City of Oakland

Department of Transportation
250 Frank H. Ogawa Plaza, Suite 4344
Oakland California 94612-2033

Martin Luther King Jr Way Complete Streets Paving Project
Road Diet Feasibility Memorandum: Executive Summary
12/20/2023

The City of Oakland Department of Transportation (OakDOT) uses a standard Road Diet Feasibility Study Methodology to determine whether it is feasible to remove lanes of traffic from City streets to improve traffic safety and meet the City's Strategic Goals. Since early 2022, OakDOT staff have been engaging with community members and stakeholders on Martin Luther King (MLK) Jr Way between 47th and the Berkeley Border on whether or not to implement the City's Bicycle Plan recommendation for protected bike lanes on the street. The City partnered with a 3rd party consultant to analyze existing and forecasted traffic patterns to determine whether the street could still efficiently move traffic when reducing the capacity from 6 to 4 lanes of travel (2 lanes in each direction plus turn lanes and parking).

The existing Average Annual Daily Traffic (AADT) for MLK Jr Way is 27,256 vehicles. **Based on Fehr & Peers' traffic analyses, an MLK Jr Way could still efficiently move existing and forecasted traffic with the proposed design.** The street would have capacity for future traffic growth—up to 3000 new daily vehicles—before reaching maximum capacity. Peak hour volumes on the corridor currently exceed the street's capacity during AM and PM peak hours, causing back-ups near the CA-24 highway ramps. Some queue lengths will increase during the peak hour with a 4-lane design of MLK, some queue lengths at red lights will increase during peak hours at the intersections of 52nd Street, 53rd Street, and 55th Street, but these queues are already exceed their capacity during peak hour on MLK Jr Way today. All signalized intersections will continue to operate at an acceptable Level of Service (LOS) (measure of vehicle delay), following a reduction from 6 to 4 lanes on MLK Jr Way. This project will optimize signal timing as a final step in the design process to ensure that peak hour traffic on the street flows smoothly.

This project will right-size MLK Jr Way and create a calmer, slower street during off-peak hours to reduce collisions and fatalities that are currently happening on the street. Additionally, this project will upgrade the last 6-lane unsignalized crossings in the City, dramatically shortening crossing distances and adding Pedestrian Hybrid Beacon signal devices. This project meets the goals of OakDOT's Strategic Plan and our Safe Oakland Streets Initiative to reduce traffic injuries and fatalities and reduce disparities in the distribution of traffic deaths in our City.

FEHR PEERS

Memorandum

Date: August 22, 2022

To: Charlie Ream, OakDOT

From: Carrie Modi, Fehr & Peers

Subject: Martin Luther King Jr Way Complete Streets Paving Project Road Diet Methodology Documentation

OK19-0337

This Memorandum summarizes the documentation gathered as part of the road diet feasibility study for the Martin Luther King Jr Way Streetscape project. This memorandum follows the City of Oakland's Methodology for Evaluating Road Diets (revised 2021). With input from OakDOT staff, this memorandum addresses Task 1: Base Analysis, Task 2 Key Signalized Intersections, Task 3 Major Transit Streets, and Task 8 Side Street Access were assessed for this project.

Task 1: Base Analysis

This section includes the base analysis tasks which are required for each road diet proposal in the City of Oakland:

- 1.1 Traffic Crashes
- 1.2 Traffic Speeds
- 1.3 Traffic Volumes
- 1.4 Pedestrian Safety
- 1.5 Bicyclists Safety
- 1.6 Future Traffic Growth

1.1 Traffic Crashes

There was a traffic death on Martin Luther King Jr Way in 2015 at the intersection of 60th Street, which involved a broadside collision between two drivers where one failed to obey traffic signs. This and other traffic deaths in the City of Oakland are tragic and preventable.

There were 65 collisions in the past five years (2017-2021), and vulnerable road users were most affected. Of the 8 collisions that were most severe, two involved pedestrians, and one involved a

bicyclist. In all, bicyclists and pedestrians were involved in 15% of collisions despite being only 3% of all road users.

Failure to yield to other vehicles is the most common cause of crashes on the street, and mostly results in broadside collisions. The other top causes include red light running and unsafe speeding, which align with resident complaints to staff about drivers speeding through red lights and feeling unsafe when crossing the street on foot.

Top 5 Causes of Collisions on MLK Jr Way		
Type	**Count**	**%**
Failure to Yield	18	28%
Red light running	15	23%
Unsafe Speed	13	20%
Unsafe lane change	7	11%
Pedestrian Right of Way	6	9%

1.2 Traffic Speeds

The posted speed limit is 30 MPH along this section of Martin Luther King Jr Way. **Tables 1a and 1b** below summarize the distribution of vehicle speed, separated by direction and categorized by time of day, representing averaged data combined from May 17 and May 18, 2022:

Table 1a: Martin Luther King Jr Way Speed Data by Time of Day, Northbound (MPH)

Time Interval	24-Hour Day	AM Peak[1]	PM Peak[2]	Off-Peak[3]
Average	34	34	33	34

85th Percentile	39	39	38	40

1. Average of the 7:00 – 9:00AM peak period.
2. Average of the 4:00 – 6:00 PM peak period.
3. Average of the remaining 20 hours of the day (excluding AM and PM peak periods).
Source: Fehr & Peers, 2022

Table 1b: Martin Luther King Jr Way Speed Data by Time of Day, Southbound (MPH)

Time Interval	24-Hour Day	AM Peak[1]	PM Peak[2]	Off-Peak[3]
Average	34	35	31	33
85th Percentile	40	42	38	40

1. Average of the 7:00 – 9:00AM peak period.
2. Average of the 4:00 – 6:00 PM peak period
3. Average of the remaining 20 hours of the day (excluding AM and PM peak periods).
Source: Fehr & Peers, 2022

Note that the northbound direction is the peak direction of travel during both the morning and afternoon peak periods, which may explain why southbound AM peak speeds are higher than the 24-hour average. **Tables 2a and 2b** below details a greater breakdown of travel speeds in 5 MPH increments, separated by direction and categorized by time of day, representing averaged data combined from May 17 and May 18, 2022:

Table 2a: Martin Luther King Jr Way Motorists by Speed Bucket (MPH), Northbound

Speed (MPH)	<15	15-19	20-24	25-29	30-34	35-39	40-44	45-49	>50
24-Hour Day (%)	0	1	4	18	40	26	9	2	1
AM Peak (%)	0	0	3	16	43	28	8	2	1
PM Peak (%)	0	1	4	23	43	22	5	1	0
Off-Peak (%)	0	1	4	17	37	27	11	3	1

Source: Fehr & Peers, 2022 (24-hour summary, averaged data from May 17-18, 2022)

Table 2b: Martin Luther King Jr Way Motorists by Speed Bucket (MPH), Southbound

Speed (MPH)	<15	15-19	20-24	25-29	30-34	35-39	40-44	45-49	>50
24-Hour Day (%)	2	2	7	19	32	23	9	3	1
AM Peak (%)	1	1	4	16	33	25	12	5	3
PM Peak (%)	4	4	10	24	32	18	6	1	1

Off-Peak (%)	2	2	7	18	32	25	10	3	1

Source: Fehr & Peers, 2022 (24-hour summary, averaged data from May 17-18, 2022)

During a 24-hour period, approximately 78% of northbound and 68% of southbound motorists traveled at 30 MPH (the posted speed limit) or above. More than one in three drivers traveled more than 5 MPH above the speed limit. Fewer than 4% of motorists travel in excess of 15 MPH above the speed limit. **Attachment 1** presents detailed reporting of speed data, separated by travel direction and date.

1.3 Traffic Volumes

Table 3 below summarizes Average Annual Daily Traffic (AADT) traffic volumes on Martin Luther King Jr Way, separated by direction and categorized by vehicle class, representing averaged data combined from May 17 and May 18, 2022.

Table 3: Martin Luther King Jr Way Average Annual Daily Traffic (AADT)

Direction	Passenger Vehicles	Buses	Four-Tire, Single Unit	Heavy Vehicles	Total
Northbound	13,203	82	1,074	299	**14,657**
Southbound	11,384	76	1,182	316	**12,985**
Total	**24,614**	**158**	**2,255**	**615**	**27,256**

Source: Fehr & Peers, 2022 (48-hour averaged data taken from May 17-18, 2022, between Aileen Street and 57th Street)

Additionally, **Table 4** below highlights the peak hour volumes, separated by date and peak hour:

Table 4: Martin Luther King Jr Way Average Peak Hour Directional Volumes

Date	Time of Day	Peak Hour	Volume
May 17	AM Peak	8:00-8:45	2113
	PM Peak	16:45-17:30	2176
May 18	AM Peak	8:00-8:45	2091
	PM Peak	16:45-17:30	2361

Source: Fehr & Peers, 2022

Attachment 2 presents a detailed reporting of traffic volume data by date.

1.4 Pedestrian Safety

Martin Luther King Jr Way, previously Grove Street, was widened in 1966 to accommodate the construction of elevated BART tracks into Berkeley. This change divided the neighborhood and

made conditions faster for vehicles, and worse for pedestrians. In 2023, this is now the last street in the City with 6-lane uncontrolled pedestrian crossings. Some of these crossings are adjacent to senior housing developments, hospitals, and are a disservice to some of our most vulnerable residents who may take longer to cross the street. In the past five years in the City of Oakland (2017-2021), 73% of traffic fatalities happened at uncontrolled crosswalks, and 34% of fatalities involved pedestrians (SafeTREC TIMS 2022). During outreach, the City heard anecdotes of people getting stuck in the middle lane of travel while vehicles moved on either side of them. The OakDOT project team observed jaywalking during site visits, and we heard in general that people do not feel safe when crossing the street, whether on foot, bike, or in a vehicle. This paving project is an opportunity to correct the historic decisions that have created a barrier to pedestrian access and circulation in this residential and medical-service oriented neighborhood.

In the past five years (2017-2021) 7 of 65 collisions on Martin Luther King Jr Way involved pedestrians, and two of these were categorized as "Injury (Other Visible)", or 3 out of 4 on the severity scale, with category 1 being fatal. Although pedestrians make up 7% of total traffic, they are involved in 10% of collisions. All except one of these collisions occurred at the intersection of Martin Luther King Jr Way and 52nd Street, which is the primary entrance to UCSF Childrens Hospital, where there are high numbers of visitors, patients, and employees walking. This collision data aligns with community members expressing safety concerns about the conditions at 52nd Street, requesting signal time changes and visibility improvements to make it safer for more vulnerable pedestrians to cross the 6-lane street.

During a site visit, Fehr & Peers and City staff saw hospital employees crossing mid-block before 52nd Street between the hospital parking lot and one of the hospital facilities. This caused staff to investigate the feasibility of installing a mid-block crossing with rapid flashing beacons or another control device here to prevent risky crossing behavior.

1.5 Bicyclist Safety/Connectivity

There is currently no bicycle facility on Martin Luther King Jr Way, and the City of Oakland's Bicycle Plan, "Let's Bike Oakland!", recommends protected bike lanes for the corridor. The City of Berkeley's Adeline Corridor Specific Plan also recommends protected bike lanes on Adeline Street, which would continue the bike network north from the Oakland border. MLK Jr Way to the south of the project area has a mix of Class III markings and Class II Bike Lanes and there are plans to upgrade the section of MLK Jr Way directly to the south of the project (between 47th and 40th Streets) with a road diet and bike lanes as part of a planned repaving effort. Bicyclists still travel on MLK Jr Way despite lack of bike lanes and are involved in 4% of collisions in the past 5 years despite being 1% of overall traffic. This demonstrates that bicyclists often choose the most efficient route to their destination, even if it is less safe than alternative routes.

Parallel Bicycle Routes

OakDOT staff studied routing options for bicyclists traveling North/South between South Berkeley and North Oakland, and found that parallel routes; Dover Street, and Genoa Street, cannot provide an efficient way to move bicyclists safely between other nearby streets with existing bike lanes. Dover Street is a neighborhood street, planned to be a Neighborhood Bike Route, that sees about 21 bicyclists in the PM peak period. Traveling North by bike here requires passing an uncontrolled crossing at 55th Street, and making an unsignalized left turn onto Alcatraz Street for people who wish to go up to Adeline Street, or requires jogging over to Shattuck Avenue. Genoa Street is currently a comfortable Neighborhood Bike Route used by around 176 bicyclists in the PM peak period, but requires a series of unsignalized crossings and turns to get from Genoa Street to King Street in Berkeley, and/or to Adeline Street. At the Southern end of these streets, bicyclists must cross 52nd Street, which is busy with traffic from the Childrens Hospital, to reach streets with bike lanes such as West Street, or must navigate the area of Martin Luther King Jr Way and 47th Street, which has no bike facility, and contains fast moving traffic accessing Highway 24/580. In general, asking bicyclists to divert, even with safe side-street options such as Dover and Genoa Streets, often backfires as cyclists choose the most direct route to their destination. We see this in action as people already bike on Martin Luther King Jr Way, and they are disproportionately injured in collisions despite being a small share of overall traffic.

Connecting to City of Berkeley

Installing protected bike lanes on Martin Luther King Jr Way would make key safety and connectivity improvements that would sync up with existing projects and planned projects. The City of Berkeley is planning to install protected bike lanes on Adeline Street to the Oakland border as part of its Adeline Corridor Specific Plan, and to straighten the intersection of Adeline Street, Stanford Avenue, and Martin Luther King Jr Way. This improvement would link up to protected bike lanes on Martin Luther King Jr Way, creating a seamless North/South bicycle connection between the two cities. As well, OakDOT recently completed a road diet with Class II bike lanes on West St, which meets Martin Luther King Jr Way at 52nd Street, and provides a safe North/South connection to West Oakland and Jack London Square.

Collisions

3 collisions on Martin Luther King Jr Way involved bicyclists. These occurred at 47th Street, 52nd Street, and 53rd Street, and were caused by vehicles running red lights and failure to yield. The collision at 52nd Street was categorized as severity level 3, or "Injury (Other Visible)", and was a hit and run collision. While bicycle volumes on this street are relatively low during the PM peak hour (25) compared to vehicles (2,176), they represent 4% of collisions despite being only 1% of all traffic.

1.6 Future Traffic Growth

The OakDOT Road Diet Methodology asks to compare the existing AADT and roadway demand for the peak direction with the anticipated roadway capacity to determine if capacity for future growth is still available. As indicated by **Table 3** in Subtask 1.3 above, the existing AADT for Martin Luther King Jr Way is 27,256 vehicles. Applying this volume to the proposed design—which matches the "Two-way Street, Two Lanes per Direction, With Turn Pockets" outside a Central Business District (CBD) configuration based on the information contained in the Road Diet Methodology—reflects LOS C. This analysis determines that the proposed six- to four-lane road diet has capacity for future traffic growth—up to 3000 new daily vehicles—before reaching maximum capacity, identified as LOS E in the "Service Volumes by Street Cross-section" table. However, the existing AADT exceeds the threshold for a Low Volume Street of this configuration (set at 20,000 vehicles), warranting further analysis in Task 2 and Task 3.

Additionally, both the AM and PM peak hour *existing* directional volumes slightly exceed the future Project road diet street capacity for the configuration of a two-way street, two-lane configuration with turn pockets, as stated in Table 1 "City of Oakland Traffic Parameters for Two-Way Streets." This future road diet capacity is set at 2,050 vehicles in each direction. **Table 5** below highlights incremental traffic growth numbers along the corridor based on data from May 17 (reference **Table 4** above for more details about peak hour volumes).

Time of Day	Existing Volume (6-lane)	5% Growth	10% Growth	15% Growth	Project Peak Capacity (4-lane)	# of Vehicles over capacity in Project configuration (4-lane)	% Over Capacity in Project configuration (4-lane)
AM Peak Hour	**2,113**	2,219	2,324	2,430	2,050	**63**	**3%**
PM Peak Hour	**2,176**	2,285	2,394	2,502	2050	**126**	**6%**

Source: Fehr & Peers, 2022

Volume growth may be mitigated by multiple north-south diversion routes in the vicinity, including Shattuck Avenue, located 2 blocks (1,500 feet) east of Martin Luther King Jr Way. Motorists accessing State Route 24 can utilize the on- and off-ramps located at Shattuck Avenue & 51st Street. The bicycle, pedestrian, and transit improvements on this corridor will ensure that there remains continued capacity for MLK to move people via all modes into the future.

Task 2: Key Signalized Intersections

The proposed project includes the following assumptions which were modeled in Synchro using HCM 2000 analysis:

- Repurposing a travel lane in each direction to provide a protected bike lane in each direction. This reduces the number of through lanes for motor vehicle traffic from six lanes to four.
- Retiming signals with Leading Pedestrian Intervals (LPIs), slower walk speeds on all approaches (3 feet per second instead of the typical MUTCD guidance of 3.5 feet per second), and protected left turns as pedestrian safety countermeasures. This has the countereffect of increasing green time substantially for each approach and increasing the total cycle length.
- Implementing LPIs
- Optimizing signal length, offsets, and splits for vehicular traffic flow. This (in addition to the extending Flash Don't Walk Phase) results in increasing the AM peak cycle length from 90 seconds to 120 seconds and from 100 seconds in the PM peak to 130 seconds.

Intersection LOS and Delay

Table 6 below highlights the LOS results at each signalized intersection in the study area. Delays and LOS would remain similar or improve at 52nd Street, 53rd Street, and 55th Street. This is attributed to the increased cycle length associated with increasing the Flash Don't Walk Phase, which increases the vehicular green time at each approach. The intersection at 59th Street would see an increase in delays and LOS. All intersections would operate at LOS D or better with the road diet project. Synchro sheets for the existing and existing plus road diet are included in **Attachment 3 and 4**, respectively.

Table 6: Martin Luther King Jr Way Existing Conditions and Road Diet LOS Results

Intersection Number	Intersection Name	Control	Peak Hour	Existing Conditions		Existing Conditions + Road Diet	
				Delay	LOS	Delay	
1	MLK Jr Way / On-Ramp	Signal	AM PM	6.4 14.8	A B	4.9 8.2	A A
2	MLK Jr Way / 52nd St	Signal	AM PM	48.6 84.9	D **F**	47.5 50.1	D D
3	MLK Jr Way / 53rd St	Signal	AM PM	125 62.3	**F** **E**	13.1 22.9	B C
4	MLK Jr Way / 55th St	Signal	AM PM	57.2 62.4	**E** **E**	45.0 33.6	D C

5	MLK Jr Way / 59th St	Signal	AM PM	10.3 31.4	B C	24.2 41.2	C D

Source: Fehr & Peers, 2022

Vehicle Queues

Table 7 to **Table 11** below presents the anticipated 50th and 95th percentile queue lengths at each signalized intersection in the study area. Bolded values indicate that the queue exceeds storage. Intersection turning movement counts are presented in **Attachment 5**.

Table 7: Martin Luther King Jr Way / SR 24 WB On-Ramp (#1) Queue Lengths

Movement	Storage/Link Distance (ft)	Peak Hour	Existing Conditions	Road Diet
50% Queues				
NBT	230	AM PM	16 21	46 61
SBL	425	AM PM	218 **436**	79 133
SBT	735	AM PM	0 0	0 0
95% Queues				
NBT	230	AM PM	34 40	88 114
SBL	425	AM PM	175 **515**	138 260
SBT	735	AM PM	0 0	0 0

Source: Fehr & Peers, 2022

Table 8: Martin Luther King Jr Way / 52nd Street (#2) Queue Lengths

Movement	Storage/Link Distance (ft)	Peak Hour	Existing Conditions	Road Diet
50% Queues				
EBL	50	AM PM	31 32	43 42
EBT	115	AM PM	80 90	**122** **133**

Table 8: Martin Luther King Jr Way / 52nd Street (#2) Queue Lengths

Movement	Storage/Link Distance (ft)	Peak Hour	Existing Conditions	Road Diet
WBT	170	AM PM	96 106	147 156
WBR	150	AM PM	0 0	0 0
NBL	50	AM PM	**74** **78**	**106** **104**
NBT	650	AM PM	179 312	294 407
SBL	150	AM PM	13 64	51 85
SBT	260	AM PM	49 63	77 120
95% Queues				
EBL	50	AM PM	**64** **67**	**80** **81**
EBT	115	AM PM	**142** **158**	**191** **211**
WBT	170	AM PM	166 **181**	234 **253**
WBR	150	AM PM	50 48	56 55
NBL	50	AM PM	133 134	169 **202**
NBT	650	AM PM	257 408	415 557
SBL	15	AM PM	57 120	104 199
SBT	260	AM PM	209 85	121 157

Source: Fehr & Peers, 2022

Table 9: Martin Luther King Jr Way / 53rd Street (#3) Queue Lengths

Movement	Storage/Link Distance (ft)	Peak Hour	Existing Conditions	Road Diet
50% Queues				

Table 9: Martin Luther King Jr Way / 53rd Street (#3) Queue Lengths

Movement	Storage/Link Distance (ft)	Peak Hour	Existing Conditions	Road Diet
EBT	550	AM PM	4 5	6 7
WBT	550	AM PM	5 8	6 11
NBL	95	AM PM	28 49	39 64
NBT	260	AM PM	4 5	9 35
SBL	95	AM PM	2 6	3 8
SBT	580	AM PM	10 8	13 12
95% Queues				
EBT	550	AM PM	35 39	42 46
WBT	550	AM PM	43 33	28 40
NBL	95	AM PM	91 **102**	80 **95**
NBT	260	AM PM	1 95	48 70
SBL	95	AM PM	21 10	6 13
SBT	580	AM PM	1 9	12 26

Source: Fehr & Peers, 2022

Table 10: Martin Luther King Jr Way / 55th Street (#4) Queue Lengths

Movement	Storage/Link Distance (ft)	Peak Hour	Existing Conditions	Road Diet
50% Queues				
EBT	490	AM PM	98 142	135 188
EBR	50	AM PM	43 **64**	**51** **89**
WBT	620	AM PM	213 194	300 282
NBL	100	AM PM	77 **162**	97 158
NBT	580	AM PM	194 30	174 98
SBL	100	AM PM	29 44	39 58
SBT	1500	AM PM	173 220	315 356
95% Queues				
EBT	490	AM PM	143 206	188 262
EBR	50	AM PM	**96** **132**	**115** **167**
WBT	620	AM PM	290 291	300 396
NBL	100	AM PM	143 **278**	97 **268**
NBT	580	AM PM	290 118	174 162
SBL	100	AM PM	65 87	39 133
SBT	1500	AM PM	259 304	315 497

Source: Fehr & Peers, 2022

Table 11: Martin Luther King Jr Way / 59th Street (#5) Queue Lengths

Movement	Storage/Link Distance (ft)	Peak Hour	Existing Conditions	Road Diet
50% Queues				
EBT	495	AM PM	2 0	3 0
WBT	625	AM PM	4 11	6 14
NBL	100	AM PM	6 10	8 13
NBT	1500	AM PM	0 0	0 91
SBL	100	AM PM	2 5	3 7
SBT	1050	AM PM	0 0	0 74
95% Queues				
EBT	495	AM PM	18 0	21 0
WBT	625	AM PM	25 36	30 44
NBL	100	AM PM	23 31	29 39
NBT	1500	AM PM	108 144	174 251
SBL	100	AM PM	13 20	15 24
SBT	1050	AM PM	99 126	150 203

Source: Fehr & Peers, 2022

Task 3: Major Transit Streets

It is important for buses to provide quick and reliable service. There are three main sources of delay to buses: stopping at traffic signals, pulling into and out of bus stops, and waiting for passengers to enter and exit the bus. Road diets may affect the first two because of their relationship to traffic signals. In addition to a longer wait at a traffic signal, other vehicles waiting at a traffic signal may delay the bus from pulling into or out of a bus stop.

AC Transit identifies Martin Luther King Jr Way as a "Major Transit Street" in its 2016 Major Corridors Study, and recommends Enhanced Bus improvements by 2020, and Rapid Bus (Overlay Local) improvements by 2040. Line 18 operates on the street, and within the project area, it uses 47th to 55th Street in North and Southbound directions. Line 18 has 8,293 daily riders, and 65% on-time performance; 7 points below its target for 72% on-time performance.

A key task of the planning process for this street will be to determine if and how to implement both a protected bike lane, and a dedicated transit lane; both of which are recommended by City and AC Transit-adopted planning documents. Because dedicated transit lanes require signal modifications, the City will implement protected bike lanes with its planned repaving project in 2025, and will partner with AC Transit on future grant opportunities to implement dedicated bus lanes whilekeeping in mind the lessons learned from vehicles speeding in the bus-only lane on International Boulevard.

Task 8: Side Street Access

All side-street stop intersections in the study area were analyzed in Synchro to determine if they exceed 50 seconds of delay, which is the OakDOT Road Diet Methodology threshold for further consideration of signal warrants. If the delay threshold is exceeded, the Methodology indicates that the peak hour warrant analysis should be completed. Only one side-street stop—at 58th Street—location in the study area exceeded the 50 seconds of delay threshold. **Table 12** presents the results of Warrant 3A—Peak Hour Delay analysis. The analysis includes three components:

1. Peak hour delay on minor approach (vehicle-hour)
2. Peak hour volume on minor approach
3. Peak hour entering volume serviced for the intersection

Table 12: Warrant 3A – Peak Hour Delay

	Peak Hour Delay on Minor Approach (Vehicle-Hour)	Peak Hour Volume on Minor Approach	Peak Hour Entering Volume Serviced for the Intersection
Project with Road Diet	0.5475	30	2,627
Limiting Value	4	100	800
Warrant Met?	Not Met	Not Met	**Met**

Source: Fehr & Peers, 2022

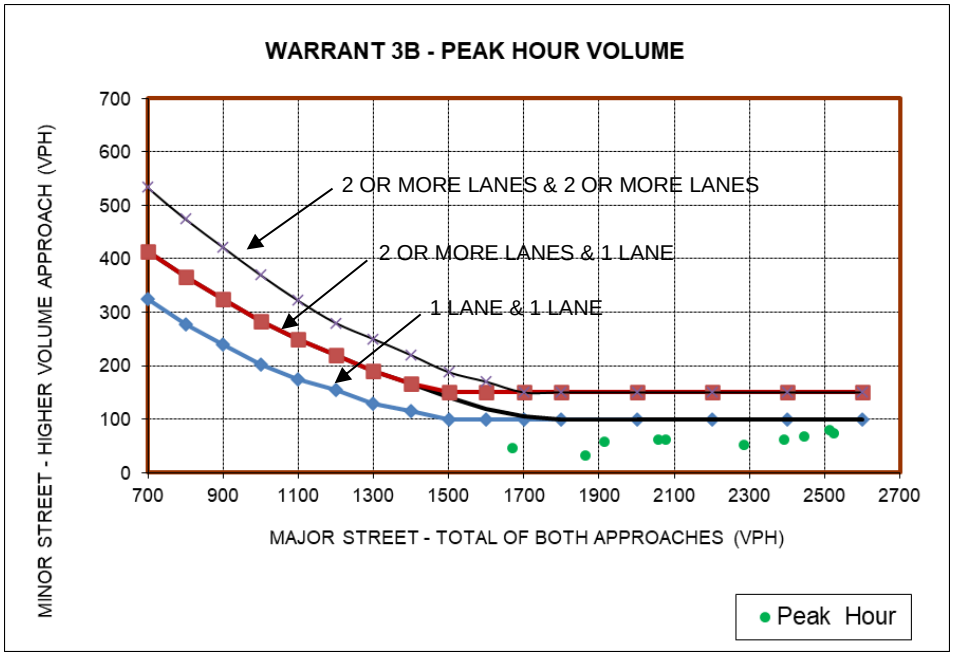
Only the peak hour entering volume serviced for the intersection was met, indicating that *the peak hour warrant overall was not met*.

The results of Warrant 3B—Peak Hour Volume analysis also determine that a warrant is not met. The warrant is satisfied when the combined volume of the major street (Martin Luther King Jr Way) and the minor street (58th Street) is lower than the threshold, defined as the "2 OR MORE LANES & 2 OR MORE LANES" line in the graph presented in **Attachment 6.** Additional details for both Warrant 3A and 3B are also presented in **Attachment 6**.

