

TRANSPORTATION IMPACT STUDY

Painted Prairie PA 27A in Aurora

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I. INTRODUCTION

I.A. Summary

FRH Realty is proposing to develop a multifamily development within the Planning Area 27A (PA-27A). The PA-27A site is located on the northwest quadrant of the intersection of Orleans Street with 56th Avenue west of PA-27B. **Figure 1** illustrates the location of the site and the adjacent primary roadway network (existing and future planned roadways). The proposed multifamily residential development would consist of 206 dwelling units of single family attached housing. Primary access to the site will be provided onto 56th Avenue along the south side of the site via Orleans Street and Nepal Court. **Figure 2** depicts the current site plan depicting building locations and site access points. A site circulation plan is shown on **Figure 3**. Three access points to the external road network will be provided at 57th Place and Road 4. The remaining access points shown in the site plan will have physical barriers and are to be used for fire/emergency access only. A short-term scenario representing completion of the site in year 2024 and a long-term future scenario were explored to examine the traffic impacts within the context of the year 2040 horizon.

This study builds on the *Painted Prairie Master Plan Traffic Impact Study Analysis*, January 2020, prepared by Felsburg Holt & Ullevig, that addresses transportation needs of the 640-acre Painted Prairie Master Plan.

I.B. Scope of Services

The purpose of this Transportation Impact Study (TIS) is to estimate the potential impacts specific to the proposed development and to identify any resultant required roadway and/or intersection improvements and traffic control needs. Also included in this report is an auxiliary turn lane analysis, queueing analysis, and MUTCD control device warrant evaluation for study intersections. The primary focus for traffic operations is at the following intersections:

Stop-controlled Intersections

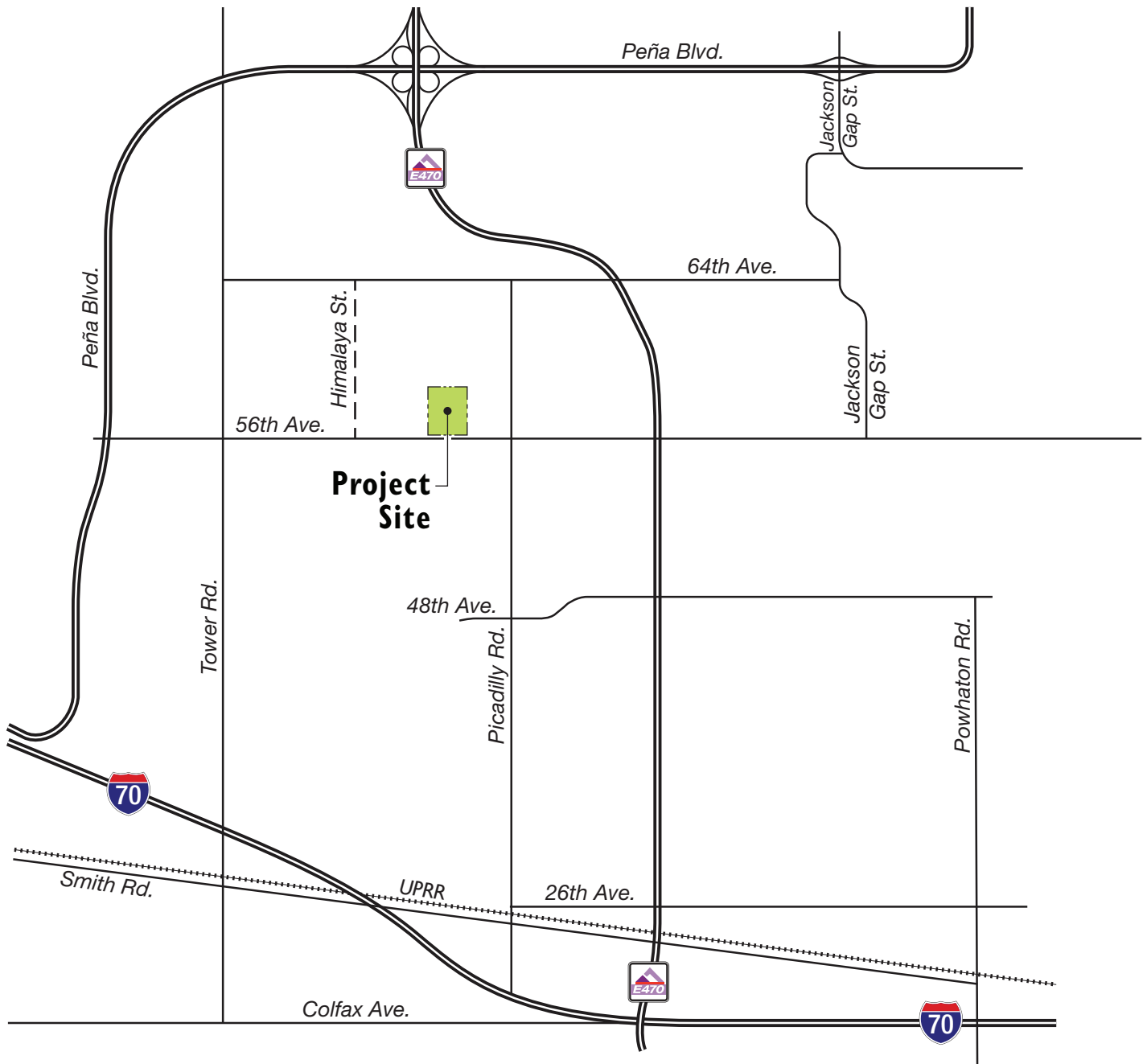
- Picadilly Road & 56th Avenue (Future Signalized-Intersection)
- Orleans Street & 56th Avenue (Proposed)
- Orleans Street & 57th Place (Proposed)
- Orleans Street & 57th Avenue (Proposed)
- Road 4 & 57th Avenue (Proposed)
- Nepal Court & 57th Avenue (Proposed)
- Nepal Court & 57th Place (Proposed)
- Nepal Court & 56th Avenue (Proposed)

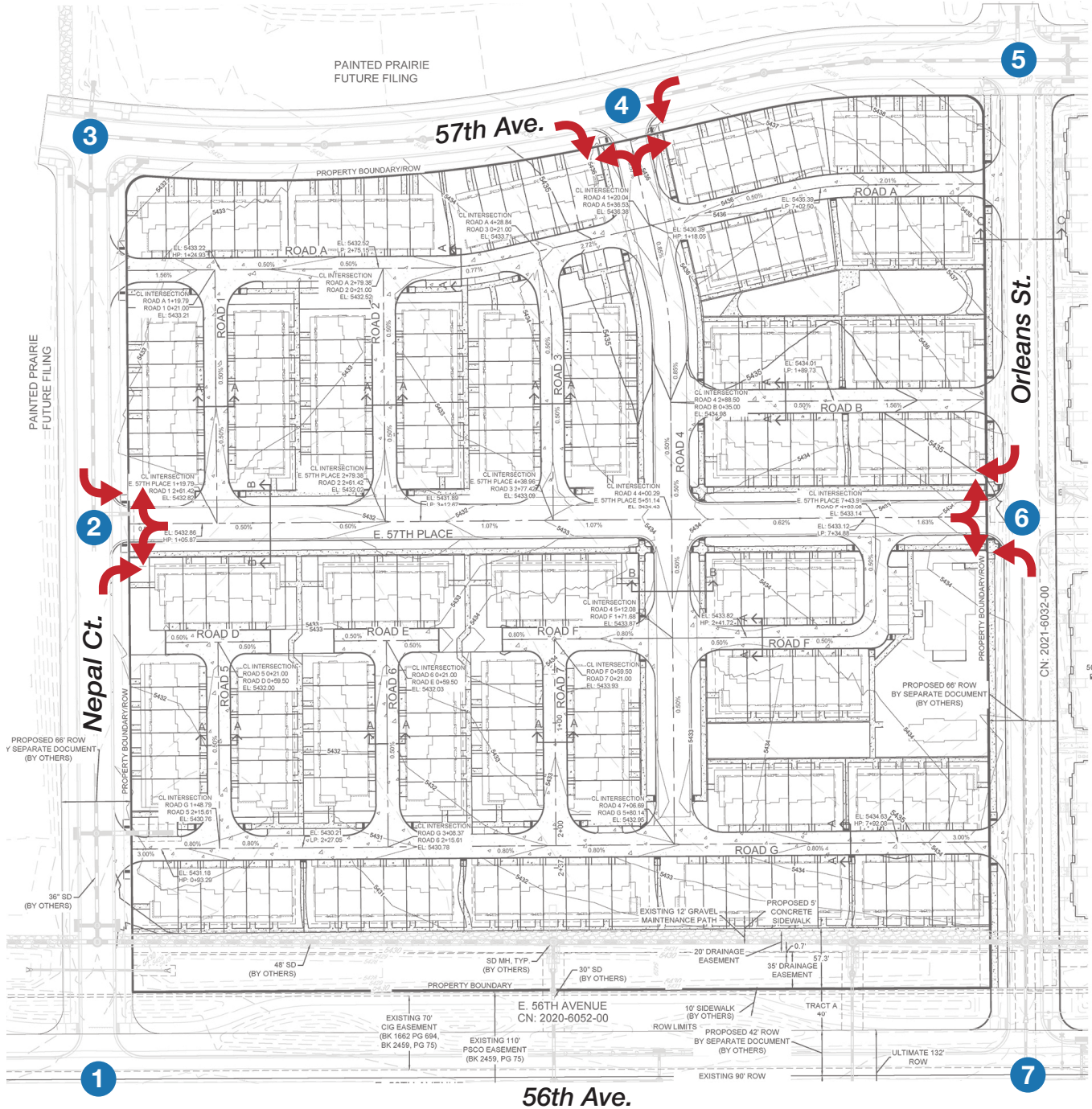
Signalized Intersections

- Lisbon Street & 56th Avenue (Proposed)



The study will evaluate the following time periods:

- Existing (2021) AM and PM peak hours.
- Buildout (2024) of the development for AM and PM peak hours.
- Future (2040) of the development for AM and PM peak hours.





LEGEND

-  = Traffic Circulation Movement
-  = Intersection Number

II. EXISTING CONDITIONS

II.A. Surrounding Land Use

The area around Painted Prairie is mostly vacant. West of the proposed site, PA-27B is expected to be developed concurrently with PA-27A. Painted Prairie Phase I is located to the north of the site, the Gaylord Rockies Resort and Convention Center is located approximately one mile to the northwest of the property, and the Green Valley Ranch residential development also exists to the south in Denver.

II.B. Transportation Network

Roadways

The existing transportation system near PA-27A includes Picadilly Road with 56th Avenue. 56th Avenue exists as a four-lane major-arterial adjacent to the site transitioning to a six-lane cross-section approximately one mile to the west and a two-lane cross-section east of Picadilly Road. Picadilly Road has been recently constructed as a three-lane cross section adjacent to the site which will be the western half of the planned ultimate six-lane major arterial cross-section.

Traffic Volumes

Existing traffic volumes in the vicinity of the site are presented on **Figure 4** and the traffic count data can also be found in the **Appendix**. Specifically, turning movement counts were collected at the Picadilly Road with 56th Avenue intersection on August 19, 2021. Current peak hour demands at the intersections are low. Daily traffic volumes along 56th Avenue were found to be 9,100 vehicles per day west of Picadilly Road and 4,700 along Picadilly Road north of 56th Avenue. The AM peak hour the study area network was determined to be from 6:45 to 7:45 AM and the PM peak hour was 4:00 to 5:00 PM. Trucks were counted separately from passenger vehicle traffic to develop truck percentages for the study area. The calculated heavy vehicle (HV) percentage was 9%. It was assumed that this was due to the on-going construction in the area. For the analysis a 2% HV percentage was assumed to provide an accurate reflection of the existing roadway network.

Traffic Operations

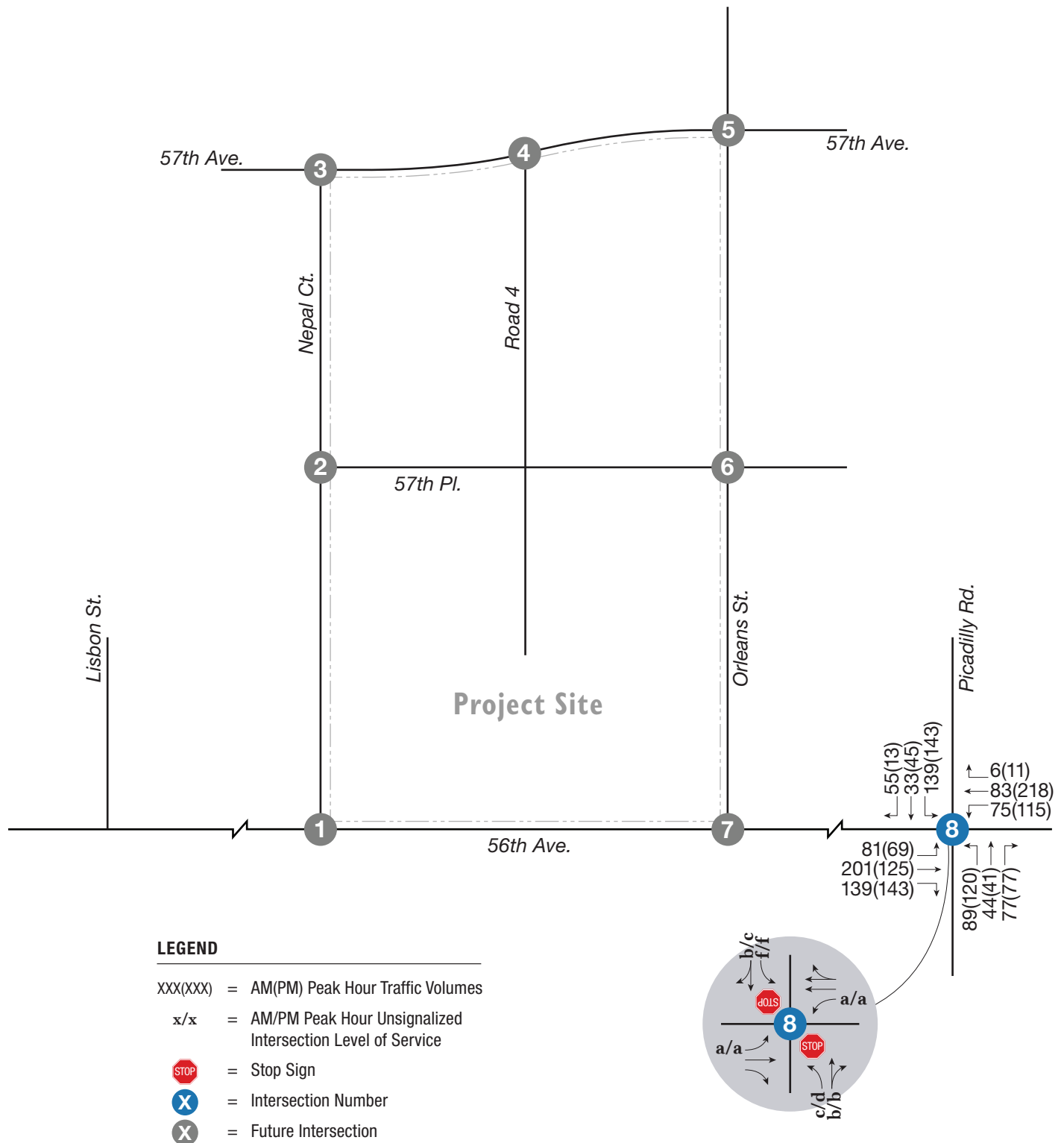
Calculations were carried out to assess operations given current traffic demands. These were conducted using techniques documented in the *Highway Capacity Manual (HCM) 6th Edition*, (Transportation Research Board, 2016) using the existing traffic volumes and intersection geometry. Level of Service (LOS) is a qualitative measure of traffic operational conditions, based on roadway capacity and vehicle delay. Levels of service are described by a letter designation ranging from A to F, with LOS A representing free-flow travel, while LOS F represents congested conditions. For signalized intersections, LOS is calculated for the entire intersection while LOS for unsignalized intersections is calculated for movements that must yield right-of-way to other traffic movements.

Table I summarizes LOS criteria for signalized and unsignalized (stop sign controlled) intersections.

Table I. Level of Service (LOS) Criteria

| Level of Service | Average Control Delay per Vehicle (sec/veh) | |
|--|--|---------------------------------------|
| | Signalized Intersections | Stop Sign Controlled Intersections |
| A | ≤ 10 | ≤ 10 |
| B | > 10 to 20 | > 10 to 15 |
| C | > 20 to 35 | > 15 to 25 |
| D | > 35 to 55 | > 25 to 35 |
| E | > 55 to 80 | > 35 to 50 |
| F | > 80 | > 50 |
| <i>HCM 6th Edition, Exhibit 19-8 & Exhibit 20-2</i> | | |

At the existing stop-controlled intersection of Picadilly Road with 56th Avenue the majority of movements operate at LOS D or better for both AM and PM peak hours, with the exception of the southbound left-turn movement. This movement operates at LOS F for both AM and PM peak hours.



III. PROPOSED CONDITIONS

III.A. Future Road Network

In 2018, the City of Aurora completed the NEATS Refresh study, which provides Year 2040 and regional buildout transportation recommendations for the roadways and multimodal transportation system within the study area. The NEATS Refresh study area encompassed a regional area extending from approximately between Tower Road east to Schumaker Road, and from Jewell Avenue on the south to 72nd Avenue on the north. Recommendations with respect to Painted Prairie PA-27A included:

- Constructing Picadilly Road as a six-lane arterial road through the Master Plan as far south as I-70 and to the north. Picadilly is currently planned to cross over E-470, pass through DEN, and serve areas in Commerce City per the City's NEATS Refresh. This study includes this roadway to be in-place to be consistent with NEATS.
- Constructing 56th Avenue as a six-lane arterial road through the Master Plan as far east as Picadilly Road where it transitions to a four-lane arterial east of Picadilly Road per the City's NEATS Refresh. It is believed and ISP for 56th Avenue will be submitted in the coming months.
- Constructing Orleans Street with 57th Avenue and Nepal Court with 57th Avenue as two-lane local roadways along the east, west, and north edge of the property respectively.

56th Avenue will provide the main points of access for the site to the external roadway network. A full movement access driveways will be provided onto Orleans Street with 56th Avenue, and a right-in/right-out onto Nepal Court with 56th Avenue. It is expected that the full movement access onto 57th Street with Picadilly Road proposed in the PA-27B development may be utilized as a point of access for northbound traffic on Picadilly Road.

III.B. Site Trip Generation

Trip generation average rates from the *Institute of Transportation Engineers' (ITE) Trip Generation Manual, Eleventh Edition, 2017*, were utilized to estimate the traffic generated by the site. Anticipated site use was analyzed from the provided site plan using the appropriate land use types from the *Trip Generation Manual*. The current proposed residential development will consist of approximately 206 units of single family attached townhomes. **Table 2** shows the trip generation for the proposed development, which is estimated to generate 1,519 trips per day, with 101 vehicle-trips during the AM peak period and 120 vehicle-trips during the PM peak period.

Table 2. Trip Generation Summary

| Land Use | Intensity | ITE Code | Daily Trips | AM Peak Hour | | | PM Peak Hour | | |
|--------------------------------|-----------|----------|-------------|--------------|-----|-------|--------------|-----|-------|
| | | | | In | Out | Total | In | Out | Total |
| Single Family Attached Housing | 206 DUs | 215 | 1,519 | 31 | 70 | 101 | 68 | 52 | 120 |

DU = Dwelling Units

The eastern half of PA-27, now known as PA-27B, is currently planned for 312 mid-rise multifamily dwelling units. These units would generate an expected 1,697 daily trips bringing the total within the planning area to 3,216 daily trips. This is a roughly 65 percent decrease for the planning area as compared to the 9,159 daily trips anticipated from PA-27 in the *Painted Prairie Master Plan Traffic Impact Study Analysis*.

III.C. Trip Distribution and Traffic Assignment

Trip distribution estimates for this site were based on those used in the Master Plan traffic study. The following distribution percentages were used to assign site generated vehicle-trips to the adjacent roadway network:

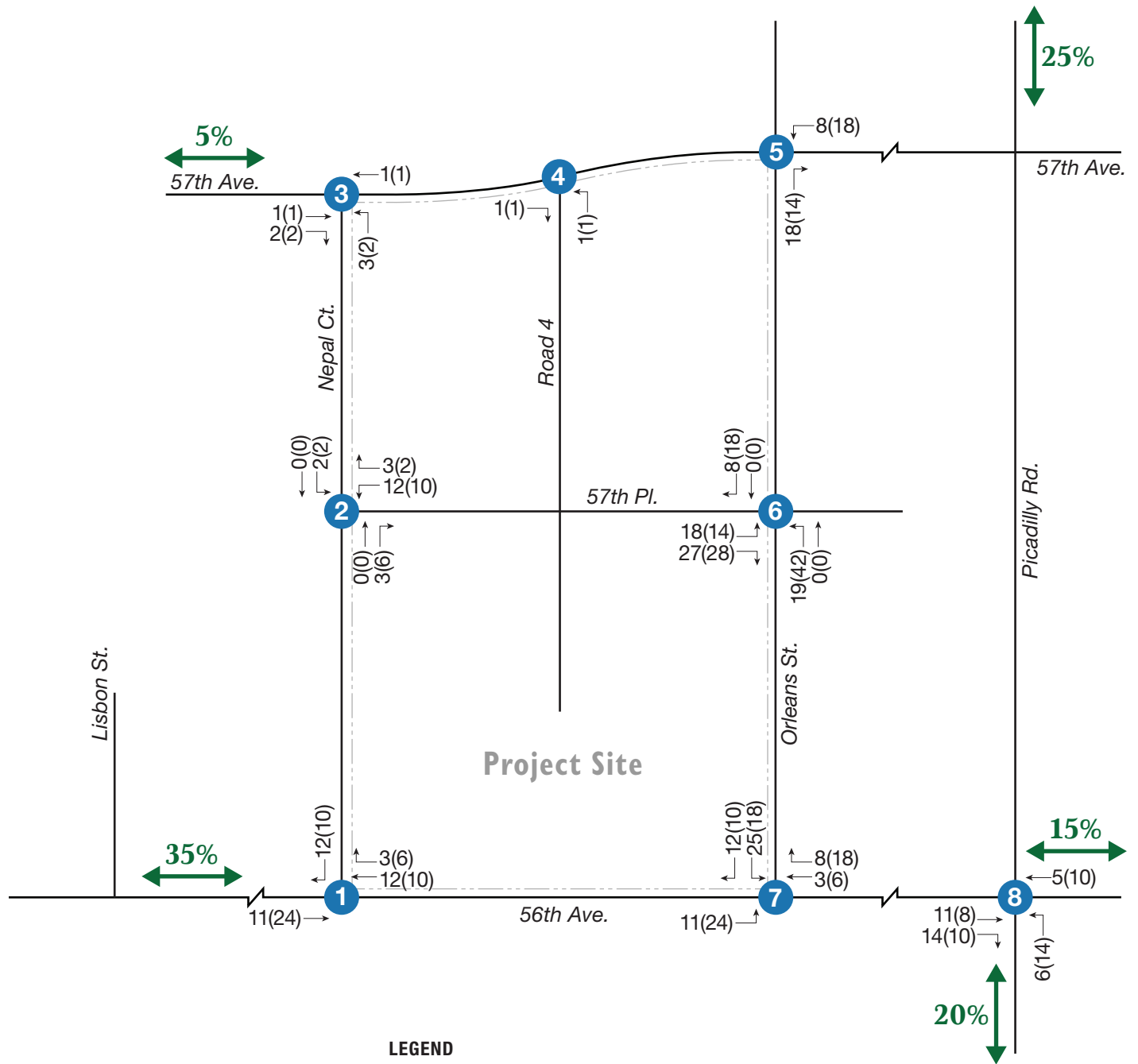
- **25%** to/from the north via Picadilly Road
- **20%** to/from the south via Picadilly Road
- **35%** to/from the west via 56th Avenue
- **15%** to/from the east via 56th Avenue
- **5%** to/from the west via 57th Avenue

Figure 5 shows the site-trip distribution percentages for the overall development. The distribution percentages were used to assign site generated vehicle-trips from the trip generation table above. These percentages dictate the vehicle movements to and from the site.

Figure 5 also shows the anticipated site generated traffic volumes for the PA-27A development.

III.D. Background Growth

A review the existing ADTs and projected ADTs from the Master Plan was conducted to project background growth in the project vicinity for the buildout year. The ADT's showed traffic volumes increasing by an average of 5% per year along 56th Avenue. This annual growth rate was used to grow the background traffic volumes for the Buildout (2024) analysis scenario.



IV. FUTURE CONDITIONS

IV.A. Buildout (2024) Traffic Conditions

Roadway System

Buildout (2024) analysis for this report assumes full buildout of the site, as such the full roadway network surrounding the site is planned to be built out, including Orleans Street, Nepal Court, 57th Avenue, and the Site Drives.

Traffic Volumes

The Buildout (2024) peak hour traffic volumes were estimated using the existing peak hour traffic volumes at the intersection of Picadilly Road with 56th Avenue and the site generated trips. The existing peak hour volumes were grown using the anticipated growth rate of 5% per year. Trips generated by the proposed PA-27B development were included in the background volumes. Additionally, trips generated by the future development of the PA-26 site were assumed and included in the background volumes. The background volumes for 2024 are shown on **Figure 6A**. The site generated traffic volumes illustrated on **Figure 5** were added to the short-term background traffic volumes found on **Figure 6A** to produce the total 2024 traffic volumes shown on **Figure 7A**.

Signal Warrant Analysis

A review was performed to determine if Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways, 2009 Edition traffic signal Warrant 1 (Eight-Hour Vehicular Volume) and/or Warrant 2 (Four-Hour Vehicular Volume) are satisfied for two-way stop-controlled study intersection(s) under Buildout (2024). Posted speed and existing and/or proposed lane configurations were assumed at study intersections for the analysis scenario. A right-turn reduction of 50% was included in the analysis at intersections analyzed along 56th Avenue. **Table 3** summarizes the results of the analysis and graphical results of the MUTCD Warrant Analysis are included in the **Appendix B**.

Table 3. 2024 MUTCD Signal Warrants

| Intersection | Existing Traffic Control | Buildout (2024) Signal Warrant |
|--|--------------------------|--------------------------------|
| Picadilly Road & 56 th Avenue | Unsignalized | Warranted |
| Orleans Street & 56 th Avenue | Unsignalized | Not Warranted |
| Orleans Street & 57 th Place | Unsignalized | Not Warranted |
| Orleans Street & 57 th Avenue | Unsignalized | Not Warranted |
| Road 4 & 57 th Avenue | Unsignalized | Not Warranted |
| Nepal Court & 57 th Avenue | Unsignalized | Not Warranted |
| Nepal Court & 57 th Place | Unsignalized | Not Warranted |
| Nepal Court & 56 th Avenue | Unsignalized | Not Warranted |

The results indicate that the intersection of Picadilly Road with 56th Avenue will be warranted for the Buildout (2024) scenario.

Auxiliary Lane Analysis

City of Aurora *Traffic Impact Study Guidelines* indicate that the *CDOT State Highway Access Code (SHAC)* be used to determine storage and taper lengths of auxiliary lanes. It was assumed that 56th Avenue is classified as NR-B Non-Rural Arterials. Table 4-8 in the *SHAC* was used to determine the recommended storage lengths.

Neither left nor right turn auxiliary lanes are provided at any intersections along Orleans Street, Nepal Court, and 57th Avenue as both turning movement volume and following volume do not necessitate the need, nor is it appropriate to apply SHAC criteria to local roadways. Based upon guidelines described in the SHAC, It is recommended that an eastbound left-turn lane and westbound right-turn lane be provided at the intersection of Orleans Street with 56th Avenue.

Traffic Control and Operations

The level of service (LOS) results and intersection lane configurations are included on **Figure 6B** for Background (2024) and **Figure 7B** for Buildout (2024) traffic conditions. Calculations used techniques documented in the *Highway Capacity Manual* (Transportation Research Board, 2016) using anticipated traffic volumes and intersection geometry. It was assumed that the existing cross section of Picadilly Road with 56th Avenue would not change for Buildout (2024) traffic conditions. The anticipated 95th percentile queue lengths for Buildout (2024) traffic conditions are summarized in **Table 4**.

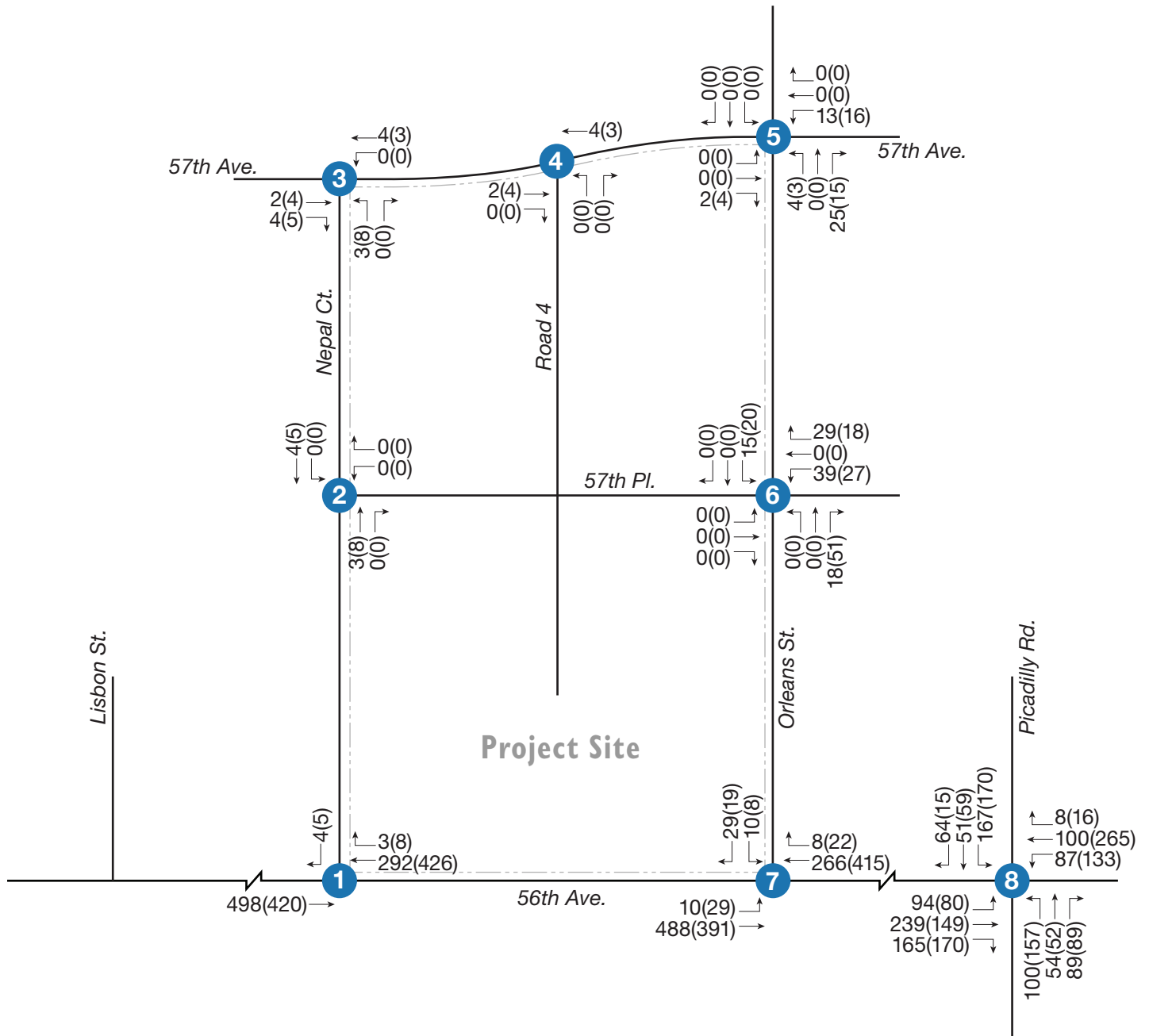
The intersection of Picadilly Road with 56th Avenue was analyzed as a signalized intersection for the Buildout (2024) scenario. Results show that the intersection would function at a LOS B during the AM and PM peak hour periods. All unsignalized movements are expected to operate at LOS B or better for AM and PM peak hour periods. Operation analysis worksheets are included in the **Appendix**.

Primary recommendations for the short-term time frame include:

- Installing traffic signals at the intersection of Picadilly Road with 56th Avenue.
- Adding an eastbound left-turn lane at the intersection of Orleans Street with 56th Avenue.
- Add a westbound right-turn lane at the intersection of Orleans Street with 56th Avenue. The right-turn lane should provide at least 50 feet of storage length. In the future this lane would become a shared through/right-turn lane when 56th Avenue is widened.

Table 4. Buildout (2024) Turn Lane Storage & 95th Percentile Queue Lengths

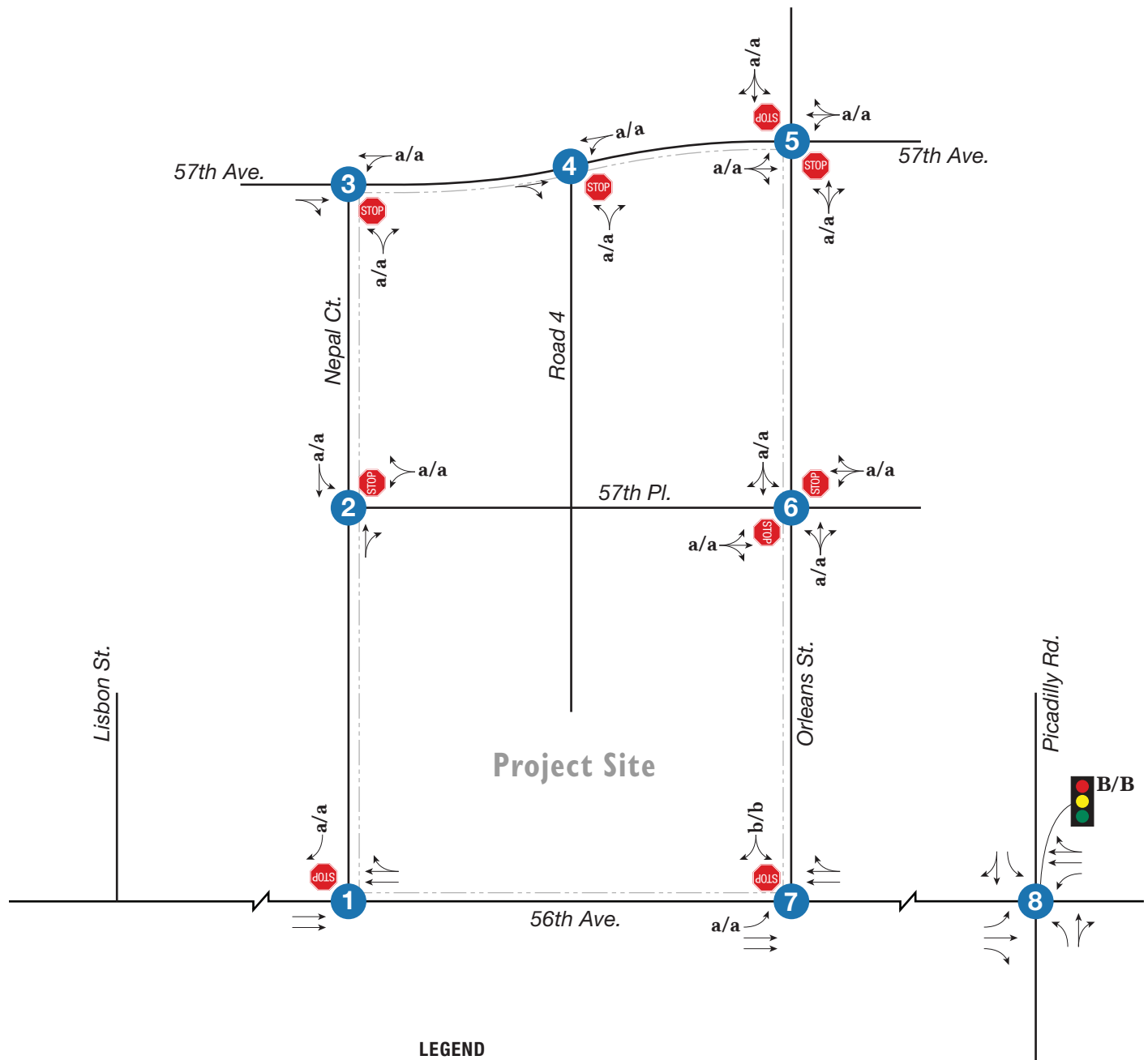
| Location | Critical Movements | Existing Turn Lane Storage Length (ft) | SHAC Recommended Storage Length | Recommended Storage Length | 95% Queue Length (ft) |
|---|---------------------------|--|---------------------------------|----------------------------|-----------------------|
| | | | | | AM Peak / PM Peak |
| Nepal Court & 56 th Avenue | SB Right-turn | - | Continuous | Continuous | 3 / 3 |
| Nepal Court & 57 th Place | WB Left-turn ⁺ | - | Continuous | Continuous | 0 / 0 |
| | SB Left-turn ⁺ | - | Continuous | Continuous | 0 / 0 |
| Nepal Court & 57 th Avenue | NB Left-turn ⁺ | - | Continuous | Continuous | 0 / 0 |
| | WB Left-turn ⁺ | - | Continuous | Continuous | 0 / 0 |
| Road 4 & 57 th Avenue | NB Left-turn ⁺ | - | Continuous | Continuous | 0 / 3 |
| | WB Left-turn ⁺ | - | Continuous | Continuous | 0 / 0 |
| Orleans Street & 57 th Avenue | NB Through ⁺ | - | Continuous | Continuous | 0 / 0 |
| | EB Through ⁺ | - | Continuous | Continuous | 0 / 0 |
| | WB Through ⁺ | - | Continuous | Continuous | 0 / 3 |
| | SB Through ⁺ | - | Continuous | Continuous | 0 / 0 |
| Orleans Street & 57 th Place | NB Through ⁺ | - | Continuous | Continuous | 0 / 3 |
| | EB Through ⁺ | - | Continuous | Continuous | 5 / 5 |
| | WB Through ⁺ | - | Continuous | Continuous | 8 / 5 |
| | SB Through ⁺ | - | Continuous | Continuous | 0 / 0 |
| Orleans Street & 56 th Avenue | EB Left-turn | - | 50 feet | 50 feet | 3 / 5 |
| | SB Left-turn ⁺ | - | Continuous | Continuous | 13 / 13 |
| Picadilly Road & E 56 th Avenue | NB Left-turn | 200 | 175 feet | 125 feet | 76 / 111 |
| | NB Through ⁺ | Continuous | Continuous | Continuous | 82 / 80 |
| | EB Left-turn | 350 | 100 feet | 50 feet | 50 / 44 |
| | EB Through ⁺ | Continuous | Continuous | Continuous | 166 / 108 |
| | EB Right-turn | 925 | 200 feet | 50 feet | 41 / 42 |
| | WB Left-turn | 150 | 150 feet | 75 feet | 47 / 67 |
| | WB Through ⁺ | Continuous | Continuous | Continuous | 37 / 86 |
| | SB Left-turn | 250 | 175 feet | 125 feet | 106 / 110 |
| | SB Through ⁺ | Continuous | Continuous | Continuous | 65 / 66 |
| *shared lane **dual turn lane # - 95 th percentile volume exceeds capacity, queues may be longer | | | | | |






