	8	0	477	92	15	1	0	106	0	330
Future Volume (vph)	304	400	8	0	477	92	15	1	0	106	0	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)	· -	0%			1%	'-		0%	'-		0%	
Storage Length (ft)	570	0 70	0	100	170	250	0	0,0	0	345	0,0	0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50		· ·	100		•	25			130		•
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.997	0.50	1.00	0.50	0.850	1.00	1.00	1.00	1.00	1.00	0.850
FIt Protected	0.950	0.551				0.000	0.950				0.950	0.000
Satd. Flow (prot)	1367	3211	0	1890	3265	1461	1685	1837	0	0	1736	1196
Flt Permitted	0.950	3211	U	1030	3203	1401	0.655	1037	U	U	0.756	1130
Satd. Flow (perm)	1367	3211	0	1890	3265	1461	1162	1837	0	0	1381	1196
Right Turn on Red	1307	3211	Yes	1090	3203		1102	1037	Yes	U	1301	
•		4	res			Yes			res			Yes
Satd. Flow (RTOR)		4			25	107		20			20	230
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)	0.04	14.9	0.04	0.00	14.6	0.00	0.00	5.7	0.00	0.04	16.4	2.24
Peak Hour Factor	0.81	0.81	0.81	0.86	0.86	0.86	0.38	0.38	0.38	0.81	0.81	0.81
Heavy Vehicles (%)	32%	12%	17%	0%	10%	10%	0%	0%	0%	4%	0%	35%
Adj. Flow (vph)	375	494	10	0	555	107	39	3	0	131	0	407
Shared Lane Traffic (%)	_		_	_				_	_	_		
Lane Group Flow (vph)	375	504	0	0	555	107	39	3	0	0	131	407
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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		12	15		12	15		12	15		12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm	NA	pm+ov
Protected Phases	1	12		3	23	23		4			4	1
Permitted Phases							4			4		4
Detector Phase	1	1 2		3	23	23	4	4		4	4	1
Switch Phase												
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	17.0			11.0			17.0	17.0		17.0	17.0	17.0
Total Split (%)	22.7%			14.7%			22.7%	22.7%		22.7%	22.7%	22.7%
Maximum Green (s)	11.6			5.7			12.1	12.1		12.1	12.1	11.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0			0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?	Loud			Load			Lag	Lug		Lug	Lag	Load
Load-Lag Optimize:												

Lane Group	Ø2		
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR) Link Speed (mph)			
Link Distance (ft) Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Turn Type			
Protected Phases	2		
Permitted Phases			
Detector Phase			
Switch Phase	1-0		
Minimum Initial (s)	15.0		
Minimum Split (s)	21.1		
Total Split (s)	30.0		
Total Split (%)	40%		
Maximum Green (s)	23.9		
Yellow Time (s)	4.8		
All-Red Time (s)	1.3		
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag		
Lead-Lag Optimize?			

Timing Plan: AM Pk Gen

	•	-	•	•	←	•	1	†		-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	20.4	45.6			29.8	29.8	10.7	10.7			10.7	33.7
Actuated g/C Ratio	0.27	0.61			0.40	0.40	0.14	0.14			0.14	0.45
v/c Ratio	1.01	0.26			0.43	0.17	0.23	0.01			0.66	0.61
Control Delay	86.1	5.1			17.0	3.4	31.2	26.0			47.1	12.1
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	86.1	5.1			17.0	3.4	31.2	26.0			47.1	12.1
LOS	F	Α			В	Α	С	С			D	В
Approach Delay		39.6			14.8			30.8			20.6	
Approach LOS		D			В			С			С	
Queue Length 50th (ft)	~219	32			97	0	16	1			58	50
Queue Length 95th (ft)	#386	42			112	22	17	4			98	125
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570					250						
Base Capacity (vph)	372	2160			1275	635	192	304			228	663
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	1.01	0.23			0.44	0.17	0.20	0.01			0.57	0.61

Intersection Summary

Area Type: Other

Cycle Length: 75
Actuated Cycle Length: 75

Offset: 42 (56%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 26.9 Intersection LOS: C
Intersection Capacity Utilization 56.2% ICU Level of Service B

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.

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



Lane Group	Ø2
Vehicle Extension (s)	2.5
Recall Mode	C-Min
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

	۶	→	•	•	+	•	•	†	~	/		-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	f)		*	f)		ሻ	†	7	ሻ	₽	
Traffic Volume (vph)	0	0	9	182	0	0	6	107	284	50	245	0
Future Volume (vph)	0	0	9	182	0	0	6	107	284	50	245	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850							0.850			
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	1900	1417	0	1805	1900	0	1504	1496	1615	1805	1484	0
Flt Permitted				0.747			0.574			0.650		
Satd. Flow (perm)	1900	1417	0	1419	1900	0	909	1496	1615	1235	1484	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		518							451			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.58	0.58	0.58	0.88	0.88	0.88	0.63	0.63	0.63	0.80	0.80	0.80
Heavy Vehicles (%)	0%	0%	14%	0%	0%	0%	20%	27%	0%	0%	28%	0%
Adj. Flow (vph)	0	0	16	207	0	0	10	170	451	63	306	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	16	0	207	0	0	10	170	451	63	306	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24			30			12			12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm			Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	2	
Permitted Phases	4			4			2		2	2		
Detector Phase	4	4		4	4		2	2	2	1	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0	15.0	4.5	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0	21.0	9.0	21.0	
Total Split (s)	40.0	40.0		40.0	40.0		51.0	51.0	51.0	9.0	51.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		51.0%	51.0%	51.0%	9.0%	51.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		45.0	45.0	45.0	5.0	45.0	
Yellow Time (s)	3.0	3.0		3.0	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	1.0	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	5.0		5.0	5.0		6.0	6.0	6.0	4.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		2.0	2.0	2.0	1.0	2.0	
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	

Timing Plan: AM Pk Gen

4: Research Parkway & Food Bank Driv/Site Drive 1

	۶	→	\rightarrow	•	←	•	4	†		-	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)		11.7		11.7			20.3	20.3	20.3	24.9	20.3	
Actuated g/C Ratio		0.24		0.24			0.42	0.42	0.42	0.52	0.42	
v/c Ratio		0.02		0.60			0.03	0.27	0.48	0.09	0.49	
Control Delay		0.0		25.9			11.5	12.9	3.5	5.9	15.6	
Queue Delay		0.0		0.0			0.0	0.0	0.0	0.0	0.0	
Total Delay		0.0		25.9			11.5	12.9	3.5	5.9	15.6	
LOS		Α		С			В	В	Α	Α	В	
Approach Delay					25.9			6.1			14.0	
Approach LOS					С			Α			В	
Queue Length 50th (ft)		0		50			2	33	0	6	65	
Queue Length 95th (ft)		0		129			7	56	0	21	134	
Internal Link Dist (ft)		116			123			640			398	
Turn Bay Length (ft)				170			140			115		
Base Capacity (vph)		1207		1087			809	1333	1488	704	1322	
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		0.01		0.19			0.01	0.13	0.30	0.09	0.23	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 48.3

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 11.8 Intersection LOS: B
Intersection Capacity Utilization 39.7% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Research Parkway & Food Bank Driv/Site Drive 1



