



Traffic Impact Study

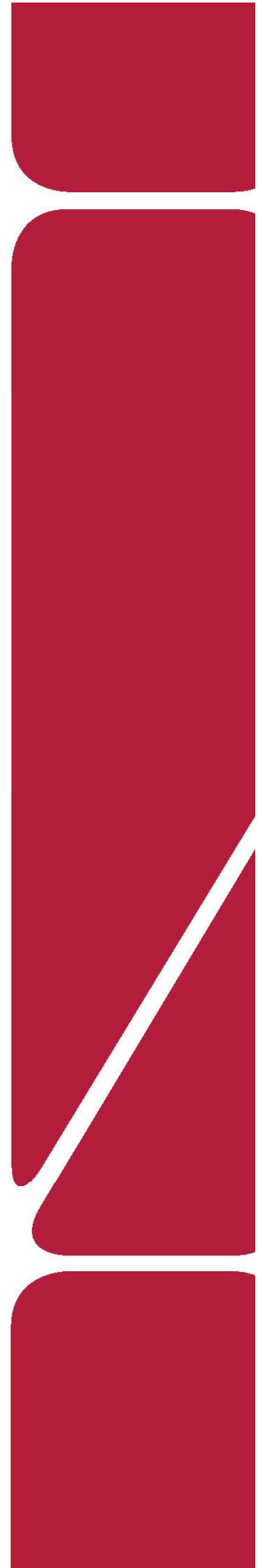
Kairoi Belmar Lakewood, Colorado

Prepared for:

Kairoi Properties, LLC

Kimley»»Horn

Transportation Engineering
Approved
Toni Bishop
Date: 8-5-2021



T R A F F I C I M P A C T S T U D Y

Kairoi Belmar

Lakewood, Colorado

Prepared for
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July 2021

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1.0 EXECUTIVE SUMMARY

Kimley-Horn and Associates, Inc. has prepared this report to document the results of the Traffic Study for the proposed Kairoi Belmar redevelopment project to be located on the northwest corner of the Ohio Avenue and Yarrow Street intersection in Lakewood, Colorado. The project is proposing to redevelop an existing office development. For the purposes of this analysis, Kairoi Belmar is anticipated to include approximately 425 multifamily housing dwelling units. It is expected that Kairoi Belmar will be completed in the next couple of years; therefore, analysis was conducted for the 2024 and 2045 horizons.

The purpose of this traffic study is to identify the traffic related impacts on the local street system. This traffic study develops the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study based on the City of Lakewood requested scope:

- Virginia Avenue and Yarrow Street
- Virginia Avenue and Wadsworth Boulevard (SH-121)
- Ohio Avenue/Project Access and Yarrow Street
- Ohio Avenue and Wadsworth Boulevard (SH-121)

In addition, a proposed full movement access along the west side of Yarrow Street to be located at an existing driveway to an office development was included for evaluation.

Regional access to the project will be provided by Interstate 25 (I-25), 6th Avenue (US-6), US Highway 285 (US-285), and Kipling Parkway (SH-391), while primary access will be provided by Wadsworth Boulevard (SH-121). Direct access to the site is proposed from two full movement accesses along the west side of Yarrow Street. The south access is existing and aligns with Ohio Avenue. The north access along Yarrow Street is located approximately 375 feet north of Ohio Avenue and the south access.

Kairoi Belmar is expected to generate approximately 2,316 weekday driveway trips, with 141 of these trips occurring during the morning peak and 178 trips occurring during the afternoon peak hour.

Based on the analysis presented in this report, Kimley-Horn believes the Kairoi Belmar project will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network and the proposed project development with expected traffic volumes resulted in the following conclusions and recommendations:

- With completion of the Kairoi Belmar redevelopment project, direct access to the site is proposed from two full movement accesses along the west side of Yarrow Street. The south access is existing and aligns with Ohio Avenue. The north access along Yarrow Street is located approximately 375 feet north of Ohio Avenue and the south access. It is recommended that a R1-1 “STOP” sign be installed on the exiting eastbound approach of the north access along Yarrow Street.
- The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the west leg of the Ohio Avenue and Wadsworth Boulevard (SH-121) intersection is anticipated to increase existing access traffic volumes by more than 20 percent. Therefore, a CDOT access permit is anticipated to be needed at this location in association with this project. A CDOT access permit is not anticipated to be needed at the intersection of Virginia Avenue and Wadsworth Boulevard (SH-121) due to project volumes not increasing traffic on any of the legs by 20 percent.
- Based on calculated vehicle queuing lengths, one vehicle could queue beyond the existing eastbound left turn lane at the Virginia Avenue and Wadsworth Boulevard (SH-121) intersection in 2024 while two vehicles could extend beyond in 2045. The eastbound left turn lane at the intersection of Virginia Avenue and Wadsworth Boulevard (SH-121) could be extended from 125 feet to 150 feet by 2024 and 175 feet by 2045. However, to avoid disrupting the existing trees within the raised landscaped median, it is anticipated that two vehicles can queue within the taper without extending into the nearest through lane which would accommodate the vehicle queuing demands. Further, there is relatively small number of eastbound through movements at this intersection; therefore, minimal impacts to the nearest through lane are expected in the unlikely event that a left turning vehicle backs into the

adjacent through lane. Therefore, no modifications are recommended to the eastbound left turn lane at the Virginia Avenue and Wadsworth Boulevard intersection.

- All off-site and on-site improvements should be incorporated into the Civil Drawings, and conform to standards of the City of Lakewood, CDOT, American Association of State Highway and Transportation Officials (AASHTO) Geometric Design of Highways and Streets, Institute of Transportation Engineers (ITE), and the Manual on Traffic Control Devices (MUTCD) – 2009 Edition.

2.0 INTRODUCTION

Kimley-Horn and Associates, Inc. has prepared this report to document the results of the Traffic Study for the proposed Kairoi Belmar redevelopment project to be located on the northwest corner of the Ohio Avenue and Yarrow Street intersection in Lakewood, Colorado. The project is proposing to redevelop an existing office development. A vicinity map illustrating the Kairoi Belmar development area site location is shown in **Figure 1**. For the purposes of this analysis, Kairoi Belmar is anticipated to include approximately 425 multifamily housing dwelling units. A conceptual land use plan is attached in **Appendix F**. It is expected that Kairoi Belmar will be completed in the next couple of years; therefore, analysis was conducted for the 2024 and 2045 horizons.

The purpose of this traffic study is to identify the traffic related impacts on the local street system. This traffic study develops the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study based on the City of Lakewood requested scope:

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- Ohio Avenue and Wadsworth Boulevard (SH-121)

In addition, a proposed full movement access along the west side of Yarrow Street to be located at an existing driveway to an office development was included for evaluation.

Regional access to the project will be provided by Interstate 25 (I-25), 6th Avenue (US-6), US Highway 285 (US-285), and Kipling Parkway (SH-391), while primary access will be provided by Wadsworth Boulevard (SH-121). Direct access to the site is proposed from two full movement accesses along the west side of Yarrow Street. The south access is existing and aligns with Ohio Avenue. The north access along Yarrow Street is located approximately 375 feet north of Ohio Avenue and the south access.



KAIROI BELMAR
LAKEWOOD, CO
VICINITY MAP

FIGURE 1

3.0 EXISTING AND FUTURE CONDITIONS

3.1 Existing Study Area

The existing site is comprised of a 43,216 square foot office building. To the west and south of the site is the Belmar Park and residential uses. To the east of the site is office buildings and some multifamily housing. North of the project is the Belmar Park, Belmar Library, and retail uses.

3.2 Existing Roadway Network

Virginia Avenue extends in the east-west direction with one through lane in each direction and has a posted speed limit of 30 miles per hour. Yarrow Street extends north-south with one through lane in each direction and has a posted speed limit of 30 miles per hour. Wadsworth Boulevard (SH-121) extends northbound and southbound with three through lanes in each direction; however, the third southbound through lane transitions into a dropped right turn lane at the intersection of Ohio Avenue and Wadsworth Boulevard (SH-121). The posted speed limit along Wadsworth Boulevard (SH-121) is 40 miles per hour. Ohio Avenue extends east-west with one through lane in each direction.

The unsignalized intersection of Virginia Avenue and Yarrow Street operates with stop control on the northbound and southbound approaches. The eastbound approach consists of a left turn lane and a shared through/right turn lane. The westbound approach consists of a shared left turn/through lane and a right turn lane. The northbound and southbound approaches consist of one lane for all movements. An aerial photo of the existing intersection configuration is below (north is up - typical).



Virginia Avenue and Yarrow Street

The signalized intersection of Virginia Avenue and Wadsworth Boulevard (SH-121) operates with protected left turn phasing on all four approaches and a free right turn lane on the westbound approach. The eastbound approach consists of a left turn lane, one through lane, and a right turn lane. The westbound approach consists of dual left turn lanes, one through lane, and a right turn acceleration lane. The northbound approach consists of dual left turn lanes and three through lanes with the outside lane being a shared through/right turn lane. The southbound approach consists of dual left turn lanes, three through lanes, and a right turn lane. An aerial photo of the existing intersection configuration is below.



Virginia Avenue and Wadsworth Boulevard (SH-121)

The unsignalized intersection of Ohio Avenue and Yarrow Street operates with stop control on the northbound and southbound approaches. All four approaches consist of one lane for all movements. The west leg currently operates as an access to the existing site and will operate as an access to the proposed development in the future. An aerial photo of the existing intersection configuration is below.



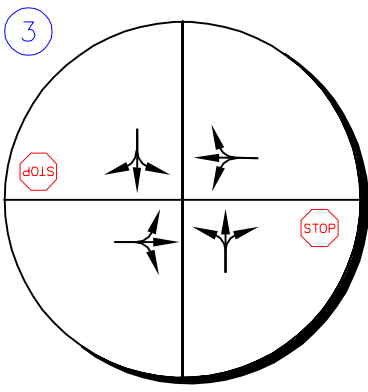
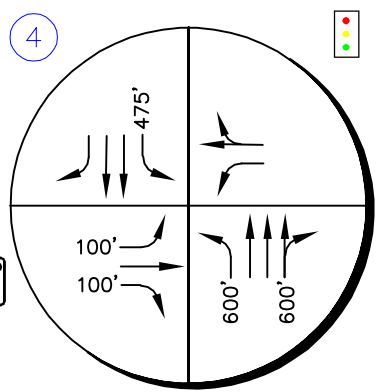
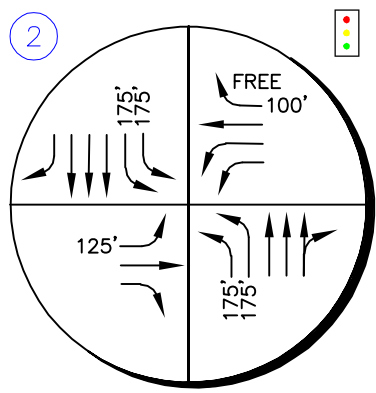
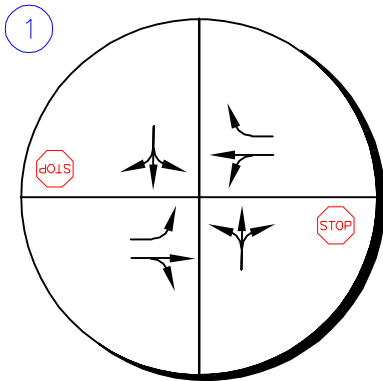
Ohio Avenue and Yarrow Street

The signalized intersection of Ohio Avenue and Wadsworth Boulevard (SH-121) operates with permitted left turn phasing on the eastbound and westbound approaches, protected left turn phasing on the northbound approach, and protected/permitted left turn phasing on the southbound approach. The eastbound approach consists of a left turn lane, one through lane, and a right turn lane. The westbound approach consists of a left turn lane and a shared through/right turn lane. The northbound approach consists of a left turn lane and three through lanes with the outside lane being a shared through/right turn lane. The southbound approach consists of a left turn lane, two through lanes, and a right turn lane. An aerial photo of the existing intersection configuration is below.



Ohio Avenue and Wadsworth Boulevard (SH-121)

The intersection lane configuration and control for the study area intersections are shown in **Figure 2**.



LEGEND	
	Study Area Key Intersection
	Signalized Intersection
	Stop Controlled Approach
	Roadway Speed Limit
	100' Turn Lane Length (feet)

KAIROI BELMAR
 LAKEWOOD, CO
 EXISTING LANE CONFIGURATIONS

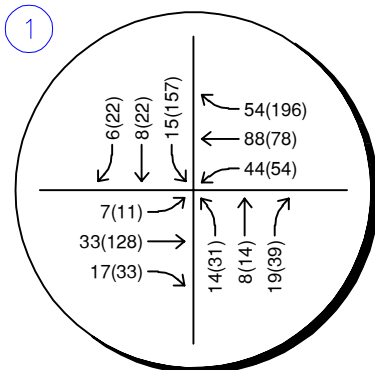
FIGURE 2

3.3 Existing Traffic Volumes

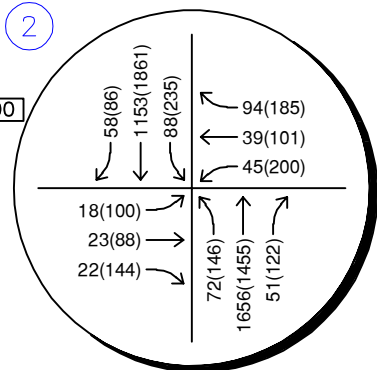
Existing turning movement counts were conducted at the study intersections on Wednesday, June 30, 2021 during the morning and afternoon peak hours. The counts were conducted during the morning and afternoon peak hours of adjacent street traffic in 15-minute intervals from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM on these count dates. The existing intersection traffic volumes are shown in **Figure 3** with count sheets provided in **Appendix A**.

3.4 Unspecified Development Traffic Growth

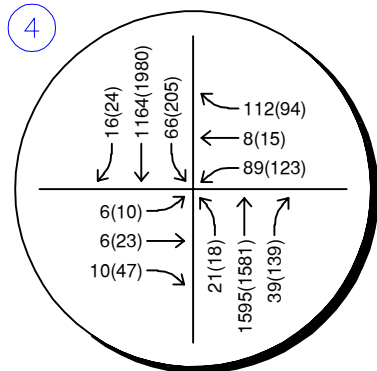
Based on information provided by the CDOT Online Transportation Information System (OTIS), the 20-year growth factor along Wadsworth Boulevard (SH-121) south of Alameda Avenue is 1.06. This equates to an annual growth rate of approximately 0.3 percent per year. Traffic information from CDOT OTIS is included in **Appendix B**. Therefore, a 0.3 percent annual growth rate was used to estimate future background traffic volume conditions within the study area. These background traffic volumes at the study area key intersection are shown in **Figure 4** for the buildout 2024 horizon and in **Figure 5** for the twenty-year long-term horizon of 2045. It should be noted that traffic entering and exiting the existing site access aligning with Ohio Avenue was included on the background traffic figures but removed from the total traffic conditions due to this property being redeveloped.



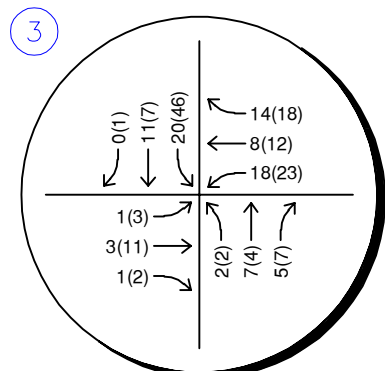
Wednesday, June 30, 2021
8:00 to 9:00AM (4:45 to 5:45PM)



Wednesday, June 30, 2021
7:30 to 8:30AM (5:00 to 6:00PM)



Wednesday, June 30, 2021
7:30 to 8:30AM (5:00 to 6:00PM)



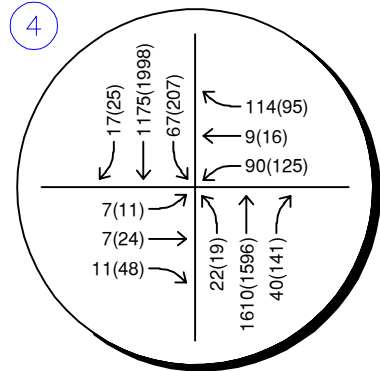
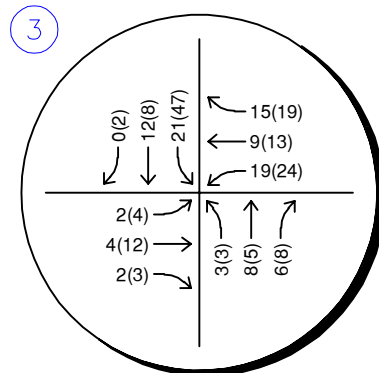
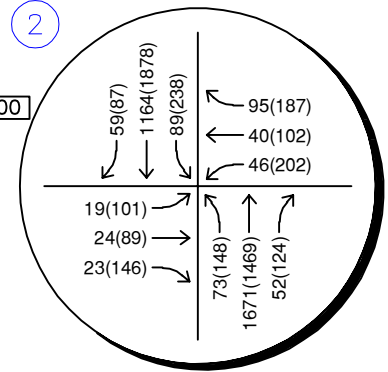
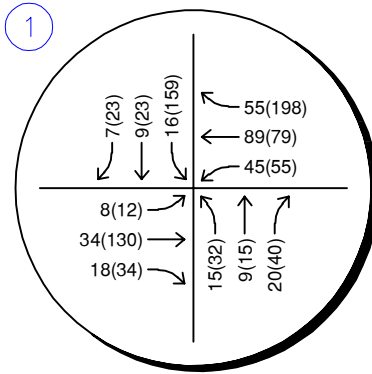
Wednesday, June 30, 2021
8:00 to 9:00AM (5:00 to 6:00PM)

LEGEND

- Study Area Key Intersection
- XXX(XXX) Weekday AM(PM) Peak Hour Traffic Volumes
- Estimated Daily Traffic Volume

KAIROI BELMAR
LAKEWOOD, CO
2021 EXISTING TRAFFIC VOLUMES

FIGURE 3

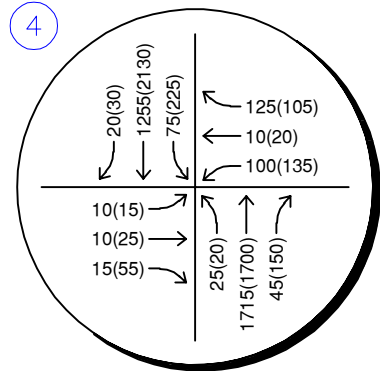
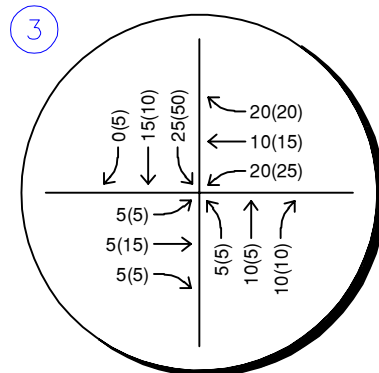
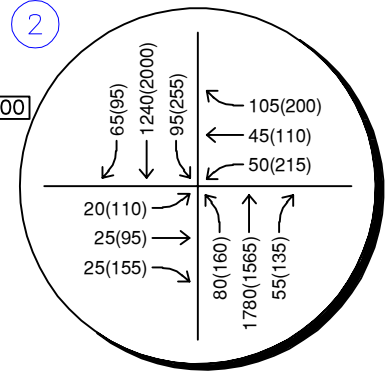
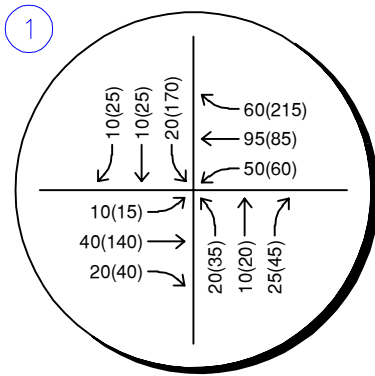


LEGEND

- X Study Area Key Intersection
- XXX(XXX) Weekday AM(PM) Peak Hour Traffic Volumes
- XX,X00 Estimated Daily Traffic Volume

KAIROI BELMAR
LAKEWOOD, CO
2024 BACKGROUND TRAFFIC VOLUMES

FIGURE 4



LEGEND

- X Study Area Key Intersection
- XXX(XXX) Weekday AM(PM)
Peak Hour Traffic Volumes
- XX,X00 Estimated Daily Traffic Volume

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LAKEWOOD, CO
2045 BACKGROUND TRAFFIC VOLUMES

FIGURE 5

4.0 PROJECT TRAFFIC CHARACTERISTICS

4.1 Trip Generation

Site-generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land use to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the *Trip Generation Manual*¹ published by the Institute of Transportation Engineers (ITE). ITE has established trip rates in nationwide studies of similar land uses. The Kairoi Belmar development is anticipated to include approximately 425 multifamily housing dwelling units. For this study, Kimley-Horn used the ITE Trip Generation Manual fitted curve equations that apply to Mid-Rise Multifamily Housing (ITE 221) for traffic associated with the development.

Kairoi Belmar is expected to generate approximately 2,316 weekday driveway trips, with 141 of these trips occurring during the morning peak and 178 trips occurring during the afternoon peak hour. It should be noted that the project will be redeveloping an existing office site that is currently generating traffic to the existing roadway network. For reference, the existing office site is currently generating 15 trips during the morning peak hour and 31 trips during the afternoon peak hour at the south access along Yarrow Street. Although not counted, it is anticipated that a similar volume of trips would be currently utilizing the existing north access. Calculations were based on the procedure and information provided in the ITE *Trip Generation Handbook, 3rd Edition, 2017*. **Table 1** summarizes the estimated trip generation for the proposed development. The trip generation worksheet is included in **Appendix C**.

Table 1 – Kairoi Belmar Traffic Generation

Land Use and Size	Weekday Vehicle Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Multifamily Housing (Mid-Rise) (221) – 425 Dwelling Units	2,316	37	104	141	109	69	178

¹ Institute of Transportation Engineers, *Trip Generation Manual*, Tenth Edition, Washington DC, 2017.

4.2 Trip Distribution

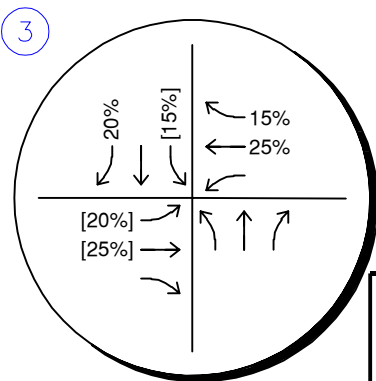
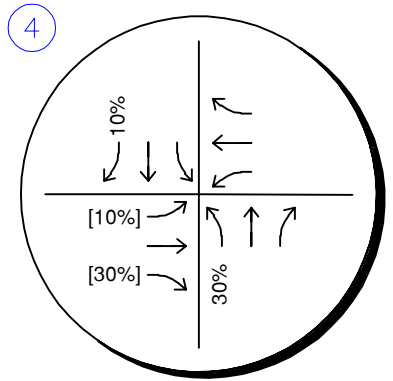
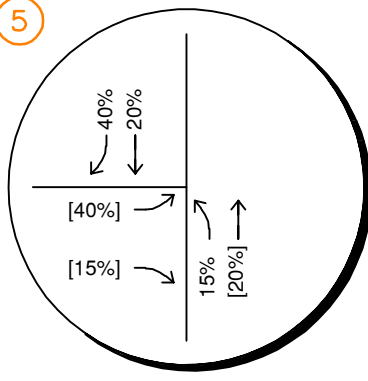
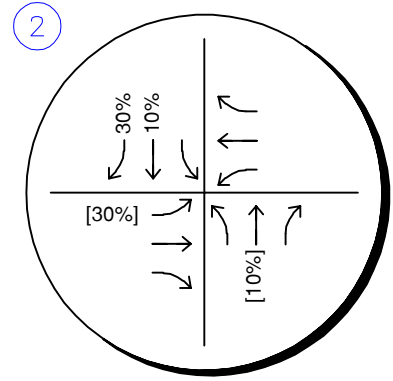
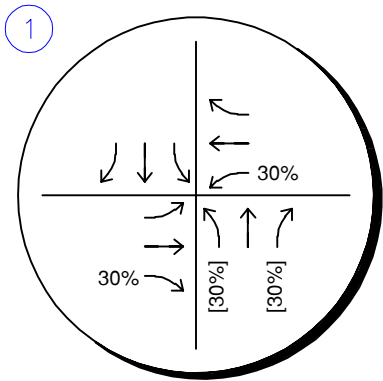
Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns, existing and anticipated surrounding demographic information, and the proposed access system for the project. The directional distribution of traffic is a means to quantify the percentage of site-generated traffic that approaches the site from a given direction and departs the site back to the original source. The project trip distribution for the proposed development is illustrated in **Figure 6**.

4.3 Traffic Assignment

Kairoi Belmar traffic assignment was obtained by applying the project trip distribution to the estimated traffic generation of the development shown in **Table 1**. Traffic assignment is shown in **Figure 7**.

4.4 Total (Background Plus Project) Traffic

Site traffic volumes were added to the background volumes to represent estimated traffic conditions for the 2024 horizon and long term 2045 horizon. These total traffic volumes for the study area are illustrated for the 2024 and 2045 horizon years in **Figures 8** and **9**, respectively.

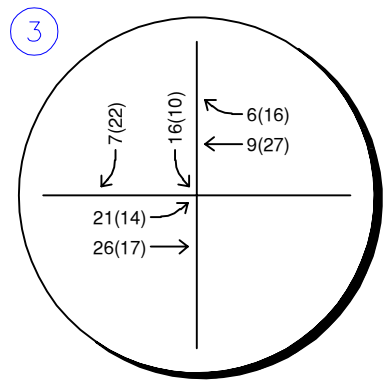
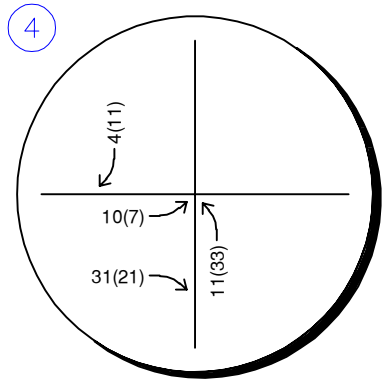
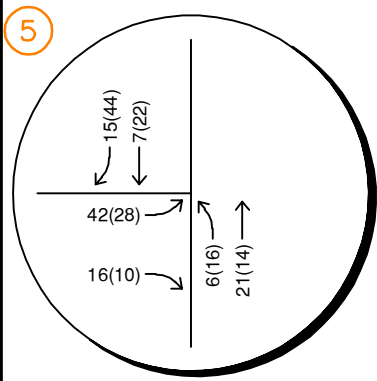
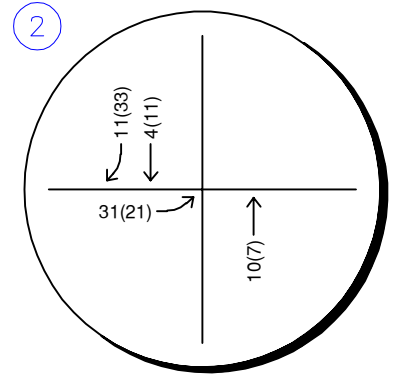
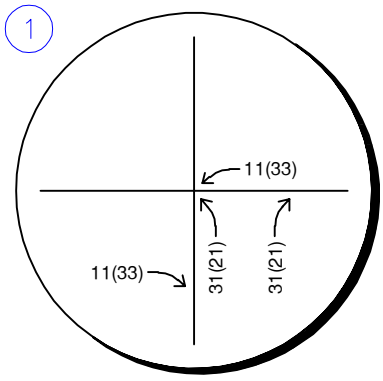


LEGEND

- Study Area Key Intersection
- Project Access Intersection
- XX% External Trip Distribution Percentage
- XX% Entering [XX%] Exiting Trip Distribution Percentage

KAIROI BELMAR
 LAKEWOOD, CO
 PROJECT TRIP DISTRIBUTION

FIGURE 6

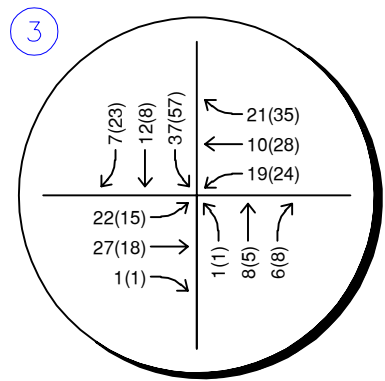
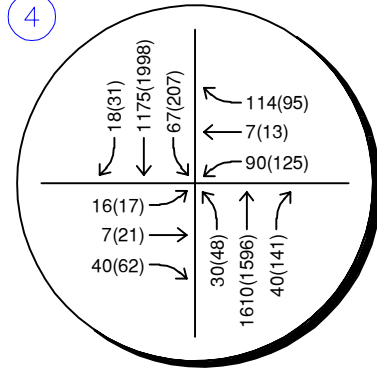
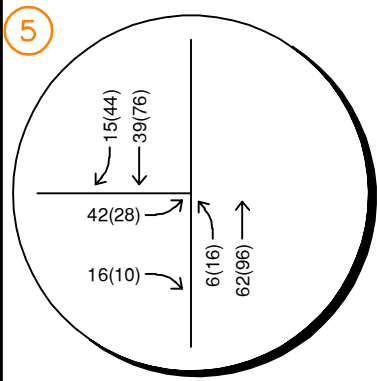
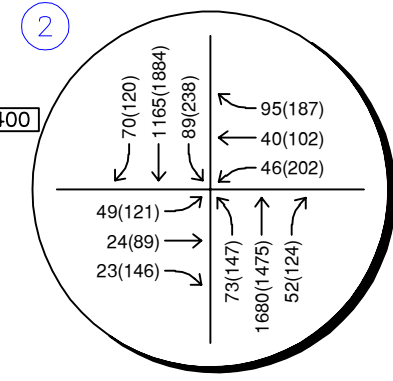
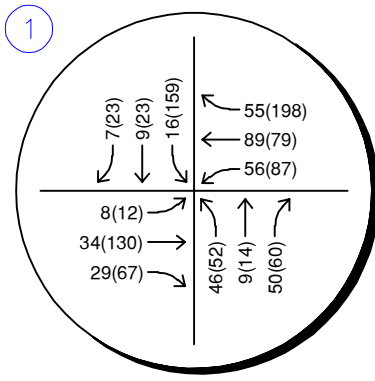


LEGEND

- X Study Area Key Intersection
- X Project Access Intersection
- XXX(XXX) Weekday AM(PM)
Peak Hour Traffic Volumes
- XX,X00 Estimated Daily Traffic Volume

KAIROI BELMAR
 LAKEWOOD, CO
 PROJECT TRAFFIC ASSIGNMENT

FIGURE 7

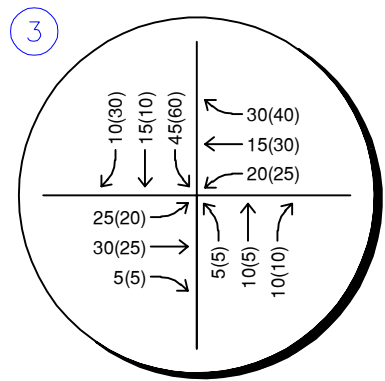
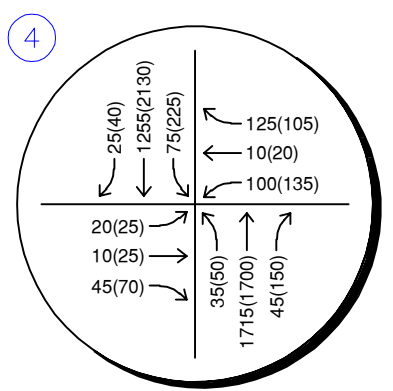
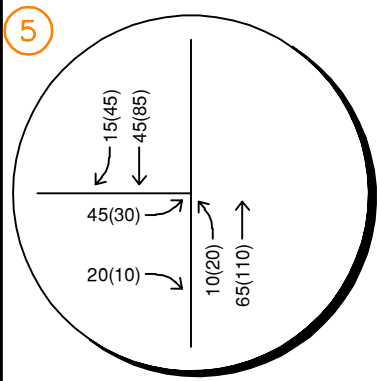
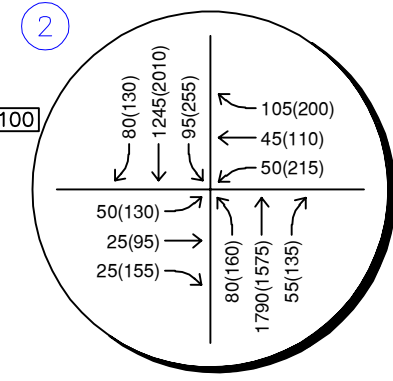
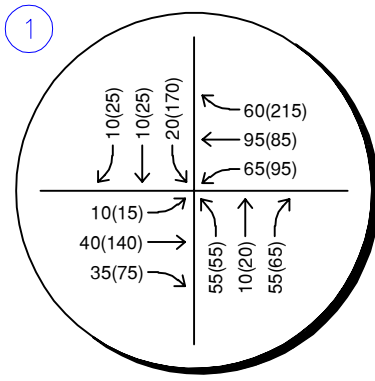


LEGEND

- Study Area Key Intersection
- Project Access Intersection
- xxx(XXX) Weekday AM(PM)
- Peak Hour Traffic Volumes
- Estimated Daily Traffic Volume

KAIROI BELMAR
LAKEWOOD, CO
2024 TOTAL TRAFFIC VOLUMES

FIGURE 8



LEGEND

- Study Area Key Intersection
- Project Access Intersection
- xxx(xxx) Weekday AM(PM)
- Peak Hour Traffic Volumes
- Estimated Daily Traffic Volume

KAIROI BELMAR
LAKEWOOD, CO
2045 TOTAL TRAFFIC VOLUMES

FIGURE 9

5.0 TRAFFIC OPERATIONS ANALYSIS

Kimley-Horn’s analysis of traffic operations in the site vicinity was conducted to determine potential capacity deficiencies in the 2024 and 2045 development horizons at the identified key intersections. The acknowledged source for determining overall capacity is the current edition of the *Highway Capacity Manual (HCM)*².

5.1 Analysis Methodology

Capacity analysis results are listed in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion). For intersections and roadways in this study area, standard traffic engineering practice identifies overall LOS D for signalized intersections and LOS E for movements and approaches of unsignalized intersections as the minimum threshold for acceptable operations. **Table 2** shows the definition of level of service for signalized and unsignalized intersections.

Table 2 – Level of Service Definitions

Level of Service	Signalized Intersection Average Total Delay (sec/veh)	Unsignalized Intersection Average Total Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

Definitions provided from the Highway Capacity Manual, Sixth Edition, Transportation Research Board, 2016.

Study area intersections were analyzed based on average total delay analysis for signalized and unsignalized intersections. Under the unsignalized analysis, the level of service (LOS) for a two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. Level of service for a two-way stop-controlled intersection is not defined for the intersection as a whole. Level of service for signalized, all-way stop controlled, and roundabout intersections is defined for each approach and for the overall intersection.