LEGEND

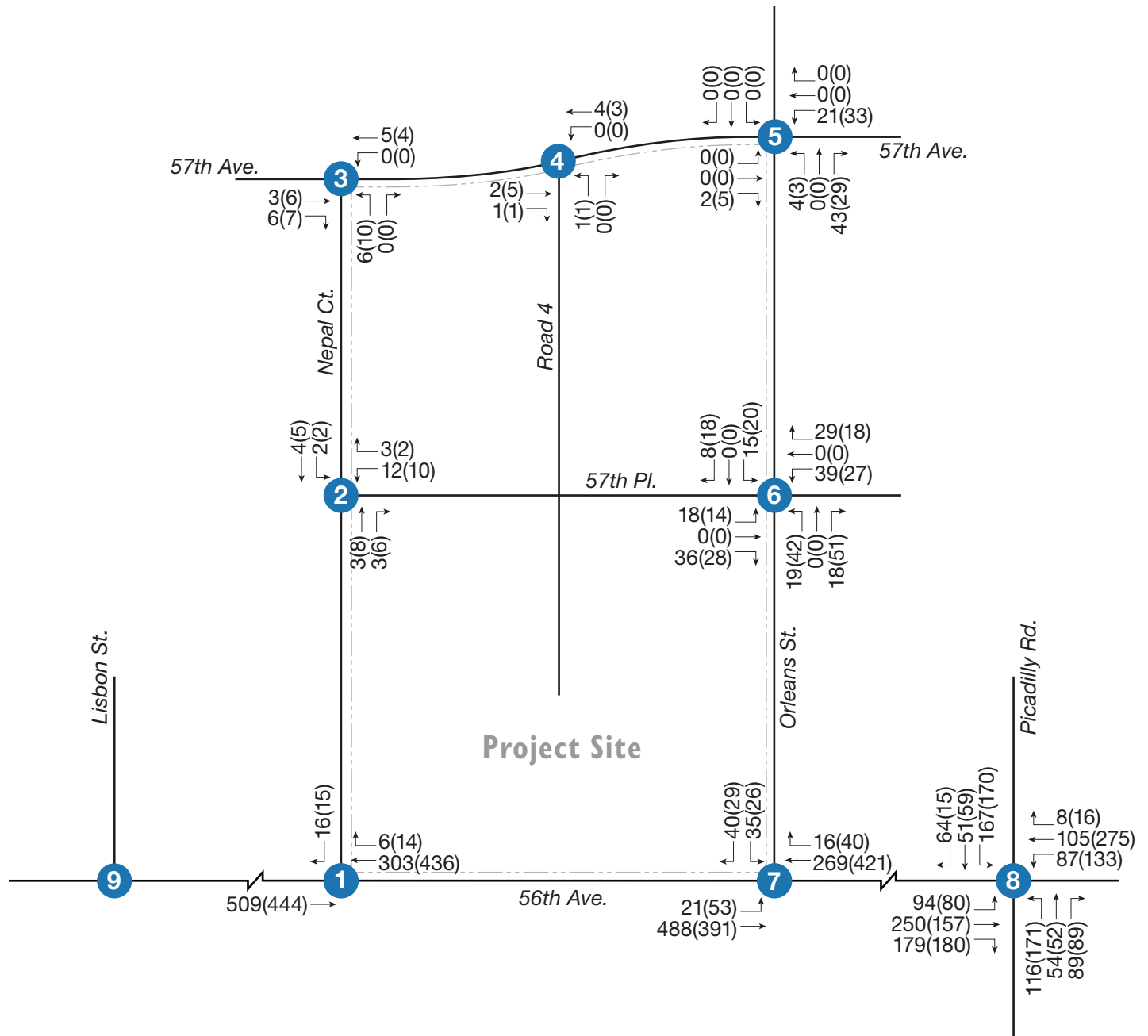
xxx(xxx) = AM(PM) Peak Hour Traffic Volumes

X = Intersection Number



LEGEND

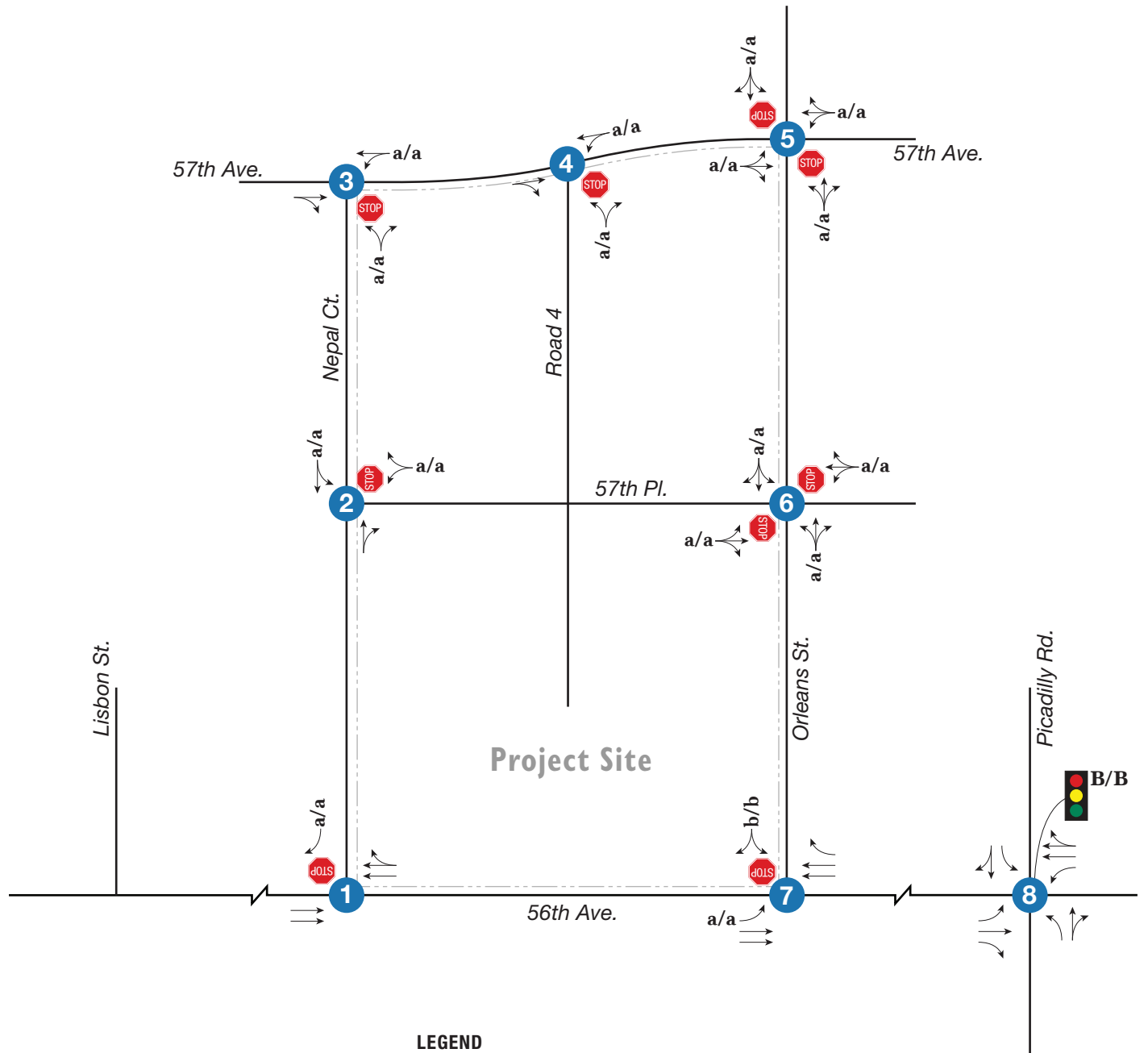
- X/X = AM/PM Peak Hour Signalized Intersection Level of Service
- x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service
-  = Stop Sign
-  = Traffic Signal
-  = Intersection Number



LEGEND

xxx(xxx) = AM(PM) Peak Hour Traffic Volumes

X = Intersection Number



IV.B. Future (2040) Traffic Conditions

Roadway System

Future (2040) analysis for this report assumes full buildout of the site, as such the full roadway network surrounding the site is planned to be built out, including Orleans Street, Nepal Court, 57th Avenue, and the Site Drives. Additional roadways in the project vicinity that were included in the Master Plan were not analyzed.

Traffic Volumes

The 2040 background traffic has been estimated using traffic volume projections from the Master Plan and the NEATS buildout scenario. Trips associated with the PA 27 development were removed from the 2040 Total Traffic Volume projections to provide an accurate representation of the background traffic. Trips generated by the PA-27B development were included in the long-term background traffic volumes. Trips generated by the future development of the PA-26 site were assumed and included in the long-term background traffic volumes.

Figure 8A shows the projected long-term background traffic demands along the study area roadways and intersections.

The site generated traffic volumes illustrated on **Figure 5** were added to the long-term future background traffic volumes found on **Figure 8A** to produce the total 2040 traffic volumes shown on **Figure 9A**.

Signal Warrant Analysis

A review was performed to determine if Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways, 2009 Edition traffic signal Warrant 1 (Eight-Hour Vehicular Volume) and/or Warrant 2 (Four-Hour Vehicular Volume) are satisfied for two-way stop-controlled study intersection(s) under Future (2040). Posted speed and existing and/or proposed lane configurations were assumed at study intersections for the analysis scenario. A right-turn reduction of 50% was included in the analysis at intersections analyzed along 56th Avenue. **Table 5** summarizes the results of the analysis and graphical results of the MUTCD Warrant Analysis are included in the **Appendix B**.

Table 5. 2040 MUTCD Signal Warrants

| Intersection | Existing Traffic Control | Future (2040) Signal Warrant |
|--|--------------------------|------------------------------|
| Picadilly Road & 56 th Avenue | Unsignalized | Warranted |
| Orleans Street & 56 th Avenue | Unsignalized | Not Warranted |
| Orleans Street & 57 th Place | Unsignalized | Not Warranted |
| Orleans Street & 57 th Avenue | Unsignalized | Not Warranted |
| Road 4 & 57 th Avenue | Unsignalized | Not Warranted |
| Nepal Court & 57 th Avenue | Unsignalized | Not Warranted |
| Nepal Court & 57 th Place | Unsignalized | Not Warranted |
| Nepal Court & 56 th Avenue | Unsignalized | Not Warranted |
| Lisbon Street & 56 th Avenue | Unsignalized | Warranted |

The results indicate that the intersection of Picadilly Road with 56th Avenue and the intersection of Lisbon Avenue with 56th Street will be warranted for the Future (2040) scenario.

Auxiliary Lane Analysis

City of Aurora *Traffic Impact Study Guidelines* indicate that the *CDOT State Highway Access Code (SHAC)* be used to determine storage and taper lengths of auxiliary lanes. These values sometimes yield conservative results and provide storage well in excess of 95th percentile queues (which already incorporate a heavy vehicle percentage). Rather, the recommendation is that the values in **Table 6** corresponding to the 95th percentile lengths be used for storage lengths, plus a lead-in taper. It was assumed that 56th Avenue is classified as NR-B Non-Rural Arterials. Table 4-8 in the *SHAC* was used to determine the recommended storage lengths.

Right-turn auxiliary lanes are not provided along 56th Avenue as *SHAC* criteria does not require them for six-lane cross-section roadways. Left turn auxiliary lanes have been provided along 56th Avenue at intersection of Orleans Street with 56th Avenue.

Output from the traffic analysis effort was utilized to recommend these storage lengths, using the following methodology:

Left turn lane storage lengths. At signalized intersections, the greater of the HCM 6th Edition or Synchro methodology queue calculations were reported. For unsignalized intersections, the HCM 6th Edition calculation was reported.

Through movements. For signalized intersections, Synchro calculation results were reported. No through movement queues are reported for unsignalized intersections as the through movements are free.

Right turn movements. The Synchro queue length was utilized for signalized intersections. HCM 6th Edition information was not used because HCM's signalized intersection methodology does not account for right turns on red. For unsignalized intersections, HCM 6th Edition calculation was reported.

Traffic Control and Operations

The level of service (LOS) results and intersection lane configurations are included on **Figure 8B** for Background (2040) traffic conditions and on **Figure 9B** for Future (2040) traffic conditions. It was assumed that Picadilly Road with 56th Avenue would be built out to a 6-lane arterial as proposed in the Master Plan by the 2040 analysis scenario. To account for progression and gaps available along 56th Street, the future signalized intersection of Lisbon Street with 56th Street was included as part of the analysis for the 2040 future year. Projected turning movement volumes at the intersection of Lisbon Street with 56th Avenue from the *Painted Prairie Master Plan Traffic Impact Study Analysis* were used.

The intersection of Picadilly Road with 56th Avenue was analyzed as a signalized intersection for the Future (2040) scenario. Results show that the intersection would function at LOS D or better during the AM and PM peak hour periods. All unsignalized movements are expected to operate at LOS D or better for AM and PM peak hour. Capacity analysis worksheets are included in the **Appendix**.

Primary recommendations for the long-term time frame include:

- Extending the westbound left-turn lane at the intersection of Picadilly Road with 56th Avenue to provide 215 feet of vehicle storage.

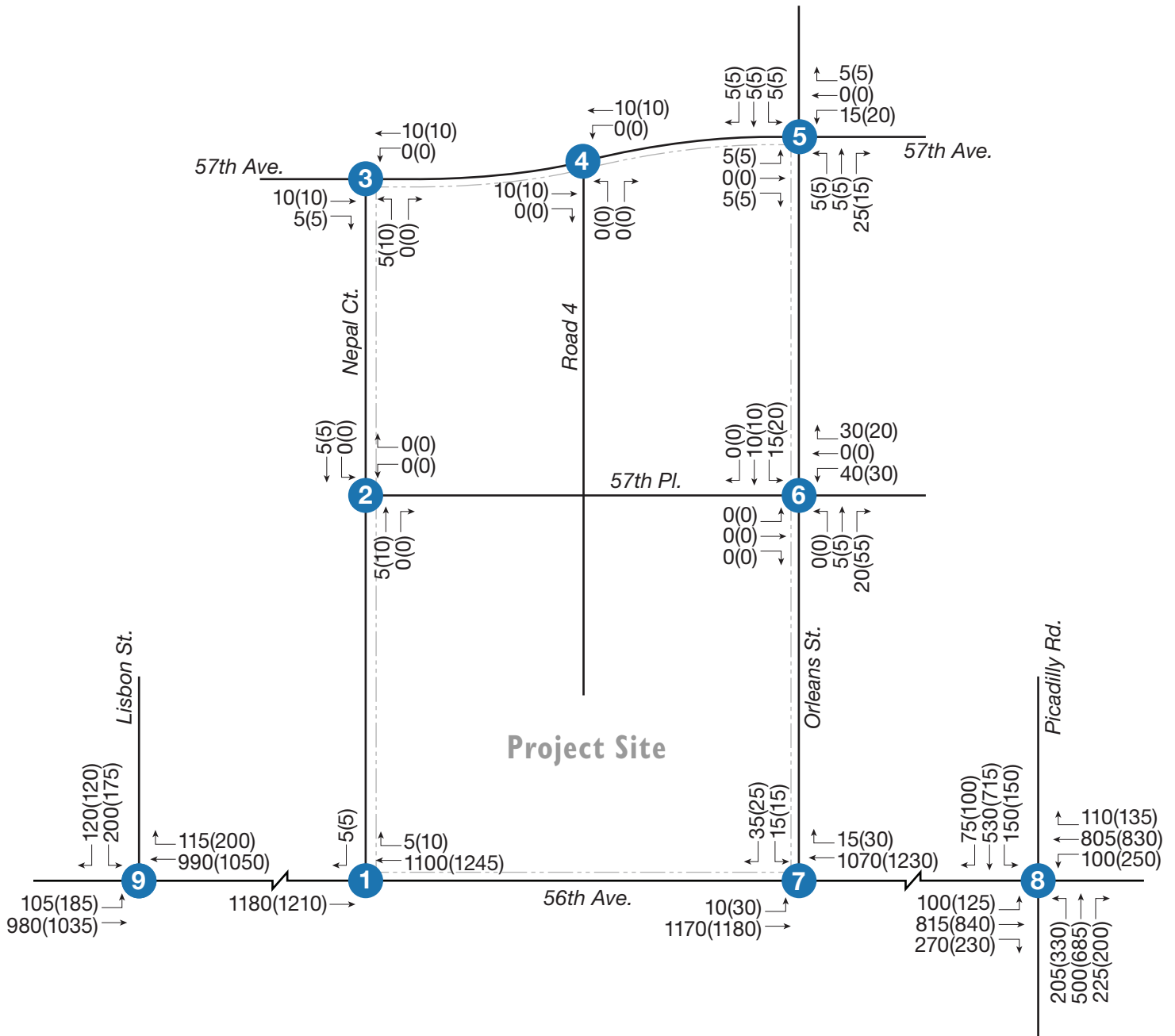
Table 6. Future (2040) Turn Lane Storage & 95th Percentile Queue Lengths

| Location | Critical Movements | Existing Turn Lane Storage Length (ft) | SHAC Recommended Storage Length | Recommended Storage Length | 95% Queue Length (ft) |
|--|---------------------------|--|---------------------------------|----------------------------|-----------------------|
| | | | | | AM Peak / PM Peak |
| Nepal Court & 56 th Avenue | SB Right-turn | - | Continuous | Continuous | 5 / 5 |
| Nepal Court & 57 th Place | WB Left-turn ⁺ | - | Continuous | Continuous | 3 / 0 |
| | SB Left-turn ⁺ | - | Continuous | Continuous | 0 / 0 |
| Nepal Court & 57 th Avenue | NB Left-turn ⁺ | - | Continuous | Continuous | 3 / 3 |
| | WB Left-turn ⁺ | - | Continuous | Continuous | 0 / 0 |
| Road 4 & 57 th Avenue | NB Left-turn ⁺ | - | Continuous | Continuous | 0 / 0 |
| | WB Left-turn ⁺ | - | Continuous | Continuous | 0 / 0 |
| Orleans Street & 57 th Avenue | NB Through ⁺ | - | Continuous | Continuous | 5 / 3 |
| | EB Through ⁺ | - | Continuous | Continuous | 0 / 0 |
| | WB Through ⁺ | - | Continuous | Continuous | 3 / 3 |
| | SB Through ⁺ | - | Continuous | Continuous | 3 / 3 |
| Orleans Street & 57 th Place | NB Through ⁺ | - | Continuous | Continuous | 0 / 3 |
| | EB Through ⁺ | - | Continuous | Continuous | 5 / 5 |
| | WB Through ⁺ | - | Continuous | Continuous | 8 / 5 |
| | SB Through ⁺ | - | Continuous | Continuous | 0 / 0 |
| Orleans Street & 56 th Avenue | EB Left-turn | - | 50 feet | 50 feet | 8 / 23 |
| | SB Left-turn ⁺ | - | Continuous | Continuous | 28 / 35 |
| Picadilly Road & E 56 th Avenue | NB Left-turn** | 200 | 300 feet | Dual 175 feet | 102 / #165 |
| | NB Through ⁺ | Continuous | Continuous | Continuous | 159 / 203 |
| | EB Left-turn | 350 | 100 feet | 100 feet | 62 / 76 |
| | EB Through ⁺ | Continuous | Continuous | Continuous | 254 / #298 |
| | WB Left-turn | 150 | 250 feet | 225 feet | 62 / #212 |
| | WB Through ⁺ | Continuous | Continuous | Continuous | 213 / 233 |
| | SB Left-turn** | 250 | 150 feet | Dual 150 feet | 79 / #85 |
| | SB Through ⁺ | Continuous | Continuous | Continuous | 153 / 217 |
| E 56 th Avenue & Lisbon Street | EB Left-turn | - | 200 feet | 200 feet | 36 / 68 |
| | EB Through | - | Continuous | Continuous | 95 / 97 |
| | WB Through ⁺ | - | Continuous | Continuous | 179 / #212 |
| | SB Left-turn | - | Continuous | Continuous | 117 / 106 |
| | SB Right-turn | - | Continuous | Continuous | 45 / 46 |

*shared lane **dual turn lane # - 95th percentile volume exceeds capacity, queues may be longer

Pedestrian Considerations

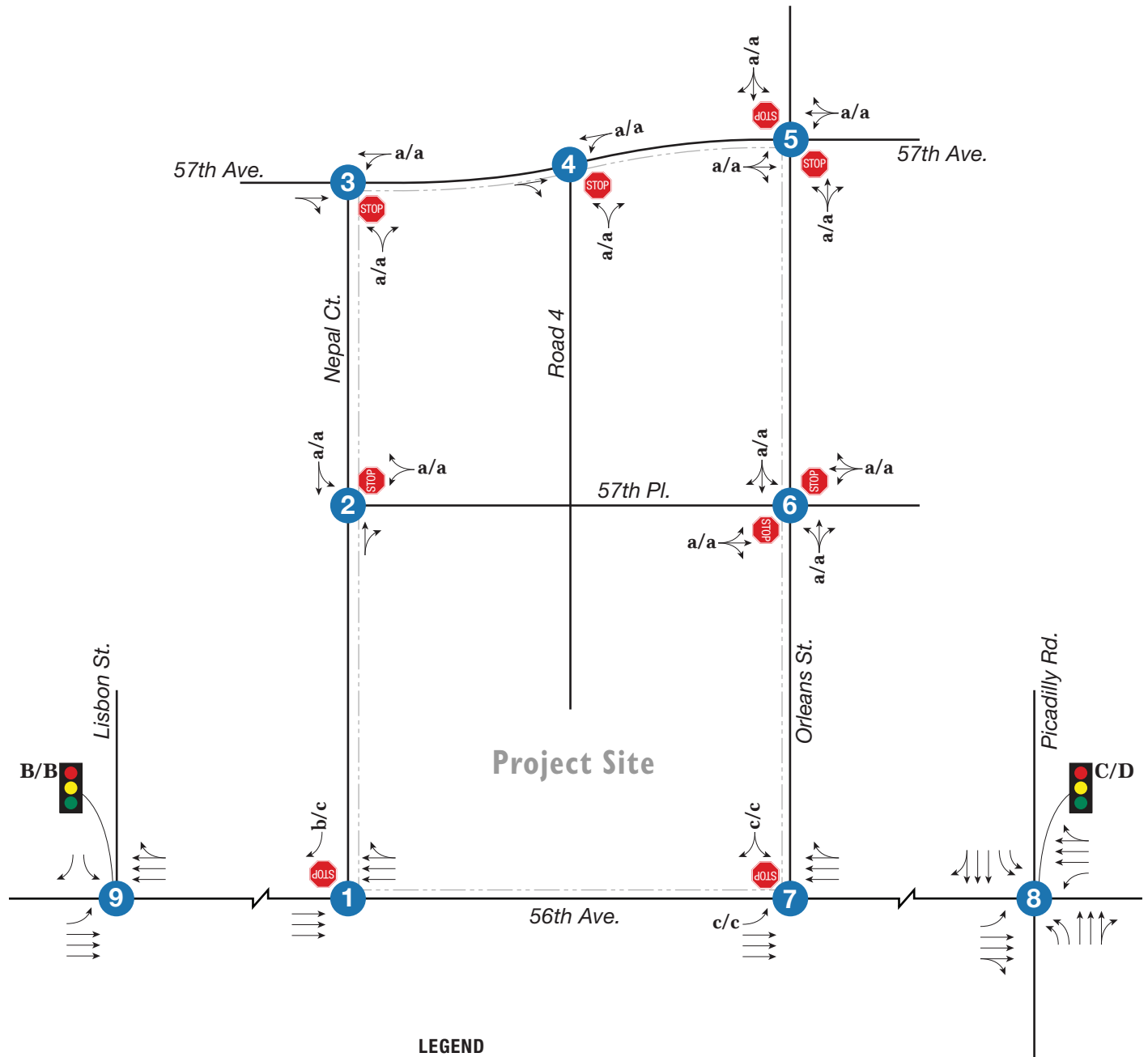
It is recommended that sidewalks be provided on 56th Avenue along the frontage of the site. Additionally, sidewalks are recommended internally through the site. Once parcels north of the site are developed, pedestrian facilities should be provided to provide connectivity to High Prairie Park.






LEGEND

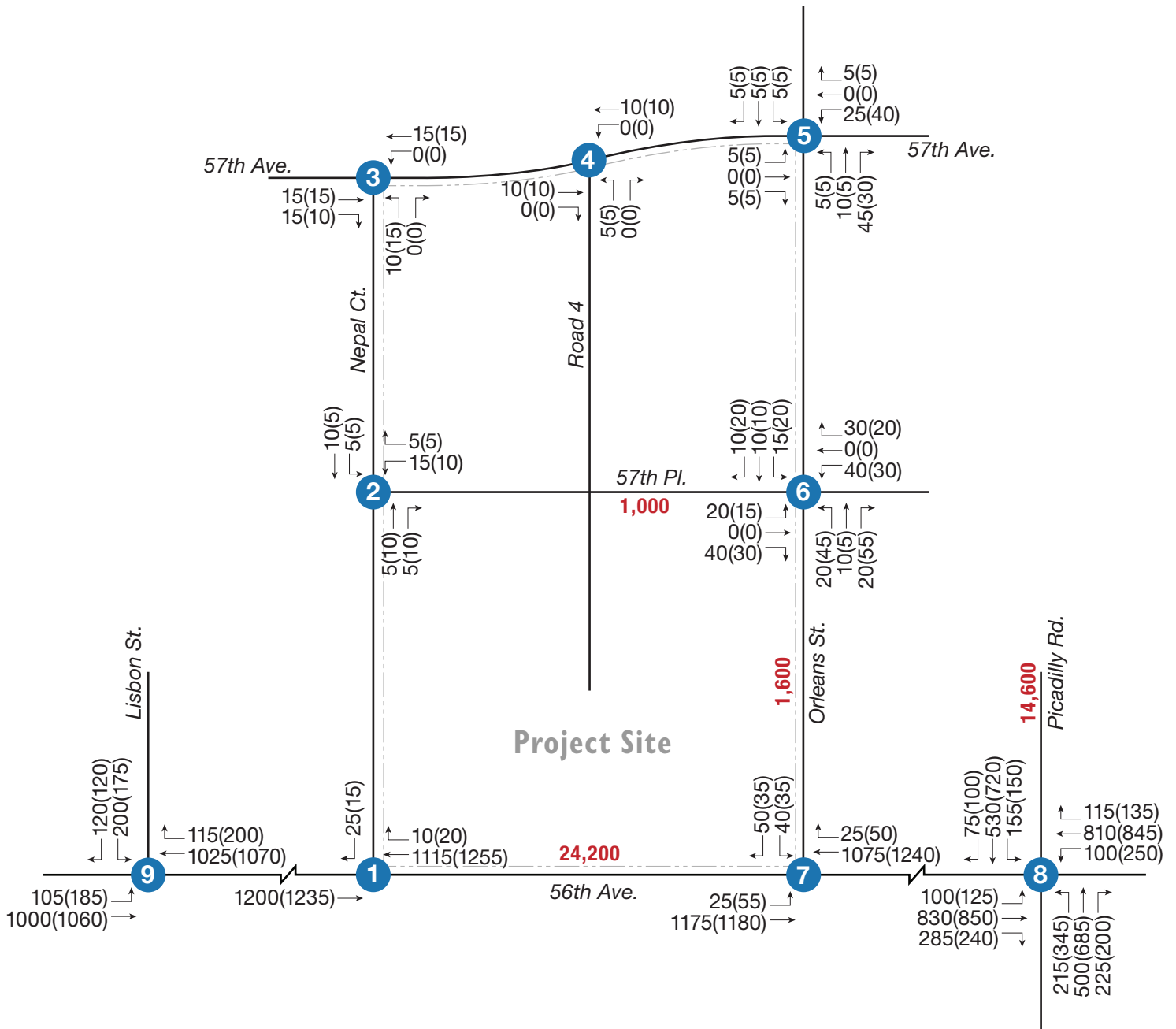
xxx(xxx) = AM(PM) Peak Hour Traffic Volumes

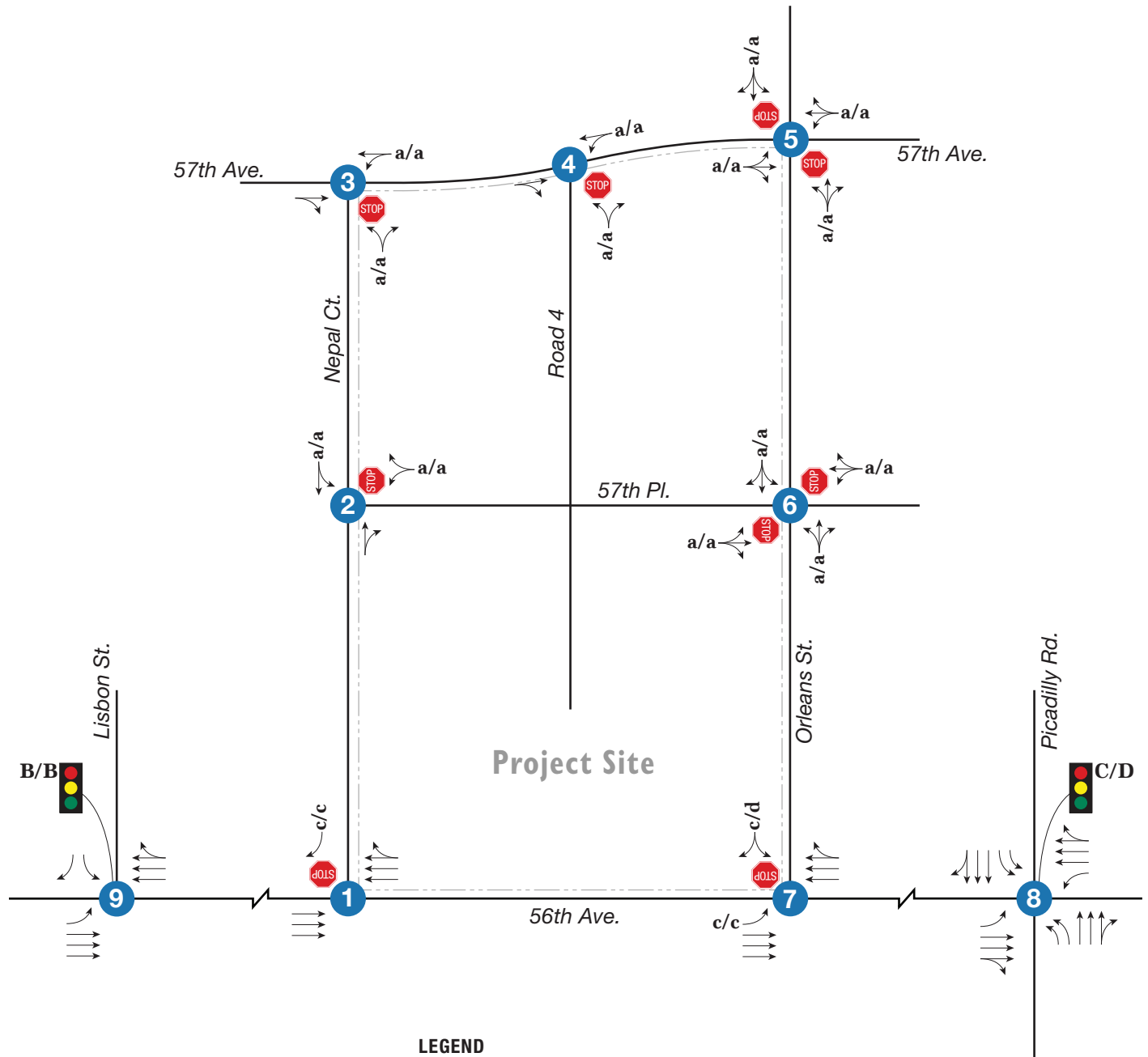
X = Intersection Number



LEGEND

- X/X = AM/PM Peak Hour Signalized Intersection Level of Service
- x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service
-  = Stop Sign
-  = Traffic Signal
-  = Intersection Number





LEGEND

- X/X = AM/PM Peak Hour Signalized Intersection Level of Service
- x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service
- STOP = Stop Sign
- Traffic Signal = Traffic Signal
- X = Intersection Number

V. SUMMARY AND RECOMMENDATIONS

FRH Realty is proposing to develop a multifamily development within the Planning Area 27A (PA-27A). The proposed multifamily residential development would consist of 206 units of single family attached housing. Primary access to the site will be provided onto 56th Avenue along the south side of the site via Orleans Street and Nepal Court.

The PA-27A site is located in the northwest quadrant of the intersection of 56th Avenue and Picadilly Road west of PA-27B. The development is estimated to generate 1,519 trips per day, with 101 vehicle-trips during the AM peak period and 120 vehicle-trips during the PM peak period when built out.

The potential traffic impacts of the development were evaluated under short-term Buildout (2024) and long-term Future (2040) conditions. Based on the results of the analysis, the key findings and recommendations of this study are listed. It is anticipated that master developer would be responsible for the recommended improvements listed.

- At the intersection of Orleans Street with 56th Avenue, based upon auxiliary lane guidance in the SHAC for NR-B Non-Rural Arterial, **it is recommended** that an eastbound left-turn lane be provided by the buildout of the development. The left-turn lane should provide at least 50 feet of vehicle storage.
- At the intersection of Orleans Street with 56th Avenue, based upon auxiliary lane guidance in the SHAC for NR-B Non-Rural Arterial, **it is recommended** that a westbound right-turn lane be provided by the buildout of the development. The right-turn lane should provide at least 50 feet of storage length. It is anticipated that the right-turn lane would become a shared through/right-turn lane in the future when 56th Avenue is widened to a six-lane cross section.
- At the intersection of Picadilly Road with 56th Avenue, MUTCD Signal Warrants are met by Buildout (2024). **It is recommended** that a traffic signal be installed. The intersection should be continually monitored as development fills the area to determine when the traffic signal should be installed.
- At the intersection of Lisbon Street with 56th Avenue, MUTCD Signal Warrants are met by Future (2040). **It is recommended** that a traffic signal be installed. The intersection should be continually monitored as development fills the area to determine when the traffic signal should be installed.
- Based on the queue length analysis, **it is recommended** the westbound left-turn lane at the intersection of Picadilly Road with 56th Avenue be extended to provide 225 feet of vehicle storage. This improvement should be provided by Future (2040) traffic conditions.

With the above site related and other area improvements under the Buildout (2024) traffic conditions, all unsignalized movements are expected to operate at LOS B or better for AM and PM peak hour periods. The signalized intersection of Picadilly Road with 56th Avenue intersection would function at a LOS B during the AM and PM peak hour periods.

Under the Future (2040) traffic conditions, all unsignalized movements are expected to operate at LOS D or better for AM and PM peak hour periods. Additionally, there are alternative routes with reserved capacity within the roadway network. The signalized intersection of Picadilly Road with 56th Avenue intersection would function at a LOS C during the AM and LOS D during the PM peak hour periods. A comprehensive LOS comparison table is provided in **Appendix H**.

