Traffic Impact and Parking Analysis

Downtown Merced Circulation Modifications

Bound by O Street, Martin Luther King Jr Way, 18th Street and 16th Street

In the City of Merced, California

Prepared for:

City of Merced
678 W. 18th Street
Merced, CA 95340

April 4, 2022

JLB Project No. 035-009

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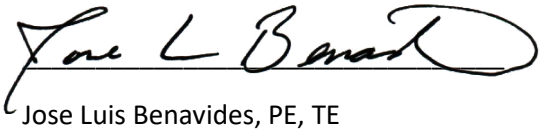
This Traffic Impact and Parking Analysis has been prepared under the direction of a licensed Traffic Engineer. The licensed Traffic Engineer attests to the technical information contained therein and has judged the qualifications of any technical specialists providing engineering data from which recommendations, conclusions and decisions are based.

Prepared by:



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Introduction and Summary

Introduction

This Report describes a Traffic Impact and Parking Analysis (TIA) prepared by JLB Traffic Engineering, Inc. (JLB) for the proposed Downtown Merced Circulation Modifications (Project) bound by O Street, Martin Luther King (MLK) Jr Way, 18th Street and 16th Street in the City of Merced. The City of Merced desires to increase the amount of parking in the downtown area. Modifications to the circulation, such as changing to one-way circulation and the reduction of the number of through lanes, are being considered in part to help increase the amount of space that can be used for on-street parking. The Project proposes to make the following circulation modifications in downtown Merced:

1. Modify the pavement delineation of 18th Street, from O Street to Martin Luther King Jr Way, to add diagonal parking on the southern side.
2. Modify Canal Street, from 18th Street to Main Street, from a two-way circulation to a one-way circulation that travels from 18th Street to Main Street and change to diagonal parking on both sides.
3. Modify Main Street, from R Street to O Street and MLK Jr Way to G Street, from four (4) lanes to two (2) lanes (one in each direction) with diagonal parking on both sides.
4. Modify Main Street, from O Street to MLK Jr Way, from a two-way circulation to a one-way circulation that travels from MLK Jr Way to O Street with diagonal parking on the southern side.
5. This study also considered modifying the pavement delineation of K Street, from 19th Street to 18th Street, to add diagonal parking. However, upon review it was determined that due to the number of driveways, bus stops and a fire hydrant that this would not result in a gain of parking stalls and for this reason it is recommended that this segment retain its existing parking layout.

Figure 1 displays the vicinity map of the area with existing number of through lanes and flow patterns, while Figure 2 displays the proposed changes in the number of lanes and flow patterns.

The purpose of this TIA is to evaluate the potential traffic impacts, discern short-term roadway and circulation needs, determine potential improvement measures, identify any critical traffic issues that should be addressed in the on-going planning process and determine how the existing traffic signals would be impacted as a result of the proposed changes to the through lane alignments and changes in circulation. The TIA primarily focused on evaluating traffic conditions at study intersections that may potentially be impacted by the proposed Project. The Scope of Work was prepared via consultation with City of Merced staff.

Summary

The potential traffic impacts of the proposed Project were evaluated in accordance with the standards set forth by the Level of Service (LOS) policy of the City of Merced.

Existing Traffic Conditions

- At present, all study intersections operate at an acceptable LOS during both peak periods.

Existing plus Project Traffic Conditions

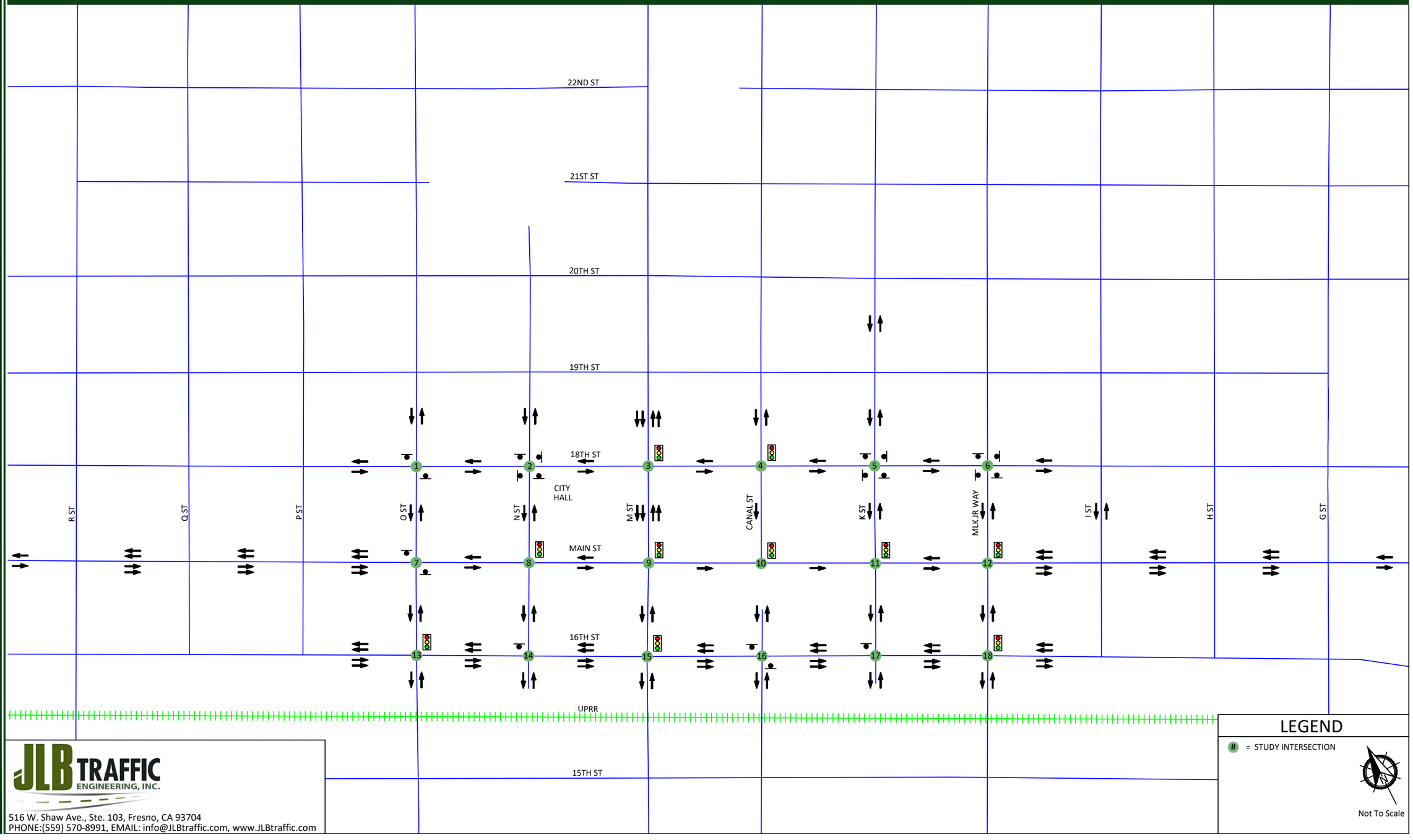
- Changes to existing parking are proposed within this Project. These recommendations are described within the Report.
- The Project proposes to make circulation modifications along Main Street. These modifications include changing Main Street from a four-lane street to a two-lane street between R Street and O Street and between MLK Jr Way and G Street, shifting Main Street from a two-way circulation between O Street and M Street and between K Street and MLK Jr Way to a one-way circulation in the westbound direction and shifting the one-way circulation on Main Street from the existing flow of M Street to K Street to instead flow from K Street to M Street.
- Under this scenario, all study intersections are projected to operate at an acceptable LOS during both peak periods.

Queuing Analysis

- It is recommended that the City consider left-turn and right-turn lane storage lengths as indicated in the Queuing Analysis and Conclusions and Recommendations.

Downtown Circulation Mod - City of Merced
Existing Through Lanes, Flow Patterns and Traffic Controls

Figure 1



LEGEND

(#) = STUDY INTERSECTION

Not To Scale

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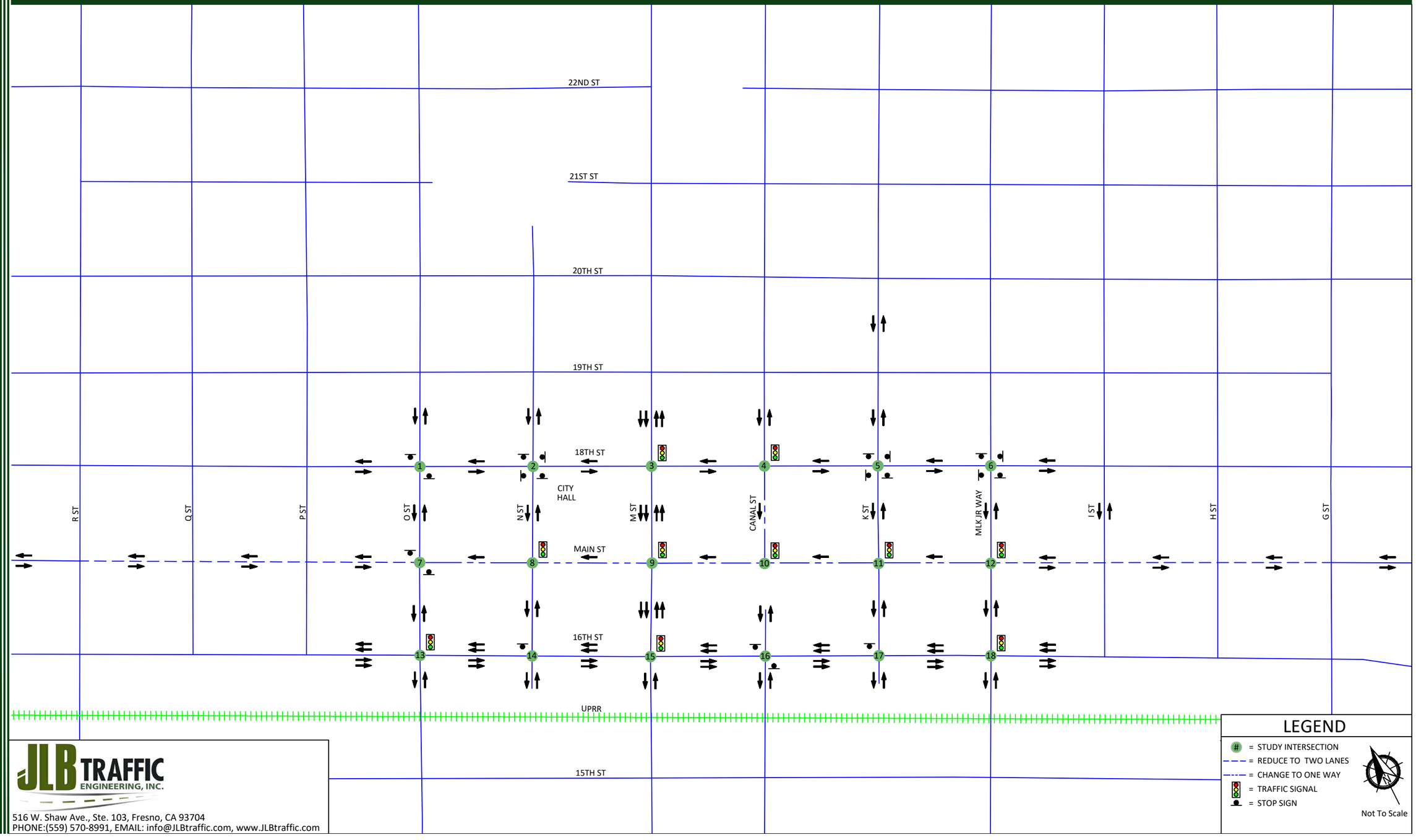
Downtown Circulation Mod - City of Merced
Proposed Through Lanes, Flow Patterns and Traffic Controls

Figure 2



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Scope of Work

The study focused on evaluating traffic conditions at the existing study intersections that may potentially be impacted by the Project. The scope of the Project was made in conjunction with the City of Merced engineering staff.

Study Facilities

The existing peak hour turning movement counts were conducted at the study intersections from September to December of 2021 while schools in the vicinity of the proposed Project were in session. Peak hours were modified from 7:00 AM - 9:00 AM and 4:00 PM - 6:00 PM in the original scope to 11:30 AM - 1:30 PM and 4:00 PM - 6:00 PM. This was determined after analyzing twenty-four hour segment counts in the area. The intersection turning movement counts included pedestrian and bicyclist volumes. The traffic counts for the existing study intersections are contained in Appendix A. After comparing pre pandemic to post pandemic statewide Vehicle Miles Travelled (VMT) data available on the Transportation Injury Mapping System (TIMS) Database, it was determined that travel had returned to pre pandemic levels. Existing counts were not escalated for this reason. The existing intersection turning movement volumes, intersection geometrics and traffic controls are illustrated in Figure 2.

Study Intersections

1. O Street / 18th Street
2. N Street / 18th Street
3. M Street / 18th Street
4. Canal Street / 18th Street
5. K Street / 18th Street
6. MLK Jr Way / 18th Street
7. O Street / Main Street
8. N Street / Main Street
9. M Street / Main Street
10. Canal Street / Main Street
11. K Street / Main Street
12. MLK Jr Way / Main Street
13. O Street / 16th Street
14. N Street / 16th Street
15. M Street / 16th Street
16. Canal Street / 16th Street
17. K Street / 16th Street
18. MLK Jr Way / 16th Street

Study Scenarios

Existing Traffic Conditions

This scenario evaluates the Existing Traffic Conditions based on existing traffic volumes and roadway conditions from traffic counts and field surveys conducted from September to December of 2021.

Existing plus Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Existing plus Project Traffic Conditions. The Existing plus Project traffic volumes were obtained by rerouting traffic to follow the new circulation. This includes one-way circulation along Main Street with traffic flowing westbound from MLK Jr Way to O Street. Additional details regarding the rerouted trips can be found in the Existing plus Project section of this Report.

Level of Service Analysis Methodology

Level of Service (LOS) is a qualitative index of the performance of an element of the transportation system. LOS is a rating scale running from "A" to "F", with "A" indicating no congestion of any kind and "F" indicating unacceptable congestion and delays. LOS in this study describes the operating conditions for signalized and unsignalized intersections.

The *Highway Capacity Manual* (HCM) 6th Edition is the standard reference published by the Transportation Research Board and contains the specific criteria and methods to be used in assessing LOS. U-turn movements were analyzed using HCM 2000 methodologies and would yield more accurate results for the reason that HCM 6th does not allow the analysis of U-turns or some shared turn lane movements. Synchro software was used to define LOS in this study. Details regarding these calculations are included in Appendix B.

While LOS is no longer the criteria of significance for traffic impacts in the state of California, the city of Merced continues to apply congestion-related conditions or requirements for land development projects through planning approval processes outside of CEQA Guidelines in order to continue the implementation of *Merced Vision 2030 General Plan* policies.

Criteria of Significance

The *Merced Vision 2030 General Plan* has established LOS D as the acceptable level of traffic congestion on new and upgraded intersections and road segments. However, the *Merced Vision 2030 General Plan* recognizes that this may not always be feasible, appropriate or necessary. For those cases in which a LOS criterion for a roadway segment differs from that of the established LOS, such criteria are identified in the roadway description. Most study intersections within the City of Merced SOI utilize LOS D to evaluate the potential significance of LOS impacts pursuant to the *Merced Vision 2030 General Plan*.

The *2030 Merced County General Plan* has established LOS C or better for roadways located within rural areas, LOS D or better for roadways located outside Urban Communities that serve as connectors between Urban Communities, and LOS D or better for roadways located within Urban Communities. Since all study intersections fall within the City of Merced SOI, the City of Merced LOS is utilized.

Operational Analysis Assumptions and Defaults

The following operational analysis values, assumptions and defaults were used in this study to ensure a consistent analysis of LOS among the various scenarios.

- Timing schedules were used in the Existing Traffic Conditions for the following intersections:
  - Canal Street / 18th Street
  - N Street / Main Street
  - M Street / Main Street
  - K Street / Main Street
  - MLK Jr Way / Main Street
- Yellow time consistent with the California Manual of Uniform Traffic Control Devices (CA MUTCD) based on approach speeds
- All-red clearance intervals of 1.0 second for all phases
- Walk intervals of 7.0 seconds
- Flashing Don't Walk based on 3.5 feet/second walking speed with yellow plus all-red clearance subtracted and 2.0 seconds added
- An average 3 percent heavy vehicle factor
- An average of 10 pedestrian calls per hour at signalized intersections
- The number of observed pedestrians at existing intersections was utilized under all study scenarios
- The observed approach Peak Hour Factor (PHF) at existing intersections for each approach was utilized in the Existing and Existing plus Project scenarios
- Westbound movements on Main Street that did not previously exist utilized the westbound PHF for the nearest intersection to the east that allows for westbound movements.

Existing Traffic and On Street Parking Conditions

Roadway Network

The Project site and surrounding study area are illustrated in Figure 1. Important roadways serving the Project are discussed below. Streets orientated northwest-southeast will be discussed as east-west street, while streets orientated northeast-southwest will be discussed as north-south street through the duration of this Report.

O Street is an existing north-south two-lane undivided local street within the vicinity of the proposed Project. In this area, O Street is a two-lane undivided local street between 23rd Street and 13th Street. The *Merced Vision 2030 General Plan* does not include future improvements for O Street within the vicinity of the Project.

N Street is an existing north-south two-lane divided local street within the vicinity of the proposed Project. In this area, N Street is a two-lane divided local street between 21st Street and 16th Street. The *Merced Vision 2030 General Plan* does not include future improvements for N Street within the vicinity of the Project. Furthermore, N Street has been recently reconstructed between 18th Street and 16th Street. This reduced the number of through lanes from four to two (one is each direction) and extended the curb ramps at 18th Street and 16th Street. The reduction of lanes altered geometrics from a left-through lane and a through-right lane to a single left-through-right lane. These geometric alterations occur on the southbound approach at 16th Street, the northbound approach at Main Street, the southbound approach at Main Street and the northbound approach at 18th Street.

M Street is an existing north-south four-lane undivided minor arterial within the vicinity of the proposed Project. In this area, M Street is a four-lane undivided minor arterial between Bear Creek Drive and 27th Street, a four-lane minor arterial divided by a two-way left-turn lane between 27th Street and 23rd Street, a four-lane undivided minor arterial between 23rd Street and 16th Street and a two-lane undivided minor arterial between 16th Street and 13th Street. The *Merced Vision 2030 General Plan* does not include future improvements for M Street within the vicinity of the Project.

Canal Street is an existing north-south two-lane undivided local street within the vicinity of the proposed Project. In this area, Canal Street is a two-lane undivided local street between 28th Street and 18th Street, a one-lane local street traveling southbound between 18th Street and Main Street and a two-lane undivided local street between Main Street and 13th Street. The one-lane section is a temporary measure implemented by the City of Merced. The *Merced Vision 2030 General Plan* does not include future improvements for Canal Street within the vicinity of the Project.

K Street is an existing north-south two-lane undivided local street within the vicinity of the proposed Project. In this area, K Street is a two-lane undivided local street between 28th Street and 16th Street. The *Merced Vision 2030 General Plan* does not include future improvements for K Street within the vicinity of the Project.

Martin Luther King Jr Way (MLK Jr Way) is an existing north-south two-lane undivided local street within the vicinity of the proposed Project. In this area, MLK Jr Way is a two-lane undivided local street between 28th Street and 16th Street and a four-lane undivided local street between 16th Street and 13th Street. The *Merced Vision 2030 General Plan* does not include future improvements for MLK Jr Way within the vicinity of the Project.

18th Street is an existing east-west two-lane collector divided by a two-way left-turn lane within the vicinity of the proposed Project. In this area, 18th Street is a two-lane undivided collector between R Street and N Street, a two-lane collector divided by a two-way left-turn lane between N Street and K Street and a two-lane undivided collector between K Street and G Street. The *Merced Vision 2030 General Plan* does not include future improvements for 18th Street within the vicinity of the Project.

Main Street is an existing east-west two-lane undivided local street within the vicinity of the proposed Project. In this area, Main Street is a four-lane undivided local street between R Street and O Street, a two-lane undivided local street between O Street and M Street, a one-lane local street with traffic traveling eastbound between M Street and K Street, a two-lane undivided local street between K Street and MLK Jr Way and a four-lane undivided local street between MLK Jr Way and G Street. The one-lane section is a temporary measure implemented by the City of Merced. The *Merced Vision 2030 General Plan* does not include future improvements for Main Street within the vicinity of the Project.

16th Street is an existing east-west four-lane divided arterial within the vicinity of the proposed Project. In this area, 16th Street is a four-lane arterial divided by a two-way left-turn lane between R Street and M Street, a four-lane divided arterial between M Street and MLK Jr Way and a four-lane arterial divided by a two-way left-turn lane between MLK Jr Way and G Street. The *Merced Vision 2030 General Plan* does not include future improvements for 16th Street within the vicinity of the Project.

On Street Parking

The Project site and proposed modifications are illustrated in Figure 2. The City of Merced desires to increase the amount of parking in the downtown area. Proposed parking improvements serving the downtown area are discussed below. Figures 3A - 3C display the preliminary parking concepts used to make these determinations.

18th Street:

Segment Between O Street to MLK Jr Way

Modify the parking on the southern side of 18th Street from on-street parallel parking to diagonal parking with a few exceptions as described below. A preliminary parking concept for a portion of this segment can be found on Figure 3A. It is recommended that the parking stalls be designed at 35-degree angles. Diagonal parking would increase the number of existing parking stalls from 89 to approximately 118 for a gain of 29 parking stalls. However, if the removal of red curb is not approved, then the net gain in parking stalls for this segment will be reduced to 11.

- The segment of 18th Street between O Street and N Street would not gain any parking stalls, and may in fact lose parking stalls, with diagonal parking. This is a result of the space restrictions created by the three (3) existing driveways and the length of the eastbound left-turn lane at N Street. As a result, it is recommended the on-street parallel parking between O Street and N Street remain.
- The segment of 18th Street between N Street and M Street currently has red curbs throughout the northern side and on portions of the southern side. Unless the red curbs were added by the City for safety concerns, it is recommended that these red curbs be removed and parallel parking be added. This would result in a gain of 18 parking stalls for this segment. If the City does not allow removal of the red curbs, only three (3) parking stalls would be gained in this segment.
- The segment of 18th Street between M Street and Canal Street currently has red curbs on the southern side in front of Gateway Gardens. Unless the red curbs were added by the City for safety concerns, it is recommended these red curbs be removed and parallel parking be added. This would result in a gain of nine (9) parking stalls for this segment. If the City does not allow removal of the red curbs, only six (6) parking stalls would be gained in this segment.

Main Street:

Segment between R Street and O Street

Modify from on-street parallel parking to diagonal parking on both sides of Main Street. A preliminary parking concept for this segment can be found on Figure 3A. It is recommended that the parking stalls be designed at 40-degree angles. Diagonal parking would increase the number of existing parking stalls from 55 to approximately 68 for a gain of 13 parking stalls.

Segment between O Street and MLK Jr Way

Modify from on-street parallel parking to diagonal parking on the southern side of Main Street. A preliminary parking concept for this segment can be found on Figure 3B. It is recommended that the parking stalls be designed at 40-degree angles. Diagonal parking would increase the number of existing parking stalls from 93 to approximately 120 for a gain of 27 parking stalls.

Segment between MLK Jr Way and G Street

Modify from on-street parallel parking to diagonal parking on both sides of Main Street from MLK Jr Way to G Street with a few exceptions as described below. A preliminary parking concept for this segment can be found on Figure 3B. It is recommended that the parking stalls be designed at 40-degree angles. Diagonal parking would increase the number of existing parking stalls from 63 to approximately 75 for a gain of 12 parking stalls.

- The segment of Main Street between H Street and G Street would not gain any parking stalls, and may in fact lose parking stalls, with the use of diagonal parking. This is a result of space restrictions created by the six (6) existing driveways and the existing concrete median. As a result, it is recommended the on-street parallel parking between H Street and G Street remain on the northern side of Main Street and east of the car dealership's driveway.

K Street:

Segment between 18th Street and Main Street

After review of K Street between 18th Street and Main Street, it was determined that diagonal parking would at best gain one stall with the possibility of a net zero change. This 330-foot segment has four (4) driveways, two (2) bus stops, a fire hydrant and a pedestrian crosswalk which greatly limit the space for diagonal parking. We recommend the City keep the existing on-street parallel parking, but we can continue exploring the option of diagonal parking in the design phase if the City so desires.

Canal Street:

Segment between 19th Street and 18th Street

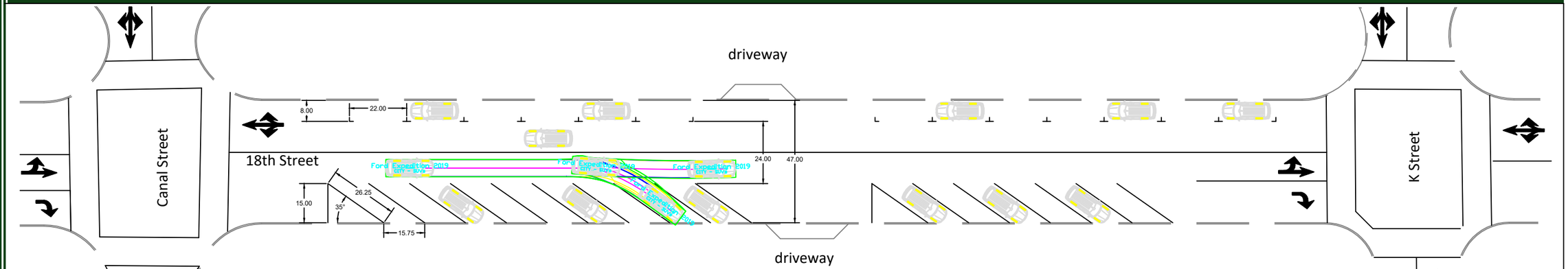
Modify from on-street parallel parking to diagonal parking on both sides of Canal Street from 18th Street to Main Street. A preliminary parking concept for this segment can be found on Figure 3C. It is recommended that the parking stalls be designed at 40-degree angles. Diagonal parking would increase the number of existing parking stalls from 20 to approximately 26 for a gain of six (6) parking stalls.

Overall Downtown Parking Supply Change:

The Project segments have 336 existing on-street parallel parking stalls (excluding the temporary changes to Main Street and Canal Street). With the implementation of the parking recommendations, parking supply would increase to approximately 432 parking stalls based on the preliminary parking concept designs which include the use of diagonal parking stalls and the removal of red curbs at various locations. This results in a net gain of approximately 96 parking stalls throughout the Project. If the City does not allow the removal of red curbs, approximately 78 parking stalls would be gained for a total of 414 parking stalls.

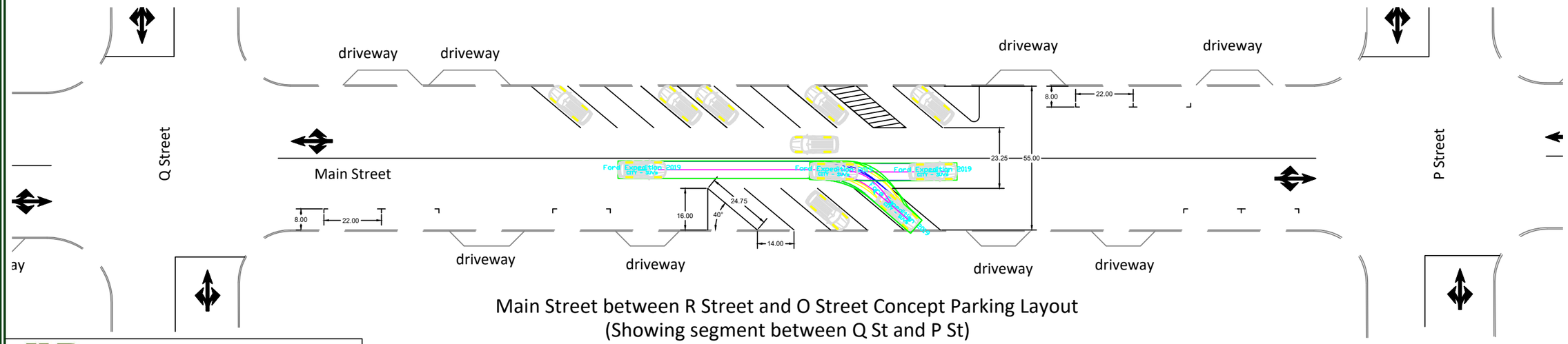
Downtown Circulation Mod - City of Merced
Preliminary Parking Concept for 18th Street and Main Street

Figure 3A



18th Street between O Street and MLK Jr Way Concept Parking Layout
(Showing segment between Canal St and K St)
35 Degree Diagonal and Parallel Parking Stalls

89 Existing Stalls
Approximately 118 Proposed Stalls



Main Street between R Street and O Street Concept Parking Layout
(Showing segment between Q St and P St)
40 Degree Diagonal Parking Stalls

55 Existing Stalls
Approximately 68 Proposed Stalls

Scale: 1" = 40'

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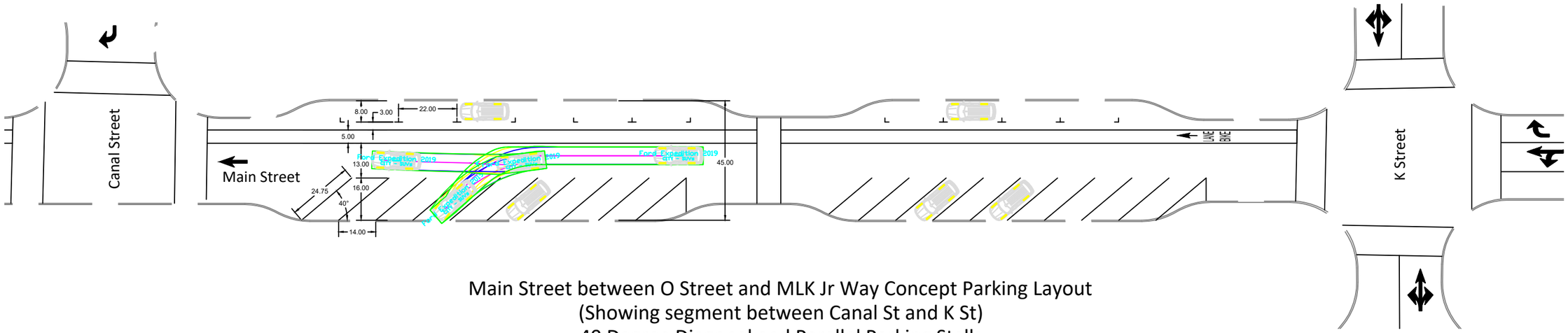
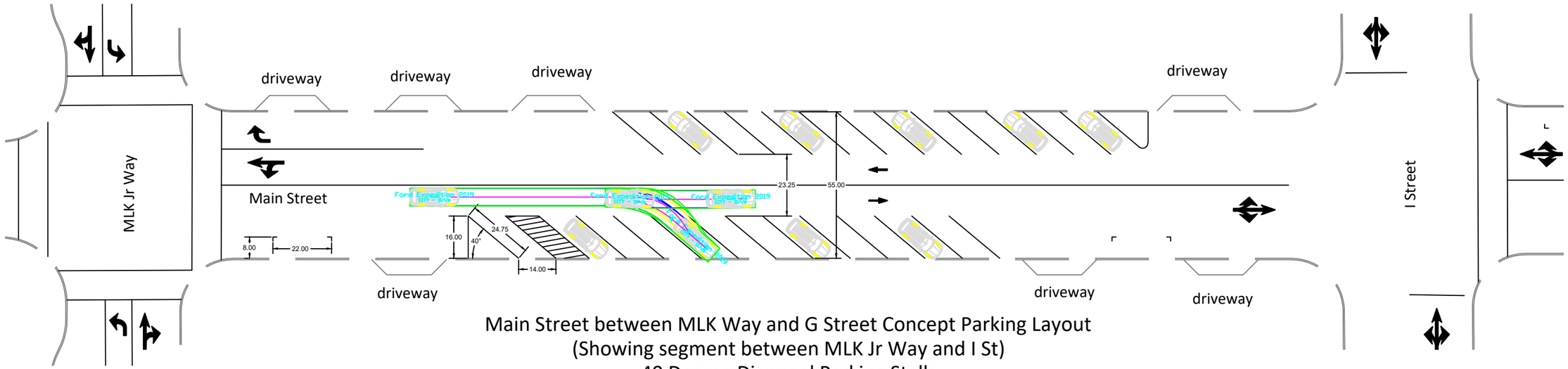


Main Street between O Street and MLK Jr Way Concept Parking Layout
(Showing segment between Canal St and K St)
40 Degree Diagonal and Parallel Parking Stalls

93 Existing Stalls
Approximately 120 Proposed Stalls



Main Street between MLK Way and G Street Concept Parking Layout
(Showing segment between MLK Jr Way and I St)
40 Degree Diagonal Parking Stalls

63 Existing Stalls
Approximately 75 Proposed Stalls

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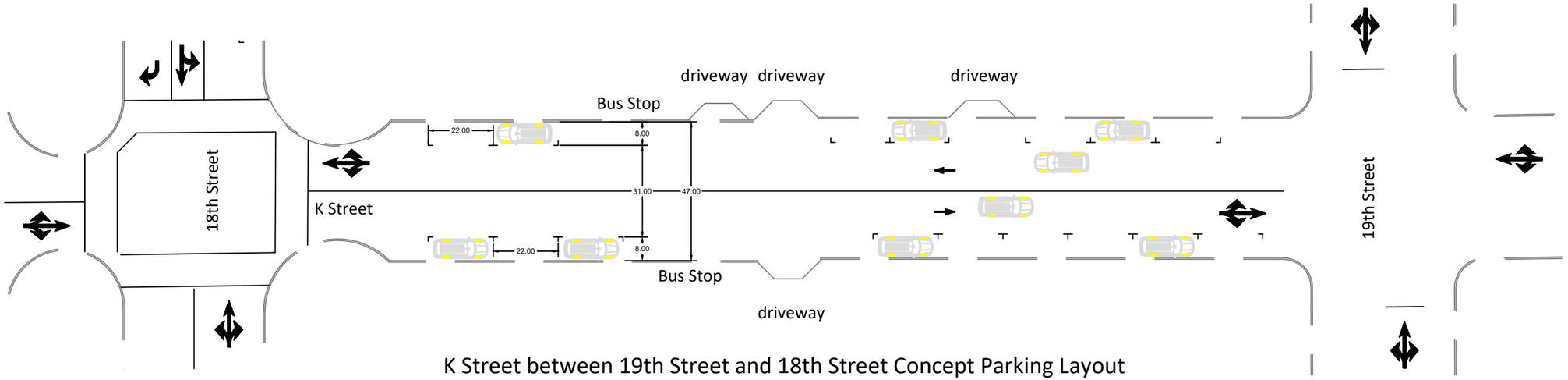
Scale: 1" = 40'

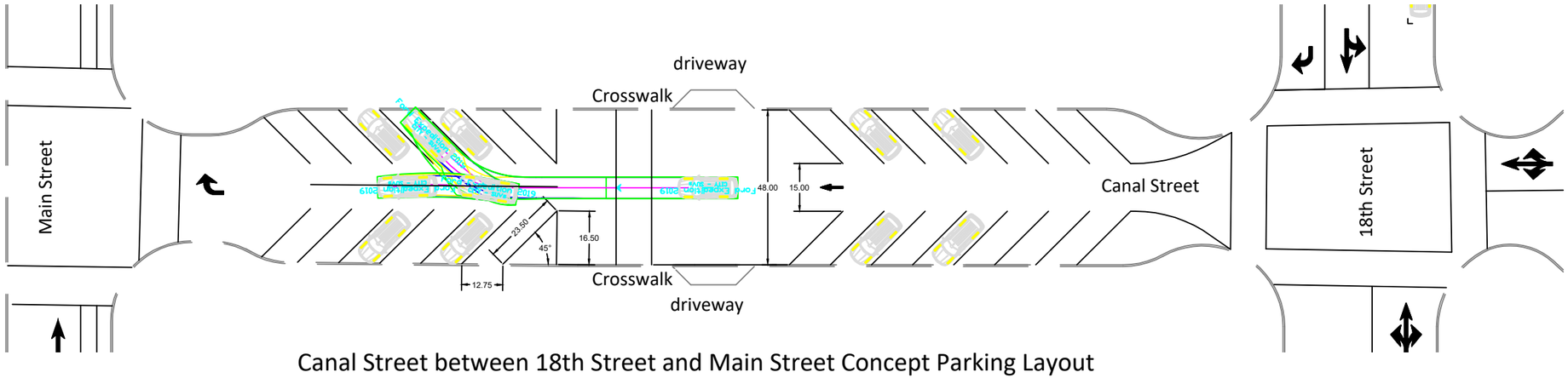
Downtown Circulation Mod - City of Merced
Preliminary Parking Concept K Street and Canal Street

Figure 3C



K Street between 19th Street and 18th Street Concept Parking Layout
(Showing entire segment)
Parallel Parking Stalls

16 Existing Stalls
Approximately 16 Proposed Stalls



Canal Street between 18th Street and Main Street Concept Parking Layout
(Showing entire segment)
45 Degree Diagonal Parking Stalls

20 Existing Stalls
Approximately 26 Proposed Stalls

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Scale: 1" = 40'

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Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for unsignalized intersections under the Existing Traffic Conditions scenario. These warrants are found in Appendix E. These warrants were prepared pursuant to the CA MUTCD guidelines for the preparation of traffic signal warrants. At present, none of the unsignalized intersections satisfy the peak hour signal warrant during either peak period.

Results of Existing Level of Service Analysis

Figure 4 illustrates the Existing turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Existing Traffic Conditions scenario are provided in Appendix E. Table I presents a summary of the Existing peak hour LOS at the study intersections.

At present, all study intersections operate at an acceptable LOS during both peak periods.

Table I: Existing Intersection LOS Results

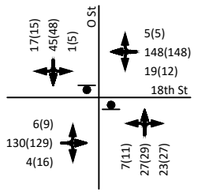
ID	*Intersection*	*Intersection Control*	*AM (7 - 9) Peak Hour*		*PM (4 - 6) Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	O Street / 18th Street	Two-Way Stop	12.3	B	12.6	B
2	N Street / 18th Street	All-Way Stop	9.0	A	9.3	A
3	M Street / 18th Street	Traffic Signal	30.5	C	30.3	C
4	Canal Street / 18th Street	Traffic Signal	10.6	B	10.2	B
5	K Street / 18th Street	All-Way Stop	10.1	B	9.8	A
6	MLK Jr Way / 18th Street	All-Way Stop	9.4	A	9.9	A
7	O Street / Main Street	Two-Way Stop	12.1	B	12.7	B
8	N Street / Main Street	Traffic Signal	10.9	B	10.7	B
9	M Street / Main Street	Traffic Signal	6.1	A	6.1	A
10	Canal Street / Main Street	Traffic Signal	0.4	A	0.4	A
11	K Street / Main Street	Traffic Signal	8.8	A	14.5	B
12	MLK Jr Way / Main Street	Traffic Signal	11.4	B	9.5	A
13	O Street / 16th Street	Traffic Signal	27.2	C	27.8	C
14	N Street / 16th Street	Two-Way Stop	24.2	C	26.1	D
15	M Street / 16th Street	Traffic Signal	33.3	C	34.7	C
16	Canal Street / 16th Street	Two-Way Stop	26.9	D	22.5	C
17	K Street / 16th Street	Two-Way Stop	24.3	C	31.1	D
18	MLK Jr Way / 16th Street	Traffic Signal	37.4	D	40.0	D

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls.
LOS for two-way STOP controlled intersections are based on the worst approach/movement of the minor street.

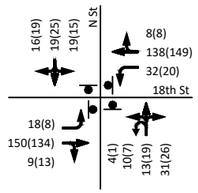
Downtown Circulation Mod - City of Merced
Existing Circulation, Lanes, Traffic Volumes, Geometrics and Traffic Controls

Figure 4

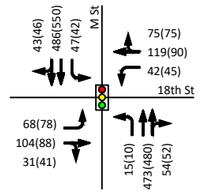
1. O St & 18th St



2. N St & 18th St



3. M St & 18th St



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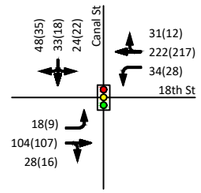

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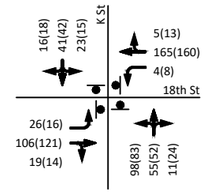

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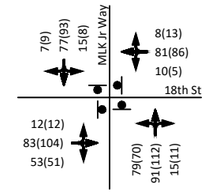

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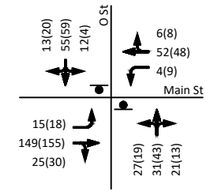

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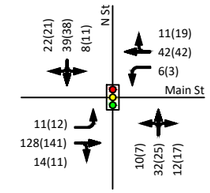

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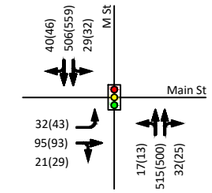

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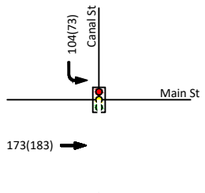

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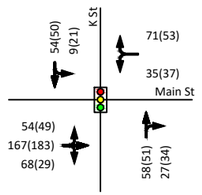

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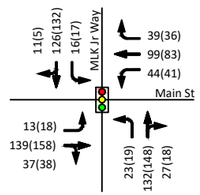
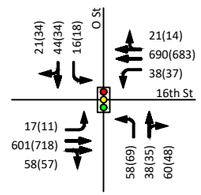


13. O St & 16th St



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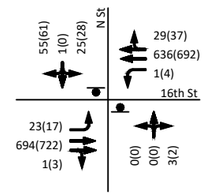

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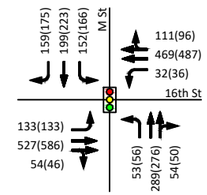
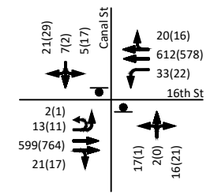
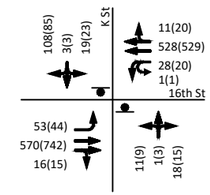


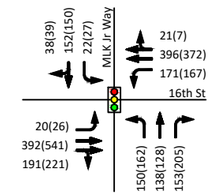
16. Canal St & 16th St

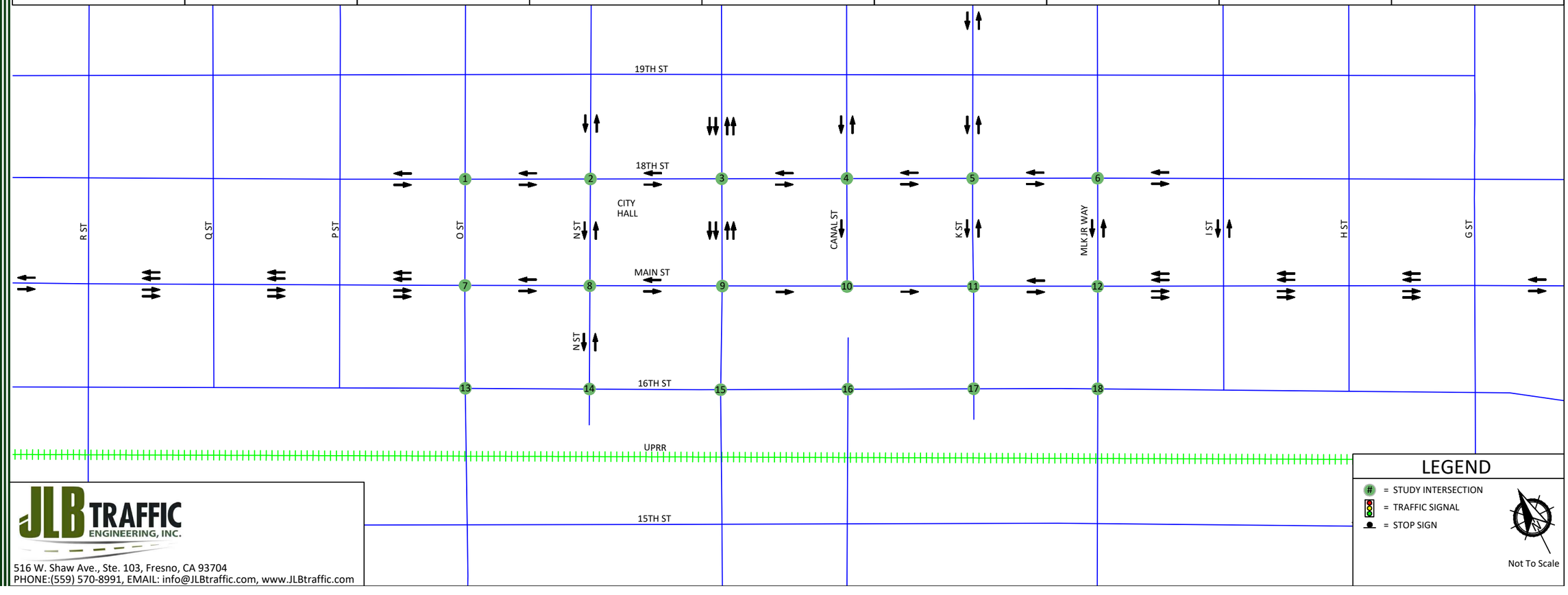


17. K St & 16th St



18. MLK Jr Way & 16th St





LEGEND

- # = STUDY INTERSECTION
- = TRAFFIC SIGNAL
- = STOP SIGN

Not To Scale

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Existing plus Project Traffic Conditions

Roadway Network

The Existing plus Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls will remain in place except for the proposed changes to circulation on Main Street between O Street and MLK Jr Way including all intersections with other streets as well as some intersections along 18th Street that were modified to accommodate diagonal parking stalls. These exceptions are described below:

- N Street / 18th Street
  - Eastbound approach lane(s) modified from a left-turn lane and a through-right lane to a left-through lane and a right-turn lane;
  - Westbound approach lane(s) modified from a left-turn lane and a through-right lane to a left-through-right lane; and
  - Modify intersection striping to accommodate lane changes.
- Canal Street / 18th Street
  - Eastbound approach lane(s) modified from a left-turn lane and a through-right lane to a left-through lane and a right-turn lane;
  - Westbound approach lane(s) modified from a left-turn lane and a through-right lane to a left-through-right lane; and
  - Modify intersection striping to accommodate lane changes.
- K Street / 18th Street
  - Eastbound approach lane(s) modified from a left-turn lane and a through-right lane to a left-through lane and a right-turn lane;
  - Westbound approach lane(s) modified from a left-turn lane and a through-right lane to a left-through-right lane; and
  - Modify intersection striping to accommodate lane changes.
- O Street / Main Street
  - Eastbound approach lane(s) modified from a left-turn lane and a through-right lane to a left-turn lane and a right-turn lane;
  - Northbound approach lane(s) modified from a left-through-right lane to a left-through lane; and
  - Southbound approach lane(s) modified from a left-thought-right lane to a through-right lane.
- N Street / Main Street
  - Eastbound approach lane(s) have been removed;
  - Westbound approach lane(s) modified from a left-turn lane and a through-right lane to a left-through lane and a right-turn lane;
  - Northbound approach lane(s) modified from a left-through-right lane to a left-through lane;
  - Southbound approach lane(s) modified from a left-thought-right lane to a through-right lane; and
  - Signal equipment modified to remove all signal equipment that currently serves eastbound movements.

- M Street / Main Street
  - Eastbound approach lane(s) have been removed;
  - Westbound approach lane(s) modified to add a left-through lane and a right-turn lane;
  - Northbound approach lane(s) modified from a left-through lane and a through-right lane to a left-through lane and a through lane;
  - Southbound approach lane(s) modified from a left-through lane and a through-right lane to a through lane and a through-right lane;
  - Signal to include an exclusive pedestrian scramble phase across all legs and corners at the same time;
  - Existing loops modified to accommodate a change in travel direction and lane alignments; and
  - Signal equipment modified to remove all signal equipment that currently serves eastbound movements.
- Canal Street / Main Street
  - Eastbound approach lane(s) have been removed;
  - Westbound approach lane(s) modified to add a through lane;
  - Southbound approach lane(s) modified from a trap left-turn lane to a trap right-turn lane; and
  - Signal equipment modified to remove all signal equipment that currently serves eastbound movements.
- K Street / Main Street
  - Eastbound approach lane(s) have been removed;
  - Westbound approach lane(s) modified from a left-right lane to a left-through lane and right-turn lane;
  - Northbound approach lane(s) modified from a through-right lane to a left-through lane;
  - Southbound approach lane(s) modified from a left-through lane to through-right lane; and
  - Signal equipment modified to remove all signal equipment that currently serves eastbound movements.
- MLK Jr Way / Main Street
  - Eastbound approach lane(s) have been removed;
  - Westbound approach lane(s) modified from a left-turn lane, a through lane and trap right-turn lane to a left-through lane and a right-turn lane; and
  - Signal equipment modified to remove all signal equipment that currently serves eastbound movements.

All modified geometrics only allow for traffic to flow westbound from MLK Jr Way to O Street. These new lane geometrics, approach lanes and traffic controls are shown in Figure 5.

Project Description

The Project proposes to make circulation modifications within the bounds of O Street, MLK Jr Way, 18th Street and 16th Street in the City of Merced. The City of Merced desires to increase the amount of parking in the downtown area. Modifications to the circulation, such as changing to one-way circulation, are being considered in part to help increase the amount of space that can be used for on-street parking. The Project proposes to make the following circulation modifications in downtown Merced:

- Modify the pavement delineation of 18th Street, from O street to MLK Jr Way, to add diagonal parking on the southern side.
- Modify Canal Street, from 18th Street to Main Street, from a two-way circulation to a one-way circulation that travels from 18th Street to Main Street and change to diagonal parking on both sides.
- Modify Main Street, from R Street to O Street and MLK Jr Way to G Street, from four (4) lanes to two (2) lanes (one in each direction) with diagonal parking on both sides.
- Modify Main Street, from O Street to MLK Jr Way, from a two-way circulation to a one-way circulation that travels westbound from MLK Jr Way to O Street with diagonal parking on the southern side.
- This study also considered modifying the pavement delineation of K Street, from 19th Street to 18th Street, to add diagonal parking. However, upon review it was determined that due to the number of driveways, bus stops and a fire hydrant that this would not result in a gain of parking stalls and for this reason it is recommended that this segment retain its existing parking layout.

Trip Redistribution

Currently, Main Street operates as a two-way street except for traffic flowing eastbound from M Street to K Street. Traffic along Main Street is shifting to travel in the westbound direction from MLK Jr Way to O Street. Traffic that is currently flowing from O Street to MLK Jr Way on this segment has been rerouted to utilize 18th Street and 16 Street instead. In addition, traffic that is currently forced to be rerouted away from traveling westbound on Main Street from M Street to K Street has been rerouted to utilize Main Street instead. Furthermore, minor adjustments were made to account for volume balancing and availability of parking facilities.

Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for unsignalized intersections under the Existing plus Project Traffic Conditions scenario. These warrants are found in Appendix E. These warrants were prepared pursuant to the CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, none of the unsignalized intersections satisfy the peak hour signal warrant during either peak period.

Results of Existing plus Project Level of Service Analysis

Figure 5 illustrates the Existing turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Existing Traffic Conditions scenario are provided in Appendix D. Table II presents a summary of the Existing peak hour LOS at the study intersections.

At present, all study intersections operate at an acceptable LOS during both peak periods.

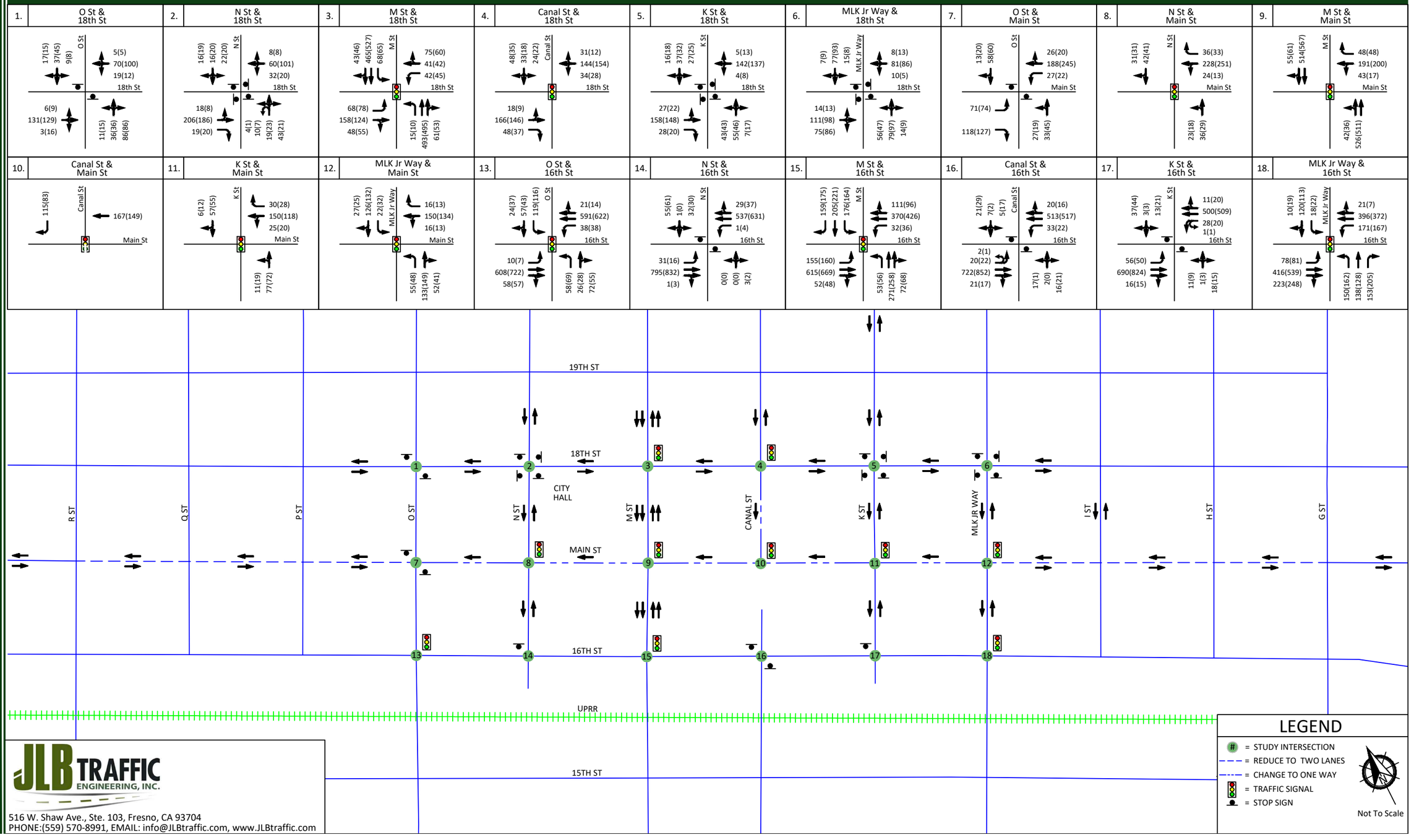
Table II: Existing plus Project Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*AM (7 - 9) Peak Hour*		*PM (4 - 6) Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	O Street / 18th Street	Two-Way Stop	11.6	B	12.3	B
2	N Street / 18th Street	All-Way Stop	9.4	A	9.3	A
3	M Street / 18th Street	Traffic Signal	19.9	B	43.6	D
4	Canal Street / 18th Street	Traffic Signal	10.4	B	9.7	A
5	K Street / 18th Street	All-Way Stop	9.9	A	9.6	A
6	MLK Jr Way / 18th Street	All-Way Stop	9.5	A	9.9	A
7	O Street / Main Street	Two-Way Stop	14.0	B	14.3	B
8	N Street / Main Street	Traffic Signal	10.7	B	7.0	A
9	M Street / Main Street	Traffic Signal	12.1	B	12.6	B
10	Canal Street / Main Street	Traffic Signal	2.8	A	2.6	A
11	K Street / Main Street	Traffic Signal	9.9	A	7.3	A
12	MLK Jr Way / Main Street	Traffic Signal	12.7	B	19.3	B
13	O Street / 16th Street	Traffic Signal	15.8	B	31.5	C
14	N Street / 16th Street	Two-Way Stop	25.3	D	26.9	D
15	M Street / 16th Street	Traffic Signal	21.9	C	41.3	D
16	Canal Street / 16th Street	Two-Way Stop	32.1	D	22.7	C
17	K Street / 16th Street	Two-Way Stop	26.6	D	34.5	D
18	MLK Jr Way / 16th Street	Traffic Signal	19.9	B	44.9	D

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls.
LOS for two-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Downtown Circulation Mod - City of Merced
Existing plus Project Circulation, Lanes, Traffic Volumes, Geometrics and Traffic Controls

Figure 5



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Queuing Analysis

Table III provides a queue length summary for left-turn and right-turn lanes at the study intersections under all study scenarios. The queuing analyses for the study intersections are contained in the LOS worksheets for the respective scenarios. Appendix C contains the methodologies used to evaluate these intersections.