² Transportation Research Board, *Highway Capacity Manual*, Sixth Edition, Washington DC, 2016.

5.2 Key Intersection Operational Analysis

Calculations for the level of service at the key intersections for the study area are provided in **Appendix D**. The existing year analysis is based on the lane geometry and intersection control shown in **Figure 2**. Existing peak hour factors were utilized in the existing and 2024 horizon analysis years while the HCM urban standard of 0.92 was used in 2045. Existing signal cycle lengths were utilized in the intersection capacity analysis. Based on national attention given on appropriate yellow and all-red clearance intervals to improve intersection safety, these have been calculated and are applied for the approaches to the signalized intersections. The increase in the yellow and all red time sacrifices intersection capacity for improved safety. Synchro traffic analysis software was used to analyze the signalized, and unsignalized key intersections for level of service.

Virginia Avenue and Yarrow Street

The unsignalized intersection of Virginia Avenue and Yarrow Street operates with stop control on the northbound and southbound approaches. The intersection movements operate acceptably at LOS C or better during both peak hours under existing conditions. With project traffic, all movements are anticipated to continue operating at an acceptable level of service during the peak hours throughout the 2045 horizon. Therefore, no recommendations to the existing control or lane configurations are proposed at this intersection. **Table 3** provides the results of the LOS analysis conducted at this intersection.

Table 3 –Virginia Avenue & Yarrow Street LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2021 Existing				
Northbound Approach	10.3	B	12.0	B
Eastbound Left	7.6	A	7.9	A
Westbound Left	7.4	A	7.7	A
Southbound Approach	10.6	B	15.1	C
2024 Background				
Northbound Approach	10.5	B	12.1	B
Eastbound Left	7.6	A	7.9	A
Westbound Left	7.4	A	7.7	A
Southbound Approach	10.7	B	15.5	C
2024 Background Plus Project				
Northbound Approach	11.3	B	13.7	B
Eastbound Left	7.6	A	7.9	A
Westbound Left	7.5	A	7.9	A
Southbound Approach	11.2	B	18.4	C
2045 Background				
Northbound Approach	10.3	B	12.6	B
Eastbound Left	7.6	A	8.0	A
Westbound Left	7.4	A	7.7	A
Southbound Approach	10.5	B	16.6	C
2045 Background Plus Project				
Northbound Approach	11.1	B	14.5	B
Eastbound Left	7.6	A	8.0	A
Westbound Left	7.5	A	7.9	A
Southbound Approach	10.9	C	20.3	C

Virginia Avenue and Wadsworth Boulevard (SH-121)

The signalized intersection of Virginia Avenue and Wadsworth Boulevard (SH-121) operates with protected left turn phasing on all four approaches and a free right turn lane on the westbound approach. This intersection operates acceptably at LOS C or better during both peak hours under existing conditions. With project traffic, this intersection is anticipated to continue operating at an acceptable level of service during the peak hours throughout the 2045 horizon. **Table 4** provides the results of the LOS analysis conducted at this intersection.

Table 4 –Virginia Avenue & Wadsworth Boulevard (SH-121) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2021 Existing	8.9	A	22.6	C
2024 Background	9.0	A	22.8	C
2024 Background Plus Project	9.8	A	22.9	C
2045 Background	9.3	A	24.1	C
2045 Background Plus Project	10.0	B	24.3	C

Ohio Avenue and Yarrow Street

The unsignalized intersection of Ohio Avenue and Yarrow Street operates with stop control on the northbound and southbound approaches. The west leg of this intersection currently provides private access to an existing office development. With construction of Kairoi Belmar, the west leg of this intersection will remain and provide private access to the project. The intersection movements operate acceptably at LOS A during both peak hours under existing conditions. With project traffic, all movements are anticipated to continue operating at an acceptable level of service during the peak hours throughout the 2045 horizon. Therefore, no recommendations to the existing control or lane configurations are proposed at this intersection. **Table 5** provides the results of the LOS analysis conducted at this intersection.

Table 5 –Ohio Avenue & Yarrow Street LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2021 Existing				
Northbound Approach	9.1	A	8.9	A
Eastbound Left	7.3	A	7.3	A
Westbound Left	7.3	A	7.3	A
Southbound Approach	9.5	A	9.5	A
2024 Background				
Northbound Approach	9.2	A	9.0	A
Eastbound Left	7.3	A	7.3	A
Westbound Left	7.3	A	7.3	A
Southbound Approach	9.6	A	9.6	A
2024 Background Plus Project				
Northbound Approach	9.6	A	9.2	A
Eastbound Left	7.3	A	7.4	A
Westbound Left	7.3	A	7.3	A
Southbound Approach	10.2	B	9.9	A
2045 Background				
Northbound Approach	9.1	A	9.1	A
Eastbound Left	7.3	A	7.3	A
Westbound Left	7.3	A	7.3	A
Southbound Approach	9.6	A	9.7	A
2045 Background Plus Project				
Northbound Approach	9.6	A	9.5	A
Eastbound Left	7.3	A	7.4	A
Westbound Left	7.3	A	7.3	A
Southbound Approach	10.2	B	10.2	B

Ohio Avenue and Wadsworth Boulevard (SH-121)

The signalized intersection of Ohio Avenue and Wadsworth Boulevard (SH-121) operates with permitted left turn phasing on the eastbound and westbound approaches, protected left turn phasing on the northbound approach, and protected/permitted left turn phasing on the southbound approach. This intersection operates acceptably at LOS B or better during both peak hours under existing conditions. With project traffic, this intersection is anticipated to continue operating at an acceptable level of service during the peak hours throughout the 2045 horizon. Therefore, no recommendations to the existing control or lane configurations are proposed at this intersection. **Table 6** provides the results of the LOS analysis conducted at this intersection.

Table 6 –Ohio Avenue & Wadsworth Boulevard (SH-121) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2021 Existing	8.1	A	13.4	B
2024 Background	8.3	A	13.8	B
2024 Background Plus Project	8.9	A	15.1	B
2045 Background	8.9	A	16.0	B
2045 Background Plus Project	9.7	A	17.5	B

Project Access

With completion of the Kairoi Belmar redevelopment project, full movement access is proposed from two full movement accesses along the west side of Yarrow Street. The south access is existing and aligns with Ohio Avenue. The north access along Yarrow Street is located approximately 375 feet north of Ohio Avenue and the south access. It is recommended that a R1-1 “STOP” sign be installed on the exiting eastbound approach of the north access along Yarrow Street. It should be noted that the south access along Yarrow Street aligning with Ohio Avenue currently provides stop control on the northbound and southbound approaches and was evaluated above as part of the Ohio Avenue and Yarrow Street intersection. **Table 7** provides the results of the level of service for the north project access. As shown in the table, the project street access intersection along Yarrow Street is anticipated to have all movements operating with acceptable LOS B or better during the peak hours in both the buildout year 2024 and the 2045 long term horizons.

Table 7 – Project Access Level of Service Results

Intersection	2024 Total				2045 Total			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Yarrow St North Access								
Northbound Left	7.3	A	7.5	A	7.4	A	7.5	A
Eastbound Approach	9.3	A	9.9	A	9.4	A	10.1	B

5.3 CDOT Turn Bay Length Analysis

The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the west leg of the Ohio Avenue and Wadsworth Boulevard (SH-121) intersection is anticipated to increase existing access traffic volumes by more than 20 percent. Therefore, a CDOT access permit is anticipated to be needed in association with this project. A CDOT access permit is not anticipated to be needed at the intersection of Virginia Avenue and Wadsworth Boulevard (SH-121) due to project volumes not increasing traffic on any of the legs by 20 percent. Therefore, a turn lane analysis was provided only for the west leg of Ohio Avenue and Wadsworth Boulevard (SH-121).

Since Wadsworth Boulevard (SH-121) is a state owned and maintained facility, auxiliary turn lanes along Wadsworth Boulevard (SH-121) need to conform with the current CDOT State Highway Access Code (SHAC) standards. CDOT categorizes the segments of Wadsworth Boulevard (SH-121) through the study area as NR-A: Non-Rural Principal Highway. According to the State Highway Access Code for category NR-A roadways, the following thresholds apply:

- A left turn deceleration lane and taper with storage length is required for any access with a projected peak hour ingress turning volume greater than 10 vehicles per hour (vph). The taper length will be included within the required deceleration length.
- A right turn deceleration lane and taper is required for any access with a projected peak hour ingress turning volume greater than 25 vph. The taper length will be included within the required deceleration length.
- Right turn acceleration lane and taper is required for any access with a projected peak hour right turning volume greater than 50 vph when the posted speed on the highway is greater than 40 mph. The taper length will be included within the required acceleration length. A right turn acceleration lane may also be required at signalized intersections if a free-right turn is needed to maintain an appropriate level of service.

Based on traffic projections and the above thresholds, auxiliary turn lane requirements were calculated for the west leg of the intersection of Ohio Avenue and Wadsworth Boulevard (SH-121). Wadsworth Boulevard (SH-121) provides three lanes of travel northbound and two lanes of travel southbound at this intersection and has a posted speed limit of 40 miles per hour. As such, turn lane requirements at the intersection of Ohio Avenue and Wadsworth Boulevard (SH-121) to be impacted by project traffic are as follows:

- A northbound left turn deceleration lane exists and **is** warranted with existing traffic volumes. Since Wadsworth Boulevard (SH-121) has a category of NR-A, the left turn lane requirement is deceleration lane and taper with storage length. The taper length will be included within the required deceleration length. Currently the northbound left lane is approximately 600 feet with a 200-foot taper. Based on the 40-mile per hour speed limit, the deceleration lane length is 225 feet, plus a 145-foot taper, and 50 feet of storage (based on 47 northbound left turns during the peak hour in 2024) totaling 275 feet plus a 145-foot taper. Therefore, the existing northbound right turn lane meets current CDOT requirements.

- A southbound right turn deceleration lane along Wadsworth Boulevard (SH-121) exists and **is** warranted based on projected 2024 background plus project traffic being 31 southbound right turns during the peak hour and the threshold being 25 vph. Since Wadsworth Boulevard (SH-121) has a category of NR-A, the right turn lane requirement is deceleration length with a taper incorporated within the deceleration length. The southbound right turn lane is currently continuous. Based on the 40-mile per hour speed limit, the deceleration lane length is 225 feet, plus a 145-foot taper. Therefore, the existing southbound right turn lane meets current CDOT requirements.
- A southbound acceleration lane along Wadsworth Boulevard (SH-121) from the Ohio Avenue eastbound right turn **is not** warranted due to the speed limit along SH-121 not being greater than 40 miles per hour and with this movement and intersection expected to operate acceptably during the peak hours throughout the 2045 horizon.

5.4 Vehicle Queuing Analysis

A vehicle queuing analysis was conducted for the study area intersections. The queuing analysis was performed using Synchro presenting the results of the 95th percentile queue lengths. Results are shown in the following **Table 8** with calculations provided within the level of service operational sheets of **Appendix D** for unsignalized intersections and **Appendix E** for signalized intersections.

Table 8 – Turn Lane Queuing Analysis Results

Intersection Turn Lane	Existing Turn Lane Length (feet)	2024 Calculated Queue (feet)	2024 Recommended Length (feet)	2045 Calculated Queue (feet)	2045 Recommended Length (feet)
Virginia Ave & Wadsworth Blvd					
Eastbound Left	125'	152'	125'	161'	125'
Westbound Right	100'	FREE	100'	FREE	100'
Northbound Left	175' DL	99'	175' DL	107'	175' DL
Southbound Left	175' DL	138'	175' DL	147'	175' DL
Ohio Ave & Wadsworth Blvd					
Eastbound Left	100'	35'	100'	46'	100'
Eastbound Right	100'	23'	100'	27'	100'
Northbound Left	600'	107'	600'	110'	600'
Southbound Left	475'	186'	475'	198'	475'

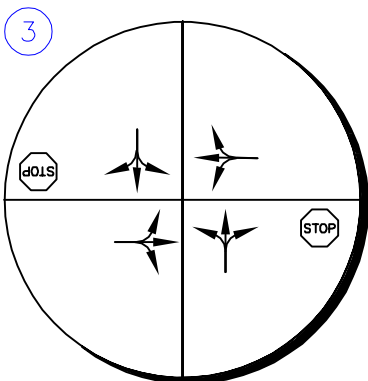
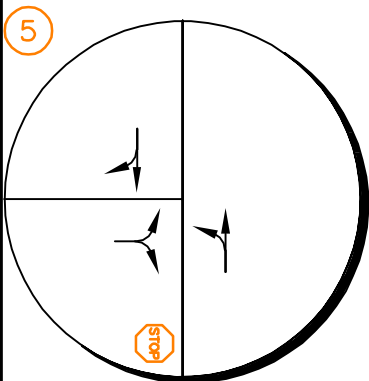
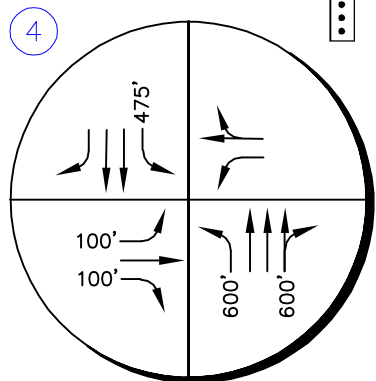
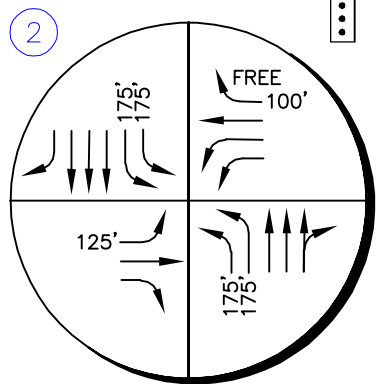
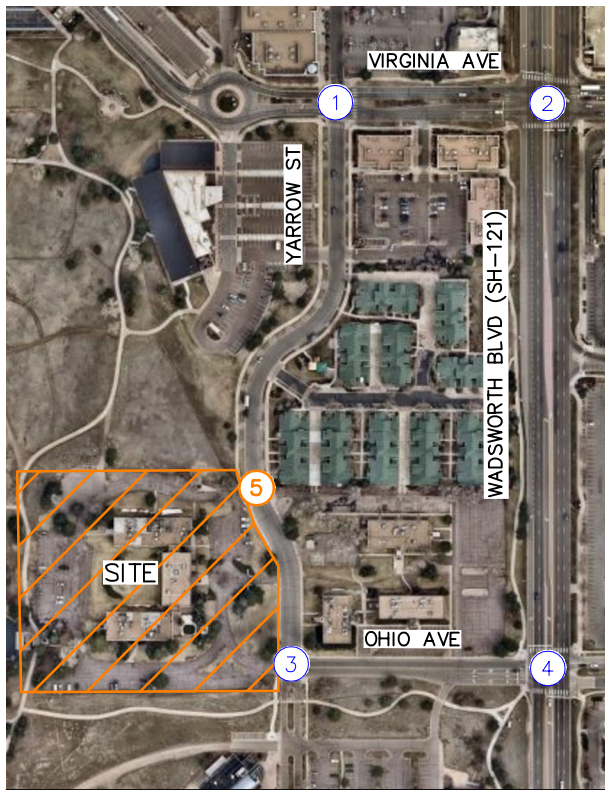
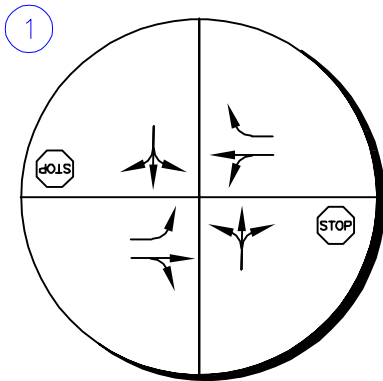
DL = Dual Left Turn Lanes; Free = Free Right Turn Movement

As shown in the table above, all queues are contained within the available storage throughout 2045 with project traffic with the exception of the eastbound left turn lane at the intersection of Virginia Avenue and Wadsworth Boulevard (SH-121). The eastbound left turn lane at the

intersection of Virginia Avenue and Wadsworth Boulevard (SH-121) could be extended from 125 feet to 150 feet by 2024 and 175 feet by 2045. However, to avoid disrupting the existing trees within the raised landscaped median, it is anticipated that two vehicles can queue within the taper without extending into the nearest through lane which would accommodate the vehicle queuing demands. Further, there is relatively small number of eastbound through movements at this intersection; therefore, minimal impacts to the nearest through lane are expected in the unlikely event that a left turning vehicle backs into the adjacent through lane. Therefore, no modifications are recommended to the eastbound left turn lane at the Virginia Avenue and Wadsworth Boulevard intersection.

5.5 Improvement Summary

Based on the results of the intersection operational and vehicle queuing analysis, the key intersection recommended improvements and control are shown in **Figure 10**.



LEGEND	
(X)	Study Area Key Intersection
(X)	Project Access Intersection
⋮	Signalized Intersection
STOP	Stop Controlled Approach
→	Improvement
↪	100' Turn Lane Length (feet)

KAIROI BELMAR
 LAKEWOOD, CO
 RECOMMENDED LANE
 CONFIGURATION AND CONTROL

FIGURE 10

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis presented in this report, Kimley-Horn believes the Kairoi Belmar project will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network and the proposed project development with expected traffic volumes resulted in the following conclusions and recommendations:

- With completion of the Kairoi Belmar redevelopment project, direct access to the site is proposed from two full movement accesses along the west side of Yarrow Street. The south access is existing and aligns with Ohio Avenue. The north access along Yarrow Street is located approximately 375 feet north of Ohio Avenue and the south access. It is recommended that a R1-1 “STOP” sign be installed on the exiting eastbound approach of the north access along Yarrow Street.
- The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the west leg of the Ohio Avenue and Wadsworth Boulevard (SH-121) intersection is anticipated to increase existing access traffic volumes by more than 20 percent. Therefore, a CDOT access permit is anticipated to be needed at this location in association with this project. A CDOT access permit is not anticipated to be needed at the intersection of Virginia Avenue and Wadsworth Boulevard (SH-121) due to project volumes not increasing traffic on any of the legs by 20 percent.
- Based on calculated vehicle queuing lengths, one vehicle could queue beyond the existing eastbound left turn lane at the Virginia Avenue and Wadsworth Boulevard (SH-121) intersection in 2024 while two vehicles could extend beyond in 2045. The eastbound left turn lane at the intersection of Virginia Avenue and Wadsworth Boulevard (SH-121) could be extended from 125 feet to 150 feet by 2024 and 175 feet by 2045. However, to avoid disrupting the existing trees within the raised landscaped median, it is anticipated that two vehicles can queue within the taper without extending into the nearest through lane which would accommodate the vehicle queuing demands. Further, there is relatively small number of eastbound through movements at this intersection; therefore, minimal impacts to the nearest

through lane are expected in the unlikely event that a left turning vehicle backs into the adjacent through lane. Therefore, no modifications are recommended to the eastbound left turn lane at the Virginia Avenue and Wadsworth Boulevard intersection.

- All off-site and on-site improvements should be incorporated into the Civil Drawings, and conform to standards of the City of Lakewood, CDOT, American Association of State Highway and Transportation Officials (AASHTO) Geometric Design of Highways and Streets, Institute of Transportation Engineers (ITE), and the Manual on Traffic Control Devices (MUTCD) – 2009 Edition.

APPENDICES

APPENDIX A

Intersection Count Sheets



Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
AM Peak
Virginia Ave and Yarrow St

File Name : Virginia and Yarrow AM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

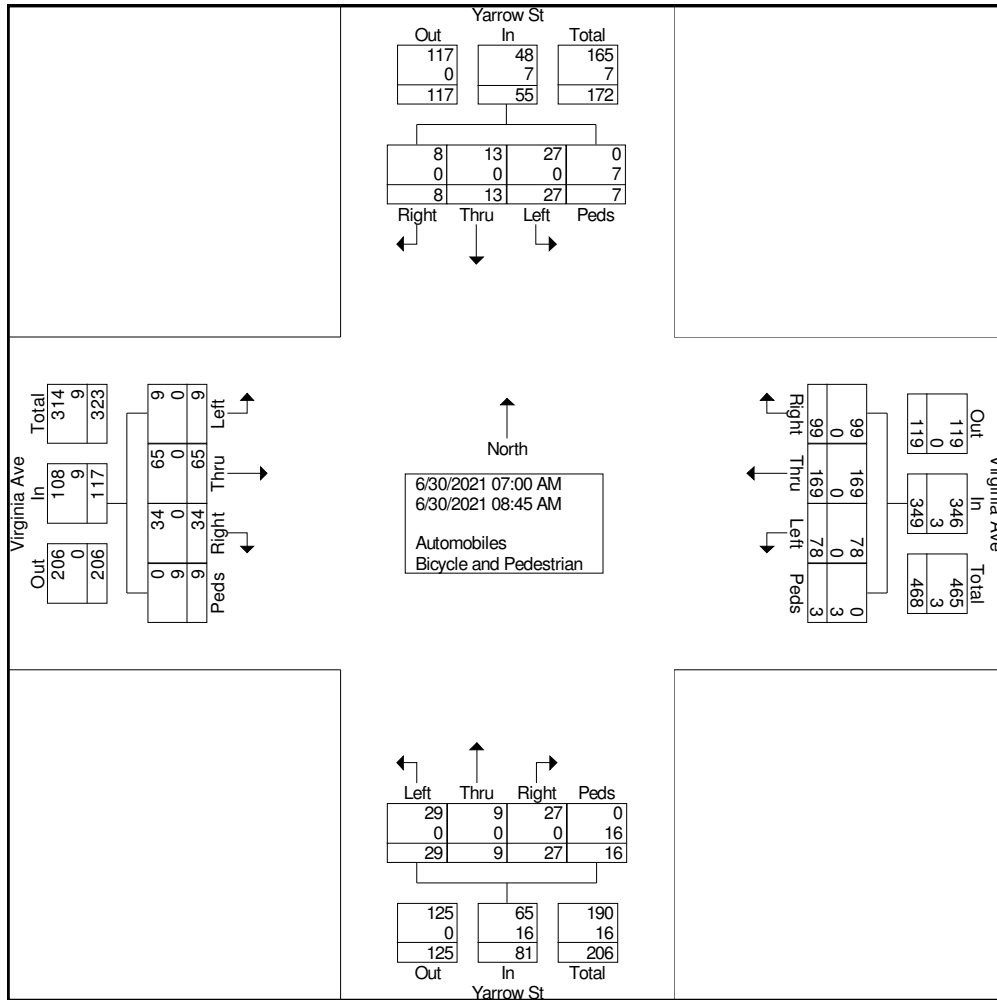
Start Time	Virginia Ave Eastbound					Virginia Ave Westbound					Yarrow St Northbound					Yarrow St Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	0	11	5	0	16	4	21	11	0	36	3	0	3	4	10	2	0	0	0	2	64
07:15 AM	0	5	4	1	10	12	12	10	1	35	8	1	1	2	12	4	2	0	0	6	63
07:30 AM	1	5	6	2	14	6	23	7	1	37	2	0	1	1	4	3	2	2	2	9	64
07:45 AM	1	11	2	2	16	12	25	17	0	54	2	0	3	0	5	3	1	0	4	8	83
Total	2	32	17	5	56	34	81	45	2	162	15	1	8	7	31	12	5	2	6	25	274
08:00 AM	2	9	8	0	19	7	24	7	0	38	2	1	6	0	9	4	3	3	0	10	76
08:15 AM	2	5	2	3	12	5	22	11	0	38	3	1	5	2	11	3	2	0	1	6	67
08:30 AM	1	9	1	0	11	19	7	15	0	41	8	2	2	3	15	4	2	2	0	8	75
08:45 AM	2	10	6	1	19	13	35	21	1	70	1	4	6	4	15	4	1	1	0	6	110
Total	7	33	17	4	61	44	88	54	1	187	14	8	19	9	50	15	8	6	1	30	328
Grand Total	9	65	34	9	117	78	169	99	3	349	29	9	27	16	81	27	13	8	7	55	602
Apprch %	7.7	55.6	29.1	7.7		22.3	48.4	28.4	0.9		35.8	11.1	33.3	19.8		49.1	23.6	14.5	12.7		
Total %	1.5	10.8	5.6	1.5	19.4	13	28.1	16.4	0.5	58	4.8	1.5	4.5	2.7	13.5	4.5	2.2	1.3	1.2	9.1	
Automobiles	9	65	34	0	108	78	169	99	0	346	29	9	27	0	65	27	13	8	0	48	567
% Automobiles	100	100	100	0	92.3	100	100	100	0	99.1	100	100	100	0	80.2	100	100	100	0	87.3	94.2
Bicycle and Pedestrian	0	0	0	9	9	0	0	0	3	3	0	0	0	16	16	0	0	0	7	7	35
% Bicycle and Pedestrian	0	0	0	100	7.7	0	0	0	100	0.9	0	0	0	100	19.8	0	0	0	100	12.7	5.8



Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
AM Peak
Virginia Ave and Yarrow St

File Name : Virginia and Yarrow AM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 2



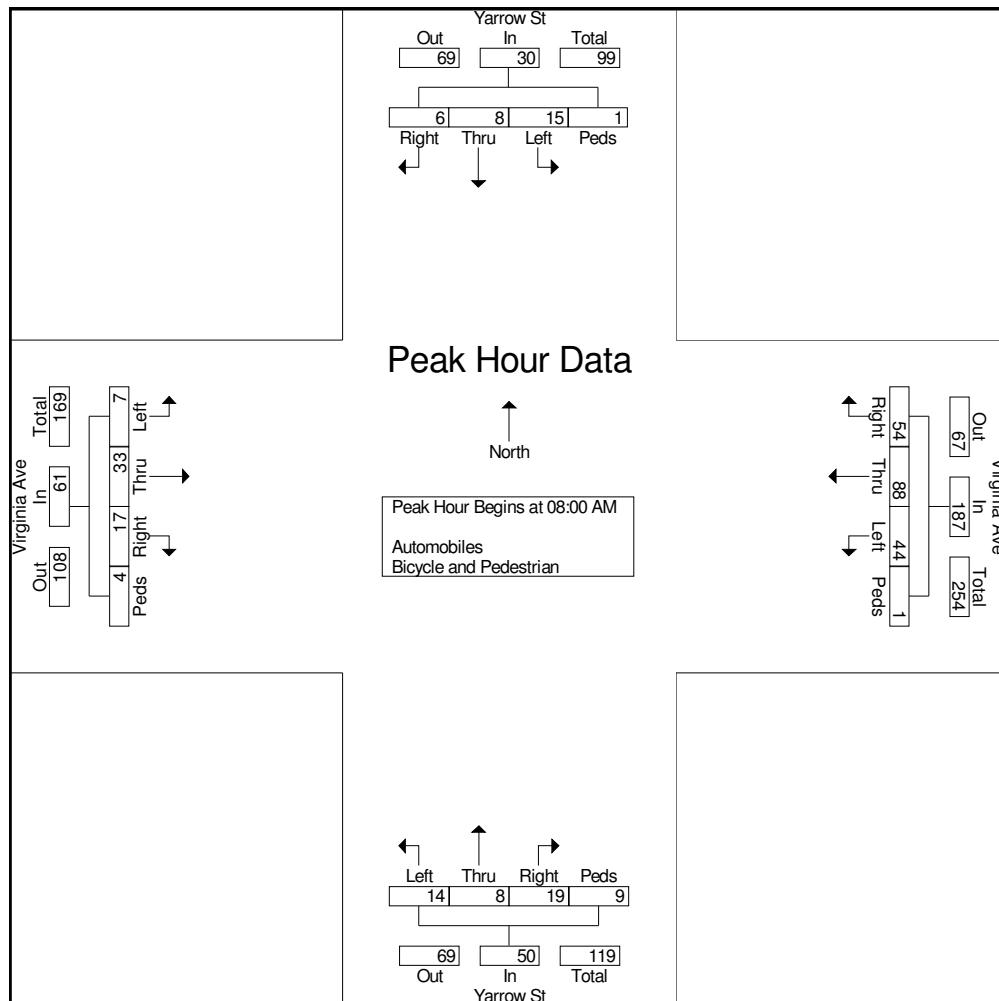


Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
AM Peak
Virginia Ave and Yarrow St

File Name : Virginia and Yarrow AM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 3

Start Time	Virginia Ave Eastbound					Virginia Ave Westbound					Yarrow St Northbound					Yarrow St Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	2	9	8	0	19	7	24	7	0	38	2	1	6	0	9	4	3	3	0	10	76
08:15 AM	2	5	2	3	12	5	22	11	0	38	3	1	5	2	11	3	2	0	1	6	67
08:30 AM	1	9	1	0	11	19	7	15	0	41	8	2	2	3	15	4	2	2	0	8	75
08:45 AM	2	10	6	1	19	13	35	21	1	70	1	4	6	4	15	4	1	1	0	6	110
Total Volume	7	33	17	4	61	44	88	54	1	187	14	8	19	9	50	15	8	6	1	30	328
% App. Total	11.5	54.1	27.9	6.6		23.5	47.1	28.9	0.5		28	16	38	18		50	26.7	20	3.3		
PHF	.875	.825	.531	.333	.803	.579	.629	.643	.250	.668	.438	.500	.792	.563	.833	.938	.667	.500	.250	.750	.745





Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
PM Peak
Virginia Ave and Yarrow St

File Name : Virginia and Yarrow PM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

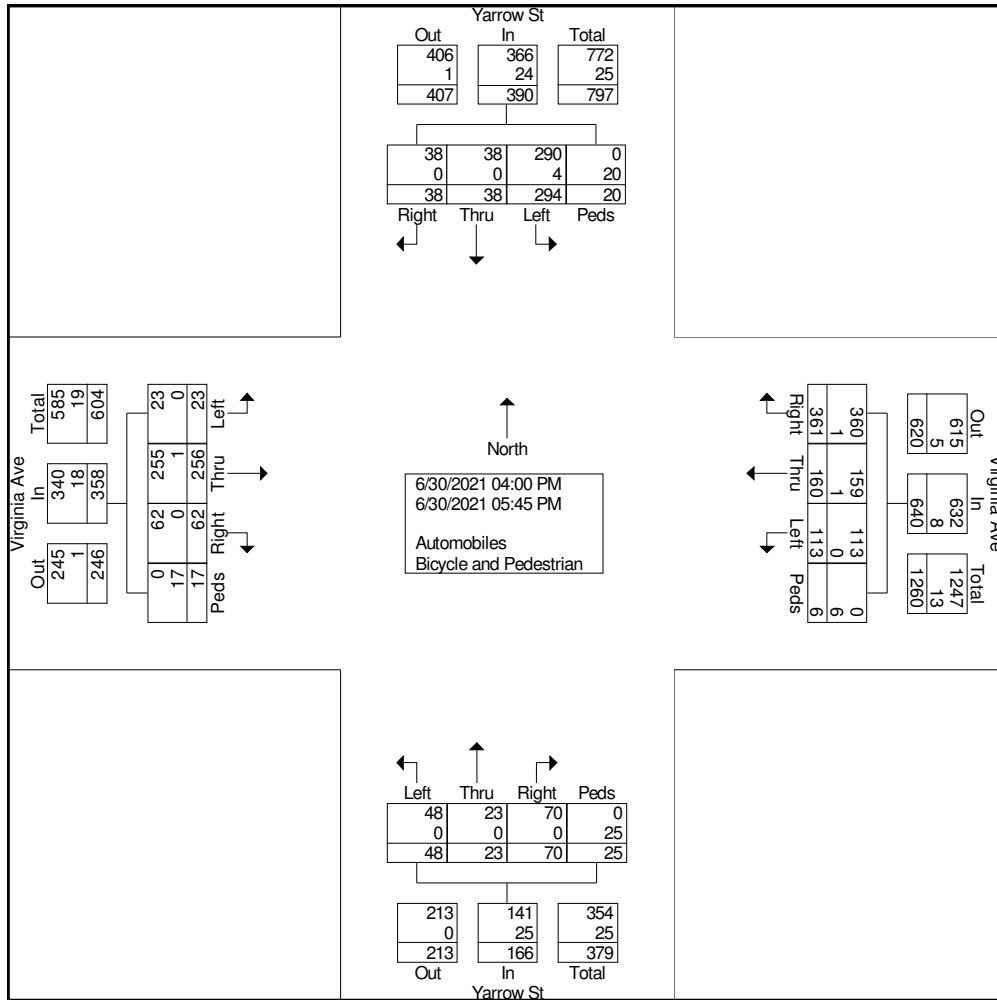
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	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	3	49	8	3	63	13	16	36	1	66	5	2	9	5	21	31	4	4	3	42	192
04:15 PM	3	33	5	3	44	11	19	46	1	77	4	2	8	1	15	38	3	3	7	51	187
04:30 PM	5	26	5	1	37	20	20	40	1	81	3	2	10	5	20	35	4	4	1	44	182
04:45 PM	1	32	8	2	43	8	18	54	0	80	6	0	8	3	17	42	7	7	2	58	198
Total	12	140	26	9	187	52	73	176	3	304	18	6	35	14	73	146	18	18	13	195	759
05:00 PM	6	46	12	4	68	18	23	41	1	83	13	4	14	4	35	32	5	5	1	43	229
05:15 PM	3	26	8	0	37	14	16	48	0	78	11	5	10	2	28	34	5	5	2	46	189
05:30 PM	1	24	5	1	31	14	21	53	0	88	1	5	7	2	15	49	5	5	3	62	196
05:45 PM	1	20	11	3	35	15	27	43	2	87	5	3	4	3	15	33	5	5	1	44	181
Total	11	116	36	8	171	61	87	185	3	336	30	17	35	11	93	148	20	20	7	195	795
Grand Total	23	256	62	17	358	113	160	361	6	640	48	23	70	25	166	294	38	38	20	390	1554
Apprch %	6.4	71.5	17.3	4.7		17.7	25	56.4	0.9		28.9	13.9	42.2	15.1		75.4	9.7	9.7	5.1		
Total %	1.5	16.5	4	1.1	23	7.3	10.3	23.2	0.4	41.2	3.1	1.5	4.5	1.6	10.7	18.9	2.4	2.4	1.3	25.1	
Automobiles	23	255	62	0	340	113	159	360	0	632	48	23	70	0	141	290	38	38	0	366	1479
% Automobiles	100	99.6	100	0	95	100	99.4	99.7	0	98.8	100	100	100	0	84.9	98.6	100	100	0	93.8	95.2
Bicycle and Pedestrian	0	1	0	17	18	0	1	1	6	8	0	0	0	25	25	4	0	0	20	24	75
% Bicycle and Pedestrian	0	0.4	0	100	5	0	0.6	0.3	100	1.2	0	0	0	100	15.1	1.4	0	0	100	6.2	4.8



Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
PM Peak
Virginia Ave and Yarrow St

File Name : Virginia and Yarrow PM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 2



