

APPENDIX J

Transportation Impact Analysis

Vehicle Miles Traveled Analysis

LANCASTER HEALTH DISTRICT MASTER PLAN

JULY 2020 | DRAFT REPORT

Prepared For:



Prepared By:

Kimley»»Horn

INTRODUCTION

This report documents a Vehicle miles Traveled Analysis conducted for the Lancaster Health District Master Plan for the City of Lancaster. The Lancaster Health District Master Plan consists of a master planned mixed-use development that is projected to occur over the next twenty years. The project site is located primarily between 20th Street West, Avenue J, 15th Street West, and Avenue J-8 in the City of Lancaster, CA. The project will also include development east of 15th Street West in the East Neighborhood and south of Avenue J-8 in the South Neighborhood. The site is currently occupied primarily by the Antelope Valley Hospital and some associated facilities, all of which would be replaced as part of the project. The project site also includes a mixture of existing retail, residential, and restaurant land uses that would remain as the project is developed. The remainder of the site is occupied by surface parking lots and unimproved land. The project will include a new Antelope Valley Hospital with 380 beds along with additional development of 284 hospital beds for sub-acute care, up to 150 KSF of retail space, 90 KSF of restaurant space, 200 KSF of office space, 400 KSF of medical-dental office space, 180 hotel rooms, a 70 KSF convention center, 300 senior housing dwelling units, 100 assisted living dwelling units, 250 single-family residential dwelling units, and 1,350 multifamily residential dwelling units. The Master Plan also includes the redesign of the internal circulation system.

VEHICLE MILES TRAVELED ANALYSIS

State Senate Bill (SB) 743 amended the California Environmental Quality Act (CEQA) Guidelines to provide an alternative to LOS for evaluating transportation impacts. Since its passing, the Governor's Office of Planning and Research (OPR) has proposed changes to the CEQA Guidelines that identify vehicle miles traveled (VMT) as the most appropriate metric to evaluate a project's transportation impacts. Since adoption by the California Natural Resources Agency in 2018, automobile delay, as measured by LOS and other similar metrics, generally no longer constitutes a significant environmental effect under CEQA.

The intent of this legislation is to balance the need for traffic LOS standards with the need to build infill housing and mixed-use commercial developments within walking distance of mass transit facilities, downtowns, and town centers. In doing so, this legislation aims to provide greater flexibility to local governments to balance these (sometimes) competing needs. However, a jurisdiction may still adopt LOS as a performance standard for analyzing traffic conditions and maintaining throughput on its highway system.

CITY OF LANCASTER VMT GUIDELINES

VMT analysis for development projects in Lancaster is based upon the latest version of the Southern California Association of Governments (SCAG) model developed for the 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). This version of the model was previously used to identify the Antelope Valley Planning Area Baseline VMT metrics for 2020.

VMT for the Lancaster Health District Master Plan reflects all land uses within the Master Plan site. The daily Total VMT per service population was calculated for the project site. A VMT impact would occur if the Total VMT per service population of the Master Plan exceeds the City's threshold of 15% below the Antelope Valley Planning Area Baseline VMT.

VMT ANALYSIS & IMPACTS

Fehr and Peers conducted the VMT Analysis for the Lancaster Health District. The technical memorandum is included as an **Appendix**.

The total VMT per service population generated by the project was calculated for base year (2020) and future year (2040) conditions compared to the Baseline VMT.

The Lancaster Health District generates 34.0 total VMT per service population in the base year (2020) and 28.7 total VMT per service population under future year (2040) conditions, in comparison to the Antelope Valley Planning Area Baseline VMT of 41.8. For both existing and future years, the project generated VMT is more than 15% below the Antelope Valley Planning Area Baseline VMT and therefore below threshold of a significant impact.

The project's effect on VMT for the region was also analyzed to determine the potential for cumulative transportation impacts. The total VMT in the Antelope Valley was calculated with and without the buildout of the Lancaster Health District Master Plan. The results showed that the future VMT in the Antelope Valley would be approximately 0.5% lower with the project in place.

The VMT analysis shows that the project is not forecast to generate a significant VMT impact.

APPENDIX – VMT TECHNICAL MEMO

Technical Memorandum

Date: May 21, 2020
To: Robert Blume, Kimley-Horn
From: Sarah Brandenberg
Subject: **DRAFT** - Lancaster Health District VMT Analysis

LA20-3197

This technical memorandum documents the Vehicle Miles Traveled (VMT) analysis for the Lancaster Health District Master Plan. The Health District Master Plan site is generally bounded by Avenue J to the north, 20th Street West to the west, 10th Street West to the east, and Avenue K to the south. The Master Plan will guide development within the site over the next 20 years and establishes the maximum amount of development that can occur within the site. The Master Plan will replace the existing Antelope Valley Hospital main facility with a new hospital and supporting uses and provide new commercial, office, hotel, and residential uses within the site. The VMT analysis conducted for the Health District Master Plan is part of an environmental impact report being prepared for the project and follows the California Environmental Quality Act (CEQA) guidance for determining transportation impacts in accordance with Senate Bill (SB) 743.

