Traffic Impact Study

Majestic Commercenter
Himalaya Road Extension

Aurora, Colorado

Prepared for:

Tower Metropolitan District

Kimley»Horn

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

Majestic Commercenter
Himalaya Road Extension

Aurora, Colorado

Prepared for
Tower Metropolitan District
20100 East 32nd Parkway
Suite 150
Aurora CO 80011

Prepared by
Curtis D. Rowe, P.E, PTOE
Kimley-Horn and Associates, Inc.
6200 South Syracuse Way
Suite 300
Greenwood Village, Colorado 80111
(303) 228-2300

April 2025

TABLE OF CONTENTS

APPENDICES

LIST OF TABLES

LIST OF FIGURES

1.0 EXECUTIVE SUMMARY

Kimley-Horn has prepared this report to document the results of intersection analyses for the extension of Himalaya Road between 36th Avenue and 38th Avenue within Majestic Commercenter in Aurora, Colorado. The purpose of this traffic study is to identify the surrounding effects of extending Himalaya Road to 38th Avenue. The potential related impacts on the local street system were evaluated to develop the necessary mitigation measures required to acceptably accommodate the associated reroute of traffic. The following intersections were incorporated into this traffic study based on the City of Aurora requested scope:

- 38th Avenue and Tower Road
- 38th Avenue and Amazon Logistics Drive
- 38th Avenue and Himalaya Road
- 38th Avenue and Picadilly Road
- 32nd Parkway and Himalaya Road

The Himalaya Road extension is planned to be constructed in the near future; therefore, a 2025 analysis was completed along with a long-term 2050 analysis, as requested by City of Aurora staff.

Based on the analysis presented in this report, Kimley-Horn believes the extension of Himalaya Road within Majestic Commercenter to 38th Avenue will acceptably accommodate the projected traffic volumes. Analysis of the existing street network, extension of the new roadway, the proposed development, and expected traffic volumes resulted in the following recommendations:

- Himalaya Road is recommended to be constructed between 36th Avenue and 38th Avenue providing a single through lane in each direction. With the new south leg of Himalaya Road at the 38th Avenue and Himalaya Road intersection, the northbound approach is recommended to include a 150-foot left turn lane and shared through/right turn lane. The southbound Himalaya Road can be restriped to include a 150-foot southbound left turn lane (bay has already been constructed), one through lane and a separate right turn lane, due to the two southbound approach lanes on Himalaya Road. Along 38th Avenue, it was assumed that concurrent with construction of the Himalaya Road extension, a second eastbound through lane would occur between Amazon Logistics Drive and Himalaya Road. Likewise,

two westbound through lanes would be introduced at the intersection. A 150-foot westbound left turn lane is recommended to be constructed, while a 200-foot eastbound left turn lane is recommended to be designated. The 38th Avenue and Himalaya Road intersection will continue to operate with stop control on the north/south Himalaya Road approaches. When 38th Avenue provides a connection between Tower Road and the E-470 interchange sometime soon, a traffic signal is anticipated to be warranted and needed at the 38th Avenue and Himalaya Road intersection. When signalization occurs, the eastbound left turn lane may need to be further extended with designation of a 275-foot length.

- By 2050, the 38th Avenue and Tower Road intersection will require dual westbound left turn lanes. However, these turns lanes are recommended to be provided prior to the long-term horizon since the reported queue lengths already extend past the existing storage lengths. The third northbound through lane, separate northbound right turn lane, and separate southbound right turn lane are also recommended to be provided if 2050 volumes are realized.

- The 38th Avenue and Picadilly Road intersection will become a four-legged intersection once the 38th Avenue connection is constructed. With a new west leg, through connectivity along 38th Avenue will be provided to the new E-470 interchange. Therefore, travel patterns and future developments will increase traffic volumes at this intersection. It is believed that the intersection will need to be signalized by 2050. The configuration of the intersection is anticipated to include two through lanes on all four approaches with separate left and right turn lanes.

- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Aurora and the Manual on Uniform Traffic Control Devices (MUTCD) – 11th Edition, 2023.

2.0 INTRODUCTION

Kimley-Horn has prepared this report to document the results of intersection analyses for the extension of Himalaya Road between 36th Avenue and 38th Avenue within Majestic Commercenter in Aurora, Colorado. A vicinity map illustrating the intersection analyses is shown in **Figure 1**.

Kimley-Horn has prepared this report to document the results of intersection analyses for the extension of Himalaya Road between 36th Avenue and 38th Avenue within Majestic Commercenter in Aurora, Colorado. The purpose of this traffic study is to identify the surrounding effects of extending Himalaya Road to 38th Avenue. The potential related impacts on the local street system were evaluated to develop the necessary mitigation measures required to acceptably accommodate the associated reroute of traffic. The following intersections were incorporated into this traffic study based on the City of Aurora requested scope:

- 38th Avenue and Tower Road
- 38th Avenue and Amazon Logistics Drive
- 38th Avenue and Himalaya Road
- 38th Avenue and Picadilly Road
- 32nd Parkway and Himalaya Road

The Himalaya Road extension is planned to be constructed in the near future; therefore, a 2025 analysis was completed along with a long-term 2050 analysis, as requested by City of Aurora staff.

Kimley»Horn
NORTH
NTS 096388016

FIGURE 1
MCC Himalaya Extension
Aurora, Colorado
Vicinity Map

Kimley»Horn

3.0 EXISTING AND FUTURE CONDITIONS

3.1 Existing Roadway Network

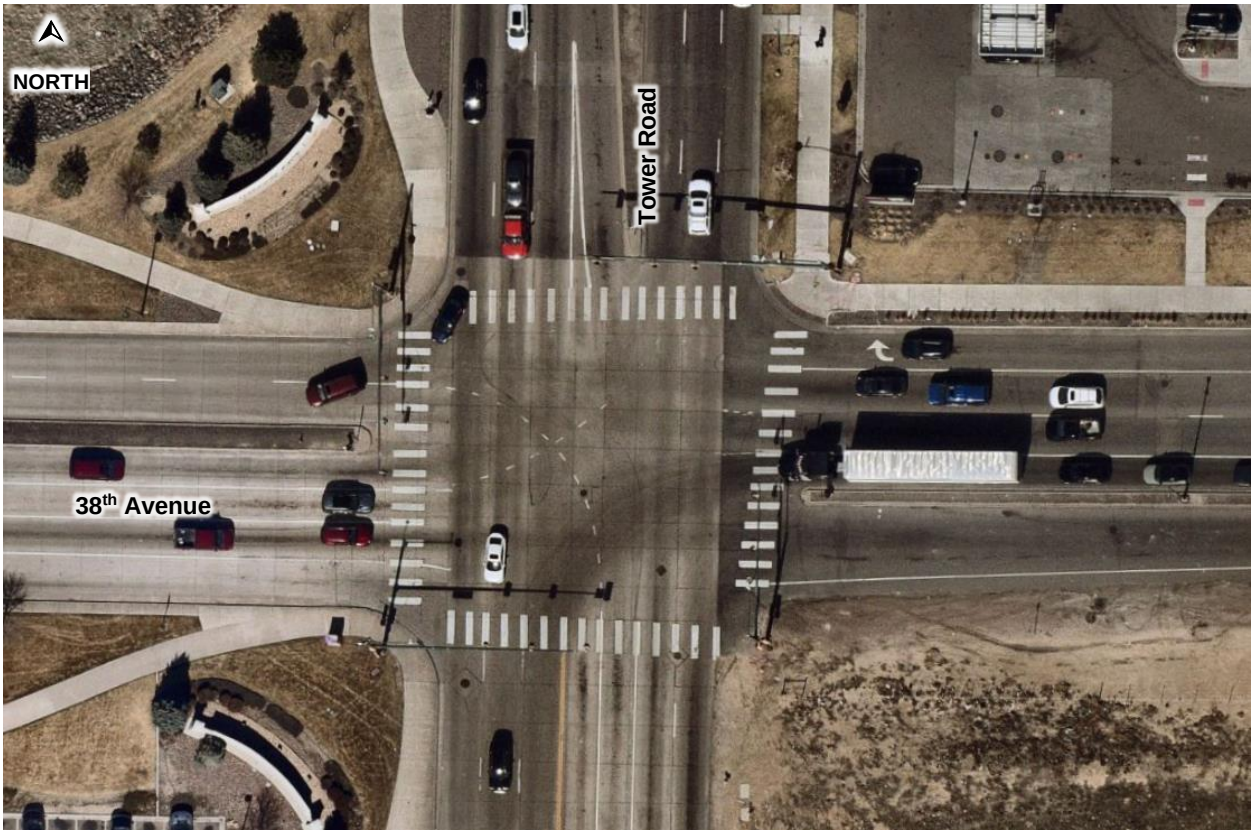
Tower Road is a north-south roadway with a posted speed limit of 40 miles per hour. South of 38th Avenue, Tower Road provides two northbound through lanes and three southbound through lanes. However, north of 38th Avenue, three through lanes are provided in each direction.

38th Avenue extends primarily east-west as a four-lane divided roadway. West of Tower Road, two through lanes in each direction are provided. East of Tower Road, 38th Avenue currently terminates at Odessa Street. The roadway continues a quarter mile between Picadilly Road and Tibet Road but terminates prior to the newly constructed E-470 interchange. The posted speed limit along this roadway is 40 miles per hour.

Himalaya Road extends primarily in the northbound and southbound direction. North of 38th Avenue, the roadway provides two through lanes in each direction with a raised median and a posted speed limit of 30 miles per hour. Approximately 1,000 feet of roadway has not been constructed directly south of 38th Avenue. Himalaya Road is reintroduced for approximately one mile and terminates at a cul-da-sac just north of Interstate 70.

Picadilly Road is currently a two-lane roadway with one through lane in each direction. The posted speed limit is 40 miles per hour. The roadway extends north/south between 19th Avenue and 64th Avenue.

The signalized intersection of 38th Avenue and Tower Road (#1) operates with protected-permissive left turn phasing on all four approaches. The northbound approach provides dual left turn lanes and two through lanes, with the outside through being a shared right turn lane. The southbound approach provides a left turn lane and three through lanes with the outside through lane being a shared right. The eastbound approach provides dual left turn lanes, a through lane, and a right turn lane while the westbound approach provides a left turn lane, two through lanes, and a right turn lane. An aerial photo of the existing intersection configuration is below (north is up - typical).



38th Avenue and Tower Road (#1)

The unsignalized ‘T’-intersection of 38th Avenue and Amazon Logistics Drive (#2) operates with stop control on the northbound Amazon Logistics Drive approach. The northbound approach provides a single lane for shared movements. The eastbound approach provides a striped shared through/right turn lane. The westbound approach provides a left turn lane and two through lanes. An aerial photo of the existing intersection configuration is below.

38th Avenue and Amazon Logistics Drive (#2)

The unsignalized 'T'-intersection of 38th Avenue and Himalaya Road (#3) operates with stop control on the southbound Himalaya Road approach. The southbound approach provides a single lane striped for shared left and right turn movements. The eastbound approach is striped as a single lane for shared left turn/through movements. The westbound approach provides a single lane approach for shared through/right turn movements. An aerial photo of the existing intersection configuration is below.

38th Avenue and Himalaya Road (#3)

The unsignalized 'T'-intersection of 38th Avenue and Picadilly Road (#4) operates with all-way stop control on all three approaches. The westbound approach is striped for a separate left and right turn lane. The northbound and southbound approaches provide a single lane for shared movements. An aerial photo of the existing intersection configuration is below.

38th Avenue and Picadilly Road (#4)

The unsignalized intersection of 32nd Parkway and Himalaya Road (#5) operates with stop control on all four approaches. The eastbound and westbound approaches of 32nd Avenue provides a left turn lane, a through lane, and a shared through/right turn lane. The northbound and southbound approaches provide a single lane for shared movements. However, the pavement width for the southbound approach allows for a separate left turn lane, a through lane, and a right turn lane while the northbound approach allows for a separate left turn lane and a shared through/right turn lane. These lanes are not presently striped. An aerial photo of the existing intersection configuration is below.

32nd Parkway and Himalaya Road (#5)

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

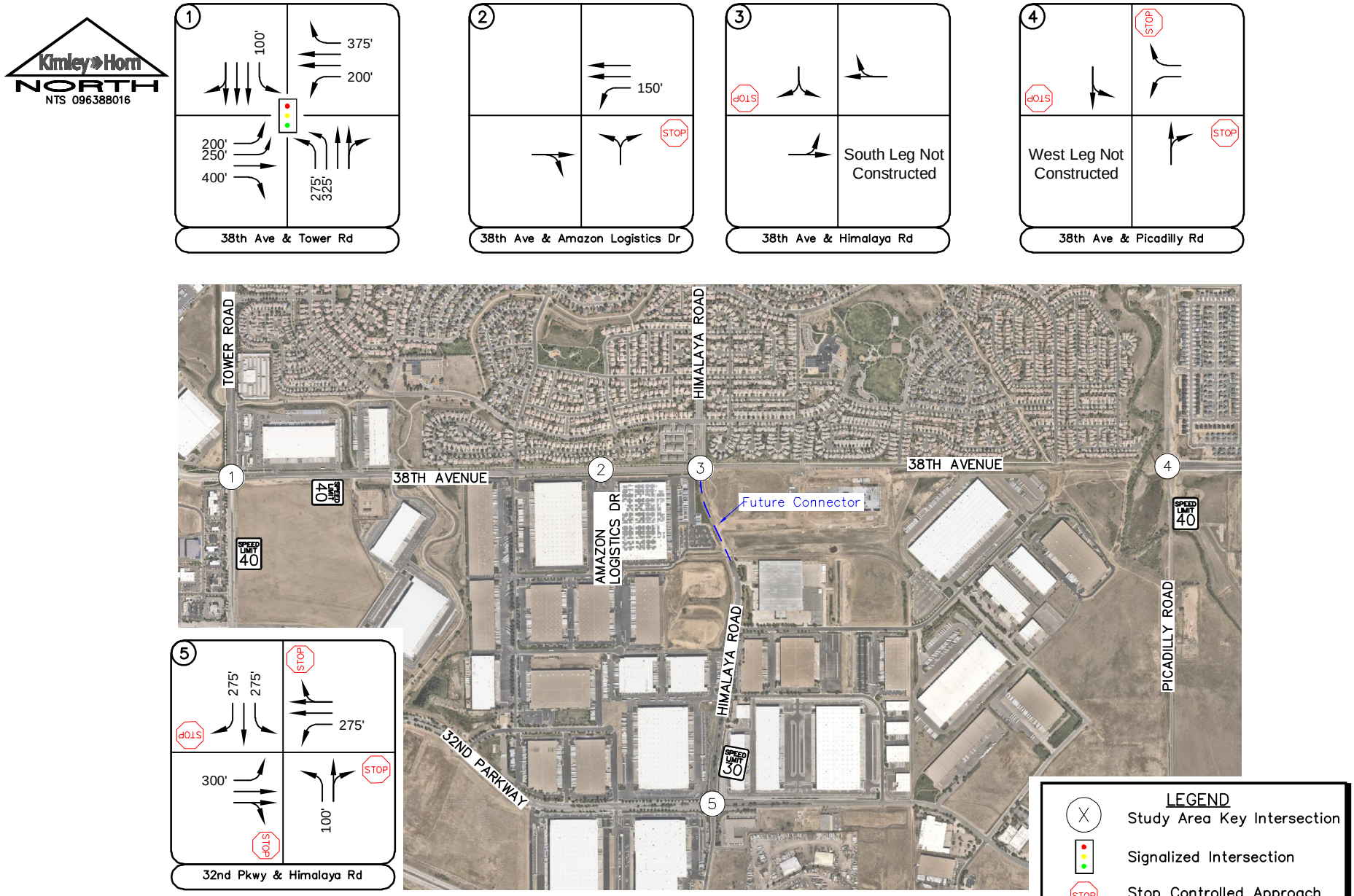


FIGURE 2
MCC Himalaya Extension
Aurora, Colorado
Existing Geometry and Control

3.2 Future Roadway Network

Himalaya Road between 36th Drive and 38th Avenue will be constructed to provide connectivity to the Majestic Commercenter development with access to 38th Avenue in the near future. The roadway extension will continue to be a two-lane roadway with on-street parking to match existing conditions.

Likewise, it is anticipated that 38th Avenue will be constructed from Odessa Street to Picadilly Road sometime after the Himalaya Road extension. The roadway currently doesn't exist for approximately 1,200 feet. The eastbound direction along 38th Avenue between Tower Road to Himalaya Road will widen to provide two through lanes. Additionally, segments of 38th Avenue that are currently two-lanes will also be widened to four-lanes in the long-term.

Tower Road is planned to provide three northbound through lanes in the future. Therefore, the long-term analysis includes the third northbound through lane, separate northbound and southbound right turn lanes, and dual eastbound and westbound left turn lanes.

3.3 Existing Traffic Volumes

Existing turning movement counts were conducted at the study intersections on Tuesday, December 10, 2024 during the weekday 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 this count date. The existing intersection traffic volumes are shown in **Figure 3** with count sheets provided in **Appendix A**.

3.4 Unspecified Development Traffic Growth

To conform to City of Aurora Traffic Impact Study Guidelines, a two (2) percent annual growth rate was used to estimate future traffic volume. This annual growth rate was used to estimate near term 2025 and long-term 2050 traffic volume projections at the key intersections. In addition, traffic volumes were assigned and rerouted from the existing network to account for the Himalaya Road extension to 38th Avenue. With construction of Himalaya Road, direct access to the Amazon site and the future development on the southeast corner of 38th Avenue and Himalaya Road intersection will be provided. Therefore, some Amazon traffic that currently uses the access along 38th Avenue is anticipated to reroute to the Himalaya Road accesses.

The traffic studies for the Food Bank of the Rockies and Gateway Park – Parcel TIC 2 were also used to estimate long-term 2050 traffic volumes. The volumes reported in the Food Bank of the Rockies included the Gateway Park – Parcel TIC 2 development in the 2050 long-term traffic volumes. These volumes aligned to the Northeast Area Transportation Study (NEATS) and DRCOG future traffic models. Future traffic volume excerpts taken from previous traffic studies are provided in **Appendix B**. The calculated background traffic volumes for 2025 and 2050 are shown in **Figure 4** and **Figure 5,** respectively.

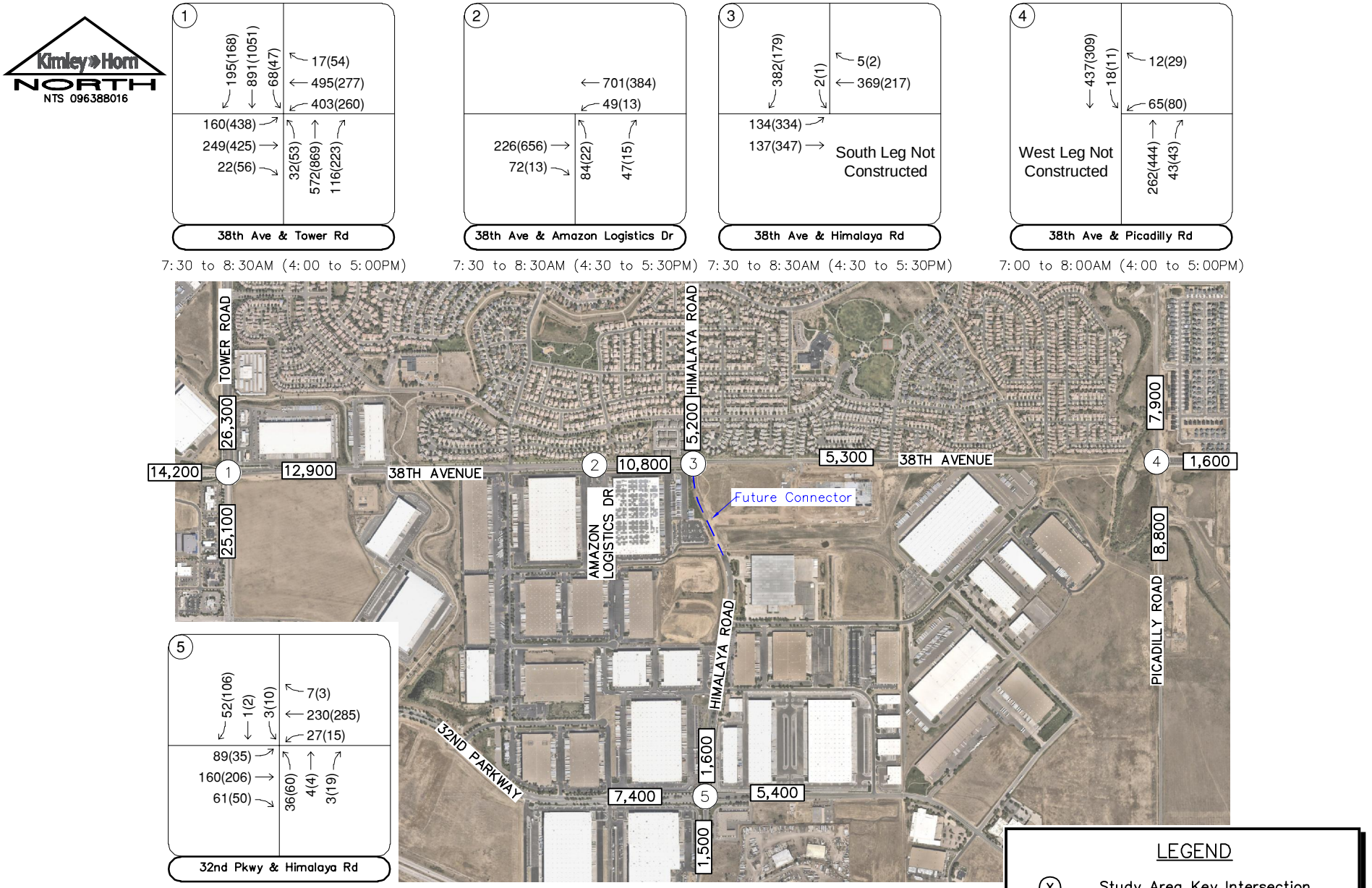


FIGURE 3

MCC Himalaya Extension
Aurora, Colorado
2024 Existing Traffic Volumes

Counts Collected at All Study Intersection
on Tuesday, December 10, 2024

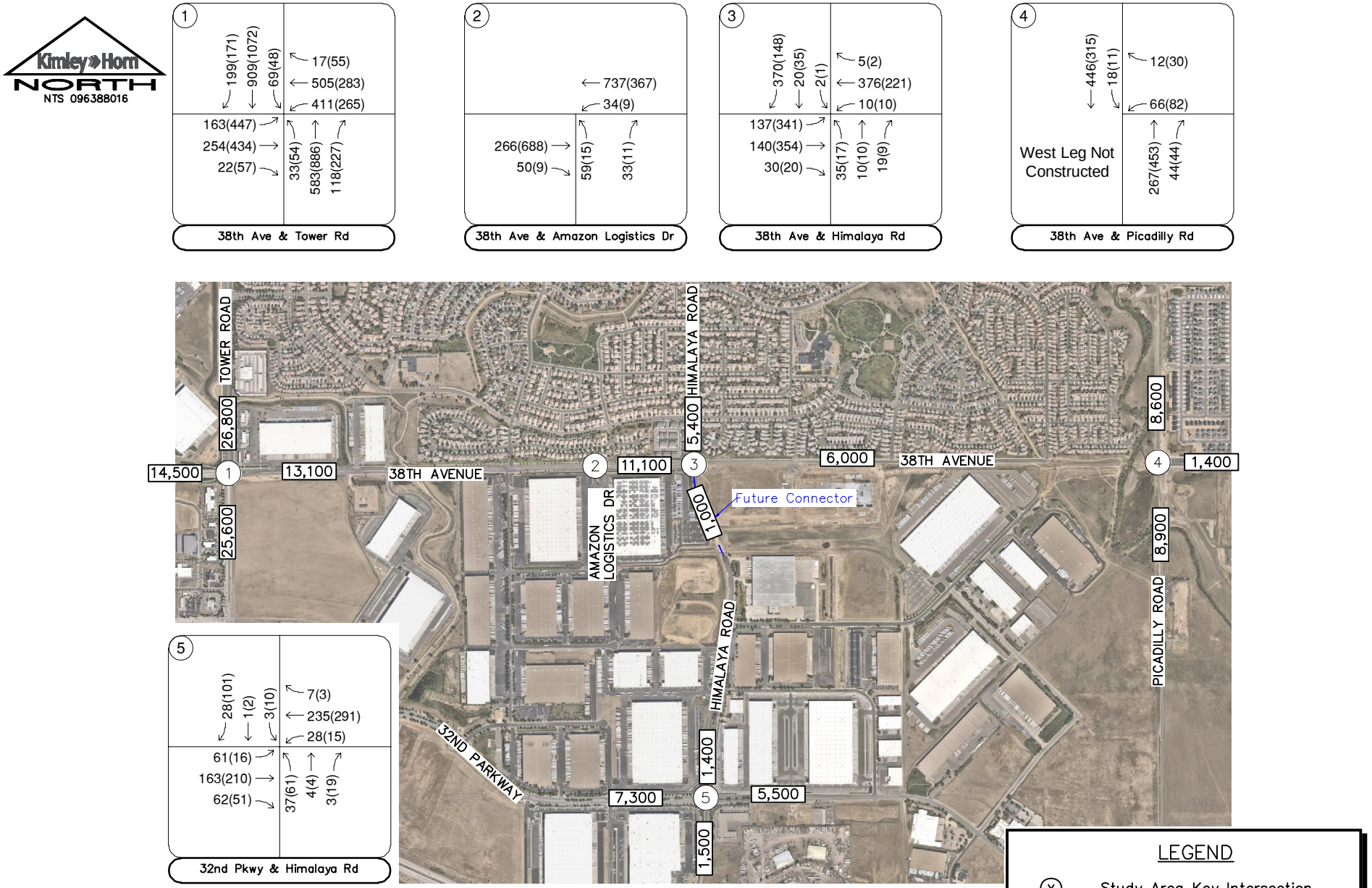


FIGURE 4
MCC Himalaya Extension
Aurora, Colorado
2025 Future Traffic Volumes

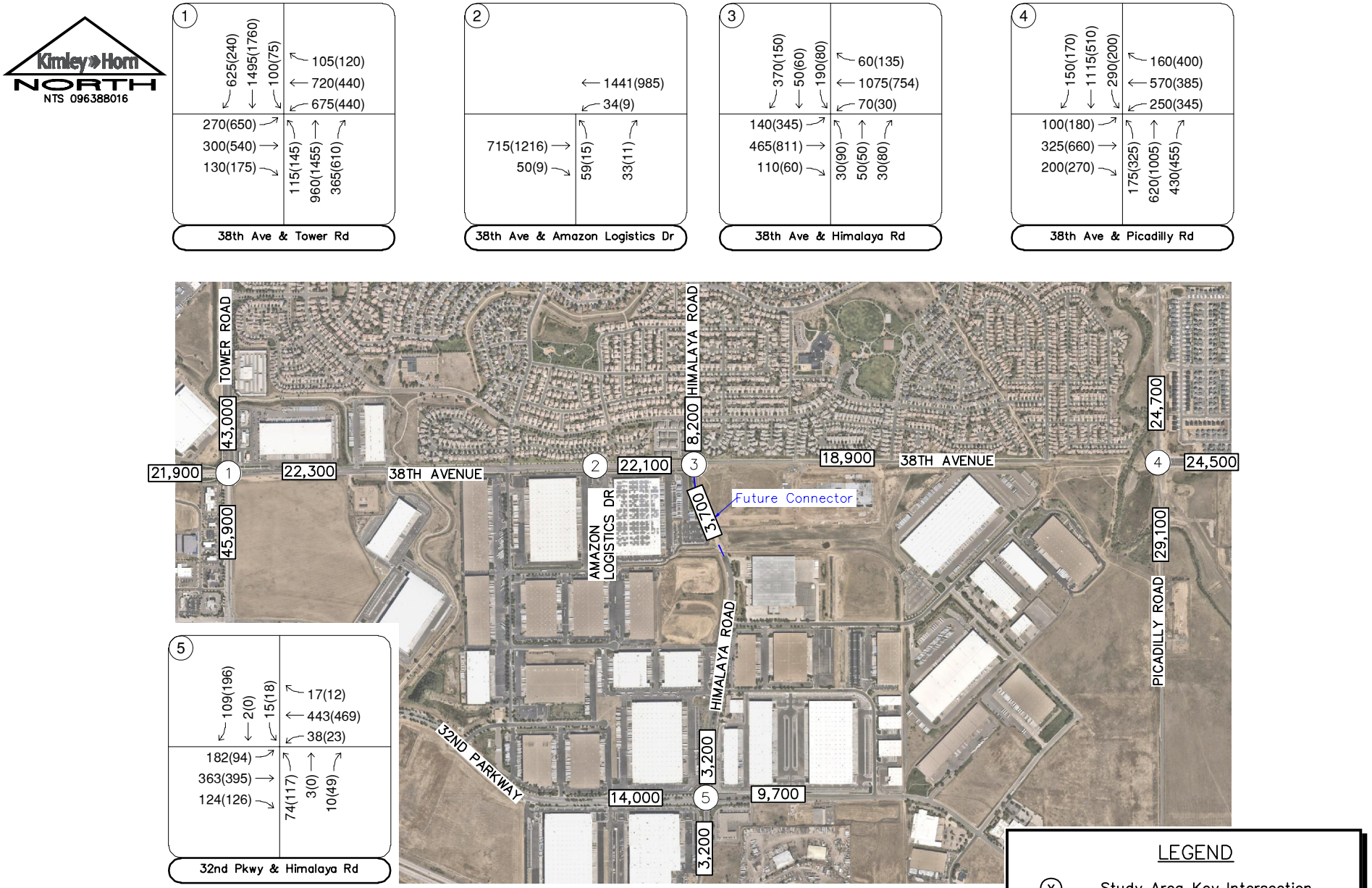


FIGURE 5
MCC Himalaya Extension
Aurora, Colorado
2050 Future Traffic Volumes

Kimley-Horn's analysis of traffic operations in the site vicinity was conducted to determine potential capacity deficiencies in the 2025 and 2050 horizons at the identified key intersections. The acknowledged source for determining overall capacity is the *Highway Capacity Manual (HCM)*[1].

4.1 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. According to City of Aurora guidelines for signalized intersections, individual movements may be allowed to fall to LOS E, but in most cases the overall intersection must operate (or be projected to operate) at a LOS D or better during morning and afternoon peak periods. If the existing LOS for an intersection is less than LOS D, potential alternatives to improve the intersection to achieve LOS D or to maintain the existing critical lane volume with the addition of site generated traffic are provided. Minor movements at unsignalized intersections, such as left turns onto a major arterial from a side street, may be allowed to fall below LOS D pending the specific conditions. Movements which have a light traffic demand as well as a viable travel alternative may be allowed to fall below LOS D. **Table 2** shows the definition of level of service for signalized and unsignalized intersections.

Table 1 – 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, Seventh Edition, Transportation Research Board, 2022.

[1] Transportation Research Board, *Highway Capacity Manual*, Seventh Edition, Washington DC, 2022.

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

4.2 Key Intersection Operational Analysis

Calculations for the operational level of service at the key intersections for the study area are provided in **Appendix C**. 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 analysis. The signal timings for the 38th Avenue and Tower Road intersection were provided by the City and were incorporated in the analysis. Synchro traffic analysis software was used to analyze the signalized and unsignalized key intersections for HCM level of service.

38th Avenue and Tower Road (#1)

The signalized intersection of 38th Avenue and Tower Road (#1) operates with protected-permissive left turn phasing on all four approaches. The intersection operates at LOS D during the morning and afternoon peak hours based on existing conditions. With the Himalaya Road connector, the intersection is anticipated to continue operating at LOS D during both peak hours. By the long-term 2050 horizon, dual westbound turn lanes, three northbound through lanes, and exclusive northbound and southbound right turn lanes are identified to be needed. The second eastbound through lane is anticipated to be provided prior to 2050 and absorb the existing right turn lane. These recommendations are consistent with traffic studies in the surrounding area. **Table 2** provides the results of the LOS analysis conducted at this intersection.

Table 2 – 38th Avenue & Tower Road LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2024 Existing	48.2	D	49.2	D
2025	49.3	D	51.3	D
2050	91.7	F	136.1	F
2050 #	48.9	D	53.7	D

= Dual WB Left Turn Lanes, Three NB Through Lanes, Separate NB and SB Right Turn Lanes with Overlap Phasing

38th Avenue and Amazon Logistics Drive (#2)

The unsignalized 'T'-intersection of 38th Avenue and Amazon Logistics Drive (#2) operates with stop control on the northbound Amazon Logistics Drive approach. The intersection movements operate acceptably at LOS B or better during both peak hours under existing conditions. The second eastbound through lane can be introduced assuming 38th Avenue to the east will be widened to the ultimate configuration. The existing roadway width can accommodate the second eastbound through lane. By 2050, the intersection movements are anticipated to continue operating acceptably. **Table 3** provides the results of the LOS analysis conducted at this intersection.

Table 3 – 38th Avenue & Amazon Logistics Drive LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2024 Existing				
Northbound Approach	15.2	C	16.3	C
Westbound Left	8.0	A	9.1	A
2025 #				
Northbound Approach	14.1	B	15.4	C
Westbound Left	8.1	A	9.2	A
2050 #				
Northbound Approach	27.9	D	28.7	D
Westbound Left	9.7	A	11.8	B

= Two EB Through Lanes

38th Avenue and Himalaya Road (#3)

The unsignalized 'T'-intersection of 38th Avenue and Himalaya Road (#3) operates with stop control on the southbound Himalaya Road approach. The intersection movements operate acceptably at LOS C or better during both peak hours under existing conditions. The south leg is planned to be constructed in the near-term horizon. Therefore, once constructed, separate left turn lanes can be implemented on all four approaches with the second eastbound and westbound through lane. Additionally, the separate southbound right turn lane can be implemented within the existing pavement width. The intersection movements are still anticipated to operate acceptably. By 2050, the volumes meet warrants for signalization. The MUTCD Four Hour Signal Warrant worksheet is included in **Appendix E. Table 4** provides the results of the LOS analysis conducted at this intersection.