APPENDIX A. TRAFFIC COUNT DATA

Location: 56TH AVE & PICADILLY RD
Date: 8/19/2021

Total Vehicles

| AM Peak | Eastbound | | | Westbound | | | E-W total | Hourly Total | Northbound | | | Southbound | | | N-S total | Hourly Total | Grand Total | Hourly Total |
|-------------------------|-----------|-----|-----|-----------|-----|----|-----------|--------------|------------|-----|-----|------------|-----|-----|-----------|--------------|-------------|--------------|
| Time Period (beginning) | LT | TH | RT | LT | TH | RT | | | LT | TH | RT | LT | TH | RT | | | | |
| 6:00 | 1 | 51 | 17 | 9 | 22 | 2 | 102 | 557 | 12 | 1 | 21 | 17 | 4 | 10 | 65 | 359 | 167 | 916 |
| 6:15 | 13 | 72 | 19 | 13 | 13 | 1 | 131 | 585 | 16 | 3 | 23 | 19 | 14 | 8 | 83 | 397 | 214 | 982 |
| 6:30 | 11 | 60 | 33 | 17 | 20 | 1 | 142 | 588 | 23 | 13 | 21 | 33 | 4 | 12 | 106 | 430 | 248 | 1018 |
| 6:45 | 29 | 74 | 44 | 22 | 13 | 0 | 182 | 585 | 14 | 8 | 17 | 44 | 7 | 15 | 105 | 437 | 287 | 1022 |
| 7:00 | 20 | 39 | 36 | 11 | 22 | 2 | 130 | 548 | 18 | 11 | 22 | 36 | 5 | 11 | 103 | 448 | 233 | 996 |
| 7:15 | 13 | 45 | 30 | 16 | 28 | 2 | 134 | 564 | 29 | 12 | 17 | 30 | 10 | 18 | 116 | 457 | 250 | 1021 |
| 7:30 | 19 | 43 | 29 | 26 | 20 | 2 | 139 | 540 | 28 | 13 | 21 | 29 | 11 | 11 | 113 | 427 | 252 | 967 |
| 7:45 | 18 | 44 | 34 | 12 | 32 | 5 | 145 | 509 | 28 | 9 | 17 | 34 | 12 | 16 | 116 | 379 | 261 | 888 |
| 8:00 | 20 | 38 | 32 | 18 | 32 | 6 | 146 | 482 | 16 | 13 | 24 | 32 | 5 | 22 | 112 | 352 | 258 | 834 |
| 8:15 | 11 | 43 | 19 | 18 | 19 | 0 | 110 | 437 | 12 | 12 | 20 | 19 | 8 | 15 | 86 | 298 | 196 | 735 |
| 8:30 | 12 | 22 | 11 | 14 | 47 | 2 | 108 | 432 | 10 | 8 | 12 | 11 | 8 | 16 | 65 | 279 | 173 | 711 |
| 8:45 | 14 | 23 | 24 | 12 | 37 | 8 | 118 | 411 | 6 | 19 | 15 | 24 | 8 | 17 | 89 | 272 | 207 | 683 |
| 9:00 | 11 | 30 | 14 | 10 | 33 | 3 | 101 | 377 | 12 | 5 | 10 | 14 | 9 | 8 | 58 | 244 | 159 | 621 |
| 9:15 | 14 | 29 | 17 | 9 | 35 | 1 | 105 | 351 | 13 | 8 | 12 | 17 | 4 | 13 | 67 | 248 | 172 | 599 |
| 9:30 | 10 | 28 | 10 | 14 | 24 | 1 | 87 | 334 | 4 | 12 | 17 | 10 | 5 | 10 | 58 | 238 | 145 | 572 |
| 9:45 | 9 | 18 | 14 | 16 | 24 | 3 | 84 | 360 | 9 | 8 | 15 | 14 | 7 | 8 | 61 | 230 | 145 | 590 |
| 10:00 | 5 | 21 | 11 | 14 | 21 | 3 | 75 | 374 | 7 | 8 | 19 | 11 | 6 | 11 | 62 | 233 | 137 | 607 |
| 10:15 | 9 | 26 | 8 | 17 | 27 | 1 | 88 | 409 | 6 | 10 | 13 | 8 | 6 | 14 | 57 | 248 | 145 | 657 |
| 10:30 | 11 | 40 | 11 | 12 | 34 | 5 | 113 | 419 | 7 | 4 | 12 | 11 | 5 | 11 | 50 | 255 | 163 | 674 |
| 10:45 | 6 | 26 | 14 | 13 | 34 | 5 | 98 | 406 | 14 | 7 | 16 | 14 | 4 | 9 | 64 | 271 | 162 | 677 |
| 11:00 | 9 | 24 | 10 | 17 | 46 | 4 | 110 | 410 | 16 | 11 | 22 | 10 | 9 | 9 | 77 | 278 | 187 | 688 |
| 11:15 | 9 | 34 | 7 | 11 | 33 | 4 | 98 | | 9 | 14 | 16 | 7 | 6 | 12 | 64 | | 162 | |
| 11:30 | 6 | 33 | 11 | 15 | 29 | 6 | 100 | | 10 | 7 | 15 | 11 | 12 | 11 | 66 | | 166 | |
| 11:45 | 10 | 28 | 14 | 18 | 30 | 2 | 102 | | 14 | 6 | 22 | 14 | 6 | 9 | 71 | | 173 | |
| Total | 290 | 891 | 469 | 354 | 675 | 69 | 2748 | | 333 | 222 | 419 | 469 | 175 | 296 | 1914 | | 4662 | PHF |
| peak (6:45 - 7:45) | 81 | 201 | 139 | 75 | 83 | 6 | 585 | | 89 | 44 | 77 | 139 | 33 | 55 | 437 | | 1022 | 0.89 |

| PM Peak | Eastbound | | | Westbound | | | E-W total | Hourly Total | Northbound | | | Southbound | | | N-S total | Hourly Total | Grand Total | Hourly Total |
|-------------------------------|-----------|-----|-----|-----------|------|----|-----------|--------------|------------|-----|-----|------------|-----|-----|-----------|--------------|-------------|--------------|
| Time Period (beginning) | LT | TH | RT | LT | TH | RT | | | LT | TH | RT | LT | TH | RT | | | | |
| 12:00 | 11 | 43 | 10 | 20 | 58 | 4 | 146 | 532 | 14 | 6 | 18 | 10 | 8 | 19 | 75 | 274 | 221 | 806 |
| 12:15 | 20 | 51 | 14 | 17 | 43 | 2 | 147 | 518 | 14 | 5 | 9 | 14 | 4 | 7 | 53 | 271 | 200 | 789 |
| 12:30 | 17 | 34 | 16 | 13 | 31 | 5 | 116 | 511 | 13 | 8 | 21 | 16 | 10 | 7 | 75 | 280 | 191 | 791 |
| 12:45 | 14 | 37 | 13 | 19 | 37 | 3 | 123 | 612 | 13 | 5 | 20 | 13 | 8 | 12 | 71 | 298 | 194 | 910 |
| 13:00 | 11 | 41 | 22 | 12 | 44 | 2 | 132 | 673 | 11 | 13 | 19 | 22 | 3 | 4 | 72 | 328 | 204 | 1001 |
| 13:15 | 10 | 50 | 15 | 19 | 44 | 2 | 140 | 747 | 14 | 4 | 13 | 15 | 8 | 8 | 62 | 327 | 202 | 1074 |
| 13:30 | 13 | 25 | 21 | 25 | 127 | 6 | 217 | 774 | 15 | 15 | 22 | 21 | 3 | 17 | 93 | 332 | 310 | 1106 |
| 13:45 | 6 | 25 | 18 | 24 | 105 | 6 | 184 | 768 | 27 | 8 | 19 | 18 | 11 | 18 | 101 | 311 | 285 | 1079 |
| 14:00 | 12 | 42 | 27 | 30 | 89 | 6 | 206 | 806 | 19 | 4 | 14 | 27 | 6 | 1 | 71 | 316 | 277 | 1122 |
| 14:15 | 9 | 30 | 12 | 22 | 92 | 2 | 167 | 780 | 17 | 12 | 16 | 12 | 10 | 0 | 67 | 334 | 234 | 1114 |
| 14:30 | 10 | 28 | 16 | 19 | 135 | 3 | 211 | 763 | 16 | 11 | 21 | 16 | 8 | 0 | 72 | 365 | 283 | 1128 |
| 14:45 | 14 | 28 | 20 | 29 | 128 | 3 | 222 | 686 | 28 | 16 | 28 | 20 | 10 | 4 | 106 | 386 | 328 | 1072 |
| 15:00 | 8 | 29 | 16 | 39 | 84 | 4 | 180 | 625 | 17 | 12 | 28 | 16 | 13 | 3 | 89 | 397 | 269 | 1022 |
| 15:15 | 10 | 22 | 23 | 25 | 68 | 2 | 150 | 610 | 32 | 9 | 26 | 23 | 7 | 1 | 98 | 426 | 248 | 1036 |
| 15:30 | 14 | 34 | 13 | 11 | 59 | 3 | 134 | 643 | 25 | 14 | 26 | 13 | 10 | 5 | 93 | 443 | 227 | 1086 |
| 15:45 | 14 | 38 | 33 | 22 | 53 | 1 | 161 | 675 | 30 | 14 | 20 | 33 | 17 | 3 | 117 | 461 | 278 | 1136 |
| 16:00 | 13 | 38 | 32 | 26 | 52 | 4 | 165 | 681 | 29 | 13 | 21 | 32 | 21 | 2 | 118 | 439 | 283 | 1120 |
| 16:15 | 18 | 35 | 45 | 25 | 57 | 3 | 183 | 665 | 26 | 12 | 19 | 45 | 11 | 2 | 115 | 433 | 298 | 1098 |
| 16:30 | 13 | 21 | 36 | 36 | 57 | 3 | 166 | 627 | 33 | 9 | 25 | 36 | 4 | 4 | 111 | 440 | 277 | 1067 |
| 16:45 | 25 | 31 | 30 | 28 | 52 | 1 | 167 | 611 | 32 | 7 | 12 | 30 | 9 | 5 | 95 | 432 | 262 | 1043 |
| 17:00 | 7 | 31 | 36 | 22 | 47 | 6 | 149 | 599 | 31 | 14 | 18 | 36 | 9 | 4 | 112 | 450 | 261 | 1049 |
| 17:15 | 20 | 24 | 30 | 14 | 54 | 3 | 145 | | 41 | 10 | 25 | 30 | 9 | 7 | 122 | | 267 | |
| 17:30 | 18 | 24 | 26 | 15 | 64 | 3 | 150 | | 32 | 9 | 21 | 26 | 12 | 3 | 103 | | 253 | |
| 17:45 | 22 | 29 | 27 | 18 | 55 | 4 | 155 | | 35 | 13 | 24 | 27 | 13 | 1 | 113 | | 268 | |
| Total | 329 | 790 | 551 | 530 | 1635 | 81 | 3916 | | 564 | 243 | 485 | 551 | 224 | 137 | 2204 | | 6120 | PHF |
| peak (15:45 - 16:45) | 58 | 132 | 146 | 109 | 219 | 11 | 675 | | 118 | 48 | 85 | 146 | 53 | 11 | 461 | | 1136 | 0.95 |
| analysis peak (16:00 - 17:00) | 69 | 125 | 143 | 115 | 218 | 11 | 681 | | 120 | 41 | 77 | 143 | 45 | 13 | 439 | | 1120 | 0.91 |

APPENDIX B. SIGNAL WARRANT ANALYSES

MUTCD Volume-based Warrant Evaluation
Nepal Ct & E 56th Ave
Buildout (2024)



Major Street: E 56th Ave
 Lanes Moving Traffic: 2 or more
 Approach Speed: 45 MPH
 Option: High speed major-street

Minor Street: Nepal Ct
 Lanes Moving Traffic: 1
 Right Turn Volume Included: 0% SB

WARRANT 1, Condition A - Minimum Vehicular Volume

70% Satisfied

No

| | Vehicles per hour 70% (56%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|--------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 420 (336) | 894 | 839 | 784 | 730 | 675 | 620 | 565 | 510 |
| Highest Apprch. Minor Street | 105 (84) | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 |

WARRANT 1, Condition B - Interruption of Continuous Traffic

70% Satisfied

No

| | Vehicles per hour 70% (56%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|--------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 630 (504) | 894 | 839 | 784 | 730 | 675 | 620 | 565 | 510 |
| Highest Apprch. Minor Street | 53 (42) | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 |

WARRANT 1, Condition A and Condition B

56% Satisfied

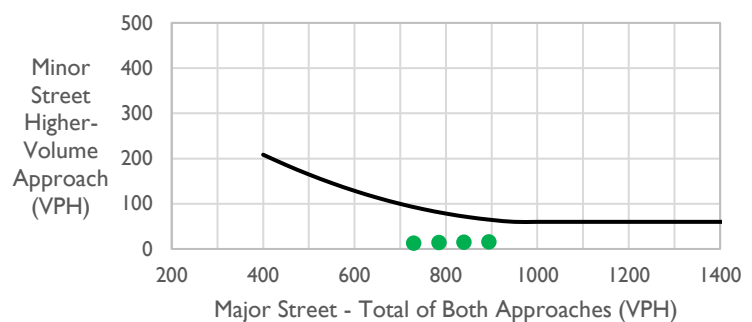
No

WARRANT 2, Four Hour Volume

70% Satisfied

No

| | Both Apprchs. Major Street | Higher Vol. Apprch. Minor Street |
|-------------|-------------------------------|--|
| Peak Hour | 894 | 16 |
| 2nd Highest | 839 | 15 |
| 3rd Highest | 784 | 14 |
| 4th Highest | 730 | 13 |



MUTCD Volume-based Warrant Evaluation
Nepal Ct & E 56th Ave
Future (2040)



Major Street: E 56th Ave
 Lanes Moving Traffic: 2 or more
 Approach Speed: 45 MPH
 Option: High speed major-street

Minor Street: Nepal Ct
 Lanes Moving Traffic: 1
 Right Turn Volume Included: 0% SB

WARRANT 1, Condition A - Minimum Vehicular Volume

70% Satisfied

No

| | Vehicles per hour 70% (56%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|--------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 420 (336) | 2510 | 2356 | 2202 | 2049 | 1895 | 1741 | 1587 | 1433 |
| Highest Apprch. Minor Street | 105 (84) | 25 | 23 | 22 | 20 | 19 | 17 | 16 | 14 |

WARRANT 1, Condition B - Interruption of Continuous Traffic

70% Satisfied

No

| | Vehicles per hour 70% (56%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|--------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 630 (504) | 2510 | 2356 | 2202 | 2049 | 1895 | 1741 | 1587 | 1433 |
| Highest Apprch. Minor Street | 53 (42) | 25 | 23 | 22 | 20 | 19 | 17 | 16 | 14 |

WARRANT 1, Condition A and Condition B

56% Satisfied

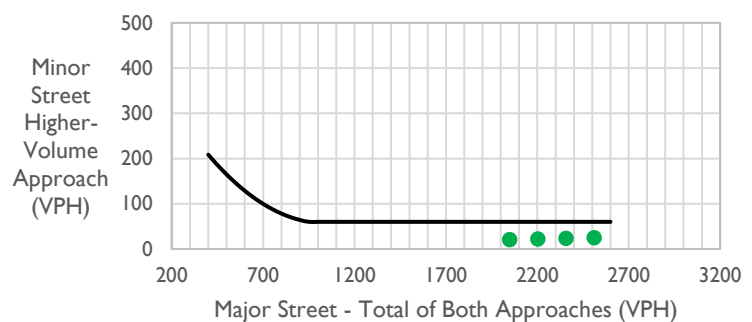
No

WARRANT 2, Four Hour Volume

70% Satisfied

No

| | Both Apprchs. Major Street | Higher Vol. Apprch. Minor Street |
|-------------|-------------------------------|--|
| Peak Hour | 2510 | 25 |
| 2nd Highest | 2356 | 23 |
| 3rd Highest | 2202 | 22 |
| 4th Highest | 2049 | 20 |



MUTCD Volume-based Warrant Evaluation
Nepal Ct & 57th Place
Buildout (2024)



Major Street: Nepal Ct

Minor Street: 57th Place

Lanes Moving Traffic: 1

Lanes Moving Traffic: 1

Approach Speed: 25 MPH

Right Turn Volume Included: 0% WB

Option: Low speed, urban community

WARRANT 1, Condition A - Minimum Vehicular Volume

100% Satisfied

No

| | Vehicles per hour 100% (80%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|---------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 500 (400) | 21 | 20 | 18 | 17 | 16 | 15 | 13 | 12 |
| Highest Apprch. Minor Street | 150 (120) | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 9 |

WARRANT 1, Condition B - Interruption of Continuous Traffic

100% Satisfied

No

| | Vehicles per hour 100% (80%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|---------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 750 (600) | 21 | 20 | 18 | 17 | 16 | 15 | 13 | 12 |
| Highest Apprch. Minor Street | 75 (60) | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 9 |

WARRANT 1, Condition A and Condition B

80% Satisfied

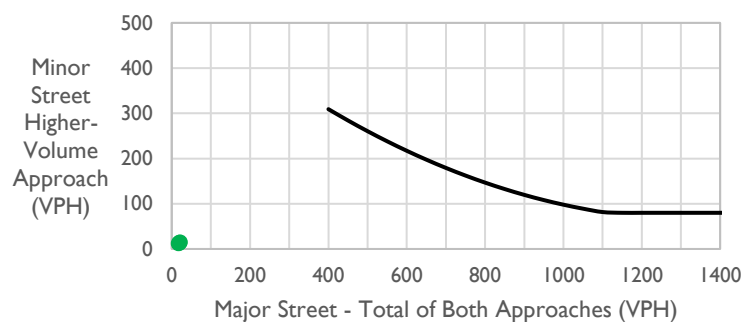
No

WARRANT 2, Four Hour Volume

100% Satisfied

No

| | Both Apprchs. Major Street | Higher Vol. Apprch. Minor Street |
|-------------|-------------------------------|--|
| Peak Hour | 21 | 15 |
| 2nd Highest | 20 | 14 |
| 3rd Highest | 18 | 13 |
| 4th Highest | 17 | 12 |



MUTCD Volume-based Warrant Evaluation
Nepal Ct & 57th Place
Future (2040)



Major Street: Nepal Ct

Minor Street: 57th Place

Lanes Moving Traffic: 1

Lanes Moving Traffic: 1

Approach Speed: 25 MPH

Right Turn Volume Included: 0% WB

Option: Low speed, urban community

WARRANT 1, Condition A - Minimum Vehicular Volume

100% Satisfied

No

| | Vehicles per hour 100% (80%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|---------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 500 (400) | 30 | 28 | 26 | 24 | 23 | 21 | 19 | 17 |
| Highest Apprch. Minor Street | 150 (120) | 20 | 19 | 18 | 16 | 15 | 14 | 13 | 11 |

WARRANT 1, Condition B - Interruption of Continuous Traffic

100% Satisfied

No

| | Vehicles per hour 100% (80%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|---------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 750 (600) | 30 | 28 | 26 | 24 | 23 | 21 | 19 | 17 |
| Highest Apprch. Minor Street | 75 (60) | 20 | 19 | 18 | 16 | 15 | 14 | 13 | 11 |

WARRANT 1, Condition A and Condition B

80% Satisfied

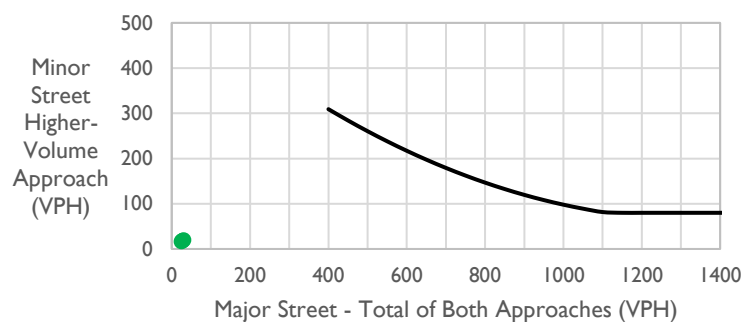
No

WARRANT 2, Four Hour Volume

100% Satisfied

No

| | Both Apprchs. Major Street | Higher Vol. Apprch. Minor Street |
|-------------|-------------------------------|--|
| Peak Hour | 30 | 20 |
| 2nd Highest | 28 | 19 |
| 3rd Highest | 26 | 18 |
| 4th Highest | 24 | 16 |



MUTCD Volume-based Warrant Evaluation
Nepal Ct & 57th Ave
Buildout (2024)



Major Street: 57th Ave

Minor Street: Nepal Ct

Lanes Moving Traffic: 1

Lanes Moving Traffic: 1

Approach Speed: 25 MPH

Right Turn Volume Included: 0% NB

Option: Low speed, urban community

WARRANT 1, Condition A - Minimum Vehicular Volume

100% Satisfied

No

| | Vehicles per hour 100% (80%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|---------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 500 (400) | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 |
| Highest Apprch. Minor Street | 150 (120) | 10 | 9 | 9 | 8 | 8 | 7 | 6 | 6 |

WARRANT 1, Condition B - Interruption of Continuous Traffic

100% Satisfied

No

| | Vehicles per hour 100% (80%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|---------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 750 (600) | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 |
| Highest Apprch. Minor Street | 75 (60) | 10 | 9 | 9 | 8 | 8 | 7 | 6 | 6 |

WARRANT 1, Condition A and Condition B

80% Satisfied

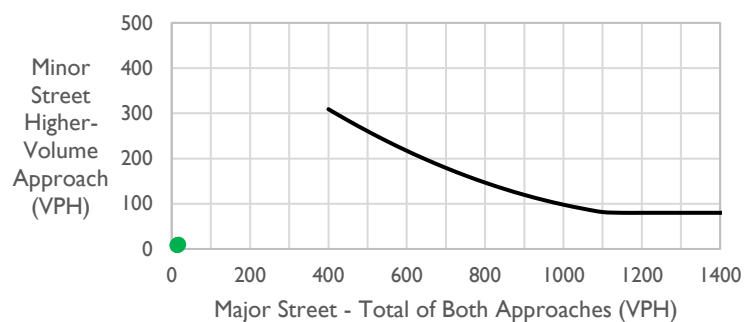
No

WARRANT 2, Four Hour Volume

100% Satisfied

No

| | Both Apprchs. Major Street | Higher Vol. Apprch. Minor Street |
|-------------|-------------------------------|--|
| Peak Hour | 17 | 10 |
| 2nd Highest | 16 | 9 |
| 3rd Highest | 15 | 9 |
| 4th Highest | 14 | 8 |



MUTCD Volume-based Warrant Evaluation
Nepal Ct & 57th Ave
Future (2040)



Major Street: 57th Ave

Minor Street: Nepal Ct

Lanes Moving Traffic: 1

Lanes Moving Traffic: 1

Approach Speed: 25 MPH

Right Turn Volume Included: 0% NB

Option: Low speed, urban community

WARRANT 1, Condition A - Minimum Vehicular Volume

100% Satisfied

No

| | Vehicles per hour 100% (80%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|---------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 500 (400) | 45 | 42 | 39 | 37 | 34 | 31 | 28 | 26 |
| Highest Apprch. Minor Street | 150 (120) | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 9 |

WARRANT 1, Condition B - Interruption of Continuous Traffic

100% Satisfied

No

| | Vehicles per hour 100% (80%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|---------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 750 (600) | 45 | 42 | 39 | 37 | 34 | 31 | 28 | 26 |
| Highest Apprch. Minor Street | 75 (60) | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 9 |

WARRANT 1, Condition A and Condition B

80% Satisfied

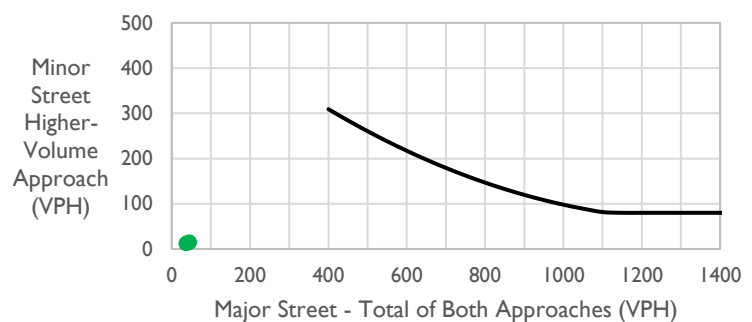
No

WARRANT 2, Four Hour Volume

100% Satisfied

No

| | Both Apprchs. Major Street | Higher Vol. Apprch. Minor Street |
|-------------|-------------------------------|--|
| Peak Hour | 45 | 15 |
| 2nd Highest | 42 | 14 |
| 3rd Highest | 39 | 13 |
| 4th Highest | 37 | 12 |



MUTCD Volume-based Warrant Evaluation
Road 4 & 57th Ave
Buildout (2024)



Major Street: 57th Ave

Minor Street: Road 4

Lanes Moving Traffic: 1

Lanes Moving Traffic: 1

Approach Speed: 25 MPH

Right Turn Volume Included: 0% NB

Option: Low speed, urban community

WARRANT 1, Condition A - Minimum Vehicular Volume

100% Satisfied

No

| | Vehicles per hour 100% (80%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|---------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 500 (400) | 9 | 8 | 8 | 7 | 7 | 6 | 6 | 5 |
| Highest Apprch. Minor Street | 150 (120) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

WARRANT 1, Condition B - Interruption of Continuous Traffic

100% Satisfied

No

| | Vehicles per hour 100% (80%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|---------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 750 (600) | 9 | 8 | 8 | 7 | 7 | 6 | 6 | 5 |
| Highest Apprch. Minor Street | 75 (60) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

WARRANT 1, Condition A and Condition B

80% Satisfied

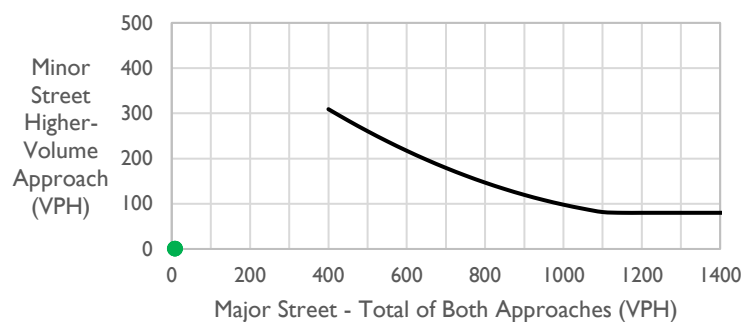
No

WARRANT 2, Four Hour Volume

100% Satisfied

No

| | Both Apprchs. Major Street | Higher Vol. Apprch. Minor Street |
|-------------|-------------------------------|--|
| Peak Hour | 9 | 1 |
| 2nd Highest | 8 | 1 |
| 3rd Highest | 8 | 1 |
| 4th Highest | 7 | 1 |



MUTCD Volume-based Warrant Evaluation
Road 4 & 57th Ave
Future (2040)



Major Street: 57th Ave

Minor Street: Road 4

Lanes Moving Traffic: 1

Lanes Moving Traffic: 1

Approach Speed: 25 MPH

Right Turn Volume Included: 0% NB

Option: Low speed, urban community

WARRANT 1, Condition A - Minimum Vehicular Volume

100% Satisfied

No

| | Vehicles per hour 100% (80%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|---------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 500 (400) | 25 | 23 | 22 | 20 | 19 | 17 | 16 | 14 |
| Highest Apprch. Minor Street | 150 (120) | 5 | 5 | 4 | 4 | 4 | 3 | 3 | 3 |

WARRANT 1, Condition B - Interruption of Continuous Traffic

100% Satisfied

No

| | Vehicles per hour 100% (80%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|---------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 750 (600) | 25 | 23 | 22 | 20 | 19 | 17 | 16 | 14 |
| Highest Apprch. Minor Street | 75 (60) | 5 | 5 | 4 | 4 | 4 | 3 | 3 | 3 |

WARRANT 1, Condition A and Condition B

80% Satisfied

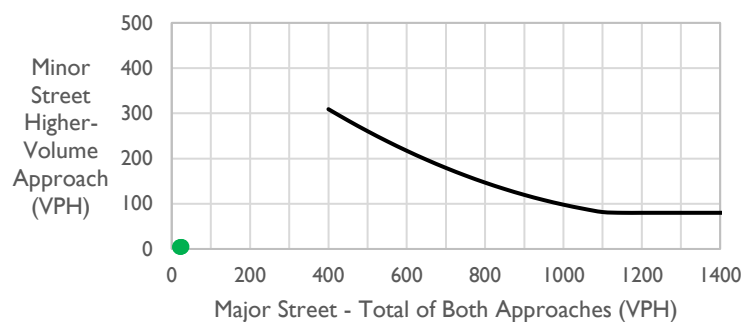
No

WARRANT 2, Four Hour Volume

100% Satisfied

No

| | Both Apprchs. Major Street | Higher Vol. Apprch. Minor Street |
|-------------|-------------------------------|--|
| Peak Hour | 25 | 5 |
| 2nd Highest | 23 | 5 |
| 3rd Highest | 22 | 4 |
| 4th Highest | 20 | 4 |



MUTCD Volume-based Warrant Evaluation
Orleans St & 57th Ave
Buildout (2024)



Major Street: Orleans St

Minor Street: 57th Ave

Lanes Moving Traffic: 1

Lanes Moving Traffic: 1

Approach Speed: 25 MPH

Right Turn Volume Included: 0% EB, 0% WB

Option: Low speed, urban community

WARRANT 1, Condition A - Minimum Vehicular Volume

100% Satisfied

No

| | Vehicles per hour 100% (80%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|---------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 500 (400) | 47 | 44 | 41 | 38 | 35 | 33 | 30 | 27 |
| Highest Apprch. Minor Street | 150 (120) | 33 | 31 | 29 | 27 | 25 | 23 | 21 | 19 |

WARRANT 1, Condition B - Interruption of Continuous Traffic

100% Satisfied

No

| | Vehicles per hour 100% (80%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|---------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 750 (600) | 47 | 44 | 41 | 38 | 35 | 33 | 30 | 27 |
| Highest Apprch. Minor Street | 75 (60) | 33 | 31 | 29 | 27 | 25 | 23 | 21 | 19 |

WARRANT 1, Condition A and Condition B

80% Satisfied

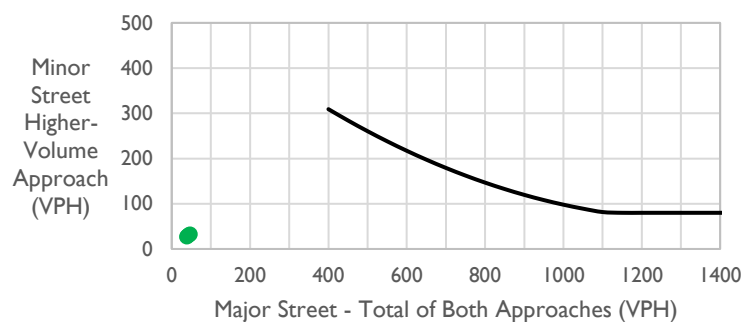
No

WARRANT 2, Four Hour Volume

100% Satisfied

No

| | Both Apprchs. Major Street | Higher Vol. Apprch. Minor Street |
|-------------|-------------------------------|--|
| Peak Hour | 47 | 33 |
| 2nd Highest | 44 | 31 |
| 3rd Highest | 41 | 29 |
| 4th Highest | 38 | 27 |



MUTCD Volume-based Warrant Evaluation
Orleans St & 57th Ave
Future (2040)



Major Street: Orleans St

Minor Street: 57th Ave

Lanes Moving Traffic: 1

Lanes Moving Traffic: 1

Approach Speed: 25 MPH

Right Turn Volume Included: 0% EB, 0% WB

Option: Low speed, urban community

WARRANT 1, Condition A - Minimum Vehicular Volume

100% Satisfied

No

| | Vehicles per hour 100% (80%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|---------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 500 (400) | 75 | 70 | 66 | 61 | 57 | 52 | 47 | 43 |
| Highest Apprch. Minor Street | 150 (120) | 45 | 42 | 39 | 37 | 34 | 31 | 28 | 26 |

WARRANT 1, Condition B - Interruption of Continuous Traffic

100% Satisfied

No

| | Vehicles per hour 100% (80%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|---------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 750 (600) | 75 | 70 | 66 | 61 | 57 | 52 | 47 | 43 |
| Highest Apprch. Minor Street | 75 (60) | 45 | 42 | 39 | 37 | 34 | 31 | 28 | 26 |

WARRANT 1, Condition A and Condition B

80% Satisfied

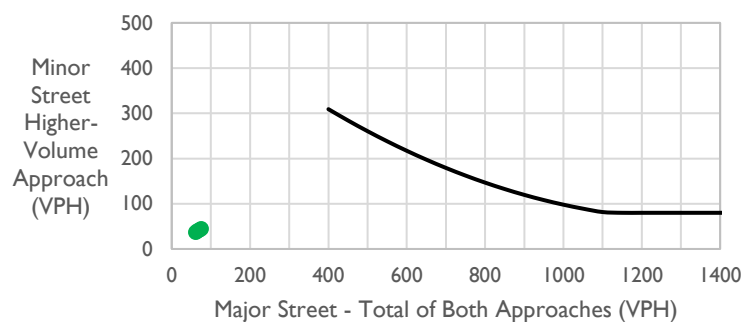
No

WARRANT 2, Four Hour Volume

100% Satisfied

No

| | Both Apprchs. Major Street | Higher Vol. Apprch. Minor Street |
|-------------|-------------------------------|--|
| Peak Hour | 75 | 45 |
| 2nd Highest | 70 | 42 |
| 3rd Highest | 66 | 39 |
| 4th Highest | 61 | 37 |



MUTCD Volume-based Warrant Evaluation
Orleans St & 57th Place
Buildout (2024)



Major Street: Orleans St

Minor Street: 57th Place

Lanes Moving Traffic: 1

Lanes Moving Traffic: 1

Approach Speed: 25 MPH

Right Turn Volume Included: 0% EB, 0% WB

Option: Low speed, urban community

WARRANT 1, Condition A - Minimum Vehicular Volume

100% Satisfied

No

| | Vehicles per hour 100% (80%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|---------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 500 (400) | 131 | 123 | 115 | 107 | 99 | 91 | 83 | 75 |
| Highest Apprch. Minor Street | 150 (120) | 68 | 64 | 60 | 55 | 51 | 47 | 43 | 39 |

WARRANT 1, Condition B - Interruption of Continuous Traffic

100% Satisfied

No

| | Vehicles per hour 100% (80%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|---------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 750 (600) | 131 | 123 | 115 | 107 | 99 | 91 | 83 | 75 |
| Highest Apprch. Minor Street | 75 (60) | 68 | 64 | 60 | 55 | 51 | 47 | 43 | 39 |

WARRANT 1, Condition A and Condition B

80% Satisfied

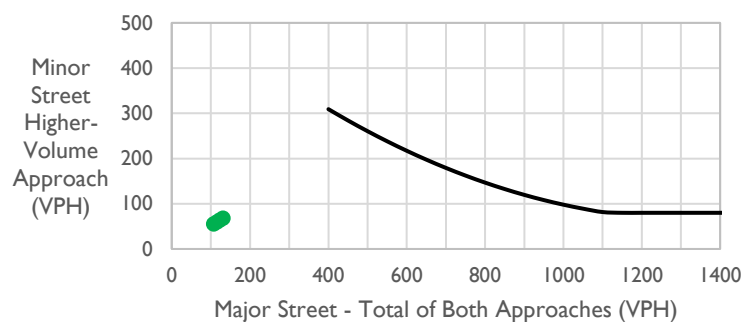
No

WARRANT 2, Four Hour Volume

100% Satisfied

No

| | Both Apprchs. Major Street | Higher Vol. Apprch. Minor Street |
|-------------|-------------------------------|--|
| Peak Hour | 131 | 68 |
| 2nd Highest | 123 | 64 |
| 3rd Highest | 115 | 60 |
| 4th Highest | 107 | 55 |



MUTCD Volume-based Warrant Evaluation
Orleans St & 57th Place
Future (2040)



Major Street: Orleans St

Minor Street: 57th Place

Lanes Moving Traffic: 1

Lanes Moving Traffic: 1

Approach Speed: 25 MPH

Right Turn Volume Included: 0% EB, 0% WB

Option: Low speed, urban community

WARRANT 1, Condition A - Minimum Vehicular Volume

100% Satisfied

No

| | Vehicles per hour 100% (80%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|---------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 500 (400) | 155 | 146 | 136 | 127 | 117 | 108 | 98 | 89 |
| Highest Apprch. Minor Street | 150 (120) | 70 | 66 | 61 | 57 | 53 | 49 | 44 | 40 |

WARRANT 1, Condition B - Interruption of Continuous Traffic

100% Satisfied

No

| | Vehicles per hour 100% (80%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|---------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 750 (600) | 155 | 146 | 136 | 127 | 117 | 108 | 98 | 89 |
| Highest Apprch. Minor Street | 75 (60) | 70 | 66 | 61 | 57 | 53 | 49 | 44 | 40 |

WARRANT 1, Condition A and Condition B

80% Satisfied

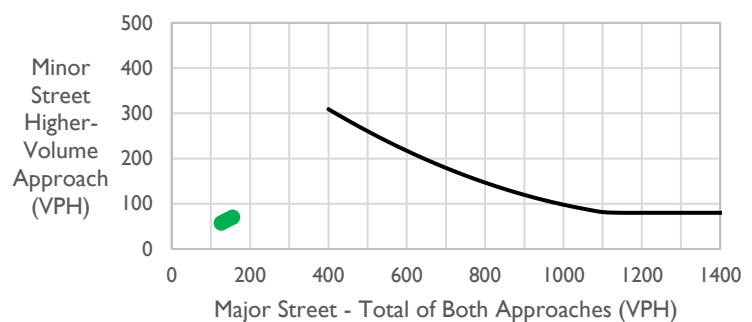
No

WARRANT 2, Four Hour Volume

100% Satisfied

No

| | Both Apprchs. Major Street | Higher Vol. Apprch. Minor Street |
|-------------|-------------------------------|--|
| Peak Hour | 155 | 70 |
| 2nd Highest | 146 | 66 |
| 3rd Highest | 136 | 61 |
| 4th Highest | 127 | 57 |



MUTCD Volume-based Warrant Evaluation
Orleans St & E 56th Ave
Buildout (2024)



Major Street: E 56th Ave
 Lanes Moving Traffic: 2 or more
 Approach Speed: 45 MPH
 Option: High speed major-street

Minor Street: Orleans St
 Lanes Moving Traffic: 1
 Right Turn Volume Included: 50% SB

WARRANT 1, Condition A - Minimum Vehicular Volume

70% Satisfied

No

| | Vehicles per hour 70% (56%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|--------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 420 (336) | 905 | 850 | 794 | 739 | 683 | 628 | 572 | 517 |
| Highest Apprch. Minor Street | 105 (84) | 55 | 52 | 48 | 45 | 42 | 38 | 35 | 31 |

WARRANT 1, Condition B - Interruption of Continuous Traffic

70% Satisfied

No

| | Vehicles per hour 70% (56%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|--------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 630 (504) | 905 | 850 | 794 | 739 | 683 | 628 | 572 | 517 |
| Highest Apprch. Minor Street | 53 (42) | 55 | 52 | 48 | 45 | 42 | 38 | 35 | 31 |

WARRANT 1, Condition A and Condition B

56% Satisfied

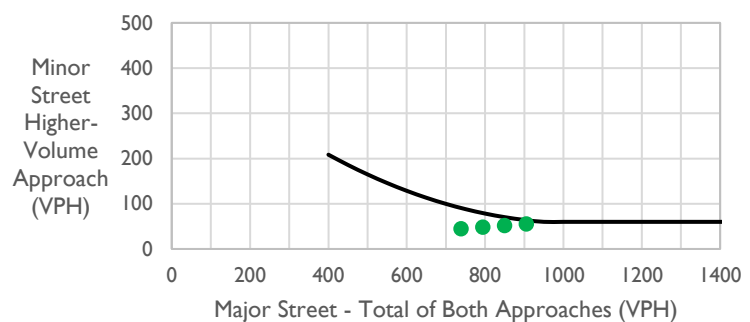
No

WARRANT 2, Four Hour Volume

70% Satisfied

No

| | Both Apprchs. Major Street | Higher Vol. Apprch. Minor Street |
|-------------|-------------------------------|--|
| Peak Hour | 905 | 55 |
| 2nd Highest | 850 | 52 |
| 3rd Highest | 794 | 48 |
| 4th Highest | 739 | 45 |



MUTCD Volume-based Warrant Evaluation
Orleans St & E 56th Ave
Future (2040)



Major Street: E 56th Ave
 Lanes Moving Traffic: 2 or more
 Approach Speed: 45 MPH
 Option: High speed major-street

Minor Street: Orleans St
 Lanes Moving Traffic: 1
 Right Turn Volume Included: 50% SB

WARRANT 1, Condition A - Minimum Vehicular Volume

70% Satisfied

No

| | Vehicles per hour 70% (56%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|------------------------------|--------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 420 (336) | 2525 | 2370 | 2216 | 2061 | 1906 | 1751 | 1597 | 1442 |
| Highest Apprch. Minor Street | 105 (84) | 65 | 61 | 57 | 53 | 49 | 45 | 41 | 37 |

WARRANT 1, Condition B - Interruption of Continuous Traffic

70% Satisfied

No

| | Vehicles per hour 70% (56%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|------------------------------|--------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 630 (504) | 2525 | 2370 | 2216 | 2061 | 1906 | 1751 | 1597 | 1442 |
| Highest Apprch. Minor Street | 53 (42) | 65 | 61 | 57 | 53 | 49 | 45 | 41 | 37 |

WARRANT 1, Condition A and Condition B

56% Satisfied

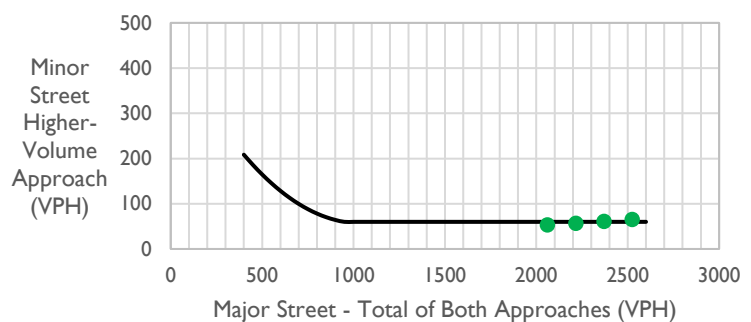
No

WARRANT 2, Four Hour Volume

70% Satisfied

No

| | Both Apprchs. Major Street | Higher Vol. Apprch. Minor Street |
|-------------|-------------------------------|--|
| Peak Hour | 2525 | 65 |
| 2nd Highest | 2370 | 61 |
| 3rd Highest | 2216 | 57 |
| 4th Highest | 2061 | 53 |



MUTCD Volume-based Warrant Evaluation
Picadilly Rd & E 56th Ave
Buildout (2024)



Major Street: E 56th Ave
 Lanes Moving Traffic: 2 or more
 Approach Speed: 45 MPH

Minor Street: Picadilly Rd
 Lanes Moving Traffic: 2 or more
 Right Turn Volume Included: 50% SB, 50% NB

Option: High speed major-street

WARRANT 1, Condition A - Minimum Vehicular Volume

70% Satisfied Yes

| | Vehicles per hour 70% (56%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|--------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 420 (336) | 841 | 789 | 738 | 686 | 635 | 583 | 532 | 480 |
| Highest Apprch. Minor Street | 140 (112) | 268 | 252 | 235 | 219 | 202 | 186 | 169 | 153 |

WARRANT 1, Condition B - Interruption of Continuous Traffic

70% Satisfied No

| | Vehicles per hour 70% (56%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|--------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 630 (504) | 841 | 789 | 738 | 686 | 635 | 583 | 532 | 480 |
| Highest Apprch. Minor Street | 70 (56) | 268 | 252 | 235 | 219 | 202 | 186 | 169 | 153 |

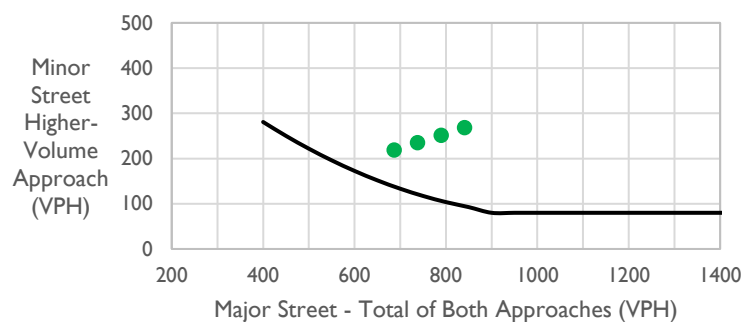
WARRANT 1, Condition A and Condition B

56% Satisfied No

WARRANT 2, Four Hour Volume

70% Satisfied Yes

| | Both Apprchs. Major Street | Higher Vol. Apprch. Minor Street |
|-------------|-------------------------------|--|
| Peak Hour | 841 | 268 |
| 2nd Highest | 789 | 252 |
| 3rd Highest | 738 | 235 |
| 4th Highest | 686 | 219 |



MUTCD Volume-based Warrant Evaluation
Picadilly Rd & E 56th Ave
Future (2040)



Major Street: E 56th Ave
 Lanes Moving Traffic: 2 or more
 Approach Speed: 45 MPH

Minor Street: Picadilly Rd
 Lanes Moving Traffic: 2 or more
 Right Turn Volume Included: 50% SB, 50% NB

Option: High speed major-street

WARRANT 1, Condition A - Minimum Vehicular Volume

70% Satisfied Yes

| | Vehicles per hour 70% (56%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|--------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 420 (336) | 2440 | 2290 | 2141 | 1991 | 1842 | 1692 | 1543 | 1393 |
| Highest Apprch. Minor Street | 140 (112) | 1135 | 1065 | 996 | 926 | 857 | 787 | 718 | 648 |