On September 27, 2013, Governor Jerry Brown signed Senate Bill (SB) 743 into law, which initiated a process to change transportation impact analyses completed in support of CEQA documentation. SB 743 eliminates level of service (LOS) as a basis for determining significant transportation impacts under CEQA and provides a new performance metric, vehicle miles traveled (VMT). As a result, the State is shifting from measuring a project's impact to drivers (LOS) to measuring the impact of driving (VMT) as it relates to achieving State goals of reducing greenhouse gas (GHG) emissions, encouraging infill development, and improving public health through active transportation.

In response to SB 743, the City of Lancaster is adopting new transportation impact thresholds to adhere to CEQA requirements and provide guidance on conducting transportation studies in the City¹. The VMT analysis for the Health District Master Plan is based on the City's new guidance for transportation impacts. The methodology and VMT analysis findings are presented below.

¹ Reference City's final guidelines if publicly available and/or adopted thresholds.



VMT Methodology

The Southern California Association of Governments (SCAG) 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) trip-based model is a travel demand forecasting model with socioeconomic and transportation network inputs, such as population, employment, and the regional and local roadway network, that estimates current travel behavior and forecasts future changes in travel demand. The current SCAG model has 2012 as the base year and 2040 as the forecast year and can be used to estimate VMT for current year 2020 conditions. The 2040 model contains the planned transportation improvements in the RTP and the growth projections in the SCS.

Given that development of the Health District Master Plan site will be implemented over the next 20 years and that CEQA requires a comparison to baseline conditions, both the base year and future year versions of the SCAG model were updated to reflect buildout of the site. The socio-economic data in the base year and future year SCAG models was updated to reflect the proposed growth in the Health District Master Plan site as shown in **Table 1**.

Table 1: Lancaster Health District Master Plan Land Uses

Land Use Type	Developer Proposed Uses
Single Family Residential	250 units (condos)
Multi-Family Residential	1,350 units (apartments)
Hotel	180 rooms/259,200 sf
Conference Center	70,000 sf
Commercial/Office	740,000 sf
<ul style="list-style-type: none"> • MOB • Office • Retail • Restaurant 	<ul style="list-style-type: none"> • 400,000 sf • 200,000 sf • 150,000 sf • 90,000 sf
Continuum of Care	400 rooms/480,000 sf
<ul style="list-style-type: none"> • Asst Living • Senior Housing 	<ul style="list-style-type: none"> • 100 rooms/120K sf • 300 rooms/360K sf
Parking Garage	1,100 stalls/385,000 sf
Acute Care	380 beds/791,000 sf
<ul style="list-style-type: none"> • Hospital • Central Plant • Psych Hospital • Rehab Hospital 	<ul style="list-style-type: none"> • 300 beds/700K sf • 12,000 sf • 40 beds/38,000 sf • 40 beds/41,000 sf
Sub Acute Care	284 beds/249,800 sf
<ul style="list-style-type: none"> • Skilled Nursing • Drug Rehab • Rehab 	<ul style="list-style-type: none"> • 160 beds/142K sf • 24 beds/22,800 sf • 100 beds/85,000 sf



When calculating VMT for a project site, such as the Lancaster Health District Master Plan, the VMT methodology should match the methodology used to establish the Baseline VMT metrics and impact thresholds. In the City of Lancaster, an origin-destination (OD) VMT methodology was used to establish the Baseline VMT, which is defined as the VMT generated by land uses within the Los Angeles County Antelope Valley Planning Area (Antelope Valley). The OD VMT method estimates the VMT generated by land uses in a specific geographic area. All vehicles traveling to/from the defined area are tracked within the SCAG model and the number of trips and length of trips are used to calculate the OD VMT. While the OD VMT is accounting for all vehicle trips generated by land uses within a defined area, the full length of those trips is accounted for in the VMT estimate.

For the purposes of analyzing VMT for transportation impacts, VMT can be reported as an efficiency metric. For land use plans, such as the Lancaster Health District Master Plan, the City's VMT methodology and impact thresholds are based on Total VMT per service population. This VMT metric reflects the Total VMT calculated by the OD VMT methodology and then divides the Total VMT by the service population (employees and residents) to get the efficiency metric of Total VMT per service population. Given that the project contains a combination of residential and employment generating uses and that the hospital, hotel, and retail uses will also generate visitor trips, the use of Total VMT per service population allows for all trip types to be captured in the analysis.

