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PRINCIPALS
Robert J. Michaud, P.E.
Daniel J. Mills, P.E., PTOE

MEMORANDUM

DATE: October 10, 2019

TO: Mr. Eric J. Gardner
Director of Development
Benchmark
201 Jones Road, Suite 300 West
Waltham, MA 02451

FROM: Robert J. Michaud, P.E. – Managing Principal
Daniel A. Dumais, P.E. – Senior Project Manager

RE: **Proposed Senior Residential Development**
Washington Street (Route 53), Hanover, Massachusetts

MDM Transportation Consultants, Inc. (MDM) has conducted this Traffic Impact Assessment (TIA) for a proposed Senior Residential development to be located along Washington Street (Route 53) in Hanover, Massachusetts. The location of the site relative to the adjacent roadway network is shown in **Figure 1.** This TIA provides a primary summary of the baseline traffic conditions at the Site and adjacent roadways/ intersections, evaluates permitted and projected trip generation, reviews safety characteristics of the study area, and provides an operational analysis of project impact.

Key findings of the assessment are as follows:

- *Baseline Traffic Volumes.* The daily traffic volume on Washington Street (Route 53) to the south of the site is approximately 28,410 vehicles per day (vpd) on a weekday and approximately 30,175 vpd on a Saturday. Peak hour traffic flow on Washington Street ranges from approximately 1,622 to 2,702 vehicles per hour (vph) representing approximately 6 to 8 percent of daily traffic flow.

- *Safety Characteristics.* A review of the crash data indicated that no immediate safety countermeasures are warranted based on the crash history at the study intersections. Likewise, available sight lines at the proposed site driveway intersection with Washington Street exceed the sight line requirements published by AASHTO.

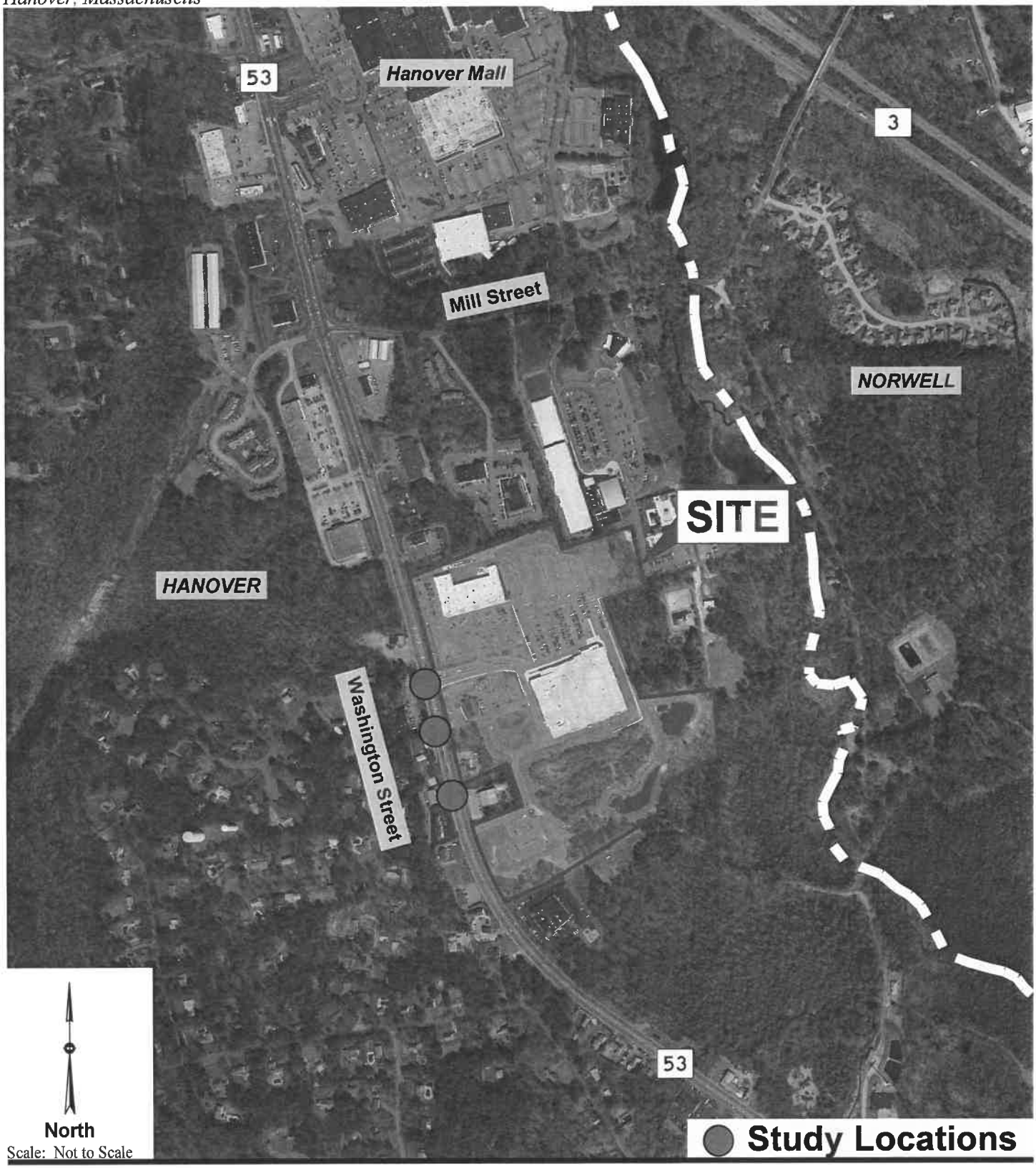

Figure 1

Site Location

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Date: October 2019
Dwg No. 1035 MR02.dwg

- *Trip Generation.* Based on ITE methodology the proposed senior residential development is estimated to generate approximately 19 vehicle trips during the weekday morning peak hour, 25 vehicle trips during the weekday evening peak hour and 32 vehicle trips during the Saturday midday peak hour. When compared to the permitted retail and coffee shop uses of the property, the senior residential development is expected to result in a reduction in trips during the weekday morning, weekday evening and Saturday midday periods.

- *Adequate Capacity.* The proposed development is expected to have minimal impact on the study area intersections and will not result in any notable changes in traffic operations in the study area relative to No-Build conditions. Specifically, the proposed project will result in improved operations at the study intersections compared to the permitted project.

In summary, MDM finds that incremental traffic associated with the proposed development is not expected to materially impact operating conditions at the study intersections. The study intersections exhibit below-average crash rates based on historic crash data; safety countermeasures are therefore not warranted. Likewise, the available sight lines at the Site Driveway intersection with Washington Street exceed the recommended sight line requirements from AASHTO. Implementation of access/egress improvements and proposed pedestrian improvements will establish a framework of minimizing Site traffic impacts by encouraging non-motorized travel modes and pedestrian accommodation that is compatible with other projects in the area. The project will require a MassDOT Access Permit for construction of the proposed site driveway.

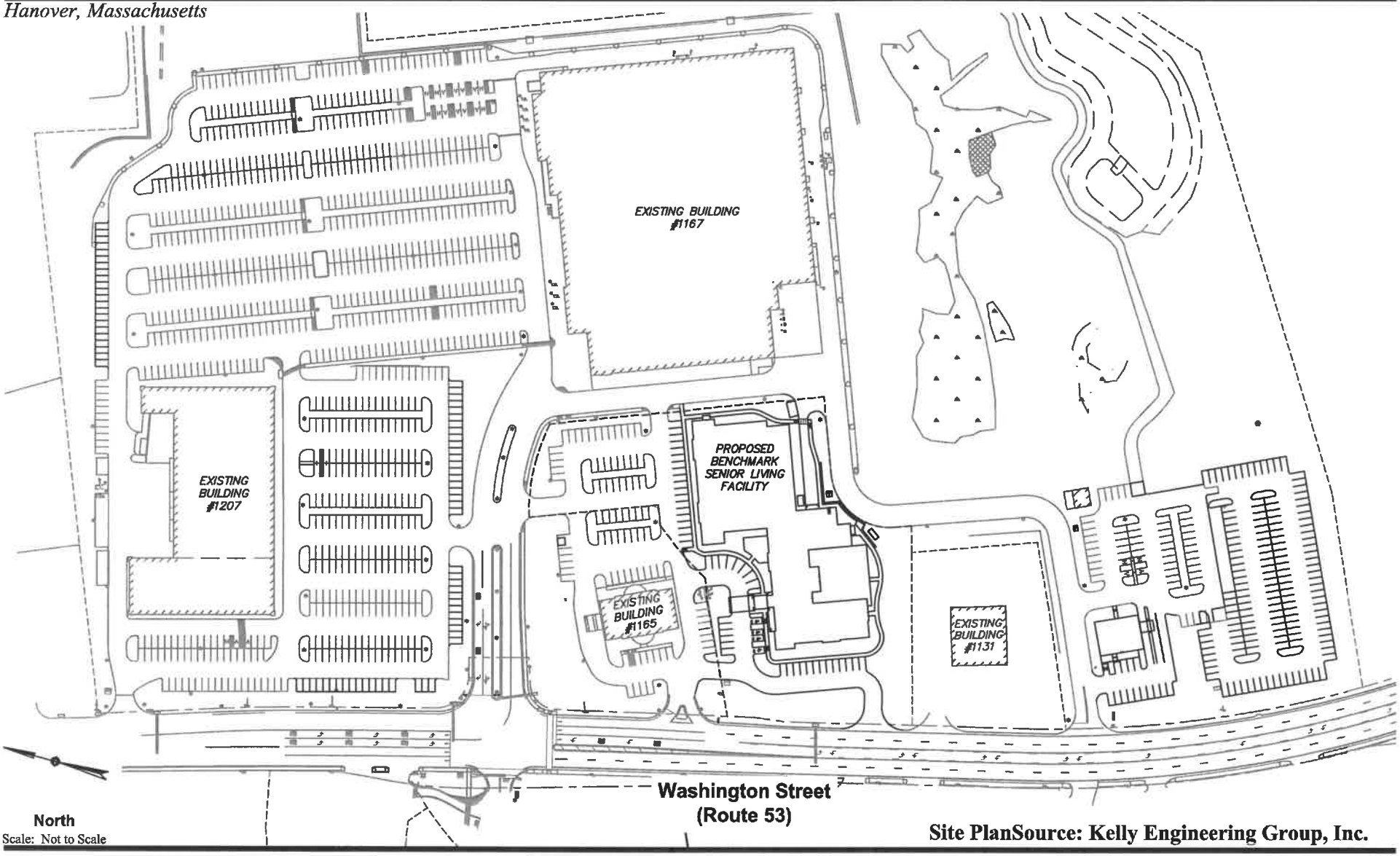
PROJECT DESCRIPTION

Permitted

The Site is located on the eastern side of Washington Street (Route 53) in Hanover, MA. Under the permitted programming a 16,700 square foot (sf) retail building and an 1,846 sf Honey Dew Donuts with drive-through would be constructed with access/egress via a full access driveway along Washington Street (Route 53) and internal connections to the existing Plaza.

Proposed

Under the proposed Site programming a 97-unit senior residential building would replace the 16,700 sf retail building and 1,846 sf Honey Dew with drive-through. Access/egress to the Site is proposed to be via a full access driveway along Washington Street (Route 53) and internal connections to the existing Plaza. The Site will be supported by approximately 83 on-site parking spaces. The preliminary site layout prepared by Kelly Engineering Group, Inc. is presented in **Figure 2.**



Site PlanSource: Kelly Engineering Group, Inc.

Figure 2

Preliminary Site Plan

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Dwg No. 1035 Figure 2.dwg

BASELINE TRAFFIC & SAFETY CHARATERISTICS

This due diligence evaluates transportation characteristics of roadways and intersections that provide a primary means of access to the Site, and that are likely to sustain a measurable level of traffic impact from the development. The study area includes the following primary and secondary intersections:

- Washington Street (Route 53) at Target Plaza Driveway – Signalized
- Washington Street (Route 53) at Costal Heritage Bank Driveway – Unsignalized
- Washington Street (Route 53) at Namco Driveway – Unsignalized

Baseline Traffic Data

Traffic volume data were collected at the primary study area intersections during the weekday morning (7:00 AM - 9:00 AM), weekday evening (4:00 PM – 6:00 PM), and Saturday midday (11:00 AM – 1:00 PM) periods to coincide with peak traffic activity of the proposed use and the adjacent streets. Review of MassDOT permanent count station data indicates that April is an average traffic month. Therefore, no adjustment for seasonal fluctuations was required to the represent average season conditions. The weekday morning, weekday evening and Saturday midday peak hour traffic volumes for the study intersections are shown in **Figure 3** and **Figure 4**. Traffic count data and MassDOT permanent count station data are provided in the **Attachments.**

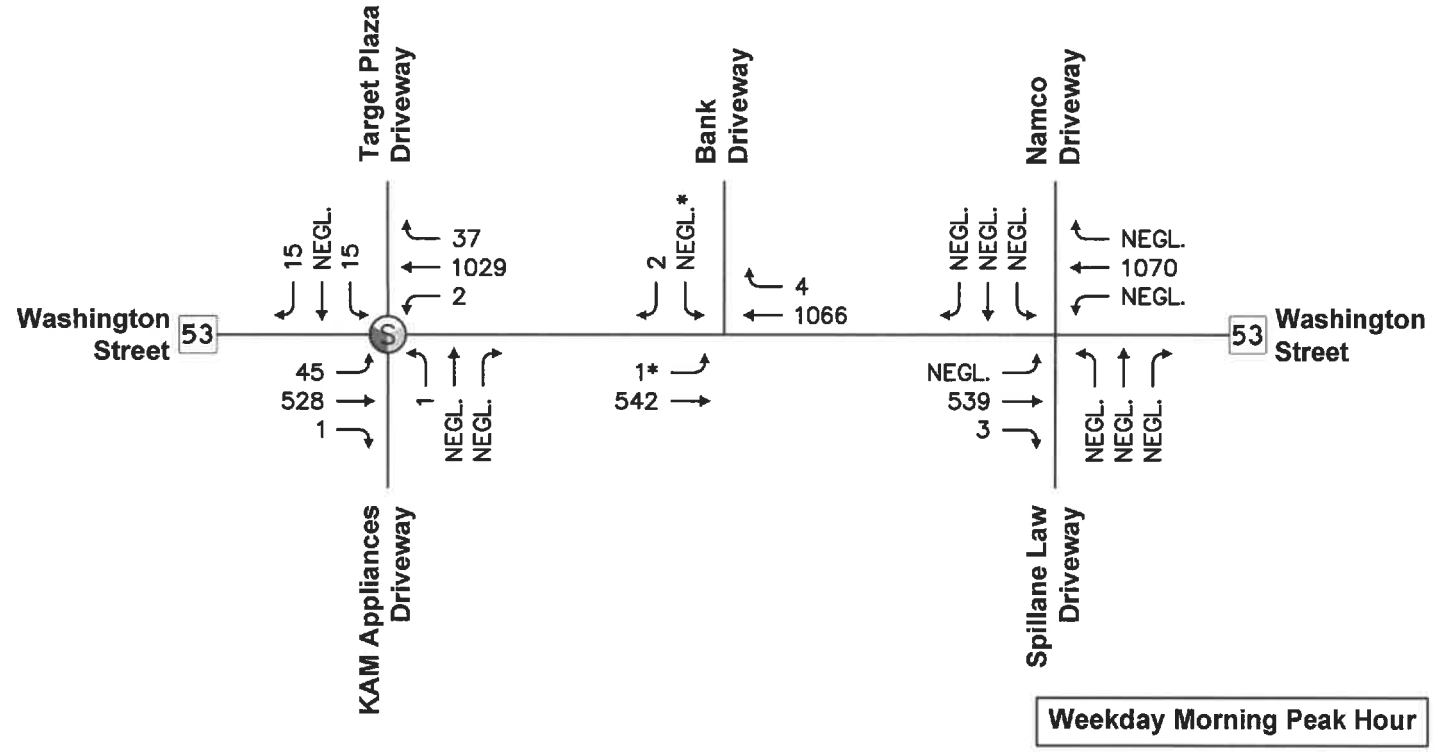
Daily Traffic Volumes

Daily traffic volumes along Route 53 just south of the Site were obtained using a video-based automatic traffic recorder (ATR) in April 2019. The results of the counts are summarized in **Table 1** and are discussed below.

TABLE 1
BASELINE TRAFFIC VOLUME SUMMARY
ROUTE 53 SOUTH OF SITE

Time Period	Daily Volume (vpd)[1]	Percent Daily Traffic[2]	Peak Hour Volume (vph)[3]	Peak Flow Direction[4]	Peak Hour Directional Volume (vph)[4]
Weekday Morning Peak Hour	28,410	6%	1,622	67% NB	1,081
Weekday Evening Peak Hour	28,410	8%	2,359	61% SB	1,429
Saturday Midday Peak Hour	30,170	8%	2,702	50% NB	1,361

[1]Two-way daily traffic expressed in vehicles per day without seasonal adjustment as counted by MDM in April 2019.
[2]The percent of daily traffic that occurs during the peak hour.
[3]Two-way peak-hour volume expressed in vehicles per hour as counted by MDM in April 2019.
[4]NB = Northbound, SB = Southbound



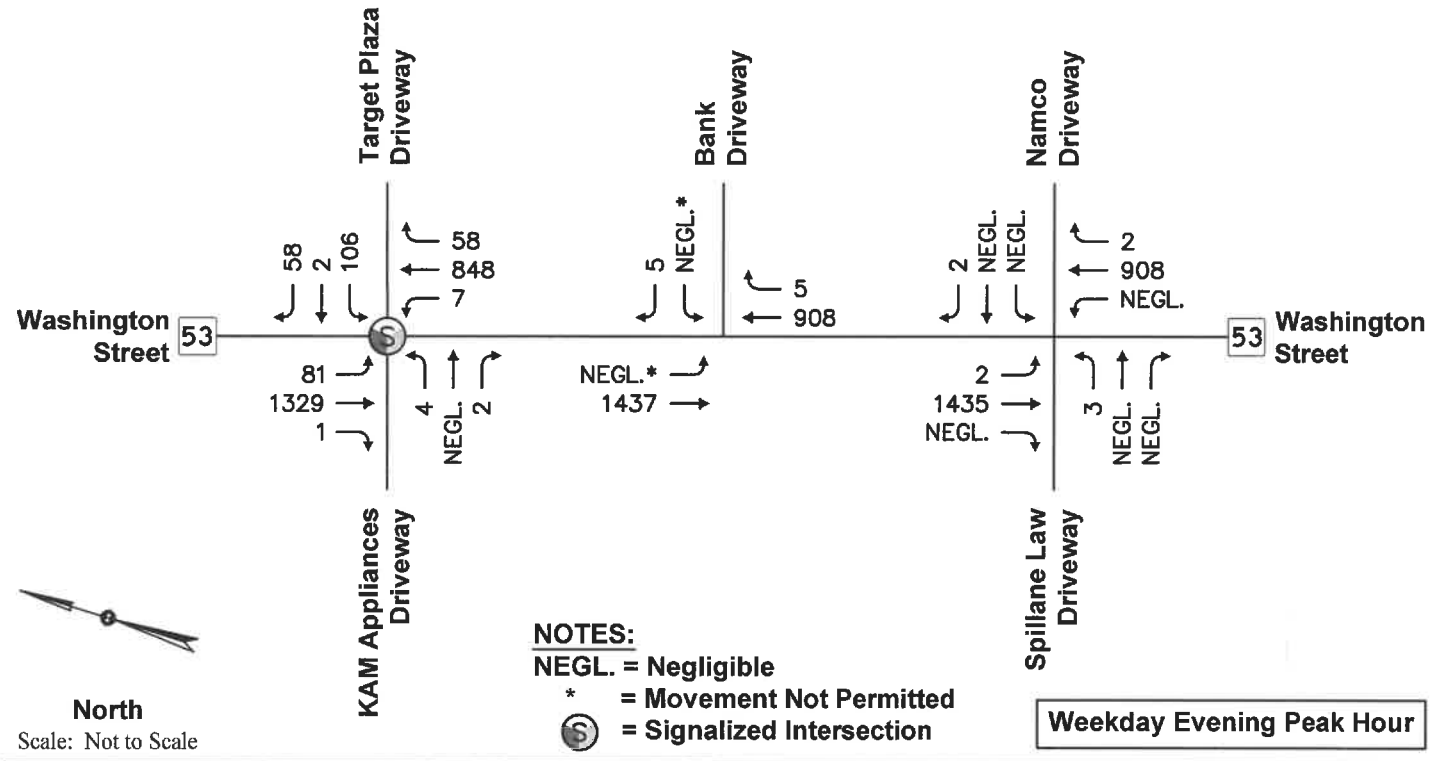


Figure 3

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2019 Existing Conditions
Weekday Peak Hour Volumes

Date: October 2019
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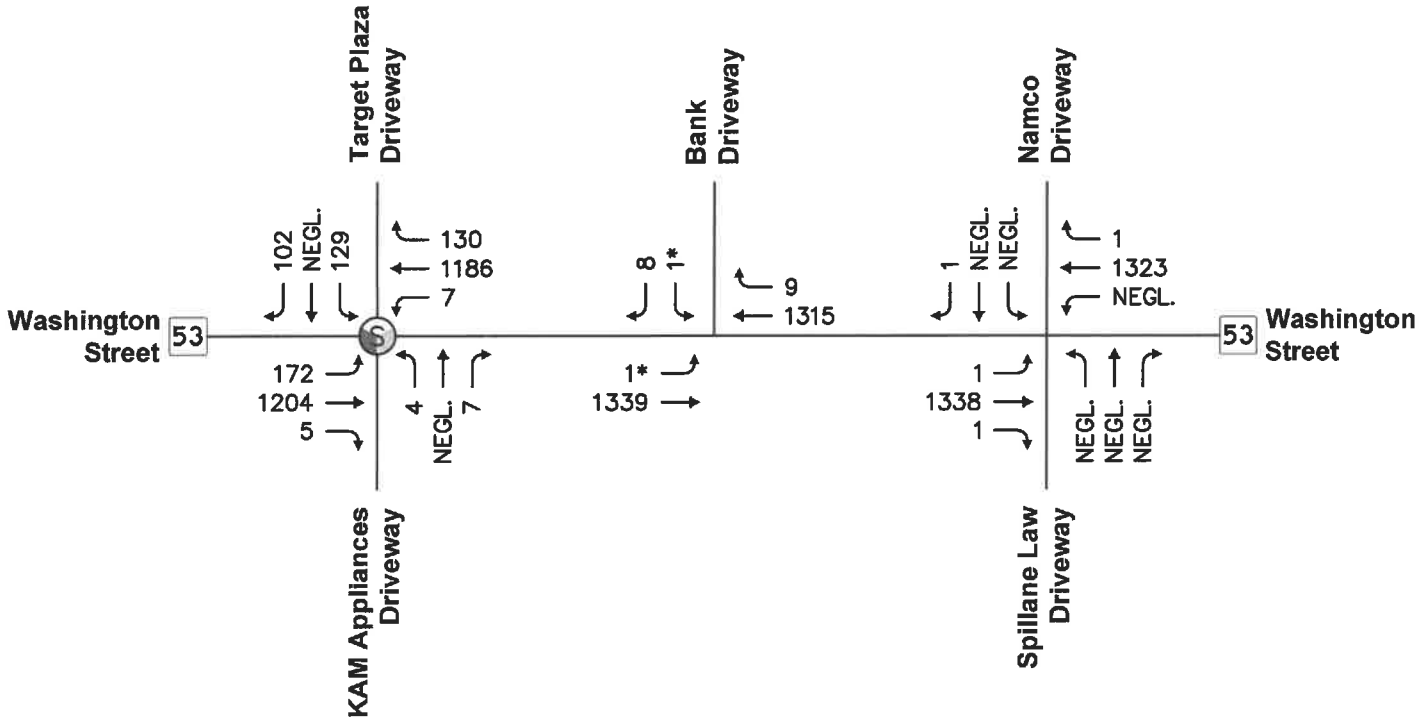

North
Scale: Not to Scale

NOTES:
NEGL. = Negligible
*** = Movement Not Permitted**
(S) = Signalized Intersection

Saturday Midday Peak Hour

Figure 4

2019 Existing Conditions
Saturday Midday Peak Hour Volumes

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As summarized in **Table 1,** the weekday daily traffic volume on Route 53 near the Site is approximately 28,410 vehicles per day (vpd) on a weekday and approximately 30,170 vehicles per day (vpd) on a Saturday. Peak hour traffic flow on Route 53 ranges from approximately 1,622 to 2,702 vehicles per hour (vph) representing approximately 6 to 8 percent of daily traffic flow.

Intersection Crash History

In order to identify crash trends and safety characteristics for study area intersections, crash data were obtained from MassDOT for the Town of Hanover for the three-year period covering 2014 through 2018 (the most recent full year of data currently available from MassDOT). A summary of the crash data with crash rates for the study intersections with reported crashes is provided in **Table 2** with detailed data provided in the **Attachments.**

Crash rates were calculated for the study intersections as reported in **Table 2.** These rates quantify the number of crashes per million entering vehicles. MassDOT has determined the official District 5 (which includes the Town of Hanover) crash rate to be 0.57 for unsignalized intersections and 0.75 for signalized intersections. This rate represents MassDOT's "average" crash experience for District 5 communities and serves as a basis for comparing reported crash rates for the study intersections. Where calculated crash rates notably exceed the district average, some form of safety countermeasures may be warranted. A review of Highway Safety Improvement Project (HSIP) locations was also conducted.

TABLE 2
INTERSECTION CRASH SUMMARY
2014 THROUGH 2018[1]

Data Category	STUDY LOCATION Route 53 at Target Driveway/KAM Appliances Driveway
Traffic Control	Signalized
Crash Rate[2]	**0.14**
MassDOT Avg. Rate[3]	0.75
Year:	
2014	2
2015	4
2016	1
2017	0
2018	1
Total	**8**
Type:	
Angle	2
Rear-End	5
Head-On	0
Sideswipe	0
Single Vehicle	0
Other/Unknown	1
Severity:	
P. Damage Only	5
Personal Injury	3
Fatality	0
Conditions:	
Dry	5
Wet	3
Snow	0
Time:	
7:00 to 9:00 AM	0
4:00 to 6:00 PM	3
Rest of Day	5

[1]Source: MassDOT Crash Database
[2]Crashes per million entering vehicles
[3]District 5 Average Crash Rate

As summarized in **Table 3** a total of eight (8) crashes were reported for the Route 53 signalized intersection with the Target Driveway and KAM Appliance Driveway. The resulting crash rate of 0.14 is lower than the District 5 average. The reported crashes included two (2) angle/ sideswipe type collisions, five (5) rear-end type collision and one (1) unknown type collision. Sixty-three percent (63%) of the crashes resulted in property-damage only, generally indicative of low-speed crashes. No fatalities or pedestrian-related incidents were reported during the study period.

In summary, based on extensive review of MassDOT and local crash data, the study intersection experienced a crash rate that is below the MassDOT District 5 average and is not listed as an HSIP location. Therefore, no additional safety countermeasures are warranted based on the review of the crash records and associated crash rates.

Sight Line Evaluation

An evaluation of sight lines was conducted at the proposed site driveway location to ensure that minimum recommended sight lines are available to safely exit onto Washington Street. The evaluation documents existing sight lines for vehicles as they relate to Washington Street with comparison to recommended guidelines for the regulatory speed limit.

The American Association of State Highway and Transportation Officials' (AASHTO) standards[1] reference two types of sight distance which are relevant at the proposed site driveway intersection on Washington Street: stopping sight distance (SSD) and intersection sight distance (ISD). Sight lines for critical vehicle movements at the proposed site driveway intersection with Washington Street were compared to minimum SSD and ISD for the regulatory speed limit in the Site vicinity.

Stopping Sight Distance

Sight distance is the length of roadway visible to the motorist to a fixed object. The minimum sight distance available on a roadway should be sufficiently long enough to enable a below-average operator, traveling at or near a regulatory speed limit, to stop safely before reaching a stationary object in its path, in this case, a vehicle exiting the site driveways onto Washington Street. The SSD criteria are defined by AASHTO based on design and operating speeds, anticipated driver behavior and vehicle performance, as well as physical roadway conditions. SSD includes the length of roadway traveled during the perception and reaction time of a driver to an object, and the distance traveled during brake application on wet level pavement. Adjustment factors are applied to account for roadway grades where applicable.

[1] *A policy on Geometric Design of Highways and Streets*, American Association of State Highway and Transportation Officials (AASHTO), 2011.

SSD was estimated in the field using AASHTO standards for driver's eye (3.5 feet) and object height equivalent to the taillight height of a passenger car (2.0 feet) for the northbound and southbound Washington Street approaches to the intersection. **Table 3** presents a summary of the available SSD for the Washington Street segment approaches to the proposed site driveway and AASHTO's recommended SSD for the regulatory speed limit.

TABLE 3
STOPPING SIGHT DISTANCE SUMMARY
WASHINGTON STREET APPROACH TO PROPOSED SITE DRIVEWAY

Approach/ Travel Direction	Available SSD	AASHTO Recommended[1]	
		Regulatory Speed Limit[2]	Criteria Satisfied
Northbound	>500 Feet	305 Feet	Yes
Southbound	>500 Feet	305 Feet	Yes

[1]Recommended sight distance based on AASHTO, A Policy on Geometric Design of Highways and Streets. Based on driver height of eye of 3.5 feet to object height of 2.0 feet and adjustments for roadway grade.
[2]Regulatory Speed Limit is 40 mph.

As summarized in **Table 3** analysis results indicate that the available sight lines exceed AASHTO's recommended SSD criteria for the proposed site driveway based on the regulatory travel speeds along Washington Street.

Intersection Sight Distance

Clear sight lines provide sufficient sight distance for a stopped driver on a minor-road approach to depart from the intersection and enter or cross the major road. As stated under AASHTO's Intersection Sight Distance (ISD) considerations, "*...If the available sight distance for an entering ...vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to avoid collisions...To enhance traffic operations, intersection sight distances that exceed stopping sight distances are desirable along the major road.*" AASHTO's ISD criteria are defined into several "cases". For the proposed unsignalized site driveway location, which is proposed to be under STOP sign control with left and right egress movements, the ISD in question relates to the ability to turn left or right from the proposed driveway at its intersection with Washington Street.

Available ISD was estimated in the field using AASHTO standards for driver's eye (3.5 feet), object height (3.5 feet) and decision point (between 8 and 14.5 feet from the edge of the travel way) for the northbound and southbound directions along Washington Street. **Table 4** presents a summary of the available ISD for the departure from the proposed site driveway and AASHTO's minimum and ideal ISD recommendations.

TABLE 4
INTERSECTION SIGHT DISTANCE SUMMARY
PROPOSED SITE DRIVEWAY DEPARTURES TO WASHINGTON STREET

		AASHTO Minimum[1]	AASHTO Ideal[2]
View Direction	Available ISD	Regulatory Speed Limit[2]	Regulatory Speed Limit[2]
Looking North	>500 Feet	305 Feet	445 Feet
Looking South	>500 Feet	305 Feet	385 Feet

[1]Recommended sight distance based on AASHTO, A Policy on Geometric Design of Highways and Streets. Based on driver height of eye of 3.5 feet and an object height of 3.5 feet. Minimum value as noted represents SSD per AASHTO guidance. Adjustments for driveway grade have been made as needed.
[2]Regulatory Speed Limit is 40 mph.

The results of the ISD analysis presented in **Table 4** indicate that the available sight lines looking north and south from the proposed driveway onto Washington Street will exceed the recommended sight line criteria from AASHTO. MDM recommends that any new plantings (shrubs, bushes) or physical landscape features to be located within driveway sight lines should also be maintained at a height of 2 feet or less above the adjacent existing roadway grade to ensure unobstructed lines of sight.

DESIGN YEAR TRAFFIC VOLUMES

The following sections provide an overview of project trip generation, trip distribution and projected 2019 Design Year traffic volumes (No-Build and Build).

Trip Generation

The trip generation estimates for the proposed development of the Site are provided for the weekday morning, weekday evening and Saturday midday periods, which correspond to the critical analysis periods for the proposed use and adjacent street traffic flow. The methodology utilized to estimate the future trip-generation characteristics of the proposed development are summarized below. In accordance with EEA/MassDOT guidelines, the traffic generated by the proposed development was estimated using trip rates published in ITE's *Trip Generation* for the Land Use Code (LUC) based on trip rates for Senior Adult Housing - Attached (LUC 252). Projected site trip generation for the proposed development is summarized in **Table 5** and compared with the permitted retail use (ITE LUC 820 – Shopping Center) and Honey Dew with Drive-Through (ITE LUC 937 Coffee/Donut Shop with Drive-Through). Trip generation calculations are provided in the **Attachments.**

TABLE 5
TRIP-GENERATION SUMMARY

	Permitted				Proposed	
Period/Direction	Retail[1]	Honey Dew[2]	Pass-By Trips[3]	Net New Trips	Senior Living Use[4]	Δ
Weekday Morning Peak-Hour:						
Enter	10	84	76	18	7	-11
Exit	6	80	76	10	12	+2
Total	16	164	152	28	19	-9
Weekday Evening Peak-Hour:						
Enter	31	40	47	24	14	-10
Exit	33	40	47	26	11	-15
Total	64	80	94	50	25	-25
Saturday Midday Peak-Hour:						
Enter	39	81	82	38	20	-18
Exit	36	81	82	35	12	-23
Total	75	162	164	73	32	-41
Weekday Daily	630	1,514	1,562	582	358	-224
Saturday Daily	770	1,982	1,964	788	314	-474

Source: ITE *Trip Generation*, Tenth Edition; 2017 with no reduction for public transit.
[1]Based on ITE LUC 820 Shopping Center trip rates applied to 16,700 s.f.
[2]Based on ITE LUC 937 Coffee/Donut Shop with Drive-Through trip rates applied to 1,846 s.f.
[3]34% of weekday retail trips, 26% of Saturday retail trips and 89% of Coffee/Donut Shop Trips per ITE Trip Generation Handbook.
[4]Based on ITE LUC 252 Senior Adult Housing - Attached trip rates applied to 97 units.