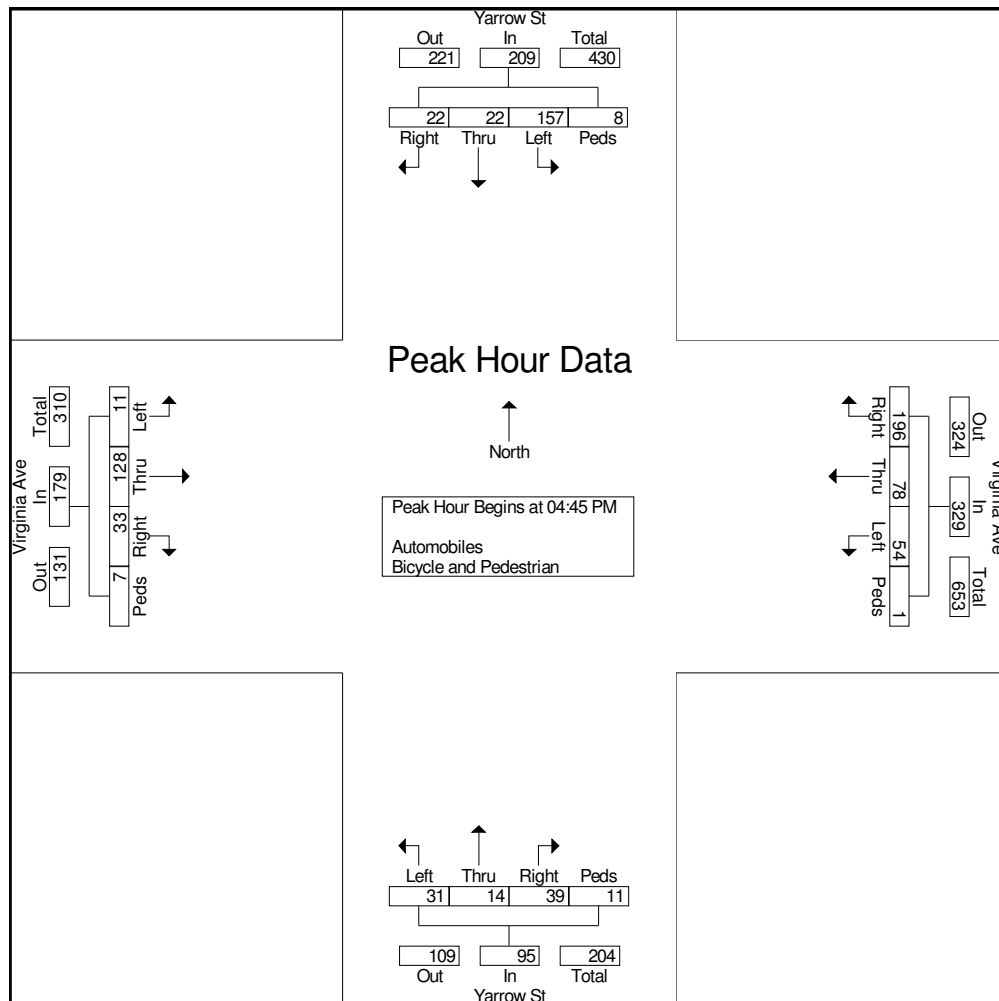


Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
PM Peak
Virginia Ave and Yarrow St

File Name : Virginia and Yarrow PM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 3

Start Time	Virginia Ave Eastbound					Virginia Ave Westbound					Yarrow St Northbound					Yarrow St Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	1	32	8	2	43	8	18	54	0	80	6	0	8	3	17	42	7	7	2	58	198
05:00 PM	6	46	12	4	68	18	23	41	1	83	13	4	14	4	35	32	5	5	1	43	229
05:15 PM	3	26	8	0	37	14	16	48	0	78	11	5	10	2	28	34	5	5	2	46	189
05:30 PM	1	24	5	1	31	14	21	53	0	88	1	5	7	2	15	49	5	5	3	62	196
Total Volume	11	128	33	7	179	54	78	196	1	329	31	14	39	11	95	157	22	22	8	209	812
% App. Total	6.1	71.5	18.4	3.9		16.4	23.7	59.6	0.3		32.6	14.7	41.1	11.6		75.1	10.5	10.5	3.8		
PHF	.458	.696	.688	.438	.658	.750	.848	.907	.250	.935	.596	.700	.696	.688	.679	.801	.786	.786	.667	.843	.886





Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
AM Peak
Virginia Ave and Wadsworth Blvd (SH-121)

File Name : Virginia and Wadsworth AM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

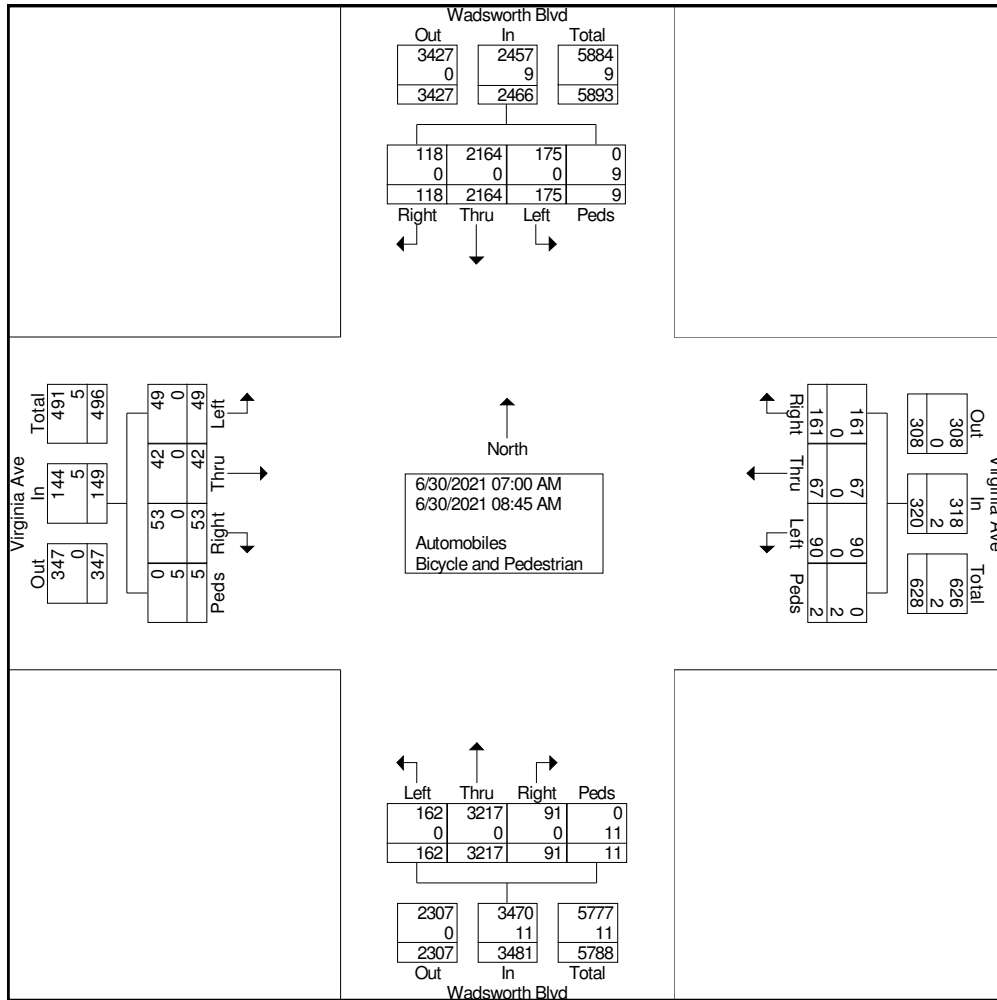
Start Time	Virginia Ave Eastbound					Virginia Ave Westbound					Wadsworth Blvd Northbound					Wadsworth Blvd Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	6	4	6	2	18	12	1	15	0	28	18	363	4	2	387	14	178	10	2	204	637
07:15 AM	8	5	8	1	22	11	9	17	1	38	17	430	3	1	451	14	244	12	1	271	782
07:30 AM	2	4	2	0	8	9	6	16	0	31	13	470	10	0	493	15	299	14	2	330	862
07:45 AM	6	6	7	1	20	10	11	19	1	41	24	399	13	0	436	23	289	21	3	336	833
Total	22	19	23	4	68	42	27	67	2	138	72	1662	30	3	1767	66	1010	57	8	1141	3114
08:00 AM	3	9	7	1	20	11	13	32	0	56	15	381	8	0	404	16	283	15	1	315	795
08:15 AM	7	4	6	0	17	15	9	27	0	51	20	406	20	0	446	34	282	8	0	324	838
08:30 AM	11	4	10	0	25	12	6	17	0	35	19	357	20	3	399	29	263	13	0	305	764
08:45 AM	6	6	7	0	19	10	12	18	0	40	36	411	13	5	465	30	326	25	0	381	905
Total	27	23	30	1	81	48	40	94	0	182	90	1555	61	8	1714	109	1154	61	1	1325	3302
Grand Total	49	42	53	5	149	90	67	161	2	320	162	3217	91	11	3481	175	2164	118	9	2466	6416
Apprch %	32.9	28.2	35.6	3.4		28.1	20.9	50.3	0.6		4.7	92.4	2.6	0.3		7.1	87.8	4.8	0.4		
Total %	0.8	0.7	0.8	0.1	2.3	1.4	1	2.5	0	5	2.5	50.1	1.4	0.2	54.3	2.7	33.7	1.8	0.1	38.4	
Automobiles	49	42	53	0	144	90	67	161	0	318	162	3217	91	0	3470	175	2164	118	0	2457	6389
% Automobiles	100	100	100	0	96.6	100	100	100	0	99.4	100	100	100	0	99.7	100	100	100	0	99.6	99.6
Bicycle and Pedestrian	0	0	0	5	5	0	0	0	2	2	0	0	0	11	11	0	0	0	9	9	27
% Bicycle and Pedestrian	0	0	0	100	3.4	0	0	0	100	0.6	0	0	0	100	0.3	0	0	0	100	0.4	0.4



Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
AM Peak
Virginia Ave and Wadsworth Blvd (SH-121)

File Name : Virginia and Wadsworth AM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 2



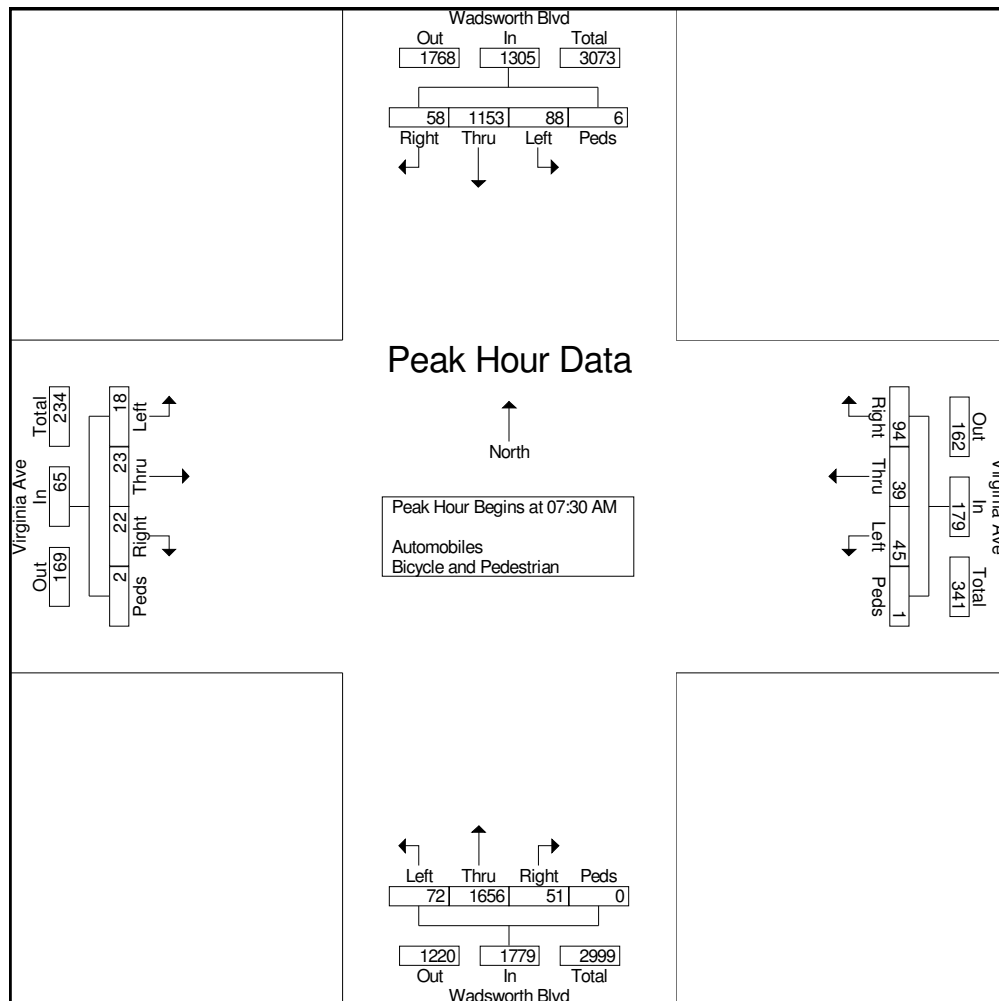


Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
AM Peak
Virginia Ave and Wadsworth Blvd (SH-121)

File Name : Virginia and Wadsworth AM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 3

Start Time	Virginia Ave Eastbound					Virginia Ave Westbound					Wadsworth Blvd Northbound					Wadsworth Blvd Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	2	4	2	0	8	9	6	16	0	31	13	470	10	0	493	15	299	14	2	330	862
07:45 AM	6	6	7	1	20	10	11	19	1	41	24	399	13	0	436	23	289	21	3	336	833
08:00 AM	3	9	7	1	20	11	13	32	0	56	15	381	8	0	404	16	283	15	1	315	795
08:15 AM	7	4	6	0	17	15	9	27	0	51	20	406	20	0	446	34	282	8	0	324	838
Total Volume	18	23	22	2	65	45	39	94	1	179	72	1656	51	0	1779	88	1153	58	6	1305	3328
% App. Total	27.7	35.4	33.8	3.1		25.1	21.8	52.5	0.6		4	93.1	2.9	0		6.7	88.4	4.4	0.5		
PHF	.643	.639	.786	.500	.813	.750	.750	.734	.250	.799	.750	.881	.638	.000	.902	.647	.964	.690	.500	.971	.965





Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
PM Peak
Virginia Ave and Wadsworth Blvd (SH-121)

File Name : Virginia and Wadsworth PM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

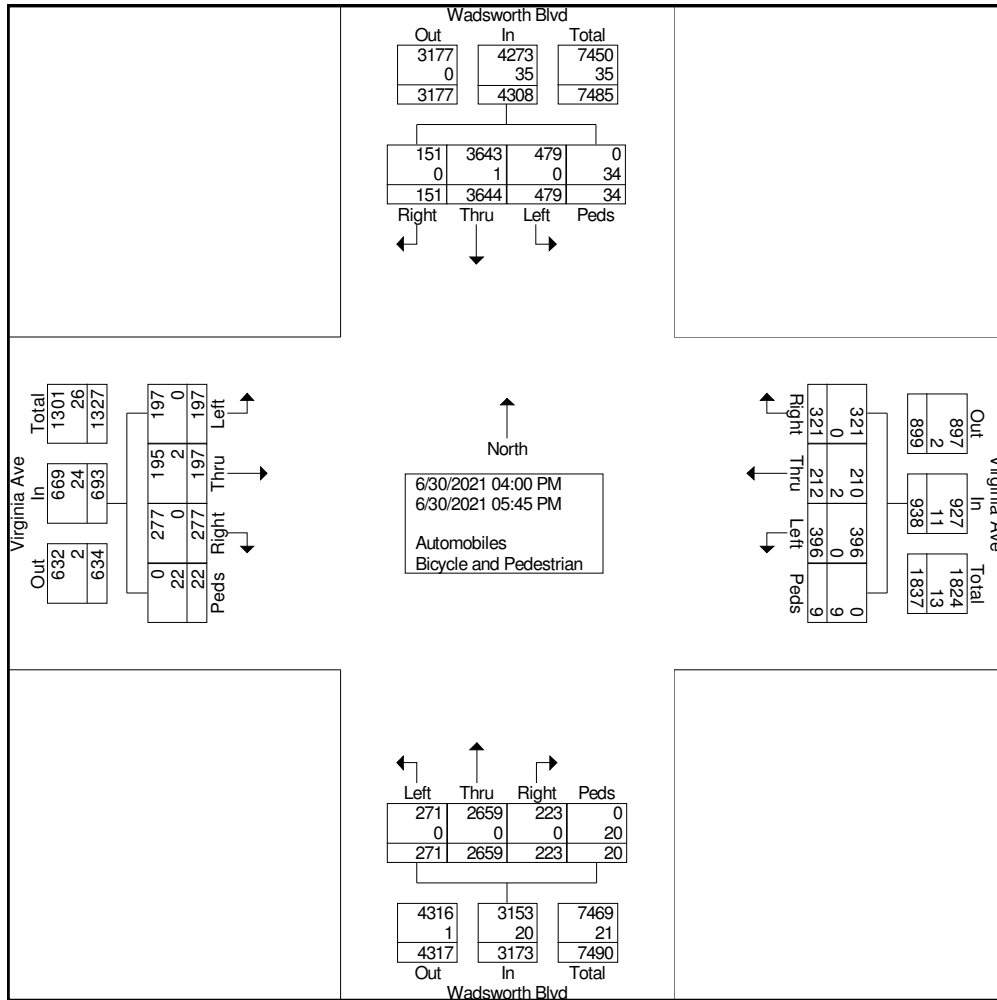
Start Time	Virginia Ave Eastbound					Virginia Ave Westbound					Wadsworth Blvd Northbound					Wadsworth Blvd Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	35	23	39	4	101	43	26	34	1	104	30	294	18	2	344	62	446	15	4	527	1076
04:15 PM	17	26	30	1	74	44	24	35	1	104	21	305	29	4	359	61	447	20	5	533	1070
04:30 PM	27	25	30	5	87	56	27	28	1	112	39	319	28	4	390	58	442	14	4	518	1107
04:45 PM	18	35	34	0	87	53	34	39	2	128	35	286	26	4	351	63	448	16	4	531	1097
Total	97	109	133	10	349	196	111	136	5	448	125	1204	101	14	1444	244	1783	65	17	2109	4350
05:00 PM	33	21	42	3	99	40	21	49	2	112	34	372	30	0	436	53	441	20	4	518	1165
05:15 PM	23	27	33	4	87	59	25	34	0	118	32	338	28	1	399	64	526	26	5	621	1225
05:30 PM	26	22	39	3	90	55	34	48	0	137	39	387	34	3	463	59	466	18	5	548	1238
05:45 PM	18	18	30	2	68	46	21	54	2	123	41	358	30	2	431	59	428	22	3	512	1134
Total	100	88	144	12	344	200	101	185	4	490	146	1455	122	6	1729	235	1861	86	17	2199	4762
Grand Total	197	197	277	22	693	396	212	321	9	938	271	2659	223	20	3173	479	3644	151	34	4308	9112
Apprch %	28.4	28.4	40	3.2		42.2	22.6	34.2	1		8.5	83.8	7	0.6		11.1	84.6	3.5	0.8		
Total %	2.2	2.2	3	0.2	7.6	4.3	2.3	3.5	0.1	10.3	3	29.2	2.4	0.2	34.8	5.3	40	1.7	0.4	47.3	
Automobiles	197	195	277	0	669	396	210	321	0	927	271	2659	223	0	3153	479	3643	151	0	4273	9022
% Automobiles	100	99	100	0	96.5	100	99.1	100	0	98.8	100	100	100	0	99.4	100	100	100	0	99.2	99
Bicycle and Pedestrian	0	2	0	22	24	0	2	0	9	11	0	0	0	20	20	0	1	0	34	35	90
% Bicycle and Pedestrian	0	1	0	100	3.5	0	0.9	0	100	1.2	0	0	0	100	0.6	0	0	0	100	0.8	1



Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
PM Peak
Virginia Ave and Wadsworth Blvd (SH-121)

File Name : Virginia and Wadsworth PM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 2



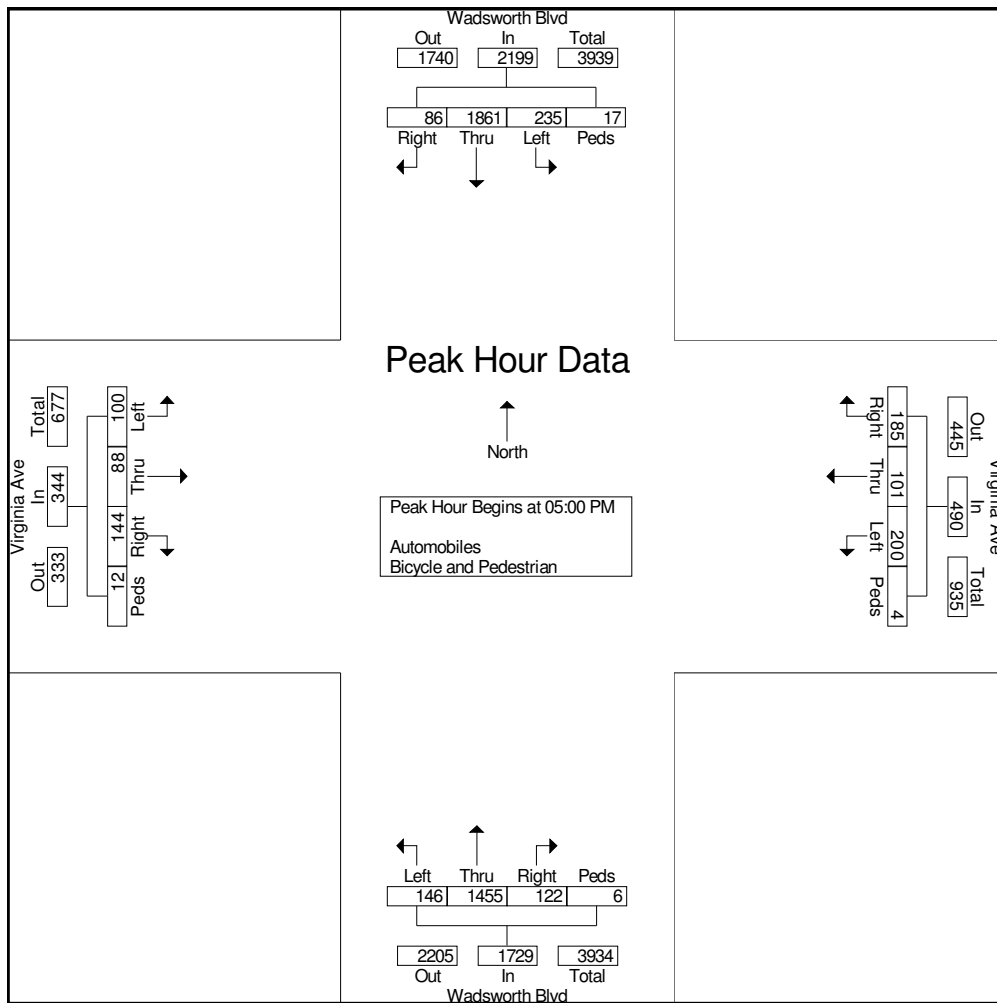


Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
PM Peak
Virginia Ave and Wadsworth Blvd (SH-121)

File Name : Virginia and Wadsworth PM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 3

Start Time	Virginia Ave Eastbound					Virginia Ave Westbound					Wadsworth Blvd Northbound					Wadsworth Blvd Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	33	21	42	3	99	40	21	49	2	112	34	372	30	0	436	53	441	20	4	518	1165
05:15 PM	23	27	33	4	87	59	25	34	0	118	32	338	28	1	399	64	526	26	5	621	1225
05:30 PM	26	22	39	3	90	55	34	48	0	137	39	387	34	3	463	59	466	18	5	548	1238
05:45 PM	18	18	30	2	68	46	21	54	2	123	41	358	30	2	431	59	428	22	3	512	1134
Total Volume	100	88	144	12	344	200	101	185	4	490	146	1455	122	6	1729	235	1861	86	17	2199	4762
% App. Total	29.1	25.6	41.9	3.5		40.8	20.6	37.8	0.8		8.4	84.2	7.1	0.3		10.7	84.6	3.9	0.8		
PHF	.758	.815	.857	.750	.869	.847	.743	.856	.500	.894	.890	.940	.897	.500	.934	.918	.885	.827	.850	.885	.962





Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
AM Peak
Ohio Ave and Yarrow St

File Name : Ohio and Yarrow AM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

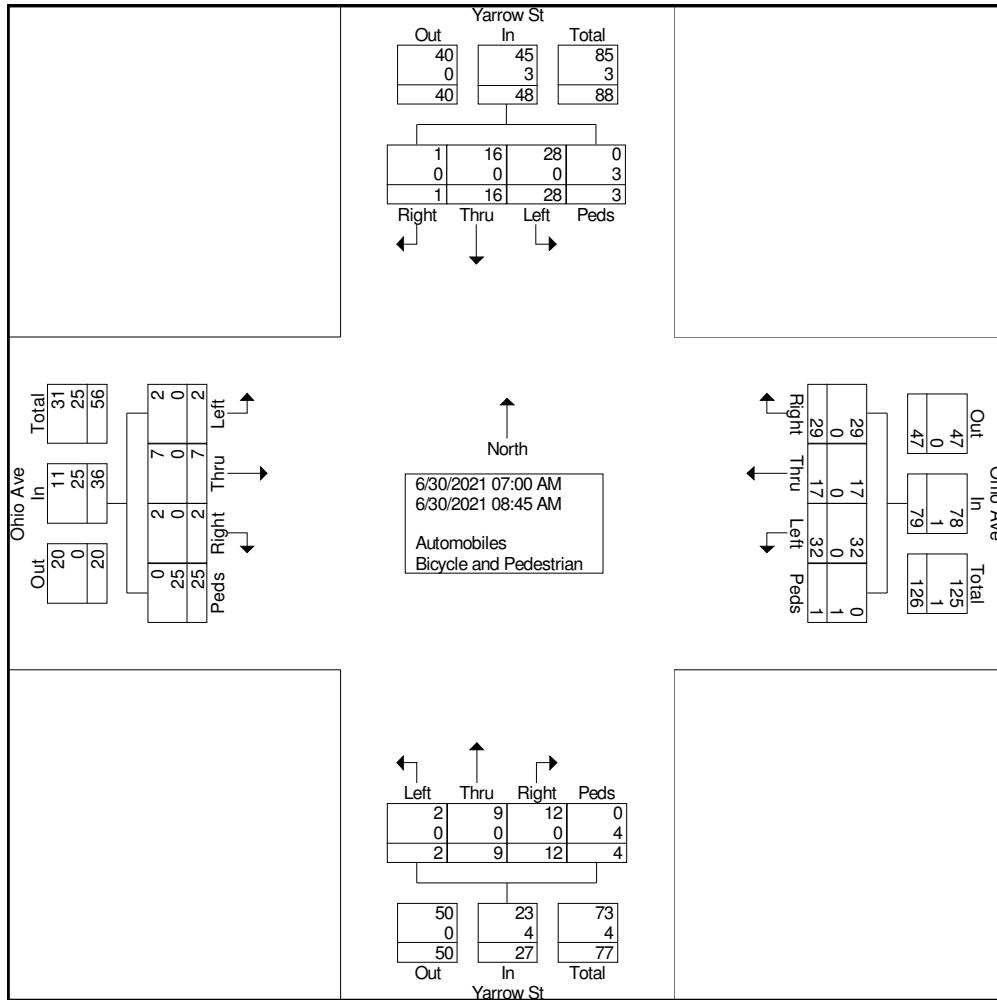
Start Time	Ohio Ave Eastbound					Ohio Ave Westbound					Yarrow St Northbound					Yarrow St Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	0	0	0	7	7	6	5	3	0	14	0	1	2	0	3	2	0	0	0	2	26
07:15 AM	0	2	0	2	4	2	1	5	1	9	0	1	1	1	3	5	1	1	1	8	24
07:30 AM	0	0	1	3	4	1	2	3	0	6	0	0	1	0	1	1	1	0	0	2	13
07:45 AM	1	2	0	4	7	5	1	4	0	10	0	0	3	0	3	0	3	0	2	5	25
Total	1	4	1	16	22	14	9	15	1	39	0	2	7	1	10	8	5	1	3	17	88
08:00 AM	0	0	0	1	1	4	1	4	0	9	0	1	0	0	1	6	3	0	0	9	20
08:15 AM	1	0	0	4	5	4	2	5	0	11	1	2	1	2	6	4	3	0	0	7	29
08:30 AM	0	0	1	2	3	2	4	1	0	7	1	1	0	1	3	4	2	0	0	6	19
08:45 AM	0	3	0	2	5	8	1	4	0	13	0	3	4	0	7	6	3	0	0	9	34
Total	1	3	1	9	14	18	8	14	0	40	2	7	5	3	17	20	11	0	0	31	102
Grand Total	2	7	2	25	36	32	17	29	1	79	2	9	12	4	27	28	16	1	3	48	190
Apprch %	5.6	19.4	5.6	69.4		40.5	21.5	36.7	1.3		7.4	33.3	44.4	14.8		58.3	33.3	2.1	6.2		
Total %	1.1	3.7	1.1	13.2	18.9	16.8	8.9	15.3	0.5	41.6	1.1	4.7	6.3	2.1	14.2	14.7	8.4	0.5	1.6	25.3	
Automobiles	2	7	2	0	11	32	17	29	0	78	2	9	12	0	23	28	16	1	0	45	157
% Automobiles	100	100	100	0	30.6	100	100	100	0	98.7	100	100	100	0	85.2	100	100	100	0	93.8	82.6
Bicycle and Pedestrian	0	0	0	25	25	0	0	0	1	1	0	0	0	4	4	0	0	0	3	3	33
% Bicycle and Pedestrian	0	0	0	100	69.4	0	0	0	100	1.3	0	0	0	100	14.8	0	0	0	100	6.2	17.4



Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
AM Peak
Ohio Ave and Yarrow St

File Name : Ohio and Yarrow AM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 2



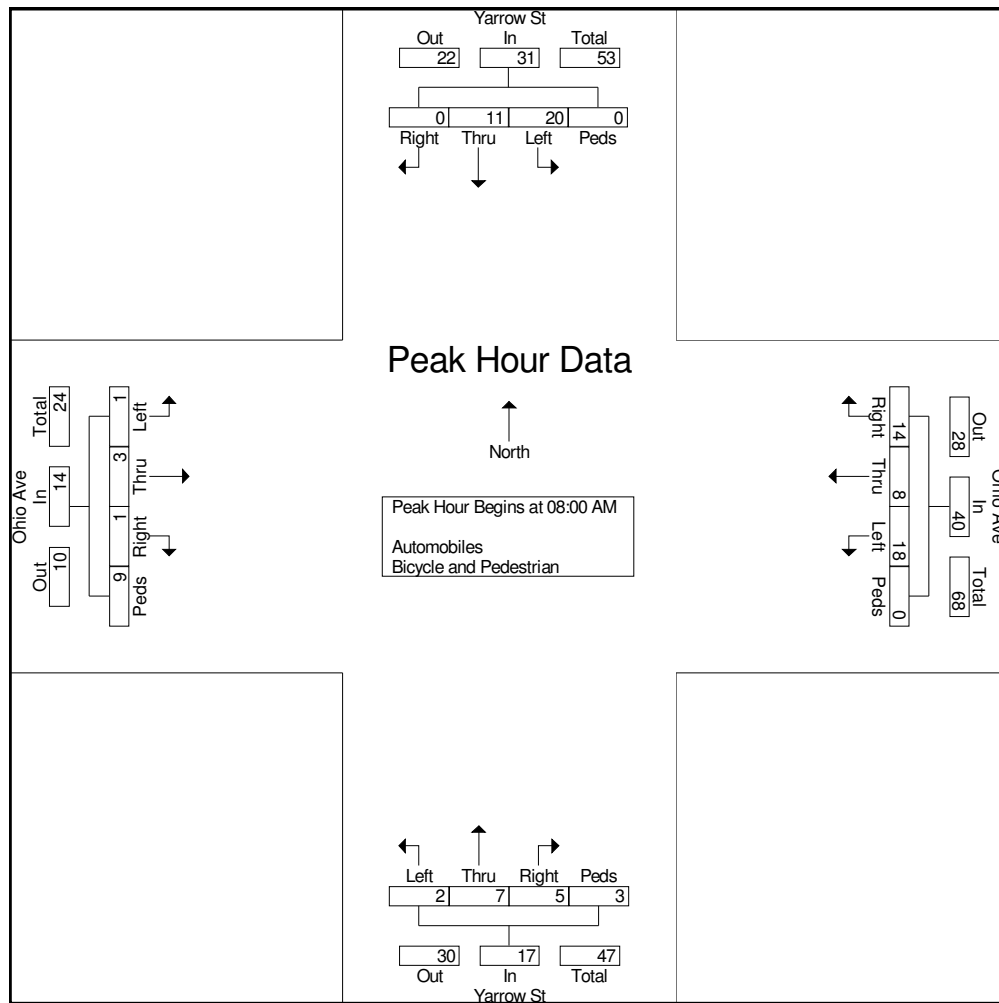


Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
AM Peak
Ohio Ave and Yarrow St

File Name : Ohio and Yarrow AM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 3

Start Time	Ohio Ave Eastbound					Ohio Ave Westbound					Yarrow St Northbound					Yarrow St Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	1	1	4	1	4	0	9	0	1	0	0	1	6	3	0	0	9	20
08:15 AM	1	0	0	4	5	4	2	5	0	11	1	2	1	2	6	4	3	0	0	7	29
08:30 AM	0	0	1	2	3	2	4	1	0	7	1	1	0	1	3	4	2	0	0	6	19
08:45 AM	0	3	0	2	5	8	1	4	0	13	0	3	4	0	7	6	3	0	0	9	34
Total Volume	1	3	1	9	14	18	8	14	0	40	2	7	5	3	17	20	11	0	0	31	102
% App. Total	7.1	21.4	7.1	64.3		45	20	35	0		11.8	41.2	29.4	17.6		64.5	35.5	0	0		
PHF	.250	.250	.250	.563	.700	.563	.500	.700	.000	.769	.500	.583	.313	.375	.607	.833	.917	.000	.000	.861	.750





Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
PM Peak
Ohio Ave and Yarrow St

File Name : Ohio and Yarrow PM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