Queuing analyses were completed using Sim Traffic output information. Synchro provides both 50th and 95th percentile maximum queue lengths (in feet). According to the Synchro manual, "the 50th percentile maximum queue is the maximum back of queue on a typical cycle and the 95th percentile queue is the maximum back of queue with 95th percentile volumes." The queues shown on Table III are the 95th percentile queue lengths for the respective lane movements.

The Highway Design Manual (HDM) provides guidance for determining deceleration lengths for the left-turn and right-turn lanes based on design speeds. Per the HDM criteria, "tapers for right-turn lanes are usually un-necessary since the main line traffic need not be shifted laterally to provide space for the right-turn lane. If, in some rare instances, a lateral shift were needed, the approach taper would use the same formula as for a left-turn lane." Therefore, a bay taper length pursuant to the Caltrans HDM would need to be added, as necessary, to the recommended storage lengths presented below.

Based on the SimTraffic output files and engineering judgement, it is recommended that the storage capacity for the following be considered for the Existing plus Project Traffic Conditions. At the remaining approaches to the study intersections, the existing storage capacity will be sufficient to accommodate the anticipated 95th percentile queue demands for the Existing Plus Project Traffic Conditions.

- M Street / 18th Street
  - Consider increasing the storage capacity of the eastbound left-turn lane from 50 feet to 100 feet.
  - Consider increasing the storage capacity of the westbound left-turn lane from 50 feet to 75 feet.
  - Consider increasing the storage capacity of the southbound left-turn lane from 60 feet to 75 feet.
- N Street / Main Street
  - Consider setting the storage capacity of the westbound right-turn lane at 75 feet.
- M Street / Main Street
  - Consider setting the storage capacity of the westbound right-turn lane at 75 feet.
- K Street / Main Street
  - Consider setting the storage capacity of the westbound right-turn lane at 75 feet.
- O Street / 16th Street
  - Consider increasing the storage capacity of the northbound left-turn lane from 50 feet to 75 feet.
  - Consider increasing the storage capacity of the southbound left-turn lane from 50 feet to 100 feet.
- M Street / 16th Street
  - The queue length of the northbound left-turn lane exceeds the available storage capacity; however, due to design constraints associated with the at grade railroad crossing the storage capacity cannot be increased.
  - The queue length of the southbound left-turn lane slightly exceeds the available storage capacity; however, due to design constraints the storage capacity cannot be increased.

- MLK Jr Way / 16th Street
  - Consider increasing the storage capacity of the westbound left-turn lane from 100 feet to 175 feet.
  - The queue length of the northbound left-turn exceeds the available storage capacity; however, due to design constraints associated with the at grade railroad crossing the storage capacity cannot be increased.
  - Consider increasing the storage capacity of the southbound left-turn lane from 50 feet to 75 feet.

Table III: Queuing Analysis

ID	Intersection	Existing Queue Storage Length (ft.)		Existing		Existing plus Project	
				AM	PM	AM	PM
1	O Street / 18th Street	EB LTR	>500	0	10	0	0
		WB LTR	>500	0	10	10	10
		NB LTR	>500	58	48	52	53
		SB LTR	>500	53	54	58	53
2	N Street / 18th Street	EB L	55	39	30	*	*
		EB LT	*	*	*	71	72
		EB TR	>500	77	54	*	*
		EB R	*	*	*	46	38
		WB L	50	46	31	*	*
		WB LTR	*	*	*	59	67
		WB TR	>500	69	104	*	*
		NB LTR	>500	55	56	42	43
		SB LTR	>500	59	44	46	49
3	M Street / 18th Street	EB L	50	81	102	95	**104**
		EB TR	>500	115	128	174	179
		WB L	50	76	71	56	**69**
		WB TR	>500	180	213	78	114
		NB L	80	26	26	25	33
		NB T	>500	59	65	97	95
		NB TR	>500	95	84	136	124
		SB L	60	66	50	75	**88**
		SB T	>500	132	114	138	141
		SB TR	>500	103	132	104	134
4	Canal Street / 18th Street	EB L	50	30	24	*	*
		EB LT	*	*	*	79	103
		EB TR	>500	75	74	*	*
		EB R	*	*	*	37	40
		WB L	50	36	44	*	*
		WB LTR	*	*	*	101	84
		WB TR	>500	107	138	*	*
		SB LTR	>500	82	57	83	60

Note: * = Does not exist or is not projected to exist

Table III: Queuing Analysis (Cont.)

ID	Intersection	Existing Queue Storage Length (ft.)		Existing		Existing plus Project	
				AM	PM	AM	PM
5	K Street / 18th Street	EB L	50	45	36	*	*
		EB LT	*	*	*	84	76
		EB TR	>500	69	65	*	*
		EB R	*	*	*	46	50
		WB L	50	19	28	*	*
		WB LTR	*	*	*	47	55
		WB TR	>500	62	80	*	*
		NB LTR	>500	80	62	66	69
		SB LTR	>500	67	63	47	50
6	MLK Street / 18th Street	EB LTR	>500	47	60	53	64
		WB LTR	>500	55	71	46	57
		NB LTR	>500	82	86	74	113
		SB LTR	>500	56	55	51	51
7	O Street / Main Street	EB L	55	0	18	39	51
		EB TR	>500	0	0	*	*
		EB R	*	*	*	6	**7**
		WB L	40	10	19	25	15
		WB TR	>500	0	0	0	18
		NB LT	*	*	*	38	41
		NB LTR	>500	72	64	*	*
		SB TR	*	*	*	49	49
		SB LTR	>500	51	49	*	*
8	N Street / Main Street	EB L	40	35	38	*	*
		EB TR	>500	89	103	*	*
		WB L	50	22	0	*	*
		WB LT	*	*	*	156	147
		WB TR	>500	45	69	*	*
		WB R	*	*	*	**74**	62
		NB LT	*	*	*	52	49
		NB LTR	>500	67	70	*	*
		SB TR	*	*	*	69	35
		SB LTR	>500	79	58	*	*

Note: * = Does not exist or is not projected to exist

Table III: Queuing Analysis (Cont.)

ID	Intersection	Existing Queue Storage Length (ft.)		Existing		Existing plus Project	
				AM	PM	AM	PM
9	M Street / Main Street	EB L	55	52	71	*	*
		EB TR	>500	97	139	*	*
		WB LT	*	*	*	238	199
		WB R	*	*	*	**122**	66
		NB LT	>500	83	62	147	130
		NB T	*	*	*	150	122
		NB TR	>500	104	93	*	*
		SB LT	>500	110	115	*	*
		SB T	*	*	*	124	210
		SB TR	>500	70	71	106	126
10	Canal Street / Main Street	EB T	>500	93	136	*	*
		WB T	*	*	*	43	46
		SB L	>500	90	73	*	*
		SB R	*	*	*	110	58
11	K Street / Main Street	EB LTR	>500	153	162	*	*
		WB LT	*	*	*	**111**	53
		WB R	*	*	*	32	23
		WB LTR	>500	58	59	*	*
		NB LT	*	*	*	89	74
		NB TR	>500	74	78	*	*
		SB LT	>500	74	96	*	*
		SB TR	*	*	*	45	43
12	MLK Street / Main Street	EB L	50	22	27	*	*
		EB TR	>500	83	80	*	*
		WB L	50	51	56	*	*
		WB LT	*	*	*	95	108
		WB T	>500	79	73	*	*
		WB R	>500	42	48	26	28
		NB L	75	63	44	56	67
		NB TR	>500	131	136	103	218
		SB L	75	32	24	44	45
		SB TR	>500	79	76	93	100

Note: * = Does not exist or is not projected to exist

Table III: Queuing Analysis (Cont.)

ID	Intersection	Existing Queue Storage Length (ft.)		Existing		Existing plus Project	
				AM	PM	AM	PM
13	O Street / 16th Street	EB L	75	46	40	42	23
		EB T	>500	170	249	165	280
		EB TR	>500	168	218	150	238
		WB L	75	74	70	57	**78**
		WB T	>500	99	136	136	166
		WB TR	>500	122	161	149	180
		NB L	50	71	93	67	**85**
		NB TR	>500	113	118	91	81
		SB L	50	55	48	88	**103**
		SB TR	>500	73	77	86	168
14	N Street / 16th Street	EB L	75	44	30	25	22
		EB T	>500	19	14	26	13
		EB TR	>500	27	12	21	14
		WB L	50	0	0	0	15
		WB T	>500	25	21	12	10
		WB TR	>500	31	13	11	18
		NB LTR	>500	15	15	18	18
		SB LTR	>500	63	76	82	65
15	M Street / 16th Street	EB L	100	135	182	124	**170**
		EB T	>500	142	212	155	200
		EB TR	>500	162	189	182	200
		WB L	85	87	91	72	**86**
		WB T	>500	179	199	140	148
		WB TR	>500	209	234	185	198
		NB L	50	97	94	72	**108**
		NB T	>500	158	166	104	164
		NB TR	>500	159	154	120	149
		SB L	200	183	182	155	**212**
		SB T	>500	171	172	192	218
		SB R	130	79	92	89	95

Note: * = Does not exist or is not projected to exist

Table III: Queuing Analysis (Cont.)

ID	Intersection	Existing Queue Storage Length (ft.)		Existing		Existing plus Project	
				AM	PM	AM	PM
16	Canal Street / 16th Street	EB L	75	22	30	40	28
		EB T	>500	32	0	0	0
		EB TR	>500	25	0	16	0
		WB L	75	35	22	38	36
		WB T	>500	0	0	0	10
		WB TR	>500	0	23	0	19
		NB LTR	>500	52	49	54	42
		SB LTR	>500	56	54	51	49
17	K Street / 16th Street	EB L	75	51	39	54	33
		EB T	>500	0	0	0	17
		EB TR	>500	14	25	7	25
		WB L	95	30	35	43	32
		WB T	>500	0	0	0	0
		WB TR	>500	7	0	19	10
		NB LTR	>500	48	44	56	43
		SB LTR	>500	83	73	54	84
18	MLK Street / 16th Street	EB L	170	49	38	82	125
		EB T	>500	110	196	161	237
		EB TR	>500	160	251	195	310
		WB L	100	166	187	127	**174**
		WB T	>500	119	220	136	241
		WB TR	>500	99	143	113	179
		NB L	105	182	162	125	**171**
		NB T	>500	276	219	113	184
		NB R	>500	78	85	98	89
		SB L	50	100	60	41	**79**
		SB TR	>500	205	167	124	159

Note: * = Does not exist or is not projected to exist

Conclusions and Recommendations

Conclusions and recommendations regarding the proposed Project are presented below.

Existing Traffic Conditions

- At present, all study intersections operate at an acceptable LOS during both peak periods.

Existing plus Project Traffic Conditions

- Under this scenario, all study intersections operate at an acceptable LOS during both peak periods.
- The Project segments have 336 existing on-street parallel parking stalls (excludes the temporary changes to Main Street and Canal Street). With the implementation of the parking recommendations, parking supply would increase by approximately 432 parking stalls based on the preliminary parking concept designs which include the use of diagonal parking stalls and the removal of red curbs at various locations. This results in a net gain of approximately 96 parking stalls throughout the Project. If the City does not allow the removal of the red curbs, approximately 78 parking stalls would be gained for a total of 414 parking stalls.
- Geometrics will be altered to have traffic flow in one direction along Main Street from MLK Jr Way to O Street. The changes in circulation are described below:
  - N Street / 18th Street
    - Eastbound approach lane(s) modified from a left-turn lane and a through-right lane to a left-through lane and a right-turn lane;
    - Westbound approach lane(s) modified from a left-turn lane and a through-right lane to a left-through-right lane; and
    - Modify intersection striping to accommodate lane changes.
  - Canal Street / 18th Street
    - Eastbound approach lane(s) modified from a left-turn lane and a through-right lane to a left-through lane and a right-turn lane;
    - Westbound approach lane(s) modified from a left-turn lane and a through-right lane to a left-through-right lane; and
    - Modify intersection striping to accommodate lane changes.
  - K Street / 18th Street
    - Eastbound approach lane(s) modified from a left-turn lane and a through-right lane to a left-through lane and a right-turn lane;
    - Westbound approach lane(s) modified from a left-turn lane and a through-right lane to a left-through-right lane; and
    - Modify intersection striping to accommodate lane changes.
  - O Street / Main Street
    - Eastbound approach lane(s) modified from a left-turn lane and a through-right lane to a left-turn lane and a right-turn lane;
    - Northbound approach lane(s) modified from a left-through-right lane to a left-through lane; and
    - Southbound approach lane(s) modified from a left-thought-right lane to a through-right lane.

- N Street / Main Street
  - Eastbound approach lane(s) have been removed;
  - Westbound approach lane(s) modified from a left-turn lane and a through-right lane to a left-through lane and a right-turn lane
  - Northbound approach lane(s) modified from a left-through-right lane to a left-through lane;
  - Southbound approach lane(s) modified from a left-thought-right lane to a through-right lane; and
  - Signal equipment modified to remove all signal equipment that currently serves eastbound movements.
- M Street / Main Street
  - Eastbound approach lane(s) have been removed;
  - Westbound approach lane(s) modified to add a left-through lane and a right-turn lane;
  - Northbound approach lane(s) modified from a left-through lane and a through-right lane to a left-through lane and a through lane;
  - Southbound approach lane(s) modified from a left-through lane and a through-right lane to a through lane and a through-right lane;
  - Signal to include an exclusive pedestrian scramble phase across all legs and corners at the same time;
  - Existing loops modified to accommodate a change in travel directions and lane alignments; and
  - Signal equipment modified to remove all signal equipment that currently serves eastbound movements.
- Canal Street / Main Street
  - Eastbound approach lane(s) have been removed;
  - Westbound approach lane(s) modified to add a through lane;
  - Southbound approach lane(s) modified from a trap left-turn lane to a trap right-turn lane; and
  - Signal equipment modified to remove all signal equipment that currently serves eastbound movements.
- K Street / Main Street
  - Eastbound approach lane(s) have been removed;
  - Westbound approach lane(s) modified from a left-right lane to a left-through lane and right-turn lane;
  - Northbound approach lane(s) modified from a through-right lane to a left-through lane;
  - Southbound approach lane(s) modified from a left-through lane to through-right lane; and
  - Signal equipment modified to remove all signal equipment that currently serves eastbound movements.
- MLK Jr Way / Main Street
  - Eastbound approach lane(s) have been removed;
  - Westbound approach lane(s) modified from a left-turn lane, a through lane and trap right-turn lane to a left-through lane and a right-turn lane; and
  - Signal equipment modified to remove all signal equipment that currently serves eastbound movements.

Queuing Analysis

- It is recommended that the City consider left-turn and right-turn lane storage lengths as indicated in the Queuing Analysis. The changes in storage lengths are described below:
  - M Street / 18th Street
    - Consider increasing the storage capacity of the eastbound left-turn lane from 50 feet to 100 feet.
    - Consider increasing the storage capacity of the westbound left-turn lane from 50 feet to 75 feet.
    - Consider increasing the storage capacity of the southbound left-turn lane from 60 feet to 75 feet.
  - N Street / Main Street
    - Consider setting the storage capacity of the westbound right-turn lane at 75 feet.
  - M Street / Main Street
    - Consider setting the storage capacity of the westbound right-turn lane at 75 feet.
  - K Street / Main Street
    - Consider setting the storage capacity of the westbound right-turn lane to 75 feet.
  - O Street / 16th Street
    - Consider increasing the storage capacity of the northbound left-turn lane from 50 feet to 75 feet.
    - Consider increasing the storage capacity of the southbound left-turn lane from 50 feet to 100 feet.
  - M Street / 16th Street
    - The queue length of the northbound left-turn lane exceeds the available storage capacity; however, due to design constraints associated with the at grade railroad crossing the storage capacity cannot be increased.
    - The queue length of the southbound left-turn lane slightly exceeds the available storage capacity; however, due to design constraints the storage capacity cannot be increased.
  - MLK Jr Way / 16th Street
    - Consider increasing the storage capacity of the westbound left-turn lane from 100 feet to 175 feet.
    - The queue length of the northbound left-turn lane reaches the available storage capacity; however, due to design constraints associated with the at grade railroad crossing the storage capacity cannot be increased.
    - Consider increasing the storage capacity of the southbound left-turn lane from 50 feet to 75 feet.

Study Participants

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Carlos Ayala-Magaña, EIT	Engineer I/II
Jesus Garcia	Engineer I/II
Javier Rios	Engineer I/II
Dennis Wynn	Sr. Engineering Technician
Adrian Benavides	Engineering Aide
Christian Sanchez	Engineering Aide

Persons Consulted:

Michael Beltran, PE	City of Merced
Joe Cardoso, PLS	City of Merced
Paul Flores	City of Merced

References

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Caltrans. 2019. "Highway Design Manual". Sacramento: State of California.

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Appendix A: Traffic Counts

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
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800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

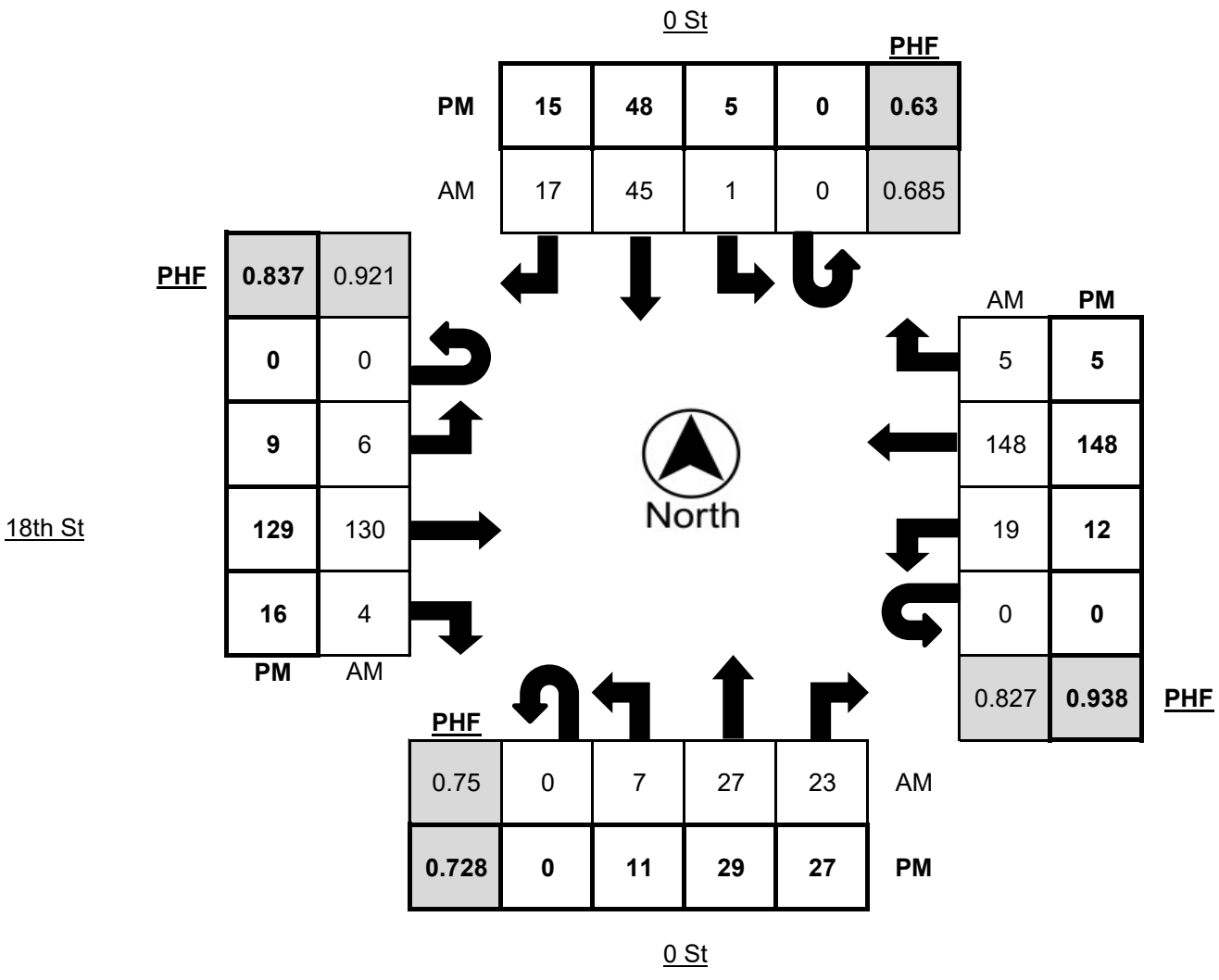
LOCATION 18th St @ O St
LATITUDE 37.304096°
COUNTY Merced
LONGITUDE -120.487341°
COLLECTION DATE Thursday, December 9, 2021
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
11:30 AM - 11:45 AM	0	3	11	4	2	0	0	16	3	0	0	0	24	0	0	0	4	32	0	0
11:45 AM - 12:00 PM	0	0	4	5	0	0	1	6	2	0	0	3	36	3	1	0	2	37	0	1
12:00 PM - 12:15 PM	0	4	5	8	0	0	0	20	3	0	0	1	35	2	0	0	6	45	1	1
12:15 PM - 12:30 PM	0	1	8	3	0	0	0	6	2	0	0	2	32	1	2	0	7	33	0	1
12:30 PM - 12:45 PM	0	2	4	3	0	0	1	13	5	0	0	1	31	1	0	0	3	35	2	1
12:45 PM - 1:00 PM	0	0	10	9	0	0	0	6	7	0	0	2	32	0	1	0	3	35	2	1
1:00 PM - 1:15 PM	0	3	11	8	0	0	0	10	2	0	0	3	28	4	1	0	3	34	2	2
1:15 PM - 1:30 PM	0	0	6	5	0	0	0	6	3	0	0	8	25	1	1	0	3	33	1	2
TOTAL	**0**	**13**	**59**	**45**	**2**	**0**	**2**	**83**	**27**	**0**	**0**	**20**	**243**	**12**	**6**	**0**	**31**	**284**	**8**	**9**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	3	9	1	0	0	4	12	2	0	0	1	23	5	0	0	4	37	1	2
4:15 PM - 4:30 PM	0	4	5	4	0	0	3	12	3	0	0	2	41	3	1	0	5	36	1	1
4:30 PM - 4:45 PM	0	1	11	6	0	0	0	7	4	0	0	2	21	8	0	0	2	37	2	1
4:45 PM - 5:00 PM	0	3	4	6	0	0	2	7	3	0	0	1	33	3	1	0	4	38	2	1
5:00 PM - 5:15 PM	0	3	9	11	0	0	0	22	5	0	0	4	34	2	0	0	1	37	0	1
5:15 PM - 5:30 PM	0	2	2	3	0	0	0	3	1	0	0	1	28	2	2	0	4	27	1	1
5:30 PM - 5:45 PM	0	1	5	8	0	0	0	9	2	0	0	0	19	2	0	0	4	19	0	1
5:45 PM - 6:00 PM	0	0	9	10	0	0	1	8	2	0	0	1	14	0	1	0	1	30	0	1
TOTAL	**0**	**17**	**54**	**49**	**0**	**0**	**10**	**80**	**22**	**0**	**0**	**12**	**213**	**25**	**5**	**0**	**25**	**261**	**7**	**9**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
12:00 PM - 1:00 PM	0	7	27	23	0	0	1	45	17	0	0	6	130	4	3	0	19	148	5	4
4:15 PM - 5:15 PM	0	11	29	27	0	0	5	48	15	0	0	9	129	16	2	0	12	148	5	4

	PHF	Trucks
AM	0.831	1.6%
PM	0.887	1.3%



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Turning Movement Report

Prepared For:
JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

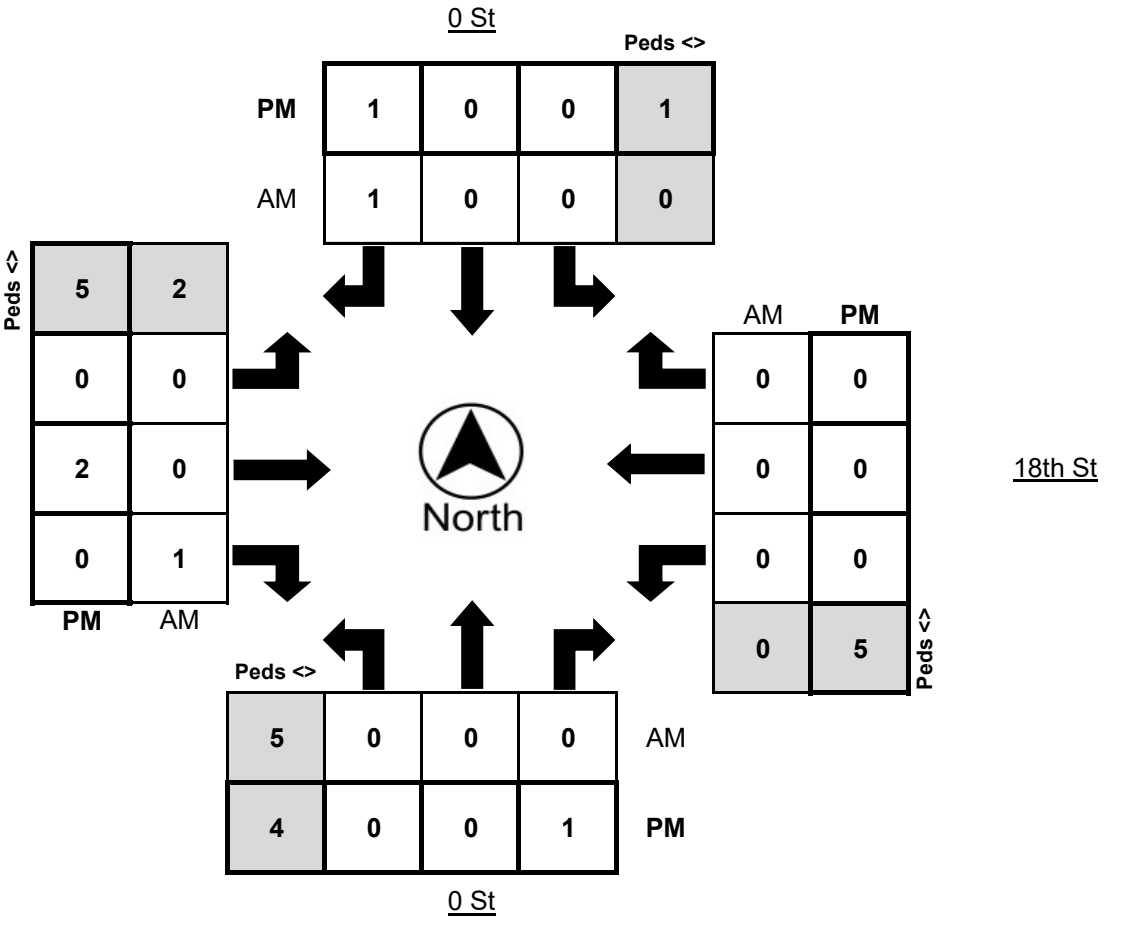
LOCATION 18th St @ O St
LATITUDE 37.304096°
COUNTY Merced
LONGITUDE -120.487341°
COLLECTION DATE Thursday, December 9, 2021
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 11:45 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM - 12:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
12:00 PM - 12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:15 PM - 12:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
12:30 PM - 12:45 PM	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	1
12:45 PM - 1:00 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
1:00 PM - 1:15 PM	0	0	0	0	0	1	0	3	0	0	0	1	0	0	0	3
1:15 PM - 1:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
TOTAL	**0**	**0**	**0**	**1**	**0**	**1**	**1**	**11**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**7**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1
4:30 PM - 4:45 PM	0	0	0	1	0	0	0	1	0	2	0	2	0	0	0	2
4:45 PM - 5:00 PM	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	1
5:00 PM - 5:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
5:15 PM - 5:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
5:30 PM - 5:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	2
TOTAL	**1**	**0**	**2**	**1**	**0**	**1**	**1**	**6**	**0**	**2**	**0**	**7**	**2**	**0**	**0**	**7**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
12:00 PM - 1:00 PM	0	0	0	0	0	0	1	5	0	0	1	0	0	0	0	2
4:15 PM - 5:15 PM	0	0	1	1	0	0	1	4	0	2	0	5	0	0	0	5

	Bikes	Peds
AM Peak Total	2	7
PM Peak Total	4	15



Metro Traffic Data Inc.
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Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

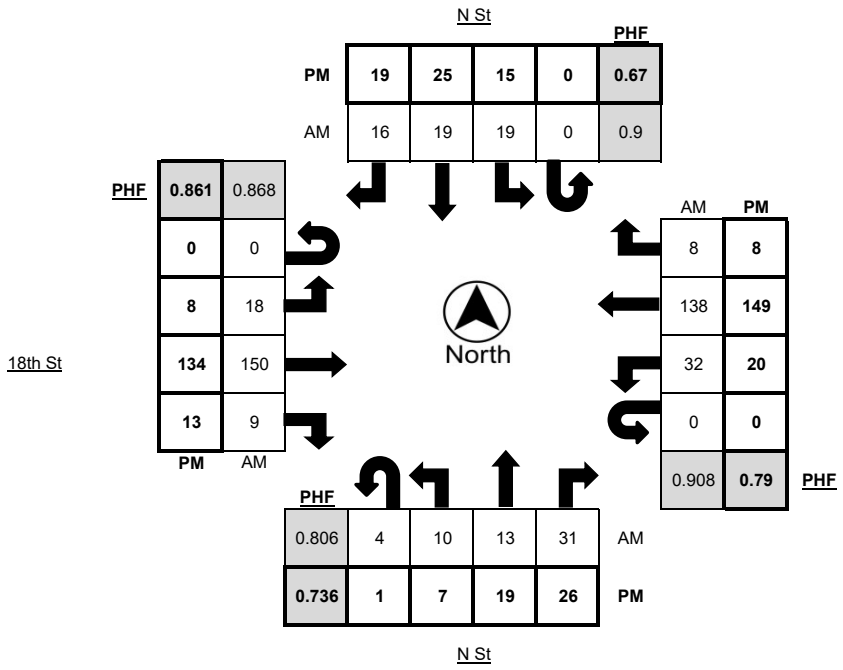
LOCATION N St @ 18th St
LATITUDE 37.3035
COUNTY Merced
LONGITUDE -120.4858
COLLECTION DATE Tuesday, October 19, 2021
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
11:30 AM - 11:45 AM	0	2	7	6	2	0	6	5	6	0	0	2	30	3	0	0	3	34	1	0
11:45 AM - 12:00 PM	0	1	3	5	1	0	8	6	2	0	0	4	28	6	2	0	8	29	2	0
12:00 PM - 12:15 PM	2	3	5	8	3	0	3	8	4	1	0	8	35	2	0	0	8	31	3	0
12:15 PM - 12:30 PM	1	2	3	4	2	0	6	2	4	0	0	6	36	4	1	0	9	38	2	0
12:30 PM - 12:45 PM	0	3	4	9	1	0	8	3	4	0	0	1	34	0	0	0	10	34	2	0
12:45 PM - 1:00 PM	1	2	1	10	2	0	2	6	4	0	0	3	45	3	0	0	5	35	1	1
1:00 PM - 1:15 PM	0	3	2	10	2	0	5	4	5	0	0	5	29	2	1	0	5	44	5	0
1:15 PM - 1:30 PM	1	1	3	5	2	0	2	6	4	0	0	2	25	2	2	0	5	40	3	0
TOTAL	**5**	**17**	**28**	**57**	**15**	**0**	**40**	**40**	**33**	**1**	**0**	**31**	**262**	**22**	**6**	**0**	**53**	**285**	**19**	**1**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	1	1	9	4	2	0	2	6	7	0	0	3	39	3	0	0	8	44	4	1
4:15 PM - 4:30 PM	0	1	5	3	1	0	2	8	3	0	0	2	28	4	2	0	4	43	2	1
4:30 PM - 4:45 PM	0	4	3	11	1	0	10	6	6	0	0	0	35	4	0	0	6	18	2	0
4:45 PM - 5:00 PM	0	1	2	8	1	0	1	5	3	1	0	3	32	2	0	0	2	44	0	0
5:00 PM - 5:15 PM	0	1	3	11	0	0	3	7	6	0	0	3	33	6	0	0	8	30	0	0
5:15 PM - 5:30 PM	3	5	2	6	5	0	4	4	4	0	0	4	25	3	1	0	8	32	3	0
5:30 PM - 5:45 PM	0	3	3	7	1	0	3	2	0	0	0	0	29	1	0	0	7	22	1	0
5:45 PM - 6:00 PM	1	6	2	8	2	0	1	1	4	0	0	0	39	3	1	0	10	41	0	0
TOTAL	**5**	**22**	**29**	**58**	**13**	**0**	**26**	**39**	**33**	**1**	**0**	**15**	**260**	**26**	**4**	**0**	**53**	**274**	**12**	**2**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
12:00 PM - 1:00 PM	4	10	13	31	8	0	19	19	16	1	0	18	150	9	1	0	32	138	8	1
4:00 PM - 5:00 PM	1	7	19	26	5	0	15	25	19	1	0	8	134	13	2	0	20	149	8	2

	PHF	Trucks
AM	0.973	2.4%
PM	0.847	2.3%



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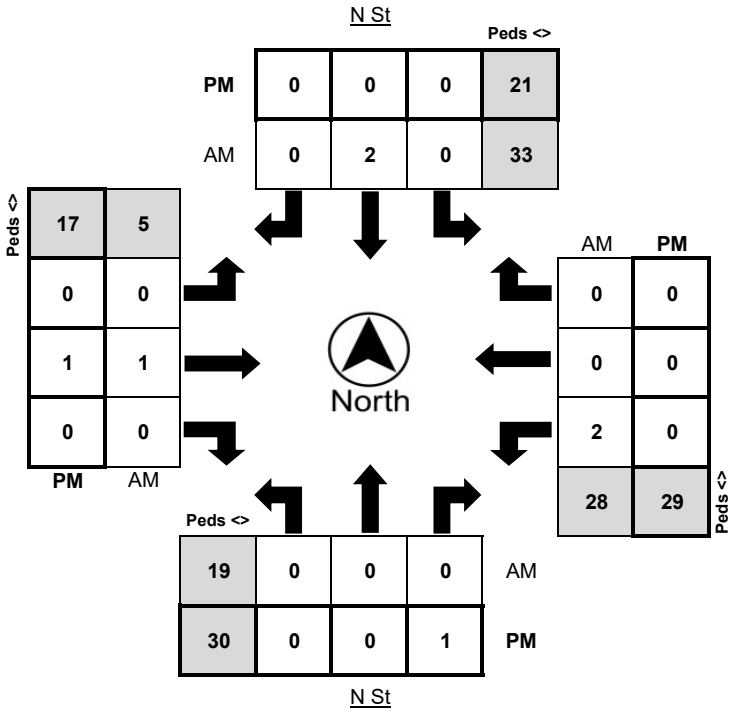
LOCATION N St @ 18th St
LATITUDE 37.3035
COUNTY Merced
LONGITUDE -120.4858
COLLECTION DATE Tuesday, October 19, 2021
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 11:45 AM	0	0	0	7	0	1	0	10	0	0	0	7	0	0	0	7
11:45 AM - 12:00 PM	0	1	1	3	0	0	0	1	0	1	0	5	0	0	0	1
12:00 PM - 12:15 PM	0	0	0	9	0	0	0	5	0	0	0	12	1	0	0	1
12:15 PM - 12:30 PM	0	0	0	10	0	1	0	2	0	0	0	7	0	0	0	2
12:30 PM - 12:45 PM	0	0	0	7	0	0	0	5	0	1	0	4	0	0	0	1
12:45 PM - 1:00 PM	0	0	0	7	0	1	0	7	0	0	0	5	1	0	0	1
1:00 PM - 1:15 PM	0	0	0	15	0	0	0	5	0	0	0	14	0	0	0	1
1:15 PM - 1:30 PM	0	0	0	8	0	0	0	7	0	1	0	6	0	0	0	3
TOTAL	**0**	**1**	**1**	**66**	**0**	**3**	**0**	**42**	**0**	**3**	**0**	**60**	**2**	**0**	**0**	**17**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	3	0	0	0	11	0	0	0	4	0	0	0	3
4:15 PM - 4:30 PM	0	0	1	9	0	0	0	6	0	1	0	5	0	0	0	6
4:30 PM - 4:45 PM	0	0	0	7	0	0	0	6	0	0	0	11	0	0	0	2
4:45 PM - 5:00 PM	0	0	0	2	0	0	0	7	0	0	0	9	0	0	0	6
5:00 PM - 5:15 PM	0	0	0	13	0	0	0	3	0	0	0	12	0	0	0	3
5:15 PM - 5:30 PM	0	0	0	5	0	0	0	1	0	1	0	4	0	0	0	3
5:30 PM - 5:45 PM	0	0	0	4	0	0	0	2	0	1	0	2	0	0	0	4
5:45 PM - 6:00 PM	0	1	0	2	0	1	0	1	0	0	0	1	0	1	0	2
TOTAL	**0**	**1**	**1**	**45**	**0**	**1**	**0**	**37**	**0**	**3**	**0**	**48**	**0**	**1**	**0**	**29**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
12:00 PM - 1:00 PM	0	0	0	33	0	2	0	19	0	1	0	28	2	0	0	5
4:00 PM - 5:00 PM	0	0	1	21	0	0	0	30	0	1	0	29	0	0	0	17

	Bikes	Peds
AM Peak Total	5	85
PM Peak Total	2	97



Metro Traffic Data Inc.
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Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

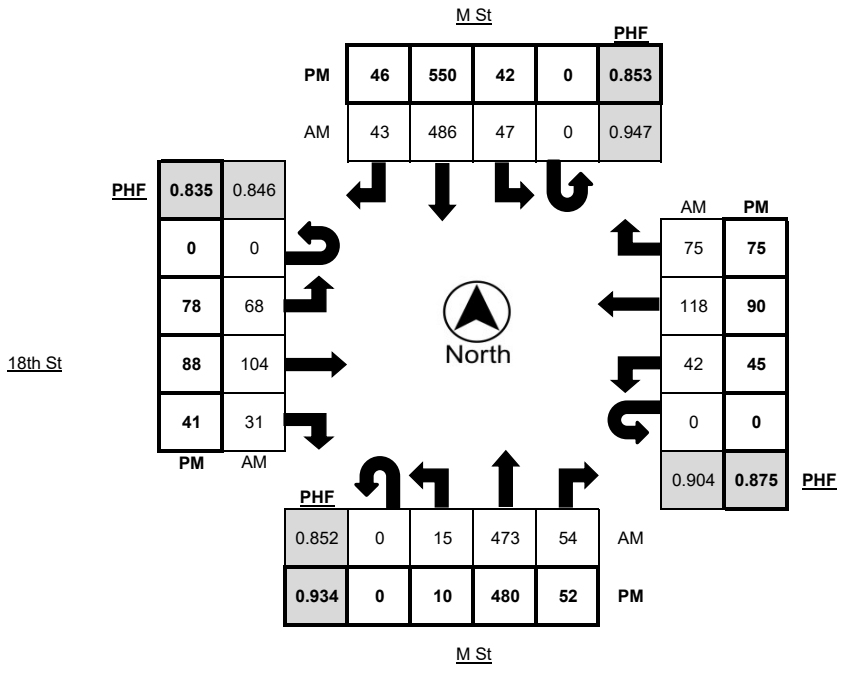
LOCATION M St @ 18th St
LATITUDE 37.3030
COUNTY Merced
LONGITUDE -120.4843
COLLECTION DATE Tuesday, October 19, 2021
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
11:30 AM - 11:45 AM	0	6	87	19	1	0	15	105	12	1	0	13	22	7	1	0	9	20	9	0
11:45 AM - 12:00 PM	0	5	111	10	1	0	22	131	8	2	0	13	18	9	1	0	12	24	14	1
12:00 PM - 12:15 PM	0	2	105	12	0	0	16	128	8	3	0	18	27	15	1	0	17	32	16	1
12:15 PM - 12:30 PM	0	6	133	20	4	0	5	115	13	2	0	21	23	1	1	0	8	23	23	0
12:30 PM - 12:45 PM	0	5	103	10	1	0	12	121	12	2	0	11	26	7	0	0	11	28	18	0
12:45 PM - 1:00 PM	0	2	132	12	2	0	14	122	10	0	0	18	28	8	0	0	6	35	18	3
1:00 PM - 1:15 PM	0	10	98	11	0	0	15	127	16	4	0	8	27	10	3	0	12	33	11	1
1:15 PM - 1:30 PM	0	10	115	19	2	0	10	116	13	1	0	10	17	6	0	0	12	28	15	1
TOTAL	**0**	**46**	**884**	**113**	**11**	**0**	**109**	**965**	**92**	**15**	**0**	**112**	**188**	**63**	**7**	**0**	**87**	**223**	**124**	**7**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	9	123	17	2	0	10	121	17	3	0	15	25	9	0	0	15	36	27	1
4:15 PM - 4:30 PM	0	6	110	9	3	0	15	151	13	6	0	8	19	5	0	0	8	26	11	0
4:30 PM - 4:45 PM	0	4	124	17	2	0	13	123	4	3	0	22	24	16	0	0	19	20	16	0
4:45 PM - 5:00 PM	0	2	110	11	0	0	11	111	11	2	0	15	22	12	0	0	11	30	19	0
5:00 PM - 5:15 PM	0	2	129	14	2	0	10	159	18	0	0	26	23	7	1	0	11	15	18	0
5:15 PM - 5:30 PM	0	2	117	10	1	0	8	157	13	3	0	15	19	6	0	0	4	25	22	0
5:30 PM - 5:45 PM	0	3	119	11	2	0	6	99	11	1	0	13	26	7	0	0	8	16	12	0
5:45 PM - 6:00 PM	0	4	94	12	0	0	11	113	13	3	0	16	27	3	0	0	7	37	12	0
TOTAL	**0**	**32**	**926**	**101**	**12**	**0**	**84**	**1034**	**100**	**21**	**0**	**130**	**185**	**65**	**1**	**0**	**83**	**205**	**137**	**1**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
12:00 PM - 1:00 PM	0	15	473	54	7	0	47	486	43	7	0	68	104	31	2	0	42	118	75	4
4:30 PM - 5:30 PM	0	10	480	52	5	0	42	550	46	8	0	78	88	41	1	0	45	90	75	0

	PHF	Trucks
AM	0.960	1.3%
PM	0.924	0.9%



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Fresno, CA 93704

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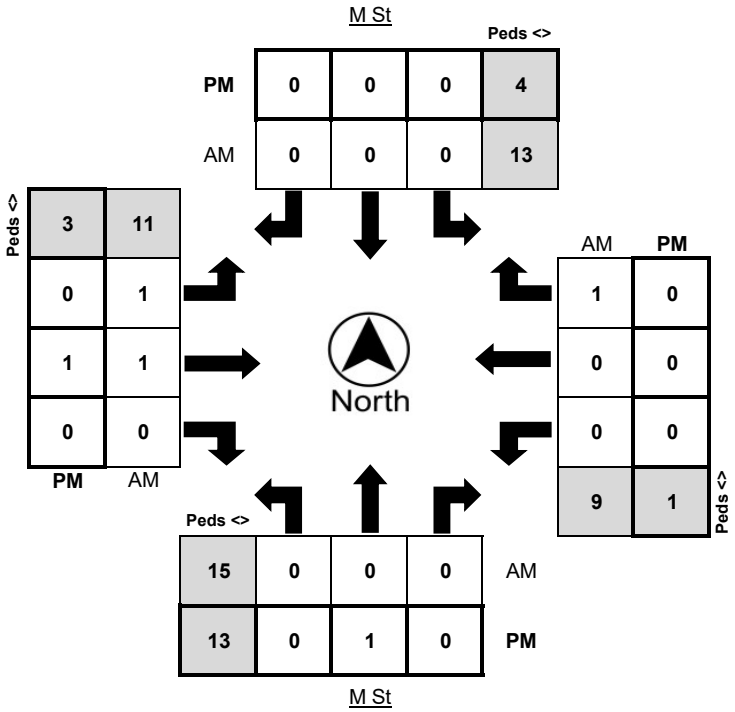
LATITUDE 37.3030
COUNTY Merced
LONGITUDE -120.4843
COLLECTION DATE Tuesday, October 19, 2021
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 11:45 AM	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	5
11:45 AM - 12:00 PM	0	0	0	5	0	0	0	1	0	1	0	3	0	0	0	2
12:00 PM - 12:15 PM	0	0	0	5	0	0	0	6	1	0	0	2	0	0	1	6
12:15 PM - 12:30 PM	0	0	0	3	0	0	0	2	0	0	0	1	0	0	0	2
12:30 PM - 12:45 PM	0	0	0	3	0	0	0	2	0	1	0	1	0	0	0	1
12:45 PM - 1:00 PM	0	0	0	2	0	0	0	5	0	0	0	5	0	0	0	2
1:00 PM - 1:15 PM	0	1	0	2	0	0	0	4	1	0	0	0	0	0	0	0
1:15 PM - 1:30 PM	0	2	0	5	0	1	0	5	0	0	0	2	0	0	0	3
TOTAL	**0**	**3**	**0**	**31**	**0**	**1**	**0**	**31**	**2**	**2**	**0**	**14**	**0**	**0**	**1**	**21**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	3	0	0	0	0	0	0	0	1	0	0	1	1
4:15 PM - 4:30 PM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	1
4:45 PM - 5:00 PM	0	0	0	2	0	0	0	5	0	0	0	1	0	0	0	1
5:00 PM - 5:15 PM	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	1	0	0	0	0	0	2	0	1	0	0	0	0	0	1
5:30 PM - 5:45 PM	0	0	0	2	0	0	0	1	0	1	0	0	0	0	0	1
5:45 PM - 6:00 PM	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
TOTAL	**1**	**1**	**0**	**10**	**0**	**1**	**0**	**15**	**0**	**2**	**0**	**2**	**0**	**1**	**2**	**5**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
12:00 PM - 1:00 PM	0	0	0	13	0	0	0	15	1	1	0	9	0	0	1	11
4:30 PM - 5:30 PM	0	1	0	4	0	0	0	13	0	1	0	1	0	0	0	3

	Bikes	Peds
AM Peak Total	3	48
PM Peak Total	2	21



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Turning Movement Report

Prepared For:

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516 W. Shaw Ave, Suite 103
Fresno, CA 93704

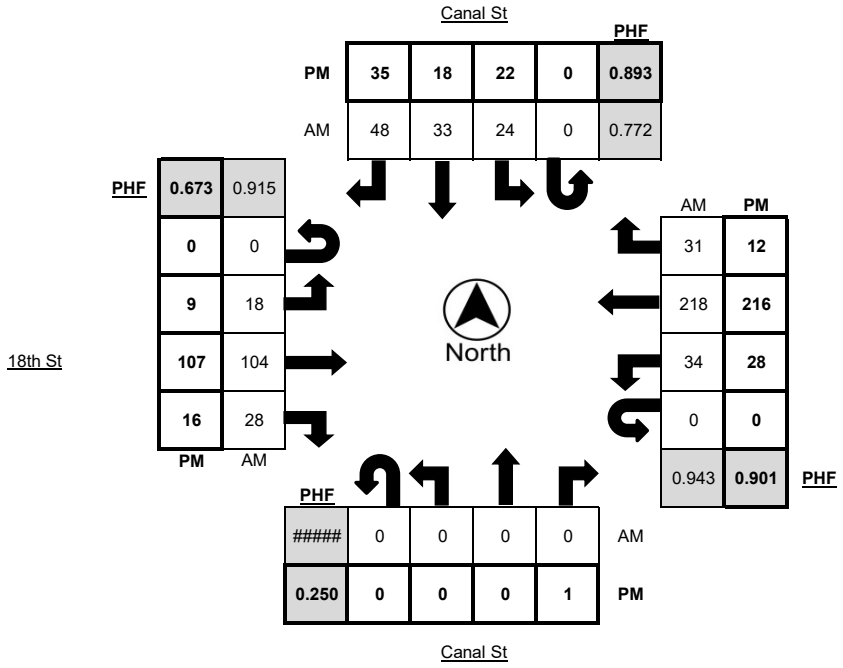
LOCATION 18th St @ Canal St
LATITUDE 37.3024
COUNTY Merced
LONGITUDE -120.4828
COLLECTION DATE Thursday, September 16, 2021
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
11:30 AM - 11:45 AM	0	0	0	0	0	0	9	5	10	0	0	2	13	10	0	0	4	59	7	1
11:45 AM - 12:00 PM	0	0	0	0	0	0	6	10	13	0	0	1	20	14	0	0	9	52	8	0
12:00 PM - 12:15 PM	0	0	0	0	0	0	7	12	15	1	0	6	29	4	0	0	4	56	6	0
12:15 PM - 12:30 PM	0	0	0	0	0	0	8	4	15	1	0	6	30	5	0	0	6	59	10	2
12:30 PM - 12:45 PM	0	0	0	0	0	0	3	7	5	1	0	5	25	5	1	0	15	51	7	0
12:45 PM - 1:00 PM	0	0	0	0	0	0	7	4	3	0	0	5	39	1	0	0	9	55	8	1
1:00 PM - 1:15 PM	0	1	0	0	0	0	4	3	14	0	0	1	23	6	1	0	8	55	7	0
1:15 PM - 1:30 PM	0	0	0	0	0	0	5	7	5	0	0	7	24	5	0	0	6	43	8	0
TOTAL	**0**	**1**	**0**	**0**	**0**	**0**	**49**	**52**	**80**	**3**	**0**	**33**	**203**	**50**	**2**	**0**	**61**	**430**	**61**	**4**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	0	0	0	0	0	8	9	6	1	0	1	25	5	0	0	10	49	4	0
4:15 PM - 4:30 PM	0	0	0	1	0	0	7	2	10	0	0	2	26	2	0	0	6	62	3	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	5	5	7	0	0	1	21	1	0	0	2	50	3	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	4	7	10	0	0	2	22	6	0	0	8	57	3	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	6	4	8	0	0	4	38	7	0	0	12	47	3	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	8	4	7	0	0	2	23	4	0	0	10	31	2	0
5:30 PM - 5:45 PM	0	0	1	1	0	0	4	2	5	0	0	0	23	2	0	0	5	34	3	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	4	4	0	0	0	1	18	2	0	0	13	46	5	0
TOTAL	**0**	**0**	**1**	**2**	**0**	**0**	**46**	**37**	**53**	**1**	**0**	**13**	**196**	**29**	**0**	**0**	**66**	**376**	**26**	**0**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
11:45 AM - 12:45 PM	0	0	0	0	0	0	24	33	48	3	0	18	104	28	1	0	34	218	31	2
4:15 PM - 5:15 PM	0	0	0	1	0	0	22	18	35	0	0	9	107	16	0	0	28	216	12	0

	PHF	Trucks
AM	0.941	1.1%
PM	0.899	0.0%



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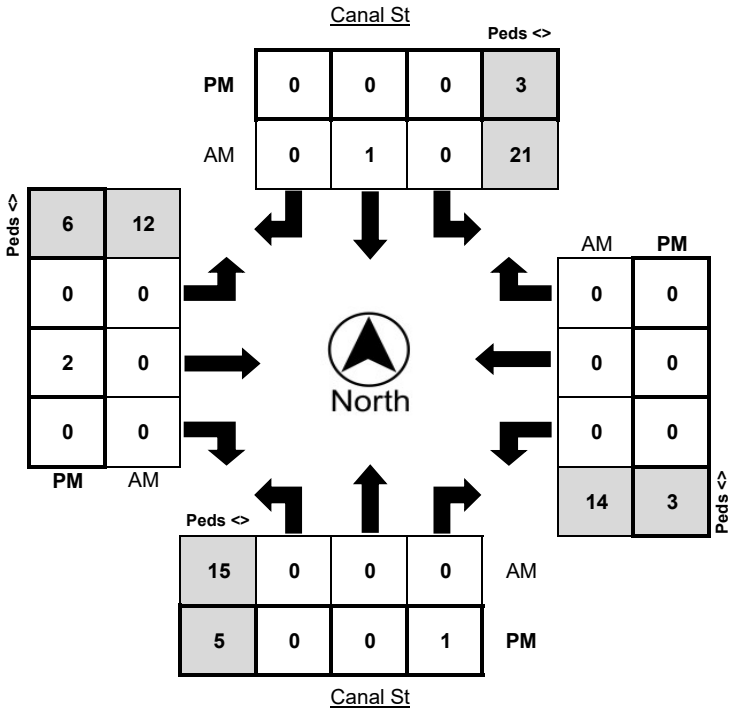
LONGITUDE -120.4828
COLLECTION DATE Thursday, September 16, 2021
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 11:45 AM	0	0	0	2	0	0	0	7	0	0	0	3	0	0	0	6
11:45 AM - 12:00 PM	0	0	0	4	0	0	0	5	0	0	0	5	0	0	0	4
12:00 PM - 12:15 PM	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0	1
12:15 PM - 12:30 PM	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	2
12:30 PM - 12:45 PM	0	0	0	10	0	1	0	4	0	0	0	4	0	0	0	5
12:45 PM - 1:00 PM	1	0	0	2	0	0	0	9	0	0	0	7	0	0	0	4
1:00 PM - 1:15 PM	0	0	0	2	0	2	0	5	0	0	0	1	0	0	0	1
1:15 PM - 1:30 PM	0	0	0	4	0	0	0	12	0	0	0	13	0	0	0	8
TOTAL	**1**	**0**	**0**	**31**	**0**	**3**	**0**	**48**	**0**	**0**	**0**	**38**	**0**	**0**	**0**	**31**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	3
4:15 PM - 4:30 PM	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1
4:30 PM - 4:45 PM	0	0	1	1	0	0	0	3	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	1
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	4
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	1
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0
TOTAL	**0**	**0**	**1**	**4**	**0**	**0**	**0**	**9**	**0**	**2**	**0**	**8**	**0**	**0**	**0**	**11**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:45 AM - 12:45 PM	0	0	0	21	0	1	0	15	0	0	0	14	0	0	0	12
4:15 PM - 5:15 PM	0	0	1	3	0	0	0	5	0	2	0	3	0	0	0	6