Table 4 – 38th Avenue & Himalaya Road LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2024 Existing				
Eastbound Left	8.5	A	8.6	A
Southbound Approach	19.0	C	10.8	B
2025 #				
Northbound Left	27.9	D	35.0	E
Northbound Through/Right	11.7	B	18.9	C
Eastbound Left	8.6	A	8.6	A
Westbound Left	7.6	A	8.1	A
Southbound Left	15.6	C	25.5	D
Southbound Through	16.0	C	29.8	D
Southbound Right	13.6	B	9.7	A
2050 #				
Northbound Left	>300	F	>300	F
Northbound Through/Right	245.6	F	>300	F
Eastbound Left	13.4	B	13.9	B
Westbound Left	9.0	A	9.9	A
Southbound Left	>300	F	>300	F
Southbound Through	69.6	F	>300	F
Southbound Right	48.1	E	13.9	B
2050 ##	**27.5**	**C**	**32.7**	**C**
Eastbound Approach	18.1	B	30.3	C
Eastbound Left	19.5	B	26.2	C
Eastbound Through/Right	17.8	B	32.0	C
Westbound Approach	21.1	C	29.7	C
Westbound Left	13.6	B	14.7	B
Westbound Through/Right	24.8	C	30.2	C
Northbound Approach	47.7	D	57.0	E
Northbound Left	43.9	D	46.8	D
Northbound Through/Right	49.1	D	64.0	E
Southbound Approach	42.9	D	34.3	C
Southbound Left	38.9	D	36.2	D
Southbound Through	38.5	D	40.3	D
Southbound Right	46.0	D	28.6	C

= Addition of the South Leg, Two EB and WB Through Lanes, Separate Left Turn Lanes on All Four Approaches, Separate SB Right Turn Lane
= Signalized

38th Avenue and Picadilly Road (#4)

The unsignalized 'T'-intersection of 38th Avenue and Picadilly Road (#4) operates with all-way stop control on all three approaches. The intersection operates at LOS B during the morning and afternoon peak hours under existing conditions. The Himalaya Road extension will not yet affect this intersection since 38th Avenue does not extend to the west. Therefore, the intersection operations will remain at LOS B during both peak hours. However, by 2050, the west leg of the intersection will be constructed and 38th Avenue will extend to Odessa Street as a four-lane roadway. Additionally, Picadilly Road is planned to be completely built out with two northbound and southbound through lanes in each direction. Separate left and right turn lanes are planned to be implemented with full buildout of the intersection. The volumes at the intersection meeting warrants for signalization. The MUTCD Four Hour Signal Warrant worksheet is included in **Appendix E. Table 5** provides the results of the LOS analysis conducted at this intersection.

Table 5 – 38th Avenue & Picadilly Road LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2024 Existing	**13.2**	**B**	**14.8**	**B**
Westbound Approach	10.9	B	10.7	B
Northbound Approach	11.3	B	17.4	C
Southbound Approach	14.8	B	12.3	B
2025	**13.5**	**B**	**15.3**	**C**
Westbound Approach	10.9	B	10.8	B
Northbound Approach	11.5	B	18.1	C
Southbound Approach	15.3	C	12.6	B
2050 #	35.8	D	51.1	D

= Signalized, Addition of the West Leg, Two NB, SB, EB, and WB Through Lanes. Separate Left and Right Turn Lanes

32nd Parkway and Himalaya Road (#5)

The unsignalized intersection of 32nd Parkway and Himalaya Road (#5) operates with all-way stop control on all four approaches. Under existing conditions, the overall intersection and approaches operate at LOS B or better during both peak hours. With project traffic, all movements are anticipated to continue operating at an acceptable level of service throughout the 2050 horizon. Therefore, no improvements or modifications are anticipated to be needed at this intersection based on the addition of project traffic and this operational level of service analysis. **Table 6** provides the results of the LOS analysis conducted at this intersection.

Table 6 – 32nd Parkway & Himalaya Road LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2024 Existing	**10.0**	**A**	**11.0**	**B**
Eastbound Approach	9.8	S	10.8	B
Westbound Approach	10.2	B	11.5	B
Northbound Approach	10.5	B	10.6	B
Southbound Approach	9.7	A	10.5	B
2025 Scenario	**9.8**	**A**	**11.0**	**B**
Eastbound Approach	9.5	A	10.8	B
Westbound Approach	10.0	A	11.5	B
Northbound Approach	10.3	B	10.6	B
Southbound Approach	9.5	A	10.3	B
2050 Scenario	**17.8**	**C**	**27.2**	**D**
Eastbound Approach	17.0	C	26.0	D
Westbound Approach	20.2	C	34.2	D
Northbound Approach	14.4	B	17.6	C
Southbound Approach	14.5	B	21.8	C

4.3 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 7** with calculations provided within the level of service operational sheets of **Appendix C** for unsignalized intersections and **Appendix D** for signalized intersections.

Table 7 – Turn Lane Queuing Analysis Results

Intersection Turn Lane	Existing Turn Lane Length	2025 Calculated Queue	2025 Recommended Length	2050 Calculated Queue	2050 Recommended Length
38th Ave & Tower Rd					
Eastbound Left	200'/250' DL	197' DL	200'/250'	**454' DL**	200'/250'
Eastbound Right	400	0'	400	-	-
Westbound Left	200'	368'	**350'**	342' DL	**350' DL**
Westbound Right	375'	0'	375'	64'	375'
Northbound Left	275'/325' DL	23' DL	275'/325' DL	106' DL	275'/325' DL
Northbound Right	DNE	-	DNE	207'	**225'**
Southbound Left	100'	83'	100'	168'	**175'**
Southbound Right	DNE	-	DNE	511'	**525'**
38th Ave & Amazon Log					
Westbound Left	150'	25'	150'	25'	150'
38th Ave & Himalaya Rd					
Eastbound Left	200'	25'	200'	268'	**275'**
Westbound Left	DNE	25'	**150'**	61'	**150'**
Northbound Left	DNE	25'	**150'**	89'	**150'**
Southbound Left	150'	25'	150'	**185'**	150'
38th Ave & Picadilly Rd					
Eastbound Left	DNE	-	DNE	192'	**200'**
Eastbound Right	DNE	-	DNE	231'	**250'**
Westbound Left	C	25'	450'	446'	**450'**
Westbound Right	C	25'	275'	230'	**250'**
Northbound Left	DNE	-	DNE	288'	**300'**
Northbound Right	DNE	-	DNE	193'	**200'**
Southbound Left	DNE	-	DNE	291'	**300'**
Southbound Right	DNE	-	DNE	24'	**150'**
32nd Pkwy & Himalaya Rd					
Eastbound Left	300'	25'	300'	50'	300'
Westbound Left	275'	25'	275'	25'	275'
Northbound Left	100'	25'	100'	50'	100'
Southbound Left	275'	25'	275'	25'	275'
Southbound Right	275'	25'	275'	75'	275'

DNE = Does Not Exist; C = Continuous; **Red** Text = Turn Lane Constraint; **Blue** Text = Recommendation

All queues are anticipated to remain within the existing or recommended turn lane lengths through 2050 except the southbound left turn lane at the 38th Avenue and Himalaya Road intersection. This turn lanes cannot be extended due to the back-to-back left with the northbound left turn lane at the 40th Avenue and Himalaya Road. If 2050 volumes are realized, the queues for the

eastbound left turns at the 38th Avenue and Tower Road intersection exceed the provided storage lengths. However, the turn lanes cannot be future extended due to back-to-back left turn lane constraints.

4.4 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 6** for the near-term horizon and **Figure 7** for the long-term 2050 horizon.

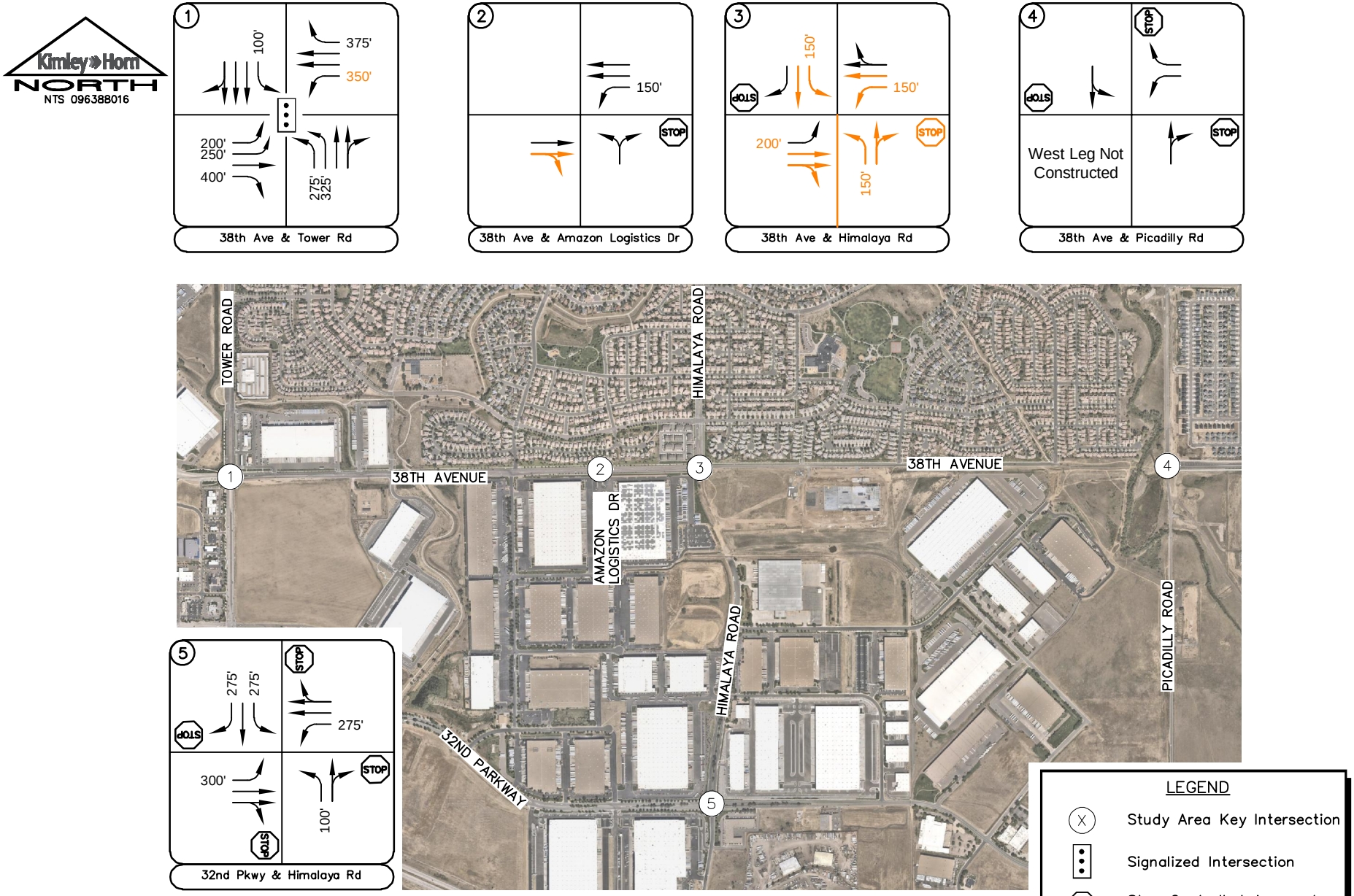


FIGURE 6
MCC Himalaya Extension
Aurora, Colorado
2025 Recommended Geometry and Control

Kimley»Horn

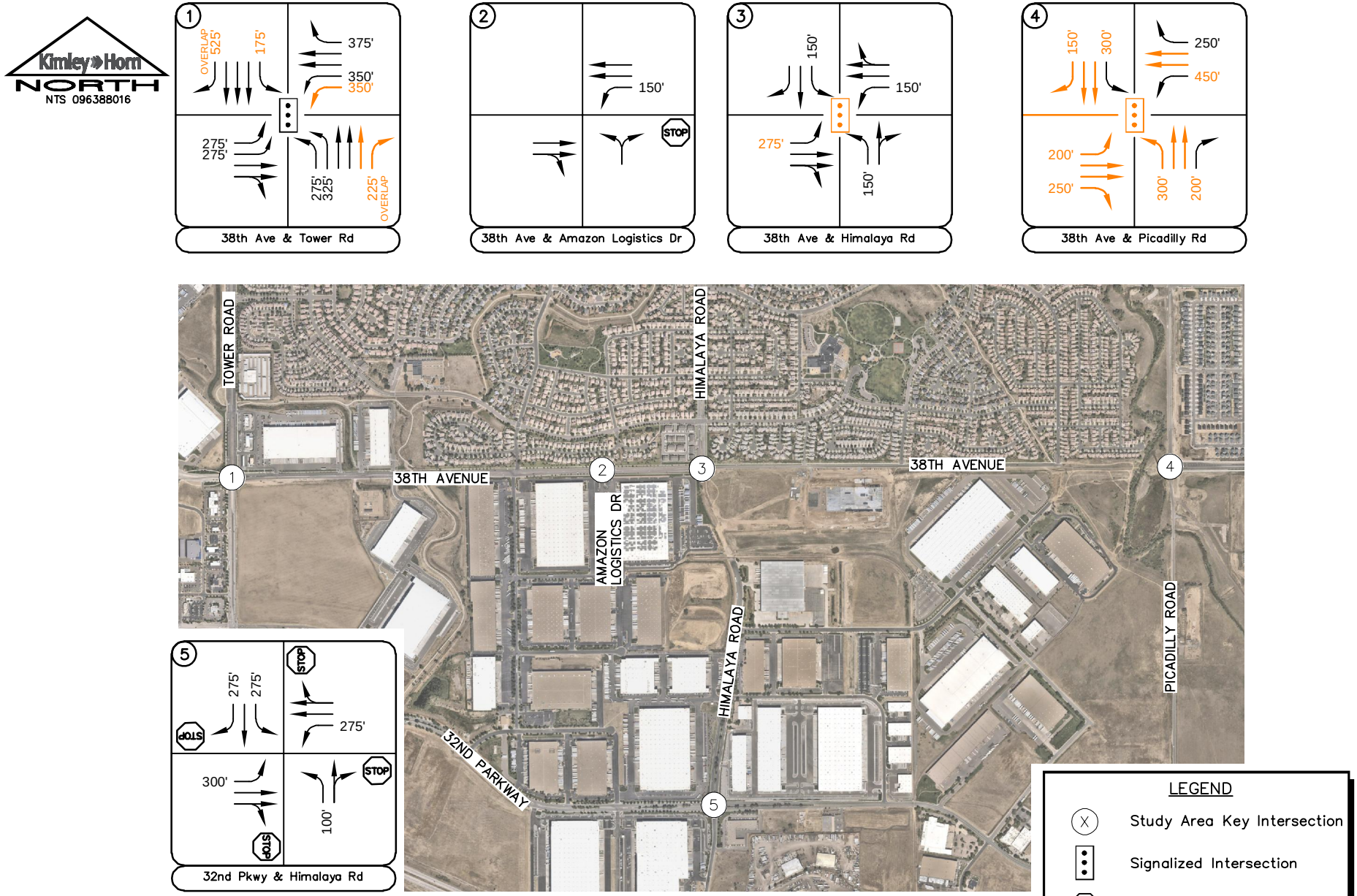


FIGURE 7
MCC Himalaya Extension
Aurora, Colorado
2050 Recommended Geometry and Control

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis presented in this report, Kimley-Horn believes the extension of Himalaya Road within Majestic Commercenter to 38th Avenue will acceptably accommodate the projected traffic volumes. Analysis of the existing street network, extension of the new roadway, the proposed development, and expected traffic volumes resulted in the following recommendations:

- Himalaya Road is recommended to be constructed between 36th Avenue and 38th Avenue providing a single through lane in each direction. With the new south leg of Himalaya Road at the 38th Avenue and Himalaya Road intersection, the northbound approach is recommended to include a 150-foot left turn lane and shared through/right turn lane. The southbound Himalaya Road can be restriped to include a 150-foot southbound left turn lane (bay has already been constructed), one through lane and a separate right turn lane, due to the two southbound approach lanes on Himalaya Road. Along 38th Avenue, it was assumed that concurrent with construction of the Himalaya Road extension, a second eastbound through lane would occur between Amazon Logistics Drive and Himalaya Road. Likewise, two westbound through lanes would be introduced at the intersection. A 150-foot westbound left turn lane is recommended to be constructed, while a 200-foot eastbound left turn lane is recommended to be designated. The 38th Avenue and Himalaya Road intersection will continue to operate with stop control on the north/south Himalaya Road approaches. When 38th Avenue provides a connection between Tower Road and the E-470 interchange sometime soon, a traffic signal is anticipated to be warranted and needed at the 38th Avenue and Himalaya Road intersection. When signalization occurs, the eastbound left turn lane may need to be further extended with designation of a 275-foot length.

- By 2050, the 38th Avenue and Tower Road intersection will require dual westbound left turn lanes. However, these turns lanes are recommended to be provided prior to the long-term horizon since the reported queue lengths already extend past the existing storage lengths. The third northbound through lane, separate northbound right turn lane, and separate southbound right turn lane are also recommended to be provided if 2050 volumes are realized.

- The 38th Avenue and Picadilly Road intersection will become a four-legged intersection once the 38th Avenue connection is constructed. With a new west leg, through connectivity along

38th Avenue will be provided to the new E-470 interchange. Therefore, travel patterns and future developments will increase traffic volumes at this intersection. It is believed that the intersection will need to be signalized by 2050. The configuration of the intersection is anticipated to include two through lanes on all four approaches with separate left and right turn lanes.

- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Aurora and the Manual on Uniform Traffic Control Devices (MUTCD) – 11th Edition, 2023.

APPENDICES

APPENDIX A

Intersection Count Sheet

Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
AM Peak
38th Ave and Tower Rd

File Name : 1 38th Ave and Tower Rd AM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 1

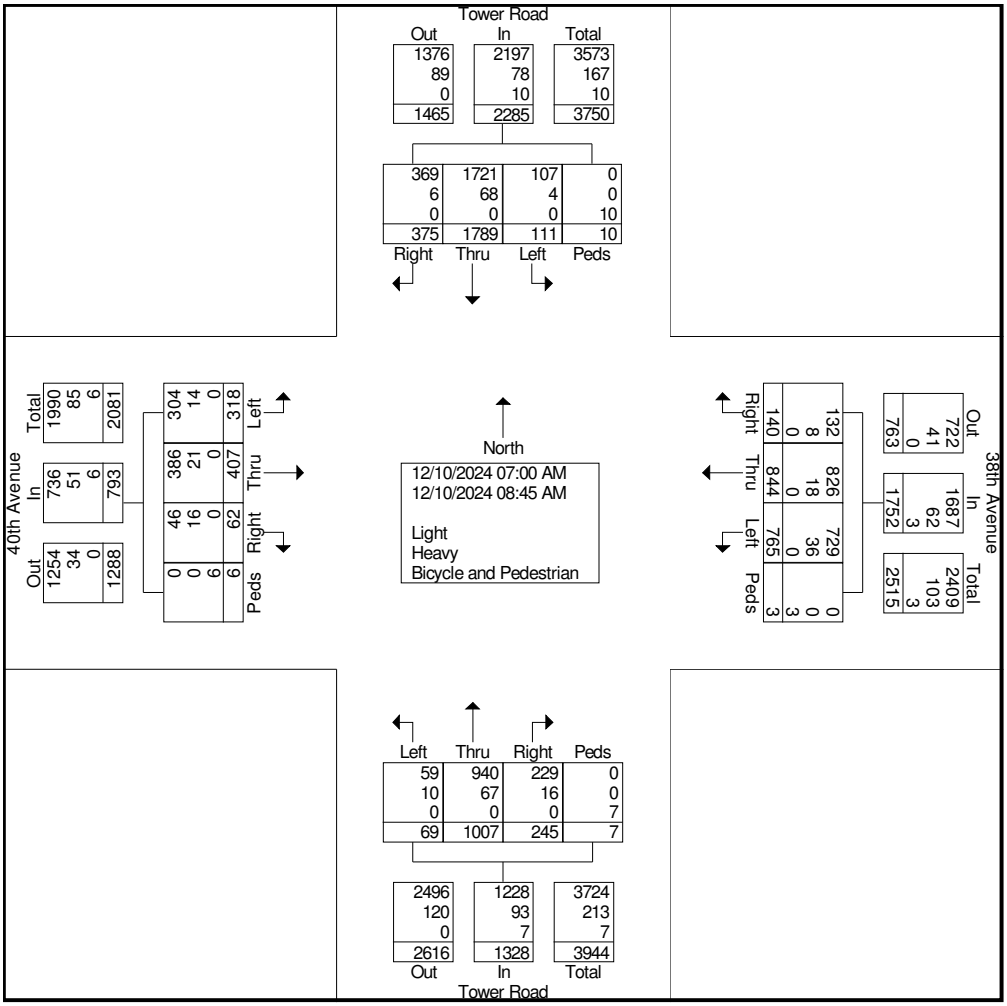
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	40th Avenue Eastbound					38th Avenue Westbound					Tower Road Northbound					Tower Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	37	28	6	1	72	89	79	7	0	175	6	111	33	0	150	10	192	43	0	245	642
07:15 AM	32	42	6	1	81	103	116	5	1	225	10	111	36	2	159	8	194	44	2	248	713
07:30 AM	25	57	4	1	87	102	130	21	0	253	15	138	27	0	180	16	230	38	1	285	805
07:45 AM	38	57	9	3	107	115	137	31	0	283	9	151	32	1	193	8	193	52	5	258	841
Total	132	184	25	6	347	409	462	64	1	936	40	511	128	3	682	42	809	177	8	1036	3001
08:00 AM	49	53	4	0	106	90	113	32	0	235	4	155	26	3	188	22	227	58	1	308	837
08:15 AM	48	82	5	0	135	96	115	23	0	234	4	128	31	0	163	22	241	47	1	311	843
08:30 AM	50	46	13	0	109	84	87	12	0	183	12	114	30	0	156	18	280	54	0	352	800
08:45 AM	39	42	15	0	96	86	67	9	2	164	9	99	30	1	139	7	232	39	0	278	677
Total	186	223	37	0	446	356	382	76	2	816	29	496	117	4	646	69	980	198	2	1249	3157
Grand Total	318	407	62	6	793	765	844	140	3	1752	69	1007	245	7	1328	111	1789	375	10	2285	6158
Apprch %	40.1	51.3	7.8	0.8		43.7	48.2	8	0.2		5.2	75.8	18.4	0.5		4.9	78.3	16.4	0.4		
Total %	5.2	6.6	1	0.1	12.9	12.4	13.7	2.3	0	28.5	1.1	16.4	4	0.1	21.6	1.8	29.1	6.1	0.2	37.1	
Light	304	386	46	0	736	729	826	132	0	1687	59	940	229	0	1228	107	1721	369	0	2197	5848
% Light	95.6	94.8	74.2	0	92.8	95.3	97.9	94.3	0	96.3	85.5	93.3	93.5	0	92.5	96.4	96.2	98.4	0	96.1	95
Heavy	14	21	16	0	51	36	18	8	0	62	10	67	16	0	93	4	68	6	0	78	284
% Heavy	4.4	5.2	25.8	0	6.4	4.7	2.1	5.7	0	3.5	14.5	6.7	6.5	0	7	3.6	3.8	1.6	0	3.4	4.6
Bicycle and Pedestrian	0	0	0	6	6	0	0	0	3	3	0	0	0	7	7	0	0	0	10	10	26
% Bicycle and Pedestrian	0	0	0	100	0.8	0	0	0	100	0.2	0	0	0	100	0.5	0	0	0	100	0.4	0.4

Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
AM Peak
38th Ave and Tower Rd

File Name : 1 38th Ave and Tower Rd AM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 2

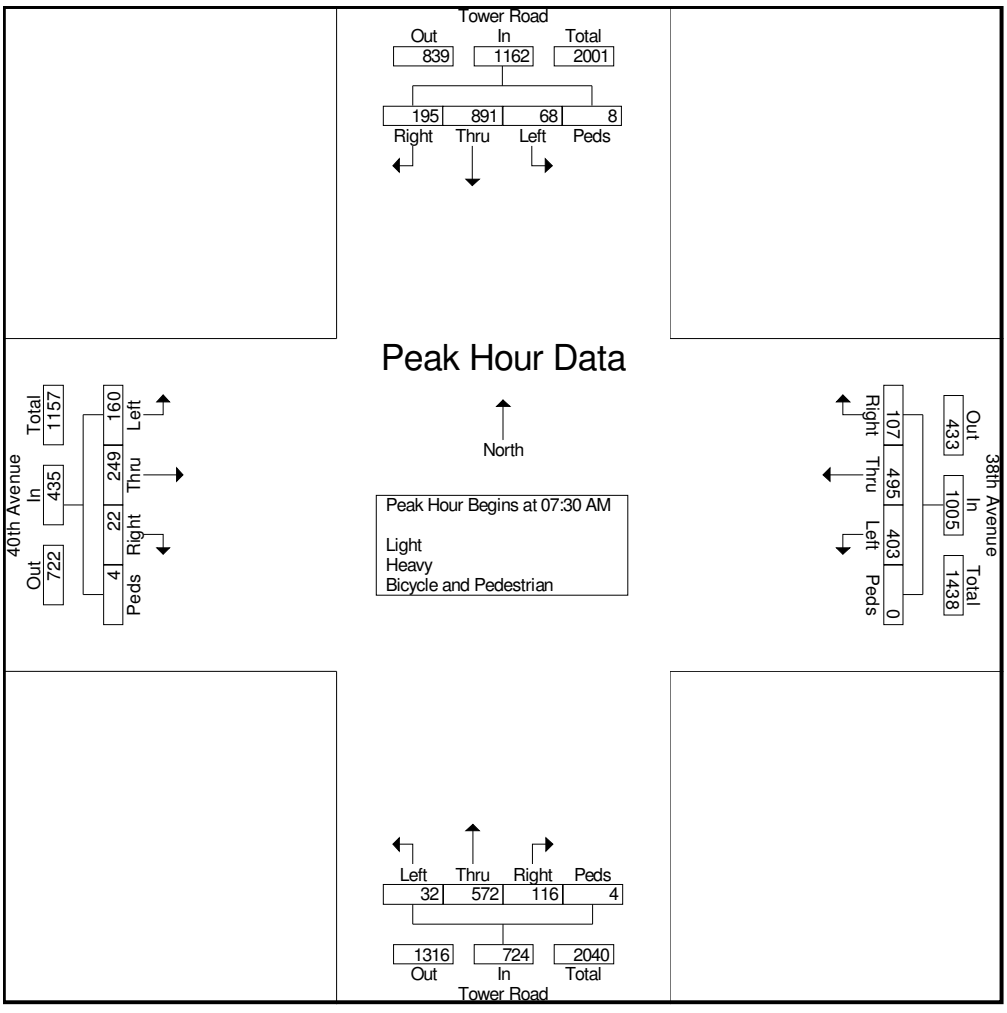


Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
AM Peak
38th Ave and Tower Rd

File Name : 1 38th Ave and Tower Rd AM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 3

	40th Avenue Eastbound					38th Avenue Westbound					Tower Road Northbound					Tower Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. 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	25	57	4	1	87	102	130	21	0	253	**15**	138	27	0	180	16	230	38	1	285	805
07:45 AM	38	57	**9**	**3**	107	**115**	**137**	31	0	**283**	9	151	**32**	1	**193**	8	193	52	**5**	258	841
08:00 AM	**49**	53	4	0	106	90	113	**32**	0	235	4	**155**	26	**3**	188	**22**	227	**58**	1	308	837
08:15 AM	48	**82**	5	0	**135**	96	115	23	0	234	4	128	31	0	163	22	**241**	47	1	**311**	**843**
Total Volume	160	249	22	4	435	403	495	107	0	1005	32	572	116	4	724	68	891	195	8	1162	3326
% App. Total	36.8	57.2	5.1	0.9		40.1	49.3	10.6	0		4.4	79	16	0.6		5.9	76.7	16.8	0.7		
PHF	.816	.759	.611	.333	.806	.876	.903	.836	.000	.888	.533	.923	.906	.333	.938	.773	.924	.841	.400	.934	.986



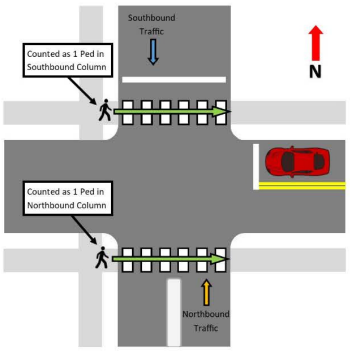
Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
AM Peak
38th Ave and Tower Rd

File Name : 1 38th Ave and Tower Rd AM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
PM Peak
38th Ave and Tower Rd

File Name : 1 38th Ave and Tower Rd PM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 1

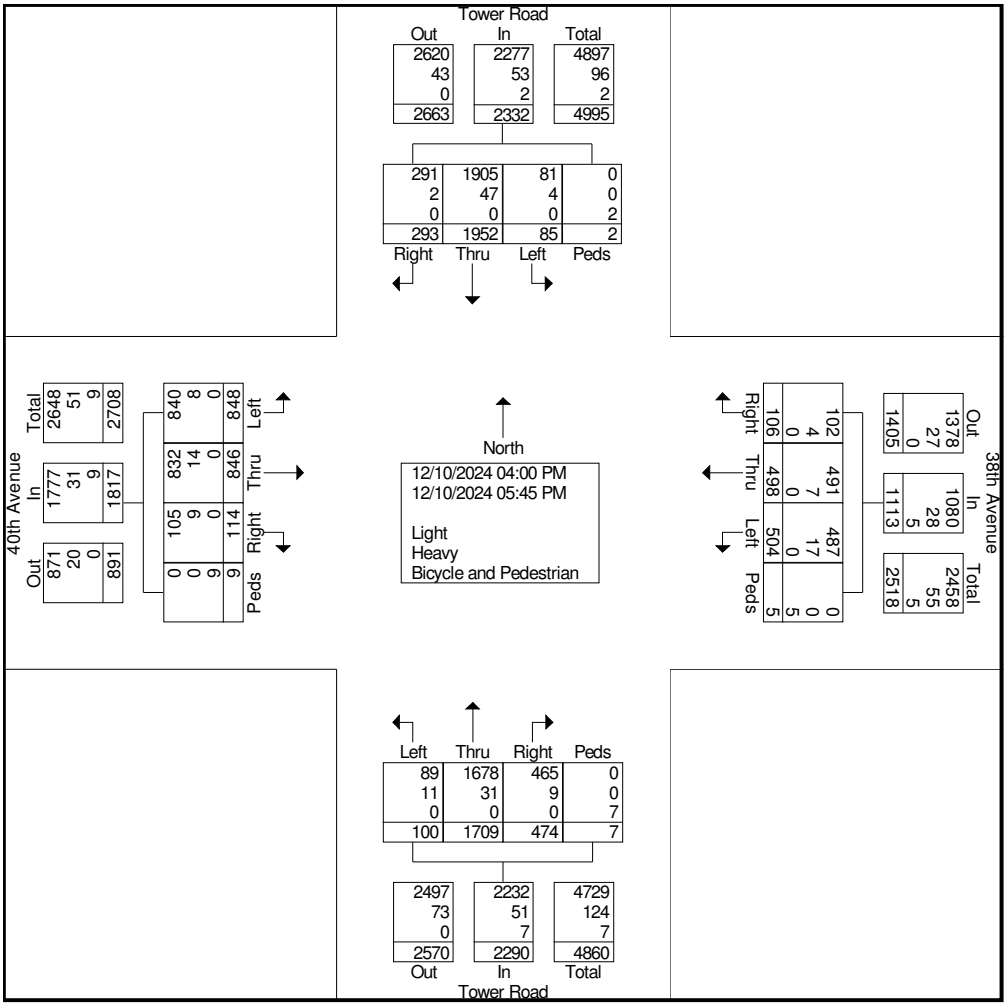
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	40th Avenue Eastbound					38th Avenue Westbound					Tower Road Northbound					Tower Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	114	117	14	2	247	73	92	11	0	176	16	205	54	1	276	12	293	67	0	372	1071
04:15 PM	105	104	17	2	228	49	54	12	2	117	12	224	52	1	289	17	268	38	1	324	958
04:30 PM	113	97	14	1	225	73	74	18	0	165	9	223	56	0	288	10	226	34	0	270	948
04:45 PM	106	107	11	3	227	65	57	13	0	135	16	217	61	0	294	8	264	29	1	302	958
Total	438	425	56	8	927	260	277	54	2	593	53	869	223	2	1147	47	1051	168	2	1268	3935
05:00 PM	111	109	17	0	237	63	69	18	0	150	11	192	63	0	266	12	209	35	0	256	909
05:15 PM	98	122	17	0	237	59	56	14	0	129	13	229	51	2	295	11	233	22	0	266	927
05:30 PM	117	93	14	1	225	61	47	8	0	116	7	211	79	0	297	7	206	31	0	244	882
05:45 PM	84	97	10	0	191	61	49	12	3	125	16	208	58	3	285	8	253	37	0	298	899
Total	410	421	58	1	890	244	221	52	3	520	47	840	251	5	1143	38	901	125	0	1064	3617
Grand Total	848	846	114	9	1817	504	498	106	5	1113	100	1709	474	7	2290	85	1952	293	2	2332	7552
Apprch %	46.7	46.6	6.3	0.5		45.3	44.7	9.5	0.4		4.4	74.6	20.7	0.3		3.6	83.7	12.6	0.1		
Total %	11.2	11.2	1.5	0.1	24.1	6.7	6.6	1.4	0.1	14.7	1.3	22.6	6.3	0.1	30.3	1.1	25.8	3.9	0	30.9	
Light	840	832	105	0	1777	487	491	102	0	1080	89	1678	465	0	2232	81	1905	291	0	2277	7366
% Light	99.1	98.3	92.1	0	97.8	96.6	98.6	96.2	0	97	89	98.2	98.1	0	97.5	95.3	97.6	99.3	0	97.6	97.5
Heavy	8	14	9	0	31	17	7	4	0	28	11	31	9	0	51	4	47	2	0	53	163
% Heavy	0.9	1.7	7.9	0	1.7	3.4	1.4	3.8	0	2.5	11	1.8	1.9	0	2.2	4.7	2.4	0.7	0	2.3	2.2
Bicycle and Pedestrian	0	0	0	9	9	0	0	0	5	5	0	0	0	7	7	0	0	0	2	2	23
% Bicycle and Pedestrian	0	0	0	100	0.5	0	0	0	100	0.4	0	0	0	100	0.3	0	0	0	100	0.1	0.3

Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
PM Peak
38th Ave and Tower Rd

File Name : 1 38th Ave and Tower Rd PM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 2