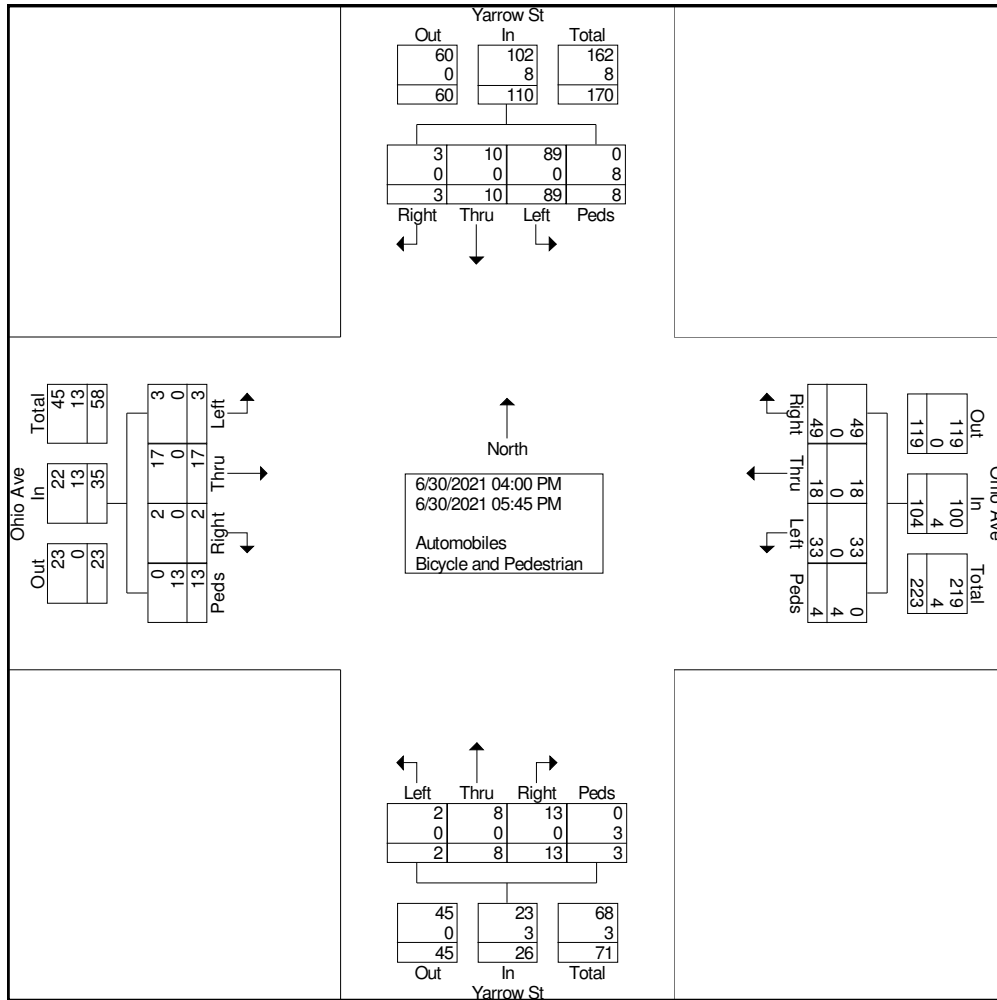
Start Time	Ohio Ave Eastbound					Ohio Ave Westbound					Yarrow St Northbound					Yarrow St Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	0	0	0	2	2	5	2	8	0	15	0	2	4	0	6	10	0	1	2	13	36
04:15 PM	0	2	0	2	4	3	2	8	1	14	0	1	0	0	1	10	0	0	2	12	31
04:30 PM	0	2	0	4	6	0	0	8	0	8	0	1	2	0	3	12	2	0	0	14	31
04:45 PM	0	2	0	0	2	2	2	7	2	13	0	0	0	0	0	11	1	1	0	13	28
Total	0	6	0	8	14	10	6	31	3	50	0	4	6	0	10	43	3	2	4	52	126
05:00 PM	1	1	1	2	5	4	0	3	1	8	1	1	1	2	5	21	0	0	2	23	41
05:15 PM	1	6	0	0	7	5	2	9	0	16	0	2	3	0	5	10	2	0	0	12	40
05:30 PM	0	2	0	0	2	5	7	2	0	14	0	0	0	0	0	10	1	1	0	12	28
05:45 PM	1	2	1	3	7	9	3	4	0	16	1	1	3	1	6	5	4	0	2	11	40
Total	3	11	2	5	21	23	12	18	1	54	2	4	7	3	16	46	7	1	4	58	149
Grand Total	3	17	2	13	35	33	18	49	4	104	2	8	13	3	26	89	10	3	8	110	275
Apprch %	8.6	48.6	5.7	37.1		31.7	17.3	47.1	3.8		7.7	30.8	50	11.5		80.9	9.1	2.7	7.3		
Total %	1.1	6.2	0.7	4.7	12.7	12	6.5	17.8	1.5	37.8	0.7	2.9	4.7	1.1	9.5	32.4	3.6	1.1	2.9	40	
Automobiles	3	17	2	0	22	33	18	49	0	100	2	8	13	0	23	89	10	3	0	102	247
% Automobiles	100	100	100	0	62.9	100	100	100	0	96.2	100	100	100	0	88.5	100	100	100	0	92.7	89.8
Bicycle and Pedestrian	0	0	0	13	13	0	0	0	4	4	0	0	0	3	3	0	0	0	8	8	28
% Bicycle and Pedestrian	0	0	0	100	37.1	0	0	0	100	3.8	0	0	0	100	11.5	0	0	0	100	7.3	10.2



Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
PM Peak
Ohio Ave and Yarrow St

File Name : Ohio and Yarrow PM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 2



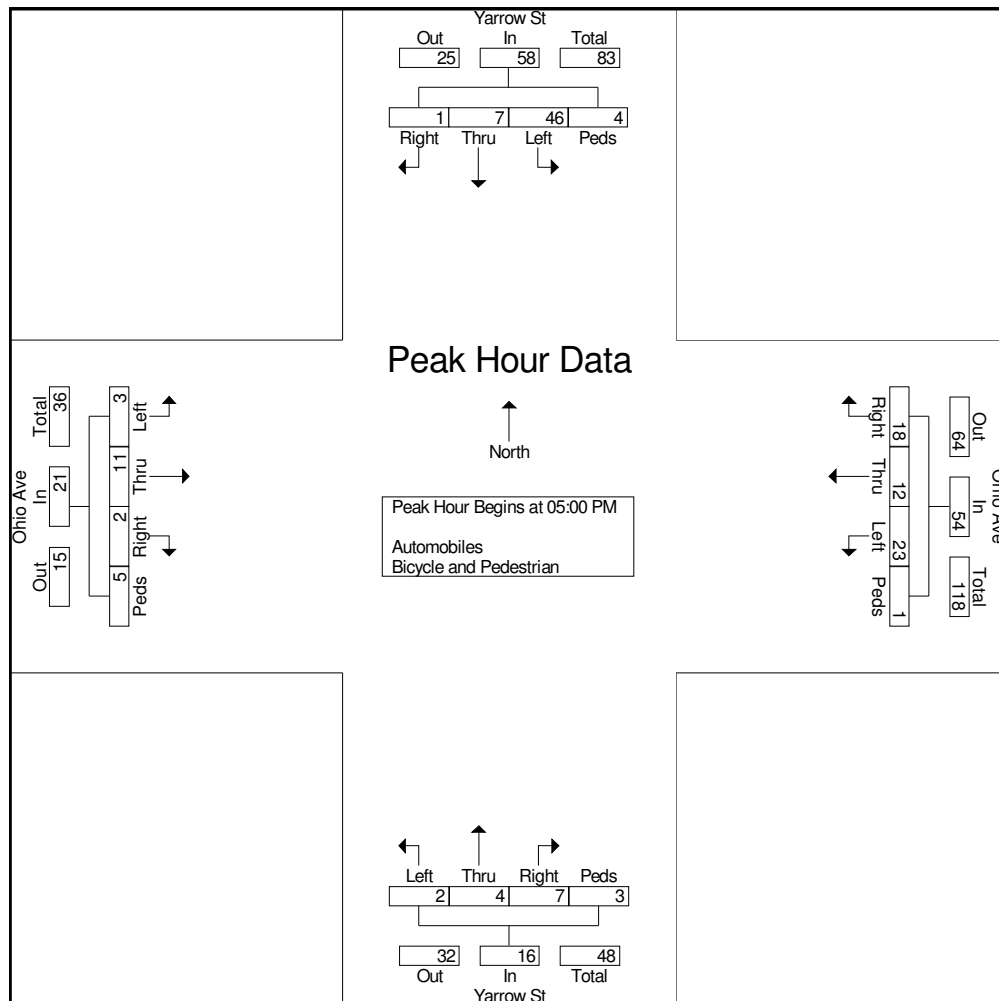


Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
PM Peak
Ohio Ave and Yarrow St

File Name : Ohio and Yarrow PM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 3

Start Time	Ohio Ave Eastbound					Ohio Ave Westbound					Yarrow St Northbound					Yarrow St Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	1	1	1	2	5	4	0	3	1	8	1	1	1	2	5	21	0	0	2	23	41
05:15 PM	1	6	0	0	7	5	2	9	0	16	0	2	3	0	5	10	2	0	0	12	40
05:30 PM	0	2	0	0	2	5	7	2	0	14	0	0	0	0	0	10	1	1	0	12	28
05:45 PM	1	2	1	3	7	9	3	4	0	16	1	1	3	1	6	5	4	0	2	11	40
Total Volume	3	11	2	5	21	23	12	18	1	54	2	4	7	3	16	46	7	1	4	58	149
% App. Total	14.3	52.4	9.5	23.8		42.6	22.2	33.3	1.9		12.5	25	43.8	18.8		79.3	12.1	1.7	6.9		
PHF	.750	.458	.500	.417	.750	.639	.429	.500	.250	.844	.500	.500	.583	.375	.667	.548	.438	.250	.500	.630	.909





Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
AM Peak
Ohio Ave and Wadsworth Blvd (SH-121)

File Name : Ohio and Wadsworth AM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

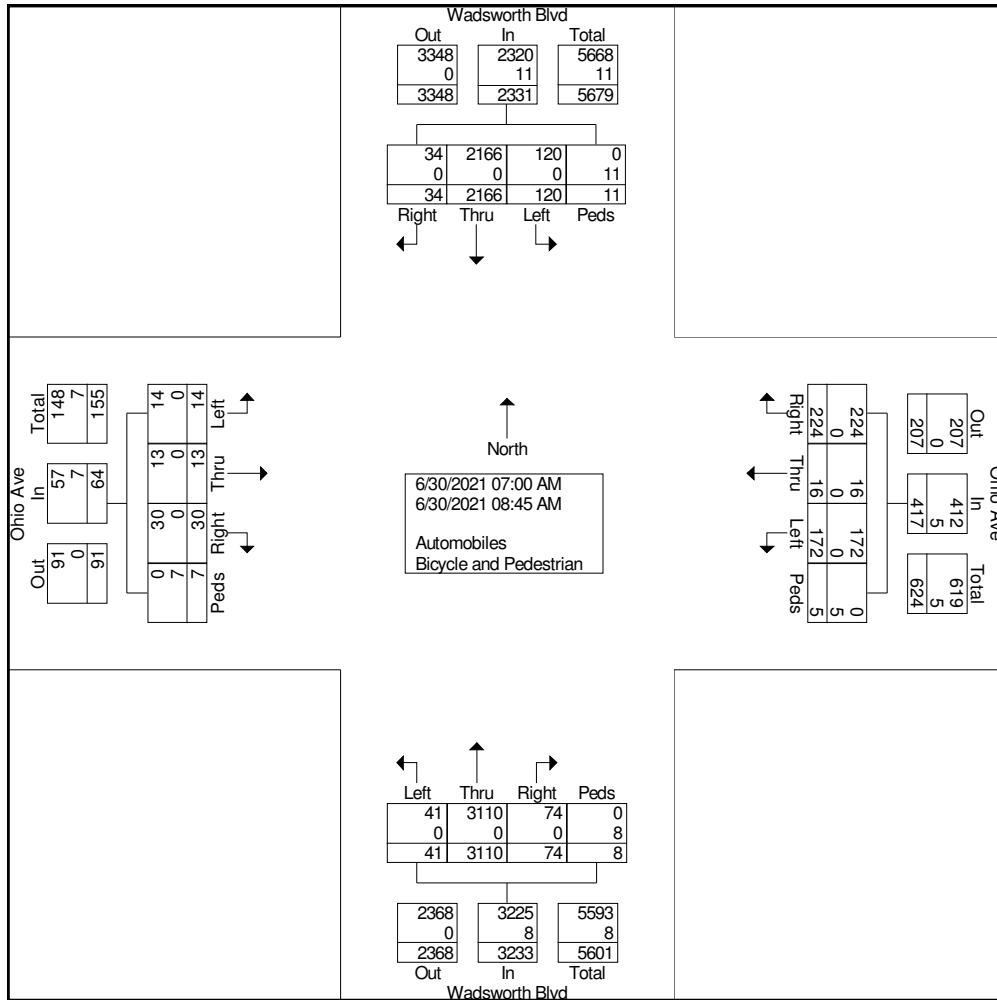
Start Time	Ohio Ave Eastbound					Ohio Ave Westbound					Wadsworth Blvd Northbound					Wadsworth Blvd Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	2	0	3	1	6	20	4	29	1	54	6	325	5	0	336	6	188	6	1	201	597
07:15 AM	1	4	3	0	8	17	2	32	1	52	4	407	9	1	421	9	238	3	1	251	732
07:30 AM	2	1	1	1	5	30	1	30	1	62	6	419	7	3	435	13	287	3	1	304	806
07:45 AM	3	3	1	0	7	16	3	27	0	46	3	393	12	1	409	11	302	3	2	318	780
Total	8	8	8	2	26	83	10	118	3	214	19	1544	33	5	1601	39	1015	15	5	1074	2915
08:00 AM	1	2	2	2	7	20	4	25	1	50	5	360	10	1	376	28	293	6	2	329	762
08:15 AM	0	0	6	2	8	23	0	30	0	53	7	423	10	1	441	14	282	4	2	302	804
08:30 AM	1	1	6	0	8	21	0	29	1	51	5	381	7	0	393	18	270	3	1	292	744
08:45 AM	4	2	8	1	15	25	2	22	0	49	5	402	14	1	422	21	306	6	1	334	820
Total	6	5	22	5	38	89	6	106	2	203	22	1566	41	3	1632	81	1151	19	6	1257	3130
Grand Total	14	13	30	7	64	172	16	224	5	417	41	3110	74	8	3233	120	2166	34	11	2331	6045
Apprch %	21.9	20.3	46.9	10.9		41.2	3.8	53.7	1.2		1.3	96.2	2.3	0.2		5.1	92.9	1.5	0.5		
Total %	0.2	0.2	0.5	0.1	1.1	2.8	0.3	3.7	0.1	6.9	0.7	51.4	1.2	0.1	53.5	2	35.8	0.6	0.2	38.6	
Automobiles	14	13	30	0	57	172	16	224	0	412	41	3110	74	0	3225	120	2166	34	0	2320	6014
% Automobiles	100	100	100	0	89.1	100	100	100	0	98.8	100	100	100	0	99.8	100	100	100	0	99.5	99.5
Bicycle and Pedestrian	0	0	0	7	7	0	0	0	5	5	0	0	0	8	8	0	0	0	11	11	31
% Bicycle and Pedestrian	0	0	0	100	10.9	0	0	0	100	1.2	0	0	0	100	0.2	0	0	0	100	0.5	0.5



Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
AM Peak
Ohio Ave and Wadsworth Blvd (SH-121)

File Name : Ohio and Wadsworth AM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 2



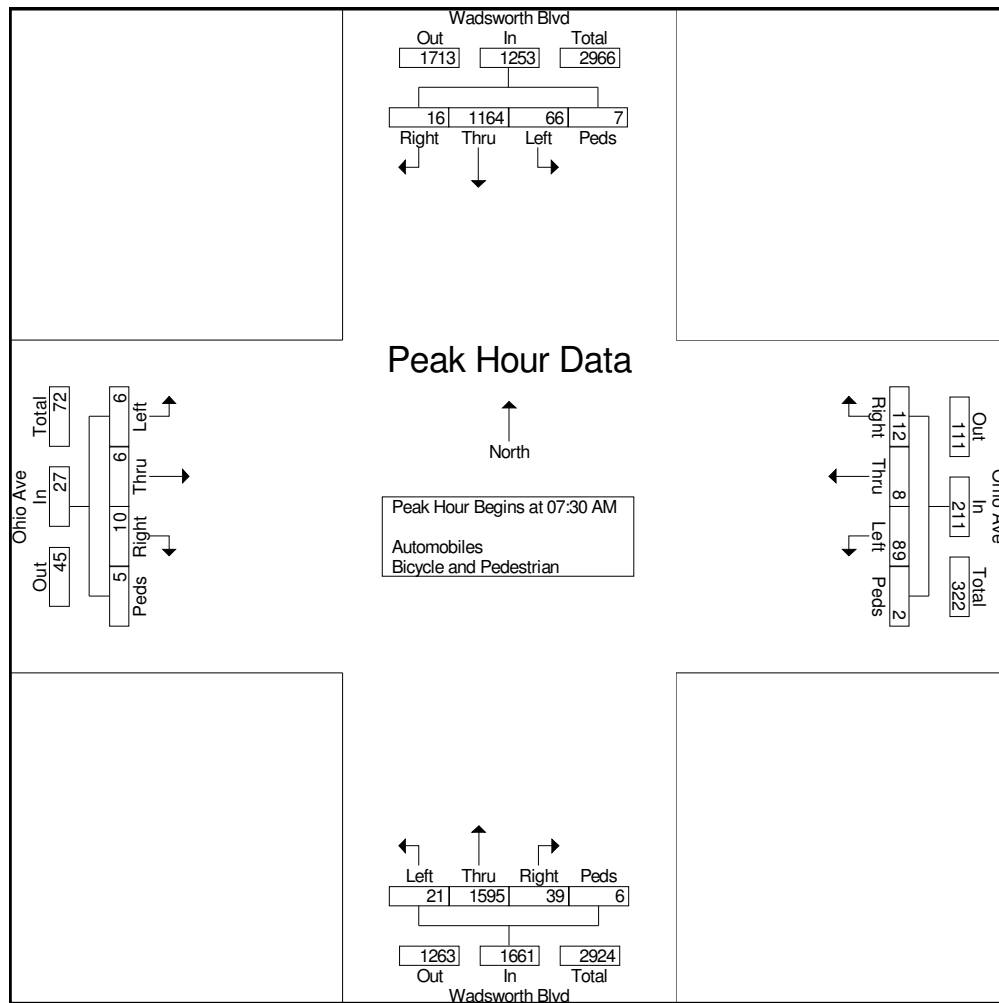


Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
AM Peak
Ohio Ave and Wadsworth Blvd (SH-121)

File Name : Ohio and Wadsworth AM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 3

Start Time	Ohio Ave Eastbound					Ohio Ave Westbound					Wadsworth Blvd Northbound					Wadsworth Blvd Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	2	1	1	1	5	30	1	30	1	62	6	419	7	3	435	13	287	3	1	304	806
07:45 AM	3	3	1	0	7	16	3	27	0	46	3	393	12	1	409	11	302	3	2	318	780
08:00 AM	1	2	2	2	7	20	4	25	1	50	5	360	10	1	376	28	293	6	2	329	762
08:15 AM	0	0	6	2	8	23	0	30	0	53	7	423	10	1	441	14	282	4	2	302	804
Total Volume	6	6	10	5	27	89	8	112	2	211	21	1595	39	6	1661	66	1164	16	7	1253	3152
% App. Total	22.2	22.2	37	18.5		42.2	3.8	53.1	0.9		1.3	96	2.3	0.4		5.3	92.9	1.3	0.6		
PHF	.500	.500	.417	.625	.844	.742	.500	.933	.500	.851	.750	.943	.813	.500	.942	.589	.964	.667	.875	.952	.978





Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
PM Peak
Ohio Ave and Wadsworth Blvd (SH-121)

File Name : Ohio and Wadsworth PM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

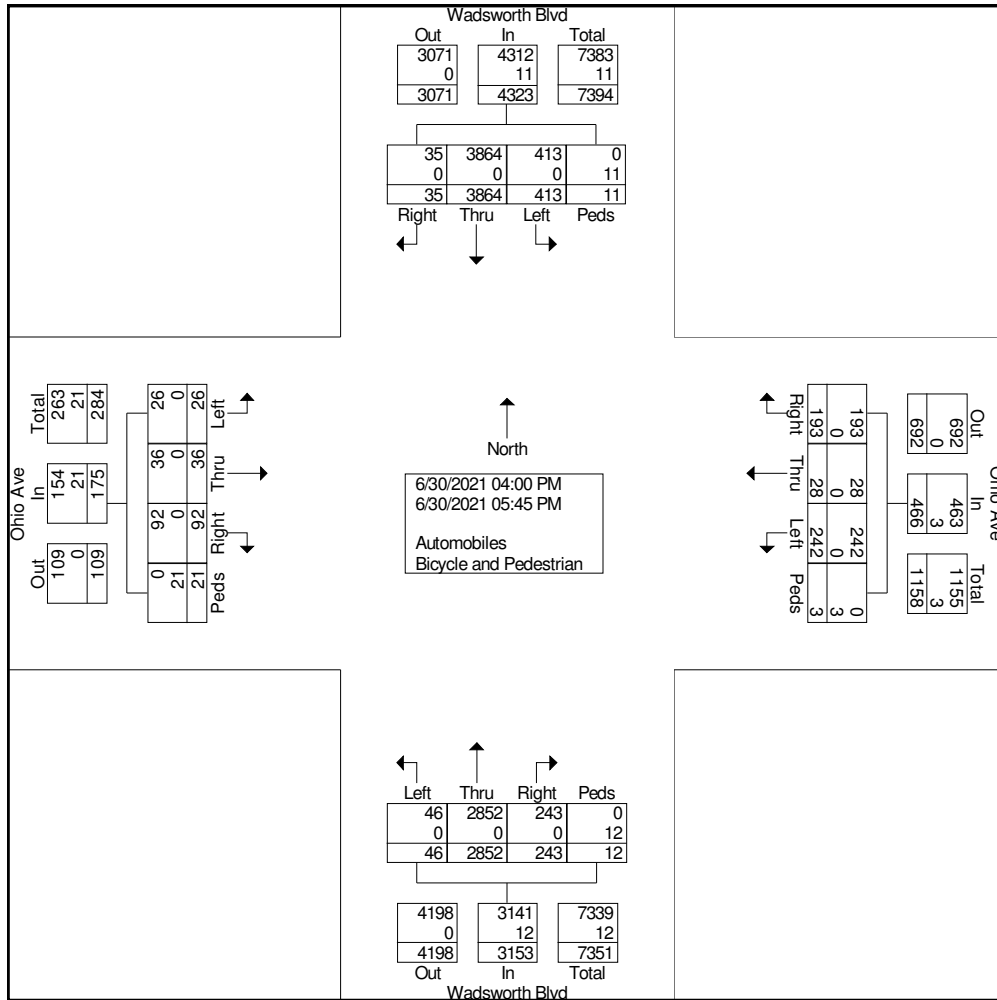
Start Time	Ohio Ave Eastbound					Ohio Ave Westbound					Wadsworth Blvd Northbound					Wadsworth Blvd Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	5	5	14	2	26	34	5	19	0	58	9	326	18	0	353	55	468	6	1	530	967
04:15 PM	3	3	9	2	17	25	4	23	2	54	7	325	24	3	359	50	458	2	2	512	942
04:30 PM	3	1	18	5	27	31	1	40	0	72	7	314	36	2	359	55	479	0	2	536	994
04:45 PM	5	4	4	1	14	29	3	17	0	49	5	306	26	2	339	48	479	3	0	530	932
Total	16	13	45	10	84	119	13	99	2	233	28	1271	104	7	1410	208	1884	11	5	2108	3835
05:00 PM	1	9	17	4	31	29	3	24	1	57	1	405	39	3	448	43	479	4	3	529	1065
05:15 PM	3	4	13	3	23	37	7	13	0	57	5	373	37	1	416	47	535	5	0	587	1083
05:30 PM	2	4	12	2	20	30	3	27	0	60	7	421	27	0	455	61	514	7	1	583	1118
05:45 PM	4	6	5	2	17	27	2	30	0	59	5	382	36	1	424	54	452	8	2	516	1016
Total	10	23	47	11	91	123	15	94	1	233	18	1581	139	5	1743	205	1980	24	6	2215	4282
Grand Total	26	36	92	21	175	242	28	193	3	466	46	2852	243	12	3153	413	3864	35	11	4323	8117
Apprch %	14.9	20.6	52.6	12		51.9	6	41.4	0.6		1.5	90.5	7.7	0.4		9.6	89.4	0.8	0.3		
Total %	0.3	0.4	1.1	0.3	2.2	3	0.3	2.4	0	5.7	0.6	35.1	3	0.1	38.8	5.1	47.6	0.4	0.1	53.3	
Automobiles	26	36	92	0	154	242	28	193	0	463	46	2852	243	0	3141	413	3864	35	0	4312	8070
% Automobiles	100	100	100	0	88	100	100	100	0	99.4	100	100	100	0	99.6	100	100	100	0	99.7	99.4
Bicycle and Pedestrian	0	0	0	21	21	0	0	0	3	3	0	0	0	12	12	0	0	0	11	11	47
% Bicycle and Pedestrian	0	0	0	100	12	0	0	0	100	0.6	0	0	0	100	0.4	0	0	0	100	0.3	0.6



Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
PM Peak
Ohio Ave and Wadsworth Blvd (SH-121)

File Name : Ohio and Wadsworth PM
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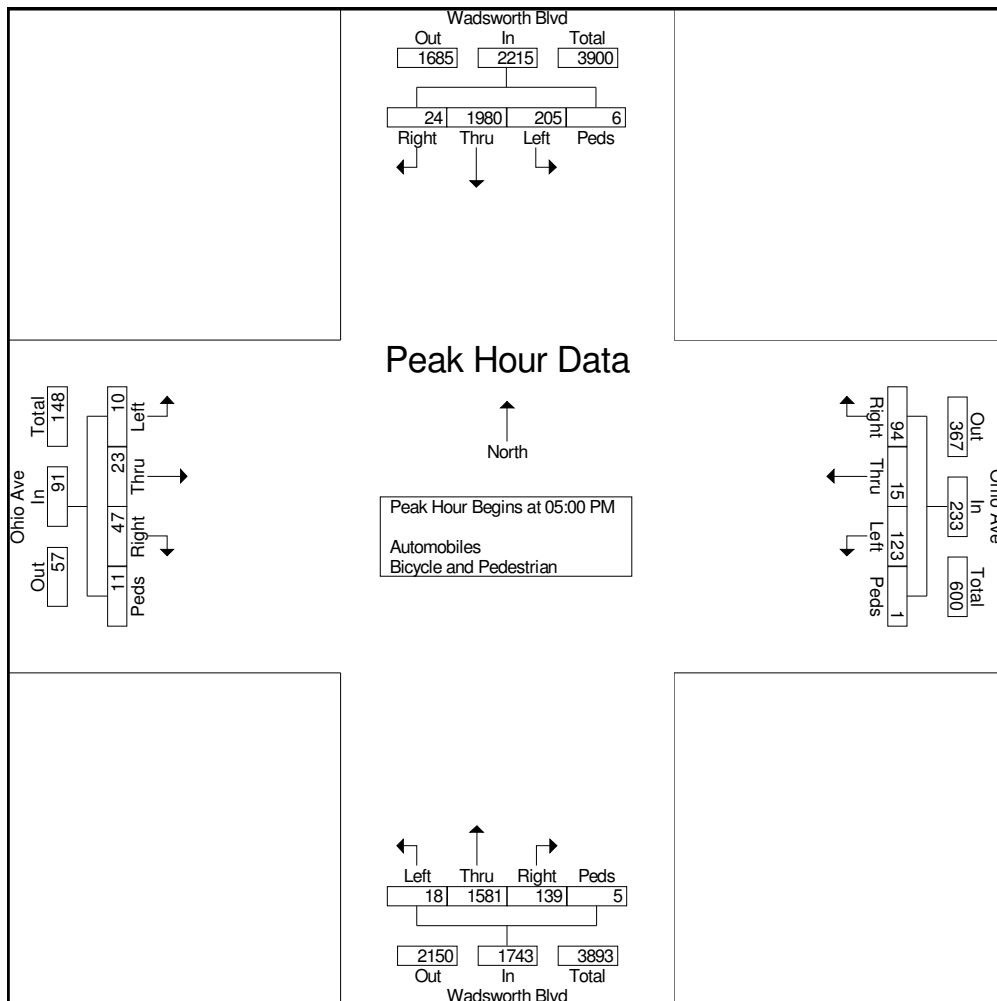


Ridgeview Data
Collection

Lakewood, CO
Kairoi at Belmar
PM Peak
Ohio Ave and Wadsworth Blvd (SH-121)

File Name : Ohio and Wadsworth PM
Site Code : IPO 554
Start Date : 6/30/2021
Page No : 3

Start Time	Ohio Ave Eastbound					Ohio Ave Westbound					Wadsworth Blvd Northbound					Wadsworth Blvd Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	1	9	17	4	31	29	3	24	1	57	1	405	39	3	448	43	479	4	3	529	1065
05:15 PM	3	4	13	3	23	37	7	13	0	57	5	373	37	1	416	47	535	5	0	587	1083
05:30 PM	2	4	12	2	20	30	3	27	0	60	7	421	27	0	455	61	514	7	1	583	1118
05:45 PM	4	6	5	2	17	27	2	30	0	59	5	382	36	1	424	54	452	8	2	516	1016
Total Volume	10	23	47	11	91	123	15	94	1	233	18	1581	139	5	1743	205	1980	24	6	2215	4282
% App. Total	11	25.3	51.6	12.1		52.8	6.4	40.3	0.4		1	90.7	8	0.3		9.3	89.4	1.1	0.3		
PHF	.625	.639	.691	.688	.734	.831	.536	.783	.250	.971	.643	.939	.891	.417	.958	.840	.925	.750	.500	.943	.958



APPENDIX B

Traffic Projections

CDOT OTIS Growth Rate - Kairoi Belmar

ROUTE	REFPT	ENDREFPT	LENGTH	AADT	AADTYR	YR20FACTOR	DHV	LOCATION
121A	10.577	11.427	0.991	52000	2019	1.06	8	ON SH 121 WADSWORTH BLVD S/O ALAMEDA AVE LAKEWOOD
					Growth Rate	0.30%		

APPENDIX C

Trip Generation Worksheets

Project Kairoi Belmar
 Subject Trip Generation for Multifamily Housing (Mid-Rise)
 Designed by TES Date July 19, 2021 Job No. 196151000
 Checked by _____ Date _____ Sheet No. 1 of 1

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 10th Edition, Fitted Curve Equations

Land Use Code - Multifamily Housing (Mid-Rise) (221)

Independant Variable - Dwelling Units (X)

X = 425
 T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (Series 200 Page 74)

Ln(T) = 0.98 Ln(X) - 0.98	Directional Distribution:	26% ent.	74% exit.
Ln(T) = 0.98 * Ln(425.0) - 0.98	T = 141	Average Vehicle Trip Ends	
	37 entering	104	exiting
	37 + 104	= 141	

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (Series 200 Page 75)

Ln(T) = 0.96 Ln(X) - 0.63	Directional Distribution:	61% ent.	39% exit.
Ln(T) = 0.96 * Ln(425.0) - 0.63	T = 178	Average Vehicle Trip Ends	
	109 entering	69	exiting
	109 + 69	= 178	

Weekday (Series 200 Page 73)

(T) = 5.45*(X) - 1.75	Directional Distribution:	50% ent.	50% exit.
(T) = 5.45 * 425 - 1.75	T = 2316	Average Vehicle Trip Ends	
	1158 entering	1158	exiting
	1158 + 1158	= 2316	

Peak Hour of Generator, Saturday (Series 200 Page 79)

(T) = 0.42*(X) + 6.73	Directional Distribution:	49% ent.	51% exit.
(T) = 0.42 * 425 + 6.73	T = 185	Average Vehicle Trip Ends	
	91 entering	94	exiting
	91 + 94	= 185	

APPENDIX D

Intersection Analysis Worksheets

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	33	17	44	88	54	14	8	19	15	8	6
Future Vol, veh/h	7	33	17	44	88	54	14	8	19	15	8	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	44	23	59	117	72	19	11	25	20	11	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	189	0	0	67	0	0	355	381	56	327	320	117
Stage 1	-	-	-	-	-	-	74	74	-	235	235	-
Stage 2	-	-	-	-	-	-	281	307	-	92	85	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1396	-	-	1535	-	-	627	567	1011	656	616	979
Stage 1	-	-	-	-	-	-	935	833	-	795	723	-
Stage 2	-	-	-	-	-	-	748	670	-	915	824	-
Platoon blocked, %	1	-	-	-	-	-	1	1	-	1	1	1
Mov Cap-1 Maneuver	1396	-	-	1535	-	-	591	539	1011	607	586	979
Mov Cap-2 Maneuver	-	-	-	-	-	-	609	556	-	643	595	-
Stage 1	-	-	-	-	-	-	929	828	-	790	692	-
Stage 2	-	-	-	-	-	-	699	641	-	875	819	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			1.8			10.3			10.6		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	730	1396	-	-	1535	-	-	676
HCM Lane V/C Ratio	0.075	0.007	-	-	0.038	-	-	0.057
HCM Control Delay (s)	10.3	7.6	-	-	7.4	0	-	10.6
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.2

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	128	33	54	78	196	31	14	39	157	22	22
Future Vol, veh/h	11	128	33	54	78	196	31	14	39	157	22	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	144	37	61	88	220	35	16	44	176	25	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	308	0	0	181	0	0	532	617	163	427	415	88
Stage 1	-	-	-	-	-	-	187	187	-	210	210	-
Stage 2	-	-	-	-	-	-	345	430	-	217	205	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1255	-	-	1394	-	-	472	410	882	559	541	1018
Stage 1	-	-	-	-	-	-	815	745	-	820	742	-
Stage 2	-	-	-	-	-	-	689	588	-	785	732	-
Platoon blocked, %	1	-	-	-	-	-	1	1	-	1	1	1
Mov Cap-1 Maneuver	1255	-	-	1394	-	-	423	384	882	493	507	1018
Mov Cap-2 Maneuver	-	-	-	-	-	-	497	451	-	551	542	-
Stage 1	-	-	-	-	-	-	807	738	-	812	702	-
Stage 2	-	-	-	-	-	-	613	556	-	723	725	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			1.3			12			15.1		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	610	1255	-	-	1394	-	-	579
HCM Lane V/C Ratio	0.155	0.01	-	-	0.044	-	-	0.39
HCM Control Delay (s)	12	7.9	-	-	7.7	0	-	15.1
HCM Lane LOS	B	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	1.8

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	34	18	45	89	55	15	9	20	16	9	7
Future Vol, veh/h	8	34	18	45	89	55	15	9	20	16	9	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	45	24	60	119	73	20	12	27	21	12	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	192	0	0	69	0	0	365	391	57	338	330	119
Stage 1	-	-	-	-	-	-	79	79	-	239	239	-
Stage 2	-	-	-	-	-	-	286	312	-	99	91	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1392	-	-	1532	-	-	617	559	1009	644	608	976
Stage 1	-	-	-	-	-	-	930	829	-	790	719	-
Stage 2	-	-	-	-	-	-	744	666	-	907	820	-
Platoon blocked, %	1	-	-	-	-	-	1	1	-	1	1	1
Mov Cap-1 Maneuver	1392	-	-	1532	-	-	578	530	1009	593	576	976
Mov Cap-2 Maneuver	-	-	-	-	-	-	600	550	-	633	588	-
Stage 1	-	-	-	-	-	-	923	822	-	784	687	-
Stage 2	-	-	-	-	-	-	692	637	-	863	813	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			1.8			10.5			10.7		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	719	1392	-	-	1532	-	-	670
HCM Lane V/C Ratio	0.082	0.008	-	-	0.039	-	-	0.064
HCM Control Delay (s)	10.5	7.6	-	-	7.4	0	-	10.7
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.2