WARRANT 1, Condition B - Interruption of Continuous Traffic

70% Satisfied Yes

| | Vehicles per hour 70% (56%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|--------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 630 (504) | 2440 | 2290 | 2141 | 1991 | 1842 | 1692 | 1543 | 1393 |
| Highest Apprch. Minor Street | 70 (56) | 1135 | 1065 | 996 | 926 | 857 | 787 | 718 | 648 |

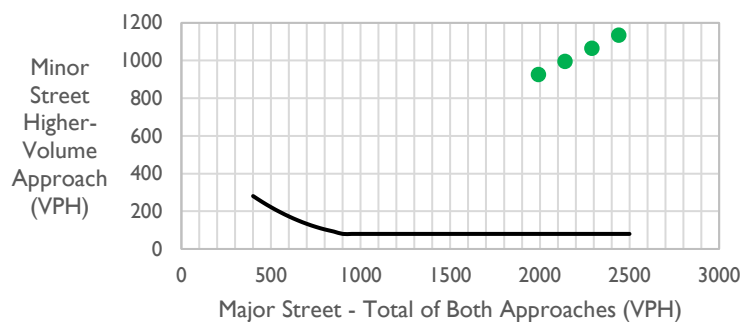
WARRANT 1, Condition A and Condition B

56% Satisfied Yes

WARRANT 2, Four Hour Volume

70% Satisfied Yes

| | Both Apprchs. Major Street | Higher Vol. Apprch. Minor Street |
|-------------|-------------------------------|--|
| Peak Hour | 2440 | 1135 |
| 2nd Highest | 2290 | 1065 |
| 3rd Highest | 2141 | 996 |
| 4th Highest | 1991 | 926 |



MUTCD Volume-based Warrant Evaluation
Lisbon St & E 56th Ave
Future (2040)



Major Street: E 56th Ave
 Lanes Moving Traffic: 2 or more
 Approach Speed: 45 MPH

Minor Street: Lisbon St
 Lanes Moving Traffic: 2 or more
 Right Turn Volume Included: 50% SB

Option: High speed major-street

WARRANT 1, Condition A - Minimum Vehicular Volume

70% Satisfied Yes

| | Vehicles per hour 70% (56%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|--------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 420 (336) | 2515 | 2361 | 2207 | 2053 | 1898 | 1744 | 1590 | 1436 |
| Highest Apprch. Minor Street | 140 (112) | 260 | 244 | 228 | 212 | 196 | 180 | 164 | 148 |

WARRANT 1, Condition B - Interruption of Continuous Traffic

70% Satisfied Yes

| | Vehicles per hour 70% (56%) | Peak Hour | 2nd Highest | 3rd Highest | 4th Highest | 5th Highest | 6th Highest | 7th Highest | 8th Highest |
|---------------------------------|--------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Both Apprchs. Major Street | 630 (504) | 2515 | 2361 | 2207 | 2053 | 1898 | 1744 | 1590 | 1436 |
| Highest Apprch. Minor Street | 70 (56) | 260 | 244 | 228 | 212 | 196 | 180 | 164 | 148 |

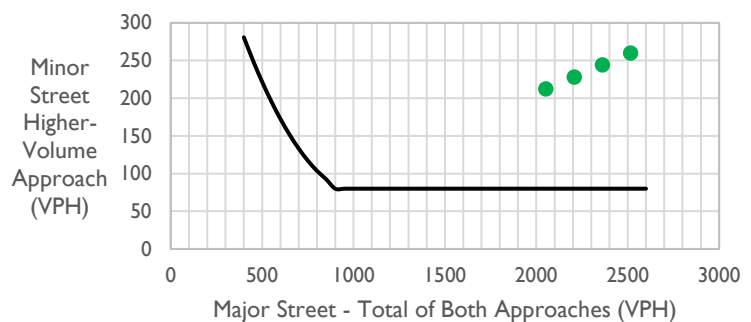
WARRANT 1, Condition A and Condition B

56% Satisfied Yes













WARRANT 2, Four Hour Volume













70% Satisfied Yes

| | Both Apprchs. Major Street | Higher Vol. Apprch. Minor Street |
|-------------|-------------------------------|--|
| Peak Hour | 2515 | 260 |
| 2nd Highest | 2361 | 244 |
| 3rd Highest | 2207 | 228 |
| 4th Highest | 2053 | 212 |






APPENDIX C. EXISTING (2021) TRAFFIC LOS WORKSHEETS




| Intersection | | | | | | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|---|--|---|---|---|
| Int Delay, s/veh | 15.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Vol, veh/h | 81 | 201 | 139 | 75 | 83 | 6 | 89 | 44 | 77 | 139 | 33 | 55 |
| Future Vol, veh/h | 81 | 201 | 139 | 75 | 83 | 6 | 89 | 44 | 77 | 139 | 33 | 55 |
| 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 | 350 | - | 0 | 150 | - | 325 | 200 | - | - | 250 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 91 | 226 | 156 | 84 | 93 | 7 | 100 | 49 | 87 | 156 | 37 | 62 |
| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
| Conflicting Flow All | 100 | 0 | 0 | 382 | 0 | 0 | 641 | 676 | 226 | 819 | 829 | 50 |
| Stage 1 | - | - | - | - | - | - | 408 | 408 | - | 265 | 265 | - |
| Stage 2 | - | - | - | - | - | - | 233 | 268 | - | 554 | 564 | - |
| Critical Hdwy | 4.13 | - | - | 4.13 | - | - | 7.33 | 6.53 | 6.23 | 7.33 | 6.53 | 6.93 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.13 | 5.53 | - | 6.53 | 5.53 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.53 | 5.53 | - | 6.13 | 5.53 | - |
| Follow-up Hdwy | 2.219 | - | - | 2.219 | - | - | 3.519 | 4.019 | 3.319 | 3.519 | 4.019 | 3.319 |
| Pot Cap-1 Maneuver | 1492 | - | - | 1175 | - | - | 373 | 374 | 813 | 281 | 305 | 1008 |
| Stage 1 | - | - | - | - | - | - | 619 | 596 | - | 718 | 689 | - |
| Stage 2 | - | - | - | - | - | - | 750 | 687 | - | 516 | 508 | - |
| Platoon blocked, % | - | - | - | - | - | - | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | 1492 | - | - | 1175 | - | - | 283 | 326 | 813 | 201 | 266 | 1008 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 283 | 326 | - | 201 | 266 | - |
| Stage 1 | - | - | - | - | - | - | 581 | 560 | - | 674 | 640 | - |
| Stage 2 | - | - | - | - | - | - | 616 | 638 | - | 395 | 477 | - |
| Approach | EB | | | WB | | | NB | | | SB | | |
| HCM Control Delay, s | 1.5 | | | 3.8 | | | 18.6 | | | 46.1 | | |
| HCM LOS | | | | | | | C | | | E | | |
| Minor Lane/Major Mvmt | NBLn1 NBLn2 | | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 | SBLn2 | | |
| Capacity (veh/h) | 283 | 527 | 1492 | - | - | 1175 | - | - | 201 | 493 | | |
| HCM Lane V/C Ratio | 0.353 | 0.258 | 0.061 | - | - | 0.072 | - | - | 0.777 | 0.201 | | |
| HCM Control Delay (s) | 24.5 | 14.2 | 7.6 | - | - | 8.3 | - | - | 66.4 | 14.1 | | |
| HCM Lane LOS | C | B | A | - | - | A | - | - | F | B | | |
| HCM 95th %tile Q(veh) | 1.5 | 1 | 0.2 | - | - | 0.2 | - | - | 5.3 | 0.7 | | |

| Intersection | | | | | | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|---|--|---|---|---|
| Int Delay, s/veh | 17.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Vol, veh/h | 69 | 125 | 143 | 115 | 218 | 11 | 120 | 41 | 77 | 143 | 45 | 13 |
| Future Vol, veh/h | 69 | 125 | 143 | 115 | 218 | 11 | 120 | 41 | 77 | 143 | 45 | 13 |
| 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 | 350 | - | 0 | 150 | - | 325 | 200 | - | - | 250 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 73 | 132 | 151 | 121 | 229 | 12 | 126 | 43 | 81 | 151 | 47 | 14 |
| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
| Conflicting Flow All | 241 | 0 | 0 | 283 | 0 | 0 | 658 | 761 | 132 | 893 | 906 | 121 |
| Stage 1 | - | - | - | - | - | - | 278 | 278 | - | 477 | 477 | - |
| Stage 2 | - | - | - | - | - | - | 380 | 483 | - | 416 | 429 | - |
| Critical Hdwy | 4.13 | - | - | 4.13 | - | - | 7.33 | 6.53 | 6.23 | 7.33 | 6.53 | 6.93 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.13 | 5.53 | - | 6.53 | 5.53 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.53 | 5.53 | - | 6.13 | 5.53 | - |
| Follow-up Hdwy | 2.219 | - | - | 2.219 | - | - | 3.519 | 4.019 | 3.319 | 3.519 | 4.019 | 3.319 |
| Pot Cap-1 Maneuver | 1324 | - | - | 1278 | - | - | 363 | 334 | 917 | 249 | 275 | 908 |
| Stage 1 | - | - | - | - | - | - | 728 | 680 | - | 539 | 555 | - |
| Stage 2 | - | - | - | - | - | - | 615 | 552 | - | 613 | 583 | - |
| Platoon blocked, % | - | - | - | - | - | - | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | 1324 | - | - | 1278 | - | - | 270 | 286 | 917 | 179 | 235 | 908 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 270 | 286 | - | 179 | 235 | - |
| Stage 1 | - | - | - | - | - | - | 688 | 643 | - | 509 | 502 | - |
| Stage 2 | - | - | - | - | - | - | 497 | 500 | - | 493 | 551 | - |
| Approach | EB | | | WB | | | NB | | | SB | | |
| HCM Control Delay, s | 1.6 | | | 2.7 | | | 21.9 | | | 65.6 | | |
| HCM LOS | | | | | | | C | | | F | | |
| Minor Lane/Major Mvmt | NBLn1 | | NBLn2 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 | SBLn2 | |
| Capacity (veh/h) | 270 | | 519 | 1324 | - | - | 1278 | - | - | 179 | 282 | |
| HCM Lane V/C Ratio | 0.468 | | 0.239 | 0.055 | - | - | 0.095 | - | - | 0.841 | 0.216 | |
| HCM Control Delay (s) | 29.5 | | 14.1 | 7.9 | - | - | 8.1 | - | - | 83.6 | 21.3 | |
| HCM Lane LOS | D | | B | A | - | - | A | - | - | F | C | |
| HCM 95th %tile Q(veh) | 2.3 | | 0.9 | 0.2 | - | - | 0.3 | - | - | 5.9 | 0.8 | |

APPENDIX D. BACKGROUND (2024) TRAFFIC LOS WORKSHEETS




| Intersection | | | | | | |
|--------------------------|--------|--------|------|--------|------|------|
| Int Delay, s/veh | 0 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑ | ↑↑ | | | ↑ |
| Traffic Vol, veh/h | 0 | 498 | 292 | 3 | 0 | 4 |
| Future Vol, veh/h | 0 | 498 | 292 | 3 | 0 | 4 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 541 | 317 | 3 | 0 | 4 |
| | | | | | | |
| Major/Minor | Major1 | Major2 | | Minor2 | | |
| Conflicting Flow All | - | 0 | - | 0 | - | 160 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.32 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 857 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 857 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | WB | | SB | | |
| HCM Control Delay, s | 0 | 0 | | 9.2 | | |
| HCM LOS | A | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 | | |
| Capacity (veh/h) | - | - | - | 857 | | |
| HCM Lane V/C Ratio | - | - | - | 0.005 | | |
| HCM Control Delay (s) | - | - | - | 9.2 | | |
| HCM Lane LOS | - | - | - | A | | |
| HCM 95th %tile Q(veh) | - | - | - | 0 | | |

| Intersection | | | | | | |
|--------------------------|---|----------|---|------|-------|---|
| Int Delay, s/veh | 0 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  | |  | | |  |
| Traffic Vol, veh/h | 0 | 0 | 3 | 0 | 0 | 4 |
| Future Vol, veh/h | 0 | 0 | 3 | 0 | 0 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 3 | 0 | 0 | 4 |
| Major/Minor | Minor1 | Major1 | Major2 | | | |
| Conflicting Flow All | 7 | 3 | 0 | 0 | 3 | 0 |
| Stage 1 | 3 | - | - | - | - | - |
| Stage 2 | 4 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 1014 | 1081 | - | - | 1619 | - |
| Stage 1 | 1020 | - | - | - | - | - |
| Stage 2 | 1019 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 1014 | 1081 | - | - | 1619 | - |
| Mov Cap-2 Maneuver | 1014 | - | - | - | - | - |
| Stage 1 | 1020 | - | - | - | - | - |
| Stage 2 | 1019 | - | - | - | - | - |
| Approach | WB | NB | SB | | | |
| HCM Control Delay, s | 0 | 0 | 0 | | | |
| HCM LOS | A | | | | | |
| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT | | |
| Capacity (veh/h) | - | - | - | 1619 | - | |
| HCM Lane V/C Ratio | - | - | - | - | - | |
| HCM Control Delay (s) | - | - | 0 | 0 | - | |
| HCM Lane LOS | - | - | A | A | - | |
| HCM 95th %tile Q(veh) | - | - | - | 0 | - | |

| Intersection | | | | | | |
|--------------------------|---|------|--------|---|---|-------|
| Int Delay, s/veh | 2 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations |  | | |  |  | |
| Traffic Vol, veh/h | 2 | 4 | 0 | 4 | 3 | 0 |
| Future Vol, veh/h | 2 | 4 | 0 | 4 | 3 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2 | 4 | 0 | 4 | 3 | 0 |
| | | | | | | |
| Major/Minor | Major1 | | Major2 | | Minor1 | |
| Conflicting Flow All | 0 | 0 | 6 | 0 | 8 | 4 |
| Stage 1 | - | - | - | - | 4 | - |
| Stage 2 | - | - | - | - | 4 | - |
| 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 | - | - | 1615 | - | 1013 | 1080 |
| Stage 1 | - | - | - | - | 1019 | - |
| Stage 2 | - | - | - | - | 1019 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1615 | - | 1013 | 1080 |
| Mov Cap-2 Maneuver | - | - | - | - | 1013 | - |
| Stage 1 | - | - | - | - | 1019 | - |
| Stage 2 | - | - | - | - | 1019 | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | | WB | | NB | |
| HCM Control Delay, s | 0 | | 0 | | 8.6 | |
| HCM LOS | A | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | |
| Capacity (veh/h) | 1013 | - | - | 1615 | - | |
| HCM Lane V/C Ratio | 0.003 | - | - | - | - | |
| HCM Control Delay (s) | 8.6 | - | - | 0 | - | |
| HCM Lane LOS | A | - | - | A | - | |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - | |

HCM 6th TWSC
4: Road 4 & 57th Ave

Background (2024)
AM Peak Hour





| Intersection | | | | | | |
|--------------------------|---|------|--------|---|---|-------|
| Int Delay, s/veh | 0 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations |  | | |  |  | |
| Traffic Vol, veh/h | 2 | 0 | 0 | 4 | 0 | 0 |
| Future Vol, veh/h | 2 | 0 | 0 | 4 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2 | 0 | 0 | 4 | 0 | 0 |
| | | | | | | |
| Major/Minor | Major1 | | Major2 | | Minor1 | |
| Conflicting Flow All | 0 | 0 | 2 | 0 | 6 | 2 |
| Stage 1 | - | - | - | - | 2 | - |
| Stage 2 | - | - | - | - | 4 | - |
| 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 | - | - | 1620 | - | 1015 | 1082 |
| Stage 1 | - | - | - | - | 1021 | - |
| Stage 2 | - | - | - | - | 1019 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1620 | - | 1015 | 1082 |
| Mov Cap-2 Maneuver | - | - | - | - | 1015 | - |
| Stage 1 | - | - | - | - | 1021 | - |
| Stage 2 | - | - | - | - | 1019 | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | | WB | | NB | |
| HCM Control Delay, s | 0 | | 0 | | 0 | |
| HCM LOS | A | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | |
| Capacity (veh/h) | - | - | - | 1620 | - | |
| HCM Lane V/C Ratio | - | - | - | - | - | |
| HCM Control Delay (s) | 0 | - | - | 0 | - | |
| HCM Lane LOS | A | - | - | A | - | |
| HCM 95th %tile Q(veh) | - | - | - | 0 | - | |

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|------|------|--------|-------|------|--------|-------|-------|--------|-------|-------|
| Int Delay, s/veh | 2.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 0 | 0 | 2 | 13 | 0 | 0 | 4 | 0 | 25 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 2 | 13 | 0 | 0 | 4 | 0 | 25 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 2 | 14 | 0 | 0 | 4 | 0 | 27 | 0 | 0 | 0 |
| | | | | | | | | | | | | |
| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
| Conflicting Flow All | 0 | 0 | 0 | 2 | 0 | 0 | 29 | 29 | 1 | 43 | 30 | 0 |
| Stage 1 | - | - | - | - | - | - | 1 | 1 | - | 28 | 28 | - |
| Stage 2 | - | - | - | - | - | - | 28 | 28 | - | 15 | 2 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | - | - | - | 1620 | - | - | 980 | 864 | 1084 | 960 | 863 | - |
| Stage 1 | - | - | - | - | - | - | 1022 | 895 | - | 989 | 872 | - |
| Stage 2 | - | - | - | - | - | - | 989 | 872 | - | 1005 | 894 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | - | - | - | 1620 | - | - | - | 856 | 1084 | 929 | 855 | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | 856 | - | 929 | 855 | - |
| Stage 1 | - | - | - | - | - | - | 1022 | 895 | - | 989 | 864 | - |
| Stage 2 | - | - | - | - | - | - | 980 | 864 | - | 980 | 894 | - |
| | | | | | | | | | | | | |
| Approach | EB | | | WB | | | NB | | | SB | | |
| HCM Control Delay, s | 0 | | | 7.2 | | | | | | 0 | | |
| HCM LOS | | | | | | | - | | | A | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 | | | | |
| Capacity (veh/h) | - | - | - | - | 1620 | - | - | - | | | | |
| HCM Lane V/C Ratio | - | - | - | - | 0.009 | - | - | - | | | | |
| HCM Control Delay (s) | - | 0 | - | - | 7.2 | 0 | - | 0 | | | | |
| HCM Lane LOS | - | A | - | - | A | A | - | A | | | | |
| HCM 95th %tile Q(veh) | - | - | - | - | 0 | - | - | - | | | | |

HCM 6th TWSC
6: Orleans St & 57th Place/Private Dr

Background (2024)
AM Peak Hour

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|-------|--------|-------|-------|--------|-------|------|--------|-------|------|------|
| Int Delay, s/veh | 1.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 39 | 0 | 29 | 0 | 0 | 18 | 15 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 39 | 0 | 29 | 0 | 0 | 18 | 15 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 42 | 0 | 32 | 0 | 0 | 20 | 16 | 0 | 0 |
| | | | | | | | | | | | | |
| Major/Minor | Minor2 | | Minor1 | | | Major1 | | | Major2 | | | |
| Conflicting Flow All | 58 | 52 | 0 | 42 | 42 | 10 | 0 | 0 | 0 | 20 | 0 | 0 |
| Stage 1 | 32 | 32 | - | 10 | 10 | - | - | - | - | - | - | - |
| Stage 2 | 26 | 20 | - | 32 | 32 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 939 | 839 | - | 961 | 850 | 1071 | - | - | - | 1596 | - | - |
| Stage 1 | 984 | 868 | - | 1011 | 887 | - | - | - | - | - | - | - |
| Stage 2 | 992 | 879 | - | 984 | 868 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 904 | 831 | - | - | 842 | 1071 | - | - | - | 1596 | - | - |
| Mov Cap-2 Maneuver | 904 | 831 | - | - | 842 | - | - | - | - | - | - | - |
| Stage 1 | 984 | 859 | - | 1011 | 887 | - | - | - | - | - | - | - |
| Stage 2 | 963 | 879 | - | 974 | 859 | - | - | - | - | - | - | - |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Approach | EB | | WB | | | NB | | | SB | | | |
| HCM Control Delay, s | 0 | | | | | 0 | | | 7.3 | | | |
| HCM LOS | A | | - | | | | | | | | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR | | | | |
| Capacity (veh/h) | - | - | - | - | - | 1596 | - | - | | | | |
| HCM Lane V/C Ratio | - | - | - | - | - | 0.01 | - | - | | | | |
| HCM Control Delay (s) | 0 | - | - | 0 | - | 7.3 | 0 | - | | | | |
| HCM Lane LOS | A | - | - | A | - | A | A | - | | | | |
| HCM 95th %tile Q(veh) | - | - | - | - | - | 0 | - | - | | | | |

| Intersection | | | | | | |
|--------------------------|---|---|---|------|---|------|
| Int Delay, s/veh | 0.6 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations |  |  |  | |  | |
| Traffic Vol, veh/h | 10 | 488 | 266 | 8 | 10 | 29 |
| Future Vol, veh/h | 10 | 488 | 266 | 8 | 10 | 29 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 200 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 530 | 289 | 9 | 11 | 32 |



















| Major/Minor | Major1 | Major2 | Minor2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 298 | 0 | 0 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | 4.14 | - | - |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | 2.22 | - | - |
| Pot Cap-1 Maneuver | 1260 | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1260 | - | - |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.2 | 0 | 10.5 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 1260 | - | - | - | 697 |
| HCM Lane V/C Ratio | 0.009 | - | - | - | 0.061 |
| HCM Control Delay (s) | 7.9 | - | - | - | 10.5 |
| HCM Lane LOS | A | - | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.2 |

Timings
8: Picadilly Rd & E 56th Ave

Background (2024)
AM Peak Hour

| |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
| Lane Configurations |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 94 | 239 | 165 | 87 | 100 | 110 | 54 | 167 | 51 |
| Future Volume (vph) | 94 | 239 | 165 | 87 | 100 | 110 | 54 | 167 | 51 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | pm+pt | NA | pm+pt | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | 5 | 2 | 1 | 6 |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 5 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 12.0 | 32.0 | 32.0 | 13.0 | 33.0 | 13.0 | 27.0 | 18.0 | 32.0 |
| Total Split (%) | 13.3% | 35.6% | 35.6% | 14.4% | 36.7% | 14.4% | 30.0% | 20.0% | 35.6% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 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) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | Max | Max | None | Max | None | None | None | None |
| Act Effect Green (s) | 34.3 | 28.8 | 28.8 | 34.8 | 29.0 | 16.7 | 8.8 | 23.1 | 14.4 |
| Actuated g/C Ratio | 0.48 | 0.40 | 0.40 | 0.49 | 0.41 | 0.23 | 0.12 | 0.32 | 0.20 |
| v/c Ratio | 0.16 | 0.35 | 0.24 | 0.17 | 0.08 | 0.34 | 0.55 | 0.47 | 0.31 |
| Control Delay | 10.2 | 19.0 | 4.1 | 10.2 | 14.9 | 20.6 | 22.8 | 22.0 | 16.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 10.2 | 19.0 | 4.1 | 10.2 | 14.9 | 20.6 | 22.8 | 22.0 | 16.0 |
| LOS | B | B | A | B | B | C | C | C | B |
| Approach Delay | | 12.4 | | | 12.8 | | 21.9 | | 19.5 |
| Approach LOS | | B | | | B | | C | | B |

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 71.3

Natural Cycle: 65

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 16.1









Intersection LOS: B

Intersection Capacity Utilization 50.0%

ICU Level of Service A










Analysis Period (min) 15

Splits and Phases: 8: Picadilly Rd & E 56th Ave

| | | | |
|---|---|---|---|
|  |  |  |  |
| Ø1 | Ø2 | Ø3 | Ø4 |
| 18 s | 27 s | 13 s | 32 s |
|  |  |  |  |
| Ø5 | Ø6 | Ø7 | Ø8 |
| 13 s | 32 s | 12 s | 33 s |






















Queues
8: Picadilly Rd & E 56th Ave

Background (2024)
AM Peak Hour




| |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
| Lane Group Flow (vph) | 102 | 260 | 179 | 95 | 118 | 120 | 156 | 182 | 125 |
| v/c Ratio | 0.16 | 0.35 | 0.24 | 0.17 | 0.08 | 0.34 | 0.55 | 0.47 | 0.31 |
| Control Delay | 10.2 | 19.0 | 4.1 | 10.2 | 14.9 | 20.6 | 22.8 | 22.0 | 16.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 10.2 | 19.0 | 4.1 | 10.2 | 14.9 | 20.6 | 22.8 | 22.0 | 16.0 |
| Queue Length 50th (ft) | 20 | 81 | 0 | 19 | 15 | 39 | 29 | 61 | 22 |
| Queue Length 95th (ft) | 52 | 165 | 40 | 49 | 36 | 74 | 85 | 108 | 66 |
| Internal Link Dist (ft) | | 583 | | | 920 | | 498 | | 433 |
| Turn Bay Length (ft) | 350 | | | 150 | | 200 | | 250 | |
| Base Capacity (vph) | 664 | 752 | 747 | 586 | 1430 | 369 | 603 | 445 | 713 |
| 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 | 0.15 | 0.35 | 0.24 | 0.16 | 0.08 | 0.33 | 0.26 | 0.41 | 0.18 |
| Intersection Summary | | | | | | | | | |




HCM 6th Signalized Intersection Summary 8: Picadilly Rd & E 56th Ave

Background (2024)
AM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  | |  |  | |
| Traffic Volume (veh/h) | 94 | 239 | 165 | 87 | 100 | 8 | 110 | 54 | 89 | 167 | 51 | 64 |
| Future Volume (veh/h) | 94 | 239 | 165 | 87 | 100 | 8 | 110 | 54 | 89 | 167 | 51 | 64 |
| 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 | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 102 | 260 | 179 | 95 | 109 | 9 | 120 | 59 | 97 | 182 | 55 | 70 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 737 | 798 | 676 | 535 | 1414 | 115 | 372 | 81 | 134 | 360 | 123 | 157 |
| Arrive On Green | 0.06 | 0.43 | 0.43 | 0.06 | 0.43 | 0.43 | 0.08 | 0.13 | 0.13 | 0.12 | 0.16 | 0.16 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 3327 | 272 | 1781 | 636 | 1046 | 1781 | 748 | 951 |
| Grp Volume(v), veh/h | 102 | 260 | 179 | 95 | 58 | 60 | 120 | 0 | 156 | 182 | 0 | 125 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1777 | 1821 | 1781 | 0 | 1682 | 1781 | 0 | 1699 |
| Q Serve(g_s), s | 2.1 | 6.2 | 4.9 | 1.9 | 1.3 | 1.3 | 3.8 | 0.0 | 6.0 | 5.8 | 0.0 | 4.4 |
| Cycle Q Clear(g_c), s | 2.1 | 6.2 | 4.9 | 1.9 | 1.3 | 1.3 | 3.8 | 0.0 | 6.0 | 5.8 | 0.0 | 4.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.15 | 1.00 | | 0.62 | 1.00 | | 0.56 |
| Lane Grp Cap(c), veh/h | 737 | 798 | 676 | 535 | 755 | 774 | 372 | 0 | 215 | 360 | 0 | 280 |
| V/C Ratio(X) | 0.14 | 0.33 | 0.26 | 0.18 | 0.08 | 0.08 | 0.32 | 0.00 | 0.72 | 0.51 | 0.00 | 0.45 |
| Avail Cap(c_a), veh/h | 823 | 798 | 676 | 650 | 755 | 774 | 457 | 0 | 564 | 514 | 0 | 697 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 9.3 | 12.8 | 12.4 | 9.6 | 11.5 | 11.5 | 22.7 | 0.0 | 28.1 | 21.7 | 0.0 | 25.3 |
| Incr Delay (d2), s/veh | 0.1 | 1.1 | 1.0 | 0.2 | 0.2 | 0.2 | 0.5 | 0.0 | 4.6 | 1.1 | 0.0 | 1.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 1.2 | 4.3 | 2.9 | 1.1 | 0.8 | 0.9 | 2.7 | 0.0 | 4.4 | 4.0 | 0.0 | 3.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 9.4 | 13.9 | 13.4 | 9.8 | 11.7 | 11.7 | 23.2 | 0.0 | 32.7 | 22.8 | 0.0 | 26.4 |
| LnGrp LOS | A | B | B | A | B | B | C | A | C | C | A | C |
| Approach Vol, veh/h | 541 | | | | 213 | | | | 276 | | | |
| Approach Delay, s/veh | 12.9 | | | | 10.8 | | | | 28.5 | | | |
| Approach LOS | B | | | | B | | | | C | | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 12.2 | 13.1 | 8.6 | 33.1 | 9.8 | 15.5 | 8.8 | 33.0 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 13.5 | 22.5 | 8.5 | 27.5 | 8.5 | 27.5 | 7.5 | 28.5 | | | | |
| Max Q Clear Time (g_c+I1), s | 7.8 | 8.0 | 3.9 | 8.2 | 5.8 | 6.4 | 4.1 | 3.3 | | | | |
| Green Ext Time (p_c), s | 0.2 | 0.6 | 0.1 | 1.8 | 0.1 | 0.5 | 0.1 | 0.5 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | 18.4 | | | | | | | | | | | |
| HCM 6th LOS | B | | | | | | | | | | | |




| Intersection | | | | | | |
|--------------------------|--------|--------|------|--------|------|------|
| Int Delay, s/veh | 0.1 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑ | ↑↑ | | | ↗ |
| Traffic Vol, veh/h | 0 | 420 | 426 | 8 | 0 | 5 |
| Future Vol, veh/h | 0 | 420 | 426 | 8 | 0 | 5 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 457 | 463 | 9 | 0 | 5 |
| | | | | | | |
| Major/Minor | Major1 | Major2 | | Minor2 | | |
| Conflicting Flow All | - | 0 | - | 0 | - | 236 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.32 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 766 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 766 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | WB | | SB | | |
| HCM Control Delay, s | 0 | 0 | | 9.7 | | |
| HCM LOS | A | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 | | |
| Capacity (veh/h) | - | - | - | 766 | | |
| HCM Lane V/C Ratio | - | - | - | 0.007 | | |
| HCM Control Delay (s) | - | - | - | 9.7 | | |
| HCM Lane LOS | - | - | - | A | | |
| HCM 95th %tile Q(veh) | - | - | - | 0 | | |

| Intersection | | | | | | |
|--------------------------|---|----------|---|------|-------|---|
| Int Delay, s/veh | 0 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  | |  | | |  |
| Traffic Vol, veh/h | 0 | 0 | 8 | 0 | 0 | 5 |
| Future Vol, veh/h | 0 | 0 | 8 | 0 | 0 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 9 | 0 | 0 | 5 |
| Major/Minor | Minor1 | Major1 | Major2 | | | |
| Conflicting Flow All | 14 | 9 | 0 | 0 | 9 | 0 |
| Stage 1 | 9 | - | - | - | - | - |
| Stage 2 | 5 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 1005 | 1073 | - | - | 1611 | - |
| Stage 1 | 1014 | - | - | - | - | - |
| Stage 2 | 1018 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 1005 | 1073 | - | - | 1611 | - |
| Mov Cap-2 Maneuver | 1005 | - | - | - | - | - |
| Stage 1 | 1014 | - | - | - | - | - |
| Stage 2 | 1018 | - | - | - | - | - |
| Approach | WB | NB | | SB | | |
| HCM Control Delay, s | 0 | 0 | | 0 | | |
| HCM LOS | A | | | | | |
| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT | | |
| Capacity (veh/h) | - | - | - | 1611 | - | |
| HCM Lane V/C Ratio | - | - | - | - | - | |
| HCM Control Delay (s) | - | - | 0 | 0 | - | |
| HCM Lane LOS | - | - | A | A | - | |
| HCM 95th %tile Q(veh) | - | - | - | 0 | - | |

| Intersection | | | | | | |
|--------------------------|---|------|--------|---|---|-------|
| Int Delay, s/veh | 3.4 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations |  | | |  |  | |
| Traffic Vol, veh/h | 4 | 5 | 0 | 3 | 8 | 0 |
| Future Vol, veh/h | 4 | 5 | 0 | 3 | 8 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 5 | 0 | 3 | 9 | 0 |
| | | | | | | |
| Major/Minor | Major1 | | Major2 | | Minor1 | |
| Conflicting Flow All | 0 | 0 | 9 | 0 | 10 | 7 |
| Stage 1 | - | - | - | - | 7 | - |
| Stage 2 | - | - | - | - | 3 | - |
| 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 | - | - | 1611 | - | 1010 | 1075 |
| Stage 1 | - | - | - | - | 1016 | - |
| Stage 2 | - | - | - | - | 1020 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1611 | - | 1010 | 1075 |
| Mov Cap-2 Maneuver | - | - | - | - | 1010 | - |
| Stage 1 | - | - | - | - | 1016 | - |
| Stage 2 | - | - | - | - | 1020 | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | | WB | | NB | |
| HCM Control Delay, s | 0 | | 0 | | 8.6 | |
| HCM LOS | A | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | |
| Capacity (veh/h) | 1010 | - | - | 1611 | - | |
| HCM Lane V/C Ratio | 0.009 | - | - | - | - | |
| HCM Control Delay (s) | 8.6 | - | - | 0 | - | |
| HCM Lane LOS | A | - | - | A | - | |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - | |

HCM 6th TWSC
4: Road 4 & 57th Ave

Background (2024)
PM Peak Hour





| Intersection | | | | | | |
|--------------------------|---|------|--------|---|---|-------|
| Int Delay, s/veh | 0 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations |  | | |  |  | |
| Traffic Vol, veh/h | 4 | 0 | 0 | 3 | 0 | 0 |
| Future Vol, veh/h | 4 | 0 | 0 | 3 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 0 | 0 | 3 | 0 | 0 |
| | | | | | | |
| Major/Minor | Major1 | | Major2 | | Minor1 | |
| Conflicting Flow All | 0 | 0 | 4 | 0 | 7 | 4 |
| Stage 1 | - | - | - | - | 4 | - |
| Stage 2 | - | - | - | - | 3 | - |
| 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 | - | - | 1618 | - | 1014 | 1080 |
| Stage 1 | - | - | - | - | 1019 | - |
| Stage 2 | - | - | - | - | 1020 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1618 | - | 1014 | 1080 |
| Mov Cap-2 Maneuver | - | - | - | - | 1014 | - |
| Stage 1 | - | - | - | - | 1019 | - |
| Stage 2 | - | - | - | - | 1020 | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | | WB | | NB | |
| HCM Control Delay, s | 0 | | 0 | | 0 | |
| HCM LOS | A | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | |
| Capacity (veh/h) | - | - | - | 1618 | - | |
| HCM Lane V/C Ratio | - | - | - | - | - | |
| HCM Control Delay (s) | 0 | - | - | 0 | - | |
| HCM Lane LOS | A | - | - | A | - | |
| HCM 95th %tile Q(veh) | - | - | - | 0 | - | |

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|------|------|--------|-------|------|--------|-------|-------|--------|-------|-------|
| Int Delay, s/veh | 3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 0 | 0 | 4 | 16 | 0 | 0 | 3 | 0 | 15 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 4 | 16 | 0 | 0 | 3 | 0 | 15 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 4 | 17 | 0 | 0 | 3 | 0 | 16 | 0 | 0 | 0 |
| | | | | | | | | | | | | |
| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
| Conflicting Flow All | 0 | 0 | 0 | 4 | 0 | 0 | 36 | 36 | 2 | 44 | 38 | 0 |
| Stage 1 | - | - | - | - | - | - | 2 | 2 | - | 34 | 34 | - |
| Stage 2 | - | - | - | - | - | - | 34 | 34 | - | 10 | 4 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | - | - | - | 1618 | - | - | 970 | 856 | 1082 | 958 | 854 | - |
| Stage 1 | - | - | - | - | - | - | 1021 | 894 | - | 982 | 867 | - |
| Stage 2 | - | - | - | - | - | - | 982 | 867 | - | 1011 | 892 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | - | - | - | 1618 | - | - | - | 847 | 1082 | 936 | 845 | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | 847 | - | 936 | 845 | - |
| Stage 1 | - | - | - | - | - | - | 1021 | 894 | - | 982 | 857 | - |
| Stage 2 | - | - | - | - | - | - | 971 | 857 | - | 996 | 892 | - |
| | | | | | | | | | | | | |
| Approach | EB | | | WB | | | NB | | | SB | | |
| HCM Control Delay, s | 0 | | | 7.2 | | | | | | 0 | | |
| HCM LOS | | | | | | | - | | | A | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 | | | | |
| Capacity (veh/h) | - | - | - | - | 1618 | - | - | - | | | | |
| HCM Lane V/C Ratio | - | - | - | - | 0.011 | - | - | - | | | | |
| HCM Control Delay (s) | - | 0 | - | - | 7.2 | 0 | - | 0 | | | | |
| HCM Lane LOS | - | A | - | - | A | A | - | A | | | | |
| HCM 95th %tile Q(veh) | - | - | - | - | 0 | - | - | - | | | | |

HCM 6th TWSC
6: Orleans St & 57th Place/Private Dr

Background (2024)
PM Peak Hour

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|-------|--------|-------|--------|-------|--------|------|------|-------|------|------|
| Int Delay, s/veh | 1.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 27 | 0 | 18 | 0 | 0 | 51 | 20 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 27 | 0 | 18 | 0 | 0 | 51 | 20 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 29 | 0 | 20 | 0 | 0 | 55 | 22 | 0 | 0 |
| | | | | | | | | | | | | |
| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
| Conflicting Flow All | 82 | 99 | 0 | 72 | 72 | 28 | 0 | 0 | 0 | 55 | 0 | 0 |
| Stage 1 | 44 | 44 | - | 28 | 28 | - | - | - | - | - | - | - |
| Stage 2 | 38 | 55 | - | 44 | 44 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 905 | 791 | - | 919 | 818 | 1047 | - | - | - | 1550 | - | - |
| Stage 1 | 970 | 858 | - | 989 | 872 | - | - | - | - | - | - | - |
| Stage 2 | 977 | 849 | - | 970 | 858 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 879 | 780 | - | - | 807 | 1047 | - | - | - | 1550 | - | - |
| Mov Cap-2 Maneuver | 879 | 780 | - | - | 807 | - | - | - | - | - | - | - |
| Stage 1 | 970 | 846 | - | 989 | 872 | - | - | - | - | - | - | - |
| Stage 2 | 959 | 849 | - | 956 | 846 | - | - | - | - | - | - | - |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Approach | EB | | WB | | NB | | SB | | | | | |
| HCM Control Delay, s | 0 | | | | 0 | | 7.4 | | | | | |
| HCM LOS | A | | - | | | | | | | | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR | | | | |
| Capacity (veh/h) | - | - | - | - | - | 1550 | - | - | | | | |
| HCM Lane V/C Ratio | - | - | - | - | - | 0.014 | - | - | | | | |
| HCM Control Delay (s) | 0 | - | - | 0 | - | 7.4 | 0 | - | | | | |
| HCM Lane LOS | A | - | - | A | - | A | A | - | | | | |
| HCM 95th %tile Q(veh) | - | - | - | - | - | 0 | - | - | | | | |

| Intersection | | | | | | |
|--------------------------|---|---|---|------|---|------|
| Int Delay, s/veh | 0.6 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations |  |  |  | |  | |
| Traffic Vol, veh/h | 29 | 391 | 415 | 22 | 8 | 19 |
| Future Vol, veh/h | 29 | 391 | 415 | 22 | 8 | 19 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 200 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 32 | 425 | 451 | 24 | 9 | 21 |



















| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 475 | 0 | - | 0 | 740 |
| Stage 1 | - | - | - | - | 463 |
| Stage 2 | - | - | - | - | 277 |
| Critical Hdwy | 4.14 | - | - | - | 6.84 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 |
| Follow-up Hdwy | 2.22 | - | - | - | 3.52 |
| Pot Cap-1 Maneuver | 1083 | - | - | - | 352 |
| Stage 1 | - | - | - | - | 600 |
| Stage 2 | - | - | - | - | 745 |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1083 | - | - | - | 341 |
| Mov Cap-2 Maneuver | - | - | - | - | 341 |
| Stage 1 | - | - | - | - | 582 |
| Stage 2 | - | - | - | - | 745 |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.6 | 0 | 11.8 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 1083 | - | - | - | 558 |
| HCM Lane V/C Ratio | 0.029 | - | - | - | 0.053 |
| HCM Control Delay (s) | 8.4 | - | - | - | 11.8 |
| HCM Lane LOS | A | - | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.2 |