	•	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			ની	₽	
Traffic Volume (vph)	0	11	11	96	284	0
Future Volume (vph)	0	11	11	96	284	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.995		
Satd. Flow (prot)	1347	0	0	1470	1462	0
Flt Permitted				0.995		
Satd. Flow (perm)	1347	0	0	1470	1462	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			478	1218	
Travel Time (s)	13.8			10.9	27.7	
Peak Hour Factor	0.56	0.56	0.75	0.75	0.81	0.81
Heavy Vehicles (%)	0%	22%	0%	32%	30%	0%
Adj. Flow (vph)	0	20	15	128	351	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	0	0	143	351	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	ion 24.9%			IC	U Level o	of Service A
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	0.6					
		ED.5	NDI	NET	057	000
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	À	4.4	4.4	4	\$	•
Traffic Vol, veh/h	0	11	11	96	284	0
Future Vol, veh/h	0	11	11	96	284	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage,		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	56	56	75	75	81	81
Heavy Vehicles, %	0	22	0	32	30	0
Mvmt Flow	0	20	15	128	351	0
NA - ' /NA' N	M O		4 . ' 4		4.1.0	
	Minor2		Major1		//ajor2	
Conflicting Flow All	509	351	351	0	-	0
Stage 1	351	-	-	-	-	-
Stage 2	158	-	-	-	-	-
Critical Hdwy	6.4	6.42	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.498	2.2	-	-	-
Pot Cap-1 Maneuver	528	650	1219	-	-	-
Stage 1	717	-	-	-	-	-
Stage 2	875	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	521	650	1219	-	-	-
Mov Cap-2 Maneuver	521	-	_	-	-	-
Stage 1	708	-	_	_	_	-
Stage 2	875	_	_	_	_	_
Jugo 2	57.0					
Approach	EB		NB		SB	
HCM Control Delay, s	10.7		0.8		0	
HCM LOS	В					
Minor Long/Major Mym	1	NBL	NDT	EDI 51	CDT	SBR
Minor Lane/Major Mvm	ı			EBLn1	SBT	SDK
Capacity (veh/h)		1219	-		-	-
HCM Lane V/C Ratio		0.012	-	0.03	-	-
HCM Control Delay (s)		8	0	10.7	-	-
HCM Lane LOS		Α	Α	В	-	-
HCM 95th %tile Q(veh)		0	-	0.1	-	-

Analysis Period (min) 15

	•	•	•	†		√
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	1	f)	
Traffic Volume (vph)	0	3	0	96	281	1
Future Volume (vph)	0	3	0	96	281	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	1900	1077	1900	1439	1474	0
Flt Permitted						
Satd. Flow (perm)	1900	1077	1900	1439	1474	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Confl. Peds. (#/hr)	3					
Peak Hour Factor	0.50	0.50	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	0%	50%	0%	32%	29%	0%
Adj. Flow (vph)	0	6	0	122	356	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	6	0	122	357	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	tion 24.9%			IC	U Level o	of Service

Movement	Intersection						
Beautiful	Int Delay, s/veh	0.1					
Cane Configurations			EDD	NDI	NDT	CDT	CDD
Traffic Vol, veh/h							SBK
Future Vol, veh/h Conflicting Peds, #/hr Sign Control Stop Stop Stop Stop Free Free Free Free Free Free Free Fre							1
Conflicting Peds, #/hr Stop Stop Free Fre							
Sign Control Stop RT Channelized Stop None Free RT Channelized Free RT Channelized None None <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
RT Channelized							
Storage Length							
Veh in Median Storage, # 0							None
Carade, % 0							-
Peak Hour Factor 50 50 79							
Heavy Vehicles, %							
Major/Minor Minor2 Major1 Major2 Conflicting Flow All 482 357 357 0 - 0 Stage 1 357 Stage 2 125 Critical Hdwy Stg 1 5.4 Critical Hdwy Stg 2 5.4 Follow-up Hdwy 3.5 3.75 2.2 Stage 1 713 Stage 2 906 Platoon blocked, % Mov Cap-1 Maneuver 547 592 1213 Stage 1 713 Stage 1 713 Platoon blocked, %							
Major/Minor Minor2 Major1 Major2							
Stage 1 357 357 0 - 0	Mvmt Flow	0	6	0	122	356	1
Stage 1 357 357 0 - 0 Stage 2 125 - - - - Critical Hdwy 6.4 6.7 4.1 - - Critical Hdwy Stg 1 5.4 - - - Critical Hdwy Stg 2 5.4 - - - - Follow-up Hdwy 3.5 3.75 2.2 - - Stage 1 713 - - - - Stage 2 906 - - - - Follow-up Hdwy 547 592 1213 - - Follow-up Hdwy 547 592 1213 - - Stage 2 906 - - - - Follow-up Hdwy 547 - - - Stage 1 713 - - - Stage 1 713 - - - Stage 2 906 - - - - Stage 2 906 - - - Stage 2 906 - - - Follow-up Hdwy 547 - Follow-up Hdwy 547 - - Follo							
Stage 1 357 357 0 - 0 Stage 2 125 - - - - Critical Hdwy 6.4 6.7 4.1 - - Critical Hdwy Stg 1 5.4 - - - Critical Hdwy Stg 2 5.4 - - - - Follow-up Hdwy 3.5 3.75 2.2 - - Stage 1 713 - - - - Stage 2 906 - - - - Follow-up Hdwy 547 592 1213 - - Follow-up Hdwy 547 592 1213 - - Stage 2 906 - - - - Follow-up Hdwy 547 - - - Stage 1 713 - - - Stage 1 713 - - - Stage 2 906 - - - - Stage 2 906 - - - Stage 2 906 - - - Follow-up Hdwy 547 - Follow-up Hdwy 547 - - Follo	Major/Minor N	linor2	N	Maior1	N	Maior2	
Stage 1 357 - -							0
Stage 2							
Critical Hdwy 6.4 6.7 4.1 - - - Critical Hdwy Stg 1 5.4 - - - - - Critical Hdwy Stg 2 5.4 - <t< td=""><td>•</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	•						
Critical Hdwy Stg 1 5.4 -							
Critical Hdwy Stg 2 5.4 -							
Stage 1							
Stage 1							
Stage 1 713 -							
Stage 2 906 -				1213	_		
Platoon blocked, %			-	-	-		
Mov Cap-1 Maneuver 547 592 1213 - - - Mov Cap-2 Maneuver 547 - <td></td> <td>900</td> <td>-</td> <td>-</td> <td>-</td> <td></td> <td></td>		900	-	-	-		
Mov Cap-2 Maneuver 547		E 17	500	1010			
Stage 1 713 -							
Stage 2 906 -	•		-	-			
Approach EB NB SB HCM Control Delay, s 11.1 0 0 0 HCM LOS B Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT Capacity (veh/h) 1213 - 592 - HCM Lane V/C Ratio - 0.01 - HCM Control Delay (s) 0 - 0 11.1 - HCM Lane LOS A - A B -	_		-	-	-	-	-
Capacity (veh/h)	Stage 2	906	-	-	-	-	-
Capacity (veh/h)							
Capacity (veh/h)	Approach	EB		NB		SB	
Minor Lane/Major Mvmt		11.1		0			
Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT Capacity (veh/h) 1213 - 592 - HCM Lane V/C Ratio - - 0.01 - HCM Control Delay (s) 0 - 0 11.1 - HCM Lane LOS A - A B -						•	
Capacity (veh/h) 1213 - - 592 - HCM Lane V/C Ratio - - - 0.01 - HCM Control Delay (s) 0 - 0 11.1 - HCM Lane LOS A - A B -							
Capacity (veh/h) 1213 - - 592 - HCM Lane V/C Ratio - - - 0.01 - HCM Control Delay (s) 0 - 0 11.1 - HCM Lane LOS A - A B -	Minor Lane/Major Mumt		NRI	NRT	FRI n1 F	ERI n2	SRT
HCM Lane V/C Ratio - - - 0.01 - HCM Control Delay (s) 0 - 0 11.1 - HCM Lane LOS A - A B -				INDI	LDLIII		SDI
HCM Control Delay (s) 0 - 0 11.1 - HCM Lane LOS A - A B -				-	-		-
HCM Lane LOS A - A B -							
HCM 95th %tile Q(veh) 0 0 -							
	HCM 95th %tile Q(veh)		0	-	-	0	-

	≯	→	•	•	+	•	4	†	~	/	 	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	25	23	5	143	14	63	4	83	9	14	134	25
Future Volume (vph)	25	23	5	143	14	63	4	83	9	14	134	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.961			0.988			0.981	
Flt Protected		0.977			0.969			0.998			0.996	
Satd. Flow (prot)	0	1477	0	0	1552	0	0	1441	0	0	1454	0
Flt Permitted		0.977			0.969			0.998			0.996	
Satd. Flow (perm)	0	1477	0	0	1552	0	0	1441	0	0	1454	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.63	0.63	0.63	0.45	0.45	0.45	0.79	0.79	0.79	0.65	0.65	0.65
Heavy Vehicles (%)	31%	11%	50%	14%	0%	17%	33%	33%	0%	0%	33%	15%
Adj. Flow (vph)	40	37	8	318	31	140	5	105	11	22	206	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	85	0	0	489	0	0	121	0	0	266	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
)	Other											
Control Type: Unsignalized												
Intersection Capacity Utilizat	ion 38.9%			IC	CU Level of	of Service	Α					
Analysis Period (min) 15												