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	130	34	55	79	198	32	15	40	159	23	23
Future Vol, veh/h	12	130	34	55	79	198	32	15	40	159	23	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	146	38	62	89	222	36	17	45	179	26	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	311	0	0	184	0	0	541	626	165	435	423	89
Stage 1	-	-	-	-	-	-	191	191	-	213	213	-
Stage 2	-	-	-	-	-	-	350	435	-	222	210	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1252	-	-	1391	-	-	465	404	879	552	536	1017
Stage 1	-	-	-	-	-	-	811	742	-	817	739	-
Stage 2	-	-	-	-	-	-	684	584	-	780	728	-
Platoon blocked, %	1	-	-	-	-	-	1	1	-	1	1	1
Mov Cap-1 Maneuver	1252	-	-	1391	-	-	415	378	879	483	501	1017
Mov Cap-2 Maneuver	-	-	-	-	-	-	490	446	-	543	537	-
Stage 1	-	-	-	-	-	-	803	735	-	809	698	-
Stage 2	-	-	-	-	-	-	606	551	-	716	721	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			1.3			12.1			15.5		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	602	1252	-	-	1391	-	-	572
HCM Lane V/C Ratio	0.162	0.011	-	-	0.044	-	-	0.403
HCM Control Delay (s)	12.1	7.9	-	-	7.7	0	-	15.5
HCM Lane LOS	B	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	1.9

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↖	↗		↕			↕	
Traffic Vol, veh/h	8	34	29	56	89	55	46	9	50	16	9	7
Future Vol, veh/h	8	34	29	56	89	55	46	9	50	16	9	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	45	39	75	119	73	61	12	67	21	12	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	192	0	0	84	0	0	403	429	65	395	375	119
Stage 1	-	-	-	-	-	-	87	87	-	269	269	-
Stage 2	-	-	-	-	-	-	316	342	-	126	106	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1392	-	-	1513	-	-	581	531	999	589	572	976
Stage 1	-	-	-	-	-	-	921	823	-	761	697	-
Stage 2	-	-	-	-	-	-	715	645	-	878	807	-
Platoon blocked, %	1	-	-	-	-	-	1	1	-	1	1	1
Mov Cap-1 Maneuver	1392	-	-	1513	-	-	539	497	999	514	535	976
Mov Cap-2 Maneuver	-	-	-	-	-	-	568	524	-	572	557	-
Stage 1	-	-	-	-	-	-	914	816	-	755	658	-
Stage 2	-	-	-	-	-	-	657	609	-	801	801	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			2.1			11.3			11.2		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	708	1392	-	-	1513	-	-	624
HCM Lane V/C Ratio	0.198	0.008	-	-	0.049	-	-	0.068
HCM Control Delay (s)	11.3	7.6	-	-	7.5	0	-	11.2
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.2	-	-	0.2

Intersection												
Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	130	67	87	79	198	52	14	60	159	23	23
Future Vol, veh/h	12	130	67	87	79	198	52	14	60	159	23	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	146	75	98	89	222	58	16	67	179	26	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	311	0	0	221	0	0	632	717	184	536	532	89
Stage 1	-	-	-	-	-	-	210	210	-	285	285	-
Stage 2	-	-	-	-	-	-	422	507	-	251	247	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1252	-	-	1348	-	-	402	356	858	469	461	1017
Stage 1	-	-	-	-	-	-	792	728	-	745	685	-
Stage 2	-	-	-	-	-	-	623	541	-	753	702	-
Platoon blocked, %	1	-	-	-	-	-	1	1	-	1	1	1
Mov Cap-1 Maneuver	1252	-	-	1348	-	-	346	321	858	387	415	1017
Mov Cap-2 Maneuver	-	-	-	-	-	-	428	396	-	465	467	-
Stage 1	-	-	-	-	-	-	784	721	-	737	623	-
Stage 2	-	-	-	-	-	-	529	491	-	672	695	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.9	13.7	18.4
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	556	1252	-	-	1348	-	-	495
HCM Lane V/C Ratio	0.255	0.011	-	-	0.073	-	-	0.465
HCM Control Delay (s)	13.7	7.9	-	-	7.9	0	-	18.4
HCM Lane LOS	B	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	1	0	-	-	0.2	-	-	2.4

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	40	20	50	95	60	20	10	25	20	10	10
Future Vol, veh/h	10	40	20	50	95	60	20	10	25	20	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	43	22	54	103	65	22	11	27	22	11	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	168	0	0	65	0	0	331	352	54	306	298	103
Stage 1	-	-	-	-	-	-	76	76	-	211	211	-
Stage 2	-	-	-	-	-	-	255	276	-	95	87	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1422	-	-	1537	-	-	652	590	1013	678	635	998
Stage 1	-	-	-	-	-	-	933	832	-	819	741	-
Stage 2	-	-	-	-	-	-	774	692	-	912	823	-
Platoon blocked, %	1	-	-	-	-	-	1	1	-	1	1	1
Mov Cap-1 Maneuver	1422	-	-	1537	-	-	614	562	1013	628	605	998
Mov Cap-2 Maneuver	-	-	-	-	-	-	629	575	-	658	610	-
Stage 1	-	-	-	-	-	-	926	825	-	813	712	-
Stage 2	-	-	-	-	-	-	724	665	-	869	816	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.1			1.8			10.3			10.5		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	745	1422	-	-	1537	-	-	704
HCM Lane V/C Ratio	0.08	0.008	-	-	0.035	-	-	0.062
HCM Control Delay (s)	10.3	7.6	-	-	7.4	0	-	10.5
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.2

Intersection												
Int Delay, s/veh	6.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	140	40	60	85	215	35	20	45	170	25	25
Future Vol, veh/h	15	140	40	60	85	215	35	20	45	170	25	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	152	43	65	92	234	38	22	49	185	27	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	326	0	0	195	0	0	572	662	174	463	449	92
Stage 1	-	-	-	-	-	-	206	206	-	222	222	-
Stage 2	-	-	-	-	-	-	366	456	-	241	227	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1235	-	-	1378	-	-	442	386	869	527	517	1012
Stage 1	-	-	-	-	-	-	796	731	-	808	732	-
Stage 2	-	-	-	-	-	-	670	572	-	762	716	-
Platoon blocked, %	1	-	-	-	-	-	1	1	-	1	1	1
Mov Cap-1 Maneuver	1235	-	-	1378	-	-	391	358	869	452	480	1012
Mov Cap-2 Maneuver	-	-	-	-	-	-	471	430	-	517	521	-
Stage 1	-	-	-	-	-	-	786	721	-	797	689	-
Stage 2	-	-	-	-	-	-	589	538	-	688	707	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			1.3			12.6			16.6		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	579	1235	-	-	1378	-	-	548
HCM Lane V/C Ratio	0.188	0.013	-	-	0.047	-	-	0.436
HCM Control Delay (s)	12.6	8	-	-	7.7	0	-	16.6
HCM Lane LOS	B	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	2.2

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	40	35	65	95	60	55	10	55	20	10	10
Future Vol, veh/h	10	40	35	65	95	60	55	10	55	20	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	43	38	71	103	65	60	11	60	22	11	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	168	0	0	81	0	0	373	394	62	365	348	103
Stage 1	-	-	-	-	-	-	84	84	-	245	245	-
Stage 2	-	-	-	-	-	-	289	310	-	120	103	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1422	-	-	1517	-	-	609	558	1003	617	593	998
Stage 1	-	-	-	-	-	-	924	825	-	784	715	-
Stage 2	-	-	-	-	-	-	741	667	-	884	810	-
Platoon blocked, %	1	-	-	-	-	-	1	1	-	1	1	1
Mov Cap-1 Maneuver	1422	-	-	1517	-	-	567	524	1003	545	558	998
Mov Cap-2 Maneuver	-	-	-	-	-	-	592	545	-	595	574	-
Stage 1	-	-	-	-	-	-	917	818	-	778	678	-
Stage 2	-	-	-	-	-	-	684	632	-	814	804	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	2.2	11.1	10.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	723	1422	-	-	1517	-	-	655
HCM Lane V/C Ratio	0.18	0.008	-	-	0.047	-	-	0.066
HCM Control Delay (s)	11.1	7.6	-	-	7.5	0	-	10.9
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0.2

Intersection												
Int Delay, s/veh	7.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	140	75	95	85	215	55	20	65	170	25	25
Future Vol, veh/h	15	140	75	95	85	215	55	20	65	170	25	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	152	82	103	92	234	60	22	71	185	27	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	326	0	0	234	0	0	667	757	193	570	564	92
Stage 1	-	-	-	-	-	-	225	225	-	298	298	-
Stage 2	-	-	-	-	-	-	442	532	-	272	266	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1235	-	-	1333	-	-	379	337	849	444	441	1012
Stage 1	-	-	-	-	-	-	778	718	-	732	676	-
Stage 2	-	-	-	-	-	-	607	526	-	734	689	-
Platoon blocked, %	1	-	-	-	-	-	1	1	-	1	1	1
Mov Cap-1 Maneuver	1235	-	-	1333	-	-	323	301	849	357	393	1012
Mov Cap-2 Maneuver	-	-	-	-	-	-	407	379	-	438	450	-
Stage 1	-	-	-	-	-	-	768	709	-	723	610	-
Stage 2	-	-	-	-	-	-	509	475	-	644	680	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			1.9			14.5			20.3		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	529	1235	-	-	1333	-	-	470
HCM Lane V/C Ratio	0.288	0.013	-	-	0.077	-	-	0.509
HCM Control Delay (s)	14.5	8	-	-	7.9	0	-	20.3
HCM Lane LOS	B	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.3	-	-	2.8

Timings
2: Wadsworth Blvd (SH-121) & Virginia Avenue

2021 Existing AM.syn
07/08/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖↗	↑	↗	↖↗	↑↖↗	↖↗	↑↖↗	↗
Traffic Volume (vph)	18	23	22	45	39	94	72	1656	88	1153	58
Future Volume (vph)	18	23	22	45	39	94	72	1656	88	1153	58
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases			4			Free					6
Detector Phase	7	4	4	3	8		5	2	1	6	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)	10.5	23.5	23.5	10.5	23.5		11.0	24.0	11.0	24.0	24.0
Total Split (s)	12.0	24.2	24.2	12.0	24.2		13.0	68.8	15.0	70.8	70.8
Total Split (%)	10.0%	20.2%	20.2%	10.0%	20.2%		10.8%	57.3%	12.5%	59.0%	59.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	C-Max
Act Effect Green (s)	6.2	7.7	7.7	6.4	10.2	120.0	8.0	81.1	8.6	85.3	85.3
Actuated g/C Ratio	0.05	0.06	0.06	0.05	0.08	1.00	0.07	0.68	0.07	0.71	0.71
v/c Ratio	0.21	0.20	0.10	0.25	0.25	0.06	0.33	0.51	0.37	0.33	0.05
Control Delay	60.1	56.1	0.9	58.1	54.6	0.1	77.9	6.2	57.1	9.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.1	56.1	0.9	58.1	54.6	0.1	77.9	6.2	57.1	9.6	0.1
LOS	E	E	A	E	D	A	E	A	E	A	A
Approach Delay		38.0			26.6			9.1		12.4	
Approach LOS		D			C			A		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.51
 Intersection Signal Delay: 11.9
 Intersection LOS: B
 Intersection Capacity Utilization 55.2%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 2: Wadsworth Blvd (SH-121) & Virginia Avenue



HCM 6th Signalized Intersection Summary
 2: Wadsworth Blvd (SH-121) & Virginia Avenue

2021 Existing AM.syn
 07/08/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖↗	↑	↗	↖↗	↑↑↑		↖↗	↑↑↑	↗
Traffic Volume (veh/h)	18	23	22	45	39	94	72	1656	51	88	1153	58
Future Volume (veh/h)	18	23	22	45	39	94	72	1656	51	88	1153	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870
Adj Flow Rate, veh/h	19	24	23	46	40	0	74	1707	53	91	1189	60
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	35	76	64	113	100		132	3532	110	142	3559	1105
Arrive On Green	0.02	0.04	0.04	0.03	0.05	0.00	0.08	1.00	1.00	0.04	0.70	0.70
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	3456	5088	158	3456	5106	1585
Grp Volume(v), veh/h	19	24	23	46	40	0	74	1142	618	91	1189	60
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1728	1702	1842	1728	1702	1585
Q Serve(g_s), s	1.3	1.5	1.7	1.6	2.5	0.0	2.5	0.0	0.0	3.1	11.0	1.4
Cycle Q Clear(g_c), s	1.3	1.5	1.7	1.6	2.5	0.0	2.5	0.0	0.0	3.1	11.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	35	76	64	113	100		132	2363	1279	142	3559	1105
V/C Ratio(X)	0.55	0.32	0.36	0.41	0.40		0.56	0.48	0.48	0.64	0.33	0.05
Avail Cap(c_a), veh/h	96	291	247	187	291		202	2363	1279	259	3559	1105
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	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	0.90	0.90	0.90	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.3	56.0	56.1	56.9	54.9	0.0	54.5	0.0	0.0	56.7	7.2	5.7
Incr Delay (d2), s/veh	12.6	2.4	3.4	2.3	2.6	0.0	3.3	0.6	1.2	4.7	0.3	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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.8	0.7	0.7	1.2	0.0	1.1	0.2	0.4	1.5	3.8	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.9	58.3	59.4	59.2	57.5	0.0	57.8	0.6	1.2	61.4	7.4	5.8
LnGrp LOS	E	E	E	E	E		E	A	A	E	A	A
Approach Vol, veh/h		66			86	A		1834			1340	
Approach Delay, s/veh		62.3			58.4			3.1			11.0	
Approach LOS		E			E			A			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.9	89.3	9.4	10.4	10.6	89.6	7.8	11.9				
Change Period (Y+Rc), s	6.0	6.0	5.5	5.5	6.0	6.0	5.5	5.5				
Max Green Setting (Gmax), s	9.0	62.8	6.5	18.7	7.0	64.8	6.5	18.7				
Max Q Clear Time (g_c+I1), s	5.1	2.0	3.6	3.7	4.5	13.0	3.3	4.5				
Green Ext Time (p_c), s	0.1	21.8	0.0	0.1	0.0	12.2	0.0	0.1				

Intersection Summary

HCM 6th Ctrl Delay	8.9
HCM 6th LOS	A

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Timings
2: Wadsworth Blvd (SH-121) & Virginia Avenue

2021 Existing PM.syn
07/08/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	
Lane Configurations												
Traffic Volume (vph)	100	88	144	200	101	185	146	1455	235	1861	86	
Future Volume (vph)	100	88	144	200	101	185	146	1455	235	1861	86	
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Prot	NA	Perm	
Protected Phases	7	4		3	8		5	2	1	6		
Permitted Phases			4			Free					6	
Detector Phase	7	4	4	3	8		5	2	1	6	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)	10.5	23.5	23.5	10.5	23.5		11.0	24.0	11.0	24.0	24.0	
Total Split (s)	19.1	24.5	24.5	18.1	23.5		16.0	57.4	20.0	61.4	61.4	
Total Split (%)	15.9%	20.4%	20.4%	15.1%	19.6%		13.3%	47.8%	16.7%	51.2%	51.2%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	C-Max	
Act Effct Green (s)	11.5	12.2	12.2	11.6	12.3	120.0	10.2	59.9	13.4	63.1	63.1	
Actuated g/C Ratio	0.10	0.10	0.10	0.10	0.10	1.00	0.08	0.50	0.11	0.53	0.53	
v/c Ratio	0.62	0.49	0.51	0.63	0.55	0.12	0.52	0.65	0.64	0.73	0.10	
Control Delay	67.4	58.6	13.7	60.9	61.8	0.2	52.5	22.1	58.8	25.0	1.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	67.4	58.6	13.7	60.9	61.8	0.2	52.5	22.1	58.8	25.0	1.4	
LOS	E	E	B	E	E	A	D	C	E	C	A	
Approach Delay		41.8			37.9			24.7		27.7		
Approach LOS		D			D			C		C		

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 28.6
 Intersection LOS: C
 Intersection Capacity Utilization 67.1%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 2: Wadsworth Blvd (SH-121) & Virginia Avenue



HCM 6th Signalized Intersection Summary
 2: Wadsworth Blvd (SH-121) & Virginia Avenue

2021 Existing PM.syn
 07/08/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖↗	↑	↗	↖↗	↑↑↑		↖↗	↑↑↑	↗
Traffic Volume (veh/h)	100	88	144	200	101	185	146	1455	122	235	1861	86
Future Volume (veh/h)	100	88	144	200	101	185	146	1455	122	235	1861	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870
Adj Flow Rate, veh/h	104	92	150	208	105	0	152	1516	127	245	1939	90
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	129	212	179	268	221		206	2540	213	306	2849	884
Arrive On Green	0.07	0.11	0.11	0.08	0.12	0.00	0.12	1.00	1.00	0.09	0.56	0.56
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	3456	4800	402	3456	5106	1585
Grp Volume(v), veh/h	104	92	150	208	105	0	152	1075	568	245	1939	90
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1728	1702	1798	1728	1702	1585
Q Serve(g_s), s	6.9	5.5	11.1	7.1	6.3	0.0	5.1	0.0	0.0	8.3	32.5	3.2
Cycle Q Clear(g_c), s	6.9	5.5	11.1	7.1	6.3	0.0	5.1	0.0	0.0	8.3	32.5	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	129	212	179	268	221		206	1801	951	306	2849	884
V/C Ratio(X)	0.80	0.43	0.84	0.78	0.48		0.74	0.60	0.60	0.80	0.68	0.10
Avail Cap(c_a), veh/h	202	296	251	363	281		288	1801	951	403	2849	884
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	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	0.82	0.82	0.82	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	49.6	52.1	54.3	49.4	0.0	51.9	0.0	0.0	53.6	18.9	12.4
Incr Delay (d2), s/veh	12.1	1.4	15.6	7.2	1.6	0.0	5.0	1.2	2.3	8.3	1.3	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	0.0
%ile BackOfQ(50%),veh/ln	3.5	2.7	5.2	3.4	3.0	0.0	2.3	0.3	0.6	4.0	12.7	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.9	51.0	67.7	61.6	51.0	0.0	56.9	1.2	2.3	62.0	20.2	12.7
LnGrp LOS	E	D	E	E	D		E	A	A	E	C	B
Approach Vol, veh/h		346			313	A		1795			2274	
Approach Delay, s/veh		63.0			58.0			6.3			24.4	
Approach LOS		E			E			A			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.6	69.5	14.8	19.1	13.2	72.9	14.2	19.7				
Change Period (Y+Rc), s	6.0	6.0	5.5	5.5	6.0	6.0	5.5	5.5				
Max Green Setting (Gmax), s	14.0	51.4	12.6	19.0	10.0	55.4	13.6	18.0				
Max Q Clear Time (g_c+I1), s	10.3	2.0	9.1	13.1	7.1	34.5	8.9	8.3				
Green Ext Time (p_c), s	0.3	18.4	0.2	0.5	0.1	15.2	0.1	0.3				

Intersection Summary

HCM 6th Ctrl Delay	22.6
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Timings
2: Wadsworth Blvd (SH-121) & Virginia Avenue

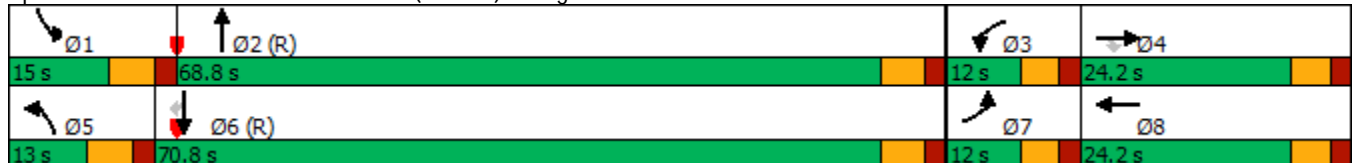


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖↗	↑	↗	↖↗	↑↖↗	↖↗	↑↖↗	↗
Traffic Volume (vph)	19	24	23	46	40	95	73	1671	89	1164	59
Future Volume (vph)	19	24	23	46	40	95	73	1671	89	1164	59
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases			4			Free					6
Detector Phase	7	4	4	3	8		5	2	1	6	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)	10.5	23.5	23.5	10.5	23.5		11.0	24.0	11.0	24.0	24.0
Total Split (s)	12.0	24.2	24.2	12.0	24.2		13.0	68.8	15.0	70.8	70.8
Total Split (%)	10.0%	20.2%	20.2%	10.0%	20.2%		10.8%	57.3%	12.5%	59.0%	59.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	6.2	7.7	7.7	6.4	10.3	120.0	8.0	81.0	8.6	85.2	85.2
Actuated g/C Ratio	0.05	0.06	0.06	0.05	0.09	1.00	0.07	0.68	0.07	0.71	0.71
v/c Ratio	0.22	0.21	0.11	0.26	0.26	0.06	0.33	0.52	0.38	0.33	0.05
Control Delay	60.4	56.2	1.0	58.1	54.6	0.1	53.0	9.6	57.1	9.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.4	56.2	1.0	58.1	54.6	0.1	53.0	9.6	57.1	9.7	0.1
LOS	E	E	A	E	D	A	D	A	E	A	A
Approach Delay		38.2			26.8			11.4		12.5	
Approach LOS		D			C			B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.52
 Intersection Signal Delay: 13.2
 Intersection LOS: B
 Intersection Capacity Utilization 55.6%
 ICU Level of Service B
 Analysis Period (min) 15

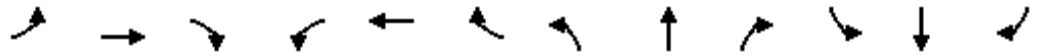
Splits and Phases: 2: Wadsworth Blvd (SH-121) & Virginia Avenue



HCM 6th Signalized Intersection Summary
 2: Wadsworth Blvd (SH-121) & Virginia Avenue

2024 Background AM.syn

07/19/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖↗	↑	↗	↖↗	↑↑↑		↖↗	↑↑↑	↗
Traffic Volume (veh/h)	19	24	23	46	40	95	73	1671	52	89	1164	59
Future Volume (veh/h)	19	24	23	46	40	95	73	1671	52	89	1164	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870
Adj Flow Rate, veh/h	20	25	24	47	41	0	75	1723	54	92	1200	61
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	36	76	64	114	100		132	3527	110	143	3556	1104
Arrive On Green	0.02	0.04	0.04	0.03	0.05	0.00	0.08	1.00	1.00	0.04	0.70	0.70
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	3456	5086	159	3456	5106	1585
Grp Volume(v), veh/h	20	25	24	47	41	0	75	1153	624	92	1200	61
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1728	1702	1842	1728	1702	1585
Q Serve(g_s), s	1.3	1.6	1.8	1.6	2.5	0.0	2.5	0.0	0.0	3.1	11.2	1.5
Cycle Q Clear(g_c), s	1.3	1.6	1.8	1.6	2.5	0.0	2.5	0.0	0.0	3.1	11.2	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	36	76	64	114	100		132	2360	1277	143	3556	1104
V/C Ratio(X)	0.55	0.33	0.37	0.41	0.41		0.57	0.49	0.49	0.64	0.34	0.06
Avail Cap(c_a), veh/h	96	291	247	187	291		202	2360	1277	259	3556	1104
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	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	0.00	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.2	56.0	56.1	56.9	55.0	0.0	54.5	0.0	0.0	56.6	7.2	5.7
Incr Delay (d2), s/veh	12.6	2.5	3.5	2.4	2.7	0.0	3.4	0.6	1.2	4.7	0.3	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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.8	0.8	0.7	1.3	0.0	1.1	0.2	0.4	1.5	3.9	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.8	58.5	59.6	59.3	57.7	0.0	57.8	0.6	1.2	61.4	7.5	5.8
LnGrp LOS	E	E	E	E	E		E	A	A	E	A	A
Approach Vol, veh/h		69			88	A		1852			1353	
Approach Delay, s/veh		62.5			58.5			3.1			11.1	
Approach LOS		E			E			A			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	89.2	9.5	10.4	10.6	89.6	7.9	11.9				
Change Period (Y+Rc), s	6.0	6.0	5.5	5.5	6.0	6.0	5.5	5.5				
Max Green Setting (Gmax), s	9.0	62.8	6.5	18.7	7.0	64.8	6.5	18.7				
Max Q Clear Time (g_c+I1), s	5.1	2.0	3.6	3.8	4.5	13.2	3.3	4.5				
Green Ext Time (p_c), s	0.1	22.2	0.0	0.1	0.0	12.3	0.0	0.1				

Intersection Summary

HCM 6th Ctrl Delay	9.0
HCM 6th LOS	A

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Timings
2: Wadsworth Blvd (SH-121) & Virginia Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖↗	↑	↗	↖↗	↑↑↑	↖↗	↑↑↑	↗
Traffic Volume (vph)	101	89	146	202	102	187	148	1469	238	1878	87
Future Volume (vph)	101	89	146	202	102	187	148	1469	238	1878	87
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases			4			Free					6
Detector Phase	7	4	4	3	8		5	2	1	6	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)	10.5	23.5	23.5	10.5	23.5		11.0	24.0	11.0	24.0	24.0
Total Split (s)	19.1	24.5	24.5	18.1	23.5		16.0	57.4	20.0	61.4	61.4
Total Split (%)	15.9%	20.4%	20.4%	15.1%	19.6%		13.3%	47.8%	16.7%	51.2%	51.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	11.5	12.2	12.2	11.6	12.3	120.0	10.2	59.7	13.4	62.9	62.9
Actuated g/C Ratio	0.10	0.10	0.10	0.10	0.10	1.00	0.08	0.50	0.11	0.52	0.52
v/c Ratio	0.62	0.49	0.51	0.63	0.56	0.12	0.53	0.66	0.65	0.73	0.10
Control Delay	67.7	58.7	13.7	61.0	62.0	0.2	52.4	22.5	58.9	25.3	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.7	58.7	13.7	61.0	62.0	0.2	52.4	22.5	58.9	25.3	1.4
LOS	E	E	B	E	E	A	D	C	E	C	A
Approach Delay		41.8			38.0			25.1		28.0	
Approach LOS		D			D			C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 28.9
 Intersection Capacity Utilization 67.5%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

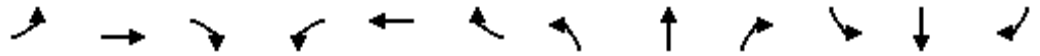
Splits and Phases: 2: Wadsworth Blvd (SH-121) & Virginia Avenue



HCM 6th Signalized Intersection Summary
 2: Wadsworth Blvd (SH-121) & Virginia Avenue

2024 Background PM.syn

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖↗	↑	↗	↖↗	↑↑↑		↖↗	↑↑↑	↗
Traffic Volume (veh/h)	101	89	146	202	102	187	148	1469	124	238	1878	87
Future Volume (veh/h)	101	89	146	202	102	187	148	1469	124	238	1878	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870
Adj Flow Rate, veh/h	105	93	152	210	106	0	154	1530	129	248	1956	91
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	214	181	270	223		208	2526	213	309	2837	881
Arrive On Green	0.07	0.11	0.11	0.08	0.12	0.00	0.12	1.00	1.00	0.09	0.56	0.56
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	3456	4797	404	3456	5106	1585
Grp Volume(v), veh/h	105	93	152	210	106	0	154	1085	574	248	1956	91
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1728	1702	1798	1728	1702	1585
Q Serve(g_s), s	7.0	5.6	11.3	7.2	6.3	0.0	5.2	0.0	0.0	8.4	33.1	3.2
Cycle Q Clear(g_c), s	7.0	5.6	11.3	7.2	6.3	0.0	5.2	0.0	0.0	8.4	33.1	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	130	214	181	270	223		208	1792	946	309	2837	881
V/C Ratio(X)	0.81	0.43	0.84	0.78	0.47		0.74	0.61	0.61	0.80	0.69	0.10
Avail Cap(c_a), veh/h	202	296	251	363	281		288	1792	946	403	2837	881
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	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	0.00	0.81	0.81	0.81	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	49.5	52.0	54.3	49.3	0.0	51.9	0.0	0.0	53.6	19.2	12.6
Incr Delay (d2), s/veh	12.4	1.4	16.0	7.4	1.6	0.0	5.1	1.2	2.3	8.6	1.4	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	0.0
%ile BackOfQ(50%),veh/ln	3.6	2.7	5.3	3.4	3.1	0.0	2.3	0.3	0.6	4.0	13.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.2	50.9	68.1	61.7	50.9	0.0	57.0	1.2	2.3	62.2	20.6	12.8
LnGrp LOS	E	D	E	E	D		E	A	A	E	C	B
Approach Vol, veh/h		350			316	A		1813			2295	
Approach Delay, s/veh		63.2			58.1			6.3			24.8	
Approach LOS		E			E			A			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.7	69.2	14.9	19.2	13.2	72.7	14.3	19.8				
Change Period (Y+Rc), s	6.0	6.0	5.5	5.5	6.0	6.0	5.5	5.5				
Max Green Setting (Gmax), s	14.0	51.4	12.6	19.0	10.0	55.4	13.6	18.0				
Max Q Clear Time (g_c+l1), s	10.4	2.0	9.2	13.3	7.2	35.1	9.0	8.3				
Green Ext Time (p_c), s	0.3	18.7	0.2	0.5	0.1	14.9	0.1	0.3				

Intersection Summary

HCM 6th Ctrl Delay	22.8
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Timings
2: Wadsworth Blvd (SH-121) & Virginia Avenue

2024 Total AM.syn
07/19/2021

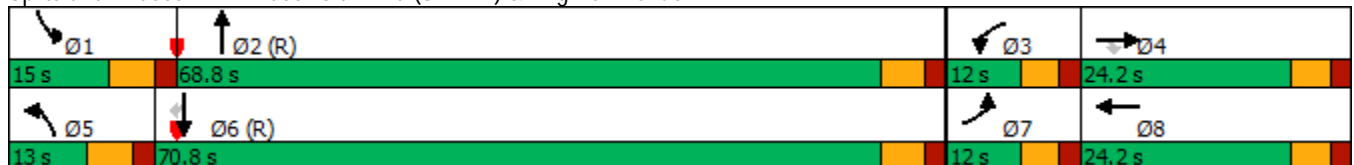


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖↗	↑	↗	↖↗	↑↖↗	↖↗	↑↖↗	↗
Traffic Volume (vph)	49	24	23	46	40	95	73	1680	89	1165	70
Future Volume (vph)	49	24	23	46	40	95	73	1680	89	1165	70
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases			4			Free					6
Detector Phase	7	4	4	3	8		5	2	1	6	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)	10.5	23.5	23.5	10.5	23.5		11.0	24.0	11.0	24.0	24.0
Total Split (s)	12.0	24.2	24.2	12.0	24.2		13.0	68.8	15.0	70.8	70.8
Total Split (%)	10.0%	20.2%	20.2%	10.0%	20.2%		10.8%	57.3%	12.5%	59.0%	59.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	C-Max
Act Effect Green (s)	6.3	7.9	7.9	8.8	8.1	120.0	8.0	78.4	8.6	82.6	82.6
Actuated g/C Ratio	0.05	0.07	0.07	0.07	0.07	1.00	0.07	0.65	0.07	0.69	0.69
v/c Ratio	0.55	0.20	0.11	0.19	0.33	0.06	0.33	0.54	0.38	0.34	0.06
Control Delay	77.7	55.8	0.9	55.2	59.5	0.1	53.3	10.5	57.1	10.7	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.7	55.8	0.9	55.2	59.5	0.1	53.3	10.5	57.1	10.7	0.3
LOS	E	E	A	E	E	A	D	B	E	B	A
Approach Delay		53.8			27.1			12.2		13.3	
Approach LOS		D			C			B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 14.6
 Intersection LOS: B
 Intersection Capacity Utilization 57.0%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 2: Wadsworth Blvd (SH-121) & Virginia Avenue



HCM 6th Signalized Intersection Summary
 2: Wadsworth Blvd (SH-121) & Virginia Avenue

2024 Total AM.syn
 07/19/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖↗	↑	↗	↖↗	↑↑↑		↖↗	↑↑↑	↗
Traffic Volume (veh/h)	49	24	23	46	40	95	73	1680	52	89	1165	70
Future Volume (veh/h)	49	24	23	46	40	95	73	1680	52	89	1165	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870
Adj Flow Rate, veh/h	51	25	24	47	41	0	75	1732	54	92	1201	72
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	84	72	114	77		132	3504	109	143	3533	1097
Arrive On Green	0.04	0.05	0.05	0.03	0.04	0.00	0.08	1.00	1.00	0.04	0.69	0.69
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	3456	5087	159	3456	5106	1585
Grp Volume(v), veh/h	51	25	24	47	41	0	75	1159	627	92	1201	72
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1728	1702	1842	1728	1702	1585
Q Serve(g_s), s	3.4	1.6	1.8	1.6	2.6	0.0	2.5	0.0	0.0	3.1	11.4	1.8
Cycle Q Clear(g_c), s	3.4	1.6	1.8	1.6	2.6	0.0	2.5	0.0	0.0	3.1	11.4	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	66	84	72	114	77		132	2345	1269	143	3533	1097
V/C Ratio(X)	0.78	0.30	0.34	0.41	0.53		0.57	0.49	0.49	0.64	0.34	0.07
Avail Cap(c_a), veh/h	96	291	247	187	291		202	2345	1269	259	3533	1097
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	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	0.90	0.90	0.90	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.3	55.4	55.5	56.9	56.4	0.0	54.5	0.0	0.0	56.6	7.4	6.0
Incr Delay (d2), s/veh	20.6	1.9	2.7	2.4	5.6	0.0	3.4	0.7	1.2	4.7	0.3	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	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.8	0.8	0.7	1.3	0.0	1.1	0.2	0.4	1.5	3.9	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.9	57.4	58.3	59.3	62.0	0.0	57.9	0.7	1.2	61.4	7.7	6.1
LnGrp LOS	E	E	E	E	E		E	A	A	E	A	A
Approach Vol, veh/h		100			88	A		1861			1365	
Approach Delay, s/veh		68.1			60.5			3.2			11.2	
Approach LOS		E			E			A			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	88.7	9.5	10.9	10.6	89.0	9.9	10.4				
Change Period (Y+Rc), s	6.0	6.0	5.5	5.5	6.0	6.0	5.5	5.5				
Max Green Setting (Gmax), s	9.0	62.8	6.5	18.7	7.0	64.8	6.5	18.7				
Max Q Clear Time (g_c+I1), s	5.1	2.0	3.6	3.8	4.5	13.4	5.4	4.6				
Green Ext Time (p_c), s	0.1	22.4	0.0	0.1	0.0	12.4	0.0	0.1				

Intersection Summary

HCM 6th Ctrl Delay	9.8
HCM 6th LOS	A

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Timings
2: Wadsworth Blvd (SH-121) & Virginia Avenue