Timings
8: Picadilly Rd & E 56th Ave

Background (2024)
PM Peak Hour

| |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
| Lane Configurations |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 80 | 149 | 170 | 133 | 265 | 157 | 52 | 170 | 59 |
| Future Volume (vph) | 80 | 149 | 170 | 133 | 265 | 157 | 52 | 170 | 59 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | pm+pt | NA | pm+pt | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | 5 | 2 | 1 | 6 |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 5 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 12.0 | 32.0 | 32.0 | 13.0 | 33.0 | 16.0 | 28.0 | 17.0 | 29.0 |
| Total Split (%) | 13.3% | 35.6% | 35.6% | 14.4% | 36.7% | 17.8% | 31.1% | 18.9% | 32.2% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 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) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | Max | Max | None | Max | None | None | None | None |
| Act Effect Green (s) | 34.5 | 27.7 | 27.7 | 37.1 | 30.8 | 19.7 | 8.6 | 18.6 | 9.1 |
| Actuated g/C Ratio | 0.47 | 0.38 | 0.38 | 0.51 | 0.42 | 0.27 | 0.12 | 0.26 | 0.13 |
| v/c Ratio | 0.15 | 0.23 | 0.26 | 0.22 | 0.20 | 0.42 | 0.55 | 0.47 | 0.34 |
| Control Delay | 9.9 | 17.9 | 4.2 | 10.2 | 15.4 | 21.5 | 21.9 | 23.0 | 28.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 9.9 | 17.9 | 4.2 | 10.2 | 15.4 | 21.5 | 21.9 | 23.0 | 28.9 |
| LOS | A | B | A | B | B | C | C | C | C |
| Approach Delay | | 10.4 | | | 13.7 | | 21.7 | | 24.8 |
| Approach LOS | | B | | | B | | C | | C |

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 72.7

Natural Cycle: 65

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 16.5









Intersection LOS: B

Intersection Capacity Utilization 47.8%

ICU Level of Service A










Analysis Period (min) 15

Splits and Phases: 8: Picadilly Rd & E 56th Ave

| | | | |
|---|---|---|---|
|  |  |  |  |
| Ø1 | Ø2 | Ø3 | Ø4 |
| 17 s | 28 s | 13 s | 32 s |
|  |  |  |  |
| Ø5 | Ø6 | Ø7 | Ø8 |
| 16 s | 29 s | 12 s | 33 s |

























Queues
8: Picadilly Rd & E 56th Ave

Background (2024)
PM Peak Hour

| |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
| Lane Group Flow (vph) | 87 | 162 | 185 | 145 | 305 | 171 | 154 | 185 | 80 |
| v/c Ratio | 0.15 | 0.23 | 0.26 | 0.22 | 0.20 | 0.42 | 0.55 | 0.47 | 0.34 |
| Control Delay | 9.9 | 17.9 | 4.2 | 10.2 | 15.4 | 21.5 | 21.9 | 23.0 | 28.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 9.9 | 17.9 | 4.2 | 10.2 | 15.4 | 21.5 | 21.9 | 23.0 | 28.9 |
| Queue Length 50th (ft) | 17 | 49 | 0 | 30 | 45 | 57 | 26 | 62 | 28 |
| Queue Length 95th (ft) | 44 | 103 | 41 | 67 | 83 | 102 | 80 | 110 | 66 |
| Internal Link Dist (ft) | | 583 | | | 920 | | 498 | | 433 |
| Turn Bay Length (ft) | 350 | | | 150 | | 200 | | 250 | |
| Base Capacity (vph) | 584 | 708 | 716 | 658 | 1490 | 426 | 610 | 439 | 621 |
| 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 | 0.15 | 0.23 | 0.26 | 0.22 | 0.20 | 0.40 | 0.25 | 0.42 | 0.13 |
| Intersection Summary | | | | | | | | | |




HCM 6th Signalized Intersection Summary 8: Picadilly Rd & E 56th Ave




Background (2024)
PM Peak Hour




| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 80 | 149 | 170 | 133 | 265 | 16 | 157 | 52 | 89 | 170 | 59 | 15 |
| Future Volume (veh/h) | 80 | 149 | 170 | 133 | 265 | 16 | 157 | 52 | 89 | 170 | 59 | 15 |
| 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 | 87 | 162 | 185 | 145 | 288 | 17 | 171 | 57 | 97 | 185 | 64 | 16 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 616 | 776 | 658 | 607 | 1455 | 86 | 427 | 79 | 135 | 364 | 195 | 49 |
| Arrive On Green | 0.06 | 0.41 | 0.41 | 0.07 | 0.43 | 0.43 | 0.11 | 0.13 | 0.13 | 0.12 | 0.14 | 0.14 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 3411 | 200 | 1781 | 622 | 1058 | 1781 | 1444 | 361 |
| Grp Volume(v), veh/h | 87 | 162 | 185 | 145 | 149 | 156 | 171 | 0 | 154 | 185 | 0 | 80 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1777 | 1834 | 1781 | 0 | 1680 | 1781 | 0 | 1805 |
| Q Serve(g_s), s | 1.8 | 3.7 | 5.2 | 3.0 | 3.5 | 3.5 | 5.4 | 0.0 | 5.9 | 5.9 | 0.0 | 2.7 |
| Cycle Q Clear(g_c), s | 1.8 | 3.7 | 5.2 | 3.0 | 3.5 | 3.5 | 5.4 | 0.0 | 5.9 | 5.9 | 0.0 | 2.7 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.11 | 1.00 | | 0.63 | 1.00 | | 0.20 |
| Lane Grp Cap(c), veh/h | 616 | 776 | 658 | 607 | 758 | 783 | 427 | 0 | 214 | 364 | 0 | 244 |
| V/C Ratio(X) | 0.14 | 0.21 | 0.28 | 0.24 | 0.20 | 0.20 | 0.40 | 0.00 | 0.72 | 0.51 | 0.00 | 0.33 |
| Avail Cap(c_a), veh/h | 709 | 776 | 658 | 706 | 758 | 783 | 540 | 0 | 591 | 490 | 0 | 662 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 9.7 | 12.5 | 12.9 | 9.7 | 12.0 | 12.0 | 21.6 | 0.0 | 28.0 | 21.6 | 0.0 | 26.1 |
| Incr Delay (d2), s/veh | 0.1 | 0.6 | 1.1 | 0.2 | 0.6 | 0.6 | 0.6 | 0.0 | 4.5 | 1.1 | 0.0 | 0.8 |
| 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(95%),veh/ln | 1.0 | 2.6 | 3.1 | 1.7 | 2.3 | 2.4 | 3.7 | 0.0 | 4.3 | 4.1 | 0.0 | 2.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 9.8 | 13.1 | 14.0 | 9.9 | 12.6 | 12.6 | 22.2 | 0.0 | 32.5 | 22.7 | 0.0 | 26.9 |
| LnGrp LOS | A | B | B | A | B | B | C | A | C | C | A | C |
| Approach Vol, veh/h | 434 | | | 450 | | | 325 | | | 265 | | |
| Approach Delay, s/veh | 12.8 | | | 11.7 | | | 27.1 | | | 24.0 | | |
| Approach LOS | B | | | B | | | C | | | C | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 12.3 | 13.0 | 9.3 | 32.2 | 11.8 | 13.5 | 8.5 | 33.0 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 12.5 | 23.5 | 8.5 | 27.5 | 11.5 | 24.5 | 7.5 | 28.5 | | | | |
| Max Q Clear Time (g_c+I1), s | 7.9 | 7.9 | 5.0 | 7.2 | 7.4 | 4.7 | 3.8 | 5.5 | | | | |
| Green Ext Time (p_c), s | 0.2 | 0.6 | 0.1 | 1.3 | 0.2 | 0.3 | 0.0 | 1.5 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | 17.6 | | | | | | | | | | | |
| HCM 6th LOS | B | | | | | | | | | | | |

APPENDIX E. BUILDOUT (2024) TRAFFIC LOS WORKSHEET

| Intersection | | | | | | |
|--------------------------|--------|--------|--------|-------|------|------|
| Int Delay, s/veh | 0.2 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑ | ↑↑ | | | ↑ |
| Traffic Vol, veh/h | 0 | 509 | 303 | 6 | 0 | 16 |
| Future Vol, veh/h | 0 | 509 | 303 | 6 | 0 | 16 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 553 | 329 | 7 | 0 | 17 |
| | | | | | | |
| Major/Minor | Major1 | Major2 | Minor2 | | | |
| Conflicting Flow All | - | 0 | - | 0 | - | 168 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.32 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 847 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 847 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | WB | | SB | | |
| HCM Control Delay, s | 0 | 0 | | 9.3 | | |
| HCM LOS | A | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 | | |
| Capacity (veh/h) | - | - | - | 847 | | |
| HCM Lane V/C Ratio | - | - | - | 0.021 | | |
| HCM Control Delay (s) | - | - | - | 9.3 | | |
| HCM Lane LOS | - | - | - | A | | |
| HCM 95th %tile Q(veh) | - | - | - | 0.1 | | |

| Intersection | | | | | | |
|--------------------------|---|----------|---|--------|-------|---|
| Int Delay, s/veh | 5.3 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  | |  | | |  |
| Traffic Vol, veh/h | 12 | 3 | 3 | 3 | 2 | 4 |
| Future Vol, veh/h | 12 | 3 | 3 | 3 | 2 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 13 | 3 | 3 | 3 | 2 | 4 |
| Major/Minor | Minor1 | Major1 | | Major2 | | |
| Conflicting Flow All | 13 | 5 | 0 | 0 | 6 | 0 |
| Stage 1 | 5 | - | - | - | - | - |
| Stage 2 | 8 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 1006 | 1078 | - | - | 1615 | - |
| Stage 1 | 1018 | - | - | - | - | - |
| Stage 2 | 1015 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 1005 | 1078 | - | - | 1615 | - |
| Mov Cap-2 Maneuver | 1005 | - | - | - | - | - |
| Stage 1 | 1018 | - | - | - | - | - |
| Stage 2 | 1014 | - | - | - | - | - |
| Approach | WB | NB | | SB | | |
| HCM Control Delay, s | 8.6 | 0 | | 2.4 | | |
| HCM LOS | A | | | | | |
| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | | SBL | SBT | |
| Capacity (veh/h) | - | - 1019 | | 1615 | - | |
| HCM Lane V/C Ratio | - | - 0.016 | | 0.001 | - | |
| HCM Control Delay (s) | - | - 8.6 | | 7.2 | 0 | |
| HCM Lane LOS | - | - A | | A | A | |
| HCM 95th %tile Q(veh) | - | - 0 | | 0 | - | |

| Intersection | | | | | | |
|--------------------------|---|------|--------|---|---|-------|
| Int Delay, s/veh | 2.6 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations |  | | |  |  | |
| Traffic Vol, veh/h | 3 | 6 | 0 | 5 | 6 | 0 |
| Future Vol, veh/h | 3 | 6 | 0 | 5 | 6 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 3 | 7 | 0 | 5 | 7 | 0 |
| | | | | | | |
| Major/Minor | Major1 | | Major2 | | Minor1 | |
| Conflicting Flow All | 0 | 0 | 10 | 0 | 12 | 7 |
| Stage 1 | - | - | - | - | 7 | - |
| Stage 2 | - | - | - | - | 5 | - |
| 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 | - | - | 1610 | - | 1008 | 1075 |
| Stage 1 | - | - | - | - | 1016 | - |
| Stage 2 | - | - | - | - | 1018 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1610 | - | 1008 | 1075 |
| Mov Cap-2 Maneuver | - | - | - | - | 1008 | - |
| Stage 1 | - | - | - | - | 1016 | - |
| Stage 2 | - | - | - | - | 1018 | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | | WB | | NB | |
| HCM Control Delay, s | 0 | | 0 | | 8.6 | |
| HCM LOS | A | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | |
| Capacity (veh/h) | 1008 | - | - | 1610 | - | |
| HCM Lane V/C Ratio | 0.006 | - | - | - | - | |
| HCM Control Delay (s) | 8.6 | - | - | 0 | - | |
| HCM Lane LOS | A | - | - | A | - | |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - | |







| Intersection | | | | | | |
|--------------------------|---|------|--------|---|---|-------|
| Int Delay, s/veh | 1.1 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations |  | | |  |  | |
| Traffic Vol, veh/h | 2 | 1 | 0 | 4 | 1 | 0 |
| Future Vol, veh/h | 2 | 1 | 0 | 4 | 1 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2 | 1 | 0 | 4 | 1 | 0 |
| | | | | | | |
| Major/Minor | Major1 | | Major2 | | Minor1 | |
| Conflicting Flow All | 0 | 0 | 3 | 0 | 7 | 3 |
| Stage 1 | - | - | - | - | 3 | - |
| Stage 2 | - | - | - | - | 4 | - |
| 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 | - | - | 1619 | - | 1014 | 1081 |
| Stage 1 | - | - | - | - | 1020 | - |
| Stage 2 | - | - | - | - | 1019 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1619 | - | 1014 | 1081 |
| Mov Cap-2 Maneuver | - | - | - | - | 1014 | - |
| Stage 1 | - | - | - | - | 1020 | - |
| Stage 2 | - | - | - | - | 1019 | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | | WB | | NB | |
| HCM Control Delay, s | 0 | | 0 | | 8.6 | |
| HCM LOS | A | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | |
| Capacity (veh/h) | 1014 | - | - | 1619 | - | |
| HCM Lane V/C Ratio | 0.001 | - | - | - | - | |
| HCM Control Delay (s) | 8.6 | - | - | 0 | - | |
| HCM Lane LOS | A | - | - | A | - | |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - | |

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|------|------|--------|-------|------|--------|-------|-------|--------|-------|-------|
| Int Delay, s/veh | 2.2 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 0 | 0 | 2 | 21 | 0 | 0 | 4 | 0 | 43 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 2 | 21 | 0 | 0 | 4 | 0 | 43 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 2 | 23 | 0 | 0 | 4 | 0 | 47 | 0 | 0 | 0 |
| | | | | | | | | | | | | |
| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
| Conflicting Flow All | 0 | 0 | 0 | 2 | 0 | 0 | 47 | 47 | 1 | 71 | 48 | 0 |
| Stage 1 | - | - | - | - | - | - | 1 | 1 | - | 46 | 46 | - |
| Stage 2 | - | - | - | - | - | - | 46 | 46 | - | 25 | 2 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | - | - | - | 1620 | - | - | 954 | 845 | 1084 | 920 | 844 | - |
| Stage 1 | - | - | - | - | - | - | 1022 | 895 | - | 968 | 857 | - |
| Stage 2 | - | - | - | - | - | - | 968 | 857 | - | 993 | 894 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | - | - | - | 1620 | - | - | - | 833 | 1084 | 871 | 832 | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | 833 | - | 871 | 832 | - |
| Stage 1 | - | - | - | - | - | - | 1022 | 895 | - | 968 | 845 | - |
| Stage 2 | - | - | - | - | - | - | 954 | 845 | - | 950 | 894 | - |
| | | | | | | | | | | | | |
| Approach | EB | | | WB | | | NB | | | SB | | |
| HCM Control Delay, s | 0 | | | 7.3 | | | | | | 0 | | |
| HCM LOS | | | | | | | - | | | A | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 | | | | |
| Capacity (veh/h) | - | - | - | - | 1620 | - | - | - | | | | |
| HCM Lane V/C Ratio | - | - | - | - | 0.014 | - | - | - | | | | |
| HCM Control Delay (s) | - | 0 | - | - | 7.3 | 0 | - | 0 | | | | |
| HCM Lane LOS | - | A | - | - | A | A | - | A | | | | |
| HCM 95th %tile Q(veh) | - | - | - | - | 0 | - | - | - | | | | |

HCM 6th TWSC
6: Orleans St & 57th Place/Private Dr



















Buildout (2024)
AM Peak Hour

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|-------|--------|-------|-------|--------|-------|------|--------|-------|------|------|
| Int Delay, s/veh | 7.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 18 | 0 | 36 | 39 | 0 | 29 | 19 | 0 | 18 | 15 | 0 | 8 |
| Future Vol, veh/h | 18 | 0 | 36 | 39 | 0 | 29 | 19 | 0 | 18 | 15 | 0 | 8 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 20 | 0 | 39 | 42 | 0 | 32 | 21 | 0 | 20 | 16 | 0 | 9 |
| | | | | | | | | | | | | |
| Major/Minor | Minor2 | | Minor1 | | | Major1 | | | Major2 | | | |
| Conflicting Flow All | 105 | 99 | 5 | 108 | 93 | 10 | 9 | 0 | 0 | 20 | 0 | 0 |
| Stage 1 | 37 | 37 | - | 52 | 52 | - | - | - | - | - | - | - |
| Stage 2 | 68 | 62 | - | 56 | 41 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 875 | 791 | 1078 | 871 | 797 | 1071 | 1611 | - | - | 1596 | - | - |
| Stage 1 | 978 | 864 | - | 961 | 852 | - | - | - | - | - | - | - |
| Stage 2 | 942 | 843 | - | 956 | 861 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 835 | 773 | 1078 | 825 | 779 | 1071 | 1611 | - | - | 1596 | - | - |
| Mov Cap-2 Maneuver | 835 | 773 | - | 825 | 779 | - | - | - | - | - | - | - |
| Stage 1 | 965 | 855 | - | 949 | 841 | - | - | - | - | - | - | - |
| Stage 2 | 902 | 832 | - | 912 | 852 | - | - | - | - | - | - | - |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Approach | EB | | WB | | | NB | | | SB | | | |
| HCM Control Delay, s | 8.9 | | 9.3 | | | 3.7 | | | 4.7 | | | |
| HCM LOS | A | | A | | | | | | | | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR | | | | |
| Capacity (veh/h) | 1611 | - | - | 983 | 915 | 1596 | - | - | | | | |
| HCM Lane V/C Ratio | 0.013 | - | - | 0.06 | 0.081 | 0.01 | - | - | | | | |
| HCM Control Delay (s) | 7.3 | 0 | - | 8.9 | 9.3 | 7.3 | 0 | - | | | | |
| HCM Lane LOS | A | A | - | A | A | A | A | - | | | | |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.2 | 0.3 | 0 | - | - | | | | |

| Intersection | | | | | | |
|--------------------------|---|---|---|---|---|---|
| Int Delay, s/veh | 1.2 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations |  |  |  |  |  |  |
| Traffic Vol, veh/h | 21 | 488 | 269 | 16 | 35 | 40 |
| Future Vol, veh/h | 21 | 488 | 269 | 16 | 35 | 40 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 200 | - | - | 45 | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 23 | 530 | 292 | 17 | 38 | 43 |
| | | | | | | |
| Major/Minor | Major1 | Major2 | | Minor2 | | |
| Conflicting Flow All | 309 | 0 | - | 0 | 603 | 146 |
| Stage 1 | - | - | - | - | 292 | - |
| Stage 2 | - | - | - | - | 311 | - |
| Critical Hdwy | 4.14 | - | - | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | 2.22 | - | - | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | 1248 | - | - | - | 430 | 875 |
| Stage 1 | - | - | - | - | 732 | - |
| Stage 2 | - | - | - | - | 716 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1248 | - | - | - | 422 | 875 |
| Mov Cap-2 Maneuver | - | - | - | - | 422 | - |
| Stage 1 | - | - | - | - | 719 | - |
| Stage 2 | - | - | - | - | 716 | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | WB | | SB | | |
| HCM Control Delay, s | 0.3 | 0 | | 12.2 | | |
| HCM LOS | B | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | |
| Capacity (veh/h) | 1248 | - | - | - | 583 | |
| HCM Lane V/C Ratio | 0.018 | - | - | - | 0.14 | |
| HCM Control Delay (s) | 7.9 | - | - | - | 12.2 | |
| HCM Lane LOS | A | - | - | - | B | |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.5 | |

Timings
8: Picadilly Rd & E 56th Ave

Buildout (2024)
AM Peak Hour

| |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
| Lane Configurations |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 94 | 250 | 179 | 87 | 105 | 116 | 54 | 167 | 51 |
| Future Volume (vph) | 94 | 250 | 179 | 87 | 105 | 116 | 54 | 167 | 51 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | pm+pt | NA | pm+pt | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | 5 | 2 | 1 | 6 |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 5 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 12.0 | 32.0 | 32.0 | 12.0 | 32.0 | 13.0 | 29.0 | 17.0 | 33.0 |
| Total Split (%) | 13.3% | 35.6% | 35.6% | 13.3% | 35.6% | 14.4% | 32.2% | 18.9% | 36.7% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 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) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | Max | Max | None | Max | None | None | None | None |
| Act Effect Green (s) | 33.6 | 28.0 | 28.0 | 33.4 | 28.0 | 16.6 | 8.6 | 22.5 | 14.0 |
| Actuated g/C Ratio | 0.48 | 0.40 | 0.40 | 0.48 | 0.40 | 0.24 | 0.12 | 0.32 | 0.20 |
| v/c Ratio | 0.16 | 0.36 | 0.26 | 0.17 | 0.09 | 0.35 | 0.54 | 0.46 | 0.31 |
| Control Delay | 10.0 | 18.7 | 4.0 | 10.2 | 14.8 | 20.3 | 22.0 | 21.6 | 15.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 10.0 | 18.7 | 4.0 | 10.2 | 14.8 | 20.3 | 22.0 | 21.6 | 15.9 |
| LOS | A | B | A | B | B | C | C | C | B |
| Approach Delay | | 12.1 | | | 12.8 | | 21.2 | | 19.3 |
| Approach LOS | | B | | | B | | C | | B |

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 69.8

Natural Cycle: 65

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 15.7









Intersection LOS: B

Intersection Capacity Utilization 50.5%

ICU Level of Service A










Analysis Period (min) 15

Splits and Phases: 8: Picadilly Rd & E 56th Ave

| | | | |
|---|---|---|---|
|  |  |  |  |
| Ø1 | Ø2 | Ø3 | Ø4 |
| 17 s | 29 s | 12 s | 32 s |
|  |  |  |  |
| Ø5 | Ø6 | Ø7 | Ø8 |
| 13 s | 33 s | 12 s | 32 s |

Queues
8: Picadilly Rd & E 56th Ave























Buildout (2024)
AM Peak Hour

| |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
| Lane Group Flow (vph) | 102 | 272 | 195 | 95 | 123 | 126 | 156 | 182 | 125 |
| v/c Ratio | 0.16 | 0.36 | 0.26 | 0.17 | 0.09 | 0.35 | 0.54 | 0.46 | 0.31 |
| Control Delay | 10.0 | 18.7 | 4.0 | 10.2 | 14.8 | 20.3 | 22.0 | 21.6 | 15.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 10.0 | 18.7 | 4.0 | 10.2 | 14.8 | 20.3 | 22.0 | 21.6 | 15.9 |
| Queue Length 50th (ft) | 20 | 85 | 0 | 19 | 16 | 40 | 28 | 60 | 22 |
| Queue Length 95th (ft) | 50 | 166 | 41 | 47 | 37 | 76 | 82 | 106 | 65 |
| Internal Link Dist (ft) | | 583 | | | 920 | | 498 | | 433 |
| Turn Bay Length (ft) | 350 | | | 150 | | 200 | | 250 | |
| Base Capacity (vph) | 662 | 748 | 752 | 556 | 1408 | 374 | 661 | 437 | 749 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.15 | 0.36 | 0.26 | 0.17 | 0.09 | 0.34 | 0.24 | 0.42 | 0.17 |
| Intersection Summary | | | | | | | | | |




HCM 6th Signalized Intersection Summary

8: Picadilly Rd & E 56th Ave

Buildout (2024)
AM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  | |  |  |  |
| Traffic Volume (veh/h) | 94 | 250 | 179 | 87 | 105 | 8 | 116 | 54 | 89 | 167 | 51 | 64 |
| Future Volume (veh/h) | 94 | 250 | 179 | 87 | 105 | 8 | 116 | 54 | 89 | 167 | 51 | 64 |
| 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 | 102 | 272 | 195 | 95 | 114 | 9 | 126 | 59 | 97 | 182 | 55 | 70 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 727 | 785 | 665 | 518 | 1396 | 109 | 377 | 82 | 135 | 364 | 121 | 154 |
| Arrive On Green | 0.06 | 0.42 | 0.42 | 0.06 | 0.42 | 0.42 | 0.08 | 0.13 | 0.13 | 0.12 | 0.16 | 0.16 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 3339 | 261 | 1781 | 636 | 1046 | 1781 | 748 | 951 |
| Grp Volume(v), veh/h | 102 | 272 | 195 | 95 | 60 | 63 | 126 | 0 | 156 | 182 | 0 | 125 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1777 | 1823 | 1781 | 0 | 1682 | 1781 | 0 | 1699 |
| Q Serve(g_s), s | 2.1 | 6.5 | 5.4 | 1.9 | 1.3 | 1.4 | 3.9 | 0.0 | 5.9 | 5.7 | 0.0 | 4.4 |
| Cycle Q Clear(g_c), s | 2.1 | 6.5 | 5.4 | 1.9 | 1.3 | 1.4 | 3.9 | 0.0 | 5.9 | 5.7 | 0.0 | 4.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.14 | 1.00 | | 0.62 | 1.00 | | 0.56 |
| Lane Grp Cap(c), veh/h | 727 | 785 | 665 | 518 | 743 | 762 | 377 | 0 | 217 | 364 | 0 | 275 |
| V/C Ratio(X) | 0.14 | 0.35 | 0.29 | 0.18 | 0.08 | 0.08 | 0.33 | 0.00 | 0.72 | 0.50 | 0.00 | 0.45 |
| Avail Cap(c_a), veh/h | 816 | 785 | 665 | 609 | 743 | 762 | 460 | 0 | 626 | 497 | 0 | 736 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 9.4 | 13.0 | 12.6 | 9.7 | 11.5 | 11.5 | 22.1 | 0.0 | 27.5 | 21.2 | 0.0 | 24.9 |
| Incr Delay (d2), s/veh | 0.1 | 1.2 | 1.1 | 0.2 | 0.2 | 0.2 | 0.5 | 0.0 | 4.4 | 1.1 | 0.0 | 1.2 |
| 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(95%),veh/ln | 1.2 | 4.5 | 3.2 | 1.1 | 0.9 | 0.9 | 2.7 | 0.0 | 4.3 | 3.9 | 0.0 | 3.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 9.5 | 14.2 | 13.8 | 9.9 | 11.8 | 11.8 | 22.6 | 0.0 | 31.9 | 22.3 | 0.0 | 26.1 |
| LnGrp LOS | A | B | B | A | B | B | C | A | C | C | A | C |
| Approach Vol, veh/h | 569 | | | 218 | | | 282 | | | 307 | | |
| Approach Delay, s/veh | 13.2 | | | 10.9 | | | 27.7 | | | 23.8 | | |
| Approach LOS | B | | | B | | | C | | | C | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 12.1 | 13.0 | 8.6 | 32.1 | 9.9 | 15.2 | 8.7 | 32.0 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 12.5 | 24.5 | 7.5 | 27.5 | 8.5 | 28.5 | 7.5 | 27.5 | | | | |
| Max Q Clear Time (g_c+I1), s | 7.7 | 7.9 | 3.9 | 8.5 | 5.9 | 6.4 | 4.1 | 3.4 | | | | |
| Green Ext Time (p_c), s | 0.2 | 0.7 | 0.1 | 1.9 | 0.1 | 0.6 | 0.1 | 0.5 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | 18.2 | | | | | | | | | | | |
| HCM 6th LOS | B | | | | | | | | | | | |




| Intersection | | | | | | |
|--------------------------|--------|--------|--------|-------|------|------|
| Int Delay, s/veh | 0.2 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑ | ↑↑ | | | ↗ |
| Traffic Vol, veh/h | 0 | 444 | 436 | 14 | 0 | 15 |
| Future Vol, veh/h | 0 | 444 | 436 | 14 | 0 | 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 | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 483 | 474 | 15 | 0 | 16 |
| | | | | | | |
| Major/Minor | Major1 | Major2 | Minor2 | | | |
| Conflicting Flow All | - | 0 | - | 0 | - | 245 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.32 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 755 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 755 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | WB | | SB | | |
| HCM Control Delay, s | 0 | 0 | | 9.9 | | |
| HCM LOS | A | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 | | |
| Capacity (veh/h) | - | - | - | 755 | | |
| HCM Lane V/C Ratio | - | - | - | 0.022 | | |
| HCM Control Delay (s) | - | - | - | 9.9 | | |
| HCM Lane LOS | - | - | - | A | | |
| HCM 95th %tile Q(veh) | - | - | - | 0.1 | | |

| Intersection | | | | | | |
|--------------------------|---|------|---|------|------|---|
| Int Delay, s/veh | 3.6 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  | |  | | |  |
| Traffic Vol, veh/h | 10 | 2 | 8 | 6 | 2 | 5 |
| Future Vol, veh/h | 10 | 2 | 8 | 6 | 2 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 2 | 9 | 7 | 2 | 5 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 22 | 13 | 0 |
| Stage 1 | 13 | - | - |
| Stage 2 | 9 | - | - |
| Critical Hdwy | 6.42 | 6.22 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - |
| Pot Cap-1 Maneuver | 995 | 1067 | - |
| Stage 1 | 1010 | - | - |
| Stage 2 | 1014 | - | - |
| Platoon blocked, % | | - | - |
| Mov Cap-1 Maneuver | 994 | 1067 | - |
| Mov Cap-2 Maneuver | 994 | - | - |
| Stage 1 | 1010 | - | - |
| Stage 2 | 1013 | - | - |




| Approach | WB | NB | SB |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 8.6 | 0 | 2.1 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h) | - | - | 1005 | 1602 |
| HCM Lane V/C Ratio | - | - | 0.013 | 0.001 |
| HCM Control Delay (s) | - | - | 8.6 | 7.2 |
| HCM Lane LOS | - | - | A | A |
| HCM 95th %tile Q(veh) | - | - | 0 | 0 |

| Intersection | | | | | | |
|--------------------------|---|------|--------|---|---|-------|
| Int Delay, s/veh | 3.2 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations |  | | |  |  | |
| Traffic Vol, veh/h | 6 | 7 | 0 | 4 | 10 | 0 |
| Future Vol, veh/h | 6 | 7 | 0 | 4 | 10 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 7 | 8 | 0 | 4 | 11 | 0 |
| | | | | | | |
| Major/Minor | Major1 | | Major2 | | Minor1 | |
| Conflicting Flow All | 0 | 0 | 15 | 0 | 15 | 11 |
| Stage 1 | - | - | - | - | 11 | - |
| Stage 2 | - | - | - | - | 4 | - |
| 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 | - | - | 1603 | - | 1004 | 1070 |
| Stage 1 | - | - | - | - | 1012 | - |
| Stage 2 | - | - | - | - | 1019 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1603 | - | 1004 | 1070 |
| Mov Cap-2 Maneuver | - | - | - | - | 1004 | - |
| Stage 1 | - | - | - | - | 1012 | - |
| Stage 2 | - | - | - | - | 1019 | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | | WB | | NB | |
| HCM Control Delay, s | 0 | | 0 | | 8.6 | |
| HCM LOS | A | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | |
| Capacity (veh/h) | 1004 | - | - | 1603 | - | |
| HCM Lane V/C Ratio | 0.011 | - | - | - | - | |
| HCM Control Delay (s) | 8.6 | - | - | 0 | - | |
| HCM Lane LOS | A | - | - | A | - | |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - | |

HCM 6th TWSC
4: Road 4 & 57th Ave

Buildout (2024)
PM Peak Hour

| Intersection | | | | | | |
|--------------------------|---|------|--------|---|---|-------|
| Int Delay, s/veh | 0.9 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations |  | | |  |  | |
| Traffic Vol, veh/h | 5 | 1 | 0 | 3 | 1 | 0 |
| Future Vol, veh/h | 5 | 1 | 0 | 3 | 1 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 1 | 0 | 3 | 1 | 0 |
| | | | | | | |
| Major/Minor | Major1 | | Major2 | | Minor1 | |
| Conflicting Flow All | 0 | 0 | 6 | 0 | 9 | 6 |
| Stage 1 | - | - | - | - | 6 | - |
| Stage 2 | - | - | - | - | 3 | - |
| 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 | - | - | 1615 | - | 1011 | 1077 |
| Stage 1 | - | - | - | - | 1017 | - |
| Stage 2 | - | - | - | - | 1020 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1615 | - | 1011 | 1077 |
| Mov Cap-2 Maneuver | - | - | - | - | 1011 | - |
| Stage 1 | - | - | - | - | 1017 | - |
| Stage 2 | - | - | - | - | 1020 | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | | WB | | NB | |
| HCM Control Delay, s | 0 | | 0 | | 8.6 | |
| HCM LOS | A | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | |
| Capacity (veh/h) | 1011 | - | - | 1615 | - | |
| HCM Lane V/C Ratio | 0.001 | - | - | - | - | |
| HCM Control Delay (s) | 8.6 | - | - | 0 | - | |
| HCM Lane LOS | A | - | - | A | - | |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 0 | 0 | 5 | 33 | 0 | 0 | 3 | 0 | 29 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 5 | 33 | 0 | 0 | 3 | 0 | 29 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 5 | 36 | 0 | 0 | 3 | 0 | 32 | 0 | 0 | 0 |





| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|-------|-------|--------|-------|-------|
| Conflicting Flow All | 0 | 0 | 0 | 5 | 0 | 0 | 75 | 75 | 3 | 91 | 77 | 0 |
| Stage 1 | - | - | - | - | - | - | 3 | 3 | - | 72 | 72 | - |
| Stage 2 | - | - | - | - | - | - | 72 | 72 | - | 19 | 5 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | - | - | - | 1616 | - | - | 915 | 815 | 1081 | 893 | 813 | - |
| Stage 1 | - | - | - | - | - | - | 1020 | 893 | - | 938 | 835 | - |
| Stage 2 | - | - | - | - | - | - | 938 | 835 | - | 1000 | 892 | - |
| Platoon blocked, % | - | - | - | - | - | - | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1616 | - | - | - | 797 | 1081 | 853 | 795 | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | 797 | - | 853 | 795 | - |
| Stage 1 | - | - | - | - | - | - | 1020 | 893 | - | 938 | 817 | - |
| Stage 2 | - | - | - | - | - | - | 917 | 817 | - | 971 | 892 | - |







| Approach | EB | WB | NB | SB |
|----------------------|----|-----|----|----|
| HCM Control Delay, s | 0 | 7.3 | | 0 |
| HCM LOS | | | - | A |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h) | - | - | - | - | 1616 | - | - | - |
| HCM Lane V/C Ratio | - | - | - | - | 0.022 | - | - | - |
| HCM Control Delay (s) | - | 0 | - | - | 7.3 | 0 | - | 0 |
| HCM Lane LOS | - | A | - | - | A | A | - | A |
| HCM 95th %tile Q(veh) | - | - | - | - | 0.1 | - | - | - |

HCM 6th TWSC
6: Orleans St & 57th Place/Private Dr



















Buildout (2024)
PM Peak Hour

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|---|--------|-------|---|-------|--------|---|------|-------|---|------|
| Int Delay, s/veh | 5.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Vol, veh/h | 14 | 0 | 28 | 27 | 0 | 18 | 42 | 0 | 51 | 20 | 0 | 18 |
| Future Vol, veh/h | 14 | 0 | 28 | 27 | 0 | 18 | 42 | 0 | 51 | 20 | 0 | 18 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 15 | 0 | 30 | 29 | 0 | 20 | 46 | 0 | 55 | 22 | 0 | 20 |
| | | | | | | | | | | | | |
| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
| Conflicting Flow All | 184 | 201 | 10 | 189 | 184 | 28 | 20 | 0 | 0 | 55 | 0 | 0 |
| Stage 1 | 54 | 54 | - | 120 | 120 | - | - | - | - | - | - | - |
| Stage 2 | 130 | 147 | - | 69 | 64 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 777 | 695 | 1071 | 771 | 710 | 1047 | 1596 | - | - | 1550 | - | - |
| Stage 1 | 958 | 850 | - | 884 | 796 | - | - | - | - | - | - | - |
| Stage 2 | 874 | 775 | - | 941 | 842 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 737 | 664 | 1071 | 724 | 679 | 1047 | 1596 | - | - | 1550 | - | - |
| Mov Cap-2 Maneuver | 737 | 664 | - | 724 | 679 | - | - | - | - | - | - | - |
| Stage 1 | 929 | 838 | - | 857 | 772 | - | - | - | - | - | - | - |
| Stage 2 | 832 | 752 | - | 901 | 830 | - | - | - | - | - | - | - |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Approach | EB | | WB | | NB | | SB | | | | | |
| HCM Control Delay, s | 9.1 | | 9.6 | | 3.3 | | 3.9 | | | | | |
| HCM LOS | A | | A | | | | | | | | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR | | | | |
| Capacity (veh/h) | 1596 | - | - | 930 | 826 | 1550 | - | - | | | | |
| HCM Lane V/C Ratio | 0.029 | - | - | 0.049 | 0.059 | 0.014 | - | - | | | | |
| HCM Control Delay (s) | 7.3 | 0 | - | 9.1 | 9.6 | 7.4 | 0 | - | | | | |
| HCM Lane LOS | A | A | - | A | A | A | A | - | | | | |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.2 | 0.2 | 0 | - | - | | | | |

| Intersection | | | | | | |
|--------------------------|---|---|---|---|---|---|
| Int Delay, s/veh | 1.3 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations |  |  |  |  |  |  |
| Traffic Vol, veh/h | 53 | 391 | 421 | 40 | 26 | 29 |
| Future Vol, veh/h | 53 | 391 | 421 | 40 | 26 | 29 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 200 | - | - | 45 | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 58 | 425 | 458 | 43 | 28 | 32 |
| | | | | | | |
| Major/Minor | Major1 | Major2 | Minor2 | | | |
| Conflicting Flow All | 501 | 0 | - | 0 | 787 | 229 |
| Stage 1 | - | - | - | - | 458 | - |
| Stage 2 | - | - | - | - | 329 | - |
| Critical Hdwy | 4.14 | - | - | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | 2.22 | - | - | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | 1059 | - | - | - | 329 | 774 |
| Stage 1 | - | - | - | - | 604 | - |
| Stage 2 | - | - | - | - | 701 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1059 | - | - | - | 311 | 774 |
| Mov Cap-2 Maneuver | - | - | - | - | 311 | - |
| Stage 1 | - | - | - | - | 571 | - |
| Stage 2 | - | - | - | - | 701 | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | WB | | SB | | |
| HCM Control Delay, s | 1 | 0 | | 14.1 | | |
| HCM LOS | B | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | |
| Capacity (veh/h) | 1059 | - | - | - | 454 | |
| HCM Lane V/C Ratio | 0.054 | - | - | - | 0.132 | |
| HCM Control Delay (s) | 8.6 | - | - | - | 14.1 | |
| HCM Lane LOS | A | - | - | - | B | |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - | 0.5 | |

Timings
8: Picadilly Rd & E 56th Ave

Buildout (2024)
PM Peak Hour

| |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
| Lane Configurations |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 80 | 157 | 180 | 133 | 275 | 171 | 52 | 170 | 59 |
| Future Volume (vph) | 80 | 157 | 180 | 133 | 275 | 171 | 52 | 170 | 59 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | pm+pt | NA | pm+pt | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | 5 | 2 | 1 | 6 |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 5 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 12.0 | 32.0 | 32.0 | 13.0 | 33.0 | 16.0 | 28.0 | 17.0 | 29.0 |
| Total Split (%) | 13.3% | 35.6% | 35.6% | 14.4% | 36.7% | 17.8% | 31.1% | 18.9% | 32.2% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 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) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | Max | Max | None | Max | None | None | None | None |
| Act Effect Green (s) | 34.5 | 27.7 | 27.7 | 37.1 | 30.8 | 20.1 | 8.7 | 18.5 | 9.0 |
| Actuated g/C Ratio | 0.47 | 0.38 | 0.38 | 0.51 | 0.42 | 0.28 | 0.12 | 0.25 | 0.12 |
| v/c Ratio | 0.15 | 0.24 | 0.27 | 0.23 | 0.21 | 0.45 | 0.55 | 0.47 | 0.34 |
| Control Delay | 10.0 | 18.0 | 4.1 | 10.2 | 15.5 | 22.1 | 21.7 | 23.1 | 29.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 10.0 | 18.0 | 4.1 | 10.2 | 15.5 | 22.1 | 21.7 | 23.1 | 29.1 |
| LOS | A | B | A | B | B | C | C | C | C |
| Approach Delay | | 10.5 | | | 13.8 | | 21.9 | | 24.9 |
| Approach LOS | | B | | | B | | C | | C |