	Bikes	Peds
AM Peak Total	1	62
PM Peak Total	3	17



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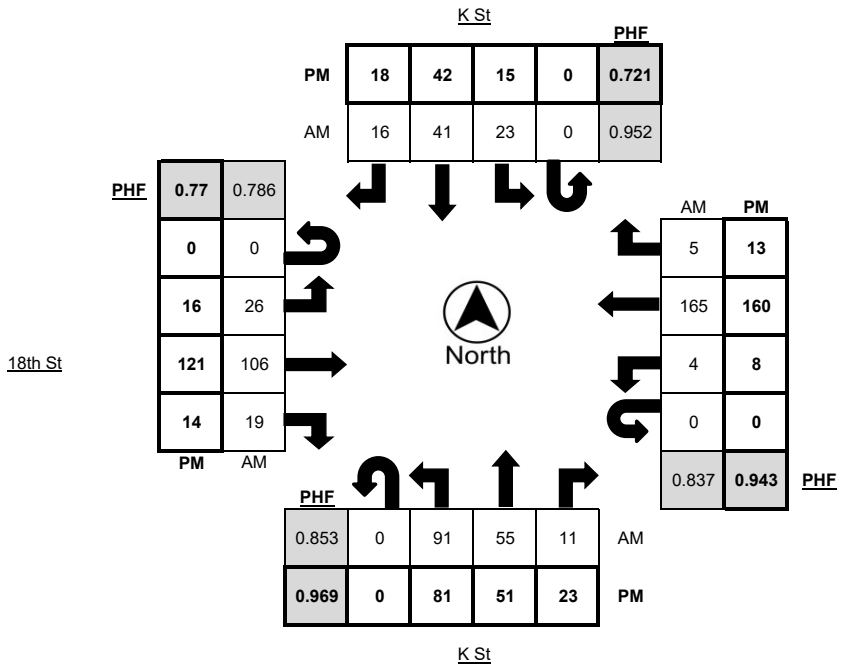
	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
11:30 AM - 11:45 AM	0	31	16	3	1	0	6	8	5	1	0	0	20	6	0	0	1	35	0	1
11:45 AM - 12:00 PM	0	24	7	2	2	0	4	11	2	2	0	2	18	5	0	0	1	39	3	0
12:00 PM - 12:15 PM	0	26	18	2	0	0	7	11	2	0	0	4	24	4	0	0	1	37	0	0
12:15 PM - 12:30 PM	0	20	15	2	2	0	3	10	6	1	0	9	26	5	1	0	1	47	2	2
12:30 PM - 12:45 PM	0	30	7	3	0	0	5	9	6	3	0	5	22	4	1	0	1	33	0	0
12:45 PM - 1:00 PM	0	15	15	4	3	0	8	11	2	1	0	8	34	6	0	0	1	48	3	0
1:00 PM - 1:15 PM	0	24	9	6	0	0	2	6	3	1	0	4	24	3	1	0	3	44	0	1
1:15 PM - 1:30 PM	0	21	19	8	1	0	6	7	5	2	0	2	26	2	0	0	2	33	2	0
TOTAL	**0**	**191**	**106**	**30**	**9**	**0**	**41**	**73**	**31**	**11**	**0**	**34**	**194**	**35**	**3**	**0**	**11**	**316**	**10**	**4**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	13	12	2	0	0	7	12	7	2	0	1	28	5	1	0	2	40	3	0
4:15 PM - 4:30 PM	0	25	11	4	2	0	4	14	8	0	0	6	33	4	0	0	2	42	4	0
4:30 PM - 4:45 PM	0	18	13	7	0	0	4	8	3	2	0	2	24	3	0	0	3	34	4	0
4:45 PM - 5:00 PM	0	24	9	5	2	0	1	12	5	1	0	3	24	3	0	0	1	42	2	1
5:00 PM - 5:15 PM	0	14	18	7	1	0	6	8	2	1	0	5	40	4	0	0	2	42	3	0
5:15 PM - 5:30 PM	0	16	11	3	1	0	3	10	4	2	0	0	26	3	0	0	1	22	2	0
5:30 PM - 5:45 PM	0	15	15	3	0	0	2	5	2	0	0	2	29	0	0	0	1	23	2	0
5:45 PM - 6:00 PM	0	22	7	4	1	0	2	9	2	2	0	1	21	0	0	0	0	37	1	0
TOTAL	**0**	**147**	**96**	**35**	**7**	**0**	**29**	**78**	**33**	**10**	**0**	**20**	**225**	**22**	**1**	**0**	**12**	**282**	**21**	**1**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
12:00 PM - 1:00 PM	0	91	55	11	5	0	23	41	16	5	0	26	106	19	2	0	4	165	5	2
4:15 PM - 5:15 PM	0	81	51	23	5	0	15	42	18	4	0	16	121	14	0	0	8	160	13	1

	PHF	Trucks
AM	0.906	2.5%
PM	0.895	1.8%



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
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Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

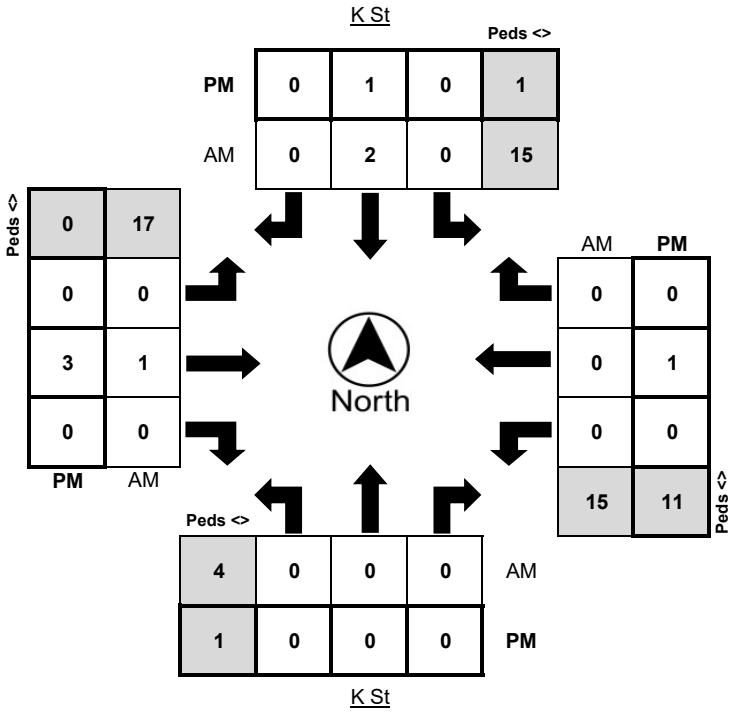
LOCATION 18th St @ K St
LATITUDE 37.3019
COUNTY Merced
LONGITUDE -120.4813
COLLECTION DATE Thursday, September 16, 2021
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 11:45 AM	0	0	0	0	0	0	0	3	1	0	0	1	0	0	0	0
11:45 AM - 12:00 PM	0	0	0	2	0	1	1	2	0	0	0	1	0	0	0	2
12:00 PM - 12:15 PM	0	0	0	4	0	1	0	2	0	1	0	10	0	0	0	5
12:15 PM - 12:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
12:30 PM - 12:45 PM	0	0	0	10	0	0	0	2	0	0	0	1	0	0	0	9
12:45 PM - 1:00 PM	0	0	0	0	0	1	0	0	0	0	0	4	0	0	0	2
1:00 PM - 1:15 PM	0	1	0	1	0	0	0	11	0	0	0	17	0	0	0	1
1:15 PM - 1:30 PM	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	1
TOTAL	**0**	**1**	**0**	**18**	**0**	**3**	**1**	**22**	**1**	**1**	**0**	**35**	**0**	**0**	**0**	**21**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	4	0	0	0	3	0	0	0	3
4:15 PM - 4:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	1	0	0	0	1	0	4	0	1	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	1	0	7	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
TOTAL	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**5**	**0**	**3**	**0**	**17**	**0**	**1**	**0**	**3**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
12:00 PM - 1:00 PM	0	0	0	15	0	2	0	4	0	1	0	15	0	0	0	17
4:15 PM - 5:15 PM	0	0	0	1	0	1	0	1	0	3	0	11	0	1	0	0

	Bikes	Peds
AM Peak Total	3	51
PM Peak Total	5	13



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Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

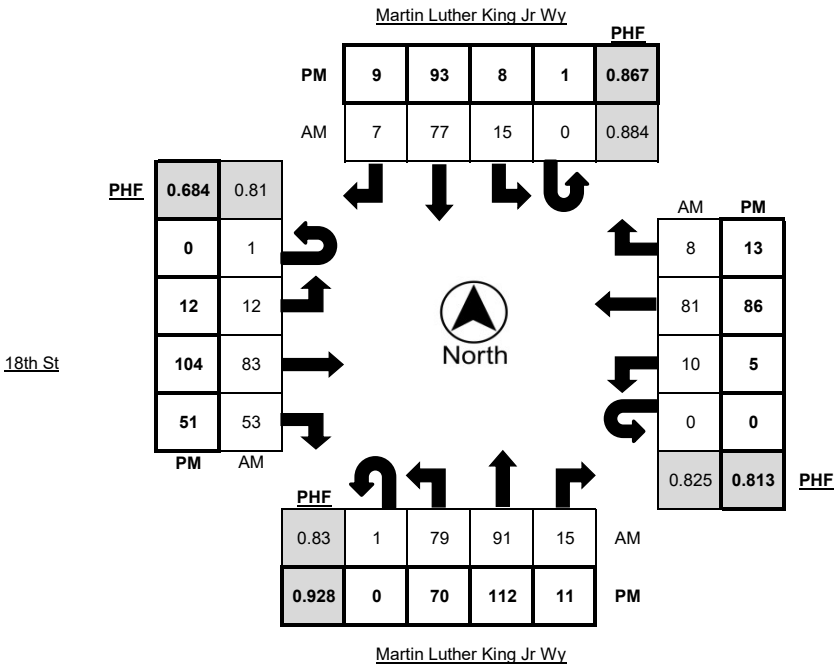
LOCATION 18th St @ Martin Luther King Jr Wy
LATITUDE 37.3013
COUNTY Merced
LONGITUDE -120.4798
COLLECTION DATE Thursday, September 16, 2021
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
11:30 AM - 11:45 AM	0	18	20	7	0	0	0	16	3	0	0	1	14	13	1	0	3	15	3	1
11:45 AM - 12:00 PM	0	14	23	3	0	0	4	7	3	0	0	0	13	9	0	0	3	26	1	0
12:00 PM - 12:15 PM	1	14	22	4	0	0	7	18	3	0	0	3	18	20	0	0	2	21	3	1
12:15 PM - 12:30 PM	0	19	34	3	0	0	2	24	1	1	0	4	18	9	0	0	1	27	2	0
12:30 PM - 12:45 PM	0	18	23	5	0	0	3	18	1	1	1	0	19	11	0	0	6	14	0	0
12:45 PM - 1:00 PM	0	28	12	3	0	0	3	17	2	1	0	5	28	13	0	0	1	19	3	1
1:00 PM - 1:15 PM	0	21	12	3	0	0	5	28	0	1	0	5	20	9	2	0	4	24	2	0
1:15 PM - 1:30 PM	0	13	14	6	0	0	4	19	3	0	0	5	18	17	0	0	4	22	0	0
TOTAL	**1**	**145**	**160**	**34**	**0**	**0**	**28**	**147**	**16**	**4**	**1**	**23**	**148**	**101**	**3**	**0**	**24**	**168**	**14**	**3**

	Northbound					Southbound					Eastbound					Westbound				
Time	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
4:00 PM - 4:15 PM	0	18	25	3	0	0	2	20	2	0	0	3	18	16	0	0	2	21	1	0
4:15 PM - 4:30 PM	0	17	30	4	0	0	3	19	1	1	0	1	24	14	0	0	2	25	5	0
4:30 PM - 4:45 PM	0	15	34	3	0	0	1	23	3	0	0	3	21	13	0	0	2	20	3	0
4:45 PM - 5:00 PM	0	25	25	1	0	0	3	23	3	1	0	2	19	9	0	0	1	22	1	0
5:00 PM - 5:15 PM	0	13	23	3	0	1	1	28	2	1	0	6	40	15	0	0	0	19	4	0
5:15 PM - 5:30 PM	0	8	21	7	0	0	3	33	0	0	0	3	21	10	1	0	1	16	3	0
5:30 PM - 5:45 PM	0	18	15	3	0	0	2	24	3	0	0	3	24	7	0	0	2	11	3	0
5:45 PM - 6:00 PM	0	10	19	2	0	0	3	11	0	0	0	4	13	11	0	0	3	25	2	0
TOTAL	**0**	**124**	**192**	**26**	**0**	**1**	**18**	**181**	**14**	**3**	**0**	**25**	**180**	**95**	**1**	**0**	**13**	**159**	**22**	**0**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
12:00 PM - 1:00 PM	1	79	91	15	0	0	15	77	7	3	1	12	83	53	0	0	10	81	8	2
4:15 PM - 5:15 PM	0	70	112	11	0	1	8	93	9	3	0	12	104	51	0	0	5	86	13	0

	PHF	Trucks
AM	0.925	0.9%
PM	0.927	0.5%



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Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

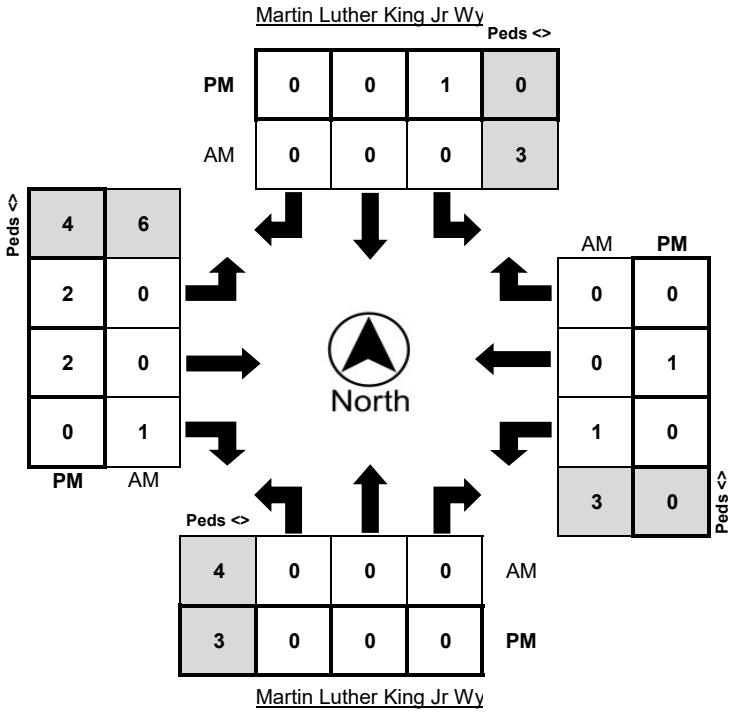
LOCATION 18th St @ Martin Luther King Jr Wy
LATITUDE 37.3013
COUNTY Merced
LONGITUDE -120.4798
COLLECTION DATE Thursday, September 16, 2021
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 11:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
11:45 AM - 12:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM - 12:15 PM	0	0	0	2	0	0	0	2	0	0	1	0	0	0	0	2
12:15 PM - 12:30 PM	0	0	0	1	0	0	0	1	0	0	0	3	1	0	0	1
12:30 PM - 12:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
12:45 PM - 1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:00 PM - 1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM - 1:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**1**	**0**	**4**	**0**	**0**	**0**	**5**	**0**	**0**	**1**	**3**	**1**	**0**	**0**	**7**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
5:00 PM - 5:15 PM	0	0	0	0	1	0	0	2	0	1	0	0	0	0	0	2
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
TOTAL	**0**	**1**	**1**	**0**	**3**	**0**	**0**	**3**	**2**	**2**	**0**	**0**	**1**	**1**	**0**	**6**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
12:00 PM - 1:00 PM	0	0	0	3	0	0	0	4	0	0	1	3	1	0	0	6
4:15 PM - 5:15 PM	0	0	0	0	1	0	0	3	2	2	0	0	0	1	0	4

	Bikes	Peds
AM Peak Total	2	16
PM Peak Total	**6**	**7**



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Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

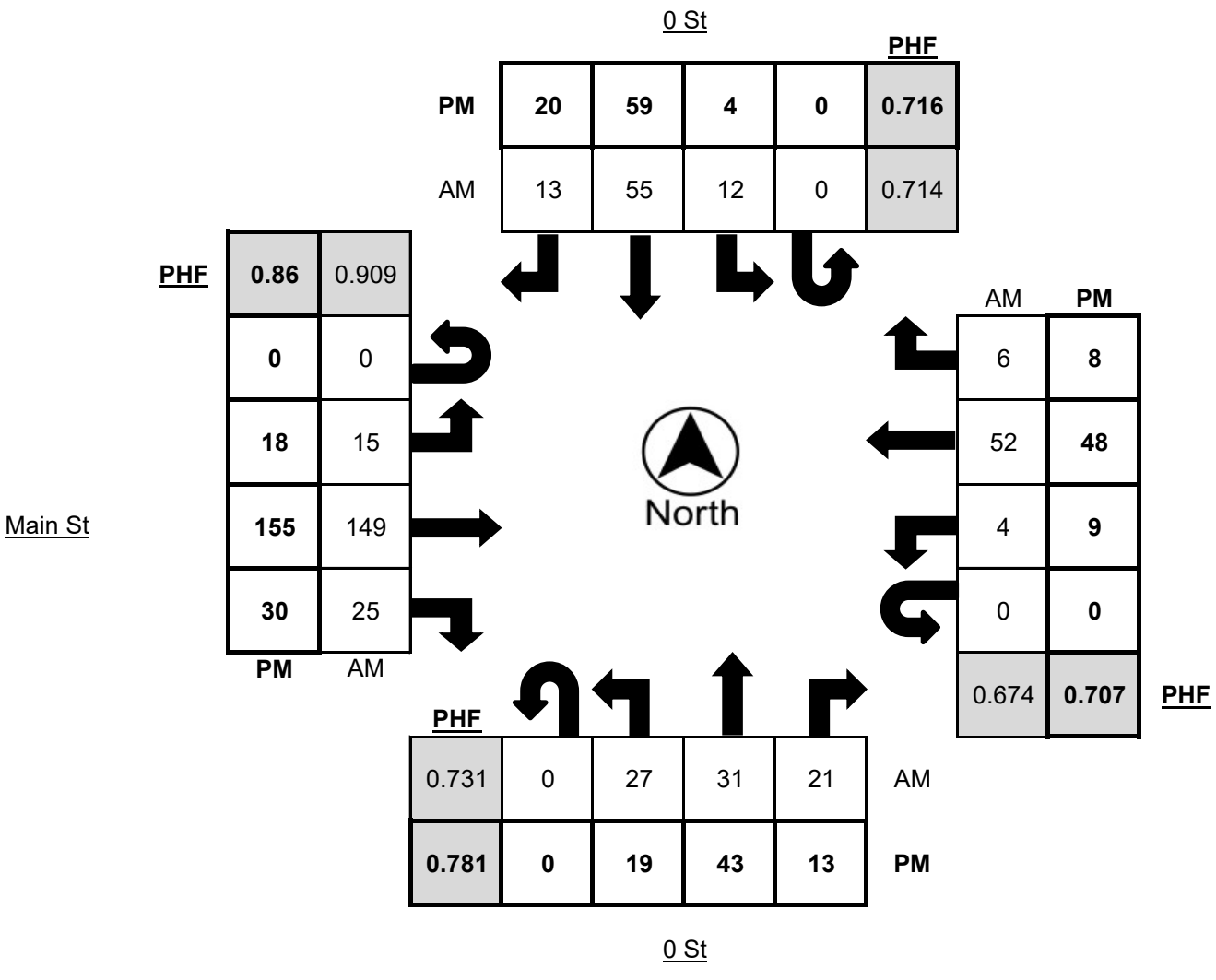
LOCATION Main St @ O St
LATITUDE 37.303089°
COUNTY Merced
LONGITUDE -120.487905°
COLLECTION DATE Thursday, December 9, 2021
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
11:30 AM - 11:45 AM	0	8	10	9	0	0	4	16	1	0	0	3	36	2	1	0	1	19	3	4
11:45 AM - 12:00 PM	0	6	5	5	0	0	1	12	1	0	0	5	40	7	0	0	1	12	0	0
12:00 PM - 12:15 PM	0	7	8	3	0	0	4	18	6	1	0	3	36	8	0	0	0	12	2	1
12:15 PM - 12:30 PM	0	6	8	4	0	0	3	9	5	0	0	4	37	8	0	0	2	9	1	0
12:30 PM - 12:45 PM	0	4	8	4	0	0	2	14	4	0	0	0	29	10	0	0	2	18	0	1
12:45 PM - 1:00 PM	0	3	11	4	0	0	1	5	1	0	0	3	39	7	1	0	0	7	0	0
1:00 PM - 1:15 PM	0	1	13	7	0	0	3	17	4	1	0	6	40	6	1	0	0	11	0	0
1:15 PM - 1:30 PM	0	3	9	4	0	0	2	6	2	0	0	4	38	6	0	0	4	8	1	0
TOTAL	**0**	**38**	**72**	**40**	**0**	**0**	**20**	**97**	**24**	**2**	**0**	**28**	**295**	**54**	**3**	**0**	**10**	**96**	**7**	**6**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	4	6	6	0	0	1	15	4	0	0	2	34	6	1	0	0	9	1	0
4:15 PM - 4:30 PM	0	5	8	7	0	0	1	14	3	0	0	2	40	4	0	0	1	10	1	1
4:30 PM - 4:45 PM	0	6	12	0	0	0	1	11	7	0	0	4	30	10	0	0	1	12	1	0
4:45 PM - 5:00 PM	0	2	9	2	0	0	1	12	4	0	0	7	41	6	0	0	4	11	1	0
5:00 PM - 5:15 PM	0	6	14	4	0	0	1	22	6	0	0	5	44	10	0	0	3	15	5	0
5:15 PM - 5:30 PM	0	7	3	2	0	0	2	5	7	0	0	1	43	3	0	0	0	11	0	0
5:30 PM - 5:45 PM	0	2	6	4	0	0	2	9	4	0	0	8	37	2	0	0	0	7	4	0
5:45 PM - 6:00 PM	0	2	14	1	0	0	0	6	0	0	0	5	35	4	0	0	0	13	9	0
TOTAL	**0**	**34**	**72**	**26**	**0**	**0**	**9**	**94**	**35**	**0**	**0**	**34**	**304**	**45**	**1**	**0**	**9**	**88**	**22**	**1**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
11:30 AM - 12:30 PM	0	27	31	21	0	0	12	55	13	1	0	15	149	25	1	0	4	52	6	5
4:15 PM - 5:15 PM	0	19	43	13	0	0	4	59	20	0	0	18	155	30	0	0	9	48	8	1

	PHF	Trucks
AM	0.915	1.7%
PM	0.789	0.2%



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516 W. Shaw Ave, Suite 103
Fresno, CA 93704

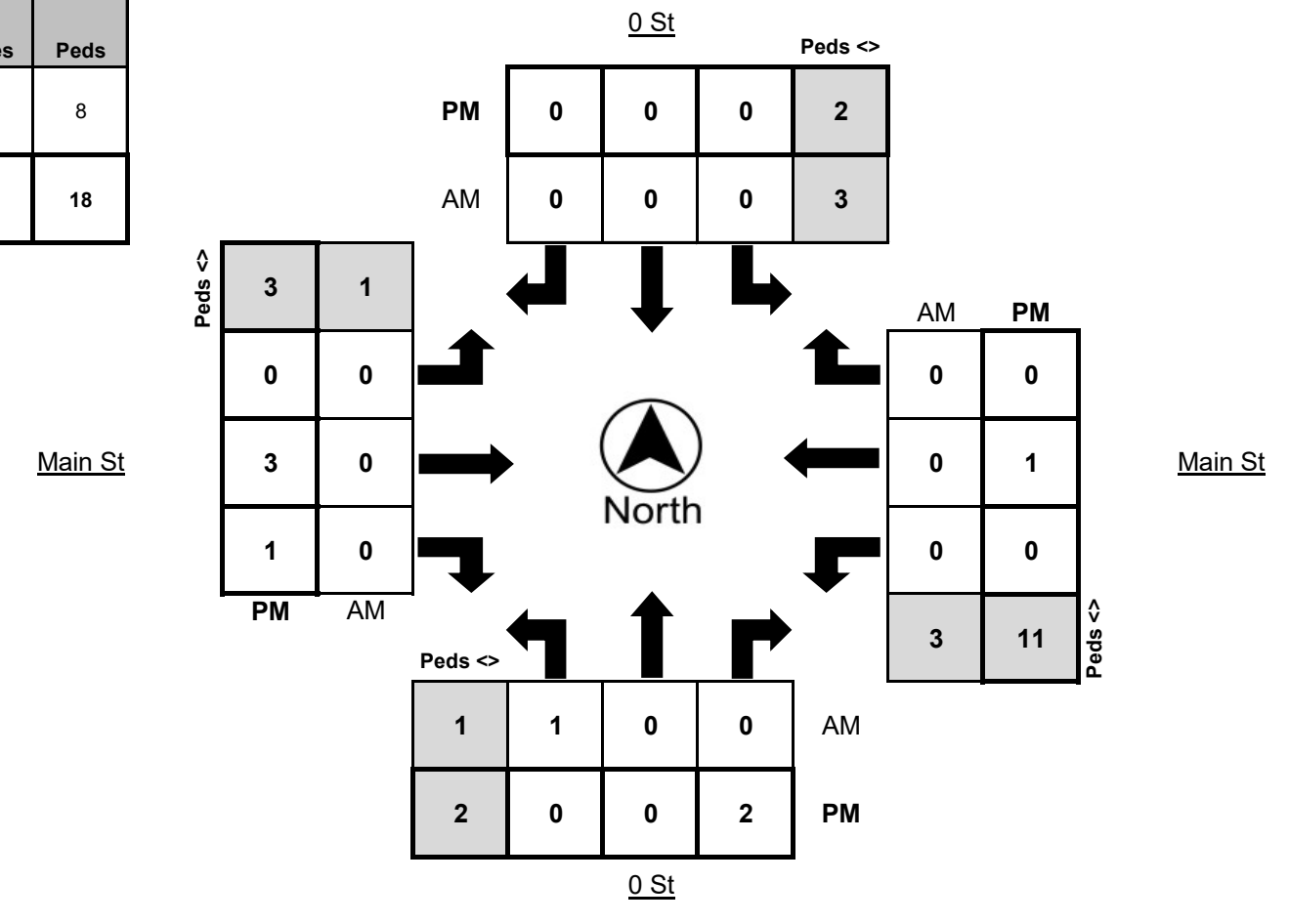
LOCATION Main St @ O St
LATITUDE 37.303089°
COUNTY Merced
LONGITUDE -120.487905°
COLLECTION DATE Thursday, December 9, 2021
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 11:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
11:45 AM - 12:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
12:00 PM - 12:15 PM	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	1
12:15 PM - 12:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM - 12:45 PM	1	0	0	3	0	0	0	0	0	0	0	2	0	0	0	1
12:45 PM - 1:00 PM	0	0	0	0	0	1	0	0	0	0	2	2	0	0	0	0
1:00 PM - 1:15 PM	0	0	0	1	0	0	0	2	0	0	0	1	0	0	0	2
1:15 PM - 1:30 PM	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0
TOTAL	**2**	**0**	**0**	**9**	**0**	**1**	**0**	**5**	**0**	**0**	**2**	**8**	**0**	**0**	**0**	**4**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	2	0	0	1	2	0	0	0	1	0	1	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	2	0	1	1	2	0	1	0	0
4:30 PM - 4:45 PM	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	2
4:45 PM - 5:00 PM	0	0	1	2	0	0	0	0	0	1	0	5	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1
5:15 PM - 5:30 PM	0	0	0	0	0	1	0	2	0	1	0	0	0	0	1	0
5:30 PM - 5:45 PM	0	0	0	2	0	0	0	3	0	0	0	4	0	0	0	1
5:45 PM - 6:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**2**	**6**	**1**	**1**	**1**	**9**	**0**	**4**	**1**	**16**	**0**	**2**	**1**	**4**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 12:30 PM	1	0	0	3	0	0	0	1	0	0	0	3	0	0	0	1
4:15 PM - 5:15 PM	0	0	2	2	0	0	0	2	0	3	1	11	0	1	0	3

	Bikes	Peds
AM Peak Total	1	8
PM Peak Total	7	18



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
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Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

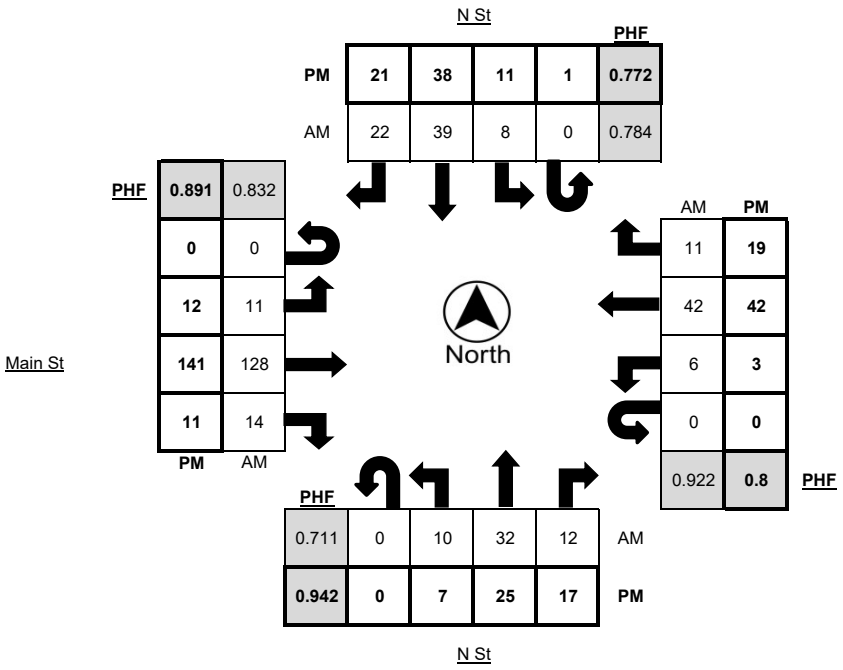
LOCATION N St @ Main St
LATITUDE 37.3025
COUNTY Merced
LONGITUDE -120.4864
COLLECTION DATE Tuesday, October 19, 2021
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
11:30 AM - 11:45 AM	0	0	10	5	2	0	0	4	5	0	0	3	23	3	0	0	1	4	1	1
11:45 AM - 12:00 PM	0	2	5	5	1	0	2	11	6	1	0	1	30	2	0	0	1	12	3	1
12:00 PM - 12:15 PM	0	2	7	2	0	0	3	11	8	0	0	4	37	5	0	0	1	8	6	0
12:15 PM - 12:30 PM	0	3	8	1	1	0	2	9	4	1	0	2	36	1	0	0	0	14	1	0
12:30 PM - 12:45 PM	0	3	12	4	2	0	1	8	4	0	0	4	25	6	1	0	4	8	1	0
12:45 PM - 1:00 PM	0	0	6	6	1	0	3	5	7	0	0	2	28	4	0	0	0	10	4	1
1:00 PM - 1:15 PM	0	1	9	7	2	0	2	5	4	0	0	4	40	1	0	0	2	6	2	0
1:15 PM - 1:30 PM	1	2	7	4	1	0	1	9	4	4	0	5	38	5	0	0	2	9	0	0
TOTAL	**1**	**13**	**64**	**34**	**10**	**0**	**14**	**62**	**42**	**6**	**0**	**25**	**257**	**27**	**1**	**0**	**11**	**71**	**18**	**3**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	3	12	6	1	0	2	12	2	0	0	3	37	3	0	0	0	8	1	0
4:15 PM - 4:30 PM	0	1	5	6	1	0	4	10	3	1	0	1	26	3	0	0	1	2	4	1
4:30 PM - 4:45 PM	0	2	10	1	1	0	3	7	7	0	0	1	34	3	0	0	1	12	7	0
4:45 PM - 5:00 PM	0	1	5	5	1	0	0	10	3	1	0	2	38	1	0	0	0	12	4	0
5:00 PM - 5:15 PM	0	1	5	7	0	0	4	12	7	0	0	5	37	4	0	0	0	14	2	0
5:15 PM - 5:30 PM	0	3	5	4	2	1	4	9	4	1	0	4	32	3	0	0	2	4	6	0
5:30 PM - 5:45 PM	0	3	8	4	1	0	2	3	6	0	0	5	32	4	0	0	0	6	1	0
5:45 PM - 6:00 PM	0	3	5	2	1	0	2	8	7	1	0	6	38	0	0	0	1	9	0	0
TOTAL	**0**	**17**	**55**	**35**	**8**	**1**	**21**	**71**	**39**	**4**	**0**	**27**	**274**	**21**	**0**	**0**	**5**	**67**	**25**	**1**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
11:45 AM - 12:45 PM	0	10	32	12	4	0	8	39	22	2	0	11	128	14	1	0	6	42	11	1
4:30 PM - 5:30 PM	0	7	25	17	4	1	11	38	21	2	0	12	141	11	0	0	3	42	19	0

	PHF	Trucks
AM	0.891	2.4%
PM	0.888	1.7%



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Prepared For:

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Fresno, CA 93704

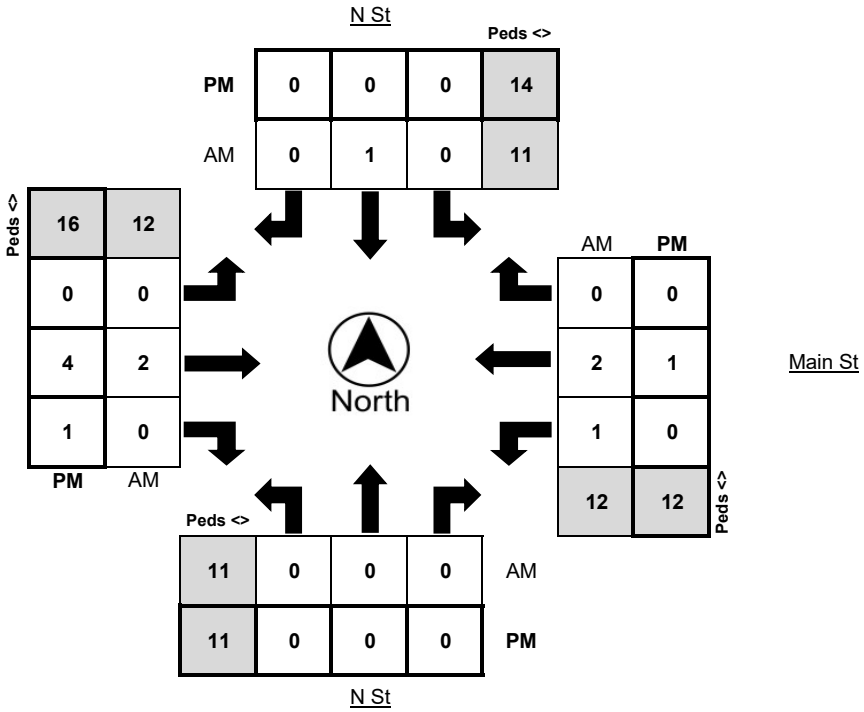
LOCATION N St @ Main St
LATITUDE 37.3025
COUNTY Merced
LONGITUDE -120.4864
COLLECTION DATE Tuesday, October 19, 2021
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 11:45 AM	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
11:45 AM - 12:00 PM	0	0	0	2	0	0	0	1	0	2	0	0	0	0	0	3
12:00 PM - 12:15 PM	0	0	0	4	0	0	0	5	0	0	0	3	0	2	0	2
12:15 PM - 12:30 PM	0	0	0	1	0	1	0	3	0	0	0	5	1	0	0	2
12:30 PM - 12:45 PM	0	0	0	4	0	0	0	2	0	0	0	4	0	0	0	5
12:45 PM - 1:00 PM	0	0	0	2	0	1	0	1	0	0	0	1	1	0	0	2
1:00 PM - 1:15 PM	0	0	0	2	0	0	0	1	0	0	0	2	0	0	0	3
1:15 PM - 1:30 PM	1	0	0	8	0	0	1	5	0	1	0	7	0	0	0	0
TOTAL	**1**	**0**	**1**	**23**	**0**	**2**	**1**	**18**	**0**	**3**	**0**	**23**	**2**	**2**	**0**	**17**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	1	0	0	0	8	0	0	0	4	0	0	0	2
4:15 PM - 4:30 PM	0	0	0	1	0	0	0	0	0	1	0	1	0	1	1	1
4:30 PM - 4:45 PM	0	0	0	10	0	0	0	3	0	1	0	3	0	0	0	4
4:45 PM - 5:00 PM	0	0	0	1	0	0	0	2	0	0	1	1	0	0	0	6
5:00 PM - 5:15 PM	0	0	0	1	0	0	0	3	0	1	0	0	0	1	0	1
5:15 PM - 5:30 PM	0	0	0	2	0	0	0	3	0	2	0	8	0	0	0	5
5:30 PM - 5:45 PM	0	0	0	3	0	0	0	2	0	0	0	1	0	0	0	4
5:45 PM - 6:00 PM	0	1	0	5	0	0	1	1	0	0	0	2	0	0	0	0
TOTAL	**0**	**1**	**0**	**24**	**0**	**0**	**1**	**22**	**0**	**5**	**1**	**20**	**0**	**2**	**1**	**23**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:45 AM - 12:45 PM	0	0	0	11	0	1	0	11	0	2	0	12	1	2	0	12
4:30 PM - 5:30 PM	0	0	0	14	0	0	0	11	0	4	1	12	0	1	0	16

	Bikes	Peds
AM Peak Total	6	46
PM Peak Total	**6**	**53**



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Fresno, CA 93704

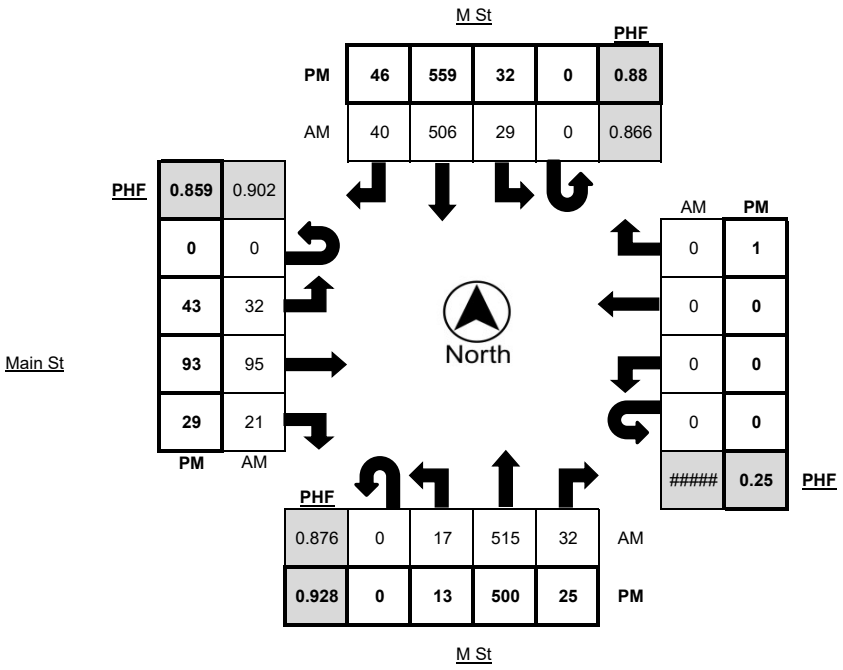
LOCATION M St @ Main St
LATITUDE 37.3020
COUNTY Merced
LONGITUDE -120.4848
COLLECTION DATE Tuesday, October 19, 2021
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
11:30 AM - 11:45 AM	0	0	102	5	1	0	7	108	4	1	0	7	19	4	0	0	0	0	0	0
11:45 AM - 12:00 PM	0	6	112	3	1	0	7	133	13	4	0	12	20	5	1	0	0	0	0	0
12:00 PM - 12:15 PM	0	8	116	5	1	0	4	153	9	2	0	9	28	4	0	0	0	0	0	0
12:15 PM - 12:30 PM	0	3	146	10	4	0	8	107	11	0	0	8	22	7	0	0	0	0	0	0
12:30 PM - 12:45 PM	0	1	110	4	1	0	7	123	11	2	0	4	19	6	0	0	0	0	0	0
12:45 PM - 1:00 PM	0	5	143	13	3	0	10	123	9	3	0	11	26	4	1	0	0	0	0	0
1:00 PM - 1:15 PM	0	2	105	7	0	0	7	130	7	3	0	12	27	8	0	0	0	0	0	0
1:15 PM - 1:30 PM	0	1	125	12	2	0	7	117	11	0	0	12	27	4	0	0	0	0	0	0
TOTAL	**0**	**26**	**959**	**59**	**13**	**0**	**57**	**994**	**75**	**15**	**0**	**75**	**188**	**42**	**2**	**0**	**0**	**0**	**0**	**0**

	Northbound					Southbound					Eastbound					Westbound				
Time	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
4:00 PM - 4:15 PM	0	2	135	9	2	0	11	132	7	4	0	13	27	4	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	2	115	4	2	0	7	150	6	3	0	8	28	5	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	2	140	3	3	0	6	140	16	1	0	9	20	9	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	4	107	8	0	0	6	114	12	2	0	9	25	6	0	0	0	0	1	0
5:00 PM - 5:15 PM	0	3	133	6	2	0	10	157	14	0	0	12	29	7	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	4	120	8	1	0	10	148	4	3	0	13	19	7	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	110	5	2	0	8	99	8	1	0	10	28	1	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	1	100	10	0	0	10	104	10	1	0	9	28	9	0	0	0	0	0	0
TOTAL	**0**	**18**	**960**	**53**	**12**	**0**	**68**	**1044**	**77**	**15**	**0**	**83**	**204**	**48**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
12:00 PM - 1:00 PM	0	17	515	32	9	0	29	506	40	7	0	32	95	21	1	0	0	0	0	0
4:30 PM - 5:30 PM	0	13	500	25	6	0	32	559	46	6	0	43	93	29	0	0	0	0	1	0

	PHF	Trucks
AM	0.935	1.3%
PM	0.904	0.9%



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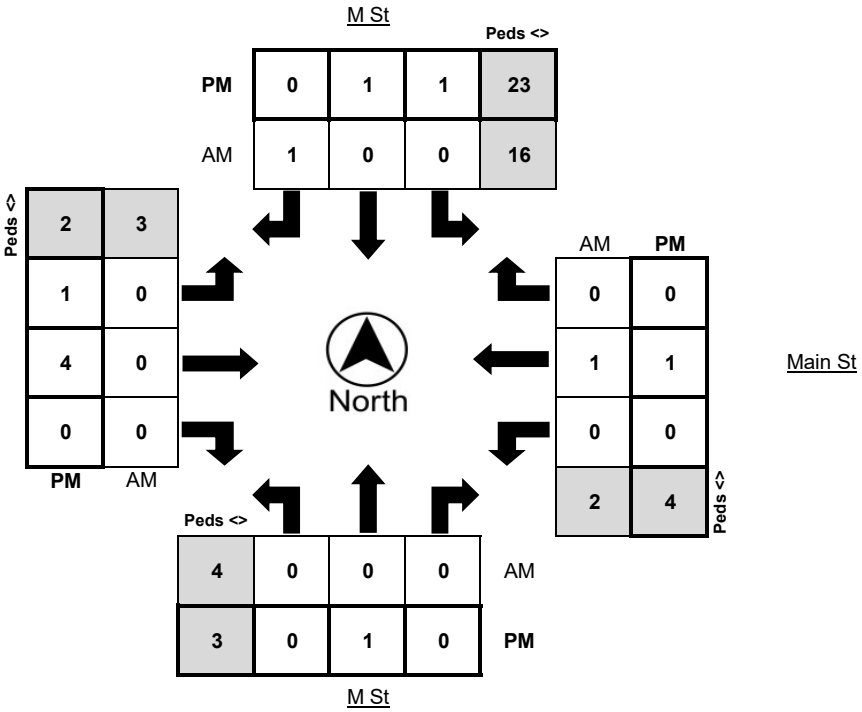
COUNTY Merced
LONGITUDE -120.4848
COLLECTION DATE Tuesday, October 19, 2021
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 11:45 AM	0	1	0	2	0	0	0	3	0	0	0	1	0	0	0	0
11:45 AM - 12:00 PM	0	0	0	2	0	0	0	2	0	2	0	0	0	0	0	1
12:00 PM - 12:15 PM	0	0	0	6	0	0	1	2	0	0	0	1	0	1	0	1
12:15 PM - 12:30 PM	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	2
12:30 PM - 12:45 PM	0	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0
12:45 PM - 1:00 PM	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0
1:00 PM - 1:15 PM	0	0	0	4	0	0	0	1	1	0	0	0	0	0	0	0
1:15 PM - 1:30 PM	0	0	0	3	0	0	0	2	0	1	0	3	0	0	0	0
TOTAL	**0**	**1**	**0**	**27**	**0**	**0**	**1**	**12**	**1**	**3**	**0**	**6**	**0**	**1**	**0**	**4**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	6	0	0	0	0	0	1	0	1	0	2	0	0
4:30 PM - 4:45 PM	0	0	0	8	0	1	0	0	0	1	0	3	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	6	0	0	0	0	0	1	0	1	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	7	0	0	0	1	0	1	0	0	0	1	0	0
5:15 PM - 5:30 PM	0	1	0	2	1	0	0	2	1	1	0	0	0	0	0	2
5:30 PM - 5:45 PM	0	0	0	6	0	0	0	1	0	0	0	3	0	0	0	0
5:45 PM - 6:00 PM	0	1	0	27	0	1	0	0	0	0	0	2	0	0	0	0
TOTAL	**0**	**2**	**1**	**64**	**1**	**2**	**0**	**4**	**1**	**5**	**0**	**10**	**0**	**3**	**0**	**2**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
12:00 PM - 1:00 PM	0	0	0	16	0	0	1	4	0	0	0	2	0	1	0	3
4:30 PM - 5:30 PM	0	1	0	23	1	1	0	3	1	4	0	4	0	1	0	2

	Bikes	Peds
AM Peak Total	2	25
PM Peak Total	**9**	**32**



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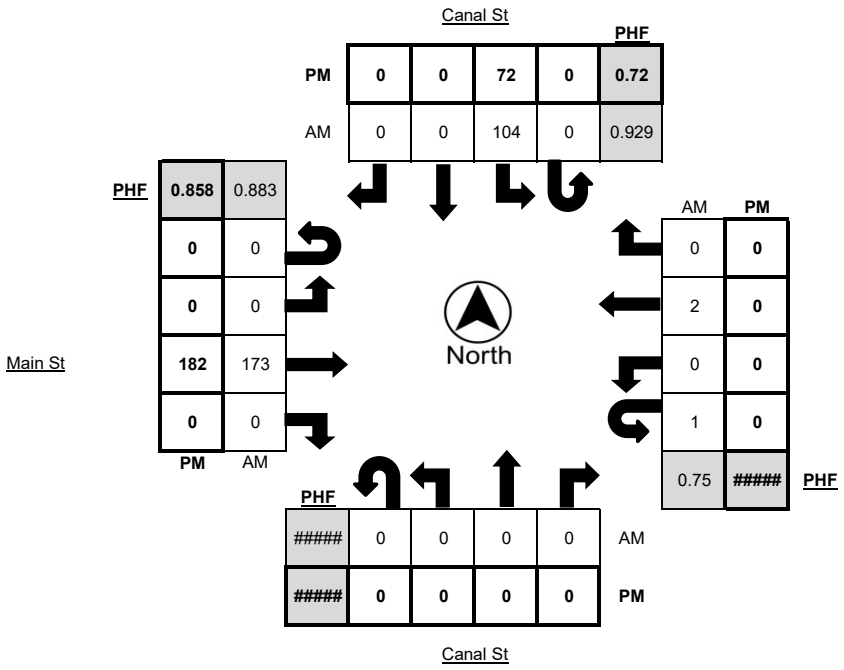
LOCATION Main St @ Canal St
LATITUDE 37.3014
COUNTY Merced
LONGITUDE -120.4833
COLLECTION DATE Thursday, September 16, 2021
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
11:30 AM - 11:45 AM	0	0	0	0	0	0	23	0	0	0	0	0	49	0	0	0	0	0	0	0
11:45 AM - 12:00 PM	0	0	0	0	0	0	27	0	0	0	0	0	33	0	0	0	0	1	0	0
12:00 PM - 12:15 PM	0	0	0	0	0	0	27	0	0	1	0	0	46	0	0	0	0	0	0	0
12:15 PM - 12:30 PM	0	0	0	0	0	0	22	0	0	0	0	0	45	0	0	1	0	0	0	0
12:30 PM - 12:45 PM	0	0	0	0	0	0	28	0	0	1	0	0	49	0	1	0	0	1	0	0
12:45 PM - 1:00 PM	0	0	0	0	0	0	13	0	0	0	0	0	45	0	0	0	0	0	0	0
1:00 PM - 1:15 PM	0	0	0	0	0	0	24	0	0	0	0	0	38	0	0	0	0	0	1	0
1:15 PM - 1:30 PM	0	0	0	0	0	0	19	0	0	0	0	0	43	0	1	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**183**	**0**	**0**	**2**	**0**	**0**	**348**	**0**	**2**	**1**	**0**	**2**	**1**	**0**

	Northbound					Southbound					Eastbound					Westbound				
Time	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
4:00 PM - 4:15 PM	0	0	0	0	0	0	25	0	0	0	0	0	44	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	16	0	0	0	0	0	53	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	15	0	0	0	0	0	42	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	16	0	0	0	0	0	43	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	19	0	0	0	0	0	43	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	17	0	0	0	0	0	54	0	1	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	10	0	0	0	0	0	42	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	14	0	0	2	0	0	42	0	0	1	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**132**	**0**	**0**	**2**	**0**	**0**	**363**	**0**	**1**	**1**	**0**	**0**	**0**	**0**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
11:45 AM - 12:45 PM	0	0	0	0	0	0	104	0	0	2	0	0	173	0	1	1	0	2	0	0
4:00 PM - 5:00 PM	0	0	0	0	0	0	72	0	0	0	0	0	182	0	0	0	0	0	0	0

	PHF	Trucks
AM	0.897	1.1%
PM	0.920	0.0%



Metro Traffic Data Inc.
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Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

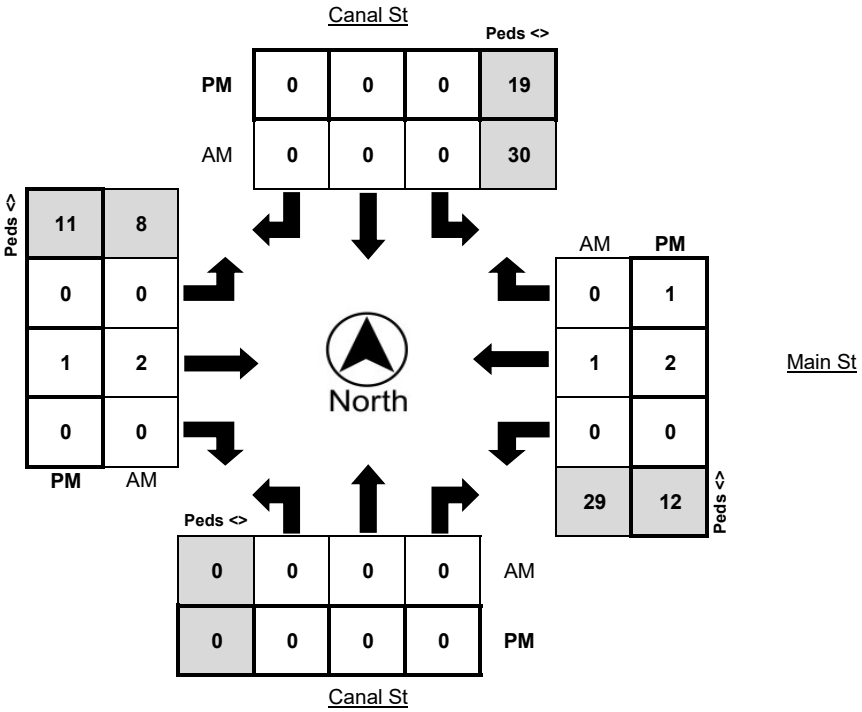
LOCATION Main St @ Canal St
LATITUDE 37.3014
COUNTY Merced
LONGITUDE -120.4833
COLLECTION DATE Thursday, September 16, 2021
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 11:45 AM	0	0	0	5	0	0	0	0	0	0	0	2	0	0	0	3
11:45 AM - 12:00 PM	0	0	0	9	0	0	0	0	0	0	0	6	0	1	0	2
12:00 PM - 12:15 PM	0	0	0	9	0	0	0	0	0	1	0	9	0	0	0	2
12:15 PM - 12:30 PM	0	0	0	5	0	0	0	0	0	1	0	7	0	0	0	1
12:30 PM - 12:45 PM	0	0	0	7	0	0	0	0	0	0	0	7	0	0	0	3
12:45 PM - 1:00 PM	0	0	0	10	0	0	2	0	0	0	0	2	0	0	0	1
1:00 PM - 1:15 PM	0	0	0	4	0	0	1	0	0	0	0	5	0	1	0	0
1:15 PM - 1:30 PM	0	0	0	8	0	0	0	0	0	0	0	4	0	0	0	0
TOTAL	**0**	**0**	**0**	**57**	**0**	**0**	**3**	**0**	**0**	**2**	**0**	**42**	**0**	**2**	**0**	**12**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	7	0	0	0	0	0	0	0	3	0	0	0	5
4:15 PM - 4:30 PM	0	0	0	4	0	0	0	0	0	1	0	3	0	0	0	2
4:30 PM - 4:45 PM	0	0	0	5	0	0	0	0	0	0	0	5	0	2	1	3
4:45 PM - 5:00 PM	0	0	0	3	0	0	0	0	0	0	0	1	0	0	0	1
5:00 PM - 5:15 PM	0	0	0	3	1	0	0	0	0	0	0	3	0	0	1	4
5:15 PM - 5:30 PM	0	0	0	1	0	0	0	0	0	0	0	5	0	1	0	2
5:30 PM - 5:45 PM	0	0	0	10	0	0	0	0	0	1	0	2	0	0	0	1
5:45 PM - 6:00 PM	0	0	0	5	0	0	0	0	0	0	0	6	0	0	0	1
TOTAL	**0**	**0**	**0**	**38**	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**28**	**0**	**3**	**2**	**19**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:45 AM - 12:45 PM	0	0	0	30	0	0	0	0	0	2	0	29	0	1	0	8
4:00 PM - 5:00 PM	0	0	0	19	0	0	0	0	0	1	0	12	0	2	1	11

	Bikes	Peds
AM Peak Total	3	67
PM Peak Total	4	42



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Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

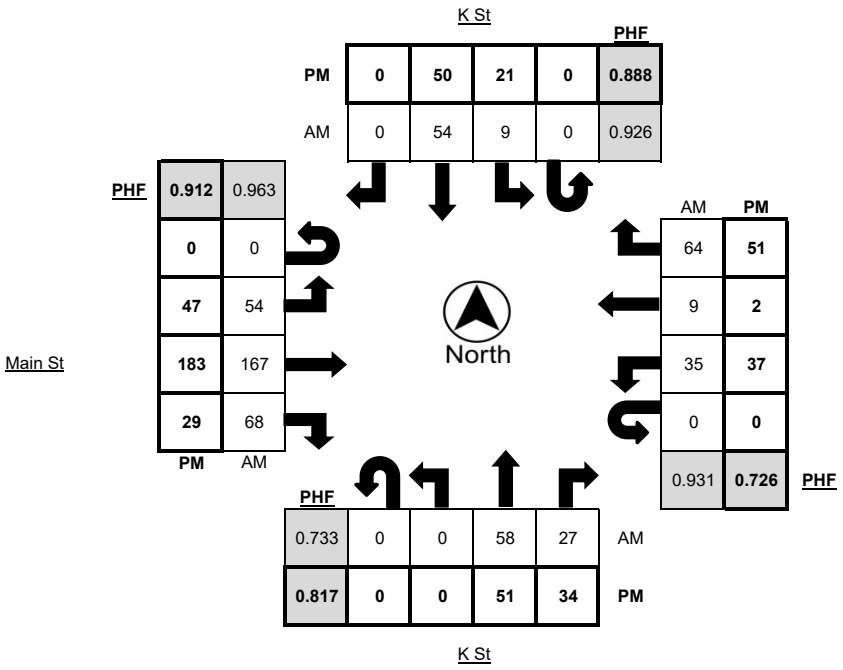
LOCATION Main St @ K St
LATITUDE 37.3009
COUNTY Merced
LONGITUDE -120.4818
COLLECTION DATE Thursday, September 16, 2021
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
11:30 AM - 11:45 AM	0	0	15	3	1	0	3	11	0	0	0	22	32	15	0	0	3	1	12	0
11:45 AM - 12:00 PM	0	0	8	4	1	0	4	13	1	2	0	19	28	13	0	0	9	2	9	0
12:00 PM - 12:15 PM	0	0	13	4	0	0	2	15	0	0	0	14	45	15	1	0	6	0	19	0
12:15 PM - 12:30 PM	0	0	17	12	2	0	2	11	0	1	0	12	45	15	0	0	9	3	15	0
12:30 PM - 12:45 PM	0	0	6	6	0	0	3	14	0	3	0	17	38	20	1	0	6	3	20	0
12:45 PM - 1:00 PM	0	0	22	5	2	0	2	14	0	1	0	11	39	18	1	0	14	3	10	1
1:00 PM - 1:15 PM	0	0	13	6	0	0	3	13	0	1	0	17	30	15	0	0	13	2	11	0
1:15 PM - 1:30 PM	0	0	19	9	1	0	4	8	0	2	0	12	43	8	1	0	5	0	15	0
TOTAL	**0**	**0**	**113**	**49**	**7**	**0**	**23**	**99**	**1**	**10**	**0**	**124**	**300**	**119**	**4**	**0**	**65**	**14**	**111**	**1**