As summarized in **Table 5**, the proposed senior residential development is estimated to generate approximately 19 vehicle trips during the weekday morning peak hour (7 entering and 12 exiting), 25 vehicle trips during the weekday evening peak hour (14 entering and 11 exiting) and 32 vehicle trips during the Saturday midday peak hour (20 entering and 12 exiting). On a daily basis, the development is estimated to generate approximately 358 vehicle trips on a weekday and 314 vehicle trips on a Saturday. When compared to the permitted retail and coffee shop uses of the property, the senior residential development is expected to result in a reduction in trips during the weekday morning, weekday evening and Saturday midday periods.

Trip Distribution

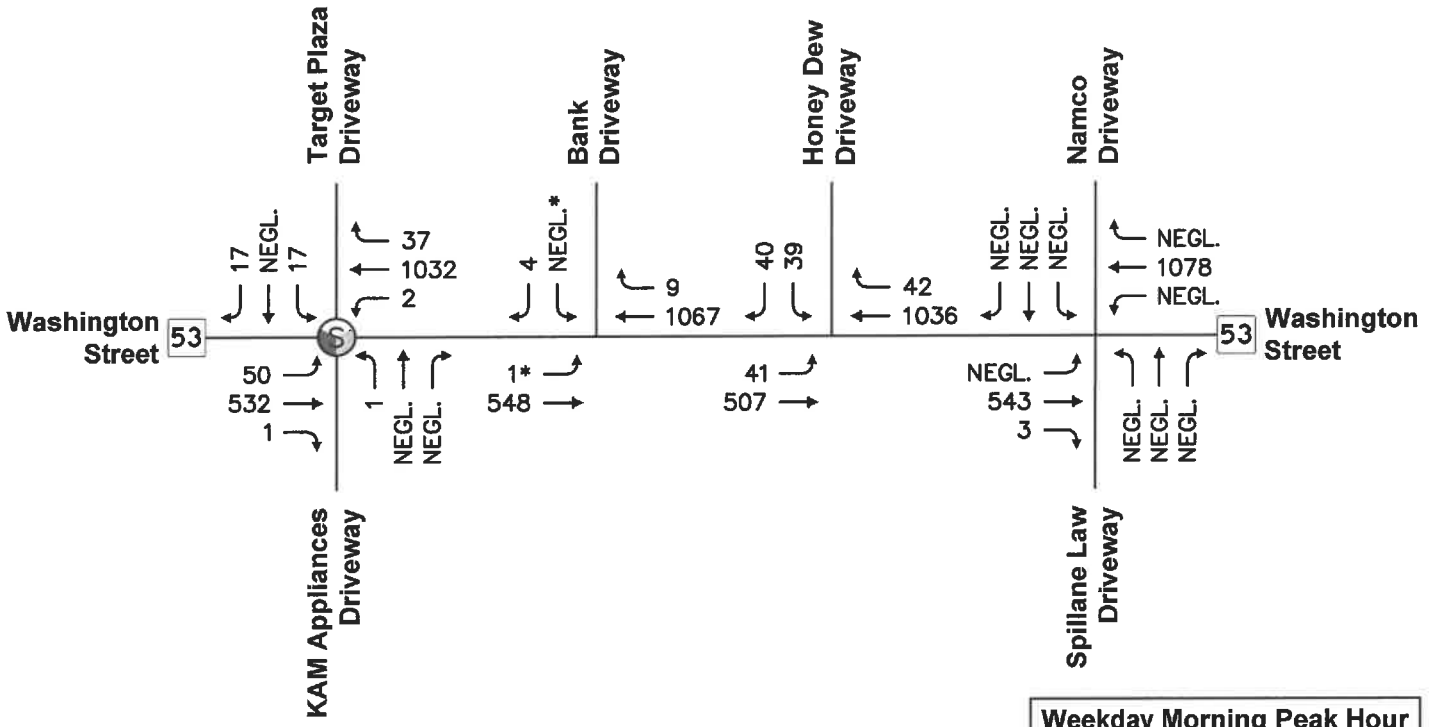
The distribution for Site uses are based primarily on existing travel patterns and volumes of the adjacent roadway system. Development-related trips for the permitted retail use/ Honey Dew (No-Build) and senior proposed residential development (Build) are assigned to the roadway network using the trip-generation estimates shown in **Table 5** and the distribution patterns provided in the **Attachments**. Development-related trip tracings for the weekday morning, weekday evening, and Saturday midday peak hours are provided in the **Attachments.**

2019 No-Build Traffic Volume Networks

No-Build traffic volume networks for the weekday morning, weekday evening, and Saturday midday peak hours include existing traffic volumes and vehicle trips associated with the permitted 16,700 sf of retail space and 1,846 sf coffee shop with drive-through. The resulting 2019 No-Build traffic volumes are shown in **Figure 5** and **Figure 6.**

2019 Build Conditions

Build condition traffic volumes include existing traffic volumes and vehicle trips associated with the proposed 97-unit senior residential development. The resulting 2019 Build condition traffic-volume networks for the weekday morning, weekday evening, and Saturday midday peak hours are shown in **Figure 7** and **Figure 8.**



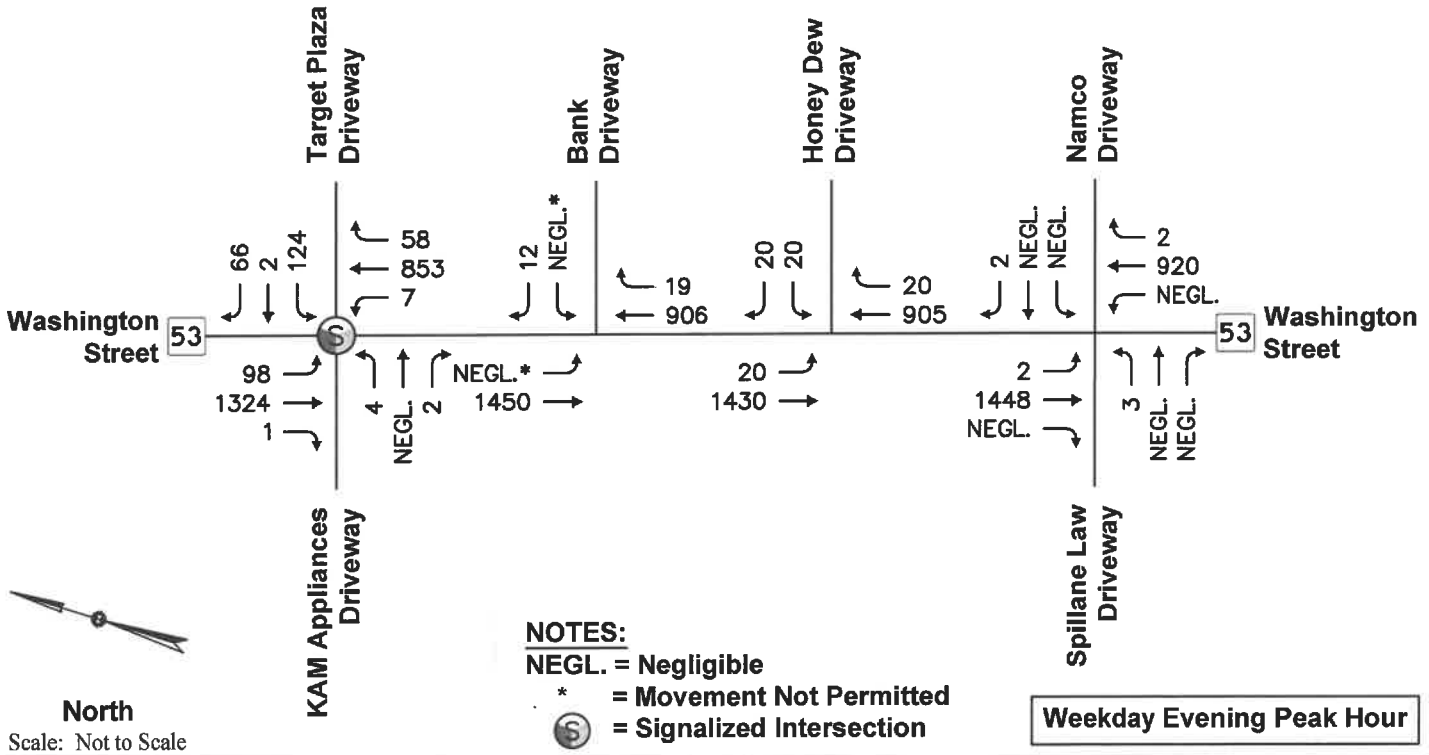


Figure 5

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2019 No-Build Conditions
Weekday Peak Hour Volumes

Date: October 2019
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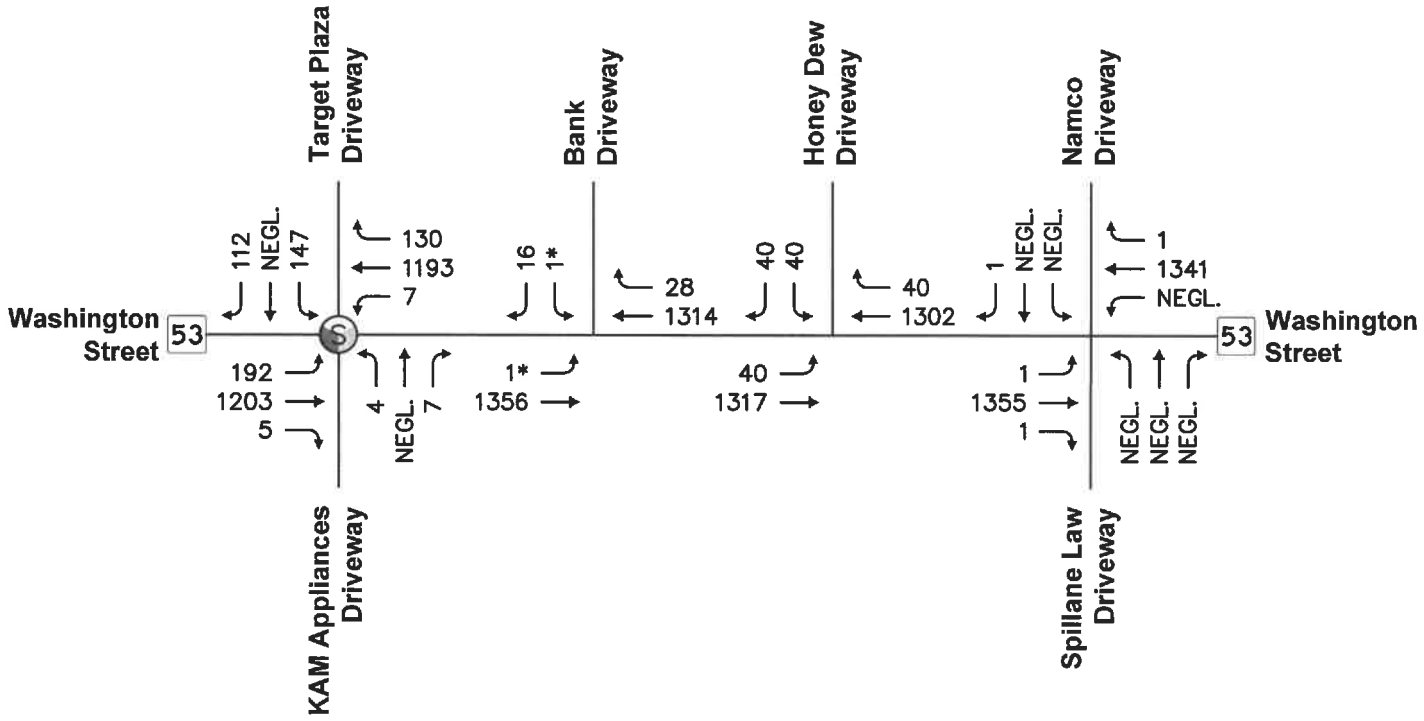

North
Scale: Not to Scale

NOTES:
NEGL. = Negligible
* = Movement Not Permitted
(S) = Signalized Intersection

Saturday Midday Peak Hour

Figure 6

2019 No-Build Conditions
Saturday Midday Peak Hour Volumes

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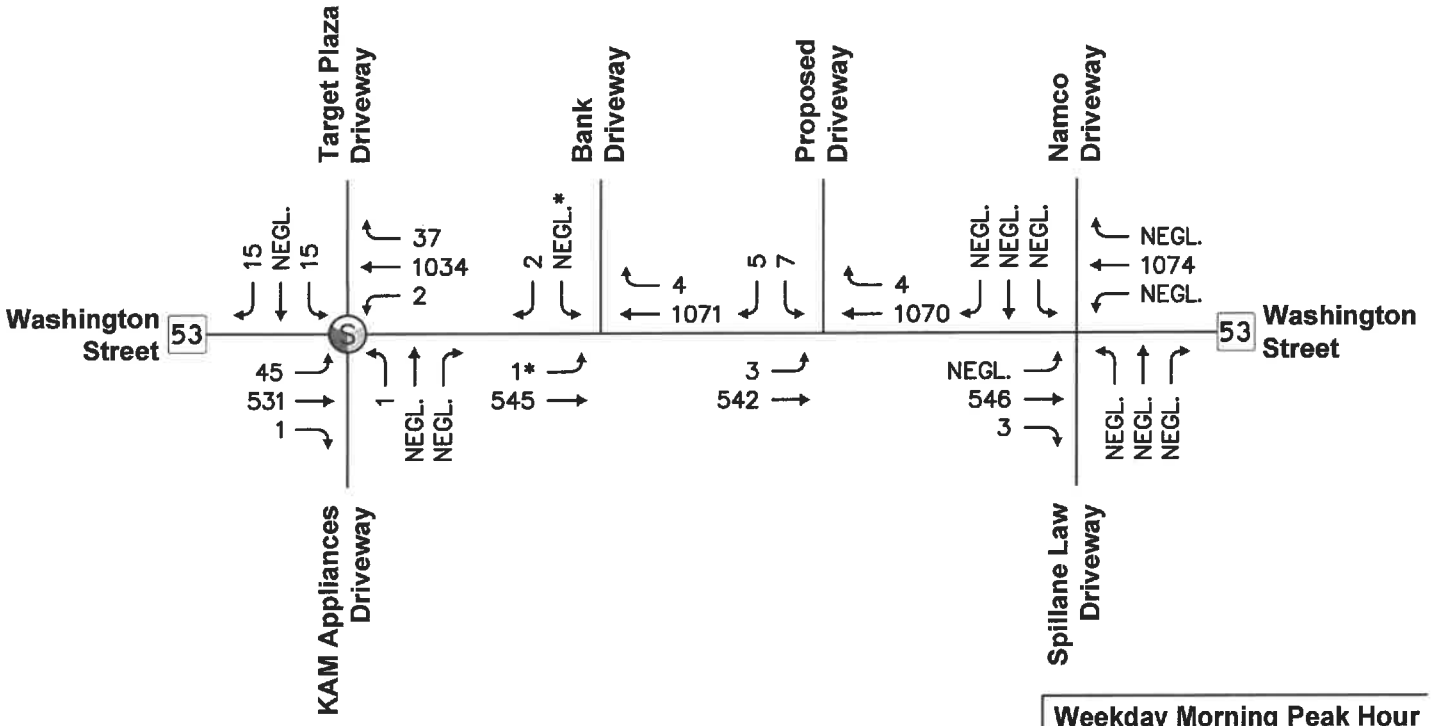
Date: October 2019
Dwg No. 1035 MR02.dwg



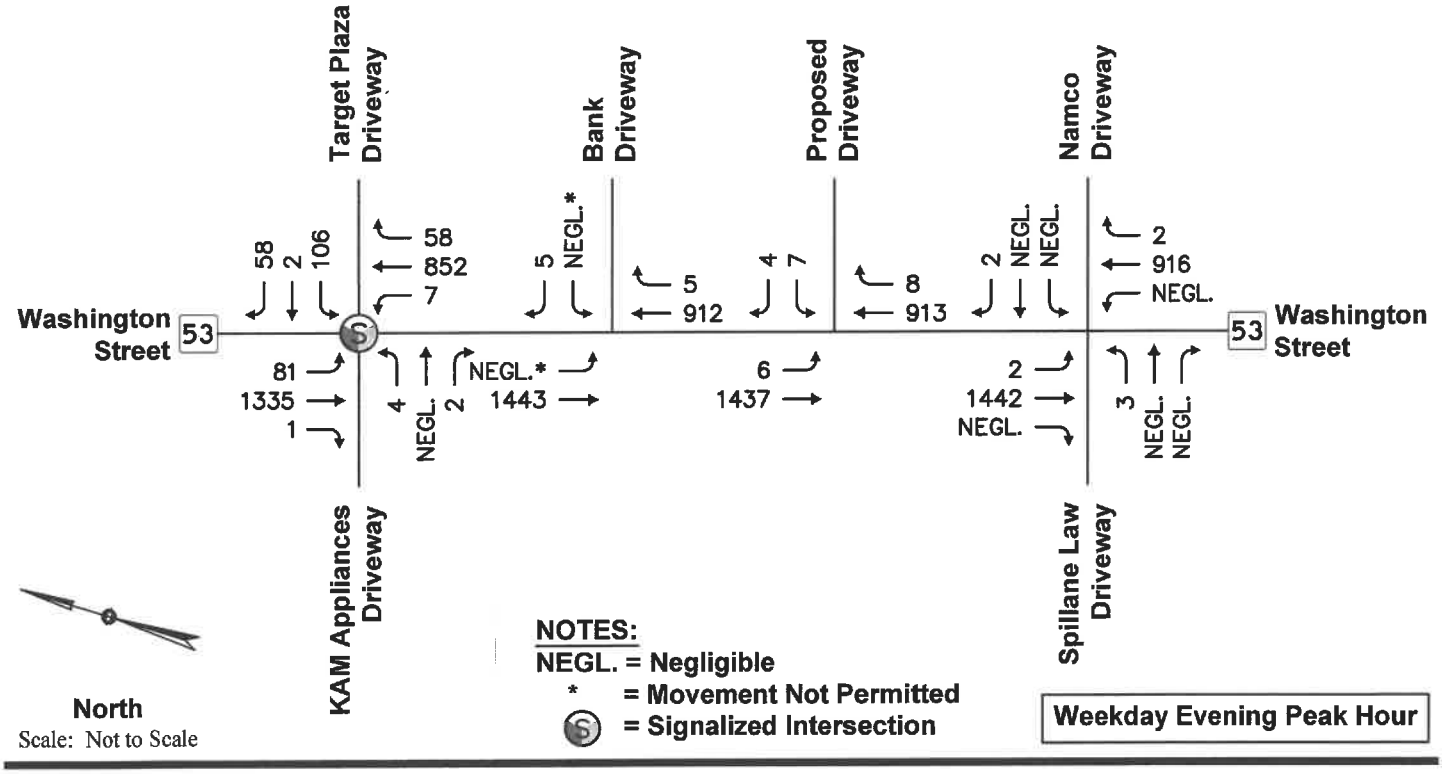


Figure 7

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2019 Build Conditions
Weekday Peak Hour Volumes

Date: October 2019
Dwg No. 1035 MR02.dwg

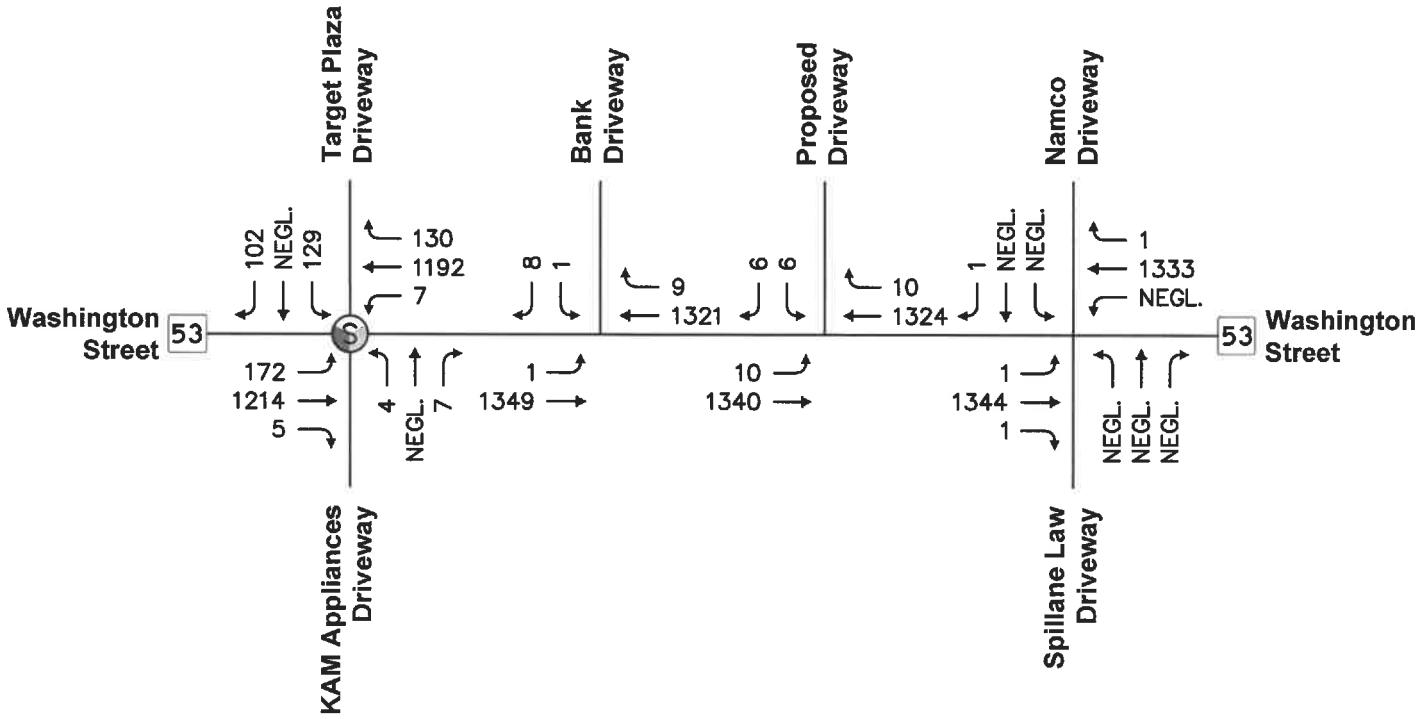

Figure 8

2019 Build Conditions
Saturday Midday Peak Hour Volumes

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Date: October 2019
Dwg No. 1035 MR02.dwg

OPERATIONS ANALYSIS

This section provides an overview of operational analysis methodology, and an assessment of intersection operations under existing (Baseline) and projected No-Build and Build conditions.

Analysis Methodology

Intersection capacity analyses are presented in this section for the Baseline, No-Build, and Build traffic-volume conditions. Capacity analyses, conducted in accordance with EEA/MassDOT guidelines, provide an index of how well the roadway facilities serve the traffic demands placed upon them. The operational results provide the basis for recommended access and roadway improvements in the following section.

Capacity analysis of intersections is developed using the Synchro® computer software, which implements the methods of the 2010 Highway Capacity Manual (HCM). The resulting analysis presents a level-of-service (LOS) designation for individual intersection movements. The LOS is a letter designation that provides a qualitative measure of operating conditions based on several factors including roadway geometry, speeds, ambient traffic volumes, traffic controls, and driver characteristics. Since the LOS of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of LOS, depending on the time of day, day of week, or period of year. A range of six levels of service are defined on the basis of average delay, ranging from LOS A (the least delay) to LOS F (delays greater than 50 seconds for unsignalized movements and delays greater than 80 seconds for signalized movements). The specific control delays and associated LOS designations are presented in the **Attachments**.

Intersection Capacity Analysis Results

Level-of-Service (LOS) analyses were conducted for the Baseline, No-Build, and Build conditions for the study intersections. The results of the intersection capacity are summarized below in **Table 6**, **Table 7**, and **Table 8**. Detailed analysis results are presented in the **Attachments**.

TABLE 6
INTERSECTION CAPACITY ANALYSIS RESULTS
WEEKDAY MORNING PEAK HOUR

Intersection	Approach	2019 Baseline			2019 No-Build			2019 Build		
		v/c[1]	Delay[2]	LOS[3]	v/c	Delay	LOS	v/c	Delay	LOS
Route 53 at	Eastbound	0.01	34	C	0.01	34	C	0.01	34	C
Target Plaza Driveway/	Westbound	0.08	18	B	0.09	18	B	0.08	18	B
KAM Appliances Dwy	Northbound	0.37	5	A	0.37	5	A	0.37	5	A
	Southbound	0.16	<5	A	0.16	5	A	0.16	<5	A
	OVERALL	**0.37**	**5**	**A**	**0.37**	**5**	**A**	**0.37**	**5**	**A**
Route 53 at	Westbound	0.00	12	B	0.01	13	B	0.00	13	B
Bank Driveway	Northbound	0.00	<5	A	0.00	<5	A	0.00	<5	A
	Southbound	0.00	<5	A	0.00	<5	A	0.00	<5	A
Route 53 at	Eastbound	0.00	<5	A	0.00	<5	A	0.00	<5	A
Namco Dwy/	Westbound	0.00	<5	A	0.00	<5	A	0.00	<5	A
Spillane Law Dwy	Northbound	0.00	<5	A	0.00	<5	A	0.00	<5	A
	Southbound	0.00	<5	A	0.00	<5	A	0.00	<5	A
Route 53 at	Westbound	n/a	n/a	n/a	0.26	21	C	0.04	18	C
Proposed Site Driveway	Northbound	n/a	n/a	n/a	0.00	<5	A	0.00	<5	A
	Southbound	n/a	n/a	n/a	0.07	<5	A	0.01	<5	A

[1] Volume-to-capacity ratio
[2] Average control delay per vehicle (in seconds)
[3] Level of service
[4] n/a = not applicable

TABLE 7
INTERSECTION CAPACITY ANALYSIS RESULTS
WEEKDAY EVENING PEAK HOUR

Intersection	Approach	2019 Baseline			2019 No-Build			2019 Build		
		v/c[1]	Delay[2]	LOS[3]	v/c	Delay	LOS	v/c	Delay	LOS
Route 53 at	Eastbound	0.02	<5	A	0.02	<5	A	0.02	<5	A
Target Plaza Driveway/	Westbound	0.54	33	C	0.59	34	C	0.54	33	C
KAM Appliances Dwy	Northbound	0.44	14	B	0.49	16	B	0.44	14	B
	Southbound	0.52	9	A	0.53	10	A	0.52	9	A
	OVERALL	**0.54**	**12**	**B**	**0.59**	**14**	**B**	**0.54**	**12**	**B**
Route 53 at	Westbound	0.01	12	B	0.03	12	B	0.01	12	B
Bank Driveway	Northbound	0.00	<5	A	0.00	<5	A	0.00	<5	A
	Southbound	0.00	<5	A	0.00	<5	A	0.00	<5	A
Route 53 at	Eastbound	0.10	>50	F	0.10	>50	F	0.10	>50	F
Namco Dwy/	Westbound	0.00	12	B	0.00	12	B	0.00	12	B
Spillane Law Dwy	Northbound	0.00	<5	A	0.00	<5	A	0.00	<5	A
	Southbound	0.00	<5	A	0.00	<5	A	0.00	<5	A
Route 53 at	Westbound	n/a	n/a	n/a	0.17	22	C	0.05	20	C
Proposed Site Driveway	Northbound	n/a	n/a	n/a	0.00	<5	A	0.00	<5	A
	Southbound	n/a	n/a	n/a	0.03	<5	A	0.01	<5	A

[1] Volume-to-capacity ratio
[2] Average control delay per vehicle (in seconds)
[3] Level of service
[4] n/a = not applicable

TABLE 8
INTERSECTION CAPACITY ANALYSIS RESULTS
SATURDAY MIDDAY PEAK HOUR

Intersection	Approach	2019 Baseline			2019 No-Build			2019 Build		
		v/c[1]	Delay[2]	LOS[3]	v/c	Delay	LOS	v/c	Delay	LOS
Route 53 at	Eastbound	0.03	<5	A	0.03	<5	A	0.03	<5	A
Target Plaza Driveway/	Westbound	0.59	30	C	0.63	31	C	0.59	30	C
KAM Appliances Dwy	Northbound	0.66	16	B	0.68	17	B	0.67	16	B
	Southbound	0.48	11	B	0.48	12	B	0.48	11	B
	OVERALL	**0.66**	**15**	**B**	**0.68**	**16**	**B**	**0.67**	**15**	**B**
Route 53 at	Westbound	0.02	14	B	0.04	15	B	0.02	14	B
Bank Driveway	Northbound	0.00	<5	A	0.00	<5	A	0.00	<5	A
	Southbound	0.00	<5	A	0.00	<5	A	0.00	<5	A
Route 53 at	Eastbound	0.00	<5	A	0.00	<5	A	0.00	<5	A
Namco Dwy/	Westbound	0.00	14	B	0.00	14	B	0.00	14	B
Spillane Law Dwy	Northbound	0.00	<5	A	0.00	<5	A	0.00	<5	A
	Southbound	0.00	<5	A	0.00	<5	A	0.00	<5	A
Route 53 at	Westbound	n/a	n/a	n/a	0.46	41	E	0.06	24	C
Proposed Site Driveway	Northbound	n/a	n/a	n/a	0.00	<5	A	0.00	<5	A
	Southbound	n/a	n/a	n/a	0.08	<5	A	0.02	<5	A

[1] Volume-to-capacity ratio
[2] Average control delay per vehicle (in seconds)
[3] Level of service
[4] n/a = not applicable

As summarized in **Table 6**, **Table 7**, and **Table 8**:

- *Route 53 at Target Driveway/KAM Appliance Driveway.* Under Design Year No-Build conditions the signalized Route 53 at the Target driveway and KAM Appliance driveway will below capacity at LOS B or better during the peak hours. Under 2019 Build conditions the intersection will continue to operate at an overall LOS B or better with slightly improved operations between No-Build and Build conditions. Additionally, review of the queues indicate that site driveway will generally not be blocked by the queues on northbound approach to the intersection.

- *Route 53 at Bank Driveway.* Under No-Build and Build conditions the unsignalized bank driveway approach to Route 53 will operate below capacity at LOS B or better during the peak hours. The Route 53 northbound and southbound approaches to the intersection will operate unimpeded at LOS A during the peak hours.

- *Route 53 at Namco Driveway/Spillane Law Driveway.* Under No-Build and Build conditions the Route 53 northbound and southbound approaches to the intersection will operate unimpeded at LOS A during the peak hours. The eastbound driveway approach to Route 53 will continue to operate with long delay with only minor changes between No-Build and Build conditions. Field observations indicate that the delay at the Spillane Law Driveway is overstated given the gaps created by the area signalized intersections.

- *Route 53 at Proposed Site Driveway.* Under Build conditions the unsignalized site driveway approach to Route 53 will operate with moderate delay at LOS C or better during the peak hours. The Route 53 northbound and southbound approaches to the intersection will operate unimpeded at LOS A during the peak hours.

In summary, the proposed development is expected to have minimal impact on the study area intersection and will not result in any notable changes in traffic operations in the study area relative to No-Build conditions. Specifically, the proposed project will result in improved operations at the study intersections compared to the permitted project. Improvements to the proposed Route 53/Site Driveway intersection are outlined in the *Recommendations and Conclusions* section to enhance operations.

RECOMMENDATIONS AND CONCLUSIONS

In summary, the proposed senior residential development is estimated to generate approximately 19 vehicle trips during the weekday morning peak hour, 25 vehicle trips during the weekday evening peak hour and 32 vehicle trips during the Saturday midday peak hour. When compared to the permitted retail and coffee shop uses of the property, the senior residential development is expected to result in a reduction in trips during the weekday morning, weekday evening and Saturday midday periods. This represents an improvement in traffic activity relative to the permitted retail/coffee shop use and adequate capacity is available along Route 53 to accommodate the traffic increases that may occur at the Site under proposed conditions.

MDM recommends the following access and on-site circulation improvements to enhancements operations, safety, and on-site traffic flow:

Access/Egress and Site Circulation Improvements

- *Signs and Pavement Markings.* A STOP sign (R1-1) and STOP line pavement marking should be installed on the exit driveway approach to Washington Street. The sign and pavement markings shall conform to Manual on Uniform Traffic Control Devices (MUTCD) standards.