Attachment 6: Peak Hour Signal Warrant Sheet

WARRANT 3: Peak Hour					
Warrant 3A: Peak Hour Delay					
Intersection	MLK Ave and 58th St				
Minor Street Lanes	1		**Worse Case Delay on Minor St**		
Total Approaches	4		**Peak Hour**	**Delay per vehicle (sec)**	**Total Vehicles on Approach**
Time	4:45-5:45		4:45-5:45	65.7	30
	1	2	3		
	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced for the Intersection (vph)		
Road Diet	0.5475	30	2627		
Limiting Value	4	100	800		
Met/ Not Met	Not Met	Not Met	Met		
	0	0	1		
Warrant	**Not Met**				

Source: Fehr & Peers, 2022



Source: Fehr & Peers, 2022

Attachment 1: Speed Data

Martin Luther King Jr Way Streetscape Project Road Diet Methodology Attachments/Supporting Materials

Prepared by National Data & Surveying Services

SPEED

Martin Luther King Jr Way Bet. Aileen St & 57th St

Attachment 1a: NB Speed Data, 5/17/22

Day: Tuesday
Date: 5/17/2022

City: Oakland
Project #: CA22_080127_001n

North Bound

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
0:00 AM	0	1	2	3	22	26	25	6	2	0	0	0	0	87
1:00	0	0	2	4	9	16	14	5	2	0	0	0	0	52
2:00	0	0	1	3	10	12	13	5	1	0	0	0	0	45
3:00	0	0	0	3	5	6	7	1	1	0	0	0	0	23
4:00	0	0	0	3	9	17	5	7	2	0	0	0	0	43
5:00	0	1	4	7	25	52	38	15	3	0	1	0	0	146
6:00	0	2	4	16	52	93	81	26	6	2	1	0	0	283
7:00	2	0	11	112	355	238	69	16	2	0	0	0	0	805
8:00	2	6	45	187	503	291	87	15	7	1	0	0	0	1144
9:00	0	3	17	130	323	233	72	20	5	2	0	0	0	805
10:00	3	6	27	165	348	186	50	10	2	1	0	0	0	798
11:00	2	5	29	144	330	206	79	18	5	0	0	0	0	818
12:00 PM	1	3	29	176	315	225	67	17	4	0	2	0	0	839
13:00	1	1	35	161	358	206	58	21	3	0	1	0	0	845
14:00	1	19	57	247	350	240	58	19	4	0	0	0	0	995
15:00	6	11	72	272	501	226	66	6	5	2	0	0	0	1167
16:00	2	11	51	308	541	281	71	20	8	0	0	0	0	1293
17:00	3	6	64	314	535	262	65	16	6	0	0	0	0	1271
18:00	0	1	25	200	438	213	44	11	3	0	0	0	0	935
19:00	0	1	16	81	205	192	79	23	4	2	0	0	0	603
20:00	1	2	14	59	208	146	68	12	2	1	0	0	0	513
21:00	0	1	20	35	130	169	71	13	2	2	1	0	0	444
22:00	0	2	9	21	94	120	53	17	3	2	0	0	0	321
23:00	0	0	1	10	47	70	41	8	4	1	0	0	0	182
Totals	24	82	535	2661	5713	3726	1281	327	86	16	6			14457
% of Totals	0%	1%	4%	18%	40%	26%	9%	2%	1%	0%	0%			100%

AM Volumes	9	24	142	777	1991	1376	540	144	38	6	2	0	0	5049
% AM	0%	0%	1%	5%	14%	10%	4%	1%	0%	0%	0%			35%
AM Peak Hour	10:00	8:00	8:00	8:00	8:00	8:00	8:00	6:00	8:00	6:00	5:00			8:00
Volume	3	6	45	187	503	291	87	26	7	2	1			1144
PM Volumes	15	58	393	1884	3722	2350	741	183	48	10	4	0	0	9408
% PM	0%	0%	3%	13%	26%	16%	5%	1%	0%	0%	0%			65%
PM Peak Hour	15:00	14:00	15:00	17:00	16:00	16:00	19:00	19:00	16:00	15:00	12:00			16:00
Volume	6	19	72	314	541	281	79	23	8	2	2			1293

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Speeds	Volume	%	Volume	%	Volume	%	Volume	%
	1949	13%	1684	12%	2564	18%	8260	57%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Martin Luther King Jr Way	North Bound	28	33	34	39	44	14457
Martin Luther King Jr Way	South Bound	26	33	33	40	45	12937

Prepared by National Data & Surveying Services

SPEED

Attachment 1b: SB Speed Data, 5/17/22

Martin Luther King Jr Way Bet. Aileen St & 57th St

Day: Tuesday
Date: 5/17/2022

City: Oakland
Project #: CA22_080127_001s

South Bound

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
0:00 AM	0	2	1	9	19	34	16	8	2	0	0	0	0	91
1:00	0	1	0	3	5	15	12	5	1	0	0	0	0	42
2:00	0	0	1	4	8	5	5	3	1	0	0	0	0	27
3:00	0	1	0	1	7	7	5	3	2	1	1	0	0	28
4:00	0	0	4	0	16	20	13	7	1	0	0	0	0	61
5:00	0	0	5	9	16	27	25	6	3	1	0	0	0	92
6:00	0	3	9	22	60	85	57	21	10	3	0	0	0	270
7:00	0	3	21	71	230	196	88	37	13	5	0	0	0	664
8:00	10	14	54	213	298	195	99	42	23	18	3	0	0	969
9:00	14	6	29	95	260	224	96	34	14	8	3	0	0	783
10:00	6	16	47	151	259	193	70	19	5	1	0	0	0	767
11:00	2	6	55	133	294	176	71	19	10	0	1	0	0	767
12:00 PM	2	7	48	192	286	195	82	31	7	1	0	0	0	851
13:00	1	14	62	179	274	223	79	19	10	1	1	0	0	863
14:00	7	10	70	165	349	246	82	40	13	5	0	0	0	987
15:00	99	93	135	198	215	121	45	7	4	0	1	0	0	918
16:00	20	29	111	275	351	204	78	25	9	2	0	0	0	1104
17:00	85	52	110	195	232	146	26	4	5	0	1	0	0	856
18:00	7	18	63	212	306	170	63	8	3	2	1	0	0	853
19:00	4	4	28	90	233	161	58	13	12	1	0	0	0	604
20:00	1	5	19	89	145	115	49	18	3	1	0	0	0	445
21:00	1	1	16	69	151	106	42	24	3	0	0	0	0	413
22:00	2	1	9	46	107	104	35	9	3	1	1	0	0	318
23:00	0	0	7	14	38	62	32	5	3	3	0	0	0	164
Totals	261	286	904	2435	4159	3030	1228	407	160	54	13			12937
% of Totals	2%	2%	7%	19%	32%	23%	9%	3%	1%	0%	0%			100%

AM Volumes	32	52	226	711	1472	1177	557	204	85	37	8	0	0	4561
% AM	0%	0%	2%	5%	11%	9%	4%	2%	1%	0%	0%			35%
AM Peak Hour	9:00	10:00	11:00	8:00	8:00	9:00	8:00	8:00	8:00	8:00	8:00			8:00
Volume	14	16	55	213	298	224	99	42	23	18	3			969
PM Volumes	229	234	678	1724	2687	1853	671	203	75	17	5	0	0	8376
% PM	2%	2%	5%	13%	21%	14%	5%	2%	1%	0%	0%			65%
PM Peak Hour	15:00	15:00	15:00	16:00	16:00	14:00	12:00	14:00	14:00	14:00	13:00			16:00
Volume	99	93	135	275	351	246	82	40	13	5	1			1104

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Speeds	Volume	%	Volume	%	Volume	%	Volume	%
	1633	13%	1714	13%	1960	15%	7630	59%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Martin Luther King Jr Way	North Bound	28	33	34	39	44	14457
Martin Luther King Jr Way	South Bound	26	33	33	40	45	12937

Prepared by National Data & Surveying Services

SPEED

Attachment 1c: NB Speed Data, 5/18/22

Martin Luther King Jr Way Bet. Aileen St & 57th St

Day: Wednesday
Date: 5/18/2022

City: Oakland
Project #: CA22_080127_001n

North Bound

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
0:00 AM	0	1	0	5	22	37	21	11	2	1	0	0	0	100
1:00	0	0	2	1	18	26	13	5	1	0	0	0	0	66
2:00	0	0	0	3	6	12	11	2	3	0	0	0	0	37
3:00	0	0	0	1	2	13	5	6	1	0	0	0	0	28
4:00	0	0	0	2	7	22	17	6	1	0	0	0	0	55
5:00	0	0	3	3	33	60	42	18	2	0	0	0	0	161
6:00	0	0	4	16	66	91	64	19	6	3	0	0	0	269
7:00	3	4	24	106	292	237	88	19	8	1	0	0	0	782
8:00	1	6	40	213	438	316	98	23	1	1	0	0	0	1137
9:00	0	6	22	123	310	253	105	25	5	2	1	0	0	852
10:00	1	1	22	125	308	241	84	12	6	1	0	0	0	801
11:00	0	3	31	153	290	229	71	14	5	2	0	0	0	798
12:00 PM	3	2	30	154	323	211	63	13	5	1	0	0	0	805
13:00	9	5	36	150	354	257	74	21	6	1	0	0	0	913
14:00	4	6	39	212	436	231	65	12	7	1	0	0	0	1013
15:00	0	6	51	254	509	243	58	15	3	1	0	0	0	1140
16:00	1	9	38	243	570	286	100	22	3	3	0	0	0	1275
17:00	1	11	55	372	535	238	62	12	1	0	0	0	0	1287
18:00	0	4	38	243	509	245	69	7	1	1	0	0	0	1117
19:00	0	6	10	73	250	240	69	23	3	3	0	0	0	677
20:00	0	0	13	65	221	157	43	21	6	1	0	0	0	527
21:00	0	2	6	75	193	125	49	22	1	0	1	0	0	474
22:00	0	2	4	24	106	109	87	17	2	3	0	0	0	354
23:00	0	0	2	14	57	64	40	10	1	1	0	0	0	189
Totals	23	74	470	2630	5855	3943	1398	355	80	27	2			14857
% of Totals	0%	0%	3%	18%	39%	27%	9%	2%	1%	0%	0%			100%

AM Volumes	5	21	148	751	1792	1537	619	160	41	11	1	0	0	5086
% AM	0%	0%	1%	5%	12%	10%	4%	1%	0%	0%	0%			34%
AM Peak Hour	7:00	8:00	8:00	8:00	8:00	8:00	9:00	9:00	7:00	6:00	9:00			8:00
Volume	3	6	40	213	438	316	105	25	8	3	1			1137
PM Volumes	18	53	322	1879	4063	2406	779	195	39	16	1	0	0	9771
% PM	0%	0%	2%	13%	27%	16%	5%	1%	0%	0%	0%			66%
PM Peak Hour	13:00	17:00	17:00	17:00	16:00	16:00	16:00	19:00	14:00	16:00	21:00			17:00
Volume	9	11	55	372	570	286	100	23	7	3	1			1287

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Speeds	Volume	%	Volume	%	Volume	%	Volume	%
	1919	13%	1718	12%	2562	17%	8658	58%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Martin Luther King Jr Way	North Bound	28	34	34	40	44	14857
Martin Luther King Jr Way	South Bound	26	33	33	40	45	13032

Prepared by National Data & Surveying Services

SPEED

Attachment 1d: SB Speed Data, 5/18/22

Martin Luther King Jr Way Bet. Aileen St & 57th St

Day: Wednesday
Date: 5/18/2022

City: Oakland
Project #: CA22_080127_001s

South Bound

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
0:00 AM	0	0	2	8	18	29	14	6	2	1	0	0	0	80
1:00	0	1	1	3	10	18	11	5	0	0	0	0	0	49
2:00	0	0	1	3	9	7	2	3	0	0	0	0	0	25
3:00	0	0	0	2	5	7	5	3	2	0	0	0	0	24
4:00	0	0	0	7	13	23	10	5	2	0	0	0	0	60
5:00	0	0	3	14	29	27	36	9	1	2	0	0	0	121
6:00	0	3	6	18	58	95	61	20	9	1	0	0	0	271
7:00	3	4	30	75	224	171	87	28	8	3	1	0	0	634
8:00	5	12	75	221	297	206	86	42	9	1	0	0	0	954
9:00	2	8	39	149	275	188	111	19	8	4	0	0	0	803
10:00	2	5	39	143	271	162	76	19	3	1	0	0	0	721
11:00	1	14	51	173	246	199	78	21	4	0	1	0	0	788
12:00 PM	12	18	65	172	272	185	91	26	4	1	1	0	0	847
13:00	3	18	69	196	336	191	73	28	13	1	0	0	0	928
14:00	25	28	87	197	314	223	69	21	8	1	0	0	0	973
15:00	84	48	110	190	208	107	41	19	9	2	0	0	0	818
16:00	37	35	97	233	281	209	71	21	6	2	0	0	0	992
17:00	58	57	138	245	315	155	70	17	4	3	0	0	0	1062
18:00	3	16	68	218	277	196	77	27	9	3	1	0	0	895
19:00	0	2	26	103	199	145	64	19	4	2	1	0	0	565
20:00	3	3	18	78	196	137	52	17	2	1	0	0	0	507
21:00	0	5	9	81	168	119	63	17	3	0	0	0	0	465
22:00	2	2	3	46	91	77	37	11	4	4	0	0	0	277
23:00	2	0	4	23	46	54	26	17	0	1	0	0	0	173
Totals	242	279	941	2598	4158	2930	1311	420	114	34	5			13032
% of Totals	2%	2%	7%	20%	32%	22%	10%	3%	1%	0%	0%			100%

AM Volumes	13	47	247	816	1455	1132	577	180	48	13	2	0	0	4530
% AM	0%	0%	2%	6%	11%	9%	4%	1%	0%	0%	0%			35%
AM Peak Hour	8:00	11:00	8:00	8:00	8:00	8:00	9:00	8:00	6:00	9:00	7:00			8:00
Volume	5	14	75	221	297	206	111	42	9	4	1			954
PM Volumes	229	232	694	1782	2703	1798	734	240	66	21	3	0	0	8502
% PM	2%	2%	5%	14%	21%	14%	6%	2%	1%	0%	0%			65%
PM Peak Hour	15:00	17:00	17:00	17:00	13:00	14:00	12:00	13:00	13:00	22:00	12:00			17:00
Volume	84	57	138	245	336	223	91	28	13	4	1			1062

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Speeds	Volume	%	Volume	%	Volume	%	Volume	%
	1588	12%	1775	14%	2054	16%	7615	58%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Martin Luther King Jr Way	North Bound	28	34	34	40	44	14857
Martin Luther King Jr Way	South Bound	26	33	33	40	45	13032

Attachment 2: Average Daily Traffic Data

Prepared by National Data & Surveying Services

CLASSIFICATION

Martin Luther King Jr Way Bet. Aileen St & 57th St

Attachment 2a: Summary Traffic Volume Data, 5/17/22

Day: Tuesday
Date: 5/17/2022

City: Oakland
Project #: CA22_080127_001

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
0:00 AM	0	171	6	0	1	0	0	0	0	0	0	0	0	178
1:00	0	85	7	0	2	0	0	0	0	0	0	0	0	94
2:00	0	71	1	0	0	0	0	0	0	0	0	0	0	72
3:00	0	49	1	0	1	0	0	0	0	0	0	0	0	51
4:00	0	90	11	0	2	0	0	1	0	0	0	0	0	104
5:00	0	214	21	0	3	0	0	0	0	0	0	0	0	238
6:00	0	452	73	17	10	0	0	1	0	0	0	0	0	553
7:00	3	1258	149	14	33	6	2	0	4	0	0	0	0	1469
8:00	7	1781	227	15	58	15	3	3	4	0	0	0	0	2113
9:00	6	1340	181	9	44	5	3	0	0	0	0	0	0	1588
10:00	2	1358	153	11	27	8	2	2	2	0	0	0	0	1565
11:00	1	1362	164	11	35	8	3	1	0	0	0	0	0	1585
12:00 PM	2	1502	148	5	21	5	2	2	3	0	0	0	0	1690
13:00	0	1508	157	7	19	9	3	4	1	0	0	0	0	1708
14:00	8	1722	192	6	35	10	3	2	3	1	0	0	0	1982
15:00	6	1842	182	4	33	8	4	3	3	0	0	0	0	2085
16:00	9	2152	195	6	17	10	3	4	1	0	0	0	0	2397
17:00	8	1962	101	15	20	9	8	2	2	0	0	0	0	2127
18:00	2	1650	93	12	15	10	5	0	1	0	0	0	0	1788
19:00	2	1115	66	10	7	6	0	0	1	0	0	0	0	1207
20:00	0	897	46	7	3	3	0	1	0	1	0	0	0	958
21:00	0	807	40	3	4	2	1	0	0	0	0	0	0	857
22:00	1	601	26	5	5	0	1	0	0	0	0	0	0	639
23:00	0	336	6	3	1	0	0	0	0	0	0	0	0	346
Totals	57	24325	2246	160	396	114	43	26	25	2				27394
% of Totals	0%	89%	8%	1%	1%	0%	0%	0%	0%	0%				100%

AM Volumes	19	8231	994	77	216	42	13	8	10	0	0	0	0	9610
% AM	0%	30%	4%	0%	1%	0%	0%	0%	0%					35%
AM Peak Hour	8:00	8:00	8:00	6:00	8:00	8:00	8:00	8:00	7:00					8:00
Volume	7	1781	227	17	58	15	3	3	4					2113
PM Volumes	38	16094	1252	83	180	72	30	18	15	2	0	0	0	17784
% PM	0%	59%	5%	0%	1%	0%	0%	0%	0%	0%				65%
PM Peak Hour	16:00	16:00	16:00	17:00	14:00	14:00	17:00	13:00	12:00	14:00				16:00
Volume	9	2152	195	15	35	10	8	4	3	1				2397

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	3582		13%	3398		12%	4524		17%	15890		58%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Martin Luther King Jr Way Bet. Aileen St & 57th St

Attachment 2b: Summary Traffic Volume Data, 5/18/22

Day: Wednesday
Date: 5/18/2022

City: Oakland
Project #: CA22_080127_001

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
0:00 AM	0	176	3	0	1	0	0	0	0	0	0	0	0	180
1:00	0	110	5	0	0	0	0	0	0	0	0	0	0	115
2:00	0	58	2	0	1	0	0	1	0	0	0	0	0	62
3:00	0	50	2	0	0	0	0	0	0	0	0	0	0	52
4:00	0	102	12	0	1	0	0	0	0	0	0	0	0	115
5:00	0	246	29	1	5	0	0	1	0	0	0	0	0	282
6:00	2	455	59	10	9	2	1	2	0	0	0	0	0	540
7:00	1	1179	160	26	33	10	2	1	1	3	0	0	0	1416
8:00	8	1849	166	16	36	8	2	2	3	1	0	0	0	2091
9:00	2	1399	200	14	29	7	3	0	1	0	0	0	0	1655
10:00	2	1314	152	11	30	6	2	3	1	1	0	0	0	1522
11:00	2	1396	145	5	32	4	0	0	0	2	0	0	0	1586
12:00 PM	3	1442	156	7	28	8	3	1	1	3	0	0	0	1652
13:00	8	1604	173	9	30	7	3	2	3	2	0	0	0	1841
14:00	1	1749	187	5	34	6	3	1	0	0	0	0	0	1986
15:00	8	1713	178	6	34	9	2	2	5	1	0	0	0	1958
16:00	8	2016	177	4	35	14	3	4	3	3	0	0	0	2267
17:00	5	2145	141	6	34	9	3	1	3	2	0	0	0	2349
18:00	5	1842	112	14	24	13	2	0	0	0	0	0	0	2012
19:00	3	1157	65	4	9	3	0	0	1	0	0	0	0	1242
20:00	0	976	41	5	10	2	0	0	0	0	0	0	0	1034
21:00	1	880	47	4	2	2	1	2	0	0	0	0	0	939
22:00	1	594	30	4	2	0	0	0	0	0	0	0	0	631
23:00	0	334	22	4	1	0	0	1	0	0	0	0	0	362
Totals	60	24786	2264	155	420	110	30	24	22	18				27889
% of Totals	0%	89%	8%	1%	2%	0%	0%	0%	0%	0%				100%

AM Volumes	17	8334	935	83	177	37	10	10	6	7	0	0	0	9616
% AM	0%	30%	3%	0%	1%	0%	0%	0%	0%	0%				34%
AM Peak Hour	8:00	8:00	9:00	7:00	8:00	7:00	9:00	10:00	8:00	7:00				8:00
Volume	8	1849	200	26	36	10	3	3	3	3				2091
PM Volumes	43	16452	1329	72	243	73	20	14	16	11	0	0	0	18273
% PM	0%	59%	5%	0%	1%	0%	0%	0%	0%	0%				66%
PM Peak Hour	13:00	17:00	14:00	18:00	16:00	16:00	12:00	16:00	15:00	12:00				17:00
Volume	8	2145	187	14	35	14	3	4	5	3				2349

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	3507		13%	3493		13%	4616		17%	16273		58%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Attachment 3: Existing Conditions AM and PM Peak Hour Synchro Sheets

MLK Jr Way Road Diet Analysis
1: MLK Jr Way

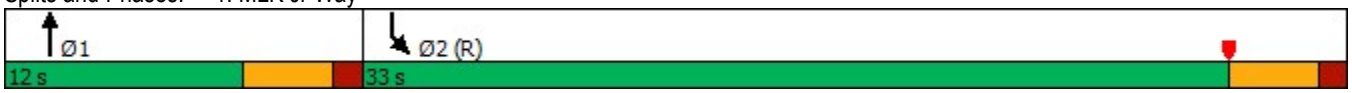
Baseline-AM

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	139	0	1214	232	0	0
Future Volume (vph)	139	0	1214	232	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Frt						
Flt Protected			0.950			
Satd. Flow (prot)	3505	0	3400	3505	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	3505	0	3400	3505	0	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	121			326	616	
Travel Time (s)	2.8			7.4	14.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	139	0	1214	232	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	139	0	1214	232	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			40	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2		
Detector Template	Thru		Left	Thru		
Leading Detector (ft)	100		20	100		
Trailing Detector (ft)	0		0	0		
Detector 1 Position(ft)	0		0	0		
Detector 1 Size(ft)	6		20	6		
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex		
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0		
Detector 1 Queue (s)	0.0		0.0	0.0		
Detector 1 Delay (s)	0.0		0.0	0.0		
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Prot	NA		
Protected Phases	1		2	Free		
Permitted Phases						
Detector Phase	1		2			
Switch Phase						
Minimum Initial (s)	4.0		4.0			

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Minimum Split (s)	8.0		8.0			
Total Split (s)	12.0		33.0			
Total Split (%)	26.7%		73.3%			
Maximum Green (s)	8.0		29.0			
Yellow Time (s)	3.0		3.0			
All-Red Time (s)	1.0		1.0			
Lost Time Adjust (s)	0.0		0.0			
Total Lost Time (s)	4.0		4.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0			
Recall Mode	None		C-Max			
Act Effct Green (s)	7.0		32.7	45.0		
Actuated g/C Ratio	0.16		0.73	1.00		
v/c Ratio	0.26		0.49	0.07		
Control Delay	17.6		6.8	0.0		
Queue Delay	0.0		0.0	0.0		
Total Delay	17.6		6.8	0.0		
LOS	B		A	A		
Approach Delay	17.6			5.7		
Approach LOS	B			A		

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 45			
Offset: 18 (40%), Referenced to phase 2:SBL and 6:, Start of Yellow			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 6.7		Intersection LOS: A	
Intersection Capacity Utilization 90.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: MLK Jr Way



Lane Group	NBT	SBL	SBT
Lane Group Flow (vph)	139	1214	232
v/c Ratio	0.26	0.49	0.07
Control Delay	17.6	6.8	0.0
Queue Delay	0.0	0.0	0.0
Total Delay	17.6	6.8	0.0
Queue Length 50th (ft)	16	218	0
Queue Length 95th (ft)	34	175	0
Internal Link Dist (ft)	41		246
Turn Bay Length (ft)			
Base Capacity (vph)	623	2472	3505
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.22	0.49	0.07

Intersection Summary

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	139	0	1214	232	0	0
Future Volume (vph)	139	0	1214	232	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		
Lane Util. Factor	0.95		0.97	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3505		3400	3505		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3505		3400	3505		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	139	0	1214	232	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	139	0	1214	232	0	0
Turn Type	NA		Prot	NA		
Protected Phases	1		2	Free		
Permitted Phases						
Actuated Green, G (s)	5.9		31.1	45.0		
Effective Green, g (s)	5.9		31.1	45.0		
Actuated g/C Ratio	0.13		0.69	1.00		
Clearance Time (s)	4.0		4.0			
Vehicle Extension (s)	3.0		3.0			
Lane Grp Cap (vph)	459		2349	3505		
v/s Ratio Prot	c0.04		c0.36	0.07		
v/s Ratio Perm						
v/c Ratio	0.30		0.52	0.07		
Uniform Delay, d1	17.7		3.3	0.0		
Progression Factor	1.00		1.68	1.00		
Incremental Delay, d2	0.4		0.7	0.0		
Delay (s)	18.1		6.3	0.0		
Level of Service	B		A	A		
Approach Delay (s)	18.1			5.3	0.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	59	101	102	74	77	153	62	73	1240	41	11	54
Future Volume (vph)	59	101	102	74	77	153	62	73	1240	41	11	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	115		0	90		0		200		0		200
Storage Lanes	1		0	1		1		1		0		1
Taper Length (ft)	25			25				25				25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	0.91	0.91	1.00
Frt		0.925				0.850			0.995			
Flt Protected	0.950				0.976			0.950				0.950
Satd. Flow (prot)	1752	1706	0	0	1800	1568	0	1752	5011	0	0	1752
Flt Permitted	0.661				0.612			0.950				0.950
Satd. Flow (perm)	1219	1706	0	0	1129	1568	0	1752	5011	0	0	1752
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		59				153			5			
Link Speed (mph)		30			30				30			
Link Distance (ft)		392			418				516			
Travel Time (s)		8.9			9.5				11.7			
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
Adj. Flow (vph)	59	101	102	74	77	153	62	73	1240	41	11	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	203	0	0	151	153	0	135	1281	0	0	65
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA	Left
Median Width(ft)		12			0				35			
Link Offset(ft)		0			0				0			
Crosswalk Width(ft)		16			16				16			
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	9	15
Number of Detectors	1	2		1	2	1	1	1	2		1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Left	Thru		Left	Left
Leading Detector (ft)	20	100		20	100	20	20	20	100		20	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0		0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0		0	0
Detector 1 Size(ft)	20	6		20	6	20	20	20	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94			94				94			
Detector 2 Size(ft)		6			6				6			
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			
Turn Type	Perm	NA		Perm	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases		4			8		5	5	2		1	1
Permitted Phases	4			8		8						

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1176	0
Future Volume (vph)	1176	0
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	0.91	0.91
Frt		
Flt Protected		
Satd. Flow (prot)	5036	0
Flt Permitted		
Satd. Flow (perm)	5036	0
Right Turn on Red		Yes
Satd. Flow (RTOR)		
Link Speed (mph)	30	
Link Distance (ft)	348	
Travel Time (s)	7.9	
Peak Hour Factor	1.00	1.00
Adj. Flow (vph)	1176	0
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1176	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	35	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.00	1.00
Turning Speed (mph)		9
Number of Detectors	2	
Detector Template	Thru	
Leading Detector (ft)	100	
Trailing Detector (ft)	0	
Detector 1 Position(ft)	0	
Detector 1 Size(ft)	6	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Detector 2 Position(ft)	94	
Detector 2 Size(ft)	6	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	
Protected Phases	6	
Permitted Phases		

MLK Jr Way Road Diet Analysis
2: MLK Jr Way & 52nd Street

Baseline-AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Detector Phase	4	4		8	8	8	5	5	2		1	1
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	36.0	36.0		36.0	36.0	36.0	9.0	9.0	25.5		9.0	9.0
Total Split (s)	36.0	36.0		36.0	36.0	36.0	12.0	12.0	33.0		21.0	21.0
Total Split (%)	40.0%	40.0%		40.0%	40.0%	40.0%	13.3%	13.3%	36.7%		23.3%	23.3%
Maximum Green (s)	31.0	31.0		31.0	31.0	31.0	8.0	8.0	28.5		17.0	17.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.5		3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	3.0	3.0			3.0	3.0		3.0	3.0			3.0
Total Lost Time (s)	8.0	8.0			8.0	8.0		7.0	7.5			7.0
Lead/Lag							Lead	Lead	Lead		Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Minimum Gap (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Time Before Reduce (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0
Time To Reduce (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0
Recall Mode	None	None		None	None	None	None	None	C-Max		None	None
Walk Time (s)	5.0	5.0		5.0	5.0	5.0			7.0			
Flash Dont Walk (s)	26.0	26.0		26.0	26.0	26.0			14.0			
Pedestrian Calls (#/hr)	0	0		0	0	0			0			
Act Effct Green (s)	11.3	11.3			11.3	11.3		13.0	46.4			11.6
Actuated g/C Ratio	0.13	0.13			0.13	0.13		0.14	0.52			0.13
v/c Ratio	0.39	0.77			1.07	0.46		0.53	0.50			0.29
Control Delay	41.4	44.6			133.3	10.4		44.4	16.8			30.7
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			0.0
Total Delay	41.4	44.6			133.3	10.4		44.4	16.8			30.7
LOS	D	D			F	B		D	B			C
Approach Delay		43.9			71.5				19.4			
Approach LOS		D			E				B			

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 32 (36%), Referenced to phase 2:NBT and 6:SBT, Start of FDW or yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 24.8 Intersection LOS: C
Intersection Capacity Utilization 75.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 2: MLK Jr Way & 52nd Street

Lane Group	SBT	SBR
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	22.5	
Total Split (s)	42.0	
Total Split (%)	46.7%	
Maximum Green (s)	37.5	
Yellow Time (s)	3.5	
All-Red Time (s)	1.0	
Lost Time Adjust (s)	3.0	
Total Lost Time (s)	7.5	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Vehicle Extension (s)	2.0	
Minimum Gap (s)	2.0	
Time Before Reduce (s)	1.0	
Time To Reduce (s)	1.0	
Recall Mode	C-Max	
Walk Time (s)	7.0	
Flash Dont Walk (s)	11.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)	43.2	
Actuated g/C Ratio	0.48	
v/c Ratio	0.49	
Control Delay	14.3	
Queue Delay	0.2	
Total Delay	14.5	
LOS	B	
Approach Delay	15.3	
Approach LOS	B	

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	59	203	151	153	135	1281	65	1176
v/c Ratio	0.39	0.77	1.07	0.46	0.53	0.50	0.29	0.49
Control Delay	41.4	44.6	133.3	10.4	44.4	16.8	30.7	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	41.4	44.6	133.3	10.4	44.4	16.8	30.7	14.5
Queue Length 50th (ft)	31	80	~96	0	74	179	13	49
Queue Length 95th (ft)	64	142	#166	50	133	257	57	209
Internal Link Dist (ft)		312	338			436		268
Turn Bay Length (ft)	115				200		200	
Base Capacity (vph)	379	571	351	593	253	2586	272	2416
Starvation Cap Reductn	0	0	0	0	0	0	0	384
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.36	0.43	0.26	0.53	0.50	0.24	0.58