G:\JOBS19\14\1901479\TRAF\SYNCHRO\Holiday Peak\T-1901479-HOLIDAY BUILD IMP-AM_PkGen.syn BL Companies

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	25	23	5	143	14	63	4	83	9	14	134	25
Future Vol, veh/h	25	23	5	143	14	63	4	83	9	14	134	25
Peak Hour Factor	0.63	0.63	0.63	0.45	0.45	0.45	0.79	0.79	0.79	0.65	0.65	0.65
Heavy Vehicles, %	31	11	50	14	0	17	33	33	0	0	33	15
Mvmt Flow	40	37	8	318	31	140	5	105	11	22	206	38
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	10.7			22.3			11.5			13		
HCM LOS	В			С			В			В		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	4%	47%	65%	8%	
Vol Thru, %	86%	43%	6%	77%	
Vol Right, %	9%	9%	29%	14%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	96	53	220	173	
LT Vol	4	25	143	14	
Through Vol	83	23	14	134	
RT Vol	9	5	63	25	
Lane Flow Rate	122	84	489	266	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.222	0.152	0.738	0.424	
Departure Headway (Hd)	6.582	6.494	5.436	5.731	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Cap	543	549	665	625	
Service Time	4.654	4.567	3.483	3.79	
HCM Lane V/C Ratio	0.225	0.153	0.735	0.426	
HCM Control Delay	11.5	10.7	22.3	13	
HCM Lane LOS	В	В	С	В	
HCM 95th-tile Q	0.8	0.5	6.5	2.1	

	-	•	•	←	1	~
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	ĥ			ર્ન	¥	7
Traffic Volume (vph)	46	0	0	40	180	0
Future Volume (vph)	46	0	0	40	180	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1863	0	0	1863	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	1863	0	0	1863	1770	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	0	0	43	196	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	0	0	43	196	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 20.0%