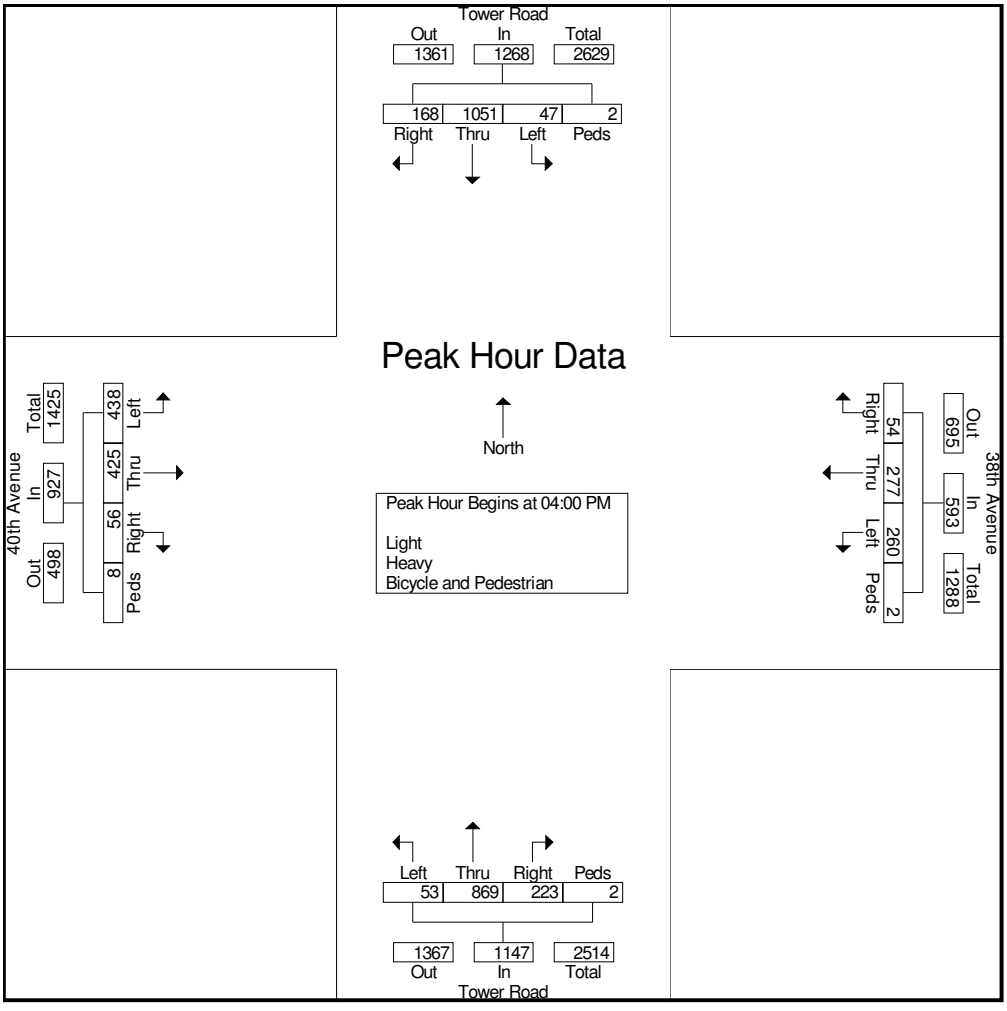


Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
PM Peak
38th Ave and Tower Rd

File Name : 1 38th Ave and Tower Rd PM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 3

	40th Avenue Eastbound					38th Avenue Westbound					Tower Road Northbound					Tower Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	**114**	**117**	14	2	**247**	**73**	**92**	11	0	**176**	**16**	205	54	**1**	276	12	**293**	**67**	0	**372**	**1071**
04:15 PM	105	104	**17**	2	228	49	54	12	**2**	117	12	**224**	52	1	289	**17**	268	38	**1**	324	958
04:30 PM	113	97	14	1	225	73	74	**18**	0	165	9	223	56	0	288	10	226	34	0	270	948
04:45 PM	106	107	11	**3**	227	65	57	13	0	135	16	217	**61**	0	**294**	8	264	29	1	302	958
Total Volume	438	425	56	8	927	260	277	54	2	593	53	869	223	2	1147	47	1051	168	2	1268	3935
% App. Total	47.2	45.8	6	0.9		43.8	46.7	9.1	0.3		4.6	75.8	19.4	0.2		3.7	82.9	13.2	0.2		
PHF	.961	.908	.824	.667	.938	.890	.753	.750	.250	.842	.828	.970	.914	.500	.975	.691	.897	.627	.500	.852	.919



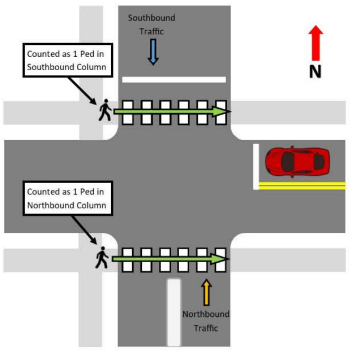
Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
PM Peak
38th Ave and Tower Rd

File Name : 1 38th Ave and Tower Rd PM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
AM Peak
38th Ave Amazon Access

File Name : 2 38th Ave Amazon Access AM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 1

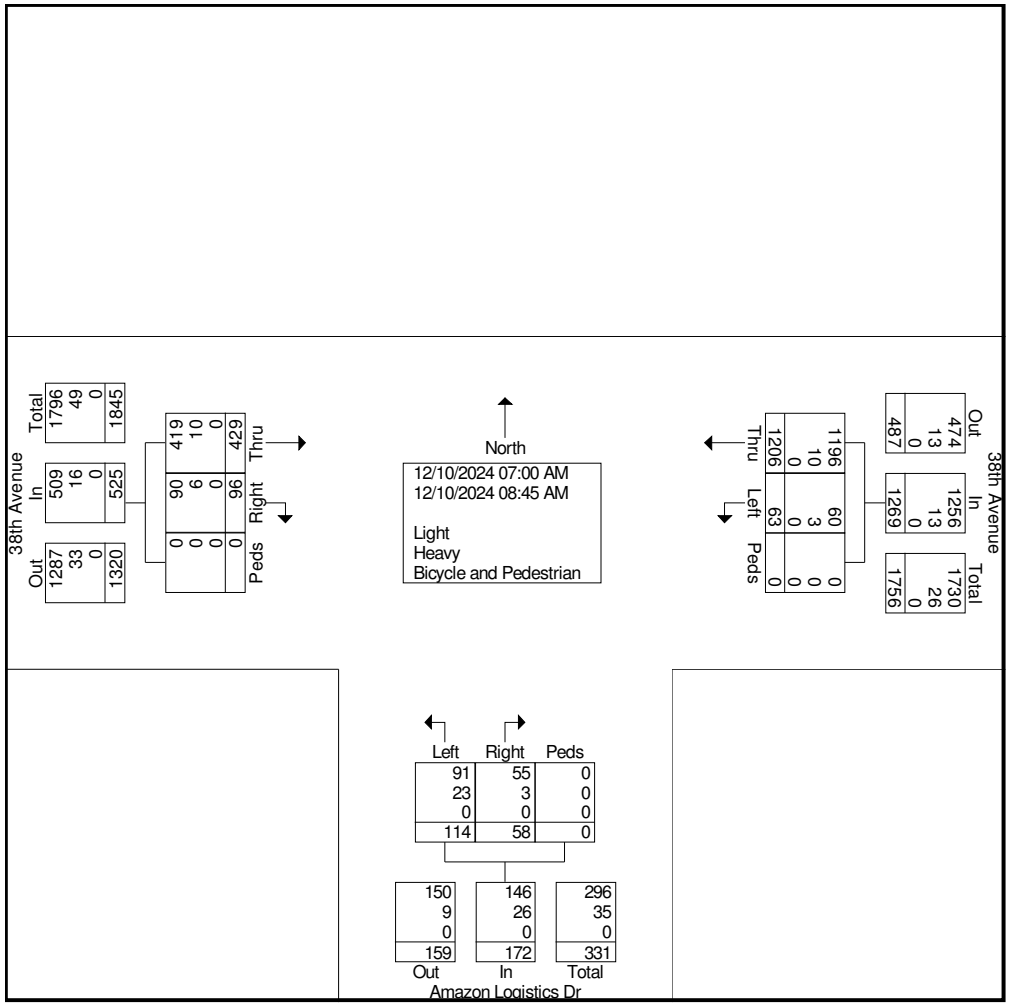
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	38th Avenue Eastbound				38th Avenue Westbound				Amazon Logistics Dr Northbound				
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
07:00 AM	36	1	0	37	0	127	0	127	1	3	0	4	168
07:15 AM	62	3	0	65	5	167	0	172	9	1	0	10	247
07:30 AM	59	10	0	69	6	174	0	180	39	30	0	69	318
07:45 AM	50	10	0	60	5	203	0	208	19	8	0	27	295
Total	207	24	0	231	16	671	0	687	68	42	0	110	1028
08:00 AM	48	17	0	65	15	175	0	190	10	4	0	14	269
08:15 AM	69	35	0	104	23	149	0	172	16	5	0	21	297
08:30 AM	60	16	0	76	8	119	0	127	12	1	0	13	216
08:45 AM	45	4	0	49	1	92	0	93	8	6	0	14	156
Total	222	72	0	294	47	535	0	582	46	16	0	62	938
Grand Total	429	96	0	525	63	1206	0	1269	114	58	0	172	1966
Apprch %	81.7	18.3	0		5	95	0		66.3	33.7	0		
Total %	21.8	4.9	0	26.7	3.2	61.3	0	64.5	5.8	3	0	8.7	
Light	419	90	0	509	60	1196	0	1256	91	55	0	146	1911
% Light	97.7	93.8	0	97	95.2	99.2	0	99	79.8	94.8	0	84.9	97.2
Heavy	10	6	0	16	3	10	0	13	23	3	0	26	55
% Heavy	2.3	6.2	0	3	4.8	0.8	0	1	20.2	5.2	0	15.1	2.8
Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0

Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
AM Peak
38th Ave Amazon Access

File Name : 2 38th Ave Amazon Access AM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 2

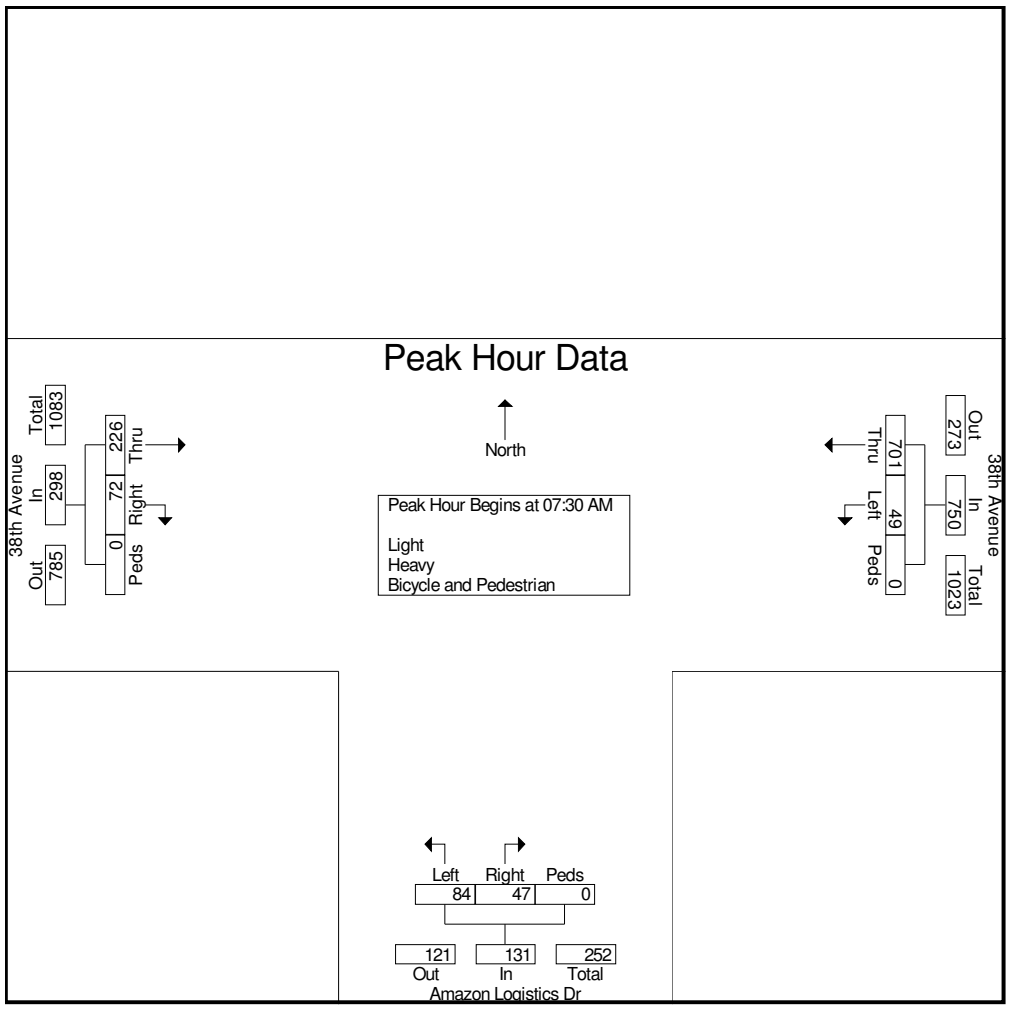


Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
AM Peak
38th Ave Amazon Access

File Name : 2 38th Ave Amazon Access AM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 3

	38th Avenue Eastbound				38th Avenue Westbound				Amazon Logistics Dr Northbound				
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. 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	59	10	0	69	6	174	0	180	**39**	**30**	0	**69**	**318**
07:45 AM	50	10	0	60	5	**203**	0	**208**	19	8	0	27	295
08:00 AM	48	17	0	65	15	175	0	190	10	4	0	14	269
08:15 AM	**69**	**35**	0	**104**	**23**	149	0	172	16	5	0	21	297
Total Volume	226	72	0	298	49	701	0	750	84	47	0	131	1179
% App. Total	75.8	24.2	0		6.5	93.5	0		64.1	35.9	0		
PHF	.819	.514	.000	.716	.533	.863	.000	.901	.538	.392	.000	.475	.927



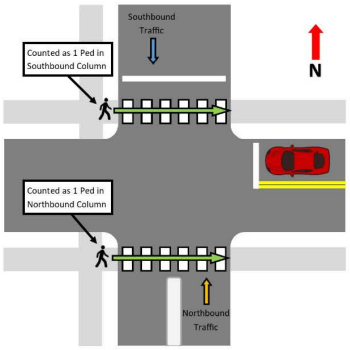
Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
AM Peak
38th Ave Amazon Access

File Name : 2 38th Ave Amazon Access AM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
PM Peak
38th Ave Amazon Access

File Name : 2 38th Ave Amazon Access PM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 1

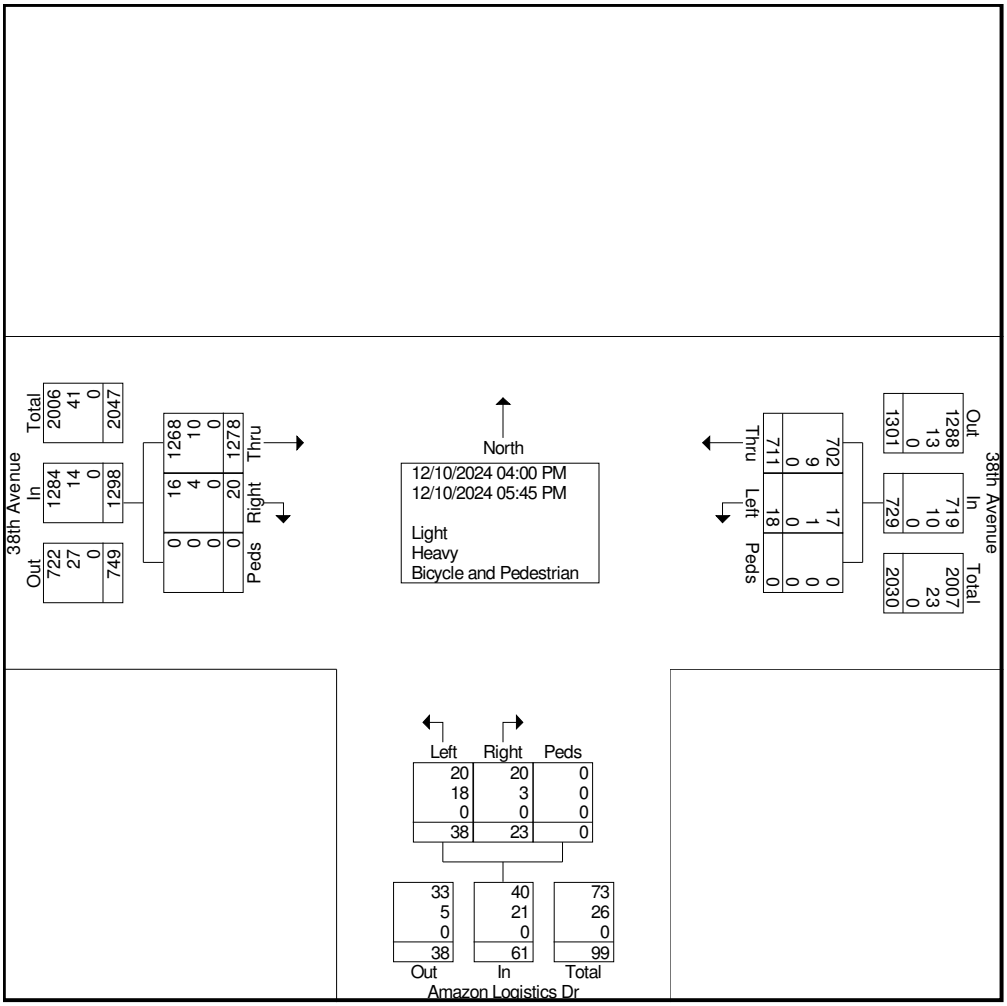
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	38th Avenue Eastbound				38th Avenue Westbound				Amazon Logistics Dr Northbound				
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
04:00 PM	161	1	0	162	2	91	0	93	7	2	0	9	264
04:15 PM	169	6	0	175	3	81	0	84	3	5	0	8	267
04:30 PM	160	9	0	169	8	97	0	105	8	5	0	13	287
04:45 PM	154	1	0	155	3	102	0	105	5	3	0	8	268
Total	644	17	0	661	16	371	0	387	23	15	0	38	1086
05:00 PM	166	2	0	168	1	97	0	98	5	3	0	8	274
05:15 PM	176	1	0	177	1	88	0	89	4	4	0	8	274
05:30 PM	161	0	0	161	0	75	0	75	3	1	0	4	240
05:45 PM	131	0	0	131	0	80	0	80	3	0	0	3	214
Total	634	3	0	637	2	340	0	342	15	8	0	23	1002
Grand Total	1278	20	0	1298	18	711	0	729	38	23	0	61	2088
Apprch %	98.5	1.5	0		2.5	97.5	0		62.3	37.7	0		
Total %	61.2	1	0	62.2	0.9	34.1	0	34.9	1.8	1.1	0	2.9	
Light	1268	16	0	1284	17	702	0	719	20	20	0	40	2043
% Light	99.2	80	0	98.9	94.4	98.7	0	98.6	52.6	87	0	65.6	97.8
Heavy	10	4	0	14	1	9	0	10	18	3	0	21	45
% Heavy	0.8	20	0	1.1	5.6	1.3	0	1.4	47.4	13	0	34.4	2.2
Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0

Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
PM Peak
38th Ave Amazon Access

File Name : 2 38th Ave Amazon Access PM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 2

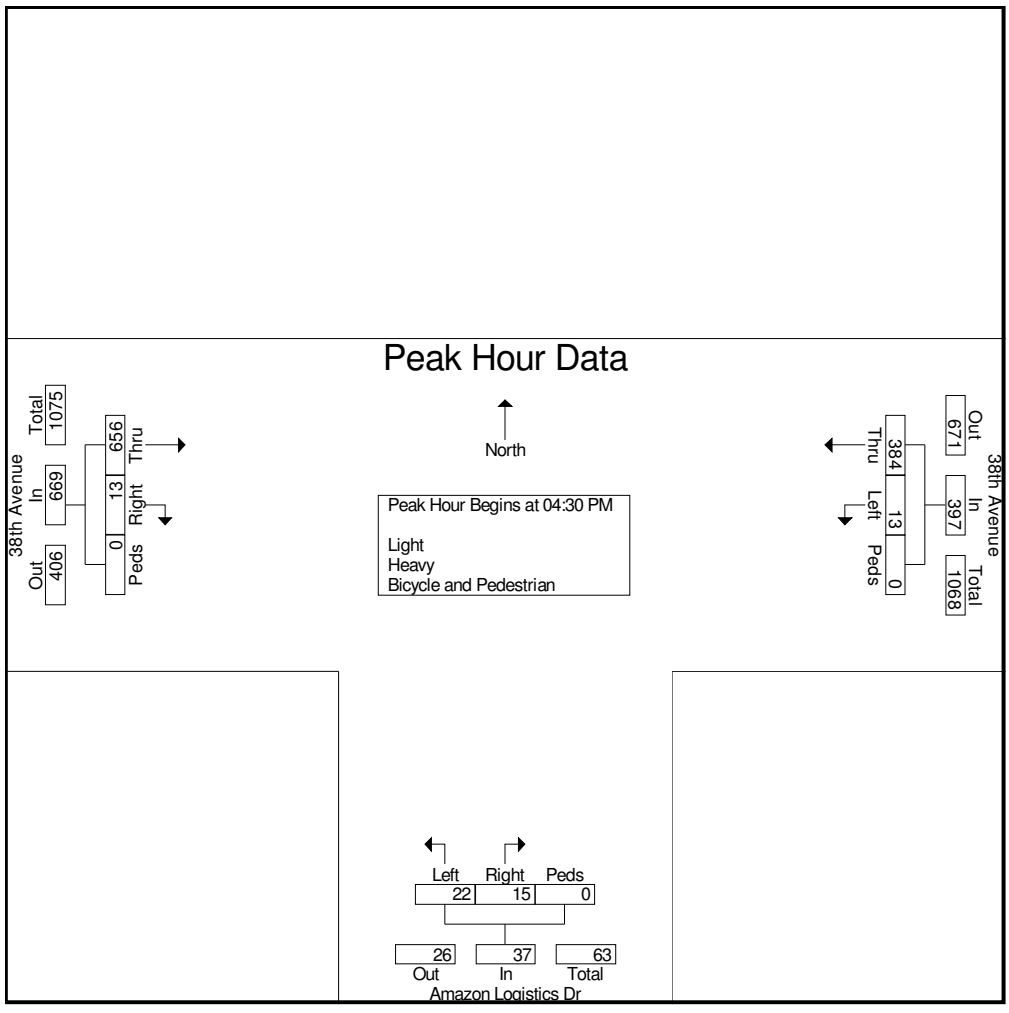


Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
PM Peak
38th Ave Amazon Access

File Name : 2 38th Ave Amazon Access PM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 3

	38th Avenue Eastbound				38th Avenue Westbound				Amazon Logistics Dr Northbound				
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	160	**9**	0	169	**8**	97	0	**105**	**8**	**5**	0	**13**	**287**
04:45 PM	154	1	0	155	3	**102**	0	105	5	3	0	8	268
05:00 PM	166	2	0	168	1	97	0	98	5	3	0	8	274
05:15 PM	**176**	1	0	**177**	1	88	0	89	4	4	0	8	274
Total Volume	656	13	0	669	13	384	0	397	22	15	0	37	1103
% App. Total	98.1	1.9	0		3.3	96.7	0		59.5	40.5	0		
PHF	.932	.361	.000	.945	.406	.941	.000	.945	.688	.750	.000	.712	.961



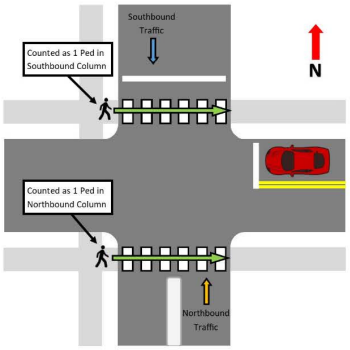
Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
PM Peak
38th Ave Amazon Access

File Name : 2 38th Ave Amazon Access PM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
AM Peak
38th Ave and Himalaya Rd

File Name : 3 38th Ave and Himalaya Rd AM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 1

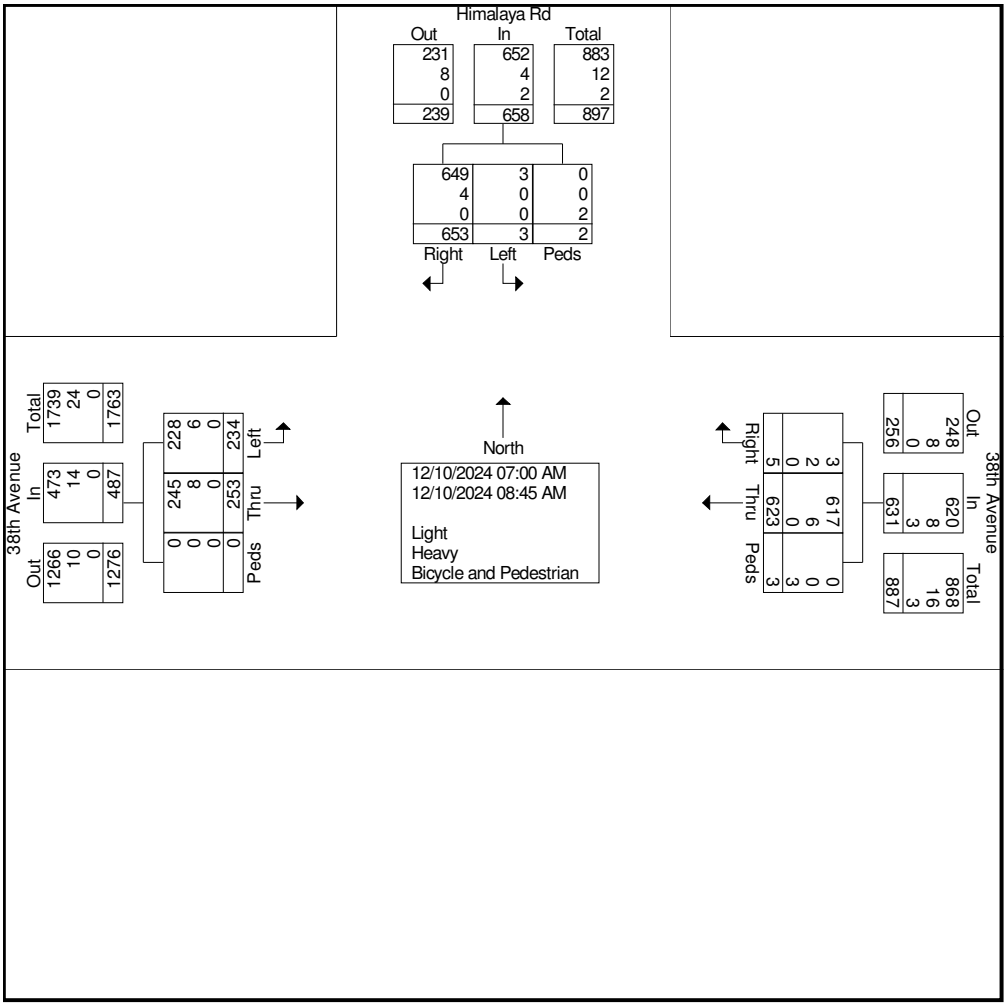
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	38th Avenue Eastbound				38th Avenue Westbound				Himalaya Rd Southbound				
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
07:00 AM	15	24	0	39	64	0	0	64	0	67	0	67	170
07:15 AM	37	27	0	64	81	0	0	81	1	93	0	94	239
07:30 AM	45	44	0	89	93	0	0	93	0	91	0	91	273
07:45 AM	28	25	0	53	96	2	2	100	0	113	0	113	266
Total	125	120	0	245	334	2	2	338	1	364	0	365	948
08:00 AM	30	25	0	55	89	3	0	92	2	97	0	99	246
08:15 AM	31	43	0	74	91	0	1	92	0	81	0	81	247
08:30 AM	25	37	0	62	66	0	0	66	0	62	2	64	192
08:45 AM	23	28	0	51	43	0	0	43	0	49	0	49	143
Total	109	133	0	242	289	3	1	293	2	289	2	293	828
Grand Total	234	253	0	487	623	5	3	631	3	653	2	658	1776
Apprch %	48	52	0		98.7	0.8	0.5		0.5	99.2	0.3		
Total %	13.2	14.2	0	27.4	35.1	0.3	0.2	35.5	0.2	36.8	0.1	37	
Light	228	245	0	473	617	3	0	620	3	649	0	652	1745
% Light	97.4	96.8	0	97.1	99	60	0	98.3	100	99.4	0	99.1	98.3
Heavy	6	8	0	14	6	2	0	8	0	4	0	4	26
% Heavy	2.6	3.2	0	2.9	1	40	0	1.3	0	0.6	0	0.6	1.5
Bicycle and Pedestrian	0	0	0	0	0	0	3	3	0	0	2	2	5
% Bicycle and Pedestrian	0	0	0	0	0	0	100	0.5	0	0	100	0.3	0.3

Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
AM Peak
38th Ave and Himalaya Rd

File Name : 3 38th Ave and Himalaya Rd AM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 2

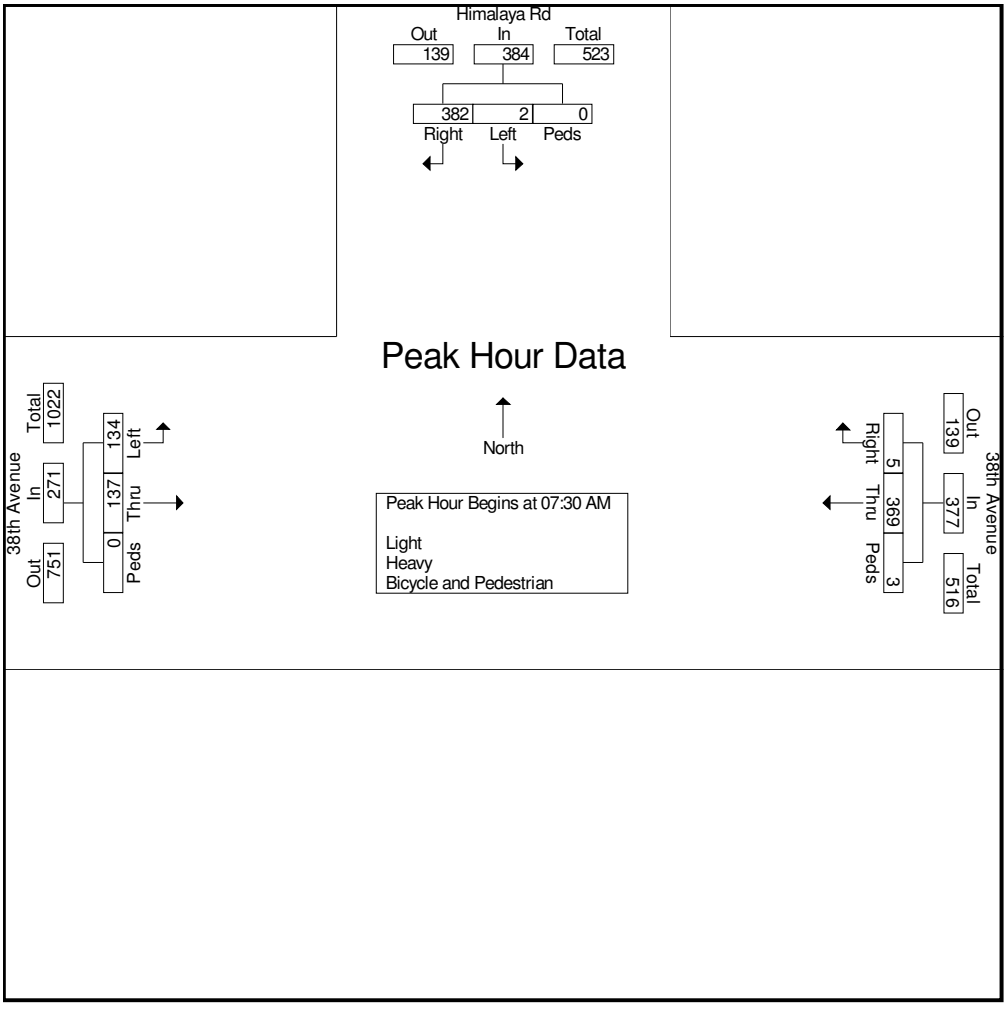


Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
AM Peak
38th Ave and Himalaya Rd

File Name : 3 38th Ave and Himalaya Rd AM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 3

	38th Avenue Eastbound				38th Avenue Westbound				Himalaya Rd Southbound				
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. 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	**45**	**44**	0	**89**	93	0	0	93	0	91	0	91	**273**
07:45 AM	28	25	0	53	**96**	2	**2**	**100**	0	**113**	0	**113**	266
08:00 AM	30	25	0	55	89	**3**	0	92	**2**	97	0	99	246
08:15 AM	31	43	0	74	91	0	1	92	0	81	0	81	247
Total Volume	134	137	0	271	369	5	3	377	2	382	0	384	1032
% App. Total	49.4	50.6	0		97.9	1.3	0.8		0.5	99.5	0		
PHF	.744	.778	.000	.761	.961	.417	.375	.943	.250	.845	.000	.850	.945



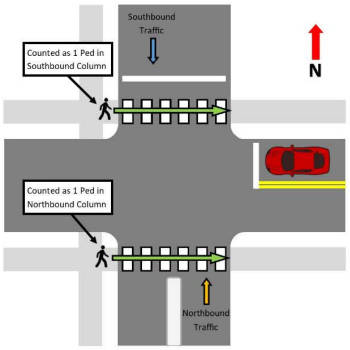
Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
AM Peak
38th Ave and Himalaya Rd

File Name : 3 38th Ave and Himalaya Rd AM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
PM Peak
38th Ave and Himalaya Rd

File Name : 3 38th Ave and Himalaya Rd PM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 1