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 72.8

Natural Cycle: 65

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 16.6









Intersection LOS: B

Intersection Capacity Utilization 48.2%

ICU Level of Service A










Analysis Period (min) 15

Splits and Phases: 8: Picadilly Rd & E 56th Ave

| | | | |
|---|---|---|---|
|  |  |  |  |
| Ø1 | Ø2 | Ø3 | Ø4 |
| 17 s | 28 s | 13 s | 32 s |
|  |  |  |  |
| Ø5 | Ø6 | Ø7 | Ø8 |
| 16 s | 29 s | 12 s | 33 s |






















Queues
8: Picadilly Rd & E 56th Ave

Buildout (2024)
PM Peak Hour

| |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
| Lane Group Flow (vph) | 87 | 171 | 196 | 145 | 316 | 186 | 154 | 185 | 80 |
| v/c Ratio | 0.15 | 0.24 | 0.27 | 0.23 | 0.21 | 0.45 | 0.55 | 0.47 | 0.34 |
| Control Delay | 10.0 | 18.0 | 4.1 | 10.2 | 15.5 | 22.1 | 21.7 | 23.1 | 29.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 10.0 | 18.0 | 4.1 | 10.2 | 15.5 | 22.1 | 21.7 | 23.1 | 29.1 |
| Queue Length 50th (ft) | 17 | 52 | 0 | 30 | 47 | 63 | 26 | 62 | 28 |
| Queue Length 95th (ft) | 44 | 108 | 42 | 67 | 86 | 111 | 80 | 110 | 66 |
| Internal Link Dist (ft) | | 583 | | | 920 | | 498 | | 433 |
| Turn Bay Length (ft) | 350 | | | 150 | | 200 | | 250 | |
| Base Capacity (vph) | 579 | 707 | 722 | 649 | 1488 | 424 | 609 | 436 | 620 |
| 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 | 0.15 | 0.24 | 0.27 | 0.22 | 0.21 | 0.44 | 0.25 | 0.42 | 0.13 |
| Intersection Summary | | | | | | | | | |




HCM 6th Signalized Intersection Summary 8: Picadilly Rd & E 56th Ave




Buildout (2024)
PM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  | |  |  | |
| Traffic Volume (veh/h) | 80 | 157 | 180 | 133 | 275 | 16 | 171 | 52 | 89 | 170 | 59 | 15 |
| Future Volume (veh/h) | 80 | 157 | 180 | 133 | 275 | 16 | 171 | 52 | 89 | 170 | 59 | 15 |
| 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 | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 87 | 171 | 196 | 145 | 299 | 17 | 186 | 57 | 97 | 185 | 64 | 16 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 610 | 776 | 658 | 597 | 1459 | 83 | 430 | 79 | 135 | 364 | 184 | 46 |
| Arrive On Green | 0.06 | 0.41 | 0.41 | 0.07 | 0.43 | 0.43 | 0.12 | 0.13 | 0.13 | 0.12 | 0.13 | 0.13 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 3419 | 194 | 1781 | 622 | 1058 | 1781 | 1444 | 361 |
| Grp Volume(v), veh/h | 87 | 171 | 196 | 145 | 155 | 161 | 186 | 0 | 154 | 185 | 0 | 80 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1777 | 1836 | 1781 | 0 | 1680 | 1781 | 0 | 1805 |
| Q Serve(g_s), s | 1.8 | 3.9 | 5.5 | 3.0 | 3.7 | 3.7 | 5.9 | 0.0 | 5.9 | 5.9 | 0.0 | 2.7 |
| Cycle Q Clear(g_c), s | 1.8 | 3.9 | 5.5 | 3.0 | 3.7 | 3.7 | 5.9 | 0.0 | 5.9 | 5.9 | 0.0 | 2.7 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.11 | 1.00 | | 0.63 | 1.00 | | 0.20 |
| Lane Grp Cap(c), veh/h | 610 | 776 | 658 | 597 | 758 | 783 | 430 | 0 | 214 | 364 | 0 | 230 |
| V/C Ratio(X) | 0.14 | 0.22 | 0.30 | 0.24 | 0.20 | 0.21 | 0.43 | 0.00 | 0.72 | 0.51 | 0.00 | 0.35 |
| Avail Cap(c_a), veh/h | 703 | 776 | 658 | 696 | 758 | 783 | 529 | 0 | 591 | 490 | 0 | 662 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 9.8 | 12.6 | 13.0 | 9.7 | 12.0 | 12.0 | 21.4 | 0.0 | 28.0 | 21.6 | 0.0 | 26.6 |
| Incr Delay (d2), s/veh | 0.1 | 0.7 | 1.2 | 0.2 | 0.6 | 0.6 | 0.7 | 0.0 | 4.5 | 1.1 | 0.0 | 0.9 |
| 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(95%),veh/ln | 1.0 | 2.7 | 3.3 | 1.7 | 2.4 | 2.5 | 4.1 | 0.0 | 4.3 | 4.1 | 0.0 | 2.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 9.9 | 13.2 | 14.2 | 9.9 | 12.6 | 12.6 | 22.1 | 0.0 | 32.5 | 22.7 | 0.0 | 27.5 |
| LnGrp LOS | A | B | B | A | B | B | C | A | C | C | A | C |
| Approach Vol, veh/h | 454 | | | | 461 | | | | 340 | | | |
| Approach Delay, s/veh | 13.0 | | | | 11.8 | | | | 26.8 | | | |
| Approach LOS | B | | | | B | | | | C | | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 12.3 | 13.0 | 9.3 | 32.2 | 12.3 | 13.0 | 8.5 | 33.0 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 12.5 | 23.5 | 8.5 | 27.5 | 11.5 | 24.5 | 7.5 | 28.5 | | | | |
| Max Q Clear Time (g_c+I1), s | 7.9 | 7.9 | 5.0 | 7.5 | 7.9 | 4.7 | 3.8 | 5.7 | | | | |
| Green Ext Time (p_c), s | 0.2 | 0.6 | 0.1 | 1.4 | 0.2 | 0.3 | 0.0 | 1.6 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | 17.7 | | | | | | | | | | | |
| HCM 6th LOS | B | | | | | | | | | | | |

APPENDIX F. BACKGROUND (2040) TRAFFIC LOS WORKSHEET




| Intersection | | | | | | |
|--------------------------|--------|--------|------|--------|------|------|
| Int Delay, s/veh | 0 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑↑↑ | ↑↑↑↓ | | | ↗ |
| Traffic Vol, veh/h | 0 | 1180 | 1100 | 5 | 0 | 5 |
| Future Vol, veh/h | 0 | 1180 | 1100 | 5 | 0 | 5 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 1283 | 1196 | 5 | 0 | 5 |
| | | | | | | |
| Major/Minor | Major1 | Major2 | | Minor2 | | |
| Conflicting Flow All | - | 0 | - | 0 | - | 601 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 7.14 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.92 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 380 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 380 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | WB | | SB | | |
| HCM Control Delay, s | 0 | 0 | | 14.6 | | |
| HCM LOS | B | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 | | |
| Capacity (veh/h) | - | - | - | 380 | | |
| HCM Lane V/C Ratio | - | - | - | 0.014 | | |
| HCM Control Delay (s) | - | - | - | 14.6 | | |
| HCM Lane LOS | - | - | - | B | | |
| HCM 95th %tile Q(veh) | - | - | - | 0 | | |

| Intersection | | | | | | |
|--------------------------|---|----------|---|--------|-------|---|
| Int Delay, s/veh | 0 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  | |  | | |  |
| Traffic Vol, veh/h | 0 | 0 | 5 | 0 | 0 | 5 |
| Future Vol, veh/h | 0 | 0 | 5 | 0 | 0 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 5 | 0 | 0 | 5 |
| Major/Minor | Minor1 | Major1 | | Major2 | | |
| Conflicting Flow All | 10 | 5 | 0 | 0 | 5 | 0 |
| Stage 1 | 5 | - | - | - | - | - |
| Stage 2 | 5 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 1010 | 1078 | - | - | 1616 | - |
| Stage 1 | 1018 | - | - | - | - | - |
| Stage 2 | 1018 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 1010 | 1078 | - | - | 1616 | - |
| Mov Cap-2 Maneuver | 1010 | - | - | - | - | - |
| Stage 1 | 1018 | - | - | - | - | - |
| Stage 2 | 1018 | - | - | - | - | - |
| Approach | WB | NB | | SB | | |
| HCM Control Delay, s | 0 | 0 | | 0 | | |
| HCM LOS | A | | | | | |
| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | | SBL | SBT | |
| Capacity (veh/h) | - | - | | 1616 | - | |
| HCM Lane V/C Ratio | - | - | | - | - | |
| HCM Control Delay (s) | - | 0 | | 0 | - | |
| HCM Lane LOS | - | A | | A | - | |
| HCM 95th %tile Q(veh) | - | - | | 0 | - | |

| Intersection | | | | | | |
|--------------------------|---|------|--------|---|---|-------|
| Int Delay, s/veh | 1.5 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations |  | | |  |  | |
| Traffic Vol, veh/h | 10 | 5 | 0 | 10 | 5 | 0 |
| Future Vol, veh/h | 10 | 5 | 0 | 10 | 5 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 5 | 0 | 11 | 5 | 0 |
| | | | | | | |
| Major/Minor | Major1 | | Major2 | | Minor1 | |
| Conflicting Flow All | 0 | 0 | 16 | 0 | 25 | 14 |
| Stage 1 | - | - | - | - | 14 | - |
| Stage 2 | - | - | - | - | 11 | - |
| 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 | - | - | 1602 | - | 991 | 1066 |
| Stage 1 | - | - | - | - | 1009 | - |
| Stage 2 | - | - | - | - | 1012 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1602 | - | 991 | 1066 |
| Mov Cap-2 Maneuver | - | - | - | - | 991 | - |
| Stage 1 | - | - | - | - | 1009 | - |
| Stage 2 | - | - | - | - | 1012 | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | | WB | | NB | |
| HCM Control Delay, s | 0 | | 0 | | 8.7 | |
| HCM LOS | A | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | |
| Capacity (veh/h) | 991 | - | - | 1602 | - | |
| HCM Lane V/C Ratio | 0.005 | - | - | - | - | |
| HCM Control Delay (s) | 8.7 | - | - | 0 | - | |
| HCM Lane LOS | A | - | - | A | - | |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - | |

HCM 6th TWSC
4: Road 4 & 57th Ave

Background (2040)
AM Peak Hour

| Intersection | | | | | | |
|--------------------------|---|--------|-------|---|---|-------|
| Int Delay, s/veh | 0 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations |  | | |  |  | |
| Traffic Vol, veh/h | 10 | 0 | 0 | 10 | 0 | 0 |
| Future Vol, veh/h | 10 | 0 | 0 | 10 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 0 | 0 | 11 | 0 | 0 |
| | | | | | | |
| Major/Minor | Major1 | Major2 | | Minor1 | | |
| Conflicting Flow All | 0 | 0 | 11 | 0 | 22 | 11 |
| Stage 1 | - | - | - | - | 11 | - |
| Stage 2 | - | - | - | - | 11 | - |
| 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 | - | - | 1608 | - | 995 | 1070 |
| Stage 1 | - | - | - | - | 1012 | - |
| Stage 2 | - | - | - | - | 1012 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1608 | - | 995 | 1070 |
| Mov Cap-2 Maneuver | - | - | - | - | 995 | - |
| Stage 1 | - | - | - | - | 1012 | - |
| Stage 2 | - | - | - | - | 1012 | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | WB | | NB | | |
| HCM Control Delay, s | 0 | 0 | | 0 | | |
| HCM LOS | A | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | |
| Capacity (veh/h) | - | - | - | 1608 | - | |
| HCM Lane V/C Ratio | - | - | - | - | - | |
| HCM Control Delay (s) | 0 | - | - | 0 | - | |
| HCM Lane LOS | A | - | - | A | - | |
| HCM 95th %tile Q(veh) | - | - | - | 0 | - | |

















| Intersection | | | | | | | | | | | | |
|--------------------------|--------|-------|------|--------|------|------|--------|-------|-------|--------|-------|-------|
| Int Delay, s/veh | 7.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 5 | 0 | 5 | 15 | 0 | 5 | 5 | 5 | 25 | 5 | 5 | 5 |
| Future Vol, veh/h | 5 | 0 | 5 | 15 | 0 | 5 | 5 | 5 | 25 | 5 | 5 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 0 | 5 | 16 | 0 | 5 | 5 | 5 | 27 | 5 | 5 | 5 |
| | | | | | | | | | | | | |
| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
| Conflicting Flow All | 5 | 0 | 0 | 5 | 0 | 0 | 53 | 50 | 3 | 64 | 50 | 3 |
| Stage 1 | - | - | - | - | - | - | 13 | 13 | - | 35 | 35 | - |
| Stage 2 | - | - | - | - | - | - | 40 | 37 | - | 29 | 15 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1616 | - | - | 1616 | - | - | 946 | 841 | 1081 | 930 | 841 | 1081 |
| Stage 1 | - | - | - | - | - | - | 1007 | 885 | - | 981 | 866 | - |
| Stage 2 | - | - | - | - | - | - | 975 | 864 | - | 988 | 883 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1616 | - | - | 1616 | - | - | 927 | 830 | 1081 | 893 | 830 | 1081 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 927 | 830 | - | 893 | 830 | - |
| Stage 1 | - | - | - | - | - | - | 1004 | 882 | - | 978 | 857 | - |
| Stage 2 | - | - | - | - | - | - | 954 | 855 | - | 954 | 880 | - |
| | | | | | | | | | | | | |
| Approach | EB | | | WB | | | NB | | | SB | | |
| HCM Control Delay, s | 3.6 | | | 5.4 | | | 8.7 | | | 9 | | |
| HCM LOS | | | | | | | A | | | A | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 | | | | |
| Capacity (veh/h) | 1013 | 1616 | - | - | 1616 | - | - | 923 | | | | |
| HCM Lane V/C Ratio | 0.038 | 0.003 | - | - | 0.01 | - | - | 0.018 | | | | |
| HCM Control Delay (s) | 8.7 | 7.2 | 0 | - | 7.2 | 0 | - | 9 | | | | |
| HCM Lane LOS | A | A | A | - | A | A | - | A | | | | |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0 | - | - | 0.1 | | | | |

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|-------|--------|-------|-------|--------|-------|------|--------|-------|------|------|
| Int Delay, s/veh | 6.2 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 40 | 0 | 30 | 0 | 5 | 20 | 15 | 10 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 40 | 0 | 30 | 0 | 5 | 20 | 15 | 10 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 43 | 0 | 33 | 0 | 5 | 22 | 16 | 11 | 0 |
| | | | | | | | | | | | | |
| Major/Minor | Minor2 | | Minor1 | | | Major1 | | | Major2 | | | |
| Conflicting Flow All | 76 | 70 | 11 | 59 | 59 | 16 | 11 | 0 | 0 | 27 | 0 | 0 |
| Stage 1 | 43 | 43 | - | 16 | 16 | - | - | - | - | - | - | - |
| Stage 2 | 33 | 27 | - | 43 | 43 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 914 | 821 | 1070 | 937 | 832 | 1063 | 1608 | - | - | 1587 | - | - |
| Stage 1 | 971 | 859 | - | 1004 | 882 | - | - | - | - | - | - | - |
| Stage 2 | 983 | 873 | - | 971 | 859 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 879 | 813 | 1070 | 930 | 824 | 1063 | 1608 | - | - | 1587 | - | - |
| Mov Cap-2 Maneuver | 879 | 813 | - | 930 | 824 | - | - | - | - | - | - | - |
| Stage 1 | 971 | 850 | - | 1004 | 882 | - | - | - | - | - | - | - |
| Stage 2 | 953 | 873 | - | 961 | 850 | - | - | - | - | - | - | - |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Approach | EB | | WB | | | NB | | | SB | | | |
| HCM Control Delay, s | 0 | | 9 | | | 0 | | | 4.4 | | | |
| HCM LOS | A | | A | | | | | | | | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR | | | | |
| Capacity (veh/h) | 1608 | - | - | - | 983 | 1587 | - | - | | | | |
| HCM Lane V/C Ratio | - | - | - | - | 0.077 | 0.01 | - | - | | | | |
| HCM Control Delay (s) | 0 | - | - | 0 | 9 | 7.3 | 0 | - | | | | |
| HCM Lane LOS | A | - | - | A | A | A | A | - | | | | |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.3 | 0 | - | - | | | | |

| Intersection | | | | | | |
|--|--------|--------|--------|------|-------|------|
| Int Delay, s/veh | 0.4 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | ↰ | ↑↑↑ | ↑↑↑ | | ↰ | |
| Traffic Vol, veh/h | 10 | 1170 | 1070 | 15 | 15 | 35 |
| Future Vol, veh/h | 10 | 1170 | 1070 | 15 | 15 | 35 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 200 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 1272 | 1163 | 16 | 16 | 38 |
| Major/Minor | Major1 | Major2 | Minor2 | | | |
| Conflicting Flow All | 1179 | 0 | - | 0 | 1702 | 590 |
| Stage 1 | - | - | - | - | 1171 | - |
| Stage 2 | - | - | - | - | 531 | - |
| Critical Hdwy | 5.34 | - | - | - | 5.74 | 7.14 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.64 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.04 | - |
| Follow-up Hdwy | 3.12 | - | - | - | 3.82 | 3.92 |
| Pot Cap-1 Maneuver | 320 | - | - | - | *367 | 386 |
| Stage 1 | - | - | - | - | *190 | - |
| Stage 2 | - | - | - | - | *666 | - |
| Platoon blocked, % | | - | - | - | 1 | |
| Mov Cap-1 Maneuver | 320 | - | - | - | *355 | 386 |
| Mov Cap-2 Maneuver | - | - | - | - | *355 | - |
| Stage 1 | - | - | - | - | *184 | - |
| Stage 2 | - | - | - | - | *666 | - |
| Approach | EB | WB | | SB | | |
| HCM Control Delay, s | 0.1 | 0 | | 16.2 | | |
| HCM LOS | | | | C | | |
| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | |
| Capacity (veh/h) | 320 | - | - | - | 376 | |
| HCM Lane V/C Ratio | 0.034 | - | - | - | 0.145 | |
| HCM Control Delay (s) | 16.6 | - | - | - | 16.2 | |
| HCM Lane LOS | C | - | - | - | C | |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.5 | |
| Notes | | | | | | |
| ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon | | | | | | |

Timings
8: Picadilly Rd & E 56th Ave

Background (2040)
AM Peak Hour

| |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|--|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
| Lane Configurations |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 100 | 815 | 100 | 805 | 205 | 500 | 150 | 530 |
| Future Volume (vph) | 100 | 815 | 100 | 805 | 205 | 500 | 150 | 530 |
| Turn Type | pm+pt | NA | pm+pt | NA | Prot | NA | Prot | NA |
| Protected Phases | 7 | 4 | 3 | 8 | 5 | 2 | 1 | 6 |
| Permitted Phases | 4 | | 8 | | | | | |
| Detector Phase | 7 | 4 | 3 | 8 | 5 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 14.0 | 33.0 | 14.5 | 33.5 | 15.2 | 28.5 | 14.0 | 27.3 |
| Total Split (%) | 15.6% | 36.7% | 16.1% | 37.2% | 16.9% | 31.7% | 15.6% | 30.3% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lead | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | Max | None | Max | None | C-Max | None | C-Max |
| Act Effect Green (s) | 39.3 | 32.3 | 39.5 | 32.4 | 10.0 | 24.7 | 8.8 | 23.5 |
| Actuated g/C Ratio | 0.44 | 0.36 | 0.44 | 0.36 | 0.11 | 0.27 | 0.10 | 0.26 |
| v/c Ratio | 0.39 | 0.65 | 0.44 | 0.55 | 0.59 | 0.55 | 0.49 | 0.50 |
| Control Delay | 17.4 | 24.9 | 19.2 | 24.5 | 44.6 | 25.2 | 43.5 | 28.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 17.4 | 24.9 | 19.2 | 24.5 | 44.6 | 25.2 | 43.5 | 28.7 |
| LOS | B | C | B | C | D | C | D | C |
| Approach Delay | | 24.3 | | 24.0 | | 29.5 | | 31.6 |
| Approach LOS | | C | | C | | C | | C |

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 43.4 (48%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 26.9









Intersection LOS: C

Intersection Capacity Utilization 61.3%

ICU Level of Service B









Analysis Period (min) 15

Splits and Phases: 8: Picadilly Rd & E 56th Ave

| | | | |
|--|--|--|--|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 14 s | 28.5 s | 14.5 s | 33 s |
|  Ø5 |  Ø6 (R) |  Ø7 |  Ø8 |
| 15.2 s | 27.3 s | 14 s | 33.5 s |

Queues
8: Picadilly Rd & E 56th Ave

Background (2040)
AM Peak Hour































| |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
| Lane Group Flow (vph) | 109 | 1179 | 109 | 995 | 223 | 788 | 163 | 658 |
| v/c Ratio | 0.39 | 0.65 | 0.44 | 0.55 | 0.59 | 0.55 | 0.49 | 0.50 |
| Control Delay | 17.4 | 24.9 | 19.2 | 24.5 | 44.6 | 25.2 | 43.5 | 28.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 17.4 | 24.9 | 19.2 | 24.5 | 44.6 | 25.2 | 43.5 | 28.7 |
| Queue Length 50th (ft) | 33 | 193 | 33 | 165 | 62 | 118 | 45 | 112 |
| Queue Length 95th (ft) | 63 | 250 | 63 | 213 | 98 | 159 | 76 | 150 |
| Internal Link Dist (ft) | | 583 | | 920 | | 498 | | 433 |
| Turn Bay Length (ft) | 350 | | 150 | | 200 | | 250 | |
| Base Capacity (vph) | 306 | 1818 | 279 | 1816 | 408 | 1421 | 362 | 1324 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.36 | 0.65 | 0.39 | 0.55 | 0.55 | 0.55 | 0.45 | 0.50 |
| Intersection Summary | | | | | | | | |

HCM 6th Signalized Intersection Summary

8: Picadilly Rd & E 56th Ave















Background (2040)

AM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    | |  |    | |   |    | |   |    | |
| Traffic Volume (veh/h) | 100 | 815 | 270 | 100 | 805 | 110 | 205 | 500 | 225 | 150 | 530 | 75 |
| Future Volume (veh/h) | 100 | 815 | 270 | 100 | 805 | 110 | 205 | 500 | 225 | 150 | 530 | 75 |
| 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 | 109 | 886 | 293 | 109 | 875 | 120 | 223 | 543 | 245 | 163 | 576 | 82 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 276 | 1224 | 403 | 240 | 1464 | 200 | 301 | 1217 | 532 | 237 | 1500 | 211 |
| Arrive On Green | 0.06 | 0.32 | 0.32 | 0.06 | 0.32 | 0.32 | 0.09 | 0.35 | 0.35 | 0.07 | 0.33 | 0.33 |
| Sat Flow, veh/h | 1781 | 3798 | 1251 | 1781 | 4543 | 620 | 3456 | 3479 | 1522 | 3456 | 4525 | 635 |
| Grp Volume(v), veh/h | 109 | 794 | 385 | 109 | 655 | 340 | 223 | 531 | 257 | 163 | 431 | 227 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1645 | 1781 | 1702 | 1759 | 1728 | 1702 | 1596 | 1728 | 1702 | 1756 |
| Q Serve(g_s), s | 3.6 | 18.5 | 18.7 | 3.6 | 14.5 | 14.6 | 5.7 | 10.8 | 11.2 | 4.1 | 8.7 | 8.9 |
| Cycle Q Clear(g_c), s | 3.6 | 18.5 | 18.7 | 3.6 | 14.5 | 14.6 | 5.7 | 10.8 | 11.2 | 4.1 | 8.7 | 8.9 |
| Prop In Lane | 1.00 | | 0.76 | 1.00 | | 0.35 | 1.00 | | 0.95 | 1.00 | | 0.36 |
| Lane Grp Cap(c), veh/h | 276 | 1097 | 530 | 240 | 1097 | 567 | 301 | 1191 | 559 | 237 | 1128 | 582 |
| V/C Ratio(X) | 0.40 | 0.72 | 0.73 | 0.45 | 0.60 | 0.60 | 0.74 | 0.45 | 0.46 | 0.69 | 0.38 | 0.39 |
| Avail Cap(c_a), veh/h | 358 | 1097 | 530 | 333 | 1097 | 567 | 411 | 1191 | 559 | 365 | 1128 | 582 |
| 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 | 19.8 | 27.0 | 27.0 | 20.8 | 25.6 | 25.6 | 40.1 | 22.5 | 22.7 | 41.0 | 23.0 | 23.1 |
| Incr Delay (d2), s/veh | 0.9 | 4.2 | 8.5 | 1.3 | 2.4 | 4.7 | 4.7 | 1.2 | 2.7 | 3.5 | 1.0 | 2.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.6 | 12.1 | 12.6 | 2.6 | 9.7 | 10.5 | 4.5 | 7.6 | 7.7 | 3.2 | 6.1 | 6.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 20.7 | 31.1 | 35.5 | 22.2 | 28.0 | 30.3 | 44.7 | 23.7 | 25.4 | 44.5 | 24.0 | 25.1 |
| LnGrp LOS | C | C | D | C | C | C | D | C | C | D | C | C |
| Approach Vol, veh/h | 1288 | | | | | 1104 | | 1011 | | 821 | | |
| Approach Delay, s/veh | 31.5 | | | | | 28.1 | | 28.8 | | 28.4 | | |
| Approach LOS | C | | | | | C | | C | | C | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 10.7 | 36.0 | 9.8 | 33.5 | 12.3 | 34.3 | 9.8 | 33.5 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 9.5 | 24.0 | 10.0 | 28.5 | 10.7 | 22.8 | 9.5 | 29.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 6.1 | 13.2 | 5.6 | 20.7 | 7.7 | 10.9 | 5.6 | 16.6 | | | | |
| Green Ext Time (p_c), s | 0.1 | 3.5 | 0.1 | 4.3 | 0.2 | 3.0 | 0.1 | 4.8 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 29.4 | | | | | | | | | |
| HCM 6th LOS | | | C | | | | | | | | | |

Timings
9: E 56th Ave & Lisbon St

Background (2040)
AM Peak Hour

| |  |  |  |  |  |
|----------------------|---|---|---|---|---|
| Lane Group | EBL | EBT | WBT | SBL | SBR |
| Lane Configurations |  |    |    |  |  |
| Traffic Volume (vph) | 105 | 980 | 990 | 200 | 120 |
| Future Volume (vph) | 105 | 980 | 990 | 200 | 120 |
| Turn Type | pm+pt | NA | NA | Prot | pm+ov |
| Protected Phases | 7 | 4 | 8 | 6 | 7 |
| Permitted Phases | 4 | | | | 6 |
| Detector Phase | 7 | 4 | 8 | 6 | 7 |
| Switch Phase | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 22.5 | 9.5 |
| Total Split (s) | 11.2 | 36.2 | 25.0 | 23.8 | 11.2 |
| Total Split (%) | 18.7% | 60.3% | 41.7% | 39.7% | 18.7% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | | Lag | | Lead |
| Lead-Lag Optimize? | Yes | | Yes | | Yes |
| Recall Mode | None | None | None | C-Min | None |
| Act Effect Green (s) | 30.8 | 30.8 | 20.4 | 20.2 | 32.7 |
| Actuated g/C Ratio | 0.51 | 0.51 | 0.34 | 0.34 | 0.54 |
| v/c Ratio | 0.33 | 0.41 | 0.70 | 0.36 | 0.15 |
| Control Delay | 8.6 | 9.2 | 19.0 | 19.6 | 8.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 8.6 | 9.2 | 19.0 | 19.6 | 8.0 |
| LOS | A | A | B | B | A |
| Approach Delay | | 9.1 | 19.0 | 15.3 | |
| Approach LOS | | A | B | B | |

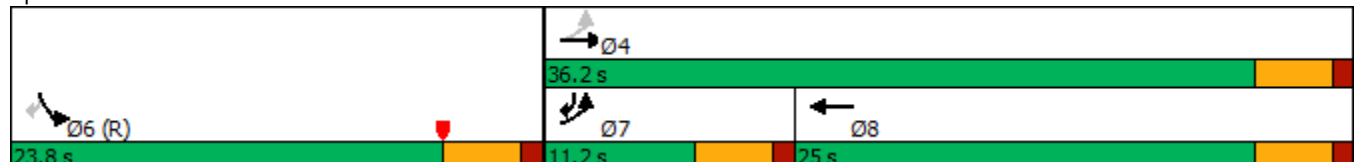
Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 14.2
 Intersection Capacity Utilization 49.8%
 Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service A

Splits and Phases: 9: E 56th Ave & Lisbon St



Queues
9: E 56th Ave & Lisbon St

Background (2040)
AM Peak Hour



| Lane Group | EBL | EBT | WBT | SBL | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 114 | 1065 | 1201 | 217 | 130 |
| v/c Ratio | 0.33 | 0.41 | 0.70 | 0.36 | 0.15 |
| Control Delay | 8.6 | 9.2 | 19.0 | 19.6 | 8.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 8.6 | 9.2 | 19.0 | 19.6 | 8.0 |
| Queue Length 50th (ft) | 16 | 63 | 121 | 66 | 22 |
| Queue Length 95th (ft) | 36 | 93 | 173 | 117 | 45 |
| Internal Link Dist (ft) | | 458 | 1341 | 565 | |
| Turn Bay Length (ft) | 100 | | | | |
| Base Capacity (vph) | 353 | 2866 | 1799 | 659 | 874 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.32 | 0.37 | 0.67 | 0.33 | 0.15 |
| Intersection Summary | | | | | |

HCM 6th Signalized Intersection Summary




9: E 56th Ave & Lisbon St




Background (2040)
AM Peak Hour



| Movement | EBL | EBT | WBT | WBR | SBL | SBR | |
|------------------------------|------|------|------|------|------|------|------|
| Lane Configurations | ↰ | ↑↑↑ | ↑↑↱ | | ↰ | ↱ | |
| Traffic Volume (veh/h) | 105 | 980 | 990 | 115 | 200 | 120 | |
| Future Volume (veh/h) | 105 | 980 | 990 | 115 | 200 | 120 | |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Work Zone On Approach | | No | No | | No | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | |
| Adj Flow Rate, veh/h | 114 | 1065 | 1076 | 125 | 217 | 130 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | |
| Cap, veh/h | 288 | 2283 | 1398 | 162 | 718 | 751 | |
| Arrive On Green | 0.07 | 0.45 | 0.30 | 0.30 | 0.40 | 0.40 | |
| Sat Flow, veh/h | 1781 | 5274 | 4808 | 538 | 1781 | 1585 | |
| Grp Volume(v), veh/h | 114 | 1065 | 789 | 412 | 217 | 130 | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1702 | 1773 | 1781 | 1585 | |
| Q Serve(g_s), s | 2.4 | 8.7 | 12.7 | 12.7 | 5.0 | 2.8 | |
| Cycle Q Clear(g_c), s | 2.4 | 8.7 | 12.7 | 12.7 | 5.0 | 2.8 | |
| Prop In Lane | 1.00 | | | 0.30 | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 288 | 2283 | 1025 | 534 | 718 | 751 | |
| V/C Ratio(X) | 0.40 | 0.47 | 0.77 | 0.77 | 0.30 | 0.17 | |
| Avail Cap(c_a), veh/h | 361 | 2698 | 1163 | 606 | 718 | 751 | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Upstream Filter(l) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Uniform Delay (d), s/veh | 13.7 | 11.6 | 19.1 | 19.1 | 12.2 | 9.1 | |
| Incr Delay (d2), s/veh | 0.9 | 0.1 | 2.8 | 5.4 | 1.1 | 0.5 | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| %ile BackOfQ(95%),veh/ln | 1.5 | 4.6 | 8.1 | 8.8 | 3.4 | 6.1 | |
| Unsig. Movement Delay, s/veh | | | | | | | |
| LnGrp Delay(d),s/veh | 14.6 | 11.7 | 21.9 | 24.4 | 13.3 | 9.6 | |
| LnGrp LOS | B | B | C | C | B | A | |
| Approach Vol, veh/h | | 1179 | 1201 | | 347 | | |
| Approach Delay, s/veh | | 12.0 | 22.8 | | 11.9 | | |
| Approach LOS | | B | C | | B | | |
| Timer - Assigned Phs | | | | 4 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 31.3 | 28.7 | 8.8 | 22.6 |
| Change Period (Y+Rc), s | | | | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 31.7 | 19.3 | 6.7 | 20.5 |
| Max Q Clear Time (g_c+l1), s | | | | 10.7 | 7.0 | 4.4 | 14.7 |
| Green Ext Time (p_c), s | | | | 7.0 | 0.9 | 0.0 | 3.4 |
| Intersection Summary | | | | | | | |
| HCM 6th Ctrl Delay | | | 16.7 | | | | |
| HCM 6th LOS | | | B | | | | |




| Intersection | | | | | | |
|--------------------------|--------|--------|------|--------|------|------|
| Int Delay, s/veh | 0 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑↑↑ | ↑↑↑↓ | | | ↗ |
| Traffic Vol, veh/h | 0 | 1210 | 1245 | 10 | 0 | 5 |
| Future Vol, veh/h | 0 | 1210 | 1245 | 10 | 0 | 5 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 1315 | 1353 | 11 | 0 | 5 |
| | | | | | | |
| Major/Minor | Major1 | Major2 | | Minor2 | | |
| Conflicting Flow All | - | 0 | - | 0 | - | 682 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 7.14 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.92 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 336 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 336 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | WB | | SB | | |
| HCM Control Delay, s | 0 | 0 | | 15.9 | | |
| HCM LOS | C | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 | | |
| Capacity (veh/h) | - | - | - | 336 | | |
| HCM Lane V/C Ratio | - | - | - | 0.016 | | |
| HCM Control Delay (s) | - | - | - | 15.9 | | |
| HCM Lane LOS | - | - | - | C | | |
| HCM 95th %tile Q(veh) | - | - | - | 0 | | |

| Intersection | | | | | | |
|--------------------------|---|----------|---|--------|-------|---|
| Int Delay, s/veh | 0 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  | |  | | |  |
| Traffic Vol, veh/h | 0 | 0 | 10 | 0 | 0 | 5 |
| Future Vol, veh/h | 0 | 0 | 10 | 0 | 0 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 11 | 0 | 0 | 5 |
| Major/Minor | Minor1 | Major1 | | Major2 | | |
| Conflicting Flow All | 16 | 11 | 0 | 0 | 11 | 0 |
| Stage 1 | 11 | - | - | - | - | - |
| Stage 2 | 5 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 1002 | 1070 | - | - | 1608 | - |
| Stage 1 | 1012 | - | - | - | - | - |
| Stage 2 | 1018 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 1002 | 1070 | - | - | 1608 | - |
| Mov Cap-2 Maneuver | 1002 | - | - | - | - | - |
| Stage 1 | 1012 | - | - | - | - | - |
| Stage 2 | 1018 | - | - | - | - | - |
| Approach | WB | NB | | SB | | |
| HCM Control Delay, s | 0 | 0 | | 0 | | |
| HCM LOS | A | | | | | |
| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT | | |
| Capacity (veh/h) | - | - | - | 1608 | - | |
| HCM Lane V/C Ratio | - | - | - | - | - | |
| HCM Control Delay (s) | - | - | 0 | 0 | - | |
| HCM Lane LOS | - | - | A | A | - | |
| HCM 95th %tile Q(veh) | - | - | - | 0 | - | |

| Intersection | | | | | | |
|--------------------------|---|------|--------|---|---|-------|
| Int Delay, s/veh | 2.5 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations |  | | |  |  | |
| Traffic Vol, veh/h | 10 | 5 | 0 | 10 | 10 | 0 |
| Future Vol, veh/h | 10 | 5 | 0 | 10 | 10 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 5 | 0 | 11 | 11 | 0 |
| | | | | | | |
| Major/Minor | Major1 | | Major2 | | Minor1 | |
| Conflicting Flow All | 0 | 0 | 16 | 0 | 25 | 14 |
| Stage 1 | - | - | - | - | 14 | - |
| Stage 2 | - | - | - | - | 11 | - |
| 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 | - | - | 1602 | - | 991 | 1066 |
| Stage 1 | - | - | - | - | 1009 | - |
| Stage 2 | - | - | - | - | 1012 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1602 | - | 991 | 1066 |
| Mov Cap-2 Maneuver | - | - | - | - | 991 | - |
| Stage 1 | - | - | - | - | 1009 | - |
| Stage 2 | - | - | - | - | 1012 | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | | WB | | NB | |
| HCM Control Delay, s | 0 | | 0 | | 8.7 | |
| HCM LOS | A | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | |
| Capacity (veh/h) | 991 | - | - | 1602 | - | |
| HCM Lane V/C Ratio | 0.011 | - | - | - | - | |
| HCM Control Delay (s) | 8.7 | - | - | 0 | - | |
| HCM Lane LOS | A | - | - | A | - | |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - | |







HCM 6th TWSC
4: Road 4 & 57th Ave

Background (2040)
PM Peak Hour

| Intersection | | | | | | |
|--------------------------|---|--------|-------|---|---|-------|
| Int Delay, s/veh | 0 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations |  | | |  |  | |
| Traffic Vol, veh/h | 10 | 0 | 0 | 10 | 0 | 0 |
| Future Vol, veh/h | 10 | 0 | 0 | 10 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 0 | 0 | 11 | 0 | 0 |
| | | | | | | |
| Major/Minor | Major1 | Major2 | | Minor1 | | |
| Conflicting Flow All | 0 | 0 | 11 | 0 | 22 | 11 |
| Stage 1 | - | - | - | - | 11 | - |
| Stage 2 | - | - | - | - | 11 | - |
| 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 | - | - | 1608 | - | 995 | 1070 |
| Stage 1 | - | - | - | - | 1012 | - |
| Stage 2 | - | - | - | - | 1012 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1608 | - | 995 | 1070 |
| Mov Cap-2 Maneuver | - | - | - | - | 995 | - |
| Stage 1 | - | - | - | - | 1012 | - |
| Stage 2 | - | - | - | - | 1012 | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | WB | | NB | | |
| HCM Control Delay, s | 0 | 0 | | 0 | | |
| HCM LOS | | | | A | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | |
| Capacity (veh/h) | - | - | - | 1608 | - | |
| HCM Lane V/C Ratio | - | - | - | - | - | |
| HCM Control Delay (s) | 0 | - | - | 0 | - | |
| HCM Lane LOS | A | - | - | A | - | |
| HCM 95th %tile Q(veh) | - | - | - | 0 | - | |