2024 Total PM.syn
07/20/2021

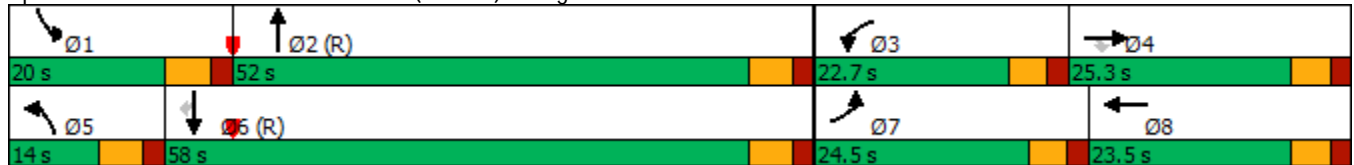


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖↗	↑	↗	↖↗	↑↑↑	↖↗	↑↑↑	↗
Traffic Volume (vph)	121	89	146	202	102	187	147	1475	238	1884	120
Future Volume (vph)	121	89	146	202	102	187	147	1475	238	1884	120
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases			4			Free					6
Detector Phase	7	4	4	3	8		5	2	1	6	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)	10.5	23.5	23.5	10.5	23.5		11.0	24.0	11.0	24.0	24.0
Total Split (s)	24.5	25.3	25.3	22.7	23.5		14.0	52.0	20.0	58.0	58.0
Total Split (%)	20.4%	21.1%	21.1%	18.9%	19.6%		11.7%	43.3%	16.7%	48.3%	48.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	C-Max
Act Effect Green (s)	13.8	13.3	13.3	12.6	12.1	120.0	9.9	57.7	13.4	61.2	61.2
Actuated g/C Ratio	0.12	0.11	0.11	0.10	0.10	1.00	0.08	0.48	0.11	0.51	0.51
v/c Ratio	0.62	0.45	0.49	0.58	0.57	0.12	0.54	0.69	0.65	0.76	0.14
Control Delay	63.3	55.6	12.7	57.5	62.6	0.2	51.5	27.7	58.9	27.3	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.3	55.6	12.7	57.5	62.6	0.2	51.5	27.7	58.9	27.3	3.7
LOS	E	E	B	E	E	A	D	C	E	C	A
Approach Delay		40.7			36.7			29.7		29.4	
Approach LOS		D			D			C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 31.1
 Intersection LOS: C
 Intersection Capacity Utilization 68.5%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 2: Wadsworth Blvd (SH-121) & Virginia Avenue



HCM 6th Signalized Intersection Summary
 2: Wadsworth Blvd (SH-121) & Virginia Avenue

2024 Total PM.syn
 07/20/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖↗	↑	↗	↖↗	↑↑↑		↖↗	↑↑↑	↗
Traffic Volume (veh/h)	121	89	146	202	102	187	147	1475	124	238	1884	120
Future Volume (veh/h)	121	89	146	202	102	187	147	1475	124	238	1884	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870
Adj Flow Rate, veh/h	126	93	152	210	106	0	153	1536	129	248	1962	125
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	154	215	182	275	202		205	2517	211	309	2831	879
Arrive On Green	0.09	0.11	0.11	0.08	0.11	0.00	0.12	1.00	1.00	0.09	0.55	0.55
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	3456	4799	403	3456	5106	1585
Grp Volume(v), veh/h	126	93	152	210	106	0	153	1089	576	248	1962	125
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1728	1702	1798	1728	1702	1585
Q Serve(g_s), s	8.3	5.6	11.3	7.1	6.4	0.0	5.1	0.0	0.0	8.4	33.4	4.6
Cycle Q Clear(g_c), s	8.3	5.6	11.3	7.1	6.4	0.0	5.1	0.0	0.0	8.4	33.4	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	154	215	182	275	202		205	1786	943	309	2831	879
V/C Ratio(X)	0.82	0.43	0.84	0.76	0.52		0.75	0.61	0.61	0.80	0.69	0.14
Avail Cap(c_a), veh/h	282	309	262	495	281		230	1786	943	403	2831	879
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	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	0.00	0.82	0.82	0.82	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.9	49.5	52.0	54.1	50.6	0.0	52.0	0.0	0.0	53.6	19.3	12.9
Incr Delay (d2), s/veh	10.1	1.4	14.4	4.4	2.1	0.0	9.2	1.3	2.4	8.6	1.4	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	0.0
%ile BackOfQ(50%),veh/ln	4.2	2.7	5.2	3.3	3.1	0.0	2.4	0.3	0.6	4.0	13.1	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.0	50.8	66.4	58.5	52.7	0.0	61.2	1.3	2.4	62.2	20.8	13.3
LnGrp LOS	E	D	E	E	D		E	A	A	E	C	B
Approach Vol, veh/h		371			316	A		1818			2335	
Approach Delay, s/veh		61.7			56.6			6.7			24.8	
Approach LOS		E			E			A			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.7	68.9	15.1	19.3	13.1	72.5	15.9	18.5				
Change Period (Y+Rc), s	6.0	6.0	5.5	5.5	6.0	6.0	5.5	5.5				
Max Green Setting (Gmax), s	14.0	46.0	17.2	19.8	8.0	52.0	19.0	18.0				
Max Q Clear Time (g_c+l1), s	10.4	2.0	9.1	13.3	7.1	35.4	10.3	8.4				
Green Ext Time (p_c), s	0.3	18.0	0.4	0.5	0.0	12.9	0.2	0.3				

Intersection Summary

HCM 6th Ctrl Delay	22.9
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Timings
2: Wadsworth Blvd (SH-121) & Virginia Avenue

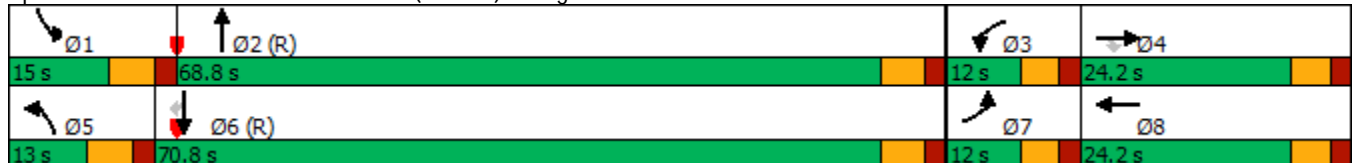


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖↗	↑	↗	↖↗	↑↖↗	↖↗	↑↖↗	↗
Traffic Volume (vph)	20	25	25	50	45	105	80	1780	95	1240	65
Future Volume (vph)	20	25	25	50	45	105	80	1780	95	1240	65
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases			4			Free					6
Detector Phase	7	4	4	3	8		5	2	1	6	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)	10.5	23.5	23.5	10.5	23.5		11.0	24.0	11.0	24.0	24.0
Total Split (s)	12.0	24.2	24.2	12.0	24.2		13.0	68.8	15.0	70.8	70.8
Total Split (%)	10.0%	20.2%	20.2%	10.0%	20.2%		10.8%	57.3%	12.5%	59.0%	59.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	C-Max
Act Effect Green (s)	6.2	7.9	7.9	6.3	12.7	120.0	8.2	78.4	8.8	82.5	82.5
Actuated g/C Ratio	0.05	0.07	0.07	0.05	0.11	1.00	0.07	0.65	0.07	0.69	0.69
v/c Ratio	0.23	0.21	0.11	0.29	0.23	0.07	0.35	0.57	0.39	0.37	0.06
Control Delay	60.8	55.8	1.0	58.9	52.2	0.1	52.8	10.7	57.2	11.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.8	55.8	1.0	58.9	52.2	0.1	52.8	10.7	57.2	11.0	0.1
LOS	E	E	A	E	D	A	D	B	E	B	A
Approach Delay		37.7			26.6			12.5		13.6	
Approach LOS		D			C			B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.57
 Intersection Signal Delay: 14.2
 Intersection LOS: B
 Intersection Capacity Utilization 58.3%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 2: Wadsworth Blvd (SH-121) & Virginia Avenue



HCM 6th Signalized Intersection Summary
 2: Wadsworth Blvd (SH-121) & Virginia Avenue

2045 Background AM.syn
 07/08/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖↗	↑	↗	↖↗	↑↑↑		↖↗	↑↑↑	↗
Traffic Volume (veh/h)	20	25	25	50	45	105	80	1780	55	95	1240	65
Future Volume (veh/h)	20	25	25	50	45	105	80	1780	55	95	1240	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870
Adj Flow Rate, veh/h	21	26	26	52	46	0	82	1835	57	98	1278	67
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	37	76	65	119	101		135	3509	109	150	3545	1100
Arrive On Green	0.02	0.04	0.04	0.03	0.05	0.00	0.08	1.00	1.00	0.04	0.69	0.69
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	3456	5088	158	3456	5106	1585
Grp Volume(v), veh/h	21	26	26	52	46	0	82	1227	665	98	1278	67
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1728	1702	1842	1728	1702	1585
Q Serve(g_s), s	1.4	1.6	1.9	1.8	2.9	0.0	2.8	0.0	0.0	3.4	12.3	1.6
Cycle Q Clear(g_c), s	1.4	1.6	1.9	1.8	2.9	0.0	2.8	0.0	0.0	3.4	12.3	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	37	76	65	119	101		135	2348	1270	150	3545	1100
V/C Ratio(X)	0.56	0.34	0.40	0.44	0.45		0.61	0.52	0.52	0.65	0.36	0.06
Avail Cap(c_a), veh/h	96	291	247	187	291		202	2348	1270	259	3545	1100
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	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	0.87	0.87	0.87	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.2	56.0	56.1	56.8	55.0	0.0	54.4	0.0	0.0	56.5	7.5	5.9
Incr Delay (d2), s/veh	12.6	2.6	4.0	2.5	3.1	0.0	3.8	0.7	1.3	4.7	0.3	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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.8	0.8	0.8	1.4	0.0	1.2	0.2	0.5	1.6	4.2	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.8	58.6	60.1	59.3	58.2	0.0	58.3	0.7	1.3	61.2	7.8	6.0
LnGrp LOS	E	E	E	E	E		E	A	A	E	A	A
Approach Vol, veh/h		73			98	A		1974			1443	
Approach Delay, s/veh		62.6			58.8			3.3			11.3	
Approach LOS		E			E			A			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.2	88.8	9.6	10.4	10.7	89.3	8.0	12.0				
Change Period (Y+Rc), s	6.0	6.0	5.5	5.5	6.0	6.0	5.5	5.5				
Max Green Setting (Gmax), s	9.0	62.8	6.5	18.7	7.0	64.8	6.5	18.7				
Max Q Clear Time (g_c+I1), s	5.4	2.0	3.8	3.9	4.8	14.3	3.4	4.9				
Green Ext Time (p_c), s	0.1	25.0	0.0	0.1	0.0	13.6	0.0	0.1				

Intersection Summary

HCM 6th Ctrl Delay	9.3
HCM 6th LOS	A

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Timings
2: Wadsworth Blvd (SH-121) & Virginia Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖↗	↑	↗	↖↗	↑↑↑	↖↗	↑↑↑	↗
Traffic Volume (vph)	110	95	155	215	110	200	160	1565	255	2000	95
Future Volume (vph)	110	95	155	215	110	200	160	1565	255	2000	95
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases			4			Free					6
Detector Phase	7	4	4	3	8		5	2	1	6	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)	10.5	23.5	23.5	10.5	23.5		11.0	24.0	11.0	24.0	24.0
Total Split (s)	24.5	25.3	25.3	22.7	23.5		14.0	52.0	20.0	58.0	58.0
Total Split (%)	20.4%	21.1%	21.1%	18.9%	19.6%		11.7%	43.3%	16.7%	48.3%	48.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	C-Max
Act Effect Green (s)	13.1	12.8	12.8	13.1	12.8	120.0	10.4	57.2	13.9	60.7	60.7
Actuated g/C Ratio	0.11	0.11	0.11	0.11	0.11	1.00	0.09	0.48	0.12	0.51	0.51
v/c Ratio	0.60	0.50	0.52	0.60	0.58	0.13	0.56	0.74	0.67	0.81	0.11
Control Delay	63.2	58.1	14.0	57.4	62.0	0.2	49.9	31.5	59.2	29.3	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.2	58.1	14.0	57.4	62.0	0.2	49.9	31.5	59.2	29.3	2.0
LOS	E	E	B	E	E	A	D	C	E	C	A
Approach Delay		40.8			36.6			33.1		31.5	
Approach LOS		D			D			C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 33.3
 Intersection LOS: C
 Intersection Capacity Utilization 70.6%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 2: Wadsworth Blvd (SH-121) & Virginia Avenue



HCM 6th Signalized Intersection Summary
 2: Wadsworth Blvd (SH-121) & Virginia Avenue

2045 Background PM.syn
 07/08/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖↗	↑	↗	↖↗	↑↑↑		↖↗	↑↑↑	↗
Traffic Volume (veh/h)	110	95	155	215	110	200	160	1565	135	255	2000	95
Future Volume (veh/h)	110	95	155	215	110	200	160	1565	135	255	2000	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870
Adj Flow Rate, veh/h	115	99	161	224	115	0	167	1630	141	266	2083	99
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	142	225	191	289	232		219	2440	211	326	2762	857
Arrive On Green	0.08	0.12	0.12	0.08	0.12	0.00	0.13	1.00	1.00	0.09	0.54	0.54
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	3456	4786	414	3456	5106	1585
Grp Volume(v), veh/h	115	99	161	224	115	0	167	1159	612	266	2083	99
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1728	1702	1796	1728	1702	1585
Q Serve(g_s), s	7.6	5.9	11.9	7.6	6.9	0.0	5.6	0.0	0.0	9.1	38.0	3.7
Cycle Q Clear(g_c), s	7.6	5.9	11.9	7.6	6.9	0.0	5.6	0.0	0.0	9.1	38.0	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	142	225	191	289	232		219	1736	916	326	2762	857
V/C Ratio(X)	0.81	0.44	0.84	0.77	0.49		0.76	0.67	0.67	0.82	0.75	0.12
Avail Cap(c_a), veh/h	282	309	262	495	281		230	1736	916	403	2762	857
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	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	0.00	0.76	0.76	0.76	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.3	49.0	51.7	53.9	49.0	0.0	51.5	0.0	0.0	53.3	21.4	13.5
Incr Delay (d2), s/veh	10.3	1.3	16.4	4.4	1.6	0.0	10.4	1.6	3.0	10.2	2.0	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	0.0
%ile BackOfQ(50%),veh/ln	3.8	2.8	5.6	3.5	3.3	0.0	2.6	0.4	0.8	4.4	15.1	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.6	50.4	68.1	58.3	50.7	0.0	62.0	1.6	3.0	63.5	23.3	13.8
LnGrp LOS	E	D	E	E	D		E	A	A	E	C	B
Approach Vol, veh/h		375			339	A		1938			2448	
Approach Delay, s/veh		62.4			55.7			7.2			27.3	
Approach LOS		E			E			A			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.3	67.2	15.5	19.9	13.6	70.9	15.1	20.4				
Change Period (Y+Rc), s	6.0	6.0	5.5	5.5	6.0	6.0	5.5	5.5				
Max Green Setting (Gmax), s	14.0	46.0	17.2	19.8	8.0	52.0	19.0	18.0				
Max Q Clear Time (g_c+l1), s	11.1	2.0	9.6	13.9	7.6	40.0	9.6	8.9				
Green Ext Time (p_c), s	0.3	19.9	0.4	0.5	0.0	10.1	0.2	0.3				

Intersection Summary

HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Timings
2: Wadsworth Blvd (SH-121) & Virginia Avenue

2045 Total AM.syn
07/20/2021

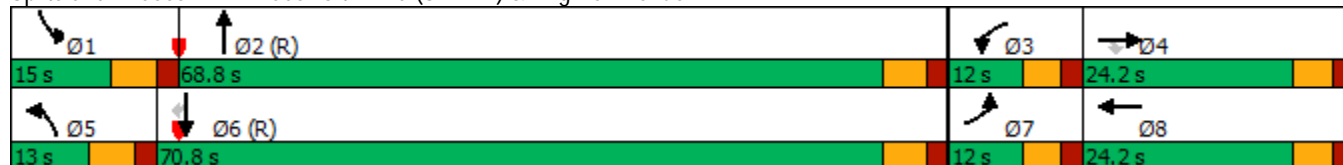


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖↗	↑	↗	↖↗	↑↑↑	↖↗	↑↑↑	↗
Traffic Volume (vph)	50	25	25	50	45	105	80	1790	95	1245	80
Future Volume (vph)	50	25	25	50	45	105	80	1790	95	1245	80
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases			4			Free					6
Detector Phase	7	4	4	3	8		5	2	1	6	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)	10.5	23.5	23.5	10.5	23.5		11.0	24.0	11.0	24.0	24.0
Total Split (s)	12.0	24.2	24.2	12.0	24.2		13.0	68.8	15.0	70.8	70.8
Total Split (%)	10.0%	20.2%	20.2%	10.0%	20.2%		10.8%	57.3%	12.5%	59.0%	59.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	6.3	8.4	8.4	6.3	8.4	120.0	8.2	77.9	8.8	82.1	82.1
Actuated g/C Ratio	0.05	0.07	0.07	0.05	0.07	1.00	0.07	0.65	0.07	0.68	0.68
v/c Ratio	0.56	0.20	0.11	0.29	0.35	0.07	0.35	0.58	0.39	0.37	0.07
Control Delay	78.3	55.1	1.0	59.0	60.0	0.1	53.5	10.9	57.2	11.2	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.3	55.1	1.0	59.0	60.0	0.1	53.5	10.9	57.2	11.2	0.6
LOS	E	E	A	E	E	A	D	B	E	B	A
Approach Delay		53.2			28.3			12.7		13.7	
Approach LOS		D			C			B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.58
 Intersection Signal Delay: 15.1
 Intersection LOS: B
 Intersection Capacity Utilization 59.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 2: Wadsworth Blvd (SH-121) & Virginia Avenue



HCM 6th Signalized Intersection Summary
 2: Wadsworth Blvd (SH-121) & Virginia Avenue

2045 Total AM.syn
 07/20/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	25	25	50	45	105	80	1790	55	95	1245	80
Future Volume (veh/h)	50	25	25	50	45	105	80	1790	55	95	1245	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870
Adj Flow Rate, veh/h	52	26	26	52	46	0	82	1845	57	98	1284	82
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	84	71	119	78		135	3490	108	150	3525	1094
Arrive On Green	0.04	0.04	0.04	0.03	0.04	0.00	0.08	1.00	1.00	0.04	0.69	0.69
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	3456	5089	157	3456	5106	1585
Grp Volume(v), veh/h	52	26	26	52	46	0	82	1234	668	98	1284	82
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1728	1702	1842	1728	1702	1585
Q Serve(g_s), s	3.5	1.6	1.9	1.8	2.9	0.0	2.8	0.0	0.0	3.4	12.5	2.0
Cycle Q Clear(g_c), s	3.5	1.6	1.9	1.8	2.9	0.0	2.8	0.0	0.0	3.4	12.5	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	67	84	71	119	78		135	2334	1263	150	3525	1094
V/C Ratio(X)	0.78	0.31	0.37	0.44	0.59		0.61	0.53	0.53	0.65	0.36	0.07
Avail Cap(c_a), veh/h	96	291	247	187	291		202	2334	1263	259	3525	1094
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	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	0.00	0.87	0.87	0.87	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.2	55.5	55.7	56.8	56.5	0.0	54.4	0.0	0.0	56.5	7.7	6.1
Incr Delay (d2), s/veh	21.3	2.1	3.1	2.5	7.0	0.0	3.8	0.7	1.4	4.7	0.3	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	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.8	0.8	0.8	1.5	0.0	1.2	0.2	0.5	1.6	4.4	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.6	57.6	58.8	59.3	63.6	0.0	58.3	0.7	1.4	61.2	8.0	6.2
LnGrp LOS	E	E	E	E	E		E	A	A	E	A	A
Approach Vol, veh/h		104			98	A		1984			1464	
Approach Delay, s/veh		68.4			61.3			3.3			11.4	
Approach LOS		E			E			A			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.2	88.3	9.6	10.9	10.7	88.8	10.0	10.5				
Change Period (Y+Rc), s	6.0	6.0	5.5	5.5	6.0	6.0	5.5	5.5				
Max Green Setting (Gmax), s	9.0	62.8	6.5	18.7	7.0	64.8	6.5	18.7				
Max Q Clear Time (g_c+I1), s	5.4	2.0	3.8	3.9	4.8	14.5	5.5	4.9				
Green Ext Time (p_c), s	0.1	25.2	0.0	0.1	0.0	13.7	0.0	0.1				

Intersection Summary

HCM 6th Ctrl Delay	10.0
HCM 6th LOS	B

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Timings
2: Wadsworth Blvd (SH-121) & Virginia Avenue

2045 Total PM.syn
07/20/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	
Lane Configurations												
Traffic Volume (vph)	130	95	155	215	110	200	160	1575	255	2010	130	
Future Volume (vph)	130	95	155	215	110	200	160	1575	255	2010	130	
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Prot	NA	Perm	
Protected Phases	7	4		3	8		5	2	1	6		
Permitted Phases			4			Free					6	
Detector Phase	7	4	4	3	8		5	2	1	6	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)	10.5	23.5	23.5	10.5	23.5		11.0	24.0	11.0	24.0	24.0	
Total Split (s)	25.5	25.3	25.3	23.7	23.5		14.0	51.0	20.0	57.0	57.0	
Total Split (%)	21.3%	21.1%	21.1%	19.8%	19.6%		11.7%	42.5%	16.7%	47.5%	47.5%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	C-Max	
Act Effct Green (s)	14.4	14.0	14.0	13.1	12.7	120.0	10.2	56.1	13.8	59.7	59.7	
Actuated g/C Ratio	0.12	0.12	0.12	0.11	0.11	1.00	0.08	0.47	0.12	0.50	0.50	
v/c Ratio	0.64	0.46	0.49	0.60	0.58	0.13	0.57	0.76	0.68	0.83	0.16	
Control Delay	63.3	54.9	12.2	57.4	62.4	0.2	50.7	33.2	59.8	30.8	4.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	63.3	54.9	12.2	57.4	62.4	0.2	50.7	33.2	59.8	30.8	4.6	
LOS	E	D	B	E	E	A	D	C	E	C	A	
Approach Delay		40.3			36.7			34.7		32.5		
Approach LOS		D			D			C		C		

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 34.3
 Intersection Capacity Utilization 71.9%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 2: Wadsworth Blvd (SH-121) & Virginia Avenue



HCM 6th Signalized Intersection Summary
 2: Wadsworth Blvd (SH-121) & Virginia Avenue

2045 Total PM.syn
 07/20/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖↗	↑	↗	↖↗	↑↑↑		↖↗	↑↑↑	↗
Traffic Volume (veh/h)	130	95	155	215	110	200	160	1575	135	255	2010	130
Future Volume (veh/h)	130	95	155	215	110	200	160	1575	135	255	2010	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870
Adj Flow Rate, veh/h	135	99	161	224	115	0	167	1641	141	266	2094	135
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	225	191	290	211		219	2441	209	326	2760	857
Arrive On Green	0.09	0.12	0.12	0.08	0.11	0.00	0.13	1.00	1.00	0.09	0.54	0.54
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	3456	4789	411	3456	5106	1585
Grp Volume(v), veh/h	135	99	161	224	115	0	167	1166	616	266	2094	135
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1728	1702	1796	1728	1702	1585
Q Serve(g_s), s	8.9	5.9	11.9	7.6	7.0	0.0	5.6	0.0	0.0	9.1	38.3	5.1
Cycle Q Clear(g_c), s	8.9	5.9	11.9	7.6	7.0	0.0	5.6	0.0	0.0	9.1	38.3	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	164	225	191	290	211		219	1735	915	326	2760	857
V/C Ratio(X)	0.83	0.44	0.84	0.77	0.55		0.76	0.67	0.67	0.82	0.76	0.16
Avail Cap(c_a), veh/h	297	309	262	524	281		230	1735	915	403	2760	857
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	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	0.76	0.76	0.76	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	49.0	51.7	53.8	50.3	0.0	51.5	0.0	0.0	53.3	21.5	13.8
Incr Delay (d2), s/veh	10.0	1.3	16.4	4.3	2.2	0.0	10.4	1.6	3.0	10.2	2.0	0.4
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	0.0
%ile BackOfQ(50%),veh/ln	4.5	2.8	5.6	3.5	3.4	0.0	2.6	0.4	0.8	4.4	15.2	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.5	50.4	68.1	58.2	52.6	0.0	62.0	1.6	3.0	63.5	23.5	14.2
LnGrp LOS	E	D	E	E	D		E	A	A	E	C	B
Approach Vol, veh/h		395			339	A		1949			2495	
Approach Delay, s/veh		62.1			56.3			7.2			27.2	
Approach LOS		E			E			A			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.3	67.1	15.6	19.9	13.6	70.9	16.5	19.0				
Change Period (Y+Rc), s	6.0	6.0	5.5	5.5	6.0	6.0	5.5	5.5				
Max Green Setting (Gmax), s	14.0	45.0	18.2	19.8	8.0	51.0	20.0	18.0				
Max Q Clear Time (g_c+I1), s	11.1	2.0	9.6	13.9	7.6	40.3	10.9	9.0				
Green Ext Time (p_c), s	0.3	19.9	0.5	0.5	0.0	9.2	0.2	0.3				

Intersection Summary

HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection												
Int Delay, s/veh	6.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	3	1	18	8	14	2	7	5	20	11	0
Future Vol, veh/h	1	3	1	18	8	14	2	7	5	20	11	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	4	1	24	11	19	3	9	7	27	15	0

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	30	0	0	5	0	0	83	85	5	84	76	21
Stage 1	-	-	-	-	-	-	7	7	-	69	69	-
Stage 2	-	-	-	-	-	-	76	78	-	15	7	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1583	-	-	1616	-	-	904	805	1078	903	814	1056
Stage 1	-	-	-	-	-	-	1015	890	-	941	837	-
Stage 2	-	-	-	-	-	-	933	830	-	1005	890	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1583	-	-	1616	-	-	880	792	1078	879	801	1056
Mov Cap-2 Maneuver	-	-	-	-	-	-	880	792	-	879	801	-
Stage 1	-	-	-	-	-	-	1014	889	-	940	824	-
Stage 2	-	-	-	-	-	-	903	818	-	987	889	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	1.5		3.3		9.1		9.5	
HCM LOS					A		A	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	889	1583	-	-	1616	-	-	850
HCM Lane V/C Ratio	0.021	0.001	-	-	0.015	-	-	0.049
HCM Control Delay (s)	9.1	7.3	0	-	7.3	0	-	9.5
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Intersection												
Int Delay, s/veh	6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	11	2	23	12	18	2	4	7	46	7	1
Future Vol, veh/h	3	11	2	23	12	18	2	4	7	46	7	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	12	2	25	13	20	2	4	8	51	8	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	33	0	0	14	0	0	97	102	13	98	93	23
Stage 1	-	-	-	-	-	-	19	19	-	73	73	-
Stage 2	-	-	-	-	-	-	78	83	-	25	20	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1579	-	-	1604	-	-	885	788	1067	884	797	1054
Stage 1	-	-	-	-	-	-	1000	880	-	937	834	-
Stage 2	-	-	-	-	-	-	931	826	-	993	879	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1579	-	-	1604	-	-	866	774	1067	862	783	1054
Mov Cap-2 Maneuver	-	-	-	-	-	-	866	774	-	862	783	-
Stage 1	-	-	-	-	-	-	998	878	-	935	821	-
Stage 2	-	-	-	-	-	-	907	813	-	979	877	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.4			3.2			8.9			9.5		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	926	1579	-	-	1604	-	-	854
HCM Lane V/C Ratio	0.015	0.002	-	-	0.016	-	-	0.069
HCM Control Delay (s)	8.9	7.3	0	-	7.3	0	-	9.5
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2

Intersection

Int Delay, s/veh 6.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	4	2	19	9	15	3	8	6	21	12	0
Future Vol, veh/h	2	4	2	19	9	15	3	8	6	21	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	5	3	25	12	20	4	11	8	28	16	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	32	0	0	8
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1580	-	-	1612
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1580	-	-	1612
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	3.2	9.2	9.6
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	881	1580	-	-	1612	-	-	834
HCM Lane V/C Ratio	0.026	0.002	-	-	0.016	-	-	0.053
HCM Control Delay (s)	9.2	7.3	0	-	7.3	0	-	9.6
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Intersection												
Int Delay, s/veh	6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	12	3	24	13	19	3	5	8	47	8	2
Future Vol, veh/h	4	12	3	24	13	19	3	5	8	47	8	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	13	3	26	14	21	3	5	9	52	9	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	35	0	0	16	0	0	105	110	15	107	101	25
Stage 1	-	-	-	-	-	-	23	23	-	77	77	-
Stage 2	-	-	-	-	-	-	82	87	-	30	24	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1576	-	-	1602	-	-	875	780	1065	872	789	1051
Stage 1	-	-	-	-	-	-	995	876	-	932	831	-
Stage 2	-	-	-	-	-	-	926	823	-	987	875	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1576	-	-	1602	-	-	852	764	1065	847	773	1051
Mov Cap-2 Maneuver	-	-	-	-	-	-	852	764	-	847	773	-
Stage 1	-	-	-	-	-	-	992	873	-	929	817	-
Stage 2	-	-	-	-	-	-	899	809	-	970	872	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	3.1	9	9.6
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	910	1576	-	-	1602	-	-	841
HCM Lane V/C Ratio	0.019	0.003	-	-	0.016	-	-	0.074
HCM Control Delay (s)	9	7.3	0	-	7.3	0	-	9.6
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0.2

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	27	1	19	10	21	1	8	6	37	12	7
Future Vol, veh/h	22	27	1	19	10	21	1	8	6	37	12	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	36	1	25	13	28	1	11	8	49	16	9

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	41	0	0	37	0	0	185	186	37	181	172	27
Stage 1	-	-	-	-	-	-	95	95	-	77	77	-
Stage 2	-	-	-	-	-	-	90	91	-	104	95	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1568	-	-	1574	-	-	776	708	1035	781	721	1048
Stage 1	-	-	-	-	-	-	912	816	-	932	831	-
Stage 2	-	-	-	-	-	-	917	820	-	902	816	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1568	-	-	1574	-	-	736	683	1035	746	696	1048
Mov Cap-2 Maneuver	-	-	-	-	-	-	736	683	-	746	696	-
Stage 1	-	-	-	-	-	-	895	800	-	914	818	-
Stage 2	-	-	-	-	-	-	877	807	-	866	800	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	3.2		2.8		9.6		10.2	
HCM LOS					A		B	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	795	1568	-	-	1574	-	-	762
HCM Lane V/C Ratio	0.025	0.019	-	-	0.016	-	-	0.098
HCM Control Delay (s)	9.6	7.3	0	-	7.3	0	-	10.2
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.3

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	18	1	24	28	35	1	5	8	57	8	23
Future Vol, veh/h	15	18	1	24	28	35	1	5	8	57	8	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	20	1	26	31	38	1	5	9	63	9	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	69	0	0	21	0	0	172	174	21	162	155	50
Stage 1	-	-	-	-	-	-	53	53	-	102	102	-
Stage 2	-	-	-	-	-	-	119	121	-	60	53	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1534	-	-	1595	-	-	796	723	1056	808	741	1025
Stage 1	-	-	-	-	-	-	960	851	-	909	813	-
Stage 2	-	-	-	-	-	-	890	797	-	951	851	-
Platoon blocked, %	1	-	-	-	-	-	1	1	-	1	1	1
Mov Cap-1 Maneuver	1534	-	-	1595	-	-	753	703	1056	780	720	1025
Mov Cap-2 Maneuver	-	-	-	-	-	-	753	703	-	780	720	-
Stage 1	-	-	-	-	-	-	949	842	-	899	799	-
Stage 2	-	-	-	-	-	-	844	784	-	927	842	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.3			2			9.2			9.9		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	874	1534	-	-	1595	-	-	825
HCM Lane V/C Ratio	0.018	0.011	-	-	0.017	-	-	0.117
HCM Control Delay (s)	9.2	7.4	0	-	7.3	0	-	9.9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0.4

Intersection												
Int Delay, s/veh	6.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	5	5	20	10	20	5	10	10	25	15	0
Future Vol, veh/h	5	5	5	20	10	20	5	10	10	25	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	5	5	22	11	22	5	11	11	27	16	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	33	0	0	10	0	0	92	95	8	95	86	22
Stage 1	-	-	-	-	-	-	18	18	-	66	66	-
Stage 2	-	-	-	-	-	-	74	77	-	29	20	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1579	-	-	1610	-	-	892	795	1074	888	804	1055
Stage 1	-	-	-	-	-	-	1001	880	-	945	840	-
Stage 2	-	-	-	-	-	-	935	831	-	988	879	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1579	-	-	1610	-	-	867	781	1074	859	790	1055
Mov Cap-2 Maneuver	-	-	-	-	-	-	867	781	-	859	790	-
Stage 1	-	-	-	-	-	-	998	877	-	942	828	-
Stage 2	-	-	-	-	-	-	904	819	-	963	876	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.4			2.9			9.1			9.6		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	897	1579	-	-	1610	-	-	832
HCM Lane V/C Ratio	0.03	0.003	-	-	0.014	-	-	0.052
HCM Control Delay (s)	9.1	7.3	0	-	7.3	0	-	9.6
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Intersection												
Int Delay, s/veh	6.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	15	5	25	15	20	5	5	10	50	10	5
Future Vol, veh/h	5	15	5	25	15	20	5	5	10	50	10	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	16	5	27	16	22	5	5	11	54	11	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	38	0	0	21	0	0	118	121	19	118	112	27
Stage 1	-	-	-	-	-	-	29	29	-	81	81	-
Stage 2	-	-	-	-	-	-	89	92	-	37	31	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1575	-	-	1595	-	-	864	774	1059	864	783	1055
Stage 1	-	-	-	-	-	-	988	871	-	932	830	-
Stage 2	-	-	-	-	-	-	924	821	-	978	869	-
Platoon blocked, %	1	-	-	-	-	-	1	1	-	1	1	1
Mov Cap-1 Maneuver	1575	-	-	1595	-	-	837	758	1059	837	767	1055
Mov Cap-2 Maneuver	-	-	-	-	-	-	837	758	-	837	767	-
Stage 1	-	-	-	-	-	-	985	868	-	930	816	-
Stage 2	-	-	-	-	-	-	891	807	-	959	866	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	3	9.1	9.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	909	1575	-	-	1595	-	-	839
HCM Lane V/C Ratio	0.024	0.003	-	-	0.017	-	-	0.084
HCM Control Delay (s)	9.1	7.3	0	-	7.3	0	-	9.7
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0.3