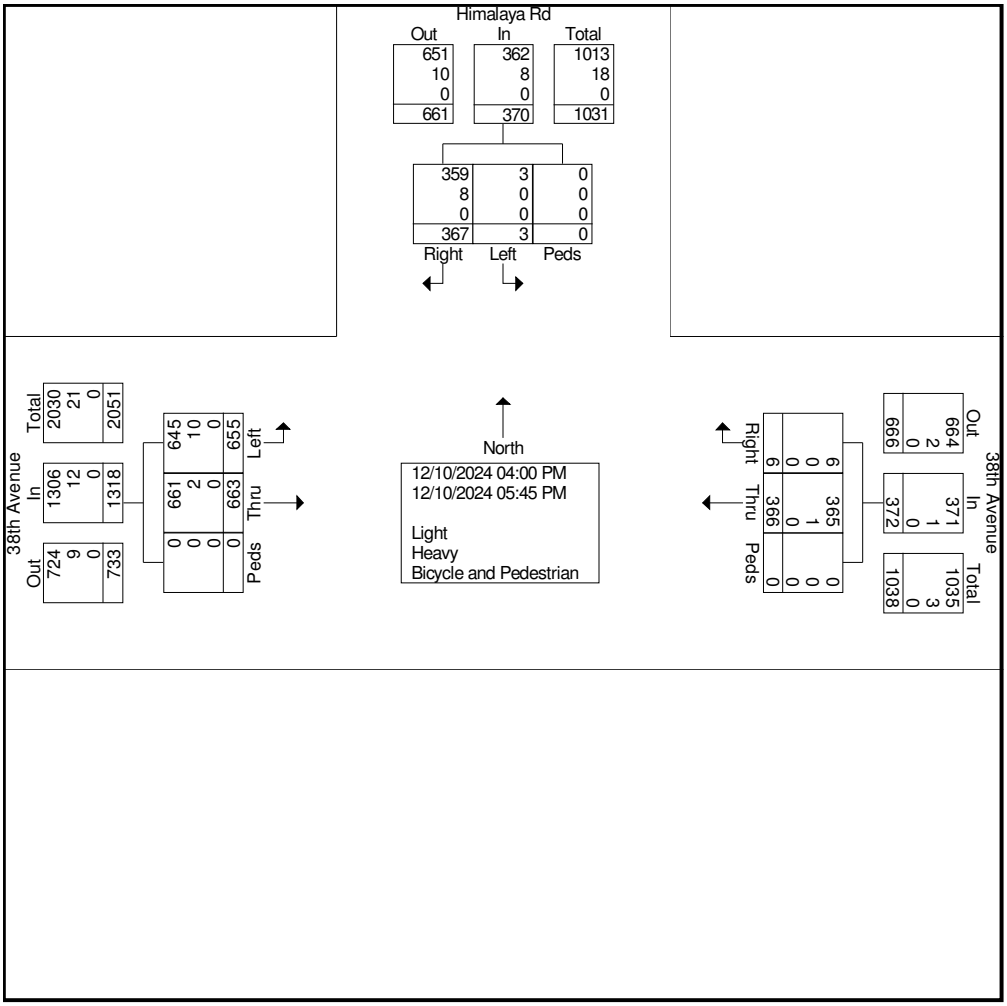
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	38th Avenue Eastbound				38th Avenue Westbound				Himalaya Rd Southbound				
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
04:00 PM	80	85	0	165	40	0	0	40	1	56	0	57	262
04:15 PM	94	83	0	177	32	1	0	33	0	54	0	54	264
04:30 PM	87	84	0	171	55	0	0	55	0	46	0	46	272
04:45 PM	86	75	0	161	58	0	0	58	0	49	0	49	268
Total	347	327	0	674	185	1	0	186	1	205	0	206	1066
05:00 PM	74	97	0	171	57	2	0	59	1	41	0	42	272
05:15 PM	87	91	0	178	47	0	0	47	0	43	0	43	268
05:30 PM	81	83	0	164	38	0	0	38	1	36	0	37	239
05:45 PM	66	65	0	131	39	3	0	42	0	42	0	42	215
Total	308	336	0	644	181	5	0	186	2	162	0	164	994
Grand Total	655	663	0	1318	366	6	0	372	3	367	0	370	2060
Apprch %	49.7	50.3	0		98.4	1.6	0		0.8	99.2	0		
Total %	31.8	32.2	0	64	17.8	0.3	0	18.1	0.1	17.8	0	18	
Light	645	661	0	1306	365	6	0	371	3	359	0	362	2039
% Light	98.5	99.7	0	99.1	99.7	100	0	99.7	100	97.8	0	97.8	99
Heavy	10	2	0	12	1	0	0	1	0	8	0	8	21
% Heavy	1.5	0.3	0	0.9	0.3	0	0	0.3	0	2.2	0	2.2	1
Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0

Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
PM Peak
38th Ave and Himalaya Rd

File Name : 3 38th Ave and Himalaya Rd PM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 2

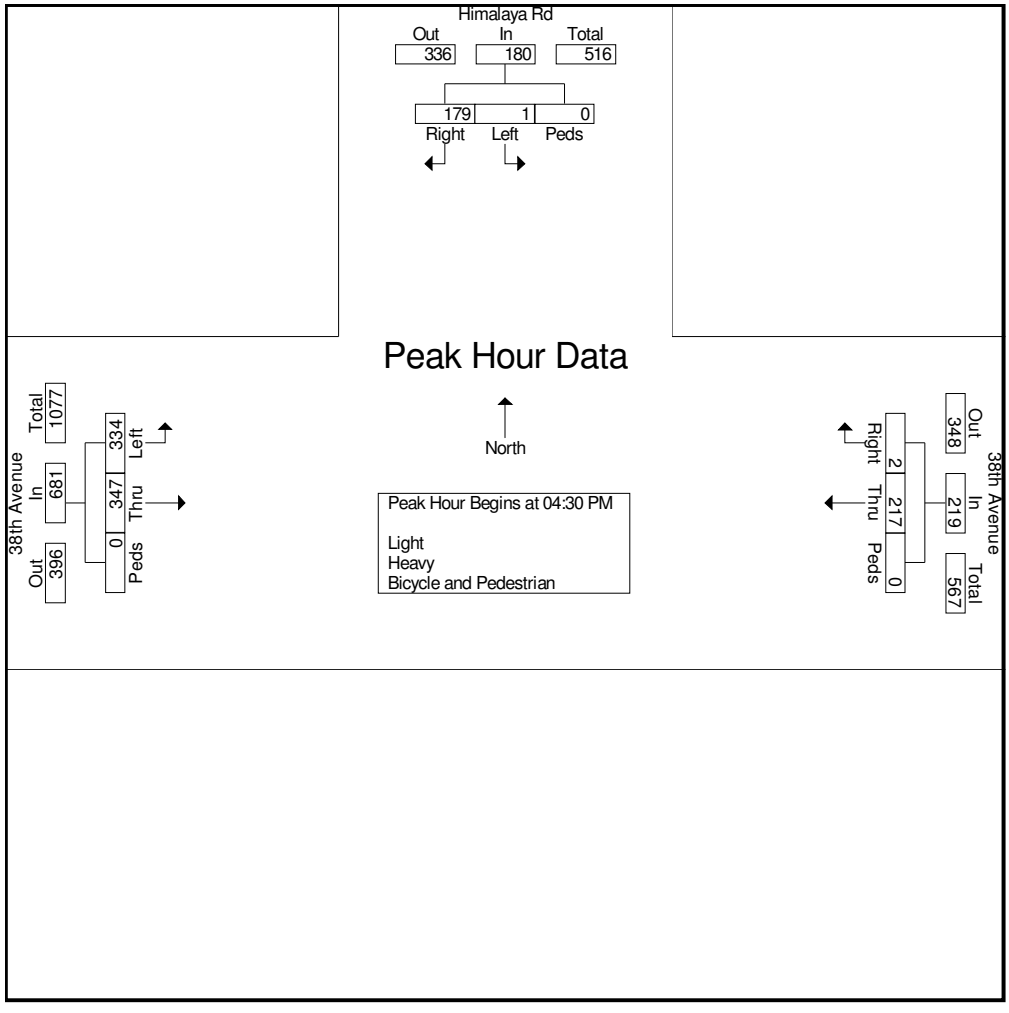


Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
PM Peak
38th Ave and Himalaya Rd

File Name : 3 38th Ave and Himalaya Rd PM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 3

	38th Avenue Eastbound				38th Avenue Westbound				Himalaya Rd Southbound				
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	**87**	84	0	171	55	0	0	55	0	46	0	46	**272**
04:45 PM	86	75	0	161	**58**	0	0	58	0	**49**	0	**49**	268
05:00 PM	74	**97**	0	171	57	**2**	0	**59**	**1**	41	0	42	272
05:15 PM	87	91	0	**178**	47	0	0	47	0	43	0	43	268
Total Volume	334	347	0	681	217	2	0	219	1	179	0	180	1080
% App. Total	49	51	0		99.1	0.9	0		0.6	99.4	0		
PHF	.960	.894	.000	.956	.935	.250	.000	.928	.250	.913	.000	.918	.993



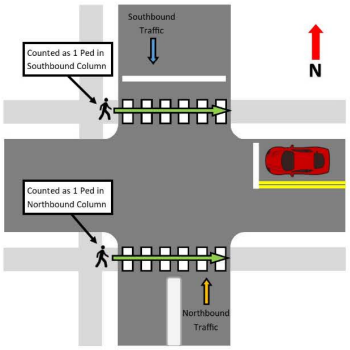
Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
PM Peak
38th Ave and Himalaya Rd

File Name : 3 38th Ave and Himalaya Rd PM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
AM Peak
38th Ave and Picadilly Rd

File Name : 4 38th Ave and Picadilly Rd AM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 1

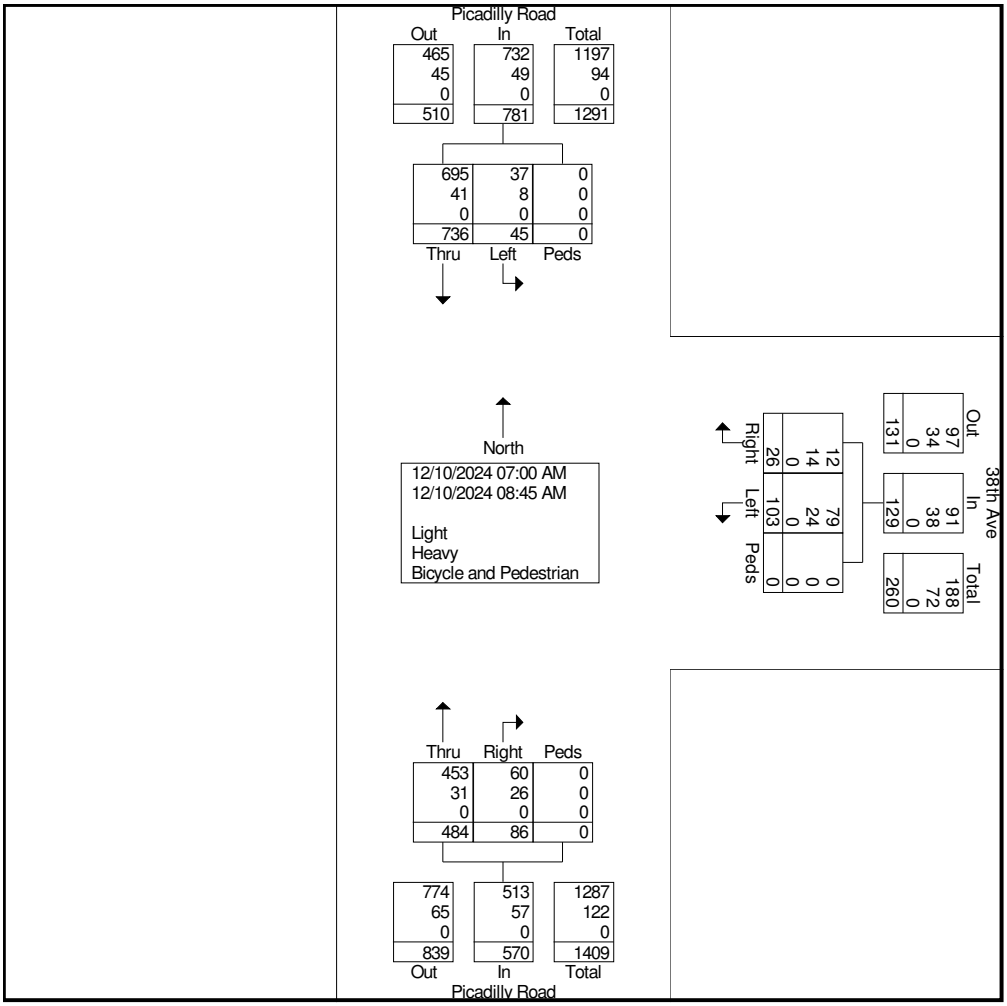
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	38th Ave Westbound				Picadilly Road Northbound				Picadilly Road Southbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
07:00 AM	13	7	0	20	49	8	0	57	4	106	0	110	187
07:15 AM	23	3	0	26	48	14	0	62	2	127	0	129	217
07:30 AM	10	0	0	10	69	8	0	77	6	126	0	132	219
07:45 AM	19	2	0	21	96	13	0	109	6	78	0	84	214
Total	65	12	0	77	262	43	0	305	18	437	0	455	837
08:00 AM	9	2	0	11	61	10	0	71	9	78	0	87	169
08:15 AM	15	2	0	17	59	12	0	71	4	90	0	94	182
08:30 AM	6	5	0	11	51	12	0	63	4	72	0	76	150
08:45 AM	8	5	0	13	51	9	0	60	10	59	0	69	142
Total	38	14	0	52	222	43	0	265	27	299	0	326	643
Grand Total	103	26	0	129	484	86	0	570	45	736	0	781	1480
Apprch %	79.8	20.2	0		84.9	15.1	0		5.8	94.2	0		
Total %	7	1.8	0	8.7	32.7	5.8	0	38.5	3	49.7	0	52.8	
Light	79	12	0	91	453	60	0	513	37	695	0	732	1336
% Light	76.7	46.2	0	70.5	93.6	69.8	0	90	82.2	94.4	0	93.7	90.3
Heavy	24	14	0	38	31	26	0	57	8	41	0	49	144
% Heavy	23.3	53.8	0	29.5	6.4	30.2	0	10	17.8	5.6	0	6.3	9.7
Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0

Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
AM Peak
38th Ave and Picadilly Rd

File Name : 4 38th Ave and Picadilly Rd AM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 2

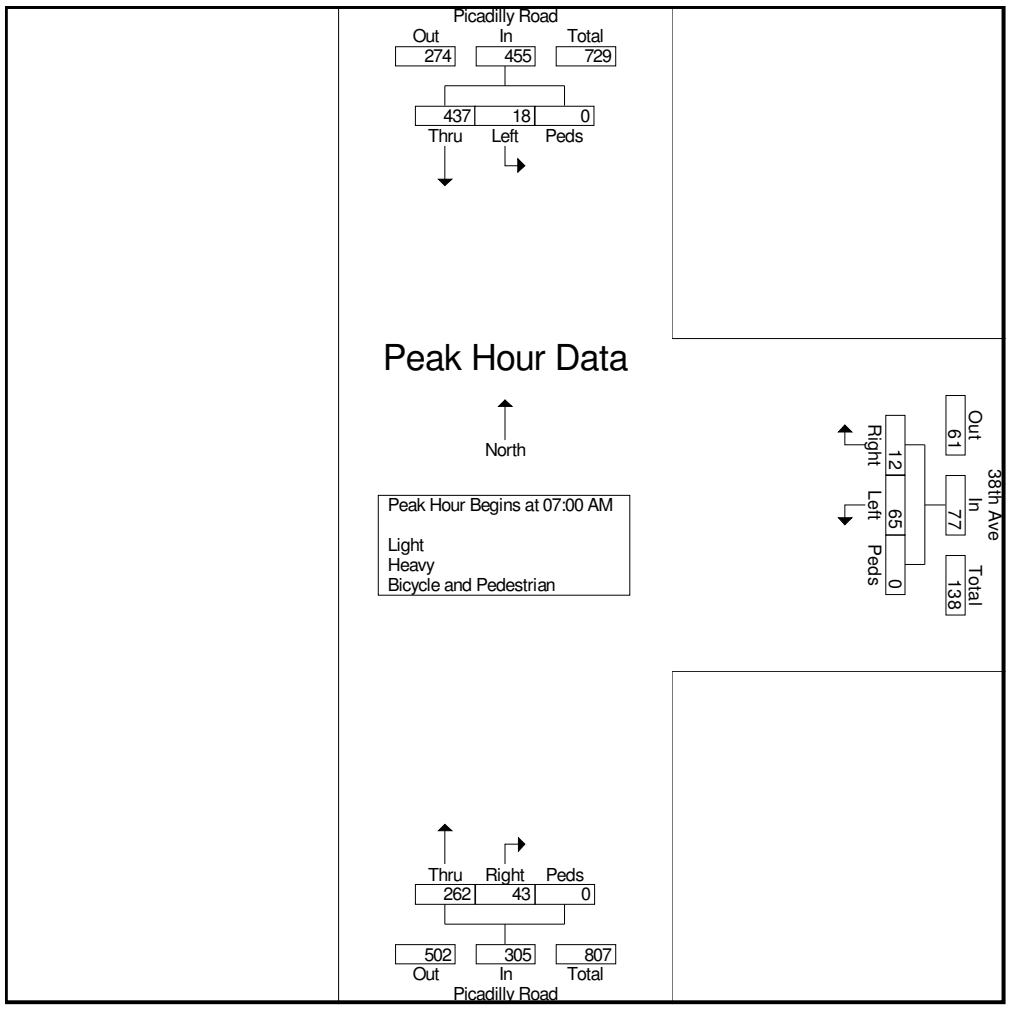


Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
AM Peak
38th Ave and Picadilly Rd

File Name : 4 38th Ave and Picadilly Rd AM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 3

	38th Ave Westbound				Picadilly Road Northbound				Picadilly Road Southbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	13	**7**	0	20	49	8	0	57	4	106	0	110	187
07:15 AM	**23**	3	0	**26**	48	**14**	0	62	2	**127**	0	129	217
07:30 AM	10	0	0	10	69	8	0	77	**6**	126	0	**132**	**219**
07:45 AM	19	2	0	21	**96**	13	0	**109**	6	78	0	84	214
Total Volume	65	12	0	77	262	43	0	305	18	437	0	455	837
% App. Total	84.4	15.6	0		85.9	14.1	0		4	96	0		
PHF	.707	.429	.000	.740	.682	.768	.000	.700	.750	.860	.000	.862	.955



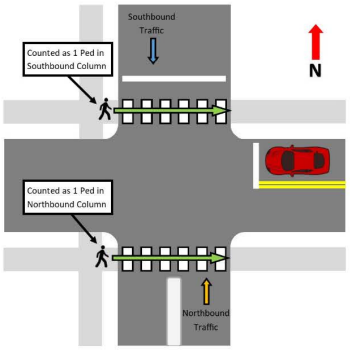
Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
AM Peak
38th Ave and Picadilly Rd

File Name : 4 38th Ave and Picadilly Rd AM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
PM Peak
38th Ave and Picadilly Rd

File Name : 4 38th Ave and Picadilly Rd PM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 1

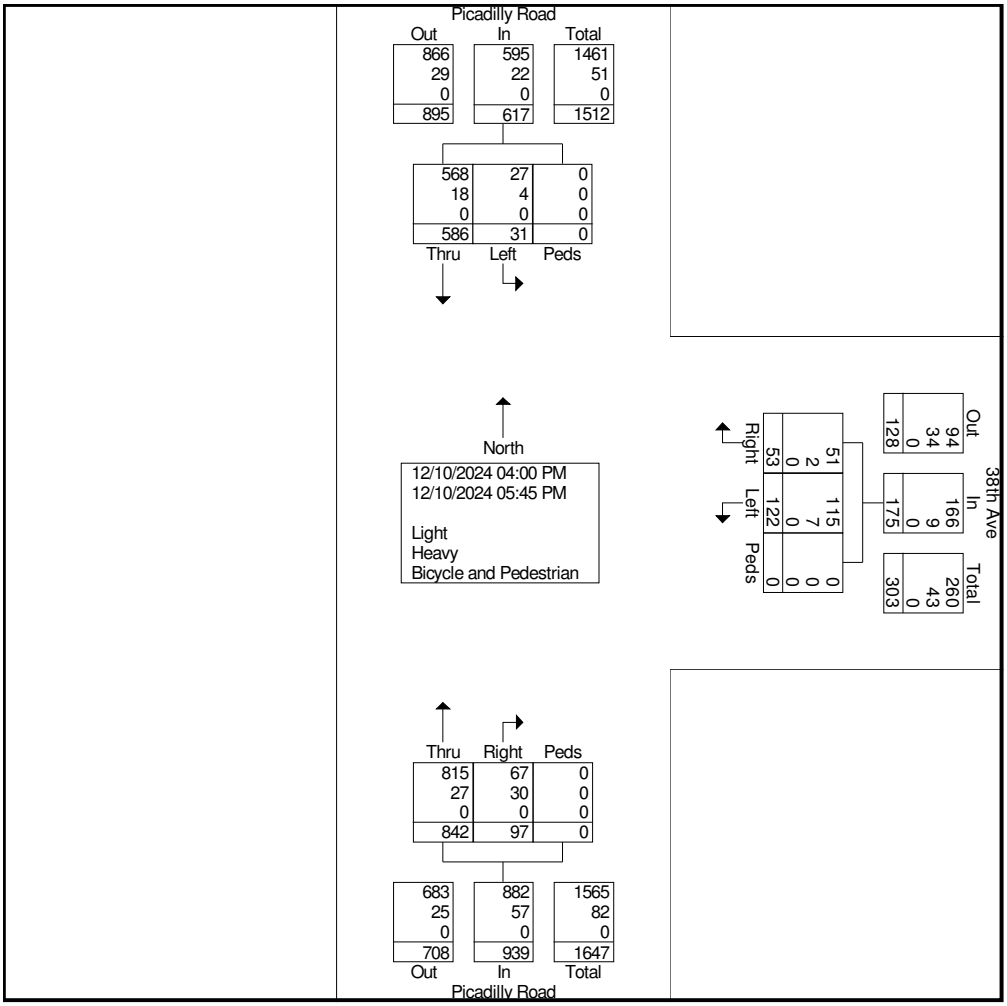
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	38th Ave Westbound				Picadilly Road Northbound				Picadilly Road Southbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
04:00 PM	29	4	0	33	110	8	0	118	1	84	0	85	236
04:15 PM	18	11	0	29	99	12	0	111	4	63	0	67	207
04:30 PM	19	8	0	27	121	10	0	131	3	83	0	86	244
04:45 PM	14	6	0	20	114	13	0	127	3	79	0	82	229
Total	80	29	0	109	444	43	0	487	11	309	0	320	916
05:00 PM	12	10	0	22	118	14	0	132	7	71	0	78	232
05:15 PM	9	3	0	12	89	10	0	99	8	77	0	85	196
05:30 PM	9	5	0	14	97	14	0	111	4	65	0	69	194
05:45 PM	12	6	0	18	94	16	0	110	1	64	0	65	193
Total	42	24	0	66	398	54	0	452	20	277	0	297	815
Grand Total	122	53	0	175	842	97	0	939	31	586	0	617	1731
Apprch %	69.7	30.3	0		89.7	10.3	0		5	95	0		
Total %	7	3.1	0	10.1	48.6	5.6	0	54.2	1.8	33.9	0	35.6	
Light	115	51	0	166	815	67	0	882	27	568	0	595	1643
% Light	94.3	96.2	0	94.9	96.8	69.1	0	93.9	87.1	96.9	0	96.4	94.9
Heavy	7	2	0	9	27	30	0	57	4	18	0	22	88
% Heavy	5.7	3.8	0	5.1	3.2	30.9	0	6.1	12.9	3.1	0	3.6	5.1
Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0

Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
PM Peak
38th Ave and Picadilly Rd

File Name : 4 38th Ave and Picadilly Rd PM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 2

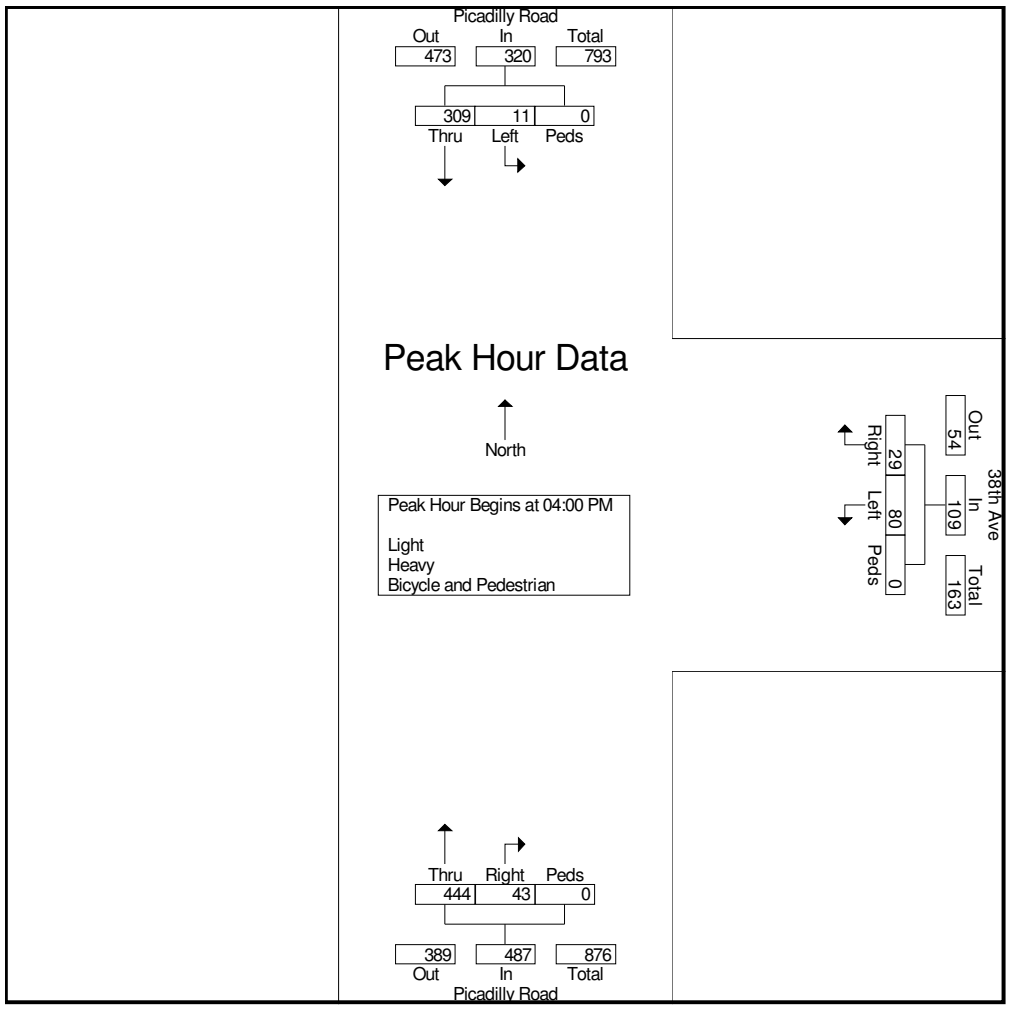


Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
PM Peak
38th Ave and Picadilly Rd

File Name : 4 38th Ave and Picadilly Rd PM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 3

	38th Ave Westbound				Picadilly Road Northbound				Picadilly Road Southbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	**29**	4	0	**33**	110	8	0	118	1	**84**	0	85	236
04:15 PM	18	**11**	0	29	99	12	0	111	**4**	63	0	67	207
04:30 PM	19	8	0	27	**121**	10	0	**131**	3	83	0	**86**	**244**
04:45 PM	14	6	0	20	114	**13**	0	127	3	79	0	82	229
Total Volume	80	29	0	109	444	43	0	487	11	309	0	320	916
% App. Total	73.4	26.6	0		91.2	8.8	0		3.4	96.6	0		
PHF	.690	.659	.000	.826	.917	.827	.000	.929	.688	.920	.000	.930	.939



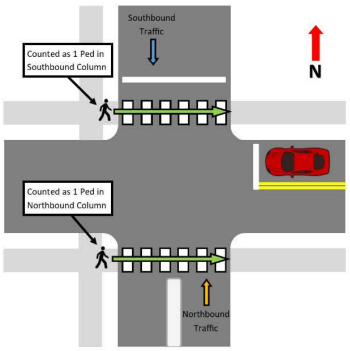
Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
PM Peak
38th Ave and Picadilly Rd

File Name : 4 38th Ave and Picadilly Rd PM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
AM Peak
32nd Pkwy and Himalaya Rd

File Name : 5 32nd Pkwy and Himalaya Rd AM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 1

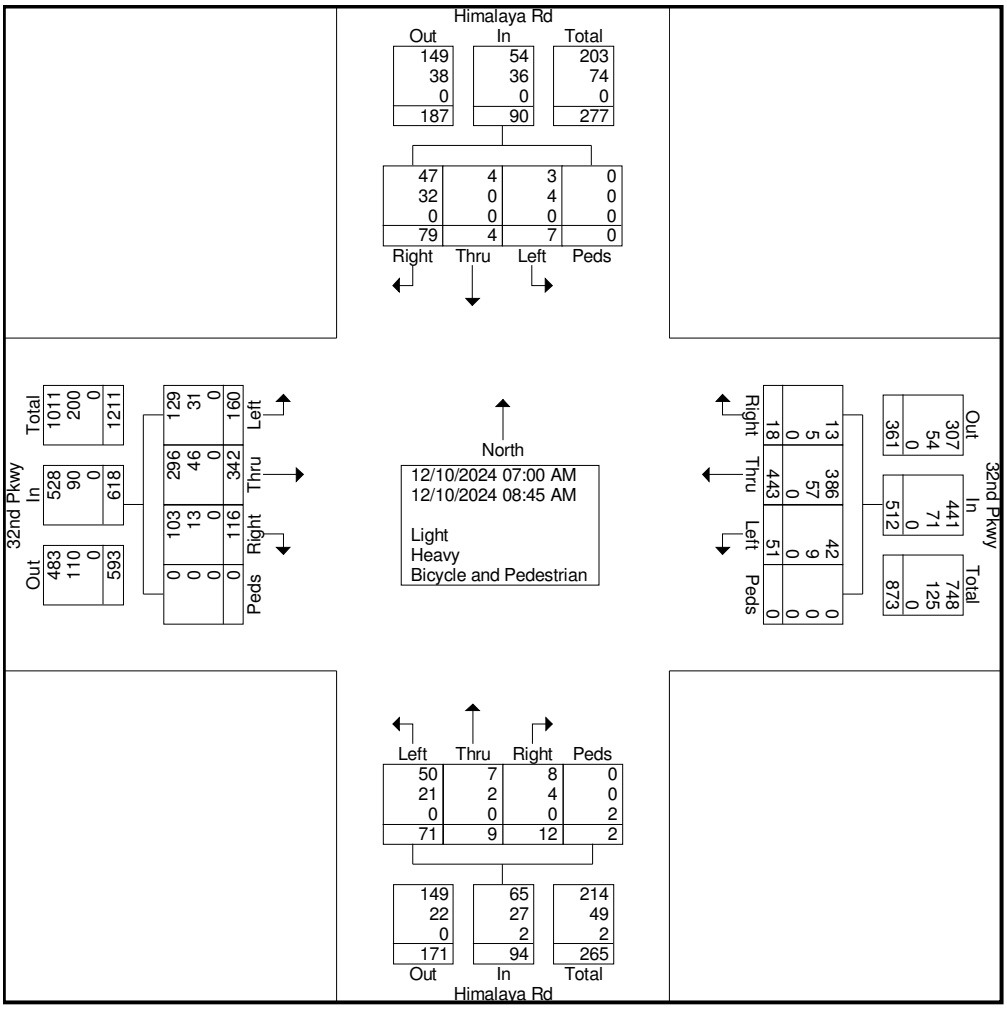
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	32nd Pkwy Eastbound					32nd Pkwy Westbound					Himalaya Rd Northbound					Himalaya Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	28	45	10	0	83	6	62	1	0	69	12	1	0	0	13	1	0	15	0	16	181
07:15 AM	20	40	12	0	72	6	55	2	0	63	8	0	0	0	8	0	1	9	0	10	153
07:30 AM	18	42	15	0	75	9	57	1	0	67	8	1	2	0	11	1	0	13	0	14	167
07:45 AM	23	33	24	0	80	6	56	3	0	65	8	2	1	0	11	1	0	15	0	16	172
Total	89	160	61	0	310	27	230	7	0	264	36	4	3	0	43	3	1	52	0	56	673
08:00 AM	20	45	12	0	77	5	58	6	0	69	10	2	3	0	15	2	0	6	0	8	169
08:15 AM	16	47	11	0	74	11	57	2	0	70	6	0	4	0	10	2	0	9	0	11	165
08:30 AM	19	43	12	0	74	5	54	1	0	60	11	2	1	2	16	0	2	3	0	5	155
08:45 AM	16	47	20	0	83	3	44	2	0	49	8	1	1	0	10	0	1	9	0	10	152
Total	71	182	55	0	308	24	213	11	0	248	35	5	9	2	51	4	3	27	0	34	641
Grand Total	160	342	116	0	618	51	443	18	0	512	71	9	12	2	94	7	4	79	0	90	1314
Apprch %	25.9	55.3	18.8	0		10	86.5	3.5	0		75.5	9.6	12.8	2.1		7.8	4.4	87.8	0		
Total %	12.2	26	8.8	0	47	3.9	33.7	1.4	0	39	5.4	0.7	0.9	0.2	7.2	0.5	0.3	6	0	6.8	
Light	129	296	103	0	528	42	386	13	0	441	50	7	8	0	65	3	4	47	0	54	1088
% Light	80.6	86.5	88.8	0	85.4	82.4	87.1	72.2	0	86.1	70.4	77.8	66.7	0	69.1	42.9	100	59.5	0	60	82.8
Heavy	31	46	13	0	90	9	57	5	0	71	21	2	4	0	27	4	0	32	0	36	224
% Heavy	19.4	13.5	11.2	0	14.6	17.6	12.9	27.8	0	13.9	29.6	22.2	33.3	0	28.7	57.1	0	40.5	0	40	17
Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2
% Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0	100	2.1	0	0	0	0	0	0.2

Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
AM Peak
32nd Pkwy and Himalaya Rd

File Name : 5 32nd Pkwy and Himalaya Rd AM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 2

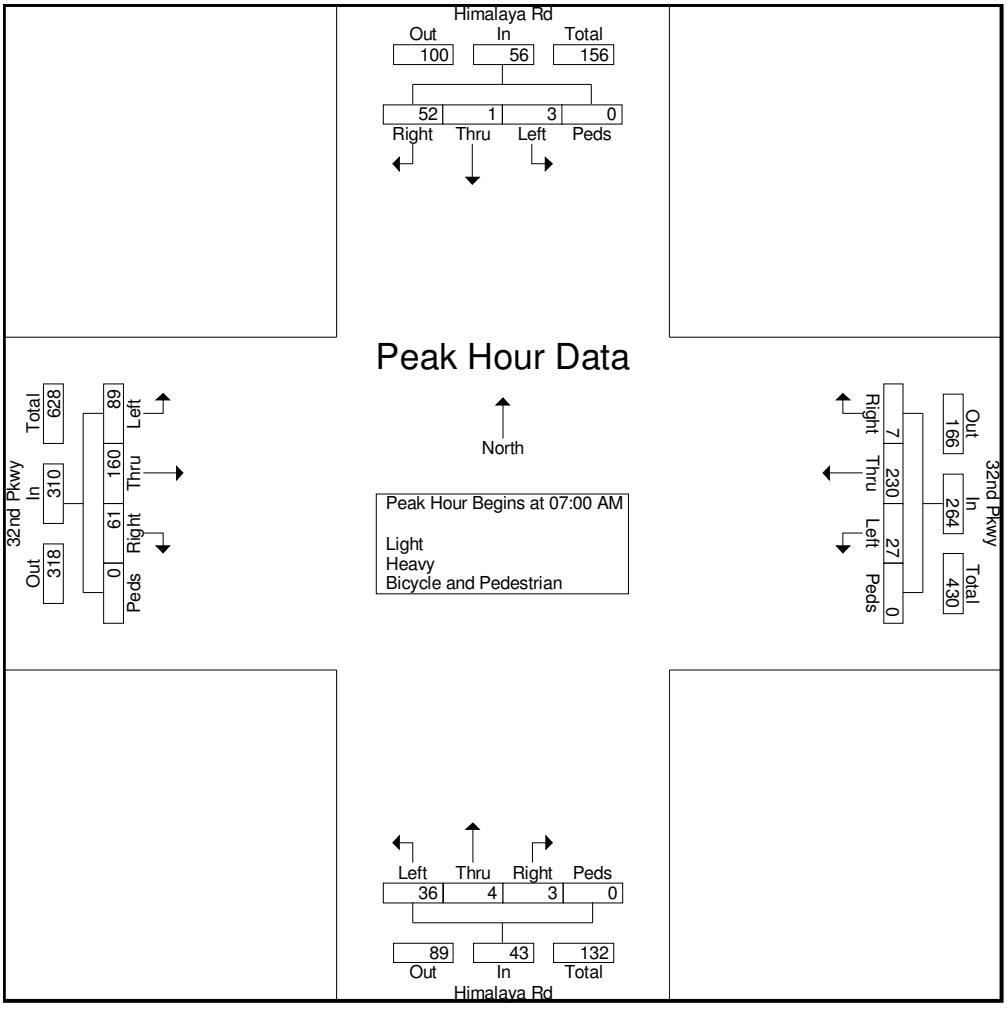


Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
AM Peak
32nd Pkwy and Himalaya Rd