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|-------|------|--------|------|------|--------|-------|-------|--------|-------|-------|
| Int Delay, s/veh | 7.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 5 | 0 | 5 | 15 | 0 | 5 | 5 | 5 | 15 | 5 | 5 | 5 |
| Future Vol, veh/h | 5 | 0 | 5 | 15 | 0 | 5 | 5 | 5 | 15 | 5 | 5 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 0 | 5 | 16 | 0 | 5 | 5 | 5 | 16 | 5 | 5 | 5 |
| | | | | | | | | | | | | |
| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
| Conflicting Flow All | 5 | 0 | 0 | 5 | 0 | 0 | 53 | 50 | 3 | 58 | 50 | 3 |
| Stage 1 | - | - | - | - | - | - | 13 | 13 | - | 35 | 35 | - |
| Stage 2 | - | - | - | - | - | - | 40 | 37 | - | 23 | 15 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1616 | - | - | 1616 | - | - | 946 | 841 | 1081 | 939 | 841 | 1081 |
| Stage 1 | - | - | - | - | - | - | 1007 | 885 | - | 981 | 866 | - |
| Stage 2 | - | - | - | - | - | - | 975 | 864 | - | 995 | 883 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1616 | - | - | 1616 | - | - | 927 | 830 | 1081 | 911 | 830 | 1081 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 927 | 830 | - | 911 | 830 | - |
| Stage 1 | - | - | - | - | - | - | 1004 | 882 | - | 978 | 857 | - |
| Stage 2 | - | - | - | - | - | - | 954 | 855 | - | 971 | 880 | - |
| | | | | | | | | | | | | |
| Approach | EB | | | WB | | | NB | | | SB | | |
| HCM Control Delay, s | 3.6 | | | 5.4 | | | 8.7 | | | 8.9 | | |
| HCM LOS | | | | | | | A | | | A | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 | | | | |
| Capacity (veh/h) | 988 | 1616 | - | - | 1616 | - | - | 929 | | | | |
| HCM Lane V/C Ratio | 0.028 | 0.003 | - | - | 0.01 | - | - | 0.018 | | | | |
| HCM Control Delay (s) | 8.7 | 7.2 | 0 | - | 7.2 | 0 | - | 8.9 | | | | |
| HCM Lane LOS | A | A | A | - | A | A | - | A | | | | |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0 | - | - | 0.1 | | | | |

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|-------|--------|------------|--------|-------|--------|------|------|-------|------|------|
| Int Delay, s/veh | 4.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 30 | 0 | 20 | 0 | 5 | 55 | 15 | 10 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 30 | 0 | 20 | 0 | 5 | 55 | 15 | 10 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 33 | 0 | 22 | 0 | 5 | 60 | 16 | 11 | 0 |
| | | | | | | | | | | | | |
| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
| Conflicting Flow All | 89 | 108 | 11 | 78 | 78 | 35 | 11 | 0 | 0 | 65 | 0 | 0 |
| Stage 1 | 43 | 43 | - | 35 | 35 | - | - | - | - | - | - | - |
| Stage 2 | 46 | 65 | - | 43 | 43 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 896 | 782 | 1070 | 911 | 812 | 1038 | 1608 | - | - | 1537 | - | - |
| Stage 1 | 971 | 859 | - | 981 | 866 | - | - | - | - | - | - | - |
| Stage 2 | 968 | 841 | - | 971 | 859 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 871 | 774 | 1070 | 904 | 804 | 1038 | 1608 | - | - | 1537 | - | - |
| Mov Cap-2 Maneuver | 871 | 774 | - | 904 | 804 | - | - | - | - | - | - | - |
| Stage 1 | 971 | 850 | - | 981 | 866 | - | - | - | - | - | - | - |
| Stage 2 | 948 | 841 | - | 961 | 850 | - | - | - | - | - | - | - |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Approach | EB | | WB | | NB | | SB | | | | | |
| HCM Control Delay, s | 0 | | 9 | | 0 | | 4.4 | | | | | |
| HCM LOS | A | | A | | | | | | | | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR | | | | | |
| Capacity (veh/h) | 1608 | - | - | - | 953 | 1537 | - | - | | | | |
| HCM Lane V/C Ratio | - | - | - | - | 0.057 | 0.011 | - | - | | | | |
| HCM Control Delay (s) | 0 | - | - | 0 | 9 | 7.4 | 0 | - | | | | |
| HCM Lane LOS | A | - | - | A | A | A | A | - | | | | |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.2 | 0 | - | - | | | | |

| Intersection | | | | | | |
|--------------------------|---|---|---|---|---|---|
| Int Delay, s/veh | 0.6 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations |  |  |  |  |  |  |
| Traffic Vol, veh/h | 30 | 1180 | 1230 | 30 | 15 | 25 |
| Future Vol, veh/h | 30 | 1180 | 1230 | 30 | 15 | 25 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 200 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 33 | 1283 | 1337 | 33 | 16 | 27 |

| Major/Minor | Major1 | Major2 | Minor2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 1370 | 0 | 0 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | 5.34 | - | - |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | 3.12 | - | - |
| Pot Cap-1 Maneuver | 258 | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 258 | - | - |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |























| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.5 | 0 | 20.1 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 258 | - | - | - | 281 |
| HCM Lane V/C Ratio | 0.126 | - | - | - | 0.155 |
| HCM Control Delay (s) | 21 | - | - | - | 20.1 |
| HCM Lane LOS | C | - | - | - | C |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 0.5 |

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

Timings
8: Picadilly Rd & E 56th Ave

Background (2040)
PM Peak Hour

| |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
| Lane Configurations |  |   |  |   |   |   |   |   |
| Traffic Volume (vph) | 125 | 840 | 250 | 830 | 330 | 685 | 150 | 715 |
| Future Volume (vph) | 125 | 840 | 250 | 830 | 330 | 685 | 150 | 715 |
| Turn Type | pm+pt | NA | pm+pt | NA | Prot | NA | Prot | NA |
| Protected Phases | 7 | 4 | 3 | 8 | 5 | 2 | 1 | 6 |
| Permitted Phases | 4 | | 8 | | | | | |
| Detector Phase | 7 | 4 | 3 | 8 | 5 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 14.9 | 28.0 | 19.0 | 32.1 | 17.0 | 31.8 | 11.2 | 26.0 |
| Total Split (%) | 16.6% | 31.1% | 21.1% | 35.7% | 18.9% | 35.3% | 12.4% | 28.9% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lead | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | Max | None | Max | None | C-Max | None | C-Max |
| Act Effect Green (s) | 33.8 | 24.8 | 42.1 | 29.0 | 12.2 | 27.3 | 6.7 | 21.8 |
| Actuated g/C Ratio | 0.38 | 0.28 | 0.47 | 0.32 | 0.14 | 0.30 | 0.07 | 0.24 |
| v/c Ratio | 0.51 | 0.83 | 0.80 | 0.64 | 0.77 | 0.62 | 0.64 | 0.72 |
| Control Delay | 21.5 | 35.1 | 37.0 | 27.6 | 50.0 | 26.5 | 52.7 | 34.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 21.5 | 35.1 | 37.0 | 27.6 | 50.0 | 26.5 | 52.7 | 34.3 |
| LOS | C | D | D | C | D | C | D | C |
| Approach Delay | | 33.7 | | 29.5 | | 32.9 | | 37.2 |
| Approach LOS | | C | | C | | C | | D |

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 33.1

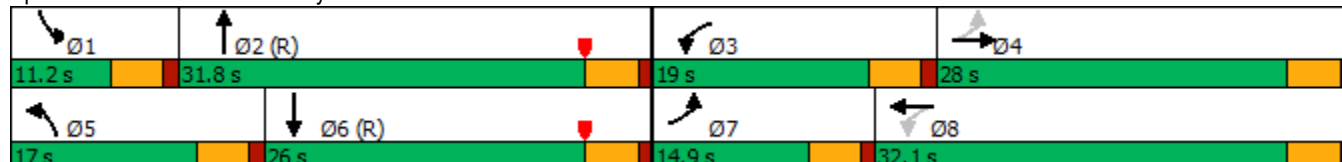
Intersection LOS: C

Intersection Capacity Utilization 75.7%

ICU Level of Service D

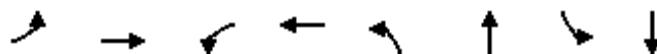
Analysis Period (min) 15

Splits and Phases: 8: Picadilly Rd & E 56th Ave



Queues
8: Picadilly Rd & E 56th Ave

Background (2040)
PM Peak Hour



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|-------------------------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 136 | 1163 | 272 | 1049 | 359 | 962 | 163 | 886 |
| v/c Ratio | 0.51 | 0.83 | 0.80 | 0.64 | 0.77 | 0.62 | 0.64 | 0.72 |
| Control Delay | 21.5 | 35.1 | 37.0 | 27.6 | 50.0 | 26.5 | 52.7 | 34.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 21.5 | 35.1 | 37.0 | 27.6 | 50.0 | 26.5 | 52.7 | 34.3 |
| Queue Length 50th (ft) | 42 | 217 | 96 | 180 | 102 | 156 | 47 | 165 |
| Queue Length 95th (ft) | 77 | #282 | #212 | 231 | #161 | 201 | #85 | 212 |
| Internal Link Dist (ft) | | 583 | | 920 | | 498 | | 433 |
| Turn Bay Length (ft) | 350 | | 150 | | 200 | | 250 | |
| Base Capacity (vph) | 295 | 1408 | 364 | 1628 | 476 | 1548 | 255 | 1231 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.46 | 0.83 | 0.75 | 0.64 | 0.75 | 0.62 | 0.64 | 0.72 |

Intersection Summary





















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

HCM 6th Signalized Intersection Summary

8: Picadilly Rd & E 56th Ave

Background (2040)

PM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | |  |  | |  |  | |
| Traffic Volume (veh/h) | 125 | 840 | 230 | 250 | 830 | 135 | 330 | 685 | 200 | 150 | 715 | 100 |
| Future Volume (veh/h) | 125 | 840 | 230 | 250 | 830 | 135 | 330 | 685 | 200 | 150 | 715 | 100 |
| 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 | 136 | 913 | 250 | 272 | 902 | 147 | 359 | 745 | 217 | 163 | 777 | 109 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 290 | 1042 | 284 | 332 | 1399 | 227 | 434 | 1343 | 387 | 233 | 1281 | 178 |
| Arrive On Green | 0.08 | 0.26 | 0.26 | 0.13 | 0.32 | 0.32 | 0.13 | 0.34 | 0.34 | 0.07 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1781 | 3990 | 1089 | 1781 | 4427 | 718 | 3456 | 3936 | 1134 | 3456 | 4530 | 631 |
| Grp Volume(v), veh/h | 136 | 778 | 385 | 272 | 693 | 356 | 359 | 643 | 319 | 163 | 583 | 303 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1674 | 1781 | 1702 | 1741 | 1728 | 1702 | 1666 | 1728 | 1702 | 1757 |
| Q Serve(g_s), s | 4.9 | 19.7 | 19.8 | 9.5 | 15.7 | 15.8 | 9.1 | 13.8 | 14.0 | 4.2 | 13.3 | 13.5 |
| Cycle Q Clear(g_c), s | 4.9 | 19.7 | 19.8 | 9.5 | 15.7 | 15.8 | 9.1 | 13.8 | 14.0 | 4.2 | 13.3 | 13.5 |
| Prop In Lane | 1.00 | | 0.65 | 1.00 | | 0.41 | 1.00 | | 0.68 | 1.00 | | 0.36 |
| Lane Grp Cap(c), veh/h | 290 | 889 | 437 | 332 | 1075 | 550 | 434 | 1161 | 568 | 233 | 963 | 497 |
| V/C Ratio(X) | 0.47 | 0.88 | 0.88 | 0.82 | 0.64 | 0.65 | 0.83 | 0.55 | 0.56 | 0.70 | 0.60 | 0.61 |
| Avail Cap(c_a), veh/h | 361 | 889 | 437 | 387 | 1075 | 550 | 480 | 1161 | 568 | 257 | 963 | 497 |
| 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 | 22.3 | 31.9 | 31.9 | 21.7 | 26.4 | 26.5 | 38.4 | 24.1 | 24.2 | 41.1 | 27.9 | 28.0 |
| Incr Delay (d2), s/veh | 1.2 | 11.8 | 21.5 | 11.6 | 3.0 | 5.8 | 10.5 | 1.9 | 4.0 | 7.2 | 2.8 | 5.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.6 | 13.9 | 15.3 | 8.1 | 10.5 | 11.3 | 7.7 | 9.3 | 9.7 | 3.5 | 9.2 | 10.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 23.5 | 43.6 | 53.4 | 33.3 | 29.4 | 32.3 | 48.9 | 26.0 | 28.1 | 48.3 | 30.7 | 33.5 |
| LnGrp LOS | C | D | D | C | C | C | D | C | C | D | C | C |
| Approach Vol, veh/h | 1299 | | 1321 | | | | 1321 | | 1049 | | | |
| Approach Delay, s/veh | 44.4 | | 31.0 | | | | 32.7 | | 34.3 | | | |
| Approach LOS | D | | C | | | | C | | C | | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 10.6 | 35.2 | 16.2 | 28.0 | 15.8 | 30.0 | 11.3 | 32.9 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 6.7 | 27.3 | 14.5 | 23.5 | 12.5 | 21.5 | 10.4 | 27.6 | | | | |
| Max Q Clear Time (g_c+I1), s | 6.2 | 16.0 | 11.5 | 21.8 | 11.1 | 15.5 | 6.9 | 17.8 | | | | |
| Green Ext Time (p_c), s | 0.0 | 4.4 | 0.2 | 1.1 | 0.2 | 2.7 | 0.1 | 4.4 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | 35.6 | | | | | | | | | | | |
| HCM 6th LOS | D | | | | | | | | | | | |

Timings
9: E 56th Ave & Lisbon St

Background (2040)
PM Peak Hour



| Lane Group | EBL | EBT | WBT | SBL | SBR |
|----------------------|-------|-------|-------|-------|-------|
| Lane Configurations | ↰ | ↑↑↑ | ↑↑↑ | ↰ | ↰ |
| Traffic Volume (vph) | 185 | 1035 | 1050 | 175 | 120 |
| Future Volume (vph) | 185 | 1035 | 1050 | 175 | 120 |
| Turn Type | pm+pt | NA | NA | Prot | pm+ov |
| Protected Phases | 7 | 4 | 8 | 6 | 7 |
| Permitted Phases | 4 | | | | 6 |
| Detector Phase | 7 | 4 | 8 | 6 | 7 |
| Switch Phase | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 22.5 | 9.5 |
| Total Split (s) | 12.0 | 36.0 | 24.0 | 24.0 | 12.0 |
| Total Split (%) | 20.0% | 60.0% | 40.0% | 40.0% | 20.0% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | | Lag | | Lead |
| Lead-Lag Optimize? | Yes | | Yes | | Yes |
| Recall Mode | None | None | None | C-Min | None |
| Act Effect Green (s) | 35.7 | 35.7 | 21.0 | 15.3 | 30.0 |
| Actuated g/C Ratio | 0.60 | 0.60 | 0.35 | 0.26 | 0.50 |
| v/c Ratio | 0.47 | 0.37 | 0.76 | 0.42 | 0.16 |
| Control Delay | 10.1 | 6.7 | 20.1 | 22.8 | 8.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 10.1 | 6.7 | 20.1 | 22.8 | 8.2 |
| LOS | B | A | C | C | A |
| Approach Delay | | 7.2 | 20.1 | 16.9 | |
| Approach LOS | | A | C | B | |

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 14.1

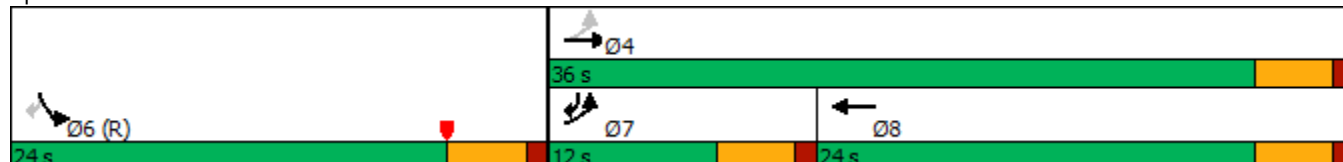
Intersection LOS: B

Intersection Capacity Utilization 55.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 9: E 56th Ave & Lisbon St



Queues
9: E 56th Ave & Lisbon St

Background (2040)
PM Peak Hour








| Lane Group | EBL | EBT | WBT | SBL | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 201 | 1125 | 1358 | 190 | 130 |
| v/c Ratio | 0.47 | 0.37 | 0.76 | 0.42 | 0.16 |
| Control Delay | 10.1 | 6.7 | 20.1 | 22.8 | 8.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 10.1 | 6.7 | 20.1 | 22.8 | 8.2 |
| Queue Length 50th (ft) | 23 | 53 | 134 | 63 | 24 |
| Queue Length 95th (ft) | 68 | 94 | 205 | 106 | 44 |
| Internal Link Dist (ft) | | 458 | 1341 | 565 | |
| Turn Bay Length (ft) | 100 | | | | |
| Base Capacity (vph) | 427 | 3042 | 1791 | 581 | 798 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.47 | 0.37 | 0.76 | 0.33 | 0.16 |
| Intersection Summary | | | | | |

HCM 6th Signalized Intersection Summary

9: E 56th Ave & Lisbon St

Background (2040)
PM Peak Hour



| Movement | EBL | EBT | WBT | WBR | SBL | SBR | |
|------------------------------|---|---|---|------|---|---|------|
| Lane Configurations |  |  |  | |  |  | |
| Traffic Volume (veh/h) | 185 | 1035 | 1050 | 200 | 175 | 120 | |
| Future Volume (veh/h) | 185 | 1035 | 1050 | 200 | 175 | 120 | |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Work Zone On Approach | | No | No | | No | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | |
| Adj Flow Rate, veh/h | 201 | 1125 | 1141 | 217 | 190 | 130 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | |
| Cap, veh/h | 326 | 2495 | 1346 | 256 | 644 | 733 | |
| Arrive On Green | 0.10 | 0.49 | 0.31 | 0.31 | 0.36 | 0.36 | |
| Sat Flow, veh/h | 1781 | 5274 | 4476 | 819 | 1781 | 1585 | |
| Grp Volume(v), veh/h | 201 | 1125 | 902 | 456 | 190 | 130 | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1702 | 1723 | 1781 | 1585 | |
| Q Serve(g_s), s | 4.2 | 8.7 | 14.9 | 14.9 | 4.6 | 2.9 | |
| Cycle Q Clear(g_c), s | 4.2 | 8.7 | 14.9 | 14.9 | 4.6 | 2.9 | |
| Prop In Lane | 1.00 | | | 0.48 | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 326 | 2495 | 1063 | 538 | 644 | 733 | |
| V/C Ratio(X) | 0.62 | 0.45 | 0.85 | 0.85 | 0.30 | 0.18 | |
| Avail Cap(c_a), veh/h | 369 | 2681 | 1106 | 560 | 644 | 733 | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Upstream Filter(l) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Uniform Delay (d), s/veh | 13.7 | 10.1 | 19.3 | 19.3 | 13.7 | 9.4 | |
| Incr Delay (d2), s/veh | 2.5 | 0.1 | 6.1 | 11.4 | 1.2 | 0.5 | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| %ile BackOfQ(95%),veh/ln | 2.7 | 4.3 | 9.7 | 10.8 | 3.3 | 6.2 | |
| Unsig. Movement Delay, s/veh | | | | | | | |
| LnGrp Delay(d),s/veh | 16.2 | 10.2 | 25.4 | 30.7 | 14.9 | 10.0 | |
| LnGrp LOS | B | B | C | C | B | A | |
| Approach Vol, veh/h | | 1326 | 1358 | | 320 | | |
| Approach Delay, s/veh | | 11.1 | 27.2 | | 12.9 | | |
| Approach LOS | | B | C | | B | | |
| Timer - Assigned Phs | | | | 4 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 33.8 | 26.2 | 10.6 | 23.2 |
| Change Period (Y+Rc), s | | | | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 31.5 | 19.5 | 7.5 | 19.5 |
| Max Q Clear Time (g_c+l1), s | | | | 10.7 | 6.6 | 6.2 | 16.9 |
| Green Ext Time (p_c), s | | | | 7.5 | 0.8 | 0.1 | 1.9 |
| Intersection Summary | | | | | | | |
| HCM 6th Ctrl Delay | | | 18.6 | | | | |
| HCM 6th LOS | | | B | | | | |

APPENDIX G. FUTURE (2040) TRAFFIC LOS WORKSHEET

Intersection

Int Delay, s/veh 0.2

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations | | ↑↑↑ | ↑↑↑ | | | ↑ |
| Traffic Vol, veh/h | 0 | 1200 | 1115 | 10 | 0 | 25 |
| Future Vol, veh/h | 0 | 1200 | 1115 | 10 | 0 | 25 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 1304 | 1212 | 11 | 0 | 27 |




| Major/Minor | Major1 | Major2 | Minor2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | - | 0 | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | - | - | - |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | - | - | - |
| Pot Cap-1 Maneuver | 0 | - | - |
| Stage 1 | 0 | - | - |
| Stage 2 | 0 | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | - | - | - |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | SB |
|----------------------|----|----|------|
| HCM Control Delay, s | 0 | 0 | 15.4 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|-----------------------|-----|-----|-----|-------|
| Capacity (veh/h) | - | - | - | 374 |
| HCM Lane V/C Ratio | - | - | - | 0.073 |
| HCM Control Delay (s) | - | - | - | 15.4 |
| HCM Lane LOS | - | - | - | C |
| HCM 95th %tile Q(veh) | - | - | - | 0.2 |




HCM 6th TWSC
2: Nepal Ct & 57th Place

Future (2040)
AM Peak Hour

| Intersection | | | | | | |
|--------------------------|---|----------|---|--------|-------|---|
| Int Delay, s/veh | 4.7 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  | |  | | |  |
| Traffic Vol, veh/h | 15 | 5 | 5 | 5 | 5 | 10 |
| Future Vol, veh/h | 15 | 5 | 5 | 5 | 5 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 5 | 5 | 5 | 5 | 11 |
| Major/Minor | Minor1 | Major1 | | Major2 | | |
| Conflicting Flow All | 29 | 8 | 0 | 0 | 10 | 0 |
| Stage 1 | 8 | - | - | - | - | - |
| Stage 2 | 21 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 986 | 1074 | - | - | 1610 | - |
| Stage 1 | 1015 | - | - | - | - | - |
| Stage 2 | 1002 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 983 | 1074 | - | - | 1610 | - |
| Mov Cap-2 Maneuver | 983 | - | - | - | - | - |
| Stage 1 | 1015 | - | - | - | - | - |
| Stage 2 | 999 | - | - | - | - | - |
| Approach | WB | NB | | SB | | |
| HCM Control Delay, s | 8.7 | 0 | | 2.4 | | |
| HCM LOS | A | | | | | |
| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | | SBL | SBT | |
| Capacity (veh/h) | - | - 1004 | | 1610 | - | |
| HCM Lane V/C Ratio | - | - 0.022 | | 0.003 | - | |
| HCM Control Delay (s) | - | - 8.7 | | 7.2 | 0 | |
| HCM Lane LOS | - | - A | | A | A | |
| HCM 95th %tile Q(veh) | - | - 0.1 | | 0 | - | |




HCM 6th TWSC
3: Nepal Ct & 57th Ave

Future (2040)
AM Peak Hour

| Intersection | | | | | | |
|--------------------------|---|--------|-------|---|---|-------|
| Int Delay, s/veh | 1.6 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations |  | | |  |  | |
| Traffic Vol, veh/h | 15 | 15 | 0 | 15 | 10 | 0 |
| Future Vol, veh/h | 15 | 15 | 0 | 15 | 10 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 16 | 0 | 16 | 11 | 0 |
| | | | | | | |
| Major/Minor | Major1 | Major2 | | Minor1 | | |
| Conflicting Flow All | 0 | 0 | 32 | 0 | 40 | 24 |
| Stage 1 | - | - | - | - | 24 | - |
| Stage 2 | - | - | - | - | 16 | - |
| 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 | - | - | 1580 | - | 972 | 1052 |
| Stage 1 | - | - | - | - | 999 | - |
| Stage 2 | - | - | - | - | 1007 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1580 | - | 972 | 1052 |
| Mov Cap-2 Maneuver | - | - | - | - | 972 | - |
| Stage 1 | - | - | - | - | 999 | - |
| Stage 2 | - | - | - | - | 1007 | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | WB | | NB | | |
| HCM Control Delay, s | 0 | 0 | | 8.7 | | |
| HCM LOS | A | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | |
| Capacity (veh/h) | 972 | - | - | 1580 | - | |
| HCM Lane V/C Ratio | 0.011 | - | - | - | - | |
| HCM Control Delay (s) | 8.7 | - | - | 0 | - | |
| HCM Lane LOS | A | - | - | A | - | |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - | |

HCM 6th TWSC
4: Road 4 & 57th Ave

Future (2040)
AM Peak Hour






| Intersection | | | | | | |
|--------------------------|---|--------|-------|---|---|-------|
| Int Delay, s/veh | 1.5 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations |  | | |  |  | |
| Traffic Vol, veh/h | 10 | 5 | 0 | 10 | 5 | 0 |
| Future Vol, veh/h | 10 | 5 | 0 | 10 | 5 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 5 | 0 | 11 | 5 | 0 |
| | | | | | | |
| Major/Minor | Major1 | Major2 | | Minor1 | | |
| Conflicting Flow All | 0 | 0 | 16 | 0 | 25 | 14 |
| Stage 1 | - | - | - | - | 14 | - |
| Stage 2 | - | - | - | - | 11 | - |
| 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 | - | - | 1602 | - | 991 | 1066 |
| Stage 1 | - | - | - | - | 1009 | - |
| Stage 2 | - | - | - | - | 1012 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1602 | - | 991 | 1066 |
| Mov Cap-2 Maneuver | - | - | - | - | 991 | - |
| Stage 1 | - | - | - | - | 1009 | - |
| Stage 2 | - | - | - | - | 1012 | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | WB | | NB | | |
| HCM Control Delay, s | 0 | 0 | | 8.7 | | |
| HCM LOS | A | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | |
| Capacity (veh/h) | 991 | - | - | 1602 | - | |
| HCM Lane V/C Ratio | 0.005 | - | - | - | - | |
| HCM Control Delay (s) | 8.7 | - | - | 0 | - | |
| HCM Lane LOS | A | - | - | A | - | |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - | |

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|-------|------|--------|-------|------|--------|-------|-------|--------|-------|-------|
| Int Delay, s/veh | 7.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 5 | 0 | 5 | 25 | 0 | 5 | 5 | 10 | 45 | 5 | 5 | 5 |
| Future Vol, veh/h | 5 | 0 | 5 | 25 | 0 | 5 | 5 | 10 | 45 | 5 | 5 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 0 | 5 | 27 | 0 | 5 | 5 | 11 | 49 | 5 | 5 | 5 |
| | | | | | | | | | | | | |
| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
| Conflicting Flow All | 5 | 0 | 0 | 5 | 0 | 0 | 75 | 72 | 3 | 100 | 72 | 3 |
| Stage 1 | - | - | - | - | - | - | 13 | 13 | - | 57 | 57 | - |
| Stage 2 | - | - | - | - | - | - | 62 | 59 | - | 43 | 15 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1616 | - | - | 1616 | - | - | 915 | 818 | 1081 | 881 | 818 | 1081 |
| Stage 1 | - | - | - | - | - | - | 1007 | 885 | - | 955 | 847 | - |
| Stage 2 | - | - | - | - | - | - | 949 | 846 | - | 971 | 883 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1616 | - | - | 1616 | - | - | 892 | 802 | 1081 | 820 | 802 | 1081 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 892 | 802 | - | 820 | 802 | - |
| Stage 1 | - | - | - | - | - | - | 1004 | 882 | - | 952 | 833 | - |
| Stage 2 | - | - | - | - | - | - | 922 | 832 | - | 913 | 880 | - |
| | | | | | | | | | | | | |
| Approach | EB | | | WB | | | NB | | | SB | | |
| HCM Control Delay, s | 3.6 | | | 6.1 | | | 8.8 | | | 9.1 | | |
| HCM LOS | | | | | | | A | | | A | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 | | | | |
| Capacity (veh/h) | 1005 | 1616 | - | - | 1616 | - | - | 885 | | | | |
| HCM Lane V/C Ratio | 0.065 | 0.003 | - | - | 0.017 | - | - | 0.018 | | | | |
| HCM Control Delay (s) | 8.8 | 7.2 | 0 | - | 7.3 | 0 | - | 9.1 | | | | |
| HCM Lane LOS | A | A | A | - | A | A | - | A | | | | |
| HCM 95th %tile Q(veh) | 0.2 | 0 | - | - | 0.1 | - | - | 0.1 | | | | |

HCM 6th TWSC
6: Orleans St & 57th Place/Private Dr

Future (2040)
AM Peak Hour

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|-------|--------|------------|--------|-------|--------|------|------|-------|------|------|
| Int Delay, s/veh | 6.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 20 | 0 | 40 | 40 | 0 | 30 | 20 | 10 | 20 | 15 | 10 | 10 |
| Future Vol, veh/h | 20 | 0 | 40 | 40 | 0 | 30 | 20 | 10 | 20 | 15 | 10 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 0 | 43 | 43 | 0 | 33 | 22 | 11 | 22 | 16 | 11 | 11 |
| | | | | | | | | | | | | |
| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
| Conflicting Flow All | 132 | 126 | 17 | 136 | 120 | 22 | 22 | 0 | 0 | 33 | 0 | 0 |
| Stage 1 | 49 | 49 | - | 66 | 66 | - | - | - | - | - | - | - |
| Stage 2 | 83 | 77 | - | 70 | 54 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 840 | 764 | 1062 | 835 | 770 | 1055 | 1593 | - | - | 1579 | - | - |
| Stage 1 | 964 | 854 | - | 945 | 840 | - | - | - | - | - | - | - |
| Stage 2 | 925 | 831 | - | 940 | 850 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 799 | 746 | 1062 | 787 | 752 | 1055 | 1593 | - | - | 1579 | - | - |
| Mov Cap-2 Maneuver | 799 | 746 | - | 787 | 752 | - | - | - | - | - | - | - |
| Stage 1 | 951 | 845 | - | 932 | 828 | - | - | - | - | - | - | - |
| Stage 2 | 884 | 819 | - | 893 | 842 | - | - | - | - | - | - | - |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Approach | EB | | WB | | NB | | SB | | | | | |
| HCM Control Delay, s | 9 | | 9.5 | | 2.9 | | 3.1 | | | | | |
| HCM LOS | A | | A | | | | | | | | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR | | | | | |
| Capacity (veh/h) | 1593 | - | - | 957 | 883 | 1579 | - | - | | | | |
| HCM Lane V/C Ratio | 0.014 | - | - | 0.068 | 0.086 | 0.01 | - | - | | | | |
| HCM Control Delay (s) | 7.3 | 0 | - | 9 | 9.5 | 7.3 | 0 | - | | | | |
| HCM Lane LOS | A | A | - | A | A | A | A | - | | | | |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.2 | 0.3 | 0 | - | - | | | | |

| Intersection | | | | | | |
|--------------------------|---|---|---|---|---|------|
| Int Delay, s/veh | 0.9 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations |  |  |  |  |  | |
| Traffic Vol, veh/h | 25 | 1175 | 1075 | 25 | 40 | 50 |
| Future Vol, veh/h | 25 | 1175 | 1075 | 25 | 40 | 50 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 200 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 1277 | 1168 | 27 | 43 | 54 |

| Major/Minor | Major1 | Major2 | Minor2 |
|----------------------|--------|--------|-------------|
| Conflicting Flow All | 1195 | 0 | 0 1747 598 |
| Stage 1 | - | - | - 1182 - |
| Stage 2 | - | - | - 565 - |
| Critical Hdwy | 5.34 | - | - 5.74 7.14 |
| Critical Hdwy Stg 1 | - | - | - 6.64 - |
| Critical Hdwy Stg 2 | - | - | - 6.04 - |
| Follow-up Hdwy | 3.12 | - | - 3.82 3.92 |
| Pot Cap-1 Maneuver | 315 | - | - *343 382 |
| Stage 1 | - | - | - *187 - |
| Stage 2 | - | - | - *666 - |
| Platoon blocked, % | | - | - 1 |
| Mov Cap-1 Maneuver | 315 | - | - *313 382 |
| Mov Cap-2 Maneuver | - | - | - *313 - |
| Stage 1 | - | - | - *171 - |
| Stage 2 | - | - | - *666 - |



























| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.4 | 0 | 19.3 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 315 | - | - | - | 348 |
| HCM Lane V/C Ratio | 0.086 | - | - | - | 0.281 |
| HCM Control Delay (s) | 17.5 | - | - | - | 19.3 |
| HCM Lane LOS | C | - | - | - | C |
| HCM 95th %tile Q(veh) | 0.3 | - | - | - | 1.1 |

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

Timings
8: Picadilly Rd & E 56th Ave

Future (2040)
AM Peak Hour

| |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
| Lane Configurations |  |    |  |    |   |    |   |    |
| Traffic Volume (vph) | 100 | 830 | 100 | 810 | 215 | 500 | 155 | 530 |
| Future Volume (vph) | 100 | 830 | 100 | 810 | 215 | 500 | 155 | 530 |
| Turn Type | pm+pt | NA | pm+pt | NA | Prot | NA | Prot | NA |
| Protected Phases | 7 | 4 | 3 | 8 | 5 | 2 | 1 | 6 |
| Permitted Phases | 4 | | 8 | | | | | |
| Detector Phase | 7 | 4 | 3 | 8 | 5 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 14.0 | 34.0 | 14.0 | 34.0 | 16.0 | 28.4 | 13.6 | 26.0 |
| Total Split (%) | 15.6% | 37.8% | 15.6% | 37.8% | 17.8% | 31.6% | 15.1% | 28.9% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lead | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | Max | None | Max | None | C-Max | None | C-Max |
| Act Effect Green (s) | 39.9 | 32.9 | 39.9 | 32.9 | 10.5 | 24.4 | 8.6 | 22.5 |
| Actuated g/C Ratio | 0.44 | 0.37 | 0.44 | 0.37 | 0.12 | 0.27 | 0.10 | 0.25 |
| v/c Ratio | 0.38 | 0.65 | 0.45 | 0.55 | 0.58 | 0.56 | 0.51 | 0.52 |
| Control Delay | 17.1 | 24.5 | 19.3 | 24.1 | 43.7 | 25.4 | 44.4 | 29.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 17.1 | 24.5 | 19.3 | 24.1 | 43.7 | 25.4 | 44.4 | 29.8 |
| LOS | B | C | B | C | D | C | D | C |
| Approach Delay | | 23.9 | | 23.6 | | 29.6 | | 32.8 |
| Approach LOS | | C | | C | | C | | C |

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 35.3 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 26.9









Intersection LOS: C

Intersection Capacity Utilization 62.1%

ICU Level of Service B









Analysis Period (min) 15

Splits and Phases: 8: Picadilly Rd & E 56th Ave

| | | | |
|--|--|--|---|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 13.6 s | 28.4 s | 14 s | 34 s |
|  Ø5 |  Ø6 (R) |  Ø7 |  Ø8 |
| 16 s | 26 s | 14 s | 34 s |





























Queues
8: Picadilly Rd & E 56th Ave

Future (2040)
AM Peak Hour

| |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
| Lane Group Flow (vph) | 109 | 1212 | 109 | 1005 | 234 | 788 | 168 | 658 |
| v/c Ratio | 0.38 | 0.65 | 0.45 | 0.55 | 0.58 | 0.56 | 0.51 | 0.52 |
| Control Delay | 17.1 | 24.5 | 19.3 | 24.1 | 43.7 | 25.4 | 44.4 | 29.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 17.1 | 24.5 | 19.3 | 24.1 | 43.7 | 25.4 | 44.4 | 29.8 |
| Queue Length 50th (ft) | 33 | 198 | 33 | 165 | 65 | 119 | 47 | 115 |
| Queue Length 95th (ft) | 62 | 254 | 62 | 213 | 102 | 159 | 79 | 153 |
| Internal Link Dist (ft) | | 583 | | 920 | | 498 | | 433 |
| Turn Bay Length (ft) | 350 | | 150 | | 200 | | 250 | |
| Base Capacity (vph) | 307 | 1853 | 267 | 1843 | 438 | 1405 | 347 | 1265 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.36 | 0.65 | 0.41 | 0.55 | 0.53 | 0.56 | 0.48 | 0.52 |
| Intersection Summary | | | | | | | | |

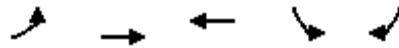
HCM 6th Signalized Intersection Summary 8: Picadilly Rd & E 56th Ave

Future (2040)
AM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    | |  |    | |  |    | |  |    | |
| Traffic Volume (veh/h) | 100 | 830 | 285 | 100 | 810 | 115 | 215 | 500 | 225 | 155 | 530 | 75 |
| Future Volume (veh/h) | 100 | 830 | 285 | 100 | 810 | 115 | 215 | 500 | 225 | 155 | 530 | 75 |
| 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 | 109 | 902 | 310 | 109 | 880 | 125 | 234 | 543 | 245 | 168 | 576 | 82 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 277 | 1231 | 422 | 238 | 1482 | 210 | 314 | 1194 | 522 | 242 | 1460 | 205 |
| Arrive On Green | 0.06 | 0.33 | 0.33 | 0.06 | 0.33 | 0.33 | 0.09 | 0.34 | 0.34 | 0.07 | 0.32 | 0.32 |
| Sat Flow, veh/h | 1781 | 3756 | 1287 | 1781 | 4520 | 639 | 3456 | 3479 | 1522 | 3456 | 4525 | 635 |
| Grp Volume(v), veh/h | 109 | 817 | 395 | 109 | 662 | 343 | 234 | 531 | 257 | 168 | 431 | 227 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1639 | 1781 | 1702 | 1755 | 1728 | 1702 | 1596 | 1728 | 1702 | 1756 |
| Q Serve(g_s), s | 3.6 | 19.1 | 19.2 | 3.6 | 14.6 | 14.7 | 5.9 | 10.9 | 11.3 | 4.3 | 8.8 | 9.0 |
| Cycle Q Clear(g_c), s | 3.6 | 19.1 | 19.2 | 3.6 | 14.6 | 14.7 | 5.9 | 10.9 | 11.3 | 4.3 | 8.8 | 9.0 |
| Prop In Lane | 1.00 | | 0.79 | 1.00 | | 0.36 | 1.00 | | 0.95 | 1.00 | | 0.36 |
| Lane Grp Cap(c), veh/h | 277 | 1116 | 537 | 238 | 1116 | 575 | 314 | 1168 | 548 | 242 | 1098 | 566 |
| V/C Ratio(X) | 0.39 | 0.73 | 0.74 | 0.46 | 0.59 | 0.60 | 0.75 | 0.45 | 0.47 | 0.69 | 0.39 | 0.40 |
| Avail Cap(c_a), veh/h | 360 | 1116 | 537 | 321 | 1116 | 575 | 442 | 1168 | 548 | 349 | 1098 | 566 |
| 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 | 19.5 | 26.8 | 26.8 | 20.7 | 25.2 | 25.3 | 39.9 | 23.0 | 23.1 | 40.9 | 23.6 | 23.7 |
| Incr Delay (d2), s/veh | 0.9 | 4.3 | 8.7 | 1.4 | 2.3 | 4.5 | 4.3 | 1.3 | 2.9 | 3.5 | 1.1 | 2.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.6 | 12.3 | 12.9 | 2.6 | 9.7 | 10.5 | 4.7 | 7.6 | 7.8 | 3.3 | 6.2 | 6.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 20.4 | 31.0 | 35.5 | 22.1 | 27.6 | 29.8 | 44.2 | 24.3 | 26.0 | 44.5 | 24.7 | 25.8 |
| LnGrp LOS | C | C | D | C | C | C | D | C | C | D | C | C |
| Approach Vol, veh/h | 1321 | | | | 1114 | | | | 1022 | | 826 | |
| Approach Delay, s/veh | 31.5 | | | | 27.7 | | | | 29.3 | | 29.0 | |
| Approach LOS | C | | | | C | | | | C | | C | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 10.8 | 35.4 | 9.8 | 34.0 | 12.7 | 33.5 | 9.8 | 34.0 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 9.1 | 23.9 | 9.5 | 29.5 | 11.5 | 21.5 | 9.5 | 29.5 | | | | |
| Max Q Clear Time (g_c+I1), s | 6.3 | 13.3 | 5.6 | 21.2 | 7.9 | 11.0 | 5.6 | 16.7 | | | | |
| Green Ext Time (p_c), s | 0.1 | 3.5 | 0.1 | 4.6 | 0.2 | 2.8 | 0.1 | 4.9 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 29.5 | | | | | | | | | |
| HCM 6th LOS | | | C | | | | | | | | | |