	Northbound					Southbound					Eastbound					Westbound				
Time	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
4:00 PM - 4:15 PM	0	0	16	10	0	0	8	12	0	3	0	12	52	7	0	0	11	0	8	0
4:15 PM - 4:30 PM	0	0	14	9	3	0	5	12	0	0	0	13	45	11	0	0	8	1	15	0
4:30 PM - 4:45 PM	0	0	11	11	0	0	3	11	0	2	0	16	43	6	0	0	7	0	9	0
4:45 PM - 5:00 PM	0	0	10	4	1	0	5	15	0	1	0	6	43	5	0	0	11	1	19	1
5:00 PM - 5:15 PM	0	0	16	16	1	0	5	9	0	1	0	14	43	10	0	0	10	2	10	0
5:15 PM - 5:30 PM	0	0	14	9	1	0	1	13	0	1	0	11	47	9	0	0	13	0	9	0
5:30 PM - 5:45 PM	0	0	13	10	0	0	0	8	0	0	0	11	43	8	0	0	10	0	8	0
5:45 PM - 6:00 PM	0	0	7	8	1	0	2	7	0	2	0	11	31	3	0	0	4	2	10	0
TOTAL	**0**	**0**	**101**	**77**	**7**	**0**	**29**	**87**	**0**	**10**	**0**	**94**	**347**	**59**	**0**	**0**	**74**	**6**	**88**	**1**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
12:00 PM - 1:00 PM	0	0	58	27	4	0	9	54	0	5	0	54	167	68	3	0	35	9	64	1
4:00 PM - 5:00 PM	0	0	51	34	4	0	21	50	0	6	0	47	183	29	0	0	37	2	51	1

	PHF	Trucks
AM	0.966	2.4%
PM	0.928	2.2%



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Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
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Fresno, CA 93704

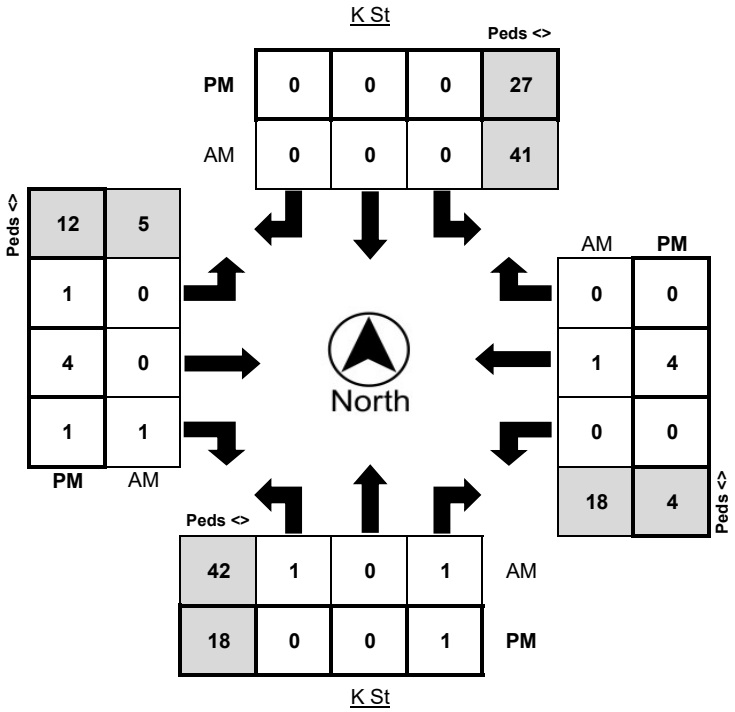
LOCATION Main St @ K St
LATITUDE 37.3009
COUNTY Merced
LONGITUDE -120.4818
COLLECTION DATE Thursday, September 16, 2021
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 11:45 AM	0	0	0	4	0	0	0	2	0	0	0	5	0	0	0	0
11:45 AM - 12:00 PM	0	0	0	3	0	0	0	5	0	0	0	4	0	0	0	0
12:00 PM - 12:15 PM	0	0	0	10	0	0	0	9	0	0	0	4	0	0	0	2
12:15 PM - 12:30 PM	0	0	0	14	0	0	0	10	0	0	1	4	0	0	0	3
12:30 PM - 12:45 PM	0	0	0	10	0	0	0	8	0	0	0	1	0	0	0	0
12:45 PM - 1:00 PM	1	0	1	7	0	0	0	15	0	0	0	9	0	1	0	0
1:00 PM - 1:15 PM	0	1	0	3	0	0	0	7	0	1	0	0	0	0	0	3
1:15 PM - 1:30 PM	0	0	0	10	0	0	0	4	0	2	1	3	0	1	0	4
TOTAL	**1**	**1**	**1**	**61**	**0**	**0**	**0**	**60**	**0**	**3**	**2**	**30**	**0**	**2**	**0**	**12**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	1	6	0	0	0	4	0	1	1	0	0	0	0	1
4:15 PM - 4:30 PM	0	0	0	10	0	0	0	1	1	1	0	1	0	1	0	3
4:30 PM - 4:45 PM	0	0	0	2	0	0	0	7	0	0	0	1	0	2	0	2
4:45 PM - 5:00 PM	0	0	0	9	0	0	0	6	0	2	0	2	0	1	0	6
5:00 PM - 5:15 PM	0	0	0	8	0	0	0	6	0	0	1	3	0	0	0	1
5:15 PM - 5:30 PM	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0	2
5:30 PM - 5:45 PM	0	0	0	6	0	0	0	8	0	1	0	0	0	0	0	6
5:45 PM - 6:00 PM	0	0	0	9	0	0	0	3	0	0	0	4	0	0	0	0
TOTAL	**0**	**0**	**1**	**55**	**0**	**0**	**0**	**40**	**1**	**5**	**2**	**16**	**0**	**4**	**0**	**21**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
12:00 PM - 1:00 PM	1	0	1	41	0	0	0	42	0	0	1	18	0	1	0	5
4:00 PM - 5:00 PM	0	0	1	27	0	0	0	18	1	4	1	4	0	4	0	12

	Bikes	Peds
AM Peak Total	4	106
PM Peak Total	11	61



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Fresno, CA 93704

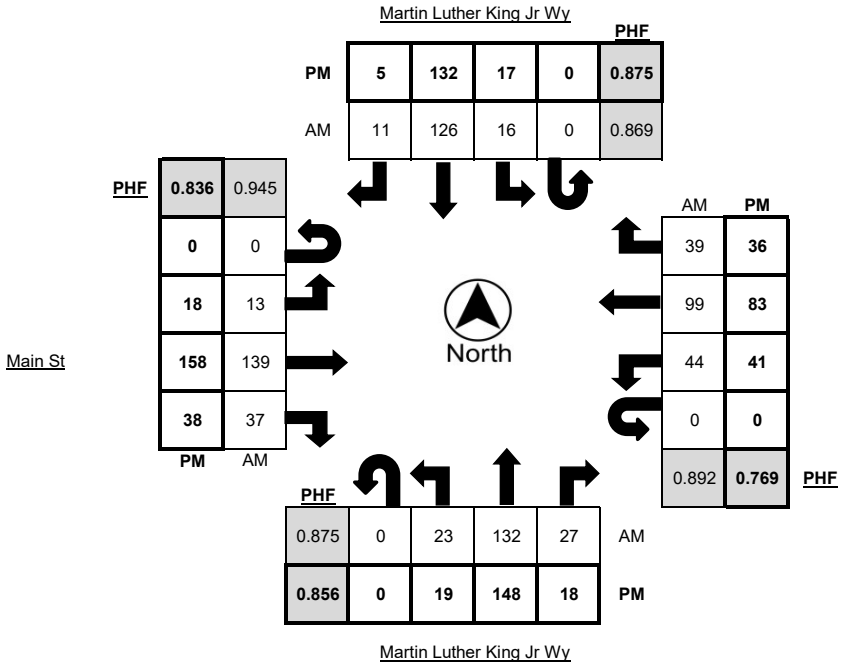
LOCATION Main St @ Martin Luther King Jr Wy
LATITUDE 37.3003
COUNTY Merced
LONGITUDE -120.4804
COLLECTION DATE Thursday, September 16, 2021
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
11:30 AM - 11:45 AM	0	3	30	3	0	0	1	27	4	0	0	3	27	7	0	0	14	17	11	0
11:45 AM - 12:00 PM	0	1	30	4	0	0	2	17	2	1	0	1	27	5	0	0	15	19	10	0
12:00 PM - 12:15 PM	0	5	33	5	0	0	4	35	5	0	0	3	34	11	1	0	7	19	7	0
12:15 PM - 12:30 PM	0	6	39	6	0	0	3	29	4	0	0	6	34	10	0	0	17	22	12	0
12:30 PM - 12:45 PM	0	8	35	9	0	0	4	32	1	0	0	1	36	11	1	0	10	29	10	0
12:45 PM - 1:00 PM	0	4	25	7	0	0	5	30	1	0	0	3	35	5	1	0	10	29	10	1
1:00 PM - 1:15 PM	0	8	26	1	2	0	4	37	1	1	0	1	26	10	1	0	5	20	9	1
1:15 PM - 1:30 PM	0	2	28	4	0	0	5	34	2	1	0	4	36	14	1	0	9	20	5	0
TOTAL	**0**	**37**	**246**	**39**	**2**	**0**	**28**	**241**	**20**	**3**	**0**	**22**	**255**	**73**	**5**	**0**	**87**	**175**	**74**	**2**

	Northbound					Southbound					Eastbound					Westbound				
Time	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
4:00 PM - 4:15 PM	0	3	30	3	0	0	3	40	1	0	0	5	46	13	0	0	12	16	10	1
4:15 PM - 4:30 PM	0	6	40	3	0	0	3	31	1	1	0	5	38	7	1	0	9	21	8	0
4:30 PM - 4:45 PM	0	3	37	6	2	0	4	34	1	0	0	5	39	10	0	0	6	18	8	1
4:45 PM - 5:00 PM	0	7	41	6	0	0	7	27	2	2	0	3	35	8	0	0	14	28	10	0
5:00 PM - 5:15 PM	1	2	28	4	0	0	3	38	1	1	1	2	46	11	0	0	10	24	6	0
5:15 PM - 5:30 PM	0	6	26	7	0	0	2	38	6	0	0	2	39	5	1	0	6	31	6	0
5:30 PM - 5:45 PM	0	2	23	6	0	0	2	33	3	0	0	3	39	6	0	0	5	19	9	0
5:45 PM - 6:00 PM	0	7	26	6	0	0	5	20	3	0	1	3	25	6	0	0	11	15	1	0
TOTAL	**1**	**36**	**251**	**41**	**2**	**0**	**29**	**261**	**18**	**4**	**2**	**28**	**307**	**66**	**2**	**0**	**73**	**172**	**58**	**2**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
12:00 PM - 1:00 PM	0	23	132	27	0	0	16	126	11	0	0	13	139	37	3	0	44	99	39	1
4:00 PM - 5:00 PM	0	19	148	18	2	0	17	132	5	3	0	18	158	38	1	0	41	83	36	2

	PHF	Trucks
AM	0.939	0.6%
PM	0.948	1.1%



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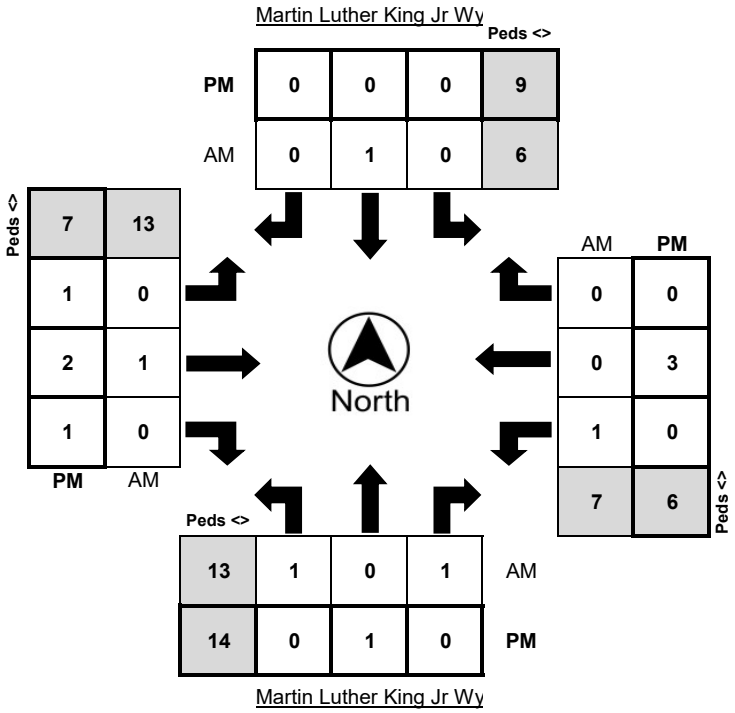
	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 11:45 AM	0	1	0	1	0	0	0	1	0	1	0	2	0	0	0	0
11:45 AM - 12:00 PM	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	2
12:00 PM - 12:15 PM	0	0	0	2	0	0	0	7	0	1	0	1	1	0	0	7
12:15 PM - 12:30 PM	0	0	0	1	0	1	0	2	0	0	0	2	0	0	0	0
12:30 PM - 12:45 PM	0	0	0	3	0	0	0	4	0	0	0	4	0	0	0	5
12:45 PM - 1:00 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
1:00 PM - 1:15 PM	0	0	0	4	0	0	0	1	0	0	0	3	0	0	0	4
1:15 PM - 1:30 PM	0	1	0	0	0	0	0	10	0	0	1	1	0	1	0	0
TOTAL	**1**	**2**	**1**	**12**	**0**	**1**	**0**	**27**	**0**	**2**	**1**	**13**	**1**	**1**	**0**	**19**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	1	0	0	0	0	0	2	1	0	1	0	0	0	0	3
4:15 PM - 4:30 PM	0	0	0	3	0	0	0	4	0	1	0	1	0	0	0	2
4:30 PM - 4:45 PM	0	0	0	2	0	0	0	6	0	1	0	3	0	2	0	1
4:45 PM - 5:00 PM	0	0	0	4	0	0	0	2	0	0	0	2	0	1	0	1
5:00 PM - 5:15 PM	0	0	0	2	0	0	0	3	0	0	0	1	1	1	0	1
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	3	0	0	0	1	0	1	0	0	0	0	0	4
5:45 PM - 6:00 PM	0	0	1	2	0	0	0	2	0	0	0	0	0	0	0	2
TOTAL	**0**	**1**	**1**	**16**	**0**	**0**	**0**	**21**	**1**	**3**	**1**	**7**	**1**	**4**	**0**	**14**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
12:00 PM - 1:00 PM	1	0	1	6	0	1	0	13	0	1	0	7	1	0	0	13
4:00 PM - 5:00 PM	0	1	0	9	0	0	0	14	1	2	1	6	0	3	0	7

	Bikes	Peds
AM Peak Total	5	39
PM Peak Total	**8**	**36**



Metro Traffic Data Inc.
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Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

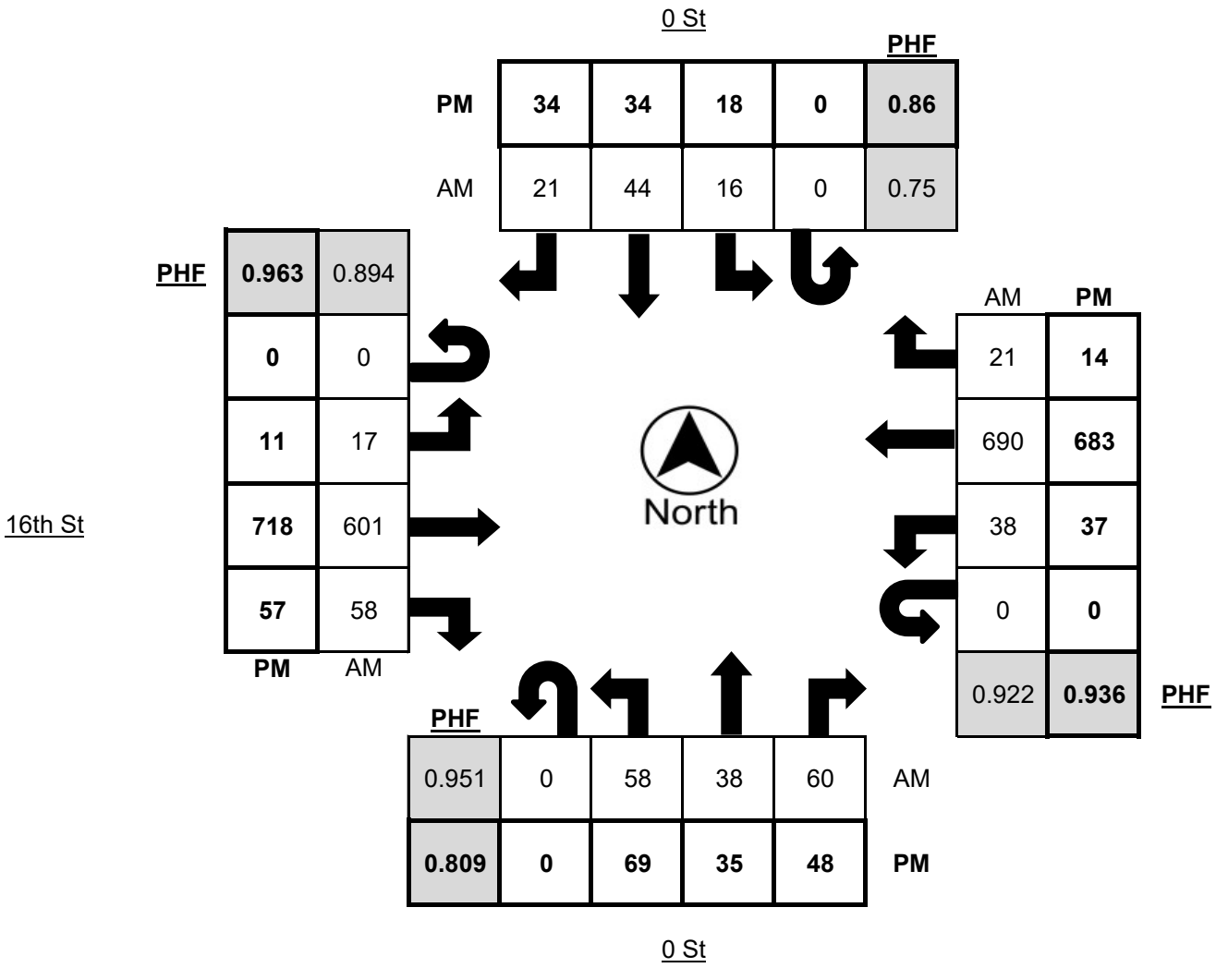
LOCATION 16th St @ O St
LATITUDE 37.302090°
COUNTY Merced
LONGITUDE -120.488484°
COLLECTION DATE Thursday, December 9, 2021
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
11:30 AM - 11:45 AM	0	14	7	11	3	0	4	4	6	0	0	10	145	16	4	0	3	146	7	5
11:45 AM - 12:00 PM	0	12	8	17	4	0	8	13	4	1	0	5	133	13	0	0	9	136	4	3
12:00 PM - 12:15 PM	0	15	8	17	4	0	3	18	6	1	0	5	148	17	7	0	17	177	8	0
12:15 PM - 12:30 PM	0	14	8	13	5	0	3	14	2	0	0	3	132	15	5	0	9	176	6	4
12:30 PM - 12:45 PM	0	16	7	18	1	0	6	8	5	0	0	4	170	15	4	0	7	189	7	3
12:45 PM - 1:00 PM	0	13	15	12	5	0	4	4	8	0	0	5	151	11	7	0	5	148	0	6
1:00 PM - 1:15 PM	0	11	13	10	0	0	1	12	3	1	0	5	145	17	6	0	4	196	3	1
1:15 PM - 1:30 PM	0	22	7	17	6	0	5	8	6	0	0	6	147	16	7	0	9	153	2	2
TOTAL	**0**	**117**	**73**	**115**	**28**	**0**	**34**	**81**	**40**	**3**	**0**	**43**	**1171**	**120**	**40**	**0**	**63**	**1321**	**37**	**24**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	13	7	16	1	0	1	6	14	1	0	2	177	18	1	0	9	172	3	5
4:15 PM - 4:30 PM	0	18	8	13	5	0	4	11	6	0	0	4	184	15	2	0	6	169	4	3
4:30 PM - 4:45 PM	0	11	11	8	4	0	7	6	6	0	0	4	190	10	2	0	11	181	4	0
4:45 PM - 5:00 PM	0	27	9	11	5	0	6	11	8	0	0	1	167	14	1	0	11	161	3	0
5:00 PM - 5:15 PM	0	22	14	7	0	0	7	17	15	0	0	2	163	11	4	0	7	153	3	0
5:15 PM - 5:30 PM	0	13	4	10	5	0	1	4	3	0	0	5	168	20	5	0	11	187	1	2
5:30 PM - 5:45 PM	0	9	6	5	3	0	2	6	2	0	0	2	150	13	2	0	9	121	3	1
5:45 PM - 6:00 PM	0	7	7	12	4	0	1	6	4	0	0	7	123	16	1	0	9	144	1	0
TOTAL	**0**	**120**	**66**	**82**	**27**	**0**	**29**	**67**	**58**	**1**	**0**	**27**	**1322**	**117**	**18**	**0**	**73**	**1288**	**22**	**11**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
12:00 PM - 1:00 PM	0	58	38	60	15	0	16	44	21	1	0	17	601	58	23	0	38	690	21	13
4:00 PM - 5:00 PM	0	69	35	48	15	0	18	34	34	1	0	11	718	57	6	0	37	683	14	8

	PHF	Trucks
AM	0.919	3.1%
PM	0.979	1.7%



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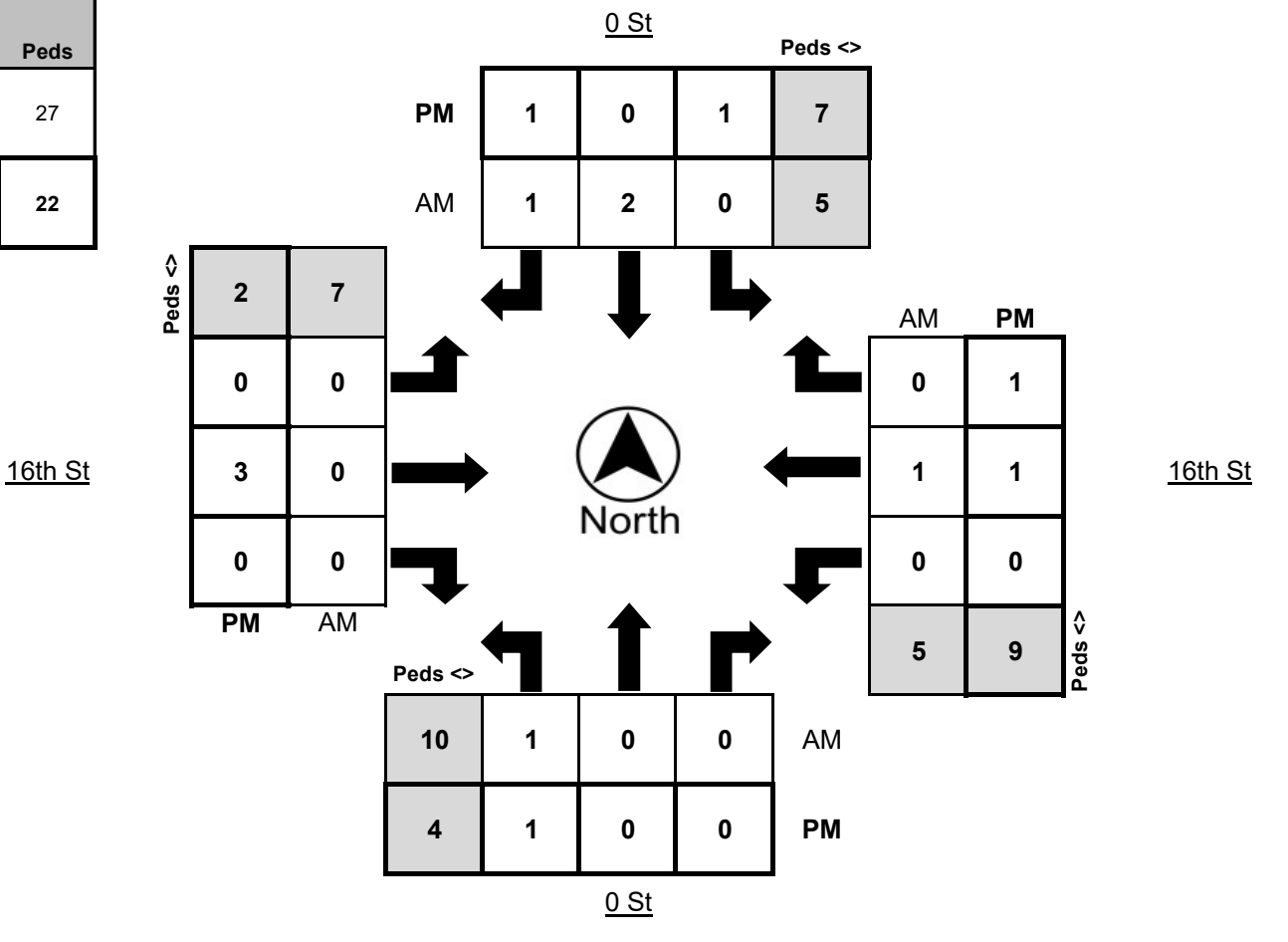
LATITUDE 37.302090°
COUNTY Merced
LONGITUDE -120.488484°
COLLECTION DATE Thursday, December 9, 2021
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 11:45 AM	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	0
11:45 AM - 12:00 PM	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0
12:00 PM - 12:15 PM	0	0	0	2	0	0	0	2	0	0	0	1	0	0	0	1
12:15 PM - 12:30 PM	0	0	0	1	0	0	0	3	0	0	0	2	0	0	0	0
12:30 PM - 12:45 PM	0	0	0	1	0	0	0	2	0	0	0	1	0	0	0	2
12:45 PM - 1:00 PM	1	0	0	1	0	2	1	3	0	0	0	1	0	1	0	4
1:00 PM - 1:15 PM	0	0	0	0	0	0	0	3	0	1	0	1	0	0	0	2
1:15 PM - 1:30 PM	0	0	0	0	0	0	0	4	0	1	0	2	0	0	0	0
TOTAL	**1**	**0**	**0**	**5**	**0**	**2**	**1**	**19**	**0**	**3**	**0**	**12**	**0**	**1**	**0**	**9**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	1	0	0	1	0	0	0	2	0	0	0	0	0	1	0	0
4:15 PM - 4:30 PM	0	0	0	3	0	0	1	1	0	1	0	2	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	1	0	0	0	1	0	1	0	2	0	0	0	2
4:45 PM - 5:00 PM	0	0	0	2	1	0	0	0	0	1	0	5	0	0	1	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	1
5:15 PM - 5:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
TOTAL	**2**	**0**	**0**	**9**	**1**	**0**	**1**	**5**	**0**	**3**	**0**	**14**	**0**	**2**	**1**	**5**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
12:00 PM - 1:00 PM	1	0	0	5	0	2	1	10	0	0	0	5	0	1	0	7
4:00 PM - 5:00 PM	1	0	0	7	1	0	1	4	0	3	0	9	0	1	1	2

	Bikes	Peds
AM Peak Total	5	27
PM Peak Total	8	22



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Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

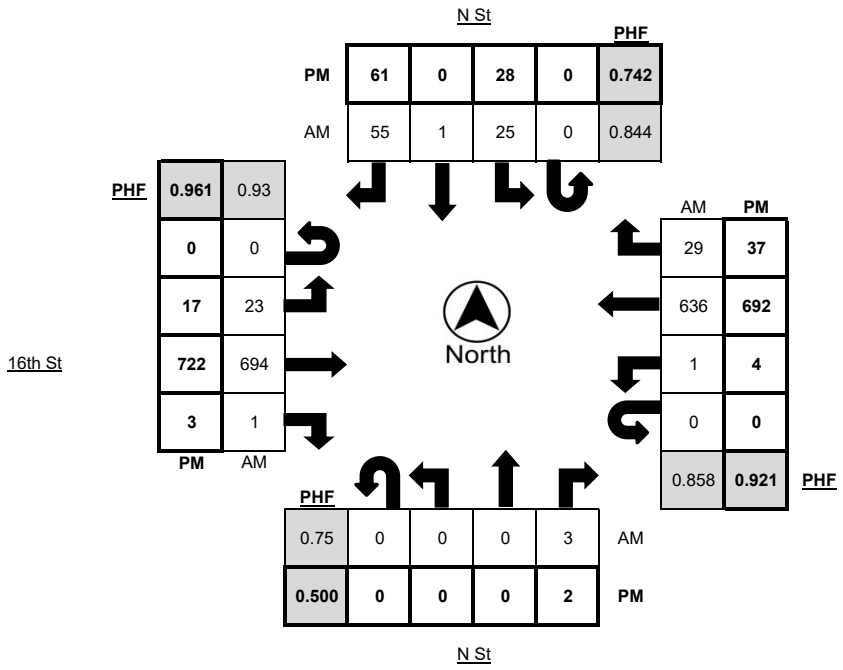
LOCATION N St @ 16th St
LATITUDE 37.3016
COUNTY Merced
LONGITUDE -120.4869
COLLECTION DATE Tuesday, October 19, 2021
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
11:30 AM - 11:45 AM	0	0	0	0	0	0	3	0	10	0	0	5	166	0	0	0	0	170	5	5
11:45 AM - 12:00 PM	0	0	0	0	0	0	8	0	15	1	0	6	141	0	0	0	0	138	9	3
12:00 PM - 12:15 PM	0	0	0	1	0	0	8	0	16	0	0	4	175	0	0	0	1	185	8	6
12:15 PM - 12:30 PM	0	0	0	1	0	0	2	0	13	1	0	9	166	0	0	0	0	155	2	5
12:30 PM - 12:45 PM	0	0	0	0	0	0	5	0	15	0	0	6	164	1	0	0	0	159	12	7
12:45 PM - 1:00 PM	0	0	0	1	0	0	10	1	11	0	0	4	189	0	0	0	0	137	7	3
1:00 PM - 1:15 PM	0	0	0	2	0	0	4	1	5	0	0	7	139	0	0	0	0	159	7	7
1:15 PM - 1:30 PM	0	0	0	0	0	0	10	0	17	2	0	8	139	0	0	0	0	157	5	8
TOTAL	**0**	**0**	**0**	**5**	**0**	**0**	**50**	**2**	**102**	**4**	**0**	**49**	**1279**	**1**	**0**	**0**	**1**	**1260**	**55**	**44**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	0	0	1	0	0	10	0	20	0	0	6	176	0	0	0	0	189	10	7
4:15 PM - 4:30 PM	0	0	0	0	0	0	6	0	13	1	0	3	184	2	0	0	2	168	8	8
4:30 PM - 4:45 PM	0	0	0	0	0	0	7	0	15	0	0	4	189	0	0	0	2	181	13	2
4:45 PM - 5:00 PM	0	0	0	1	0	0	5	0	13	1	0	4	173	1	0	0	0	154	6	4
5:00 PM - 5:15 PM	0	1	0	0	0	0	8	0	12	0	0	6	183	0	0	0	2	149	4	3
5:15 PM - 5:30 PM	0	0	0	0	0	1	6	1	8	1	0	7	195	1	0	0	0	193	7	7
5:30 PM - 5:45 PM	0	0	0	0	0	0	6	0	5	0	0	8	159	0	0	0	1	148	10	0
5:45 PM - 6:00 PM	0	1	0	1	0	0	3	0	11	1	0	7	150	0	0	0	0	162	11	1
TOTAL	**0**	**2**	**0**	**3**	**0**	**1**	**51**	**1**	**97**	**4**	**0**	**45**	**1409**	**4**	**0**	**0**	**7**	**1344**	**69**	**32**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
12:00 PM - 1:00 PM	0	0	0	3	0	0	25	1	55	1	0	23	694	1	0	0	1	636	29	21
4:00 PM - 5:00 PM	0	0	0	2	0	0	28	0	61	2	0	17	722	3	0	0	4	692	37	21

	PHF	Trucks
AM	0.922	1.5%
PM	0.950	1.5%



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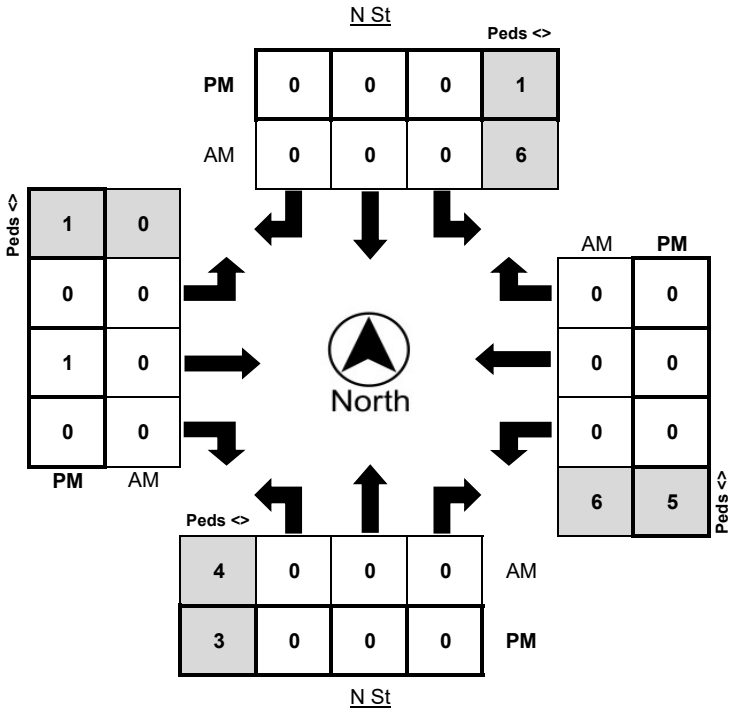
	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 11:45 AM	0	0	0	2	0	0	0	1	0	0	0	2	0	0	0	0
11:45 AM - 12:00 PM	0	0	0	0	0	0	0	2	0	0	0	1	0	2	0	0
12:00 PM - 12:15 PM	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0
12:15 PM - 12:30 PM	0	0	0	4	0	0	0	1	0	0	0	4	0	0	0	0
12:30 PM - 12:45 PM	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0
12:45 PM - 1:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
1:00 PM - 1:15 PM	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0
1:15 PM - 1:30 PM	0	0	0	2	0	0	0	1	0	0	0	1	0	0	0	1
TOTAL	**0**	**0**	**0**	**11**	**0**	**0**	**0**	**8**	**1**	**0**	**0**	**11**	**0**	**2**	**0**	**1**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	1	0	0	0	1	0	1	0	1	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1
5:00 PM - 5:15 PM	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**6**	**0**	**1**	**1**	**9**	**0**	**0**	**0**	**1**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
12:00 PM - 1:00 PM	0	0	0	6	0	0	0	4	0	0	0	6	0	0	0	0
4:00 PM - 5:00 PM	0	0	0	1	0	0	0	3	0	1	0	5	0	0	0	1

	Bikes	Peds
AM Peak Total	0	16
PM Peak Total	1	10



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	Northbound					Southbound					Eastbound					Westbound				
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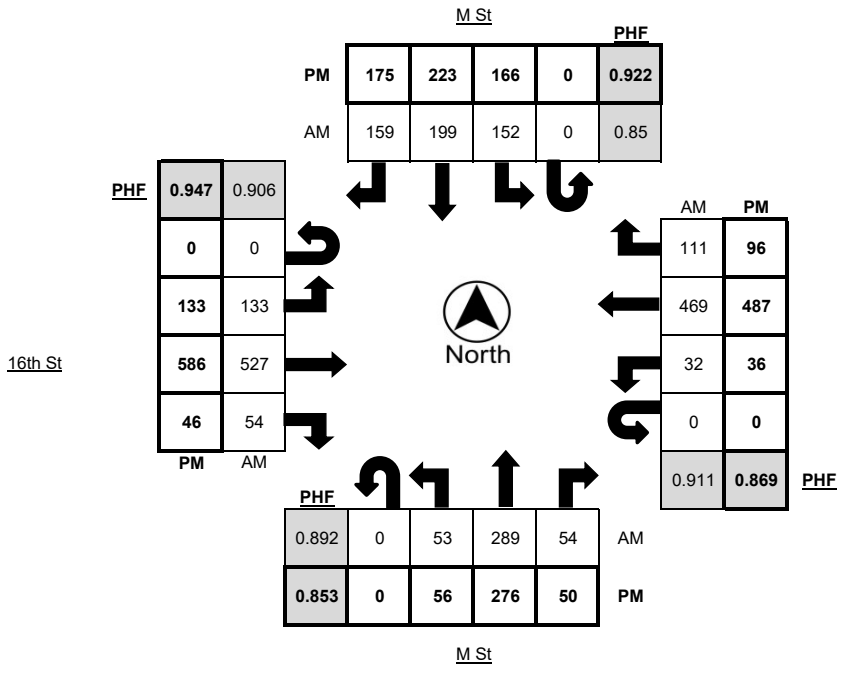
11:30 AM - 11:45 AM	0	13	47	10	2	0	33	43	36	2	0	36	121	15	11	0	13	115	20	1
11:45 AM - 12:00 PM	0	8	54	6	1	0	33	53	42	3	0	30	112	7	3	0	5	103	36	2
12:00 PM - 12:15 PM	0	16	55	18	1	0	49	51	50	1	0	31	135	16	6	0	9	129	30	6
12:15 PM - 12:30 PM	0	12	85	14	3	0	35	46	30	1	0	30	124	16	4	0	3	126	31	6
12:30 PM - 12:45 PM	0	14	66	9	2	0	33	47	44	2	0	28	129	8	6	0	12	118	25	3
12:45 PM - 1:00 PM	0	11	83	13	4	0	35	55	35	1	0	44	139	14	5	0	8	96	25	5
1:00 PM - 1:15 PM	0	14	58	12	1	0	34	65	36	3	0	24	108	13	4	0	7	125	26	6
1:15 PM - 1:30 PM	0	12	68	10	5	0	32	42	39	0	0	29	110	9	3	0	8	110	20	5
TOTAL	**0**	**100**	**516**	**92**	**19**	**0**	**284**	**402**	**312**	**13**	**0**	**252**	**978**	**98**	**42**	**0**	**65**	**922**	**213**	**34**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	18	67	7	0	0	39	56	44	1	0	38	115	11	3	0	4	135	36	6
4:15 PM - 4:30 PM	0	19	58	15	4	0	40	70	49	3	0	33	130	15	3	0	5	114	25	6
4:30 PM - 4:45 PM	0	19	85	8	1	0	38	58	53	1	0	33	135	15	4	0	3	123	27	3
4:45 PM - 5:00 PM	0	8	60	11	2	0	35	45	32	2	0	32	142	10	1	0	7	118	23	1
5:00 PM - 5:15 PM	0	13	64	15	1	0	53	55	42	0	0	36	150	10	3	0	8	109	23	7
5:15 PM - 5:30 PM	0	16	67	16	1	0	40	65	48	3	0	32	159	11	3	0	18	137	23	4
5:30 PM - 5:45 PM	0	12	58	10	1	0	31	45	33	1	0	33	120	11	7	0	3	107	21	1
5:45 PM - 6:00 PM	0	16	59	15	2	0	30	51	33	1	0	25	112	9	2	0	12	123	26	1
TOTAL	**0**	**121**	**518**	**97**	**12**	**0**	**306**	**445**	**334**	**12**	**0**	**262**	**1063**	**92**	**26**	**0**	**60**	**966**	**204**	**29**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
12:00 PM - 1:00 PM	0	53	289	54	10	0	152	199	159	5	0	133	527	54	21	0	32	469	111	20
4:30 PM - 5:30 PM	0	56	276	50	5	0	166	223	175	6	0	133	586	46	11	0	36	487	96	15

	PHF	Trucks
AM	0.947	2.5%
PM	0.922	1.6%



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

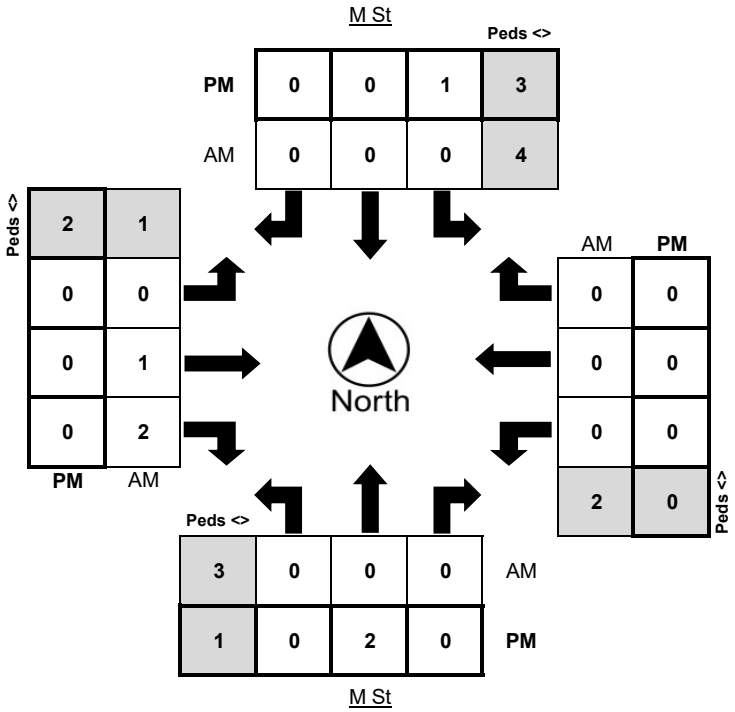
LOCATION M St @ 16th St
LATITUDE 37.3010
COUNTY Merced
LONGITUDE -120.4854
COLLECTION DATE Tuesday, October 19, 2021
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 11:45 AM	0	1	0	0	0	0	0	1	0	0	0	2	0	0	0	0
11:45 AM - 12:00 PM	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0
12:00 PM - 12:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
12:15 PM - 12:30 PM	0	0	0	3	0	0	0	0	0	0	1	2	0	0	0	1
12:30 PM - 12:45 PM	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0
12:45 PM - 1:00 PM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
1:00 PM - 1:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM - 1:30 PM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
TOTAL	**0**	**1**	**0**	**6**	**0**	**0**	**0**	**7**	**0**	**3**	**2**	**4**	**0**	**0**	**0**	**1**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
4:30 PM - 4:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM - 5:15 PM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**4**	**1**	**3**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**2**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
12:00 PM - 1:00 PM	0	0	0	4	0	0	0	3	0	1	2	2	0	0	0	1
4:30 PM - 5:30 PM	0	2	0	3	1	0	0	1	0	0	0	0	0	0	0	2

	Bikes	Peds
AM Peak Total	3	10
PM Peak Total	3	6



Metro Traffic Data Inc.
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Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

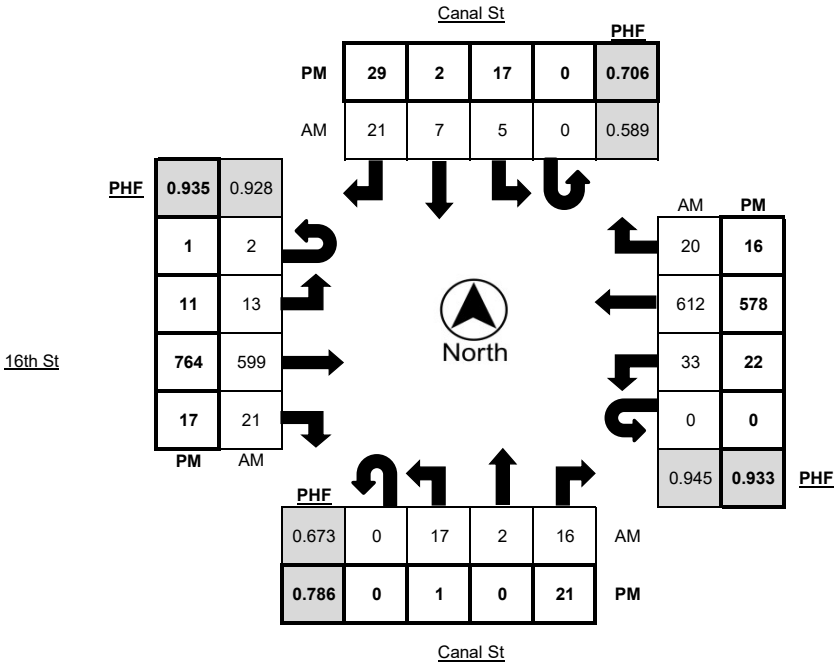
LOCATION 16th St @ Canal St
LATITUDE 37.3004
COUNTY Merced
LONGITUDE -120.4839
COLLECTION DATE Thursday, September 16, 2021
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
11:30 AM - 11:45 AM	0	0	0	7	1	0	1	1	3	0	0	1	143	6	9	0	8	139	2	5
11:45 AM - 12:00 PM	0	6	1	6	0	0	2	4	8	0	1	3	145	3	0	0	12	156	8	4
12:00 PM - 12:15 PM	0	4	1	3	0	0	1	3	4	0	0	2	160	7	4	0	8	163	3	5
12:15 PM - 12:30 PM	0	3	0	6	0	0	1	0	8	0	1	3	133	6	9	0	9	152	5	4
12:30 PM - 12:45 PM	0	4	0	1	0	0	1	0	1	0	0	5	161	5	3	0	4	141	4	11
12:45 PM - 1:00 PM	0	2	0	10	0	0	2	2	7	0	0	6	151	5	7	0	11	141	2	4
1:00 PM - 1:15 PM	0	1	0	9	0	0	0	0	7	0	0	1	148	4	4	0	12	149	4	5
1:15 PM - 1:30 PM	0	3	0	8	0	0	2	0	1	0	0	3	167	5	6	0	6	166	4	9
TOTAL	**0**	**23**	**2**	**50**	**1**	**0**	**10**	**10**	**39**	**0**	**2**	**24**	**1208**	**41**	**42**	**0**	**70**	**1207**	**32**	**47**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	0	0	7	0	0	2	0	5	0	0	2	164	6	0	0	6	161	4	12
4:15 PM - 4:30 PM	0	0	0	2	0	0	1	1	4	0	0	2	159	1	5	0	3	154	3	6
4:30 PM - 4:45 PM	0	1	0	6	0	0	4	0	7	0	1	2	191	4	2	0	7	133	1	3
4:45 PM - 5:00 PM	0	0	0	2	0	0	5	0	12	0	0	1	193	5	8	0	1	144	7	1
5:00 PM - 5:15 PM	0	0	0	7	0	0	8	2	7	0	0	2	208	2	2	0	6	153	6	5
5:15 PM - 5:30 PM	0	0	0	6	0	0	0	0	3	0	0	6	172	6	3	0	8	148	2	3
5:30 PM - 5:45 PM	0	2	0	5	0	0	1	1	7	0	0	2	156	5	2	0	10	142	2	1
5:45 PM - 6:00 PM	0	0	0	3	0	0	2	0	4	0	0	0	150	1	4	0	8	132	7	3
TOTAL	**0**	**3**	**0**	**38**	**0**	**0**	**23**	**4**	**49**	**0**	**1**	**17**	**1393**	**30**	**26**	**0**	**49**	**1167**	**32**	**34**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
11:45 AM - 12:45 PM	0	17	2	16	0	0	5	7	21	0	2	13	599	21	16	0	33	612	20	24
4:30 PM - 5:30 PM	0	1	0	21	0	0	17	2	29	0	1	11	764	17	15	0	22	578	16	12

	PHF	Trucks
AM	0.953	2.9%
PM	0.922	1.8%



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LOCATION 16th St @ Canal St
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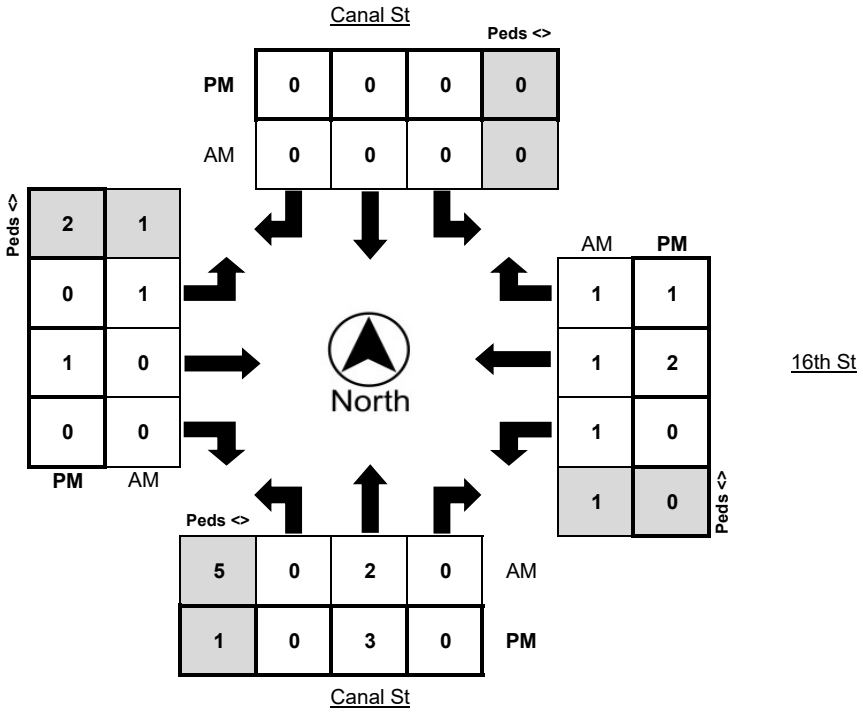
COUNTY Merced
LONGITUDE -120.4839
COLLECTION DATE Thursday, September 16, 2021
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 11:45 AM	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0
11:45 AM - 12:00 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0
12:00 PM - 12:15 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	1
12:15 PM - 12:30 PM	0	2	0	0	0	0	0	0	1	0	0	0	1	0	0	0
12:30 PM - 12:45 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
12:45 PM - 1:00 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
1:00 PM - 1:15 PM	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0
1:15 PM - 1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**9**	**1**	**0**	**0**	**6**	**2**	**1**	**1**	**1**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	3
4:15 PM - 4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
4:30 PM - 4:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
TOTAL	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**1**	**0**	**2**	**0**	**3**	**1**	**5**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:45 AM - 12:45 PM	0	2	0	0	0	0	0	5	1	0	0	1	1	1	1	1
4:30 PM - 5:30 PM	0	3	0	0	0	0	0	1	0	1	0	0	0	2	1	2

	Bikes	Peds
AM Peak Total	6	7
PM Peak Total	**7**	**3**



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Turning Movement Report

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Fresno, CA 93704

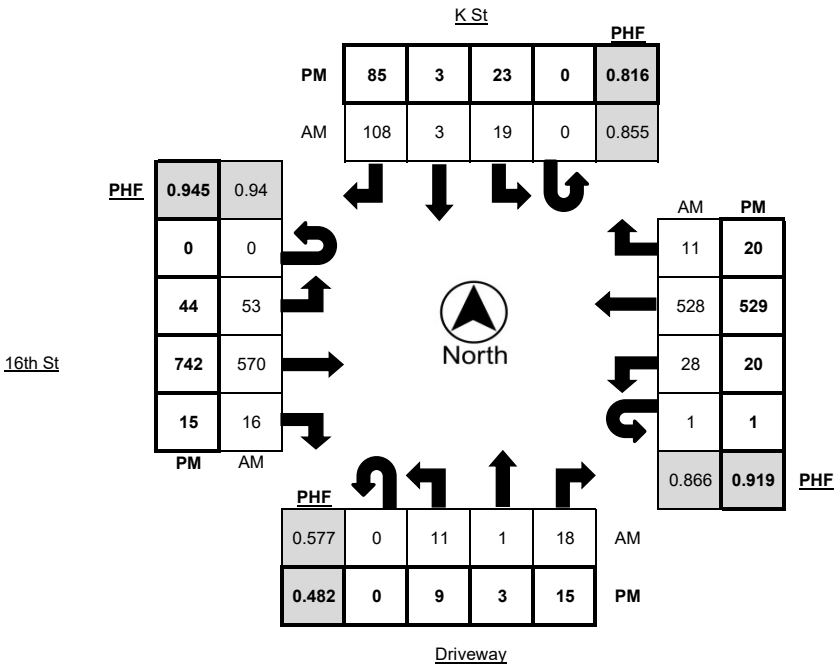
LOCATION 16th St @ K St
LATITUDE 37.2999
COUNTY Merced
LONGITUDE -120.4824
COLLECTION DATE Thursday, September 16, 2021
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
11:30 AM - 11:45 AM	0	1	0	2	0	0	4	0	22	1	0	9	136	6	9	0	3	132	4	5
11:45 AM - 12:00 PM	0	6	1	1	1	0	3	1	21	3	0	8	138	2	5	0	2	154	5	5
12:00 PM - 12:15 PM	0	3	0	3	0	0	3	1	24	1	0	7	152	4	4	0	5	145	2	4
12:15 PM - 12:30 PM	0	4	1	2	0	0	6	0	17	1	0	18	122	4	9	0	6	140	2	3
12:30 PM - 12:45 PM	0	1	0	4	0	0	7	1	27	3	0	10	148	3	4	0	6	122	3	9
12:45 PM - 1:00 PM	0	2	0	2	0	0	5	1	32	1	0	19	137	3	7	0	6	122	5	3
1:00 PM - 1:15 PM	0	5	1	2	1	0	4	0	28	0	0	14	131	4	4	0	7	131	2	5
1:15 PM - 1:30 PM	0	3	0	10	0	0	3	1	21	2	0	10	154	6	6	1	9	153	1	6
TOTAL	**0**	**25**	**3**	**26**	**2**	**0**	**35**	**5**	**192**	**12**	**0**	**95**	**1118**	**32**	**48**	**1**	**44**	**1099**	**24**	**40**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	6	1	3	0	0	5	1	21	3	0	12	162	1	0	0	12	147	10	10
4:15 PM - 4:30 PM	0	2	1	3	0	0	7	1	19	0	0	8	146	2	5	0	8	137	6	6
4:30 PM - 4:45 PM	0	1	2	1	0	0	6	1	27	2	0	11	188	5	0	0	7	118	4	1
4:45 PM - 5:00 PM	0	3	1	10	0	0	8	1	19	1	0	9	183	3	8	0	6	134	3	1
5:00 PM - 5:15 PM	0	0	0	1	0	0	7	0	18	1	0	12	197	3	2	0	2	146	7	3
5:15 PM - 5:30 PM	0	5	0	3	0	0	2	1	21	1	0	12	174	4	3	1	5	131	6	2
5:30 PM - 5:45 PM	0	5	0	6	0	0	7	1	18	0	0	10	139	7	1	0	5	134	4	1
5:45 PM - 6:00 PM	0	2	0	5	0	0	3	1	17	2	0	5	149	6	5	0	5	129	4	1
TOTAL	**0**	**24**	**5**	**32**	**0**	**0**	**45**	**7**	**160**	**10**	**0**	**79**	**1338**	**31**	**24**	**1**	**50**	**1076**	**44**	**25**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
12:30 PM - 1:30 PM	0	11	1	18	1	0	19	3	108	6	0	53	570	16	21	1	28	528	11	23
4:30 PM - 5:30 PM	0	9	3	15	0	0	23	3	85	5	0	44	742	15	13	1	20	529	20	7

	PHF	Trucks
AM	0.919	3.7%
PM	0.960	1.7%



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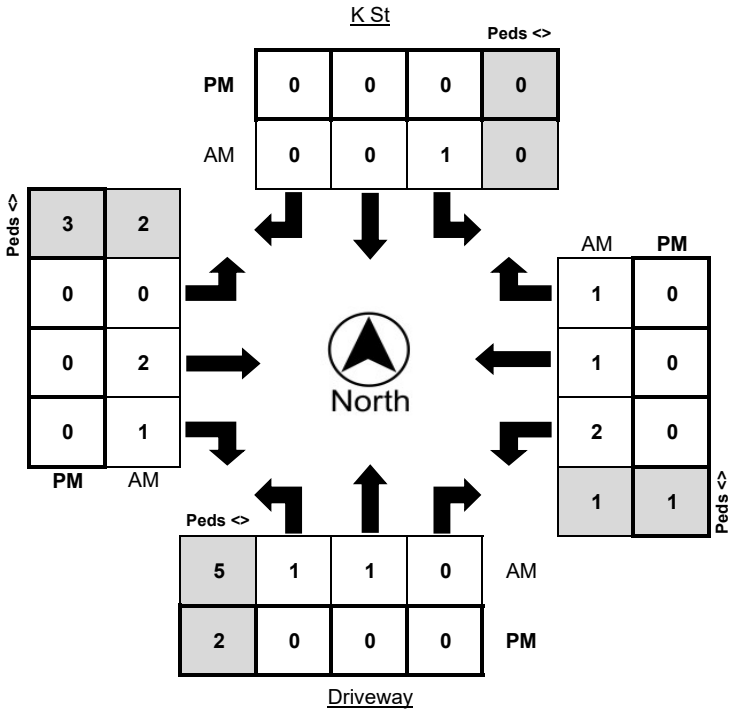
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 11:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
11:45 AM - 12:00 PM	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2
12:00 PM - 12:15 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	2
12:15 PM - 12:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	1
12:30 PM - 12:45 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
12:45 PM - 1:00 PM	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0
1:00 PM - 1:15 PM	1	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0
1:15 PM - 1:30 PM	0	0	0	0	1	0	0	3	0	1	0	0	1	0	0	1
TOTAL	**2**	**1**	**0**	**0**	**1**	**0**	**0**	**13**	**0**	**2**	**1**	**2**	**2**	**2**	**1**	**7**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
TOTAL	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**4**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
12:30 PM - 1:30 PM	1	1	0	0	1	0	0	5	0	2	1	1	2	1	1	2
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	3