Intersection Summary

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

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

MLK Jr Way Road Diet Analysis
2: MLK Jr Way & 52nd Street

Baseline-AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	59	101	102	74	77	153	62	73	1240	41	11	54
Future Volume (veh/h)	59	101	102	74	77	153	62	73	1240	41	11	54
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0		0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00		1.00		1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Work Zone On Approach		No			No				No			
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856		1856	1856	1856		1856
Adj Flow Rate, veh/h	59	101	102	74	77	153		73	1240	41		54
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Percent Heavy Veh, %	3	3	3	3	3	3		3	3	3		3
Cap, veh/h	146	186	188	150	132	345		23	1427	47		427
Arrive On Green	0.22	0.22	0.25	0.25	0.22	0.22		0.01	0.28	0.32		0.48
Sat Flow, veh/h	1141	847	855	413	599	1572		1767	5036	166		1767
Grp Volume(v), veh/h	59	0	203	151	0	153		73	831	450		54
Grp Sat Flow(s),veh/h/ln	1141	0	1702	1011	0	1572		1767	1689	1826		1767
Q Serve(g_s), s	4.6	0.0	9.4	6.0	0.0	7.6		1.2	21.1	21.1		1.5
Cycle Q Clear(g_c), s	19.2	0.0	9.4	15.5	0.0	7.6		1.2	21.1	21.1		1.5
Prop In Lane	1.00		0.50	0.49		1.00		1.00		0.09		1.00
Lane Grp Cap(c), veh/h	146	0	374	315	0	345		23	957	517		427
V/C Ratio(X)	0.41	0.00	0.54	0.48	0.00	0.44		3.11	0.87	0.87		0.13
Avail Cap(c_a), veh/h	250	0	529	447	0	489		98	957	517		427
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		0.96
Uniform Delay (d), s/veh	42.2	0.0	30.4	33.9	0.0	30.4		44.4	30.7	30.5		18.0
Incr Delay (d2), s/veh	0.7	0.0	0.5	0.4	0.0	0.3		1007.7	10.6	17.8		0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	3.8	2.9	0.0	2.8		7.1	9.7	11.5		0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.8	0.0	30.9	34.3	0.0	30.7		1052.1	41.2	48.3		18.1
LnGrp LOS	D	A	C	C	A	C		F	D	D		B
Approach Vol, veh/h		262			304				1354			
Approach Delay, s/veh		33.6			32.5				98.1			
Approach LOS		C			C				F			

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	29.2	33.0		27.8	8.2	54.0		27.8				
Change Period (Y+Rc), s	4.5	* 4.5		5.0	4.0	4.5		5.0				
Max Green Setting (Gmax), s	17.0	* 29		31.0	8.0	37.5		31.0				
Max Q Clear Time (g_c+I1), s	4.5	24.1		22.2	4.2	3.0		17.5				
Green Ext Time (p_c), s	0.0	2.5		0.6	0.0	6.9		0.7				

Intersection Summary		
HCM 6th Ctrl Delay		48.6
HCM 6th LOS		D

Notes

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	1176	0
Future Volume (veh/h)	1176	0
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1856	1856
Adj Flow Rate, veh/h	1176	0
Peak Hour Factor	1.00	1.00
Percent Heavy Veh, %	3	3
Cap, veh/h	2620	0
Arrive On Green	1.00	0.00
Sat Flow, veh/h	5233	0
Grp Volume(v), veh/h	1176	0
Grp Sat Flow(s),veh/h/ln	1689	0
Q Serve(g_s), s	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	2620	0
V/C Ratio(X)	0.45	0.00
Avail Cap(c_a), veh/h	2620	0
HCM Platoon Ratio	2.00	2.00
Upstream Filter(I)	0.96	0.00
Uniform Delay (d), s/veh	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	0.5	0.0
LnGrp LOS	A	A
Approach Vol, veh/h	1230	
Approach Delay, s/veh	1.3	
Approach LOS	A	
Timer - Assigned Phs		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	4	3	31	7	1	5	8	39	1301	22	4	1196
Future Volume (vph)	4	3	31	7	1	5	8	39	1301	22	4	1196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0		95		0	95	
Storage Lanes	0		0	0		0		1		0	1	
Taper Length (ft)	25			25				25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	0.91	1.00	0.91
Frt		0.890			0.948				0.998			0.999
Flt Protected		0.995			0.974			0.950			0.950	
Satd. Flow (prot)	0	1634	0	0	1703	0	0	1752	5026	0	1752	5031
Flt Permitted								0.950			0.950	
Satd. Flow (perm)	0	1642	0	0	1749	0	0	1752	5026	0	1752	5031
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		31			5				3			1
Link Speed (mph)		30			30				30			30
Link Distance (ft)		477			347				348			340
Travel Time (s)		10.8			7.9				7.9			7.7
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
Adj. Flow (vph)	4	3	31	7	1	5	8	39	1301	22	4	1196
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	38	0	0	13	0	0	47	1323	0	4	1203
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left
Median Width(ft)		0			0				35			35
Link Offset(ft)		0			0				0			0
Crosswalk Width(ft)		16			16				16			16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15	
Number of Detectors	1	2		1	2		1	1	2		1	2
Detector Template	Left	Thru		Left	Thru		Left	Left	Thru		Left	Thru
Leading Detector (ft)	20	100		20	100		20	20	100		20	100
Trailing Detector (ft)	0	0		0	0		0	0	0		0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0		0	0
Detector 1 Size(ft)	20	6		20	6		20	20	6		20	6
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94			94				94			94
Detector 2 Size(ft)		6			6				6			6
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			0.0
Turn Type	Perm	NA		Perm	NA		Prot	Prot	NA		Prot	NA
Protected Phases		4			8		5	5	2		1	6
Permitted Phases	4			8								

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	7
Future Volume (vph)	7
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	0.91
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	1.00
Adj. Flow (vph)	7
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	
Permitted Phases	

MLK Jr Way Road Diet Analysis
3: MLK Jr Way & 53rd St

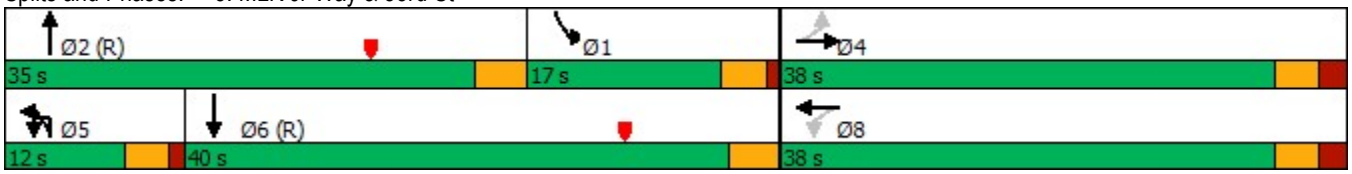
Baseline-AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Detector Phase	4	4		8	8		5	5	2		1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	38.0	38.0		38.0	38.0		9.0	9.0	15.5		9.0	15.5
Total Split (s)	38.0	38.0		38.0	38.0		12.0	12.0	35.0		17.0	40.0
Total Split (%)	42.2%	42.2%		42.2%	42.2%		13.3%	13.3%	38.9%		18.9%	44.4%
Maximum Green (s)	33.0	33.0		33.0	33.0		8.0	8.0	31.5		13.0	36.5
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.5		3.0	3.5
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	1.0	0.0		1.0	0.0
Lost Time Adjust (s)		3.0			3.0			3.0	3.0		3.0	3.0
Total Lost Time (s)		8.0			8.0			7.0	6.5		7.0	6.5
Lead/Lag							Lead	Lead	Lead		Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0		2.0	2.0
Minimum Gap (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0		2.0	2.0
Time Before Reduce (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0		1.0	1.0
Time To Reduce (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0		1.0	1.0
Recall Mode	None	None		None	None		None	None	C-Max		None	C-Max
Walk Time (s)	5.0	5.0		5.0	5.0				5.0			5.0
Flash Dont Walk (s)	28.0	28.0		28.0	28.0				7.0			7.0
Pedestrian Calls (#/hr)	0	0		0	0				0			0
Act Effct Green (s)		2.7			2.6			3.7	76.0		3.6	72.4
Actuated g/C Ratio		0.03			0.03			0.04	0.84		0.04	0.80
v/c Ratio		0.48			0.23			0.65	0.31		0.06	0.30
Control Delay		38.6			43.4			91.1	0.6		21.0	0.9
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		38.6			43.4			91.1	0.6		21.0	0.9
LOS		D			D			F	A		C	A
Approach Delay		38.6			43.4				3.7			0.9
Approach LOS		D			D				A			A

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 47 (52%), Referenced to phase 2:NBT and 6:SBT, Start of FDW or yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 3.2 Intersection LOS: A
Intersection Capacity Utilization 51.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: MLK Jr Way & 53rd St



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	38	13	47	1323	4	1203
v/c Ratio	0.48	0.23	0.65	0.31	0.06	0.30
Control Delay	38.6	43.4	91.1	0.6	21.0	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	43.4	91.1	0.6	21.0	0.9
Queue Length 50th (ft)	4	5	28	4	2	10
Queue Length 95th (ft)	35	23	m59	22	m2	19
Internal Link Dist (ft)	397	267		268		260
Turn Bay Length (ft)			95		95	
Base Capacity (vph)	568	586	97	4243	194	4047
Starvation Cap Reductn	0	0	0	817	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.02	0.48	0.39	0.02	0.30

Intersection Summary

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

MLK Jr Way Road Diet Analysis
3: MLK Jr Way & 53rd St

Baseline-AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	4	3	31	7	1	5	8	39	1301	22	4	1196
Future Volume (veh/h)	4	3	31	7	1	5	8	39	1301	22	4	1196
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00		1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No				No			No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856		1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	4	3	31	7	1	5		39	1301	22	4	1196
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
Percent Heavy Veh, %	3	3	3	3	3	3		3	3	3	3	3
Cap, veh/h	44	0	1	62	0	1		2	1625	27	784	3916
Arrive On Green	0.03	0.00	0.03	0.03	0.00	0.03		0.00	0.63	0.70	0.44	0.75
Sat Flow, veh/h	143	156	1324	817	221	649		1767	5130	87	1767	5197
Grp Volume(v), veh/h	38	0	0	13	0	0		39	856	467	4	777
Grp Sat Flow(s),veh/h/ln	1623	0	0	1688	0	0		1767	1689	1840	1767	1689
Q Serve(g_s), s	1.1	0.0	0.0	0.0	0.0	0.0		0.1	17.0	16.9	0.1	6.6
Cycle Q Clear(g_c), s	2.1	0.0	0.0	0.6	0.0	0.0		0.1	17.0	16.9	0.1	6.6
Prop In Lane	0.11		0.82	0.54		0.38		1.00		0.05	1.00	
Lane Grp Cap(c), veh/h	100	0	0	119	0	0		2	1069	583	784	2545
V/C Ratio(X)	0.38	0.00	0.00	0.11	0.00	0.00		17.42	0.80	0.80	0.01	0.31
Avail Cap(c_a), veh/h	622	0	0	608	0	0		98	1069	583	784	2545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		2.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00		0.87	0.87	0.87	1.00	1.00
Uniform Delay (d), s/veh	44.5	0.0	0.0	43.8	0.0	0.0		44.9	14.4	14.3	14.0	3.6
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.1	0.0	0.0		7446.4	5.5	9.7	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	0.3	0.0	0.0		4.7	4.6	5.6	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	0.0	0.0	44.0	0.0	0.0		7491.3	19.9	24.0	14.0	3.9
LnGrp LOS	D	A	A	D	A	A		F	B	C	B	A
Approach Vol, veh/h		38			13				1362			1207
Approach Delay, s/veh		45.4			44.0				235.3			4.0
Approach LOS		D			D				F			A

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	46.9	35.0		8.1	7.1	74.8		8.1				
Change Period (Y+Rc), s	4.0	3.5		5.0	4.0	* 4		5.0				
Max Green Setting (Gmax), s	13.0	31.5		33.0	8.0	* 37		33.0				
Max Q Clear Time (g_c+I1), s	3.1	20.0		4.1	3.1	9.6		3.0				
Green Ext Time (p_c), s	0.0	4.9		0.1	0.0	6.1		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		125.0
HCM 6th LOS		F

Notes

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	7
Future Volume (veh/h)	7
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1856
Adj Flow Rate, veh/h	7
Peak Hour Factor	1.00
Percent Heavy Veh, %	3
Cap, veh/h	23
Arrive On Green	0.79
Sat Flow, veh/h	30
Grp Volume(v), veh/h	426
Grp Sat Flow(s),veh/h/ln	1850
Q Serve(g_s), s	6.6
Cycle Q Clear(g_c), s	6.6
Prop In Lane	0.02
Lane Grp Cap(c), veh/h	1394
V/C Ratio(X)	0.31
Avail Cap(c_a), veh/h	1394
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	3.5
Incr Delay (d2), s/veh	0.6
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	2.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	4.1
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	9	195	240	47	265	86	9	125	1079	55	50	983
Future Volume (vph)	9	195	240	47	265	86	9	125	1079	55	50	983
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		25	0		0		160		0	160	
Storage Lanes	0		1	0		0		1		0	1	
Taper Length (ft)	25			25				25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	0.91	1.00	0.91
Frt			0.850		0.971				0.993			0.998
Flt Protected		0.998			0.994			0.950			0.950	
Satd. Flow (prot)	0	1841	1568	0	1780	0	0	1752	5001	0	1752	5026
Flt Permitted		0.979			0.929			0.950			0.950	
Satd. Flow (perm)	0	1806	1568	0	1664	0	0	1752	5001	0	1752	5026
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			145		17				9			2
Link Speed (mph)		30			30				30			30
Link Distance (ft)		401			398				320			427
Travel Time (s)		9.1			9.0				7.3			9.7
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
Adj. Flow (vph)	9	195	240	47	265	86	9	125	1079	55	50	983
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	204	240	0	398	0	0	134	1134	0	50	999
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left
Median Width(ft)		0			0				35			35
Link Offset(ft)		0			0				0			0
Crosswalk Width(ft)		16			16				16			16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15	
Number of Detectors	1	2	1	1	2		1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Thru		Left	Left	Thru		Left	Thru
Leading Detector (ft)	20	100	20	20	100		20	20	100		20	100
Trailing Detector (ft)	0	0	0	0	0		0	0	0		0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0		0	0
Detector 1 Size(ft)	20	6	20	20	6		20	20	6		20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94			94				94			94
Detector 2 Size(ft)		6			6				6			6
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			0.0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	Prot	NA		Prot	NA
Protected Phases		4			8		5	5	2		1	6
Permitted Phases	4		4	8								

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	16
Future Volume (vph)	16
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	0.91
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	1.00
Adj. Flow (vph)	16
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Detector Phase	4	4	4	8	8		5	5	2		1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	40.0	40.0	40.0	40.0	40.0		9.5	9.5	27.0		9.5	27.0
Total Split (s)	39.5	39.5	39.5	39.5	39.5		22.5	22.5	38.0		12.5	28.0
Total Split (%)	43.9%	43.9%	43.9%	43.9%	43.9%		25.0%	25.0%	42.2%		13.9%	31.1%
Maximum Green (s)	34.5	34.5	34.5	34.5	34.5		18.0	18.0	33.0		8.0	23.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.0	3.0	3.5		3.0	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5
Lost Time Adjust (s)		3.0	3.0		3.0			3.0	3.0		3.0	3.0
Total Lost Time (s)		8.0	8.0		8.0			7.5	8.0		7.5	8.0
Lead/Lag							Lag	Lag	Lag		Lead	Lead
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0
Time Before Reduce (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0
Time To Reduce (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0
Recall Mode	None	None	None	None	None		None	None	C-Max		None	C-Max
Walk Time (s)	5.0	5.0	5.0	5.0	5.0				7.0			7.0
Flash Dont Walk (s)	30.0	30.0	30.0	30.0	30.0				15.0			15.0
Pedestrian Calls (#/hr)	0	0	0	0	0				0			0
Act Effct Green (s)		22.3	22.3		22.3			15.0	42.1		4.0	29.2
Actuated g/C Ratio		0.25	0.25		0.25			0.17	0.47		0.04	0.32
v/c Ratio		0.46	0.48		0.94			0.46	0.48		0.64	0.61
Control Delay		30.7	13.9		61.5			33.0	12.4		76.5	29.1
Queue Delay		0.0	0.0		0.0			0.0	0.0		0.0	0.0
Total Delay		30.7	13.9		61.5			33.0	12.4		76.5	29.1
LOS		C	B		E			C	B		E	C
Approach Delay		21.6			61.5				14.6			31.3
Approach LOS		C			E				B			C

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 42 (47%), Referenced to phase 2:NBT and 6:SBT, Start of FDW or yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 27.0		Intersection LOS: C	
Intersection Capacity Utilization 89.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 4: MLK Jr Way & 55th Street

Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	204	240	398	134	1134	50	999
v/c Ratio	0.46	0.48	0.94	0.46	0.48	0.64	0.61
Control Delay	30.7	13.9	61.5	33.0	12.4	76.5	29.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	13.9	61.5	33.0	12.4	76.5	29.1
Queue Length 50th (ft)	98	43	213	77	194	29	173
Queue Length 95th (ft)	143	96	290	143	290	65	#259
Internal Link Dist (ft)	321		318		240		347
Turn Bay Length (ft)		25		160		160	
Base Capacity (vph)	632	643	593	292	2343	101	1631
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	0.32	0.37	0.67	0.46	0.48	0.50	0.61

Intersection Summary

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

MLK Jr Way Road Diet Analysis
4: MLK Jr Way & 55th Street

Baseline-AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	9	195	240	47	265	86	9	125	1079	55	50	983
Future Volume (veh/h)	9	195	240	47	265	86	9	125	1079	55	50	983
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00		1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No				No			No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856		1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	9	195	240	47	265	86		125	1079	55	50	983
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
Percent Heavy Veh, %	3	3	3	3	3	3		3	3	3	3	3
Cap, veh/h	48	438	380	75	276	84		476	2423	123	11	1141
Arrive On Green	0.28	0.24	0.24	0.28	0.24	0.28		0.27	0.49	0.52	0.01	0.22
Sat Flow, veh/h	27	1813	1572	126	1140	349		1767	4936	251	1767	5134
Grp Volume(v), veh/h	204	0	240	398	0	0		125	738	396	50	646
Grp Sat Flow(s),veh/h/ln	1840	0	1572	1616	0	0		1767	1689	1810	1767	1689
Q Serve(g_s), s	0.0	0.0	12.3	13.1	0.0	0.0		5.0	12.8	12.7	0.6	16.6
Cycle Q Clear(g_c), s	8.3	0.0	12.3	21.4	0.0	0.0		5.0	12.8	12.7	0.6	16.6
Prop In Lane	0.04		1.00	0.12		0.22		1.00		0.14	1.00	
Lane Grp Cap(c), veh/h	548	0	380	489	0	0		476	1658	889	11	750
V/C Ratio(X)	0.37	0.00	0.63	0.81	0.00	0.00		0.26	0.45	0.45	4.49	0.86
Avail Cap(c_a), veh/h	742	0	550	663	0	0		476	1658	889	98	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.0	0.0	30.5	33.3	0.0	0.0		25.8	14.9	14.8	44.7	33.7
Incr Delay (d2), s/veh	0.2	0.0	0.6	4.1	0.0	0.0		0.1	0.9	1.6	1589.2	12.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	4.6	8.4	0.0	0.0		2.1	4.9	5.3	5.2	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	0.0	31.2	37.4	0.0	0.0		26.0	15.8	16.4	1634.0	46.1
LnGrp LOS	C	A	C	D	A	A		C	B	B	F	D
Approach Vol, veh/h		444			398				1259			1049
Approach Delay, s/veh		30.2			37.4				17.0			124.5
Approach LOS		C			D				B			F

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	52.2		29.8	32.2	28.0		29.8				
Change Period (Y+Rc), s	4.5	5.0		5.0	5.0	* 5		5.0				
Max Green Setting (Gmax), s	8.0	33.0		34.5	18.0	* 23		34.5				
Max Q Clear Time (g_c+I1), s	3.6	15.8		15.3	8.0	19.6		23.4				
Green Ext Time (p_c), s	0.0	5.0		1.1	0.1	1.6		1.4				

Intersection Summary		
HCM 6th Ctrl Delay		57.2
HCM 6th LOS		E

Notes

User approved pedestrian interval to be less than phase max green.
User approved ignoring U-Turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
Fehr and Peers

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	16
Future Volume (veh/h)	16
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1856
Adj Flow Rate, veh/h	16
Peak Hour Factor	1.00
Percent Heavy Veh, %	3
Cap, veh/h	19
Arrive On Green	0.26
Sat Flow, veh/h	84
Grp Volume(v), veh/h	353
Grp Sat Flow(s),veh/h/ln	1841
Q Serve(g_s), s	16.6
Cycle Q Clear(g_c), s	16.6
Prop In Lane	0.05
Lane Grp Cap(c), veh/h	409
V/C Ratio(X)	0.86
Avail Cap(c_a), veh/h	409
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	33.6
Incr Delay (d2), s/veh	20.6
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	9.5
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	54.2
LnGrp LOS	D
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

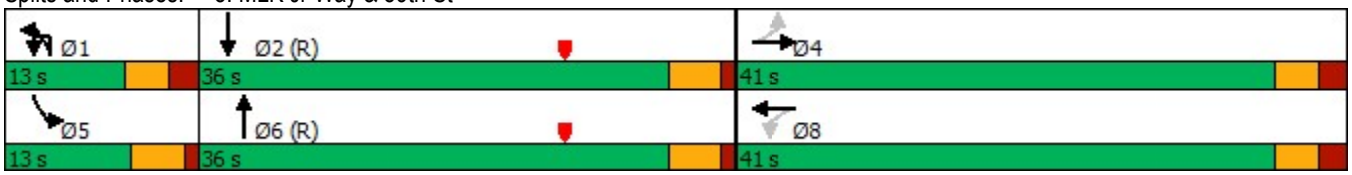
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	1	5	4	3	9	4	7	1054	10	4	946
Future Volume (vph)	3	1	5	4	3	9	4	7	1054	10	4	946
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0		125		0	125	
Storage Lanes	0		0	0		0		1		0	1	
Taper Length (ft)	25			25				25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	0.91	1.00	0.91
Frt		0.925			0.924				0.999			
Flt Protected		0.984			0.988			0.950			0.950	
Satd. Flow (prot)	0	1679	0	0	1684	0	0	1752	5031	0	1752	5036
Flt Permitted		0.950			0.950			0.950			0.950	
Satd. Flow (perm)	0	1621	0	0	1619	0	0	1752	5031	0	1752	5036
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		5			9				2			
Link Speed (mph)		30			30				30			30
Link Distance (ft)		299			347				402			331
Travel Time (s)		6.8			7.9				9.1			7.5
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
Adj. Flow (vph)	3	1	5	4	3	9	4	7	1054	10	4	946
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	9	0	0	16	0	0	11	1064	0	4	948
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left
Median Width(ft)		0			0				35			35
Link Offset(ft)		0			0				0			0
Crosswalk Width(ft)		16			16				16			16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15	
Number of Detectors	1	2		1	2		1	1	2		1	2
Detector Template	Left	Thru		Left	Thru		Left	Left	Thru		Left	Thru
Leading Detector (ft)	20	100		20	100		20	20	100		20	100
Trailing Detector (ft)	0	0		0	0		0	0	0		0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0		0	0
Detector 1 Size(ft)	20	6		20	6		20	20	6		20	6
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94			94				94			94
Detector 2 Size(ft)		6			6				6			6
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			0.0
Turn Type	Perm	NA		Perm	NA		Prot	Prot	NA		Prot	NA
Protected Phases		4			8		1	1	6		5	2
Permitted Phases	4			8								

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	2
Future Volume (vph)	2
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	0.91
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	1.00
Adj. Flow (vph)	2
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Detector Phase	4	4		8	8		1	1	6		5	2
Switch Phase												
Minimum Initial (s)	7.0	7.0		5.0	5.0		7.0	7.0	5.0		7.0	5.0
Minimum Split (s)	36.0	36.0		36.0	36.0		12.0	12.0	18.5		11.5	18.5
Total Split (s)	41.0	41.0		41.0	41.0		13.0	13.0	36.0		13.0	36.0
Total Split (%)	45.6%	45.6%		45.6%	45.6%		14.4%	14.4%	40.0%		14.4%	40.0%
Maximum Green (s)	36.0	36.0		36.0	36.0		8.0	8.0	31.5		8.5	31.5
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.5		3.5	3.5
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	1.0		1.0	1.0
Lost Time Adjust (s)		3.0			3.0			3.0	3.0		3.0	3.0
Total Lost Time (s)		8.0			8.0			8.0	7.5		7.5	7.5
Lead/Lag							Lead	Lead	Lag		Lead	Lag
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0		4.0	4.0	2.0		4.0	2.0
Recall Mode	None	None		None	None		None	None	C-Max		None	C-Max
Walk Time (s)	5.0	5.0		5.0	5.0		0.0	0.0	7.0			7.0
Flash Dont Walk (s)	26.0	26.0		26.0	26.0		0.0	0.0	7.0			7.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0			0
Act Effct Green (s)		4.0			2.5			4.3	80.1		4.1	79.9
Actuated g/C Ratio		0.04			0.03			0.05	0.89		0.05	0.89
v/c Ratio		0.12			0.30			0.13	0.24		0.05	0.21
Control Delay		34.6			43.2			44.4	2.5		42.5	2.6
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		34.6			43.2			44.4	2.5		42.5	2.6
LOS		C			D			D	A		D	A
Approach Delay		34.6			43.3				2.9			2.7
Approach LOS		C			D				A			A

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 27 (30%), Referenced to phase 2:SBT and 6:NBT, Start of FDW or yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.30			
Intersection Signal Delay: 3.3		Intersection LOS: A	
Intersection Capacity Utilization 39.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 5: MLK Jr Way & 59th St



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	9	16	11	1064	4	948
v/c Ratio	0.12	0.30	0.13	0.24	0.05	0.21
Control Delay	34.6	43.2	44.4	2.5	42.5	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.6	43.2	44.4	2.5	42.5	2.6
Queue Length 50th (ft)	2	4	6	0	2	0
Queue Length 95th (ft)	18	25	23	108	13	99
Internal Link Dist (ft)	219	267		322		251
Turn Bay Length (ft)			125		125	
Base Capacity (vph)	597	599	97	4479	107	4471
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.03	0.11	0.24	0.04	0.21

Intersection Summary

MLK Jr Way Road Diet Analysis
5: MLK Jr Way & 59th St

Baseline-AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	3	1	5	4	3	9	4	7	1054	10	4	946
Future Volume (veh/h)	3	1	5	4	3	9	4	7	1054	10	4	946
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00		1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No				No			No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856		1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	3	1	5	4	3	9		7	1054	10	4	946
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
Percent Heavy Veh, %	3	3	3	3	3	3		3	3	3	3	3
Cap, veh/h	54	0	1	50	0	1		2	4064	39	2	4044
Arrive On Green	0.02	0.00	0.02	0.02	0.00	0.02		0.00	0.79	0.82	0.00	0.77
Sat Flow, veh/h	570	190	950	432	324	972		1767	5175	49	1767	5220
Grp Volume(v), veh/h	9	0	0	16	0	0		7	688	376	4	612
Grp Sat Flow(s),veh/h/ln	1710	0	0	1729	0	0		1767	1689	1847	1767	1689
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0		0.1	4.9	4.9	0.1	4.5
Cycle Q Clear(g_c), s	0.4	0.0	0.0	0.8	0.0	0.0		0.1	4.9	4.9	0.1	4.5
Prop In Lane	0.33		0.56	0.25		0.56		1.00		0.03	1.00	
Lane Grp Cap(c), veh/h	85	0	0	82	0	0		2	2652	1450	2	2616
V/C Ratio(X)	0.11	0.00	0.00	0.20	0.00	0.00		3.56	0.26	0.26	2.04	0.23
Avail Cap(c_a), veh/h	669	0	0	680	0	0		98	2652	1450	108	2616
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.4	0.0	0.0	44.7	0.0	0.0		45.0	2.6	2.6	45.0	2.8
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.4	0.0	0.0		1463.6	0.2	0.4	793.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	0.4	0.0	0.0		0.8	1.2	1.3	0.5	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.6	0.0	0.0	45.1	0.0	0.0		1508.6	2.8	3.0	838.0	3.0
LnGrp LOS	D	A	A	D	A	A		F	A	A	F	A
Approach Vol, veh/h		9			16				1071			952
Approach Delay, s/veh		44.6			45.1				12.7			6.6
Approach LOS		D			D				B			A

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	77.2		6.6	5.2	78.2		6.6				
Change Period (Y+Rc), s	5.0	4.5		5.0	4.5	4.5		5.0				
Max Green Setting (Gmax), s	8.0	31.5		36.0	8.5	31.5		36.0				
Max Q Clear Time (g_c+I1), s	3.1	7.5		3.0	3.1	7.9		3.0				
Green Ext Time (p_c), s	0.0	4.4		0.0	0.0	5.1		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			10.3									
HCM 6th LOS			B									

Notes

User approved ignoring U-Turning movement.