- *Maintain Clear Driveway Sight Lines.* New plantings (shrubs, bushes) and structures (walls, fences, etc.) should be designed and maintained at a height of 2 feet or less above the finished driveway elevation within the sight triangle areas to provide unobstructed visibility to oncoming vehicles.

- *Driveway Design.* Driveway alignment, widths and curb radii should be designed to achieve (a) approximate perpendicular orientation at Washington Street; (b) total minimum width to facilitate full access/egress; (c) minimum curb radii as required to accommodate the largest design vehicle (delivery truck) and the Town's largest fire apparatus (fire truck); and (d) at a location to avoid conflicts with the existing mast arm assembly for the overhead Two-Way-Turn-Lane signage that is located within the Site frontage. Driveway grading and orientation should meet or exceed minimum recommended stopping sight distance presented herein.

- *Site Circulation.* The drop-off/pick-up loop should be designed to accommodate the largest design vehicle (ambulance). Accordingly, the site layout should be designed to accommodate the delivery vehicle and largest emergency vehicle (ladder truck).

Pedestrian and Bicycle Accommodations

- *Pedestrian Accommodation.* The final design should incorporate sidewalks that connect the proposed building entrances with the parking areas and to the existing sidewalk along Washington Street and within the retail plaza.

- *Bicycle Amenities.* The Proponent should incorporate bicycle racks within the property near the buildings entranceways to encourage and facilitate this mode of transportation to/from the Site.

In summary, MDM finds that incremental traffic associated with the proposed development is not expected to materially impact operating conditions at the study intersections. The study intersections exhibit below-average crash rates based on historic crash data; safety countermeasures are therefore not warranted. Likewise, the available sight lines at the Site Driveway intersection with Washington Street exceed the recommended sight line requirements from AASHTO. Implementation of access/egress improvements and proposed pedestrian improvements will establish a framework of minimizing Site traffic impacts by encouraging non-motorized travel modes and pedestrian accommodation that is compatible with other projects in the area. The project will require a MassDOT Access Permit for construction of the proposed site driveway.

ATTACHMENTS

- Traffic Volume Data
- Seasonal/ Yearly Growth Data
- Crash Data
- Sight Distance Calculations
- Trip Generation
- Trip Distribution Calculations
- Capacity Analysis

□ Traffic Volume Data

MDM TRANSPORTATION CONSULTANTS, INC.

28 Lord Road, Suite 280
Marlborough, MA
www.mdmtrans.com

Washington Street
South of Site
Hanover, MA

Start Time	25-Apr-19 Thu	Northbound		Hour Totals		Southbound				Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		8	229			23	268				
12:15		11	232			19	243				
12:30		6	242			11	231				
12:45		5	211	30	914	13	273	66	1015	96	1929
01:00		7	211			14	247				
01:15		11	206			6	247				
01:30		6	212			9	252				
01:45		1	220	25	849	2	241	31	987	56	1836
02:00		3	222			5	284				
02:15		3	233			4	264				
02:30		4	240			7	277				
02:45		9	240	19	935	1	303	17	1128	36	2063
03:00		5	217			0	304				
03:15		5	223			5	332				
03:30		11	210			1	329				
03:45		24	219	45	869	3	296	9	1261	54	2130
04:00		21	180			2	342				
04:15		27	205			6	358				
04:30		52	234			10	356				
04:45		97	195	197	814	11	365	29	1421	226	2235
05:00		124	237			6	356				
05:15		137	264			14	352				
05:30		153	215			18	347				
05:45		138	225	552	941	18	325	56	1380	608	2321
06:00		171	217			20	331				
06:15		207	189			41	302				
06:30		217	218			51	267				
06:45		232	199	827	823	78	259	190	1159	1017	1982
07:00		208	147			66	251				
07:15		236	128			98	217				
07:30		225	122			111	190				
07:45		248	99	917	496	124	202	399	860	1316	1356
08:00		274	132			135	208				
08:15		278	94			128	195				
08:30		277	86			126	168				
08:45		252	63	1081	375	152	144	541	715	1622	1090
09:00		261	80			137	138				
09:15		260	58			159	119				
09:30		249	43			179	96				
09:45		223	53	993	234	189	91	664	444	1657	678
10:00		205	41			175	84				
10:15		255	44			201	75				
10:30		219	25			186	72				
10:45		207	21	886	131	214	48	776	279	1662	410
11:00		210	19			215	70				
11:15		236	22			218	44				
11:30		208	17			229	46				
11:45		230	10	884	68	223	33	885	193	1769	261
Total		6456	7449			3663	10842			10119	18291
Percent		46.4%	53.6%			25.3%	74.7%			35.6%	64.4%
Combined Total		13905				14505				28410	

MDM TRANSPORTATION CONSULTANTS, INC.

28 Lord Road, Suite 280
Marlborough, MA
www.mdmtrans.com

Washington Street
South of Site
Hanover, MA

Start Time	27-Apr-19 Sat	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		19	350			55	320				
12:15		19	315			37	332				
12:30		22	323			26	356				
12:45		14	310	74	1298	30	305	148	1313	222	2611
01:00		9	333			30	315				
01:15		7	327			11	342				
01:30		6	321			6	376				
01:45		1	301	23	1282	14	295	61	1328	84	2610
02:00		2	295			5	345				
02:15		3	297			10	320				
02:30		3	278			10	347				
02:45		4	266	12	1136	7	302	32	1314	44	2450
03:00		1	283			3	312				
03:15		6	329			8	320				
03:30		10	266			5	307				
03:45		10	344	27	1222	8	322	24	1261	51	2483
04:00		4	261			2	316				
04:15		13	281			2	331				
04:30		16	240			3	313				
04:45		25	272	58	1054	2	272	9	1232	67	2286
05:00		33	241			2	317				
05:15		38	228			1	265				
05:30		39	237			7	256				
05:45		47	216	157	922	2	218	12	1056	169	1978
06:00		67	243			10	236				
06:15		52	203			22	229				
06:30		73	195			31	248				
06:45		91	175	283	816	39	179	102	892	385	1708
07:00		89	200			51	185				
07:15		87	174			110	201				
07:30		131	139			155	170				
07:45		176	156	483	669	150	157	466	713	949	1382
08:00		149	158			131	202				
08:15		173	109			183	164				
08:30		200	91			161	133				
08:45		211	82	733	440	175	108	650	607	1383	1047
09:00		256	83			190	103				
09:15		278	100			174	97				
09:30		245	74			197	84				
09:45		297	69	1076	326	228	79	789	363	1865	689
10:00		293	67			235	72				
10:15		292	96			215	76				
10:30		264	38			291	63				
10:45		330	42	1179	243	299	46	1040	257	2219	500
11:00		324	51			287	67				
11:15		368	34			321	68				
11:30		318	22			343	56				
11:45		325	16	1335	123	357	35	1308	226	2643	349
Total		5440	9531			4641	10562			10081	20093
Percent		36.3%	63.7%			30.5%	69.5%			33.4%	66.6%
Combined Total		14971				15203				30174	

MDM Transportation Consultants, INC.

28 Lord Road, Suite 280
Marlborough, MA

N/S: Washington Street
EB: Retail Dwy
WB: Site Plaza Driveway
Hanover, MA

File Name : 1035_Washington_at_Plaza_Signal_4-25-2019
Site Code : 1035
Start Date : 4/25/2019
Page No : 1

Groups Printed- Lights - Mediums - Articulated Trucks

	Washington Street From North					Plaza Driveway From East					Washington Street From South					Retail Driveway From West					
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
07:00 AM	0	63	0	0	63	0	0	0	0	0	2	207	0	0	209	1	0	0	0	1	273
07:15 AM	0	98	0	0	98	0	0	0	0	0	0	242	0	0	242	0	0	0	0	0	340
07:30 AM	0	113	1	0	114	1	0	0	0	1	8	215	0	0	223	0	0	0	0	0	338
07:45 AM	1	122	8	0	131	3	0	2	0	5	12	234	0	0	246	0	0	0	0	0	382
Total	1	396	9	0	406	4	0	2	0	6	22	898	0	0	920	1	0	0	0	1	1333
08:00 AM	0	127	4	0	131	2	0	3	0	5	5	269	1	0	275	0	0	0	0	0	411
08:15 AM	0	120	9	0	129	6	0	3	0	9	11	262	0	0	273	0	0	0	0	0	411
08:30 AM	1	121	13	0	135	4	0	4	0	8	9	258	1	0	268	0	0	0	0	0	411
08:45 AM	0	127	19	0	146	3	0	5	0	8	12	240	0	0	252	0	0	1	0	1	407
Total	1	495	45	0	541	15	0	15	0	30	37	1029	2	0	1068	0	0	1	0	1	1640
04:00 PM	0	309	28	0	337	12	0	26	0	38	12	183	0	0	195	4	0	3	0	7	577
04:15 PM	0	331	12	0	343	15	0	24	0	39	17	178	1	0	196	0	0	2	0	2	580
04:30 PM	0	326	15	0	341	15	0	28	0	43	19	216	1	0	236	2	0	0	0	2	622
04:45 PM	1	343	26	0	370	12	0	28	0	40	9	176	2	0	187	0	0	2	0	2	599
Total	1	1309	81	0	1391	54	0	106	0	160	57	753	4	0	814	6	0	7	0	13	2378
05:00 PM	0	330	21	0	351	18	1	27	0	46	19	221	4	0	244	0	0	0	0	0	641
05:15 PM	0	330	19	0	349	13	1	23	0	37	11	235	0	0	246	0	0	2	0	2	634
05:30 PM	0	316	24	0	340	13	0	28	0	41	15	203	0	0	218	1	0	2	0	3	602
05:45 PM	0	303	18	0	321	9	0	22	0	31	17	208	0	0	225	0	0	1	0	1	578
Total	0	1279	82	0	1361	53	2	100	0	155	62	867	4	0	933	1	0	5	0	6	2455
Grand Total	3	3479	217	0	3699	126	2	223	0	351	178	3547	10	0	3735	8	0	13	0	21	7806
Apprch %	0.1	94.1	5.9	0		35.9	0.6	63.5	0		4.8	95	0.3	0		38.1	0	61.9	0		
Total %	0	44.6	2.8	0	47.4	1.6	0	2.9	0	4.5	2.3	45.4	0.1	0	47.8	0.1	0	0.2	0	0.3	
Lights	3	3424										3495									
% Lights	100	98.4	99.5	0	98.5	99.2	100	99.1	0	99.1	99.4	98.5	100	0	98.6	87.5	0	84.6	0	85.7	98.5
Mediums	0	46	0	0	46	0	0	2	0	2	0	46	0	0	46	1	0	1	0	2	96
% Mediums																					
Articulated Trucks	0	9	1	0	10	1	0	0	0	1	1	6	0	0	7	0	0	1	0	1	19
% Articulated Trucks	0	0.3	0.5	0	0.3	0.8	0	0	0	0.3	0.6	0.2	0	0	0.2	0	0	7.7	0	4.8	0.2

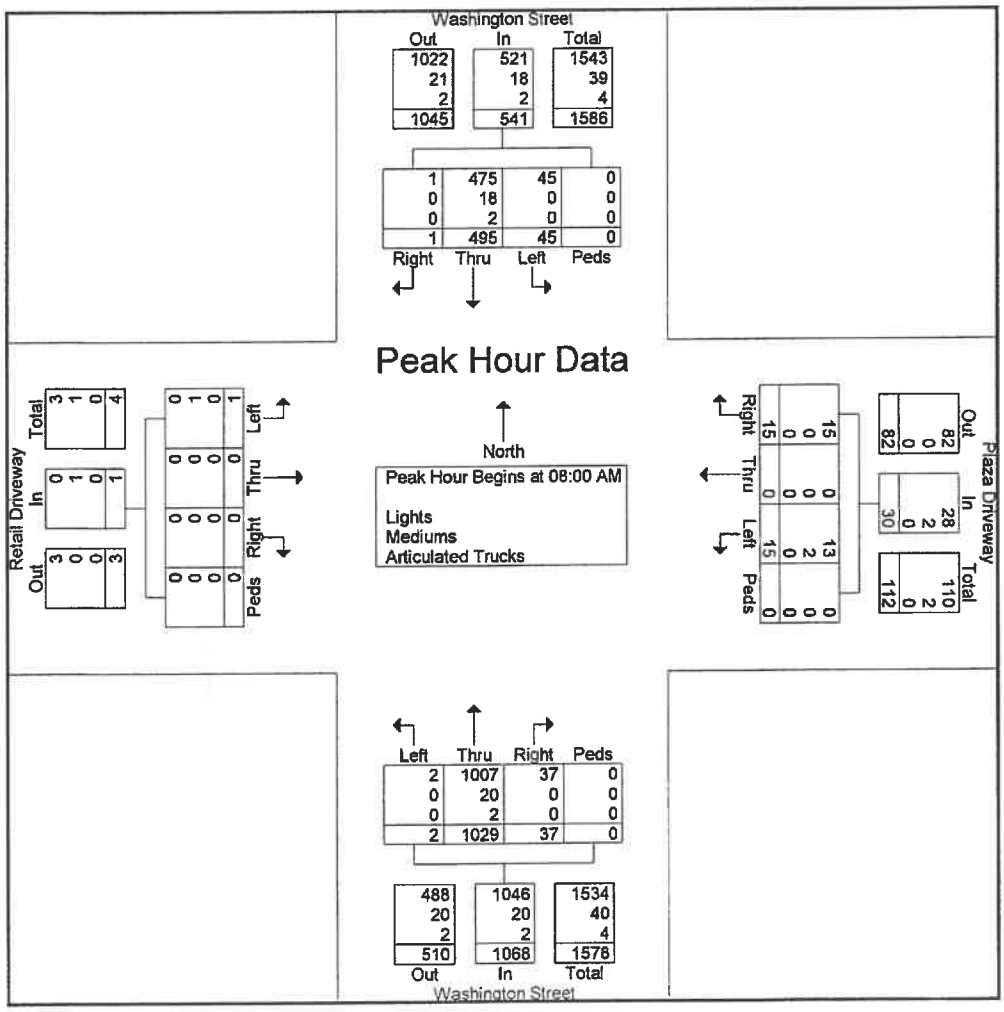
MDM Transportation Consultants, INC.

28 Lord Road, Suite 280
Marlborough, MA

N/S: Washington Street
EB: Retail Dwy
WB: Site Plaza Driveway
Hanover, MA

File Name : 1035_Washington_at_Plaza_Signal_4-25-2019
Site Code : 1035
Start Date : 4/25/2019
Page No : 2

	Washington Street From North					Plaza Driveway From East					Washington Street From South					Retail Driveway From West					
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 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	**127**	4	0	131	2	0	3	0	5	5	**269**	1	0	**275**	0	0	0	0	0	**411**
08:15 AM	0	120	9	0	129	**6**	0	3	0	**9**	11	262	0	0	273	0	0	0	0	0	411
08:30 AM	1	121	13	0	135	4	0	4	0	8	9	258	1	0	268	0	0	0	0	0	411
08:45 AM	0	127	**19**	0	**146**	3	0	**5**	0	8	**12**	240	0	0	252	0	0	1	0	1	407
Total Volume	1	495	45	0	541	15	0	15	0	30	37	1029	2	0	1068	0	0	1	0	1	1640
% App. Total	0.2	91.5	8.3	0		50	0	50	0		3.5	96.3	0.2	0		0	0	100	0		
PHF	.250	.974	.592	.000	.926	.625	.000	.750	.000	.833	.771	.956	.500	.000	.971	.000	.000	.250	.000	.250	.998
Lights	1	475	45	0	521	15	0	13	0	28	37	1007									
% Lights	100	96.0	100	0	96.3	100	0	86.7	0	93.3	100	97.9	100	0	97.9	0	0	0	0	0	97.3
Mediums	0	18	0	0	18	0	0	2	0	2	0	20	0	0	20	0	0	1	0	1	41
% Mediums								13.3	0	6.7	0	1.9	0	0	1.9	0	0	100	0	100	2.5
Articulated Trucks																					
% Articulated Trucks	0	0.4	0	0	0.4	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0.2



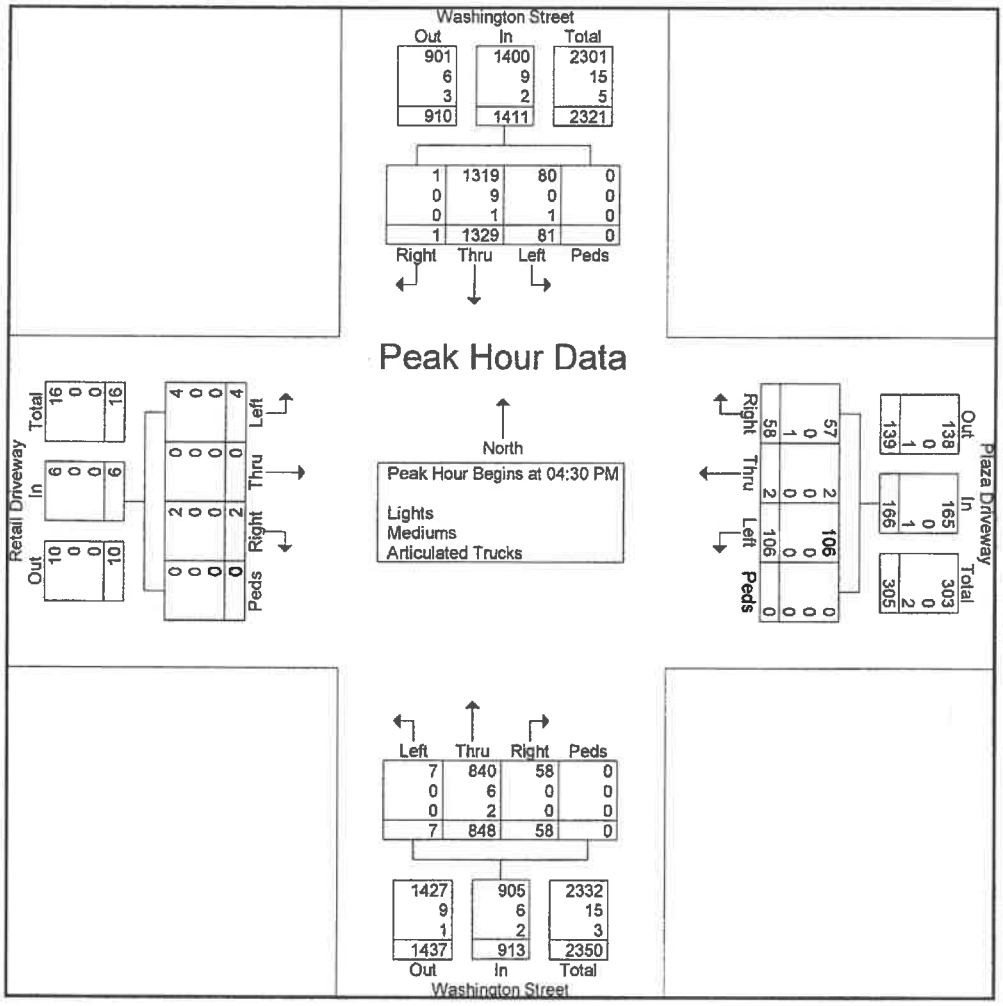
MDM Transportation Consultants, INC.

28 Lord Road, Suite 280
Marlborough, MA

N/S: Washington Street
EB: Retail Dwy
WB: Site Plaza Driveway
Hanover, MA

File Name : 1035_Washington_at_Plaza_Signal_4-25-2019
Site Code : 1035
Start Date : 4/25/2019
Page No : 3

	Washington Street From North					Plaza Driveway From East					Washington Street From South					Retail Driveway From West					
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 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	326	15	0	341	15	0	28	0	43	19	216	1	0	236	2	0	0	0	2	622
04:45 PM	1	343	26	0	370	12	0	28	0	40	9	176	2	0	187	0	0	2	0	2	599
05:00 PM	0	330	21	0	351	18	1	27	0	46	19	221	4	0	244	0	0	0	0	0	641
05:15 PM	0	330	19	0	349	13	1	23	0	37	11	235	0	0	246	0	0	2	0	2	634
Total Volume	1	1329	81	0	1411	58	2	106	0	166	58	848	7	0	913	2	0	4	0	6	2496
% App. Total	0.1	94.2	5.7	0		34.9	1.2	63.9	0		6.4	92.9	0.8	0		33.3	0	66.7	0		
PHF	.250	.969	.779	.000	.953	.806	.500	.946	.000	.902	.763	.902	.438	.000	.928	.250	.000	.500	.000	.750	.973
Lights	1	1319																			
% Lights	100	99.2	98.8	0	99.2	98.3	100	100	0	99.4	100	99.1	100	0	99.1	100	0	100	0	100	99.2
Mediums	0	9	0	0	9	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	15
% Mediums																					
Articulated Trucks	0	1	1	0	2	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	5
% Articulated Trucks	0	0.1	1.2	0	0.1	1.7	0	0	0	0.6	0	0.2	0	0	0.2	0	0	0	0	0	0.2



MDM Transportation Consultants, INC.

28 Lord Road, Suite 280
Marlborough, MA

N/S: Washington Street
EB: Retail Dwy
WB: Site Plaza Driveway
Hanover, MA

File Name : 1035_Washington_at_Plaza_Signal_4-27-2019
Site Code : 1035
Start Date : 4/27/2019
Page No : 1

Groups Printed- Lights - Mediums - Articulated Trucks

	Washington Street From North					Plaza Driveway From East					Washington Street From South					Retail Driveway From West					
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
11:00 AM	0	258	36	0	294	29	0	31	0	60	28	298	1	0	327	1	0	2	0	3	684
11:15 AM	0	283	33	0	316	19	0	39	0	58	39	316	1	0	356	1	0	0	0	1	731
11:30 AM	0	311	39	0	350	26	0	27	0	53	31	271	0	0	302	1	0	0	0	1	706
11:45 AM	2	311	51	0	364	30	0	38	0	68	20	293	3	0	316	3	0	1	0	4	752
Total	2	1163	159	0	1324	104	0	135	0	239	118	1178	5	0	1301	6	0	3	0	9	2873
12:00 PM	3	289	49	0	341	27	0	25	0	52	40	306	3	0	349	2	0	3	0	5	747
12:15 PM	1	296	46	0	343	29	0	39	0	68	31	256	0	0	287	2	0	1	0	3	701
12:30 PM	0	316	36	0	352	26	1	36	0	63	32	286	2	0	320	1	0	0	0	1	736
12:45 PM	0	252	53	0	305	35	1	52	0	88	29	255	1	0	285	2	0	2	0	4	682
Total	4	1153	184	0	1341	117	2	152	0	271	132	1103	6	0	1241	7	0	6	0	13	2866
Grand Total	6	2316	343	0	2665	221	2	287	0	510	250	2281	11	0	2542	13	0	9	0	22	5739
Apprch %	0.2	86.9	12.9	0		43.3	0.4	56.3	0		9.8	89.7	0.4	0		59.1	0	40.9	0		
Total %	0.1	40.4	6	0	46.4	3.9	0	5	0	8.9	4.4	39.7	0.2	0	44.3	0.2	0	0.2	0	0.4	
Lights	6	2303										2266									
% Lights	100	99.4	100	0	99.5	99.1	100	100	0	99.6	99.6	99.3	100	0	99.4	100	0	100	0	100	99.5
Mediums	0	12	0	0	12	2	0	0	0	2	1	13	0	0	14	0	0	0	0	0	28
% Mediums																					
Articulated Trucks	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
% Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	0.1

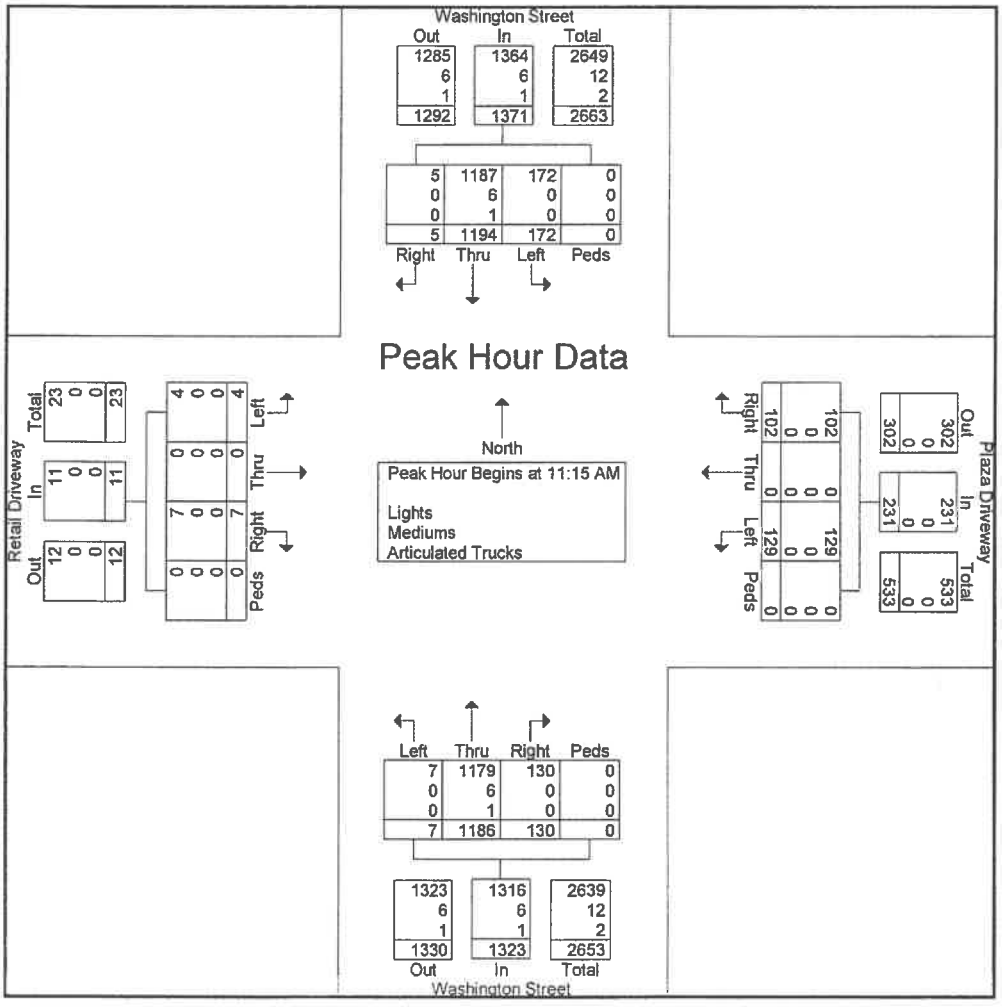
MDM Transportation Consultants, INC.

28 Lord Road, Suite 280
Marlborough, MA

N/S: Washington Street
EB: Retail Dwy
WB: Site Plaza Driveway
Hanover, MA

File Name : 1035_Washington_at_Plaza_Signal_4-27-2019
Site Code : 1035
Start Date : 4/27/2019
Page No : 2

	Washington Street From North					Plaza Driveway From East					Washington Street From South					Retail Driveway From West					
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 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:15 AM																					
11:15 AM	0	283	33	0	316	19	0	**39**	0	58	39	**316**	1	0	**356**	1	0	0	0	1	731
11:30 AM	0	**311**	39	0	350	26	0	27	0	53	31	271	0	0	302	1	0	0	0	1	706
11:45 AM	2	311	**51**	0	**364**	**30**	0	38	0	**68**	20	293	**3**	0	316	**3**	0	1	0	4	**752**
12:00 PM	**3**	289	49	0	341	27	0	25	0	52	**40**	306	3	0	349	2	0	**3**	0	**5**	747
Total Volume	5	1194	172	0	1371	102	0	129	0	231	130	1186	7	0	1323	7	0	4	0	11	2936
% App. Total	0.4	87.1	12.5	0		44.2	0	55.8	0		9.8	89.6	0.5	0		63.6	0	36.4	0		
PHF	.417	.960	.843	.000	.942	.850	.000	.827	.000	.849	.813	.938	.583	.000	.929	.583	.000	.333	.000	.550	.976
Lights	5	1187										1179									
% Lights	100	99.4	100	0	99.5	100	0	100	0	100	100	99.4	100	0	99.5	100	0	100	0	100	99.5
Mediums	0	6	0	0	6	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	12
% Mediums																					
Articulated Trucks	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
% Articulated Trucks	0	0.1	0	0	0.1	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	0.1



MDM Transportation Consultants, INC.

28 Lord Road, Suite 280
Marlborough, MA

N/S: Washington Street
EB: Spillane Law Dwy
WB: Namco Driveway
Hanover, MA

File Name : 1035_Washington_at_Namco_4-25-2019
Site Code : 1035
Start Date : 4/25/2019
Page No : 1

Groups Printed- Lights - Mediums - Articulated Trucks

	Washington Street From North					Namco Driveway From East					Washington Street From South					Spillane Law Dwy From West					
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
07:00 AM	0	62	0	0	62	0	0	0	0	0	0	214	0	0	214	0	0	0	0	0	276
07:15 AM	0	109	0	0	109	0	0	0	0	0	0	237	0	0	237	0	0	0	0	0	346
07:30 AM	0	106	0	0	106	0	0	0	0	0	0	226	0	0	226	0	0	0	0	0	332
07:45 AM	1	127	0	0	128	0	0	0	0	0	0	246	0	0	246	0	0	0	0	0	374
Total	1	404	0	0	405	0	0	0	0	0	0	923	0	0	923	0	0	0	0	0	1328
08:00 AM	1	132	0	0	133	0	0	0	0	0	0	277	0	0	277	0	0	0	0	0	410
08:15 AM	0	124	0	0	124	0	0	0	0	0	0	273	0	0	273	0	0	0	0	0	397
08:30 AM	0	133	0	0	133	0	0	0	0	0	0	270	0	0	270	0	0	0	0	0	403
08:45 AM	2	150	0	0	152	0	0	0	0	0	0	246	0	0	246	0	0	0	0	0	398
Total	3	539	0	0	542	0	0	0	0	0	0	1066	0	0	1066	0	0	0	0	0	1608
04:00 PM	0	347	0	0	347	0	0	1	0	1	0	185	1	0	186	1	0	0	0	1	535
04:15 PM	0	339	0	0	339	0	0	0	0	0	0	200	0	0	200	0	0	0	0	0	539
04:30 PM	0	356	0	0	356	0	0	0	0	0	0	207	0	0	207	0	0	0	0	0	563
04:45 PM	0	374	1	0	375	1	0	0	0	1	0	190	0	0	190	0	0	1	0	1	567
Total	0	1416	1	0	1417	1	0	1	0	2	0	782	1	0	783	1	0	1	0	2	2204
05:00 PM	0	332	1	0	333	1	0	0	0	1	0	228	0	0	228	0	0	1	0	1	563
05:15 PM	0	367	0	0	367	0	0	0	0	0	2	254	0	0	256	0	0	1	0	1	624
05:30 PM	0	322	0	0	322	0	0	1	0	1	0	211	0	0	211	0	0	0	0	0	534
05:45 PM	0	321	0	0	321	0	0	0	0	0	1	219	0	0	220	0	0	0	0	0	541
Total	0	1342	1	0	1343	1	0	1	0	2	3	912	0	0	915	0	0	2	0	2	2262
Grand Total	4	3701	2	0	3707	2	0	2	0	4	3	3683	1	0	3687	1	0	3	0	4	7402
Apprch %	0.1	99.8	0.1	0		50	0	50	0		0.1	99.9	0	0		25	0	75	0		
Total %	0.1	50	0	0	50.1	0	0	0	0	0.1	0	49.8	0	0	49.8	0	0	0	0	0.1	
Lights	3	3638										3623									
% Lights	75	98.3	100	0	98.3	100	0	100	0	100	100	98.4	100	0	98.4	100	0	100	0	100	98.3
Mediums	1	55	0	0	56	0	0	0	0	0	0	49	0	0	49	0	0	0	0	0	105
% Mediums																					
Articulated Trucks	0	8	0	0	8	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	19
% Articulated Trucks	0	0.2	0	0	0.2	0	0	0	0	0	0	0.3	0	0	0.3	0	0	0	0	0	0.3

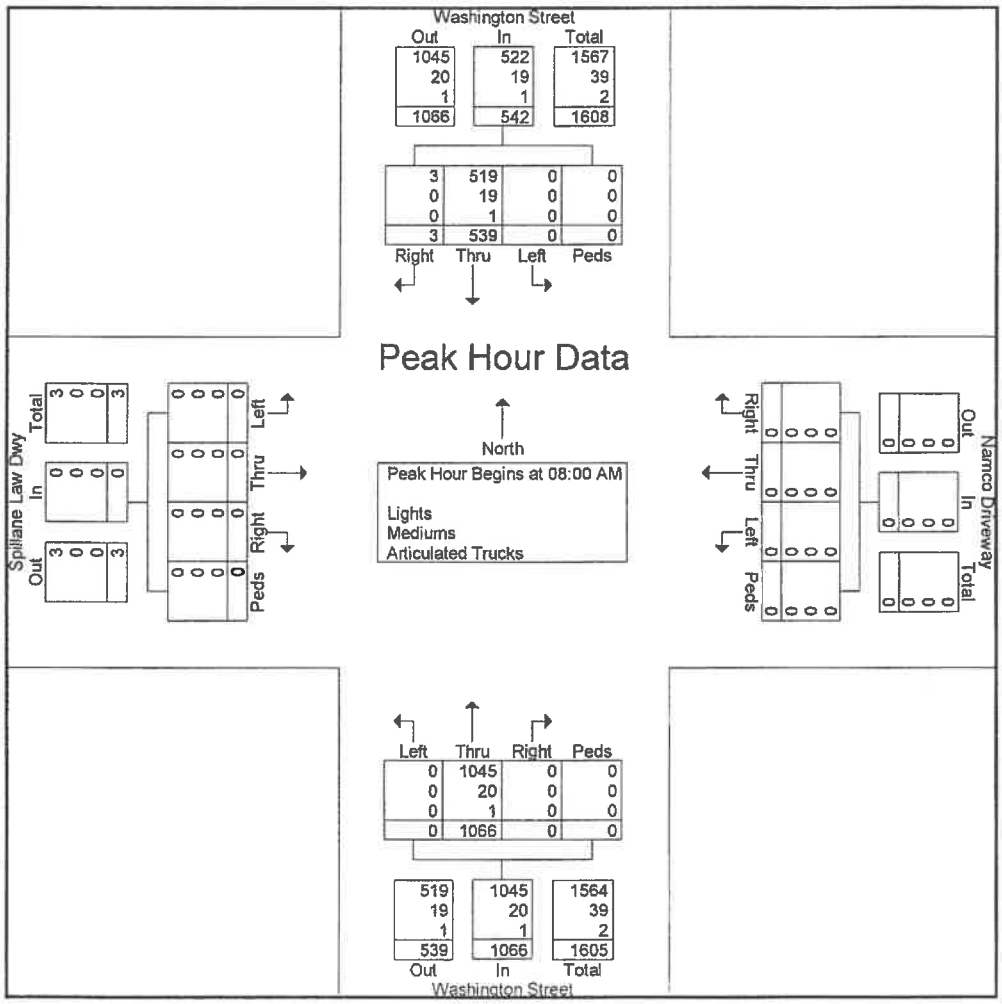
MDM Transportation Consultants, INC.