	Bikes	Peds
AM Peak Total	10	8
PM Peak Total	0	6



Metro Traffic Data Inc.
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Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

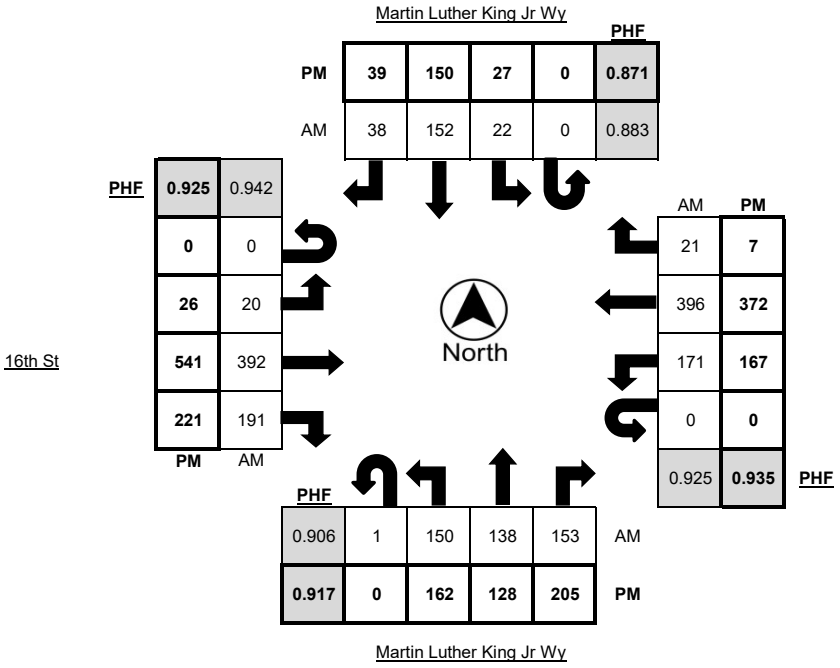
LOCATION 16th St @ Martin Luther King Jr Wy
LATITUDE 37.2993
COUNTY Merced
LONGITUDE -120.4809
COLLECTION DATE Thursday, September 16, 2021
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
11:30 AM - 11:45 AM	0	33	28	44	1	0	8	25	15	0	0	6	101	40	7	0	43	89	1	7
11:45 AM - 12:00 PM	0	37	25	30	1	0	6	20	13	1	0	3	90	53	3	0	42	112	5	4
12:00 PM - 12:15 PM	1	40	37	44	1	0	7	42	8	0	0	3	111	45	4	0	49	98	7	4
12:15 PM - 12:30 PM	0	38	37	39	2	0	3	47	6	0	0	10	86	42	6	0	44	101	4	0
12:30 PM - 12:45 PM	0	35	39	40	1	0	6	43	11	1	0	4	105	51	3	0	36	85	5	8
12:45 PM - 1:00 PM	0	31	30	46	0	0	3	35	9	1	0	4	84	43	3	0	31	94	4	3
1:00 PM - 1:15 PM	1	53	25	46	9	0	5	35	10	3	0	3	93	50	3	0	30	84	6	1
1:15 PM - 1:30 PM	0	53	22	41	4	0	6	37	18	1	0	8	108	54	6	0	42	89	3	3
TOTAL	**2**	**320**	**243**	**330**	**19**	**0**	**44**	**284**	**90**	**7**	**0**	**41**	**778**	**378**	**35**	**0**	**317**	**752**	**35**	**30**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	47	33	37	2	0	4	47	12	1	0	3	123	51	2	0	48	108	0	7
4:15 PM - 4:30 PM	0	36	43	48	3	0	5	43	8	1	0	1	114	39	2	0	36	105	4	3
4:30 PM - 4:45 PM	0	32	37	49	2	0	5	36	10	1	0	3	135	51	0	0	37	89	2	1
4:45 PM - 5:00 PM	0	39	39	50	0	0	6	30	12	0	0	11	136	51	7	0	48	90	2	1
5:00 PM - 5:15 PM	0	45	26	43	1	0	8	40	7	2	0	7	144	62	1	0	43	103	0	3
5:15 PM - 5:30 PM	0	46	26	63	1	0	8	44	10	0	0	5	126	57	2	0	39	90	3	1
5:30 PM - 5:45 PM	0	41	25	46	0	0	3	38	6	0	0	4	101	44	1	0	29	93	2	1
5:45 PM - 6:00 PM	0	35	28	44	0	0	3	27	5	0	0	6	109	46	4	0	38	93	5	1
TOTAL	**0**	**321**	**257**	**380**	**9**	**0**	**42**	**305**	**70**	**5**	**0**	**40**	**988**	**401**	**19**	**0**	**318**	**771**	**18**	**18**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
11:45 AM - 12:45 PM	1	150	138	153	5	0	22	152	38	2	0	20	392	191	16	0	171	396	21	16
4:30 PM - 5:30 PM	0	162	128	205	4	0	27	150	39	3	0	26	541	221	10	0	167	372	7	6

	PHF	Trucks
AM	0.938	2.1%
PM	0.968	1.1%



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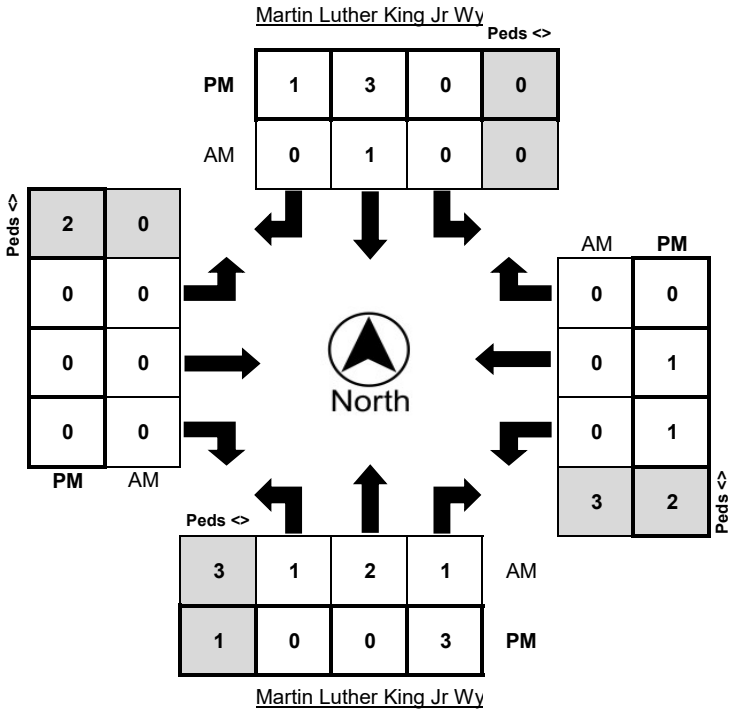
	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:30 AM - 11:45 AM	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	2
11:45 AM - 12:00 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM - 12:15 PM	0	1	0	0	0	1	0	2	0	0	0	1	0	0	0	0
12:15 PM - 12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM - 12:45 PM	0	1	0	0	0	0	0	1	0	0	0	2	0	0	0	0
12:45 PM - 1:00 PM	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	4
1:00 PM - 1:15 PM	0	0	0	1	0	0	1	1	0	0	0	0	0	1	0	2
1:15 PM - 1:30 PM	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
TOTAL	**1**	**4**	**2**	**4**	**0**	**1**	**1**	**5**	**0**	**0**	**0**	**4**	**0**	**1**	**0**	**8**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	0
4:30 PM - 4:45 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0
5:00 PM - 5:15 PM	0	0	1	0	0	2	1	1	0	0	0	1	0	1	0	1
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM - 5:45 PM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	1	0	0	0	0	0	0	1	0	1	0	1	0	2
TOTAL	**0**	**1**	**6**	**0**	**0**	**4**	**1**	**1**	**0**	**1**	**1**	**3**	**3**	**4**	**1**	**4**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
11:45 AM - 12:45 PM	1	2	1	0	0	1	0	3	0	0	0	3	0	0	0	0
4:30 PM - 5:30 PM	0	0	3	0	0	3	1	1	0	0	0	2	1	1	0	2

	Bikes	Peds
AM Peak Total	5	6
PM Peak Total	**9**	**5**



Appendix B: Methodology

Levels of Service Methodology

The description and procedures for calculating capacity and level of service (LOS) are found in the Transportation Research Board, Highway Capacity Manual (HCM). The HCM 2010 represents the research on capacity and quality of service for transportation facilities.

Quality of service requires quantitative measures to characterize operational conditions within a traffic stream. Level of service is a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience.

Six levels of service are defined for each type of facility that has analysis procedures available. Letters designate each level of service (LOS), from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each LOS represents a range of operating conditions and the driver's perception of these conditions. Safety is not included in the measures that establish a LOS.

Urban Streets (Automobile Mode)

The term "urban streets" refers to urban arterials and collectors, including those in downtown areas. Arterial streets are roads that primarily serve longer through trips. However, providing access to abutting commercial and residential land uses is also an important function of arterials. Collector streets provide both land access and traffic circulation within residential, commercial and industrial areas. Their access function is more important than that of arterials, and unlike arterials their operation is not always dominated by traffic signals. Downtown streets are signalized facilities that often resemble arterials.

They not only move through traffic but also provide access to local businesses for passenger cars, transit buses, and trucks. Pedestrian conflicts and lane obstructions created by stopping or standing taxicabs, buses, trucks and parking vehicles that cause turbulence in the traffic flow are typical of downtown streets.

Flow Characteristics

The speed of vehicles on urban streets is influenced by three main factors, street environment, interaction among vehicles and traffic control.

The street environment includes the geometric characteristics of the facility, the character of roadside activity, and adjacent land uses. Thus, the environment reflects the number and width of lanes, type of median, driveway/access point density, spacing between signalized intersections, existence of parking, level of pedestrian and bicyclist activity and speed limit.

The interaction among vehicles is determined by traffic density, the proportion of trucks and buses, and turning movements. This interaction affects the operation of vehicles at intersections and, to a lesser extent, between signals.

Traffic controls (including signals and signs) forces a portion of all vehicles to slow or stop. The delays and speed changes caused by traffic control devices reduce vehicle speeds; however, such controls are needed to establish right-of-way.

Levels of Service (Automobile Mode)

The average travel speed for through vehicles along an urban street is the determinant of the operating level of service (LOS). The travel speed along a segment, section or entire length of an urban street is dependent on the running speed between signalized intersections and the amount of control delay incurred at signalized intersections.

LOS A describes primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal. Travel speeds exceed 85 of the base free flow speed (FFS).

LOS B describes reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67 and 85 percent of the base FFS.

LOS C describes stable operations. The ability to maneuver and change lanes in midblock location may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50 and 67 percent of the base FFS.

LOS D indicates a less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volumes, inappropriate signal timing, at the boundary intersections. The travel speed is between 40 and 50 percent of the base FFS.

LOS E is characterized unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30 and 40 percent of the base FFS.

LOS F is characterized by street flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30 percent or less of the base FFS.

Table A-1: Urban Street Levels of Service (Automobile Mode)

Travel Speed as a Percentage of Base Free-Flow Speed (%)	LOS by Critical Volume-to-Capacity Ratio	
	v/c ≤ 1.0	v/c > 1.0
>85	A	F
>67 to 85	B	F
>50 to 67	C	F
>40 to 50	D	F
>30 to 40	E	F
≤30	F	F

a = The Critical volume-to-capacity ratio is based on consideration of the through movement-to-capacity ratio at each boundary intersection in the subject direction of travel. The critical volume-to-capacity ratio is the largest ratio of those considered.
Source: Highway Capacity Manual 2010, Exhibit 16-4. Urban Street LOS Criteria (Automobile Mode)

Intersection Levels of Service

One of the more important elements limiting, and often interrupting the flow of traffic on a highway is the intersection. Flow on an interrupted facility is usually dominated by points of fixed operation such as traffic signals, stop and yield signs.

Signalized Intersections – Performance Measures

For signalized intersections the performance measures include automobile volume-to-capacity ratio, automobile delay, queue storage length, ratio of pedestrian delay, pedestrian circulation area, pedestrian perception score, bicycle delay, and bicycle perception score. LOS is also considered a performance measure. For the automobile mode average control delay per vehicle per approach is determined for the peak hour. A weighted average of control delay per vehicle is then determined for the intersection. A LOS designation is given to the weighted average control delay to better describe the level of operation. A description of LOS for signalized intersections is found in Table A-2.

Table A-2: Signalized Intersection Levels of Service Description (Automobile Mode)

Level of Service	Description	Average Control Delay (Seconds per Vehicle)
A	Operations with a control delay of 10 seconds/vehicle or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when volume-to-capacity ratio is and either progression is exceptionally favorable or the cycle length is very short. If it's due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.	≤10
B	Operations with control delay between 10.1 to 20.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.	>10.0 to 20.0
C	Operations with average control delays between 20.1 to 35.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20 to 35
D	Operations with control delay between 35.1 to 55.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop, and individual cycle failures are noticeable.	>35 to 55
E	Operations with control delay between 55.1 to 80.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.	>55 to 80
F	Operations with unacceptable control delay exceeding 80.0 seconds/vehicle and a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	>80

Source: Highway Capacity Manual 2010

Unsignalized Intersections

The HCM 2010 procedures use control delay as a measure of effectiveness to determine level of service. Delay is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, i.e., in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Control delay is the increased time of travel for a vehicle approaching and passing through an unsignalized intersection, compared with a free-flow vehicle if it were not required to slow or stop at the intersection.

All-Way Stop Controlled Intersections

All-way stop controlled intersections is a form of traffic controls in which all approaches to an intersection are required to stop. Similar to signalized intersections, at all-way stop controlled intersections the average control delay per vehicle per approach is determined for the peak hour. A weighted average of control delay per vehicle is then determined for the intersection as a whole. In other words, the delay measured for all-way stop controlled intersections is a measure of the average delay for all vehicles passing through the intersection during the peak hour. A LOS designation is given to the weighted average control delay to better describe the level of operation.

Two-Way Stop Controlled Intersections

Two-way stop controlled (TWSC) intersections in which stop signs are used to assign the right-of-way, are the most prevalent type of intersection in the United States. At TWSC intersections the stop-controlled approaches are referred as the minor street approaches and can be either public streets or private driveways. The approaches that are not controlled by stop signs are referred to as the major street approaches.

The capacity of movements subject to delay are determined using the "critical gap" method of capacity analysis. Expected average control delay based on movement volume and movement capacity is calculated. A LOS for TWSC intersection is determined by the computed or measured control delay for each minor movement. LOS is not defined for the intersection as a whole for three main reasons: (a) major-street through vehicles are assumed to experience zero delay; (b) the disproportionate number of major-street through vehicles at the typical TWSC intersection skews the weighted average of all movements, resulting in a very low overall average delay from all vehicles; and (c) the resulting low delay can mask important LOS deficiencies for minor movements. Table A-3 provides a description of LOS at unsignalized intersections.

Table A-3: Unsignalized Intersection Level of Service Description (Automobile Mode)

Control Delay (Seconds per Vehicle)	LOS by Volume-to-Capacity Ratio	
	v/c ≤ 1.0	v/c > 1.0
≤10	A	F
>10 to 15	B	F
>15 to 25	C	F
>25 to 35	D	F
>35 to 50	E	F
>50	F	F

Source: HCM 2010 Exhibit 19-1.

Segment Levels of Service

Basic Freeway and Multilane Highway Segments

For segments of multilane highways and basic freeways outside the influence of merging, diverging, and weaving maneuvers, LOS is defined by density. Density describes a motorist's proximity to other vehicles and is related to a motorist's freedom to maneuver within the traffic stream. Chapter 12 of the Highway Capacity Manual categorizes each LOS as follows:

LOS A describes free-flow operations. FFS prevails on the freeway or multilane highway, and vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. The effects of incidents or point breakdowns are easily absorbed.

LOS B represents reasonably free-flow operations, and FFS on the freeway or multilane highway is maintained. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high. The effects of minor incidents are still easily absorbed.

LOS C provides for flow with speeds near the FFS of the freeway or multilane highway. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver. Minor incidents may still be absorbed, but the local deterioration in service quality will be significant. Queues may be expected to form behind any significant blockages.

LOS D is the level at which speeds begin to decline with increasing flows, with density increasing more quickly. Freedom to maneuver within the traffic stream is seriously limited, and drivers experience reduced physical and psychological comfort levels. Even minor incidents can be expected to create queuing, because the traffic stream has little space to absorb disruptions.

LOS E describes operation at or near capacity. Operations on the freeway or multilane highway at this level are highly volatile because there are virtually no usable gaps within the traffic stream, leaving little room to maneuver within the traffic stream. Any disruption to the traffic stream, such as vehicles entering from a ramp or an access point or a vehicle changing lanes, can establish a disruption wave that propagates throughout the upstream traffic stream. Toward the upper boundary of LOS E, the traffic stream has no ability to dissipate even the most minor disruption, and any incident can be expected to produce a serious breakdown and substantial queuing. The physical and psychological comfort afforded to drivers is poor.

LOS F describes unstable flow. Such conditions exist within queues forming behind bottlenecks. Breakdowns occur for a number of reasons:

- Traffic incidents can temporarily reduce the capacity of a short segment, so that the number of vehicles arriving at a point is greater than the number of vehicles that can move through it.
- Points of recurring congestion, such as merge or weaving segments and lane drops, experience very high demand in which the number of vehicles arriving is greater than the number of vehicles that can be discharged.
- In analyses using forecast volumes, the projected flow rate can exceed the estimated capacity of a given location.

Basic Freeway

Basic Freeway segments generally have four to eight lanes and posted speed limits between 50 and 75 mi/hr. The performance measures include capacity, free flow speed, demand and volume-to-capacity ration, space mean speed, average density and LOS. The LOS is dependent on the number of lanes, base free-flow speed, lane width, right side lateral clearance, total ramp density, hourly demand volume, peak hour factor and total truck percentage. Table A-5 provides a description of LOS for Basic Freeway Segments.

Multilane Highway

Multilane Highway segments generally have four to six lanes and posted speed limits between 40 and 55 mi/hr. The performance measures include capacity, free flow speed, demand and volume-to-capacity ration, space mean speed, average density and LOS. The LOS is dependent on the number of lanes, base free-flow speed, lane width, right side lateral clearance, left side lateral clearance, access point density, terrain type, median type, hourly demand volume, peak hour factor and total truck percentage. Table A-5 provides a description of LOS for Multilane Highway Segments.

Table A-5: Basic Freeway and Multilane Highway Segment Level of Service Description

Density (Passenger Cars per Mile per Lane)	LOS by Volume-to-Capacity Ratio	
	v/c ≤ 1.0	v/c > 1.0
≤11	A	F
>11 to 18	B	F
>18 to 26	C	F
>26 to 35	D	F
>35 to 45	E	F
>45 or Demand Exceeds Capacity	F	F

Source: HCM 2010 Exhibit 12-15.

Two-Lane Highway Segments

Two-Lane Highways generally have one lane per direction and only allows passing maneuvers to take place in the opposing lane of traffic. If allowed, passing maneuvers are limited by the availability of gaps in the opposing traffic stream and by the availability of sufficient sight distance for a driver to discern the approach of an opposing vehicle safely. A principle measure of LOS is percent time spent following and follower density. This is the average percent of time that vehicles must travel in platoons behind slower vehicles due to the inability to pass. Chapter 15 of the Highway Capacity Manual categorizes each LOS as follows:

At **LOS A**, motorists experience high operating speeds on Class I highways and little difficulty in passing. Platoons of three or more vehicles are rare. On Class II highways, speed is controlled primarily by roadway conditions, but a small amount of platooning would be expected. On Class III highways, motorists can maintain operating speeds at or near the facility's FFS.

At **LOS B**, passing demand and passing capacity are balanced. On both Class I and Class II highways, the degree of platooning becomes noticeable. Some speed reductions are present on Class I highways. On Class III highways, maintenance of FFS operation becomes difficult, but the speed reduction is still relatively small.

At **LOS C**, most vehicles travel in platoons. Speeds are noticeably curtailed on all three classes of highway.

At **LOS D**, platooning increases significantly. Passing demand is high on both Class I and Class II facilities, but passing capacity approaches zero. A high percentage of vehicles travels in platoons, and PTSF is noticeable. On Class III highways, the fall-off from FFS is significant.

At LOS E demand is approaching capacity. Passing on Class I and II highways is virtually impossible, and PTSF is more than 80%. Speeds are seriously curtailed. On Class III highways, speed is less than two-thirds the FFS. The lower limit of LOS E represents capacity.

LOS F exists whenever demand flow in one or both directions exceeds the segment's capacity. Operating conditions are unstable, and heavy congestion exists on all classes of two-lane highway.

Two-Lane Highway

The performance measures include average travel speed, segment travel time, percent followers, volume to capacity ratio, follower density and LOS. The LOS is dependent on Highway Class (I, II, or III), lane width, shoulder width, access point density, terrain type, free flow speed, passing lane length, demand flow rate, opposing demand flow rate peak hour factor and total truck percentage. Table A-6 and A-7 provide a description of LOS for Two-Lane Highway Segments.

Table A-6: Two-Lane Highway Segment Level of Service Description

LOS	Class I Highways		Class II Highways	Class III Highways
	ATS (Mile per Hour)	PTSF (%)	PTSF (%)	PFFS (%)
A	>55	≤35	≤40	>91.7
B	>50 to 55	>35 to 50	>40 to 55	>83.3 to 91.7
C	>45 to 50	>50 to 65	>55 to 70	>75.0 to 83.3
D	>40 to 45	>65 to 80	>70 to 85	>66.7 to 75.0
E	≤40	>80	>85	≤66.7
F	Demand exceeds capacity			

Source: HCM 2010 Exhibit 15-3.

Table A-7: Two-Lane Highway Segment Level of Service Description

Follower Density (Followers per Mile per Lane)	**LOS by Volume-to-Capacity Ratio**	
	v/c ≤ 1.0	**v/c > 1.0**
≤2.0	A	F
>2.0 to 4.0	B	F
>4.0 to 8.0	C	F
>8.0 to 12.0	D	F
>12.0	E	F
Demand Exceeds Capacity	F	F

Source: Highway Capacity Software 7.0 Two-Lane Highway Analysis

Appendix C: Existing Traffic Conditions

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	130	4	19	148	5	7	27	23	1	45	17
Future Vol, veh/h	6	130	4	19	148	5	7	27	23	1	45	17
Conflicting Peds, #/hr	0	0	5	5	0	0	2	0	0	0	0	2
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	83	83	83	75	75	75	69	69	69
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	7	141	4	23	178	6	9	36	31	1	65	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	184	0	0	150	0	0	436	392	148	418	391	183
Stage 1	-	-	-	-	-	-	162	162	-	227	227	-
Stage 2	-	-	-	-	-	-	274	230	-	191	164	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1385	-	-	1425	-	-	529	542	896	544	543	857
Stage 1	-	-	-	-	-	-	838	762	-	773	714	-
Stage 2	-	-	-	-	-	-	730	712	-	808	761	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1385	-	-	1418	-	-	454	526	892	489	527	855
Mov Cap-2 Maneuver	-	-	-	-	-	-	454	526	-	489	527	-
Stage 1	-	-	-	-	-	-	829	754	-	768	701	-
Stage 2	-	-	-	-	-	-	630	699	-	739	753	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.8	11.7	12.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	616	1385	-	-	1418	-	-	587
HCM Lane V/C Ratio	0.123	0.005	-	-	0.016	-	-	0.156
HCM Control Delay (s)	11.7	7.6	0	-	7.6	0	-	12.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.5

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	18	150	9	32	138	8	4	10	13	31	19	19
Future Vol, veh/h	18	150	9	32	138	8	4	10	13	31	19	19
Peak Hour Factor	0.87	0.87	0.87	0.91	0.91	0.91	0.81	0.81	0.81	0.81	0.90	0.90
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	21	172	10	35	152	9	5	12	16	38	21	21
Number of Lanes	1	1	0	1	1	0	0	0	1	0	0	1

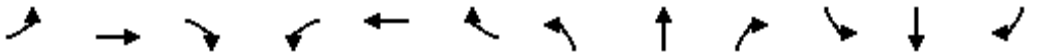
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	9.3	9.1	8.2	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	19%	100%	0%	100%	0%	35%
Vol Thru, %	24%	0%	94%	0%	95%	35%
Vol Right, %	57%	0%	6%	0%	5%	30%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	58	18	159	32	146	54
LT Vol	11	18	0	32	0	19
Through Vol	14	0	150	0	138	19
RT Vol	33	0	9	0	8	16
Lane Flow Rate	72	21	183	35	160	60
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.093	0.032	0.254	0.054	0.223	0.082
Departure Headway (Hd)	4.693	5.549	5.007	5.553	5.012	4.906
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	763	645	716	645	716	729
Service Time	2.729	3.282	2.74	3.287	2.746	2.943
HCM Lane V/C Ratio	0.094	0.033	0.256	0.054	0.223	0.082
HCM Control Delay	8.2	8.5	9.4	8.6	9.2	8.4
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.3	0.1	1	0.2	0.9	0.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	16
Future Vol, veh/h	16
Peak Hour Factor	0.90
Heavy Vehicles, %	3
Mvmt Flow	18
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	104	31	42	119	75	15	473	54	47	486	43
Future Volume (veh/h)	68	104	31	42	119	75	15	473	54	47	486	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.98		0.98	0.99		0.97	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	80	122	36	47	132	83	18	556	64	49	512	45
Peak Hour Factor	0.85	0.85	0.85	0.90	0.90	0.90	0.85	0.85	0.85	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	173	212	62	260	196	123	166	686	79	787	1942	170
Arrive On Green	0.03	0.16	0.16	0.06	0.19	0.19	0.02	0.43	0.43	0.38	0.59	0.59
Sat Flow, veh/h	1767	1366	403	1767	1054	663	1767	3177	365	1767	3276	287
Grp Volume(v), veh/h	80	0	158	47	0	215	18	308	312	49	275	282
Grp Sat Flow(s),veh/h/ln	1767	0	1769	1767	0	1717	1767	1763	1779	1767	1763	1801
Q Serve(g_s), s	0.0	0.0	8.0	0.0	0.0	11.2	0.8	14.6	14.8	0.0	7.2	7.3
Cycle Q Clear(g_c), s	0.0	0.0	8.0	0.0	0.0	11.2	0.8	14.6	14.8	0.0	7.2	7.3
Prop In Lane	1.00		0.23	1.00		0.39	1.00		0.20	1.00		0.16
Lane Grp Cap(c), veh/h	173	0	274	260	0	320	166	381	384	787	1045	1068
V/C Ratio(X)	0.46	0.00	0.58	0.18	0.00	0.67	0.11	0.81	0.81	0.06	0.26	0.26
Avail Cap(c_a), veh/h	263	0	604	260	0	533	234	650	656	787	1045	1068
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.96	0.00	0.96	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	0.0	37.6	38.2	0.0	36.3	31.7	25.5	25.6	16.9	9.4	9.4
Incr Delay (d2), s/veh	1.9	0.0	1.9	0.3	0.0	2.4	0.3	16.5	16.7	0.0	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	3.6	1.0	0.0	4.8	0.3	6.3	6.4	0.6	2.7	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.1	0.0	39.5	38.5	0.0	38.7	31.9	42.0	42.3	16.9	10.0	10.0
LnGrp LOS	D	A	D	D	A	D	C	D	D	B	B	B
Approach Vol, veh/h		238			262			638			606	
Approach Delay, s/veh		41.7			38.7			41.8			10.6	
Approach LOS		D			D			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	41.5	25.3	10.1	19.1	5.3	61.5	7.1	22.1
Change Period (Y+Rc), s	4.6	* 4.6	* 4.2	* 4.2	* 4.2	4.6	* 4.2	* 4.2
Max Green Setting (Gmax), s	5.8	* 35	* 4.8	* 33	* 4.8	36.4	* 7.8	* 30
Max Q Clear Time (g_c+I1), s	2.0	16.8	2.0	10.0	2.8	9.3	2.0	13.2
Green Ext Time (p_c), s	0.0	3.5	0.0	0.8	0.0	3.4	0.1	1.1

Intersection Summary	
HCM 6th Ctrl Delay	30.5
HCM 6th LOS	C

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	104	28	34	222	31	0	0	0	24	33	48
Future Volume (vph)	18	104	28	34	222	31	0	0	0	24	33	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.6	4.6						4.6	
Lane Util. Factor	1.00	1.00		1.00	1.00						1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99						0.98	
Flpb, ped/bikes	0.98	1.00		0.98	1.00						1.00	
Frt	1.00	0.97		1.00	0.98						0.94	
Flt Protected	0.95	1.00		0.95	1.00						0.99	
Satd. Flow (prot)	1709	1769		1714	1798						1676	
Flt Permitted	0.58	1.00		0.67	1.00						0.99	
Satd. Flow (perm)	1035	1769		1202	1798						1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.25	0.25	0.25	0.77	0.77	0.77
Adj. Flow (vph)	20	113	30	36	236	33	0	0	0	31	43	62
RTOR Reduction (vph)	0	16	0	0	8	0	0	0	0	0	39	0
Lane Group Flow (vph)	20	127	0	36	261	0	0	0	0	0	97	0
Confl. Peds. (#/hr)	21		15	15		21	12		14	14		12
Turn Type	Perm	NA		Perm	NA					Perm	NA	
Protected Phases		2			2						4	
Permitted Phases	2			2						4		
Actuated Green, G (s)	28.8	28.8		28.8	28.8						22.0	
Effective Green, g (s)	28.8	28.8		28.8	28.8						22.0	
Actuated g/C Ratio	0.48	0.48		0.48	0.48						0.37	
Clearance Time (s)	4.6	4.6		4.6	4.6						4.6	
Lane Grp Cap (vph)	496	849		576	863						614	
v/s Ratio Prot		0.07			c0.14							
v/s Ratio Perm	0.02			0.03							0.06	
v/c Ratio	0.04	0.15		0.06	0.30						0.16	
Uniform Delay, d1	8.3	8.7		8.4	9.5						12.8	
Progression Factor	1.00	1.00		1.00	1.00						1.00	
Incremental Delay, d2	0.2	0.4		0.2	0.9						0.5	
Delay (s)	8.4	9.1		8.6	10.4						13.3	
Level of Service	A	A		A	B						B	
Approach Delay (s)		9.0			10.2			0.0			13.3	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	106	19	4	165	5	98	55	11	23	41	16
Future Vol, veh/h	26	106	19	4	165	5	98	55	11	23	41	16
Peak Hour Factor	0.79	0.79	0.79	0.84	0.84	0.84	0.85	0.85	0.85	0.95	0.95	0.95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	33	134	24	5	196	6	115	65	13	24	43	17
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	9.8	10.7	10.3	9
HCM LOS	A	B	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	60%	100%	0%	100%	0%	29%
Vol Thru, %	34%	0%	85%	0%	97%	51%
Vol Right, %	7%	0%	15%	0%	3%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	164	26	125	4	170	80
LT Vol	98	26	0	4	0	23
Through Vol	55	0	106	0	165	41
RT Vol	11	0	19	0	5	16
Lane Flow Rate	193	33	158	5	202	84
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.277	0.055	0.237	0.008	0.307	0.122
Departure Headway (Hd)	5.175	6	5.387	5.982	5.457	5.201
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	689	592	660	593	652	681
Service Time	3.253	3.787	3.174	3.768	3.242	3.295
HCM Lane V/C Ratio	0.28	0.056	0.239	0.008	0.31	0.123
HCM Control Delay	10.3	9.1	9.9	8.8	10.7	9
HCM Lane LOS	B	A	A	A	B	A
HCM 95th-tile Q	1.1	0.2	0.9	0	1.3	0.4

Intersection	
Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	83	53	10	81	8	79	91	15	15	77	7
Future Vol, veh/h	12	83	53	10	81	8	79	91	15	15	77	7
Peak Hour Factor	0.81	0.81	0.81	0.83	0.83	0.83	0.83	0.83	0.83	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	15	102	65	12	98	10	95	110	18	17	88	8
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.3	9	10	8.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	43%	8%	10%	15%
Vol Thru, %	49%	56%	82%	78%
Vol Right, %	8%	36%	8%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	185	148	99	99
LT Vol	79	12	10	15
Through Vol	91	83	81	77
RT Vol	15	53	8	7
Lane Flow Rate	223	183	119	112
Geometry Grp	1	1	1	1
Degree of Util (X)	0.301	0.24	0.165	0.155
Departure Headway (Hd)	4.857	4.728	4.976	4.952
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	736	755	716	719
Service Time	2.917	2.79	3.043	3.021
HCM Lane V/C Ratio	0.303	0.242	0.166	0.156
HCM Control Delay	10	9.3	9	8.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.3	0.9	0.6	0.5

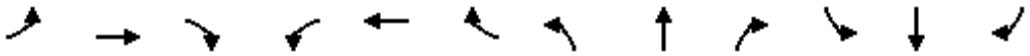
Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	149	25	4	52	6	27	31	21	12	55	13
Future Vol, veh/h	15	149	25	4	52	6	27	31	21	12	55	13
Conflicting Peds, #/hr	3	0	1	1	0	3	1	0	3	3	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	40	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	67	67	67	73	73	73	71	71	71
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	16	164	27	6	78	9	37	42	29	17	77	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	90	0	0	192	0	0	354	313	182	346	322	87
Stage 1	-	-	-	-	-	-	211	211	-	98	98	-
Stage 2	-	-	-	-	-	-	143	102	-	248	224	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1499	-	-	1375	-	-	599	601	858	606	594	969
Stage 1	-	-	-	-	-	-	789	726	-	906	812	-
Stage 2	-	-	-	-	-	-	857	809	-	754	716	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1495	-	-	1374	-	-	521	590	855	544	583	965
Mov Cap-2 Maneuver	-	-	-	-	-	-	521	590	-	544	583	-
Stage 1	-	-	-	-	-	-	780	717	-	893	806	-
Stage 2	-	-	-	-	-	-	756	803	-	676	707	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.5	12.1	12.1
HCM LOS			B	B

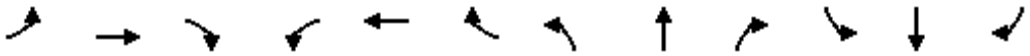
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	613	1495	-	-	1374	-	-	616
HCM Lane V/C Ratio	0.177	0.011	-	-	0.004	-	-	0.183
HCM Control Delay (s)	12.1	7.4	-	-	7.6	-	-	12.1
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0.7



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	128	14	6	42	11	10	32	12	8	39	22
Future Volume (vph)	11	128	14	6	42	11	10	32	12	8	39	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.2		4.2	4.2			4.2			4.2	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.99			0.99	
Flpb, ped/bikes	0.99	1.00		0.99	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.97			0.97			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1727	1811		1730	1774			1749			1727	
Flt Permitted	0.72	1.00		0.65	1.00			0.96			0.98	
Satd. Flow (perm)	1307	1811		1182	1774			1693			1698	
Peak-hour factor, PHF	0.83	0.83	0.83	0.92	0.92	0.92	0.71	0.71	0.71	0.78	0.78	0.78
Adj. Flow (vph)	13	154	17	7	46	12	14	45	17	10	50	28
RTOR Reduction (vph)	0	6	0	0	6	0	0	10	0	0	17	0
Lane Group Flow (vph)	13	165	0	7	52	0	0	66	0	0	71	0
Confl. Peds. (#/hr)	11		11	11		11	12		12	12		12
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)	30.8	30.8		30.8	30.8			24.8			24.8	
Effective Green, g (s)	30.8	30.8		30.8	30.8			24.8			24.8	
Actuated g/C Ratio	0.48	0.48		0.48	0.48			0.39			0.39	
Clearance Time (s)	4.2	4.2		4.2	4.2			4.2			4.2	
Lane Grp Cap (vph)	628	871		568	853			656			657	
v/s Ratio Prot		c0.09			0.03							
v/s Ratio Perm	0.01			0.01				0.04			c0.04	
v/c Ratio	0.02	0.19		0.01	0.06			0.10			0.11	
Uniform Delay, d1	8.7	9.5		8.7	8.9			12.5			12.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.5		0.0	0.1			0.3			0.3	
Delay (s)	8.8	10.0		8.7	9.0			12.8			12.9	
Level of Service	A	A		A	A			B			B	
Approach Delay (s)		9.9			9.0			12.8			12.9	
Approach LOS		A			A			B			B	

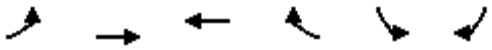
Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	64.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	95	21	0	0	0	17	515	32	29	506	40
Future Volume (vph)	32	95	21	0	0	0	17	515	32	29	506	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.2						4.2			4.2	
Lane Util. Factor	1.00	1.00						0.95			0.95	
Frpb, ped/bikes	1.00	1.00						1.00			1.00	
Flpb, ped/bikes	0.98	1.00						1.00			1.00	
Frt	1.00	0.97						0.99			0.99	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1714	1790						3465			3453	
Flt Permitted	0.95	1.00						0.93			0.90	
Satd. Flow (perm)	1714	1790						3224			3119	
Peak-hour factor, PHF	0.90	0.90	0.90	0.25	0.25	0.25	0.88	0.88	0.88	0.87	0.87	0.87
Adj. Flow (vph)	36	106	23	0	0	0	19	585	36	33	582	46
RTOR Reduction (vph)	0	10	0	0	0	0	0	2	0	0	3	0
Lane Group Flow (vph)	36	119	0	0	0	0	0	638	0	0	658	0
Confl. Peds. (#/hr)	16		4	4		16	3		2	2		3
Turn Type	Perm	NA					Perm	NA		Perm	NA	
Protected Phases		2						4			4	
Permitted Phases	2						4			4		
Actuated Green, G (s)	12.6	12.6						75.0			75.0	
Effective Green, g (s)	12.6	12.6						75.0			75.0	
Actuated g/C Ratio	0.13	0.13						0.78			0.78	
Clearance Time (s)	4.2	4.2						4.2			4.2	
Vehicle Extension (s)	3.0	3.0						3.0			3.0	
Lane Grp Cap (vph)	224	234						2518			2436	
v/s Ratio Prot		c0.07										
v/s Ratio Perm	0.02							0.20			c0.21	
v/c Ratio	0.16	0.51						0.25			0.27	
Uniform Delay, d1	37.0	38.8						2.9			2.9	
Progression Factor	1.00	1.00						0.47			0.64	
Incremental Delay, d2	0.3	1.7						0.2			0.3	
Delay (s)	37.3	40.5						1.6			2.1	
Level of Service	D	D						A			A	
Approach Delay (s)		39.8			0.0			1.6			2.1	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



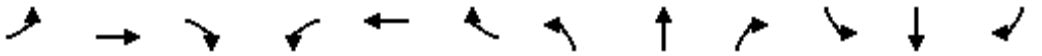
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑			↰	
Traffic Volume (veh/h)	0	173	0	0	104	0
Future Volume (veh/h)	0	173	0	0	104	0
Initial Q (Qb), veh	0	0			0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00
Parking Bus, Adj	1.00	1.00			1.00	1.00
Work Zone On Approach		No			No	
Adj Sat Flow, veh/h/ln	0	1856			1856	0
Adj Flow Rate, veh/h	0	197			112	0
Peak Hour Factor	0.88	0.88			0.93	0.93
Percent Heavy Veh, %	0	3			3	0
Cap, veh/h	0	1645			0	0
Arrive On Green	0.00	0.89			0.00	0.00
Sat Flow, veh/h	0	1856			0	
Grp Volume(v), veh/h	0	197			0.0	
Grp Sat Flow(s),veh/h/ln	0	1856				
Q Serve(g_s), s	0.0	0.5				
Cycle Q Clear(g_c), s	0.0	0.5				
Prop In Lane	0.00					
Lane Grp Cap(c), veh/h	0	1645				
V/C Ratio(X)	0.00	0.12				
Avail Cap(c_a), veh/h	0	1645				
HCM Platoon Ratio	1.00	1.00				
Upstream Filter(I)	0.00	1.00				
Uniform Delay (d), s/veh	0.0	0.3				
Incr Delay (d2), s/veh	0.0	0.1				
Initial Q Delay(d3),s/veh	0.0	0.0				
%ile BackOfQ(50%),veh/ln	0.0	0.1				
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	0.4				
LnGrp LOS	A	A				
Approach Vol, veh/h		197				
Approach Delay, s/veh		0.4				
Approach LOS		A				

Timer - Assigned Phs	2
Phs Duration (G+Y+Rc), s	37.0
Change Period (Y+Rc), s	* 4.2
Max Green Setting (Gmax), s	* 33
Max Q Clear Time (g_c+I1), s	2.5
Green Ext Time (p_c), s	1.1

Intersection Summary	
HCM 6th Ctrl Delay	0.4
HCM 6th LOS	A

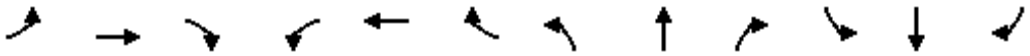
Notes

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



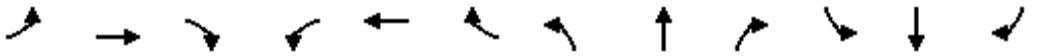
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	167	68	35	0	71	0	58	27	9	54	0
Future Volume (vph)	54	167	68	35	0	71	0	58	27	9	54	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	16	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.5			4.2			4.2	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.98			0.94			0.98			1.00	
Flpb, ped/bikes		0.99			0.98			1.00			1.00	
Frt		0.97			0.91			0.96			1.00	
Flt Protected		0.99			0.98			1.00			0.99	
Satd. Flow (prot)		1707			1525			1734			1823	
Flt Permitted		0.93			0.86			1.00			0.97	
Satd. Flow (perm)		1610			1331			1734			1775	
Peak-hour factor, PHF	0.96	0.96	0.96	0.93	0.93	0.93	0.73	0.73	0.73	0.93	0.93	0.93
Adj. Flow (vph)	56	174	71	38	0	76	0	79	37	10	58	0
RTOR Reduction (vph)	0	17	0	0	36	0	0	24	0	0	0	0
Lane Group Flow (vph)	0	284	0	0	78	0	0	92	0	0	68	0
Confl. Peds. (#/hr)	41		42	42		41	5		18	18		5
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		2			6			4			4	
Permitted Phases	2			6						4		
Actuated Green, G (s)		33.8			33.5			21.8			21.8	
Effective Green, g (s)		33.8			33.5			21.8			21.8	
Actuated g/C Ratio		0.53			0.52			0.34			0.34	
Clearance Time (s)		4.2			4.5			4.2			4.2	
Lane Grp Cap (vph)		850			696			590			604	
v/s Ratio Prot								c0.05				
v/s Ratio Perm		c0.18			0.06						0.04	
v/c Ratio		0.33			0.11			0.16			0.11	
Uniform Delay, d1		8.6			7.7			14.7			14.5	
Progression Factor		0.62			0.58			1.00			1.00	
Incremental Delay, d2		1.0			0.3			0.6			0.4	
Delay (s)		6.5			4.8			15.2			14.8	
Level of Service		A			A			B			B	
Approach Delay (s)		6.5			4.8			15.2			14.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	8.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	64.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	139	37	44	99	39	23	132	27	16	126	11
Future Volume (vph)	13	139	37	44	99	39	23	132	27	16	126	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	12	12	12	12	12	12	10	12	12
Total Lost time (s)	4.2	4.2		4.2	4.2	4.2	4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		0.98	1.00	1.00	0.99	1.00		0.99	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1621	1771		1723	1845	1521	1727	1788		1623	1816	
Flt Permitted	0.69	1.00		0.64	1.00	1.00	0.66	1.00		0.64	1.00	
Satd. Flow (perm)	1170	1771		1160	1845	1521	1194	1788		1099	1816	
Peak-hour factor, PHF	0.95	0.95	0.95	0.89	0.89	0.89	0.88	0.88	0.88	0.87	0.87	0.87
Adj. Flow (vph)	14	146	39	49	111	44	26	150	31	18	145	13
RTOR Reduction (vph)	0	15	0	0	0	26	0	12	0	0	5	0
Lane Group Flow (vph)	14	170	0	49	111	18	26	169	0	18	153	0
Confl. Peds. (#/hr)	6		13	13		6	13		7	7		13
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4		4	2			2		
Actuated Green, G (s)	26.8	26.8		26.8	26.8	26.8	28.8	28.8		28.8	28.8	
Effective Green, g (s)	26.8	26.8		26.8	26.8	26.8	28.8	28.8		28.8	28.8	
Actuated g/C Ratio	0.42	0.42		0.42	0.42	0.42	0.45	0.45		0.45	0.45	
Clearance Time (s)	4.2	4.2		4.2	4.2	4.2	4.2	4.2		4.2	4.2	
Lane Grp Cap (vph)	489	741		485	772	636	537	804		494	817	
v/s Ratio Prot		c0.10			0.06			c0.09			0.08	
v/s Ratio Perm	0.01			0.04		0.01	0.02			0.02		
v/c Ratio	0.03	0.23		0.10	0.14	0.03	0.05	0.21		0.04	0.19	
Uniform Delay, d1	10.9	12.0		11.3	11.5	10.9	9.9	10.7		9.8	10.6	
Progression Factor	1.07	0.94		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.7		0.4	0.4	0.1	0.2	0.6		0.1	0.5	
Delay (s)	11.9	11.9		11.7	11.9	11.0	10.1	11.3		10.0	11.1	
Level of Service	B	B		B	B	B	B	B		A	B	
Approach Delay (s)		11.9			11.7			11.1			11.0	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	64.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	601	58	38	690	21	58	38	60	16	44	21
Future Volume (veh/h)	17	601	58	38	690	21	58	38	60	16	44	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	19	675	65	41	750	23	61	40	63	21	59	28
Peak Hour Factor	0.89	0.89	0.89	0.92	0.92	0.92	0.95	0.95	0.95	0.75	0.75	0.75
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	37	832	80	739	2282	70	79	75	118	59	125	59
Arrive On Green	0.02	0.26	0.26	0.84	1.00	1.00	0.04	0.12	0.12	0.03	0.11	0.11
Sat Flow, veh/h	1767	3243	312	1767	3491	107	1767	642	1010	1767	1181	560
Grp Volume(v), veh/h	19	367	373	41	379	394	61	0	103	21	0	87
Grp Sat Flow(s),veh/h/ln	1767	1763	1792	1767	1763	1835	1767	0	1652	1767	0	1741
Q Serve(g_s), s	1.0	18.7	18.8	0.4	0.0	0.0	3.3	0.0	5.6	1.1	0.0	4.5
Cycle Q Clear(g_c), s	1.0	18.7	18.8	0.4	0.0	0.0	3.3	0.0	5.6	1.1	0.0	4.5
Prop In Lane	1.00		0.17	1.00		0.06	1.00		0.61	1.00		0.32
Lane Grp Cap(c), veh/h	37	452	460	739	1152	1200	79	0	193	59	0	185
V/C Ratio(X)	0.52	0.81	0.81	0.06	0.33	0.33	0.78	0.00	0.53	0.36	0.00	0.47
Avail Cap(c_a), veh/h	107	639	650	739	1152	1200	180	0	530	107	0	486
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	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	46.5	33.5	33.5	4.6	0.0	0.0	45.4	0.0	39.9	45.4	0.0	40.4
Incr Delay (d2), s/veh	10.9	14.6	14.5	0.0	0.8	0.7	14.9	0.0	2.3	3.6	0.0	1.9
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(50%),veh/ln	0.6	9.6	9.7	0.2	0.2	0.2	1.8	0.0	2.4	0.5	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.5	48.1	48.0	4.6	0.8	0.7	60.3	0.0	42.2	49.0	0.0	42.2
LnGrp LOS	E	D	D	A	A	A	E	A	D	D	A	D
Approach Vol, veh/h		759			814			164			108	
Approach Delay, s/veh		48.3			0.9			48.9			43.5	
Approach LOS		D			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	44.3	28.8	8.5	14.4	6.2	67.0	7.4	15.4
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2
Max Green Setting (Gmax), s	* 7.8	* 35	* 9.8	* 27	* 5.8	* 37	* 5.8	* 31
Max Q Clear Time (g_c+I1), s	2.4	20.8	5.3	6.5	3.0	2.0	3.1	7.6
Green Ext Time (p_c), s	0.0	3.8	0.0	0.4	0.0	5.6	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

Notes

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

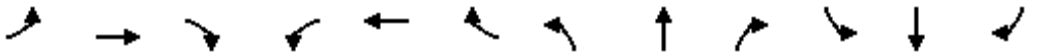
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	694	1	1	636	29	0	0	3	25	1	55
Future Vol, veh/h	23	694	1	1	636	29	0	0	3	25	1	55
Conflicting Peds, #/hr	6	0	4	4	0	6	0	0	6	6	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	86	86	86	75	75	75	84	84	84
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	25	746	1	1	740	34	0	0	4	30	1	65

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	780	0	0	751	0	0	1174	1583	384	1194	1566	393
Stage 1	-	-	-	-	-	-	801	801	-	765	765	-
Stage 2	-	-	-	-	-	-	373	782	-	429	801	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	827	-	-	848	-	-	146	107	611	141	109	603
Stage 1	-	-	-	-	-	-	342	393	-	360	408	-
Stage 2	-	-	-	-	-	-	617	401	-	572	393	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	822	-	-	845	-	-	125	103	605	135	105	600
Mov Cap-2 Maneuver	-	-	-	-	-	-	125	103	-	135	105	-
Stage 1	-	-	-	-	-	-	330	380	-	347	405	-
Stage 2	-	-	-	-	-	-	547	398	-	548	380	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	11	24.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	605	822	-	-	845	-	-	283
HCM Lane V/C Ratio	0.007	0.03	-	-	0.001	-	-	0.341
HCM Control Delay (s)	11	9.5	-	-	9.3	-	-	24.2
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	1.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	133	527	54	32	469	111	53	289	54	152	199	159
Future Volume (veh/h)	133	527	54	32	469	111	53	289	54	152	199	159
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		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	146	579	59	35	515	122	60	325	61	179	234	187
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.89	0.89	0.89	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	549	1705	173	44	672	158	77	462	86	199	417	352
Arrive On Green	0.62	1.00	1.00	0.01	0.08	0.08	0.04	0.16	0.16	0.11	0.22	0.22
Sat Flow, veh/h	1767	3229	328	1767	2828	667	1767	2967	550	1767	1856	1568
Grp Volume(v), veh/h	146	315	323	35	320	317	60	192	194	179	234	187
Grp Sat Flow(s),veh/h/ln	1767	1763	1795	1767	1763	1732	1767	1763	1754	1767	1856	1568
Q Serve(g_s), s	3.6	0.0	0.0	1.9	17.1	17.2	3.2	9.9	10.1	9.6	10.7	4.8
Cycle Q Clear(g_c), s	3.6	0.0	0.0	1.9	17.1	17.2	3.2	9.9	10.1	9.6	10.7	4.8
Prop In Lane	1.00		0.18	1.00		0.38	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	549	930	947	44	419	411	77	275	273	199	417	352
V/C Ratio(X)	0.27	0.34	0.34	0.80	0.76	0.77	0.78	0.70	0.71	0.90	0.56	0.53
Avail Cap(c_a), veh/h	549	930	947	107	551	541	164	533	530	199	590	498
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	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	0.97	0.97	0.97
Uniform Delay (d), s/veh	13.2	0.0	0.0	47.4	41.6	41.7	45.4	38.4	38.5	42.1	33.0	7.6
Incr Delay (d2), s/veh	0.3	1.0	1.0	27.6	12.5	13.1	15.2	3.2	3.4	36.8	1.2	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(50%),veh/ln	1.3	0.3	0.3	1.2	9.5	9.4	1.7	4.5	4.6	6.1	4.8	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.5	1.0	1.0	75.0	54.1	54.7	60.7	41.6	41.9	78.9	34.2	8.8
LnGrp LOS	B	A	A	E	D	D	E	D	D	E	C	A
Approach Vol, veh/h		784			672			446			600	
Approach Delay, s/veh		3.3			55.5			44.3			39.6	
Approach LOS		A			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	54.9	8.4	26.2	34.0	27.4	15.4	19.2
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	* 4.6	* 4.2
Max Green Setting (Gmax), s	* 5.8	* 34	* 8.9	30.5	9.0	* 30	* 11	* 29
Max Q Clear Time (g_c+I1), s	3.9	2.0	5.2	12.7	5.6	19.2	11.6	12.1
Green Ext Time (p_c), s	0.0	4.1	0.0	1.8	0.1	2.9	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	33.3
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	2.1

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	2	13	599	21	33	612	20	17	2	16	5	7	21
Future Vol, veh/h	2	13	599	21	33	612	20	17	2	16	5	7	21
Conflicting Peds, #/hr	0	0	0	5	5	0	0	1	0	1	1	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	75	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	95	95	95	67	67	67	59	59	59
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	14	644	23	35	644	21	25	3	24	8	12	36

Major/Minor	Major1				Major2			Minor1			Minor2		
Conflicting Flow All	665	665	0	0	672	0	0	1092	1428	340	1082	1429	334
Stage 1	-	-	-	-	-	-	-	693	693	-	725	725	-
Stage 2	-	-	-	-	-	-	-	399	735	-	357	704	-
Critical Hdwy	6.46	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.53	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	540	913	-	-	908	-	-	168	133	653	171	132	659
Stage 1	-	-	-	-	-	-	-	397	440	-	380	426	-
Stage 2	-	-	-	-	-	-	-	596	421	-	631	435	-
Platoon blocked, %			-	-		-	-						
Mov Cap-1 Maneuver	830	830	-	-	904	-	-	140	125	649	155	124	658
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	140	125	-	155	124	-
Stage 1	-	-	-	-	-	-	-	387	429	-	373	409	-
Stage 2	-	-	-	-	-	-	-	526	405	-	591	425	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.5	26.9	21.5
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	216	830	-	-	904	-	-	274
HCM Lane V/C Ratio	0.242	0.019	-	-	0.038	-	-	0.204
HCM Control Delay (s)	26.9	9.4	-	-	9.1	-	-	21.5
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0.1	-	-	0.7

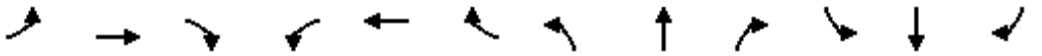
Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	53	570	16	1	28	528	11	11	1	18	19	3	108
Future Vol, veh/h	53	570	16	1	28	528	11	11	1	18	19	3	108
Conflicting Peds, #/hr	0	0	5	0	5	0	0	2	0	1	1	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	-	95	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	87	87	87	87	58	58	58	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	56	606	17	1	32	607	13	19	2	31	22	3	126