HCM 6th Signalized Intersection Summary
Fehr and Peers

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	2
Future Volume (veh/h)	2
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1856
Adj Flow Rate, veh/h	2
Peak Hour Factor	1.00
Percent Heavy Veh, %	3
Cap, veh/h	9
Arrive On Green	0.81
Sat Flow, veh/h	11
Grp Volume(v), veh/h	336
Grp Sat Flow(s),veh/h/ln	1854
Q Serve(g_s), s	4.5
Cycle Q Clear(g_c), s	4.5
Prop In Lane	0.01
Lane Grp Cap(c), veh/h	1436
V/C Ratio(X)	0.23
Avail Cap(c_a), veh/h	1436
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	2.8
Incr Delay (d2), s/veh	0.4
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	1.3
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	3.2
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Lane Group	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations										
Traffic Volume (vph)	3	16	6	136	378	0	221	11	0	0
Future Volume (vph)	3	16	6	136	378	0	221	11	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00
Frt	0.886			0.891			0.993			
Flt Protected	0.992			0.999						
Satd. Flow (prot)	1621	0	0	3120	0	0	3480	0	0	0
Flt Permitted	0.992			0.999						
Satd. Flow (perm)	1621	0	0	3120	0	0	3480	0	0	0
Link Speed (mph)	30			30			30		30	
Link Distance (ft)	270			479			121		146	
Travel Time (s)	6.1			10.9			2.8		3.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	3	16	6	136	378	0	221	11	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	19	0	0	520	0	0	232	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	12			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations										
Traffic Volume (veh/h)	3	16	6	136	378	0	221	11	0	0
Future Volume (Veh/h)	3	16	6	136	378	0	221	11	0	0
Sign Control	Stop			Free			Free		Stop	
Grade	0%			0%			0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	3	16	6	136	378	0	221	11	0	0
Pedestrians										
Lane Width (ft)										
Walking Speed (ft/s)										
Percent Blockage										
Right turn flare (veh)										
Median type				None			None			
Median storage veh)										
Upstream signal (ft)							121			
pX, platoon unblocked										
vC, conflicting volume	306	374	232			136			569	257
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	306	374	232			136			569	257
tC, single (s)	7.6	6.6	4.2			4.2			6.6	7.0
tC, 2 stage (s)										
tF (s)	3.5	4.0	2.2			2.2			4.0	3.3
p0 queue free %	100	97	100			100			100	100
cM capacity (veh/h)	618	550	1326			1439			426	739

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	19	74	446	147	85
Volume Left	3	6	0	0	0
Volume Right	0	0	378	0	11
cSH	560	1326	1700	1700	1700
Volume to Capacity	0.03	0.00	0.26	0.09	0.05
Queue Length 95th (ft)	3	0	0	0	0
Control Delay (s)	11.7	0.7	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	11.7	0.1		0.0	
Approach LOS	B				

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	30.7%	ICU Level of Service		A
Analysis Period (min)	15			

MLK Jr Way Road Diet Analysis
1: MLK Jr Way

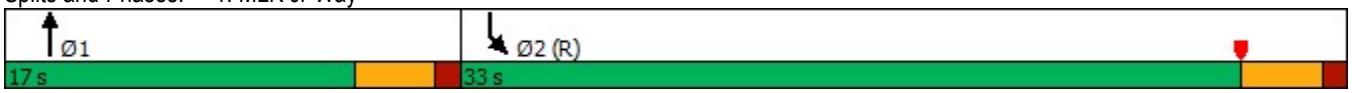
Baseline-PM

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	176	0	1447	234	0	0
Future Volume (vph)	176	0	1447	234	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Frt						
Flt Protected			0.950			
Satd. Flow (prot)	3539	0	3433	3539	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	3539	0	3433	3539	0	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	121			326	616	
Travel Time (s)	2.8			7.4	14.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	176	0	1447	234	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	176	0	1447	234	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			40	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2		
Detector Template	Thru		Left	Thru		
Leading Detector (ft)	100		20	100		
Trailing Detector (ft)	0		0	0		
Detector 1 Position(ft)	0		0	0		
Detector 1 Size(ft)	6		20	6		
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex		
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0		
Detector 1 Queue (s)	0.0		0.0	0.0		
Detector 1 Delay (s)	0.0		0.0	0.0		
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Prot	NA		
Protected Phases	1		2	Free		
Permitted Phases						
Detector Phase	1		2			
Switch Phase						
Minimum Initial (s)	4.0		4.0			

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Minimum Split (s)	8.0		8.0			
Total Split (s)	17.0		33.0			
Total Split (%)	34.0%		66.0%			
Maximum Green (s)	13.0		29.0			
Yellow Time (s)	3.0		3.0			
All-Red Time (s)	1.0		1.0			
Lost Time Adjust (s)	0.0		0.0			
Total Lost Time (s)	4.0		4.0			
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0			
Recall Mode	Max		C-Max			
Act Effct Green (s)	13.0		29.0	50.0		
Actuated g/C Ratio	0.26		0.58	1.00		
v/c Ratio	0.19		0.73	0.07		
Control Delay	15.1		17.5	0.0		
Queue Delay	0.0		0.0	0.0		
Total Delay	15.1		17.5	0.0		
LOS	B		B	A		
Approach Delay	15.1			15.1		
Approach LOS	B			B		

Intersection Summary			
Area Type:	Other		
Cycle Length: 50			
Actuated Cycle Length: 50			
Offset: 30 (60%), Referenced to phase 2:SBL and 6:, Start of Yellow			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 15.1		Intersection LOS: B	
Intersection Capacity Utilization 106.3%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 1: MLK Jr Way



Lane Group	NBT	SBL	SBT
Lane Group Flow (vph)	176	1447	234
v/c Ratio	0.19	0.73	0.07
Control Delay	15.1	17.5	0.0
Queue Delay	0.0	0.0	0.0
Total Delay	15.1	17.5	0.0
Queue Length 50th (ft)	21	436	0
Queue Length 95th (ft)	40	515	0
Internal Link Dist (ft)	41		246
Turn Bay Length (ft)			
Base Capacity (vph)	920	1991	3539
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.19	0.73	0.07

Intersection Summary

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	176	0	1447	234	0	0
Future Volume (vph)	176	0	1447	234	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		
Lane Util. Factor	0.95		0.97	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3539		3433	3539		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	3539		3433	3539		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	176	0	1447	234	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	176	0	1447	234	0	0
Turn Type	NA		Prot	NA		
Protected Phases	1		2	Free		
Permitted Phases						
Actuated Green, G (s)	13.0		29.0	50.0		
Effective Green, g (s)	13.0		29.0	50.0		
Actuated g/C Ratio	0.26		0.58	1.00		
Clearance Time (s)	4.0		4.0			
Vehicle Extension (s)	3.0		3.0			
Lane Grp Cap (vph)	920		1991	3539		
v/s Ratio Prot	c0.05		c0.42	0.07		
v/s Ratio Perm						
v/c Ratio	0.19		0.73	0.07		
Uniform Delay, d1	14.4		7.6	0.0		
Progression Factor	1.00		1.97	1.00		
Incremental Delay, d2	0.5		2.2	0.0		
Delay (s)	14.9		17.2	0.0		
Level of Service	B		B	A		
Approach Delay (s)	14.9			14.8	0.0	
Approach LOS	B			B	A	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	106.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

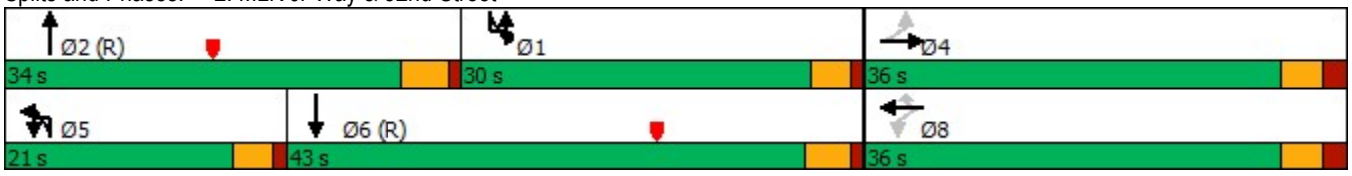
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	53	89	116	57	70	120	47	75	1564	42	6	93
Future Volume (vph)	53	89	116	57	70	120	47	75	1564	42	6	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	115		0	90		0		200		0		200
Storage Lanes	1		0	1		1		1		0		1
Taper Length (ft)	25			25				25				25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	0.91	0.91	1.00
Frt		0.915				0.850			0.996			
Flt Protected	0.950				0.978			0.950				0.950
Satd. Flow (prot)	1770	1704	0	0	1822	1583	0	1770	5065	0	0	1770
Flt Permitted	0.676				0.502			0.950				0.950
Satd. Flow (perm)	1259	1704	0	0	935	1583	0	1770	5065	0	0	1770
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		65				120			4			
Link Speed (mph)		30			30				30			
Link Distance (ft)		392			418				516			
Travel Time (s)		8.9			9.5				11.7			
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
Adj. Flow (vph)	53	89	116	57	70	120	47	75	1564	42	6	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	205	0	0	127	120	0	122	1606	0	0	99
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA	Left
Median Width(ft)		12			0				35			
Link Offset(ft)		0			0				0			
Crosswalk Width(ft)		16			16				16			
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	9	15
Number of Detectors	1	2		1	2	1	1	1	2		1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Left	Thru		Left	Left
Leading Detector (ft)	20	100		20	100	20	20	20	100		20	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0		0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0		0	0
Detector 1 Size(ft)	20	6		20	6	20	20	20	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94			94				94			
Detector 2 Size(ft)		6			6				6			
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			
Turn Type	Perm	NA		Perm	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases		4			8		5	5	2		1	1
Permitted Phases	4			8		8						

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1370	1
Future Volume (vph)	1370	1
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	0.91	0.91
Frt		
Flt Protected		
Satd. Flow (prot)	5085	0
Flt Permitted		
Satd. Flow (perm)	5085	0
Right Turn on Red		Yes
Satd. Flow (RTOR)		
Link Speed (mph)	30	
Link Distance (ft)	348	
Travel Time (s)	7.9	
Peak Hour Factor	1.00	1.00
Adj. Flow (vph)	1370	1
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1371	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	35	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.00	1.00
Turning Speed (mph)		9
Number of Detectors	2	
Detector Template	Thru	
Leading Detector (ft)	100	
Trailing Detector (ft)	0	
Detector 1 Position(ft)	0	
Detector 1 Size(ft)	6	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Detector 2 Position(ft)	94	
Detector 2 Size(ft)	6	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	
Protected Phases	6	
Permitted Phases		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Detector Phase	4	4		8	8	8	5	5	2		1	1
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	36.0	36.0		36.0	36.0	36.0	9.0	9.0	25.5		9.0	9.0
Total Split (s)	36.0	36.0		36.0	36.0	36.0	21.0	21.0	34.0		30.0	30.0
Total Split (%)	36.0%	36.0%		36.0%	36.0%	36.0%	21.0%	21.0%	34.0%		30.0%	30.0%
Maximum Green (s)	31.0	31.0		31.0	31.0	31.0	17.0	17.0	29.5		26.0	26.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.5		3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	3.0	3.0			3.0	3.0		3.0	3.0			3.0
Total Lost Time (s)	8.0	8.0			8.0	8.0		7.0	7.5			7.0
Lead/Lag							Lead	Lead	Lead		Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Minimum Gap (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Time Before Reduce (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0
Time To Reduce (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0
Recall Mode	None	None		None	None	None	None	None	C-Max		None	None
Walk Time (s)	5.0	5.0		5.0	5.0	5.0			7.0			
Flash Dont Walk (s)	26.0	26.0		26.0	26.0	26.0			14.0			
Pedestrian Calls (#/hr)	0	0		0	0	0			0			
Act Effct Green (s)	10.4	10.4			10.4	10.4		8.2	50.1			18.9
Actuated g/C Ratio	0.10	0.10			0.10	0.10		0.08	0.50			0.19
v/c Ratio	0.41	0.88			1.32	0.44		0.84	0.63			0.30
Control Delay	49.3	63.0			234.8	12.6		85.3	24.2			28.6
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			0.0
Total Delay	49.3	63.0			234.8	12.6		85.3	24.2			28.6
LOS	D	E			F	B		F	C			C
Approach Delay		60.1			126.9				28.5			
Approach LOS		E			F				C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 38 (38%), Referenced to phase 2:NBT and 6:SBT, Start of FDW or yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.32			
Intersection Signal Delay: 28.9		Intersection LOS: C	
Intersection Capacity Utilization 81.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: MLK Jr Way & 52nd Street



Lane Group	SBT	SBR
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	22.5	
Total Split (s)	43.0	
Total Split (%)	43.0%	
Maximum Green (s)	38.5	
Yellow Time (s)	3.5	
All-Red Time (s)	1.0	
Lost Time Adjust (s)	3.0	
Total Lost Time (s)	7.5	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Vehicle Extension (s)	2.0	
Minimum Gap (s)	2.0	
Time Before Reduce (s)	1.0	
Time To Reduce (s)	1.0	
Recall Mode	C-Max	
Walk Time (s)	7.0	
Flash Dont Walk (s)	11.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)	58.9	
Actuated g/C Ratio	0.59	
v/c Ratio	0.46	
Control Delay	5.6	
Queue Delay	0.2	
Total Delay	5.8	
LOS	A	
Approach Delay	7.3	
Approach LOS	A	

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	53	205	127	120	122	1606	99	1371
v/c Ratio	0.41	0.88	1.32	0.44	0.84	0.63	0.30	0.46
Control Delay	49.3	63.0	234.8	12.6	85.3	24.2	28.6	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	49.3	63.0	234.8	12.6	85.3	24.2	28.6	5.8
Queue Length 50th (ft)	32	90	~106	0	78	312	64	63
Queue Length 95th (ft)	67	158	#181	48	134	408	m120	85
Internal Link Dist (ft)		312	338			436		268
Turn Bay Length (ft)	115				200		200	
Base Capacity (vph)	352	523	261	529	247	2541	407	2996
Starvation Cap Reductn	0	0	0	0	0	0	0	633
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.39	0.49	0.23	0.49	0.63	0.24	0.58

Intersection Summary

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

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

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

MLK Jr Way Road Diet Analysis
2: MLK Jr Way & 52nd Street

Baseline-PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	53	89	116	57	70	120	47	75	1564	42	6	93
Future Volume (veh/h)	53	89	116	57	70	120	47	75	1564	42	6	93
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0		0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00		1.00		1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Work Zone On Approach		No			No				No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870		1870
Adj Flow Rate, veh/h	53	89	116	57	70	120		75	1564	42		93
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2
Cap, veh/h	131	147	191	121	124	315		25	1355	36		545
Arrive On Green	0.20	0.20	0.23	0.23	0.20	0.20		0.01	0.26	0.29		0.31
Sat Flow, veh/h	1193	737	961	346	625	1585		1781	5112	137		1781
Grp Volume(v), veh/h	53	0	205	127	0	120		75	1041	565		93
Grp Sat Flow(s),veh/h/ln	1193	0	1697	971	0	1585		1781	1702	1846		1781
Q Serve(g_s), s	4.4	0.0	10.9	4.9	0.0	6.6		1.4	26.5	26.5		3.8
Cycle Q Clear(g_c), s	19.4	0.0	10.9	15.9	0.0	6.6		1.4	26.5	26.5		3.8
Prop In Lane	1.00		0.57	0.45		1.00		1.00		0.07		1.00
Lane Grp Cap(c), veh/h	131	0	338	274	0	315		25	902	489		545
V/C Ratio(X)	0.41	0.00	0.61	0.46	0.00	0.38		3.06	1.15	1.15		0.17
Avail Cap(c_a), veh/h	228	0	475	394	0	444		249	902	489		545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		0.94
Uniform Delay (d), s/veh	47.3	0.0	35.7	38.5	0.0	34.7		49.3	36.8	36.6		25.4
Incr Delay (d2), s/veh	0.7	0.0	0.7	0.5	0.0	0.3		934.2	82.1	90.6		0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	4.5	2.9	0.0	2.5		7.0	21.0	24.0		1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.0	0.0	36.3	39.0	0.0	35.0		983.5	118.8	127.3		25.5
LnGrp LOS	D	A	D	D	A	C		F	F	F		C
Approach Vol, veh/h		258			247				1681			
Approach Delay, s/veh		38.7			37.0				160.3			
Approach LOS		D			D				F			

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	38.1	34.0		27.9	8.4	63.7		27.9				
Change Period (Y+Rc), s	4.5	* 4.5		5.0	4.0	4.5		5.0				
Max Green Setting (Gmax), s	26.0	* 30		31.0	17.0	38.5		31.0				
Max Q Clear Time (g_c+I1), s	6.8	29.5		22.4	4.4	18.4		17.9				
Green Ext Time (p_c), s	0.1	0.0		0.6	0.1	6.7		0.6				

Intersection Summary		
HCM 6th Ctrl Delay		84.9
HCM 6th LOS		F

Notes

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	1370	1
Future Volume (veh/h)	1370	1
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	1370	1
Peak Hour Factor	1.00	1.00
Percent Heavy Veh, %	2	2
Cap, veh/h	2963	2
Arrive On Green	0.56	0.59
Sat Flow, veh/h	5270	4
Grp Volume(v), veh/h	885	486
Grp Sat Flow(s),veh/h/ln	1702	1870
Q Serve(g_s), s	15.4	15.4
Cycle Q Clear(g_c), s	15.4	15.4
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	1914	1051
V/C Ratio(X)	0.46	0.46
Avail Cap(c_a), veh/h	1914	1051
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	0.94	0.94
Uniform Delay (d), s/veh	12.9	12.9
Incr Delay (d2), s/veh	0.8	1.4
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	6.5
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	13.7	14.3
LnGrp LOS	B	B
Approach Vol, veh/h	1464	
Approach Delay, s/veh	14.7	
Approach LOS	B	
Timer - Assigned Phs		

MLK Jr Way Road Diet Analysis
3: MLK Jr Way & 53rd St

Baseline-PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	5	32	12	1	8	45	26	1726	43	9	1376
Future Volume (vph)	3	5	32	12	1	8	45	26	1726	43	9	1376
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0		95		0	95	
Storage Lanes	0		0	0		0		1		0	1	
Taper Length (ft)	25			25				25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	0.91	1.00	0.91
Frt		0.892			0.949				0.996			0.999
Flt Protected		0.996			0.972			0.950			0.950	
Satd. Flow (prot)	0	1655	0	0	1718	0	0	1770	5065	0	1770	5080
Flt Permitted								0.950			0.950	
Satd. Flow (perm)	0	1662	0	0	1768	0	0	1770	5065	0	1770	5080
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		32			8				4			1
Link Speed (mph)		30			30				30			30
Link Distance (ft)		477			347				348			340
Travel Time (s)		10.8			7.9				7.9			7.7
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
Adj. Flow (vph)	3	5	32	12	1	8	45	26	1726	43	9	1376
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	40	0	0	21	0	0	71	1769	0	9	1381
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left
Median Width(ft)		0			0				35			35
Link Offset(ft)		0			0				0			0
Crosswalk Width(ft)		16			16				16			16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15	
Number of Detectors	1	2		1	2		1	1	2		1	2
Detector Template	Left	Thru		Left	Thru		Left	Left	Thru		Left	Thru
Leading Detector (ft)	20	100		20	100		20	20	100		20	100
Trailing Detector (ft)	0	0		0	0		0	0	0		0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0		0	0
Detector 1 Size(ft)	20	6		20	6		20	20	6		20	6
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94			94				94			94
Detector 2 Size(ft)		6			6				6			6
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			0.0
Turn Type	Perm	NA		Perm	NA		Prot	Prot	NA		Prot	NA
Protected Phases		4			8		5	5	2		1	6
Permitted Phases	4			8								

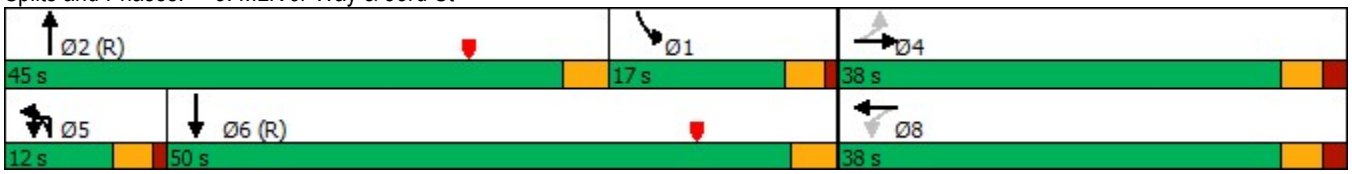
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	5
Future Volume (vph)	5
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	0.91
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	1.00
Adj. Flow (vph)	5
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Detector Phase	4	4		8	8		5	5	2		1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	38.0	38.0		38.0	38.0		9.0	9.0	15.5		9.0	15.5
Total Split (s)	38.0	38.0		38.0	38.0		12.0	12.0	45.0		17.0	50.0
Total Split (%)	38.0%	38.0%		38.0%	38.0%		12.0%	12.0%	45.0%		17.0%	50.0%
Maximum Green (s)	33.0	33.0		33.0	33.0		8.0	8.0	41.5		13.0	46.5
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.5		3.0	3.5
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	1.0	0.0		1.0	0.0
Lost Time Adjust (s)		3.0			3.0			3.0	3.0		3.0	3.0
Total Lost Time (s)		8.0			8.0			7.0	6.5		7.0	6.5
Lead/Lag							Lead	Lead	Lead		Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0		2.0	2.0
Minimum Gap (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0		2.0	2.0
Time Before Reduce (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0		1.0	1.0
Time To Reduce (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0		1.0	1.0
Recall Mode	None	None		None	None		None	None	C-Max		None	C-Max
Walk Time (s)	5.0	5.0		5.0	5.0				5.0			5.0
Flash Dont Walk (s)	28.0	28.0		28.0	28.0				7.0			7.0
Pedestrian Calls (#/hr)	0	0		0	0				0			0
Act Effct Green (s)		2.8			2.9			4.6	85.9		3.7	75.1
Actuated g/C Ratio		0.03			0.03			0.05	0.86		0.04	0.75
v/c Ratio		0.52			0.36			0.88	0.41		0.14	0.36
Control Delay		43.5			51.1			118.4	1.9		32.0	0.7
Queue Delay		0.0			0.0			0.0	0.1		0.0	0.0
Total Delay		43.5			51.1			118.4	1.9		32.0	0.7
LOS		D			D			F	A		C	A
Approach Delay		43.5			51.1				6.4			0.9
Approach LOS		D			D				A			A

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 46 (46%), Referenced to phase 2:NBT and 6:SBT, Start of FDW or yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 4.8 Intersection LOS: A
Intersection Capacity Utilization 61.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: MLK Jr Way & 53rd St



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	40	21	71	1769	9	1381
v/c Ratio	0.52	0.36	0.88	0.41	0.14	0.36
Control Delay	43.5	51.1	118.4	1.9	32.0	0.7
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	43.5	51.1	118.4	1.9	32.0	0.7
Queue Length 50th (ft)	5	8	49	5	6	8
Queue Length 95th (ft)	39	33	m#102	95	m10	9
Internal Link Dist (ft)	397	267		268		260
Turn Bay Length (ft)			95		95	
Base Capacity (vph)	521	536	88	4350	177	3815
Starvation Cap Reductn	0	0	0	811	0	0
Spillback Cap Reductn	0	0	0	0	0	74
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.04	0.81	0.50	0.05	0.37

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

MLK Jr Way Road Diet Analysis
3: MLK Jr Way & 53rd St

Baseline-PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	3	5	32	12	1	8	45	26	1726	43	9	1376
Future Volume (veh/h)	3	5	32	12	1	8	45	26	1726	43	9	1376
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00		1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No				No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	5	32	12	1	8		26	1726	43	9	1376
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
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	39	1	5	60	0	2		2	1973	49	706	4100
Arrive On Green	0.03	0.00	0.03	0.03	0.00	0.03		0.00	0.77	0.83	0.40	0.78
Sat Flow, veh/h	93	234	1308	926	135	653		1781	5124	128	1781	5252
Grp Volume(v), veh/h	40	0	0	21	0	0		26	1146	623	9	892
Grp Sat Flow(s),veh/h/ln	1635	0	0	1715	0	0		1781	1702	1847	1781	1702
Q Serve(g_s), s	1.3	0.0	0.0	0.0	0.0	0.0		0.1	23.7	23.6	0.3	7.8
Cycle Q Clear(g_c), s	2.4	0.0	0.0	1.1	0.0	0.0		0.1	23.7	23.6	0.3	7.8
Prop In Lane	0.07		0.80	0.57		0.38		1.00		0.07	1.00	
Lane Grp Cap(c), veh/h	94	0	0	114	0	0		2	1311	711	706	2658
V/C Ratio(X)	0.43	0.00	0.00	0.18	0.00	0.00		14.60	0.87	0.88	0.01	0.34
Avail Cap(c_a), veh/h	568	0	0	548	0	0		89	1311	711	706	2658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		2.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00		0.76	0.76	0.76	1.00	1.00
Uniform Delay (d), s/veh	49.5	0.0	0.0	48.8	0.0	0.0		50.0	9.8	9.6	18.3	3.3
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.3	0.0	0.0		6183.3	6.5	11.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.0	0.5	0.0	0.0		3.1	4.7	5.9	0.1	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.6	0.0	0.0	49.1	0.0	0.0		6233.3	16.3	20.9	18.3	3.6
LnGrp LOS	D	A	A	D	A	A		F	B	C	B	A
Approach Vol, veh/h		40			21				1795			1390
Approach Delay, s/veh		50.6			49.1				108.0			3.8
Approach LOS		D			D				F			A

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	46.6	45.0		8.4	6.6	85.1		8.4				
Change Period (Y+Rc), s	4.0	3.5		5.0	4.0	* 4		5.0				
Max Green Setting (Gmax), s	13.0	41.5		33.0	8.0	* 47		33.0				
Max Q Clear Time (g_c+I1), s	3.3	26.7		4.4	3.1	10.8		3.1				
Green Ext Time (p_c), s	0.0	7.8		0.1	0.0	7.8		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		62.3
HCM 6th LOS		E

Notes

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	5
Future Volume (veh/h)	5
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	5
Peak Hour Factor	1.00
Percent Heavy Veh, %	2
Cap, veh/h	15
Arrive On Green	0.81
Sat Flow, veh/h	19
Grp Volume(v), veh/h	489
Grp Sat Flow(s),veh/h/ln	1867
Q Serve(g_s), s	7.8
Cycle Q Clear(g_c), s	7.8
Prop In Lane	0.01
Lane Grp Cap(c), veh/h	1458
V/C Ratio(X)	0.34
Avail Cap(c_a), veh/h	1458
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	3.3
Incr Delay (d2), s/veh	0.6
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	2.4
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	3.9
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	19	208	235	37	167	51	11	179	1438	89	3	66
Future Volume (vph)	19	208	235	37	167	51	11	179	1438	89	3	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		25	0		0		160		0		160
Storage Lanes	0		1	0		0		1		0		1
Taper Length (ft)	25			25				25				25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	0.91	0.91	1.00
Frt			0.850		0.973				0.991			
Flt Protected		0.996			0.993			0.950				0.950
Satd. Flow (prot)	0	1855	1583	0	1800	0	0	1770	5040	0	0	1770
Flt Permitted		0.910			0.675			0.232				0.950
Satd. Flow (perm)	0	1695	1583	0	1223	0	0	432	5040	0	0	1770
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			125		13				11			
Link Speed (mph)		30			30				30			
Link Distance (ft)		401			398				320			
Travel Time (s)		9.1			9.0				7.3			
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
Adj. Flow (vph)	19	208	235	37	167	51	11	179	1438	89	3	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	227	235	0	255	0	0	190	1527	0	0	69
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA	Left
Median Width(ft)		0			0				35			
Link Offset(ft)		0			0				0			
Crosswalk Width(ft)		16			16				16			
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	9	15
Number of Detectors	1	2	1	1	2		1	1	2		1	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Left	Thru		Left	Left
Leading Detector (ft)	20	100	20	20	100		20	20	100		20	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0		0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0		0	0
Detector 1 Size(ft)	20	6	20	20	6		20	20	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94			94				94			
Detector 2 Size(ft)		6			6				6			
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			
Turn Type	Perm	NA	Perm	Perm	NA		custom	Prot	NA		Prot	Prot
Protected Phases		4			8			5	2		1	1
Permitted Phases	4		4	8			5					

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1137	25
Future Volume (vph)	1137	25
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	0.91	0.91
Frt	0.997	
Flt Protected		
Satd. Flow (prot)	5070	0
Flt Permitted		
Satd. Flow (perm)	5070	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	3	
Link Speed (mph)	30	
Link Distance (ft)	427	
Travel Time (s)	9.7	
Peak Hour Factor	1.00	1.00
Adj. Flow (vph)	1137	25
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1162	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	35	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.00	1.00
Turning Speed (mph)		9
Number of Detectors	2	
Detector Template	Thru	
Leading Detector (ft)	100	
Trailing Detector (ft)	0	
Detector 1 Position(ft)	0	
Detector 1 Size(ft)	6	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Detector 2 Position(ft)	94	
Detector 2 Size(ft)	6	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	
Protected Phases	6	
Permitted Phases		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Detector Phase	4	4	4	8	8		5	5	2		1	1
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	40.0	40.0	40.0	40.0	40.0		9.5	9.5	27.0		9.5	9.5
Total Split (s)	39.5	39.5	39.5	39.5	39.5		31.5	31.5	44.0		16.5	16.5
Total Split (%)	39.5%	39.5%	39.5%	39.5%	39.5%		31.5%	31.5%	44.0%		16.5%	16.5%
Maximum Green (s)	34.5	34.5	34.5	34.5	34.5		27.0	27.0	39.0		12.0	12.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.0	3.0	3.5		3.0	3.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5
Lost Time Adjust (s)		3.0	3.0		3.0			3.0	3.0			3.0
Total Lost Time (s)		8.0	8.0		8.0			7.5	8.0			7.5
Lead/Lag							Lag	Lag	Lag		Lead	Lead
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0
Time Before Reduce (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0
Time To Reduce (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0
Recall Mode	None	None	None	None	None		None	None	C-Max		None	None
Walk Time (s)	5.0	5.0	5.0	5.0	5.0				7.0			
Flash Dont Walk (s)	30.0	30.0	30.0	30.0	30.0				15.0			
Pedestrian Calls (#/hr)	0	0	0	0	0				0			
Act Effct Green (s)		16.2	16.2		16.2			24.0	56.9			5.3
Actuated g/C Ratio		0.16	0.16		0.16			0.24	0.57			0.05
v/c Ratio		0.83	0.65		1.23			1.84	0.53			0.73
Control Delay		63.8	26.1		170.3			434.5	4.2			86.2
Queue Delay		0.0	0.0		0.0			0.0	0.0			0.0
Total Delay		63.8	26.1		170.3			434.5	4.2			86.2
LOS		E	C		F			F	A			F
Approach Delay		44.6			170.3				51.8			
Approach LOS		D			F				D			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 26 (26%), Referenced to phase 2:NBT and 6:SBT, Start of FDW or yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.84			
Intersection Signal Delay: 52.6		Intersection LOS: D	
Intersection Capacity Utilization 87.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 4: MLK Jr Way & 55th Street