ICU Level of Service A

Analysis Period (min) 15

Movement	Intersection						
Movement		6.8					
Lane Configurations			EDD	WDI	WDT	NDI	NDD
Traffic Vol, veh/h 46 0 0 40 180 0 Future Vol, veh/h 46 0 0 40 180 0 Conflicting Peds, #/hr 0 0 0 0 0 0 Sign Control Free Free Free Free Free Free Free Stop Stop RT Channelized - None - - - - - - - - -			FRK	WRL			
Future Vol, veh/h Conflicting Peds, #/hr O Conflicting Control Free Free Free Free Free Free Free Fre			^	^			
Conflicting Peds, #/hr 0 0 0 0 0 0 0 Sign Control Free Stop Stop RT Channelized - None -<							
Sign Control Free RTee Free RTee RTee Free RTee RTee RTee RTee RT RT RT Channelized Free RT Channelized - None RT Channelized - None RT							
RT Channelized - None - None - None Storage Length 0 0 0 0 Veh in Median Storage, # 0 0 0 0 0 0 0 0 0 0 Grade, % 0 0 0 0 0 0 0 0 0 0 0 0 0 Peak Hour Factor 92 92 92 92 92 92 92 92 92 92 92 92 Heavy Vehicles, % 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 Mymt Flow 50 0 0 43 196 0 0 43 196 0 Major/Minor Major1 Major2 Minor1 Minor1 Conflicting Flow All 0 0 50 0 93 50 Stage 1 50 - 50 - 50 50 Stage 2 43 - 50 50 Stage 2 43 - 50 50 Stage 2 - 542 - 542 - 542 Stage 2							
Storage Length - - - - 0 0 Veh in Median Storage, # 0 - - 0 0 - Grade, % 0 - - 0 0 - Peak Hour Factor 92 92 92 92 92 92 Heavy Vehicles, % 2 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Veh in Median Storage, # 0 - - 0 0 - Grade, % 0 - - 0 0 - Peak Hour Factor 92 92 92 92 92 92 Heavy Vehicles, % 2 3 50 3 50 50 5 4 2 2 2 2 2 2 2 2							
Grade, % 0 - - 0 0 - Peak Hour Factor 92 93 50 53 53 83 10 93 50 50 542 6.22 6.7 6.42 6.22 6.22 6.7 6.42 6.22 6.22 6.7			-	-			
Peak Hour Factor 92 93 50 50 50 53 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 60 50 60 22 60 60 80 80 80 80 80 90 70 70			-	-			-
Heavy Vehicles, % 2 2 2 2 2 2 2 2 2							
Mymt Flow 50 0 0 43 196 0 Major/Minor Major1 Major2 Minor1 Conflicting Flow All 0 0 50 0 93 50 Stage 1 - - - - 50 - Stage 2 - - - - 43 - Critical Hdwy - - 4.12 - 6.42 6.22 Critical Hdwy Stg 1 - - - 5.42 - - Critical Hdwy Stg 2 - - - 5.42 - - Critical Hdwy Stg 2 - - - 5.42 - - Critical Hdwy Stg 2 - - - 5.42 - - Follow-up Hdwy - 2.218 - 3.518 3.318 Pot Cap-1 Maneuver - 1557 907 1018 Mov Cap-2 Maneuver - - 907	Peak Hour Factor						
Major/Minor Major1 Major2 Minor1 Conflicting Flow All 0 0 50 0 93 50 Stage 1 - - - 50 - - 50 - - 50 - - - 50 - - - 50 - - - 50 - - - 50 - - - 50 - - - 50 - <td>Heavy Vehicles, %</td> <td></td> <td>2</td> <td>2</td> <td></td> <td></td> <td></td>	Heavy Vehicles, %		2	2			
Conflicting Flow All 0 0 50 0 93 50 Stage 1 - - - 50 - Stage 2 - - - 43 - Critical Hdwy - - 4.12 - 6.42 6.22 Critical Hdwy Stg 1 - - - 5.42 - Critical Hdwy Stg 2 - - - 5.42 - Follow-up Hdwy - - 2.218 - 3.518 3.318 Pot Cap-1 Maneuver - 1557 - 907 1018 Stage 1 - - - 979 - Platoon blocked, % - - - 907 1018 Mov Cap-1 Maneuver - 1557 907 1018 Mov Cap-2 Maneuver - - 907 - Stage 1 - - - 979 - Approach EB <t< td=""><td>Mvmt Flow</td><td>50</td><td>0</td><td>0</td><td>43</td><td>196</td><td>0</td></t<>	Mvmt Flow	50	0	0	43	196	0
Conflicting Flow All 0 0 50 0 93 50 Stage 1 - - - 50 - Stage 2 - - - 43 - Critical Hdwy - - 4.12 - 6.42 6.22 Critical Hdwy Stg 1 - - - 5.42 - Critical Hdwy Stg 2 - - - 5.42 - Follow-up Hdwy - - 2.218 - 3.518 3.318 Pot Cap-1 Maneuver - 1557 - 907 1018 Stage 1 - - - 979 - Platoon blocked, % - - - 907 1018 Mov Cap-1 Maneuver - 1557 907 1018 Mov Cap-2 Maneuver - - 907 - Stage 1 - - - 979 - Approach EB <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
Conflicting Flow All 0 0 50 0 93 50 Stage 1 - - - 50 - Stage 2 - - - 43 - Critical Hdwy - - 4.12 - 6.42 6.22 Critical Hdwy Stg 1 - - - 5.42 - Critical Hdwy Stg 2 - - - 5.42 - Follow-up Hdwy - - 2.218 - 3.518 3.318 Pot Cap-1 Maneuver - 1557 - 907 1018 Stage 1 - - - 979 - Platoon blocked, % - - - 907 1018 Mov Cap-1 Maneuver - 1557 907 1018 Mov Cap-2 Maneuver - - 907 - Stage 1 - - - 979 - Approach EB <t< td=""><td>Major/Minor</td><td>10ia-1</td><td></td><td>Mais-0</td><td></td><td>Mineral</td><td></td></t<>	Major/Minor	10ia-1		Mais-0		Mineral	
Stage 1 - - - 50 - Stage 2 - - - - 43 - Critical Hdwy - - 4.12 - 6.42 6.22 Critical Hdwy Stg 1 - - - 5.42 - Critical Hdwy Stg 2 - - - 5.42 - Follow-up Hdwy - - 2.218 - 3.518 3.318 Pot Cap-1 Maneuver - - 1557 - 907 1018 Stage 1 - - - 972 - Stage 2 - - - 907 1018 Mov Cap-1 Maneuver - - 1557 - 907 1018 Mov Cap-2 Maneuver - - - 907 - - 907 - Stage 2 - - - 979 - - - 979 - Approach EB WB NB NB - - - -							
Stage 2 - - - 43 - Critical Hdwy - - 4.12 - 6.42 6.22 Critical Hdwy Stg 1 - - - 5.42 - Critical Hdwy Stg 2 - - - 5.42 - Follow-up Hdwy - - 2.218 - 3.518 3.318 Pot Cap-1 Maneuver - - 1557 - 907 1018 Stage 1 - - - 979 - Platoon blocked, % - - - 907 1018 Mov Cap-1 Maneuver - - 1557 - 907 1018 Mov Cap-2 Maneuver - - - 907 - - 907 - Stage 1 - - - 972 - - 979 - Approach EB WB NB NB NB HCM LOS B Minor Lane/Major Mvmt NBLn1 NBLn2 EBT EBR WBL		0	0	50	0		50
Critical Hdwy - - 4.12 - 6.42 6.22 Critical Hdwy Stg 1 - - - 5.42 - Critical Hdwy Stg 2 - - - 5.42 - Follow-up Hdwy - 2.218 - 3.518 3.318 Pot Cap-1 Maneuver - - 1557 - 907 1018 Stage 1 - - - - 979 - Platoon blocked, % - - - 907 1018 Mov Cap-1 Maneuver - - 1557 - 907 1018 Mov Cap-2 Maneuver - - - 907 - - Stage 1 - - - 907 - - Stage 2 - - - 979 - Approach EB WB NB HCM Control Delay, s 0 0 10.1 HCM Lane V/C Ratio 0.216 - - - HCM Control Delay (s) 10.1			-	-			
Critical Hdwy Stg 1 - - - 5.42 - Critical Hdwy Stg 2 - - - 5.42 - Follow-up Hdwy - - 2.218 - 3.518 3.318 Pot Cap-1 Maneuver - - 1557 - 907 1018 Stage 1 - - - - 979 - Platoon blocked, % - - - - 979 - Mov Cap-1 Maneuver - - 1557 - 907 1018 Mov Cap-2 Maneuver - - - 907 - - 907 - Stage 1 - - - 972 - - 979 - Approach EB WB NB HCM Control Delay, s 0 0 10.1 - </td <td></td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td></td> <td></td>		-	-	-	-		
Critical Hdwy Stg 2 - - - 5.42 - Follow-up Hdwy - - 2.218 - 3.518 3.318 Pot Cap-1 Maneuver - - 1557 - 907 1018 Stage 1 - - - - 972 - Stage 2 - - - - - - Mov Cap-1 Maneuver - - - - 907 - - Mov Cap-2 Maneuver - - - 907 - - 907 - - - 907 - - - 972 - - - 972 - - - 979 - - - 979 - - - 979 - - - - 979 - - - - 979 - - - - - - - - - -		-	-	4.12	-		6.22
Follow-up Hdwy - 2.218 - 3.518 3.318 Pot Cap-1 Maneuver - 1557 - 907 1018 Stage 1 972 - Stage 2 979 - Platoon blocked, % Mov Cap-1 Maneuver - 1557 - 907 1018 Mov Cap-2 Maneuver 1557 - 907 1018 Mov Cap-2 Maneuver 907 - Stage 1 972 - Stage 2 979 - Approach EB WB NB HCM Control Delay, s 0 0 10.1 HCM LOS B Minor Lane/Major Mvmt NBLn1 NBLn2 EBT EBR WBL Capacity (veh/h) 907 1557 HCM Lane V/C Ratio 0.216 HCM Control Delay (s) 10.1 0 - 0 HCM Lane LOS B A - A	Critical Hdwy Stg 1	-	-	-	-		-
Pot Cap-1 Maneuver - - 1557 - 907 1018 Stage 1 - - - 972 - Stage 2 - - - 979 - Platoon blocked, % - 907 - - - 907 - - - 972 - - - 972 - - - 972 - - - 979 - - - 979 - - - 979 - - - 979 - - - 979 - - - - - - - - - - - - - - - -	Critical Hdwy Stg 2	-	-		-		
Pot Cap-1 Maneuver - - 1557 - 907 1018 Stage 1 - - - 972 - Stage 2 - - - 979 - Platoon blocked, % - 907 - - - 907 - - - 972 - - - 972 - - - 972 - - - 972 - - - 979 - - - 979 - - - 979 - - - - 979 - - - - - - - - - - - - - -	Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Stage 2 - - - 979 - Platoon blocked, % - - - - - Mov Cap-1 Maneuver - - 1557 - 907 1018 Mov Cap-2 Maneuver - - - 907 - Stage 1 - - - 972 - Stage 2 - - - 979 - Approach EB WB NB HCM Control Delay, s 0 0 10.1 HCM Los B Minor Lane/Major Mvmt NBLn1 NBLn2 EBT EBR WBL Capacity (veh/h) 907 1557 HCM Lane V/C Ratio 0.216	Pot Cap-1 Maneuver	-	-	1557	-	907	1018
Stage 2 - - - 979 - Platoon blocked, % - - - - - Mov Cap-1 Maneuver - - 1557 - 907 1018 Mov Cap-2 Maneuver - - - 907 - Stage 1 - - - 972 - Stage 2 - - - 979 - Approach EB WB NB HCM Control Delay, s 0 0 10.1 - B Minor Lane/Major Mvmt NBLn1 NBLn2 EBT EBR WBL Capacity (veh/h) 907 - - - - HCM Lane V/C Ratio 0.216 - - - - HCM Control Delay (s) 10.1 0 - - 0 HCM Lane LOS B A - - A	Stage 1	-	-	-	-	972	-
Platoon blocked, % - - - Mov Cap-1 Maneuver - - 1557 - 907 1018 Mov Cap-2 Maneuver - - - - 907 - Stage 1 - - - - 972 - Stage 2 - - - - 979 - Approach EB WB NB HCM Control Delay, s 0 0 10.1 - - B Minor Lane/Major Mvmt NBLn1 NBLn2 EBT EBR WBL Capacity (veh/h) 907 - - 1557 HCM Lane V/C Ratio 0.216 - - - - HCM Control Delay (s) 10.1 0 - - 0 HCM Lane LOS B A - A -		-	-	-	-	979	-
Mov Cap-1 Maneuver - - 1557 - 907 1018 Mov Cap-2 Maneuver - - - - 907 - Stage 1 - - - - 972 - Stage 2 - - - - 979 - Approach EB WB NB HCM Control Delay, s 0 0 10.1 - HCM LOS B B WBL B WBL Capacity (veh/h) 907 - - - 1557 HCM Lane V/C Ratio 0.216 - - - - HCM Control Delay (s) 10.1 0 - - 0 HCM Lane LOS B A - A		_	-		_		
Mov Cap-2 Maneuver - - - 907 - Stage 1 - - - 972 - Stage 2 - - - 979 - Approach EB WB NB HCM Control Delay, s 0 0 10.1 - HCM LOS B B -	-	_	_	1557	_	907	1018
Stage 1 - - - 972 - Stage 2 - - - 979 - Approach EB WB NB HCM Control Delay, s 0 0 10.1 HCM LOS B Minor Lane/Major Mvmt NBLn1 NBLn2 EBT EBR WBL Capacity (veh/h) 907 - - 1557 HCM Lane V/C Ratio 0.216 - - - HCM Control Delay (s) 10.1 0 - - 0 HCM Lane LOS B A - - A		_	_				
Stage 2 - - - 979 - Approach EB WB NB HCM Control Delay, s 0 0 10.1 HCM LOS B Minor Lane/Major Mvmt NBLn1 NBLn2 EBT EBR WBL Capacity (veh/h) 907 - - 1557 HCM Lane V/C Ratio 0.216 - - - HCM Control Delay (s) 10.1 0 - - 0 HCM Lane LOS B A - A		_	_	_			
Approach EB WB NB HCM Control Delay, s 0 0 10.1 HCM LOS B Minor Lane/Major Mvmt NBLn1 NBLn2 EBT EBR WBL Capacity (veh/h) 907 - - 1557 HCM Lane V/C Ratio 0.216 - - - HCM Control Delay (s) 10.1 0 - - 0 HCM Lane LOS B A - A				_			
HCM Control Delay, s	Olayo Z					313	
HCM Control Delay, s							
Minor Lane/Major Mvmt NBLn1 NBLn2 EBT EBR WBL Capacity (veh/h) 907 - - 1557 HCM Lane V/C Ratio 0.216 - - - HCM Control Delay (s) 10.1 0 - - 0 HCM Lane LOS B A - A	Approach	EB		WB		NB	
Minor Lane/Major Mvmt NBLn1 NBLn2 EBT EBR WBL Capacity (veh/h) 907 - - - 1557 HCM Lane V/C Ratio 0.216 - - - - HCM Control Delay (s) 10.1 0 - - 0 HCM Lane LOS B A - A	HCM Control Delay, s	0		0		10.1	
Capacity (veh/h) 907 - - - 1557 HCM Lane V/C Ratio 0.216 - - - - HCM Control Delay (s) 10.1 0 - - 0 HCM Lane LOS B A - - A	HCM LOS					В	
Capacity (veh/h) 907 - - - 1557 HCM Lane V/C Ratio 0.216 - - - - HCM Control Delay (s) 10.1 0 - - 0 HCM Lane LOS B A - - A							
Capacity (veh/h) 907 - - - 1557 HCM Lane V/C Ratio 0.216 - - - - HCM Control Delay (s) 10.1 0 - - 0 HCM Lane LOS B A - - A	Minor Long/Major March		UDL = 4 P	UDL =0	EDT	EDD	WDI
HCM Lane V/C Ratio 0.216 - - - - HCM Control Delay (s) 10.1 0 - - 0 HCM Lane LOS B A - - A		. [NBLI12			
HCM Control Delay (s) 10.1 0 0 HCM Lane LOS B A A				-			
HCM Lane LOS B A A							
					-	-	
HCM 95th %tile Q(veh) 0.8 0				Α	-	-	
	HCM 95th %tile Q(veh)		0.8	-	-	-	0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Romind) Plan: PM Peak Gen