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	620	0	0	623	628	0	0	1105	1418	318	1097	1420	312
Stage 1	-	-	-	-	-	-	-	732	732	-	680	680	-
Stage 2	-	-	-	-	-	-	-	373	686	-	417	740	-
Critical Hdwy	4.16	-	-	6.46	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.53	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	950	-	-	574	943	-	-	164	135	675	166	134	681
Stage 1	-	-	-	-	-	-	-	377	423	-	405	446	-
Stage 2	-	-	-	-	-	-	-	617	444	-	581	419	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	950	-	-	917	917	-	-	121	122	671	145	121	680
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	121	122	-	145	121	-
Stage 1	-	-	-	-	-	-	-	353	396	-	381	430	-
Stage 2	-	-	-	-	-	-	-	480	428	-	519	392	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.5	24.3	18.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	238	950	-	-	917	-	-	413
HCM Lane V/C Ratio	0.217	0.059	-	-	0.036	-	-	0.366
HCM Control Delay (s)	24.3	9	-	-	9.1	-	-	18.7
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.8	0.2	-	-	0.1	-	-	1.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	392	191	171	396	21	150	138	153	22	152	38
Future Volume (veh/h)	20	392	191	171	396	21	150	138	153	22	152	38
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		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	21	417	203	184	426	23	165	152	168	25	173	43
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.91	0.91	0.91	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	26	534	257	572	1840	99	196	464	392	34	227	56
Arrive On Green	0.00	0.08	0.08	0.32	0.54	0.54	0.11	0.25	0.25	0.02	0.16	0.16
Sat Flow, veh/h	1767	2304	1109	1767	3402	183	1767	1856	1567	1767	1433	356
Grp Volume(v), veh/h	21	318	302	184	220	229	165	152	168	25	0	216
Grp Sat Flow(s),veh/h/ln	1767	1763	1651	1767	1763	1822	1767	1856	1567	1767	0	1789
Q Serve(g_s), s	1.1	17.0	17.3	7.5	6.3	6.3	8.8	6.4	3.9	1.4	0.0	11.1
Cycle Q Clear(g_c), s	1.1	17.0	17.3	7.5	6.3	6.3	8.8	6.4	3.9	1.4	0.0	11.1
Prop In Lane	1.00		0.67	1.00		0.10	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	26	409	383	572	954	986	196	464	392	34	0	283
V/C Ratio(X)	0.81	0.78	0.79	0.32	0.23	0.23	0.84	0.33	0.43	0.73	0.00	0.76
Avail Cap(c_a), veh/h	99	525	492	572	954	986	199	657	555	88	0	522
HCM Platoon Ratio	0.33	0.33	0.33	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	0.99	0.00	0.99
Uniform Delay (d), s/veh	47.6	41.9	42.0	24.5	11.6	11.6	41.8	29.4	6.2	46.8	0.0	38.7
Incr Delay (d2), s/veh	41.9	13.6	15.2	0.3	0.6	0.6	26.1	0.4	0.7	25.7	0.0	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	9.5	9.2	3.1	2.4	2.5	5.2	2.9	3.1	0.8	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.6	55.5	57.2	24.8	12.1	12.1	67.9	29.8	6.9	72.6	0.0	42.9
LnGrp LOS	F	E	E	C	B	B	E	C	A	E	A	D
Approach Vol, veh/h		641			633			485			241	
Approach Delay, s/veh		57.4			15.8			34.8			46.0	
Approach LOS		E			B			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.3	26.5	14.9	19.4	5.6	56.1	6.0	28.2
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2
Max Green Setting (Gmax), s	* 12	* 29	* 11	* 28	* 5.4	* 35	* 4.8	* 34
Max Q Clear Time (g_c+I1), s	9.5	19.3	10.8	13.1	3.1	8.3	3.4	8.4
Green Ext Time (p_c), s	0.1	2.6	0.0	1.0	0.0	2.6	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	37.4
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	129	16	12	148	5	11	29	27	5	48	15
Future Vol, veh/h	9	129	16	12	148	5	11	29	27	5	48	15
Conflicting Peds, #/hr	1	0	4	4	0	1	5	0	5	5	0	5
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	84	84	84	94	94	94	73	73	73	63	63	63
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	154	19	13	157	5	15	40	37	8	76	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	163	0	0	177	0	0	431	379	173	416	386	166
Stage 1	-	-	-	-	-	-	190	190	-	187	187	-
Stage 2	-	-	-	-	-	-	241	189	-	229	199	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1410	-	-	1393	-	-	533	552	868	545	547	876
Stage 1	-	-	-	-	-	-	809	741	-	812	743	-
Stage 2	-	-	-	-	-	-	760	742	-	772	735	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1409	-	-	1388	-	-	451	539	861	482	534	871
Mov Cap-2 Maneuver	-	-	-	-	-	-	451	539	-	482	534	-
Stage 1	-	-	-	-	-	-	798	731	-	804	735	-
Stage 2	-	-	-	-	-	-	653	734	-	689	725	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.6	11.9	12.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	612	1409	-	-	1388	-	-	579
HCM Lane V/C Ratio	0.15	0.008	-	-	0.009	-	-	0.186
HCM Control Delay (s)	11.9	7.6	0	-	7.6	0	-	12.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.7

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	8	134	13	20	149	8	1	7	19	26	15	25
Future Vol, veh/h	8	134	13	20	149	8	1	7	19	26	15	25
Peak Hour Factor	0.86	0.86	0.86	0.79	0.79	0.79	0.74	0.74	0.74	0.74	0.67	0.67
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	9	156	15	25	189	10	1	9	26	35	22	37
Number of Lanes	1	1	0	1	1	0	0	0	1	0	0	1

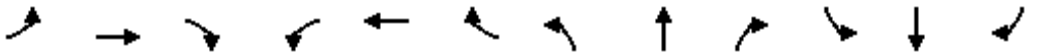
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	9.4	9.7	8.3	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	13%	100%	0%	100%	0%	25%
Vol Thru, %	37%	0%	91%	0%	95%	42%
Vol Right, %	50%	0%	9%	0%	5%	32%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	53	8	147	20	157	59
LT Vol	7	8	0	20	0	15
Through Vol	19	0	134	0	149	25
RT Vol	26	0	13	0	8	19
Lane Flow Rate	72	9	171	25	199	88
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.095	0.015	0.242	0.039	0.28	0.12
Departure Headway (Hd)	4.793	5.654	5.089	5.61	5.071	4.898
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	745	632	704	637	707	729
Service Time	2.841	3.396	2.831	3.351	2.812	2.944
HCM Lane V/C Ratio	0.097	0.014	0.243	0.039	0.281	0.121
HCM Control Delay	8.3	8.5	9.5	8.6	9.8	8.6
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.3	0	0.9	0.1	1.1	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	19
Future Vol, veh/h	19
Peak Hour Factor	0.67
Heavy Vehicles, %	3
Mvmt Flow	28
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



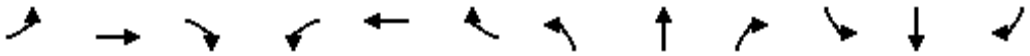
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	88	41	45	90	75	10	480	52	42	550	46
Future Volume (veh/h)	78	88	41	45	90	75	10	480	52	42	550	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.98		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	93	105	49	51	102	85	11	516	56	49	647	54
Peak Hour Factor	0.84	0.84	0.84	0.88	0.88	0.88	0.93	0.93	0.93	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	186	178	83	249	158	132	754	1882	204	274	815	68
Arrive On Green	0.03	0.15	0.15	0.05	0.17	0.17	0.73	1.00	1.00	0.03	0.25	0.25
Sat Flow, veh/h	1767	1185	553	1767	925	771	1767	3208	347	1767	3292	274
Grp Volume(v), veh/h	93	0	154	51	0	187	11	283	289	49	346	355
Grp Sat Flow(s),veh/h/ln	1767	0	1739	1767	0	1696	1767	1763	1792	1767	1763	1804
Q Serve(g_s), s	0.0	0.0	7.9	0.0	0.0	9.9	0.0	0.0	0.0	2.1	17.6	17.7
Cycle Q Clear(g_c), s	0.0	0.0	7.9	0.0	0.0	9.9	0.0	0.0	0.0	2.1	17.6	17.7
Prop In Lane	1.00		0.32	1.00		0.45	1.00		0.19	1.00		0.15
Lane Grp Cap(c), veh/h	186	0	261	249	0	290	754	1034	1051	274	436	446
V/C Ratio(X)	0.50	0.00	0.59	0.20	0.00	0.64	0.01	0.27	0.28	0.18	0.79	0.80
Avail Cap(c_a), veh/h	274	0	594	249	0	509	754	1034	1051	343	705	722
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.97	0.00	0.97	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	0.0	38.0	38.8	0.0	37.1	7.1	0.0	0.0	29.7	33.8	33.8
Incr Delay (d2), s/veh	2.1	0.0	2.1	0.4	0.0	2.3	0.0	0.6	0.6	0.3	13.8	13.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	3.5	1.1	0.0	4.2	0.1	0.2	0.2	0.9	9.0	9.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.7	0.0	40.2	39.2	0.0	39.4	7.1	0.6	0.6	30.0	47.6	47.5
LnGrp LOS	D	A	D	D	A	D	A	A	A	C	D	D
Approach Vol, veh/h		247			238			583			750	
Approach Delay, s/veh		42.3			39.3			0.8			46.4	
Approach LOS		D			D			A			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	60.9	9.3	18.6	39.8	28.4	7.2	20.6
Change Period (Y+Rc), s	* 4.2	4.6	* 4.2	* 4.2	4.6	* 4.6	* 4.2	* 4.2
Max Green Setting (Gmax), s	* 6.8	35.4	* 3.8	* 33	3.8	* 38	* 7.8	* 29
Max Q Clear Time (g_c+I1), s	4.1	2.0	2.0	9.9	2.0	19.7	2.0	11.9
Green Ext Time (p_c), s	0.0	3.6	0.0	0.8	0.0	4.1	0.1	0.9

Intersection Summary	
HCM 6th Ctrl Delay	30.3
HCM 6th LOS	C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	107	16	28	217	12	0	0	0	22	18	35
Future Volume (vph)	9	107	16	28	217	12	0	0	0	22	18	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.6	4.6						4.6	
Lane Util. Factor	1.00	1.00		1.00	1.00						1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00						0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00						1.00	
Frt	1.00	0.98		1.00	0.99						0.94	
Flt Protected	0.95	1.00		0.95	1.00						0.99	
Satd. Flow (prot)	1746	1802		1740	1828						1679	
Flt Permitted	0.59	1.00		0.64	1.00						0.99	
Satd. Flow (perm)	1086	1802		1175	1828						1679	
Peak-hour factor, PHF	0.67	0.67	0.67	0.90	0.90	0.90	0.25	0.25	0.25	0.89	0.89	0.89
Adj. Flow (vph)	13	160	24	31	241	13	0	0	0	25	20	39
RTOR Reduction (vph)	0	9	0	0	3	0	0	0	0	0	25	0
Lane Group Flow (vph)	13	175	0	31	251	0	0	0	0	0	59	0
Confl. Peds. (#/hr)	3		5	5		3	6		3	3		6
Turn Type	Perm	NA		Perm	NA					Perm	NA	
Protected Phases		2			2						4	
Permitted Phases	2			2						4		
Actuated Green, G (s)	28.8	28.8		28.8	28.8						22.0	
Effective Green, g (s)	28.8	28.8		28.8	28.8						22.0	
Actuated g/C Ratio	0.48	0.48		0.48	0.48						0.37	
Clearance Time (s)	4.6	4.6		4.6	4.6						4.6	
Lane Grp Cap (vph)	521	864		564	877						615	
v/s Ratio Prot		0.10			c0.14							
v/s Ratio Perm	0.01			0.03							0.04	
v/c Ratio	0.02	0.20		0.05	0.29						0.10	
Uniform Delay, d1	8.2	9.0		8.3	9.4						12.5	
Progression Factor	1.00	1.00		1.00	1.00						1.00	
Incremental Delay, d2	0.1	0.5		0.2	0.8						0.3	
Delay (s)	8.3	9.5		8.5	10.2						12.8	
Level of Service	A	A		A	B						B	
Approach Delay (s)		9.4			10.0			0.0			12.8	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	121	14	8	160	13	83	52	24	15	42	18
Future Vol, veh/h	16	121	14	8	160	13	83	52	24	15	42	18
Peak Hour Factor	0.77	0.77	0.77	0.94	0.94	0.94	0.97	0.97	0.97	0.72	0.72	0.72
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	21	157	18	9	170	14	86	54	25	21	58	25
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	10	10.1	9.7	9.1
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	52%	100%	0%	100%	0%	20%
Vol Thru, %	33%	0%	90%	0%	92%	56%
Vol Right, %	15%	0%	10%	0%	8%	24%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	159	16	135	8	173	75
LT Vol	83	16	0	8	0	15
Through Vol	52	0	121	0	160	42
RT Vol	24	0	14	0	13	18
Lane Flow Rate	164	21	175	9	184	104
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.233	0.034	0.261	0.014	0.276	0.147
Departure Headway (Hd)	5.11	5.943	5.365	5.949	5.391	5.083
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	697	598	664	597	661	699
Service Time	3.182	3.724	3.145	3.728	3.17	3.164
HCM Lane V/C Ratio	0.235	0.035	0.264	0.015	0.278	0.149
HCM Control Delay	9.7	8.9	10.1	8.8	10.2	9.1
HCM Lane LOS	A	A	B	A	B	A
HCM 95th-tile Q	0.9	0.1	1	0	1.1	0.5

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	104	51	5	86	13	70	112	11	8	93	9
Future Vol, veh/h	12	104	51	5	86	13	70	112	11	8	93	9
Peak Hour Factor	0.68	0.68	0.68	0.81	0.81	0.81	0.93	0.93	0.93	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	18	153	75	6	106	16	75	120	12	9	107	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.2	9.3	10.2	9.3
HCM LOS	B	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	36%	7%	5%	7%
Vol Thru, %	58%	62%	83%	85%
Vol Right, %	6%	31%	12%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	193	167	104	110
LT Vol	70	12	5	8
Through Vol	112	104	86	93
RT Vol	11	51	13	9
Lane Flow Rate	208	246	128	126
Geometry Grp	1	1	1	1
Degree of Util (X)	0.292	0.327	0.18	0.179
Departure Headway (Hd)	5.057	4.787	5.039	5.1
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	704	744	704	695
Service Time	3.142	2.864	3.128	3.194
HCM Lane V/C Ratio	0.295	0.331	0.182	0.181
HCM Control Delay	10.2	10.2	9.3	9.3
HCM Lane LOS	B	B	A	A
HCM 95th-tile Q	1.2	1.4	0.7	0.6

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	155	30	9	48	8	19	43	13	4	59	20
Future Vol, veh/h	18	155	30	9	48	8	19	43	13	4	59	20
Conflicting Peds, #/hr	2	0	2	2	0	2	3	0	11	11	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	40	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	71	71	71	78	78	78	72	72	72
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	21	180	35	13	68	11	24	55	17	6	82	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	81	0	0	217	0	0	400	349	211	389	361	79
Stage 1	-	-	-	-	-	-	242	242	-	102	102	-
Stage 2	-	-	-	-	-	-	158	107	-	287	259	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1510	-	-	1347	-	-	559	573	827	568	565	979
Stage 1	-	-	-	-	-	-	759	704	-	902	809	-
Stage 2	-	-	-	-	-	-	842	805	-	718	692	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1507	-	-	1344	-	-	470	557	817	499	549	974
Mov Cap-2 Maneuver	-	-	-	-	-	-	470	557	-	499	549	-
Stage 1	-	-	-	-	-	-	747	693	-	888	799	-
Stage 2	-	-	-	-	-	-	725	795	-	632	681	-

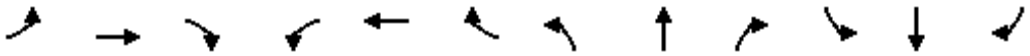
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	1.1	12.7	12.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	562	1507	-	-	1344	-	-	610
HCM Lane V/C Ratio	0.171	0.014	-	-	0.009	-	-	0.189
HCM Control Delay (s)	12.7	7.4	-	-	7.7	-	-	12.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	141	11	3	42	19	7	25	17	11	38	21
Future Volume (vph)	12	141	11	3	42	19	7	25	17	11	38	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.2		4.2	4.2			4.2			4.2	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.98			0.98	
Flpb, ped/bikes	0.98	1.00		0.99	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.95			0.95			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1720	1821		1730	1737			1714			1723	
Flt Permitted	0.71	1.00		0.65	1.00			0.98			0.97	
Satd. Flow (perm)	1280	1821		1183	1737			1683			1683	
Peak-hour factor, PHF	0.89	0.89	0.89	0.80	0.80	0.80	0.94	0.94	0.94	0.77	0.77	0.77
Adj. Flow (vph)	13	158	12	4	52	24	7	27	18	14	49	27
RTOR Reduction (vph)	0	4	0	0	12	0	0	11	0	0	17	0
Lane Group Flow (vph)	13	166	0	4	65	0	0	41	0	0	73	0
Confl. Peds. (#/hr)	14		11	11		14	16		12	12		16
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Actuated Green, G (s)	30.8	30.8		30.8	30.8			24.8			24.8	
Effective Green, g (s)	30.8	30.8		30.8	30.8			24.8			24.8	
Actuated g/C Ratio	0.48	0.48		0.48	0.48			0.39			0.39	
Clearance Time (s)	4.2	4.2		4.2	4.2			4.2			4.2	
Lane Grp Cap (vph)	616	876		569	835			652			652	
v/s Ratio Prot		c0.09			0.04							
v/s Ratio Perm	0.01			0.00				0.02			c0.04	
v/c Ratio	0.02	0.19		0.01	0.08			0.06			0.11	
Uniform Delay, d1	8.7	9.5		8.6	8.9			12.3			12.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.5		0.0	0.2			0.2			0.4	
Delay (s)	8.8	10.0		8.7	9.1			12.5			12.9	
Level of Service	A	A		A	A			B			B	
Approach Delay (s)		9.9			9.1			12.5			12.9	
Approach LOS		A			A			B			B	

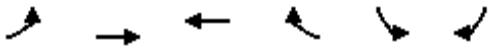
Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	64.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	93	29	0	0	0	13	500	25	32	559	46
Future Volume (vph)	43	93	29	0	0	0	13	500	25	32	559	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.2						4.2			4.2	
Lane Util. Factor	1.00	1.00						0.95			0.95	
Frpb, ped/bikes	1.00	1.00						1.00			1.00	
Flpb, ped/bikes	0.97	1.00						1.00			1.00	
Frt	1.00	0.96						0.99			0.99	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1697	1772						3471			3451	
Flt Permitted	0.95	1.00						0.94			0.90	
Satd. Flow (perm)	1697	1772						3250			3127	
Peak-hour factor, PHF	0.86	0.86	0.86	0.25	0.25	0.25	0.93	0.93	0.93	0.88	0.88	0.88
Adj. Flow (vph)	50	108	34	0	0	0	14	538	27	36	635	52
RTOR Reduction (vph)	0	15	0	0	0	0	0	2	0	0	3	0
Lane Group Flow (vph)	50	127	0	0	0	0	0	577	0	0	720	0
Confl. Peds. (#/hr)	23		3	3		23	2		4	4		2
Turn Type	Perm	NA					Perm	NA		Perm	NA	
Protected Phases		2						4			4	
Permitted Phases	2						4			4		
Actuated Green, G (s)	12.9	12.9						74.7			74.7	
Effective Green, g (s)	12.9	12.9						74.7			74.7	
Actuated g/C Ratio	0.13	0.13						0.78			0.78	
Clearance Time (s)	4.2	4.2						4.2			4.2	
Vehicle Extension (s)	3.0	3.0						3.0			3.0	
Lane Grp Cap (vph)	228	238						2528			2433	
v/s Ratio Prot		c0.07										
v/s Ratio Perm	0.03							0.18			c0.23	
v/c Ratio	0.22	0.53						0.23			0.30	
Uniform Delay, d1	37.1	38.8						2.9			3.1	
Progression Factor	1.00	1.00						0.39			0.21	
Incremental Delay, d2	0.5	2.3						0.2			0.3	
Delay (s)	37.5	41.1						1.3			0.9	
Level of Service	D	D						A			A	
Approach Delay (s)		40.1			0.0			1.3			0.9	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



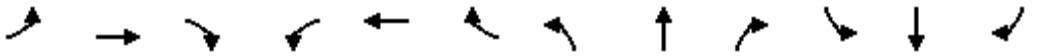
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	183	0	0	73	0
Future Volume (veh/h)	0	183	0	0	73	0
Initial Q (Qb), veh	0	0			0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00
Parking Bus, Adj	1.00	1.00			1.00	1.00
Work Zone On Approach		No			No	
Adj Sat Flow, veh/h/ln	0	1856			1856	0
Adj Flow Rate, veh/h	0	213			101	0
Peak Hour Factor	0.86	0.86			0.72	0.72
Percent Heavy Veh, %	0	3			3	0
Cap, veh/h	0	1645			0	0
Arrive On Green	0.00	0.89			0.00	0.00
Sat Flow, veh/h	0	1856			0	
Grp Volume(v), veh/h	0	213			0.0	
Grp Sat Flow(s),veh/h/ln	0	1856				
Q Serve(g_s), s	0.0	0.5				
Cycle Q Clear(g_c), s	0.0	0.5				
Prop In Lane	0.00					
Lane Grp Cap(c), veh/h	0	1645				
V/C Ratio(X)	0.00	0.13				
Avail Cap(c_a), veh/h	0	1645				
HCM Platoon Ratio	1.00	1.00				
Upstream Filter(I)	0.00	1.00				
Uniform Delay (d), s/veh	0.0	0.3				
Incr Delay (d2), s/veh	0.0	0.2				
Initial Q Delay(d3),s/veh	0.0	0.0				
%ile BackOfQ(50%),veh/ln	0.0	0.1				
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	0.4				
LnGrp LOS	A	A				
Approach Vol, veh/h		213				
Approach Delay, s/veh		0.4				
Approach LOS		A				

Timer - Assigned Phs	2
Phs Duration (G+Y+Rc), s	37.0
Change Period (Y+Rc), s	* 4.2
Max Green Setting (Gmax), s	* 33
Max Q Clear Time (g_c+I1), s	2.5
Green Ext Time (p_c), s	1.3

Intersection Summary	
HCM 6th Ctrl Delay	0.4
HCM 6th LOS	A

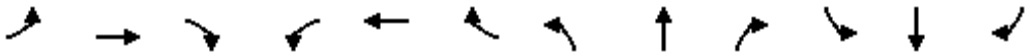
Notes

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



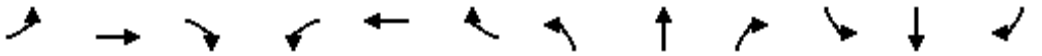
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	183	29	37	0	53	0	51	34	21	50	0
Future Volume (vph)	49	183	29	37	0	53	0	51	34	21	50	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	16	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.5			4.2			4.2	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.99			0.96			0.99			1.00	
Flpb, ped/bikes		0.99			0.99			1.00			1.00	
Frt		0.98			0.92			0.95			1.00	
Flt Protected		0.99			0.98			1.00			0.99	
Satd. Flow (prot)		1774			1578			1726			1814	
Flt Permitted		0.93			0.82			1.00			0.92	
Satd. Flow (perm)		1670			1322			1726			1691	
Peak-hour factor, PHF	0.91	0.91	0.91	0.73	0.73	0.73	0.82	0.82	0.82	0.89	0.89	0.89
Adj. Flow (vph)	54	201	32	51	0	73	0	62	41	24	56	0
RTOR Reduction (vph)	0	7	0	0	35	0	0	27	0	0	0	0
Lane Group Flow (vph)	0	280	0	0	89	0	0	76	0	0	80	0
Confl. Peds. (#/hr)	27		18	18		27	12		4	4		12
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		2			6			4			4	
Permitted Phases	2			6						4		
Actuated Green, G (s)		33.8			33.5			21.8			21.8	
Effective Green, g (s)		33.8			33.5			21.8			21.8	
Actuated g/C Ratio		0.53			0.52			0.34			0.34	
Clearance Time (s)		4.2			4.5			4.2			4.2	
Lane Grp Cap (vph)		881			691			587			575	
v/s Ratio Prot								0.04				
v/s Ratio Perm		c0.17			0.07						c0.05	
v/c Ratio		0.32			0.13			0.13			0.14	
Uniform Delay, d1		8.6			7.8			14.6			14.6	
Progression Factor		2.08			0.45			1.00			1.00	
Incremental Delay, d2		0.9			0.4			0.5			0.5	
Delay (s)		18.8			3.9			15.0			15.1	
Level of Service		B			A			B			B	
Approach Delay (s)		18.8			3.9			15.0			15.1	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	64.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	158	38	41	83	36	19	148	18	17	132	5
Future Volume (vph)	18	158	38	41	83	36	19	148	18	17	132	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	12	12	12	12	12	12	10	12	12
Total Lost time (s)	4.2	4.2		4.2	4.2	4.2	4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		0.98	1.00	1.00	0.99	1.00		0.99	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1614	1776		1724	1845	1513	1739	1809		1625	1832	
Flt Permitted	0.69	1.00		0.58	1.00	1.00	0.66	1.00		0.64	1.00	
Satd. Flow (perm)	1168	1776		1058	1845	1513	1204	1809		1087	1832	
Peak-hour factor, PHF	0.84	0.84	0.84	0.77	0.77	0.77	0.86	0.86	0.86	0.88	0.88	0.88
Adj. Flow (vph)	21	188	45	53	108	47	22	172	21	19	150	6
RTOR Reduction (vph)	0	13	0	0	0	27	0	7	0	0	2	0
Lane Group Flow (vph)	21	220	0	53	108	20	22	186	0	19	154	0
Confl. Peds. (#/hr)	9		14	14		9	7		6	6		7
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4		4	2			2		
Actuated Green, G (s)	26.8	26.8		26.8	26.8	26.8	28.8	28.8		28.8	28.8	
Effective Green, g (s)	26.8	26.8		26.8	26.8	26.8	28.8	28.8		28.8	28.8	
Actuated g/C Ratio	0.42	0.42		0.42	0.42	0.42	0.45	0.45		0.45	0.45	
Clearance Time (s)	4.2	4.2		4.2	4.2	4.2	4.2	4.2		4.2	4.2	
Lane Grp Cap (vph)	489	743		443	772	633	541	814		489	824	
v/s Ratio Prot		c0.12			0.06			c0.10			0.08	
v/s Ratio Perm	0.02			0.05		0.01	0.02			0.02		
v/c Ratio	0.04	0.30		0.12	0.14	0.03	0.04	0.23		0.04	0.19	
Uniform Delay, d1	11.0	12.3		11.4	11.5	11.0	9.9	10.8		9.9	10.6	
Progression Factor	0.42	0.34		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.0		0.6	0.4	0.1	0.1	0.7		0.1	0.5	
Delay (s)	4.8	5.2		11.9	11.9	11.0	10.0	11.4		10.0	11.1	
Level of Service	A	A		B	B	B	B	B		B	B	
Approach Delay (s)		5.2			11.7			11.3			11.0	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	64.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	718	57	38	683	14	69	35	48	18	34	34
Future Volume (veh/h)	11	718	57	38	683	14	69	35	48	18	34	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	11	748	59	40	727	15	85	43	59	21	40	40
Peak Hour Factor	0.96	0.96	0.96	0.94	0.94	0.94	0.81	0.81	0.81	0.86	0.86	0.86
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	23	911	72	663	2252	46	109	87	119	88	94	94
Arrive On Green	0.01	0.28	0.28	0.75	1.00	1.00	0.06	0.12	0.12	0.05	0.11	0.11
Sat Flow, veh/h	1767	3307	261	1767	3532	73	1767	699	959	1767	840	840
Grp Volume(v), veh/h	11	399	408	40	363	379	85	0	102	21	0	80
Grp Sat Flow(s),veh/h/ln	1767	1763	1805	1767	1763	1842	1767	0	1658	1767	0	1680
Q Serve(g_s), s	0.6	20.3	20.3	0.6	0.0	0.0	4.6	0.0	5.5	1.1	0.0	4.3
Cycle Q Clear(g_c), s	0.6	20.3	20.3	0.6	0.0	0.0	4.6	0.0	5.5	1.1	0.0	4.3
Prop In Lane	1.00		0.14	1.00		0.04	1.00		0.58	1.00		0.50
Lane Grp Cap(c), veh/h	23	486	497	663	1124	1175	109	0	206	88	0	189
V/C Ratio(X)	0.47	0.82	0.82	0.06	0.32	0.32	0.78	0.00	0.50	0.24	0.00	0.42
Avail Cap(c_a), veh/h	94	654	669	663	1124	1175	199	0	535	107	0	455
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	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	47.0	32.5	32.6	7.5	0.0	0.0	44.4	0.0	39.2	43.9	0.0	39.7
Incr Delay (d2), s/veh	13.9	14.4	14.1	0.0	0.8	0.7	11.3	0.0	1.8	1.4	0.0	1.5
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(50%),veh/ln	0.3	10.3	10.5	0.2	0.2	0.2	2.3	0.0	2.3	0.5	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.0	46.9	46.7	7.6	0.8	0.7	55.7	0.0	41.1	45.2	0.0	41.2
LnGrp LOS	E	D	D	A	A	A	E	A	D	D	A	D
Approach Vol, veh/h		818			782			187			101	
Approach Delay, s/veh		47.0			1.1			47.7			42.1	
Approach LOS		D			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	40.2	30.7	10.1	15.0	5.5	65.4	9.0	16.1
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2
Max Green Setting (Gmax), s	* 6.8	* 36	* 11	* 26	* 5.1	* 37	* 5.8	* 31
Max Q Clear Time (g_c+I1), s	2.6	22.3	6.6	6.3	2.6	2.0	3.1	7.5
Green Ext Time (p_c), s	0.0	4.1	0.1	0.3	0.0	5.3	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	27.8
HCM 6th LOS	C

Notes

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

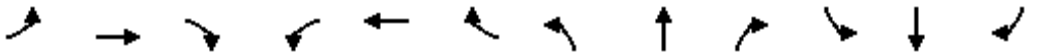
Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	722	3	4	692	37	0	0	2	28	0	61
Future Vol, veh/h	17	722	3	4	692	37	0	0	2	28	0	61
Conflicting Peds, #/hr	1	0	3	3	0	1	1	0	5	5	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	92	92	92	50	50	50	74	74	74
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	18	752	3	4	752	40	0	0	4	38	0	82

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	793	0	0	758	0	0	1178	1594	386	1198	1575	398
Stage 1	-	-	-	-	-	-	793	793	-	781	781	-
Stage 2	-	-	-	-	-	-	385	801	-	417	794	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	817	-	-	843	-	-	145	105	610	140	108	599
Stage 1	-	-	-	-	-	-	346	396	-	352	401	-
Stage 2	-	-	-	-	-	-	607	393	-	581	396	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	816	-	-	841	-	-	122	102	605	136	105	598
Mov Cap-2 Maneuver	-	-	-	-	-	-	122	102	-	136	105	-
Stage 1	-	-	-	-	-	-	337	386	-	344	399	-
Stage 2	-	-	-	-	-	-	520	391	-	562	386	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	11	26.1
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	605	816	-	-	841	-	-	289
HCM Lane V/C Ratio	0.007	0.022	-	-	0.005	-	-	0.416
HCM Control Delay (s)	11	9.5	-	-	9.3	-	-	26.1
HCM Lane LOS	B	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	133	586	46	36	487	96	56	276	50	166	223	175
Future Volume (veh/h)	133	586	46	36	487	96	56	276	50	166	223	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	140	617	48	41	560	110	66	325	59	180	242	190
Peak Hour Factor	0.95	0.95	0.95	0.87	0.87	0.87	0.85	0.85	0.85	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	539	1736	135	52	716	140	85	463	83	199	407	344
Arrive On Green	0.61	1.00	1.00	0.01	0.08	0.08	0.05	0.16	0.16	0.04	0.07	0.07
Sat Flow, veh/h	1767	3314	257	1767	2937	575	1767	2984	535	1767	1856	1568
Grp Volume(v), veh/h	140	328	337	41	335	335	66	190	194	180	242	190
Grp Sat Flow(s),veh/h/ln	1767	1763	1808	1767	1763	1750	1767	1763	1757	1767	1856	1568
Q Serve(g_s), s	3.5	0.0	0.0	2.2	17.9	18.0	3.5	9.8	10.0	9.7	12.1	5.5
Cycle Q Clear(g_c), s	3.5	0.0	0.0	2.2	17.9	18.0	3.5	9.8	10.0	9.7	12.1	5.5
Prop In Lane	1.00		0.14	1.00		0.33	1.00		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	539	924	947	52	430	427	85	273	272	199	407	344
V/C Ratio(X)	0.26	0.35	0.36	0.79	0.78	0.78	0.78	0.70	0.71	0.91	0.59	0.55
Avail Cap(c_a), veh/h	539	924	947	107	555	550	169	533	531	199	584	493
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	13.7	0.0	0.0	47.2	41.6	41.7	45.2	38.4	38.5	45.7	40.4	9.7
Incr Delay (d2), s/veh	0.3	1.1	1.0	23.0	13.1	13.5	13.9	3.2	3.4	37.6	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.3	0.3	1.3	10.0	10.0	1.9	4.4	4.5	6.6	6.1	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.9	1.1	1.0	70.2	54.7	55.1	59.1	41.6	41.9	83.3	41.7	11.0
LnGrp LOS	B	A	A	E	D	E	E	D	D	F	D	B
Approach Vol, veh/h		805			711			450			612	
Approach Delay, s/veh		3.3			55.8			44.3			44.4	
Approach LOS		A			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	54.5	8.8	25.7	33.5	28.0	15.4	19.1
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	* 4.6	* 4.2
Max Green Setting (Gmax), s	* 5.8	* 34	* 9.2	30.2	8.8	* 30	* 11	* 29
Max Q Clear Time (g_c+I1), s	4.2	2.0	5.5	14.1	5.5	20.0	11.7	12.0
Green Ext Time (p_c), s	0.0	4.3	0.0	1.8	0.1	2.9	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	34.7
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1.3

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	1	11	764	17	22	578	16	1	0	21	17	2	29
Future Vol, veh/h	1	11	764	17	22	578	16	1	0	21	17	2	29
Conflicting Peds, #/hr	0	0	0	1	1	0	0	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	75	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	93	93	93	79	79	79	71	71	71
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	12	813	18	24	622	17	1	0	27	24	3	41

Major/Minor	Major1				Major2			Minor1			Minor2		
Conflicting Flow All	639	639	0	0	832	0	0	1212	1536	417	1112	1537	322
Stage 1	-	-	-	-	-	-	-	849	849	-	679	679	-
Stage 2	-	-	-	-	-	-	-	363	687	-	433	858	-
Critical Hdwy	6.46	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.53	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	561	934	-	-	790	-	-	137	114	582	162	114	671
Stage 1	-	-	-	-	-	-	-	320	373	-	405	447	-
Stage 2	-	-	-	-	-	-	-	626	443	-	569	369	-
Platoon blocked, %			-	-		-	-						
Mov Cap-1 Maneuver	880	880	-	-	789	-	-	122	109	581	149	109	670
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	122	109	-	149	109	-
Stage 1	-	-	-	-	-	-	-	315	367	-	399	434	-
Stage 2	-	-	-	-	-	-	-	565	430	-	535	363	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.3	12.7	22.5
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	496	880	-	-	789	-	-	273
HCM Lane V/C Ratio	0.056	0.015	-	-	0.03	-	-	0.248
HCM Control Delay (s)	12.7	9.2	-	-	9.7	-	-	22.5
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	1

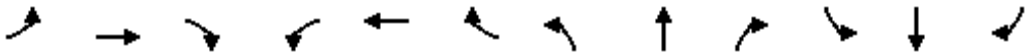
Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	44	742	15	1	20	529	20	9	3	15	23	3	85
Future Vol, veh/h	44	742	15	1	20	529	20	9	3	15	23	3	85
Conflicting Peds, #/hr	0	0	2	0	2	0	0	3	0	1	1	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	-	95	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	92	92	92	92	48	48	48	82	82	82
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	46	781	16	1	22	575	22	19	6	31	28	4	104

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	597	0	0	797	799	0	0	1222	1526	402	1119	1523	302
Stage 1	-	-	-	-	-	-	-	883	883	-	632	632	-
Stage 2	-	-	-	-	-	-	-	339	643	-	487	891	-
Critical Hdwy	4.16	-	-	6.46	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.53	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	969	-	-	445	813	-	-	134	116	595	160	116	691
Stage 1	-	-	-	-	-	-	-	305	360	-	433	470	-
Stage 2	-	-	-	-	-	-	-	646	464	-	528	357	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	969	-	-	779	779	-	-	104	107	593	136	107	689
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	104	107	-	136	107	-
Stage 1	-	-	-	-	-	-	-	290	342	-	413	456	-
Stage 2	-	-	-	-	-	-	-	527	450	-	467	340	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.4	31.1	21.9
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	193	969	-	-	779	-	-	346
HCM Lane V/C Ratio	0.291	0.048	-	-	0.029	-	-	0.391
HCM Control Delay (s)	31.1	8.9	-	-	9.8	-	-	21.9
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.2	0.1	-	-	0.1	-	-	1.8



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	541	221	167	372	7	162	128	205	27	150	39
Future Volume (veh/h)	26	541	221	167	372	7	162	128	205	27	150	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	28	582	238	178	396	7	176	139	223	31	172	45
Peak Hour Factor	0.93	0.93	0.93	0.94	0.94	0.94	0.92	0.92	0.92	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	34	668	273	491	1887	33	208	466	394	39	221	58
Arrive On Green	0.01	0.18	0.18	0.28	0.53	0.53	0.12	0.25	0.25	0.02	0.16	0.16
Sat Flow, veh/h	1767	2441	997	1767	3544	63	1767	1856	1569	1767	1417	371
Grp Volume(v), veh/h	28	420	400	178	197	206	176	139	223	31	0	217
Grp Sat Flow(s),veh/h/ln	1767	1763	1675	1767	1763	1844	1767	1856	1569	1767	0	1787
Q Serve(g_s), s	1.5	22.2	22.3	7.8	5.6	5.7	9.4	5.8	6.1	1.7	0.0	11.2
Cycle Q Clear(g_c), s	1.5	22.2	22.3	7.8	5.6	5.7	9.4	5.8	6.1	1.7	0.0	11.2
Prop In Lane	1.00		0.59	1.00		0.03	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	34	483	459	491	939	982	208	466	394	39	0	278
V/C Ratio(X)	0.82	0.87	0.87	0.36	0.21	0.21	0.85	0.30	0.57	0.79	0.00	0.78
Avail Cap(c_a), veh/h	107	525	499	491	939	982	217	657	556	107	0	521
HCM Platoon Ratio	0.67	0.67	0.67	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	0.99	0.00	0.99
Uniform Delay (d), s/veh	47.2	37.5	37.6	27.8	11.8	11.8	41.5	29.1	8.2	46.7	0.0	38.9
Incr Delay (d2), s/veh	36.1	18.9	19.9	0.4	0.5	0.5	24.8	0.4	1.3	28.1	0.0	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	12.4	11.9	3.3	2.2	2.3	5.5	2.6	4.2	1.0	0.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.3	56.4	57.5	28.3	12.3	12.3	66.3	29.5	9.5	74.8	0.0	43.6
LnGrp LOS	F	E	E	C	B	B	E	C	A	E	A	D
Approach Vol, veh/h		848			581			538			248	
Approach Delay, s/veh		57.8			17.2			33.2			47.5	
Approach LOS		E			B			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.9	30.5	15.5	19.1	6.1	55.3	6.3	28.3
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2
Max Green Setting (Gmax), s	* 11	* 29	* 12	* 28	* 5.8	* 34	* 5.8	* 34
Max Q Clear Time (g_c+I1), s	9.8	24.3	11.4	13.2	3.5	7.7	3.7	8.1
Green Ext Time (p_c), s	0.0	2.0	0.0	1.0	0.0	2.3	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	40.0
HCM 6th LOS	D

Notes

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

Intersection: 1: O St & 18th St

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	78	54
Average Queue (ft)	33	27
95th Queue (ft)	58	53
Link Distance (ft)	345	736
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: N St & 18th St

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	ULTR	LTR
Maximum Queue (ft)	50	103	54	98	55	90
Average Queue (ft)	13	49	22	42	31	31
95th Queue (ft)	39	77	46	69	55	59
Link Distance (ft)		190		420	340	770
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	55		50			
Storage Blk Time (%)	0	2	0	2		
Queuing Penalty (veh)	0	0	0	1		

Intersection: 3: M St & 18th St

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	119	129	100	183	31	72	115	109	138	133
Average Queue (ft)	42	67	27	114	6	25	40	24	72	54
95th Queue (ft)	81	115	76	180	26	59	95	66	132	103
Link Distance (ft)		420		418		337	337		1165	1165
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	50		50		80			60		
Storage Blk Time (%)	16	25	5	39		0		0	7	
Queuing Penalty (veh)	21	17	9	17		0		1	4	

Intersection: 4: Canal St & 18th St

Movement	EB	EB	WB	WB	SB
Directions Served	L	TR	L	TR	LTR
Maximum Queue (ft)	31	91	47	150	119
Average Queue (ft)	9	43	12	63	46
95th Queue (ft)	30	75	36	107	82
Link Distance (ft)		418		436	1163
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	50		50		
Storage Blk Time (%)	0	5	1	11	
Queuing Penalty (veh)	0	1	2	4	

Intersection: 5: K St & 18th St

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	31	94	32	72	118	101
Average Queue (ft)	21	43	3	40	49	35
95th Queue (ft)	45	69	19	62	80	67
Link Distance (ft)		436		417	335	1166
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	50		50			
Storage Blk Time (%)	0	3	0	2		
Queuing Penalty (veh)	0	1	0	0		

Intersection: 6: MLK Jr Wy & 18th St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	52	73	96	55
Average Queue (ft)	33	33	53	36
95th Queue (ft)	47	55	82	56
Link Distance (ft)	417	1408	330	1439
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: O St & Main St

Movement	WB	NB	SB
Directions Served	L	LTR	LTR
Maximum Queue (ft)	31	77	54
Average Queue (ft)	1	41	30
95th Queue (ft)	10	72	51
Link Distance (ft)		132	345
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	40		
Storage Blk Time (%)	0		
Queuing Penalty (veh)	0		

Intersection: 8: N St & Main St

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	31	119	31	53	75	94
Average Queue (ft)	11	43	4	17	27	34
95th Queue (ft)	35	89	22	45	67	79
Link Distance (ft)		428		421	326	340
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	40		50			
Storage Blk Time (%)	0	8	0	1		
Queuing Penalty (veh)	1	1	0	0		

Intersection: 9: M St & Main St

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	TR	LT	TR	LT	TR
Maximum Queue (ft)	71	113	134	141	170	114
Average Queue (ft)	23	50	30	47	51	24
95th Queue (ft)	52	97	83	104	110	70
Link Distance (ft)		421	326	326	337	337
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	55					
Storage Blk Time (%)	2	11				
Queuing Penalty (veh)	3	4				

Intersection: 10: Main St & Canal St

Movement	EB	SB
Directions Served	T	L
Maximum Queue (ft)	138	120
Average Queue (ft)	43	49
95th Queue (ft)	93	90
Link Distance (ft)	426	355
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: K St & Main St

Movement	EB	B40	WB	NB	SB
Directions Served	LTR	T	LTR	TR	LT
Maximum Queue (ft)	196	54	71	96	96
Average Queue (ft)	85	2	27	42	35
95th Queue (ft)	153	18	58	74	74
Link Distance (ft)	114	279	416	324	335
Upstream Blk Time (%)	2				
Queuing Penalty (veh)	7				
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: MLK Jr Wy & Main St

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	31	97	72	95	51	117	141	63	107
Average Queue (ft)	5	43	20	43	16	19	62	8	32
95th Queue (ft)	22	83	51	79	42	63	131	32	79
Link Distance (ft)		416		1418	1418		326		330
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50		50			75		75	
Storage Blk Time (%)	0	8	1	8		0	6	0	1
Queuing Penalty (veh)	0	1	1	3		0	1	0	0

Intersection: 13: O St & 16th St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	52	244	224	106	139	136	100	118	59	74
Average Queue (ft)	17	101	80	35	48	63	38	61	19	36
95th Queue (ft)	46	170	168	74	99	122	71	113	55	73
Link Distance (ft)		1314	1314		408	408		431		148
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	75			75			50		50	
Storage Blk Time (%)		13		1	4		13	19	7	9
Queuing Penalty (veh)		2		5	2		12	11	4	1

Intersection: 14: Private Drwy/N St & 16th St

Movement	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	TR	T	TR	LTR	LTR
Maximum Queue (ft)	50	50	75	71	88	30	72
Average Queue (ft)	17	3	3	3	4	2	38
95th Queue (ft)	44	19	27	25	31	15	63
Link Distance (ft)		408	408	412	412	100	326
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	75						
Storage Blk Time (%)				0			
Queuing Penalty (veh)				0			

Intersection: 15: M St & 16th St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	R
Maximum Queue (ft)	174	236	228	129	167	249	99	162	176	223	219	97
Average Queue (ft)	73	63	75	32	115	139	50	98	94	104	91	48
95th Queue (ft)	135	142	162	87	179	209	97	158	159	183	171	79
Link Distance (ft)		412	412		420	420		1285	1285		326	326
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			85			50			200		
Storage Blk Time (%)	7	1		2	10		16	45		1	2	
Queuing Penalty (veh)	20	2		5	3		23	24		2	2	

Intersection: 16: Canal St & 16th St

Movement	EB	EB	EB	WB	NB	SB
Directions Served	UL	T	TR	L	LTR	LTR
Maximum Queue (ft)	30	97	74	52	70	54
Average Queue (ft)	5	3	2	10	25	26
95th Queue (ft)	22	32	25	35	52	56
Link Distance (ft)		420	420		1281	163
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	75			75		
Storage Blk Time (%)		0				
Queuing Penalty (veh)		0				

Intersection: 17: Private Drwy/K St & 16th St

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	UL	TR	LTR	LTR
Maximum Queue (ft)	56	30	31	22	55	95
Average Queue (ft)	17	2	8	1	20	48
95th Queue (ft)	51	14	30	7	48	83
Link Distance (ft)		434		399	136	324
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	75		95			
Storage Blk Time (%)	0					
Queuing Penalty (veh)	0					

Intersection: 18: MLK Jr Wy & 16th St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	TR
Maximum Queue (ft)	80	114	166	167	166	145	160	382	76	164	248
Average Queue (ft)	17	66	101	109	62	52	129	135	48	35	107
95th Queue (ft)	49	110	160	166	119	99	182	276	78	100	205
Link Distance (ft)		399	399		1389	1389		1818	1818		326
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	170			100			105			50	
Storage Blk Time (%)				18	1		30	7		7	39
Queuing Penalty (veh)				35	2		42	11		13	8

Network Summary

Network wide Queuing Penalty: 329

Intersection: 1: O St & 18th St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	31	55	55
Average Queue (ft)	1	1	35	29
95th Queue (ft)	10	10	48	54
Link Distance (ft)	1356	195	345	736
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: N St & 18th St

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	ULTR	LTR
Maximum Queue (ft)	31	71	31	155	79	53
Average Queue (ft)	8	36	9	57	33	29
95th Queue (ft)	30	54	31	104	56	44
Link Distance (ft)		190		420	340	770
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	55		50			
Storage Blk Time (%)		1	0	4		
Queuing Penalty (veh)		0	0	1		

Intersection: 3: M St & 18th St

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	120	156	98	297	32	90	119	52	118	184
Average Queue (ft)	57	71	31	105	6	22	31	25	72	65
95th Queue (ft)	102	128	71	213	26	65	84	50	114	132
Link Distance (ft)		420		418		337	337		1165	1165
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	50		50		80			60		
Storage Blk Time (%)	20	22	8	31		1		0	8	
Queuing Penalty (veh)	26	17	14	14		0		0	3	

Intersection: 4: Canal St & 18th St

Movement	EB	EB	WB	WB	SB
Directions Served	L	TR	L	TR	LTR
Maximum Queue (ft)	31	97	67	183	55
Average Queue (ft)	5	39	17	76	30
95th Queue (ft)	24	74	44	138	57
Link Distance (ft)		418		436	1163
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	50		50		
Storage Blk Time (%)	0	3	1	12	
Queuing Penalty (veh)	0	0	3	3	

Intersection: 5: K St & 18th St

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	52	79	31	100	78	74
Average Queue (ft)	10	42	7	51	41	37
95th Queue (ft)	36	65	28	80	62	63
Link Distance (ft)		436		417	343	1166
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	50		50			
Storage Blk Time (%)	0	1	0	4		
Queuing Penalty (veh)	0	0	0	0		

Intersection: 6: MLK Jr Wy & 18th St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	79	101	98	68
Average Queue (ft)	35	43	57	37
95th Queue (ft)	60	71	86	55
Link Distance (ft)	417	1408	330	1439
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: O St & Main St

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	31	31	73	55
Average Queue (ft)	3	4	34	30
95th Queue (ft)	18	19	64	49
Link Distance (ft)			132	345
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50	40		
Storage Blk Time (%)	0	0		
Queuing Penalty (veh)	0	0		

Intersection: 8: N St & Main St

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	TR	LTR	LTR
Maximum Queue (ft)	93	148	122	109	72
Average Queue (ft)	7	56	28	24	23
95th Queue (ft)	38	103	69	70	58
Link Distance (ft)		428	421	326	340
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	40				
Storage Blk Time (%)	0	13	2		
Queuing Penalty (veh)	0	2	0		

Intersection: 9: M St & Main St

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	TR	LT	TR	LT	TR
Maximum Queue (ft)	86	180	70	96	153	113
Average Queue (ft)	32	70	29	45	63	27
95th Queue (ft)	71	139	62	93	115	71
Link Distance (ft)		421	326	326	337	337
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	55					
Storage Blk Time (%)	6	22				
Queuing Penalty (veh)	7	10				

Intersection: 10: Main St & Canal St

Movement	EB	SB
Directions Served	T	L
Maximum Queue (ft)	163	94
Average Queue (ft)	66	36
95th Queue (ft)	136	73
Link Distance (ft)	426	355
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: K St & Main St

Movement	EB	B40	WB	NB	SB
Directions Served	LTR	T	LTR	TR	LT
Maximum Queue (ft)	177	42	77	96	116
Average Queue (ft)	91	3	21	36	45
95th Queue (ft)	162	17	59	78	96
Link Distance (ft)	114	279	416	332	343
Upstream Blk Time (%)	5				
Queuing Penalty (veh)	12				
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: MLK Jr Wy & Main St

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	31	96	68	75	53	74	178	43	106
Average Queue (ft)	6	42	21	35	20	13	67	5	32
95th Queue (ft)	27	80	56	73	48	44	136	24	76
Link Distance (ft)		416		1418	1418		326		330
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50		50			75		75	
Storage Blk Time (%)	0	6	2	4		1	8		1
Queuing Penalty (veh)	0	1	1	2		1	1		0

Intersection: 13: O St & 16th St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	50	275	247	72	180	202	99	169	54	94
Average Queue (ft)	12	137	118	34	55	77	51	56	20	42
95th Queue (ft)	40	249	218	70	136	161	93	118	48	77
Link Distance (ft)		1314	1314		408	408		431		148
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	75			75			50		50	
Storage Blk Time (%)		23		1	4		23	10	2	10
Queuing Penalty (veh)		2		2	2		19	7	2	2

Intersection: 14: Private Drwy/N St & 16th St

Movement	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	L	T	TR	LTR	LTR
Maximum Queue (ft)	45	28	25	65	33	30	92
Average Queue (ft)	9	2	2	2	2	2	42
95th Queue (ft)	30	14	12	21	13	15	76
Link Distance (ft)		408		412	412	100	326
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	75		50				
Storage Blk Time (%)				0			
Queuing Penalty (veh)				0			

Intersection: 15: M St & 16th St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	R
Maximum Queue (ft)	174	298	288	130	199	267	100	203	177	188	203	115
Average Queue (ft)	108	89	89	33	120	149	48	102	88	114	92	57
95th Queue (ft)	182	212	189	91	199	234	94	166	154	182	172	92
Link Distance (ft)		412	412		420	420		1285	1285		326	326
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			85			50			200		
Storage Blk Time (%)	18	2		0	16		18	39		0	0	
Queuing Penalty (veh)	52	3		0	6		25	22		0	1	

Intersection: 16: Canal St & 16th St

Movement	EB	WB	WB	NB	SB
Directions Served	UL	L	TR	LTR	LTR
Maximum Queue (ft)	30	30	70	67	56
Average Queue (ft)	8	5	2	17	26
95th Queue (ft)	30	22	23	49	54
Link Distance (ft)			434	1281	163
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	75	75			
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 17: Private Drwy/K St & 16th St

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	UL	LTR	LTR
Maximum Queue (ft)	31	73	52	30	89
Average Queue (ft)	15	3	10	20	45
95th Queue (ft)	39	25	35	44	73
Link Distance (ft)		434		136	332
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	75		95		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 18: MLK Jr Wy & 16th St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	TR
Maximum Queue (ft)	46	295	330	174	247	221	159	284	102	88	200
Average Queue (ft)	14	104	147	117	109	56	114	98	55	25	96
95th Queue (ft)	38	196	251	187	220	143	162	219	85	60	167
Link Distance (ft)		399	399		1389	1389		1818	1818		326
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	170			100			105			50	
Storage Blk Time (%)		1		26	1		17	2		4	43
Queuing Penalty (veh)		0		48	2		22	3		7	12

Network Summary

Network wide Queuing Penalty: 357

Appendix D: Existing plus Project Traffic Conditions

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	131	3	19	70	5	11	36	86	9	37	17
Future Vol, veh/h	6	131	3	19	70	5	11	36	86	9	37	17
Conflicting Peds, #/hr	0	0	5	5	0	0	2	0	0	0	0	2
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	83	83	83	75	75	75	69	69	69
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	7	142	3	23	84	6	15	48	115	13	54	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	90	0	0	150	0	0	338	299	149	372	297	89
Stage 1	-	-	-	-	-	-	163	163	-	133	133	-
Stage 2	-	-	-	-	-	-	175	136	-	239	164	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1499	-	-	1425	-	-	614	611	895	583	613	966
Stage 1	-	-	-	-	-	-	837	761	-	868	784	-
Stage 2	-	-	-	-	-	-	824	782	-	762	761	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1499	-	-	1418	-	-	544	595	891	469	596	964
Mov Cap-2 Maneuver	-	-	-	-	-	-	544	595	-	469	596	-
Stage 1	-	-	-	-	-	-	829	753	-	864	771	-
Stage 2	-	-	-	-	-	-	733	769	-	619	753	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.5	11.3	11.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	750	1499	-	-	1418	-	-	637
HCM Lane V/C Ratio	0.236	0.004	-	-	0.016	-	-	0.143
HCM Control Delay (s)	11.3	7.4	0	-	7.6	0	-	11.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.9	0	-	-	0	-	-	0.5

Intersection	
Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	18	206	19	32	60	8	4	10	19	43	22	16
Future Vol, veh/h	18	206	19	32	60	8	4	10	19	43	22	16
Peak Hour Factor	0.87	0.87	0.87	0.91	0.91	0.91	0.81	0.81	0.81	0.81	0.90	0.90
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	21	237	22	35	66	9	5	12	23	53	24	18
Number of Lanes	0	1	1	0	1	0	0	0	1	0	0	1

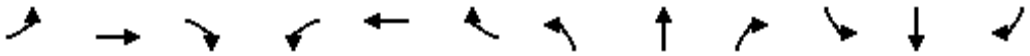
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	10.3	8.6	8.3	8.4
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	14%	8%	0%	32%	41%
Vol Thru, %	26%	92%	0%	60%	30%
Vol Right, %	60%	0%	100%	8%	30%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	76	224	19	100	54
LT Vol	11	18	0	32	22
Through Vol	20	206	0	60	16
RT Vol	45	0	19	8	16
Lane Flow Rate	94	257	22	110	60
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.121	0.361	0.026	0.146	0.082
Departure Headway (Hd)	4.651	5.052	4.309	4.771	4.929
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	769	711	829	751	725
Service Time	2.688	2.785	2.042	2.809	2.968
HCM Lane V/C Ratio	0.122	0.361	0.027	0.146	0.083
HCM Control Delay	8.3	10.6	7.2	8.6	8.4
HCM Lane LOS	A	B	A	A	A
HCM 95th-tile Q	0.4	1.6	0.1	0.5	0.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	16
Future Vol, veh/h	16
Peak Hour Factor	0.90
Heavy Vehicles, %	3
Mvmt Flow	18
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



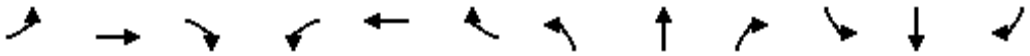
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	158	48	42	41	75	15	493	61	68	465	43
Future Volume (veh/h)	68	158	48	42	41	75	15	493	61	68	465	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.98	0.99		0.98	0.98		0.99	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	80	186	56	47	46	83	18	580	72	72	489	45
Peak Hour Factor	0.85	0.85	0.85	0.90	0.90	0.90	0.85	0.85	0.85	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	337	284	85	250	113	204	666	1491	185	260	718	66
Arrive On Green	0.05	0.21	0.21	0.03	0.19	0.19	0.59	0.95	0.95	0.05	0.22	0.22
Sat Flow, veh/h	1767	1361	410	1767	584	1053	1767	3152	390	1767	3257	299
Grp Volume(v), veh/h	80	0	242	47	0	129	18	324	328	72	264	270
Grp Sat Flow(s),veh/h/ln	1767	0	1771	1767	0	1636	1767	1763	1780	1767	1763	1793
Q Serve(g_s), s	2.6	0.0	9.0	1.5	0.0	5.0	0.0	1.1	1.1	2.5	9.9	10.0
Cycle Q Clear(g_c), s	2.6	0.0	9.0	1.5	0.0	5.0	0.0	1.1	1.1	2.5	9.9	10.0
Prop In Lane	1.00		0.23	1.00		0.64	1.00		0.22	1.00		0.17
Lane Grp Cap(c), veh/h	337	0	369	250	0	316	666	834	842	260	389	395
V/C Ratio(X)	0.24	0.00	0.66	0.19	0.00	0.41	0.03	0.39	0.39	0.28	0.68	0.68
Avail Cap(c_a), veh/h	337	0	605	286	0	568	666	834	842	269	573	583
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.96	0.96	0.96	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.9	0.0	26.1	22.6	0.0	25.4	9.0	1.1	1.1	24.7	25.7	25.7
Incr Delay (d2), s/veh	0.4	0.0	2.0	0.4	0.0	0.8	0.0	1.3	1.3	0.6	9.2	9.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	3.8	0.6	0.0	1.9	0.1	0.6	0.6	1.0	4.9	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.3	0.0	28.1	23.0	0.0	26.3	9.0	2.4	2.4	25.3	34.9	35.0
LnGrp LOS	C	A	C	C	A	C	A	A	A	C	C	C
Approach Vol, veh/h		322			176			670			606	
Approach Delay, s/veh		26.7			25.4			2.5			33.8	
Approach LOS		C			C			A			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	38.7	6.5	19.2	25.8	20.5	7.6	18.1
Change Period (Y+Rc), s	* 4.2	4.6	* 4.2	* 4.2	4.6	* 4.6	* 4.2	* 4.2
Max Green Setting (Gmax), s	* 3.8	22.6	* 3.8	* 25	3.0	* 23	* 3.4	* 25
Max Q Clear Time (g_c+I1), s	4.5	3.1	3.5	11.0	2.0	12.0	4.6	7.0
Green Ext Time (p_c), s	0.0	3.8	0.0	1.1	0.0	2.4	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	19.9
HCM 6th LOS	B