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	30	5	20	15	30	5	10	10	45	15	10
Future Vol, veh/h	25	30	5	20	15	30	5	10	10	45	15	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	33	5	22	16	33	5	11	11	49	16	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	49	0	0	38	0	0	180	183	36	178	169	33
Stage 1	-	-	-	-	-	-	90	90	-	77	77	-
Stage 2	-	-	-	-	-	-	90	93	-	101	92	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1560	-	-	1572	-	-	787	715	1037	789	728	1047
Stage 1	-	-	-	-	-	-	917	820	-	936	833	-
Stage 2	-	-	-	-	-	-	922	820	-	905	819	-
Platoon blocked, %	1	-	-	-	-	-	1	1	-	1	1	1
Mov Cap-1 Maneuver	1560	-	-	1572	-	-	747	692	1037	753	705	1047
Mov Cap-2 Maneuver	-	-	-	-	-	-	747	692	-	753	705	-
Stage 1	-	-	-	-	-	-	900	805	-	920	822	-
Stage 2	-	-	-	-	-	-	881	809	-	868	804	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.1			2.3			9.6			10.2		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	812	1560	-	-	1572	-	-	773
HCM Lane V/C Ratio	0.033	0.017	-	-	0.014	-	-	0.098
HCM Control Delay (s)	9.6	7.3	0	-	7.3	0	-	10.2
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.3

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	25	5	25	30	40	5	5	10	60	10	30
Future Vol, veh/h	20	25	5	25	30	40	5	5	10	60	10	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	27	5	27	33	43	5	5	11	65	11	33

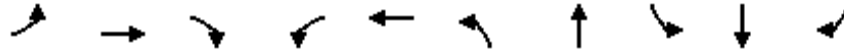
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	76	0	0	32	0	0	205	204	30	191	185	55
Stage 1	-	-	-	-	-	-	74	74	-	109	109	-
Stage 2	-	-	-	-	-	-	131	130	-	82	76	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1525	-	-	1580	-	-	758	695	1044	775	713	1018
Stage 1	-	-	-	-	-	-	935	833	-	901	807	-
Stage 2	-	-	-	-	-	-	877	790	-	926	832	-
Platoon blocked, %	1	-	-	-	-	-	1	1	-	1	1	1
Mov Cap-1 Maneuver	1525	-	-	1580	-	-	706	672	1044	743	689	1018
Mov Cap-2 Maneuver	-	-	-	-	-	-	706	672	-	743	689	-
Stage 1	-	-	-	-	-	-	921	821	-	887	793	-
Stage 2	-	-	-	-	-	-	822	776	-	897	820	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	3			1.9			9.5			10.2		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	830	1525	-	-	1580	-	-	802
HCM Lane V/C Ratio	0.026	0.014	-	-	0.017	-	-	0.136
HCM Control Delay (s)	9.5	7.4	0	-	7.3	0	-	10.2
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0.5

Timings
4: Wadsworth Blvd (SH-121) & Ohio Ave

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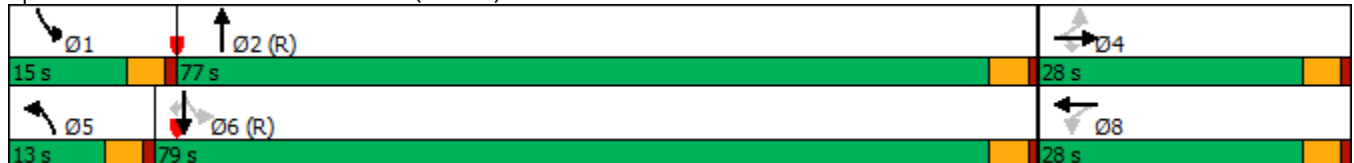
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↗	↖	↑↑↑	↖	↑↑	↗
Traffic Volume (vph)	6	6	10	89	8	21	1595	66	1164	16
Future Volume (vph)	6	6	10	89	8	21	1595	66	1164	16
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	pm+pt	NA	Perm
Protected Phases		4			8	5	2	1	6	
Permitted Phases	4		4	8				6		6
Detector Phase	4	4	4	8	8	5	2	1	6	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)	22.5	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	28.0	28.0	28.0	28.0	28.0	13.0	77.0	15.0	79.0	79.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%	10.8%	64.2%	12.5%	65.8%	65.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	13.1	13.1	13.1	13.1	13.1	7.0	89.0	95.6	92.8	92.8
Actuated g/C Ratio	0.11	0.11	0.11	0.11	0.11	0.06	0.74	0.80	0.77	0.77
v/c Ratio	0.06	0.03	0.05	0.59	0.44	0.20	0.44	0.26	0.43	0.01
Control Delay	46.2	45.0	0.4	65.9	15.2	57.8	7.2	9.4	5.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.2	45.0	0.4	65.9	15.2	57.8	7.2	9.4	5.4	0.0
LOS	D	D	A	E	B	E	A	A	A	A
Approach Delay		25.0			36.8		7.9		5.6	
Approach LOS		C			D		A		A	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 9.0
 Intersection Capacity Utilization 59.2%
 Analysis Period (min) 15

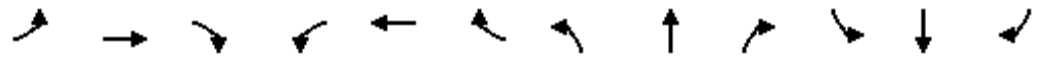
Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 4: Wadsworth Blvd (SH-121) & Ohio Ave



HCM 6th Signalized Intersection Summary
 4: Wadsworth Blvd (SH-121) & Ohio Ave

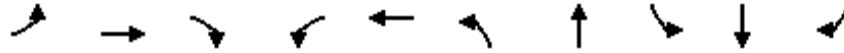
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	6	10	89	8	112	21	1595	39	66	1164	16
Future Volume (veh/h)	6	6	10	89	8	112	21	1595	39	66	1164	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870
Adj Flow Rate, veh/h	6	6	10	91	8	114	21	1628	40	67	1188	16
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	182	154	192	10	145	37	3860	95	316	2734	1219
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.02	0.75	0.75	0.07	1.00	1.00
Sat Flow, veh/h	1269	1870	1585	1397	105	1496	1781	5126	126	1781	3554	1585
Grp Volume(v), veh/h	6	6	10	91	0	122	21	1081	587	67	1188	16
Grp Sat Flow(s),veh/h/ln	1269	1870	1585	1397	0	1601	1781	1702	1848	1781	1777	1585
Q Serve(g_s), s	0.6	0.3	0.7	7.6	0.0	8.9	1.4	13.8	13.8	1.0	0.0	0.0
Cycle Q Clear(g_c), s	9.5	0.3	0.7	7.9	0.0	8.9	1.4	13.8	13.8	1.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.93	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	89	182	154	192	0	156	37	2564	1392	316	2734	1219
V/C Ratio(X)	0.07	0.03	0.06	0.47	0.00	0.78	0.56	0.42	0.42	0.21	0.43	0.01
Avail Cap(c_a), veh/h	214	366	310	330	0	314	126	2564	1392	406	2734	1219
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	57.6	49.1	49.2	52.7	0.0	52.9	58.2	5.4	5.4	3.6	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.1	0.2	1.8	0.0	8.4	12.6	0.5	0.9	0.3	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.3	2.8	0.0	4.0	0.8	4.4	5.0	0.3	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.9	49.1	49.4	54.5	0.0	61.3	70.8	5.9	6.3	3.9	0.5	0.0
LnGrp LOS	E	D	D	D	A	E	E	A	A	A	A	A
Approach Vol, veh/h		22			213			1689			1271	
Approach Delay, s/veh		51.6			58.4			6.8			0.7	
Approach LOS		D			E			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	94.9		16.2	7.0	96.8		16.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.5	72.5		23.5	8.5	74.5		23.5				
Max Q Clear Time (g_c+I1), s	3.0	15.8		11.5	3.4	2.0		10.9				
Green Ext Time (p_c), s	0.1	19.4		0.0	0.0	12.8		0.7				
Intersection Summary												
HCM 6th Ctrl Delay			8.1									
HCM 6th LOS			A									

Timings
4: Wadsworth Blvd (SH-121) & Ohio Ave

2021 Existing PM.syn
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Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	10	23	47	123	15	18	1581	205	1980	24
Future Volume (vph)	10	23	47	123	15	18	1581	205	1980	24
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	pm+pt	NA	Perm
Protected Phases		4			8	5	2	1	6	
Permitted Phases	4		4	8				6		6
Detector Phase	4	4	4	8	8	5	2	1	6	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)	22.5	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	23.0	23.0	23.0	23.0	23.0	9.5	73.7	23.3	87.5	87.5
Total Split (%)	19.2%	19.2%	19.2%	19.2%	19.2%	7.9%	61.4%	19.4%	72.9%	72.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	15.3	15.3	15.3	15.3	15.3	5.6	78.0	95.7	91.9	91.9
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.13	0.05	0.65	0.80	0.77	0.77
v/c Ratio	0.07	0.10	0.17	0.73	0.39	0.23	0.55	0.71	0.76	0.02
Control Delay	45.3	45.4	1.9	73.1	16.1	62.4	13.1	42.1	15.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.3	45.4	1.9	73.1	16.1	62.4	13.1	42.1	15.0	0.3
LOS	D	D	A	E	B	E	B	D	B	A
Approach Delay		19.7			46.3		13.6		17.3	
Approach LOS		B			D		B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 17.4
 Intersection Capacity Utilization 83.6%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service E

Splits and Phases: 4: Wadsworth Blvd (SH-121) & Ohio Ave



HCM 6th Signalized Intersection Summary
 4: Wadsworth Blvd (SH-121) & Ohio Ave

2021 Existing PM.syn
 07/08/2021

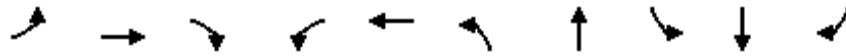


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	23	47	123	15	94	18	1581	139	205	1980	24
Future Volume (veh/h)	10	23	47	123	15	94	18	1581	139	205	1980	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870
Adj Flow Rate, veh/h	10	24	49	128	16	98	19	1647	145	214	2062	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	235	199	212	29	175	35	3395	298	299	2638	1177
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.02	0.71	0.71	0.05	0.74	0.74
Sat Flow, veh/h	1279	1870	1585	1327	227	1392	1781	4779	420	1781	3554	1585
Grp Volume(v), veh/h	10	24	49	128	0	114	19	1173	619	214	2062	25
Grp Sat Flow(s),veh/h/ln	1279	1870	1585	1327	0	1620	1781	1702	1795	1781	1777	1585
Q Serve(g_s), s	0.9	1.4	3.3	11.3	0.0	7.9	1.3	18.3	18.3	3.7	42.7	0.5
Cycle Q Clear(g_c), s	8.8	1.4	3.3	12.7	0.0	7.9	1.3	18.3	18.3	3.7	42.7	0.5
Prop In Lane	1.00		1.00	1.00		0.86	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	136	235	199	212	0	203	35	2418	1275	299	2638	1177
V/C Ratio(X)	0.07	0.10	0.25	0.61	0.00	0.56	0.55	0.48	0.49	0.72	0.78	0.02
Avail Cap(c_a), veh/h	172	288	244	249	0	250	74	2418	1275	486	2638	1177
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.65	0.65	0.65
Uniform Delay (d), s/veh	53.5	46.5	47.3	52.1	0.0	49.4	58.3	7.7	7.7	11.7	9.5	4.0
Incr Delay (d2), s/veh	0.2	0.2	0.6	3.0	0.0	2.4	12.6	0.7	1.3	2.1	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.7	1.4	4.0	0.0	3.4	0.7	6.3	6.9	3.1	14.6	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.7	46.7	48.0	55.1	0.0	51.8	70.9	8.4	9.0	13.8	11.0	4.1
LnGrp LOS	D	D	D	E	A	D	E	A	A	B	B	A
Approach Vol, veh/h		83			242			1811			2301	
Approach Delay, s/veh		48.3			53.6			9.3			11.2	
Approach LOS		D			D			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.7	89.7		19.6	6.8	93.6		19.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	18.8	69.2		18.5	5.0	83.0		18.5				
Max Q Clear Time (g_c+I1), s	5.7	20.3		10.8	3.3	44.7		14.7				
Green Ext Time (p_c), s	0.5	21.1		0.1	0.0	26.2		0.4				

Intersection Summary

HCM 6th Ctrl Delay	13.4
HCM 6th LOS	B

Timings
4: Wadsworth Blvd (SH-121) & Ohio Ave



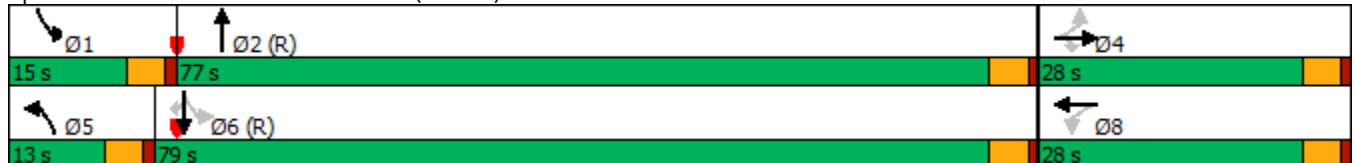
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	7	7	11	90	9	22	1610	67	1175	17
Future Volume (vph)	7	7	11	90	9	22	1610	67	1175	17
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	pm+pt	NA	Perm
Protected Phases		4			8	5	2	1	6	
Permitted Phases	4		4	8				6		6
Detector Phase	4	4	4	8	8	5	2	1	6	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)	22.5	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	28.0	28.0	28.0	28.0	28.0	13.0	77.0	15.0	79.0	79.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%	10.8%	64.2%	12.5%	65.8%	65.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effect Green (s)	13.2	13.2	13.2	13.2	13.2	7.1	88.9	94.5	90.4	90.4
Actuated g/C Ratio	0.11	0.11	0.11	0.11	0.11	0.06	0.74	0.79	0.75	0.75
v/c Ratio	0.07	0.03	0.05	0.60	0.45	0.21	0.45	0.27	0.45	0.01
Control Delay	46.6	45.0	0.5	66.1	15.3	58.0	7.3	10.0	6.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	45.0	0.5	66.1	15.3	58.0	7.3	10.0	6.0	0.0
LOS	D	D	A	E	B	E	A	B	A	A
Approach Delay		25.8			36.8		8.0		6.1	
Approach LOS		C			D		A		A	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.60
 Intersection Signal Delay: 9.3
 Intersection Capacity Utilization 59.5%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service B

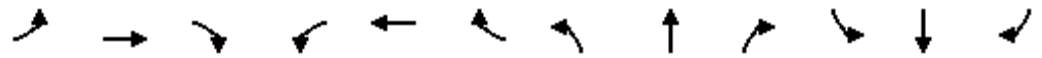
Splits and Phases: 4: Wadsworth Blvd (SH-121) & Ohio Ave



HCM 6th Signalized Intersection Summary
 4: Wadsworth Blvd (SH-121) & Ohio Ave

2024 Background AM.syn

07/19/2021

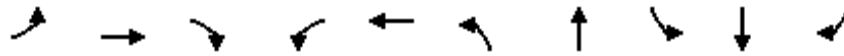


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	7	11	90	9	114	22	1610	40	67	1175	17
Future Volume (veh/h)	7	7	11	90	9	114	22	1610	40	67	1175	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870
Adj Flow Rate, veh/h	7	7	11	92	9	116	22	1643	41	68	1199	17
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	185	157	193	11	147	39	3848	96	312	2725	1215
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.02	0.75	0.75	0.07	1.00	1.00
Sat Flow, veh/h	1266	1870	1585	1395	115	1487	1781	5124	128	1781	3554	1585
Grp Volume(v), veh/h	7	7	11	92	0	125	22	1091	593	68	1199	17
Grp Sat Flow(s),veh/h/ln	1266	1870	1585	1395	0	1603	1781	1702	1847	1781	1777	1585
Q Serve(g_s), s	0.7	0.4	0.8	7.7	0.0	9.1	1.5	14.1	14.1	1.0	0.0	0.0
Cycle Q Clear(g_c), s	9.8	0.4	0.8	8.1	0.0	9.1	1.5	14.1	14.1	1.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.93	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	89	185	157	193	0	159	39	2557	1388	312	2725	1215
V/C Ratio(X)	0.08	0.04	0.07	0.48	0.00	0.79	0.57	0.43	0.43	0.22	0.44	0.01
Avail Cap(c_a), veh/h	211	366	310	328	0	314	126	2557	1388	401	2725	1215
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	57.6	48.9	49.0	52.5	0.0	52.8	58.1	5.5	5.5	3.7	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.1	0.2	1.8	0.0	8.4	12.6	0.5	1.0	0.3	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.3	2.8	0.0	4.0	0.8	4.5	5.1	0.3	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.0	49.0	49.2	54.3	0.0	61.2	70.7	6.0	6.4	4.0	0.5	0.0
LnGrp LOS	E	D	D	D	A	E	E	A	A	A	A	A
Approach Vol, veh/h		25			217			1706			1284	
Approach Delay, s/veh		51.6			58.3			7.0			0.7	
Approach LOS		D			E			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	94.6		16.4	7.1	96.5		16.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.5	72.5		23.5	8.5	74.5		23.5				
Max Q Clear Time (g_c+I1), s	3.0	16.1		11.8	3.5	2.0		11.1				
Green Ext Time (p_c), s	0.1	19.7		0.0	0.0	13.0		0.7				

Intersection Summary

HCM 6th Ctrl Delay	8.3
HCM 6th LOS	A

Timings
4: Wadsworth Blvd (SH-121) & Ohio Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↗	↖	↑↑↑	↖	↑↑	↗
Traffic Volume (vph)	11	24	48	125	16	19	1596	207	1998	25
Future Volume (vph)	11	24	48	125	16	19	1596	207	1998	25
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	pm+pt	NA	Perm
Protected Phases		4			8	5	2	1	6	
Permitted Phases	4		4	8				6		6
Detector Phase	4	4	4	8	8	5	2	1	6	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)	22.5	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	23.0	23.0	23.0	23.0	23.0	9.5	73.7	23.3	87.5	87.5
Total Split (%)	19.2%	19.2%	19.2%	19.2%	19.2%	7.9%	61.4%	19.4%	72.9%	72.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effect Green (s)	15.4	15.4	15.4	15.4	15.4	5.6	77.7	95.6	91.8	91.8
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.13	0.05	0.65	0.80	0.76	0.76
v/c Ratio	0.08	0.11	0.18	0.74	0.39	0.24	0.56	0.72	0.77	0.02
Control Delay	45.5	45.5	2.2	73.9	16.2	62.7	13.3	43.0	15.3	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.5	45.5	2.2	73.9	16.2	62.7	13.3	43.0	15.3	0.4
LOS	D	D	A	E	B	E	B	D	B	A
Approach Delay		20.3			46.7		13.9		17.7	
Approach LOS		C			D		B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 17.8
 Intersection Capacity Utilization 84.2%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service E

Splits and Phases: 4: Wadsworth Blvd (SH-121) & Ohio Ave



HCM 6th Signalized Intersection Summary
 4: Wadsworth Blvd (SH-121) & Ohio Ave

2024 Background PM.syn

07/19/2021



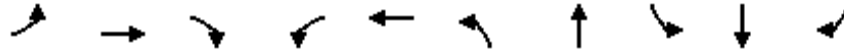
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	24	48	125	16	95	19	1596	141	207	1998	25
Future Volume (veh/h)	11	24	48	125	16	95	19	1596	141	207	1998	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870
Adj Flow Rate, veh/h	11	25	50	130	17	99	20	1662	147	216	2081	26
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	137	239	202	213	30	176	36	3380	298	296	2629	1172
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.02	0.71	0.71	0.05	0.74	0.74
Sat Flow, veh/h	1276	1870	1585	1325	238	1384	1781	4777	422	1781	3554	1585
Grp Volume(v), veh/h	11	25	50	130	0	116	20	1184	625	216	2081	26
Grp Sat Flow(s),veh/h/ln	1276	1870	1585	1325	0	1621	1781	1702	1794	1781	1777	1585
Q Serve(g_s), s	1.0	1.4	3.4	11.5	0.0	8.1	1.3	18.7	18.8	3.8	44.1	0.5
Cycle Q Clear(g_c), s	9.0	1.4	3.4	13.0	0.0	8.1	1.3	18.7	18.8	3.8	44.1	0.5
Prop In Lane	1.00		1.00	1.00		0.85	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	137	239	202	213	0	207	36	2409	1270	296	2629	1172
V/C Ratio(X)	0.08	0.10	0.25	0.61	0.00	0.56	0.55	0.49	0.49	0.73	0.79	0.02
Avail Cap(c_a), veh/h	171	288	244	249	0	250	74	2409	1270	482	2629	1172
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.64	0.64	0.64
Uniform Delay (d), s/veh	53.4	46.3	47.2	52.0	0.0	49.2	58.2	7.9	7.9	12.7	9.8	4.1
Incr Delay (d2), s/veh	0.2	0.2	0.6	3.3	0.0	2.4	12.6	0.7	1.4	2.2	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.7	1.4	4.0	0.0	3.4	0.7	6.5	7.1	3.7	15.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.7	46.5	47.8	55.3	0.0	51.6	70.8	8.6	9.2	14.9	11.4	4.2
LnGrp LOS	D	D	D	E	A	D	E	A	A	B	B	A
Approach Vol, veh/h		86			246			1829			2323	
Approach Delay, s/veh		48.2			53.5			9.5			11.7	
Approach LOS		D			D			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.8	89.4		19.8	6.9	93.3		19.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	18.8	69.2		18.5	5.0	83.0		18.5				
Max Q Clear Time (g_c+I1), s	5.8	20.8		11.0	3.3	46.1		15.0				
Green Ext Time (p_c), s	0.5	21.4		0.1	0.0	25.8		0.3				

Intersection Summary

HCM 6th Ctrl Delay	13.8
HCM 6th LOS	B

Timings
4: Wadsworth Blvd (SH-121) & Ohio Ave

2024 Total AM.syn
07/19/2021



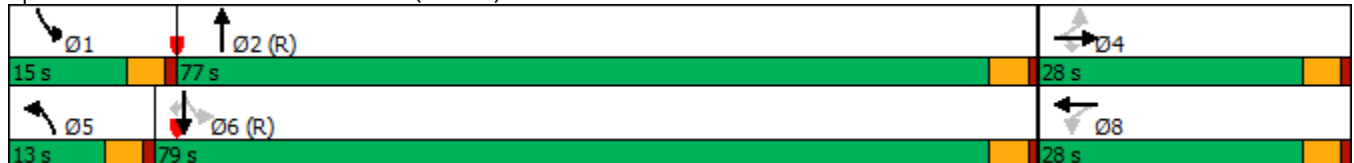
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↗	↖	↑↑↑	↖	↑↑	↗
Traffic Volume (vph)	16	7	40	90	7	30	1610	67	1175	18
Future Volume (vph)	16	7	40	90	7	30	1610	67	1175	18
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	pm+pt	NA	Perm
Protected Phases		4			8	5	2	1	6	
Permitted Phases	4		4	8				6		6
Detector Phase	4	4	4	8	8	5	2	1	6	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)	22.5	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	28.0	28.0	28.0	28.0	28.0	13.0	77.0	15.0	79.0	79.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%	10.8%	64.2%	12.5%	65.8%	65.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effect Green (s)	13.2	13.2	13.2	13.2	13.2	7.6	88.9	94.0	89.9	89.9
Actuated g/C Ratio	0.11	0.11	0.11	0.11	0.11	0.06	0.74	0.78	0.75	0.75
v/c Ratio	0.16	0.03	0.18	0.60	0.44	0.28	0.45	0.27	0.45	0.02
Control Delay	49.4	45.0	9.2	66.1	14.8	59.1	7.3	9.9	6.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.4	45.0	9.2	66.1	14.8	59.1	7.3	9.9	6.2	0.1
LOS	D	D	A	E	B	E	A	A	A	A
Approach Delay		23.1			36.7		8.3		6.3	
Approach LOS		C			D		A		A	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.60
 Intersection Signal Delay: 9.6
 Intersection Capacity Utilization 61.2%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service B

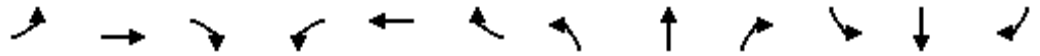
Splits and Phases: 4: Wadsworth Blvd (SH-121) & Ohio Ave



HCM 6th Signalized Intersection Summary
 4: Wadsworth Blvd (SH-121) & Ohio Ave

2024 Total AM.syn

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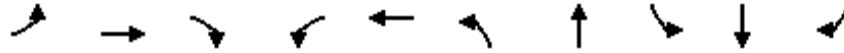
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↗		↖	↑↑↑		↖	↑↑	↗
Traffic Volume (veh/h)	16	7	40	90	7	114	30	1610	40	67	1175	18
Future Volume (veh/h)	16	7	40	90	7	114	30	1610	40	67	1175	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870
Adj Flow Rate, veh/h	16	7	41	92	7	116	31	1643	41	68	1199	18
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	98	195	166	197	10	158	48	3820	95	310	2687	1199
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.03	0.75	0.75	0.07	1.00	1.00
Sat Flow, veh/h	1268	1870	1585	1357	91	1508	1781	5124	128	1781	3554	1585
Grp Volume(v), veh/h	16	7	41	92	0	123	31	1091	593	68	1199	18
Grp Sat Flow(s),veh/h/ln	1268	1870	1585	1357	0	1599	1781	1702	1847	1781	1777	1585
Q Serve(g_s), s	1.5	0.4	2.9	7.8	0.0	9.0	2.1	14.4	14.4	1.0	0.0	0.0
Cycle Q Clear(g_c), s	10.4	0.4	2.9	8.2	0.0	9.0	2.1	14.4	14.4	1.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.94	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	98	195	166	197	0	167	48	2538	1377	310	2687	1199
V/C Ratio(X)	0.16	0.04	0.25	0.47	0.00	0.74	0.65	0.43	0.43	0.22	0.45	0.02
Avail Cap(c_a), veh/h	214	366	310	321	0	313	126	2538	1377	399	2687	1199
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Uniform Delay (d), s/veh	57.2	48.3	49.4	52.0	0.0	52.1	57.8	5.7	5.7	3.9	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.1	0.8	1.7	0.0	6.2	13.8	0.5	1.0	0.3	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.2	1.2	2.8	0.0	3.9	1.1	4.7	5.3	0.3	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.0	48.4	50.2	53.7	0.0	58.3	71.6	6.2	6.7	4.2	0.5	0.0
LnGrp LOS	E	D	D	D	A	E	E	A	A	A	A	A
Approach Vol, veh/h		64			215			1715			1285	
Approach Delay, s/veh		51.9			56.3			7.6			0.7	
Approach LOS		D			E			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	94.0		17.0	7.7	95.2		17.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.5	72.5		23.5	8.5	74.5		23.5				
Max Q Clear Time (g_c+I1), s	3.0	16.4		12.4	4.1	2.0		11.0				
Green Ext Time (p_c), s	0.1	19.7		0.1	0.0	13.0		0.7				

Intersection Summary

HCM 6th Ctrl Delay	8.9
HCM 6th LOS	A

Timings
4: Wadsworth Blvd (SH-121) & Ohio Ave

2024 Total PM.syn
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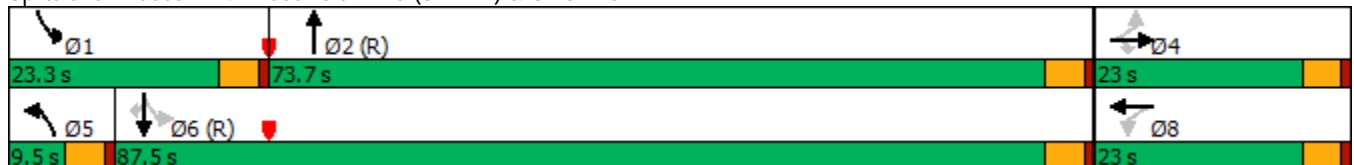
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↗	↖	↑↑↑	↖	↑↑	↗
Traffic Volume (vph)	17	21	62	125	13	48	1596	207	1998	31
Future Volume (vph)	17	21	62	125	13	48	1596	207	1998	31
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	pm+pt	NA	Perm
Protected Phases		4			8	5	2	1	6	
Permitted Phases	4		4	8				6		6
Detector Phase	4	4	4	8	8	5	2	1	6	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)	22.5	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	23.0	23.0	23.0	23.0	23.0	9.5	73.7	23.3	87.5	87.5
Total Split (%)	19.2%	19.2%	19.2%	19.2%	19.2%	7.9%	61.4%	19.4%	72.9%	72.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effect Green (s)	15.4	15.4	15.4	15.4	15.4	6.2	77.7	95.3	87.0	87.0
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.13	0.05	0.65	0.79	0.72	0.72
v/c Ratio	0.13	0.09	0.23	0.73	0.39	0.55	0.56	0.72	0.81	0.03
Control Delay	46.9	45.2	5.5	73.5	15.6	78.4	13.3	44.9	16.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.9	45.2	5.5	73.5	15.6	78.4	13.3	44.9	16.1	0.3
LOS	D	D	A	E	B	E	B	D	B	A
Approach Delay		20.9			46.6		15.1		18.5	
Approach LOS		C			D		B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 18.7
 Intersection Capacity Utilization 84.2%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service E

Splits and Phases: 4: Wadsworth Blvd (SH-121) & Ohio Ave



HCM 6th Signalized Intersection Summary
 4: Wadsworth Blvd (SH-121) & Ohio Ave

2024 Total PM.syn
 07/20/2021

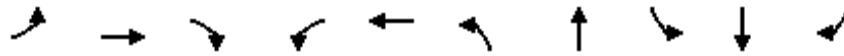


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	21	62	125	13	95	48	1596	141	207	1998	31
Future Volume (veh/h)	17	21	62	125	13	95	48	1596	141	207	1998	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870
Adj Flow Rate, veh/h	18	22	65	130	14	99	50	1662	147	216	2081	32
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	238	202	213	25	180	64	3375	298	298	2574	1148
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.04	0.71	0.71	0.05	0.72	0.72
Sat Flow, veh/h	1280	1870	1585	1310	200	1415	1781	4777	422	1781	3554	1585
Grp Volume(v), veh/h	18	22	65	130	0	113	50	1184	625	216	2081	32
Grp Sat Flow(s),veh/h/ln	1280	1870	1585	1310	0	1616	1781	1702	1794	1781	1777	1585
Q Serve(g_s), s	1.6	1.2	4.5	11.7	0.0	7.9	3.3	18.8	18.8	4.0	46.8	0.7
Cycle Q Clear(g_c), s	9.5	1.2	4.5	12.9	0.0	7.9	3.3	18.8	18.8	4.0	46.8	0.7
Prop In Lane	1.00		1.00	1.00		0.88	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	139	238	202	213	0	205	64	2405	1268	298	2574	1148
V/C Ratio(X)	0.13	0.09	0.32	0.61	0.00	0.55	0.78	0.49	0.49	0.72	0.81	0.03
Avail Cap(c_a), veh/h	173	288	244	248	0	249	74	2405	1268	482	2574	1148
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.62	0.62	0.62
Uniform Delay (d), s/veh	53.6	46.3	47.7	52.0	0.0	49.1	57.4	7.9	7.9	12.1	11.0	4.7
Incr Delay (d2), s/veh	0.4	0.2	0.9	3.3	0.0	2.3	35.3	0.7	1.4	2.1	1.8	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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.6	1.8	4.0	0.0	3.3	2.1	6.5	7.1	3.2	16.5	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.0	46.4	48.6	55.2	0.0	51.4	92.7	8.6	9.3	14.2	12.8	4.7
LnGrp LOS	D	D	D	E	A	D	F	A	A	B	B	A
Approach Vol, veh/h		105			243			1859			2329	
Approach Delay, s/veh		49.1			53.5			11.1			12.8	
Approach LOS		D			D			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.9	89.3		19.8	8.8	91.4		19.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	18.8	69.2		18.5	5.0	83.0		18.5				
Max Q Clear Time (g_c+I1), s	6.0	20.8		11.5	5.3	48.8		14.9				
Green Ext Time (p_c), s	0.5	21.4		0.2	0.0	24.5		0.3				

Intersection Summary

HCM 6th Ctrl Delay	15.1
HCM 6th LOS	B

Timings
4: Wadsworth Blvd (SH-121) & Ohio Ave



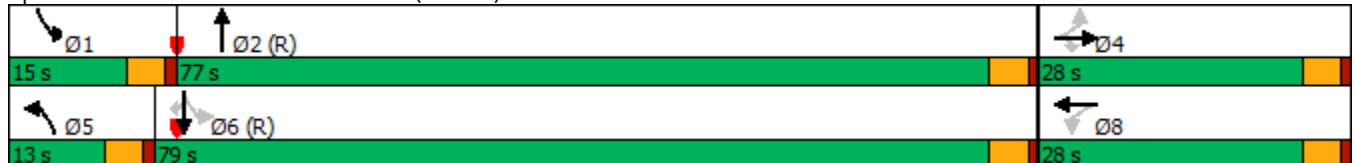
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	10	10	15	100	10	25	1715	75	1255	20
Future Volume (vph)	10	10	15	100	10	25	1715	75	1255	20
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	pm+pt	NA	Perm
Protected Phases		4			8	5	2	1	6	
Permitted Phases	4		4	8				6		6
Detector Phase	4	4	4	8	8	5	2	1	6	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)	22.5	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	28.0	28.0	28.0	28.0	28.0	13.0	77.0	15.0	79.0	79.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%	10.8%	64.2%	12.5%	65.8%	65.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effect Green (s)	14.0	14.0	14.0	14.0	14.0	7.3	87.7	93.7	89.3	89.3
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.12	0.06	0.73	0.78	0.74	0.74
v/c Ratio	0.10	0.05	0.06	0.63	0.46	0.24	0.48	0.33	0.49	0.02
Control Delay	46.7	44.4	0.5	66.2	14.5	58.4	8.2	15.7	6.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.7	44.4	0.5	66.2	14.5	58.4	8.2	15.7	6.6	0.1
LOS	D	D	A	E	B	E	A	B	A	A
Approach Delay		26.3			36.5		8.9		7.0	
Approach LOS		C			D		A		A	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 10.2
 Intersection Capacity Utilization 62.3%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service B

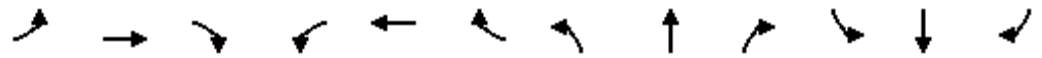
Splits and Phases: 4: Wadsworth Blvd (SH-121) & Ohio Ave