Lane Group	SBT	SBR
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	27.0	
Total Split (s)	29.0	
Total Split (%)	29.0%	
Maximum Green (s)	24.0	
Yellow Time (s)	3.5	
All-Red Time (s)	1.5	
Lost Time Adjust (s)	3.0	
Total Lost Time (s)	8.0	
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Vehicle Extension (s)	2.0	
Minimum Gap (s)	2.0	
Time Before Reduce (s)	1.0	
Time To Reduce (s)	1.0	
Recall Mode	C-Max	
Walk Time (s)	7.0	
Flash Dont Walk (s)	15.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)	36.3	
Actuated g/C Ratio	0.36	
v/c Ratio	0.63	
Control Delay	29.1	
Queue Delay	0.0	
Total Delay	29.1	
LOS	C	
Approach Delay	32.3	
Approach LOS	C	

Intersection Summary

Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	227	235	255	190	1527	69	1162
v/c Ratio	0.83	0.65	1.23	1.84	0.53	0.73	0.63
Control Delay	63.8	26.1	170.3	434.5	4.2	86.2	29.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.8	26.1	170.3	434.5	4.2	86.2	29.1
Queue Length 50th (ft)	142	64	~194	~162	30	44	220
Queue Length 95th (ft)	206	132	#291	#278	118	87	304
Internal Link Dist (ft)	321		318		240		347
Turn Bay Length (ft)		25		160		160	
Base Capacity (vph)	533	584	394	103	2872	159	1843
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.40	0.65	1.84	0.53	0.43	0.63

Intersection Summary

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

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

MLK Jr Way Road Diet Analysis
4: MLK Jr Way & 55th Street

Baseline-PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	19	208	235	37	167	51	11	179	1438	89	3	66
Future Volume (veh/h)	19	208	235	37	167	51	11	179	1438	89	3	66
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0		0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00		1.00		1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Work Zone On Approach		No			No				No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870		1870
Adj Flow Rate, veh/h	19	208	235	37	167	51		179	1438	89		66
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2
Cap, veh/h	53	320	295	62	181	51		648	2787	172		21
Arrive On Green	0.22	0.19	0.19	0.22	0.19	0.22		0.36	0.57	0.60		0.01
Sat Flow, veh/h	75	1721	1585	112	975	272		1781	4915	304		1781
Grp Volume(v), veh/h	227	0	235	255	0	0		179	996	531		66
Grp Sat Flow(s),veh/h/ln	1797	0	1585	1359	0	0		1781	1702	1816		1781
Q Serve(g_s), s	0.0	0.0	14.2	7.7	0.0	0.0		7.1	17.9	17.8		1.2
Cycle Q Clear(g_c), s	11.1	0.0	14.2	18.8	0.0	0.0		7.1	17.9	17.8		1.2
Prop In Lane	0.08		1.00	0.15		0.20		1.00		0.17		1.00
Lane Grp Cap(c), veh/h	427	0	295	335	0	0		648	1930	1029		21
V/C Ratio(X)	0.53	0.00	0.80	0.76	0.00	0.00		0.28	0.52	0.52		3.09
Avail Cap(c_a), veh/h	657	0	499	540	0	0		648	1930	1029		160
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	37.5	0.0	38.9	40.0	0.0	0.0		22.5	13.3	13.1		49.4
Incr Delay (d2), s/veh	0.4	0.0	1.9	1.4	0.0	0.0		0.1	1.0	1.8		948.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
%ile BackOfQ(50%),veh/ln	4.9	0.0	5.6	6.0	0.0	0.0		3.0	6.7	7.3		6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.9	0.0	40.8	41.3	0.0	0.0		22.6	14.2	14.9		998.0
LnGrp LOS	D	A	D	D	A	A		C	B	B		F
Approach Vol, veh/h		462			255				1706			
Approach Delay, s/veh		39.4			41.3				15.3			
Approach LOS		D			D				B			

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	64.7		26.6	44.4	29.0		26.6				
Change Period (Y+Rc), s	4.5	5.0		5.0	5.0	* 5		5.0				
Max Green Setting (Gmax), s	12.0	39.0		34.5	27.0	* 24		34.5				
Max Q Clear Time (g_c+I1), s	4.2	20.9		17.2	10.1	24.0		20.8				
Green Ext Time (p_c), s	0.0	7.4		1.2	0.2	0.0		0.9				

Intersection Summary		
HCM 6th Ctrl Delay		62.4
HCM 6th LOS		E

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
Fehr and Peers

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	1137	25
Future Volume (veh/h)	1137	25
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	1137	25
Peak Hour Factor	1.00	1.00
Percent Heavy Veh, %	2	2
Cap, veh/h	1080	24
Arrive On Green	0.21	0.24
Sat Flow, veh/h	5141	113
Grp Volume(v), veh/h	753	409
Grp Sat Flow(s),veh/h/ln	1702	1850
Q Serve(g_s), s	21.0	21.0
Cycle Q Clear(g_c), s	21.0	21.0
Prop In Lane		0.06
Lane Grp Cap(c), veh/h	715	389
V/C Ratio(X)	1.05	1.05
Avail Cap(c_a), veh/h	715	389
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	39.5	39.4
Incr Delay (d2), s/veh	48.5	60.4
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.4	15.9
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	88.0	99.8
LnGrp LOS	F	F
Approach Vol, veh/h	1228	
Approach Delay, s/veh	140.8	
Approach LOS	F	
Timer - Assigned Phs		

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	1	2	0	12	13	4	5	1	15	1282	6	1
Future Volume (vph)	1	2	0	12	13	4	5	1	15	1282	6	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0		0	0		0		125		0	
Storage Lanes		0		0	0		0		1		0	
Taper Length (ft)		25			25				25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	0.91	0.91
Frt			0.892			0.969				0.999		
Flt Protected			0.990			0.971			0.950			
Satd. Flow (prot)	0	0	1645	0	0	1753	0	0	1770	5080	0	0
Flt Permitted			0.950			0.950			0.950			
Satd. Flow (perm)	0	0	1578	0	0	1715	0	0	1770	5080	0	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)			125			5				1		
Link Speed (mph)			30			30				30		
Link Distance (ft)			299			347				402		
Travel Time (s)			6.8			7.9				9.1		
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
Adj. Flow (vph)	1	2	0	12	13	4	5	1	15	1282	6	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	15	0	0	22	0	0	16	1288	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA
Median Width(ft)			0			0				35		
Link Offset(ft)			0			0				0		
Crosswalk Width(ft)			16			16				16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9	15		9	15		9	9	15		9	9
Number of Detectors	1	1	2		1	2		1	1	2		1
Detector Template	Left	Left	Thru		Left	Thru		Left	Left	Thru		Left
Leading Detector (ft)	20	20	100		20	100		20	20	100		20
Trailing Detector (ft)	0	0	0		0	0		0	0	0		0
Detector 1 Position(ft)	0	0	0		0	0		0	0	0		0
Detector 1 Size(ft)	20	20	6		20	6		20	20	6		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0
Detector 2 Position(ft)			94			94				94		
Detector 2 Size(ft)			6			6				6		
Detector 2 Type			Cl+Ex			Cl+Ex				Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0			0.0				0.0		
Turn Type	Perm	Perm	NA		Perm	NA		Prot	Prot	NA		Prot
Protected Phases			4			8		1	1	6		5
Permitted Phases	4	4			8							

Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	7	1119	4
Future Volume (vph)	7	1119	4
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	125		0
Storage Lanes	1		0
Taper Length (ft)	25		
Lane Util. Factor	1.00	0.91	0.91
Frt		0.999	
Flt Protected	0.950		
Satd. Flow (prot)	1770	5080	0
Flt Permitted	0.950		
Satd. Flow (perm)	1770	5080	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		1	
Link Speed (mph)		30	
Link Distance (ft)		331	
Travel Time (s)		7.5	
Peak Hour Factor	1.00	1.00	1.00
Adj. Flow (vph)	7	1119	4
Shared Lane Traffic (%)			
Lane Group Flow (vph)	8	1123	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(ft)		35	
Link Offset(ft)		0	
Crosswalk Width(ft)		16	
Two way Left Turn Lane			
Headway Factor	1.00	1.00	1.00
Turning Speed (mph)	15		9
Number of Detectors	1	2	
Detector Template	Left	Thru	
Leading Detector (ft)	20	100	
Trailing Detector (ft)	0	0	
Detector 1 Position(ft)	0	0	
Detector 1 Size(ft)	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	
Detector 2 Position(ft)		94	
Detector 2 Size(ft)		6	
Detector 2 Type		Cl+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Prot	NA	
Protected Phases	5	2	
Permitted Phases			

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Detector Phase	4	4	4		8	8		1	1	6		5
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0		7.0	7.0	5.0		7.0
Minimum Split (s)	36.0	36.0	36.0		36.0	36.0		12.0	12.0	18.5		12.0
Total Split (s)	35.0	35.0	35.0		35.0	35.0		19.0	19.0	52.0		13.0
Total Split (%)	35.0%	35.0%	35.0%		35.0%	35.0%		19.0%	19.0%	52.0%		13.0%
Maximum Green (s)	30.0	30.0	30.0		30.0	30.0		14.0	14.0	47.5		8.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.5		3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0		2.0	2.0	1.0		2.0
Lost Time Adjust (s)			3.0			3.0			3.0	3.0		
Total Lost Time (s)			8.0			8.0			8.0	7.5		
Lead/Lag								Lead	Lead	Lag		Lead
Lead-Lag Optimize?								Yes	Yes	Yes		Yes
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0		4.0	4.0	2.0		4.0
Recall Mode	None	None	None		None	None		None	None	C-Max		None
Walk Time (s)	5.0	5.0	5.0		5.0	5.0				7.0		
Flash Dont Walk (s)	26.0	26.0	26.0		26.0	26.0				7.0		
Pedestrian Calls (#/hr)	0	0	0		0	0				0		
Act Effct Green (s)			2.8			2.9			4.7	89.6		
Actuated g/C Ratio			0.03			0.03			0.05	0.90		
v/c Ratio			0.09			0.40			0.20	0.28		
Control Delay			1.1			60.3			50.9	2.6		
Queue Delay			0.0			0.0			0.0	0.0		
Total Delay			1.1			60.3			50.9	2.6		
LOS			A			E			D	A		
Approach Delay			1.1			60.3				3.2		
Approach LOS			A			E				A		

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 3 (3%), Referenced to phase 2:SBT and 6:NBT, Start of FDW or yellow			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay: 4.0		Intersection LOS: A	
Intersection Capacity Utilization 42.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 5: MLK Jr Way & 59th St

Lane Group	SBL	SBT	SBR
Detector Phase	5	2	
Switch Phase			
Minimum Initial (s)	7.0	5.0	
Minimum Split (s)	12.0	18.5	
Total Split (s)	13.0	46.0	
Total Split (%)	13.0%	46.0%	
Maximum Green (s)	8.0	41.5	
Yellow Time (s)	3.0	3.5	
All-Red Time (s)	2.0	1.0	
Lost Time Adjust (s)	3.0	3.0	
Total Lost Time (s)	8.0	7.5	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	4.0	2.0	
Recall Mode	None	C-Max	
Walk Time (s)		7.0	
Flash Dont Walk (s)		7.0	
Pedestrian Calls (#/hr)		0	
Act Effct Green (s)	4.3	86.8	
Actuated g/C Ratio	0.04	0.87	
v/c Ratio	0.11	0.25	
Control Delay	48.8	3.6	
Queue Delay	0.0	0.0	
Total Delay	48.8	3.6	
LOS	D	A	
Approach Delay		3.9	
Approach LOS		A	

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	15	22	16	1288	8	1123
v/c Ratio	0.09	0.40	0.20	0.28	0.11	0.25
Control Delay	1.1	60.3	50.9	2.6	48.8	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.1	60.3	50.9	2.6	48.8	3.6
Queue Length 50th (ft)	0	11	10	0	5	0
Queue Length 95th (ft)	0	36	31	144	20	126
Internal Link Dist (ft)	219	267		322		251
Turn Bay Length (ft)			125		125	
Base Capacity (vph)	517	466	194	4550	88	4408
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.05	0.08	0.28	0.09	0.25

Intersection Summary

MLK Jr Way Road Diet Analysis
5: MLK Jr Way & 59th St

Baseline-PM

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (veh/h)	1	2	0	12	13	4	5	1	15	1282	6	1
Future Volume (veh/h)	1	2	0	12	13	4	5	1	15	1282	6	1
Initial Q (Qb), veh		0	0	0	0	0	0		0	0	0	
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		1.00		1.00		1.00	
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Work Zone On Approach			No			No				No		
Adj Sat Flow, veh/h/ln		1870	1870	1870	1870	1870	1870		1870	1870	1870	
Adj Flow Rate, veh/h		2	0	12	13	4	5		15	1282	6	
Peak Hour Factor		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Percent Heavy Veh, %		2	2	2	2	2	2		2	2	2	
Cap, veh/h		41	0	1	58	0	0		2	4143	19	
Arrive On Green		0.02	0.00	0.02	0.02	0.00	0.02		0.00	0.79	0.82	
Sat Flow, veh/h		246	0	1474	972	299	374		1781	5245	25	
Grp Volume(v), veh/h		14	0	0	22	0	0		15	832	456	
Grp Sat Flow(s),veh/h/ln		1720	0	0	1644	0	0		1781	1702	1866	
Q Serve(g_s), s		0.0	0.0	0.0	0.2	0.0	0.0		0.1	6.8	6.8	
Cycle Q Clear(g_c), s		0.7	0.0	0.0	1.2	0.0	0.0		0.1	6.8	6.8	
Prop In Lane		0.14		0.86	0.59		0.23		1.00		0.01	
Lane Grp Cap(c), veh/h		80	0	0	95	0	0		2	2688	1474	
V/C Ratio(X)		0.17	0.00	0.00	0.23	0.00	0.00		8.42	0.31	0.31	
Avail Cap(c_a), veh/h		512	0	0	514	0	0		196	2688	1474	
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Upstream Filter(I)		1.00	0.00	0.00	1.00	0.00	0.00		1.00	1.00	1.00	
Uniform Delay (d), s/veh		49.2	0.0	0.0	49.6	0.0	0.0		50.0	2.9	2.9	
Incr Delay (d2), s/veh		0.4	0.0	0.0	0.5	0.0	0.0		3661.2	0.3	0.5	
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln		0.3	0.0	0.0	0.5	0.0	0.0		1.9	1.7	2.0	
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		49.5	0.0	0.0	50.1	0.0	0.0		3711.2	3.2	3.5	
LnGrp LOS		D	A	A	D	A	A		F	A	A	
Approach Vol, veh/h			14			22				1303		
Approach Delay, s/veh			49.5			50.1				46.0		
Approach LOS			D			D				D		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.4	85.3		7.3	6.2	86.5		7.3
Change Period (Y+Rc), s	5.0	4.5		5.0	5.0	4.5		5.0
Max Green Setting (Gmax), s	14.0	41.5		30.0	8.0	47.5		30.0
Max Q Clear Time (g_c+I1), s	3.1	9.0		3.0	3.1	9.8		3.2
Green Ext Time (p_c), s	0.0	5.7		0.0	0.0	7.1		0.0

Intersection Summary	
HCM 6th Ctrl Delay	31.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved ignoring U-Turning movement.

HCM 6th Signalized Intersection Summary
Fehr and Peers

Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (veh/h)	7	1119	4
Future Volume (veh/h)	7	1119	4
Initial Q (Qb), veh	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00
Work Zone On Approach		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870
Adj Flow Rate, veh/h	7	1119	4
Peak Hour Factor	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2
Cap, veh/h	2	4088	15
Arrive On Green	0.00	0.78	0.81
Sat Flow, veh/h	1781	5252	19
Grp Volume(v), veh/h	7	725	398
Grp Sat Flow(s),veh/h/ln	1781	1702	1867
Q Serve(g_s), s	0.1	6.0	6.0
Cycle Q Clear(g_c), s	0.1	6.0	6.0
Prop In Lane	1.00		0.01
Lane Grp Cap(c), veh/h	2	2649	1453
V/C Ratio(X)	3.93	0.27	0.27
Avail Cap(c_a), veh/h	89	2649	1453
HCM Platoon Ratio	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.0	3.1	3.1
Incr Delay (d2), s/veh	1651.4	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.6	1.8
Unsig. Movement Delay, s/veh			
LnGrp Delay(d),s/veh	1701.4	3.4	3.6
LnGrp LOS	F	A	A
Approach Vol, veh/h		1130	
Approach Delay, s/veh		14.0	
Approach LOS		B	
Timer - Assigned Phs			

Lane Group	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations										
Traffic Volume (vph)	1	9	7	176	389	0	232	4	0	0
Future Volume (vph)	1	9	7	176	389	0	232	4	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00
Frt	0.878			0.898			0.997			
Flt Protected	0.995			0.999						
Satd. Flow (prot)	1627	0	0	3175	0	0	3529	0	0	0
Flt Permitted	0.995			0.999						
Satd. Flow (perm)	1627	0	0	3175	0	0	3529	0	0	0
Link Speed (mph)	30			30			30		30	
Link Distance (ft)	270			479			121		146	
Travel Time (s)	6.1			10.9			2.8		3.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	9	7	176	389	0	232	4	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	10	0	0	572	0	0	236	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	12			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60	60	60		60	60		60	60	60
Sign Control	Stop			Free			Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.9%		ICU Level of Service A	
Analysis Period (min) 15			

Attachment 4: Existing Conditions Plus Road AM and PM Peak Hour Synchro Sheets

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations										
Traffic Volume (veh/h)	1	9	7	176	389	0	232	4	0	0
Future Volume (Veh/h)	1	9	7	176	389	0	232	4	0	0
Sign Control	Stop			Free			Free		Stop	
Grade	0%			0%			0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1	9	7	176	389	0	232	4	0	0
Pedestrians										
Lane Width (ft)										
Walking Speed (ft/s)										
Percent Blockage										
Right turn flare (veh)										
Median type				None			None			
Median storage veh)										
Upstream signal (ft)							121			
pX, platoon unblocked										
vC, conflicting volume	336	424	236			176			620	282
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	336	424	236			176			620	282
tC, single (s)	7.5	6.5	4.1			4.1			6.5	6.9
tC, 2 stage (s)										
tF (s)	3.5	4.0	2.2			2.2			4.0	3.3
p0 queue free %	100	98	99			100			100	100
cM capacity (veh/h)	591	518	1328			1398			400	714

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	10	95	477	155	81
Volume Left	1	7	0	0	0
Volume Right	0	0	389	0	4
cSH	524	1328	1700	1700	1700
Volume to Capacity	0.02	0.01	0.28	0.09	0.05
Queue Length 95th (ft)	1	0	0	0	0
Control Delay (s)	12.0	0.6	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	12.0	0.1		0.0	
Approach LOS	B				

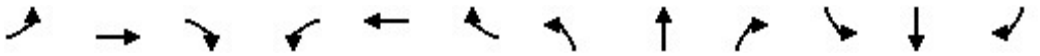
Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	32.9%	ICU Level of Service		A
Analysis Period (min)	15			

MLK Jr Way Road Diet Analysis
7: MLK Jr Way & 54th St

Road Diet-AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	3	21	8	3	5	39	1258	18	9	1263	4
Future Volume (vph)	1	3	21	8	3	5	39	1258	18	9	1263	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.887			0.958			0.998				
Flt Protected		0.998			0.976			0.999				
Satd. Flow (prot)	0	1633	0	0	1725	0	0	3494	0	0	3505	0
Flt Permitted		0.998			0.976			0.999				
Satd. Flow (perm)	0	1633	0	0	1725	0	0	3494	0	0	3505	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		221			257			323			333	
Travel Time (s)		6.0			7.0			7.3			7.6	
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
Adj. Flow (vph)	1	3	21	8	3	5	39	1258	18	9	1263	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	16	0	0	1315	0	0	1276	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			35			35	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 74.9%		ICU Level of Service D	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.887			0.958			0.998				
Flt Protected		0.998			0.976			0.999				
Satd. Flow (prot)	0	1633	0	0	1725	0	0	3494	0	0	3505	0
Flt Permitted		0.998			0.976			0.999				
Satd. Flow (perm)	0	1633	0	0	1725	0	0	3494	0	0	3505	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		221			257			323			333	
Travel Time (s)		6.0			7.0			7.3			7.6	

Intersection Summary	
Area Type:	Other

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	3	21	8	3	5	39	1258	18	9	1263	4
Future Vol, veh/h	1	3	21	8	3	5	39	1258	18	9	1263	4
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, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	3	21	8	3	5	39	1258	18	9	1263	4

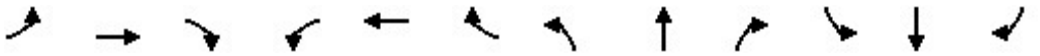
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1992	2637	634	1996	2630	638	1267	0	0	1276	0	0
Stage 1	1283	1283	-	1345	1345	-	-	-	-	-	-	-
Stage 2	709	1354	-	651	1285	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	35	23	419	35	23	417	539	-	-	535	-	-
Stage 1	173	232	-	158	217	-	-	-	-	-	-	-
Stage 2	389	214	-	421	232	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	26	16	419	25	16	417	539	-	-	535	-	-
Mov Cap-2 Maneuver	91	89	-	89	85	-	-	-	-	-	-	-
Stage 1	130	219	-	119	163	-	-	-	-	-	-	-
Stage 2	283	161	-	372	219	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.1	40.6	1.7	0.4
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	539	-	-	264	117	535	-	-
HCM Lane V/C Ratio	0.072	-	-	0.095	0.137	0.017	-	-
HCM Control Delay (s)	12.2	1.4	-	20.1	40.6	11.8	0.3	-
HCM Lane LOS	B	A	-	C	E	B	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.5	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	3	5	5	1	14	14	1154	6	14	1034	3
Future Volume (vph)	3	3	5	5	1	14	14	1154	6	14	1034	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.939			0.905			0.999				
Flt Protected		0.987			0.988			0.999			0.999	
Satd. Flow (prot)	0	1710	0	0	1649	0	0	3498	0	0	3501	0
Flt Permitted		0.987			0.988			0.999			0.999	
Satd. Flow (perm)	0	1710	0	0	1649	0	0	3498	0	0	3501	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		222			330			303			277	
Travel Time (s)		6.1			9.0			6.9			6.3	
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
Adj. Flow (vph)	3	3	5	5	1	14	14	1154	6	14	1034	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	11	0	0	20	0	0	1174	0	0	1051	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			35			35	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.0%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.939			0.905			0.999				
Flt Protected		0.987			0.988			0.999			0.999	
Satd. Flow (prot)	0	1710	0	0	1649	0	0	3498	0	0	3501	0
Flt Permitted		0.987			0.988			0.999			0.999	
Satd. Flow (perm)	0	1710	0	0	1649	0	0	3498	0	0	3501	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		222			330			303			277	
Travel Time (s)		6.1			9.0			6.9			6.3	

Intersection Summary	
Area Type:	Other

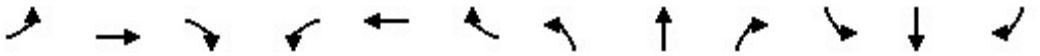
Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	3	5	5	1	14	14	1154	6	14	1034	3
Future Vol, veh/h	3	3	5	5	1	14	14	1154	6	14	1034	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, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	3	5	5	1	14	14	1154	6	14	1034	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1670	2252	519	1732	2250	580	1037	0	0	1160	0	0
Stage 1	1064	1064	-	1185	1185	-	-	-	-	-	-	-
Stage 2	606	1188	-	547	1065	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	62	40	499	56	41	455	660	-	-	592	-	-
Stage 1	236	296	-	199	259	-	-	-	-	-	-	-
Stage 2	448	258	-	486	295	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	55	35	499	50	36	455	660	-	-	592	-	-
Mov Cap-2 Maneuver	152	131	-	138	132	-	-	-	-	-	-	-
Stage 1	222	279	-	187	243	-	-	-	-	-	-	-
Stage 2	406	243	-	449	278	-	-	-	-	-	-	-

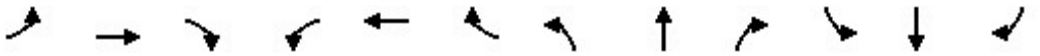
Approach	EB	WB	NB	SB
HCM Control Delay, s	23.2	19.5	0.4	0.4
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	660	-	-	209	268	592	-	-
HCM Lane V/C Ratio	0.021	-	-	0.053	0.075	0.024	-	-
HCM Control Delay (s)	10.6	0.3	-	23.2	19.5	11.2	0.3	-
HCM Lane LOS	B	A	-	C	C	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.2	0.1	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	3	11	11	2	9	8	1154	16	18	1029	0
Future Volume (vph)	0	3	11	11	2	9	8	1154	16	18	1029	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.894			0.945			0.998				
Flt Protected					0.976						0.999	
Satd. Flow (prot)	0	1649	0	0	1701	0	0	3498	0	0	3501	0
Flt Permitted					0.976						0.999	
Satd. Flow (perm)	0	1649	0	0	1701	0	0	3498	0	0	3501	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		354			322			277			250	
Travel Time (s)		9.7			8.8			6.3			5.7	
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
Adj. Flow (vph)	0	3	11	11	2	9	8	1154	16	18	1029	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	14	0	0	22	0	0	1178	0	0	1047	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			35			35	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.8%		ICU Level of Service B	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.894			0.945			0.998				
Flt Protected					0.976						0.999	
Satd. Flow (prot)	0	1649	0	0	1701	0	0	3498	0	0	3501	0
Flt Permitted					0.976						0.999	
Satd. Flow (perm)	0	1649	0	0	1701	0	0	3498	0	0	3501	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		354			322			277			250	
Travel Time (s)		9.7			8.8			6.3			5.7	

Intersection Summary	
Area Type:	Other

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	3	11	11	2	9	8	1154	16	18	1029	0
Future Vol, veh/h	0	3	11	11	2	9	8	1154	16	18	1029	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, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	3	11	11	2	9	8	1154	16	18	1029	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1659	2251	515	1730	2243	585	1029	0	0	1170	0	0
Stage 1	1065	1065	-	1178	1178	-	-	-	-	-	-	-
Stage 2	594	1186	-	552	1065	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	63	40	502	56	41	452	665	-	-	587	-	-
Stage 1	236	295	-	201	261	-	-	-	-	-	-	-
Stage 2	456	258	-	483	295	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	56	36	502	50	37	452	665	-	-	587	-	-
Mov Cap-2 Maneuver	157	131	-	141	135	-	-	-	-	-	-	-
Stage 1	228	274	-	194	252	-	-	-	-	-	-	-
Stage 2	428	249	-	434	274	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.1	25.8	0.3	0.6
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	665	-	-	312	195	587	-	-
HCM Lane V/C Ratio	0.012	-	-	0.045	0.113	0.031	-	-
HCM Control Delay (s)	10.5	0.2	-	17.1	25.8	11.3	0.4	-
HCM Lane LOS	B	A	-	C	D	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.4	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	15	26	1147	1032	1
Future Volume (vph)	0	15	26	1147	1032	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.865					
Flt Protected				0.999		
Satd. Flow (prot)	1596	0	0	3501	3505	0
Flt Permitted				0.999		
Satd. Flow (perm)	1596	0	0	3501	3505	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	271			250	253	
Travel Time (s)	7.4			5.7	5.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	15	26	1147	1032	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	0	0	1173	1033	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			35	35	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60	60	60			60
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.3%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt	0.865					
Flt Protected				0.999		
Satd. Flow (prot)	1596	0	0	3501	3505	0
Flt Permitted				0.999		
Satd. Flow (perm)	1596	0	0	3501	3505	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	271			250	253	
Travel Time (s)	7.4			5.7	5.8	

Intersection Summary	
Area Type:	Other

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	15	26	1147	1032	1
Future Vol, veh/h	0	15	26	1147	1032	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	15	26	1147	1032	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1659	517	1033	0	-	0
Stage 1	1033	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	87	501	662	-	-	-
Stage 1	302	-	-	-	-	-
Stage 2	493	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	78	501	662	-	-	-
Mov Cap-2 Maneuver	191	-	-	-	-	-
Stage 1	269	-	-	-	-	-
Stage 2	493	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.4	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	662	-	501	-	-
HCM Lane V/C Ratio	0.039	-	0.03	-	-
HCM Control Delay (s)	10.7	0.6	12.4	-	-
HCM Lane LOS	B	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	20	25	1116	1003	2
Future Volume (vph)	2	20	25	1116	1003	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.877					
Flt Protected	0.995			0.999		
Satd. Flow (prot)	1610	0	0	3501	3505	0
Flt Permitted	0.995			0.999		
Satd. Flow (perm)	1610	0	0	3501	3505	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	436			253	245	
Travel Time (s)	11.9			5.8	5.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	20	25	1116	1003	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	22	0	0	1141	1005	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			35	35	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60	60	60			60
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.7%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt	0.877					
Flt Protected	0.995			0.999		
Satd. Flow (prot)	1610	0	0	3501	3505	0
Flt Permitted	0.995			0.999		
Satd. Flow (perm)	1610	0	0	3501	3505	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	436			253	245	
Travel Time (s)	11.9			5.8	5.6	