Timings
9: E 56th Ave & Lisbon St

Future (2040)
AM Peak Hour



| Lane Group | EBL | EBT | WBT | SBL | SBR |
|----------------------|-------|-------|-------|-------|-------|
| Lane Configurations | ↰ | ↑↑↑ | ↑↑↑ | ↰ | ↰ |
| Traffic Volume (vph) | 105 | 1000 | 1025 | 200 | 120 |
| Future Volume (vph) | 105 | 1000 | 1025 | 200 | 120 |
| Turn Type | pm+pt | NA | NA | Prot | pm+ov |
| Protected Phases | 7 | 4 | 8 | 6 | 7 |
| Permitted Phases | 4 | | | | 6 |
| Detector Phase | 7 | 4 | 8 | 6 | 7 |
| Switch Phase | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 22.5 | 9.5 |
| Total Split (s) | 11.2 | 36.4 | 25.2 | 23.6 | 11.2 |
| Total Split (%) | 18.7% | 60.7% | 42.0% | 39.3% | 18.7% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | | Lag | | Lead |
| Lead-Lag Optimize? | Yes | | Yes | | Yes |
| Recall Mode | None | None | None | C-Min | None |
| Act Effect Green (s) | 31.1 | 31.1 | 20.8 | 19.9 | 32.3 |
| Actuated g/C Ratio | 0.52 | 0.52 | 0.35 | 0.33 | 0.54 |
| v/c Ratio | 0.33 | 0.41 | 0.71 | 0.37 | 0.15 |
| Control Delay | 8.5 | 9.0 | 18.9 | 19.9 | 8.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 8.5 | 9.0 | 18.9 | 19.9 | 8.2 |
| LOS | A | A | B | B | A |
| Approach Delay | | 9.0 | 18.9 | 15.5 | |
| Approach LOS | | A | B | B | |

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 14.2

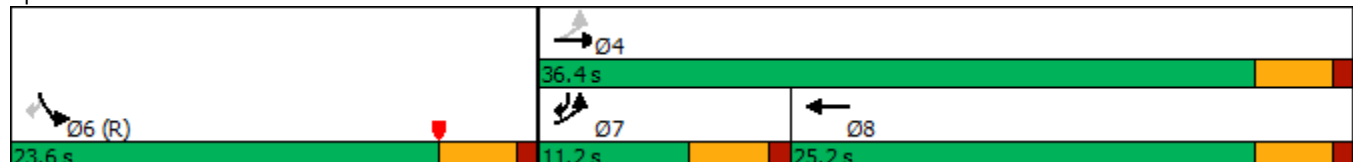
Intersection LOS: B

Intersection Capacity Utilization 50.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 9: E 56th Ave & Lisbon St



Queues
9: E 56th Ave & Lisbon St

Future (2040)
AM Peak Hour








| Lane Group | EBL | EBT | WBT | SBL | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 114 | 1087 | 1239 | 217 | 130 |
| v/c Ratio | 0.33 | 0.41 | 0.71 | 0.37 | 0.15 |
| Control Delay | 8.5 | 9.0 | 18.9 | 19.9 | 8.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 8.5 | 9.0 | 18.9 | 19.9 | 8.2 |
| Queue Length 50th (ft) | 16 | 64 | 126 | 67 | 23 |
| Queue Length 95th (ft) | 36 | 95 | 179 | 117 | 45 |
| Internal Link Dist (ft) | | 343 | 1340 | 945 | |
| Turn Bay Length (ft) | 100 | | | | |
| Base Capacity (vph) | 351 | 2888 | 1817 | 650 | 862 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.32 | 0.38 | 0.68 | 0.33 | 0.15 |
| Intersection Summary | | | | | |

HCM 6th Signalized Intersection Summary 9: E 56th Ave & Lisbon St

Future (2040)
AM Peak Hour






| Movement | EBL | EBT | WBT | WBR | SBL | SBR | |
|------------------------------|---|---|---|------|---|---|------|
| Lane Configurations |  |  |  | |  |  | |
| Traffic Volume (veh/h) | 105 | 1000 | 1025 | 115 | 200 | 120 | |
| Future Volume (veh/h) | 105 | 1000 | 1025 | 115 | 200 | 120 | |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Work Zone On Approach | | No | No | | No | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | |
| Adj Flow Rate, veh/h | 114 | 1087 | 1114 | 125 | 217 | 130 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | |
| Cap, veh/h | 287 | 2316 | 1433 | 161 | 706 | 741 | |
| Arrive On Green | 0.07 | 0.45 | 0.31 | 0.31 | 0.40 | 0.40 | |
| Sat Flow, veh/h | 1781 | 5274 | 4826 | 522 | 1781 | 1585 | |
| Grp Volume(v), veh/h | 114 | 1087 | 814 | 425 | 217 | 130 | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1702 | 1776 | 1781 | 1585 | |
| Q Serve(g_s), s | 2.4 | 8.9 | 13.1 | 13.1 | 5.0 | 2.9 | |
| Cycle Q Clear(g_c), s | 2.4 | 8.9 | 13.1 | 13.1 | 5.0 | 2.9 | |
| Prop In Lane | 1.00 | | | 0.29 | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 287 | 2316 | 1047 | 547 | 706 | 741 | |
| V/C Ratio(X) | 0.40 | 0.47 | 0.78 | 0.78 | 0.31 | 0.18 | |
| Avail Cap(c_a), veh/h | 359 | 2715 | 1174 | 613 | 706 | 741 | |
| HCM Platoon Ratio | 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 | |
| Uniform Delay (d), s/veh | 13.6 | 11.4 | 18.9 | 18.9 | 12.4 | 9.3 | |
| Incr Delay (d2), s/veh | 0.9 | 0.1 | 3.0 | 5.7 | 1.1 | 0.5 | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| %ile BackOfQ(95%),veh/ln | 1.5 | 4.6 | 8.3 | 9.1 | 3.5 | 6.2 | |
| Unsig. Movement Delay, s/veh | | | | | | | |
| LnGrp Delay(d),s/veh | 14.5 | 11.5 | 21.9 | 24.6 | 13.6 | 9.8 | |
| LnGrp LOS | B | B | C | C | B | A | |
| Approach Vol, veh/h | | 1201 | 1239 | | 347 | | |
| Approach Delay, s/veh | | 11.8 | 22.8 | | 12.2 | | |
| Approach LOS | | B | C | | B | | |
| Timer - Assigned Phs | | | | 4 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 31.7 | 28.3 | 8.8 | 23.0 |
| Change Period (Y+Rc), s | | | | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 31.9 | 19.1 | 6.7 | 20.7 |
| Max Q Clear Time (g_c+I1), s | | | | 10.9 | 7.0 | 4.4 | 15.1 |
| Green Ext Time (p_c), s | | | | 7.2 | 0.8 | 0.0 | 3.4 |
| Intersection Summary | | | | | | | |
| HCM 6th Ctrl Delay | | | 16.8 | | | | |
| HCM 6th LOS | | | B | | | | |

| Intersection | | | | | | |
|--------------------------|--------|--------|------|--------|------|------|
| Int Delay, s/veh | 0.1 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑↑↑ | ↑↑↑↓ | | | ↗ |
| Traffic Vol, veh/h | 0 | 1235 | 1255 | 20 | 0 | 15 |
| Future Vol, veh/h | 0 | 1235 | 1255 | 20 | 0 | 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 | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 1342 | 1364 | 22 | 0 | 16 |
| | | | | | | |
| Major/Minor | Major1 | Major2 | | Minor2 | | |
| Conflicting Flow All | - | 0 | - | 0 | - | 693 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 7.14 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.92 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 331 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 331 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | WB | | SB | | |
| HCM Control Delay, s | 0 | 0 | | 16.4 | | |
| HCM LOS | | | | C | | |
| | | | | | | |
| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 | | |
| Capacity (veh/h) | - | - | - | 331 | | |
| HCM Lane V/C Ratio | - | - | - | 0.049 | | |
| HCM Control Delay (s) | - | - | - | 16.4 | | |
| HCM Lane LOS | - | - | - | C | | |
| HCM 95th %tile Q(veh) | - | - | - | 0.2 | | |

HCM 6th TWSC
2: Nepal Ct & 57th Place

Future (2040)
PM Peak Hour




| Intersection | | | | | | |
|--------------------------|---|----------|---|--------|-------|---|
| Int Delay, s/veh | 3.7 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  | |  | | |  |
| Traffic Vol, veh/h | 10 | 5 | 10 | 10 | 5 | 5 |
| Future Vol, veh/h | 10 | 5 | 10 | 10 | 5 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 5 | 11 | 11 | 5 | 5 |
| Major/Minor | Minor1 | Major1 | | Major2 | | |
| Conflicting Flow All | 32 | 17 | 0 | 0 | 22 | 0 |
| Stage 1 | 17 | - | - | - | - | - |
| Stage 2 | 15 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 982 | 1062 | - | - | 1593 | - |
| Stage 1 | 1006 | - | - | - | - | - |
| Stage 2 | 1008 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 979 | 1062 | - | - | 1593 | - |
| Mov Cap-2 Maneuver | 979 | - | - | - | - | - |
| Stage 1 | 1006 | - | - | - | - | - |
| Stage 2 | 1005 | - | - | - | - | - |
| Approach | WB | NB | | SB | | |
| HCM Control Delay, s | 8.6 | 0 | | 3.6 | | |
| HCM LOS | A | | | | | |
| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | | SBL | SBT | |
| Capacity (veh/h) | - | - 1005 | | 1593 | - | |
| HCM Lane V/C Ratio | - | - 0.016 | | 0.003 | - | |
| HCM Control Delay (s) | - | - 8.6 | | 7.3 | 0 | |
| HCM Lane LOS | - | - A | | A | A | |
| HCM 95th %tile Q(veh) | - | - 0 | | 0 | - | |

HCM 6th TWSC
3: Nepal Ct & 57th Ave

Future (2040)
PM Peak Hour

Intersection

Int Delay, s/veh 2.4

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|--------------------------|---|------|------|---|---|------|
| Lane Configurations |  | | |  |  | |
| Traffic Vol, veh/h | 15 | 10 | 0 | 15 | 15 | 0 |
| Future Vol, veh/h | 15 | 10 | 0 | 15 | 15 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 11 | 0 | 16 | 16 | 0 |




| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 27 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | - | - | 4.12 |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | - | - | 2.218 |
| Pot Cap-1 Maneuver | - | - | 1587 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1587 |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | NB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 8.8 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|------|-----|
| Capacity (veh/h) | 974 | - | - | 1587 | - |
| HCM Lane V/C Ratio | 0.017 | - | - | - | - |
| HCM Control Delay (s) | 8.8 | - | - | 0 | - |
| HCM Lane LOS | A | - | - | A | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0 | - |

HCM 6th TWSC
4: Road 4 & 57th Ave





Future (2040)
PM Peak Hour







| Intersection | | | | | | |
|--------------------------|---|--------|-------|---|---|-------|
| Int Delay, s/veh | 1.5 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations |  | | |  |  | |
| Traffic Vol, veh/h | 10 | 5 | 0 | 10 | 5 | 0 |
| Future Vol, veh/h | 10 | 5 | 0 | 10 | 5 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 5 | 0 | 11 | 5 | 0 |
| | | | | | | |
| Major/Minor | Major1 | Major2 | | Minor1 | | |
| Conflicting Flow All | 0 | 0 | 16 | 0 | 25 | 14 |
| Stage 1 | - | - | - | - | 14 | - |
| Stage 2 | - | - | - | - | 11 | - |
| 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 | - | - | 1602 | - | 991 | 1066 |
| Stage 1 | - | - | - | - | 1009 | - |
| Stage 2 | - | - | - | - | 1012 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1602 | - | 991 | 1066 |
| Mov Cap-2 Maneuver | - | - | - | - | 991 | - |
| Stage 1 | - | - | - | - | 1009 | - |
| Stage 2 | - | - | - | - | 1012 | - |
| | | | | | | |
| | | | | | | |
| Approach | EB | WB | | NB | | |
| HCM Control Delay, s | 0 | 0 | | 8.7 | | |
| HCM LOS | A | | | | | |
| | | | | | | |
| | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | |
| Capacity (veh/h) | 991 | - | - | 1602 | - | |
| HCM Lane V/C Ratio | 0.005 | - | - | - | - | |
| HCM Control Delay (s) | 8.7 | - | - | 0 | - | |
| HCM Lane LOS | A | - | - | A | - | |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - | |

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|-------|------|--------|-------|------|--------|-------|-------|--------|-------|-------|
| Int Delay, s/veh | 7.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 5 | 0 | 5 | 40 | 0 | 5 | 5 | 5 | 30 | 5 | 5 | 5 |
| Future Vol, veh/h | 5 | 0 | 5 | 40 | 0 | 5 | 5 | 5 | 30 | 5 | 5 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 0 | 5 | 43 | 0 | 5 | 5 | 5 | 33 | 5 | 5 | 5 |
| | | | | | | | | | | | | |
| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
| Conflicting Flow All | 5 | 0 | 0 | 5 | 0 | 0 | 107 | 104 | 3 | 121 | 104 | 3 |
| Stage 1 | - | - | - | - | - | - | 13 | 13 | - | 89 | 89 | - |
| Stage 2 | - | - | - | - | - | - | 94 | 91 | - | 32 | 15 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1616 | - | - | 1616 | - | - | 872 | 786 | 1081 | 854 | 786 | 1081 |
| Stage 1 | - | - | - | - | - | - | 1007 | 885 | - | 918 | 821 | - |
| Stage 2 | - | - | - | - | - | - | 913 | 820 | - | 984 | 883 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1616 | - | - | 1616 | - | - | 843 | 762 | 1081 | 805 | 762 | 1081 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 843 | 762 | - | 805 | 762 | - |
| Stage 1 | - | - | - | - | - | - | 1004 | 882 | - | 915 | 799 | - |
| Stage 2 | - | - | - | - | - | - | 878 | 798 | - | 946 | 880 | - |
| | | | | | | | | | | | | |
| Approach | EB | | | WB | | | NB | | | SB | | |
| HCM Control Delay, s | 3.6 | | | 6.5 | | | 8.8 | | | 9.3 | | |
| HCM LOS | | | | | | | A | | | A | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 | | | | |
| Capacity (veh/h) | 994 | 1616 | - | - | 1616 | - | - | 862 | | | | |
| HCM Lane V/C Ratio | 0.044 | 0.003 | - | - | 0.027 | - | - | 0.019 | | | | |
| HCM Control Delay (s) | 8.8 | 7.2 | 0 | - | 7.3 | 0 | - | 9.3 | | | | |
| HCM Lane LOS | A | A | A | - | A | A | - | A | | | | |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0.1 | - | - | 0.1 | | | | |

HCM 6th TWSC
6: Orleans St & 57th Place/Private Dr

Future (2040)
PM Peak Hour

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|---|--------|------------|---|-------|--------|---|------|-------|---|------|
| Int Delay, s/veh | 5.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Vol, veh/h | 15 | 0 | 30 | 30 | 0 | 20 | 45 | 5 | 55 | 20 | 10 | 20 |
| Future Vol, veh/h | 15 | 0 | 30 | 30 | 0 | 20 | 45 | 5 | 55 | 20 | 10 | 20 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 0 | 33 | 33 | 0 | 22 | 49 | 5 | 60 | 22 | 11 | 22 |
| | | | | | | | | | | | | |
| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
| Conflicting Flow All | 210 | 229 | 22 | 216 | 210 | 35 | 33 | 0 | 0 | 65 | 0 | 0 |
| Stage 1 | 66 | 66 | - | 133 | 133 | - | - | - | - | - | - | - |
| Stage 2 | 144 | 163 | - | 83 | 77 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 747 | 671 | 1055 | 740 | 687 | 1038 | 1579 | - | - | 1537 | - | - |
| Stage 1 | 945 | 840 | - | 870 | 786 | - | - | - | - | - | - | - |
| Stage 2 | 859 | 763 | - | 925 | 831 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 705 | 639 | 1055 | 692 | 655 | 1038 | 1579 | - | - | 1537 | - | - |
| Mov Cap-2 Maneuver | 705 | 639 | - | 692 | 655 | - | - | - | - | - | - | - |
| Stage 1 | 915 | 827 | - | 842 | 761 | - | - | - | - | - | - | - |
| Stage 2 | 814 | 739 | - | 883 | 819 | - | - | - | - | - | - | - |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Approach | EB | | WB | | NB | | SB | | | | | |
| HCM Control Delay, s | 9.2 | | 9.8 | | 3.2 | | 3 | | | | | |
| HCM LOS | A | | A | | | | | | | | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR | | | | | |
| Capacity (veh/h) | 1579 | - | - | 905 | 798 | 1537 | - | - | | | | |
| HCM Lane V/C Ratio | 0.031 | - | - | 0.054 | 0.068 | 0.014 | - | - | | | | |
| HCM Control Delay (s) | 7.4 | 0 | - | 9.2 | 9.8 | 7.4 | 0 | - | | | | |
| HCM Lane LOS | A | A | - | A | A | A | A | - | | | | |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.2 | 0.2 | 0 | - | - | | | | |

| Intersection | | | | | | |
|--------------------------|---|---|---|---|---|---|
| Int Delay, s/veh | 1.3 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations |  |  |  |  |  |  |
| Traffic Vol, veh/h | 55 | 1180 | 1240 | 50 | 35 | 35 |
| Future Vol, veh/h | 55 | 1180 | 1240 | 50 | 35 | 35 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 200 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 60 | 1283 | 1348 | 54 | 38 | 38 |

| Major/Minor | Major1 | Major2 | Minor2 |
|----------------------|--------|--------|-------------|
| Conflicting Flow All | 1402 | 0 | 0 2008 701 |
| Stage 1 | - | - | - 1375 - |
| Stage 2 | - | - | - 633 - |
| Critical Hdwy | 5.34 | - | - 5.74 7.14 |
| Critical Hdwy Stg 1 | - | - | - 6.64 - |
| Critical Hdwy Stg 2 | - | - | - 6.04 - |
| Follow-up Hdwy | 3.12 | - | - 3.82 3.92 |
| Pot Cap-1 Maneuver | 249 | - | - *225 327 |
| Stage 1 | - | - | - *142 - |
| Stage 2 | - | - | - *666 - |
| Platoon blocked, % | - | - | - 1 |
| Mov Cap-1 Maneuver | 249 | - | - *171 327 |
| Mov Cap-2 Maneuver | - | - | - *171 - |
| Stage 1 | - | - | - *108 - |
| Stage 2 | - | - | - *666 - |

















| Approach | EB | WB | SB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 1.1 | 0 | 29 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|------|-----|-----|-----|-------|
| Capacity (veh/h) | 249 | - | - | - | 225 |
| HCM Lane V/C Ratio | 0.24 | - | - | - | 0.338 |
| HCM Control Delay (s) | 24 | - | - | - | 29 |
| HCM Lane LOS | C | - | - | - | D |
| HCM 95th %tile Q(veh) | 0.9 | - | - | - | 1.4 |

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

Timings
8: Picadilly Rd & E 56th Ave









Future (2040)
PM Peak Hour

| |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|--|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
| Lane Configurations |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 125 | 850 | 250 | 845 | 345 | 690 | 150 | 720 |
| Future Volume (vph) | 125 | 850 | 250 | 845 | 345 | 690 | 150 | 720 |
| Turn Type | pm+pt | NA | pm+pt | NA | Prot | NA | Prot | NA |
| Protected Phases | 7 | 4 | 3 | 8 | 5 | 2 | 1 | 6 |
| Permitted Phases | 4 | | 8 | | | | | |
| Detector Phase | 7 | 4 | 3 | 8 | 5 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 14.9 | 28.3 | 19.0 | 32.4 | 17.6 | 31.5 | 11.2 | 25.1 |
| Total Split (%) | 16.6% | 31.4% | 21.1% | 36.0% | 19.6% | 35.0% | 12.4% | 27.9% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lead | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | Max | None | Max | None | C-Max | None | C-Max |
| Act Effect Green (s) | 34.1 | 25.1 | 42.4 | 29.3 | 12.7 | 27.0 | 6.7 | 21.0 |
| Actuated g/C Ratio | 0.38 | 0.28 | 0.47 | 0.33 | 0.14 | 0.30 | 0.07 | 0.23 |
| v/c Ratio | 0.51 | 0.83 | 0.80 | 0.65 | 0.77 | 0.63 | 0.64 | 0.75 |
| Control Delay | 21.5 | 35.1 | 36.8 | 27.5 | 49.2 | 26.9 | 52.7 | 36.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 21.5 | 35.1 | 36.8 | 27.5 | 49.2 | 26.9 | 52.7 | 36.0 |
| LOS | C | D | D | C | D | C | D | D |
| Approach Delay | | 33.7 | | 29.4 | | 33.1 | | 38.6 |
| Approach LOS | | C | | C | | C | | D |

Intersection Summary









| |
|--|
| Cycle Length: 90 |
| Actuated Cycle Length: 90 |
| Offset: 37.5 (42%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow |
| Natural Cycle: 70 |
| Control Type: Actuated-Coordinated |
| Maximum v/c Ratio: 0.83 |
| Intersection Signal Delay: 33.4 |
| Intersection Capacity Utilization 76.6% |
| Analysis Period (min) 15 |
| Intersection LOS: C |
| ICU Level of Service D |

Splits and Phases: 8: Picadilly Rd & E 56th Ave

| | | | |
|--|--|--|--|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 11.2 s | 31.5 s | 19 s | 28.3 s |
|  Ø5 |  Ø6 (R) |  Ø7 |  Ø8 |
| 17.6 s | 25.1 s | 14.9 s | 32.4 s |

Queues
8: Picadilly Rd & E 56th Ave

Future (2040)
PM Peak Hour

| |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
| Lane Group Flow (vph) | 136 | 1185 | 272 | 1065 | 375 | 967 | 163 | 892 |
| v/c Ratio | 0.51 | 0.83 | 0.80 | 0.65 | 0.77 | 0.63 | 0.64 | 0.75 |
| Control Delay | 21.5 | 35.1 | 36.8 | 27.5 | 49.2 | 26.9 | 52.7 | 36.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 21.5 | 35.1 | 36.8 | 27.5 | 49.2 | 26.9 | 52.7 | 36.0 |
| Queue Length 50th (ft) | 42 | 221 | 96 | 183 | 106 | 157 | 47 | 169 |
| Queue Length 95th (ft) | 76 | #298 | #212 | 234 | #165 | 203 | #85 | 217 |
| Internal Link Dist (ft) | | 583 | | 920 | | 498 | | 433 |
| Turn Bay Length (ft) | 350 | | 150 | | 200 | | 250 | |
| Base Capacity (vph) | 295 | 1425 | 365 | 1644 | 499 | 1531 | 255 | 1184 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.46 | 0.83 | 0.75 | 0.65 | 0.75 | 0.63 | 0.64 | 0.75 |

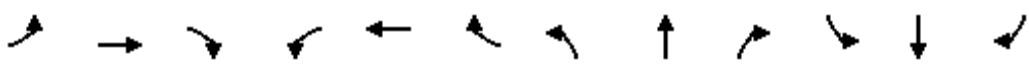
Intersection Summary

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

HCM 6th Signalized Intersection Summary

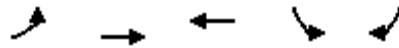
8: Picadilly Rd & E 56th Ave

Future (2040)
PM Peak Hour

| |  | | | | | | | | | | | |
|------------------------------|--|------|------|------|------|------|------|------|------|------|------|------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↰ | ↑↑↑ | | ↰ | ↑↑↑ | | ↰ | ↑↑↑ | | ↰ | ↑↑↑ | |
| Traffic Volume (veh/h) | 125 | 850 | 240 | 250 | 845 | 135 | 345 | 690 | 200 | 150 | 720 | 100 |
| Future Volume (veh/h) | 125 | 850 | 240 | 250 | 845 | 135 | 345 | 690 | 200 | 150 | 720 | 100 |
| 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 | 136 | 924 | 261 | 272 | 918 | 147 | 375 | 750 | 217 | 163 | 783 | 109 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 289 | 1047 | 295 | 330 | 1416 | 226 | 451 | 1334 | 382 | 233 | 1248 | 172 |
| Arrive On Green | 0.08 | 0.26 | 0.26 | 0.13 | 0.32 | 0.32 | 0.13 | 0.34 | 0.34 | 0.07 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1781 | 3959 | 1115 | 1781 | 4439 | 708 | 3456 | 3943 | 1129 | 3456 | 4535 | 627 |
| Grp Volume(v), veh/h | 136 | 794 | 391 | 272 | 703 | 362 | 375 | 646 | 321 | 163 | 586 | 306 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1670 | 1781 | 1702 | 1743 | 1728 | 1702 | 1667 | 1728 | 1702 | 1758 |
| Q Serve(g_s), s | 4.9 | 20.1 | 20.2 | 9.5 | 16.0 | 16.1 | 9.5 | 14.0 | 14.2 | 4.2 | 13.6 | 13.7 |
| Cycle Q Clear(g_c), s | 4.9 | 20.1 | 20.2 | 9.5 | 16.0 | 16.1 | 9.5 | 14.0 | 14.2 | 4.2 | 13.6 | 13.7 |
| Prop In Lane | 1.00 | | 0.67 | 1.00 | | 0.41 | 1.00 | | 0.68 | 1.00 | | 0.36 |
| Lane Grp Cap(c), veh/h | 289 | 900 | 442 | 330 | 1086 | 556 | 451 | 1151 | 564 | 233 | 937 | 484 |
| V/C Ratio(X) | 0.47 | 0.88 | 0.89 | 0.82 | 0.65 | 0.65 | 0.83 | 0.56 | 0.57 | 0.70 | 0.63 | 0.63 |
| Avail Cap(c_a), veh/h | 360 | 900 | 442 | 386 | 1086 | 556 | 503 | 1151 | 564 | 257 | 937 | 484 |
| 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 | 22.2 | 31.8 | 31.8 | 21.7 | 26.3 | 26.3 | 38.2 | 24.3 | 24.4 | 41.1 | 28.6 | 28.6 |
| Incr Delay (d2), s/veh | 1.2 | 12.2 | 22.1 | 12.0 | 3.0 | 5.8 | 10.4 | 2.0 | 4.1 | 7.2 | 3.2 | 6.2 |
| 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(95%),veh/ln | 3.6 | 14.2 | 15.5 | 8.2 | 10.6 | 11.4 | 7.9 | 9.3 | 9.7 | 3.5 | 9.4 | 10.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 23.4 | 43.9 | 53.9 | 33.6 | 29.3 | 32.2 | 48.5 | 26.3 | 28.5 | 48.3 | 31.7 | 34.8 |
| LnGrp LOS | C | D | D | C | C | C | D | C | C | D | C | C |
| Approach Vol, veh/h | | 1321 | | | 1337 | | | 1342 | | | 1055 | |
| Approach Delay, s/veh | | 44.7 | | | 30.9 | | | 33.0 | | | 35.2 | |
| Approach LOS | | D | | | C | | | C | | | D | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 10.6 | 34.9 | 16.2 | 28.3 | 16.3 | 29.3 | 11.3 | 33.2 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 6.7 | 27.0 | 14.5 | 23.8 | 13.1 | 20.6 | 10.4 | 27.9 | | | | |
| Max Q Clear Time (g_c+I1), s | 6.2 | 16.2 | 11.5 | 22.2 | 11.5 | 15.7 | 6.9 | 18.1 | | | | |
| Green Ext Time (p_c), s | 0.0 | 4.4 | 0.2 | 1.1 | 0.2 | 2.3 | 0.1 | 4.5 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 36.0 | | | | | | | | | |
| HCM 6th LOS | | | D | | | | | | | | | |

Timings
9: E 56th Ave & Lisbon St

Future (2040)
PM Peak Hour



| Lane Group | EBL | EBT | WBT | SBL | SBR |
|----------------------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | 185 | 1060 | 1070 | 175 | 125 |
| Future Volume (vph) | 185 | 1060 | 1070 | 175 | 125 |
| Turn Type | pm+pt | NA | NA | Prot | pm+ov |
| Protected Phases | 7 | 4 | 8 | 6 | 7 |
| Permitted Phases | 4 | | | | 6 |
| Detector Phase | 7 | 4 | 8 | 6 | 7 |
| Switch Phase | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 22.5 | 9.5 |
| Total Split (s) | 12.0 | 36.0 | 24.0 | 24.0 | 12.0 |
| Total Split (%) | 20.0% | 60.0% | 40.0% | 40.0% | 20.0% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | | Lag | | Lead |
| Lead-Lag Optimize? | Yes | | Yes | | Yes |
| Recall Mode | None | None | None | C-Min | None |
| Act Effect Green (s) | 35.8 | 35.8 | 21.1 | 15.2 | 29.9 |
| Actuated g/C Ratio | 0.60 | 0.60 | 0.35 | 0.25 | 0.50 |
| v/c Ratio | 0.47 | 0.38 | 0.77 | 0.42 | 0.17 |
| Control Delay | 10.1 | 6.7 | 20.4 | 22.9 | 8.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 10.1 | 6.7 | 20.4 | 22.9 | 8.4 |
| LOS | B | A | C | C | A |
| Approach Delay | | 7.2 | 20.4 | 16.8 | |
| Approach LOS | | A | C | B | |

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 19.5 (33%), Referenced to phase 2: and 6:SBL, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 14.2

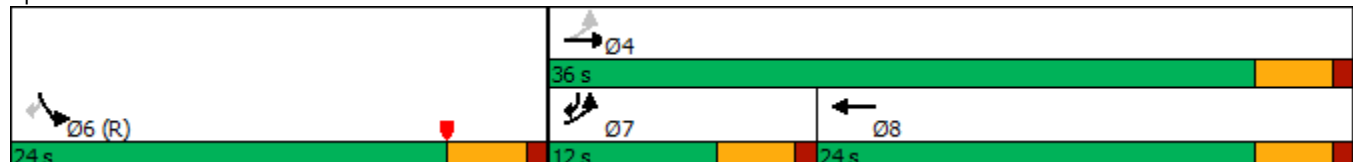
Intersection LOS: B

Intersection Capacity Utilization 56.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 9: E 56th Ave & Lisbon St



Queues
9: E 56th Ave & Lisbon St

Future (2040)
PM Peak Hour



| Lane Group | EBL | EBT | WBT | SBL | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 201 | 1152 | 1380 | 190 | 136 |
| v/c Ratio | 0.47 | 0.38 | 0.77 | 0.42 | 0.17 |
| Control Delay | 10.1 | 6.7 | 20.4 | 22.9 | 8.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 10.1 | 6.7 | 20.4 | 22.9 | 8.4 |
| Queue Length 50th (ft) | 23 | 55 | 138 | 63 | 26 |
| Queue Length 95th (ft) | 68 | 97 | #212 | 106 | 46 |
| Internal Link Dist (ft) | | 343 | 1340 | 945 | |
| Turn Bay Length (ft) | 100 | | | | |
| Base Capacity (vph) | 426 | 3045 | 1795 | 579 | 794 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.47 | 0.38 | 0.77 | 0.33 | 0.17 |






Intersection Summary

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

HCM 6th Signalized Intersection Summary 9: E 56th Ave & Lisbon St

Future (2040)
PM Peak Hour



| Movement | EBL | EBT | WBT | WBR | SBL | SBR | |
|------------------------------|---|---|---|------|---|---|------|
| Lane Configurations |  |  |  | |  |  | |
| Traffic Volume (veh/h) | 185 | 1060 | 1070 | 200 | 175 | 125 | |
| Future Volume (veh/h) | 185 | 1060 | 1070 | 200 | 175 | 125 | |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Work Zone On Approach | | No | No | | No | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | |
| Adj Flow Rate, veh/h | 201 | 1152 | 1163 | 217 | 190 | 136 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | |
| Cap, veh/h | 324 | 2503 | 1359 | 253 | 641 | 730 | |
| Arrive On Green | 0.10 | 0.49 | 0.31 | 0.31 | 0.36 | 0.36 | |
| Sat Flow, veh/h | 1781 | 5274 | 4491 | 806 | 1781 | 1585 | |
| Grp Volume(v), veh/h | 201 | 1152 | 916 | 464 | 190 | 136 | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1702 | 1725 | 1781 | 1585 | |
| Q Serve(g_s), s | 4.2 | 8.9 | 15.1 | 15.1 | 4.6 | 3.0 | |
| Cycle Q Clear(g_c), s | 4.2 | 8.9 | 15.1 | 15.1 | 4.6 | 3.0 | |
| Prop In Lane | 1.00 | | | 0.47 | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 324 | 2503 | 1070 | 542 | 641 | 730 | |
| V/C Ratio(X) | 0.62 | 0.46 | 0.86 | 0.86 | 0.30 | 0.19 | |
| Avail Cap(c_a), veh/h | 367 | 2681 | 1106 | 561 | 641 | 730 | |
| HCM Platoon Ratio | 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 | |
| Uniform Delay (d), s/veh | 13.7 | 10.1 | 19.3 | 19.3 | 13.8 | 9.5 | |
| Incr Delay (d2), s/veh | 2.6 | 0.1 | 6.6 | 12.2 | 1.2 | 0.6 | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| %ile BackOfQ(95%),veh/ln | 2.7 | 4.5 | 9.9 | 11.1 | 3.3 | 6.5 | |
| Unsig. Movement Delay, s/veh | | | | | | | |
| LnGrp Delay(d),s/veh | 16.3 | 10.2 | 25.9 | 31.5 | 14.9 | 10.1 | |
| LnGrp LOS | B | B | C | C | B | B | |
| Approach Vol, veh/h | | 1353 | 1380 | | 326 | | |
| Approach Delay, s/veh | | 11.1 | 27.8 | | 12.9 | | |
| Approach LOS | | B | C | | B | | |
| Timer - Assigned Phs | | | | 4 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 33.9 | 26.1 | 10.6 | 23.4 |
| Change Period (Y+Rc), s | | | | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 31.5 | 19.5 | 7.5 | 19.5 |
| Max Q Clear Time (g_c+I1), s | | | | 10.9 | 6.6 | 6.2 | 17.1 |
| Green Ext Time (p_c), s | | | | 7.7 | 0.8 | 0.1 | 1.7 |
| Intersection Summary | | | | | | | |
| HCM 6th Ctrl Delay | | | 18.8 | | | | |
| HCM 6th LOS | | | B | | | | |

APPENDIX H. LOS COMPARISON TABLE

| Intersection | Movement | LOS (Delay in Seconds) | | | | | | | |
|---|----------|------------------------|----------|------------------|----------|----------------------|----------|-----------------|-----------|
| | | Short Term Background | | Short Term Total | | Long Term Background | | Long Term Total | |
| | | AM | PM | AM | PM | AM | PM | AM | PM |
| 1. Nepal Court & 56th Ave (Stop-Controlled) | SBLR | a (9.2) | a (9.7) | a (9.3) | a (9.9) | b (14.6) | c (15.9) | c (15.2) | c (16.4) |
| 2. Nepal Court & 57th Place (Stop-Controlled) | WBLR | a (0.0) | a (0.0) | a (8.6) | a (8.6) | a (0.0) | a (0.0) | a (8.7) | a (8.6) |
| | SBL | a (0.0) | a (0.0) | a (7.2) | a (7.3) | a (0.0) | a (0.0) | a (7.3) | a (7.3) |
| 3. Nepal Court & 57th Avenue (Stop-Controlled) | NBLR | a (0.0) | a (0.0) | a (8.6) | a (8.6) | a (8.7) | a (8.7) | a (8.8) | a (8.8) |
| | WBL | a (0.0) | a (0.0) | a (0.0) | a (0.0) | a (0.0) | a (0.0) | a (0.0) | a (0.0) |
| 4. Road 4 & 57th Avenue (Stop-Controlled) | NBLR | a (8.6) | a (8.6) | a (8.6) | a (8.6) | a (0.0) | a (0.0) | a (8.7) | a (8.7) |
| | WBL | a (0.0) | a (0.0) | a (0.0) | a (0.0) | a (0.0) | a (0.0) | a (0.0) | a (0.0) |
| 5. Orleans Street & 57th Avenue (Stop-Controlled) | NBL | a (0.0) | a (0.0) | a (0.0) | a (0.0) | a (8.7) | a (8.7) | a (8.7) | a (8.8) |
| | EBL | a (0.0) | a (0.0) | a (0.0) | a (0.0) | a (7.2) | a (7.2) | a (7.2) | a (7.2) |
| | WBL | a (7.2) | a (7.3) | a (7.3) | a (7.3) | a (7.3) | a (7.3) | a (7.3) | a (7.3) |
| | SBL | a (0.0) | a (0.0) | a (0.0) | a (0.0) | a (9.0) | a (8.9) | a (9.1) | a (9.2) |
| 6. Orleans Street & 57th Place (Stop-Controlled) | NBL | a (0.0) | a (0.0) | a (7.3) | a (7.3) | a (0.0) | a (0.0) | a (7.3) | a (7.4) |
| | EBL | a (0.0) | a (0.0) | a (8.9) | a (9.1) | a (0.0) | a (0.0) | a (9.0) | a (9.2) |
| | WBL | a (0.0) | a (0.0) | a (9.3) | a (9.6) | a (9.0) | a (9.0) | a (9.5) | a (9.8) |
| | SBL | a (7.3) | a (7.4) | a (7.3) | a (7.4) | a (7.3) | a (7.4) | a (7.3) | a (7.4) |
| 7. Orleans Street & 56th Avenue (Stop-Controlled) | EBL | a (7.9) | a (8.4) | a (7.9) | a (8.6) | c (16.7) | c (21.0) | c (17.5) | c (23.8) |
| | SBLR | b (10.5) | b (11.8) | b (12.2) | b (14.1) | c (16.2) | c (20.1) | c (19.3) | d (28.80) |
| 8. Picadilly Road & 56th Avenue (Signalized) | NBL | c (23.2) | c (22.3) | c (22.6) | c (22.1) | d (44.7) | d (48.9) | d (44.2) | d (48.5) |
| | NBT | a (0.0) | a (0.0) | a (0.0) | a (0.0) | c (23.7) | c (26.0) | c (24.3) | c (26.3) |
| | NBR | c (32.7) | c (32.5) | c (31.9) | c (32.5) | c (25.4) | c (28.1) | c (26.0) | c (28.5) |
| | EBL | a (9.4) | b (10.1) | a (9.5) | b (10.2) | c 920.7) | c (23.5) | c (20.4) | c (23.3) |
| | EBT | b (13.9) | b (13.1) | b (14.2) | b (13.2) | c (31.1) | d (43.6) | c (31.0) | d (43.9) |
| | EBR | b (13.4) | b (14.0) | b (13.8) | b (14.2) | d (35.5) | d (53.4) | d (35.5) | d (53.9) |
| | WBL | a (9.8) | a (9.9) | a (9.9) | a (9.9) | c (22.2) | c (33.3) | c (22.1) | c (33.6) |
| | WBT | b (12.1) | b (14.2) | b (12.3) | b (14.4) | c (28.0) | c (29.3) | c (27.6) | c (29.2) |
| | WBR | b (11.2) | b (11.2) | b (11.2) | b (11.2) | c (30.3) | C (32.3) | c (29.8) | c (32.1) |
| | SBL | c (22.8) | c (22.7) | c (22.3) | c (22.7) | d (44.5) | d (48.3) | d (44.5) | d (48.3) |
| | SBT | a (0.0) | a (0.0) | a (0.0) | a (0.0) | c (24.0) | c (30.7) | c (24.7) | c (31.7) |
| | SBR | c (26.4) | c (26.7) | c (26.1) | c (27.5) | c (25.1) | c (33.5) | c (25.8) | c (34.8) |
| | Overall | B (18.4) | B (18.0) | B (18.2) | B (18.0) | C (29.4) | D (35.6) | C (29.5) | D (36.0) |
| 9. Lisbon Street & 56th Avenue (Signalized) | EBL | - | - | - | - | b (14.6) | b (16.2) | b (14.5) | b (16.3) |
| | EBT | - | - | - | - | b (11.7) | b (10.2) | b (11.5) | b (10.2) |
| | WBT | - | - | - | - | c (21.9) | c (25.4) | c (21.9) | c (25.9) |
| | WBR | - | - | - | - | c (24.4) | c (30.7) | c (24.6) | c (31.5) |
| | SBL | - | - | - | - | b (13.3) | b (14.9) | b (13.6) | b (14.9) |
| | SBR | - | - | - | - | a 99.6) | a (10.0) | a (9.8) | b (10.1) |
| | Overall | - | - | - | - | B (16.7) | B (18.6) | B (16.8) | B (18.80) |