28 Lord Road, Suite 280
Marlborough, MA

N/S: Washington Street
EB: Spillane Law Dwy
WB: Namco Driveway
Hanover, MA

File Name : 1035_Washington_at_Namco_4-25-2019
Site Code : 1035
Start Date : 4/25/2019
Page No : 2

	Washington Street From North					Namco Driveway From East					Washington Street From South					Spillane Law Dwy From West					
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 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	1	132	0	0	133	0	0	0	0	0	0	**277**	0	0	**277**	0	0	0	0	0	**410**
08:15 AM	0	124	0	0	124	0	0	0	0	0	0	273	0	0	273	0	0	0	0	0	397
08:30 AM	0	133	0	0	133	0	0	0	0	0	0	270	0	0	270	0	0	0	0	0	403
08:45 AM	**2**	**150**	0	0	**152**	0	0	0	0	0	0	246	0	0	246	0	0	0	0	0	398
Total Volume	3	539	0	0	542	0	0	0	0	0	0	1066	0	0	1066	0	0	0	0	0	1608
% App. Total	0.6	99.4	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
PHF	.375	.898	.000	.000	.891	.000	.000	.000	.000	.000	.000	.962	.000	.000	.962	.000	.000	.000	.000	.000	.980
Lights	3	519	0	0	522	0	0	0	0	0	0	1045									
% Lights	100	96.3	0	0	96.3	0	0	0	0	0	0	98.0	0	0	98.0	0	0	0	0	0	97.5
Mediums	0	19	0	0	19	0	0	0	0	0	0	20	0	0	20	0	0	0	0	0	39
% Mediums																					
Articulated Trucks	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
% Articulated Trucks	0	0.2	0	0	0.2	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	0.1



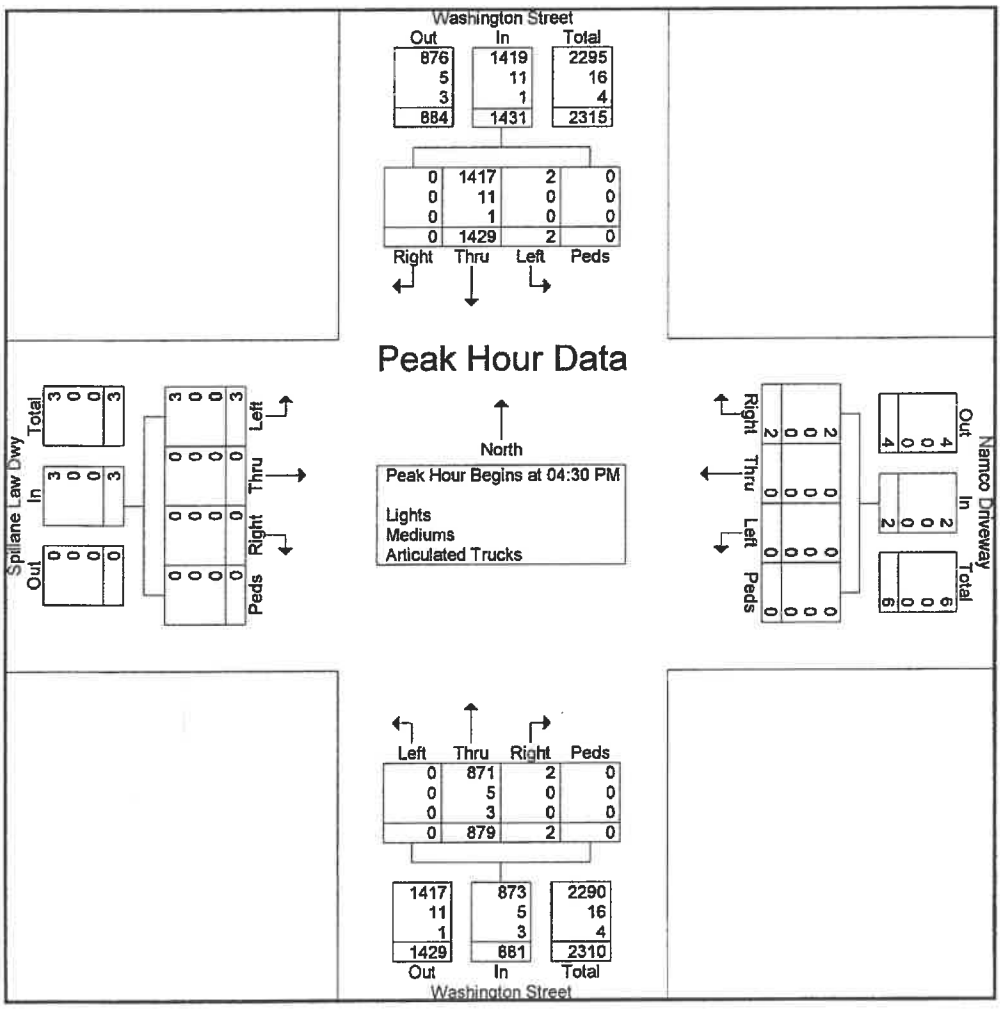
MDM Transportation Consultants, INC.

28 Lord Road, Suite 280
Marlborough, MA

N/S: Washington Street
EB: Spillane Law Dwy
WB: Namco Driveway
Hanover, MA

File Name : 1035_Washington_at_Namco_4-25-2019
Site Code : 1035
Start Date : 4/25/2019
Page No : 3

	Washington Street From North					Namco Driveway From East					Washington Street From South					Spillane Law Dwy From West					
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 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	356	0	0	356	0	0	0	0	0	0	207	0	0	207	0	0	0	0	0	563
04:45 PM	0	**374**	1	0	**375**	**1**	0	0	0	1	0	190	0	0	190	0	0	**1**	0	1	567
05:00 PM	0	332	1	0	333	1	0	0	0	1	0	228	0	0	228	0	0	1	0	1	563
05:15 PM	0	367	0	0	367	0	0	0	0	0	**2**	**254**	0	0	**256**	0	0	1	0	1	**624**
Total Volume	0	1429	2	0	1431	2	0	0	0	2	2	879	0	0	881	0	0	3	0	3	2317
% App. Total	0	99.9	0.1	0		100	0	0	0		0.2	99.8	0	0		0	0	100	0		
PHF	.000	.955	.500	.000	.954	.500	.000	.000	.000	.500	.250	.865	.000	.000	.860	.000	.000	.750	.000	.750	.928
Lights	0	1417																			
% Lights	0	99.2	100	0	99.2	100	0	0	0	100	100	99.1	0	0	99.1	0	0	100	0	100	99.1
Mediums	0	11	0	0	11	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	16
% Mediums																					
Articulated Trucks	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
% Articulated Trucks	0	0.1	0	0	0.1	0	0	0	0	0	0	0.3	0	0	0.3	0	0	0	0	0	0.2



MDM Transportation Consultants, INC.

28 Lord Road, Suite 280
Marlborough, MA

N/S: Washington Street
EB: Spillane Law Dwy
WB: Namco Driveway
Hanover, MA

File Name : 1035_Washington_at_Namco_4-27-2019
Site Code : 1035
Start Date : 4/27/2019
Page No : 1

Groups Printed- Lights - Mediums - Articulated Trucks

	Washington Street From North					Namco Driveway From East					Washington Street From South					Spillane Law Dwy From West					
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
11:00 AM	0	294	1	0	295	1	0	0	0	1	0	330	0	0	330	0	0	0	0	0	626
11:15 AM	0	320	0	0	320	0	0	0	0	0	0	354	0	0	354	0	0	0	0	0	674
11:30 AM	0	338	0	0	338	0	0	0	0	0	0	300	0	0	300	0	0	0	0	0	638
11:45 AM	1	363	0	0	364	0	0	0	0	0	0	319	0	0	319	0	0	0	0	0	683
Total	1	1315	1	0	1317	1	0	0	0	1	0	1303	0	0	1303	0	0	0	0	0	2621
12:00 PM	0	316	1	0	317	1	0	0	0	1	1	337	0	0	338	0	0	0	0	0	656
12:15 PM	0	333	0	0	333	0	0	0	0	0	0	310	0	0	310	0	0	0	0	0	643
12:30 PM	0	346	1	0	347	0	0	0	0	0	0	313	0	0	313	0	0	0	0	0	660
12:45 PM	1	326	2	0	329	2	0	0	0	2	1	279	0	0	280	0	0	1	0	1	612
Total	1	1321	4	0	1326	3	0	0	0	3	2	1239	0	0	1241	0	0	1	0	1	2571
Grand Total	2	2636	5	0	2643	4	0	0	0	4	2	2542	0	0	2544	0	0	1	0	1	5192
Apprch %	0.1	99.7	0.2	0		100	0	0	0		0.1	99.9	0	0		0	0	100	0		
Total %	0	50.8	0.1	0	50.9	0.1	0	0	0	0.1	0	49	0	0	49	0	0	0	0	0	
Lights	2	2622										2521									
% Lights	100	99.5	100	0	99.5	100	0	0	0	100	100	99.2	0	0	99.2	0	0	100	0	100	99.3
Mediums	0	14	0	0	14	0	0	0	0	0	0	19	0	0	19	0	0	0	0	0	33
% Mediums																					
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
% Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	0

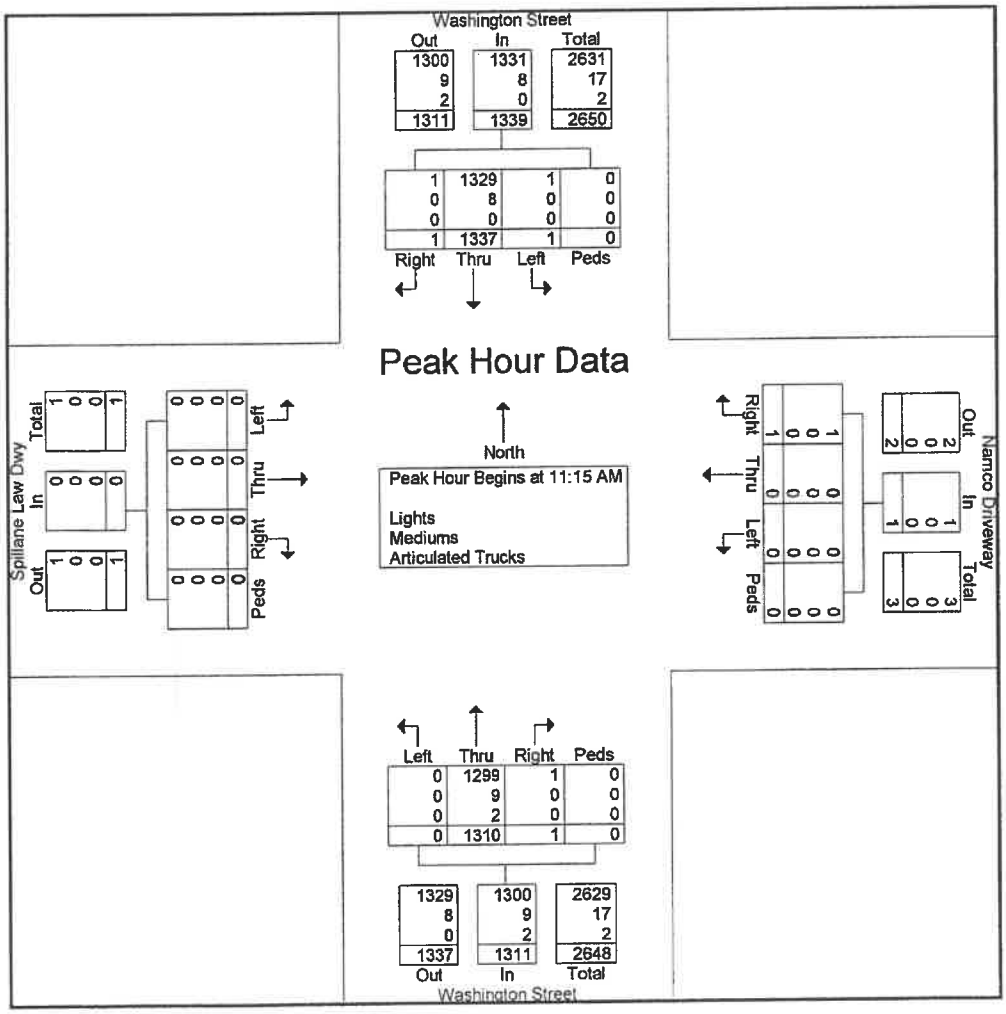
MDM Transportation Consultants, INC.

28 Lord Road, Suite 280
Marlborough, MA

N/S: Washington Street
EB: Spillane Law Dwy
WB: Namco Driveway
Hanover, MA

File Name : 1035_Washington_at_Namco_4-27-2019
Site Code : 1035
Start Date : 4/27/2019
Page No : 2

	Washington Street From North					Namco Driveway From East					Washington Street From South					Spillane Law Dwy From West					
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 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:15 AM																					
11:15 AM	0	320	0	0	320	0	0	0	0	0	0	**354**	0	0	**354**	0	0	0	0	0	674
11:30 AM	0	338	0	0	338	0	0	0	0	0	0	300	0	0	300	0	0	0	0	0	638
11:45 AM	1	**363**	0	0	**364**	0	0	0	0	0	0	319	0	0	319	0	0	0	0	0	**683**
12:00 PM	0	316	1	0	317	1	0	0	0	1	1	337	0	0	338	0	0	0	0	0	656
Total Volume	1	1337	1	0	1339	1	0	0	0	1	1	1310	0	0	1311	0	0	0	0	0	2651
% App. Total	0.1	99.9	0.1	0		100	0	0	0		0.1	99.9	0	0		0	0	0	0		
PHF	.250	.921	.250	.000	.920	.250	.000	.000	.000	.250	.250	.925	.000	.000	.926	.000	.000	.000	.000	.000	.970
Lights	1	1329										1299									
% Lights	100	99.4	100	0	99.4	100	0	0	0	100	100	99.2	0	0	99.2	0	0	0	0	0	99.3
Mediums	0	8	0	0	8	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	17
% Mediums																					
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
% Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0.1



MDM Transportation Consultants, INC.

28 Lord Road, Suite 280
Marlborough, MA

N/S: Washington Street
WB: Coastal Bank Dwy
Hanover, MA

File Name : 1035_Washington_at_Coastal_Bank_4-25-2019
Site Code : 1035
Start Date : 4/25/2019
Page No : 1

Groups Printed- Lights - Mediums - Articulated Trucks

	Washington Street From North				Coastal Bank Dwy From East				Washington Street From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
07:00 AM	62	0	0	62	0	0	0	0	0	214	0	214	276
07:15 AM	110	0	0	110	1	0	0	1	0	238	0	238	349
07:30 AM	105	0	0	105	0	0	0	0	1	224	0	225	330
07:45 AM	129	0	0	129	0	0	0	0	1	242	0	243	372
Total	406	0	0	406	1	0	0	1	2	918	0	920	1327
08:00 AM	131	0	0	131	0	0	0	0	1	275	0	276	407
08:15 AM	121	0	0	121	0	0	0	0	0	270	0	270	391
08:30 AM	131	1	0	132	0	0	0	0	2	267	0	269	401
08:45 AM	149	0	0	149	2	0	0	2	1	244	0	245	396
Total	532	1	0	533	2	0	0	2	4	1056	0	1060	1595
04:00 PM	350	0	0	350	2	1	0	3	2	189	0	191	544
04:15 PM	351	1	0	352	3	0	0	3	3	209	0	212	567
04:30 PM	357	0	0	357	2	0	0	2	0	219	0	219	578
04:45 PM	372	0	0	372	1	0	0	1	2	190	0	192	565
Total	1430	1	0	1431	8	1	0	9	7	807	0	814	2254
05:00 PM	328	0	0	328	1	0	0	1	0	227	0	227	556
05:15 PM	363	0	0	363	1	0	0	1	3	255	0	258	622
05:30 PM	331	0	0	331	0	0	0	0	0	210	0	210	541
05:45 PM	320	0	0	320	0	0	0	0	0	225	0	225	545
Total	1342	0	0	1342	2	0	0	2	3	917	0	920	2264
Grand Total	3710	2	0	3712	13	1	0	14	16	3698	0	3714	7440
Apprch %	99.9	0.1	0		92.9	7.1	0		0.4	99.6	0		
Total %	49.9	0	0	49.9	0.2	0	0	0.2	0.2	49.7	0	49.9	
Lights	3651	2	0	3653	13	1	0	14	16	3645	0	3661	7328
% Lights	98.4	100	0	98.4	100	100	0	100	100	98.6	0	98.6	98.5
Mediums	51	0	0	51	0	0	0	0	0	42	0	42	93
% Mediums	1.4	0	0	1.4	0	0	0	0	0	1.1	0	1.1	1.2
Articulated Trucks	8	0	0	8	0	0	0	0	0	11	0	11	19
% Articulated Trucks	0.2	0	0	0.2	0	0	0	0	0	0.3	0	0.3	0.3

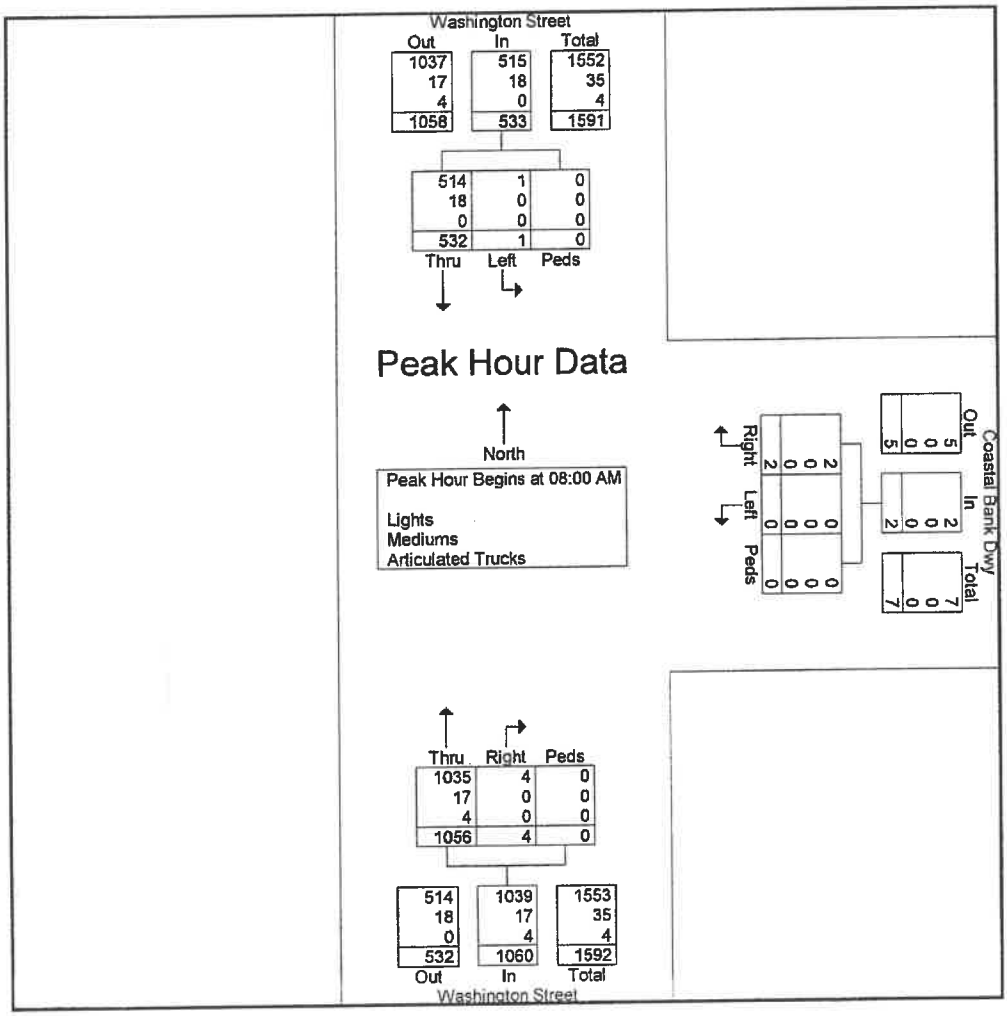
MDM Transportation Consultants, INC.

28 Lord Road, Suite 280
Marlborough, MA

N/S: Washington Street
WB: Coastal Bank Dwy
Hanover, MA

File Name : 1035_Washington_at_Coastal_Bank_4-25-2019
Site Code : 1035
Start Date : 4/25/2019
Page No : 2

	Washington Street From North				Coastal Bank Dwy From East				Washington Street From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	131	0	0	131	0	0	0	0	1	275	0	276	407
08:15 AM	121	0	0	121	0	0	0	0	0	270	0	270	391
08:30 AM	131	1	0	132	0	0	0	0	2	267	0	269	401
08:45 AM	149	0	0	149	2	0	0	2	1	244	0	245	396
Total Volume	532	1	0	533	2	0	0	2	4	1056	0	1060	1595
% App. Total	99.8	0.2	0		100	0	0		0.4	99.6	0		
PHF	.893	.250	.000	.894	.250	.000	.000	.250	.500	.960	.000	.960	.980
Lights	514	1	0	515	2	0	0	2	4	1035	0	1039	1556
% Lights	96.6	100	0	96.6	100	0	0	100	100	98.0	0	98.0	97.6
Mediums	18	0	0	18	0	0	0	0	0	17	0	17	35
% Mediums	3.4	0	0	3.4	0	0	0	0	0	1.6	0	1.6	2.2
Articulated Trucks	0	0	0	0	0	0	0	0	0	4	0	4	4
% Articulated Trucks	0	0	0	0	0	0	0	0	0	0.4	0	0.4	0.3



MDM Transportation Consultants, INC.

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N/S: Washington Street
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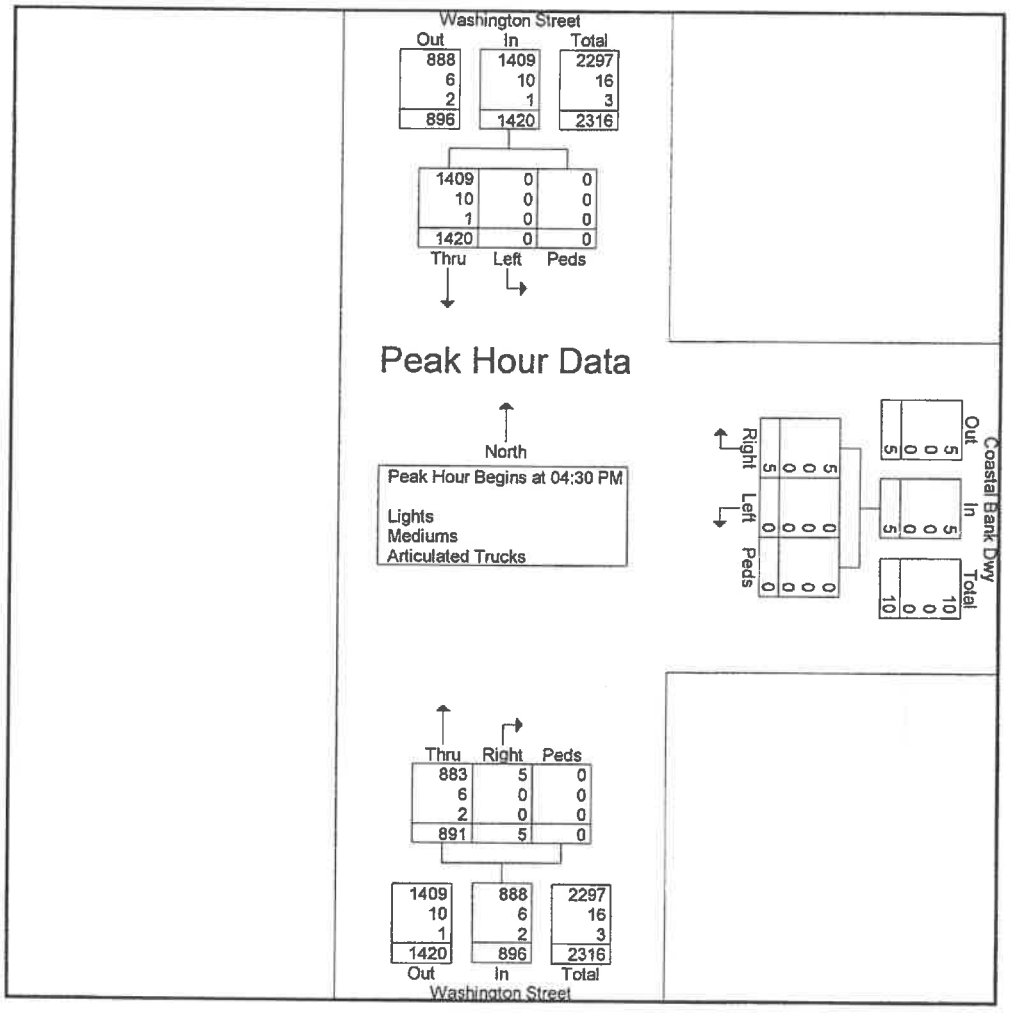
Hanover, MA

File Name : 1035_Washington_at_Coastal_Bank_4-25-2019
Site Code : 1035
Start Date : 4/25/2019
Page No : 3

	Washington Street From North				Coastal Bank Dwy From East				Washington Street From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	357	0	0	357	2	0	0	2	0	219	0	219	578
04:45 PM	372	0	0	372	1	0	0	1	2	190	0	192	565
05:00 PM	328	0	0	328	1	0	0	1	0	227	0	227	556
05:15 PM	363	0	0	363	1	0	0	1	3	255	0	258	622
Total Volume	1420	0	0	1420	5	0	0	5	5	891	0	896	2321
% App. Total	100	0	0		100	0	0		0.6	99.4	0		
PHF	.954	.000	.000	.954	.625	.000	.000	.625	.417	.874	.000	.868	.933
Lights	1409	0	0	1409	5	0	0	5	5	883	0	888	2302
% Lights	99.2	0	0	99.2	100	0	0	100	100	99.1	0	99.1	99.2
Mediums	10	0	0	10	0	0	0	0	0	6	0	6	16
% Mediums	0.7	0	0	0.7	0	0	0	0	0	0.7	0	0.7	0.7
Articulated Trucks	1	0	0	1	0	0	0	0	0	2	0	2	3
% Articulated Trucks	0.1	0	0	0.1	0	0	0	0	0	0.2	0	0.2	0.1



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File Name : 1035_Washington_at_Coastal_Bank_4-27-2019
Site Code : 1035
Start Date : 4/27/2019
Page No : 1

Groups Printed- Lights - Mediums - Articulated Trucks

	Washington Street From North				Coastal Bank Dwy From East				Washington Street From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
11:00 AM	293	1	0	294	2	0	0	2	2	326	0	328	624
11:15 AM	321	0	0	321	2	0	0	2	1	353	0	354	677
11:30 AM	337	1	0	338	1	0	0	1	2	298	0	300	639
11:45 AM	368	0	0	368	3	0	0	3	3	321	0	324	695
Total	1319	2	0	1321	8	0	0	8	8	1298	0	1306	2635
12:00 PM	313	0	0	313	2	1	0	3	3	328	0	331	647
12:15 PM	334	2	0	336	2	0	0	2	2	326	0	328	666
12:30 PM	348	0	0	348	2	0	0	2	3	310	0	313	663
12:45 PM	328	0	0	328	3	0	0	3	2	291	0	293	624
Total	1323	2	0	1325	9	1	0	10	10	1255	0	1265	2600
Grand Total	2642	4	0	2646	17	1	0	18	18	2553	0	2571	5235
Apprch %	99.8	0.2	0		94.4	5.6	0		0.7	99.3	0		
Total %	50.5	0.1	0	50.5	0.3	0	0	0.3	0.3	48.8	0	49.1	
Lights	2628	4	0	2632	17	1	0	18	18	2529	0	2547	5197
% Lights	99.5	100	0	99.5	100	100	0	100	100	99.1	0	99.1	99.3
Mediums	14	0	0	14	0	0	0	0	0	22	0	22	36
% Mediums	0.5	0	0	0.5	0	0	0	0	0	0.9	0	0.9	0.7
Articulated Trucks	0	0	0	0	0	0	0	0	0	2	0	2	2
% Articulated Trucks	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0

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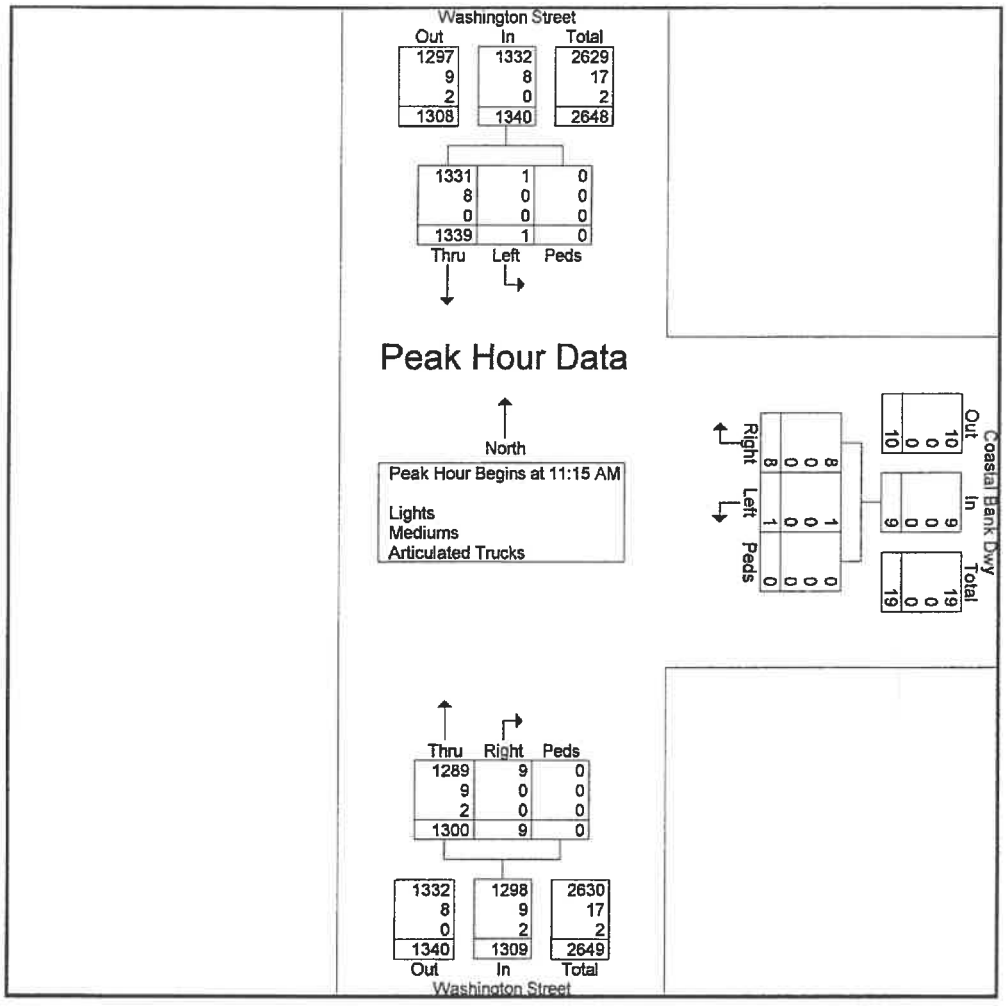
Site Code : 1035
Start Date : 4/27/2019
Page No : 2