File Name : 5 32nd Pkwy and Himalaya Rd AM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 3

	32nd Pkwy Eastbound					32nd Pkwy Westbound					Himalaya Rd Northbound					Himalaya Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	**28**	**45**	10	0	**83**	6	**62**	1	0	**69**	**12**	1	0	0	**13**	**1**	0	**15**	0	**16**	**181**
07:15 AM	20	40	12	0	72	6	55	2	0	63	8	0	0	0	8	0	**1**	9	0	10	153
07:30 AM	18	42	15	0	75	**9**	57	1	0	67	8	1	**2**	0	11	1	0	13	0	14	167
07:45 AM	23	33	**24**	0	80	6	56	**3**	0	65	8	**2**	1	0	11	1	0	15	0	16	172
Total Volume	89	160	61	0	310	27	230	7	0	264	36	4	3	0	43	3	1	52	0	56	673
% App. Total	28.7	51.6	19.7	0		10.2	87.1	2.7	0		83.7	9.3	7	0		5.4	1.8	92.9	0		
PHF	.795	.889	.635	.000	.934	.750	.927	.583	.000	.957	.750	.500	.375	.000	.827	.750	.250	.867	.000	.875	.930



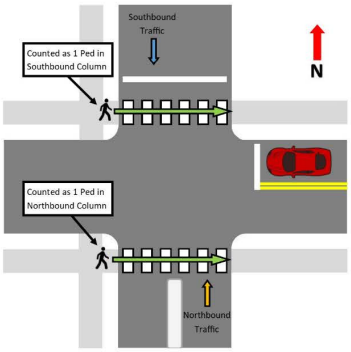
Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
AM Peak
32nd Pkwy and Himalaya Rd

File Name : 5 32nd Pkwy and Himalaya Rd AM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
PM Peak
32nd Pkwy and Himalaya Rd

File Name : 5 32nd Pkwy and Himalaya Rd PM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 1

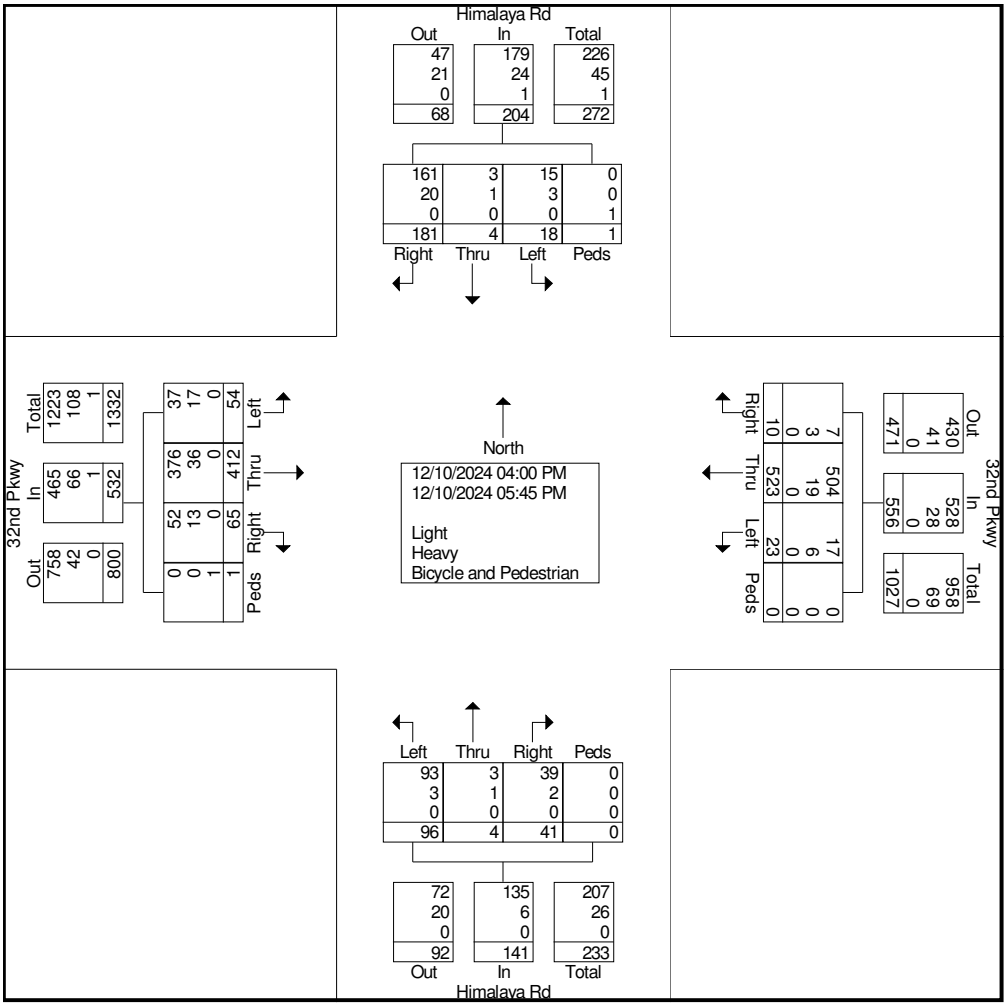
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	32nd Pkwy Eastbound					32nd Pkwy Westbound					Himalaya Rd Northbound					Himalaya Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	4	53	5	0	62	5	70	0	0	75	14	0	10	0	24	5	1	25	0	31	192
04:15 PM	5	38	5	0	48	0	56	3	0	59	8	0	9	0	17	2	0	19	0	21	145
04:30 PM	12	48	9	0	69	4	62	1	0	67	23	3	8	0	34	5	0	41	1	47	217
04:45 PM	14	34	19	1	68	6	68	1	0	75	15	1	5	0	21	3	0	24	0	27	191
Total	35	173	38	1	247	15	256	5	0	276	60	4	32	0	96	15	1	109	1	126	745
05:00 PM	2	63	17	0	82	5	86	0	0	91	14	0	4	0	18	2	2	27	0	31	222
05:15 PM	7	61	5	0	73	0	69	1	0	70	8	0	2	0	10	0	0	14	0	14	167
05:30 PM	7	61	3	0	71	2	66	3	0	71	7	0	1	0	8	1	1	24	0	26	176
05:45 PM	3	54	2	0	59	1	46	1	0	48	7	0	2	0	9	0	0	7	0	7	123
Total	19	239	27	0	285	8	267	5	0	280	36	0	9	0	45	3	3	72	0	78	688
Grand Total	54	412	65	1	532	23	523	10	0	556	96	4	41	0	141	18	4	181	1	204	1433
Apprch %	10.2	77.4	12.2	0.2		4.1	94.1	1.8	0		68.1	2.8	29.1	0		8.8	2	88.7	0.5		
Total %	3.8	28.8	4.5	0.1	37.1	1.6	36.5	0.7	0	38.8	6.7	0.3	2.9	0	9.8	1.3	0.3	12.6	0.1	14.2	
Light	37	376	52	0	465	17	504	7	0	528	93	3	39	0	135	15	3	161	0	179	1307
% Light	68.5	91.3	80	0	87.4	73.9	96.4	70	0	95	96.9	75	95.1	0	95.7	83.3	75	89	0	87.7	91.2
Heavy	17	36	13	0	66	6	19	3	0	28	3	1	2	0	6	3	1	20	0	24	124
% Heavy	31.5	8.7	20	0	12.4	26.1	3.6	30	0	5	3.1	25	4.9	0	4.3	16.7	25	11	0	11.8	8.7
Bicycle and Pedestrian	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
% Bicycle and Pedestrian	0	0	0	100	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.5	0.1

Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
PM Peak
32nd Pkwy and Himalaya Rd

File Name : 5 32nd Pkwy and Himalaya Rd PM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 2

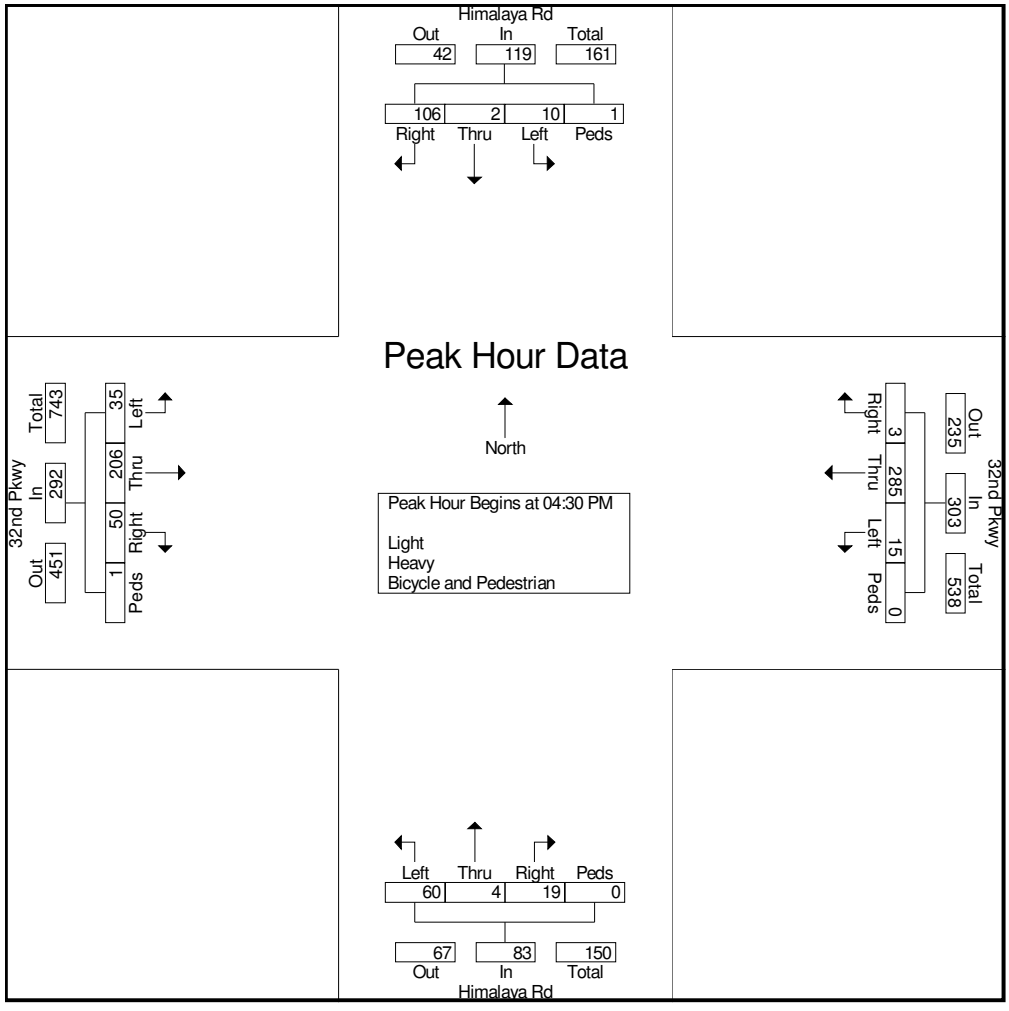


Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
PM Peak
32nd Pkwy and Himalaya Rd

File Name : 5 32nd Pkwy and Himalaya Rd PM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 3

	32nd Pkwy Eastbound					32nd Pkwy Westbound					Himalaya Rd Northbound					Himalaya Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	12	48	9	0	69	4	62	**1**	0	67	**23**	**3**	**8**	0	**34**	**5**	0	**41**	**1**	**47**	217
04:45 PM	**14**	34	**19**	**1**	68	**6**	68	1	0	75	15	1	5	0	21	3	0	24	0	27	191
05:00 PM	2	**63**	17	0	**82**	5	**86**	0	0	**91**	14	0	4	0	18	2	**2**	27	0	31	**222**
05:15 PM	7	61	5	0	73	0	69	1	0	70	8	0	2	0	10	0	0	14	0	14	167
Total Volume	35	206	50	1	292	15	285	3	0	303	60	4	19	0	83	10	2	106	1	119	797
% App. Total	12	70.5	17.1	0.3		5	94.1	1	0		72.3	4.8	22.9	0		8.4	1.7	89.1	0.8		
PHF	.625	.817	.658	.250	.890	.625	.828	.750	.000	.832	.652	.333	.594	.000	.610	.500	.250	.646	.250	.633	.898



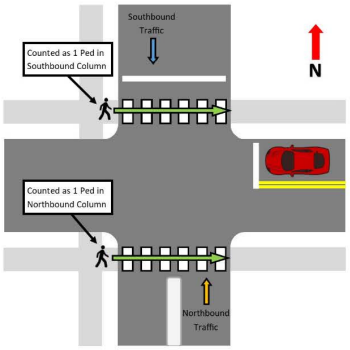
Ridgeview Data Collection

Aurora, CO
Aurora Majestic Center
PM Peak
32nd Pkwy and Himalaya Rd

File Name : 5 32nd Pkwy and Himalaya Rd PM
Site Code : KHA 666
Start Date : 12/10/2024
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



APPENDIX B

Background Traffic Study Excerpts

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

Food Bank of the Rockies

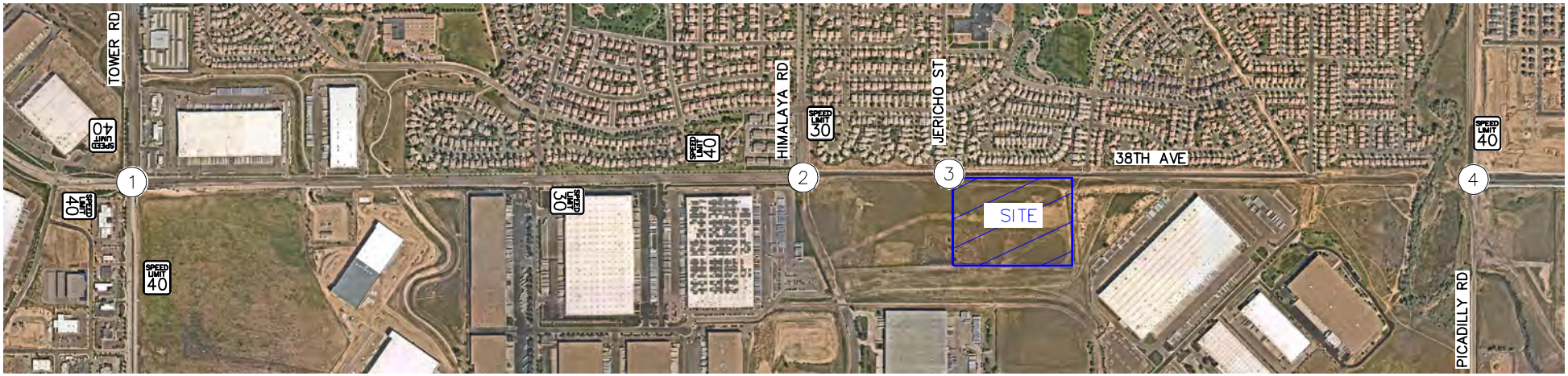
Aurora, Colorado

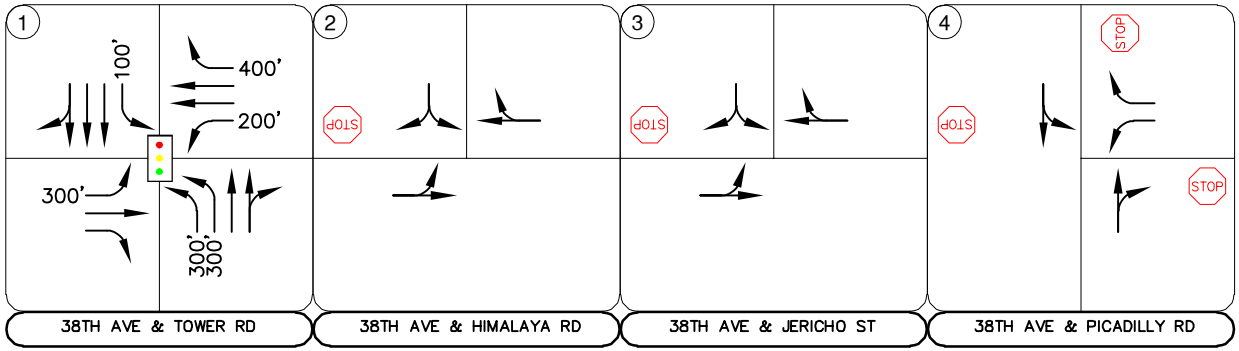
Prepared for
Commerce Construction Co., L.P.
20100 East 32nd Parkway
Suite 150
Aurora, Colorado 80011

Prepared by
Kimley-Horn and Associates, Inc.
4582 South Ulster Street
Suite 1500
Denver, Colorado 80237
(303) 228-2300

January 2024

Kimley»Horn
NORTH
NTS 096388013





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

FIGURE 3
FOOD BANK OF THE ROCKIES
AURORA, COLORADO
EXISTING GEOMETRY AND CONTROL

Kimley»Horn

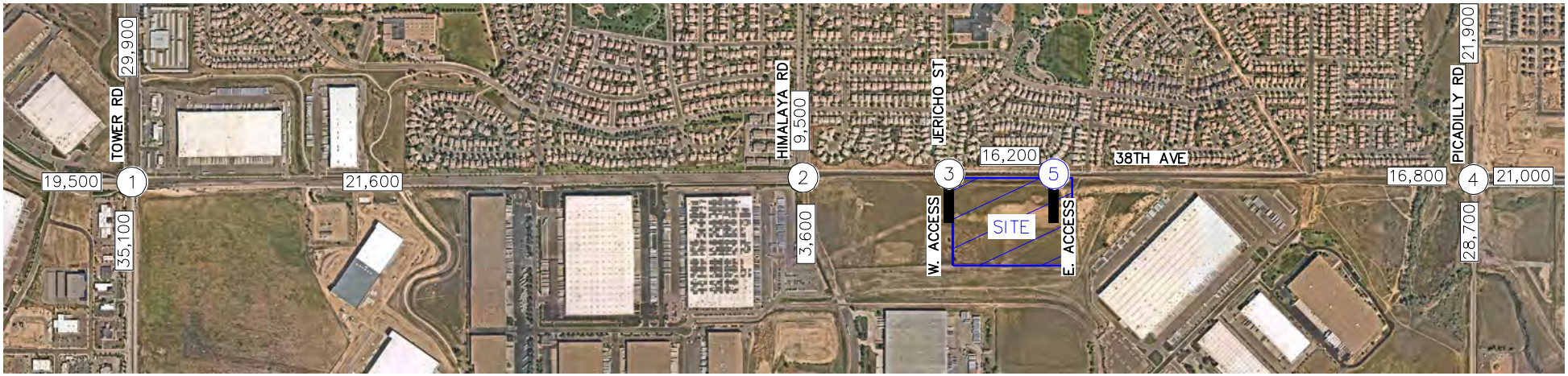
3.3 Existing Traffic Volumes

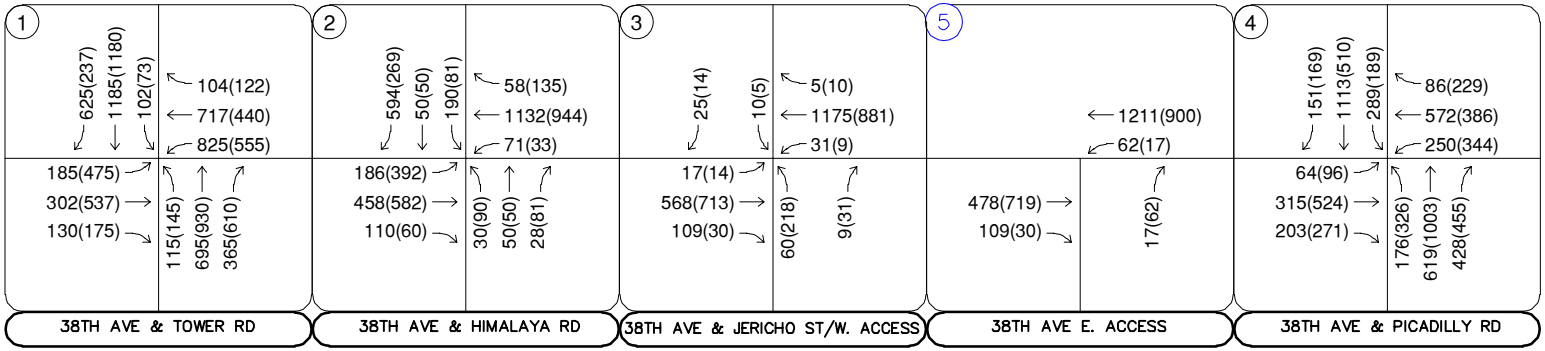
Existing turning movement counts were conducted at the study intersections on Thursday, February 2, 2023, during the weekday morning and afternoon peak hours. The counts were conducted during the morning and afternoon peak hours of adjacent street traffic in 15-minute intervals from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM on this count date. The existing intersection traffic volumes are shown in **Figure 4** with count sheets provided in **Appendix A**.

3.4 Unspecified Development Traffic Growth

To conform to City of Aurora Traffic Impact Study Guidelines, a two (2) percent annual growth rate was used to estimate future traffic volume. This annual growth rate was used to estimate short-term 2025 and long-term 2040 traffic volume projections at the key intersections. In addition, project traffic volumes from Gateway Park – Parcel TIC 2 and Buildings 26 & 27 were added directly to the study intersections. These developments have either been approved or are currently being constructed and will be completed by 2025.

Further, the Gateway Park – Parcel TIC 2 2040 total traffic volumes at 38th Avenue/Tower Road intersection and the Majestic Commercenter II 2040 total traffic volumes at 38th Avenue/Picadilly Road were used as the baseline for the 2040 background traffic volumes. These volumes were balanced between the 38th Avenue study intersections and aligned to NEATS Refresh and DRCOG future traffic models. The traffic studies are included in **Appendix B.** The calculated background traffic volumes for 2025 and 2040 are shown in **Figure 5** and **Figure 6,** respectively.



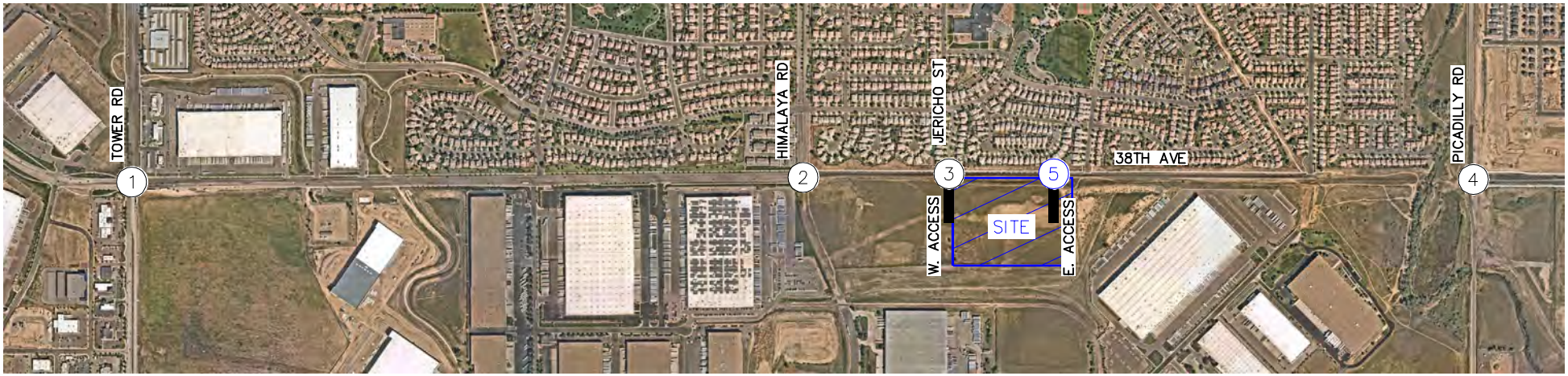


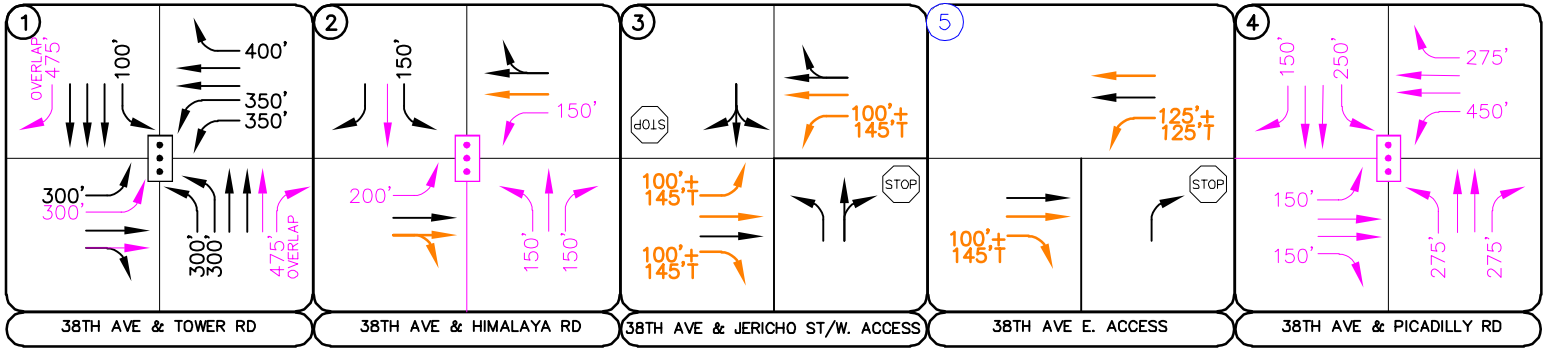
LEGEND

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

FIGURE 12
FOOD BANK OF THE ROCKIES
AURORA, COLORADO
2040 TOTAL TRAFFIC VOLUMES

Kimley»Horn
NORTH
NTS 096388013





LEGEND

- Study Area Key Intersection
- Project Access Intersection
- Signalized Intersection
- Stop Controlled Approach
- Site Specific Improvement
- Other Improvements
- 100' Turn Lane Length (feet)

FIGURE 14
FOOD BANK OF THE ROCKIES
AURORA, COLORADO
2040 RECOMMENDED GEOMETRY AND CONTROL

Kimley»Horn

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

Gateway Park – Parcel TIC 2

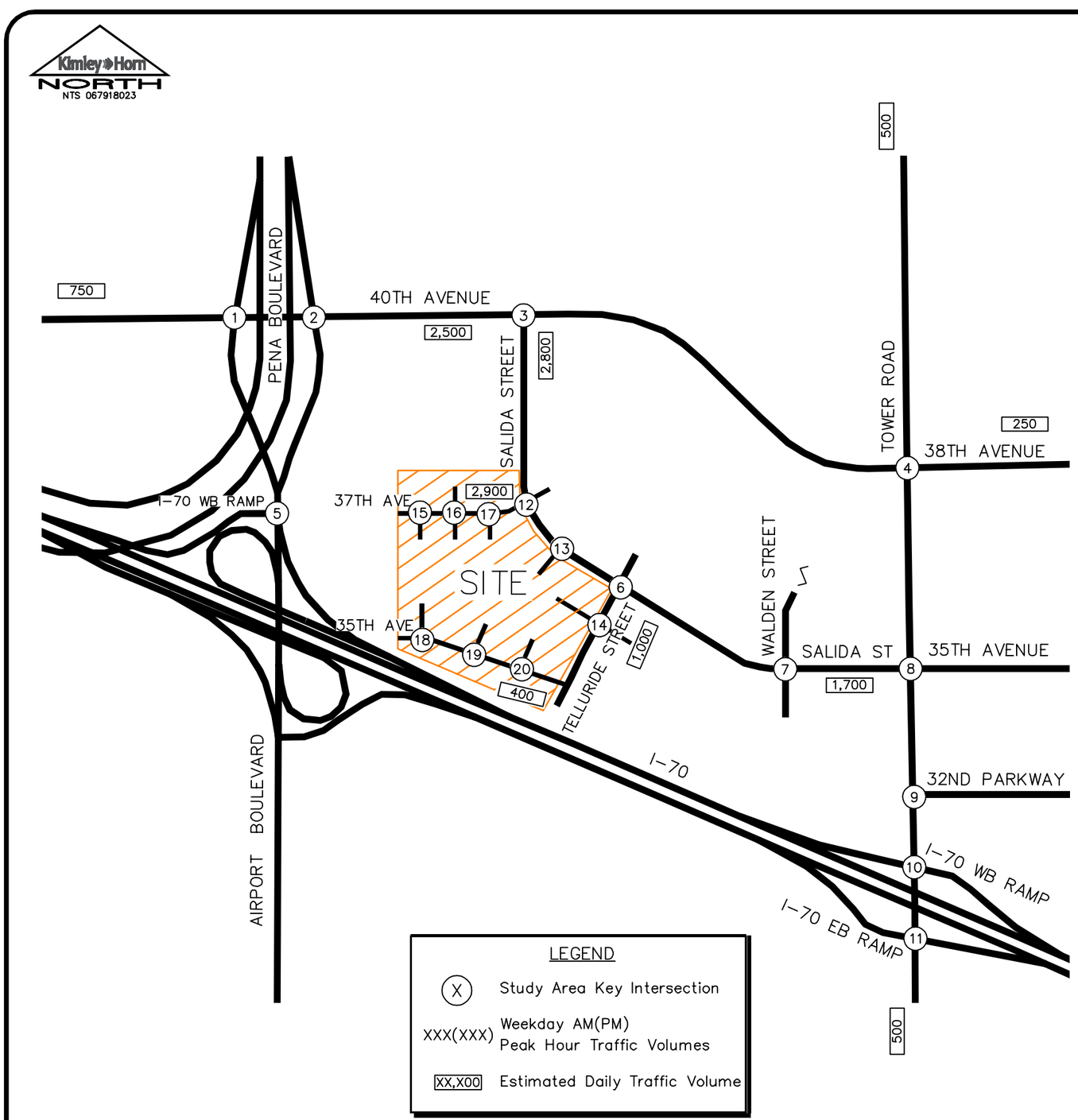
Aurora, Colorado

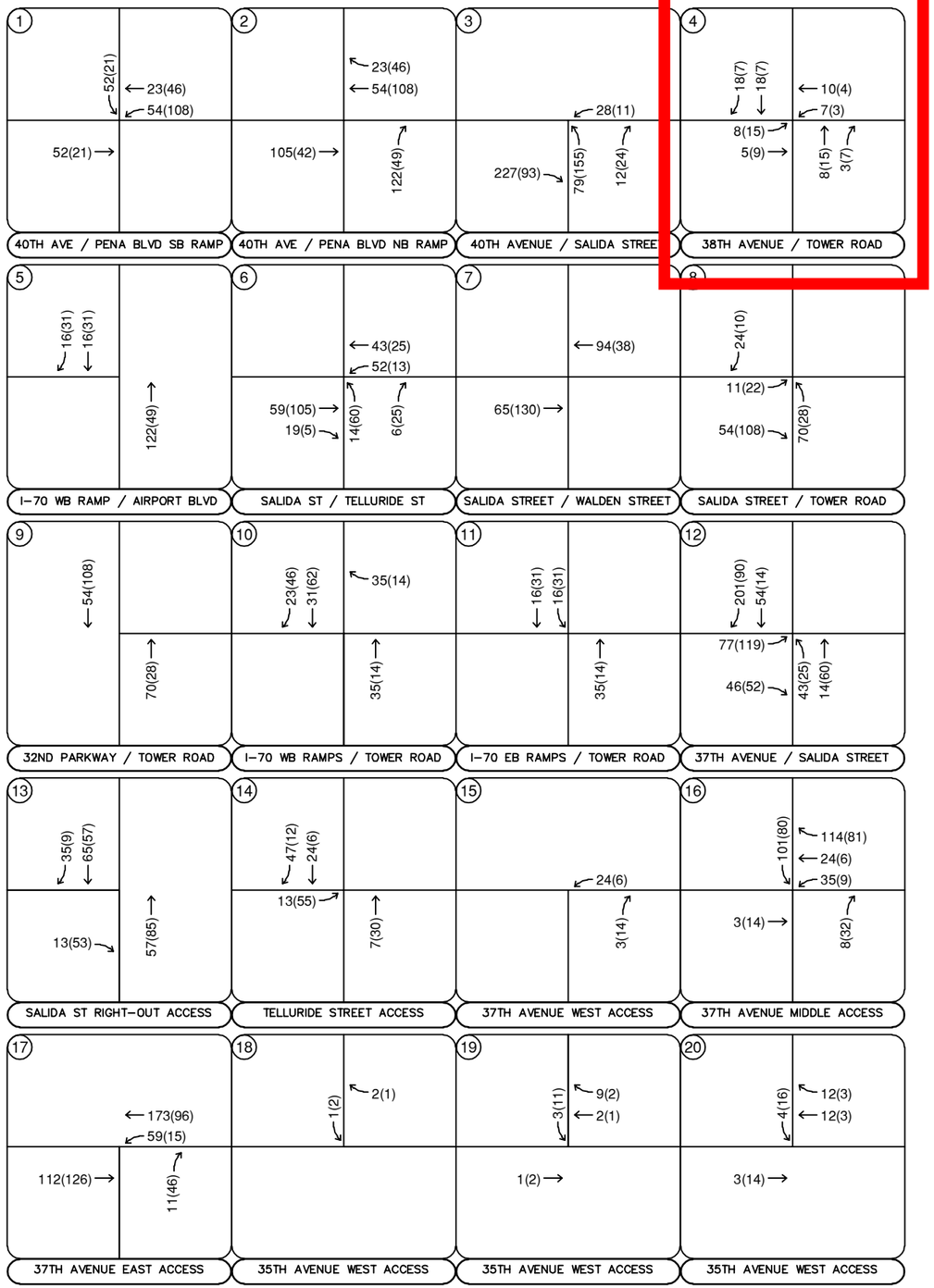
Prepared for
LIT PAULS GATEWAY LAND HOLDINGS, LLC
100 St. Paul Street
Suite 300
Denver, CO 80206