	ᄼ	→	•	•	—	•	4	†	/	/	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^	*	ň	^					7	4	7
Traffic Volume (vph)	0	427	132	250	420	0	0	0	0	148	0	93
Future Volume (vph)	0	427	132	250	420	0	0	0	0	148	0	93
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	14	13	15
Storage Length (ft)	0		0	830		0	0		0	240		240
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	0			100			0			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.91	0.95
Frt			0.850								0.968	0.850
Flt Protected				0.950						0.950	0.962	
Satd. Flow (prot)	0	3574	1553	1719	3505	0	0	0	0	1726	1560	1548
Flt Permitted				0.950		•	-			0.950	0.962	
Satd. Flow (perm)	0	3574	1553	1719	3505	0	0	0	0	1726	1560	1548
Right Turn on Red		•	Yes			Yes	•		Yes			No
Satd. Flow (RTOR)			159			. 00						110
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		348			913			376			495	
Travel Time (s)		5.3			20.8			8.5			11.3	
Peak Hour Factor	0.83	0.83	0.83	0.59	0.59	0.59	0.88	0.88	0.88	0.86	0.86	0.86
Heavy Vehicles (%)	0%	1%	4%	5%	3%	0%	0%	0%	0%	6%	0%	9%
Adj. Flow (vph)	0	514	159	424	712	0	0	0	0	172	0	108
Shared Lane Traffic (%)			, , ,				-		-	44%	-	19%
Lane Group Flow (vph)	0	514	159	424	712	0	0	0	0	96	97	87
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			24	<u> </u>		14			14	J
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.96	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Prot	NA					Split	NA	Prot
Protected Phases		2		1	12					4	4	4
Permitted Phases			2									
Detector Phase		2	2	1	12					4	4	4
Switch Phase												
Minimum Initial (s)		15.0	15.0	7.0						9.0	9.0	9.0
Minimum Split (s)		20.5	20.5	11.0						14.5	14.5	14.5
Total Split (s)		30.0	30.0	20.0						25.0	25.0	25.0
Total Split (%)		40.0%	40.0%	26.7%						33.3%	33.3%	33.3%
Maximum Green (s)		24.5	24.5	16.0						19.5	19.5	19.5
Yellow Time (s)		3.5	3.5	3.0						3.5	3.5	3.5
All-Red Time (s)		2.0	2.0	1.0						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)		5.5	5.5	4.0						5.5	5.5	5.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		0.2	0.2	3.0						3.0	3.0	3.0

1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Romand) Plan: PM Peak Gen

								- \				
	٠	→	•	•	←	4	4	†	/	\	↓	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode		C-Max	C-Max	None						None	None	None
Act Effct Green (s)		25.7	25.7	26.3	58.3					10.9	10.9	10.9
Actuated g/C Ratio		0.34	0.34	0.35	0.78					0.15	0.15	0.15
v/c Ratio		0.42	0.25	0.71	0.26					0.38	0.43	0.39
Control Delay		20.7	4.6	27.0	1.2					32.9	34.6	33.5
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		20.7	4.6	27.0	1.2					32.9	34.6	33.5
LOS		С	Α	С	Α					С	С	С
Approach Delay		16.9			10.9						33.6	
Approach LOS		В			В						С	
Queue Length 50th (ft)		97	0	99	11					44	46	40
Queue Length 95th (ft)		127	30	108	14					78	83	73
Internal Link Dist (ft)		268			833			296			415	
Turn Bay Length (ft)				830						240		240
Base Capacity (vph)		1225	637	601	2723					448	405	402
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		0.42	0.25	0.71	0.26					0.21	0.24	0.22
Intersection Summary												
Area Type:	Other											
Cycle Length: 75												
Actuated Cycle Length: 75	5											
Offset: 13 (17%), Referen	ced to phase	e 2:EBWE	3, Start of `	Yellow								
Natural Cycle: 60												
Control Type: Actuated-Co	oordinated											
Maximum v/c Patio: 0.71												

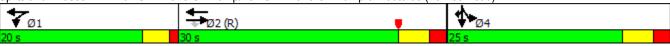
Maximum v/c Ratio: 0.71

Intersection Signal Delay: 15.8

Intersection LOS: B Intersection Capacity Utilization 46.4% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: I-91 SB Exit 15 On-Ramp/I-91 SB Exit 15 Off-Ramp & Route 68 (Barnes Road)



2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Romand)Plan: PM Peak Gen

	۶	→	\rightarrow	•	•	•	4	†	/	>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ř	^			†	7	ř	4	7			
Traffic Volume (vph)	80	495	0	0	506	161	164	0	255	0	0	0
Future Volume (vph)	80	495	0	0	506	161	164	0	255	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	14	12	16	16	16	16
Storage Length (ft)	830		0	0		480	180		180	0		0
Storage Lanes	1		0	0		1	1		0	0		0
Taper Length (ft)	25			0			100			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.91	0.95	1.00	1.00	1.00
Frt						0.850		0.869	0.850			
Flt Protected	0.950						0.950	0.994				
Satd. Flow (prot)	1719	3574	0	0	3539	1406	1678	1415	1656	0	0	0
Flt Permitted	0.950						0.950	0.994				
Satd. Flow (perm)	1719	3574	0	0	3539	1406	1678	1415	1656	0	0	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)						199						
Link Speed (mph)		35			40			30			30	
Link Distance (ft)		913			764			683			489	
Travel Time (s)		17.8			13.0			15.5			11.1	
Peak Hour Factor	0.85	0.85	0.85	0.81	0.81	0.81	0.84	0.84	0.84	0.88	0.88	0.88
Heavy Vehicles (%)	5%	1%	0%	0%	2%	11%	9%	0%	5%	0%	0%	0%
Adj. Flow (vph)	94	582	0	0	625	199	195	0	304	0	0	0
Shared Lane Traffic (%)							11%		47%			
Lane Group Flow (vph)	94	582	0	0	625	199	174	164	161	0	0	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)		24			24			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	0.92	1.00	0.85	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA			NA	Prot	Split	NA	Prot			
Protected Phases	1	12			2	2	4	4	4			
Permitted Phases												
Detector Phase	1	12			2	2	4	4	4			
Switch Phase												
Minimum Initial (s)	7.0				15.0	15.0	9.0	9.0	9.0			
Minimum Split (s)	11.0				20.5	20.5	14.0	14.0	14.0			
Total Split (s)	20.0				31.0	31.0	24.0	24.0	24.0			
Total Split (%)	26.7%				41.3%	41.3%	32.0%	32.0%	32.0%			
Maximum Green (s)	16.0				25.5	25.5	19.0	19.0	19.0			
Yellow Time (s)	3.0				3.5	3.5	3.0	3.0	3.0			
All-Red Time (s)	1.0				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)	4.0				5.5	5.5	5.0	5.0	5.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0				0.2	0.2	3.0	3.0	3.0			