	Washington Street From North				Coastal Bank Dwy From East				Washington Street From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:00 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:15 AM													
11:15 AM	321	0	0	321	2	0	0	2	1	**353**	0	**354**	677
11:30 AM	337	1	0	338	1	0	0	1	2	298	0	300	639
11:45 AM	**368**	0	0	**368**	**3**	0	0	**3**	**3**	321	0	324	**695**
12:00 PM	313	0	0	313	2	1	0	3	3	328	0	331	647
Total Volume	1339	1	0	1340	8	1	0	9	9	1300	0	1309	2658
% App. Total	99.9	0.1	0		88.9	11.1	0		0.7	99.3	0		
PHF	.910	.250	.000	.910	.667	.250	.000	.750	.750	.921	.000	.924	.956
Lights	1331	1	0	1332	8	1	0	9	9	1289	0	1298	2639
% Lights	99.4	100	0	99.4	100	100	0	100	100	99.2	0	99.2	99.3
Mediums	8	0	0	8	0	0	0	0	0	9	0	9	17
% Mediums	0.6	0	0	0.6	0	0	0	0	0	0.7	0	0.7	0.6
Articulated Trucks	0	0	0	0	0	0	0	0	0	2	0	2	2
% Articulated Trucks	0	0	0	0	0	0	0	0	0	0.2	0	0.2	0.1



- Seasonal Data/ Yearly Growth

STATION 7318 - HINGHAM - RTE.3 - BETWEEN EXITS 14 AND 15

YR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
06	83878	88500	93541	94036	97168	101493	104458	103714	96982	94006	91503	92813	95174
	6%	2%	-2%	-2%	1%	-2%	-5%	-2%	-2%	2%	3%	-5%	-1%
07	88880	89923	91597	91818	98247	99653	99656	101792	95339	95500	94030	88576	94584
	1%	4%	1%	1%	-4%	-5%	-1%	-3%	-8%	-5%	-7%	0%	-2%
08	89419	93856	92600	92464	94682	94660	99019	98704	88097	91202	87772	88382	92571
	-7%	-9%	-4%	-1%	-2%	3%	4%	4%	2%	-2%	2%	1%	0%
12	83333	85862	89210	91559	93160.4	97816	102745	102494	89916	89234	89711	88831	91989
	1%	-8%	-3%	-2%	3%	0%	-1%	-5%	7%	6%	0%	-1%	0%
13	84386	78650	86436	89331	96366	98194	101862	97143	96539	94175	89347	88298	91727
	-4%	3%	-1%	-15%	0%	2%	2%	6%	0%	-1%	7%	9%	1%
14	81215	80850	85260	76073	96449	99766	104326	102869	96138	93583	95538	96423	92374
	23%	-12%	-1%	22%	1%	1%	-2%	-1%	-1%	0%	-5%	-5%	1%
15	99906	71446	84719	92960	97583	100859	102391	102048	95577	93821	90845	91395	93629
	-15%	20%	6%	-2%	0%	2%	1%	2%	1%	1%	1%	2%	1%
16	84967	85632	90030	91534	97559	102746	102972	104431	96386	94948	91570	93286	94672
	5%	3%	4%	4%	1%	0%	-2%	-2%	-1%	-1%	1%	3%	1%
17	88883	87881	93852	95381	98390	102289	100769	102516	95311	94437	92532	95974	95685
Seasonal Adjustment Factor (to average month)	1.08	1.11	1.04	1.04	0.97	0.94	0.92	0.92	0.99	1.00	1.02	1.02	
												Growth	**-0.19%**

STATION 6255 - WEYMOUTH - RTE.3 - NORTH OF RTE.18

YR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
06	127860	130038	134769	134790	137305	142198	141532	145144	137785	135232	131943	133004	135967
	-15%	-5%	-5%	-2%	-2%	-3%	-2%	-4%	-5%	-2%	-5%	-10%	-3%
08	108948	123432	127432	131442	134698	137617	138002	139131	130855	132275	125709	119851	129116
	10%	0%	-2%	2%	0%	4%	4%	4%	7%	4%	10%	14%	5%
09	120200	123983	124807	134354	135239	143114	143685	144937	140079	137288	138708	136428	135235
	4%	3%	6%	-2%	1%	-1%	-2%	-1%	-3%	-2%	-1%	-8%	-1%
10	124682	127558	132607	132335	137070	141389	141525	143034	135247	133953	137105	125692	134350
	-3%	-2%	-2%	-5%	-1%	-1%	-1%	-1%	-1%	-4%	-6%	1%	-1%
12	121356	125492	129664	125423	135823	140595	140021	141557	133706	129259	129209	126662	131564
	2%	-9%	-4%	5%	1%	-1%	0%	0%	1%	3%	-1%	-1%	0%
13	123406	114801	124822	131401	136582	139737	139578	141869	135080	133711	128561	125568	131260
	-8%	3%	2%	0%	-1%	0%	6%	4%	1%	-1%	-1%	4%	1%
14	113701	118439	127037	131150	135571	139606	147749	147593	136789	132227	127797	130710	132364
	9%	2%	2%	1%	2%	2%	-5%	-3%	-1%	1%	-14%	-19%	-10%
16	123413	121003	128951	132915	138071	142406	140685	142991	135630	134163	110041	106177	105377
	-43%	3%	0%	1%	0%	0%	-1%	-1%	-1%	-1%	19%	21%	11%
17	70435	124154	129045	134625	137743	142253	139660	141524	134110	133079	131317	128775	128893
Seasonal Adjustment Factor (to average month)	1.16	1.05	1.00	0.98	0.95	0.92	0.91	0.90	0.95	0.97	1.00	1.03	
												Growth	**0.19%**

STATION 703 - ABINGTON - RTE.123 - AT THE BROCKTON C.L.

YR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
06	12635	13053	13787	13800	13829	14197	12875	13252	13744	13804	13637	13677	13524
	1%	1%	-2%	-1%	0%	-3%	3%	2%	-1%	-1%	-3%	-7%	-1%
07	12725	13219	13457	13626	13808	13831	13234	13490	13544	13620	13289	12763	13384
	-2%	-2%	-2%	0%	-3%	-3%	-2%	-5%	1%	1%	-2%	2%	-1%
08	12431	12909	13144	13662	13430	13479	13027	12806	13646	13740	13012	13034	13193
	-1%	2%	1%	1%	-1%	3%	3%	3%	3%	0%	1%	2%	1%
09	12251	13199	13301	13860	13231	13817	13354	13212	14037	13712	13161	13327	13372
	1%	0%	2%	1%	6%	0%	0%	2%	-1%	1%	1%	-3%	1%
10	12356	13142	13629	13942	14001	13859	13299	13442	13874	13868	13350	12989	13479
	-5%	-4%	-2%	-3%	-3%	-2%	-2%	-3%	-1%	-1%	0%	3%	-2%
11	11690	12662	13410	13515	13585	13612	12975	13016	13668	13685	13377	13350	13212
	6%	4%	0%	0%	-2%	-1%	-6%	0%	1%	0%	0%	0%	0%
12	12382	13150	13430	13546	13366	13534	12225	13018	13740	13653	13399	13378	13235
	-1%	-6%	-3%	0%	0%	0%	5%	0%	-1%	0%	-1%	-1%	-1%
13	12301	12335	13001	13557	13321	13558	12876	13055	13640	13635	13199	13188	13139
	-3%	3%	2%	-1%	0%	0%	-1%	-1%	-2%	-2%	-2%	1%	-1%
14	11894	12651	13252	13385	13345	13524	12759	12893	13376	13379	12882	13315	13055
	1%	-5%	-5%	-2%	0%	-1%	1%	0%	-1%	-1%	0%	-2%	-1%
15	11974	11975	12649	13151	13378	13433	12829	12941	13230	13222	12868	12985	12886
	1%	3%	3%	-1%	-2%	1%	-1%	0%	-1%	-1%	-1%	0%	0%
16	12035	12304	13075	13076	13171	13574	12742	12986	13061	13140	12743	12940	12904
Seasonal Adjustment Factor (to average month)	1.08	1.03	1.00	0.98	0.98	0.97	1.02	1.01	0.97	0.97	1.00	1.00	
												Growth	**-0.53%**
Average Seasonal Adjustment Factor (to average month)	1.11	1.07	1.01	1.00	0.97	0.94	0.95	0.94	0.97	0.98	1.01	1.02	

□ Crash Data

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Hanover, MA COUNT DATE : Apr-19

DISTRICT : 5 UNSIGNALIZED : [ ] SIGNALIZED : [X]

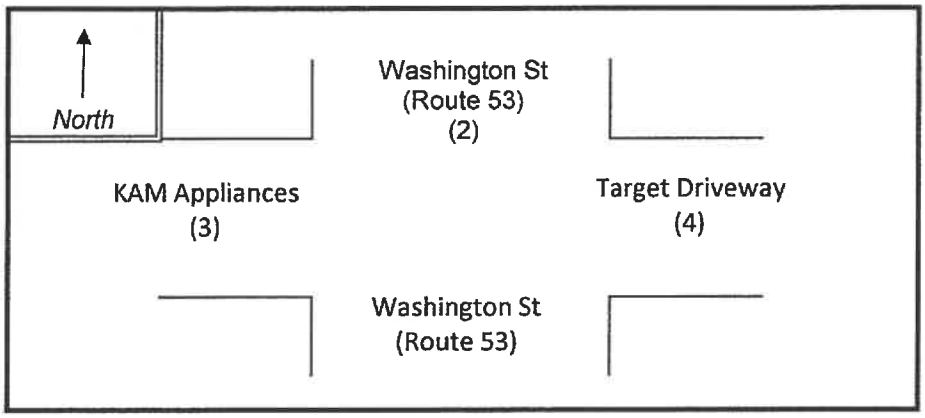
~ INTERSECTION DATA ~

MAJOR STREET : Washington Street (Route 53)

MINOR STREET(S) : Target Driveway

KAM Appliances Driveway

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	SB	EB	WB		
PEAK HOURLY VOLUMES (PM) :	913	1,411	6	166		2,496

" K " FACTOR : 0.080

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME : 31,200

TOTAL # OF CRASHES : 8

OF YEARS : 5

AVERAGE # OF CRASHES PER YEAR (A) : 1.60

CRASH RATE CALCULATION : 0.14

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

Comments : MassDOT District 5 Avg: Signalized = 0.75; Unsignalized = 0.57

Project Title & Date: 1035 - Hanover

massDOT

MassDOT Crash Report for Honover for the year 2014

Crash Number	City/Town Name	Crash Date	Crash Time	Crash Severity	Number of Vehicles	Total Nonfatal Injuries	Total Fatal Injuries	Manner of Collision	Vehicle Action Prior to Crash	Vehicle Travel Directions	Most Harmful Events	Vehicle Configuration	Road Surface Condition	Ambient Light	Weather Condition	At Roadway Intersection	Distance from Nearest Roadway Intersection	Distance from Nearest Milemarker	Distance from Nearest Exit	Distance from Nearest Landmark	Non Motorist Type
963940	HANOVER	18-Oct-2014	12:28 PM	Property damage only (none injured)	4	0	0	Not reported	V1: Traveling straight ahead / V2:Traveling straight ahead / V3:Traveling straight ahead / V4:Traveling straight ahead	V1:Southbound / V2:Southbound / V3:Southbound / V4:Southbound	V1: Cargo/equipment loss or shift / V2: Collision with other movable object / V3: Collision with other movable object / V4: Collision with other movable object	V1: Light truck(van, mini-van, panel, pickup, sport utility) with only four tires / V2:Light truck(van, mini-van, panel, pickup, sport utility) with only four tires / V3:Light truck(van, mini-van, panel, pickup, sport utility) with only four tires / V4:Passenger car	Dry	Daylight	Clear/Clear		WASHINGTON ST			TARGET STORE	
965574	HANOVER	24-Oct-2014	5:16 PM	Non-fatal injury	4	4	0	Rear-end	V1: Traveling straight ahead / V2:Slowing or stopped in traffic / V3:Slowing or stopped in traffic / V4:Slowing or stopped in traffic	V1:Southbound / V2:Southbound / V3:Southbound / V4:Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic / V3: Collision with motor vehicle in traffic / V4: Collision with motor vehicle in traffic	V1: Passenger car / V2:Light truck(van, mini-van, panel, pickup, sport utility) with only four tires / V3:Passenger car / V4:Passenger car	Dry	Daylight	Cloudy/Cloudy		WASHINGTON ST Rte 53 S				

massDOT

MassDOT Crash Report for Hanover for the year 2015

Crash Number	City/Town Name	Crash Date	Crash Time	Crash Severity	Number of Vehicles	Total Nonfatal Injuries	Total Fatal Injuries	Manner of Collision	Vehicle Action Prior to Crash	Vehicle Travel Directions	Most Harmful Events	Vehicle Configuration	Road Surface Condition	Ambient Light	Weather Condition	At Roadway Intersection	Distance from Nearest Roadway Intersection	Distance from Nearest Milemarker	Distance from Nearest Exit	Distance from Nearest Landmark	Non Motorist Type
1117398	HANOVER	21-Nov-2015	5:57 PM	Property damage only (none injured)	2	0	0	Rear-end	V1: Not reported / V2:Slowing or stopped in traffic	V1:Southbound / V2:Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2:Not reported	Dry	Dark - lighted roadway	Clear/Clear		1202 WASHINGTON STREET Rte 53 S			SQUIRES OF HANOVER	
1107143	HANOVER	06-Nov-2015	12:52 PM	Non-fatal injury	2	2	0	Angle	V1: Traveling straight ahead / V2:Entering traffic lane	V1:Southbound / V2:Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Light truck(van, mini-van, panel, pickup, sport utility) with only four tires / V2:Passenger car	Dry	Daylight	Cloudy/Clear		WASHINGTON ST Rte 53 S			SQUIRES RESTAURANT	
1095499	HANOVER	02-Oct-2015	12:23 PM	Non-fatal injury	2	1	0	Rear-end	V1: Slowing or stopped in traffic / V2:Slowing or stopped in traffic	V1:Southbound / V2:Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2:Light truck(van, mini-van, panel, pickup, sport utility) with only four tires	Wet	Daylight	Rain/Cloudy		WASHINGTON ST Rte 53 S				
1082713	HANOVER	31-Aug-2015	1:55 PM	Property damage only (none injured)	2	0	0	Angle	V1: Turning left / V2:Parked	V1:Northbound / V2:Not reported	V1: Collision with parked motor vehicle / V2: Not reported	V1: Single-unit truck (2-axle, 6-tire) / V2:Passenger car	Dry	Daylight	Clear/Clear		WASHINGTON ST Rte 53 S				

massDOT

MassDOT Crash Report for Hanover for the year 2016

Crash Number	City/Town Name	Crash Date	Crash Time	Crash Severity	Number of Vehicles	Total Nonfatal Injuries	Total Fatal Injuries	Manner of Collision	Vehicle Action Prior to Crash	Vehicle Travel Directions	Most Harmful Events	Vehicle Configuration	Road Surface Condition	Ambient Light	Weather Condition	At Roadway Intersection	Distance from Nearest Roadway Intersection	Distance from Nearest Milemarker	Distance from Nearest Exit	Distance from Nearest Landmark	Non Motorist Type
1275093	HANOVER	27-Oct-2016	4:31 PM	Property damage only (none injured)	2	0	0	Rear-end	V1: Slowing or stopped in traffic / V2:Traveling straight ahead	V1:Northbound / V2:Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2:Passenger car	Wet	Dusk	Rain/Rain	WASHINGTON STREET Rte 53 N /				Target	

massDOT

MassDOT Crash Report for Hanover for the year 2017

Crash Number	City/Town Name	Crash Date	Crash Time	Crash Severity	Number of Vehicles	Total Nonfatal Injuries	Total Fatal Injuries	Manner of Collision	Vehicle Action Prior to Crash	Vehicle Travel Directions	Most Harmful Events	Vehicle Configuration	Road Surface Condition	Ambient Light	Weather Condition	At Roadway Intersection	Distance from Nearest Roadway Intersection	Distance from Nearest Milemarker	Distance from Nearest Exit	Distance from Nearest Landmark	Non Motorist Type
4362119	HANOVER	25-Aug-16	10:34 PM	Property damage only (none injured)	2	0	0	Rear-end	V1: Slowing or stopped in traffic / V2: Slowing or stopped in traffic	V1:Southbound / V2:Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1:(Passenger car) / V2:Passenger car\	Wet	Dark - lighted roadway	Rain/Rain	WASHINGTON STREET Rte 53 N /	WASHINGTON ST Rte 53 S				

massDOT

MassDOT Crash Report for Hanover for the year 2018

Crash Number	City/Town Name	Crash Date	Crash Time	Crash Severity	Number of Vehicles	Total Nonfatal Injuries	Total Fatal Injuries	Manner of Collision	Vehicle Action Prior to Crash	Vehicle Travel Directions	Most Harmful Events	Vehicle Configuration	Road Surface Condition	Ambient Light	Weather Condition	At Roadway Intersection	Distance from Nearest Roadway Intersection	Distance from Nearest Milemarker	Distance from Nearest Exit	Distance from Nearest Landmark	Non Motorist Type

□ Sight Distance Calculations

Stopping Sight Distance - Regulatory

Washington Street approaches to Site Driveway

		SPEED (MPH)	BRAKE REACTION DISTANCE (FT)	BRAKING DISTANCE (FT)	CALCULATED STOPPING SIGHT DISTANCE (FT)
Direction 1	NB	40	147	153.3	300.3
Direction 2	SB	40	147	153.3	300.3

INPUTS	Direction 1	Direction 2
Travel Direction	NB	SB
Speed	40	40
Grade	0	0
t	2.5	2.5
a	11.2	11.2

Stopping Sight Distance (SSD) - Source: AASHTO

SSD = Reaction Distance + Brake Distance

Reaction Distance = 1.47 x t x V

Brake Distance = V^2 / (30 x ((a/32.2)+G))

Where:
t = reaction time (sec)
V = travel speed (mph)
G= roadway grade
a - deceleration rate (ft/sec^2)

Intersection Sight Distance Calculations

Source: *A Policy on Geometric Design of Highways and Street, 6th Edition;* AASHTO; 2011.

ISD = 1.47 * V * t

V = speed
t = time gap

t = 7.5 s for a passenger car for Left Turn from a Stop
t = 6.5 s for a passenger car for Right Turn from a Stop

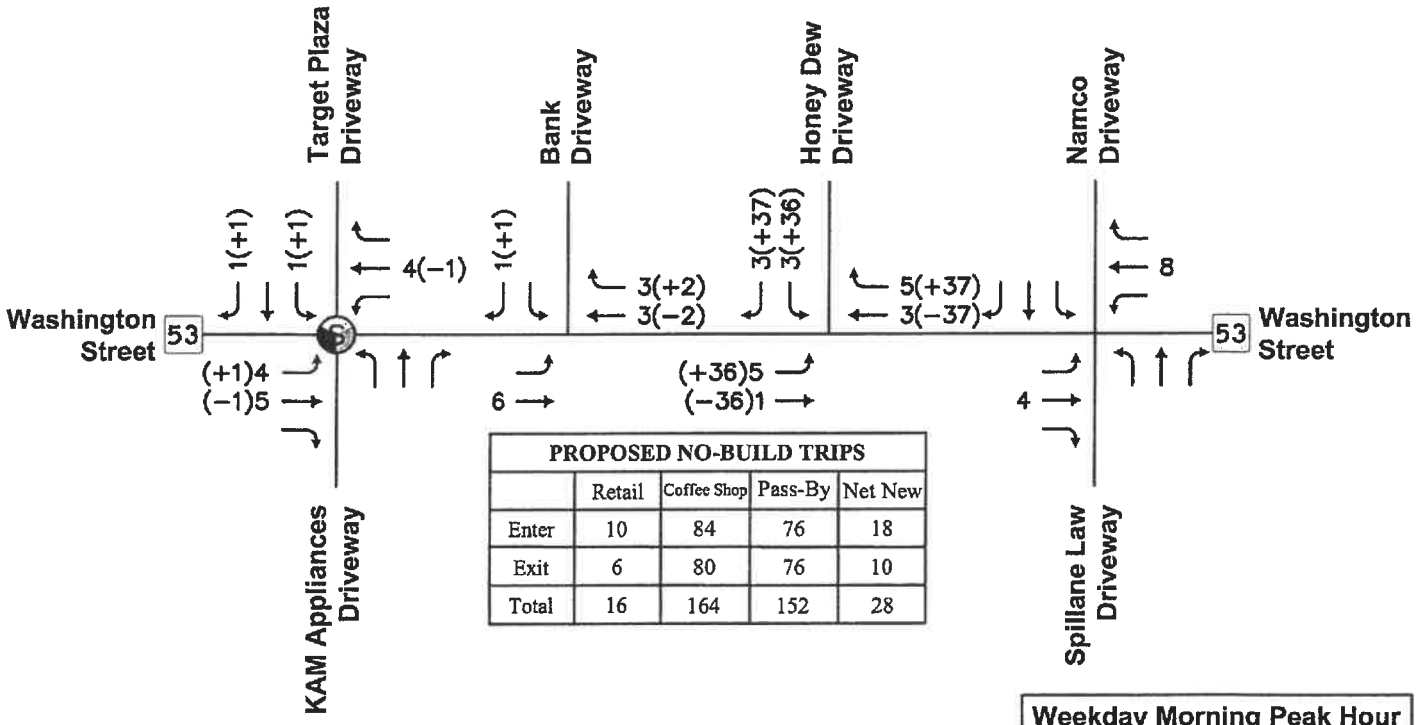
Washington Street

ISD = 1.47 * 40 * 7.5 = 441 ft **SAY 445 ft**
(left-turn from a stop)

ISD = 1.47 * 40 * 6.5 = 382 ft **SAY 385 ft**
(right-turn from a stop)

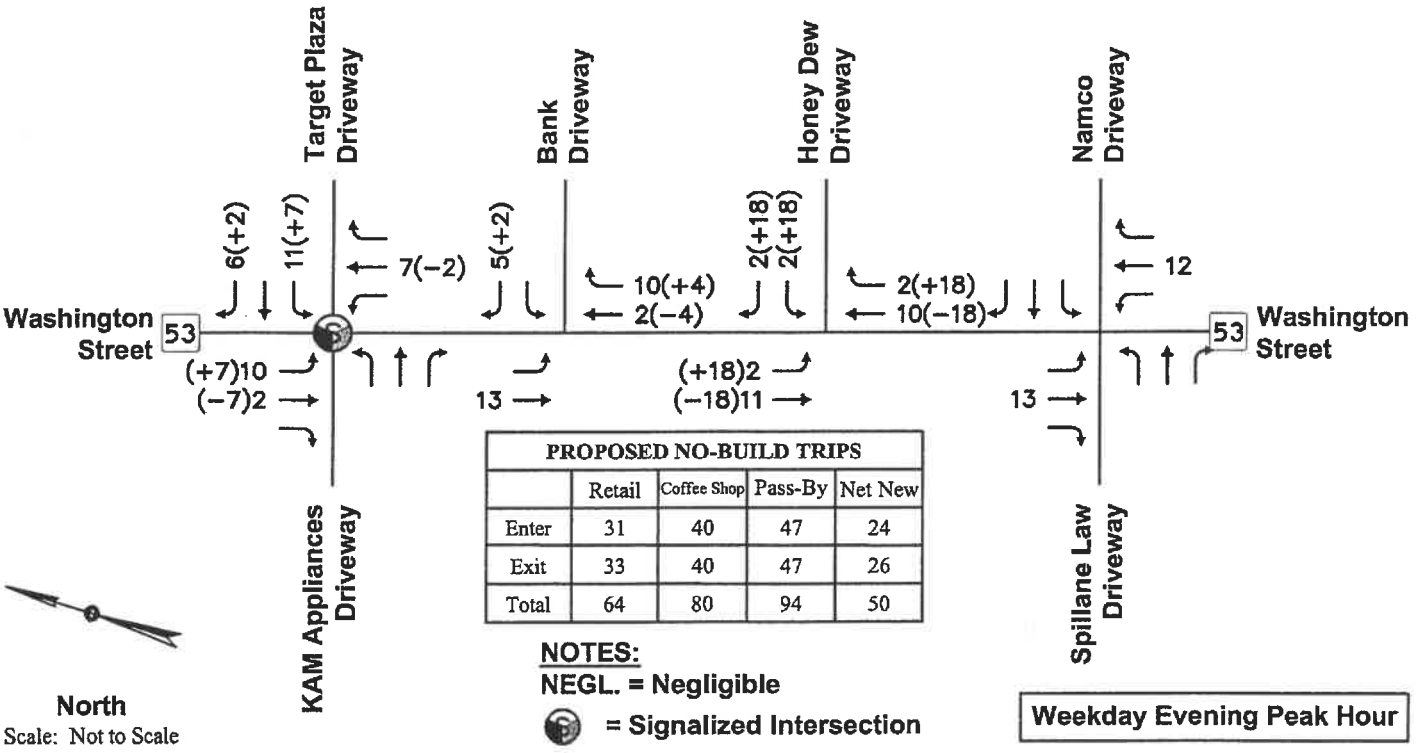
- Trip Generation

2019 No-Build
(Retail Programming)



PROPOSED NO-BUILD TRIPS				
	Retail	Coffee Shop	Pass-By	Net New
Enter	10	84	76	18
Exit	6	80	76	10
Total	16	164	152	28

Weekday Morning Peak Hour



PROPOSED NO-BUILD TRIPS				
	Retail	Coffee Shop	Pass-By	Net New
Enter	31	40	47	24
Exit	33	40	47	26
Total	64	80	94	50

NOTES:
NEGL. = Negligible
= Signalized Intersection

Weekday Evening Peak Hour

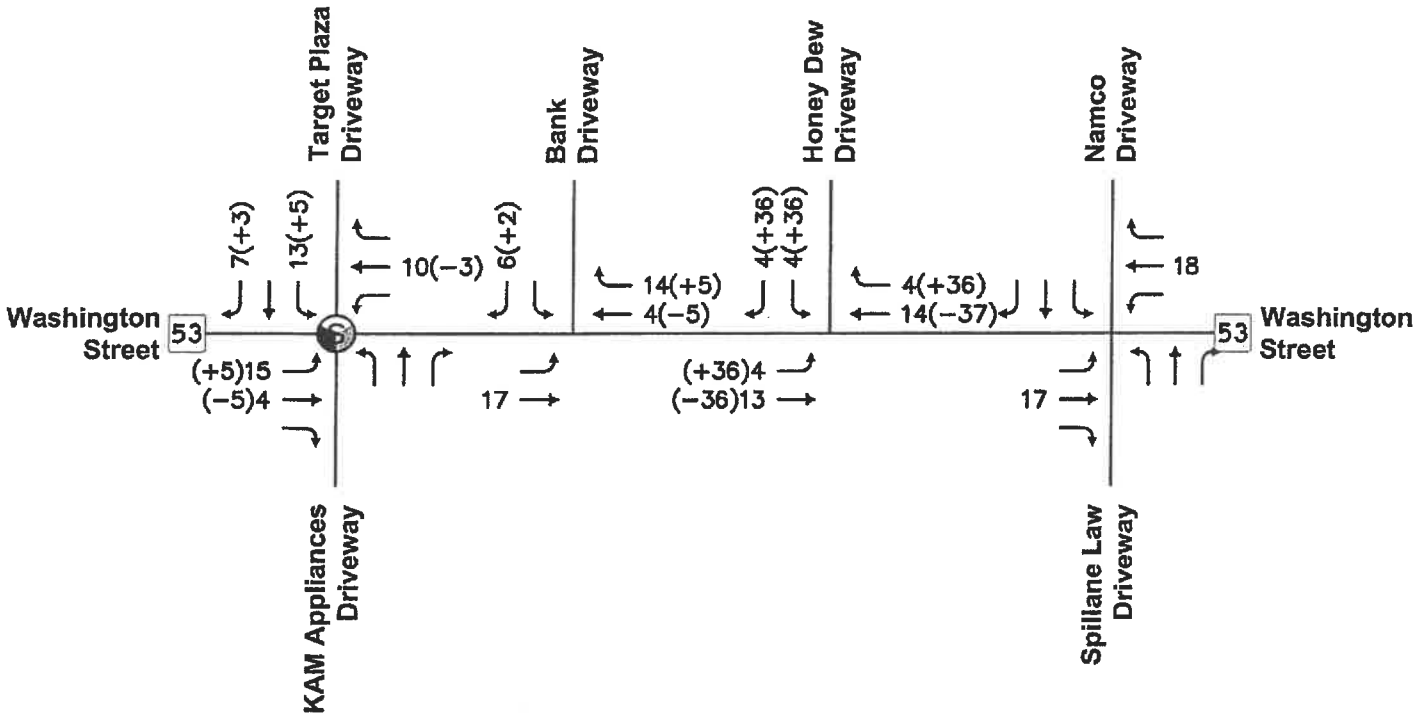
Attachment

MDM TRANSPORTATION CONSULTANTS, INC.
Planners & Engineers

Site Generated Trips
Weekday Peak Hour Volumes
(16,700 s.f. Retail
1,846 s.f. Coffee Shop)

Date: May 2019
Dwg No. 1035 TIA.dwg

PROPOSED NO-BUILD TRIPS				
	Retail	Coffee Shop	Pass-By	Net New
Enter	10	84	76	18
Exit	6	80	76	10
Total	16	164	152	28



North
Scale: Not to Scale

NOTES:
NEGL. = Negligible
= Signalized Intersection

Saturday Midday Peak Hour

MDM TRANSPORTATION CONSULTANTS, INC.
Planners & Engineers

Attachment

Site Generated Trips
Saturday Midday Peak Hour Volumes
(16,700 s.f. Retail
1,846 s.f. Coffee Shop)

Date: May 2019
Dwg No. 1035 TIA.dwg

Institute of Transportation Engineers (ITE) 10th Edition
Land Use Code (LUC) 820 - Shopping Center

Average Vehicle Trips Ends vs: 1,000 Sq. Feet Gross Leasable Area
Independent Variable (X): 16.700

AVERAGE WEEKDAY DAILY

T = 37.75*(X)
T = 37.75* 16.70
T = 630.43
T = 630 vehicle trips
with 50% (315 vpd) entering and 50% (315 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.94 * (X)
T = 0.94 * 16.70
T = 15.70
T = 16 vehicle trips
with 62% (10 vph) entering and 38% (6 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 3.81 *(X)
T = 3.81* 16.70
T = 63.63
T = 64 vehicle trips
with 48% (31 vph) entering and 52% (33 vph) exiting.

SATURDAY DAILY

T = 46.12 *(X)
T = 46.12* 16.70
T = 770.20
T = 770 vehicle trips
with 50% (385 vpd) entering and 50% (385 vpd) exiting.

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 4.50 *(X)
T = 4.50* 16.70
T = 75.15
T = 75 vehicle trips
with 52% (39 vph) entering and 48% (36 vph) exiting.

Summary

Pass-By:	0.34 Weekday		
Pass-By:	0.26 Saturday		
	Total	Pass-By	Net New
AM			
In	10	3	7
Out	6	3	3
Total	16	6	10
PM			
In	31	11	20
Out	33	11	22
Total	64	22	42
Sat			
In	39	10	29
Out	36	10	26
Total	75	20	55
Daily			
In	315	107	208
Out	315	107	208
Total	630	214	416
Sat Daily			
In	385	100	285
Out	385	100	285
Total	770	200	570

Institute of Transportation Engineers (ITE) 10th Edition
Land Use Code (LUC) 937 - Coffee/Donut Shop with Drive-Through Window

Average Vehicle Trips Ends vs: 1,000 Sq. Feet Gross Floor Area
Independent Variable (X): 1.85

Pass-By: 0.89

AVERAGE WEEKDAY DAILY

T = 820.38 * (X)
T = 820.38 * 1.85
T = 1514.42
T = 1,514 vehicle trips
with 50% (757 vph) entering and 50% (757 vph) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 88.99* (X)
T = 88.99 * 1.85
T = 164.28
T = 164 vehicle trips
with 51% (84 vph) entering and 49% (80 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 43.38 * (X)
T = 43.38 * 1.85
T = 80.08
T = 80 vehicle trips
with 50% (40 vph) entering and 50% (40 vph) exiting.

SATURDAY DAILY

(Daily LUC 937/ Daily LUC 934)*SaturdayDaily LUC 934

820.38 * y y= 1073.26
470.95 616.12
T= y * (X)
T= 1982
with 50% (991 vph) entering and 50% (991 vph) exiting.

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 87.70 * (X)
T = 87.70 * 1.85
T = 161.89
T = 162 vehicle trips
with 50% (81 vph) entering and 50% (81 vph) exiting.