SAND CREEK METROPOLITAN DISTRICT
100 St. Paul Street
Suite 300
Denver, CO 80206

Prepared by
Kimley-Horn and Associates, Inc.
4582 South Ulster Street
Suite 1500
Denver, Colorado 80237
(303) 228-2300

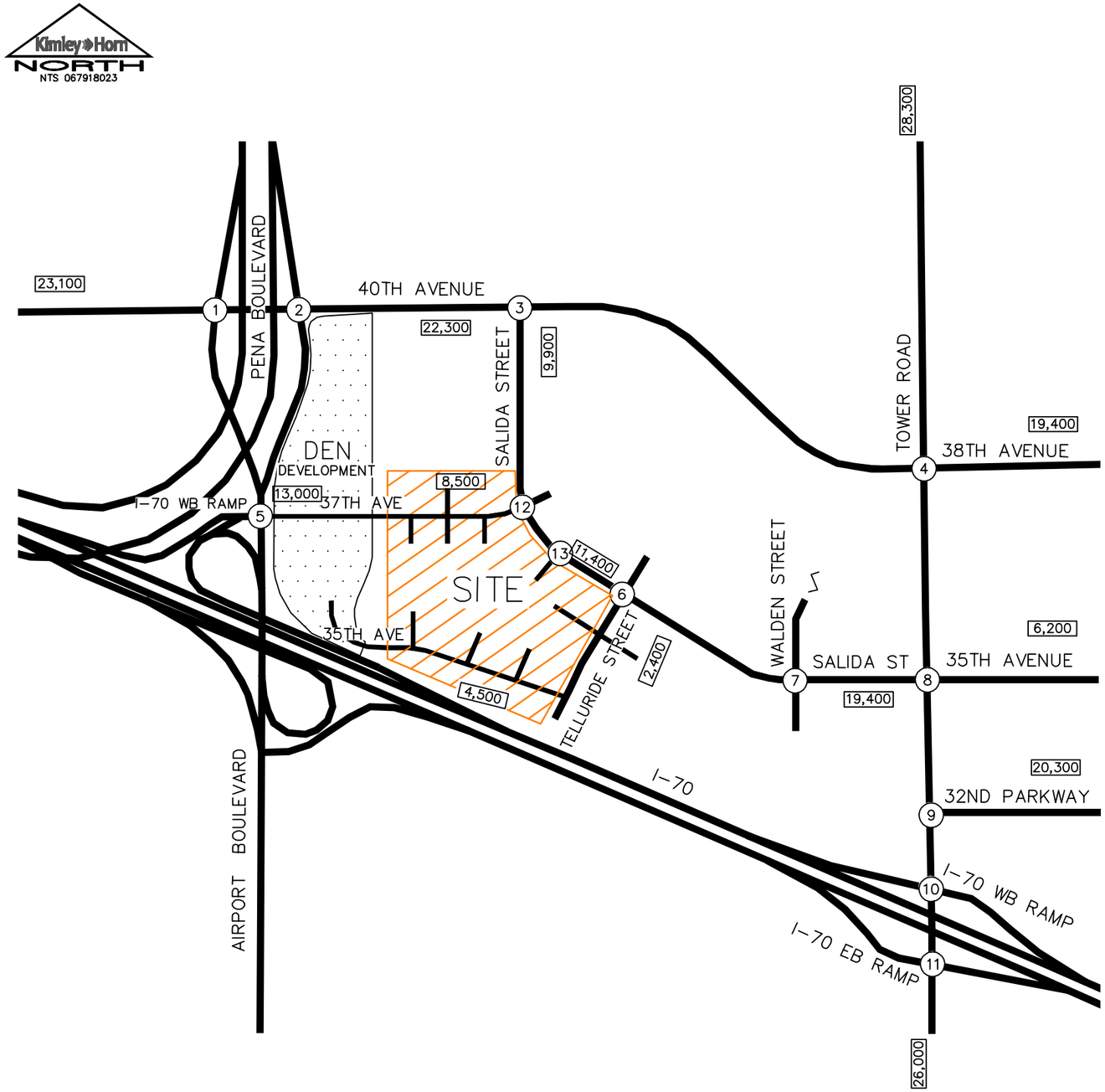
October 2020

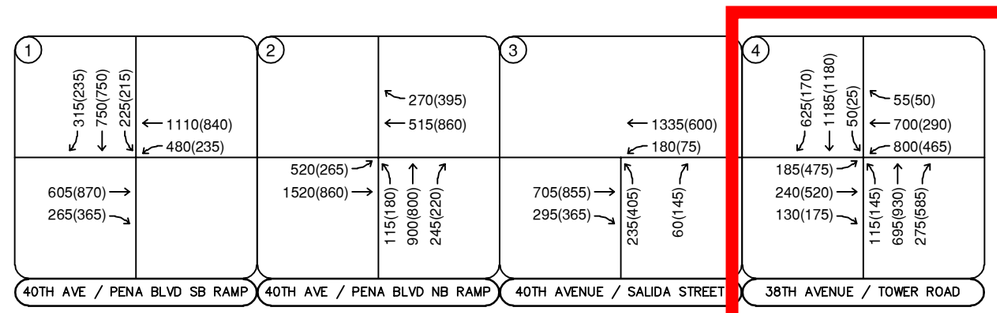


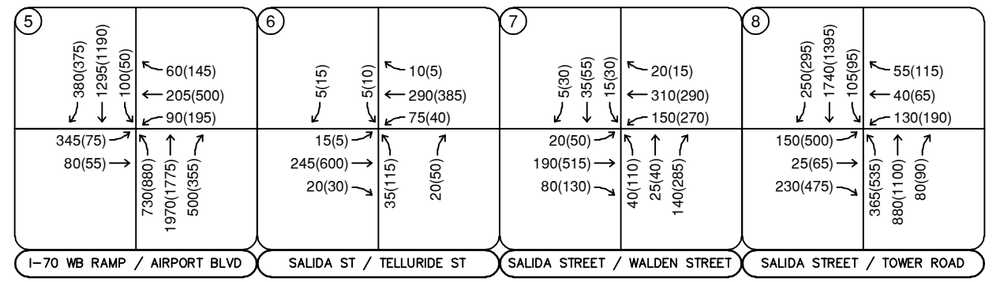


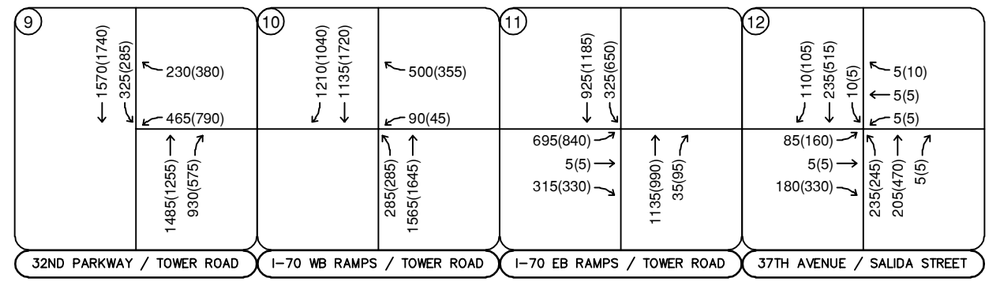
GATEWAY PARK – PARCEL TIC 2 – SALIDA STREET & TELLURIDE STREET
2022 & 2040 SCENARIO 1 TRAFFIC ASSIGNMENT VOLUMES

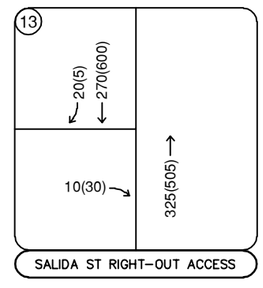
FIGURE 12











LEGEND

(X) Study Area Key Intersection

XXX(XXX) Weekday AM(PM) Peak Hour Traffic Volumes

XX,X00 Estimated Daily Traffic Volume

GATEWAY PARK – PARCEL TIC 2 – SALIDA STREET & TELLURIDE STREET
2040 BACKGROUND PLUS PROJECT TRAFFIC VOLUMES (SCENARIO 2 – WITH AIRPORT BLVD CONNECTION)

FIGURE 16

Kimley»Horn

APPENDIX C

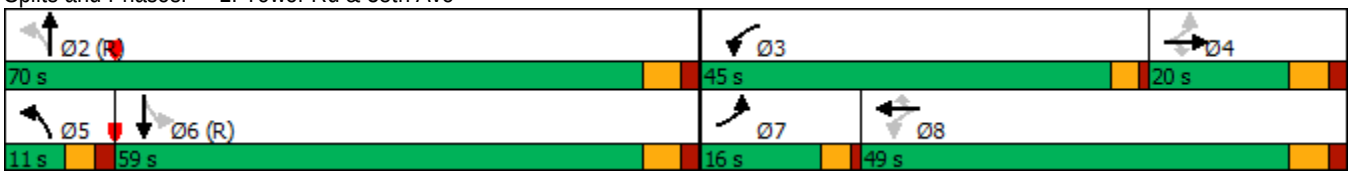
Intersection Analysis Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	160	249	22	403	495	17	32	572	68	891
Future Volume (vph)	160	249	22	403	495	17	32	572	68	891
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	NA
Protected Phases	7	4		3	8		5	2		6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	7	4	4	3	8	8	5	2	6	6
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	11.0	11.0	11.0
Minimum Split (s)	10.0	12.0	12.0	10.0	12.0	12.0	11.0	17.0	17.0	17.0
Total Split (s)	16.0	20.0	20.0	45.0	49.0	49.0	11.0	70.0	59.0	59.0
Total Split (%)	11.9%	14.8%	14.8%	33.3%	36.3%	36.3%	8.1%	51.9%	43.7%	43.7%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	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)	4.0	6.0	6.0	4.0	6.0	6.0	5.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 78 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 1: Tower Rd & 38th Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	249	22	403	495	17	32	572	116	68	891	195
Future Volume (veh/h)	160	249	22	403	495	17	32	572	116	68	891	195
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	1811	1811	1811	1841	1841	1841	1796	1796	1796	1856	1856	1856
Adj Flow Rate, veh/h	162	252	22	407	500	17	32	578	117	69	900	197
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	6	6	6	4	4	4	7	7	7	3	3	3
Cap, veh/h	475	188	159	443	934	417	541	1572	317	381	2030	442
Arrive On Green	0.06	0.10	0.10	0.22	0.27	0.27	0.03	0.56	0.56	0.49	0.49	0.49
Sat Flow, veh/h	3346	1811	1535	1753	3497	1560	3319	2829	571	744	4162	907
Grp Volume(v), veh/h	162	252	22	407	500	17	32	348	347	69	729	368
Grp Sat Flow(s),veh/h/ln	1673	1811	1535	1753	1749	1560	1659	1706	1693	744	1689	1692
Q Serve(g_s), s	5.8	14.0	1.8	26.9	16.5	1.1	0.6	15.4	15.5	7.7	19.1	19.2
Cycle Q Clear(g_c), s	5.8	14.0	1.8	26.9	16.5	1.1	0.6	15.4	15.5	14.0	19.1	19.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.34	1.00		0.54
Lane Grp Cap(c), veh/h	475	188	159	443	934	417	541	948	941	381	1647	825
V/C Ratio(X)	0.34	1.34	0.14	0.92	0.54	0.04	0.06	0.37	0.37	0.18	0.44	0.45
Avail Cap(c_a), veh/h	576	188	159	586	1114	497	585	948	941	381	1647	825
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.8	60.5	55.0	39.2	42.3	36.7	16.6	16.7	16.8	23.2	22.6	22.6
Incr Delay (d2), s/veh	0.4	185.1	0.4	16.6	0.5	0.0	0.0	1.1	1.1	1.0	0.9	1.7
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	2.5	16.1	0.7	13.6	7.2	0.4	0.2	6.3	6.3	1.5	7.8	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.2	245.6	55.4	55.8	42.8	36.7	16.6	17.8	17.9	24.3	23.5	24.4
LnGrp LOS	D	F	E	E	D	D	B	B	B	C	C	C
Approach Vol, veh/h		436			924			727			1166	
Approach Delay, s/veh		163.4			48.4			17.8			23.8	
Approach LOS		F			D			B			C	

Timer - Assigned Phs	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	81.0	34.0	20.0	9.2	71.8	11.9	42.1
Change Period (Y+Rc), s	6.0	4.0	6.0	5.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	64.0	41.0	14.0	6.0	53.0	12.0	43.0
Max Q Clear Time (g_c+I1), s	17.5	28.9	16.0	2.6	21.2	7.8	18.5
Green Ext Time (p_c), s	5.1	1.1	0.0	0.0	9.8	0.2	3.5

Intersection Summary	
HCM 6th Ctrl Delay	48.2
HCM 6th LOS	D

Notes

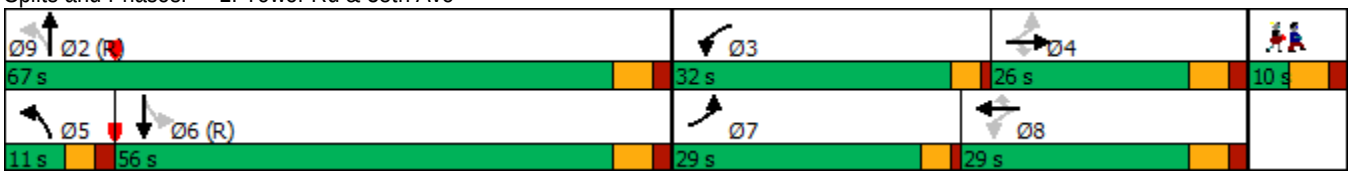
User approved pedestrian interval to be less than phase max green.

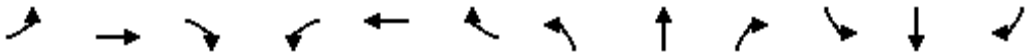
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	Ø9
Lane Configurations											
Traffic Volume (vph)	438	425	56	260	277	54	53	869	47	1051	
Future Volume (vph)	438	425	56	260	277	54	53	869	47	1051	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	
Protected Phases	7	4		3	8		5	2		6	9
Permitted Phases	4		4	8		8	2		6		
Detector Phase	7	4	4	3	8	8	5	2	6	6	
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	4.0	4.0	6.0	11.0	11.0	11.0	4.0
Minimum Split (s)	10.0	12.0	12.0	10.0	12.0	12.0	11.0	17.0	17.0	17.0	10.0
Total Split (s)	29.0	26.0	26.0	32.0	29.0	29.0	11.0	67.0	56.0	56.0	10.0
Total Split (%)	21.5%	19.3%	19.3%	23.7%	21.5%	21.5%	8.1%	49.6%	41.5%	41.5%	7%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	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)	4.0	6.0	6.0	4.0	6.0	6.0	5.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	C-Max	None

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 33 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Tower Rd & 38th Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	438	425	56	260	277	54	53	869	223	47	1051	168
Future Volume (vph)	438	425	56	260	277	54	53	869	223	47	1051	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	5.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1863	1583	1752	3505	1568	3433	3431		1770	4980	
Flt Permitted	0.54	1.00	1.00	0.14	1.00	1.00	0.12	1.00		0.17	1.00	
Satd. Flow (perm)	1939	1863	1583	251	3505	1568	421	3431		314	4980	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	476	462	61	283	301	59	58	945	242	51	1142	183
RTOR Reduction (vph)	0	0	49	0	0	46	0	15	0	0	14	0
Lane Group Flow (vph)	476	462	12	283	301	13	58	1172	0	51	1311	0
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	45.3	26.7	26.7	50.7	29.4	29.4	71.0	71.0		60.6	60.6	
Effective Green, g (s)	45.3	26.7	26.7	50.7	29.4	29.4	71.0	71.0		60.6	60.6	
Actuated g/C Ratio	0.34	0.20	0.20	0.38	0.22	0.22	0.53	0.53		0.45	0.45	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	5.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	856	368	313	331	763	341	341	1804		140	2235	
v/s Ratio Prot	0.08	c0.25		c0.13	0.09		0.01	c0.34			0.26	
v/s Ratio Perm	0.11		0.01	0.19		0.01	0.08			0.16		
v/c Ratio	0.56	1.26	0.04	0.85	0.39	0.04	0.17	0.65		0.36	0.59	
Uniform Delay, d1	34.6	54.1	43.8	36.7	45.2	41.6	18.3	23.0		24.5	27.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	135.4	0.1	18.9	0.3	0.0	0.2	1.8		7.2	1.1	
Delay (s)	35.4	189.5	43.8	55.6	45.5	41.7	18.5	24.9		31.7	29.0	
Level of Service	D	F	D	E	D	D	B	C		C	C	
Approach Delay (s)		107.2			49.6			24.6			29.1	
Approach LOS		F			D			C			C	

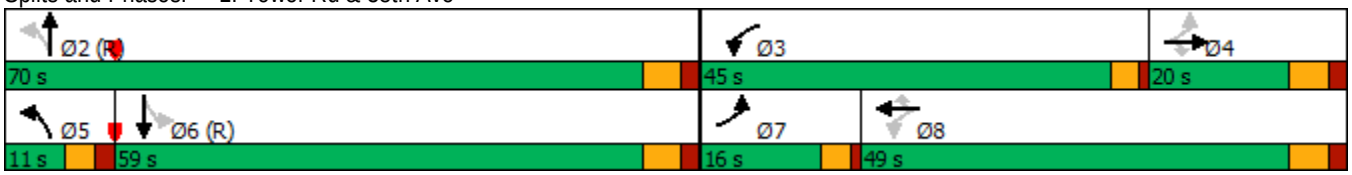
Intersection Summary			
HCM 2000 Control Delay	49.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	163	254	22	411	505	17	33	583	69	909
Future Volume (vph)	163	254	22	411	505	17	33	583	69	909
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	NA
Protected Phases	7	4		3	8		5	2		6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	7	4	4	3	8	8	5	2	6	6
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	11.0	11.0	11.0
Minimum Split (s)	10.0	12.0	12.0	10.0	12.0	12.0	11.0	17.0	17.0	17.0
Total Split (s)	16.0	20.0	20.0	45.0	49.0	49.0	11.0	70.0	59.0	59.0
Total Split (%)	11.9%	14.8%	14.8%	33.3%	36.3%	36.3%	8.1%	51.9%	43.7%	43.7%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	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)	4.0	6.0	6.0	4.0	6.0	6.0	5.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 78 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 1: Tower Rd & 38th Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	254	22	411	505	17	33	583	118	69	909	199
Future Volume (veh/h)	163	254	22	411	505	17	33	583	118	69	909	199
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	1811	1811	1811	1841	1841	1841	1796	1796	1796	1856	1856	1856
Adj Flow Rate, veh/h	165	257	22	415	510	17	33	589	119	70	918	201
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	6	6	6	4	4	4	7	7	7	3	3	3
Cap, veh/h	476	188	159	449	945	422	527	1561	315	372	2011	439
Arrive On Green	0.06	0.10	0.10	0.23	0.27	0.27	0.03	0.55	0.55	0.48	0.48	0.48
Sat Flow, veh/h	3346	1811	1535	1753	3497	1560	3319	2830	570	735	4162	908
Grp Volume(v), veh/h	165	257	22	415	510	17	33	355	353	70	744	375
Grp Sat Flow(s),veh/h/ln	1673	1811	1535	1753	1749	1560	1659	1706	1694	735	1689	1692
Q Serve(g_s), s	5.9	14.0	1.8	27.4	16.8	1.1	0.6	15.9	16.0	8.1	19.7	19.8
Cycle Q Clear(g_c), s	5.9	14.0	1.8	27.4	16.8	1.1	0.6	15.9	16.0	14.7	19.7	19.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.34	1.00		0.54
Lane Grp Cap(c), veh/h	476	188	159	449	945	422	527	942	935	372	1632	818
V/C Ratio(X)	0.35	1.37	0.14	0.92	0.54	0.04	0.06	0.38	0.38	0.19	0.46	0.46
Avail Cap(c_a), veh/h	575	188	159	586	1114	497	570	942	935	372	1632	818
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.7	60.5	55.0	38.9	42.1	36.3	16.9	17.1	17.1	23.9	23.1	23.2
Incr Delay (d2), s/veh	0.4	195.9	0.4	17.4	0.5	0.0	0.0	1.1	1.2	1.1	0.9	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	16.7	0.7	13.9	7.4	0.4	0.2	6.5	6.5	1.5	8.1	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.2	256.4	55.4	56.3	42.6	36.4	17.0	18.3	18.3	25.1	24.0	25.0
LnGrp LOS	D	F	E	E	D	D	B	B	B	C	C	C
Approach Vol, veh/h		444			942			741			1189	
Approach Delay, s/veh		169.8			48.5			18.2			24.4	
Approach LOS		F			D			B			C	

Timer - Assigned Phs	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	80.5	34.5	20.0	9.3	71.2	12.0	42.5
Change Period (Y+Rc), s	6.0	4.0	6.0	5.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	64.0	41.0	14.0	6.0	53.0	12.0	43.0
Max Q Clear Time (g_c+I1), s	18.0	29.4	16.0	2.6	21.8	7.9	18.8
Green Ext Time (p_c), s	5.2	1.1	0.0	0.0	10.0	0.2	3.6

Intersection Summary	
HCM 6th Ctrl Delay	49.3
HCM 6th LOS	D

Notes

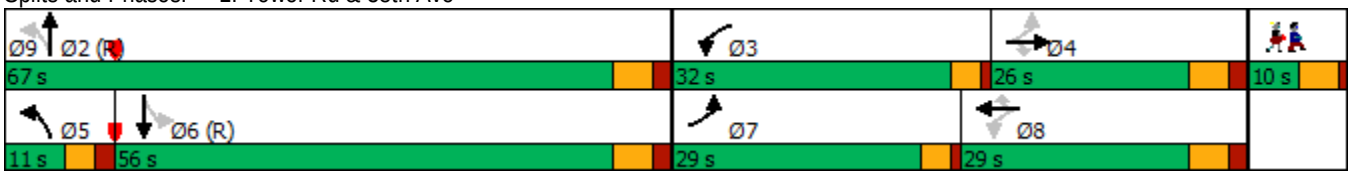
User approved pedestrian interval to be less than phase max green.

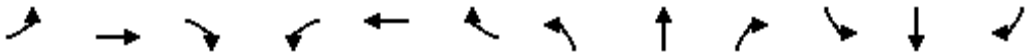
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	Ø9
Lane Configurations											
Traffic Volume (vph)	447	434	57	265	283	55	54	886	48	1072	
Future Volume (vph)	447	434	57	265	283	55	54	886	48	1072	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	
Protected Phases	7	4		3	8		5	2		6	9
Permitted Phases	4		4	8		8	2		6		
Detector Phase	7	4	4	3	8	8	5	2	6	6	
Switch Phase											
Minimum Initial (s)	4.0	6.0	6.0	4.0	4.0	4.0	5.0	11.0	11.0	11.0	4.0
Minimum Split (s)	10.0	12.0	12.0	10.0	12.0	12.0	11.0	17.0	17.0	17.0	10.0
Total Split (s)	29.0	26.0	26.0	32.0	29.0	29.0	11.0	67.0	56.0	56.0	10.0
Total Split (%)	21.5%	19.3%	19.3%	23.7%	21.5%	21.5%	8.1%	49.6%	41.5%	41.5%	7%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	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)	4.0	6.0	6.0	4.0	6.0	6.0	5.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	C-Max	None

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 33 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Tower Rd & 38th Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	447	434	57	265	283	55	54	886	227	48	1072	171
Future Volume (vph)	447	434	57	265	283	55	54	886	227	48	1072	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	5.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1863	1583	1752	3505	1568	3433	3431		1770	4980	
Flt Permitted	0.52	1.00	1.00	0.14	1.00	1.00	0.11	1.00		0.16	1.00	
Satd. Flow (perm)	1895	1863	1583	254	3505	1568	401	3431		300	4980	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	486	472	62	288	308	60	59	963	247	52	1165	186
RTOR Reduction (vph)	0	0	50	0	0	47	0	15	0	0	14	0
Lane Group Flow (vph)	486	472	12	288	308	13	59	1195	0	52	1337	0
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	45.4	26.5	26.5	50.6	29.1	29.1	71.0	71.0		60.5	60.5	
Effective Green, g (s)	45.4	26.5	26.5	50.6	29.1	29.1	71.0	71.0		60.5	60.5	
Actuated g/C Ratio	0.34	0.20	0.20	0.37	0.22	0.22	0.53	0.53		0.45	0.45	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	5.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	852	365	310	333	755	337	334	1804		134	2231	
v/s Ratio Prot	0.08	c0.25		c0.14	0.09		0.01	c0.35			0.27	
v/s Ratio Perm	0.11		0.01	0.19		0.01	0.09			0.17		
v/c Ratio	0.57	1.29	0.04	0.86	0.41	0.04	0.18	0.66		0.39	0.60	
Uniform Delay, d1	34.7	54.2	43.9	36.9	45.5	41.9	18.4	23.3		24.9	28.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	150.9	0.1	20.2	0.4	0.0	0.3	1.9		8.3	1.2	
Delay (s)	35.6	205.2	44.0	57.1	45.9	41.9	18.7	25.2		33.2	29.3	
Level of Service	D	F	D	E	D	D	B	C		C	C	
Approach Delay (s)		114.6			50.5			24.9			29.4	
Approach LOS		F			D			C			C	

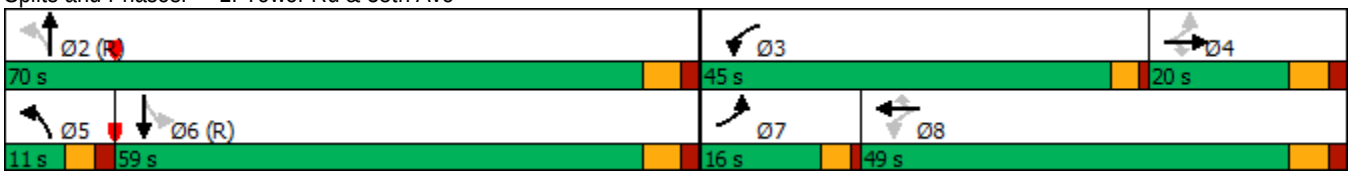
Intersection Summary			
HCM 2000 Control Delay	51.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

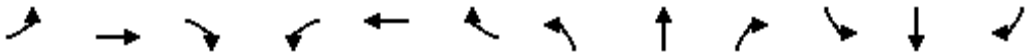
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	270	300	130	675	720	105	115	960	100	1495
Future Volume (vph)	270	300	130	675	720	105	115	960	100	1495
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	NA
Protected Phases	7	4		3	8		5	2		6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	7	4	4	3	8	8	5	2	6	6
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	11.0	11.0	11.0
Minimum Split (s)	10.0	12.0	12.0	10.0	12.0	12.0	11.0	17.0	17.0	17.0
Total Split (s)	16.0	20.0	20.0	45.0	49.0	49.0	11.0	70.0	59.0	59.0
Total Split (%)	11.9%	14.8%	14.8%	33.3%	36.3%	36.3%	8.1%	51.9%	43.7%	43.7%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	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)	4.0	6.0	6.0	4.0	6.0	6.0	5.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 78 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 1: Tower Rd & 38th Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	300	130	675	720	105	115	960	365	100	1495	625
Future Volume (veh/h)	270	300	130	675	720	105	115	960	365	100	1495	625
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	1811	1811	1811	1841	1841	1841	1796	1796	1796	1856	1856	1856
Adj Flow Rate, veh/h	273	303	131	682	727	106	116	970	369	101	1510	631
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	6	6	6	4	4	4	7	7	7	3	3	3
Cap, veh/h	526	188	159	586	1121	500	252	1149	433	101	1391	564
Arrive On Green	0.09	0.10	0.10	0.30	0.32	0.32	0.04	0.47	0.47	0.39	0.39	0.39
Sat Flow, veh/h	3346	1811	1535	1753	3497	1560	3319	2424	914	405	3538	1436
Grp Volume(v), veh/h	273	303	131	682	727	106	116	680	659	101	1439	702
Grp Sat Flow(s),veh/h/ln	1673	1811	1535	1753	1749	1560	1659	1706	1632	405	1689	1597
Q Serve(g_s), s	9.7	14.0	11.3	41.0	24.1	6.7	2.7	47.0	48.1	15.9	53.1	53.1
Cycle Q Clear(g_c), s	9.7	14.0	11.3	41.0	24.1	6.7	2.7	47.0	48.1	53.1	53.1	53.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.56	1.00		0.90
Lane Grp Cap(c), veh/h	526	188	159	586	1121	500	252	809	774	101	1328	628
V/C Ratio(X)	0.52	1.61	0.82	1.16	0.65	0.21	0.46	0.84	0.85	1.00	1.08	1.12
Avail Cap(c_a), veh/h	532	188	159	586	1121	500	254	809	774	101	1328	628
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	60.5	59.3	38.0	39.3	33.4	32.3	31.0	31.3	63.7	41.0	41.0
Incr Delay (d2), s/veh	0.9	299.2	28.1	91.5	1.3	0.2	1.3	10.3	11.4	89.3	50.8	72.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	22.0	5.6	32.3	10.6	2.6	1.1	21.3	21.0	6.0	31.1	33.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.0	359.7	87.4	129.6	40.7	33.7	33.6	41.3	42.7	153.0	91.7	113.8
LnGrp LOS	D	F	F	F	D	C	C	D	D	F	F	F
Approach Vol, veh/h		707			1515			1455			2242	
Approach Delay, s/veh		189.3			80.2			41.3			101.4	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	70.0	45.0	20.0	10.9	59.1	15.7	49.3
Change Period (Y+Rc), s	6.0	4.0	6.0	5.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	64.0	41.0	14.0	6.0	53.0	12.0	43.0
Max Q Clear Time (g_c+I1), s	50.1	43.0	16.0	4.7	55.1	11.7	26.1
Green Ext Time (p_c), s	7.9	0.0	0.0	0.0	0.0	0.0	5.1

Intersection Summary	
HCM 6th Ctrl Delay	91.7
HCM 6th LOS	F

Notes

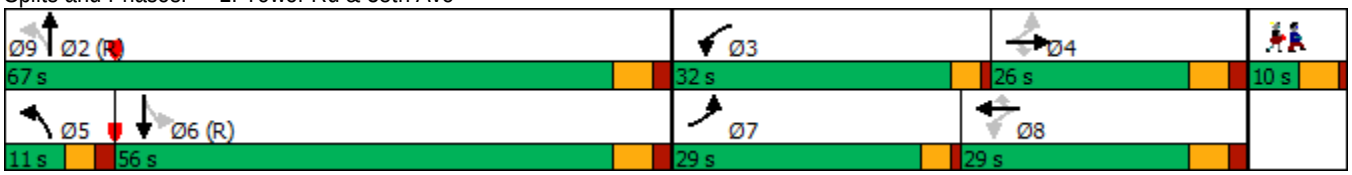
User approved pedestrian interval to be less than phase max green.