Intersection Summary	
Area Type:	Other

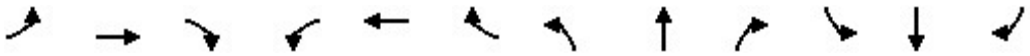
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	20	25	1116	1003	2
Future Vol, veh/h	2	20	25	1116	1003	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	2	20	25	1116	1003	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1612	503	1005	0	-	0
Stage 1	1004	-	-	-	-	-
Stage 2	608	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	94	511	679	-	-	-
Stage 1	313	-	-	-	-	-
Stage 2	503	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	85	511	679	-	-	-
Mov Cap-2 Maneuver	200	-	-	-	-	-
Stage 1	283	-	-	-	-	-
Stage 2	503	-	-	-	-	-

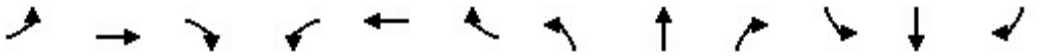
Approach	EB	NB	SB
HCM Control Delay, s	13.5	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	679	-	448	-	-
HCM Lane V/C Ratio	0.037	-	0.049	-	-
HCM Control Delay (s)	10.5	0.5	13.5	-	-
HCM Lane LOS	B	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	4	54	9	10	11	44	1063	15	6	946	3
Future Volume (vph)	3	4	54	9	10	11	44	1063	15	6	946	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.880			0.950			0.998				
Flt Protected		0.998			0.985			0.998				
Satd. Flow (prot)	0	1620	0	0	1726	0	0	3491	0	0	3505	0
Flt Permitted		0.998			0.985			0.998				
Satd. Flow (perm)	0	1620	0	0	1726	0	0	3491	0	0	3505	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		357			401			245			319	
Travel Time (s)		9.7			10.9			5.6			7.3	
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
Adj. Flow (vph)	3	4	54	9	10	11	44	1063	15	6	946	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	30	0	0	1122	0	0	955	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			35			35	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.7%		ICU Level of Service C	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.880			0.950			0.998				
Flt Protected		0.998			0.985			0.998				
Satd. Flow (prot)	0	1620	0	0	1726	0	0	3491	0	0	3505	0
Flt Permitted		0.998			0.985			0.998				
Satd. Flow (perm)	0	1620	0	0	1726	0	0	3491	0	0	3505	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		357			401			245			319	
Travel Time (s)		9.7			10.9			5.6			7.3	

Intersection Summary	
Area Type:	Other

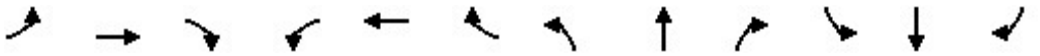
Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	4	54	9	10	11	44	1063	15	6	946	3
Future Vol, veh/h	3	4	54	9	10	11	44	1063	15	6	946	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, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	4	54	9	10	11	44	1063	15	6	946	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1585	2126	475	1646	2120	539	949	0	0	1078	0	0
Stage 1	960	960	-	1159	1159	-	-	-	-	-	-	-
Stage 2	625	1166	-	487	961	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	72	49	533	65	49	484	713	-	-	637	-	-
Stage 1	274	331	-	207	266	-	-	-	-	-	-	-
Stage 2	437	264	-	528	331	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	58	41	533	50	41	484	713	-	-	637	-	-
Mov Cap-2 Maneuver	151	136	-	131	132	-	-	-	-	-	-	-
Stage 1	232	324	-	175	225	-	-	-	-	-	-	-
Stage 2	345	223	-	459	324	-	-	-	-	-	-	-

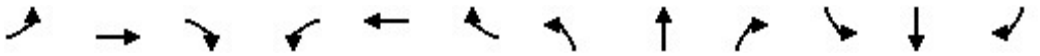
Approach	EB	WB	NB	SB
HCM Control Delay, s	15.5	29.1	1.1	0.2
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	713	-	-	405	179	637	-	-
HCM Lane V/C Ratio	0.062	-	-	0.151	0.168	0.009	-	-
HCM Control Delay (s)	10.4	0.7	-	15.5	29.1	10.7	0.1	-
HCM Lane LOS	B	A	-	C	D	B	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.5	0.6	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	5	13	9	10	23	9	1049	8	8	930	2
Future Volume (vph)	1	5	13	9	10	23	9	1049	8	8	930	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.908			0.926			0.999				
Flt Protected		0.997			0.989							
Satd. Flow (prot)	0	1670	0	0	1689	0	0	3501	0	0	3505	0
Flt Permitted		0.997			0.989							
Satd. Flow (perm)	0	1670	0	0	1689	0	0	3501	0	0	3505	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		378			377			334			323	
Travel Time (s)		10.3			10.3			7.6			7.3	
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
Adj. Flow (vph)	1	5	13	9	10	23	9	1049	8	8	930	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	19	0	0	42	0	0	1066	0	0	940	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			35			35	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.8%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.908			0.926			0.999				
Flt Protected		0.997			0.989							
Satd. Flow (prot)	0	1670	0	0	1689	0	0	3501	0	0	3505	0
Flt Permitted		0.997			0.989							
Satd. Flow (perm)	0	1670	0	0	1689	0	0	3501	0	0	3505	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		378			377			334			323	
Travel Time (s)		10.3			10.3			7.6			7.3	

Intersection Summary	
Area Type:	Other

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	5	13	9	10	23	9	1049	8	8	930	2
Future Vol, veh/h	1	5	13	9	10	23	9	1049	8	8	930	2
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, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	5	13	9	10	23	9	1049	8	8	930	2

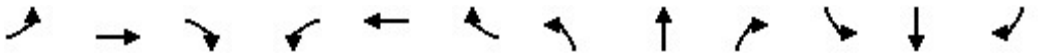
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1495	2022	466	1555	2019	529	932	0	0	1057	0	0
Stage 1	947	947	-	1071	1071	-	-	-	-	-	-	-
Stage 2	548	1075	-	484	948	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	84	57	541	76	57	492	724	-	-	649	-	-
Stage 1	279	336	-	234	293	-	-	-	-	-	-	-
Stage 2	486	292	-	530	335	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	73	54	541	69	54	492	724	-	-	649	-	-
Mov Cap-2 Maneuver	182	161	-	168	161	-	-	-	-	-	-	-
Stage 1	271	327	-	227	284	-	-	-	-	-	-	-
Stage 2	434	283	-	496	326	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.2	21.6	0.2	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	724	-	-	314	259	649	-	-
HCM Lane V/C Ratio	0.012	-	-	0.061	0.162	0.012	-	-
HCM Control Delay (s)	10	0.1	-	17.2	21.6	10.6	0.1	-
HCM Lane LOS	B	A	-	C	C	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.6	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	2	7	3	14	7	1060	9	19	934	8
Future Volume (vph)	1	1	2	7	3	14	7	1060	9	19	934	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.932			0.921			0.999			0.999	
Flt Protected		0.988			0.986						0.999	
Satd. Flow (prot)	0	1699	0	0	1675	0	0	3501	0	0	3498	0
Flt Permitted		0.988			0.986						0.999	
Satd. Flow (perm)	0	1699	0	0	1675	0	0	3501	0	0	3498	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		336			359			323			429	
Travel Time (s)		9.2			9.8			7.3			9.8	
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
Adj. Flow (vph)	1	1	2	7	3	14	7	1060	9	19	934	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	24	0	0	1076	0	0	961	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			35			35	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.6%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.932			0.921			0.999			0.999	
Flt Protected		0.988			0.986						0.999	
Satd. Flow (prot)	0	1699	0	0	1675	0	0	3501	0	0	3498	0
Flt Permitted		0.988			0.986						0.999	
Satd. Flow (perm)	0	1699	0	0	1675	0	0	3501	0	0	3498	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		336			359			323			429	
Travel Time (s)		9.2			9.8			7.3			9.8	

Intersection Summary	
Area Type:	Other

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	2	7	3	14	7	1060	9	19	934	8
Future Vol, veh/h	1	1	2	7	3	14	7	1060	9	19	934	8
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, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	1	2	7	3	14	7	1060	9	19	934	8

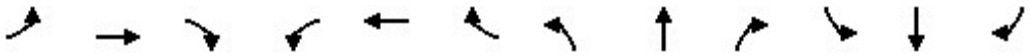
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1522	2059	471	1585	2059	535	942	0	0	1069	0	0
Stage 1	976	976	-	1079	1079	-	-	-	-	-	-	-
Stage 2	546	1083	-	506	980	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	80	54	536	72	54	487	717	-	-	642	-	-
Stage 1	268	325	-	231	291	-	-	-	-	-	-	-
Stage 2	487	289	-	514	324	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	72	49	536	67	49	487	717	-	-	642	-	-
Mov Cap-2 Maneuver	180	151	-	165	155	-	-	-	-	-	-	-
Stage 1	262	305	-	225	284	-	-	-	-	-	-	-
Stage 2	457	282	-	479	304	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.6	19.9	0.2	0.5
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	717	-	-	251	265	642	-	-
HCM Lane V/C Ratio	0.01	-	-	0.016	0.091	0.03	-	-
HCM Control Delay (s)	10.1	0.1	-	19.6	19.9	10.8	0.3	-
HCM Lane LOS	B	A	-	C	C	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0.1	-	-

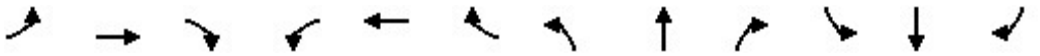
MLK Jr Way Road Diet Analysis
7: MLK Jr Way & 54th St

Road Diet-PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1	15	19	8	11	34	1683	21	7	1406	9
Future Volume (vph)	3	1	15	19	8	11	34	1683	21	7	1406	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.893			0.961			0.998			0.999	
Flt Protected		0.992			0.976			0.999				
Satd. Flow (prot)	0	1650	0	0	1747	0	0	3529	0	0	3536	0
Flt Permitted		0.992			0.976			0.999				
Satd. Flow (perm)	0	1650	0	0	1747	0	0	3529	0	0	3536	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		221			257			323			333	
Travel Time (s)		6.0			7.0			7.3			7.6	
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
Adj. Flow (vph)	3	1	15	19	8	11	34	1683	21	7	1406	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	19	0	0	38	0	0	1738	0	0	1422	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			35			35	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 83.5%		ICU Level of Service E	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.893			0.961			0.998			0.999	
Flt Protected		0.992			0.976			0.999				
Satd. Flow (prot)	0	1650	0	0	1747	0	0	3529	0	0	3536	0
Flt Permitted		0.992			0.976			0.999				
Satd. Flow (perm)	0	1650	0	0	1747	0	0	3529	0	0	3536	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		221			257			323			333	
Travel Time (s)		6.0			7.0			7.3			7.6	

Intersection Summary	
Area Type:	Other

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	15	19	8	11	34	1683	21	7	1406	9
Future Vol, veh/h	3	1	15	19	8	11	34	1683	21	7	1406	9
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, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	15	19	8	11	34	1683	21	7	1406	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2339	3197	708	2480	3191	852	1415	0	0	1704	0	0
Stage 1	1425	1425	-	1762	1762	-	-	-	-	-	-	-
Stage 2	914	1772	-	718	1429	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	19	10	377	~ 15	10	303	478	-	-	369	-	-
Stage 1	142	200	-	87	136	-	-	-	-	-	-	-
Stage 2	294	135	-	386	199	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	0	377	-	0	303	478	-	-	369	-	-
Mov Cap-2 Maneuver	~ -8	~ -7	-	-	0	-	-	-	-	-	-	-
Stage 1	142	182	-	87	0	-	-	-	-	-	-	-
Stage 2	-	0	-	336	181	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			6.4	0.8
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	478	-	-	-	-	369	-	-
HCM Lane V/C Ratio	0.071	-	-	-	-	0.019	-	-
HCM Control Delay (s)	13.1	6.3	-	-	-	14.9	0.7	-
HCM Lane LOS	B	A	-	-	-	B	A	-
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.1	-	-

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	9	11	7	4	18	10	7	1472	12	34	1205
Future Volume (vph)	0	9	11	7	4	18	10	7	1472	12	34	1205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.926			0.916				0.999			
Flt Protected					0.988				0.999			0.999
Satd. Flow (prot)	0	1725	0	0	1686	0	0	0	3532	0	0	3536
Flt Permitted					0.988				0.999			0.999
Satd. Flow (perm)	0	1725	0	0	1686	0	0	0	3532	0	0	3536
Link Speed (mph)		25			25				30			30
Link Distance (ft)		222			330				303			277
Travel Time (s)		6.1			9.0				6.9			6.3
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
Adj. Flow (vph)	0	9	11	7	4	18	10	7	1472	12	34	1205
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	20	0	0	29	0	0	0	1501	0	0	1240
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left
Median Width(ft)		0			0				35			35
Link Offset(ft)		0			0				0			0
Crosswalk Width(ft)		16			16				16			16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15	
Sign Control		Stop			Stop				Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.5%		ICU Level of Service C	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	1
Future Volume (vph)	1
Ideal Flow (vphpl)	1900
Lane Util. Factor	0.95
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	1.00
Adj. Flow (vph)	1
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Sign Control	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%				0%			0%
Storage Length (ft)	0		0	0		0		0		0	0	
Storage Lanes	0		0	0		0		0		0	0	
Taper Length (ft)	25			25				25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.926			0.916				0.999			
Flt Protected					0.988				0.999			0.999
Satd. Flow (prot)	0	1725	0	0	1686	0	0	0	3532	0	0	3536
Flt Permitted					0.988				0.999			0.999
Satd. Flow (perm)	0	1725	0	0	1686	0	0	0	3532	0	0	3536
Link Speed (mph)		25			25				30			30
Link Distance (ft)		222			330				303			277
Travel Time (s)		6.1			9.0				6.9			6.3

Intersection Summary	
Area Type:	Other

Lane Group	SBR
Lane Configurations	
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Grade (%)	
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	0.95
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	

Intersection Summary

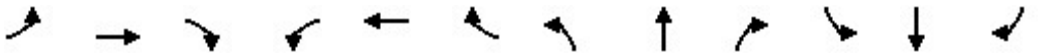
Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	9	11	7	4	18	10	7	1472	12	34	1205	1
Future Vol, veh/h	0	9	11	7	4	18	10	7	1472	12	34	1205	1
Conflicting Peds, #/hr	0	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	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	9	11	7	4	18	10	7	1472	12	34	1205	1

Major/Minor	Minor2			Minor1			Major1				Major2		
Conflicting Flow All	2046	2792	603	2187	2786	742	1206	1206	0	0	1484	0	0
Stage 1	1274	1274	-	1512	1512	-	-	-	-	-	-	-	-
Stage 2	772	1518	-	675	1274	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	33	18	442	25	18	358	245	574	-	-	449	-	-
Stage 1	177	236	-	126	181	-	-	-	-	-	-	-	-
Stage 2	358	180	-	410	236	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-		-	-
Mov Cap-1 Maneuver	19	10	442	14	10	358	315	315	-	-	449	-	-
Mov Cap-2 Maneuver	76	59	-	65	69	-	-	-	-	-	-	-	-
Stage 1	122	182	-	87	125	-	-	-	-	-	-	-	-
Stage 2	227	124	-	293	182	-	-	-	-	-	-	-	-

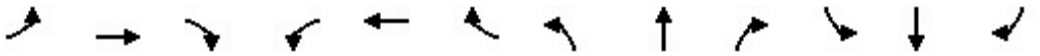
Approach	EB	WB	NB	SB
HCM Control Delay, s	43.6	39.1	5.3	1.8
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	315	-	-	113	134	449	-	-
HCM Lane V/C Ratio	0.022	-	-	0.177	0.216	0.076	-	-
HCM Control Delay (s)	17.1	5.2	-	43.6	39.1	13.7	1.5	-
HCM Lane LOS	C	A	-	E	E	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.8	0.2	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	6	8	7	5	10	23	1449	24	29	1209	3
Future Volume (vph)	0	6	8	7	5	10	23	1449	24	29	1209	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.923			0.939			0.998				
Flt Protected					0.984			0.999			0.999	
Satd. Flow (prot)	0	1719	0	0	1721	0	0	3529	0	0	3536	0
Flt Permitted					0.984			0.999			0.999	
Satd. Flow (perm)	0	1719	0	0	1721	0	0	3529	0	0	3536	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		354			322			277			250	
Travel Time (s)		9.7			8.8			6.3			5.7	
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
Adj. Flow (vph)	0	6	8	7	5	10	23	1449	24	29	1209	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	14	0	0	22	0	0	1496	0	0	1241	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			35			35	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 71.3%		ICU Level of Service C	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.923			0.939			0.998				
Flt Protected					0.984			0.999			0.999	
Satd. Flow (prot)	0	1719	0	0	1721	0	0	3529	0	0	3536	0
Flt Permitted					0.984			0.999			0.999	
Satd. Flow (perm)	0	1719	0	0	1721	0	0	3529	0	0	3536	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		354			322			277			250	
Travel Time (s)		9.7			8.8			6.3			5.7	

Intersection Summary	
Area Type:	Other

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	6	8	7	5	10	23	1449	24	29	1209	3
Future Vol, veh/h	0	6	8	7	5	10	23	1449	24	29	1209	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, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	6	8	7	5	10	23	1449	24	29	1209	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2042	2788	606	2173	2777	737	1212	0	0	1473	0	0
Stage 1	1269	1269	-	1507	1507	-	-	-	-	-	-	-
Stage 2	773	1519	-	666	1270	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	33	18	440	26	19	361	571	-	-	454	-	-
Stage 1	178	238	-	127	182	-	-	-	-	-	-	-
Stage 2	358	180	-	415	237	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	22	11	440	17	12	361	571	-	-	454	-	-
Mov Cap-2 Maneuver	88	69	-	73	75	-	-	-	-	-	-	-
Stage 1	138	191	-	98	141	-	-	-	-	-	-	-
Stage 2	260	140	-	317	191	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	35.2	43.2	1.4	1.6
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	571	-	-	133	116	454	-	-
HCM Lane V/C Ratio	0.04	-	-	0.105	0.19	0.064	-	-
HCM Control Delay (s)	11.6	1.3	-	35.2	43.2	13.5	1.3	-
HCM Lane LOS	B	A	-	E	E	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.7	0.2	-	-

Lane Group	EBU	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1	2	14	24	1435	1220	4
Future Volume (vph)	1	2	14	24	1435	1220	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.889					
Flt Protected		0.991			0.999		
Satd. Flow (prot)	0	1641	0	0	3536	3539	0
Flt Permitted		0.991			0.999		
Satd. Flow (perm)	0	1641	0	0	3536	3539	0
Link Speed (mph)		25			30	30	
Link Distance (ft)		271			250	253	
Travel Time (s)		7.4			5.7	5.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	2	14	24	1435	1220	4
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	17	0	0	1459	1224	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Right	Left	Left	Left	Right
Median Width(ft)		12			35	35	
Link Offset(ft)		0			0	0	
Crosswalk Width(ft)		16			16	16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9	15	9	15			9
Sign Control		Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.7%		ICU Level of Service C	
Analysis Period (min) 15			

Lane Group	EBU	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)		0%			0%	0%	
Storage Length (ft)		0	0	0			0
Storage Lanes		1	0	0			0
Taper Length (ft)		25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor							
Frt		0.889					
Flt Protected		0.991			0.999		
Satd. Flow (prot)	0	1641	0	0	3536	3539	0
Flt Permitted		0.991			0.999		
Satd. Flow (perm)	0	1641	0	0	3536	3539	0
Link Speed (mph)		25			30	30	
Link Distance (ft)		271			250	253	
Travel Time (s)		7.4			5.7	5.8	

Intersection Summary	
Area Type:	Other

Intersection	
Int Delay, s/veh	0.9

Movement	EBU	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	1	2	14	24	1435	1220	4
Future Vol, veh/h	1	2	14	24	1435	1220	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	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	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	1	2	14	24	1435	1220	4

Major/Minor	Minor2			Major1		Major2	
Conflicting Flow All	0	1988	612	1224	0	-	0
Stage 1	0	1222	-	-	-	-	-
Stage 2	0	766	-	-	-	-	-
Critical Hdwy	-	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	5.84	-	-	-	-	-
Critical Hdwy Stg 2	-	5.84	-	-	-	-	-
Follow-up Hdwy	-	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	0	53	436	565	-	-	-
Stage 1	0	241	-	-	-	-	-
Stage 2	0	419	-	-	-	-	-
Platoon blocked, %	-				-	-	-
Mov Cap-1 Maneuver	0	42	436	565	-	-	-
Mov Cap-2 Maneuver	0	136	-	-	-	-	-
Stage 1	0	191	-	-	-	-	-
Stage 2	0	419	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16	1.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	565	-	342	-	-
HCM Lane V/C Ratio	0.042	-	0.047	-	-
HCM Control Delay (s)	11.7	1.2	16	-	-
HCM Lane LOS	B	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	24	53	1381	1206	8
Future Volume (vph)	0	24	53	1381	1206	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.865				0.999	
Flt Protected				0.998		
Satd. Flow (prot)	1611	0	0	3532	3536	0
Flt Permitted				0.998		
Satd. Flow (perm)	1611	0	0	3532	3536	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	436			253	245	
Travel Time (s)	11.9			5.8	5.6	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	24	53	1381	1206	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	0	1434	1214	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			35	35	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 86.6%		ICU Level of Service E	
Analysis Period (min) 15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt	0.865				0.999	
Flt Protected				0.998		
Satd. Flow (prot)	1611	0	0	3532	3536	0
Flt Permitted				0.998		
Satd. Flow (perm)	1611	0	0	3532	3536	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	436			253	245	
Travel Time (s)	11.9			5.8	5.6	

Intersection Summary	
Area Type:	Other

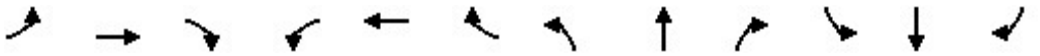
Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	24	53	1381	1206	8
Future Vol, veh/h	0	24	53	1381	1206	8
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	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	24	53	1381	1206	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2007	607	1214	0	-	0
Stage 1	1210	-	-	-	-	-
Stage 2	797	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	52	439	570	-	-	-
Stage 1	245	-	-	-	-	-
Stage 2	404	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	31	439	570	-	-	-
Mov Cap-2 Maneuver	109	-	-	-	-	-
Stage 1	147	-	-	-	-	-
Stage 2	404	-	-	-	-	-

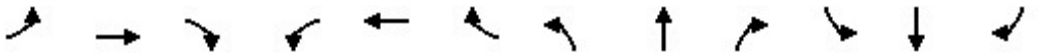
Approach	EB	NB	SB
HCM Control Delay, s	13.7	2.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	570	-	439	-	-
HCM Lane V/C Ratio	0.093	-	0.055	-	-
HCM Control Delay (s)	12	2.2	13.7	-	-
HCM Lane LOS	B	A	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.2	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	8	61	10	8	12	85	1285	8	6	1137	3
Future Volume (vph)	4	8	61	10	8	12	85	1285	8	6	1137	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.887			0.946			0.999				
Flt Protected		0.997			0.984			0.997				
Satd. Flow (prot)	0	1647	0	0	1734	0	0	3525	0	0	3539	0
Flt Permitted		0.997			0.984			0.997				
Satd. Flow (perm)	0	1647	0	0	1734	0	0	3525	0	0	3539	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		357			401			245			319	
Travel Time (s)		9.7			10.9			5.6			7.3	
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
Adj. Flow (vph)	4	8	61	10	8	12	85	1285	8	6	1137	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	73	0	0	30	0	0	1378	0	0	1146	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			35			35	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 85.3%		ICU Level of Service E	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.887			0.946			0.999				
Flt Protected		0.997			0.984			0.997				
Satd. Flow (prot)	0	1647	0	0	1734	0	0	3525	0	0	3539	0
Flt Permitted		0.997			0.984			0.997				
Satd. Flow (perm)	0	1647	0	0	1734	0	0	3525	0	0	3539	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		357			401			245			319	
Travel Time (s)		9.7			10.9			5.6			7.3	

Intersection Summary	
Area Type:	Other

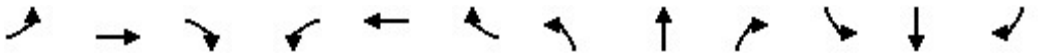
Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	8	61	10	8	12	85	1285	8	6	1137	3
Future Vol, veh/h	4	8	61	10	8	12	85	1285	8	6	1137	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, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	8	61	10	8	12	85	1285	8	6	1137	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1968	2614	570	2044	2611	647	1140	0	0	1293	0	0
Stage 1	1151	1151	-	1459	1459	-	-	-	-	-	-	-
Stage 2	817	1463	-	585	1152	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	37	24	465	33	24	414	609	-	-	532	-	-
Stage 1	211	271	-	136	192	-	-	-	-	-	-	-
Stage 2	337	191	-	464	270	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	19	12	465	16	12	414	609	-	-	532	-	-
Mov Cap-2 Maneuver	64	65	-	55	62	-	-	-	-	-	-	-
Stage 1	106	263	-	68	97	-	-	-	-	-	-	-
Stage 2	151	96	-	379	262	-	-	-	-	-	-	-

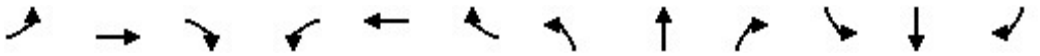
Approach	EB	WB	NB	SB
HCM Control Delay, s	27.8	65.7	3.2	0.3
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	609	-	-	230	88	532	-	-
HCM Lane V/C Ratio	0.14	-	-	0.317	0.341	0.011	-	-
HCM Control Delay (s)	11.9	2.6	-	27.8	65.7	11.8	0.2	-
HCM Lane LOS	B	A	-	D	F	B	A	-
HCM 95th %tile Q(veh)	0.5	-	-	1.3	1.3	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1	8	10	4	19	14	1263	17	18	1104	11
Future Volume (vph)	2	1	8	10	4	19	14	1263	17	18	1104	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.902			0.922			0.998			0.999	
Flt Protected		0.991			0.985			0.999			0.999	
Satd. Flow (prot)	0	1665	0	0	1692	0	0	3529	0	0	3532	0
Flt Permitted		0.991			0.985			0.999			0.999	
Satd. Flow (perm)	0	1665	0	0	1692	0	0	3529	0	0	3532	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		378			377			334			323	
Travel Time (s)		10.3			10.3			7.6			7.3	
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
Adj. Flow (vph)	2	1	8	10	4	19	14	1263	17	18	1104	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	11	0	0	33	0	0	1294	0	0	1133	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			35			35	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.3%		ICU Level of Service B	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.902			0.922			0.998			0.999	
Flt Protected		0.991			0.985			0.999			0.999	
Satd. Flow (prot)	0	1665	0	0	1692	0	0	3529	0	0	3532	0
Flt Permitted		0.991			0.985			0.999			0.999	
Satd. Flow (perm)	0	1665	0	0	1692	0	0	3529	0	0	3532	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		378			377			334			323	
Travel Time (s)		10.3			10.3			7.6			7.3	

Intersection Summary	
Area Type:	Other

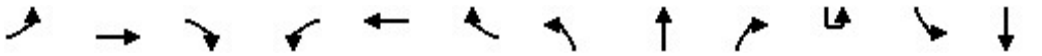
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1	8	10	4	19	14	1263	17	18	1104	11
Future Vol, veh/h	2	1	8	10	4	19	14	1263	17	18	1104	11
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, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	1	8	10	4	19	14	1263	17	18	1104	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1808	2454	558	1889	2451	640	1115	0	0	1280	0	0
Stage 1	1146	1146	-	1300	1300	-	-	-	-	-	-	-
Stage 2	662	1308	-	589	1151	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	49	30	473	43	31	418	622	-	-	538	-	-
Stage 1	212	272	-	170	230	-	-	-	-	-	-	-
Stage 2	417	228	-	461	271	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	40	25	473	37	26	418	622	-	-	538	-	-
Mov Cap-2 Maneuver	130	110	-	116	113	-	-	-	-	-	-	-
Stage 1	195	248	-	157	212	-	-	-	-	-	-	-
Stage 2	360	210	-	412	247	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.1	26.8	0.5	0.7
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	622	-	-	266	198	538	-	-
HCM Lane V/C Ratio	0.023	-	-	0.041	0.167	0.033	-	-
HCM Control Delay (s)	10.9	0.4	-	19.1	26.8	11.9	0.5	-
HCM Lane LOS	B	A	-	C	D	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.6	0.1	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	2	2	6	8	11	18	1252	10	8	13	1124
Future Volume (vph)	1	2	2	6	8	11	18	1252	10	8	13	1124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.946			0.941			0.999				0.997
Flt Protected		0.990			0.988			0.999				0.999
Satd. Flow (prot)	0	1745	0	0	1732	0	0	3532	0	0	0	3525
Flt Permitted		0.990			0.988			0.999				0.999
Satd. Flow (perm)	0	1745	0	0	1732	0	0	3532	0	0	0	3525
Link Speed (mph)		25			25			30				30
Link Distance (ft)		336			359			323				429
Travel Time (s)		9.2			9.8			7.3				9.8
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
Adj. Flow (vph)	1	2	2	6	8	11	18	1252	10	8	13	1124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	5	0	0	25	0	0	1280	0	0	0	1171
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	R NA	Left	Left
Median Width(ft)		0			0			35				35
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	9	15	
Sign Control		Stop			Stop			Free				Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.7%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	26
Future Volume (vph)	26
Ideal Flow (vphpl)	1900
Lane Util. Factor	0.95
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	1.00
Adj. Flow (vph)	26
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Sign Control	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	0		0	0		0	0		0		0	
Storage Lanes	0		0	0		0	0		0		0	
Taper Length (ft)	25			25			25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.946			0.941			0.999				0.997
Flt Protected		0.990			0.988			0.999				0.999
Satd. Flow (prot)	0	1745	0	0	1732	0	0	3532	0	0	0	3525
Flt Permitted		0.990			0.988			0.999				0.999
Satd. Flow (perm)	0	1745	0	0	1732	0	0	3532	0	0	0	3525
Link Speed (mph)		25			25			30				30
Link Distance (ft)		336			359			323				429
Travel Time (s)		9.2			9.8			7.3				9.8