2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Roand)Plan: PM Peak Gen

	•	→	•	•	•	•	1	Ť		-	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None				C-Max	C-Max	None	None	None			
Act Effct Green (s)	11.6	51.6			34.5	34.5	14.4	14.4	14.4			
Actuated g/C Ratio	0.15	0.69			0.46	0.46	0.19	0.19	0.19			
v/c Ratio	0.35	0.24			0.38	0.26	0.54	0.60	0.51			
Control Delay	26.6	0.2			10.4	1.7	32.7	36.4	31.8			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	26.6	0.2			10.4	1.7	32.7	36.4	31.8			
LOS	С	Α			В	Α	С	D	С			
Approach Delay		3.9			8.3			33.6				
Approach LOS		Α			Α			С				
Queue Length 50th (ft)	28	0			51	0	76	76	70			
Queue Length 95th (ft)	31	0			94	7	118	121	111			
Internal Link Dist (ft)		833			684			603			409	
Turn Bay Length (ft)	830					480	180		180			
Base Capacity (vph)	366	2440			1626	753	425	358	419			
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	0.26	0.24			0.38	0.26	0.41	0.46	0.38			

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 51 (68%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 50

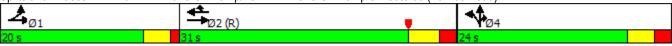
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 13.1 Intersection LOS: B
Intersection Capacity Utilization 46.4% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: I-91 NB Exit 15 Off-Ramp/I-91 NB Exit 15 On-Ramp & Route 68 (Barnes Road)



Timing Plan: PM Peak Gen

	۶	→	\rightarrow	•	•	•	1	†	/	-	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	∱ 1≽		ሻ	^	7	ሻ	f)			4	7
Traffic Volume (vph)	281	454	15	3	373	90	8	1	8	84	1	286
Future Volume (vph)	281	454	15	3	373	90	8	1	8	84	1	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	12	12	12
Grade (%)		0%			1%			0%			0%	
Storage Length (ft)	570		0	100		250	0		0	345		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	50			100			0			130		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995				0.850		0.862				0.850
Flt Protected	0.950			0.950			0.950				0.953	
Satd. Flow (prot)	1597	3557	0	1796	3522	1607	1685	1583	0	0	1742	1196
Flt Permitted	0.950			0.950			0.693				0.720	
Satd. Flow (perm)	1597	3557	0	1796	3522	1607	1229	1583	0	0	1316	1196
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				113		11				297
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		764			751			251			720	
Travel Time (s)		14.9			14.6			5.7			16.4	
Peak Hour Factor	0.78	0.78	0.78	0.80	0.80	0.80	0.75	0.75	0.75	0.86	0.86	0.86
Heavy Vehicles (%)	13%	1%	0%	0%	2%	0%	0%	0%	0%	4%	0%	35%
Adj. Flow (vph)	360	582	19	4	466	113	11	1	11	98	1	333
Shared Lane Traffic (%)												
Lane Group Flow (vph)	360	601	0	4	466	113	11	12	0	0	99	333
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	, i		0	J
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.09	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		12	15		12	15		12	15		12
Turn Type	Prot	NA		Prot	NA	Prot	Perm	NA		Perm	NA	pm+ov
Protected Phases	1	12		3	23	23		4			4	1
Permitted Phases							4			4		4
Detector Phase	1	12		3	23	23	4	4		4	4	1
Switch Phase												
Minimum Initial (s)	5.0			5.0			7.0	7.0		7.0	7.0	5.0
Minimum Split (s)	10.4			10.3			11.9	11.9		11.9	11.9	10.4
Total Split (s)	17.0			11.0			17.0	17.0		17.0	17.0	17.0
Total Split (%)	22.7%			14.7%			22.7%	22.7%		22.7%	22.7%	22.7%
Maximum Green (s)	11.6			5.7			12.1	12.1		12.1	12.1	11.6
Yellow Time (s)	3.0			4.3			3.6	3.6		3.6	3.6	3.0
All-Red Time (s)	2.4			1.0			1.3	1.3		1.3	1.3	2.4
Lost Time Adjust (s)	0.0			0.0			0.0	0.0			0.0	0.0
Total Lost Time (s)	5.4			5.3			4.9	4.9			4.9	5.4
Lead/Lag	Lead			Lead			Lag	Lag		Lag	Lag	Lead
Lead-Lag Optimize?												

Lane Group	Ø2
LaneConfigurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph) Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	45.0
Minimum Initial (s)	15.0
Minimum Split (s)	21.1
Total Split (s)	30.0
Total Split (%)	40%
Maximum Green (s)	23.9
Yellow Time (s)	4.8
All-Red Time (s)	1.3
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	

	•	-	•	•	←	•	1	†	~	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.0			1.5			2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None			None	None		None	None	None
Act Effct Green (s)	22.8	46.8		5.2	28.4	28.4	9.8	9.8			9.8	35.1
Actuated g/C Ratio	0.30	0.62		0.07	0.38	0.38	0.13	0.13			0.13	0.47
v/c Ratio	0.74	0.27		0.03	0.35	0.17	0.07	0.06			0.58	0.46
Control Delay	42.0	4.6		33.0	16.9	3.4	28.1	16.3			43.9	5.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	42.0	4.6		33.0	16.9	3.4	28.1	16.3			43.9	5.4
LOS	D	Α		С	В	Α	С	В			D	Α
Approach Delay		18.6			14.4			22.0			14.2	
Approach LOS		В			В			С			В	
Queue Length 50th (ft)	125	39		2	82	0	5	0			44	8
Queue Length 95th (ft)	#332	48		10	84	18	15	11			84	57
Internal Link Dist (ft)		684			671			171			640	
Turn Bay Length (ft)	570			100		250						
Base Capacity (vph)	484	2504		136	1344	683	198	264			212	717
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	0.24		0.03	0.35	0.17	0.06	0.05			0.47	0.46

Intersection Summary

Area Type: Other

Cycle Length: 75
Actuated Cycle Length: 75

Offset: 42 (56%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

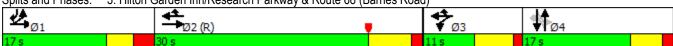
Maximum v/c Ratio: 0.74

Intersection Signal Delay: 16.5 Intersection LOS: B
Intersection Capacity Utilization 53.1% ICU Level of Service A

Analysis Period (min) 15

Queue shown is maximum after two cycles.

Splits and Phases: 3: Hilton Garden Inn/Research Parkway & Route 68 (Barnes Road)



^{# 95}th percentile volume exceeds capacity, queue may be longer.

Lane Group	Ø2
Vehicle Extension (s)	2.5
Recall Mode	C-Min
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings 4: Research Parkway & Food Bank Driv/Site Drive 1

	۶	→	•	•	←	•	1	†	~	/	+	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	f)		ሻ	f)		ሻ	^	7	ሻ	ĵ.	
Traffic Volume (vph)	Ö	0	1	166	0	0	0	104	268	47	204	0
Future Volume (vph)	0	0	1	166	0	0	0	104	268	47	204	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	140		0	115		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	0			25			130			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850							0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	1900	1615	0	1805	1900	0	1900	1743	1615	1805	1743	0
FIt Permitted				0.755						0.682		
Satd. Flow (perm)	1900	1615	0	1434	1900	0	1900	1743	1615	1296	1743	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		591							298			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			203			720			478	
Travel Time (s)		4.5			4.6			16.4			10.9	
Peak Hour Factor	0.25	0.25	0.25	0.88	0.88	0.88	0.90	0.90	0.90	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	9%	0%	0%	9%	0%
Adj. Flow (vph)	0	0	4	189	0	0	0	116	298	57	249	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	189	0	0	0	116	298	57	249	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Right	Right	Left	Left	Right	Right	Right	Right
Median Width(ft)		24			30	<u> </u>		12			12	
Link Offset(ft)		0			12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm			Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	2	
Permitted Phases	4			4			2		2	2		
Detector Phase	4	4		4	4		2	2	2	1	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0	15.0	4.5	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0	21.0	9.0	21.0	
Total Split (s)	40.0	40.0		40.0	40.0		51.0	51.0	51.0	9.0	51.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		51.0%	51.0%	51.0%	9.0%	51.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		45.0	45.0	45.0	5.0	45.0	
Yellow Time (s)	3.0	3.0		3.0	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	1.0	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	5.0		5.0	5.0		6.0	6.0	6.0	4.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	