HCM 6th Signalized Intersection Summary
 4: Wadsworth Blvd (SH-121) & Ohio Ave

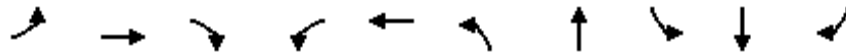
2045 Background AM.syn

07/08/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	15	100	10	125	25	1715	45	75	1255	20
Future Volume (veh/h)	10	10	15	100	10	125	25	1715	45	75	1255	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870
Adj Flow Rate, veh/h	10	10	15	102	10	128	26	1750	46	77	1281	20
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	204	172	204	13	162	43	3787	99	288	2681	1196
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.02	0.74	0.74	0.08	1.00	1.00
Sat Flow, veh/h	1251	1870	1585	1386	116	1487	1781	5116	134	1781	3554	1585
Grp Volume(v), veh/h	10	10	15	102	0	138	26	1164	632	77	1281	20
Grp Sat Flow(s),veh/h/ln	1251	1870	1585	1386	0	1603	1781	1702	1846	1781	1777	1585
Q Serve(g_s), s	0.9	0.6	1.0	8.5	0.0	10.1	1.7	16.2	16.2	1.2	0.0	0.0
Cycle Q Clear(g_c), s	11.0	0.6	1.0	9.1	0.0	10.1	1.7	16.2	16.2	1.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.93	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	91	204	172	204	0	174	43	2520	1367	288	2681	1196
V/C Ratio(X)	0.11	0.05	0.09	0.50	0.00	0.79	0.60	0.46	0.46	0.27	0.48	0.02
Avail Cap(c_a), veh/h	200	366	310	325	0	314	126	2520	1367	375	2681	1196
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94
Uniform Delay (d), s/veh	57.5	47.9	48.1	52.0	0.0	52.1	58.0	6.2	6.2	4.4	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.1	0.2	1.9	0.0	7.8	12.9	0.6	1.1	0.5	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.3	0.4	3.1	0.0	4.4	0.9	5.3	6.0	0.4	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.0	48.0	48.3	53.9	0.0	59.9	70.9	6.8	7.3	4.9	0.6	0.0
LnGrp LOS	E	D	D	D	A	E	E	A	A	A	A	A
Approach Vol, veh/h		35			240			1822			1378	
Approach Delay, s/veh		51.0			57.4			7.9			0.8	
Approach LOS		D			E			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.1	93.3		17.6	7.4	95.0		17.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.5	72.5		23.5	8.5	74.5		23.5				
Max Q Clear Time (g_c+I1), s	3.2	18.2		13.0	3.7	2.0		12.1				
Green Ext Time (p_c), s	0.1	21.9		0.0	0.0	14.7		0.8				
Intersection Summary												
HCM 6th Ctrl Delay			8.9									
HCM 6th LOS			A									

Timings
4: Wadsworth Blvd (SH-121) & Ohio Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	15	25	55	135	20	20	1700	225	2130	30
Future Volume (vph)	15	25	55	135	20	20	1700	225	2130	30
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	pm+pt	NA	Perm
Protected Phases		4			8	5	2	1	6	
Permitted Phases	4		4	8				6		6
Detector Phase	4	4	4	8	8	5	2	1	6	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)	22.5	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	25.5	25.5	25.5	25.5	25.5	9.5	72.5	22.0	85.0	85.0
Total Split (%)	21.3%	21.3%	21.3%	21.3%	21.3%	7.9%	60.4%	18.3%	70.8%	70.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effect Green (s)	16.8	16.8	16.8	16.8	16.8	5.8	74.6	94.2	90.3	90.3
Actuated g/C Ratio	0.14	0.14	0.14	0.14	0.14	0.05	0.62	0.78	0.75	0.75
v/c Ratio	0.12	0.10	0.19	0.73	0.41	0.25	0.62	0.77	0.83	0.03
Control Delay	44.9	43.8	3.5	70.8	15.6	62.5	15.8	52.8	18.0	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.9	43.8	3.5	70.8	15.6	62.5	15.8	52.8	18.0	0.4
LOS	D	D	A	E	B	E	B	D	B	A
Approach Delay		20.8			44.3		16.3		21.1	
Approach LOS		C			D		B		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 20.5
 Intersection Capacity Utilization 88.4%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service E

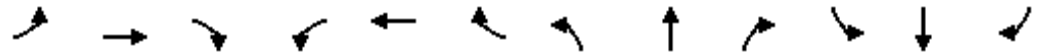
Splits and Phases: 4: Wadsworth Blvd (SH-121) & Ohio Ave



HCM 6th Signalized Intersection Summary
4: Wadsworth Blvd (SH-121) & Ohio Ave

2045 Background PM.syn

07/09/2021



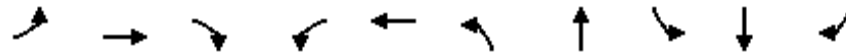
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	25	55	135	20	105	20	1700	150	225	2130	30
Future Volume (veh/h)	15	25	55	135	20	105	20	1700	150	225	2130	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870
Adj Flow Rate, veh/h	16	26	57	141	21	109	21	1771	156	234	2219	31
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	258	219	226	36	188	37	3312	291	279	2589	1155
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.02	0.69	0.69	0.06	0.73	0.73
Sat Flow, veh/h	1260	1870	1585	1315	263	1363	1781	4779	420	1781	3554	1585
Grp Volume(v), veh/h	16	26	57	141	0	130	21	1260	667	234	2219	31
Grp Sat Flow(s),veh/h/ln	1260	1870	1585	1315	0	1625	1781	1702	1795	1781	1777	1585
Q Serve(g_s), s	1.4	1.5	3.9	12.6	0.0	9.0	1.4	21.7	21.8	4.3	54.2	0.7
Cycle Q Clear(g_c), s	10.4	1.5	3.9	14.1	0.0	9.0	1.4	21.7	21.8	4.3	54.2	0.7
Prop In Lane	1.00		1.00	1.00		0.84	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	140	258	219	226	0	224	37	2359	1244	279	2589	1155
V/C Ratio(X)	0.11	0.10	0.26	0.63	0.00	0.58	0.56	0.53	0.54	0.84	0.86	0.03
Avail Cap(c_a), veh/h	186	327	277	274	0	284	74	2359	1244	438	2589	1155
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.55	0.55	0.55
Uniform Delay (d), s/veh	53.3	45.2	46.2	51.3	0.0	48.5	58.2	9.0	9.0	18.4	11.8	4.5
Incr Delay (d2), s/veh	0.4	0.2	0.6	3.1	0.0	2.4	12.6	0.9	1.7	4.7	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.7	1.6	4.3	0.0	3.8	0.8	7.6	8.4	5.2	19.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.7	45.4	46.9	54.5	0.0	50.8	70.8	9.9	10.7	23.1	14.0	4.5
LnGrp LOS	D	D	D	D	A	D	E	A	B	C	B	A
Approach Vol, veh/h		99			271			1948			2484	
Approach Delay, s/veh		47.6			52.7			10.8			14.7	
Approach LOS		D			D			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.3	87.7		21.1	7.0	91.9		21.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	17.5	68.0		21.0	5.0	80.5		21.0				
Max Q Clear Time (g_c+I1), s	6.3	23.8		12.4	3.4	56.2		16.1				
Green Ext Time (p_c), s	0.5	22.7		0.2	0.0	19.9		0.5				

Intersection Summary

HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

Timings
4: Wadsworth Blvd (SH-121) & Ohio Ave

2045 Total AM.syn
07/20/2021

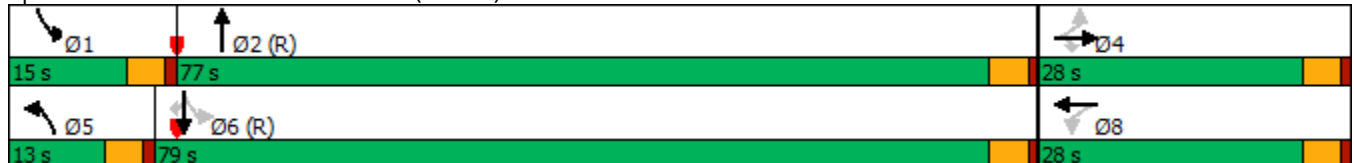


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↗	↖	↑↑↑	↖	↑↑	↗
Traffic Volume (vph)	20	10	45	100	10	35	1715	75	1255	25
Future Volume (vph)	20	10	45	100	10	35	1715	75	1255	25
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	pm+pt	NA	Perm
Protected Phases		4			8	5	2	1	6	
Permitted Phases	4		4	8				6		6
Detector Phase	4	4	4	8	8	5	2	1	6	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)	22.5	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	28.0	28.0	28.0	28.0	28.0	13.0	77.0	15.0	79.0	79.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%	10.8%	64.2%	12.5%	65.8%	65.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effect Green (s)	14.0	14.0	14.0	14.0	14.0	7.9	87.7	93.2	88.8	88.8
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.12	0.07	0.73	0.78	0.74	0.74
v/c Ratio	0.20	0.05	0.20	0.63	0.46	0.31	0.48	0.33	0.49	0.02
Control Delay	50.2	44.4	11.2	66.2	14.5	59.6	8.2	15.8	6.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.2	44.4	11.2	66.2	14.5	59.6	8.2	15.8	6.7	0.1
LOS	D	D	B	E	B	E	A	B	A	A
Approach Delay		25.8			36.5		9.2		7.1	
Approach LOS		C			D		A		A	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 10.6
 Intersection Capacity Utilization 66.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 4: Wadsworth Blvd (SH-121) & Ohio Ave



HCM 6th Signalized Intersection Summary
 4: Wadsworth Blvd (SH-121) & Ohio Ave

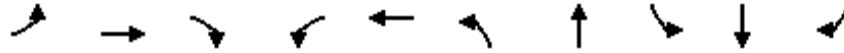
2045 Total AM.syn
 07/20/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	10	45	100	10	125	35	1715	45	75	1255	25
Future Volume (veh/h)	20	10	45	100	10	125	35	1715	45	75	1255	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870
Adj Flow Rate, veh/h	20	10	46	102	10	128	36	1750	46	77	1281	26
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	218	185	211	14	173	52	3747	98	284	2636	1176
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.03	0.73	0.73	0.08	1.00	1.00
Sat Flow, veh/h	1251	1870	1585	1348	116	1487	1781	5116	134	1781	3554	1585
Grp Volume(v), veh/h	20	10	46	102	0	138	36	1164	632	77	1281	26
Grp Sat Flow(s),veh/h/ln	1251	1870	1585	1348	0	1603	1781	1702	1846	1781	1777	1585
Q Serve(g_s), s	1.9	0.6	3.2	8.7	0.0	10.0	2.4	16.7	16.7	1.2	0.0	0.0
Cycle Q Clear(g_c), s	11.9	0.6	3.2	9.3	0.0	10.0	2.4	16.7	16.7	1.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.93	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	102	218	185	211	0	187	52	2493	1352	284	2636	1176
V/C Ratio(X)	0.20	0.05	0.25	0.48	0.00	0.74	0.69	0.47	0.47	0.27	0.49	0.02
Avail Cap(c_a), veh/h	201	366	310	317	0	314	126	2493	1352	372	2636	1176
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94
Uniform Delay (d), s/veh	57.0	47.1	48.2	51.2	0.0	51.2	57.7	6.5	6.5	4.7	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.1	0.7	1.7	0.0	5.6	15.3	0.6	1.2	0.5	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.3	1.3	3.0	0.0	4.3	1.3	5.6	6.2	0.4	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.9	47.2	48.9	52.9	0.0	56.9	73.0	7.2	7.7	5.2	0.6	0.0
LnGrp LOS	E	D	D	D	A	E	E	A	A	A	A	A
Approach Vol, veh/h		76			240			1832			1384	
Approach Delay, s/veh		51.1			55.2			8.6			0.8	
Approach LOS		D			E			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.1	92.4		18.5	8.0	93.5		18.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.5	72.5		23.5	8.5	74.5		23.5				
Max Q Clear Time (g_c+I1), s	3.2	18.7		13.9	4.4	2.0		12.0				
Green Ext Time (p_c), s	0.1	21.8		0.1	0.0	14.7		0.8				
Intersection Summary												
HCM 6th Ctrl Delay			9.7									
HCM 6th LOS			A									

Timings
4: Wadsworth Blvd (SH-121) & Ohio Ave

2045 Total PM.syn
07/20/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	25	25	70	135	20	50	1700	225	2130	40
Future Volume (vph)	25	25	70	135	20	50	1700	225	2130	40
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	pm+pt	NA	Perm
Protected Phases		4			8	5	2	1	6	
Permitted Phases	4		4	8				6		6
Detector Phase	4	4	4	8	8	5	2	1	6	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)	22.5	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	23.0	23.0	23.0	23.0	23.0	9.5	73.7	23.3	87.5	87.5
Total Split (%)	19.2%	19.2%	19.2%	19.2%	19.2%	7.9%	61.4%	19.4%	72.9%	72.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	6.0	75.3	95.0	86.6	86.6
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.13	0.05	0.63	0.79	0.72	0.72
v/c Ratio	0.20	0.10	0.25	0.77	0.42	0.59	0.61	0.77	0.87	0.04
Control Delay	48.9	45.2	7.0	76.0	16.3	82.5	15.3	51.8	19.3	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	45.2	7.0	76.0	16.3	82.5	15.3	51.8	19.3	0.5
LOS	D	D	A	E	B	F	B	D	B	A
Approach Delay		23.6			47.4		17.1		22.0	
Approach LOS		C			D		B		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 21.4
 Intersection Capacity Utilization 89.7%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 4: Wadsworth Blvd (SH-121) & Ohio Ave



HCM 6th Signalized Intersection Summary
 4: Wadsworth Blvd (SH-121) & Ohio Ave

2045 Total PM.syn
 07/20/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	25	70	135	20	105	50	1700	150	225	2130	40
Future Volume (veh/h)	25	25	70	135	20	105	50	1700	150	225	2130	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870
Adj Flow Rate, veh/h	26	26	73	141	21	109	52	1771	156	234	2219	42
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	258	218	223	36	188	67	3302	290	282	2531	1129
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.04	0.69	0.69	0.06	0.71	0.71
Sat Flow, veh/h	1260	1870	1585	1296	263	1363	1781	4779	420	1781	3554	1585
Grp Volume(v), veh/h	26	26	73	141	0	130	52	1260	667	234	2219	42
Grp Sat Flow(s),veh/h/ln	1260	1870	1585	1296	0	1625	1781	1702	1795	1781	1777	1585
Q Serve(g_s), s	2.4	1.5	5.0	12.8	0.0	9.0	3.5	21.8	21.9	4.5	57.4	0.9
Cycle Q Clear(g_c), s	11.4	1.5	5.0	14.3	0.0	9.0	3.5	21.8	21.9	4.5	57.4	0.9
Prop In Lane	1.00		1.00	1.00		0.84	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	139	258	218	223	0	224	67	2352	1240	282	2531	1129
V/C Ratio(X)	0.19	0.10	0.33	0.63	0.00	0.58	0.78	0.54	0.54	0.83	0.88	0.04
Avail Cap(c_a), veh/h	160	288	244	244	0	251	74	2352	1240	457	2531	1129
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.52	0.52	0.52
Uniform Delay (d), s/veh	53.8	45.2	46.8	51.5	0.0	48.5	57.2	9.1	9.1	17.7	13.2	5.1
Incr Delay (d2), s/veh	0.6	0.2	0.9	4.6	0.0	2.7	36.5	0.9	1.7	3.6	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.7	2.0	4.4	0.0	3.8	2.2	7.7	8.4	5.0	20.7	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.5	45.4	47.7	56.1	0.0	51.2	93.8	10.0	10.8	21.3	15.8	5.1
LnGrp LOS	D	D	D	E	A	D	F	A	B	C	B	A
Approach Vol, veh/h		125			271			1979			2495	
Approach Delay, s/veh		48.6			53.7			12.5			16.1	
Approach LOS		D			D			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.6	87.4		21.0	9.0	90.0		21.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	18.8	69.2		18.5	5.0	83.0		18.5				
Max Q Clear Time (g_c+I1), s	6.5	23.9		13.4	5.5	59.4		16.3				
Green Ext Time (p_c), s	0.5	23.0		0.2	0.0	19.4		0.3				

Intersection Summary

HCM 6th Ctrl Delay	17.5
HCM 6th LOS	B

Intersection						
Int Delay, s/veh	3.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	42	16	6	62	39	15
Future Vol, veh/h	42	16	6	62	39	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	17	7	67	42	16

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	131	50	58	0	-	0
Stage 1	50	-	-	-	-	-
Stage 2	81	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	863	1018	1546	-	-	-
Stage 1	972	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	859	1018	1546	-	-	-
Mov Cap-2 Maneuver	859	-	-	-	-	-
Stage 1	967	-	-	-	-	-
Stage 2	942	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1546	-	898	-	-
HCM Lane V/C Ratio	0.004	-	0.07	-	-
HCM Control Delay (s)	7.3	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	28	10	16	96	76	44
Future Vol, veh/h	28	10	16	96	76	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	11	17	104	83	48

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	245	107	131	0	-	0
Stage 1	107	-	-	-	-	-
Stage 2	138	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	743	947	1454	-	-	-
Stage 1	917	-	-	-	-	-
Stage 2	889	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	734	947	1454	-	-	-
Mov Cap-2 Maneuver	734	-	-	-	-	-
Stage 1	906	-	-	-	-	-
Stage 2	889	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	1.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1454	-	780	-	-
HCM Lane V/C Ratio	0.012	-	0.053	-	-
HCM Control Delay (s)	7.5	0	9.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	45	20	10	65	45	15
Future Vol, veh/h	45	20	10	65	45	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	22	11	71	49	16

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	150	57	65	0	-	0
Stage 1	57	-	-	-	-	-
Stage 2	93	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	842	1009	1537	-	-	-
Stage 1	966	-	-	-	-	-
Stage 2	931	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	836	1009	1537	-	-	-
Mov Cap-2 Maneuver	836	-	-	-	-	-
Stage 1	959	-	-	-	-	-
Stage 2	931	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1537	-	883	-	-
HCM Lane V/C Ratio	0.007	-	0.08	-	-
HCM Control Delay (s)	7.4	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	30	10	20	110	85	45
Future Vol, veh/h	30	10	20	110	85	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	11	22	120	92	49

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	281	117	141	0	0
Stage 1	117	-	-	-	-
Stage 2	164	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	709	935	1442	-	-
Stage 1	908	-	-	-	-
Stage 2	865	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	698	935	1442	-	-
Mov Cap-2 Maneuver	698	-	-	-	-
Stage 1	893	-	-	-	-
Stage 2	865	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1442	-	745	-	-
HCM Lane V/C Ratio	0.015	-	0.058	-	-
HCM Control Delay (s)	7.5	0	10.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

APPENDIX E

Queue Analysis Worksheets

Queues

2: Wadsworth Blvd (SH-121) & Virginia Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	51	25	24	47	41	98	75	1786	92	1201	72
v/c Ratio	0.55	0.20	0.11	0.19	0.33	0.06	0.33	0.54	0.38	0.34	0.06
Control Delay	77.7	55.8	0.9	55.2	59.5	0.1	53.3	10.5	57.1	10.7	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.7	55.8	0.9	55.2	59.5	0.1	53.3	10.5	57.1	10.7	0.3
Queue Length 50th (ft)	39	19	0	18	31	0	29	180	35	158	0
Queue Length 95th (ft)	#90	47	0	38	67	0	56	207	61	210	2
Internal Link Dist (ft)		471			309			1142		188	
Turn Bay Length (ft)	125					100	175		175		
Base Capacity (vph)	95	290	358	256	290	1583	235	3308	271	3498	1128
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.09	0.07	0.18	0.14	0.06	0.32	0.54	0.34	0.34	0.06

Intersection Summary

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

Queues

2: Wadsworth Blvd (SH-121) & Virginia Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	126	93	152	210	106	195	153	1665	248	1963	125
v/c Ratio	0.62	0.45	0.49	0.58	0.57	0.12	0.54	0.69	0.65	0.76	0.14
Control Delay	63.3	55.6	12.7	57.5	62.6	0.2	51.5	27.7	58.9	27.3	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.3	55.6	12.7	57.5	62.6	0.2	51.5	27.7	58.9	27.3	3.7
Queue Length 50th (ft)	94	68	0	80	80	0	60	224	95	436	0
Queue Length 95th (ft)	152	116	59	118	134	0	99	365	138	576	34
Internal Link Dist (ft)		471			309			1142		188	
Turn Bay Length (ft)	125					100	175		175		
Base Capacity (vph)	280	307	388	492	279	1583	284	2420	416	2593	869
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.30	0.39	0.43	0.38	0.12	0.54	0.69	0.60	0.76	0.14

Intersection Summary

Queues

2045 Total AM.syn

2: Wadsworth Blvd (SH-121) & Virginia Avenue

07/20/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	52	26	26	52	46	108	82	1902	98	1284	82
v/c Ratio	0.56	0.20	0.11	0.29	0.35	0.07	0.35	0.58	0.39	0.37	0.07
Control Delay	78.3	55.1	1.0	59.0	60.0	0.1	53.5	10.9	57.2	11.2	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.3	55.1	1.0	59.0	60.0	0.1	53.5	10.9	57.2	11.2	0.6
Queue Length 50th (ft)	40	19	0	20	35	0	32	196	38	175	0
Queue Length 95th (ft)	#92	48	0	41	72	0	60	223	64	232	7
Internal Link Dist (ft)		471			309			1142		188	
Turn Bay Length (ft)	125					100	175		175		
Base Capacity (vph)	95	290	358	185	290	1583	240	3291	274	3479	1123
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.09	0.07	0.28	0.16	0.07	0.34	0.58	0.36	0.37	0.07

Intersection Summary

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

Queues

2045 Total PM.syn

2: Wadsworth Blvd (SH-121) & Virginia Avenue

07/20/2021



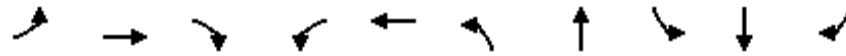
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	135	99	161	224	115	208	167	1782	266	2094	135
v/c Ratio	0.64	0.46	0.49	0.60	0.58	0.13	0.57	0.76	0.68	0.83	0.16
Control Delay	63.3	54.9	12.2	57.4	62.4	0.2	50.7	33.2	59.8	30.8	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.3	54.9	12.2	57.4	62.4	0.2	50.7	33.2	59.8	30.8	4.6
Queue Length 50th (ft)	101	73	0	86	86	0	67	308	102	502	3
Queue Length 95th (ft)	161	121	60	124	143	0	#107	#430	147	#693	41
Internal Link Dist (ft)		471			309			1142		188	
Turn Bay Length (ft)	125					100	175		175		
Base Capacity (vph)	295	309	397	520	279	1583	292	2356	419	2528	850
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.32	0.41	0.43	0.41	0.13	0.57	0.76	0.63	0.83	0.16

Intersection Summary

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

4: Wadsworth Blvd (SH-121) & Ohio Ave

07/19/2021

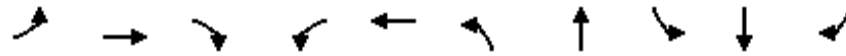


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	16	7	41	92	123	31	1684	68	1199	18
v/c Ratio	0.16	0.03	0.18	0.60	0.44	0.28	0.45	0.27	0.45	0.02
Control Delay	49.4	45.0	9.2	66.1	14.8	59.1	7.3	9.9	6.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.4	45.0	9.2	66.1	14.8	59.1	7.3	9.9	6.2	0.1
Queue Length 50th (ft)	11	5	0	69	5	23	172	8	98	0
Queue Length 95th (ft)	33	19	23	119	59	55	250	25	112	0
Internal Link Dist (ft)		456			230		520		1142	
Turn Bay Length (ft)	100		100			600		475		
Base Capacity (vph)	184	364	354	274	406	130	3753	307	2651	1199
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.02	0.12	0.34	0.30	0.24	0.45	0.22	0.45	0.02

Intersection Summary

4: Wadsworth Blvd (SH-121) & Ohio Ave

07/20/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	18	22	65	130	113	50	1810	216	2081	32
v/c Ratio	0.13	0.09	0.23	0.73	0.39	0.55	0.56	0.72	0.81	0.03
Control Delay	46.9	45.2	5.5	73.5	15.6	78.4	13.3	44.9	16.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.9	45.2	5.5	73.5	15.6	78.4	13.3	44.9	16.1	0.3
Queue Length 50th (ft)	12	15	0	97	10	38	268	118	249	0
Queue Length 95th (ft)	35	40	20	164	62	#107	366	m186	367	m0
Internal Link Dist (ft)		456			230		520		1142	
Turn Bay Length (ft)	100		100			600		475		
Base Capacity (vph)	164	287	324	213	333	91	3261	374	2566	1162
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.08	0.20	0.61	0.34	0.55	0.56	0.58	0.81	0.03

Intersection Summary

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

Queue shown is maximum after two cycles.

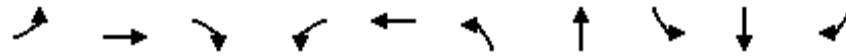
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total AM.syn

4: Wadsworth Blvd (SH-121) & Ohio Ave

07/20/2021

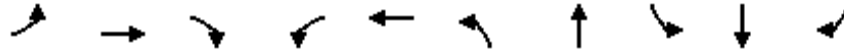


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	20	10	46	102	138	36	1796	77	1281	26
v/c Ratio	0.20	0.05	0.20	0.63	0.46	0.31	0.48	0.33	0.49	0.02
Control Delay	50.2	44.4	11.2	66.2	14.5	59.6	8.2	15.8	6.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.2	44.4	11.2	66.2	14.5	59.6	8.2	15.8	6.7	0.1
Queue Length 50th (ft)	14	7	0	76	7	27	197	9	106	0
Queue Length 95th (ft)	38	23	27	130	64	61	292	50	121	1
Internal Link Dist (ft)		456			230		520		1142	
Turn Bay Length (ft)	100		100			600		475		
Base Capacity (vph)	168	364	354	273	417	133	3705	283	2618	1185
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.03	0.13	0.37	0.33	0.27	0.48	0.27	0.49	0.02

Intersection Summary

Queues
4: Wadsworth Blvd (SH-121) & Ohio Ave

2045 Total PM.syn
07/20/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	26	26	73	141	130	52	1927	234	2219	42
v/c Ratio	0.20	0.10	0.25	0.77	0.42	0.59	0.61	0.77	0.87	0.04
Control Delay	48.9	45.2	7.0	76.0	16.3	82.5	15.3	51.8	19.3	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	45.2	7.0	76.0	16.3	82.5	15.3	51.8	19.3	0.5
Queue Length 50th (ft)	18	18	0	105	14	40	325	145	295	0
Queue Length 95th (ft)	46	45	27	#188	72	#110	403	m198	427	m0
Internal Link Dist (ft)		456			230		520		1142	
Turn Bay Length (ft)	100		100			600		475		
Base Capacity (vph)	149	287	324	212	343	88	3159	354	2552	1157
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.09	0.23	0.67	0.38	0.59	0.61	0.66	0.87	0.04

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.

APPENDIX F

Conceptual Site Plan

Open Space:

Areas on a lot, or combination of lots, that are designed and intended for the use and enjoyment of residents and or the use and enjoyment of the public in general, and that are not occupied by primary or accessory structures, automobile parking spaces, parking aisles, or driveways. Open space may include walkways, pedestrian paths, plazas, natural and landscaped areas, playgrounds, improved roof tops, detention that is integrated into landscaped areas, and other similar amenities designed specifically for active or passive use.

Plaza:

An improved open space area provided for the users of the site, which includes landscaping, benches, and other site amenities.

open space requirements:
 +/- 5.259 acres / +/- 229,074 sf

15 % = 34,361 sf
 30 % = 68,722 sf

17.7.5: Open Space and On-Site Amenities

17.7.5.1: General Standards

The following open space design standards are intended to enhance the overall site layout and ensure that open space is designed as an accessible amenity.

- A. All development or redevelopment requiring a site plan per Article 2 of this Zoning Ordinance must meet the open space requirements set forth in Article 5.
- B. Open space areas should be visible from adjacent streets or pedestrian areas to the greatest extent possible.
- C. Stormwater detention areas should be integrated into the site design and used as an amenity to the greatest extent possible.

Name	Area
Open Space	1,238 SF
Open Space / Plaza Space	2,090 SF
Open Space	2,652 SF
Open Space	2,731 SF
Open Space / Plaza Space	4,266 SF
Open Space / Plaza Space	5,129 SF
Open Space / Plaza Space	11,138 SF
Open Space	13,469 SF
Open Space / Plaza Space	24,006 SF
Open Space PROVIDED	66,718 SF

NOTE:
 this total does not include rooftop amenity space or balconies along Yarrow St, which will increase the 'Open Space' provided.

17.7.5.2: Additional Requirement for Mixed-Use and Commercial Zone

Districts in order to provide enhanced pedestrian amenities on larger sites, plaza space shall be required when a multifamily residential, commercial, or mixed use development or redevelopment involves a gross site area greater than 2 acres, the following shall apply:

A. The plaza space shall consist of the following minimum percentage of the overall open space requirement as identified in Article 5:

Table 17.7.1: Plaza Space Requirement

Zone District or Context	Minimum Percentage of Overall Open Space Requirement
Urban	45% (34,361 sf @ 15%) = 15,462 sf (68,722 sf @ 30%) = 30,924 sf

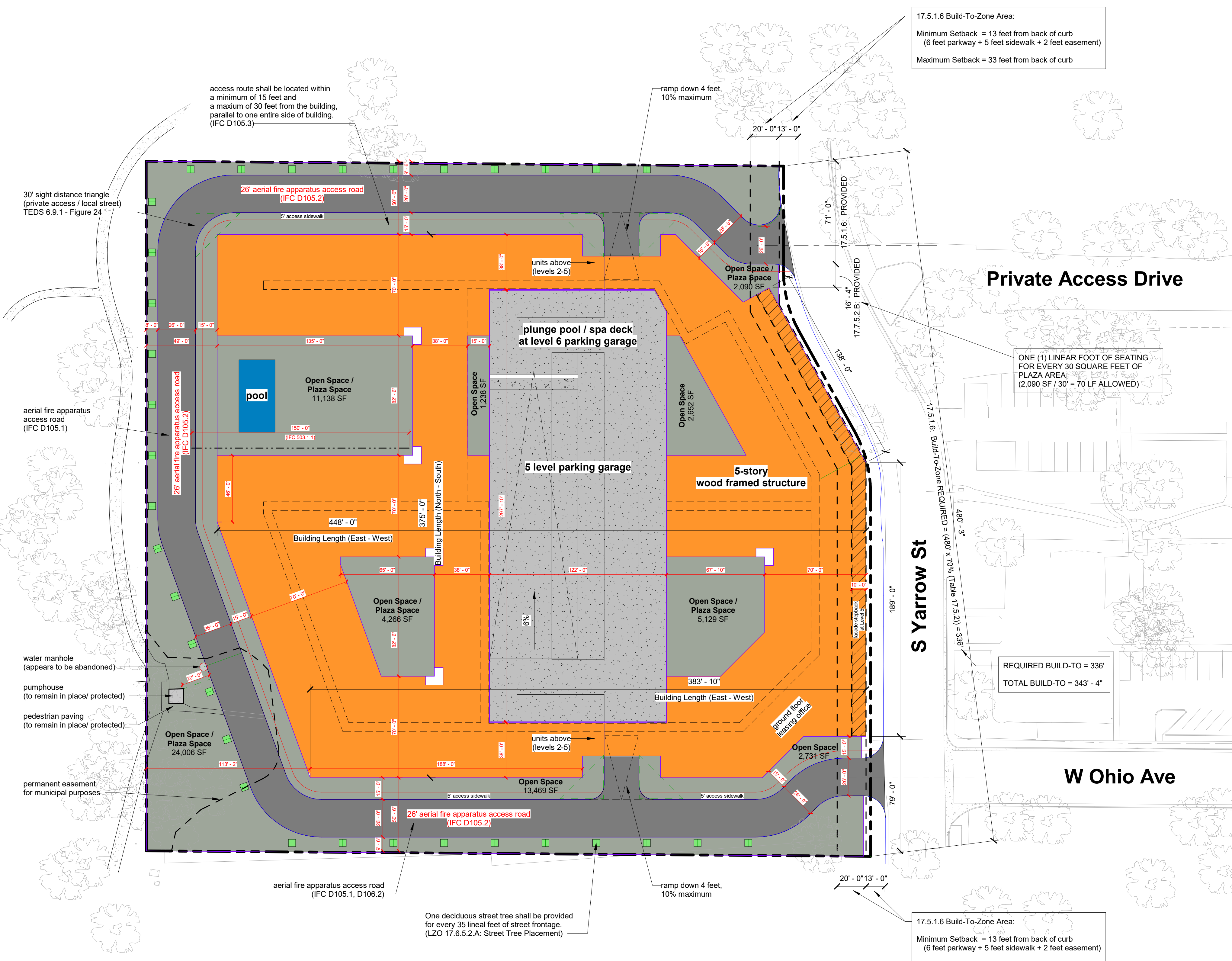
Name	Area
Open Space / Plaza Space	2,090 SF
Open Space / Plaza Space	4,266 SF
Open Space / Plaza Space	5,129 SF
Open Space / Plaza Space	11,138 SF
Open Space / Plaza Space	24,006 SF
Plaza Space PROVIDED	46,628 SF

B. When a plaza is required as a percentage of the overall required open space, the plaza space shall incorporate the following element

1. One linear foot of seating shall be provided for every 30 square feet of plaza area and/or public space. The seating space requirement may be met by providing benches, chairs, and/or seat-walls. Benches and seat-walls accessible from both sides and 33 inches or greater in depth may count both sides toward the seating requirement.

C. In addition to the requirements in Section 17.7.5.2.B, plaza spaces must provide at least 2 of the following elements:

1. Shade structures such as pergolas, canopies, awnings, arcades, or other similar elements.
2. In addition to trees required to satisfy the open space requirement, trees shall be provided at a rate of one tree per 800 square feet of plaza or public space area.
3. Water features or public art.
4. Activity areas including but not limited to outdoor cafes, retail spaces, and/or programmed spaces that accommodate entertainment, meetings, educational activities, and play areas.
5. Pedestrian-scale information kiosk.



17.5.1.6 Build-To-Zone Area:
 Minimum Setback = 13 feet from back of curb
 (6 feet parkway + 5 feet sidewalk + 2 feet easement)
 Maximum Setback = 33 feet from back of curb

Private Access Drive

ONE (1) LINEAR FOOT OF SEATING FOR EVERY 30 SQUARE FEET OF PLAZA AREA (2,090 SF / 30' = 70 LF ALLOWED)

REQUIRED BUILD-TO = 336'
 TOTAL BUILD-TO = 343' - 4"

OPTION 4 - 5-STORY WOOD FRAME w/ ENCLOSED COURTS & FULL FIRE LANE	
Building Area By Level	
Level 1	86,823 SF
Level 2-4	89,307 SF
	89,307 SF
	89,307 SF
Level 5	86,063 SF
Level 6 Only	4,727 SF
	440,807 SF Per Level 1-5
	5 Levels
	445,534 Total GSF
	10,000 Amenity/Leasing in Wood Frame
	80% Efficiency Factor
	348,427 NRSF
	850 Avg Unit Size
	410 Total Units

Parking Summary	GSF	Spaces
Garage B1	0	0
Garage L1	36,824	110
Garage L2	36,824	110
Garage L3	36,824	110
Garage L4	36,824	110
Garage L5	36,824	110
Garage L6	0	0
Total		550

Site Plan

NOTE: This drawing is CONCEPTUAL only and for the convenience of reference. The developer expressly reserves the right to make any modifications, revisions, and changes without notice.

Belmar MF Density Study - OPTION 5
 777 S Wadsworth Blvd.
 Lakewood, CO 80226

Job #: 21017.00 Scale: 1" = 40'
 Date: 06/01/2021 File Name: P:\2021\21017 - Kairoi Lakewood Belmar Phase 1 Wrap MF05 - Models\CAD\01 - Rev\site O5_V1.rvt
 Drawn by: MG Not for regulatory approval, permitting, or construction