	Total	Pass-By	Net New
AM			
In	84	73	11
Out	80	73	7
Total	164	146	18
PM			
In	40	36	4
Out	40	36	4
Total	80	72	8
Sat			
In	81	72	9
Out	81	72	9
Total	162	144	18
Weekday Daily	1,514	1,348	166
Saturday Daily	1,982	1,764	218

Source: ITE Trip Generation, 10th Edition

2019 Build

Institute of Transportation Engineers (ITE) 10th Edition
Land Use Code (LUC) 252 - Senior Adult Housing - Attached

Average Vehicle Trips Ends vs: Dwelling Units
Independent Variable (X): 97

AVERAGE WEEKDAY DAILY

T = 3.70*(X) (Small Sample Size - Use with Caution)
T = 3.70* 97
T = 358.90 vehicle trips
T= 358
with 50% (179 vpd) entering and 50% (179 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.2*(X)
T = 0.20* 97
T = 19.00 vehicle trips
T = 19
with 35% (7 vph) entering and 65%(12 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

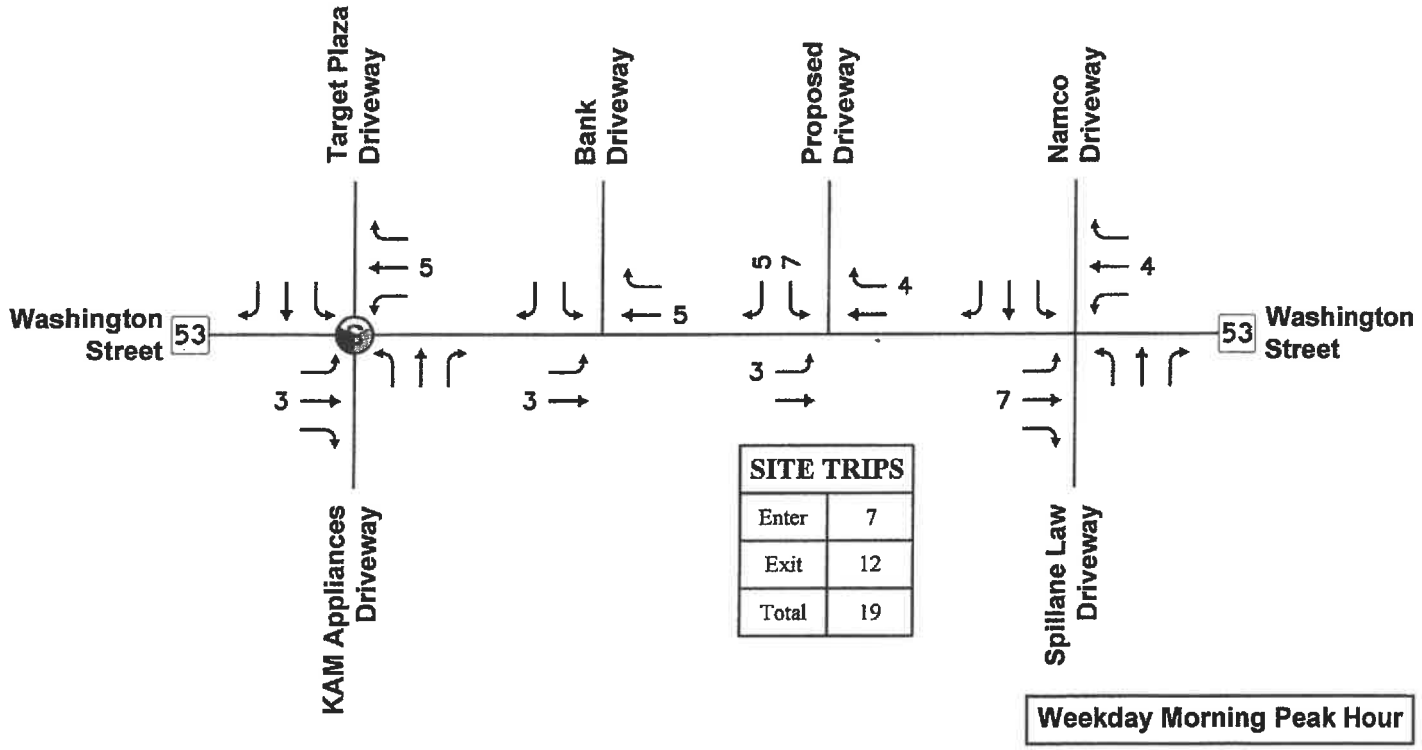
T = 0.26*(X)
T = 0.26* 97
T = 25.00
T = 25
with 55% (14 vph) entering and 45%(11 vph) exiting.

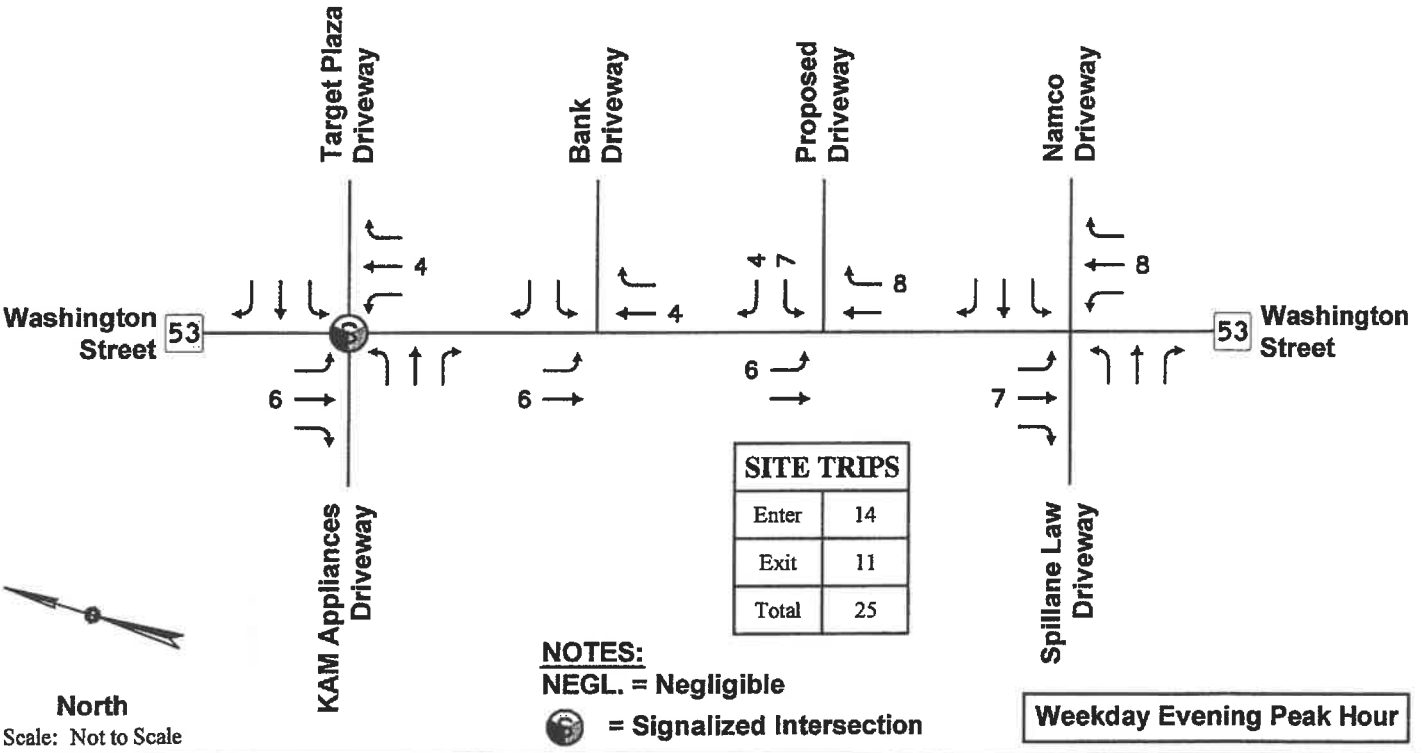
SATURDAY DAILY

T = 3.23 * (X) (Small Sample Size - Use with Caution)
T = 3.23 * 97
T = 313.31
T = 314 vehicle trips
with 50% (157 vpd) entering and 50% (157 vpd) exiting.

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 0.33 * (X)
T = 0.33 * 97
T = 32.01
T = 32 vehicle trips
with 62% (20 vph) entering and 38%(12 vph) exiting.



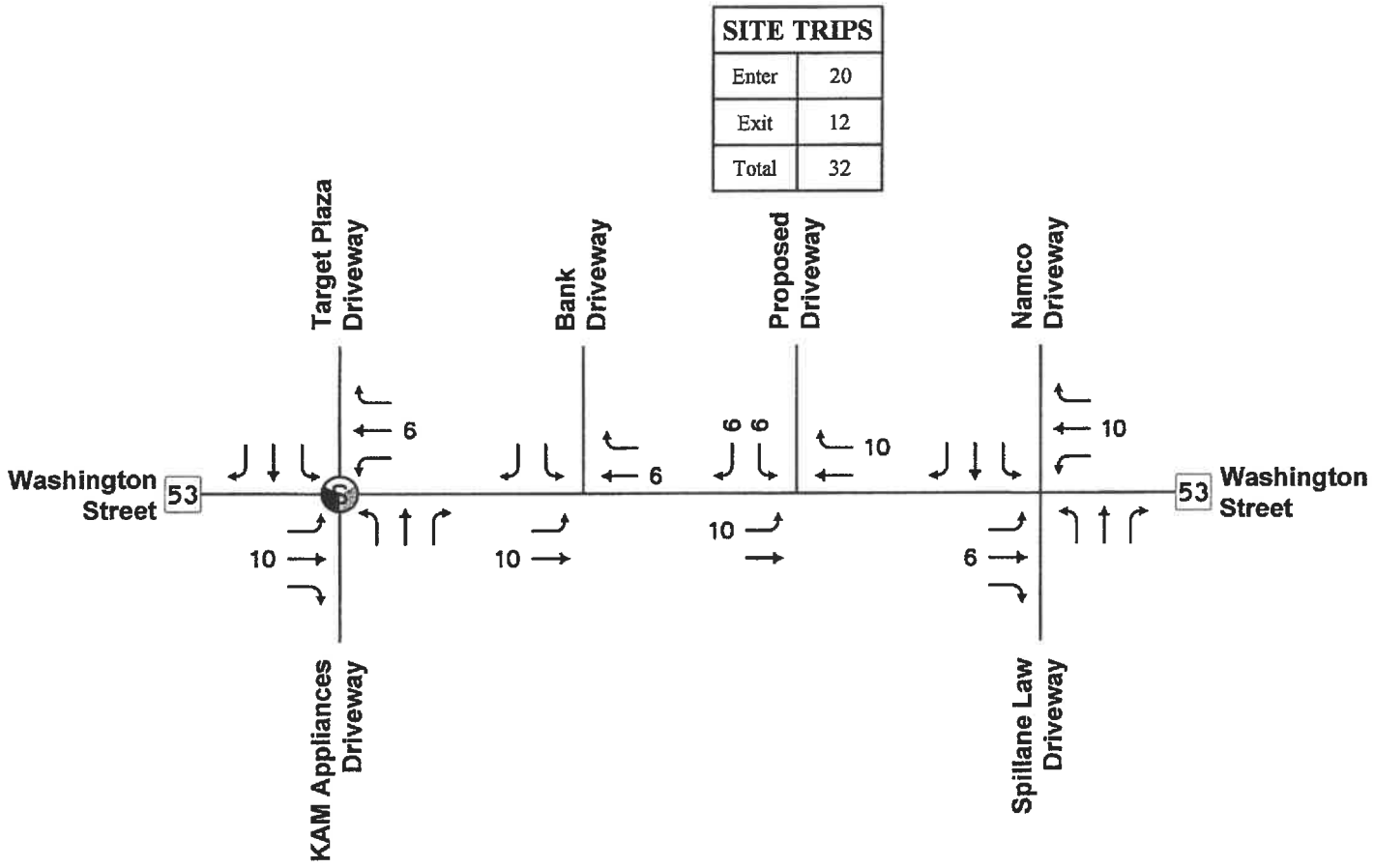


Attachment

MDM TRANSPORTATION CONSULTANTS, INC.
Planners & Engineers

Site Generated Trips
Weekday Peak Hour Volumes
(Senior Living Facility)

Date: May 2019
Dwg No. 1035 TIA.dwg



North
Scale: Not to Scale

NOTES:
NEGL. = Negligible
= Signalized Intersection

Saturday Midday Peak Hour

Attachment

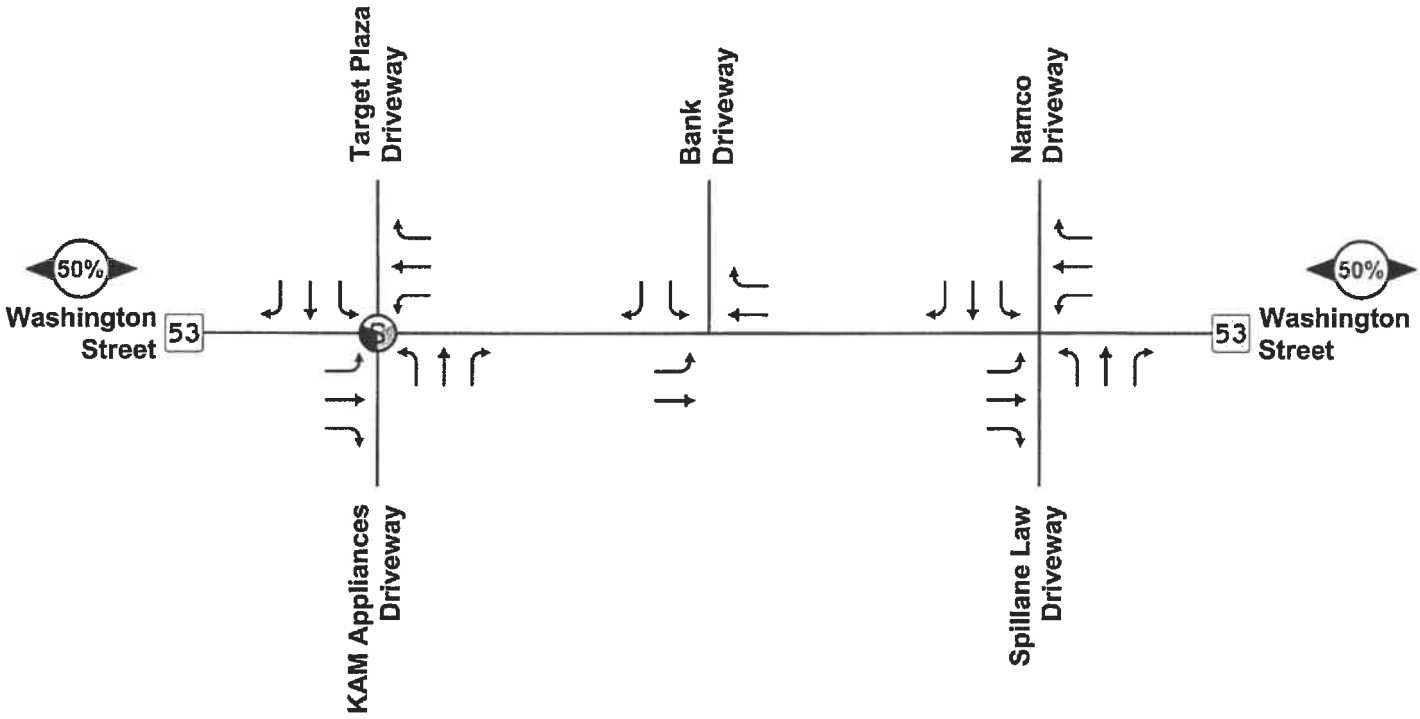
MDM TRANSPORTATION CONSULTANTS, INC.
Planners & Engineers

Site Generated Trips
Saturday Midday Peak Hour Volumes
(Senior Living Facility)

Date: May 2019
Dwg No. 1035 TIA.dwg

□ Trip Distribution Calculations

2019 No-Build
(Retail Programming)



North
Scale: Not to Scale

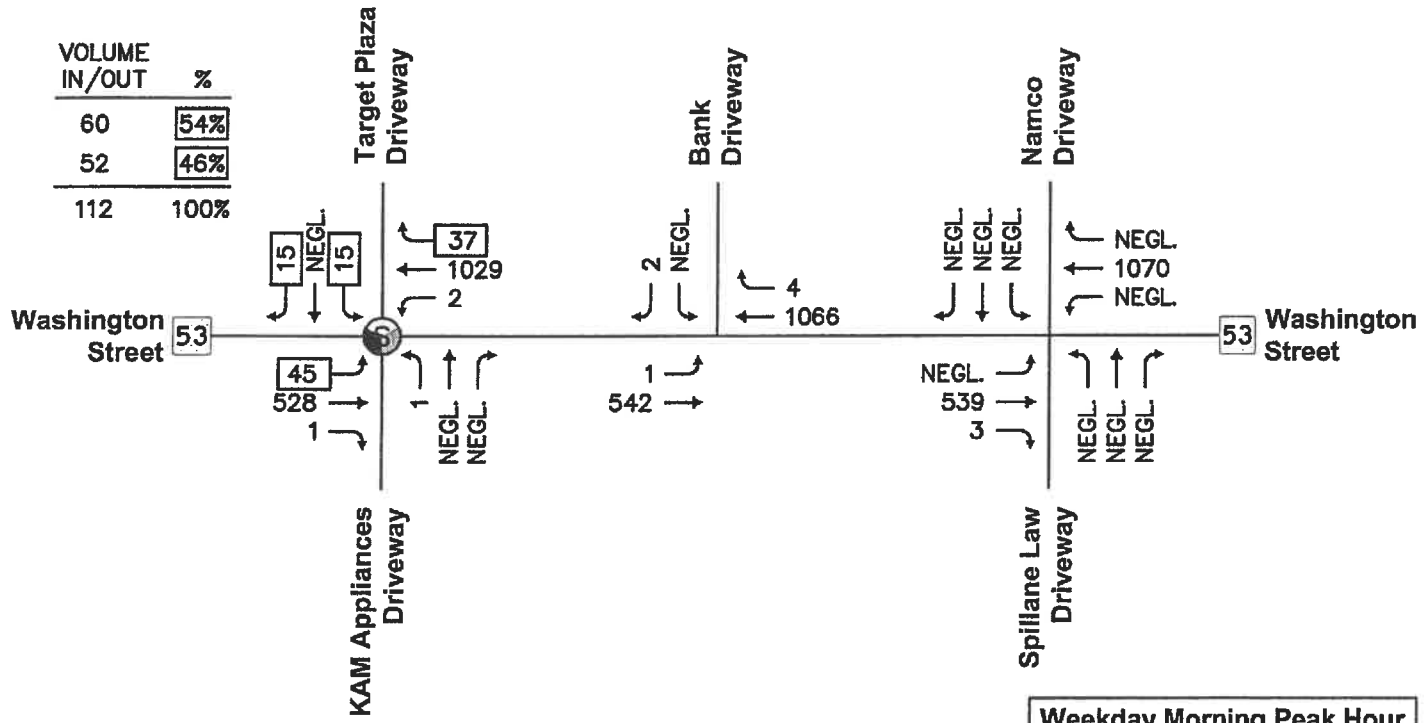
NOTES:
NEGL. = Negligible
S = Signalized Intersection

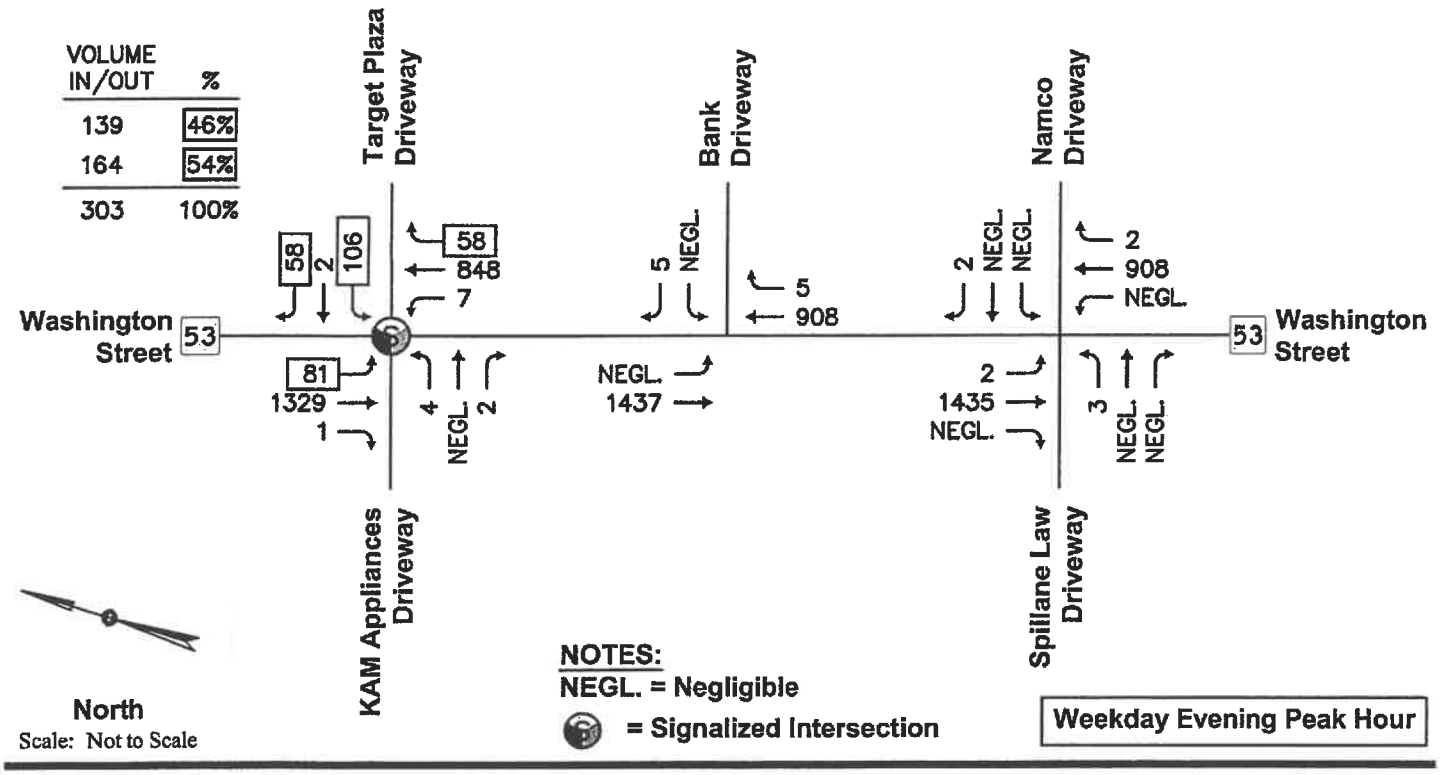
Attachment

MDM TRANSPORTATION CONSULTANTS, INC.
Planners & Engineers

Trip Distribution (16,700 s.f. Retail)

Date: May 2019
Dwg No. 1035 TIA.dwg



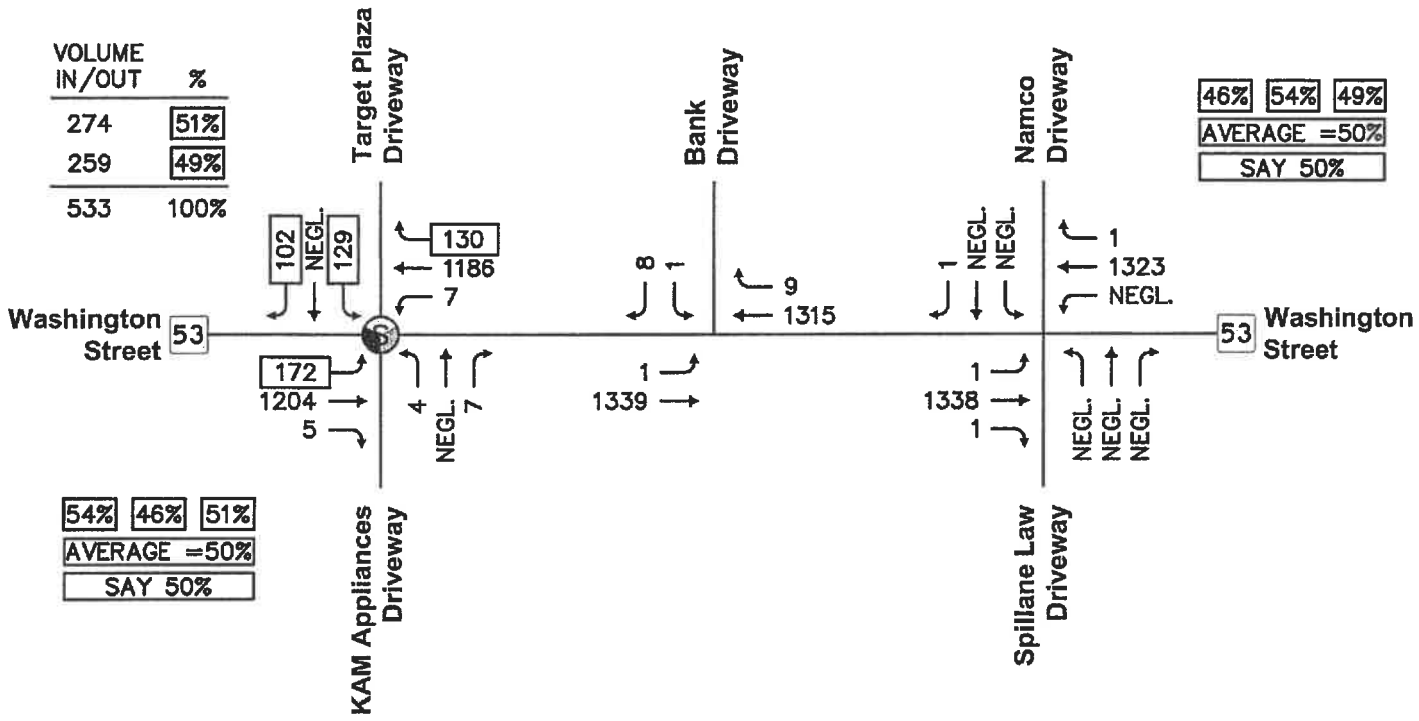


Attachment

MDM TRANSPORTATION CONSULTANTS, INC.
Planners & Engineers

Retail Trip Distribution Calculations

Date: May 2019
Dwg No. 1035 TIA.dwg



North
Scale: Not to Scale

NOTES:
NEGL. = Negligible
= Signalized Intersection

Saturday Midday Peak Hour

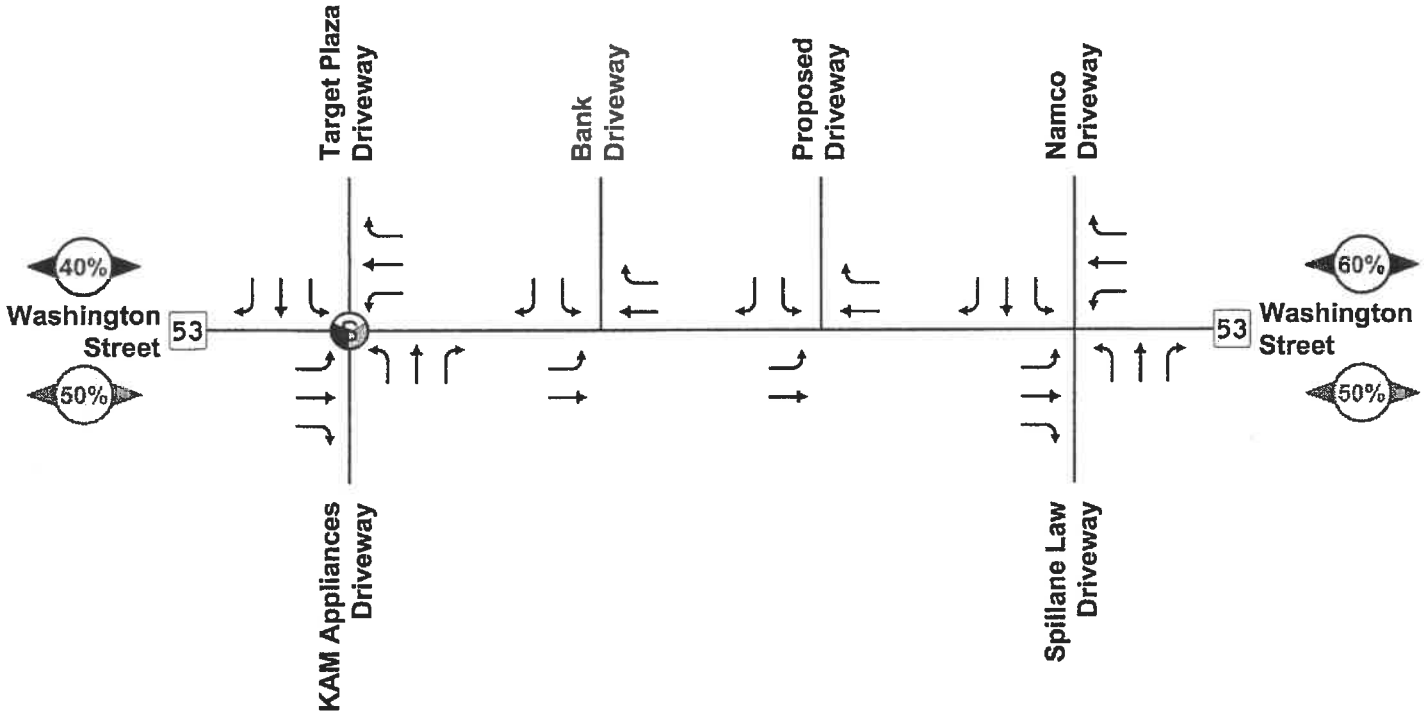
Attachment

MDM TRANSPORTATION CONSULTANTS, INC.
Planners & Engineers

Retail Trip Distribution Calculations

Date: May 2019
Dwg No. 1035 TIA.dwg

2019 Build



NOTES:

= Signalized Intersection

40% = Weekday Distribution

50% = Saturday Distribution

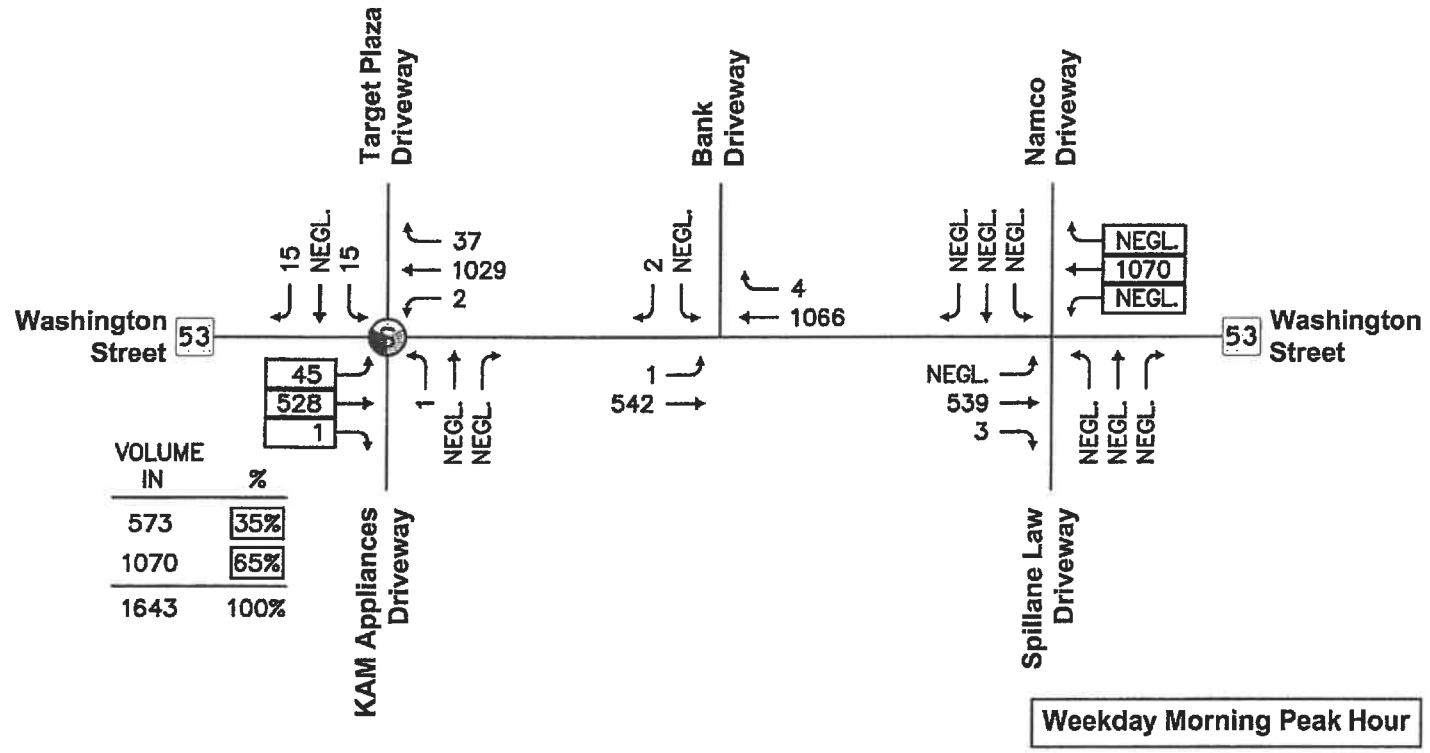
North
Scale: Not to Scale

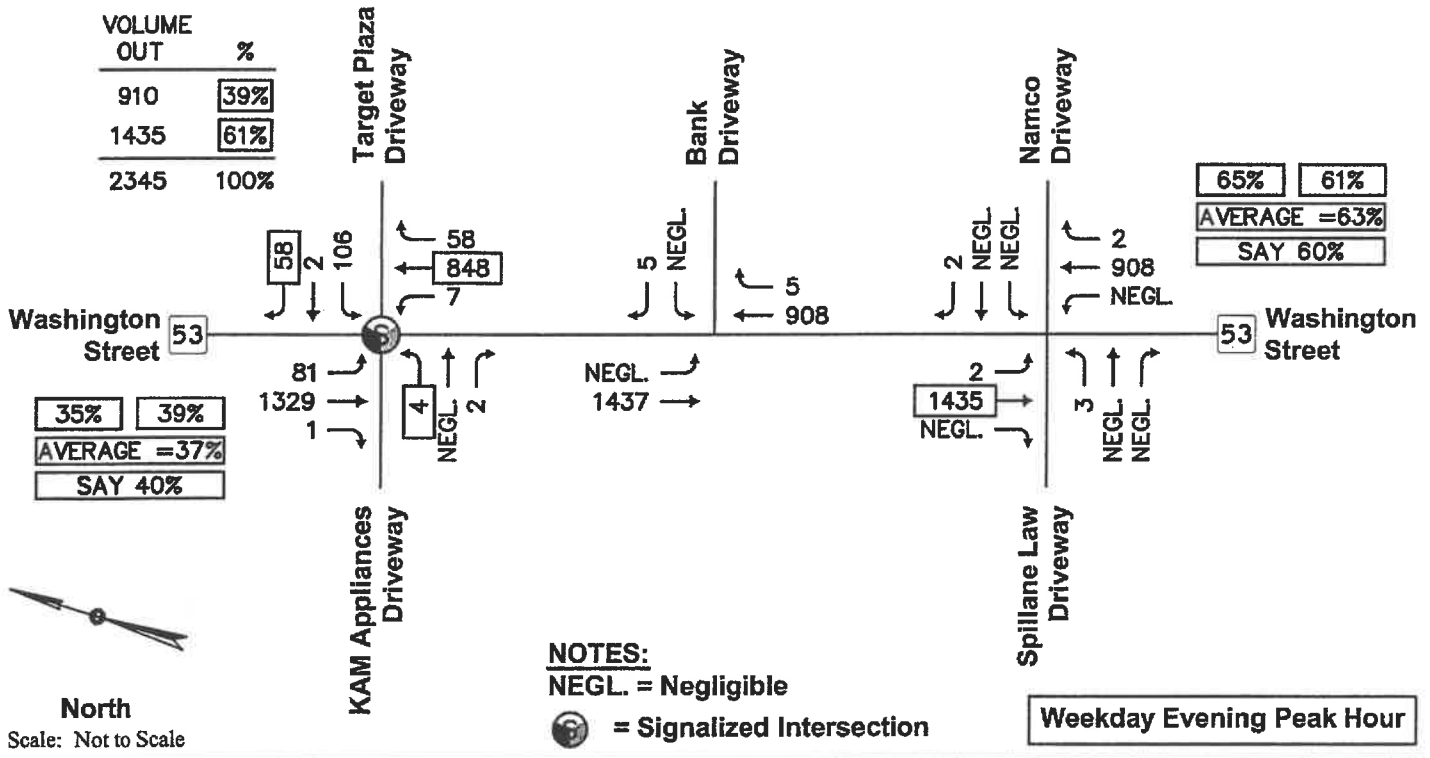
Attachment

MDM TRANSPORTATION CONSULTANTS, INC.
Planners & Engineers

Trip Distribution (Senior Living Facility)

Date: May 2019
Dwg No. 1035 TIA.dwg



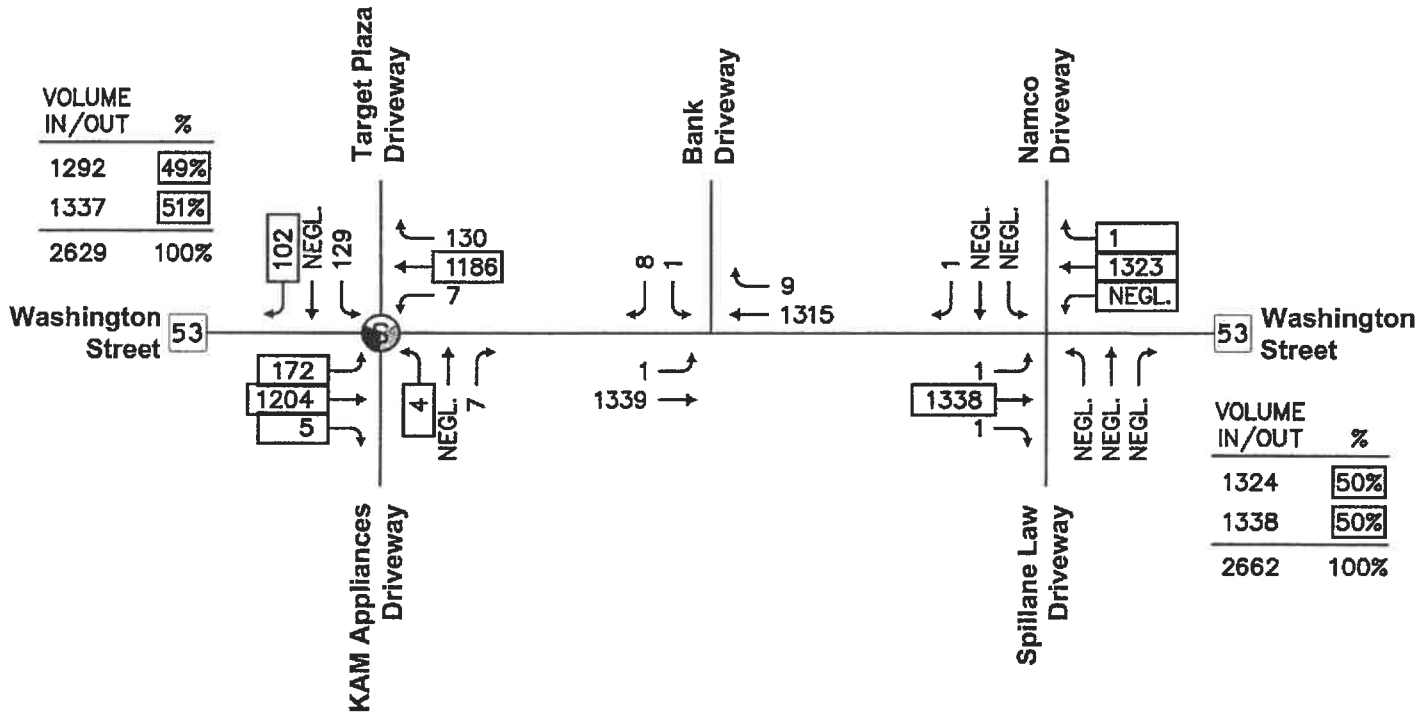


Attachment

MDM TRANSPORTATION CONSULTANTS, INC.
Planners & Engineers

Residential Trip Distribution Calculations

Date: May 2019
Dwg No. 1035 TIA.dwg



North
Scale: Not to Scale

NOTES:
NEGL. = Negligible
= Signalized Intersection

Saturday Midday Peak Hour

MDM TRANSPORTATION CONSULTANTS, INC.
Planners & Engineers

Attachment

Residential Trip Distribution Calculations

Date: May 2019
Dwg No. 1035 TIA.dwg

□ Capacity Analysis

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	0	0	15	0	15	2	1029	37	45	528	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	14	14	12	14	12	12	12	12	12
Storage Length (ft)	0		0	0		0	220		0	240		0
Storage Lanes	0		0	0		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt						0.850		0.995				
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	963	0	0	1704	1615	1925	3524	0	3502	3539	0
Flt Permitted							0.950			0.950		
Satd. Flow (perm)	0	1013	0	0	1794	1615	1925	3524	0	3502	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						103		7				
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		418			1412			266			1857	
Travel Time (s)		9.5			32.1			4.5			31.7	
Peak Hour 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
Heavy Vehicles (%)	100%	0%	0%	13%	0%	0%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	1	0	0	15	0	15	2	1029	37	45	528	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1	0	0	15	15	2	1066	0	45	529	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			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.92	0.92	0.92	0.92	0.92	1.00	0.92	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	50	50		50	50	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	8.0	15.0		8.0	15.0	
Minimum Split (s)	13.0	13.0		13.0	13.0	13.0	13.0	21.0		13.0	21.0	

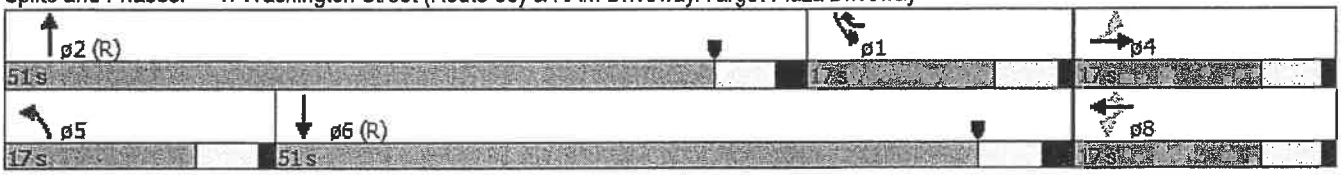
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	17.0	17.0		17.0	17.0	17.0	17.0	51.0		17.0	51.0	
Total Split (%)	20.0%	20.0%		20.0%	20.0%	20.0%	20.0%	60.0%		20.0%	60.0%	
Maximum Green (s)	12.0	12.0		12.0	12.0	12.0	12.0	45.0		12.0	45.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0		1.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	5.0		4.0	5.0	
Lead/Lag						Lag	Lead	Lead		Lag	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	None	None	C-Max		None	C-Max	
Act Effct Green (s)		9.1			9.1	14.1	9.0	69.1		11.4	78.7	
Actuated g/C Ratio		0.11			0.11	0.17	0.11	0.81		0.13	0.93	
v/c Ratio		0.01			0.08	0.04	0.01	0.37		0.10	0.16	
Control Delay		34.0			35.3	0.2	34.0	5.1		31.9	2.1	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		34.0			35.3	0.2	34.0	5.1		31.9	2.1	
LOS		C			D	A	C	A		C	A	
Approach Delay		34.0			17.8			5.1			4.4	
Approach LOS		C			B			A			A	
90th %ile Green (s)	8.3	8.3		8.3	8.3	12.0	8.0	48.7		12.0	52.7	
90th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Min	Coord		Hold	Coord	
70th %ile Green (s)	0.0	0.0		0.0	0.0	12.0	0.0	62.0		12.0	79.0	
70th %ile Term Code	Skip	Skip		Skip	Skip	Hold	Skip	Coord		Hold	Coord	
50th %ile Green (s)	0.0	0.0		0.0	0.0	12.0	0.0	62.0		12.0	79.0	
50th %ile Term Code	Skip	Skip		Skip	Skip	Hold	Skip	Coord		Hold	Coord	
30th %ile Green (s)	0.0	0.0		0.0	0.0	0.0	0.0	79.0		0.0	79.0	
30th %ile Term Code	Skip	Skip		Skip	Skip	Skip	Skip	Coord		Skip	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0	0.0	0.0	79.0		0.0	79.0	
10th %ile Term Code	Skip	Skip		Skip	Skip	Skip	Skip	Coord		Skip	Coord	
Queue Length 50th (ft)		1			7	0	1	88		10	0	
Queue Length 95th (ft)		5			25	0	7	212		25	80	
Internal Link Dist (ft)		338			1332			186			1777	
Turn Bay Length (ft)							220			240		
Base Capacity (vph)		154			274	381	294	2867		535	3278	
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			0.05	0.04	0.01	0.37		0.08	0.16	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 85
Offset: 11 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.37
Intersection Signal Delay: 5.1 Intersection LOS: A

Intersection Capacity Utilization 53.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Washington Street (Route 53) & KAM Driveway/Target Plaza Driveway



Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	2	1066	4	1	542
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, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	2	0	0	3
Mvmt Flow	0	2	1088	4	1	553

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1369	546	0	0	1092	0
Stage 1	1090	-	-	-	-	-
Stage 2	279	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	140	487	-	-	647	-
Stage 1	288	-	-	-	-	-
Stage 2	749	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	140	487	-	-	647	-
Mov Cap-2 Maneuver	236	-	-	-	-	-
Stage 1	288	-	-	-	-	-
Stage 2	748	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	487	647	-
HCM Lane V/C Ratio	-	-	0.004	0.002	-
HCM Control Delay (s)	-	-	12.4	10.6	0
HCM Lane LOS	-	-	B	B	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	0	0	0	0	1070	0	0	539	3
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	4	0
Mvmt Flow	0	0	0	0	0	0	0	1092	0	0	550	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1098	1644	277	1367	1645	546	553	0	0	1092	0	0
Stage 1	552	552	-	1092	1092	-	-	-	-	-	-	-
Stage 2	546	1092	-	275	553	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	170	101	726	108	101	487	1027	-	-	647	-	-
Stage 1	491	518	-	232	293	-	-	-	-	-	-	-
Stage 2	495	293	-	713	518	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	170	101	726	108	101	487	1027	-	-	647	-	-
Mov Cap-2 Maneuver	170	101	-	108	101	-	-	-	-	-	-	-
Stage 1	491	518	-	232	293	-	-	-	-	-	-	-
Stage 2	495	293	-	713	518	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1027	-	-	-	-	647	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	0	2	106	2	58	7	848	58	81	1329	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	14	14	12	14	12	12	12	12	12
Storage Length (ft)	0		0	0		0	220		0	240		0
Storage Lanes	0		0	0		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt		0.955				0.850		0.990				
Flt Protected		0.968			0.953		0.950			0.950		
Satd. Flow (prot)	0	1874	0	0	1931	1583	1925	3508	0	3502	3539	0
Flt Permitted		0.856			0.726		0.950			0.950		
Satd. Flow (perm)	0	1657	0	0	1471	1583	1925	3508	0	3502	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		153				87		10				
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		418			1412			266			1857	
Travel Time (s)		9.5			32.1			4.5			31.7	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	4	0	2	109	2	60	7	874	60	84	1370	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	0	0	111	60	7	934	0	84	1371	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			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.92	0.92	0.92	0.92	0.92	1.00	0.92	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	50	50		50	50	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	8.0	15.0		8.0	15.0	
Minimum Split (s)	13.0	13.0		13.0	13.0	13.0	13.0	21.0		13.0	21.0	

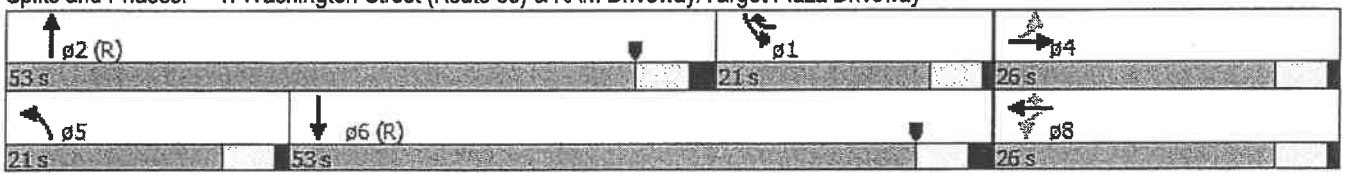
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	26.0	26.0		26.0	26.0	21.0	21.0	53.0		21.0	53.0	
Total Split (%)	26.0%	26.0%		26.0%	26.0%	21.0%	21.0%	53.0%		21.0%	53.0%	
Maximum Green (s)	21.0	21.0		21.0	21.0	16.0	16.0	47.0		16.0	47.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0		1.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	5.0		4.0	5.0	
Lead/Lag						Lag	Lead	Lead		Lag	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	None	None	C-Max		None	C-Max	
Act Effct Green (s)		13.9			13.9	32.5	9.0	60.3		15.4	74.5	
Actuated g/C Ratio		0.14			0.14	0.32	0.09	0.60		0.15	0.74	
v/c Ratio		0.02			0.54	0.10	0.04	0.44		0.16	0.52	
Control Delay		0.2			49.2	2.4	42.3	13.3		36.4	7.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		0.2			49.2	2.4	42.3	13.3		36.4	7.6	
LOS		A			D	A	D	B		D	A	
Approach Delay		0.2			32.8			13.5			9.2	
Approach LOS		A			C			B			A	
90th %ile Green (s)	18.2	18.2		18.2	18.2	16.0	8.0	49.8		16.0	57.8	
90th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Min	Coord		Hold	Coord	
70th %ile Green (s)	15.0	15.0		15.0	15.0	16.0	0.0	53.0		16.0	74.0	
70th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Skip	Coord		Hold	Coord	
50th %ile Green (s)	12.8	12.8		12.8	12.8	16.0	0.0	55.2		16.0	76.2	
50th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Skip	Coord		Hold	Coord	
30th %ile Green (s)	10.6	10.6		10.6	10.6	16.0	0.0	57.4		16.0	78.4	
30th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Skip	Coord		Hold	Coord	
10th %ile Green (s)	8.0	8.0		8.0	8.0	0.0	0.0	81.0		0.0	81.0	
10th %ile Term Code	Hold	Hold		Min	Min	Skip	Skip	Coord		Skip	Coord	
Queue Length 50th (ft)		0			67	0	4	173		23	137	
Queue Length 95th (ft)		0			116	13	18	254		45	360	
Internal Link Dist (ft)		338			1332			186			1777	
Turn Bay Length (ft)							220			240		
Base Capacity (vph)		483			323	609	327	2118		595	2635	
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			0.34	0.10	0.02	0.44		0.14	0.52	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 91 (91%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 12.4 Intersection LOS: B

Intersection Capacity Utilization 52.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Washington Street (Route 53) & KAM Driveway/Target Plaza Driveway



Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	5	908	5	0	1437
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, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	0	5	976	5	0	1545

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1752	491	0	0	982	0
Stage 1	979	-	-	-	-	-
Stage 2	773	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	78	529	-	-	711	-
Stage 1	329	-	-	-	-	-
Stage 2	421	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	78	529	-	-	711	-
Mov Cap-2 Maneuver	203	-	-	-	-	-
Stage 1	329	-	-	-	-	-
Stage 2	421	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	529	711	-
HCM Lane V/C Ratio	-	-	0.01	-	-
HCM Control Delay (s)	-	-	11.9	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	0	0	0	0	2	0	908	2	2	1435	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	2	0
Mvmt Flow	3	0	0	0	0	2	0	976	2	2	1543	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2035	2525	772	1753	2524	489	1543	0	0	978	0	0
Stage 1	1547	1547	-	977	977	-	-	-	-	-	-	-
Stage 2	488	978	-	776	1547	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	34	28	347	56	28	530	436	-	-	714	-	-
Stage 1	122	177	-	273	332	-	-	-	-	-	-	-
Stage 2	535	331	-	361	177	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	33	27	347	55	27	530	436	-	-	714	-	-
Mov Cap-2 Maneuver	33	27	-	55	27	-	-	-	-	-	-	-
Stage 1	122	173	-	273	332	-	-	-	-	-	-	-
Stage 2	533	331	-	354	173	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	125.6	11.8	0	0.1
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	436	-	-	33	530	714	-	-
HCM Lane V/C Ratio	-	-	-	0.098	0.004	0.003	-	-
HCM Control Delay (s)	0	-	-	125.6	11.8	10.1	0.1	-
HCM Lane LOS	A	-	-	F	B	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	0	7	129	0	102	7	1186	130	172	1204	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	14	14	12	14	12	12	12	12	12
Storage Length (ft)	0		0	0		0	220		0	240		0
Storage Lanes	0		0	0		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt		0.914				0.850		0.985			0.999	
Flt Protected		0.982			0.950		0.950			0.950		
Satd. Flow (prot)	0	1819	0	0	1925	1615	1925	3493	0	3502	3536	0
Flt Permitted		0.907			0.750		0.950			0.950		
Satd. Flow (perm)	0	1680	0	0	1520	1615	1925	3493	0	3502	3536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		161				92		19			1	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		418			1412			266			1857	
Travel Time (s)		9.5			32.1			4.5			31.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	4	0	7	132	0	104	7	1210	133	176	1229	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	11	0	0	132	104	7	1343	0	176	1234	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			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.92	0.92	0.92	0.92	0.92	1.00	0.92	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	50	50		50	50	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	8.0	15.0		8.0	15.0	
Minimum Split (s)	13.0	13.0		13.0	13.0	13.0	13.0	21.0		13.0	21.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	22.0	22.0		22.0	22.0	17.0	17.0	56.0		17.0	56.0	
Total Split (%)	23.2%	23.2%		23.2%	23.2%	17.9%	17.9%	58.9%		17.9%	58.9%	
Maximum Green (s)	17.0	17.0		17.0	17.0	12.0	12.0	50.0		12.0	50.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0		1.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	5.0		4.0	5.0	
Lead/Lag						Lag	Lead	Lead		Lag	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	None	None	C-Max		None	C-Max	
Act Effct Green (s)		14.1			14.1	31.1	9.0	54.9		13.0	69.3	
Actuated g/C Ratio		0.15			0.15	0.33	0.09	0.58		0.14	0.73	
v/c Ratio		0.03			0.59	0.18	0.04	0.66		0.37	0.48	
Control Delay		0.2			47.8	6.5	39.7	16.1		39.8	7.3	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		0.2			47.8	6.5	39.7	16.1		39.8	7.3	
LOS		A			D	A	D	B		D	A	
Approach Delay		0.2			29.6			16.2			11.4	
Approach LOS		A			C			B			B	
90th %ile Green (s)	17.0	17.0		17.0	17.0	12.0	8.0	50.0		12.0	54.0	
90th %ile Term Code	Hold	Hold		Max	Max	Max	Min	Coord		Max	Coord	
70th %ile Green (s)	15.7	15.7		15.7	15.7	12.0	0.0	51.3		12.0	68.3	
70th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Skip	Coord		Hold	Coord	
50th %ile Green (s)	13.5	13.5		13.5	13.5	12.0	0.0	53.5		12.0	70.5	
50th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Skip	Coord		Hold	Coord	
30th %ile Green (s)	11.2	11.2		11.2	11.2	12.0	0.0	55.8		12.0	72.8	
30th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Skip	Coord		Hold	Coord	
10th %ile Green (s)	8.0	8.0		8.0	8.0	12.0	0.0	59.0		12.0	76.0	
10th %ile Term Code	Hold	Hold		Min	Min	Hold	Skip	Coord		Hold	Coord	
Queue Length 50th (ft)		0			75	5	4	271		50	121	
Queue Length 95th (ft)		0			129	37	18	378		82	298	
Internal Link Dist (ft)		338			1332			186			1777	
Turn Bay Length (ft)							220			240		
Base Capacity (vph)		448			288	590	263	2027		479	2580	
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		0.02			0.46	0.18	0.03	0.66		0.37	0.48	

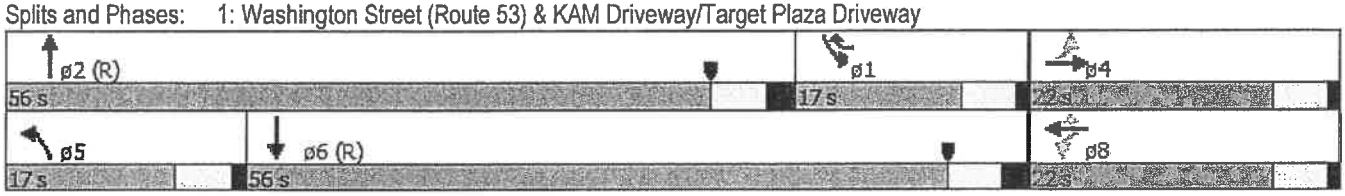
Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 90 (95%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 14.9 Intersection LOS: B

Intersection Capacity Utilization 68.2%
Analysis Period (min) 15

ICU Level of Service C

Splits and Phases: 1: Washington Street (Route 53) & KAM Driveway/Target Plaza Driveway



Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	8	1315	9	1	1339
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, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	1	8	1370	9	1	1395

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2073	690	0	0	1379	0
Stage 1	1374	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	48	392	-	-	504	-
Stage 1	204	-	-	-	-	-
Stage 2	460	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	48	392	-	-	504	-
Mov Cap-2 Maneuver	147	-	-	-	-	-
Stage 1	204	-	-	-	-	-
Stage 2	456	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.4	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	392	504	-
HCM Lane V/C Ratio	-	-	0.021	0.002	-
HCM Control Delay (s)	-	-	14.4	12.2	0.1
HCM Lane LOS	-	-	B	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	0	0	1	0	1323	1	1	1338	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	2	0
Mvmt Flow	0	0	0	0	0	1	0	1364	1	1	1379	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2064	2747	690	2056	2746	682	1380	0	0	1365	0	0
Stage 1	1382	1382	-	1364	1364	-	-	-	-	-	-	-
Stage 2	682	1365	-	692	1382	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	32	20	392	33	20	397	503	-	-	510	-	-
Stage 1	154	213	-	158	218	-	-	-	-	-	-	-
Stage 2	411	217	-	405	213	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	32	20	392	33	20	397	503	-	-	510	-	-
Mov Cap-2 Maneuver	32	20	-	33	20	-	-	-	-	-	-	-
Stage 1	154	211	-	158	218	-	-	-	-	-	-	-
Stage 2	410	217	-	402	211	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	14.1	0	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	503	-	-	-	397	510	-	-
HCM Lane V/C Ratio	-	-	-	-	0.003	0.002	-	-
HCM Control Delay (s)	0	-	-	0	14.1	12.1	0	-
HCM Lane LOS	A	-	-	A	B	B	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	0	0	17	0	17	2	1032	37	50	532	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	14	14	12	14	12	12	12	12	12
Storage Length (ft)	0		0	0		0	220		0	240		0
Storage Lanes	0		0	0		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt						0.850		0.995				
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	963	0	0	1704	1615	1925	3524	0	3502	3539	0
Flt Permitted							0.950			0.950		
Satd. Flow (perm)	0	1013	0	0	1794	1615	1925	3524	0	3502	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						103		6				
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		418			1412			266			1857	
Travel Time (s)		9.5			32.1			4.5			31.7	
Peak Hour 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
Heavy Vehicles (%)	100%	0%	0%	13%	0%	0%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	1	0	0	17	0	17	2	1032	37	50	532	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1	0	0	17	17	2	1069	0	50	533	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			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.92	0.92	0.92	0.92	0.92	1.00	0.92	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	50	50		50	50	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	8.0	15.0		8.0	15.0	
Minimum Split (s)	13.0	13.0		13.0	13.0	13.0	13.0	21.0		13.0	21.0	

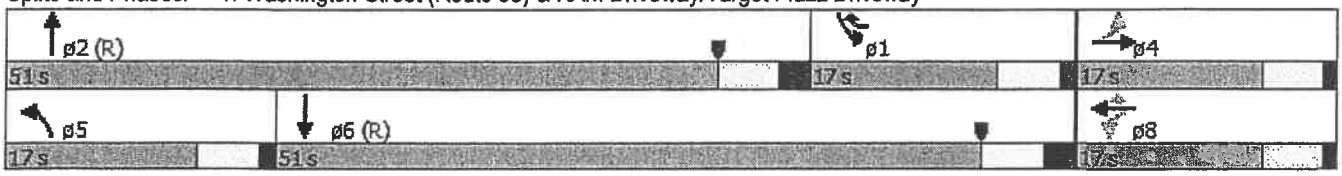
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	17.0	17.0		17.0	17.0	17.0	17.0	51.0		17.0	51.0	
Total Split (%)	20.0%	20.0%		20.0%	20.0%	20.0%	20.0%	60.0%		20.0%	60.0%	
Maximum Green (s)	12.0	12.0		12.0	12.0	12.0	12.0	45.0		12.0	45.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0		1.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	5.0		4.0	5.0	
Lead/Lag						Lag	Lead	Lead		Lag	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	None	None	C-Max		None	C-Max	
Act Effct Green (s)		9.1			9.1	14.1	9.0	69.1		11.4	78.7	
Actuated g/C Ratio		0.11			0.11	0.17	0.11	0.81		0.13	0.93	
v/c Ratio		0.01			0.09	0.05	0.01	0.37		0.11	0.16	
Control Delay		34.0			35.4	0.2	34.0	5.1		32.0	2.1	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		34.0			35.4	0.2	34.0	5.1		32.0	2.1	
LOS		C			D	A	C	A		C	A	
Approach Delay		34.0			17.8			5.2			4.7	
Approach LOS		C			B			A			A	
90th %ile Green (s)	8.5	8.5		8.5	8.5	12.0	8.0	48.5		12.0	52.5	
90th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Min	Coord		Hold	Coord	
70th %ile Green (s)	0.0	0.0		0.0	0.0	12.0	0.0	62.0		12.0	79.0	
70th %ile Term Code	Skip	Skip		Skip	Skip	Hold	Skip	Coord		Hold	Coord	
50th %ile Green (s)	0.0	0.0		0.0	0.0	12.0	0.0	62.0		12.0	79.0	
50th %ile Term Code	Skip	Skip		Skip	Skip	Hold	Skip	Coord		Hold	Coord	
30th %ile Green (s)	0.0	0.0		0.0	0.0	0.0	0.0	79.0		0.0	79.0	
30th %ile Term Code	Skip	Skip		Skip	Skip	Skip	Skip	Coord		Skip	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0	0.0	0.0	79.0		0.0	79.0	
10th %ile Term Code	Skip	Skip		Skip	Skip	Skip	Skip	Coord		Skip	Coord	
Queue Length 50th (ft)		1			8	0	1	89		11	0	
Queue Length 95th (ft)		5			27	0	7	214		27	81	
Internal Link Dist (ft)		338			1332			186			1777	
Turn Bay Length (ft)							220			240		
Base Capacity (vph)		154			274	382	294	2866		535	3277	
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			0.06	0.04	0.01	0.37		0.09	0.16	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 85
Offset: 11 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.37
Intersection Signal Delay: 5.3 Intersection LOS: A

Intersection Capacity Utilization 53.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Washington Street (Route 53) & KAM Driveway/Target Plaza Driveway



Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	4	1067	9	1	548
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, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	2	0	0	3
Mvmt Flow	0	4	1089	9	1	559

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1375	549	0	0	1098	0
Stage 1	1093	-	-	-	-	-
Stage 2	282	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	139	485	-	-	643	-
Stage 1	287	-	-	-	-	-
Stage 2	747	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	139	485	-	-	643	-
Mov Cap-2 Maneuver	235	-	-	-	-	-
Stage 1	287	-	-	-	-	-
Stage 2	746	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	485	643	-
HCM Lane V/C Ratio	-	-	0.008	0.002	-
HCM Control Delay (s)	-	-	12.5	10.6	0
HCM Lane LOS	-	-	B	B	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	0	0	0	0	1078	0	0	543	3
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	4	0
Mvmt Flow	0	0	0	0	0	0	0	1100	0	0	554	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1106	1656	279	1377	1657	550	557	0	0	1100	0	0
Stage 1	556	556	-	1100	1100	-	-	-	-	-	-	-
Stage 2	550	1100	-	277	557	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	168	99	724	106	99	484	1024	-	-	642	-	-
Stage 1	488	516	-	230	290	-	-	-	-	-	-	-
Stage 2	492	290	-	712	515	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	168	99	724	106	99	484	1024	-	-	642	-	-
Mov Cap-2 Maneuver	168	99	-	106	99	-	-	-	-	-	-	-
Stage 1	488	516	-	230	290	-	-	-	-	-	-	-
Stage 2	492	290	-	712	515	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1024	-	-	-	-	642	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	0	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	39	40	1036	42	41	507
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	98	98	98	98	98	98
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	40	41	1057	43	42	517

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1421	550	0	0	1100	0
Stage 1	1079	-	-	-	-	-
Stage 2	342	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	130	484	-	-	642	-
Stage 1	292	-	-	-	-	-
Stage 2	697	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	118	484	-	-	642	-
Mov Cap-2 Maneuver	226	-	-	-	-	-
Stage 1	292	-	-	-	-	-
Stage 2	633	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.6	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	310	642	-
HCM Lane V/C Ratio	-	-	0.26	0.065	-
HCM Control Delay (s)	-	-	20.6	11	0.4
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	1	0.2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	0	2	124	2	66	7	853	58	98	1324	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	14	14	12	14	12	12	12	12	12
Storage Length (ft)	0		0	0		0	220		0	240		0
Storage Lanes	0		0	0		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt		0.955				0.850		0.990				
Flt Protected		0.968			0.953		0.950			0.950		
Satd. Flow (prot)	0	1874	0	0	1931	1583	1925	3508	0	3502	3539	0
Flt Permitted		0.857			0.726		0.950			0.950		
Satd. Flow (perm)	0	1659	0	0	1471	1583	1925	3508	0	3502	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		153				87		10				
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		418			1412			266			1857	
Travel Time (s)		9.5			32.1			4.5			31.7	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	4	0	2	128	2	68	7	879	60	101	1365	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	0	0	130	68	7	939	0	101	1366	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			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.92	0.92	0.92	0.92	0.92	1.00	0.92	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	50	50		50	50	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	8.0	15.0		8.0	15.0	
Minimum Split (s)	13.0	13.0		13.0	13.0	13.0	13.0	21.0		13.0	21.0	