4: Research Parkway & Food Bank Driv/Site Drive 1

	۶	→	\rightarrow	•	•	•	4	†	/	>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0		7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0		0	
Act Effct Green (s)		12.0		12.0				19.1	19.1	23.9	19.1	
Actuated g/C Ratio		0.25		0.25				0.40	0.40	0.51	0.40	
v/c Ratio		0.00		0.52				0.17	0.36	0.08	0.35	
Control Delay		0.0		21.6				12.5	3.4	6.0	13.9	
Queue Delay		0.0		0.0				0.0	0.0	0.0	0.0	
Total Delay		0.0		21.6				12.5	3.4	6.0	13.9	
LOS		Α		С				В	Α	Α	В	
Approach Delay					21.6			6.0			12.5	
Approach LOS					С			Α			В	
Queue Length 50th (ft)		0		44				22	0	6	51	
Queue Length 95th (ft)		0		105				58	41	20	104	
Internal Link Dist (ft)		116			123			640			398	
Turn Bay Length (ft)				170						115		
Base Capacity (vph)		1371		1093				1604	1510	709	1604	
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		0.00		0.17				0.07	0.20	0.08	0.16	
Intersection Summary												

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 47.3

Natural Cycle: 45

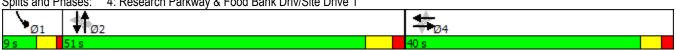
Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.52

Intersection LOS: B Intersection Signal Delay: 11.4 Intersection Capacity Utilization 38.7% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Research Parkway & Food Bank Driv/Site Drive 1



	•	•	•	†		4	
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	¥			4	ĵ.		
Traffic Volume (vph)	0	1	1	103	250	0	
Future Volume (vph)	0	1	1	103	250	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	0.865						
Flt Protected							
Satd. Flow (prot)	1644	0	0	1744	1743	0	
Flt Permitted							
Satd. Flow (perm)	1644	0	0	1744	1743	0	
Link Speed (mph)	30			30	30		
Link Distance (ft)	609			478	1218		
Travel Time (s)	13.8			10.9	27.7		
Peak Hour Factor	0.25	0.25	0.83	0.83	0.85	0.85	
Heavy Vehicles (%)	0%	0%	0%	9%	9%	0%	
Adj. Flow (vph)	0	4	1	124	294	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	4	0	0	125	294	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Right	Right	Left	Right	
Median Width(ft)	12			12	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15	9	15			9	
Sign Control	Stop			Free	Free		
Intersection Summary							
Area Type:	Other						
Control Type: Unsignalized							
Intersection Capacity Utiliza	ation 23.2%			IC	U Level o	of Service A	Α
Analysis Period (min) 15							

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			4	£	
Traffic Vol, veh/h	0	1	1	103	250	0
Future Vol, veh/h	0	1	1	103	250	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-		_	None
Storage Length	0	-	_	-	_	-
Veh in Median Storage,		_	_	0	0	-
Grade, %	0	_	_	0	0	_
Peak Hour Factor	25	25	83	83	85	85
Heavy Vehicles, %	0	0	0	9	9	0
Mvmt Flow	0	4	1	124	294	0
WWW.CT IOW		•	•	121	201	J
		_				
	linor2		/lajor1		//ajor2	
Conflicting Flow All	420	294	294	0	-	0
Stage 1	294	-	-	-	-	-
Stage 2	126	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	594	750	1279	-	-	-
Stage 1	761	-	-	-	-	-
Stage 2	905	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	593	750	1279	-	-	-
Mov Cap-2 Maneuver	593	-	-	-	-	-
Stage 1	760	_	-	-	_	-
Stage 2	905	_	_	_	_	_
Glago L	000					
Approach	EB		NB		SB	
HCM Control Delay, s	9.8		0.1		0	
HCM LOS	Α					
Minor Lane/Major Mvmt		NBL	NRT	EBLn1	SBT	SBR
Capacity (veh/h)		1279	-		-	OBIT
HCM Lane V/C Ratio		0.001		0.005	_	_
HCM Control Delay (s)		7.8	0	9.8	-	-
Holy Contion Delay (5)		1.0			_	_
		Δ	Δ	Δ	_	_
HCM Lane LOS HCM 95th %tile Q(veh)		A 0	A -	A 0	-	-

Analysis Period (min) 15

	•	•	•	†		4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	*	f	
Traffic Volume (vph)	0	1	0	103	249	0
Future Volume (vph)	0	1	0	103	249	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			0
Storage Lanes	1	1	1			0
Taper Length (ft)	0		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	1900	1615	1900	1743	1696	0
Flt Permitted						
Satd. Flow (perm)	1900	1615	1900	1743	1696	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			752	493	
Travel Time (s)	7.0			17.1	11.2	
Peak Hour Factor	0.25	0.25	0.81	0.81	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	9%	12%	0%
Adj. Flow (vph)	0	4	0	127	323	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	4	0	127	323	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Right	Left	Right
Median Width(ft)	12		Ţ.	12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type: (Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	ion 23.1%			IC	U Level o	of Service A

 $\hbox{G:\label{local} G:\label{local} $$G:\label{local} $$G:\label{$

HCM Lane LOS

HCM 95th %tile Q(veh)

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T T	EBR	NDL	<u> </u>	<u>361</u>	אנפט
Traffic Vol, veh/h	0		0	103	249	0
Future Vol, veh/h	0	1	0	103	249	0
Conflicting Peds, #/hr		0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	Olop -	None	-	None	-	None
Storage Length	0	0	100	-	_	-
Veh in Median Storag		-	-	0	0	_
Grade, %	0, # 0	_	_	0	0	_
Peak Hour Factor	25	25	81	81	77	77
Heavy Vehicles, %	0	0	0	9	12	0
Mvmt Flow	0	4	0	127	323	0
IVIVIIILI IOW	U	+	U	121	323	U
Major/Minor	Minor2	N	Major1	N	Major2	
Conflicting Flow All	450	323	323	0	-	0
Stage 1	323	-	-	-	-	-
Stage 2	127	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	571	723	1248	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	904	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	571	723	1248	-	_	-
Mov Cap-2 Maneuver		_	_	_	_	_
Stage 1	738	_	-	_	-	-
Stage 2	904	_	_	_	_	_
					0.5	
Approach	EB		NB		SB	
HCM Control Delay, s			0		0	
HCM LOS	В					
Minor Lane/Major Mvr	mt	NBL	NBT	EBLn1 I	FBI n2	SBT
Capacity (veh/h)		1248		-		
HCM Lane V/C Ratio		-	_		0.006	_
HCM Control Delay (s	:)	0	_	_	10	_
How Control Delay (S	7	U	_	U	10	_