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	166	48	34	144	31	0	0	0	24	33	48
Future Volume (vph)	18	166	48	34	144	31	0	0	0	24	33	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6		4.6						4.6	
Lane Util. Factor		1.00	1.00		1.00						1.00	
Frpb, ped/bikes		1.00	0.95		0.99						0.98	
Flpb, ped/bikes		1.00	1.00		1.00						0.99	
Frt		1.00	0.85		0.98						0.94	
Flt Protected		1.00	1.00		0.99						0.99	
Satd. Flow (prot)		1830	1488		1769						1672	
Flt Permitted		0.97	1.00		0.94						0.99	
Satd. Flow (perm)		1775	1488		1670						1672	
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.25	0.25	0.25	0.77	0.77	0.77
Adj. Flow (vph)	20	180	52	36	153	33	0	0	0	31	43	62
RTOR Reduction (vph)	0	0	25	0	9	0	0	0	0	0	40	0
Lane Group Flow (vph)	0	200	27	0	213	0	0	0	0	0	96	0
Confl. Peds. (#/hr)	21		15	15		21	12		14	14		12
Turn Type	Perm	NA	Perm	Perm	NA					Perm	NA	
Protected Phases		2			2						4	
Permitted Phases	2		2	2						4		
Actuated Green, G (s)		37.4	37.4		37.4						25.4	
Effective Green, g (s)		37.4	37.4		37.4						25.4	
Actuated g/C Ratio		0.52	0.52		0.52						0.35	
Clearance Time (s)		4.6	4.6		4.6						4.6	
Lane Grp Cap (vph)		922	772		867						589	
v/s Ratio Prot												
v/s Ratio Perm		0.11	0.02		c0.13						0.06	
v/c Ratio		0.22	0.03		0.25						0.16	
Uniform Delay, d1		9.4	8.5		9.5						16.0	
Progression Factor		0.73	0.78		1.00						1.00	
Incremental Delay, d2		0.5	0.1		0.7						0.6	
Delay (s)		7.4	6.7		10.2						16.6	
Level of Service		A	A		B						B	
Approach Delay (s)		7.2			10.2			0.0			16.6	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	158	28	4	142	5	43	55	7	27	37	16
Future Vol, veh/h	27	158	28	4	142	5	43	55	7	27	37	16
Peak Hour Factor	0.79	0.79	0.79	0.84	0.84	0.84	0.85	0.85	0.85	0.95	0.95	0.95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	34	200	35	5	169	6	51	65	8	28	39	17
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	10.5	9.6	9.4	9
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	41%	15%	0%	3%	34%
Vol Thru, %	52%	85%	0%	94%	46%
Vol Right, %	7%	0%	100%	3%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	105	185	28	151	80
LT Vol	43	27	0	4	27
Through Vol	55	158	0	142	37
RT Vol	7	0	28	5	16
Lane Flow Rate	124	234	35	180	84
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.179	0.347	0.045	0.245	0.121
Departure Headway (Hd)	5.212	5.327	4.549	4.915	5.18
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	683	672	782	724	686
Service Time	3.283	3.088	2.309	2.982	3.257
HCM Lane V/C Ratio	0.182	0.348	0.045	0.249	0.122
HCM Control Delay	9.4	10.9	7.5	9.6	9
HCM Lane LOS	A	B	A	A	A
HCM 95th-tile Q	0.6	1.6	0.1	1	0.4

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	111	75	10	81	8	56	79	14	15	77	7
Future Vol, veh/h	14	111	75	10	81	8	56	79	14	15	77	7
Peak Hour Factor	0.81	0.81	0.81	0.83	0.83	0.83	0.83	0.83	0.83	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	17	137	93	12	98	10	67	95	17	17	88	8
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.8	9	9.7	9.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	38%	7%	10%	15%
Vol Thru, %	53%	55%	82%	78%
Vol Right, %	9%	38%	8%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	149	200	99	99
LT Vol	56	14	10	15
Through Vol	79	111	81	77
RT Vol	14	75	8	7
Lane Flow Rate	180	247	119	112
Geometry Grp	1	1	1	1
Degree of Util (X)	0.248	0.317	0.164	0.158
Departure Headway (Hd)	4.982	4.621	4.955	5.043
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	716	773	718	705
Service Time	3.05	2.679	3.024	3.117
HCM Lane V/C Ratio	0.251	0.32	0.166	0.159
HCM Control Delay	9.7	9.8	9	9.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1	1.4	0.6	0.6

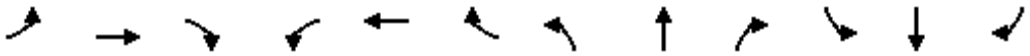
Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	71	0	118	27	188	26	27	33	0	0	58	13
Future Vol, veh/h	71	0	118	27	188	26	27	33	0	0	58	13
Conflicting Peds, #/hr	3	0	1	1	0	3	1	0	3	3	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	0	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	67	67	67	73	73	73	71	71	71
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	78	0	130	40	281	39	37	45	0	0	82	18

Major/Minor	Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	433	404	-	-	385	305
Stage 1	-	-	-	1	1	-	-	384	-
Stage 2	-	-	-	432	403	-	-	1	-
Critical Hdwy	4.13	-	-	7.13	6.53	-	-	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	6.13	5.53	-	-	-	-
Follow-up Hdwy	2.227	-	-	3.527	4.027	-	-	4.027	3.327
Pot Cap-1 Maneuver	1615	-	-	531	534	0	0	547	732
Stage 1	-	-	-	-	-	0	0	610	-
Stage 2	-	-	-	600	598	0	0	-	-
Platoon blocked, %		-	-						
Mov Cap-1 Maneuver	1613	-	-	448	519	-	-	531	730
Mov Cap-2 Maneuver	-	-	-	448	519	-	-	531	-
Stage 1	-	-	-	-	-	-	-	593	-
Stage 2	-	-	-	492	581	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0.8	14	12.8
HCM LOS		B	B

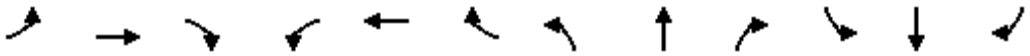
Minor Lane/Major Mvmt	NBLn1	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	484	1613	-	-	559
HCM Lane V/C Ratio	0.17	0.025	-	-	0.179
HCM Control Delay (s)	14	7.3	-	-	12.8
HCM Lane LOS	B	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	24	228	36	23	36	0	0	42	31
Future Volume (vph)	0	0	0	24	228	36	23	36	0	0	42	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.2	4.2		4.2			4.2	
Lane Util. Factor					1.00	1.00		1.00			1.00	
Frpb, ped/bikes					1.00	0.96		1.00			0.98	
Flpb, ped/bikes					1.00	1.00		0.99			1.00	
Frt					1.00	0.85		1.00			0.94	
Flt Protected					1.00	1.00		0.98			1.00	
Satd. Flow (prot)					1833	1509		1793			1704	
Flt Permitted					1.00	1.00		0.89			1.00	
Satd. Flow (perm)					1833	1509		1630			1704	
Peak-hour factor, PHF	0.83	0.83	0.83	0.92	0.92	0.92	0.71	0.71	0.71	0.78	0.78	0.78
Adj. Flow (vph)	0	0	0	26	248	39	32	51	0	0	54	40
RTOR Reduction (vph)	0	0	0	0	0	18	0	0	0	0	26	0
Lane Group Flow (vph)	0	0	0	0	274	21	0	83	0	0	68	0
Confl. Peds. (#/hr)	11		11	11		11	12		12	12		12
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					4			2			2	
Permitted Phases				4		4	2					
Actuated Green, G (s)					38.8	38.8		24.8			24.8	
Effective Green, g (s)					38.8	38.8		24.8			24.8	
Actuated g/C Ratio					0.54	0.54		0.34			0.34	
Clearance Time (s)					4.2	4.2		4.2			4.2	
Lane Grp Cap (vph)					987	813		561			586	
v/s Ratio Prot											0.04	
v/s Ratio Perm					0.15	0.01		c0.05				
v/c Ratio					0.28	0.03		0.15			0.12	
Uniform Delay, d1					9.0	7.8		16.3			16.1	
Progression Factor					0.75	1.03		1.00			1.00	
Incremental Delay, d2					0.5	0.0		0.6			0.4	
Delay (s)					7.3	8.0		16.9			16.5	
Level of Service					A	A		B			B	
Approach Delay (s)		0.0			7.4			16.9			16.5	
Approach LOS		A			A			B			B	

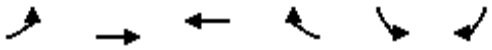
Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	43	191	48	42	526	0	0	514	55
Future Volume (vph)	0	0	0	43	191	48	42	526	0	0	514	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.2	4.2		4.2			4.2	
Lane Util. Factor					1.00	1.00		0.95			0.95	
Frpb, ped/bikes					1.00	0.96		1.00			1.00	
Flpb, ped/bikes					1.00	1.00		1.00			1.00	
Frt					1.00	0.85		1.00			0.99	
Flt Protected					0.99	1.00		1.00			1.00	
Satd. Flow (prot)					1826	1506		3492			3447	
Flt Permitted					0.99	1.00		0.87			1.00	
Satd. Flow (perm)					1826	1506		3055			3447	
Peak-hour factor, PHF	0.90	0.90	0.90	0.93	0.93	0.93	0.88	0.88	0.88	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	46	205	52	48	598	0	0	591	63
RTOR Reduction (vph)	0	0	0	0	0	43	0	0	0	0	7	0
Lane Group Flow (vph)	0	0	0	0	251	9	0	646	0	0	647	0
Confl. Peds. (#/hr)	16		4	4		16	3		2	2		3
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					2			4			4	
Permitted Phases				2		2	4					
Actuated Green, G (s)					12.2	12.2		42.0			42.0	
Effective Green, g (s)					12.2	12.2		42.0			42.0	
Actuated g/C Ratio					0.17	0.17		0.58			0.58	
Clearance Time (s)					4.2	4.2		4.2			4.2	
Vehicle Extension (s)					3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)					309	255		1782			2010	
v/s Ratio Prot											0.19	
v/s Ratio Perm					0.14	0.01		c0.21				
v/c Ratio					0.81	0.03		0.36			0.32	
Uniform Delay, d1					28.8	25.0		7.9			7.7	
Progression Factor					0.84	1.11		1.00			0.47	
Incremental Delay, d2					14.8	0.1		0.6			0.4	
Delay (s)					39.0	27.8		8.5			4.0	
Level of Service					D	C		A			A	
Approach Delay (s)		0.0			37.1			8.5			4.0	
Approach LOS		A			D			A			A	

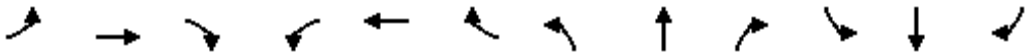
Intersection Summary			
HCM 2000 Control Delay	12.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	12.6
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑			↱
Traffic Volume (veh/h)	0	0	167	0	0	115
Future Volume (veh/h)	0	0	167	0	0	115
Initial Q (Qb), veh			0	0	0	0
Ped-Bike Adj(A_pbT)				1.00	1.00	1.00
Parking Bus, Adj			1.00	1.00	1.00	1.00
Work Zone On Approach			No		No	
Adj Sat Flow, veh/h/ln			1856	0	0	1856
Adj Flow Rate, veh/h			180	0	0	124
Peak Hour Factor			0.93	0.93	0.93	0.93
Percent Heavy Veh, %			3	0	0	3
Cap, veh/h			1657	0	0	0
Arrive On Green			0.29	0.00	0.00	0.00
Sat Flow, veh/h			1856	0	0	
Grp Volume(v), veh/h			180	0	0.0	
Grp Sat Flow(s),veh/h/ln			1856	0		
Q Serve(g_s), s			3.0	0.0		
Cycle Q Clear(g_c), s			3.0	0.0		
Prop In Lane				0.00		
Lane Grp Cap(c), veh/h			1657	0		
V/C Ratio(X)			0.11	0.00		
Avail Cap(c_a), veh/h			1657	0		
HCM Platoon Ratio			0.33	1.00		
Upstream Filter(I)			1.00	0.00		
Uniform Delay (d), s/veh			2.6	0.0		
Incr Delay (d2), s/veh			0.1	0.0		
Initial Q Delay(d3),s/veh			0.0	0.0		
%ile BackOfQ(50%),veh/ln			0.1	0.0		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh			2.8	0.0		
LnGrp LOS			A	A		
Approach Vol, veh/h			180			
Approach Delay, s/veh			2.8			
Approach LOS			A			

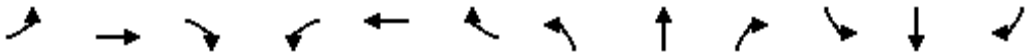
Timer - Assigned Phs	2
Phs Duration (G+Y+Rc), s	42.0
Change Period (Y+Rc), s	4.5
Max Green Setting (Gmax), s	37.5
Max Q Clear Time (g_c+I1), s	5.0
Green Ext Time (p_c), s	1.1

Intersection Summary	
HCM 6th Ctrl Delay	2.8
HCM 6th LOS	A



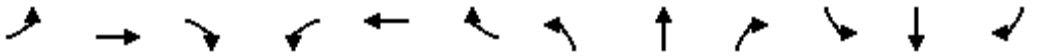
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	25	150	30	11	77	0	0	57	6
Future Volume (vph)	0	0	0	25	150	30	11	77	0	0	57	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	16	12	12	12	12	12	12	12	12
Total Lost time (s)					4.5	4.5		4.2			4.2	
Lane Util. Factor					1.00	1.00		1.00			1.00	
Frpb, ped/bikes					1.00	0.90		1.00			1.00	
Flpb, ped/bikes					0.99	1.00		1.00			1.00	
Frt					1.00	0.85		1.00			0.99	
Flt Protected					0.99	1.00		0.99			1.00	
Satd. Flow (prot)					1809	1411		1831			1817	
Flt Permitted					0.99	1.00		0.97			1.00	
Satd. Flow (perm)					1809	1411		1792			1817	
Peak-hour factor, PHF	0.96	0.96	0.96	0.93	0.93	0.93	0.73	0.73	0.73	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	27	161	32	15	105	0	0	61	6
RTOR Reduction (vph)	0	0	0	0	0	16	0	0	0	0	4	0
Lane Group Flow (vph)	0	0	0	0	188	16	0	120	0	0	63	0
Confl. Peds. (#/hr)	41		42	42		41	5		18	18		5
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					2			4			4	
Permitted Phases				2		2	4					
Actuated Green, G (s)					35.5	35.5		27.8			27.8	
Effective Green, g (s)					35.5	35.5		27.8			27.8	
Actuated g/C Ratio					0.49	0.49		0.39			0.39	
Clearance Time (s)					4.5	4.5		4.2			4.2	
Lane Grp Cap (vph)					891	695		691			701	
v/s Ratio Prot											0.03	
v/s Ratio Perm					0.10	0.01		c0.07				
v/c Ratio					0.21	0.02		0.17			0.09	
Uniform Delay, d1					10.3	9.4		14.5			14.1	
Progression Factor					0.55	0.27		1.00			1.00	
Incremental Delay, d2					0.5	0.1		0.5			0.3	
Delay (s)					6.2	2.6		15.1			14.3	
Level of Service					A	A		B			B	
Approach Delay (s)		0.0			5.7			15.1			14.3	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	16	150	16	55	133	52	22	126	27
Future Volume (vph)	0	0	0	16	150	16	55	133	52	22	126	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	12	12	12	12	12	12	10	12	12
Total Lost time (s)					4.2	4.2	4.2	4.2		4.2	4.2	
Lane Util. Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes					1.00	0.97	1.00	0.99		1.00	0.99	
Flpb, ped/bikes					1.00	1.00	0.98	1.00		0.99	1.00	
Frt					1.00	0.85	1.00	0.96		1.00	0.97	
Flt Protected					1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)					1831	1519	1725	1752		1622	1783	
Flt Permitted					1.00	1.00	0.65	1.00		0.61	1.00	
Satd. Flow (perm)					1831	1519	1171	1752		1038	1783	
Peak-hour factor, PHF	0.95	0.95	0.95	0.89	0.89	0.89	0.88	0.88	0.88	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	18	169	18	62	151	59	25	145	31
RTOR Reduction (vph)	0	0	0	0	0	10	0	20	0	0	11	0
Lane Group Flow (vph)	0	0	0	0	187	8	63	190	0	25	165	0
Confl. Peds. (#/hr)	6		13	13		6	13		7	7		13
Turn Type				Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases					4			2			2	
Permitted Phases				4		4	2			2		
Actuated Green, G (s)					30.8	30.8	32.8	32.8		32.8	32.8	
Effective Green, g (s)					30.8	30.8	32.8	32.8		32.8	32.8	
Actuated g/C Ratio					0.43	0.43	0.46	0.46		0.46	0.46	
Clearance Time (s)					4.2	4.2	4.2	4.2		4.2	4.2	
Lane Grp Cap (vph)					783	649	533	798		472	812	
v/s Ratio Prot								c0.11			0.09	
v/s Ratio Perm					0.10	0.01	0.05			0.02		
v/c Ratio					0.24	0.01	0.12	0.24		0.05	0.20	
Uniform Delay, d1					13.1	11.8	11.3	12.0		10.9	11.8	
Progression Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2					0.7	0.0	0.5	0.7		0.2	0.6	
Delay (s)					13.8	11.9	11.7	12.7		11.1	12.3	
Level of Service					B	B	B	B		B	B	
Approach Delay (s)		0.0			13.7			12.5			12.2	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	608	58	38	591	21	58	26	72	119	57	24
Future Volume (veh/h)	10	608	58	38	591	21	58	26	72	119	57	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	11	683	65	41	642	23	61	27	76	159	76	32
Peak Hour Factor	0.89	0.89	0.89	0.92	0.92	0.92	0.95	0.95	0.95	0.75	0.75	0.75
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	25	1053	100	78	1229	44	104	63	178	205	255	107
Arrive On Green	0.01	0.32	0.32	0.04	0.35	0.35	0.06	0.15	0.15	0.12	0.21	0.21
Sat Flow, veh/h	1767	3248	309	1767	3470	124	1767	425	1195	1767	1235	520
Grp Volume(v), veh/h	11	370	378	41	326	339	61	0	103	159	0	108
Grp Sat Flow(s),veh/h/ln	1767	1763	1794	1767	1763	1831	1767	0	1620	1767	0	1756
Q Serve(g_s), s	0.3	8.2	8.3	1.0	6.7	6.7	1.5	0.0	2.6	4.0	0.0	2.4
Cycle Q Clear(g_c), s	0.3	8.2	8.3	1.0	6.7	6.7	1.5	0.0	2.6	4.0	0.0	2.4
Prop In Lane	1.00		0.17	1.00		0.07	1.00		0.74	1.00		0.30
Lane Grp Cap(c), veh/h	25	571	582	78	625	649	104	0	241	205	0	362
V/C Ratio(X)	0.44	0.65	0.65	0.52	0.52	0.52	0.59	0.00	0.43	0.77	0.00	0.30
Avail Cap(c_a), veh/h	193	861	877	193	861	895	274	0	919	378	0	1099
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	22.4	13.3	13.3	21.4	11.7	11.7	21.0	0.0	17.7	19.7	0.0	15.4
Incr Delay (d2), s/veh	11.4	1.2	1.2	5.3	0.7	0.7	5.1	0.0	1.2	6.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.8	2.8	0.5	2.3	2.3	0.7	0.0	1.0	1.8	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	14.5	14.5	26.7	12.4	12.4	26.2	0.0	18.9	25.8	0.0	15.9
LnGrp LOS	C	B	B	C	B	B	C	A	B	C	A	B
Approach Vol, veh/h		759			706			164			267	
Approach Delay, s/veh		14.8			13.2			21.6			21.8	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	19.1	6.9	13.7	4.9	20.4	9.5	11.0
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2
Max Green Setting (Gmax), s	* 5	* 22	* 7.1	* 29	* 5	* 22	* 9.8	* 26
Max Q Clear Time (g_c+I1), s	3.0	10.3	3.5	4.4	2.3	8.7	6.0	4.6
Green Ext Time (p_c), s	0.0	3.6	0.0	0.5	0.0	3.5	0.1	0.5

Intersection Summary	
HCM 6th Ctrl Delay	15.8
HCM 6th LOS	B

Notes

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

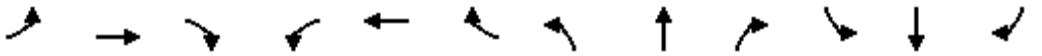
Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	795	1	1	537	29	0	0	3	32	1	55
Future Vol, veh/h	31	795	1	1	537	29	0	0	3	32	1	55
Conflicting Peds, #/hr	6	0	4	4	0	6	0	0	6	6	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	86	86	86	75	75	75	84	84	84
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	33	855	1	1	624	34	0	0	4	38	1	65

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	664	0	0	860	0	0	1241	1592	438	1149	1575	335
Stage 1	-	-	-	-	-	-	926	926	-	649	649	-
Stage 2	-	-	-	-	-	-	315	666	-	500	926	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	914	-	-	771	-	-	130	105	564	152	108	658
Stage 1	-	-	-	-	-	-	287	343	-	422	461	-
Stage 2	-	-	-	-	-	-	668	453	-	519	343	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	909	-	-	768	-	-	112	100	559	145	103	654
Mov Cap-2 Maneuver	-	-	-	-	-	-	112	100	-	145	103	-
Stage 1	-	-	-	-	-	-	276	329	-	404	458	-
Stage 2	-	-	-	-	-	-	599	450	-	494	329	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	11.5	25.3
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	559	909	-	-	768	-	-	280
HCM Lane V/C Ratio	0.007	0.037	-	-	0.002	-	-	0.374
HCM Control Delay (s)	11.5	9.1	-	-	9.7	-	-	25.3
HCM Lane LOS	B	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	1.7



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	615	52	32	370	111	53	271	72	176	205	159
Future Volume (veh/h)	155	615	52	32	370	111	53	271	72	176	205	159
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	170	676	57	35	407	122	60	304	81	207	241	187
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.89	0.89	0.89	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	214	1126	95	50	649	193	75	516	135	255	535	452
Arrive On Green	0.12	0.34	0.34	0.03	0.24	0.24	0.04	0.19	0.19	0.14	0.29	0.29
Sat Flow, veh/h	1767	3289	277	1767	2677	794	1767	2762	724	1767	1856	1569
Grp Volume(v), veh/h	170	362	371	35	266	263	60	192	193	207	241	187
Grp Sat Flow(s),veh/h/ln	1767	1763	1804	1767	1763	1708	1767	1763	1723	1767	1856	1569
Q Serve(g_s), s	5.4	9.8	9.8	1.1	7.8	7.9	1.9	5.7	5.9	6.5	6.1	3.4
Cycle Q Clear(g_c), s	5.4	9.8	9.8	1.1	7.8	7.9	1.9	5.7	5.9	6.5	6.1	3.4
Prop In Lane	1.00		0.15	1.00		0.46	1.00		0.42	1.00		1.00
Lane Grp Cap(c), veh/h	214	603	617	50	428	414	75	329	322	255	535	452
V/C Ratio(X)	0.79	0.60	0.60	0.70	0.62	0.63	0.80	0.58	0.60	0.81	0.45	0.41
Avail Cap(c_a), veh/h	282	1028	1052	178	912	884	273	887	867	301	950	804
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	24.6	15.7	15.7	27.7	19.5	19.5	27.3	21.4	21.5	23.9	16.8	6.3
Incr Delay (d2), s/veh	11.0	1.0	0.9	16.2	1.5	1.6	17.1	1.6	1.8	13.5	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	3.5	3.6	0.7	3.0	3.0	1.1	2.3	2.4	3.4	2.4	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.6	16.6	16.6	44.0	21.0	21.1	44.4	23.0	23.2	37.4	17.4	6.9
LnGrp LOS	D	B	B	D	C	C	D	C	C	D	B	A
Approach Vol, veh/h		903			564			445			635	
Approach Delay, s/veh		20.2			22.5			26.0			20.8	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	23.9	6.7	21.2	11.2	18.6	12.9	15.0
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	* 4.6	* 4.2
Max Green Setting (Gmax), s	* 5.8	* 34	* 8.9	29.5	9.2	* 30	* 9.8	* 29
Max Q Clear Time (g_c+I1), s	3.1	11.8	3.9	8.1	7.4	9.9	8.5	7.9
Green Ext Time (p_c), s	0.0	4.5	0.0	1.9	0.1	3.0	0.1	2.2

Intersection Summary	
HCM 6th Ctrl Delay	21.9
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	2.3

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	2	20	722	21	33	513	20	17	2	16	5	7	21
Future Vol, veh/h	2	20	722	21	33	513	20	17	2	16	5	7	21
Conflicting Peds, #/hr	0	0	0	5	5	0	0	1	0	1	1	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	75	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	95	95	95	67	67	67	59	59	59
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	22	776	23	35	540	21	25	3	24	8	12	36

Major/Minor	Major1				Major2			Minor1			Minor2		
Conflicting Flow All	561	561	0	0	804	0	0	1188	1472	406	1060	1473	282
Stage 1	-	-	-	-	-	-	-	841	841	-	621	621	-
Stage 2	-	-	-	-	-	-	-	347	631	-	439	852	-
Critical Hdwy	6.46	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.53	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	629	999	-	-	809	-	-	142	125	592	177	125	712
Stage 1	-	-	-	-	-	-	-	323	376	-	439	475	-
Stage 2	-	-	-	-	-	-	-	639	470	-	564	372	-
Platoon blocked, %			-	-		-	-						
Mov Cap-1 Maneuver	944	944	-	-	805	-	-	117	116	589	158	116	711
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	117	116	-	158	116	-
Stage 1	-	-	-	-	-	-	-	313	365	-	428	455	-
Stage 2	-	-	-	-	-	-	-	565	450	-	523	361	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.6	32.1	21.6
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	184	944	-	-	805	-	-	272
HCM Lane V/C Ratio	0.284	0.025	-	-	0.043	-	-	0.206
HCM Control Delay (s)	32.1	8.9	-	-	9.7	-	-	21.6
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.1	0.1	-	-	0.1	-	-	0.8

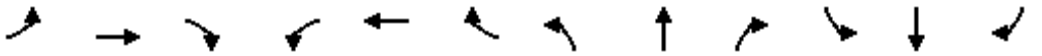
Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	56	690	16	1	28	500	11	11	1	18	13	3	37
Future Vol, veh/h	56	690	16	1	28	500	11	11	1	18	13	3	37
Conflicting Peds, #/hr	0	0	5	0	5	0	0	2	0	1	1	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	-	95	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	87	87	87	87	58	58	58	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	60	734	17	1	32	575	13	19	2	31	15	3	43

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	588	0	0	751	756	0	0	1225	1522	382	1137	1524	296
Stage 1	-	-	-	-	-	-	-	868	868	-	648	648	-
Stage 2	-	-	-	-	-	-	-	357	654	-	489	876	-
Critical Hdwy	4.16	-	-	6.46	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.53	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	976	-	-	476	844	-	-	134	116	613	155	116	697
Stage 1	-	-	-	-	-	-	-	311	365	-	423	462	-
Stage 2	-	-	-	-	-	-	-	631	459	-	527	362	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	976	-	-	817	817	-	-	112	104	609	134	104	696
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	112	104	-	134	104	-
Stage 1	-	-	-	-	-	-	-	290	341	-	397	444	-
Stage 2	-	-	-	-	-	-	-	563	441	-	467	338	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.5	26.6	20.3
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	218	976	-	-	817	-	-	296
HCM Lane V/C Ratio	0.237	0.061	-	-	0.041	-	-	0.208
HCM Control Delay (s)	26.6	8.9	-	-	9.6	-	-	20.3
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.9	0.2	-	-	0.1	-	-	0.8



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	416	223	171	396	21	150	138	153	18	120	10
Future Volume (veh/h)	78	416	223	171	396	21	150	138	153	18	120	10
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		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	83	443	237	184	426	23	165	152	168	20	136	11
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.91	0.91	0.91	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	106	655	347	231	1242	67	210	452	382	32	243	20
Arrive On Green	0.06	0.29	0.29	0.13	0.37	0.37	0.12	0.24	0.24	0.02	0.14	0.14
Sat Flow, veh/h	1767	2223	1179	1767	3401	183	1767	1856	1567	1767	1693	137
Grp Volume(v), veh/h	83	351	329	184	220	229	165	152	168	20	0	147
Grp Sat Flow(s),veh/h/ln	1767	1763	1639	1767	1763	1822	1767	1856	1567	1767	0	1830
Q Serve(g_s), s	2.5	9.4	9.5	5.4	4.9	4.9	4.9	3.6	3.0	0.6	0.0	4.0
Cycle Q Clear(g_c), s	2.5	9.4	9.5	5.4	4.9	4.9	4.9	3.6	3.0	0.6	0.0	4.0
Prop In Lane	1.00		0.72	1.00		0.10	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	106	519	483	231	643	665	210	452	382	32	0	262
V/C Ratio(X)	0.78	0.67	0.68	0.80	0.34	0.34	0.79	0.34	0.44	0.62	0.00	0.56
Avail Cap(c_a), veh/h	326	893	830	289	856	885	303	1119	945	158	0	954
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	0.00	1.00
Uniform Delay (d), s/veh	24.9	16.7	16.7	22.7	12.4	12.4	23.0	16.7	6.6	26.2	0.0	21.4
Incr Delay (d2), s/veh	11.6	1.5	1.7	11.7	0.3	0.3	8.4	0.4	0.8	17.8	0.0	1.9
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(50%),veh/ln	1.3	3.5	3.3	2.8	1.7	1.7	2.4	1.4	1.6	0.4	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	18.2	18.4	34.3	12.7	12.7	31.4	17.2	7.4	44.0	0.0	23.3
LnGrp LOS	D	B	B	C	B	B	C	B	A	D	A	C
Approach Vol, veh/h		763			633			485			167	
Approach Delay, s/veh		20.3			19.0			18.6			25.8	
Approach LOS		C			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	20.0	10.6	11.9	7.4	23.8	5.2	17.3
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2
Max Green Setting (Gmax), s	* 8.8	* 27	* 9.2	* 28	* 9.9	* 26	* 4.8	* 32
Max Q Clear Time (g_c+I1), s	7.4	11.5	6.9	6.0	4.5	6.9	2.6	5.6
Green Ext Time (p_c), s	0.1	3.8	0.1	0.7	0.1	2.4	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	19.9
HCM 6th LOS	B

Notes

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

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	9	129	16	12	100	5	15	36	86	8	45	15
Future Vol, veh/h	9	129	16	12	100	5	15	36	86	8	45	15
Conflicting Peds, #/hr	0	0	5	5	0	0	2	0	0	0	0	2
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	84	84	84	94	94	94	73	73	73	63	63	63
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	154	19	13	106	5	21	49	118	13	71	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	111	0	0	178	0	0	375	328	169	404	335	111
Stage 1	-	-	-	-	-	-	191	191	-	135	135	-
Stage 2	-	-	-	-	-	-	184	137	-	269	200	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1473	-	-	1392	-	-	580	589	872	555	584	940
Stage 1	-	-	-	-	-	-	808	740	-	866	783	-
Stage 2	-	-	-	-	-	-	815	781	-	734	734	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1473	-	-	1385	-	-	501	575	868	442	571	938
Mov Cap-2 Maneuver	-	-	-	-	-	-	501	575	-	442	571	-
Stage 1	-	-	-	-	-	-	797	730	-	859	775	-
Stage 2	-	-	-	-	-	-	713	773	-	587	724	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.8	11.8	12.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	715	1473	-	-	1385	-	-	602
HCM Lane V/C Ratio	0.262	0.007	-	-	0.009	-	-	0.179
HCM Control Delay (s)	11.8	7.5	0	-	7.6	0	-	12.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.1	0	-	-	0	-	-	0.6

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	8	186	20	20	101	8	1	7	23	21	20	20
Future Vol, veh/h	8	186	20	20	101	8	1	7	23	21	20	20
Peak Hour Factor	0.86	0.86	0.86	0.79	0.79	0.79	0.74	0.74	0.74	0.74	0.67	0.67
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	9	216	23	25	128	10	1	9	31	28	30	30
Number of Lanes	0	1	1	0	1	0	0	0	1	0	0	1

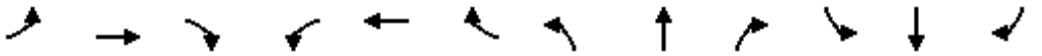
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	9.9	9.1	8.4	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	14%	4%	0%	16%	34%
Vol Thru, %	45%	96%	0%	78%	34%
Vol Right, %	41%	0%	100%	6%	32%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	194	20	129	59
LT Vol	7	8	0	20	20
Through Vol	23	186	0	101	20
RT Vol	21	0	20	8	19
Lane Flow Rate	70	226	23	163	88
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.095	0.32	0.028	0.215	0.12
Departure Headway (Hd)	4.845	5.1	4.376	4.735	4.913
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	736	704	816	756	727
Service Time	2.894	2.838	2.113	2.776	2.96
HCM Lane V/C Ratio	0.095	0.321	0.028	0.216	0.121
HCM Control Delay	8.4	10.2	7.2	9.1	8.6
HCM Lane LOS	A	B	A	A	A
HCM 95th-tile Q	0.3	1.4	0.1	0.8	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	19
Future Vol, veh/h	19
Peak Hour Factor	0.67
Heavy Vehicles, %	3
Mvmt Flow	28
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



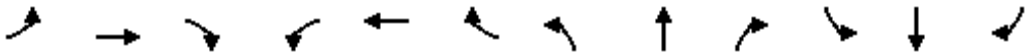
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	124	55	45	42	60	10	495	53	65	527	46
Future Volume (veh/h)	78	124	55	45	42	60	10	495	53	65	527	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	0.98		0.97	0.99		0.97	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	93	148	65	51	48	68	11	532	57	76	620	54
Peak Hour Factor	0.84	0.84	0.84	0.88	0.88	0.88	0.93	0.93	0.93	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	282	212	93	200	102	144	766	661	71	845	780	68
Arrive On Green	0.06	0.18	0.18	0.03	0.15	0.15	0.76	0.41	0.41	0.41	0.24	0.24
Sat Flow, veh/h	1767	1211	532	1767	681	965	1767	3204	342	1767	3274	285
Grp Volume(v), veh/h	93	0	213	51	0	116	11	292	297	76	333	341
Grp Sat Flow(s),veh/h/ln	1767	0	1743	1767	0	1646	1767	1763	1783	1767	1763	1796
Q Serve(g_s), s	4.4	0.0	11.5	2.4	0.0	6.4	0.0	14.6	14.7	0.0	17.8	17.8
Cycle Q Clear(g_c), s	4.4	0.0	11.5	2.4	0.0	6.4	0.0	14.6	14.7	0.0	17.8	17.8
Prop In Lane	1.00		0.31	1.00		0.59	1.00		0.19	1.00		0.16
Lane Grp Cap(c), veh/h	282	0	305	200	0	246	766	363	368	845	420	428
V/C Ratio(X)	0.33	0.00	0.70	0.25	0.00	0.47	0.01	0.80	0.81	0.09	0.79	0.80
Avail Cap(c_a), veh/h	333	0	554	243	0	474	766	659	667	845	712	726
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.97	0.97	0.97	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.0	0.0	38.8	34.8	0.0	38.9	6.8	27.6	27.6	15.7	35.8	35.8
Incr Delay (d2), s/veh	0.7	0.0	2.9	0.7	0.0	1.4	0.0	16.5	16.8	0.0	14.3	14.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	5.1	1.1	0.0	2.7	0.1	6.3	6.5	1.0	9.1	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	0.0	41.6	35.4	0.0	40.3	6.8	44.1	44.4	15.7	50.1	50.0
LnGrp LOS	C	A	D	D	A	D	A	D	D	B	D	D
Approach Vol, veh/h		306			167			600			750	
Approach Delay, s/veh		39.2			38.8			43.6			46.6	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	45.5	25.2	7.6	21.7	42.3	28.4	10.1	19.1
Change Period (Y+Rc), s	4.2	* 4.6	* 4.2	* 4.2	4.2	* 4.6	* 4.2	* 4.2
Max Green Setting (Gmax), s	7.8	* 37	* 5.8	* 32	4.8	* 40	* 8.8	* 29
Max Q Clear Time (g_c+I1), s	2.0	16.7	4.4	13.5	2.0	19.8	6.4	8.4
Green Ext Time (p_c), s	0.1	3.4	0.0	1.1	0.0	4.0	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	43.6
HCM 6th LOS	D

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	146	37	28	154	12	0	0	0	22	18	35
Future Volume (vph)	9	146	37	28	154	12	0	0	0	22	18	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6		4.6						4.6	
Lane Util. Factor		1.00	1.00		1.00						1.00	
Frpb, ped/bikes		1.00	0.96		1.00						0.98	
Flpb, ped/bikes		1.00	1.00		1.00						1.00	
Frt		1.00	0.85		0.99						0.94	
Flt Protected		1.00	1.00		0.99						0.99	
Satd. Flow (prot)		1837	1503		1807						1669	
Flt Permitted		0.98	1.00		0.94						0.99	
Satd. Flow (perm)		1806	1503		1705						1669	
Peak-hour factor, PHF	0.67	0.67	0.67	0.90	0.90	0.90	0.25	0.25	0.25	0.89	0.89	0.89
Adj. Flow (vph)	13	218	55	31	171	13	0	0	0	25	20	39
RTOR Reduction (vph)	0	0	34	0	4	0	0	0	0	0	22	0
Lane Group Flow (vph)	0	231	21	0	211	0	0	0	0	0	62	0
Confl. Peds. (#/hr)	21		15	15		21	12		14	14		12
Turn Type	Perm	NA	Perm	Perm	NA					Perm	NA	
Protected Phases		2			2						4	
Permitted Phases	2		2	2						4		
Actuated Green, G (s)		18.8	18.8		18.8						22.0	
Effective Green, g (s)		18.8	18.8		18.8						22.0	
Actuated g/C Ratio		0.38	0.38		0.38						0.44	
Clearance Time (s)		4.6	4.6		4.6						4.6	
Lane Grp Cap (vph)		679	565		641						734	
v/s Ratio Prot												
v/s Ratio Perm		c0.13	0.01		0.12						0.04	
v/c Ratio		0.34	0.04		0.33						0.08	
Uniform Delay, d1		11.2	9.9		11.1						8.1	
Progression Factor		0.65	0.60		1.00						1.00	
Incremental Delay, d2		1.3	0.1		1.4						0.2	
Delay (s)		8.6	6.1		12.5						8.4	
Level of Service		A	A		B						A	
Approach Delay (s)		8.1			12.5			0.0			8.4	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	148	20	8	137	13	43	46	17	25	32	18
Future Vol, veh/h	22	148	20	8	137	13	43	46	17	25	32	18
Peak Hour Factor	0.77	0.77	0.77	0.94	0.94	0.94	0.97	0.97	0.97	0.72	0.72	0.72
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	29	192	26	9	146	14	44	47	18	35	44	25
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	10.3	9.4	9.1	9
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	41%	13%	0%	5%	33%
Vol Thru, %	43%	87%	0%	87%	43%
Vol Right, %	16%	0%	100%	8%	24%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	106	170	20	158	75
LT Vol	43	22	0	8	25
Through Vol	46	148	0	137	32
RT Vol	17	0	20	13	18
Lane Flow Rate	109	221	26	168	104
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.155	0.326	0.033	0.227	0.146
Departure Headway (Hd)	5.105	5.311	4.541	4.869	5.051
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	698	673	784	733	705
Service Time	3.169	3.067	2.297	2.931	3.117
HCM Lane V/C Ratio	0.156	0.328	0.033	0.229	0.148
HCM Control Delay	9.1	10.6	7.5	9.4	9
HCM Lane LOS	A	B	A	A	A
HCM 95th-tile Q	0.5	1.4	0.1	0.9	0.5

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	98	86	5	86	13	47	97	9	8	93	9
Future Vol, veh/h	13	98	86	5	86	13	47	97	9	8	93	9
Peak Hour Factor	0.68	0.68	0.68	0.81	0.81	0.81	0.93	0.93	0.93	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	19	144	126	6	106	16	51	104	10	9	107	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.4	9.2	9.8	9.4
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	7%	5%	7%
Vol Thru, %	63%	50%	83%	85%
Vol Right, %	6%	44%	12%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	153	197	104	110
LT Vol	47	13	5	8
Through Vol	97	98	86	93
RT Vol	9	86	13	9
Lane Flow Rate	165	290	128	126
Geometry Grp	1	1	1	1
Degree of Util (X)	0.234	0.371	0.178	0.18
Departure Headway (Hd)	5.127	4.605	4.977	5.122
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	693	776	714	693
Service Time	3.213	2.67	3.059	3.213
HCM Lane V/C Ratio	0.238	0.374	0.179	0.182
HCM Control Delay	9.8	10.4	9.2	9.4
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.9	1.7	0.6	0.7

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	74	0	127	22	245	20	19	45	0	0	60	20
Future Vol, veh/h	74	0	127	22	245	20	19	45	0	0	60	20
Conflicting Peds, #/hr	3	0	1	1	0	3	1	0	3	3	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	0	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	71	71	71	78	78	78	72	72	72
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	86	0	148	31	345	28	24	58	0	0	83	28

Major/Minor	Major2			Minor1			Minor2			
Conflicting Flow All	1	0	0	479	439		-	-	425	363
Stage 1	-	-	-	1	1		-	-	424	-
Stage 2	-	-	-	478	438		-	-	1	-
Critical Hdwy	4.13	-	-	7.13	6.53		-	-	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-		-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	6.13	5.53		-	-	-	-
Follow-up Hdwy	2.227	-	-	3.527	4.027		-	-	4.027	3.327
Pot Cap-1 Maneuver	1615	-	-	495	510		0	0	520	680
Stage 1	-	-	-	-	-		0	0	585	-
Stage 2	-	-	-	566	577		0	0	-	-
Platoon blocked, %		-	-							
Mov Cap-1 Maneuver	1613	-	-	408	498		-	-	508	678
Mov Cap-2 Maneuver	-	-	-	408	498		-	-	508	-
Stage 1	-	-	-	-	-		-	-	572	-
Stage 2	-	-	-	455	564		-	-	-	-

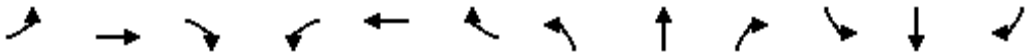
Approach	WB	NB	SB
HCM Control Delay, s	0.6	14.3	13.3
HCM LOS		B	B

Minor Lane/Major Mvmt	NBLn1	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	467	1613	-	-	542
HCM Lane V/C Ratio	0.176	0.019	-	-	0.205
HCM Control Delay (s)	14.3	7.3	-	-	13.3
HCM Lane LOS	B	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	13	251	33	18	29	0	0	41	31
Future Volume (vph)	0	0	0	13	251	33	18	29	0	0	41	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.2	4.2		4.2			4.2	
Lane Util. Factor					1.00	1.00		1.00			1.00	
Frpb, ped/bikes					1.00	0.97		1.00			0.98	
Flpb, ped/bikes					1.00	1.00		0.99			1.00	
Frt					1.00	0.85		1.00			0.94	
Flt Protected					1.00	1.00		0.98			1.00	
Satd. Flow (prot)					1839	1517		1799			1709	
Flt Permitted					1.00	1.00		0.91			1.00	
Satd. Flow (perm)					1839	1517		1664			1709	
Peak-hour factor, PHF	0.89	0.89	0.89	0.80	0.80	0.80	0.94	0.94	0.94	0.77	0.77	0.77
Adj. Flow (vph)	0	0	0	16	314	41	19	31	0	0	53	40
RTOR Reduction (vph)	0	0	0	0	0	21	0	0	0	0	27	0
Lane Group Flow (vph)	0	0	0	0	330	20	0	50	0	0	66	0
Confl. Peds. (#/hr)	11		11	11		11	12		12	12		12
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					4			2			2	
Permitted Phases				4		4	2					
Actuated Green, G (s)					24.8	24.8		16.8			16.8	
Effective Green, g (s)					24.8	24.8		16.8			16.8	
Actuated g/C Ratio					0.50	0.50		0.34			0.34	
Clearance Time (s)					4.2	4.2		4.2			4.2	
Lane Grp Cap (vph)					912	752		559			574	
v/s Ratio Prot											c0.04	
v/s Ratio Perm					0.18	0.01		0.03				
v/c Ratio					0.36	0.03		0.09			0.12	
Uniform Delay, d1					7.7	6.4		11.4			11.5	
Progression Factor					0.54	0.67		1.08			1.00	
Incremental Delay, d2					1.0	0.1		0.3			0.4	
Delay (s)					5.1	4.4		12.5			11.9	
Level of Service					A	A		B			B	
Approach Delay (s)		0.0			5.0			12.5			11.9	
Approach LOS		A			A			B			B	

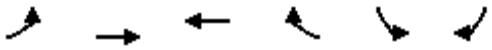
Intersection Summary			
HCM 2000 Control Delay	7.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	17	200	48	36	511	0	0	567	61
Future Volume (vph)	0	0	0	17	200	48	36	511	0	0	567	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.2	4.2		4.2			4.2	
Lane Util. Factor					1.00	1.00		0.95			0.95	
Frpb, ped/bikes					1.00	0.97		1.00			1.00	
Flpb, ped/bikes					1.00	1.00		1.00			1.00	
Frt					1.00	0.85		1.00			0.99	
Flt Protected					1.00	1.00		1.00			1.00	
Satd. Flow (prot)					1837	1514		3493			3446	
Flt Permitted					1.00	1.00		0.87			1.00	
Satd. Flow (perm)					1837	1514		3050			3446	
Peak-hour factor, PHF	0.86	0.86	0.86	0.73	0.73	0.73	0.93	0.93	0.93	0.88	0.88	0.88
Adj. Flow (vph)	0	0	0	23	274	66	39	549	0	0	644	69
RTOR Reduction (vph)	0	0	0	0	0	46	0	0	0	0	5	0
Lane Group Flow (vph)	0	0	0	0	297	20	0	588	0	0	708	0
Confl. Peds. (#/hr)	16		4	4		16	3		2	2		3
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					2			4			4	
Permitted Phases				2		2	4					
Actuated Green, G (s)					21.2	21.2		61.0			61.0	
Effective Green, g (s)					21.2	21.2		61.0			61.0	
Actuated g/C Ratio					0.21	0.21		0.61			0.61	
Clearance Time (s)					4.2	4.2		4.2			4.2	
Vehicle Extension (s)					3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)					389	320		1860			2102	
v/s Ratio Prot											c0.21	
v/s Ratio Perm					0.16	0.01		0.19				
v/c Ratio					0.76	0.06		0.32			0.34	
Uniform Delay, d1					37.0	31.5		9.4			9.6	
Progression Factor					0.89	1.13		0.34			0.56	
Incremental Delay, d2					8.6	0.1		0.4			0.4	
Delay (s)					41.4	35.7		3.6			5.8	
Level of Service					D	D		A			A	
Approach Delay (s)		0.0			40.4			3.6			5.8	
Approach LOS		A			D			A			A	

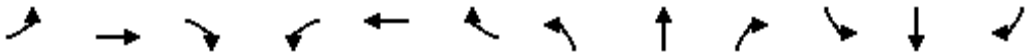
Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.6
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑			↱
Traffic Volume (veh/h)	0	0	149	0	0	83
Future Volume (veh/h)	0	0	149	0	0	83
Initial Q (Qb), veh			0	0	0	0
Ped-Bike Adj(A_pbT)				1.00	1.00	1.00
Parking Bus, Adj			1.00	1.00	1.00	1.00
Work Zone On Approach			No		No	
Adj Sat Flow, veh/h/ln			1856	0	0	1856
Adj Flow Rate, veh/h			204	0	0	115
Peak Hour Factor			0.73	0.73	0.72	0.72
Percent Heavy Veh, %			3	0	0	3
Cap, veh/h			1546	0	0	0
Arrive On Green			0.28	0.00	0.00	0.00
Sat Flow, veh/h			1856	0	0	
Grp Volume(v), veh/h			204	0	0.0	
Grp Sat Flow(s),veh/h/ln			1856	0		
Q Serve(g_s), s			2.2	0.0		
Cycle Q Clear(g_c), s			2.2	0.0		
Prop In Lane				0.00		
Lane Grp Cap(c), veh/h			1546	0		
V/C Ratio(X)			0.13	0.00		
Avail Cap(c_a), veh/h			1546	0		
HCM Platoon Ratio			0.33	1.00		
Upstream Filter(I)			1.00	0.00		
Uniform Delay (d), s/veh			2.4	0.0		
Incr Delay (d2), s/veh			0.2	0.0		
Initial Q Delay(d3),s/veh			0.0	0.0		
%ile BackOfQ(50%),veh/ln			0.1	0.0		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh			2.6	0.0		
LnGrp LOS			A	A		
Approach Vol, veh/h			204			
Approach Delay, s/veh			2.6			
Approach LOS			A			

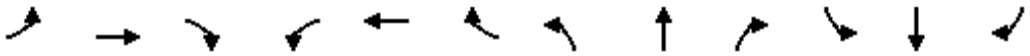
Timer - Assigned Phs	2
Phs Duration (G+Y+Rc), s	27.0
Change Period (Y+Rc), s	4.5
Max Green Setting (Gmax), s	22.5
Max Q Clear Time (g_c+I1), s	4.2
Green Ext Time (p_c), s	1.0

Intersection Summary	
HCM 6th Ctrl Delay	2.6
HCM 6th LOS	A



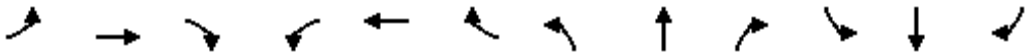
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	20	118	28	19	72	0	0	55	12
Future Volume (vph)	0	0	0	20	118	28	19	72	0	0	55	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	16	12	12	12	12	12	12	12	12
Total Lost time (s)					4.5	4.5		4.2			4.2	
Lane Util. Factor					1.00	1.00		1.00			1.00	
Frpb, ped/bikes					1.00	0.92		1.00			1.00	
Flpb, ped/bikes					0.99	1.00		1.00			1.00	
Frt					1.00	0.85		1.00			0.98	
Flt Protected					0.99	1.00		0.99			1.00	
Satd. Flow (prot)					1816	1449		1823			1793	
Flt Permitted					0.99	1.00		0.95			1.00	
Satd. Flow (perm)					1816	1449		1746			1793	
Peak-hour factor, PHF	0.91	0.91	0.91	0.73	0.73	0.73	0.82	0.82	0.82	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	27	162	38	23	88	0	0	62	13
RTOR Reduction (vph)	0	0	0	0	0	21	0	0	0	0	8	0
Lane Group Flow (vph)	0	0	0	0	189	17	0	111	0	0	67	0
Confl. Peds. (#/hr)	41		42	42		41	5		18	18		5
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					2			4			4	
Permitted Phases				2		2	4					
Actuated Green, G (s)					22.5	22.5		18.8			18.8	
Effective Green, g (s)					22.5	22.5		18.8			18.8	
Actuated g/C Ratio					0.45	0.45		0.38			0.38	
Clearance Time (s)					4.5	4.5		4.2			4.2	
Lane Grp Cap (vph)					817	652		656			674	
v/s Ratio Prot											0.04	
v/s Ratio Perm					0.10	0.01		c0.06				
v/c Ratio					0.23	0.03		0.17			0.10	
Uniform Delay, d1					8.4	7.7		10.4			10.1	
Progression Factor					0.51	0.23		1.01			1.00	
Incremental Delay, d2					0.7	0.1		0.5			0.3	
Delay (s)					4.9	1.8		11.0			10.4	
Level of Service					A	A		B			B	
Approach Delay (s)		0.0			4.4			11.0			10.4	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	35.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	13	134	13	48	149	41	32	132	25
Future Volume (vph)	0	0	0	13	134	13	48	149	41	32	132	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	12	12	12	12	12	12	10	12	12
Total Lost time (s)					4.2	4.2	4.2	4.2		4.2	4.2	
Lane Util. Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes					1.00	0.96	1.00	0.99		1.00	0.99	
Flpb, ped/bikes					1.00	1.00	0.98	1.00		0.99	1.00	
Frt					1.00	0.85	1.00	0.97		1.00	0.98	
Flt Protected					1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)					1831	1512	1715	1771		1619	1788	
Flt Permitted					1.00	1.00	0.62	1.00		0.58	1.00	
Satd. Flow (perm)					1831	1512	1127	1771		988	1788	
Peak-hour factor, PHF	0.84	0.84	0.84	0.77	0.77	0.77	0.86	0.86	0.86	0.88	0.88	0.88
Adj. Flow (vph)	0	0	0	17	174	17	56	173	48	36	150	28
RTOR Reduction (vph)	0	0	0	0	0	10	0	10	0	0	7	0
Lane Group Flow (vph)	0	0	0	0	191	7	56	211	0	36	171	0
Confl. Peds. (#/hr)	6		13	13		6	13		7	7		13
Turn Type				Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases					4			2			2	
Permitted Phases				4		4	2			2		
Actuated Green, G (s)					43.8	43.8	47.8	47.8		47.8	47.8	
Effective Green, g (s)					43.8	43.8	47.8	47.8		47.8	47.8	
Actuated g/C Ratio					0.44	0.44	0.48	0.48		0.48	0.48	
Clearance Time (s)					4.2	4.2	4.2	4.2		4.2	4.2	
Lane Grp Cap (vph)					801	662	538	846		472	854	
v/s Ratio Prot								c0.12			0.10	
v/s Ratio Perm					0.10	0.00	0.05			0.04		
v/c Ratio					0.24	0.01	0.10	0.25		0.08	0.20	
Uniform Delay, d1					17.6	15.9	14.3	15.5		14.1	15.1	
Progression Factor					1.00	1.00	1.32	1.52		1.00	1.00	
Incremental Delay, d2					0.7	0.0	0.4	0.7		0.3	0.5	
Delay (s)					18.3	15.9	19.3	24.2		14.5	15.6	
Level of Service					B	B	B	C		B	B	
Approach Delay (s)		0.0			18.1			23.2			15.4	
Approach LOS		A			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	722	57	38	622	14	69	28	55	116	43	37
Future Volume (veh/h)	7	722	57	38	622	14	69	28	55	116	43	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	7	752	59	40	662	15	85	35	68	135	50	43
Peak Hour Factor	0.96	0.96	0.96	0.94	0.94	0.94	0.81	0.81	0.81	0.86	0.86	0.86
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	16	900	71	619	2161	49	178	64	125	167	100	86
Arrive On Green	0.01	0.27	0.27	0.70	1.00	1.00	0.10	0.12	0.12	0.09	0.11	0.11
Sat Flow, veh/h	1767	3307	259	1767	3523	80	1767	556	1081	1767	912	784
Grp Volume(v), veh/h	7	401	410	40	331	346	85	0	103	135	0	93
Grp Sat Flow(s),veh/h/ln	1767	1763	1803	1767	1763	1840	1767	0	1637	1767	0	1696
Q Serve(g_s), s	0.4	21.4	21.4	0.7	0.0	0.0	4.5	0.0	5.9	7.5	0.0	5.2
Cycle Q Clear(g_c), s	0.4	21.4	21.4	0.7	0.0	0.0	4.5	0.0	5.9	7.5	0.0	5.2
Prop In Lane	1.00		0.14	1.00		0.04	1.00		0.66	1.00		0.46
Lane Grp Cap(c), veh/h	16	480	491	619	1081	1129	178	0	189	167	0	185
V/C Ratio(X)	0.45	0.84	0.84	0.06	0.31	0.31	0.48	0.00	0.54	0.81	0.00	0.50
Avail Cap(c_a), veh/h	88	610	624	619	1081	1129	191	0	426	279	0	526
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	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	49.3	34.3	34.3	9.9	0.0	0.0	42.5	0.0	41.7	44.4	0.0	42.0
Incr Delay (d2), s/veh	18.8	15.7	15.5	0.0	0.7	0.7	2.0	0.0	2.4	9.0	0.0	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(50%),veh/ln	0.3	11.0	11.2	0.3	0.2	0.2	2.1	0.0	2.5	3.7	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.1	50.0	49.8	9.9	0.7	0.7	44.5	0.0	44.2	53.4	0.0	44.1
LnGrp LOS	E	D	D	A	A	A	D	A	D	D	A	D
Approach Vol, veh/h		818			717			188			228	
Approach Delay, s/veh		50.0			1.2			44.3			49.6	
Approach LOS		D			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	39.2	31.4	14.3	15.1	5.1	65.5	13.6	15.8
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2
Max Green Setting (Gmax), s	* 6.8	* 35	* 11	* 31	* 5	* 36	* 16	* 26
Max Q Clear Time (g_c+I1), s	2.7	23.4	6.5	7.2	2.4	2.0	9.5	7.9
Green Ext Time (p_c), s	0.0	3.8	0.1	0.5	0.0	4.7	0.2	0.5