Intersection Summary	
Area Type:	Other

Lane Group	SBR
Lane Configurations	
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Grade (%)	
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	0.95
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	

Intersection Summary

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	1	2	2	6	8	11	18	1252	10	8	13	1124	26
Future Vol, veh/h	1	2	2	6	8	11	18	1252	10	8	13	1124	26
Conflicting Peds, #/hr	0	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	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	2	2	6	8	11	18	1252	10	8	13	1124	26

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	1845	2477	575	1898	2485	631	1150	0	0	1262	1262	0	0
Stage 1	1179	1179	-	1293	1293	-	-	-	-	-	-	-	-
Stage 2	666	1298	-	605	1192	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	46	29	461	42	29	424	603	-	-	225	547	-	-
Stage 1	202	262	-	172	231	-	-	-	-	-	-	-	-
Stage 2	415	230	-	451	259	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	34	22	461	33	22	424	603	-	-	348	348	-	-
Mov Cap-2 Maneuver	121	102	-	111	102	-	-	-	-	-	-	-	-
Stage 1	182	218	-	155	208	-	-	-	-	-	-	-	-
Stage 2	350	207	-	370	215	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29	32	0.6	2.8
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	603	-	-	155	158	348	-	-
HCM Lane V/C Ratio	0.03	-	-	0.032	0.158	0.037	-	-
HCM Control Delay (s)	11.2	0.5	-	29	32	16	2.6	-
HCM Lane LOS	B	A	-	D	D	C	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.5	0.1	-	-

Attachment 5: Intersection Turning Movement Data

Attachment 5: Intersection Turning Movement Data

National Data & Surveying Services Intersection Turning Movement Count

Location: MLK Jr Way & 47th St/SR 24 WB On-Ramp
City: Oakland
Control: 1-Way Stop (EB)

Project ID: 22-080126-001
Date: 4/12/2022

Data - Total

NS/EW Streets:	MLK Jr Way				MLK Jr Way				47th St/SR 24 WB On-Ramp				47th St/SR 24 WB On-Ramp				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1.5	0.5	0	0	2	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	12	32	1	0	25	1	0	0	1	0	0	0	0	0	0	72
7:15 AM	0	9	60	0	0	27	2	0	0	3	0	0	0	0	0	0	101
7:30 AM	2	22	56	0	0	38	1	0	0	1	0	0	0	0	0	0	120
7:45 AM	2	28	69	0	1	48	0	0	0	5	0	0	0	0	0	0	153
8:00 AM	0	30	100	0	0	56	4	0	2	3	0	0	0	0	0	0	195
8:15 AM	3	31	102	1	0	49	1	0	0	4	1	0	0	0	0	0	192
8:30 AM	1	42	86	0	0	55	4	0	1	2	2	0	0	0	0	0	193
8:45 AM	1	33	90	0	0	61	2	0	0	1	3	0	0	0	0	0	191
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	9	207	595	2	1	359	15	0	3	20	6	0	0	0	0	0	1217
APPROACH %'s :	1.11%	25.46%	73.19%	0.25%	0.27%	95.73%	4.00%	0.00%	10.34%	68.97%	20.69%	0.00%					
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	5	136	378	1	0	221	11	0	3	10	6	0	0	0	0	0	771
PEAK HR FACTOR :	0.417	0.810	0.926	0.250	0.000	0.906	0.688	0.000	0.375	0.625	0.500	0.000	0.000	0.000	0.000	0.000	0.988
	0.949				0.921				0.950								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1.5	0.5	0	0	2	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	2	41	110	0	1	35	0	0	0	4	3	0	0	0	0	0	196
4:15 PM	0	46	90	0	1	53	1	1	0	0	2	0	0	0	0	0	194
4:30 PM	1	40	86	1	2	50	1	1	1	3	1	0	0	0	0	0	187
4:45 PM	2	35	96	0	1	57	1	0	0	2	3	0	0	0	0	0	197
5:00 PM	1	46	90	1	1	59	1	0	1	0	1	0	0	0	0	0	201
5:15 PM	2	49	98	0	0	52	1	0	0	0	0	0	0	0	0	0	202
5:30 PM	2	46	105	0	3	59	1	0	0	1	2	0	0	0	0	0	219
5:45 PM	1	47	92	0	1	55	0	0	1	3	0	0	0	0	0	0	200
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	11	350	767	2	10	420	6	2	3	13	12	0	0	0	0	0	1596
APPROACH %'s :	0.97%	30.97%	67.88%	0.18%	2.28%	95.89%	1.37%	0.46%	10.71%	46.43%	42.86%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	6	188	385	1	5	225	3	0	2	4	3	0	0	0	0	0	822
PEAK HR FACTOR :	0.750	0.959	0.917	0.250	0.417	0.953	0.750	0.000	0.500	0.333	0.375	0.000	0.000	0.000	0.000	0.000	0.938
	0.948				0.925				0.563								

National Data & Surveying Services Intersection Turning Movement Count

Location: MLK Jr Way & SR 24 WB On-Ramp/SR 24 EB Off-Ramp
City: Oakland
Control: Signalized

Project ID: 22-080126-002
Date: 4/12/2022

Data - Total

NS/EW Streets:	MLK Jr Way				MLK Jr Way				SR 24 WB On-Ramp/SR 24 EB Off-Ramp				SR 24 WB On-Ramp/SR 24 EB Off-Ramp				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	2	2	0	0	0	0	0	0	0	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	12	0	0	139	27	0	0	0	0	0	0	0	0	149	0	327
7:15 AM	0	9	0	0	167	28	0	0	0	0	0	0	0	0	224	0	428
7:30 AM	0	20	1	0	220	44	0	0	0	0	0	0	0	0	303	0	588
7:45 AM	0	29	0	0	274	45	0	0	0	0	0	0	0	0	384	0	732
8:00 AM	0	29	0	0	291	60	0	0	0	0	0	0	0	0	358	0	738
8:15 AM	0	33	0	0	345	51	0	0	0	0	0	0	0	0	315	0	744
8:30 AM	0	44	0	0	287	57	0	0	0	0	0	0	0	0	311	0	699
8:45 AM	0	32	0	0	291	64	0	0	0	0	0	0	0	0	302	0	689
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	208	1	0	2014	376	0	0	0	0	0	0	0	0	2346	0	4945
APPROACH %'s :	0.00%	99.52%	0.48%	0.00%	84.27%	15.73%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	135	0	0	1197	213	0	0	0	0	0	0	0	0	1368	0	2913
PEAK HR FACTOR :	0.000	0.767	0.000	0.000	0.867	0.888	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.891	0.000	0.979
		0.767				0.890								0.891			

NS/EW Streets:	MLK Jr Way				MLK Jr Way				SR 24 WB On-Ramp/SR 24 EB Off-Ramp				SR 24 WB On-Ramp/SR 24 EB Off-Ramp				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	2	2	0	0	0	0	0	0	0	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	39	2	0	334	38	0	0	0	0	0	0	0	0	391	0	804
4:15 PM	0	45	0	0	359	54	0	0	0	0	0	0	0	0	390	0	848
4:30 PM	0	43	0	0	288	57	0	0	0	0	0	0	0	0	363	0	751
4:45 PM	0	36	0	0	364	56	0	0	0	0	0	0	0	0	368	0	824
5:00 PM	0	45	1	0	324	64	0	0	0	0	0	0	0	0	375	0	809
5:15 PM	0	50	0	0	374	52	0	0	0	0	0	0	0	0	380	0	856
5:30 PM	0	45	0	0	385	62	0	0	0	0	0	0	0	0	408	0	900
5:45 PM	0	49	0	0	317	55	0	0	0	0	0	0	0	0	372	0	793
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	352	3	0	2745	438	0	0	0	0	0	0	0	0	3047	0	6585
APPROACH %'s :	0.00%	99.15%	0.85%	0.00%	86.24%	13.76%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	176	1	0	1447	234	0	0	0	0	0	0	0	0	1531	0	3389
PEAK HR FACTOR :	0.000	0.880	0.250	0.000	0.940	0.914	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.938	0.000	0.941
		0.885				0.940								0.938			

National Data & Surveying Services Intersection Turning Movement Count

Location: MLK Jr Way & 51st St
City: Oakland
Project ID: 22-080126-003
Date: 4/12/2022

Data - Pedestrians (Crosswalks)

NS/EW Streets:	MLK Jr Way		MLK Jr Way		51st St		51st St		
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
2:00 PM	0	2	0	0	2	0	0	2	6
2:15 PM	2	1	1	0	2	1	3	1	11
2:30 PM	6	4	0	0	0	1	4	2	17
2:45 PM	21	1	0	0	3	2	13	0	40
3:00 PM	7	4	0	0	1	0	7	1	20
3:15 PM	1	16	0	1	1	3	1	7	30
3:30 PM	1	6	0	0	1	0	0	4	12
3:45 PM	1	1	1	0	1	0	1	3	8
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	39	35	2	1	11	7	29	20	144
APPROACH %'s :	52.70%	47.30%	66.67%	33.33%	61.11%	38.89%	59.18%	40.82%	
PEAK HR :	02:45 PM - 03:45 PM								TOTAL
PEAK HR VOL :	30	27	0	1	6	5	21	12	102
PEAK HR FACTOR :	0.357	0.422		0.250	0.500	0.417	0.404	0.429	0.638
	0.648		0.250		0.550		0.635		

National Data & Surveying Services Intersection Turning Movement Count

Location: MLK Jr Way & 52nd St
City: Oakland
Control: Signalized

Project ID: 22-080126-004
Date: 4/12/2022

Data - Total

NS/EW Streets:	MLK Jr Way				MLK Jr Way				52nd St				52nd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	1	1	0	0	0.5	0.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	7	135	3	10	7	148	0	1	4	1	6	0	6	3	13	0	344
7:15 AM	21	189	7	10	8	169	0	0	4	5	14	0	10	5	20	0	462
7:30 AM	17	283	12	14	9	228	1	2	12	9	19	0	9	9	26	0	650
7:45 AM	20	359	8	11	10	280	1	1	10	11	31	0	12	14	35	0	803
8:00 AM	23	331	8	17	8	274	0	3	21	24	31	0	22	11	35	0	808
8:15 AM	21	310	14	17	15	322	0	2	18	38	27	0	14	25	36	0	859
8:30 AM	10	315	11	13	15	285	0	2	10	24	25	0	19	22	32	0	783
8:45 AM	19	284	8	15	16	295	0	4	10	15	19	0	18	19	50	1	773
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	138	2206	71	107	88	2001	2	15	89	127	172	0	110	108	247	1	5482
APPROACH %'s :	5.47%	87.47%	2.82%	4.24%	4.18%	95.01%	0.09%	0.71%	22.94%	32.73%	44.33%	0.00%	23.61%	23.18%	53.00%	0.21%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	74	1315	41	58	48	1161	1	8	59	97	114	0	67	72	138	0	3253
PEAK HR FACTOR :	0.804	0.916	0.732	0.853	0.800	0.901	0.250	0.667	0.702	0.638	0.919	0.000	0.761	0.720	0.958	0.000	0.947
	0.935				0.898				0.813				0.923				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	1	1	0	0	0.5	0.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	27	370	13	11	19	298	0	1	6	16	27	0	18	16	38	0	860
4:15 PM	18	389	13	16	29	315	1	1	10	22	29	0	15	28	25	0	911
4:30 PM	17	345	14	16	16	274	1	0	9	25	38	0	11	23	29	0	818
4:45 PM	20	386	7	7	21	351	1	2	13	25	29	0	17	15	13	0	907
5:00 PM	21	373	8	13	23	327	0	2	15	23	22	0	12	22	34	0	895
5:15 PM	18	386	15	16	29	336	0	0	14	27	37	0	13	13	48	0	952
5:30 PM	16	419	12	11	20	356	0	2	11	14	28	0	15	20	25	0	949
5:45 PM	15	355	12	19	21	286	0	0	9	26	36	0	18	17	37	0	851
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	152	3023	94	109	178	2543	3	8	87	178	246	0	119	154	249	0	7143
APPROACH %'s :	4.50%	89.49%	2.78%	3.23%	6.52%	93.08%	0.11%	0.29%	17.03%	34.83%	48.14%	0.00%	22.80%	29.50%	47.70%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	75	1564	42	47	93	1370	1	6	53	89	116	0	57	70	120	0	3703
PEAK HR FACTOR :	0.893	0.933	0.700	0.734	0.802	0.962	0.250	0.750	0.883	0.824	0.784	0.000	0.838	0.795	0.625	0.000	0.972
	0.943				0.972				0.827				0.834				

National Data & Surveying Services Intersection Turning Movement Count

Location: MLK Jr Way/West St & 53rd St
City: Oakland
Control: Signalized

Project ID: 22-080126-005
Date: 4/12/2022

Data - Total

NS/EW Streets:	MLK Jr Way/West St					MLK Jr Way/West St					53rd St					53rd St						
AM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND					ORTHBOUND2	
	1	3	0	0	0	1	3	0	0	0	0	1	0	0	0	0	1	0	0	0	0	
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L2	TOTAL
7:00 AM	2	116	1	7	0	1	145	0	0	2	0	0	5	0	1	1	0	0	0	0	0	281
7:15 AM	3	192	2	3	0	0	170	0	0	5	0	0	3	0	0	0	0	0	0	0	0	378
7:30 AM	8	283	5	18	3	2	220	0	0	4	0	0	5	0	3	2	0	1	0	0	0	554
7:45 AM	9	346	2	9	1	0	274	2	0	7	1	1	5	0	1	1	0	1	0	0	0	660
8:00 AM	13	338	2	1	2	1	287	1	0	29	2	0	7	0	0	0	0	0	0	0	0	683
8:15 AM	11	323	3	2	0	0	315	1	0	32	1	2	9	0	0	3	0	1	0	0	0	703
8:30 AM	6	319	8	2	1	2	293	2	0	16	1	0	12	0	0	0	1	2	1	0	0	666
8:45 AM	9	321	9	3	0	1	301	3	0	16	0	1	3	0	1	3	0	2	0	1	0	674
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L2	TOTAL
TOTAL VOLUMES :	61	2238	32	45	7	7	2005	9	0	111	5	4	49	0	6	10	1	7	1	1	0	4599
APPROACH %'s :	2.56%	93.92%	1.34%	1.89%	0.29%	0.33%	94.04%	0.42%	0.00%	5.21%	7.81%	6.25%	76.56%	0.00%	9.38%	50.00%	5.00%	35.00%	5.00%	5.00%		
PEAK HR :	08:00 AM - 09:00 AM																					TOTAL
PEAK HR VOL :	39	1301	22	8	3	4	1196	7	0	93	4	3	31	0	1	6	1	5	1	1	0	2726
PEAK HR FACTOR :	0.750	0.962	0.611	0.667	0.375	0.500	0.949	0.583	0.000	0.727	0.500	0.375	0.646	0.000	0.250	0.500	0.250	0.625	0.250	0.250	0.000	0.969
			0.964					0.934					0.750					0.583				

PM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND						
	1	3	0	0	0	1	3	0	0	0	0	1	0	0	0	0	1	0	0	0	0	
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L2	TOTAL
4:00 PM	4	400	11	21	0	2	298	1	2	11	1	1	7	0	0	2	0	0	0	0	0	761
4:15 PM	9	411	9	17	2	5	307	3	0	25	0	0	5	0	1	5	0	1	0	0	0	800
4:30 PM	8	383	3	23	0	2	265	1	0	13	0	0	9	0	1	4	0	3	0	0	0	715
4:45 PM	6	428	14	13	1	4	349	0	0	20	0	0	9	0	0	1	1	3	0	0	0	849
5:00 PM	6	411	7	15	3	2	326	2	0	18	0	1	6	0	0	7	0	2	0	1	0	807
5:15 PM	4	435	10	6	1	1	342	1	0	18	1	1	10	0	1	2	0	2	0	0	0	835
5:30 PM	10	452	12	11	1	2	359	2	0	17	2	3	7	0	0	2	0	1	0	0	0	881
5:45 PM	5	387	2	8	0	0	280	2	0	22	1	2	10	0	2	3	2	2	0	0	0	728
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L2	TOTAL
TOTAL VOLUMES :	52	3307	68	114	8	18	2526	12	2	144	5	8	63	0	5	26	3	14	0	1	0	6376
APPROACH %'s :	1.47%	93.18%	1.92%	3.21%	0.23%	0.67%	93.49%	0.44%	0.07%	5.33%	6.17%	9.88%	77.78%	0.00%	6.17%	59.09%	6.82%	31.82%	0.00%	2.27%		
PEAK HR :	04:45 PM - 05:45 PM																					TOTAL
PEAK HR VOL :	26	1726	43	45	6	9	1376	5	0	73	3	5	32	0	1	12	1	8	0	1	0	3372
PEAK HR FACTOR :	0.650	0.955	0.768	0.750	0.500	0.563	0.958	0.625	0.000	0.913	0.375	0.417	0.800	0.000	0.250	0.429	0.250	0.667	0.000	0.250	0.000	0.957
			0.950					0.963					0.788					0.550				

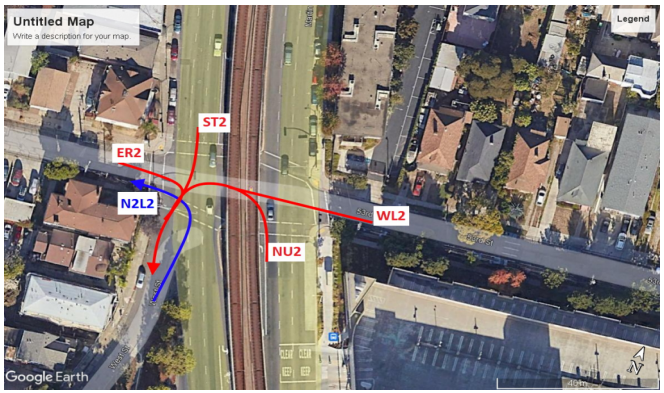
Explanation for extra leg movements

Movements entering the extra leg

NU2	Movements coming from NB on Martin Luther King Jr Way entering into the Extra Leg (West St)
ST2	Movements coming from SB on Martin Luther King Jr Way entering into the Extra Leg (West St)
ER2	Movements coming from EB on 53rd St entering into the Extra Leg (West St)
WL2	Movements coming from WB on 53rd St entering into the Extra Leg (West St)

Movements exiting the extra leg

N2L2	Movements exiting from Extra Leg (West St) entering into 53rd St heading WB



National Data & Surveying Services Intersection Turning Movement Count

Location: MLK Jr Way & 54th St
City: Oakland
Control: 2-Way Stop (EB/WB)

Project ID: 22-080126-006
Date: 4/12/2022

Data - Total

NS/EW Streets:	MLK Jr Way				MLK Jr Way				54th St				54th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	3	113	3	0	0	138	2	0	1	0	2	0	0	0	1	0	263
7:15 AM	1	188	3	1	0	178	0	0	0	0	3	0	0	0	1	0	375
7:30 AM	3	270	3	1	0	213	0	0	0	0	3	0	3	1	0	0	497
7:45 AM	6	344	2	0	2	283	0	0	0	0	5	0	0	0	3	0	645
8:00 AM	9	326	7	1	2	316	0	0	0	0	7	0	4	2	2	0	676
8:15 AM	8	312	3	1	1	323	2	0	0	0	7	0	3	1	0	0	661
8:30 AM	6	300	4	1	2	320	1	0	0	2	4	0	1	0	2	0	643
8:45 AM	12	320	4	1	2	304	1	2	1	1	3	0	0	0	1	0	652
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	48	2173	29	6	9	2075	6	2	2	3	34	0	11	4	10	0	4412
APPROACH %'s :	2.13%	96.32%	1.29%	0.27%	0.43%	99.19%	0.29%	0.10%	5.13%	7.69%	87.18%	0.00%	44.00%	16.00%	40.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	35	1258	18	4	7	1263	4	2	1	3	21	0	8	3	5	0	2632
PEAK HR FACTOR :	0.729	0.965	0.643	1.000	0.875	0.978	0.500	0.250	0.250	0.375	0.750	0.000	0.500	0.375	0.625	0.000	0.973
	0.958				0.979				0.893				0.500				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	6	392	7	3	2	304	0	0	1	1	6	0	4	1	3	0	730
4:15 PM	7	394	5	2	0	334	1	0	0	0	0	0	1	0	3	0	747
4:30 PM	4	378	4	1	2	291	6	0	1	3	5	0	1	0	4	0	700
4:45 PM	6	404	8	3	0	341	1	1	1	1	3	0	8	3	2	0	782
5:00 PM	3	417	3	0	0	346	4	0	2	0	2	0	0	0	2	0	779
5:15 PM	11	418	7	1	4	361	3	0	0	0	9	0	8	2	2	0	826
5:30 PM	8	444	3	2	2	358	1	0	0	0	1	0	3	3	5	0	830
5:45 PM	7	375	8	0	2	303	2	0	0	0	3	0	3	1	2	0	706
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	52	3222	45	12	12	2638	18	1	5	5	29	0	28	10	23	0	6100
APPROACH %'s :	1.56%	96.73%	1.35%	0.36%	0.45%	98.84%	0.67%	0.04%	12.82%	12.82%	74.36%	0.00%	45.90%	16.39%	37.70%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	28	1683	21	6	6	1406	9	1	3	1	15	0	19	8	11	0	3217
PEAK HR FACTOR :	0.636	0.948	0.656	0.500	0.375	0.974	0.563	0.250	0.375	0.250	0.417	0.000	0.594	0.667	0.550	0.000	0.969
	0.951				0.966				0.528				0.731				

National Data & Surveying Services Intersection Turning Movement Count

Location: MLK Jr Way & 55th St
City: Oakland
Control: Signalized

Project ID: 22-080126-007
Date: 4/12/2022

Data - Total

NS/EW Streets:	MLK Jr Way				MLK Jr Way				55th St				55th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	10	100	5	1	1	113	1	0	1	12	30	0	6	8	2	0	290
7:15 AM	12	166	9	1	6	127	2	1	2	14	36	0	4	11	9	0	400
7:30 AM	22	224	17	2	6	168	2	0	4	22	48	0	9	19	5	0	548
7:45 AM	33	305	11	3	10	198	5	1	1	32	62	0	7	48	12	0	728
8:00 AM	32	273	10	4	10	236	1	0	1	47	66	0	14	48	16	0	758
8:15 AM	33	267	20	1	15	266	5	0	0	58	61	0	9	73	30	0	838
8:30 AM	26	264	14	3	14	242	6	0	2	47	55	0	11	86	18	0	788
8:45 AM	34	275	11	1	11	239	4	0	6	43	58	0	13	58	22	0	775
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	202	1874	97	16	73	1589	26	2	17	275	416	0	73	351	114	0	5125
APPROACH %'s :	9.23%	85.61%	4.43%	0.73%	4.32%	94.02%	1.54%	0.12%	2.40%	38.84%	58.76%	0.00%	13.57%	65.24%	21.19%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	125	1079	55	9	50	983	16	0	9	195	240	0	47	265	86	0	3159
PEAK HR FACTOR :	0.919	0.981	0.688	0.563	0.833	0.924	0.667	0.000	0.375	0.841	0.909	0.000	0.839	0.770	0.717	0.000	0.942
		0.988				0.917				0.933				0.865			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	51	317	17	3	18	238	3	0	2	47	61	0	7	31	13	0	808
4:15 PM	43	342	18	2	17	265	2	0	1	44	51	0	13	35	8	0	841
4:30 PM	42	306	15	0	9	244	2	0	2	43	55	0	8	41	7	0	774
4:45 PM	52	356	19	1	10	257	5	2	5	48	65	0	14	48	10	0	892
5:00 PM	38	357	18	4	18	290	8	0	3	62	60	0	8	41	18	0	925
5:15 PM	42	347	30	3	18	290	7	1	9	50	56	0	8	46	16	0	923
5:30 PM	47	378	22	3	20	300	5	0	2	48	54	0	7	32	7	0	925
5:45 PM	43	302	25	4	14	240	3	1	3	60	52	0	8	53	12	0	820
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	358	2705	164	20	124	2124	35	4	27	402	454	0	73	327	91	0	6908
APPROACH %'s :	11.03%	83.31%	5.05%	0.62%	5.42%	92.87%	1.53%	0.17%	3.06%	45.53%	51.42%	0.00%	14.87%	66.60%	18.53%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	179	1438	89	11	66	1137	25	3	19	208	235	0	37	167	51	0	3665
PEAK HR FACTOR :	0.861	0.951	0.742	0.688	0.825	0.948	0.781	0.375	0.528	0.839	0.904	0.000	0.661	0.870	0.708	0.000	0.991
		0.954				0.947				0.924				0.885			

National Data & Surveying Services Intersection Turning Movement Count

Location: MLK Jr Way & 56th St
City: Oakland
Control: 2-Way Stop (EB/WB)

Project ID: 22-080126-008
Date: 4/12/2022

Data - Total

NS/EW Streets:	MLK Jr Way				MLK Jr Way				56th St				56th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	99	0	2	0	108	0	0	0	0	2	0	0	0	0	0	211
7:15 AM	0	175	3	0	1	133	0	0	0	0	5	0	1	1	0	0	319
7:30 AM	2	230	2	1	2	169	0	0	0	0	1	0	2	0	0	0	409
7:45 AM	0	316	3	0	6	208	0	0	0	1	6	0	1	0	6	0	547
8:00 AM	4	280	1	0	4	257	0	1	1	1	0	0	2	0	5	0	556
8:15 AM	1	292	2	1	2	269	2	0	1	2	2	0	1	0	4	0	579
8:30 AM	3	283	2	2	2	262	0	0	0	0	1	0	2	0	2	0	559
8:45 AM	2	299	1	1	5	246	1	0	1	0	2	0	0	1	3	0	562
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	12	1974	14	7	22	1652	3	1	3	4	19	0	9	2	20	0	3742
APPROACH %'s :	0.60%	98.36%	0.70%	0.35%	1.31%	98.45%	0.18%	0.06%	11.54%	15.38%	73.08%	0.00%	29.03%	6.45%	64.52%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	10	1154	6	4	13	1034	3	1	3	3	5	0	5	1	14	0	2256
PEAK HR FACTOR :	0.625	0.965	0.750	0.500	0.650	0.961	0.375	0.250	0.750	0.375	0.625	0.000	0.625	0.250	0.700	0.000	0.974
	0.969				0.962				0.550				0.714				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	3	319	3	1	4	252	1	0	2	1	0	0	2	0	2	0	590
4:15 PM	1	352	3	1	5	281	0	1	0	2	5	0	1	0	3	0	655
4:30 PM	1	309	4	1	5	243	3	1	1	1	3	0	3	0	1	0	576
4:45 PM	2	356	3	4	6	277	0	0	0	1	3	0	2	0	1	0	655
5:00 PM	3	374	3	2	12	292	0	0	0	1	7	0	2	1	9	0	706
5:15 PM	1	366	4	2	8	327	0	1	0	2	0	0	3	1	5	0	720
5:30 PM	1	376	2	2	6	309	1	1	0	5	1	0	0	2	3	0	709
5:45 PM	1	318	4	2	10	261	0	1	0	1	3	0	0	0	3	0	604
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	13	2770	26	15	56	2242	5	5	3	14	22	0	13	4	27	0	5215
APPROACH %'s :	0.46%	98.09%	0.92%	0.53%	2.43%	97.14%	0.22%	0.22%	7.69%	35.90%	56.41%	0.00%	29.55%	9.09%	61.36%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	7	1472	12	10	32	1205	1	2	0	9	11	0	7	4	18	0	2790
PEAK HR FACTOR :	0.583	0.979	0.750	0.625	0.667	0.921	0.250	0.500	0.000	0.450	0.393	0.000	0.583	0.500	0.500	0.000	0.969
	0.982				0.923				0.625				0.604				

National Data & Surveying Services Intersection Turning Movement Count

Location: MLK Jr Way & Aileen St
City: Oakland
Control: 2-Way Stop (EB/WB)