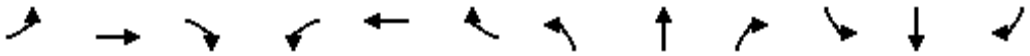
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	Ø9
Lane Configurations											
Traffic Volume (vph)	650	540	175	440	440	120	145	1455	75	1760	
Future Volume (vph)	650	540	175	440	440	120	145	1455	75	1760	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	
Protected Phases	7	4		3	8		5	2		6	9
Permitted Phases	4		4	8		8	2		6		
Detector Phase	7	4	4	3	8	8	5	2	6	6	
Switch Phase											
Minimum Initial (s)	4.0	6.0	6.0	4.0	4.0	4.0	5.0	11.0	11.0	11.0	4.0
Minimum Split (s)	10.0	12.0	12.0	10.0	12.0	12.0	11.0	17.0	17.0	17.0	10.0
Total Split (s)	29.0	26.0	26.0	32.0	29.0	29.0	11.0	67.0	56.0	56.0	10.0
Total Split (%)	21.5%	19.3%	19.3%	23.7%	21.5%	21.5%	8.1%	49.6%	41.5%	41.5%	7%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	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)	4.0	6.0	6.0	4.0	6.0	6.0	5.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	C-Max	None

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 33 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 1: Tower Rd & 38th Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	650	540	175	440	440	120	145	1455	610	75	1760	240
Future Volume (vph)	650	540	175	440	440	120	145	1455	610	75	1760	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	5.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1863	1583	1752	3505	1568	3433	3382		1770	4994	
Flt Permitted	0.28	1.00	1.00	0.17	1.00	1.00	0.06	1.00		0.07	1.00	
Satd. Flow (perm)	1005	1863	1583	311	3505	1568	231	3382		130	4994	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	707	587	190	478	478	130	158	1582	663	82	1913	261
RTOR Reduction (vph)	0	0	117	0	0	107	0	29	0	0	12	0
Lane Group Flow (vph)	707	587	73	478	478	23	158	2216	0	82	2162	0
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	44.3	20.0	20.0	51.7	23.7	23.7	71.0	71.0		57.5	57.5	
Effective Green, g (s)	44.3	20.0	20.0	51.7	23.7	23.7	71.0	71.0		57.5	57.5	
Actuated g/C Ratio	0.33	0.15	0.15	0.38	0.18	0.18	0.53	0.53		0.43	0.43	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	5.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	766	276	234	417	615	275	323	1778		55	2127	
v/s Ratio Prot	0.17	c0.32		c0.24	0.14		0.03	c0.66			0.43	
v/s Ratio Perm	0.14		0.05	0.20		0.01	0.23			c0.63		
v/c Ratio	0.92	2.13	0.31	1.15	0.78	0.08	0.49	1.25		1.49	1.02	
Uniform Delay, d1	38.8	57.5	51.4	40.4	53.1	46.6	29.2	32.0		38.8	38.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.6	519.1	0.8	90.4	6.1	0.1	1.2	115.7		295.3	23.7	
Delay (s)	55.4	576.6	52.1	130.9	59.3	46.7	30.3	147.7		334.0	62.5	
Level of Service	E	F	D	F	E	D	C	F		F	E	
Approach Delay (s)		261.1			89.3			139.9			72.3	
Approach LOS		F			F			F			E	

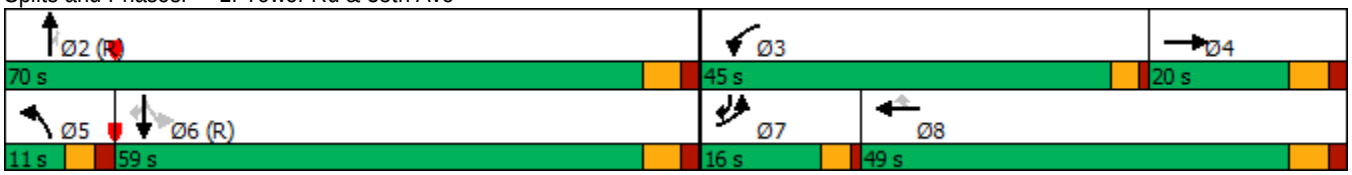
Intersection Summary			
HCM 2000 Control Delay	136.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.59		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	128.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

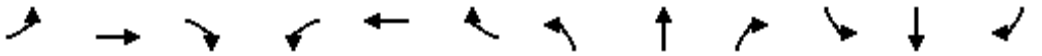
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	270	300	675	720	105	115	960	365	100	1495	625
Future Volume (vph)	270	300	675	720	105	115	960	365	100	1495	625
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov
Protected Phases	7	4	3	8		5	2			6	7
Permitted Phases					8			2	6		6
Detector Phase	7	4	3	8	8	5	2	2	6	6	7
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	11.0	11.0	11.0	11.0	6.0
Minimum Split (s)	10.0	12.0	10.0	12.0	12.0	11.0	17.0	17.0	17.0	17.0	10.0
Total Split (s)	16.0	20.0	45.0	49.0	49.0	11.0	70.0	70.0	59.0	59.0	16.0
Total Split (%)	11.9%	14.8%	33.3%	36.3%	36.3%	8.1%	51.9%	51.9%	43.7%	43.7%	11.9%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	3.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead			Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	None

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 78 (58%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 1: Tower Rd & 38th Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	300	130	675	720	105	115	960	365	100	1495	625
Future Volume (veh/h)	270	300	130	675	720	105	115	960	365	100	1495	625
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	1811	1811	1811	1841	1841	1841	1796	1796	1796	1856	1856	1856
Adj Flow Rate, veh/h	273	303	131	682	727	45	116	970	308	101	1510	631
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	6	6	6	4	4	4	7	7	7	3	3	3
Cap, veh/h	297	257	109	767	860	384	148	2681	832	240	2357	871
Arrive On Green	0.09	0.11	0.11	0.23	0.25	0.25	0.04	0.55	0.55	0.47	0.47	0.47
Sat Flow, veh/h	3346	2356	996	3401	3497	1560	3319	4904	1522	429	5066	1572
Grp Volume(v), veh/h	273	219	215	682	727	45	116	970	308	101	1510	631
Grp Sat Flow(s),veh/h/ln	1673	1721	1632	1700	1749	1560	1659	1635	1522	429	1689	1572
Q Serve(g_s), s	10.9	14.7	14.7	26.2	26.7	3.0	4.7	15.1	15.5	23.5	30.7	40.3
Cycle Q Clear(g_c), s	10.9	14.7	14.7	26.2	26.7	3.0	4.7	15.1	15.5	27.6	30.7	40.3
Prop In Lane	1.00		0.61	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	297	188	178	767	860	384	148	2681	832	240	2357	871
V/C Ratio(X)	0.92	1.17	1.20	0.89	0.85	0.12	0.79	0.36	0.37	0.42	0.64	0.72
Avail Cap(c_a), veh/h	297	188	178	1033	1114	497	148	2681	832	240	2357	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.0	60.1	60.1	50.6	48.5	39.5	63.9	17.3	17.4	28.2	27.5	22.4
Incr Delay (d2), s/veh	31.7	118.2	133.1	7.6	4.9	0.1	23.9	0.4	1.3	5.3	1.4	5.2
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	6.0	12.6	12.7	12.0	12.2	1.2	2.5	5.8	5.7	2.8	12.6	15.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.7	178.3	193.3	58.3	53.3	39.7	87.8	17.7	18.7	33.5	28.9	27.6
LnGrp LOS	F	F	F	E	D	D	F	B	B	C	C	C
Approach Vol, veh/h		707			1454			1394			2242	
Approach Delay, s/veh		149.8			55.2			23.7			28.7	
Approach LOS		F			E			C			C	

Timer - Assigned Phs	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	79.8	34.5	20.7	11.0	68.8	16.0	39.2
Change Period (Y+Rc), s	6.0	4.0	6.0	5.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	64.0	41.0	14.0	6.0	53.0	12.0	43.0
Max Q Clear Time (g_c+I1), s	17.5	28.2	16.7	6.7	42.3	12.9	28.7
Green Ext Time (p_c), s	10.6	2.2	0.0	0.0	8.8	0.0	4.5

Intersection Summary	
HCM 6th Ctrl Delay	48.9
HCM 6th LOS	D

Notes

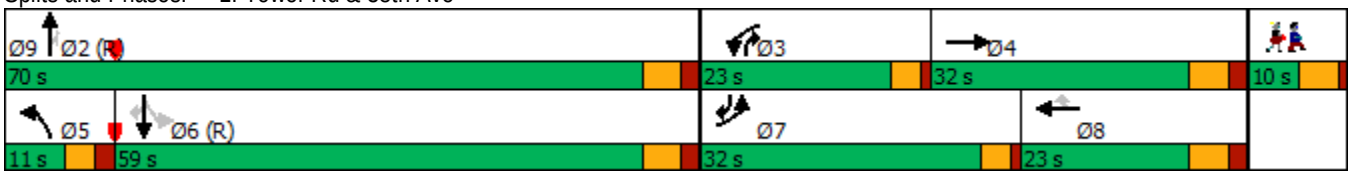
User approved pedestrian interval to be less than phase max green.

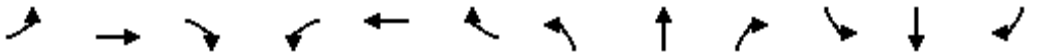
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations												
Traffic Volume (vph)	650	540	440	440	120	145	1455	610	75	1760	240	
Future Volume (vph)	650	540	440	440	120	145	1455	610	75	1760	240	
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	pm+ov	Perm	NA	pm+ov	
Protected Phases	7	4	3	8		5	2	3		6	7	9
Permitted Phases					8			2	6		6	
Detector Phase	7	4	3	8	8	5	2	3	6	6	7	
Switch Phase												
Minimum Initial (s)	4.0	6.0	4.0	4.0	4.0	5.0	11.0	4.0	11.0	11.0	4.0	4.0
Minimum Split (s)	10.0	12.0	10.0	12.0	12.0	11.0	17.0	10.0	17.0	17.0	10.0	10.0
Total Split (s)	32.0	32.0	23.0	23.0	23.0	11.0	70.0	23.0	59.0	59.0	32.0	10.0
Total Split (%)	23.7%	23.7%	17.0%	17.0%	17.0%	8.1%	51.9%	17.0%	43.7%	43.7%	23.7%	7%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0
Lost Time Adjust (s)	0.0	-1.0	0.0	-1.0	0.0	-2.0	-2.0	-2.0	-2.0	-2.0	0.0	
Total Lost Time (s)	4.0	5.0	4.0	5.0	6.0	3.0	4.0	2.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead		Lead	Lag	Lag	Lead	
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	None	None

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 33 (24%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 1: Tower Rd & 38th Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	650	540	175	440	440	120	145	1455	610	75	1760	240
Future Volume (vph)	650	540	175	440	440	120	145	1455	610	75	1760	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0	6.0	3.0	4.0	2.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3409		3400	3505	1568	3433	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.13	1.00	1.00
Satd. Flow (perm)	3433	3409		3400	3505	1568	3433	5085	1583	243	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	707	587	190	478	478	130	158	1582	663	82	1913	261
RTOR Reduction (vph)	0	23	0	0	0	114	0	0	61	0	0	76
Lane Group Flow (vph)	707	754	0	478	478	16	158	1582	602	82	1913	185
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	7	4		3	8		5	2	3		6	7
Permitted Phases						8			2	6		6
Actuated Green, G (s)	28.0	26.0		19.0	17.0	17.0	11.8	74.0	93.0	57.2	57.2	85.2
Effective Green, g (s)	28.0	27.0		19.0	18.0	17.0	13.8	76.0	97.0	59.2	59.2	85.2
Actuated g/C Ratio	0.21	0.20		0.14	0.13	0.13	0.10	0.56	0.72	0.44	0.44	0.63
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	5.0	6.0	4.0	6.0	6.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	712	681		478	467	197	350	2862	1137	106	2229	999
v/s Ratio Prot	c0.21	c0.22		0.14	0.14		0.05	c0.31	0.08		c0.38	0.04
v/s Ratio Perm						0.01			0.30	0.34		0.08
v/c Ratio	0.99	1.11		1.00	1.02	0.08	0.45	0.55	0.53	0.77	0.86	0.19
Uniform Delay, d1	53.4	54.0		58.0	58.5	52.1	57.0	18.7	8.6	32.2	34.1	10.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	31.8	67.6		41.2	47.8	0.2	0.9	0.8	0.4	41.3	4.6	0.1
Delay (s)	85.2	121.6		99.2	106.3	52.3	58.0	19.5	9.1	73.5	38.7	10.5
Level of Service	F	F		F	F	D	E	B	A	E	D	B
Approach Delay (s)		104.3			96.7			19.1			36.7	
Approach LOS		F			F			B			D	

Intersection Summary			
HCM 2000 Control Delay	53.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	226	72	49	701	84	47
Future Vol, veh/h	226	72	49	701	84	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	2	2	15	15
Mvmt Flow	243	77	53	754	90	51

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	320	0	765	282
Stage 1	-	-	-	-	282	-
Stage 2	-	-	-	-	483	-
Critical Hdwy	-	-	4.13	-	6.825	6.425
Critical Hdwy Stg 1	-	-	-	-	5.625	-
Critical Hdwy Stg 2	-	-	-	-	6.025	-
Follow-up Hdwy	-	-	2.219	-	3.6425	3.4425
Pot Cap-1 Maneuver	-	-	1238	-	333	721
Stage 1	-	-	-	-	731	-
Stage 2	-	-	-	-	557	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1238	-	319	721
Mov Cap-2 Maneuver	-	-	-	-	420	-
Stage 1	-	-	-	-	731	-
Stage 2	-	-	-	-	533	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	15.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	494	-	-	1238	-
HCM Lane V/C Ratio	0.285	-	-	0.043	-
HCM Control Delay (s)	15.2	-	-	8	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	656	13	13	384	22	15
Future Vol, veh/h	656	13	13	384	22	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	34	34
Mvmt Flow	683	14	14	400	23	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	697	0	918	690
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	228	-
Critical Hdwy	-	-	4.13	-	7.11	6.71
Critical Hdwy Stg 1	-	-	-	-	5.91	-
Critical Hdwy Stg 2	-	-	-	-	6.31	-
Follow-up Hdwy	-	-	2.219	-	3.823	3.623
Pot Cap-1 Maneuver	-	-	897	-	241	381
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	711	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	897	-	237	381
Mov Cap-2 Maneuver	-	-	-	-	340	-
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	700	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	16.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	356	-	-	897	-
HCM Lane V/C Ratio	0.108	-	-	0.015	-
HCM Control Delay (s)	16.3	-	-	9.1	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	266	50	34	737	59	33
Future Vol, veh/h	266	50	34	737	59	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	2	2	15	15
Mvmt Flow	286	54	37	792	63	35

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	340	0	783	170
Stage 1	-	-	-	-	313	-
Stage 2	-	-	-	-	470	-
Critical Hdwy	-	-	4.14	-	7.1	7.2
Critical Hdwy Stg 1	-	-	-	-	6.1	-
Critical Hdwy Stg 2	-	-	-	-	6.1	-
Follow-up Hdwy	-	-	2.22	-	3.65	3.45
Pot Cap-1 Maneuver	-	-	1216	-	305	805
Stage 1	-	-	-	-	677	-
Stage 2	-	-	-	-	559	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1216	-	296	805
Mov Cap-2 Maneuver	-	-	-	-	407	-
Stage 1	-	-	-	-	677	-
Stage 2	-	-	-	-	542	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	14.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	495	-	-	1216	-
HCM Lane V/C Ratio	0.2	-	-	0.03	-
HCM Control Delay (s)	14.1	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.7	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	688	9	9	367	15	11
Future Vol, veh/h	688	9	9	367	15	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	34	34
Mvmt Flow	717	9	9	382	16	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	726	0	931	363
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	209	-
Critical Hdwy	-	-	4.14	-	7.48	7.58
Critical Hdwy Stg 1	-	-	-	-	6.48	-
Critical Hdwy Stg 2	-	-	-	-	6.48	-
Follow-up Hdwy	-	-	2.22	-	3.84	3.64
Pot Cap-1 Maneuver	-	-	873	-	214	550
Stage 1	-	-	-	-	367	-
Stage 2	-	-	-	-	718	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	873	-	212	550
Mov Cap-2 Maneuver	-	-	-	-	301	-
Stage 1	-	-	-	-	367	-
Stage 2	-	-	-	-	711	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	15.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	372	-	-	873	-
HCM Lane V/C Ratio	0.073	-	-	0.011	-
HCM Control Delay (s)	15.4	-	-	9.2	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	715	50	34	1441	59	33
Future Vol, veh/h	715	50	34	1441	59	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	2	2	15	15
Mvmt Flow	769	54	37	1549	63	35

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	823	0	1645	412
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	849	-
Critical Hdwy	-	-	4.14	-	7.1	7.2
Critical Hdwy Stg 1	-	-	-	-	6.1	-
Critical Hdwy Stg 2	-	-	-	-	6.1	-
Follow-up Hdwy	-	-	2.22	-	3.65	3.45
Pot Cap-1 Maneuver	-	-	803	-	79	554
Stage 1	-	-	-	-	373	-
Stage 2	-	-	-	-	349	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	803	-	75	554
Mov Cap-2 Maneuver	-	-	-	-	195	-
Stage 1	-	-	-	-	373	-
Stage 2	-	-	-	-	333	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	27.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	254	-	-	803	-
HCM Lane V/C Ratio	0.389	-	-	0.046	-
HCM Control Delay (s)	27.9	-	-	9.7	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	1.8	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1216	9	9	985	15	11
Future Vol, veh/h	1216	9	9	985	15	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	34	34
Mvmt Flow	1267	9	9	1026	16	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1276	0	1803	638
Stage 1	-	-	-	-	1272	-
Stage 2	-	-	-	-	531	-
Critical Hdwy	-	-	4.14	-	7.48	7.58
Critical Hdwy Stg 1	-	-	-	-	6.48	-
Critical Hdwy Stg 2	-	-	-	-	6.48	-
Follow-up Hdwy	-	-	2.22	-	3.84	3.64
Pot Cap-1 Maneuver	-	-	540	-	50	350
Stage 1	-	-	-	-	174	-
Stage 2	-	-	-	-	472	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	540	-	49	350
Mov Cap-2 Maneuver	-	-	-	-	132	-
Stage 1	-	-	-	-	174	-
Stage 2	-	-	-	-	464	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	28.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	179	-	-	540	-
HCM Lane V/C Ratio	0.151	-	-	0.017	-
HCM Control Delay (s)	28.7	-	-	11.8	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Intersection	
Int Delay, s/veh	8.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	134	137	369	5	2	382
Future Vol, veh/h	134	137	369	5	2	382
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	2	2	2	2
Mvmt Flow	141	144	388	5	2	402

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	393	0	-	0	817	391
Stage 1	-	-	-	-	391	-
Stage 2	-	-	-	-	426	-
Critical Hdwy	4.13	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.227	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1160	-	-	-	346	658
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	659	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1160	-	-	-	300	658
Mov Cap-2 Maneuver	-	-	-	-	300	-
Stage 1	-	-	-	-	593	-
Stage 2	-	-	-	-	659	-

Approach	EB	WB	SB
HCM Control Delay, s	4.2	0	19
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1160	-	-	-	654
HCM Lane V/C Ratio	0.122	-	-	-	0.618
HCM Control Delay (s)	8.5	0	-	-	19
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	4.3

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	334	347	217	2	1	179
Future Vol, veh/h	334	347	217	2	1	179
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	337	351	219	2	1	181

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	221	0	-	0	1245	220
Stage 1	-	-	-	-	220	-
Stage 2	-	-	-	-	1025	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1348	-	-	-	192	820
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	346	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1348	-	-	-	132	820
Mov Cap-2 Maneuver	-	-	-	-	132	-
Stage 1	-	-	-	-	564	-
Stage 2	-	-	-	-	346	-

Approach	EB	WB	SB
HCM Control Delay, s	4.2	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1348	-	-	-	797
HCM Lane V/C Ratio	0.25	-	-	-	0.228
HCM Control Delay (s)	8.6	0	-	-	10.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	1	-	-	-	0.9

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	137	140	30	10	376	5	35	10	19	2	20	370
Future Vol, veh/h	137	140	30	10	376	5	35	10	19	2	20	370
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	150	-	-	0	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	2	2	2	2	2	2	2	2	2
Mvmt Flow	144	147	32	11	396	5	37	11	20	2	21	389

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	401	0	0	179	0	0	682	874	90	788	888	201
Stage 1	-	-	-	-	-	-	451	451	-	421	421	-
Stage 2	-	-	-	-	-	-	231	423	-	367	467	-
Critical Hdwy	4.16	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.23	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1147	-	-	1394	-	-	336	287	950	282	281	806
Stage 1	-	-	-	-	-	-	557	569	-	581	587	-
Stage 2	-	-	-	-	-	-	751	586	-	625	560	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1147	-	-	1394	-	-	149	249	950	242	244	806
Mov Cap-2 Maneuver	-	-	-	-	-	-	194	325	-	343	349	-
Stage 1	-	-	-	-	-	-	487	497	-	508	582	-
Stage 2	-	-	-	-	-	-	371	581	-	524	489	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.8	0.2	20.6	13.7
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	194	571	1147	-	-	1394	-	-	343	349	806
HCM Lane V/C Ratio	0.19	0.053	0.126	-	-	0.008	-	-	0.006	0.06	0.483
HCM Control Delay (s)	27.9	11.7	8.6	-	-	7.6	-	-	15.6	16	13.6
HCM Lane LOS	D	B	A	-	-	A	-	-	C	C	B
HCM 95th %tile Q(veh)	0.7	0.2	0.4	-	-	0	-	-	0	0.2	2.7

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	341	354	20	10	221	2	17	10	9	1	35	148
Future Vol, veh/h	341	354	20	10	221	2	17	10	9	1	35	148
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	150	-	-	0	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	344	358	20	10	223	2	17	10	9	1	35	149

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	225	0	0	378	0	0	1205	1301	189	1116	1310	113
Stage 1	-	-	-	-	-	-	1056	1056	-	244	244	-
Stage 2	-	-	-	-	-	-	149	245	-	872	1066	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1341	-	-	1177	-	-	140	160	821	162	158	918
Stage 1	-	-	-	-	-	-	241	300	-	738	703	-
Stage 2	-	-	-	-	-	-	838	702	-	312	297	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1341	-	-	1177	-	-	80	118	821	122	116	918
Mov Cap-2 Maneuver	-	-	-	-	-	-	137	174	-	177	180	-
Stage 1	-	-	-	-	-	-	179	223	-	548	697	-
Stage 2	-	-	-	-	-	-	660	696	-	219	221	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.1	0.3	26.5	13.6
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	137	278	1341	-	-	1177	-	-	177	180	918
HCM Lane V/C Ratio	0.125	0.069	0.257	-	-	0.009	-	-	0.006	0.196	0.163
HCM Control Delay (s)	35	18.9	8.6	-	-	8.1	-	-	25.5	29.8	9.7
HCM Lane LOS	E	C	A	-	-	A	-	-	D	D	A
HCM 95th %tile Q(veh)	0.4	0.2	1	-	-	0	-	-	0	0.7	0.6

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	140	465	110	70	1075	60	30	50	30	190	50	370
Future Vol, veh/h	140	465	110	70	1075	60	30	50	30	190	50	370
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	150	-	-	0	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	2	2	2	2	2	2	2	2	2
Mvmt Flow	147	489	116	74	1132	63	32	53	32	200	53	389

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1195	0	0	605	0	0	1582	2184	303	1877	2211	598
Stage 1	-	-	-	-	-	-	841	841	-	1312	1312	-
Stage 2	-	-	-	-	-	-	741	1343	-	565	899	-
Critical Hdwy	4.16	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.23	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	574	-	-	969	-	-	73	~ 45	693	~ 44	~ 44	445
Stage 1	-	-	-	-	-	-	326	379	-	~ 167	227	-
Stage 2	-	-	-	-	-	-	374	219	-	477	356	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	574	-	-	969	-	-	~ 4	~ 31	693	-	~ 30	445
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ -213	~ 48	-	~ 70	105	-
Stage 1	-	-	-	-	-	-	243	282	-	~ 124	210	-
Stage 2	-	-	-	-	-	-	32	202	-	275	265	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.6	0.5		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	+	74	574	-	-	969	-	-	-	105	445
HCM Lane V/C Ratio	-	1.138	0.257	-	-	0.076	-	-	-	0.501	0.875
HCM Control Delay (s)	-	245.6	13.4	-	-	9	-	-	-	69.6	48.1
HCM Lane LOS	-	F	B	-	-	A	-	-	-	F	E
HCM 95th %tile Q(veh)	-	6.3	1	-	-	0.2	-	-	-	2.2	9.1

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

Intersection	
Int Delay, s/veh	91.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	345	811	60	30	754	135	90	50	80	80	60	150
Future Vol, veh/h	345	811	60	30	754	135	90	50	80	80	60	150
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	150	-	-	0	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	348	819	61	30	762	136	91	51	81	81	61	152

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	898	0	0	880	0	0	2018	2504	440	2021	2466	449
Stage 1	-	-	-	-	-	-	1546	1546	-	890	890	-
Stage 2	-	-	-	-	-	-	472	958	-	1131	1576	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	752	-	-	764	-	-	~ 34	~ 28	565	~ 34	~ 30	557
Stage 1	-	-	-	-	-	-	120	174	-	304	359	-
Stage 2	-	-	-	-	-	-	542	334	-	217	168	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	752	-	-	764	-	-	-	~ 14	565	~ 27	~ 15	557
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ -70	~ -65	-	~ 14	~ 50	-
Stage 1	-	-	-	-	-	-	~ 64	93	-	163	345	-
Stage 2	-	-	-	-	-	-	312	321	-	~ 46	90	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.9	0.3		$ 815.9
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	-	+	752	-	-	764	-	-	14	50	557
HCM Lane V/C Ratio	-	-	0.463	-	-	0.04	-	-	5.772	1.212	0.272
HCM Control Delay (s)	-	-	13.9	-	-	9.9	-	-	$ 2685.2	$ 328.6	13.9
HCM Lane LOS	-	-	B	-	-	A	-	-	F	F	B
HCM 95th %tile Q(veh)	-	-	2.5	-	-	0.1	-	-	11.1	5.5	1.1

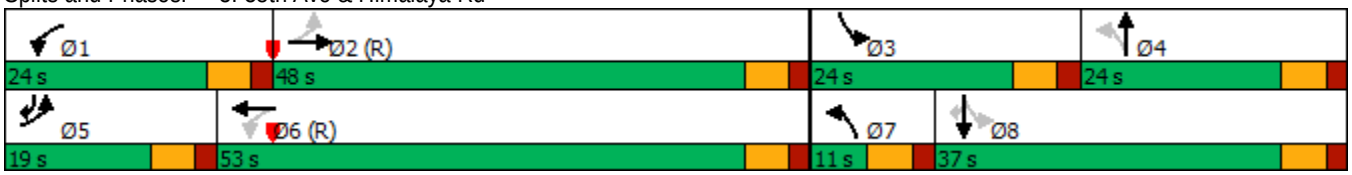
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

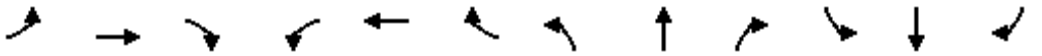
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	140	465	70	1075	30	50	190	50	370
Future Volume (vph)	140	465	70	1075	30	50	190	50	370
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov
Protected Phases	5	2	1	6	7	4	3	8	5
Permitted Phases	2		6		4		8		8
Detector Phase	5	2	1	6	7	4	3	8	5
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	24.0	11.0	24.0	24.0	24.0	11.0
Total Split (s)	19.0	48.0	24.0	53.0	11.0	24.0	24.0	37.0	19.0
Total Split (%)	15.8%	40.0%	20.0%	44.2%	9.2%	20.0%	20.0%	30.8%	15.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 3: 38th Ave & Himalaya Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	465	110	70	1075	60	30	50	30	190	50	370
Future Volume (veh/h)	140	465	110	70	1075	60	30	50	30	190	50	370
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	1856	1856	1856	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	147	489	116	74	1132	63	32	53	32	200	53	326
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	1468	346	474	1721	96	236	139	84	369	397	428
Arrive On Green	0.06	0.52	0.52	0.04	0.50	0.50	0.03	0.13	0.13	0.11	0.21	0.21
Sat Flow, veh/h	1767	2831	668	1781	3423	190	1781	1092	659	1781	1870	1585
Grp Volume(v), veh/h	147	303	302	74	587	608	32	0	85	200	53	326
Grp Sat Flow(s),veh/h/ln	1767	1763	1735	1781	1777	1836	1781	0	1752	1781	1870	1585
Q Serve(g_s), s	4.8	12.0	12.1	2.4	29.5	29.5	1.9	0.0	5.3	11.3	2.8	22.7
Cycle Q Clear(g_c), s	4.8	12.0	12.1	2.4	29.5	29.5	1.9	0.0	5.3	11.3	2.8	22.7
Prop In Lane	1.00		0.38	1.00		0.10	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	281	914	900	474	893	923	236	0	223	369	397	428
V/C Ratio(X)	0.52	0.33	0.34	0.16	0.66	0.66	0.14	0.00	0.38	0.54	0.13	0.76
Avail Cap(c_a), veh/h	371	914	900	667	893	923	262	0	263	436	483	501
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	0.69	0.69	0.69	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.0	16.8	16.8	13.5	22.2	22.2	43.7	0.0	48.1	37.6	38.3	40.3
Incr Delay (d2), s/veh	1.5	1.0	1.0	0.1	2.6	2.5	0.3	0.0	1.1	1.2	0.2	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	5.1	5.1	1.0	12.7	13.1	0.8	0.0	2.4	5.0	1.3	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.5	17.8	17.8	13.6	24.8	24.7	43.9	0.0	49.1	38.9	38.5	46.0
LnGrp LOS	B	B	B	B	C	C	D	A	D	D	D	D
Approach Vol, veh/h		752			1269			117			579	
Approach Delay, s/veh		18.1			24.1			47.7			42.9	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	68.2	19.5	21.2	12.9	66.3	9.3	31.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	18.0	42.0	18.0	18.0	13.0	47.0	5.0	31.0
Max Q Clear Time (g_c+I1), s	4.4	14.1	13.3	7.3	6.8	31.5	3.9	24.7
Green Ext Time (p_c), s	0.1	4.0	0.2	0.2	0.2	7.3	0.0	0.8

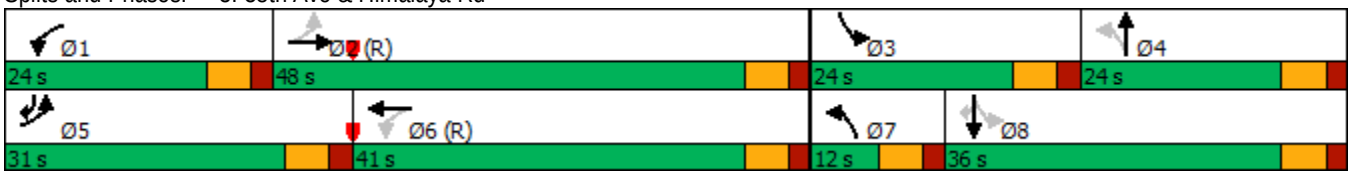
Intersection Summary	
HCM 6th Ctrl Delay	27.5
HCM 6th LOS	C

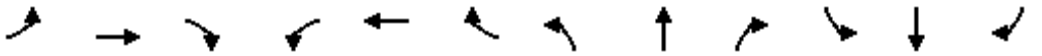
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	345	811	30	754	90	50	80	60	150
Future Volume (vph)	345	811	30	754	90	50	80	60	150
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov
Protected Phases	5	2	1	6	7	4	3	8	5
Permitted Phases	2		6		4		8		8
Detector Phase	5	2	1	6	7	4	3	8	5
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	24.0	11.0	24.0	24.0	24.0	11.0
Total Split (s)	31.0	48.0	24.0	41.0	12.0	24.0	24.0	36.0	31.0
Total Split (%)	25.8%	40.0%	20.0%	34.2%	10.0%	20.0%	20.0%	30.0%	25.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	Max	C-Max	None	None	Max	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 3: 38th Ave & Himalaya Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	345	811	60	30	754	135	90	50	80	80	60	150
Future Volume (veh/h)	345	811	60	30	754	135	90	50	80	80	60	150
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	348	819	61	30	762	136	91	51	81	81	61	91
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	438	1354	101	460	1262	225	278	63	99	352	367	525
Arrive On Green	0.14	0.40	0.40	0.15	0.42	0.42	0.05	0.10	0.10	0.15	0.20	0.20
Sat Flow, veh/h	1781	3353	250	1781	3013	538	1781	651	1034	1781	1870	1585
Grp Volume(v), veh/h	348	434	446	30	449	449	91	0	132	81	61	91
Grp Sat Flow(s),veh/h/ln	1781	1777	1825	1781	1777	1774	1781	0	1684	1781	1870	1585
Q Serve(g_s), s	13.4	23.1	23.1	0.9	23.6	23.6	5.5	0.0	9.2	4.2	3.3	4.9
Cycle Q Clear(g_c), s	13.4	23.1	23.1	0.9	23.6	23.6	5.5	0.0	9.2	4.2	3.3	4.9
Prop In Lane	1.00		0.14	1.00		0.30	1.00		0.61	1.00		1.00
Lane Grp Cap(c), veh/h	438	717	737	460	744	743	278	0	162	352	367	525
V/C Ratio(X)	0.79	0.60	0.61	0.07	0.60	0.60	0.33	0.00	0.81	0.23	0.17	0.17
Avail Cap(c_a), veh/h	569	717	737	460	744	743	278	0	253	352	468	610
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	0.83	0.83	0.83	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.4	28.2	28.2	14.5	27.1	27.1	46.1	0.0	53.2	34.7	40.1	28.5
Incr Delay (d2), s/veh	5.8	3.8	3.7	0.2	3.0	3.0	0.7	0.0	10.8	1.5	0.2	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	6.1	10.5	10.8	0.4	10.5	10.5	2.5	0.0	4.4	2.0	1.5	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.2	32.0	31.9	14.7	30.1	30.2	46.8	0.0	64.0	36.2	40.3	28.6
LnGrp LOS	C	C	C	B	C	C	D	A	E	D	D	C
Approach Vol, veh/h		1228			928			223			233	
Approach Delay, s/veh		30.3			29.7			57.0			34.3	
Approach LOS		C			C			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	54.5	24.0	17.5	22.2	56.2	12.0	29.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	18.0	42.0	18.0	18.0	25.0	35.0	6.0	30.0
Max Q Clear Time (g_c+I1), s	2.9	25.1	6.2	11.2	15.4	25.6	7.5	6.9
Green Ext Time (p_c), s	0.0	5.3	0.1	0.3	0.8	3.9	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	32.7
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	13.2
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	12	262	43	18	437
Future Vol, veh/h	65	12	262	43	18	437
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	30	30	10	10	6	6
Mvmt Flow	68	13	273	45	19	455
Number of Lanes	1	1	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	10.9	11.3	14.8
HCM LOS	B	B	B

Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	0%	100%	0%	4%
Vol Thru, %	86%	0%	0%	96%
Vol Right, %	14%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	305	65	12	455
LT Vol	0	65	0	18
Through Vol	262	0	0	437
RT Vol	43	0	12	0
Lane Flow Rate	318	68	12	474
Geometry Grp	2	7	7	2
Degree of Util (X)	0.422	0.137	0.021	0.612
Departure Headway (Hd)	4.787	7.28	6.062	4.648
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	750	489	585	773
Service Time	2.841	5.079	3.86	2.694
HCM Lane V/C Ratio	0.424	0.139	0.021	0.613
HCM Control Delay	11.3	11.2	9	14.8
HCM Lane LOS	B	B	A	B
HCM 95th-tile Q	2.1	0.5	0.1	4.2

Intersection	
Intersection Delay, s/veh	14.8
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	80	29	444	43	11	309
Future Vol, veh/h	80	29	444	43	11	309
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	5	5	6	6	4	4
Mvmt Flow	85	31	472	46	12	329
Number of Lanes	1	1	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	10.7	17.4	12.3
HCM LOS	B	C	B

Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	0%	100%	0%	3%
Vol Thru, %	91%	0%	0%	97%
Vol Right, %	9%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	487	80	29	320
LT Vol	0	80	0	11
Through Vol	444	0	0	309
RT Vol	43	0	29	0
Lane Flow Rate	518	85	31	340
Geometry Grp	2	7	7	2
Degree of Util (X)	0.68	0.169	0.051	0.467
Departure Headway (Hd)	4.722	7.129	5.908	4.934
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	756	506	610	722
Service Time	2.795	4.829	3.608	3.019
HCM Lane V/C Ratio	0.685	0.168	0.051	0.471
HCM Control Delay	17.4	11.3	8.9	12.3
HCM Lane LOS	C	B	A	B
HCM 95th-tile Q	5.4	0.6	0.2	2.5

Intersection	
Intersection Delay, s/veh	13.5
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	66	12	267	44	18	446
Future Vol, veh/h	66	12	267	44	18	446
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	30	30	10	10	6	6
Mvmt Flow	69	13	278	46	19	465
Number of Lanes	1	1	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	10.9	11.5	15.3
HCM LOS	B	B	C

Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	0%	100%	0%	4%
Vol Thru, %	86%	0%	0%	96%
Vol Right, %	14%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	311	66	12	464
LT Vol	0	66	0	18
Through Vol	267	0	0	446
RT Vol	44	0	12	0
Lane Flow Rate	324	69	12	483
Geometry Grp	2	7	7	2
Degree of Util (X)	0.432	0.142	0.022	0.626
Departure Headway (Hd)	4.806	7.418	6.198	4.664
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	745	486	581	769
Service Time	2.866	5.118	3.898	2.715
HCM Lane V/C Ratio	0.435	0.142	0.021	0.628
HCM Control Delay	11.5	11.3	9	15.3
HCM Lane LOS	B	B	A	C
HCM 95th-tile Q	2.2	0.5	0.1	4.5

Intersection	
Intersection Delay, s/veh	15.3
Intersection LOS	C

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	82	30	453	44	11	315
Future Vol, veh/h	82	30	453	44	11	315
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	5	5	6	6	4	4
Mvmt Flow	87	32	482	47	12	335
Number of Lanes	1	1	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	10.8	18.1	12.6
HCM LOS	B	C	B