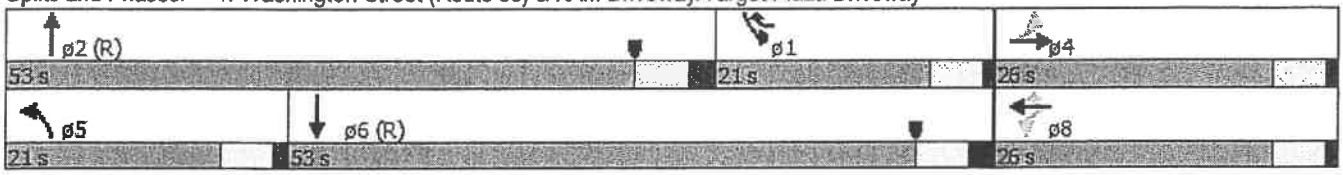
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	26.0	26.0		26.0	26.0	21.0	21.0	53.0		21.0	53.0	
Total Split (%)	26.0%	26.0%		26.0%	26.0%	21.0%	21.0%	53.0%		21.0%	53.0%	
Maximum Green (s)	21.0	21.0		21.0	21.0	16.0	16.0	47.0		16.0	47.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0		1.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	5.0		4.0	5.0	
Lead/Lag						Lag	Lead	Lead		Lag	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	None	None	C-Max		None	C-Max	
Act Effct Green (s)		15.1			15.1	36.1	9.0	54.9		17.0	73.3	
Actuated g/C Ratio		0.15			0.15	0.36	0.09	0.55		0.17	0.73	
v/c Ratio		0.02			0.59	0.11	0.04	0.49		0.17	0.53	
Control Delay		0.0			49.5	3.0	42.3	15.5		36.4	8.2	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		0.0			49.5	3.0	42.3	15.5		36.4	8.2	
LOS		A			D	A	D	B		D	A	
Approach Delay		0.0			33.6			15.7			10.2	
Approach LOS		A			C			B			B	
90th %ile Green (s)	19.9	19.9		19.9	19.9	16.0	8.0	48.1		16.0	56.1	
90th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Min	Coord		Hold	Coord	
70th %ile Green (s)	16.5	16.5		16.5	16.5	16.0	0.0	51.5		16.0	72.5	
70th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Skip	Coord		Hold	Coord	
50th %ile Green (s)	14.1	14.1		14.1	14.1	16.0	0.0	53.9		16.0	74.9	
50th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Skip	Coord		Hold	Coord	
30th %ile Green (s)	11.7	11.7		11.7	11.7	16.0	0.0	56.3		16.0	77.3	
30th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Skip	Coord		Hold	Coord	
10th %ile Green (s)	8.2	8.2		8.2	8.2	16.0	0.0	59.8		16.0	80.8	
10th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Skip	Coord		Hold	Coord	
Queue Length 50th (ft)		0			78	0	4	181		28	147	
Queue Length 95th (ft)		0			131	18	18	266		52	376	
Internal Link Dist (ft)		338			1332			186			1777	
Turn Bay Length (ft)							220			240		
Base Capacity (vph)		484			323	626	327	1931		595	2594	
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			0.40	0.11	0.02	0.49		0.17	0.53	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 91 (91%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 13.9 Intersection LOS: B

Intersection Capacity Utilization 58.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Washington Street (Route 53) & KAM Driveway/Target Plaza Driveway



Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	12	906	19	0	1450
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, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	0	13	974	20	0	1559

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1764	497	0	0	995	0
Stage 1	984	-	-	-	-	-
Stage 2	780	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	77	524	-	-	703	-
Stage 1	327	-	-	-	-	-
Stage 2	418	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	77	524	-	-	703	-
Mov Cap-2 Maneuver	202	-	-	-	-	-
Stage 1	327	-	-	-	-	-
Stage 2	418	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	524	703	-
HCM Lane V/C Ratio	-	-	0.025	-	-
HCM Control Delay (s)	-	-	12	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	0	0	0	0	2	0	920	2	2	1448	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	2	0
Mvmt Flow	3	0	0	0	0	2	0	989	2	2	1557	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2056	2552	778	1773	2551	496	1557	0	0	991	0	0
Stage 1	1561	1561	-	990	990	-	-	-	-	-	-	-
Stage 2	495	991	-	783	1561	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	33	27	343	54	27	525	431	-	-	706	-	-
Stage 1	119	175	-	268	327	-	-	-	-	-	-	-
Stage 2	530	327	-	357	175	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	32	26	343	53	26	525	431	-	-	706	-	-
Mov Cap-2 Maneuver	32	26	-	53	26	-	-	-	-	-	-	-
Stage 1	119	171	-	268	327	-	-	-	-	-	-	-
Stage 2	528	327	-	350	171	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	129.7	11.9	0	0.1
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	431	-	-	32	525	706	-	-
HCM Lane V/C Ratio	-	-	-	0.101	0.004	0.003	-	-
HCM Control Delay (s)	0	-	-	129.7	11.9	10.1	0.1	-
HCM Lane LOS	A	-	-	F	B	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	20	20	905	20	20	1430
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	93	93	93	93	93	93
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	22	22	973	22	22	1538

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1796	497	0	0	995	0
Stage 1	984	-	-	-	-	-
Stage 2	812	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	73	524	-	-	703	-
Stage 1	327	-	-	-	-	-
Stage 2	402	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	57	524	-	-	703	-
Mov Cap-2 Maneuver	173	-	-	-	-	-
Stage 1	327	-	-	-	-	-
Stage 2	316	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.6	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	260	703	-
HCM Lane V/C Ratio	-	-	0.165	0.031	-
HCM Control Delay (s)	-	-	21.6	10.3	1.1
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	0	7	147	0	112	7	1193	130	192	1203	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	14	14	12	14	12	12	12	12	12
Storage Length (ft)	0		0	0		0	220		0	240		0
Storage Lanes	0		0	0		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt		0.914				0.850		0.985			0.999	
Flt Protected		0.982			0.950		0.950			0.950		
Satd. Flow (prot)	0	1819	0	0	1925	1615	1925	3493	0	3502	3536	0
Flt Permitted		0.907			0.750		0.950			0.950		
Satd. Flow (perm)	0	1680	0	0	1520	1615	1925	3493	0	3502	3536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		161				92		19			1	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		418			1412			266			1857	
Travel Time (s)		9.5			32.1			4.5			31.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	4	0	7	150	0	114	7	1217	133	196	1228	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	11	0	0	150	114	7	1350	0	196	1233	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			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.92	0.92	0.92	0.92	0.92	1.00	0.92	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	50	50		50	50	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	8.0	15.0		8.0	15.0	
Minimum Split (s)	13.0	13.0		13.0	13.0	13.0	13.0	21.0		13.0	21.0	

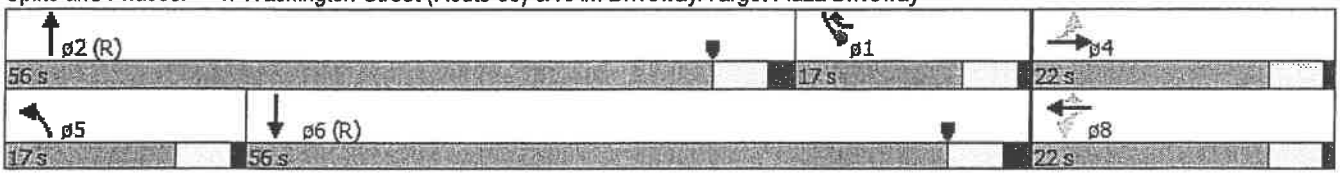
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	22.0	22.0		22.0	22.0	17.0	17.0	56.0		17.0	56.0	
Total Split (%)	23.2%	23.2%		23.2%	23.2%	17.9%	17.9%	58.9%		17.9%	58.9%	
Maximum Green (s)	17.0	17.0		17.0	17.0	12.0	12.0	50.0		12.0	50.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0		1.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	5.0		4.0	5.0	
Lead/Lag						Lag	Lead	Lead		Lag	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	None	None	C-Max		None	C-Max	
Act Effct Green (s)		14.9			14.9	31.9	9.0	54.1		13.0	68.5	
Actuated g/C Ratio		0.16			0.16	0.34	0.09	0.57		0.14	0.72	
v/c Ratio		0.03			0.63	0.19	0.04	0.68		0.41	0.48	
Control Delay		0.1			49.1	7.2	39.7	16.8		40.4	7.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		0.1			49.1	7.2	39.7	16.8		40.4	7.6	
LOS		A			D	A	D	B		D	A	
Approach Delay		0.1			31.0			16.9			12.1	
Approach LOS		A			C			B			B	
90th %ile Green (s)	17.0	17.0		17.0	17.0	12.0	8.0	50.0		12.0	54.0	
90th %ile Term Code	Hold	Hold		Max	Max	Max	Min	Coord		Max	Coord	
70th %ile Green (s)	17.0	17.0		17.0	17.0	12.0	0.0	50.0		12.0	67.0	
70th %ile Term Code	Hold	Hold		Max	Max	Hold	Skip	Coord		Hold	Coord	
50th %ile Green (s)	14.6	14.6		14.6	14.6	12.0	0.0	52.4		12.0	69.4	
50th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Skip	Coord		Hold	Coord	
30th %ile Green (s)	12.1	12.1		12.1	12.1	12.0	0.0	54.9		12.0	71.9	
30th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Skip	Coord		Hold	Coord	
10th %ile Green (s)	8.7	8.7		8.7	8.7	12.0	0.0	58.3		12.0	75.3	
10th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Skip	Coord		Hold	Coord	
Queue Length 50th (ft)		0			85	9	4	282		56	128	
Queue Length 95th (ft)		0			146	43	18	382		90	298	
Internal Link Dist (ft)		338			1332			186			1777	
Turn Bay Length (ft)							220			240		
Base Capacity (vph)		448			288	603	263	1997		479	2550	
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		0.02			0.52	0.19	0.03	0.68		0.41	0.48	

Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 90 (95%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 15.8 Intersection LOS: B

Intersection Capacity Utilization 69.4% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: Washington Street (Route 53) & KAM Driveway/Target Plaza Driveway



Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	16	1314	28	1	1356
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, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	1	17	1369	29	1	1412

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2091	699	0	0	1398	0
Stage 1	1383	-	-	-	-	-
Stage 2	708	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	46	387	-	-	495	-
Stage 1	202	-	-	-	-	-
Stage 2	455	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	46	387	-	-	495	-
Mov Cap-2 Maneuver	145	-	-	-	-	-
Stage 1	202	-	-	-	-	-
Stage 2	451	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.7	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	387	495	-
HCM Lane V/C Ratio	-	-	0.043	0.002	-
HCM Control Delay (s)	-	-	14.7	12.3	0.1
HCM Lane LOS	-	-	B	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	0	0	1	0	1341	1	1	1355	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	2	0
Mvmt Flow	0	0	0	0	0	1	0	1382	1	1	1397	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2090	2783	699	2084	2783	692	1398	0	0	1384	0	0
Stage 1	1399	1399	-	1383	1383	-	-	-	-	-	-	-
Stage 2	691	1384	-	701	1400	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	31	19	387	31	19	391	495	-	-	501	-	-
Stage 1	151	209	-	154	213	-	-	-	-	-	-	-
Stage 2	406	213	-	400	209	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	31	19	387	31	19	391	495	-	-	501	-	-
Mov Cap-2 Maneuver	31	19	-	31	19	-	-	-	-	-	-	-
Stage 1	151	207	-	154	213	-	-	-	-	-	-	-
Stage 2	405	213	-	396	207	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	14.2	0	0.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	495	-	-	-	391	501	-	-
HCM Lane V/C Ratio	-	-	-	-	0.003	0.002	-	-
HCM Control Delay (s)	0	-	-	0	14.2	12.2	0.1	-
HCM Lane LOS	A	-	-	A	B	B	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	40	40	1302	40	40	1317
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	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	42	42	1356	42	42	1372

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2146	699	0	0	1398	0
Stage 1	1377	-	-	-	-	-
Stage 2	769	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	43	387	-	-	495	-
Stage 1	203	-	-	-	-	-
Stage 2	423	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 28	387	-	-	495	-
Mov Cap-2 Maneuver	119	-	-	-	-	-
Stage 1	203	-	-	-	-	-
Stage 2	272	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	40.5	0	2.5
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	182	495	-
HCM Lane V/C Ratio	-	-	0.458	0.084	-
HCM Control Delay (s)	-	-	40.5	12.9	2.2
HCM Lane LOS	-	-	E	B	A
HCM 95th %tile Q(veh)	-	-	2.2	0.3	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	0	0	15	0	15	2	1034	37	45	531	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	14	14	12	14	12	12	12	12	12
Storage Length (ft)	0		0	0		0	220		0	240		0
Storage Lanes	0		0	0		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt						0.850		0.995				
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	963	0	0	1704	1615	1925	3524	0	3502	3539	0
Flt Permitted							0.950			0.950		
Satd. Flow (perm)	0	1013	0	0	1794	1615	1925	3524	0	3502	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						103		6				
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		418			1412			266			1857	
Travel Time (s)		9.5			32.1			4.5			31.7	
Peak Hour 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
Heavy Vehicles (%)	100%	0%	0%	13%	0%	0%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	1	0	0	15	0	15	2	1034	37	45	531	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1	0	0	15	15	2	1071	0	45	532	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			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.92	0.92	0.92	0.92	0.92	1.00	0.92	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	50	50		50	50	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	8.0	15.0		8.0	15.0	
Minimum Split (s)	13.0	13.0		13.0	13.0	13.0	13.0	21.0		13.0	21.0	

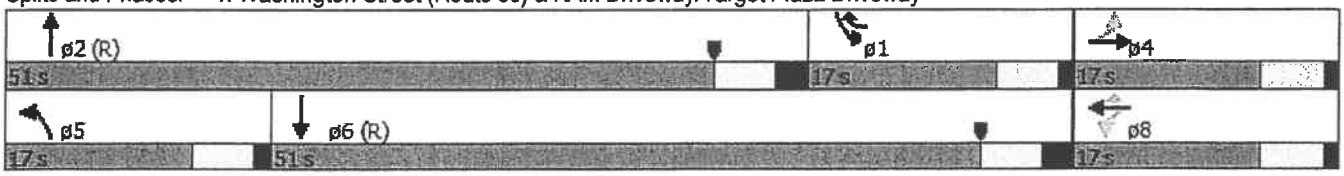
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	17.0	17.0		17.0	17.0	17.0	17.0	51.0		17.0	51.0	
Total Split (%)	20.0%	20.0%		20.0%	20.0%	20.0%	20.0%	60.0%		20.0%	60.0%	
Maximum Green (s)	12.0	12.0		12.0	12.0	12.0	12.0	45.0		12.0	45.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0		1.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	5.0		4.0	5.0	
Lead/Lag						Lag	Lead	Lead		Lag	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	None	None	C-Max		None	C-Max	
Act Effct Green (s)		9.1			9.1	14.1	9.0	69.1		11.4	78.7	
Actuated g/C Ratio		0.11			0.11	0.17	0.11	0.81		0.13	0.93	
v/c Ratio		0.01			0.08	0.04	0.01	0.37		0.10	0.16	
Control Delay		34.0			35.3	0.2	34.0	5.1		31.9	2.1	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		34.0			35.3	0.2	34.0	5.1		31.9	2.1	
LOS		C			D	A	C	A		C	A	
Approach Delay		34.0			17.8			5.1			4.4	
Approach LOS		C			B			A			A	
90th %ile Green (s)	8.3	8.3		8.3	8.3	12.0	8.0	48.7		12.0	52.7	
90th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Min	Coord		Hold	Coord	
70th %ile Green (s)	0.0	0.0		0.0	0.0	12.0	0.0	62.0		12.0	79.0	
70th %ile Term Code	Skip	Skip		Skip	Skip	Hold	Skip	Coord		Hold	Coord	
50th %ile Green (s)	0.0	0.0		0.0	0.0	12.0	0.0	62.0		12.0	79.0	
50th %ile Term Code	Skip	Skip		Skip	Skip	Hold	Skip	Coord		Hold	Coord	
30th %ile Green (s)	0.0	0.0		0.0	0.0	0.0	0.0	79.0		0.0	79.0	
30th %ile Term Code	Skip	Skip		Skip	Skip	Skip	Skip	Coord		Skip	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0	0.0	0.0	79.0		0.0	79.0	
10th %ile Term Code	Skip	Skip		Skip	Skip	Skip	Skip	Coord		Skip	Coord	
Queue Length 50th (ft)		1			7	0	1	89		10	0	
Queue Length 95th (ft)		5			25	0	7	214		25	81	
Internal Link Dist (ft)		338			1332			186			1777	
Turn Bay Length (ft)							220			240		
Base Capacity (vph)		154			274	381	294	2867		535	3278	
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			0.05	0.04	0.01	0.37		0.08	0.16	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 85
Offset: 11 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.37
Intersection Signal Delay: 5.1 Intersection LOS: A

Intersection Capacity Utilization 53.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Washington Street (Route 53) & KAM Driveway/Target Plaza Driveway



Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	2	1071	4	1	545
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, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	2	0	0	3
Mvmt Flow	0	2	1093	4	1	556

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1375	548	0	0	1097	0
Stage 1	1095	-	-	-	-	-
Stage 2	280	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	139	485	-	-	644	-
Stage 1	286	-	-	-	-	-
Stage 2	748	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	139	485	-	-	644	-
Mov Cap-2 Maneuver	235	-	-	-	-	-
Stage 1	286	-	-	-	-	-
Stage 2	747	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	485	644	-
HCM Lane V/C Ratio	-	-	0.004	0.002	-
HCM Control Delay (s)	-	-	12.5	10.6	0
HCM Lane LOS	-	-	B	B	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	0	0	0	0	1074	0	0	546	3
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	4	0
Mvmt Flow	0	0	0	0	0	0	0	1096	0	0	557	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1107	1655	280	1375	1656	548	560	0	0	1096	0	0
Stage 1	559	559	-	1096	1096	-	-	-	-	-	-	-
Stage 2	548	1096	-	279	560	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	167	99	723	106	99	485	1021	-	-	644	-	-
Stage 1	486	514	-	231	292	-	-	-	-	-	-	-
Stage 2	493	292	-	710	514	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	167	99	723	106	99	485	1021	-	-	644	-	-
Mov Cap-2 Maneuver	167	99	-	106	99	-	-	-	-	-	-	-
Stage 1	486	514	-	231	292	-	-	-	-	-	-	-
Stage 2	493	292	-	710	514	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1021	-	-	-	-	644	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	0	-	-

Intersection

Int Delay, s/veh 0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	7	5	1070	4	3	542
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	98	98	98	98	98	98
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	7	5	1092	4	3	553

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1377	548	0	0	1096	0
Stage 1	1094	-	-	-	-	-
Stage 2	283	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	138	485	-	-	644	-
Stage 1	287	-	-	-	-	-
Stage 2	746	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	137	485	-	-	644	-
Mov Cap-2 Maneuver	235	-	-	-	-	-
Stage 1	287	-	-	-	-	-
Stage 2	741	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.6	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 299	644	-
HCM Lane V/C Ratio	-	- 0.041	0.005	-
HCM Control Delay (s)	-	- 17.6	10.6	0
HCM Lane LOS	-	- C	B	A
HCM 95th %tile Q(veh)	-	- 0.1	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	0	2	106	2	58	7	852	58	81	1335	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	14	14	12	14	12	12	12	12	12
Storage Length (ft)	0		0	0		0	220		0	240		0
Storage Lanes	0		0	0		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt		0.955				0.850		0.990				
Flt Protected		0.968			0.953		0.950			0.950		
Satd. Flow (prot)	0	1874	0	0	1931	1583	1925	3508	0	3502	3539	0
Flt Permitted		0.856			0.726		0.950			0.950		
Satd. Flow (perm)	0	1657	0	0	1471	1583	1925	3508	0	3502	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		153				87		10				
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		418			1412			266			1857	
Travel Time (s)		9.5			32.1			4.5			31.7	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	4	0	2	109	2	60	7	878	60	84	1376	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	0	0	111	60	7	938	0	84	1377	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			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.92	0.92	0.92	0.92	0.92	1.00	0.92	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	50	50		50	50	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	8.0	15.0		8.0	15.0	
Minimum Split (s)	13.0	13.0		13.0	13.0	13.0	13.0	21.0		13.0	21.0	

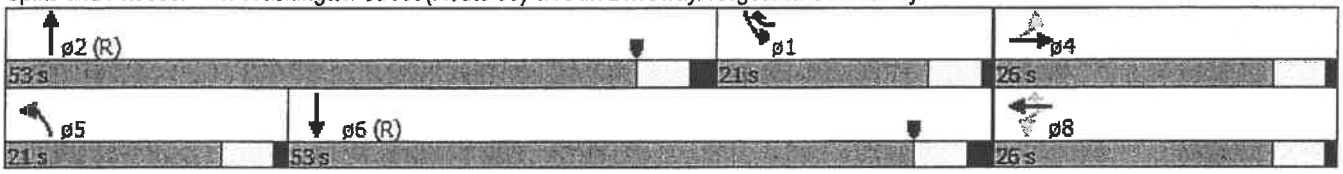
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	26.0	26.0		26.0	26.0	21.0	21.0	53.0		21.0	53.0	
Total Split (%)	26.0%	26.0%		26.0%	26.0%	21.0%	21.0%	53.0%		21.0%	53.0%	
Maximum Green (s)	21.0	21.0		21.0	21.0	16.0	16.0	47.0		16.0	47.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0		1.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	5.0		4.0	5.0	
Lead/Lag						Lag	Lead	Lead		Lag	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	None	None	C-Max		None	C-Max	
Act Effct Green (s)		13.9			13.9	32.5	9.0	60.3		15.4	74.5	
Actuated g/C Ratio		0.14			0.14	0.32	0.09	0.60		0.15	0.74	
v/c Ratio		0.02			0.54	0.10	0.04	0.44		0.16	0.52	
Control Delay		0.2			49.2	2.4	42.3	13.3		36.4	7.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		0.2			49.2	2.4	42.3	13.3		36.4	7.6	
LOS		A			D	A	D	B		D	A	
Approach Delay		0.2			32.8			13.5			9.3	
Approach LOS		A			C			B			A	
90th %ile Green (s)	18.2	18.2		18.2	18.2	16.0	8.0	49.8		16.0	57.8	
90th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Min	Coord		Hold	Coord	
70th %ile Green (s)	15.0	15.0		15.0	15.0	16.0	0.0	53.0		16.0	74.0	
70th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Skip	Coord		Hold	Coord	
50th %ile Green (s)	12.8	12.8		12.8	12.8	16.0	0.0	55.2		16.0	76.2	
50th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Skip	Coord		Hold	Coord	
30th %ile Green (s)	10.6	10.6		10.6	10.6	16.0	0.0	57.4		16.0	78.4	
30th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Skip	Coord		Hold	Coord	
10th %ile Green (s)	8.0	8.0		8.0	8.0	0.0	0.0	81.0		0.0	81.0	
10th %ile Term Code	Hold	Hold		Min	Min	Skip	Skip	Coord		Skip	Coord	
Queue Length 50th (ft)		0			67	0	4	174		23	138	
Queue Length 95th (ft)		0			116	13	18	255		45	363	
Internal Link Dist (ft)		338			1332			186			1777	
Turn Bay Length (ft)							220			240		
Base Capacity (vph)		483			323	609	327	2118		595	2635	
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			0.34	0.10	0.02	0.44		0.14	0.52	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 91 (91%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 12.4 Intersection LOS: B

Intersection Capacity Utilization 52.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Washington Street (Route 53) & KAM Driveway/Target Plaza Driveway



Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	5	912	5	0	1443
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, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	0	5	981	5	0	1552

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1759	493	0	0	986	0
Stage 1	983	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	77	527	-	-	709	-
Stage 1	328	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	77	527	-	-	709	-
Mov Cap-2 Maneuver	203	-	-	-	-	-
Stage 1	328	-	-	-	-	-
Stage 2	420	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	527	709	-
HCM Lane V/C Ratio	-	-	0.01	-	-
HCM Control Delay (s)	-	-	11.9	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	0	0	0	0	2	0	916	2	2	1442	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	2	0
Mvmt Flow	3	0	0	0	0	2	0	985	2	2	1551	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2047	2542	775	1766	2541	494	1551	0	0	987	0	0
Stage 1	1555	1555	-	986	986	-	-	-	-	-	-	-
Stage 2	492	987	-	780	1555	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	33	27	345	54	27	526	433	-	-	708	-	-
Stage 1	120	176	-	270	328	-	-	-	-	-	-	-
Stage 2	532	328	-	359	176	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	32	26	345	53	26	526	433	-	-	708	-	-
Mov Cap-2 Maneuver	32	26	-	53	26	-	-	-	-	-	-	-
Stage 1	120	172	-	270	328	-	-	-	-	-	-	-
Stage 2	530	328	-	352	172	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	129.7	11.9	0	0.1
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	433	-	-	32	526	708	-	-
HCM Lane V/C Ratio	-	-	-	0.101	0.004	0.003	-	-
HCM Control Delay (s)	0	-	-	129.7	11.9	10.1	0.1	-
HCM Lane LOS	A	-	-	F	B	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	7	4	913	8	6	1437
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	93	93	93	93	93	93
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	8	4	982	9	6	1545

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1771	495	0	0	990	0
Stage 1	986	-	-	-	-	-
Stage 2	785	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	76	525	-	-	706	-
Stage 1	327	-	-	-	-	-
Stage 2	415	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	71	525	-	-	706	-
Mov Cap-2 Maneuver	194	-	-	-	-	-
Stage 1	327	-	-	-	-	-
Stage 2	390	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	252	706	-
HCM Lane V/C Ratio	-	-	0.047	0.009	-
HCM Control Delay (s)	-	-	20	10.1	0.3
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	0	7	129	0	102	7	1192	130	172	1214	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	14	14	12	14	12	12	12	12	12
Storage Length (ft)	0		0	0		0	220		0	240		0
Storage Lanes	0		0	0		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt		0.914				0.850		0.985			0.999	
Flt Protected		0.982			0.950		0.950			0.950		
Satd. Flow (prot)	0	1819	0	0	1925	1615	1925	3493	0	3502	3536	0
Flt Permitted		0.907			0.750		0.950			0.950		
Satd. Flow (perm)	0	1680	0	0	1520	1615	1925	3493	0	3502	3536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		161				92		19			1	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		418			1412			266			1857	
Travel Time (s)		9.5			32.1			4.5			31.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	4	0	7	132	0	104	7	1216	133	176	1239	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	11	0	0	132	104	7	1349	0	176	1244	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			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.92	0.92	0.92	0.92	0.92	1.00	0.92	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	50	50		50	50	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	8.0	15.0		8.0	15.0	
Minimum Split (s)	13.0	13.0		13.0	13.0	13.0	13.0	21.0		13.0	21.0	

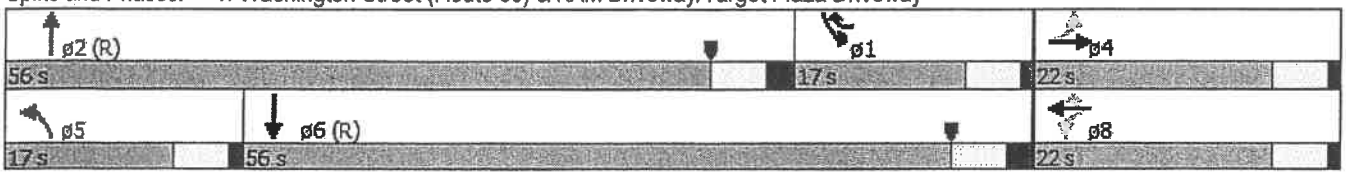
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	22.0	22.0		22.0	22.0	17.0	17.0	56.0		17.0	56.0	
Total Split (%)	23.2%	23.2%		23.2%	23.2%	17.9%	17.9%	58.9%		17.9%	58.9%	
Maximum Green (s)	17.0	17.0		17.0	17.0	12.0	12.0	50.0		12.0	50.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0		1.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	5.0		4.0	5.0	
Lead/Lag						Lag	Lead	Lead		Lag	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	None	None	C-Max		None	C-Max	
Act Effct Green (s)		14.1			14.1	31.1	9.0	54.9		13.0	69.3	
Actuated g/C Ratio		0.15			0.15	0.33	0.09	0.58		0.14	0.73	
v/c Ratio		0.03			0.59	0.18	0.04	0.67		0.37	0.48	
Control Delay		0.2			47.8	6.5	39.7	16.2		39.8	7.4	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		0.2			47.8	6.5	39.7	16.2		39.8	7.4	
LOS		A			D	A	D	B		D	A	
Approach Delay		0.2			29.6			16.3			11.4	
Approach LOS		A			C			B			B	
90th %ile Green (s)	17.0	17.0		17.0	17.0	12.0	8.0	50.0		12.0	54.0	
90th %ile Term Code	Hold	Hold		Max	Max	Max	Min	Coord		Max	Coord	
70th %ile Green (s)	15.7	15.7		15.7	15.7	12.0	0.0	51.3		12.0	68.3	
70th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Skip	Coord		Hold	Coord	
50th %ile Green (s)	13.5	13.5		13.5	13.5	12.0	0.0	53.5		12.0	70.5	
50th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Skip	Coord		Hold	Coord	
30th %ile Green (s)	11.2	11.2		11.2	11.2	12.0	0.0	55.8		12.0	72.8	
30th %ile Term Code	Hold	Hold		Gap	Gap	Hold	Skip	Coord		Hold	Coord	
10th %ile Green (s)	8.0	8.0		8.0	8.0	12.0	0.0	59.0		12.0	76.0	
10th %ile Term Code	Hold	Hold		Min	Min	Hold	Skip	Coord		Hold	Coord	
Queue Length 50th (ft)		0			75	5	4	273		50	123	
Queue Length 95th (ft)		0			129	37	18	381		82	302	
Internal Link Dist (ft)		338			1332			186			1777	
Turn Bay Length (ft)							220			240		
Base Capacity (vph)		448			288	590	263	2027		479	2580	
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		0.02			0.46	0.18	0.03	0.67		0.37	0.48	

Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 90 (95%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 15.0 Intersection LOS: B

Intersection Capacity Utilization 68.4% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: Washington Street (Route 53) & KAM Driveway/Target Plaza Driveway



Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	8	1321	9	1	1349
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, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	1	8	1376	9	1	1405

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2086	693	0	0	1385	0
Stage 1	1381	-	-	-	-	-
Stage 2	705	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	47	390	-	-	501	-
Stage 1	202	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	47	390	-	-	501	-
Mov Cap-2 Maneuver	145	-	-	-	-	-
Stage 1	202	-	-	-	-	-
Stage 2	452	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.4	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 390	501	-
HCM Lane V/C Ratio	-	- 0.021	0.002	-
HCM Control Delay (s)	-	- 14.4	12.2	0.1
HCM Lane LOS	-	- B	B	A
HCM 95th %tile Q(veh)	-	- 0.1	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	0	0	1	0	1333	1	1	1344	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	2	0
Mvmt Flow	0	0	0	0	0	1	0	1374	1	1	1386	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2075	2763	693	2070	2764	688	1387	0	0	1375	0	0
Stage 1	1388	1388	-	1375	1375	-	-	-	-	-	-	-
Stage 2	687	1375	-	695	1389	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	32	20	390	32	20	393	500	-	-	505	-	-
Stage 1	153	212	-	156	215	-	-	-	-	-	-	-
Stage 2	408	215	-	403	212	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	32	20	390	32	20	393	500	-	-	505	-	-
Mov Cap-2 Maneuver	32	20	-	32	20	-	-	-	-	-	-	-
Stage 1	153	210	-	156	215	-	-	-	-	-	-	-
Stage 2	407	215	-	399	210	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	14.2	0	0.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	500	-	-	-	393	505	-	-
HCM Lane V/C Ratio	-	-	-	-	0.003	0.002	-	-
HCM Control Delay (s)	0	-	-	0	14.2	12.1	0.1	-
HCM Lane LOS	A	-	-	A	B	B	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	6	6	1324	10	10	1340
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	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	6	6	1379	10	10	1396

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2103	695	0	0	1390	0
Stage 1	1384	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	45	389	-	-	499	-
Stage 1	201	-	-	-	-	-
Stage 2	449	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	41	389	-	-	499	-
Mov Cap-2 Maneuver	139	-	-	-	-	-
Stage 1	201	-	-	-	-	-
Stage 2	409	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.7	0	0.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 205	499	-
HCM Lane V/C Ratio	-	- 0.061	0.021	-
HCM Control Delay (s)	-	- 23.7	12.4	0.5
HCM Lane LOS	-	- C	B	A
HCM 95th %tile Q(veh)	-	- 0.2	0.1	-