Α

B 0

Α

	۶	→	•	•	+	•	•	†	~	\	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	23	19	3	115	15	56	7	82	14	11	131	22
Future Volume (vph)	23	19	3	115	15	56	7	82	14	11	131	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.959			0.982			0.982	
Flt Protected		0.975			0.970			0.997			0.997	
Satd. Flow (prot)	0	1834	0	0	1767	0	0	1710	0	0	1685	0
Flt Permitted		0.975			0.970			0.997			0.997	
Satd. Flow (perm)	0	1834	0	0	1767	0	0	1710	0	0	1685	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		607			1354			493			424	
Travel Time (s)		13.8			30.8			11.2			9.6	
Peak Hour Factor	0.64	0.64	0.64	0.66	0.66	0.66	0.72	0.72	0.72	0.67	0.67	0.67
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	11%	0%	0%	12%	6%
Adj. Flow (vph)	36	30	5	174	23	85	10	114	19	16	196	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	0	0	282	0	0	143	0	0	245	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
/I	Other											
Control Type: Unsignalized												
Intersection Capacity Utilizat	ion 32.3%			IC	CU Level of	of Service	Α					
Analysis Period (min) 15												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	23	19	3	115	15	56	7	82	14	11	131	22
Future Vol, veh/h	23	19	3	115	15	56	7	82	14	11	131	22
Peak Hour Factor	0.64	0.64	0.64	0.66	0.66	0.66	0.72	0.72	0.72	0.67	0.67	0.67
Heavy Vehicles, %	0	0	0	0	0	0	0	11	0	0	12	6
Mvmt Flow	36	30	5	174	23	85	10	114	19	16	196	33
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	9			11			9.4			10.4		
HCM LOS	Α			В			Α			В		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	7%	51%	62%	7%	
Vol Thru, %	80%	42%	8%	80%	
Vol Right, %	14%	7%	30%	13%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	103	45	186	164	
LT Vol	7	23	115	11	
Through Vol	82	19	15	131	
RT Vol	14	3	56	22	
Lane Flow Rate	143	70	282	245	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.2	0.105	0.382	0.333	
Departure Headway (Hd)	5.023	5.393	4.878	4.891	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Сар	705	669	730	727	
Service Time	3.119	3.393	2.96	2.976	
HCM Lane V/C Ratio	0.203	0.105	0.386	0.337	
HCM Control Delay	9.4	9	11	10.4	
HCM Lane LOS	Α	Α	В	В	
HCM 95th-tile Q	0.7	0.4	1.8	1.5	

	-	•	•	•	1	~
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	f)			4	¥	7
Traffic Volume (vph)	44	0	0	26	160	0
Future Volume (vph)	44	0	0	26	160	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1863	0	0	1863	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	1863	0	0	1863	1770	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	1354			442	652	
Travel Time (s)	30.8			10.0	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	0	0	28	174	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	0	28	174	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Tyne:	Other					

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 18.9%

ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	6.8					
		EDD	WDI	WDT	NDI	NDD
	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	- ↑	_	_	4	100	7
Traffic Vol, veh/h	44	0	0	26	160	0
Future Vol, veh/h	44	0	0	26	160	0
Conflicting Peds, #/hr	0	0	0	0	0	0
	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage,	# 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	0	0	28	174	0
Majay/Minay	-14		Ania no		Mine and	
	ajor1		Major2		Minor1	
Conflicting Flow All	0	0	48	0	76	48
Stage 1	-	-	-	-	48	-
Stage 2	-	-	-	-	28	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1559	-	927	1021
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	995	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	_	_	1559	_	927	1021
Mov Cap-2 Maneuver	_	_	-	_	927	-
Stage 1	_	_	_	_	974	_
Stage 2			_	_	995	_
Glage Z		_	-	_	990	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		9.8	
HCM LOS					Α	
		IDI 4	IDI C	EDT		14/51
Minor Lane/Major Mvmt		NBLn1 N	vBLn2	EBT	EBR	WBL
Capacity (veh/h)		927	-	-	-	1559
HCM Lane V/C Ratio		0.188	-	-	-	-
HCM Control Delay (s)		9.8	0	-	-	0
HCM Lane LOS		Α	Α	-	-	Α
HCM 95th %tile Q(veh)		0.7	-	-	-	0
. ,						

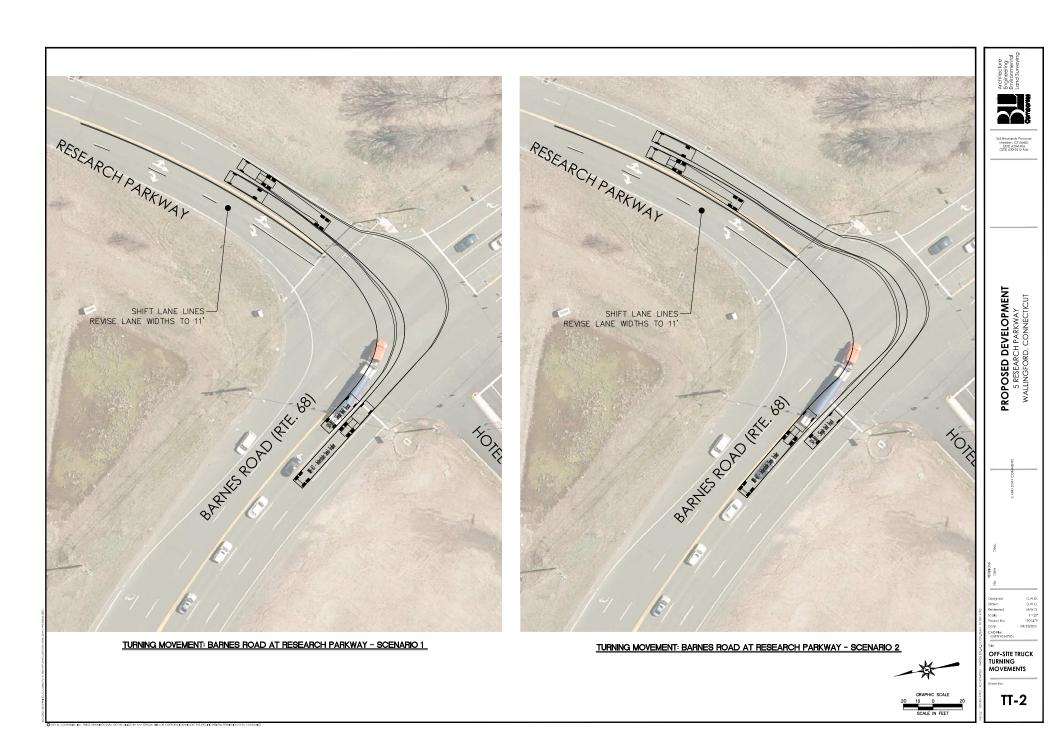
TRUCK TURNING TEMPLATES

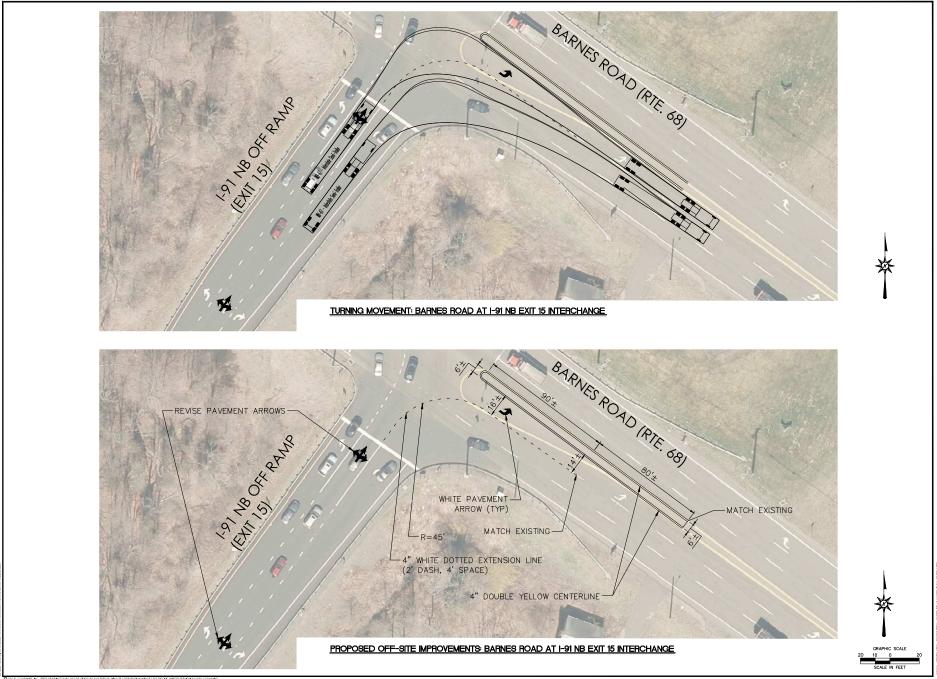




355 Research Parkway Meriden, CT 06450 [203] 630-1406 [203] 630-2615 Pax PROPOSED DEVELOPMENT 5 RESEARCH PARKWAY WALLINGFORD, CONNECTICUT OFF-SITE TRUCK TURNING MOVEMENTS

TT-1





355 Research Parkwa Meriden, CT 06450 (203) 630-1406 (203) 630-2615 Fax

PROPOSED DEVELOPMENT 5 RESEARCH PARKWAY WALLINGFORD, CONNECTICUT

OFF-SITE TRUCK TURNING MOVEMENTS

TT-3