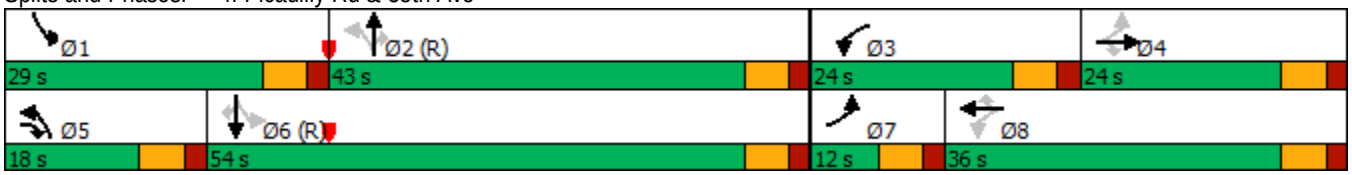
Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	0%	100%	0%	3%
Vol Thru, %	91%	0%	0%	97%
Vol Right, %	9%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	497	82	30	326
LT Vol	0	82	0	11
Through Vol	453	0	0	315
RT Vol	44	0	30	0
Lane Flow Rate	529	87	32	347
Geometry Grp	2	7	7	2
Degree of Util (X)	0.696	0.174	0.053	0.478
Departure Headway (Hd)	4.742	7.172	5.95	4.959
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	756	503	605	718
Service Time	2.819	4.872	3.65	3.048
HCM Lane V/C Ratio	0.7	0.173	0.053	0.483
HCM Control Delay	18.1	11.4	9	12.6
HCM Lane LOS	C	B	A	B
HCM 95th-tile Q	5.7	0.6	0.2	2.6

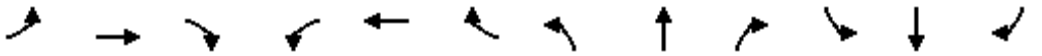
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	325	200	250	570	160	175	620	430	290	1115	150
Future Volume (vph)	100	325	200	250	570	160	175	620	430	290	1115	150
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	5	3	8	8	5	2	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	5.0	5.0
Minimum Split (s)	11.0	24.0	11.0	24.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	12.0	24.0	18.0	24.0	36.0	36.0	18.0	43.0	43.0	29.0	54.0	54.0
Total Split (%)	10.0%	20.0%	15.0%	20.0%	30.0%	30.0%	15.0%	35.8%	35.8%	24.2%	45.0%	45.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 4: Picadilly Rd & 38th Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	325	200	250	570	160	175	620	430	290	1115	150
Future Volume (veh/h)	100	325	200	250	570	160	175	620	430	290	1115	150
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	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	104	339	146	260	594	105	182	646	386	302	1161	94
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, %	6	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	184	419	306	332	744	332	270	1426	636	413	1570	700
Arrive On Green	0.05	0.12	0.12	0.14	0.22	0.22	0.08	0.41	0.41	0.12	0.46	0.46
Sat Flow, veh/h	1725	3441	1535	1725	3441	1535	1725	3441	1535	1725	3441	1535
Grp Volume(v), veh/h	104	339	146	260	594	105	182	646	386	302	1161	94
Grp Sat Flow(s),veh/h/ln	1725	1721	1535	1725	1721	1535	1725	1721	1535	1725	1721	1535
Q Serve(g_s), s	6.0	11.5	10.1	15.3	19.6	6.9	7.2	16.2	23.6	11.7	33.2	4.3
Cycle Q Clear(g_c), s	6.0	11.5	10.1	15.3	19.6	6.9	7.2	16.2	23.6	11.7	33.2	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	184	419	306	332	744	332	270	1426	636	413	1570	700
V/C Ratio(X)	0.56	0.81	0.48	0.78	0.80	0.32	0.67	0.45	0.61	0.73	0.74	0.13
Avail Cap(c_a), veh/h	184	516	349	342	860	384	309	1426	636	538	1570	700
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	51.3	42.5	37.3	44.5	39.6	23.1	25.3	27.5	18.1	26.8	18.9
Incr Delay (d2), s/veh	3.6	7.2	1.1	11.0	4.7	0.5	4.7	1.0	4.3	3.6	3.2	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	2.9	5.4	3.9	7.4	8.8	2.7	3.2	6.8	9.3	4.9	14.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.2	58.5	43.6	48.3	49.2	40.1	27.8	26.4	31.7	21.7	30.0	19.3
LnGrp LOS	D	E	D	D	D	D	C	C	C	C	C	B
Approach Vol, veh/h		589			959			1214			1557	
Approach Delay, s/veh		53.0			48.0			28.3			27.7	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.3	55.7	23.3	20.6	15.3	60.7	12.0	32.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	23.0	37.0	18.0	18.0	12.0	48.0	6.0	30.0
Max Q Clear Time (g_c+I1), s	13.7	25.6	17.3	13.5	9.2	35.2	8.0	21.6
Green Ext Time (p_c), s	0.6	4.5	0.1	1.1	0.1	6.9	0.0	2.8

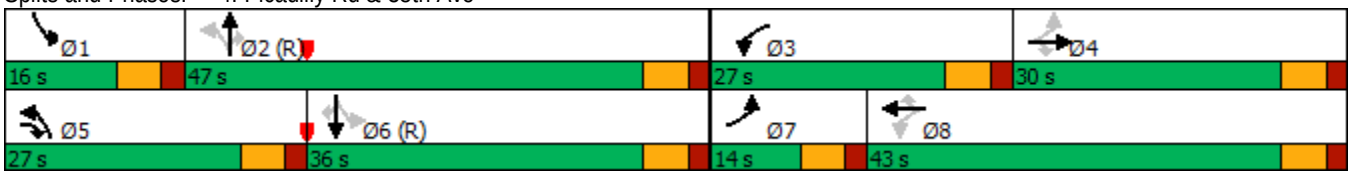
Intersection Summary	
HCM 6th Ctrl Delay	35.8
HCM 6th LOS	D

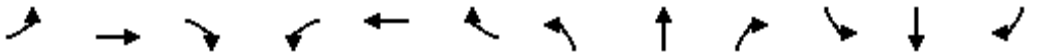
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	660	270	345	385	400	325	1005	455	200	510	170
Future Volume (vph)	180	660	270	345	385	400	325	1005	455	200	510	170
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	5	3	8	8	5	2	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	5.0	5.0
Minimum Split (s)	11.0	24.0	11.0	24.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	14.0	30.0	27.0	27.0	43.0	43.0	27.0	47.0	47.0	16.0	36.0	36.0
Total Split (%)	11.7%	25.0%	22.5%	22.5%	35.8%	35.8%	22.5%	39.2%	39.2%	13.3%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 4: Picadilly Rd & 38th Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	660	270	345	385	400	325	1005	455	200	510	170
Future Volume (veh/h)	180	660	270	345	385	400	325	1005	455	200	510	170
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	1826	1826	1826	1811	1811	1811	1841	1841	1841
Adj Flow Rate, veh/h	191	702	223	367	410	362	346	1069	420	213	543	117
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	5	5	5	6	6	6	4	4	4
Cap, veh/h	374	711	569	366	1070	477	444	1176	524	222	930	415
Arrive On Green	0.07	0.20	0.20	0.17	0.31	0.31	0.16	0.34	0.34	0.08	0.27	0.27
Sat Flow, veh/h	1781	3554	1585	1739	3469	1547	1725	3441	1535	1753	3497	1560
Grp Volume(v), veh/h	191	702	223	367	410	362	346	1069	420	213	543	117
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1739	1735	1547	1725	1721	1535	1753	1749	1560
Q Serve(g_s), s	8.0	23.6	12.6	21.0	11.1	25.3	16.8	35.6	29.8	10.0	16.2	7.1
Cycle Q Clear(g_c), s	8.0	23.6	12.6	21.0	11.1	25.3	16.8	35.6	29.8	10.0	16.2	7.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	374	711	569	366	1070	477	444	1176	524	222	930	415
V/C Ratio(X)	0.51	0.99	0.39	1.00	0.38	0.76	0.78	0.91	0.80	0.96	0.58	0.28
Avail Cap(c_a), veh/h	374	711	569	366	1070	477	471	1176	524	222	930	415
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.68	0.68	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.4	47.9	28.7	35.4	32.6	37.5	25.7	37.7	35.8	34.5	38.3	34.9
Incr Delay (d2), s/veh	0.8	24.8	0.3	47.6	0.2	6.9	7.8	11.9	12.2	49.2	2.7	1.7
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	4.8	12.8	4.8	13.7	4.7	10.4	7.7	16.7	12.8	7.6	7.3	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.2	72.6	29.0	83.0	32.8	44.4	33.5	49.6	48.0	83.7	40.9	36.6
LnGrp LOS	D	E	C	F	C	D	C	D	D	F	D	D
Approach Vol, veh/h		1116			1139			1835			873	
Approach Delay, s/veh		57.8			52.7			46.2			50.8	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	47.0	27.0	30.0	25.1	37.9	14.0	43.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	10.0	41.0	21.0	24.0	21.0	30.0	8.0	37.0
Max Q Clear Time (g_c+I1), s	12.0	37.6	23.0	25.6	18.8	18.2	10.0	27.3
Green Ext Time (p_c), s	0.0	2.5	0.0	0.0	0.3	3.2	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	51.1
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	10
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	89	160	61	27	230	7	36	4	3	3	1	52
Future Vol, veh/h	89	160	61	27	230	7	36	4	3	3	1	52
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	15	15	15	14	14	14	29	29	29	40	40	40
Mvmt Flow	96	172	66	29	247	8	39	4	3	3	1	56
Number of Lanes	1	2	0	1	2	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	9.8	10.2	10.5	9.7
HCM LOS	A	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	57%	0%	100%	47%	0%	100%	92%	0%	100%	0%
Vol Right, %	0%	43%	0%	0%	53%	0%	0%	8%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	36	7	89	107	114	27	153	84	3	1	52
LT Vol	36	0	89	0	0	27	0	0	3	0	0
Through Vol	0	4	0	107	53	0	153	77	0	1	0
RT Vol	0	3	0	0	61	0	0	7	0	0	52
Lane Flow Rate	39	8	96	115	123	29	165	90	3	1	56
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.079	0.014	0.165	0.182	0.182	0.051	0.265	0.143	0.007	0.002	0.098
Departure Headway (Hd)	7.337	6.537	6.216	5.715	5.34	6.281	5.78	5.721	7.527	7.027	6.327
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	491	551	572	622	664	565	615	621	478	512	570
Service Time	5.04	4.24	4.009	3.507	3.133	4.073	3.572	3.513	5.23	4.73	4.03
HCM Lane V/C Ratio	0.079	0.015	0.168	0.185	0.185	0.051	0.268	0.145	0.006	0.002	0.098
HCM Control Delay	10.7	9.3	10.3	9.8	9.3	9.4	10.7	9.5	10.3	9.7	9.7
HCM Lane LOS	B	A	B	A	A	A	B	A	B	A	A
HCM 95th-tile Q	0.3	0	0.6	0.7	0.7	0.2	1.1	0.5	0	0	0.3

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	206	50	15	285	3	60	4	19	10	2	106
Future Vol, veh/h	35	206	50	15	285	3	60	4	19	10	2	106
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	12	12	12	5	5	5	4	4	4	12	12	12
Mvmt Flow	39	229	56	17	317	3	67	4	21	11	2	118
Number of Lanes	1	2	0	1	2	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	10.8	11.5	10.6	10.5
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	17%	0%	100%	58%	0%	100%	97%	0%	100%	0%
Vol Right, %	0%	83%	0%	0%	42%	0%	0%	3%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	60	23	35	137	119	15	190	98	10	2	106
LT Vol	60	0	35	0	0	15	0	0	10	0	0
Through Vol	0	4	0	137	69	0	190	95	0	2	0
RT Vol	0	19	0	0	50	0	0	3	0	0	106
Lane Flow Rate	67	26	39	153	132	17	211	109	11	2	118
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.134	0.044	0.073	0.266	0.219	0.031	0.359	0.185	0.023	0.004	0.202
Departure Headway (Hd)	7.26	6.181	6.782	6.28	5.983	6.633	6.13	6.108	7.373	6.872	6.17
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	493	578	528	572	600	540	587	587	485	520	581
Service Time	5.011	3.932	4.523	4.02	3.724	4.372	3.869	3.848	5.122	4.621	3.919
HCM Lane V/C Ratio	0.136	0.045	0.074	0.267	0.22	0.031	0.359	0.186	0.023	0.004	0.203
HCM Control Delay	11.1	9.2	10.1	11.3	10.4	9.6	12.3	10.2	10.3	9.6	10.5
HCM Lane LOS	B	A	B	B	B	A	B	B	B	A	B
HCM 95th-tile Q	0.5	0.1	0.2	1.1	0.8	0.1	1.6	0.7	0.1	0	0.7

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	61	163	62	28	235	7	37	4	3	3	1	28
Future Vol, veh/h	61	163	62	28	235	7	37	4	3	3	1	28
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	15	15	15	14	14	14	29	29	29	40	40	40
Mvmt Flow	66	175	67	30	253	8	40	4	3	3	1	30
Number of Lanes	1	2	0	1	2	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	9.5	10	10.3	9.4
HCM LOS	A	A	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	57%	0%	100%	47%	0%	100%	92%	0%	100%	0%
Vol Right, %	0%	43%	0%	0%	53%	0%	0%	8%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	37	7	61	109	116	28	157	85	3	1	28
LT Vol	37	0	61	0	0	28	0	0	3	0	0
Through Vol	0	4	0	109	54	0	157	78	0	1	0
RT Vol	0	3	0	0	62	0	0	7	0	0	28
Lane Flow Rate	40	8	66	117	125	30	168	92	3	1	30
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.08	0.013	0.112	0.183	0.183	0.051	0.264	0.142	0.007	0.002	0.052
Departure Headway (Hd)	7.2	6.4	6.141	5.64	5.266	6.142	5.641	5.583	7.45	6.95	6.25
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	500	563	580	632	677	580	632	638	483	518	576
Service Time	4.9	4.1	3.912	3.411	3.037	3.915	3.414	3.357	5.154	4.653	3.953
HCM Lane V/C Ratio	0.08	0.014	0.114	0.185	0.185	0.052	0.266	0.144	0.006	0.002	0.052
HCM Control Delay	10.5	9.2	9.7	9.7	9.2	9.2	10.5	9.3	10.2	9.7	9.3
HCM Lane LOS	B	A	A	A	A	A	B	A	B	A	A
HCM 95th-tile Q	0.3	0	0.4	0.7	0.7	0.2	1.1	0.5	0	0	0.2

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	210	51	15	291	3	61	4	19	10	2	101
Future Vol, veh/h	16	210	51	15	291	3	61	4	19	10	2	101
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	12	12	12	5	5	5	4	4	4	12	12	12
Mvmt Flow	18	233	57	17	323	3	68	4	21	11	2	112
Number of Lanes	1	2	0	1	2	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	10.8	11.5	10.6	10.3
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	17%	0%	100%	58%	0%	100%	97%	0%	100%	0%
Vol Right, %	0%	83%	0%	0%	42%	0%	0%	3%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	61	23	16	140	121	15	194	100	10	2	101
LT Vol	61	0	16	0	0	15	0	0	10	0	0
Through Vol	0	4	0	140	70	0	194	97	0	2	0
RT Vol	0	19	0	0	51	0	0	3	0	0	101
Lane Flow Rate	68	26	18	156	134	17	216	111	11	2	112
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.136	0.044	0.033	0.271	0.223	0.03	0.364	0.187	0.023	0.004	0.191
Departure Headway (Hd)	7.218	6.14	6.772	6.269	5.972	6.578	6.076	6.055	7.345	6.843	6.142
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	497	582	529	572	601	544	593	592	487	522	584
Service Time	4.966	3.887	4.513	4.01	3.714	4.319	3.816	3.795	5.095	4.594	3.892
HCM Lane V/C Ratio	0.137	0.045	0.034	0.273	0.223	0.031	0.364	0.188	0.023	0.004	0.192
HCM Control Delay	11.1	9.2	9.7	11.3	10.4	9.5	12.3	10.2	10.3	9.6	10.3
HCM Lane LOS	B	A	A	B	B	A	B	B	B	A	B
HCM 95th-tile Q	0.5	0.1	0.1	1.1	0.8	0.1	1.7	0.7	0.1	0	0.7

Intersection	
Intersection Delay, s/veh	17.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	182	363	124	38	443	17	74	3	10	15	2	109
Future Vol, veh/h	182	363	124	38	443	17	74	3	10	15	2	109
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	15	15	15	14	14	14	29	29	29	40	40	40
Mvmt Flow	196	390	133	41	476	18	80	3	11	16	2	117
Number of Lanes	1	2	0	1	2	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	17	20.2	14.4	14.5
HCM LOS	C	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	23%	0%	100%	49%	0%	100%	90%	0%	100%	0%
Vol Right, %	0%	77%	0%	0%	51%	0%	0%	10%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	74	13	182	242	245	38	295	165	15	2	109
LT Vol	74	0	182	0	0	38	0	0	15	0	0
Through Vol	0	3	0	242	121	0	295	148	0	2	0
RT Vol	0	10	0	0	124	0	0	17	0	0	109
Lane Flow Rate	80	14	196	260	263	41	318	177	16	2	117
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.212	0.033	0.425	0.528	0.509	0.092	0.668	0.369	0.044	0.006	0.28
Departure Headway (Hd)	9.576	8.537	7.812	7.307	6.949	8.082	7.577	7.504	9.817	9.312	8.604
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	375	419	462	494	519	443	476	480	365	384	417
Service Time	7.338	6.299	5.557	5.052	4.694	5.831	5.326	5.253	7.579	7.073	6.365
HCM Lane V/C Ratio	0.213	0.033	0.424	0.526	0.507	0.093	0.668	0.369	0.044	0.005	0.281
HCM Control Delay	14.9	11.6	16.2	18	16.7	11.7	24.4	14.6	13	12.1	14.7
HCM Lane LOS	B	B	C	C	C	B	C	B	B	B	B
HCM 95th-tile Q	0.8	0.1	2.1	3	2.9	0.3	4.8	1.7	0.1	0	1.1

Intersection	
Intersection Delay, s/veh	27.2
Intersection LOS	D

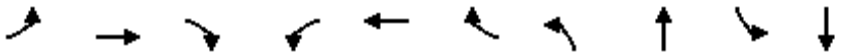
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	94	395	126	23	469	12	117	0	49	18	0	196
Future Vol, veh/h	94	395	126	23	469	12	117	0	49	18	0	196
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	12	12	12	5	5	5	4	4	4	12	12	12
Mvmt Flow	104	439	140	26	521	13	130	0	54	20	0	218
Number of Lanes	1	2	0	1	2	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	26	34.2	17.6	21.8
HCM LOS	D	D	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	0%	0%	100%	51%	0%	100%	93%	0%	100%	0%
Vol Right, %	0%	100%	0%	0%	49%	0%	0%	7%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	117	49	94	263	258	23	313	168	18	0	196
LT Vol	117	0	94	0	0	23	0	0	18	0	0
Through Vol	0	0	0	263	132	0	313	156	0	0	0
RT Vol	0	49	0	0	126	0	0	12	0	0	196
Lane Flow Rate	130	54	104	293	286	26	347	187	20	0	218
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.375	0.138	0.266	0.705	0.661	0.066	0.845	0.452	0.057	0	0.55
Departure Headway (Hd)	10.375	9.148	9.185	8.669	8.315	9.273	8.757	8.705	10.311	9.801	9.088
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	346	391	391	415	435	386	413	413	347	0	396
Service Time	8.153	6.926	6.946	6.429	6.076	7.037	6.521	6.469	8.082	7.572	6.858
HCM Lane V/C Ratio	0.376	0.138	0.266	0.706	0.657	0.067	0.84	0.453	0.058	0	0.551
HCM Control Delay	19.3	13.4	15.3	29.8	26	12.7	44.3	18.5	13.7	12.6	22.5
HCM Lane LOS	C	B	C	D	D	B	E	C	B	N	C
HCM 95th-tile Q	1.7	0.5	1.1	5.3	4.7	0.2	8.1	2.3	0.2	0	3.2

APPENDIX D

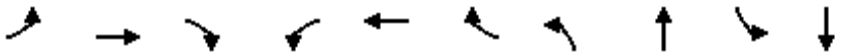
Queue Analysis Worksheets



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	165	257	22	415	510	17	33	708	70	1119
v/c Ratio	0.30	0.77	0.06	0.84	0.43	0.03	0.09	0.45	0.25	0.53
Control Delay	26.0	68.6	0.3	43.5	36.4	0.1	18.9	24.0	29.9	29.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	68.6	0.3	43.5	36.4	0.1	18.9	24.0	29.9	29.4
Queue Length 50th (ft)	42	214	0	258	182	0	7	206	41	268
Queue Length 95th (ft)	64	#475	0	368	241	0	17	260	83	317
Internal Link Dist (ft)		588			4108			1443		1507
Turn Bay Length (ft)	300			200		400	300		100	
Base Capacity (vph)	619	334	389	598	1173	589	374	1571	278	2107
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	0.27	0.77	0.06	0.69	0.43	0.03	0.09	0.45	0.25	0.53

Intersection Summary

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	486	472	62	288	308	60	59	1210	52	1351
v/c Ratio	0.55	1.29	0.15	0.85	0.41	0.13	0.16	0.67	0.38	0.59
Control Delay	31.3	193.0	0.7	57.7	48.3	0.6	16.0	24.9	36.4	28.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.3	193.0	0.7	57.7	48.3	0.6	16.0	24.9	36.4	28.7
Queue Length 50th (ft)	152	~525	0	192	123	0	12	385	30	321
Queue Length 95th (ft)	197	#825	0	292	178	0	23	463	76	377
Internal Link Dist (ft)		588			4108			1443		1507
Turn Bay Length (ft)	300			200		400	300		100	
Base Capacity (vph)	1009	365	420	412	755	445	363	1818	136	2283
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	0.48	1.29	0.15	0.70	0.41	0.13	0.16	0.67	0.38	0.59

Intersection Summary

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

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	273	434	682	727	106	116	970	369	101	1510	631
v/c Ratio	0.93	0.77	0.83	0.66	0.19	0.80	0.42	0.41	0.50	0.76	0.73
Control Delay	98.4	59.3	57.4	43.1	8.3	99.3	24.1	3.3	41.3	38.7	26.2
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	98.4	59.3	57.4	43.1	8.3	99.3	24.1	3.3	41.3	38.7	26.2
Queue Length 50th (ft)	124	176	294	288	5	53	200	0	66	417	353
Queue Length 95th (ft)	#211	#320	342	359	48	#106	238	54	130	476	511
Internal Link Dist (ft)		588		4108			1443			1507	
Turn Bay Length (ft)	300		200		400	300			100		
Base Capacity (vph)	293	564	1022	1105	560	145	2298	909	203	1977	870
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	0.93	0.77	0.67	0.66	0.19	0.80	0.42	0.41	0.50	0.76	0.73

Intersection Summary

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	707	777	478	478	130	158	1582	663	82	1913	261
v/c Ratio	0.99	1.10	1.00	1.02	0.38	0.45	0.55	0.54	0.78	0.86	0.23
Control Delay	85.2	113.4	98.7	104.5	5.9	60.8	19.6	6.1	79.4	39.3	2.6
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	85.2	113.4	98.7	104.5	5.9	60.8	19.6	6.1	79.4	39.3	2.6
Queue Length 50th (ft)	322	~396	219	~234	0	68	309	133	60	545	15
Queue Length 95th (ft)	#454	#528	#336	#348	27	103	352	207	#168	639	48
Internal Link Dist (ft)		588		4108			1443			1507	
Turn Bay Length (ft)	300		200		400	300			100		
Base Capacity (vph)	712	704	478	467	346	351	2862	1239	105	2229	1135
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	0.99	1.10	1.00	1.02	0.38	0.45	0.55	0.54	0.78	0.86	0.23

Intersection Summary

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

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	147	605	74	1195	32	85	200	53	389
v/c Ratio	0.53	0.31	0.15	0.66	0.19	0.52	0.62	0.15	0.66
Control Delay	16.9	16.3	15.7	38.8	34.6	50.5	45.2	39.8	29.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.9	16.3	15.7	38.8	34.6	50.5	45.2	39.8	29.2
Queue Length 50th (ft)	43	132	37	452	18	48	127	35	193
Queue Length 95th (ft)	82	200	m61	574	41	98	185	68	259
Internal Link Dist (ft)		970		5214		558		1149	
Turn Bay Length (ft)	175		175						
Base Capacity (vph)	322	1923	644	1822	171	281	350	481	629
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.31	0.11	0.66	0.19	0.30	0.57	0.11	0.62

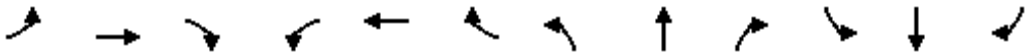
Intersection Summary

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	348	880	30	898	91	132	81	61	152
v/c Ratio	0.78	0.72	0.06	0.71	0.43	0.64	0.23	0.16	0.19
Control Delay	34.5	37.5	14.1	45.2	39.7	44.1	31.9	39.7	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.5	37.5	14.1	45.2	39.7	44.1	31.9	39.7	6.6
Queue Length 50th (ft)	160	306	12	357	53	57	47	40	20
Queue Length 95th (ft)	268	382	m24	#467	89	118	81	75	53
Internal Link Dist (ft)		970		5214		558		1149	
Turn Bay Length (ft)	175		175						
Base Capacity (vph)	486	1230	465	1266	210	301	359	465	810
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.72	0.06	0.71	0.43	0.44	0.23	0.13	0.19

Intersection Summary

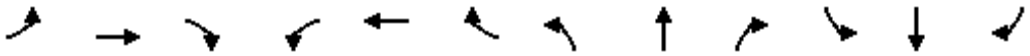
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	104	339	208	260	594	167	182	646	448	302	1161	156
v/c Ratio	0.60	0.74	0.37	0.79	0.76	0.34	0.76	0.50	0.54	0.68	0.80	0.21
Control Delay	48.9	61.1	21.0	49.2	50.2	5.2	44.1	31.5	7.4	22.5	35.8	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	61.1	21.0	49.2	50.2	5.2	44.1	31.5	7.4	22.5	35.8	2.2
Queue Length 50th (ft)	58	141	28	155	223	0	71	203	23	120	425	0
Queue Length 95th (ft)	100	191	130	#246	286	39	#199	288	122	182	520	24
Internal Link Dist (ft)		5214			616			1950			2180	
Turn Bay Length (ft)	150		150	450		275	275		275	250		150
Base Capacity (vph)	173	510	573	340	851	524	253	1297	829	512	1456	760
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.66	0.36	0.76	0.70	0.32	0.72	0.50	0.54	0.59	0.80	0.21

Intersection Summary

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	191	702	287	367	410	426	346	1069	484	213	543	181
v/c Ratio	0.62	0.99	0.39	1.02	0.39	0.66	0.83	0.92	0.64	1.04	0.60	0.31
Control Delay	42.4	86.2	38.1	85.8	33.9	19.2	39.3	51.3	12.7	106.1	42.5	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.4	86.2	38.1	85.8	33.9	19.2	39.3	51.3	12.7	106.1	42.5	2.5
Queue Length 50th (ft)	130	305	145	~244	131	112	172	415	72	~130	197	0
Queue Length 95th (ft)	m192	#431	231	#446	177	230	#288	#547	193	#291	258	16
Internal Link Dist (ft)		5214			616			1950			2180	
Turn Bay Length (ft)	150		150	450		275	275		275	250		150
Base Capacity (vph)	308	707	750	361	1060	650	431	1163	756	205	906	587
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.99	0.38	1.02	0.39	0.66	0.80	0.92	0.64	1.04	0.60	0.31

Intersection Summary

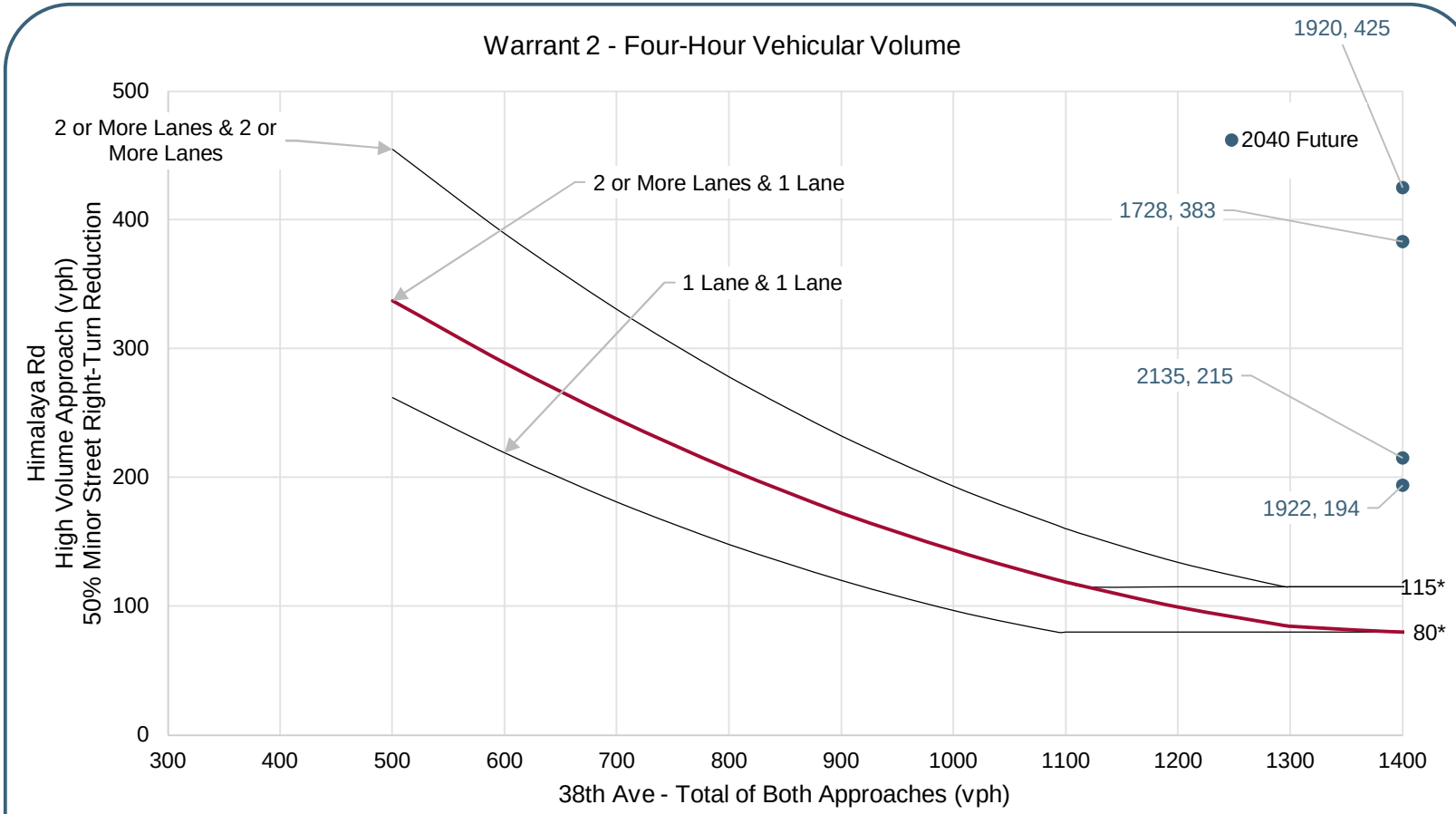
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

APPENDIX E

Signal Warrant Worksheets



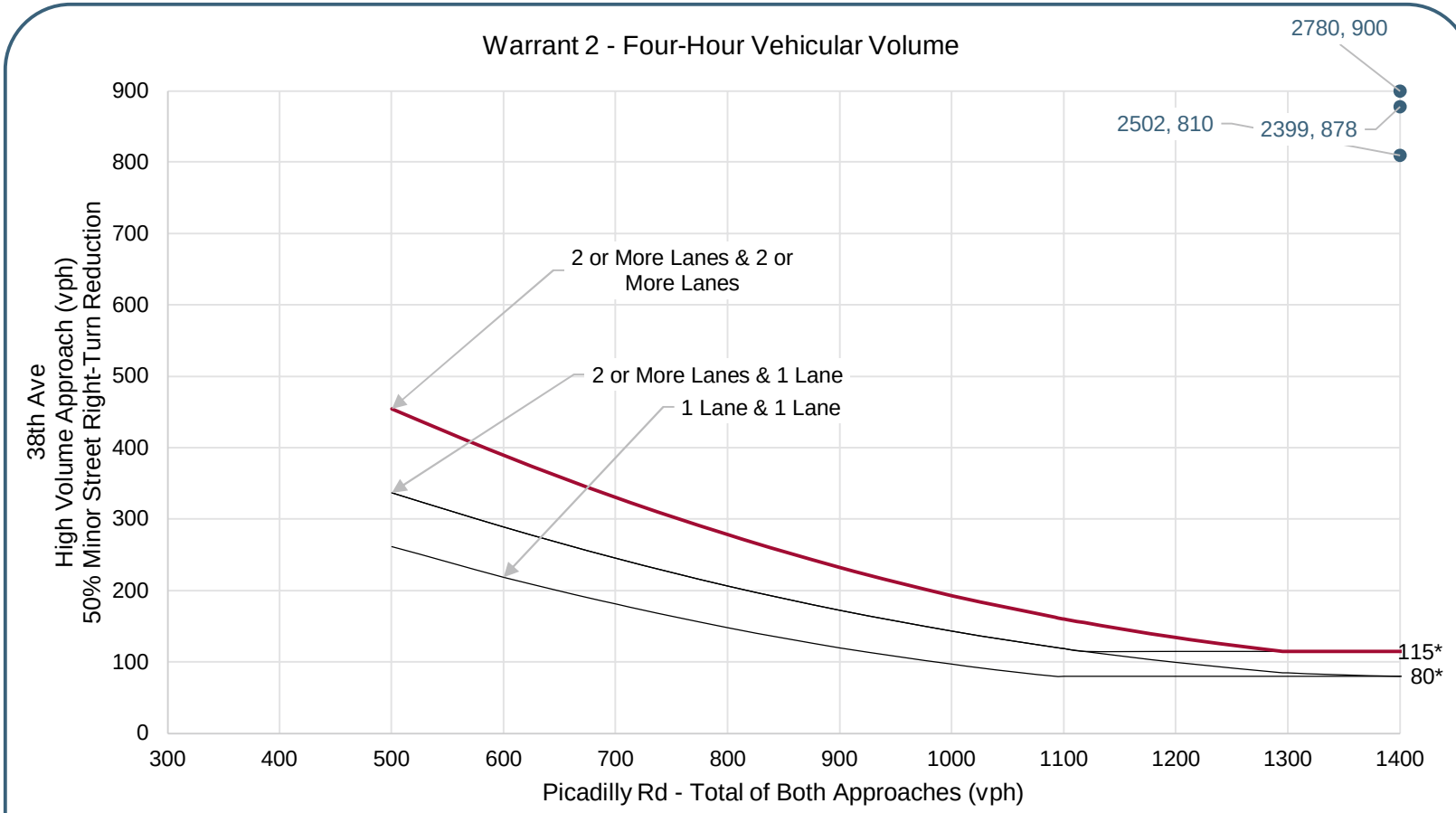
*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

38th Ave & Himalaya Rd
Signal Warrant Analysis
Four-Hour Volume Warrant

Source: Manual on Uniform Traffic Control Devices 2009

Figure 1

Kimley»Horn



Picadilly Rd & 38th Ave
Signal Warrant Analysis
Four-Hour Volume Warrant

Source: Manual on Uniform Traffic Control Devices 2009

Figure 2

Kimley»Horn