Project ID: 22-080126-009
Date: 4/12/2022

Data - Total

NS/EW Streets:	MLK Jr Way				MLK Jr Way				Aileen St				Aileen St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	97	0	2	0	104	0	0	1	0	3	0	3	0	1	0	211
7:15 AM	0	162	3	0	0	123	0	0	0	0	3	0	3	1	0	0	295
7:30 AM	1	237	2	0	0	174	0	0	0	0	2	0	2	0	1	0	419
7:45 AM	2	311	1	2	1	199	0	0	0	0	1	0	3	3	6	0	529
8:00 AM	1	288	3	1	5	265	0	0	0	0	0	0	6	0	0	0	569
8:15 AM	1	288	4	0	3	255	0	1	0	0	6	0	2	0	3	0	563
8:30 AM	3	283	2	0	3	260	0	1	0	1	3	0	1	0	2	0	559
8:45 AM	2	295	7	0	5	249	0	0	0	2	2	0	2	2	4	0	570
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	10	1961	22	5	17	1629	0	2	1	3	20	0	22	6	17	0	3715
APPROACH %'s :	0.50%	98.15%	1.10%	0.25%	1.03%	98.85%	0.00%	0.12%	4.17%	12.50%	83.33%	0.00%	48.89%	13.33%	37.78%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	7	1154	16	1	16	1029	0	2	0	3	11	0	11	2	9	0	2261
PEAK HR FACTOR :	0.583	0.978	0.571	0.250	0.800	0.971	0.000	0.500	0.000	0.375	0.458	0.000	0.458	0.250	0.563	0.000	0.992
	0.969				0.969				0.583				0.688				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	310	8	1	3	258	0	0	0	1	0	0	0	0	4	0	585
4:15 PM	2	355	2	1	5	274	0	0	0	0	1	0	5	1	3	0	649
4:30 PM	2	306	2	1	3	258	2	0	0	1	4	0	3	2	2	0	586
4:45 PM	10	342	3	3	6	262	0	0	0	3	2	0	3	0	2	0	636
5:00 PM	1	373	6	1	11	302	2	0	0	1	3	0	2	3	3	0	708
5:15 PM	2	365	5	2	7	326	1	0	0	2	2	0	2	1	3	0	718
5:30 PM	4	369	10	0	5	319	0	0	0	0	1	0	0	1	2	0	711
5:45 PM	5	305	6	0	2	266	0	0	1	0	1	0	2	0	1	0	589
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	26	2725	42	9	42	2265	5	0	1	8	14	0	17	8	20	0	5182
APPROACH %'s :	0.93%	97.25%	1.50%	0.32%	1.82%	97.97%	0.22%	0.00%	4.35%	34.78%	60.87%	0.00%	37.78%	17.78%	44.44%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	17	1449	24	6	29	1209	3	0	0	6	8	0	7	5	10	0	2773
PEAK HR FACTOR :	0.425	0.971	0.600	0.500	0.659	0.927	0.375	0.000	0.000	0.500	0.667	0.000	0.583	0.417	0.833	0.000	0.966
	0.977				0.929				0.700				0.688				

National Data & Surveying Services Intersection Turning Movement Count

Location: MLK Jr Way & 57th St
City: Oakland
Control: 1-Way Stop (EB)

Project ID: 22-080126-010
Date: 4/12/2022

Data - Total

NS/EW Streets:	MLK Jr Way				MLK Jr Way				57th St				57th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	105	0	0	0	100	0	0	1	0	1	0	0	0	0	0	207
7:15 AM	2	156	0	0	0	127	0	0	1	0	1	0	0	0	0	0	287
7:30 AM	2	235	0	2	0	163	0	0	1	0	4	0	0	0	0	0	407
7:45 AM	0	309	0	2	0	199	0	0	0	0	4	0	0	0	0	0	514
8:00 AM	4	290	0	0	0	262	1	0	0	0	5	0	0	0	0	0	562
8:15 AM	5	285	0	2	0	256	0	0	0	0	4	0	0	0	0	0	552
8:30 AM	5	271	0	0	0	257	0	0	0	0	3	0	0	0	0	0	536
8:45 AM	9	301	0	1	0	257	0	0	0	0	3	0	0	0	0	0	571
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	27	1952	0	7	0	1621	1	0	3	0	25	0	0	0	0	0	3636
APPROACH %'s :	1.36%	98.29%	0.00%	0.35%	0.00%	99.94%	0.06%	0.00%	10.71%	0.00%	89.29%	0.00%					
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	23	1147	0	3	0	1032	1	0	0	0	15	0	0	0	0	0	2221
PEAK HR FACTOR :	0.639	0.953	0.000	0.375	0.000	0.985	0.250	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.972
	0.943				0.982				0.750								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	3	315	0	0	0	248	1	0	1	0	5	0	0	0	0	0	573
4:15 PM	3	351	0	0	0	287	0	0	0	0	7	0	0	0	0	0	648
4:30 PM	3	309	0	0	0	250	0	0	2	0	0	0	0	0	0	0	564
4:45 PM	6	338	0	0	0	274	0	0	0	0	2	0	0	0	0	0	620
5:00 PM	5	368	0	1	0	302	1	0	0	0	4	1	0	0	0	0	682
5:15 PM	4	368	0	0	0	333	2	0	1	0	3	0	0	0	0	0	711
5:30 PM	6	361	0	2	0	311	1	0	1	0	5	0	0	0	0	0	687
5:45 PM	4	305	0	0	0	277	2	0	0	0	2	0	0	0	0	0	590
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	34	2715	0	3	0	2282	7	0	5	0	28	1	0	0	0	0	5075
APPROACH %'s :	1.24%	98.66%	0.00%	0.11%	0.00%	99.69%	0.31%	0.00%	14.71%	0.00%	82.35%	2.94%					
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	21	1435	0	3	0	1220	4	0	2	0	14	1	0	0	0	0	2700
PEAK HR FACTOR :	0.875	0.975	0.000	0.375	0.000	0.916	0.500	0.000	0.500	0.000	0.700	0.250	0.000	0.000	0.000	0.000	0.949
	0.975				0.913				0.708								

National Data & Surveying Services Intersection Turning Movement Count

Location: MLK Jr Way & Arlington Ave
City: Oakland
Control: 1-Way Stop (EB)

Project ID: 22-080126-011
Date: 4/12/2022

Data - Total

NS/EW Streets:	MLK Jr Way				MLK Jr Way				Arlington Ave				Arlington Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	2	100	0	0	0	98	0	0	0	0	2	0	0	0	0	0	202
7:15 AM	2	159	0	0	0	127	0	0	2	0	0	0	0	0	0	0	290
7:30 AM	5	221	0	0	0	160	2	0	0	0	3	0	0	0	0	0	391
7:45 AM	8	311	0	0	0	202	0	0	0	0	6	1	0	0	0	0	528
8:00 AM	10	277	0	0	0	250	1	0	1	0	4	0	0	0	0	0	543
8:15 AM	5	282	0	1	0	257	0	0	1	0	3	0	0	0	0	0	549
8:30 AM	2	269	0	0	0	257	1	0	0	0	4	0	0	0	0	0	533
8:45 AM	7	288	0	0	0	239	0	0	0	0	9	0	0	0	0	0	543
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	41	1907	0	1	0	1590	4	0	4	0	31	1	0	0	0	0	3579
APPROACH %'s :	2.10%	97.85%	0.00%	0.05%	0.00%	99.75%	0.25%	0.00%	11.11%	0.00%	86.11%	2.78%					
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	24	1116	0	1	0	1003	2	0	2	0	20	0	0	0	0	0	2168
PEAK HR FACTOR :	0.600	0.969	0.000	0.250	0.000	0.976	0.500	0.000	0.500	0.000	0.556	0.000	0.000	0.000	0.000	0.000	0.987
		0.967				0.974				0.611							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	14	303	0	0	0	261	3	0	0	0	3	0	0	0	0	0	584
4:15 PM	11	338	0	0	0	268	4	0	0	0	2	0	0	0	0	0	623
4:30 PM	7	306	0	0	0	261	0	0	1	0	4	0	0	0	0	0	579
4:45 PM	10	327	0	1	0	257	1	0	0	0	3	0	0	0	0	0	599
5:00 PM	12	352	0	0	0	305	2	1	0	0	4	0	0	0	0	0	676
5:15 PM	20	353	0	0	0	336	2	0	0	0	11	0	0	0	0	0	722
5:30 PM	10	349	0	0	0	307	3	0	0	0	6	0	0	0	0	0	675
5:45 PM	8	299	0	1	0	255	0	0	1	0	5	0	0	0	0	0	569
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	92	2627	0	2	0	2250	15	1	2	0	38	0	0	0	0	0	5027
APPROACH %'s :	3.38%	96.55%	0.00%	0.07%	0.00%	99.29%	0.66%	0.04%	5.00%	0.00%	95.00%	0.00%					
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	52	1381	0	1	0	1205	8	1	0	0	24	0	0	0	0	0	2672
PEAK HR FACTOR :	0.650	0.978	0.000	0.250	0.000	0.897	0.667	0.250	0.000	0.000	0.545	0.000	0.000	0.000	0.000	0.000	0.925
		0.961				0.898				0.545							

National Data & Surveying Services Intersection Turning Movement Count

Location: MLK Jr Way & 58th St
City: Oakland
Control: 2-Way Stop (EB/WB)

Project ID: 22-080126-012
Date: 4/12/2022

Data - Total

NS/EW Streets:	MLK Jr Way				MLK Jr Way				58th St				58th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	97	0	0	0	94	1	1	0	0	6	0	1	0	0	0	201
7:15 AM	6	149	2	0	0	110	0	0	0	0	11	0	3	1	1	0	283
7:30 AM	7	216	1	0	2	157	1	0	0	0	6	0	3	3	1	0	397
7:45 AM	17	288	2	0	0	190	2	1	1	1	7	0	2	0	2	0	513
8:00 AM	12	269	1	0	0	237	0	0	1	1	18	0	2	3	1	0	545
8:15 AM	15	261	3	0	0	231	0	1	0	2	20	0	3	2	7	0	545
8:30 AM	10	261	5	0	1	248	1	1	0	0	11	0	3	2	2	0	545
8:45 AM	7	272	6	0	3	230	2	0	1	1	5	1	1	3	1	0	533
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	75	1813	20	0	6	1497	7	4	3	5	84	1	18	14	15	0	3562
APPROACH %'s :	3.93%	95.02%	1.05%	0.00%	0.40%	98.88%	0.46%	0.26%	3.23%	5.38%	90.32%	1.08%	38.30%	29.79%	31.91%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	44	1063	15	0	4	946	3	2	2	4	54	1	9	10	11	0	2168
PEAK HR FACTOR :	0.733	0.977	0.625	0.000	0.333	0.954	0.375	0.500	0.500	0.500	0.675	0.250	0.750	0.833	0.393	0.000	0.994
		0.984				0.951				0.693				0.625			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	19	275	5	0	3	242	2	1	1	1	14	0	2	0	3	0	568
4:15 PM	20	317	4	1	2	257	1	0	0	1	13	0	3	1	3	0	623
4:30 PM	18	289	4	0	2	258	2	0	0	2	8	0	3	0	1	0	587
4:45 PM	19	295	4	0	2	241	1	0	0	2	10	0	1	3	3	0	581
5:00 PM	22	334	2	0	0	297	1	0	1	2	23	0	2	1	3	0	688
5:15 PM	21	328	0	1	3	301	0	0	1	3	15	0	2	2	4	0	681
5:30 PM	21	328	2	1	0	298	1	1	2	1	13	0	5	2	2	0	677
5:45 PM	16	279	2	0	4	249	0	2	1	4	13	0	0	4	4	0	578
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	156	2445	23	3	16	2143	8	4	6	16	109	0	18	13	23	0	4983
APPROACH %'s :	5.94%	93.07%	0.88%	0.11%	0.74%	98.71%	0.37%	0.18%	4.58%	12.21%	83.21%	0.00%	33.33%	24.07%	42.59%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	83	1285	8	2	5	1137	3	1	4	8	61	0	10	8	12	0	2627
PEAK HR FACTOR :	0.943	0.962	0.500	0.500	0.417	0.944	0.750	0.250	0.500	0.667	0.663	0.000	0.500	0.667	0.750	0.000	0.955
		0.962				0.942				0.702				0.833			

National Data & Surveying Services Intersection Turning Movement Count

Location: MLK Jr Way & 59th St
City: Oakland
Control: Signalized

Project ID: 22-080126-013
Date: 4/12/2022

Data - Total

NS/EW Streets:	MLK Jr Way				MLK Jr Way				59th St				59th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	95	0	0	0	97	1	0	0	0	1	0	0	0	0	0	194
7:15 AM	0	147	1	1	0	110	0	0	0	0	0	0	1	0	0	0	260
7:30 AM	3	218	1	0	0	154	0	0	0	0	0	0	2	0	0	0	378
7:45 AM	0	288	2	1	1	190	0	0	0	0	2	0	0	0	2	0	486
8:00 AM	2	264	1	0	1	237	0	0	1	1	2	0	1	0	1	0	511
8:15 AM	1	265	5	0	0	236	1	0	1	0	0	0	0	1	5	0	515
8:30 AM	1	249	2	4	0	240	1	0	1	0	1	0	0	1	3	0	503
8:45 AM	3	276	2	0	3	233	0	0	0	0	2	0	3	1	0	0	523
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	10	1802	14	6	5	1497	3	0	3	1	8	0	7	3	11	0	3370
APPROACH %'s :	0.55%	98.36%	0.76%	0.33%	0.33%	99.47%	0.20%	0.00%	25.00%	8.33%	66.67%	0.00%	33.33%	14.29%	52.38%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	7	1054	10	4	4	946	2	0	3	1	5	0	4	3	9	0	2052
PEAK HR FACTOR :	0.583	0.955	0.500	0.250	0.333	0.985	0.500	0.000	0.750	0.250	0.625	0.000	0.333	0.750	0.450	0.000	0.981
	0.956				0.988				0.563				0.667				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	2	283	1	1	2	244	0	0	0	1	4	0	0	0	2	0	540
4:15 PM	2	309	2	0	3	266	4	0	0	0	3	0	2	0	1	0	592
4:30 PM	8	285	2	0	2	249	2	0	0	0	3	0	0	0	2	0	553
4:45 PM	1	293	2	1	1	241	0	0	0	0	4	0	3	1	0	0	547
5:00 PM	3	335	1	0	0	282	1	1	1	0	3	0	5	1	2	0	635
5:15 PM	7	321	2	0	3	312	2	0	1	0	3	1	1	2	2	0	657
5:30 PM	4	333	1	0	3	284	1	0	0	0	2	0	4	0	1	0	633
5:45 PM	5	267	6	1	0	251	1	1	1	1	2	1	4	1	2	0	544
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	32	2426	17	3	14	2129	11	2	3	2	24	2	19	5	12	0	4701
APPROACH %'s :	1.29%	97.90%	0.69%	0.12%	0.65%	98.75%	0.51%	0.09%	9.68%	6.45%	77.42%	6.45%	52.78%	13.89%	33.33%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	15	1282	6	1	7	1119	4	1	2	0	12	1	13	4	5	0	2472
PEAK HR FACTOR :	0.536	0.957	0.750	0.250	0.583	0.897	0.500	0.250	0.500	0.000	0.750	0.250	0.650	0.500	0.625	0.000	0.941
	0.962				0.892				0.750				0.688				

National Data & Surveying Services Intersection Turning Movement Count

Location: MLK Jr Way & 60th St
City: Oakland
Control: 2-Way Stop (EB/WB)

Project ID: 22-080126-014
Date: 4/12/2022

Data - Total

NS/EW Streets:	MLK Jr Way				MLK Jr Way				60th St				60th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	92	0	0	0	97	0	1	0	0	0	0	1	0	2	0	194
7:15 AM	1	143	1	2	1	111	2	0	0	2	2	0	0	1	1	0	267
7:30 AM	0	216	2	3	1	145	1	0	0	1	1	0	0	0	2	0	372
7:45 AM	0	285	1	0	0	188	0	1	0	0	1	0	2	1	3	0	482
8:00 AM	0	268	2	2	3	231	0	1	0	3	5	0	1	1	7	0	524
8:15 AM	1	267	1	0	1	233	2	0	0	2	4	0	2	2	7	0	522
8:30 AM	4	249	3	0	0	231	0	0	1	0	3	0	4	3	5	0	503
8:45 AM	1	265	2	1	2	235	0	1	0	0	1	0	2	4	4	0	518
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	8	1785	12	8	8	1471	5	4	1	8	17	0	12	12	31	0	3382
APPROACH %'s :	0.44%	98.46%	0.66%	0.44%	0.54%	98.86%	0.34%	0.27%	3.85%	30.77%	65.38%	0.00%	21.82%	21.82%	56.36%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	6	1049	8	3	6	930	2	2	1	5	13	0	9	10	23	0	2067
PEAK HR FACTOR :	0.375	0.979	0.667	0.375	0.500	0.989	0.250	0.500	0.250	0.417	0.650	0.000	0.563	0.625	0.821	0.000	0.986
	0.980				0.987				0.594				0.875				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	2	284	3	0	0	248	0	0	0	0	2	0	4	1	2	0	546
4:15 PM	0	304	1	1	3	250	1	2	0	0	3	0	5	1	3	0	574
4:30 PM	1	281	1	2	2	263	4	0	1	1	0	0	0	0	2	0	558
4:45 PM	0	290	5	1	4	225	3	2	1	0	2	0	1	2	5	0	541
5:00 PM	4	327	3	1	6	279	0	0	0	0	1	0	4	0	3	0	628
5:15 PM	3	317	4	1	3	301	4	0	0	0	4	0	3	0	5	0	645
5:30 PM	3	329	5	1	2	299	4	1	1	1	1	0	2	2	6	0	657
5:45 PM	1	271	3	0	5	241	2	1	1	2	1	0	1	1	2	0	532
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	14	2403	25	7	25	2106	18	6	4	4	14	0	20	7	28	0	4681
APPROACH %'s :	0.57%	98.12%	1.02%	0.29%	1.16%	97.73%	0.84%	0.28%	18.18%	18.18%	63.64%	0.00%	36.36%	12.73%	50.91%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	10	1263	17	4	15	1104	11	3	2	1	8	0	10	4	19	0	2471
PEAK HR FACTOR :	0.625	0.960	0.850	1.000	0.625	0.917	0.688	0.375	0.500	0.250	0.500	0.000	0.625	0.500	0.792	0.000	0.940
	0.957				0.920				0.688				0.825				

National Data & Surveying Services Intersection Turning Movement Count

Location: MLK Jr Way & 61st St
City: Oakland
Control: 2-Way Stop (EB/WB)

Project ID: 22-080126-015
Date: 4/12/2022

Data - Total

NS/EW Streets:	MLK Jr Way				MLK Jr Way				61st St				61st St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	96	0	0	1	96	0	0	0	0	1	0	1	0	0	0	195
7:15 AM	0	142	0	1	1	113	0	0	0	0	0	0	0	0	1	0	258
7:30 AM	0	208	2	0	1	148	1	1	0	0	2	0	0	0	2	0	365
7:45 AM	1	294	2	1	4	183	2	3	0	1	1	0	0	1	0	0	493
8:00 AM	0	270	2	1	0	236	3	7	0	0	1	0	0	2	1	0	523
8:15 AM	2	272	2	0	1	231	0	3	0	1	0	0	3	0	2	0	517
8:30 AM	1	250	1	1	1	228	4	2	0	0	0	0	2	1	8	0	499
8:45 AM	2	268	4	0	1	239	1	4	1	0	1	0	2	0	3	0	526
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	6	1800	13	4	10	1474	11	20	1	2	6	0	8	4	17	0	3376
APPROACH %'s :	0.33%	98.74%	0.71%	0.22%	0.66%	97.29%	0.73%	1.32%	11.11%	22.22%	66.67%	0.00%	27.59%	13.79%	58.62%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	5	1060	9	2	3	934	8	16	1	1	2	0	7	3	14	0	2065
PEAK HR FACTOR :	0.625	0.974	0.563	0.500	0.750	0.977	0.500	0.571	0.250	0.250	0.500	0.000	0.583	0.375	0.438	0.000	0.981
	0.975				0.977				0.500				0.545				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	3	276	3	2	2	240	3	2	2	1	2	0	1	1	6	0	544
4:15 PM	0	301	4	0	3	255	4	3	0	0	2	0	4	1	1	0	578
4:30 PM	2	282	3	1	1	260	5	2	0	1	0	0	4	0	2	0	563
4:45 PM	3	291	3	0	2	230	6	4	1	2	2	0	0	2	3	0	549
5:00 PM	2	320	3	0	2	289	7	1	0	0	0	0	1	2	4	0	631
5:15 PM	5	312	1	0	4	304	4	2	0	0	0	0	3	3	2	0	640
5:30 PM	8	329	3	0	5	301	9	1	0	0	0	0	2	1	2	0	661
5:45 PM	1	274	4	1	2	251	4	3	1	1	1	0	0	0	1	0	544
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	24	2385	24	4	21	2130	42	18	4	5	7	0	15	10	21	0	4710
APPROACH %'s :	0.98%	97.87%	0.98%	0.16%	0.95%	96.34%	1.90%	0.81%	25.00%	31.25%	43.75%	0.00%	32.61%	21.74%	45.65%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	18	1252	10	0	13	1124	26	8	1	2	2	0	6	8	11	0	2481
PEAK HR FACTOR :	0.563	0.951	0.833	0.000	0.650	0.924	0.722	0.500	0.250	0.250	0.250	0.000	0.500	0.667	0.688	0.000	0.938
	0.941				0.926				0.250				0.781				

National Data & Surveying Services Intersection Turning Movement Count

Location: Dover St & 52nd St
City: Oakland
Control: 1-Way Stop (SB)

Project ID: 22-080126-016
Date: 4/12/2022

Data - Total

NS/EW Streets:	Dover St				Dover St				52nd St				52nd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	1	0	1	9	2	1	1	21	3	0	39
7:15 AM	0	0	0	0	2	0	3	0	3	17	1	1	0	25	0	0	52
7:30 AM	0	0	1	0	7	0	6	0	7	23	1	1	0	42	0	0	88
7:45 AM	1	1	0	0	2	0	5	0	2	23	3	1	1	55	2	0	96
8:00 AM	0	0	0	0	2	0	4	0	9	32	0	1	2	66	1	0	117
8:15 AM	2	1	0	0	6	0	1	0	5	61	2	0	1	67	3	0	149
8:30 AM	2	1	1	0	6	2	4	0	4	46	1	0	1	71	7	2	148
8:45 AM	1	0	0	0	1	0	8	0	0	37	3	0	2	72	3	1	128
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	6	3	2	0	26	2	32	0	31	248	13	5	8	419	19	3	817
APPROACH %'s :	54.55%	27.27%	18.18%	0.00%	43.33%	3.33%	53.33%	0.00%	10.44%	83.50%	4.38%	1.68%	1.78%	93.32%	4.23%	0.67%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	5	2	1	0	15	2	17	0	18	176	6	1	6	276	14	3	542
PEAK HR FACTOR :	0.625	0.500	0.250	0.000	0.625	0.250	0.531	0.000	0.500	0.721	0.500	0.250	0.750	0.958	0.500	0.375	0.909
	0.500				0.708				0.739				0.923				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	8	0	7	0	2	48	0	0	0	58	1	0	125
4:15 PM	0	0	1	0	11	0	7	0	2	62	0	0	1	65	2	1	152
4:30 PM	1	0	2	0	7	0	4	0	7	55	0	0	1	67	2	0	146
4:45 PM	1	0	1	0	12	0	7	0	3	53	0	0	0	66	2	1	146
5:00 PM	1	1	0	0	8	0	4	0	4	58	2	0	0	57	4	1	140
5:15 PM	2	0	1	0	6	1	4	0	7	62	1	1	0	62	6	0	153
5:30 PM	0	0	1	0	10	0	8	0	5	44	0	0	0	70	3	0	141
5:45 PM	2	0	1	0	3	1	3	0	5	50	0	2	0	55	2	0	124
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	7	2	7	0	65	2	44	0	35	432	3	3	2	500	22	3	1127
APPROACH %'s :	43.75%	12.50%	43.75%	0.00%	58.56%	1.80%	39.64%	0.00%	7.40%	91.33%	0.63%	0.63%	0.38%	94.88%	4.17%	0.57%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	5	1	4	0	33	1	19	0	21	228	3	1	1	252	14	2	585
PEAK HR FACTOR :	0.625	0.250	0.500	0.000	0.688	0.250	0.679	0.000	0.750	0.919	0.375	0.250	0.250	0.940	0.583	0.500	0.956
	0.833				0.697				0.891				0.961				

National Data & Surveying Services Intersection Turning Movement Count

Location: Dover St & 55th St
City: Oakland
Control: 2-Way Stop (NB/SB)

Project ID: 22-080126-017
Date: 4/12/2022

Data - Total

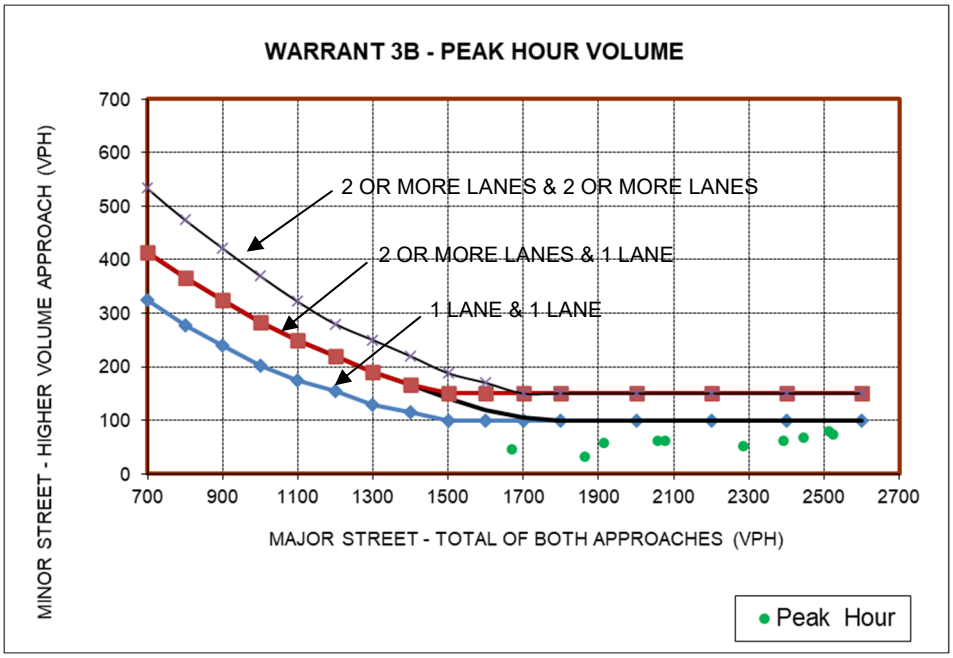
NS/EW Streets:	Dover St				Dover St				55th St				55th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	2	0	0	0	1	0	0	20	0	0	1	14	0	0	38
7:15 AM	0	0	3	0	1	2	3	0	0	25	0	0	0	22	0	0	56
7:30 AM	0	0	1	0	1	0	2	0	0	49	0	0	1	31	0	0	85
7:45 AM	3	0	2	0	2	0	5	0	1	47	0	0	5	60	0	0	125
8:00 AM	1	3	0	0	3	1	4	0	1	64	2	0	1	71	1	0	152
8:15 AM	4	1	3	0	3	0	2	0	1	91	0	0	0	104	2	0	211
8:30 AM	3	1	2	0	3	0	3	0	3	67	1	0	3	115	0	0	201
8:45 AM	2	0	0	0	2	1	5	0	8	64	0	0	5	84	0	0	171
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	13	5	13	0	15	4	25	0	14	427	3	0	16	501	3	0	1039
APPROACH %'s :	41.94%	16.13%	41.94%	0.00%	34.09%	9.09%	56.82%	0.00%	3.15%	96.17%	0.68%	0.00%	3.08%	96.35%	0.58%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	10	5	5	0	11	2	14	0	13	286	3	0	9	374	3	0	735
PEAK HR FACTOR :	0.625	0.417	0.417	0.000	0.917	0.500	0.700	0.000	0.406	0.786	0.375	0.000	0.450	0.813	0.375	0.000	0.871
	0.625				0.844				0.821				0.818				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	3	1	0	0	1	4	0	1	76	1	1	1	47	1	0	137
4:15 PM	6	1	0	0	0	0	4	0	2	75	1	0	2	50	4	0	145
4:30 PM	0	1	4	0	2	5	4	0	2	68	1	0	2	48	2	0	139
4:45 PM	3	1	5	0	4	1	5	0	9	67	2	0	2	64	3	0	166
5:00 PM	3	0	0	0	1	3	2	0	2	85	5	0	0	60	1	0	162
5:15 PM	4	3	1	0	1	2	3	0	4	98	0	0	1	62	2	0	181
5:30 PM	2	2	4	0	0	2	4	0	4	79	4	0	1	40	2	0	144
5:45 PM	2	0	1	0	1	3	3	0	2	99	1	0	1	66	4	0	183
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	20	11	16	0	9	17	29	0	26	647	15	1	10	437	19	0	1257
APPROACH %'s :	42.55%	23.40%	34.04%	0.00%	16.36%	30.91%	52.73%	0.00%	3.77%	93.90%	2.18%	0.15%	2.15%	93.78%	4.08%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	11	5	6	0	3	10	12	0	12	361	10	0	3	228	9	0	670
PEAK HR FACTOR :	0.688	0.417	0.375	0.000	0.750	0.833	0.750	0.000	0.750	0.912	0.500	0.000	0.750	0.864	0.563	0.000	0.915
	0.688				0.893				0.939				0.845				

Attachment 6: Peak Hour Signal Warrant Sheet

WARRANT 3: Peak Hour					
Warrant 3A: Peak Hour Delay					
Intersection	MLK Ave and 58th St				
Minor Street Lanes	1		**Worse Case Delay on Minor St**		
Total Approaches	4		**Peak Hour**	**Delay per vehicle (sec)**	**Total Vehicles on Approach**
Time	4:45-5:45		4:45-5:45	65.7	30
	1	2	3		
	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced for the Intersection (vph)		
Road Diet	0.5475	30	2627		
Limiting Value	4	100	800		
Met/ Not Met	Not Met	Not Met	Met		
	0	0	1		
Warrant	**Not Met**				

Source: Fehr & Peers, 2022



Source: Fehr & Peers, 2022