Intersection Summary	
HCM 6th Ctrl Delay	31.5
HCM 6th LOS	C

Notes

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

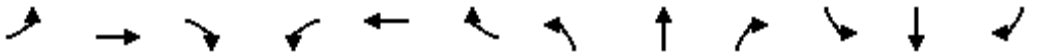
Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	832	3	4	631	37	0	0	2	30	0	61
Future Vol, veh/h	16	832	3	4	631	37	0	0	2	30	0	61
Conflicting Peds, #/hr	6	0	4	4	0	6	0	0	6	6	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	92	92	92	50	50	50	74	74	74
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	17	867	3	4	686	40	0	0	4	41	0	82

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	732	0	0	874	0	0	1258	1647	445	1194	1628	369
Stage 1	-	-	-	-	-	-	907	907	-	720	720	-
Stage 2	-	-	-	-	-	-	351	740	-	474	908	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	862	-	-	761	-	-	126	97	558	141	100	625
Stage 1	-	-	-	-	-	-	295	350	-	383	428	-
Stage 2	-	-	-	-	-	-	636	419	-	538	350	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	857	-	-	758	-	-	107	94	553	136	97	621
Mov Cap-2 Maneuver	-	-	-	-	-	-	107	94	-	136	97	-
Stage 1	-	-	-	-	-	-	288	342	-	373	423	-
Stage 2	-	-	-	-	-	-	549	414	-	521	342	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	11.6	26.9
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	553	857	-	-	758	-	-	285
HCM Lane V/C Ratio	0.007	0.019	-	-	0.006	-	-	0.431
HCM Control Delay (s)	11.6	9.3	-	-	9.8	-	-	26.9
HCM Lane LOS	B	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	2.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	669	48	36	426	96	56	258	68	164	221	175
Future Volume (veh/h)	160	669	48	36	426	96	56	258	68	164	221	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	168	704	51	41	490	110	66	304	80	178	240	190
Peak Hour Factor	0.95	0.95	0.95	0.87	0.87	0.87	0.85	0.85	0.85	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	611	833	60	549	603	135	181	428	111	206	306	258
Arrive On Green	0.69	0.50	0.50	0.62	0.42	0.42	0.10	0.15	0.15	0.19	0.28	0.28
Sat Flow, veh/h	1767	3331	241	1767	2861	638	1767	2769	717	1767	1856	1567
Grp Volume(v), veh/h	168	372	383	41	301	299	66	192	192	178	240	190
Grp Sat Flow(s),veh/h/ln	1767	1763	1810	1767	1763	1736	1767	1763	1723	1767	1856	1567
Q Serve(g_s), s	3.6	18.3	18.3	0.9	15.0	15.2	3.5	10.3	10.6	9.7	12.0	11.0
Cycle Q Clear(g_c), s	3.6	18.3	18.3	0.9	15.0	15.2	3.5	10.3	10.6	9.7	12.0	11.0
Prop In Lane	1.00		0.13	1.00		0.37	1.00		0.42	1.00		1.00
Lane Grp Cap(c), veh/h	611	441	452	549	372	366	181	272	266	206	306	258
V/C Ratio(X)	0.27	0.84	0.85	0.07	0.81	0.82	0.36	0.70	0.72	0.86	0.78	0.74
Avail Cap(c_a), veh/h	611	645	662	549	532	524	181	511	500	209	575	486
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.67	1.67	1.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	10.6	23.3	23.3	13.2	27.1	27.2	41.9	40.1	40.2	39.5	34.6	34.3
Incr Delay (d2), s/veh	0.2	17.7	17.5	0.1	17.1	18.0	1.2	3.3	3.7	28.0	4.3	3.9
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(50%),veh/ln	1.3	7.3	7.5	0.4	6.5	6.5	1.6	4.7	4.7	5.4	5.1	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.9	41.1	40.8	13.3	44.3	45.2	43.1	43.4	43.9	67.5	38.8	38.1
LnGrp LOS	B	D	D	B	D	D	D	D	D	E	D	D
Approach Vol, veh/h		923			641			450			608	
Approach Delay, s/veh		35.5			42.7			43.6			47.0	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.3	29.2	14.4	21.1	38.8	25.7	15.9	19.7
Change Period (Y+Rc), s	* 4.2	* 4.2	4.2	* 4.6	4.2	* 4.6	* 4.2	* 4.2
Max Green Setting (Gmax), s	* 5.8	* 37	9.4	* 31	11.8	* 30	* 12	* 29
Max Q Clear Time (g_c+I1), s	2.9	20.3	5.5	14.0	5.6	17.2	11.7	12.6
Green Ext Time (p_c), s	0.0	4.2	0.0	1.8	0.2	2.9	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	41.3
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	1.4

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	1	22	852	17	22	517	16	1	0	21	17	2	29
Future Vol, veh/h	1	22	852	17	22	517	16	1	0	21	17	2	29
Conflicting Peds, #/hr	0	0	0	5	5	0	0	1	0	1	1	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	75	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	93	93	93	79	79	79	71	71	71
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	23	906	18	24	556	17	1	0	27	24	3	41

Major/Minor	Major1				Major2			Minor1			Minor2		
Conflicting Flow All	573	573	0	0	929	0	0	1297	1589	468	1115	1590	288
Stage 1	-	-	-	-	-	-	-	968	968	-	613	613	-
Stage 2	-	-	-	-	-	-	-	329	621	-	502	977	-
Critical Hdwy	6.46	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.53	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	618	989	-	-	726	-	-	118	106	539	161	106	706
Stage 1	-	-	-	-	-	-	-	271	328	-	444	479	-
Stage 2	-	-	-	-	-	-	-	655	475	-	517	325	-
Platoon blocked, %			-	-		-	-						
Mov Cap-1 Maneuver	961	961	-	-	723	-	-	103	99	536	146	99	705
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	103	99	-	146	99	-
Stage 1	-	-	-	-	-	-	-	263	318	-	433	463	-
Stage 2	-	-	-	-	-	-	-	592	459	-	479	315	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.4	13.5	22.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	450	961	-	-	723	-	-	270
HCM Lane V/C Ratio	0.062	0.025	-	-	0.033	-	-	0.25
HCM Control Delay (s)	13.5	8.8	-	-	10.1	-	-	22.7
HCM Lane LOS	B	A	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0.1	-	-	1

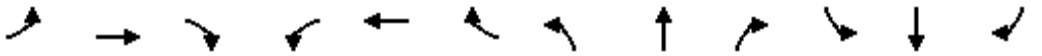
Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	50	824	15	1	20	509	20	9	3	15	21	3	44
Future Vol, veh/h	50	824	15	1	20	509	20	9	3	15	21	3	44
Conflicting Peds, #/hr	0	0	5	0	5	0	0	2	0	1	1	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	-	95	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	92	92	92	92	48	48	48	82	82	82
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	53	867	16	1	22	553	22	19	6	31	26	4	54

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	575	0	0	883	888	0	0	1313	1607	448	1154	1604	290
Stage 1	-	-	-	-	-	-	-	986	986	-	610	610	-
Stage 2	-	-	-	-	-	-	-	327	621	-	544	994	-
Critical Hdwy	4.16	-	-	6.46	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.53	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	987	-	-	392	752	-	-	115	103	555	151	103	704
Stage 1	-	-	-	-	-	-	-	264	322	-	446	481	-
Stage 2	-	-	-	-	-	-	-	657	475	-	488	319	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	987	-	-	715	715	-	-	96	94	552	127	94	703
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	96	94	-	127	94	-
Stage 1	-	-	-	-	-	-	-	249	303	-	422	466	-
Stage 2	-	-	-	-	-	-	-	582	460	-	426	300	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.4	34.5	25
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	177	987	-	-	715	-	-	262
HCM Lane V/C Ratio	0.318	0.053	-	-	0.032	-	-	0.317
HCM Control Delay (s)	34.5	8.9	-	-	10.2	-	-	25
HCM Lane LOS	D	A	-	-	B	-	-	D
HCM 95th %tile Q(veh)	1.3	0.2	-	-	0.1	-	-	1.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	539	248	167	372	7	162	128	205	22	113	19
Future Volume (veh/h)	81	539	248	167	372	7	162	128	205	22	113	19
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		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	87	580	267	178	396	7	176	139	223	25	130	22
Peak Hour Factor	0.93	0.93	0.93	0.94	0.94	0.94	0.92	0.92	0.92	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	771	1107	509	209	546	10	208	283	238	158	191	32
Arrive On Green	0.14	0.16	0.16	0.12	0.15	0.15	0.12	0.15	0.15	0.03	0.04	0.04
Sat Flow, veh/h	1767	2344	1078	1767	3544	63	1767	1856	1563	1767	1545	261
Grp Volume(v), veh/h	87	436	411	178	197	206	176	139	223	25	0	152
Grp Sat Flow(s),veh/h/ln	1767	1763	1659	1767	1763	1844	1767	1856	1563	1767	0	1806
Q Serve(g_s), s	4.3	22.7	22.8	9.9	10.6	10.7	9.8	6.9	10.7	1.4	0.0	8.3
Cycle Q Clear(g_c), s	4.3	22.7	22.8	9.9	10.6	10.7	9.8	6.9	10.7	1.4	0.0	8.3
Prop In Lane	1.00		0.65	1.00		0.03	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	771	832	783	209	272	284	208	283	238	158	0	224
V/C Ratio(X)	0.11	0.52	0.52	0.85	0.72	0.73	0.85	0.49	0.94	0.16	0.00	0.68
Avail Cap(c_a), veh/h	771	832	783	226	545	570	242	685	577	158	0	506
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.00	0.99
Uniform Delay (d), s/veh	26.0	31.9	31.9	43.2	40.3	40.3	43.2	38.8	24.3	44.9	0.0	46.0
Incr Delay (d2), s/veh	0.1	2.4	2.5	24.1	15.4	14.9	21.0	1.3	15.6	0.5	0.0	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	11.2	10.6	5.6	5.7	5.9	5.4	3.2	4.9	0.6	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.0	34.2	34.4	67.3	55.7	55.2	64.2	40.2	39.9	45.3	0.0	49.6
LnGrp LOS	C	C	C	E	E	E	E	D	D	D	A	D
Approach Vol, veh/h		934			581			538			177	
Approach Delay, s/veh		33.5			59.1			47.9			49.0	
Approach LOS		C			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	51.4	16.0	16.6	47.8	19.6	13.1	19.4
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2	* 4.2
Max Green Setting (Gmax), s	* 13	* 29	* 14	* 28	* 11	* 31	* 4.8	* 37
Max Q Clear Time (g_c+I1), s	11.9	24.8	11.8	10.3	6.3	12.7	3.4	12.7
Green Ext Time (p_c), s	0.0	1.9	0.1	0.7	0.1	2.1	0.0	1.5

Intersection Summary	
HCM 6th Ctrl Delay	44.9
HCM 6th LOS	D

Notes

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

Intersection: 1: O St & 18th St

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	31	56	71
Average Queue (ft)	1	37	29
95th Queue (ft)	10	52	58
Link Distance (ft)	434	346	736
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: N St & 18th St

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LTR	ULTR	LTR
Maximum Queue (ft)	78	54	72	45	50
Average Queue (ft)	48	17	36	22	25
95th Queue (ft)	71	46	59	42	46
Link Distance (ft)	434		214	321	775
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		55			
Storage Blk Time (%)	2	0			
Queuing Penalty (veh)	0	1			

Intersection: 3: M St & 18th St

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	119	204	53	114	32	118	184	109	174	124
Average Queue (ft)	41	95	26	43	6	39	60	34	77	54
95th Queue (ft)	95	174	56	78	25	97	136	75	138	104
Link Distance (ft)		157		126		332	332		1165	1165
Upstream Blk Time (%)		3		0						
Queuing Penalty (veh)		7		0						
Storage Bay Dist (ft)	50		50		80			60		
Storage Blk Time (%)	7	26	2	9		2		1	11	
Queuing Penalty (veh)	14	18	2	4		0		3	7	

Intersection: 4: Canal St & 18th St

Movement	EB	EB	WB	SB
Directions Served	LT	R	LTR	LTR
Maximum Queue (ft)	74	49	135	129
Average Queue (ft)	40	12	62	41
95th Queue (ft)	79	37	101	83
Link Distance (ft)	243		435	1169
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		50		
Storage Blk Time (%)	7	0		
Queuing Penalty (veh)	3	0		

Intersection: 5: K St & 18th St

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LTR	LTR	LTR
Maximum Queue (ft)	98	55	68	82	56
Average Queue (ft)	53	20	34	37	31
95th Queue (ft)	84	46	47	66	47
Link Distance (ft)	435		418	323	1173
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		50			
Storage Blk Time (%)	5	0			
Queuing Penalty (veh)	1	0			

Intersection: 6: MLK Jr Wy & 18th St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	65	52	77	55
Average Queue (ft)	35	31	46	34
95th Queue (ft)	53	46	74	51
Link Distance (ft)	418	1408	336	1440
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: O St & Main St

Movement	EB	EB	WB	NB	SB
Directions Served	L	R	L	LT	TR
Maximum Queue (ft)	51	19	50	46	71
Average Queue (ft)	13	1	5	23	27
95th Queue (ft)	39	6	25	38	49
Link Distance (ft)		1354		131	346
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	75		75		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: N St & Main St

Movement	WB	WB	NB	SB
Directions Served	LT	R	LT	TR
Maximum Queue (ft)	162	98	53	87
Average Queue (ft)	90	22	24	32
95th Queue (ft)	156	74	52	69
Link Distance (ft)	421		344	321
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		50		
Storage Blk Time (%)	16	0		
Queuing Penalty (veh)	6	0		

Intersection: 9: M St & Main St

Movement	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	T	T	TR
Maximum Queue (ft)	270	150	142	158	177	192
Average Queue (ft)	133	42	81	77	59	44
95th Queue (ft)	238	122	147	150	124	106
Link Distance (ft)	420		343	343	332	332
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		75				
Storage Blk Time (%)	32					
Queuing Penalty (veh)	15					

Intersection: 10: Main St & Canal St

Movement	WB	SB
Directions Served	T	R
Maximum Queue (ft)	51	158
Average Queue (ft)	15	49
95th Queue (ft)	43	110
Link Distance (ft)	448	333
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: K St & Main St

Movement	WB	WB	NB	SB
Directions Served	LT	R	LT	TR
Maximum Queue (ft)	166	31	109	46
Average Queue (ft)	46	9	39	21
95th Queue (ft)	111	32	89	45
Link Distance (ft)	415		344	323
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		75		
Storage Blk Time (%)	2			
Queuing Penalty (veh)	1			

Intersection: 12: MLK Jr Wy & Main St

Movement	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	L	TR	L	TR
Maximum Queue (ft)	96	31	69	134	47	126
Average Queue (ft)	63	6	26	55	14	45
95th Queue (ft)	95	26	56	103	44	93
Link Distance (ft)	1418			332		336
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		75	75		75	
Storage Blk Time (%)	5		0	4		1
Queuing Penalty (veh)	1		0	2		0

Intersection: 13: O St & 16th St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	50	197	183	57	222	201	68	98	99	104
Average Queue (ft)	14	93	75	27	74	88	38	49	56	45
95th Queue (ft)	42	165	150	57	136	149	67	91	88	86
Link Distance (ft)		1314	1314		408	408		431		148
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	75			75			50		50	
Storage Blk Time (%)		11		0	7		10	5	13	5
Queuing Penalty (veh)		1		0	3		10	3	10	6

Intersection: 14: Private Drwy/N St & 16th St

Movement	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	TR	T	TR	LTR	LTR
Maximum Queue (ft)	26	74	55	25	22	30	101
Average Queue (ft)	7	3	3	2	2	3	47
95th Queue (ft)	25	26	21	12	11	18	82
Link Distance (ft)		408	408	412	412	100	344
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	75						
Storage Blk Time (%)		0					
Queuing Penalty (veh)		0					

Intersection: 15: M St & 16th St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	R
Maximum Queue (ft)	149	185	207	129	175	245	76	115	135	176	227	99
Average Queue (ft)	80	92	107	25	88	114	37	68	72	92	103	53
95th Queue (ft)	124	155	182	72	140	185	72	104	120	155	192	89
Link Distance (ft)		412	412		420	420		1285	1285		343	343
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			85			50			200		
Storage Blk Time (%)	5	4		0	7		12	28			1	
Queuing Penalty (veh)	16	6		0	2		17	15			2	

Intersection: 16: Canal St & 16th St

Movement	EB	EB	WB	NB	SB
Directions Served	UL	TR	L	LTR	LTR
Maximum Queue (ft)	53	48	50	53	55
Average Queue (ft)	12	2	12	23	19
95th Queue (ft)	40	16	38	54	51
Link Distance (ft)		420		1281	163
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	75		75		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 17: Private Drwy/K St & 16th St

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	UL	TR	LTR	LTR
Maximum Queue (ft)	64	22	74	51	68	56
Average Queue (ft)	20	1	9	2	26	27
95th Queue (ft)	54	7	43	19	56	54
Link Distance (ft)		434		399	136	344
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	75		95			
Storage Blk Time (%)	0					
Queuing Penalty (veh)	0					

Intersection: 18: MLK Jr Wy & 16th St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	TR
Maximum Queue (ft)	90	180	225	146	142	124	159	199	139	52	179
Average Queue (ft)	44	91	132	76	77	64	77	61	46	15	63
95th Queue (ft)	82	161	195	127	136	113	125	113	98	41	124
Link Distance (ft)		399	399		1389	1389		1818	1818		332
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	170			100			105			50	
Storage Blk Time (%)		0		5	4		4	0		2	15
Queuing Penalty (veh)		0		11	6		6	0		2	3

Network Summary

Network wide Queuing Penalty: 205

Intersection: 1: O St & 18th St

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	29	55	55
Average Queue (ft)	1	36	30
95th Queue (ft)	10	53	53
Link Distance (ft)	434	346	736
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: N St & 18th St

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LTR	ULTR	LTR
Maximum Queue (ft)	92	49	75	70	53
Average Queue (ft)	44	12	40	20	27
95th Queue (ft)	72	38	67	43	49
Link Distance (ft)	434		233	321	776
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		55			
Storage Blk Time (%)	2	0			
Queuing Penalty (veh)	0	0			

Intersection: 3: M St & 18th St

Movement	EB	EB	B38	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	T	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	119	202	94	91	162	56	161	197	109	184	183
Average Queue (ft)	48	103	3	34	58	8	31	51	39	79	64
95th Queue (ft)	104	179	31	69	114	33	95	124	88	141	134
Link Distance (ft)		138	233		117		331	331		1165	1165
Upstream Blk Time (%)	0	4			1						
Queuing Penalty (veh)	0	10			2						
Storage Bay Dist (ft)	50			50		80			60		
Storage Blk Time (%)	10	35		9	13		2		1	11	
Queuing Penalty (veh)	17	27		10	6		0		3	7	

Intersection: 4: Canal St & 18th St

Movement	EB	EB	WB	SB
Directions Served	LT	R	LTR	LTR
Maximum Queue (ft)	137	55	92	66
Average Queue (ft)	54	13	50	28
95th Queue (ft)	103	40	84	60
Link Distance (ft)	252		435	1169
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		50		
Storage Blk Time (%)	9	0		
Queuing Penalty (veh)	3	0		

Intersection: 5: K St & 18th St

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LTR	LTR	LTR
Maximum Queue (ft)	78	86	74	103	55
Average Queue (ft)	49	15	37	34	29
95th Queue (ft)	76	50	55	69	50
Link Distance (ft)	435		418	323	1173
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		50			
Storage Blk Time (%)	4	0			
Queuing Penalty (veh)	1	0			

Intersection: 6: MLK Jr Wy & 18th St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	72	54	131	55
Average Queue (ft)	42	37	63	34
95th Queue (ft)	64	57	113	51
Link Distance (ft)	418	1408	336	1440
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: O St & Main St

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	R	L	TR	LT	TR
Maximum Queue (ft)	53	22	31	54	48	55
Average Queue (ft)	19	1	2	2	22	32
95th Queue (ft)	51	7	15	18	41	49
Link Distance (ft)		1354		428	131	346
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	75		75			
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 8: N St & Main St

Movement	WB	WB	NB	SB
Directions Served	LT	R	LT	TR
Maximum Queue (ft)	262	100	53	43
Average Queue (ft)	62	17	20	16
95th Queue (ft)	147	62	49	35
Link Distance (ft)	421		344	321
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		50		
Storage Blk Time (%)	10	0		
Queuing Penalty (veh)	3	1		

Intersection: 9: M St & Main St

Movement	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	T	T	TR
Maximum Queue (ft)	225	138	187	135	270	189
Average Queue (ft)	119	25	57	50	97	52
95th Queue (ft)	199	66	130	122	210	126
Link Distance (ft)	420		343	343	331	331
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		75				
Storage Blk Time (%)	30					
Queuing Penalty (veh)	14					

Intersection: 10: Main St & Canal St

Movement	WB	SB
Directions Served	T	R
Maximum Queue (ft)	51	54
Average Queue (ft)	20	26
95th Queue (ft)	46	58
Link Distance (ft)	448	333
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: K St & Main St

Movement	WB	WB	NB	SB
Directions Served	LT	R	LT	TR
Maximum Queue (ft)	54	31	98	65
Average Queue (ft)	22	5	35	16
95th Queue (ft)	53	23	74	43
Link Distance (ft)	415		344	323
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		75		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: MLK Jr Wy & Main St

Movement	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	L	TR	L	TR
Maximum Queue (ft)	118	32	124	286	64	108
Average Queue (ft)	57	7	23	121	14	50
95th Queue (ft)	108	28	67	218	45	100
Link Distance (ft)	1418			332		336
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		75	75		75	
Storage Blk Time (%)	6		0	17	0	3
Queuing Penalty (veh)	1		1	8	0	1

Intersection: 13: O St & 16th St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	B39
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR	T
Maximum Queue (ft)	29	370	277	149	242	270	94	95	99	212	79
Average Queue (ft)	5	157	122	33	69	93	47	42	65	71	3
95th Queue (ft)	23	280	238	78	166	180	85	81	103	168	26
Link Distance (ft)		1314	1314		408	408		431		148	131
Upstream Blk Time (%)										4	
Queuing Penalty (veh)										7	
Storage Bay Dist (ft)	75			75			50		50		
Storage Blk Time (%)		23		0	9		24	10	33	16	
Queuing Penalty (veh)		2		0	3		20	7	27	18	

Intersection: 14: Private Drwy/N St & 16th St

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	27	29	30	26	22	43	30	67
Average Queue (ft)	5	2	2	3	1	3	3	41
95th Queue (ft)	22	13	14	15	10	18	18	65
Link Distance (ft)		408	408		412	412	100	344
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	75			50				
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 15: M St & 16th St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	R
Maximum Queue (ft)	174	248	234	128	192	202	100	179	179	249	343	118
Average Queue (ft)	101	107	112	39	78	109	57	104	92	130	100	49
95th Queue (ft)	170	200	200	86	148	198	108	164	149	212	218	95
Link Distance (ft)		412	412		420	420		1285	1285		343	343
Upstream Blk Time (%)											0	
Queuing Penalty (veh)											0	
Storage Bay Dist (ft)	100			85			50			200		
Storage Blk Time (%)	11	6		0	6		12	42		1	0	
Queuing Penalty (veh)	38	10		0	2		15	24		2	0	

Intersection: 16: Canal St & 16th St

Movement	EB	WB	WB	WB	NB	SB
Directions Served	UL	L	T	TR	LTR	LTR
Maximum Queue (ft)	45	52	30	52	31	52
Average Queue (ft)	6	9	1	2	19	25
95th Queue (ft)	28	36	10	19	42	49
Link Distance (ft)			434	434	1281	163
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	75	75				
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 17: Private Drwy/K St & 16th St

Movement	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	TR	UL	TR	LTR	LTR
Maximum Queue (ft)	31	53	52	53	31	53	139
Average Queue (ft)	10	2	3	7	1	16	34
95th Queue (ft)	33	17	25	32	10	43	84
Link Distance (ft)		434	434		399	136	344
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	75			95			
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 18: MLK Jr Wy & 16th St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	TR
Maximum Queue (ft)	224	260	327	174	355	254	159	219	96	164	198
Average Queue (ft)	53	138	192	100	123	82	99	93	60	27	95
95th Queue (ft)	125	237	310	174	241	179	171	184	89	79	159
Link Distance (ft)		399	399		1389	1389		1818	1818		332
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	170			100			105			50	
Storage Blk Time (%)		4		20	9		12	7		5	38
Queuing Penalty (veh)		3		37	14		15	12		6	8

Network Summary

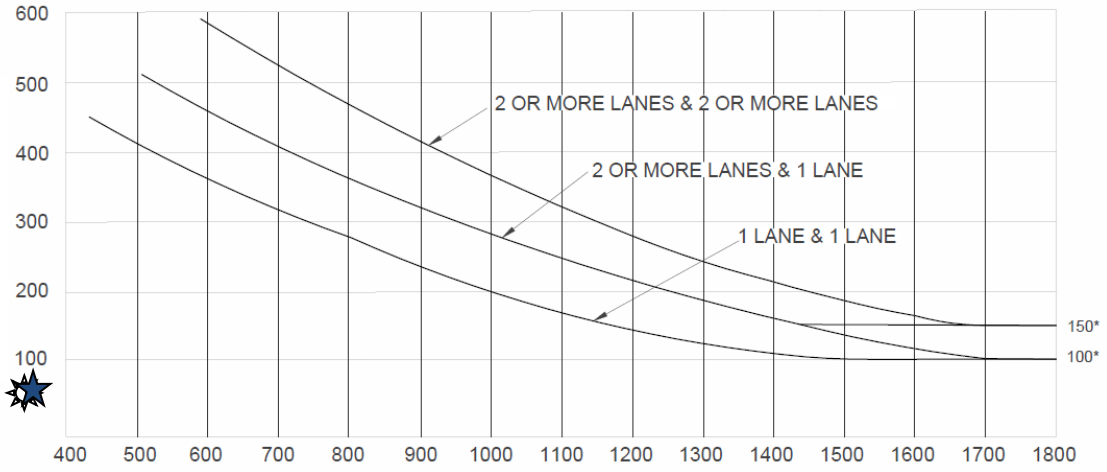
Network wide Queuing Penalty: 388

Appendix E: Signal Warrants

Warrant 3: Peak Hour (Urban)

Existing Traffic Conditions
1. O Street / 18th Street
AM (PM) Peak Hour

O Street Highest Approach Volume = 63 (68) VPH



18th Street Total of Both Approaches = 312 (319) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

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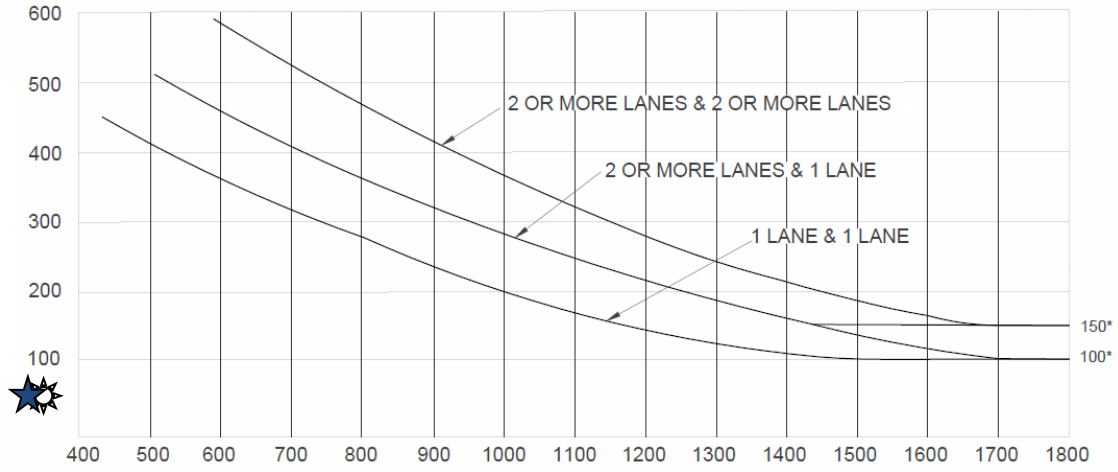
Warrant 3: Peak Hour (Urban)

Existing Traffic Conditions
2. N Street / 18th Street
AM (PM) Peak Hour

N Street Highest Approach Volume = 58 (59) VPH



18th Street Total of Both Approaches = 355 (332) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

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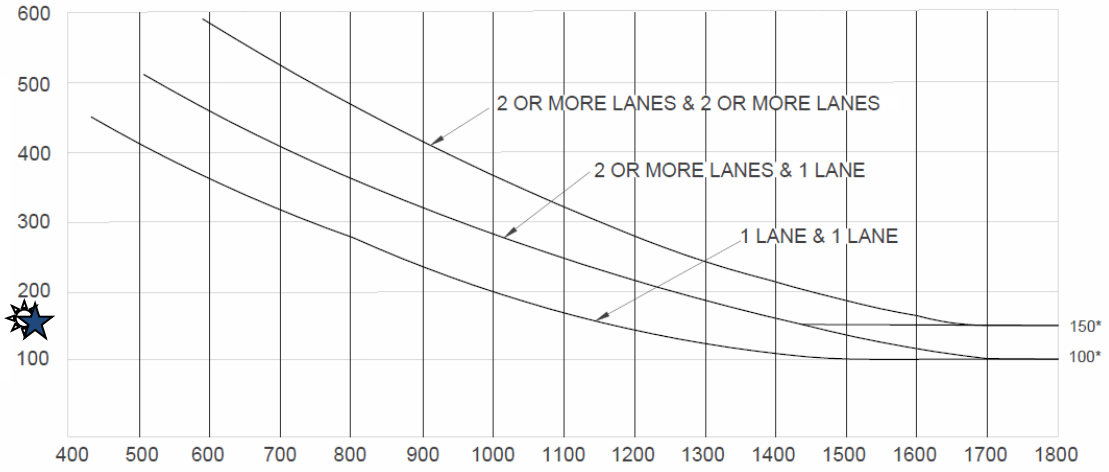
Warrant 3: Peak Hour (Urban)

Existing Traffic Conditions
5. K Street / 18th Street
AM (PM) Peak Hour

K Street Highest Approach Volume = 164 (159) VPH



18th Street Total of Both Approaches = 325 (332) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

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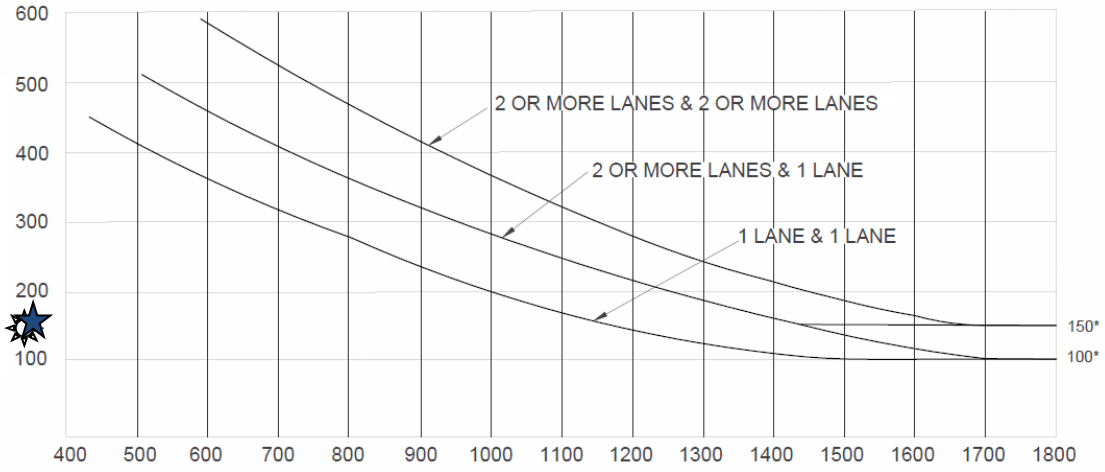
Warrant 3: Peak Hour (Urban)

Existing Traffic Conditions
6. MLK Street / 18th Street
AM (PM) Peak Hour

18th Street Highest Approach Volume = 148 (167) VPH



MLK Street Total of Both Approaches = 284 (303) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

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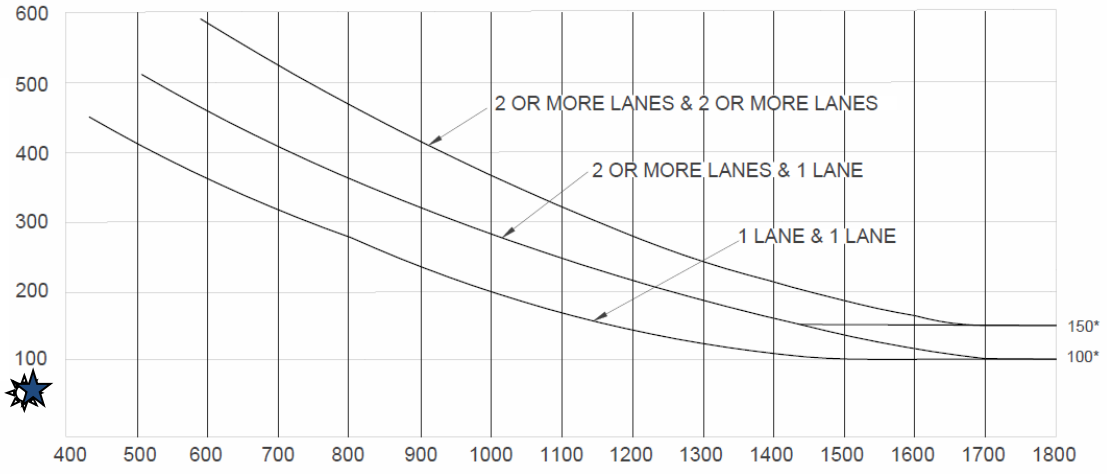
Warrant 3: Peak Hour (Urban)

Existing Traffic Conditions
7. O Street / Main Street
AM (PM) Peak Hour

O Street Highest Approach Volume = 80 (83) VPH



Main Street Total of Both Approaches = 251 (268) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

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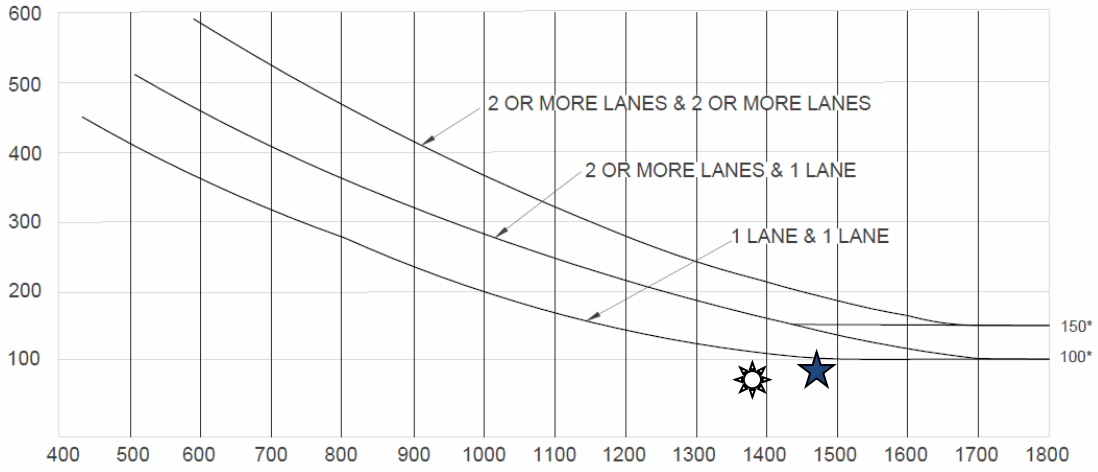
Warrant 3: Peak Hour (Urban)

Existing Traffic Conditions
14. N Street / 16th Street
AM (PM) Peak Hour

N Street Highest Approach Volume = 81 (89) VPH



16th Street Total of Both Approaches =

1384 (1475) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

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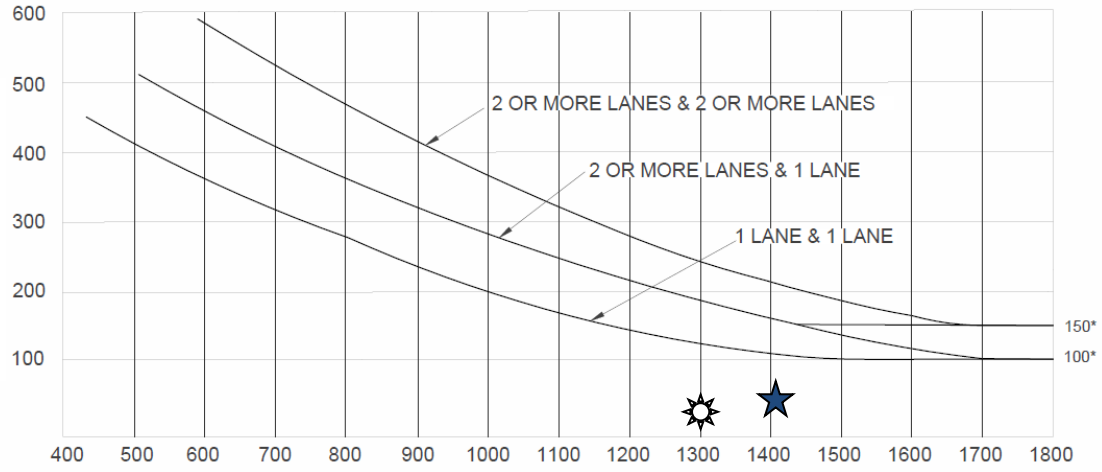
Warrant 3: Peak Hour (Urban)

Existing Traffic Conditions
16. Canal Street / 16th Street
AM (PM) Peak Hour

Canal Street Highest Approach Volume = 35 (48) VPH



16th Street Total of Both Approaches = 1300 (1409) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

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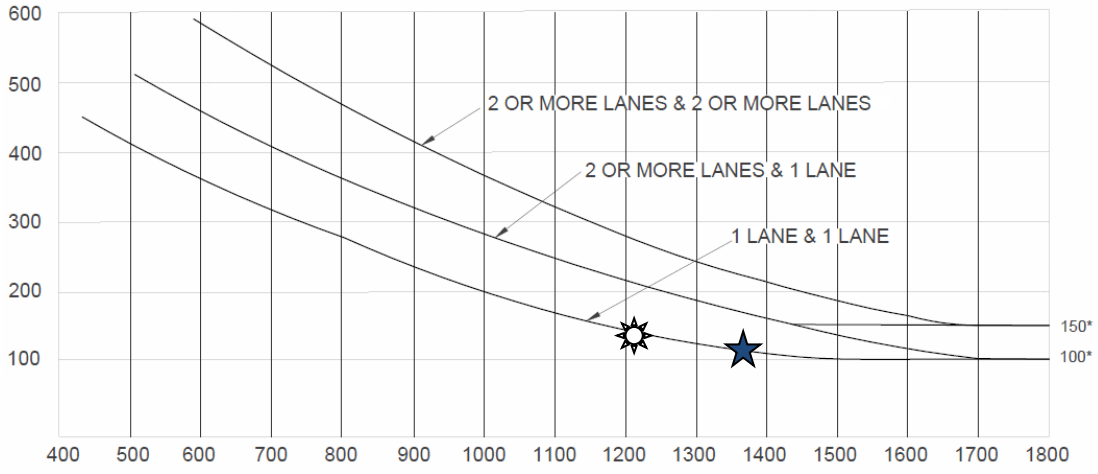
Warrant 3: Peak Hour (Urban)

Existing Traffic Conditions
17. K Street / 16th Street
AM (PM) Peak Hour

K Street Highest Approach Volume = 130 (111) VPH



16th Street Total of Both Approaches = 1207 (1371) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

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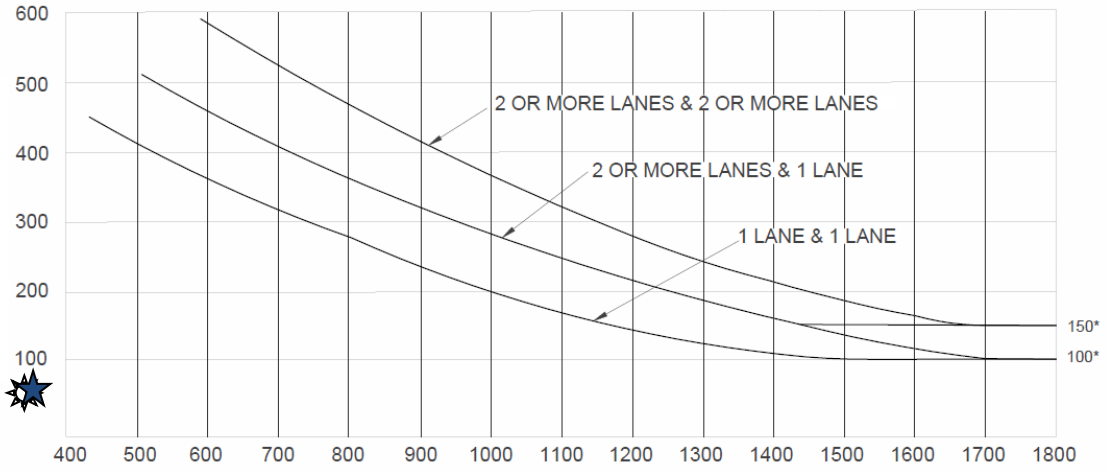
Warrant 3: Peak Hour (Urban)

Existing plus Project Traffic Conditions
1. O Street / 18th Street
AM (PM) Peak Hour

O Street Highest Approach Volume = 63 (68) VPH



18th Street Total of Both Approaches = 365 (375) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
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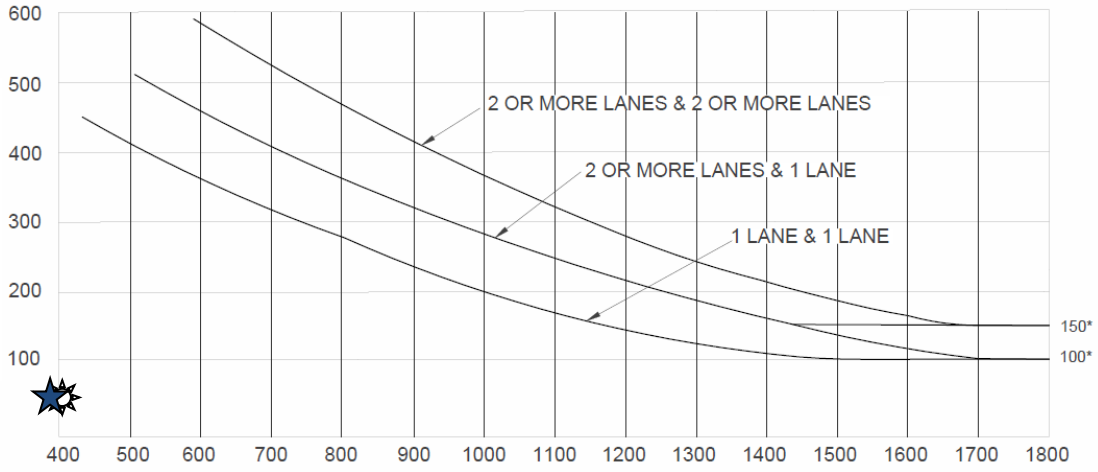
Warrant 3: Peak Hour (Urban)

Existing plus Project Traffic Conditions
2. N Street / 18th Street
AM (PM) Peak Hour

N Street Highest Approach Volume = 54 (59) VPH



18th Street Total of Both Approaches = 401 (380) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

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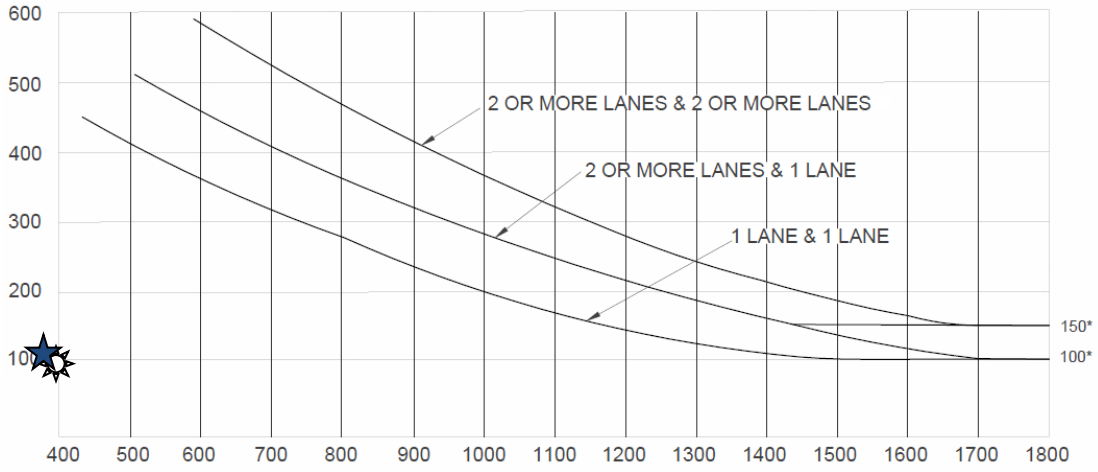
Warrant 3: Peak Hour (Urban)

Existing plus Project Traffic Conditions
5. K Street / 18th Street
AM (PM) Peak Hour

K Street Highest Approach Volume = 93 (106) VPH



18th Street Total of Both Approaches = 397 (386) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

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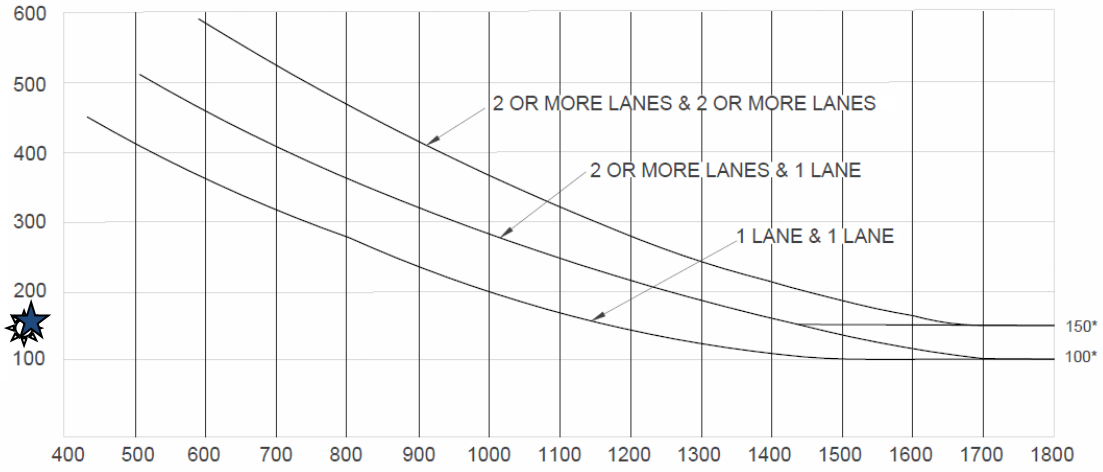
Warrant 3: Peak Hour (Urban)

Existing plus Project Traffic Conditions
6. MLK Street / 18th Street
AM (PM) Peak Hour

18th Street Highest Approach Volume = 148 (167) VPH



MLK Street Total of Both Approaches = 354 (356) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

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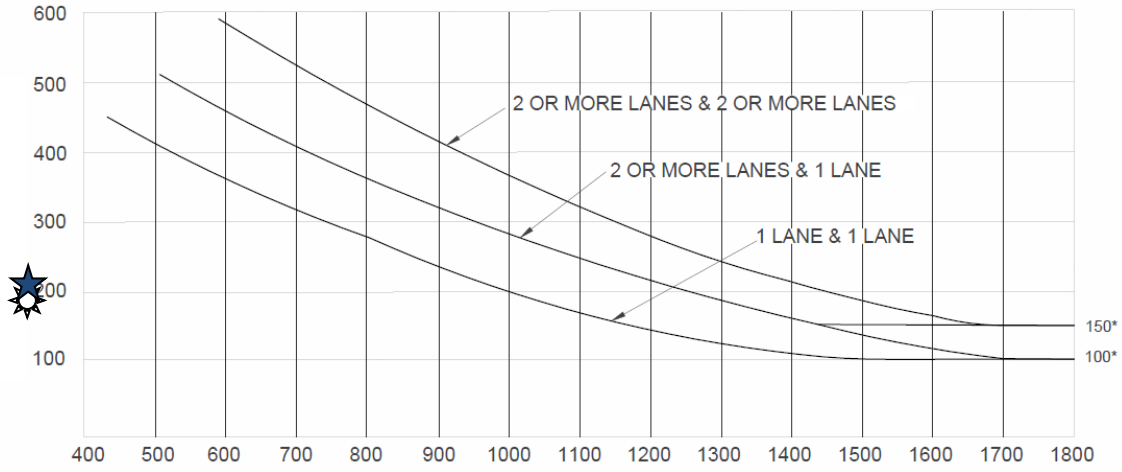
Warrant 3: Peak Hour (Urban)

Existing plus Project Traffic Conditions
7. O Street / Main Street
AM (PM) Peak Hour

O Street Highest Approach Volume = 189 (203) VPH



Main Street Total of Both Approaches = 203 (203) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

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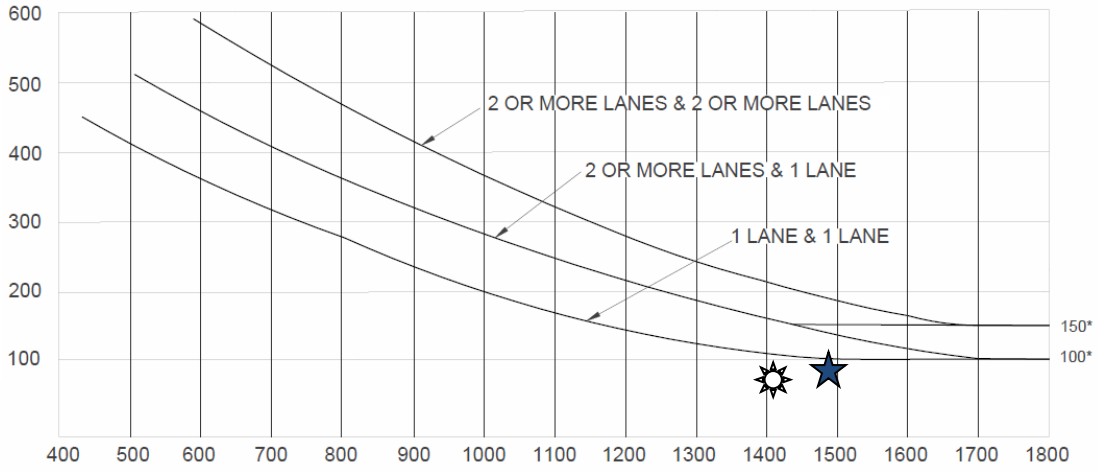
Warrant 3: Peak Hour (Urban)

Existing plus Project Traffic Conditions
14. N Street / 16th Street
AM (PM) Peak Hour

N Street Highest Approach Volume = 76 (88) VPH



16th Street Total of Both Approaches = 1407 (1493) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

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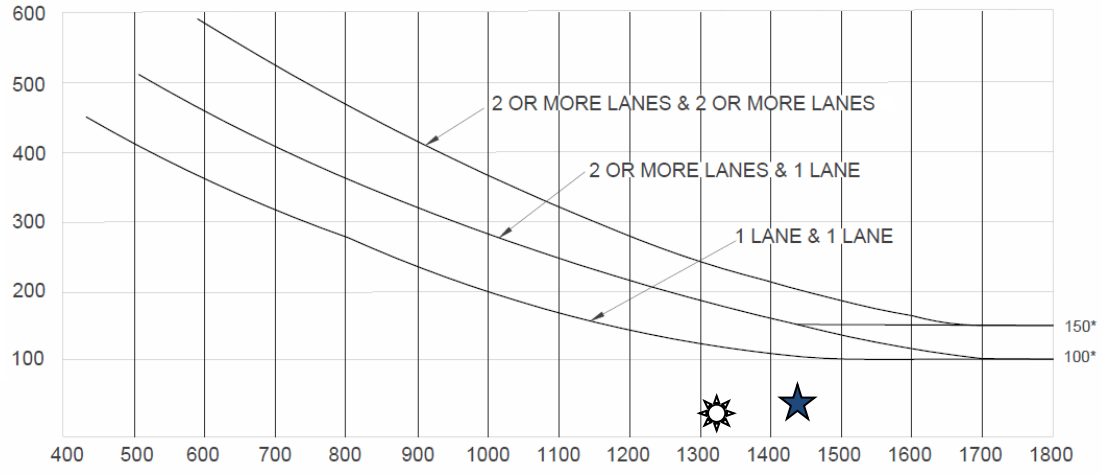
Warrant 3: Peak Hour (Urban)

Existing plus Project Traffic Conditions
16. Canal Street / 16th Street
AM (PM) Peak Hour

Canal Street Highest Approach Volume = 35 (48) VPH



16th Street Total of Both Approaches = 1329 (1437) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

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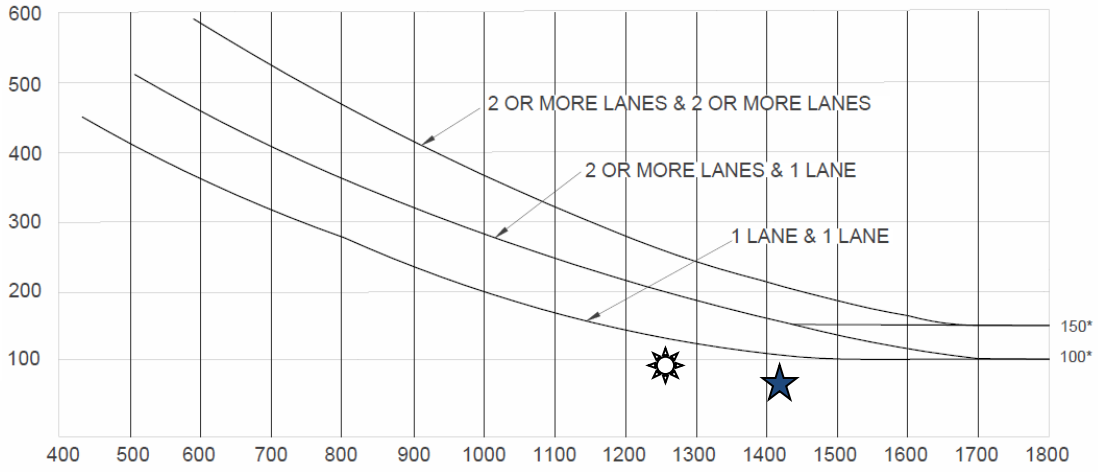
Warrant 3: Peak Hour (Urban)

Existing plus Project Traffic Conditions
17. K Street / 16th Street
AM (PM) Peak Hour

K Street Highest Approach Volume = 95 (74) VPH



16th Street Total of Both Approaches = 1256 (1416) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

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