Following the VMT analysis of the Lancaster Master Plan site, the Total VMT per service population of the Master Plan site was then compared to the Antelope Valley Baseline VMT per service population to determine if it exceeds the City's impact threshold. In addition, given the amount of development being proposed and the size of the development site, the change in Total VMT in the Antelope Valley under Year 2040 conditions with and without buildout of the Health District Master Plan site was evaluated to assess potential cumulative project impacts.

VMT Analysis Metrics

The Total VMT per service population of the Lancaster Health District site was calculated for both base year (2020) and future year (2040) conditions using the SCAG travel demand model. While the project will be built over time, the Year 2020 analysis shows how the VMT generated by the Health District Master Plan site compares to current travel and VMT characteristics in the area. The 2040 analysis shows how the VMT generated by the Master Plan site would change as additional growth occurs in the City and throughout the Antelope Valley. As discussed above, the Total VMT per service population reflects all VMT generated by the land uses within the defined area and then divides the Total VMT by the number of residents and employees within the area to report VMT as an efficiency metric. **Table 2** shows the Total VMT per service population of the Lancaster Health District Master Plan site.



Table 2: Lancaster Health District Master Plan Site VMT Metrics

VMT Metrics	Total VMT per Service Population
Antelope Valley Planning Area Baseline (2020) VMT	41.8
Health District Master Plan Site Base Year (2020) VMT	34.0
Health District Master Plan Site Future Year (2040) VMT	28.7

As shown above, the Lancaster Health District Master Plan site generates 34.0 Total VMT per service population in the base year and 28.7 Total VMT per service population under future conditions. In comparison to the Antelope Valley Baseline VMT, the project site is more VMT efficient due to the mixed-use nature of the project site and the higher development densities in comparison to the broader Antelope Valley area. In addition, the location of the project in the urban core area of Lancaster provides closer proximity to other nearby uses that can result in shorter travel distances and reduce VMT. The lower VMT under future conditions reflects the shorter travel distances in the area with planned nearby growth in the City of Lancaster and in the Antelope Valley.

VMT Impact Thresholds and Findings

To determine a VMT impact, the VMT generated by the Health District Master Plan site was compared to the Antelope Valley Baseline VMT. The total VMT per service population of the Master Plan site was compared to the Antelope Valley Baseline VMT per service population to determine if it exceeds the City's threshold of 15% below the Antelope Valley Baseline VMT. The Baseline VMT and VMT impact thresholds for land use plans in the City of Lancaster are summarized in **Table 3**.

Table 3: Baseline VMT and VMT Impact Threshold for Land Use Plans in Lancaster

VMT Metrics	Year 2020	
	Baseline VMT	VMT Impact Threshold*
Total VMT per Service Population	41.8	35.5

* The VMT Impact Threshold for is 15% below the Baseline VMT.

To determine if the Lancaster Health District Master Plan site would result in a VMT impact, the Total VMT per service population was compared to the City's impact threshold. As shown in **Table 4**, the Lancaster Health District Master Plan site would not exceed the City's VMT impact threshold under base year (2020) or future year (2040) conditions.



Table 4: Lancaster Health District Master Plan Site VMT Impact Findings

VMT Metrics	Total VMT per Service Population	VMT Impact Threshold	Significant VMT Impact?
Health District Site Base Year (2020) VMT	34.0	35.5	No
Health District Site Future Year (2040) VMT	28.7	35.5	No

VMT Analysis for Cumulative Conditions

For cumulative conditions, a project that is below the VMT impact thresholds and does not have a VMT impact under baseline conditions would also typically not have a cumulative impact as long as it is aligned with long-term State environmental goals, such as reducing GHG emissions, and relevant plans, such as the SCAG RTP/SCS². Rather than simply relying on the impact findings above and given the magnitude of development that is proposed within the Health District Master Plan site, the change in regional VMT with the proposed development was analyzed in greater detail.

In addition to analyzing VMT as an efficiency metric, a project's effect on VMT can also be analyzed to determine if it would result in an overall increase in VMT in the region. This analysis is useful in assessing potential cumulative transportation impacts that could occur as a result of growth within the Health District Master Plan site. Therefore, the total amount of VMT within the Antelope Valley was calculated with and without the buildout of the Health District Master Plan site in Year 2040. The total VMT in the Antelope Valley is shown in **Table 5**.

Table 5: Antelope Valley VMT with Buildout of the Lancaster Health District Master Plan Site

VMT Metrics	Total VMT
Antelope Valley Planning Area Future Year (2040) No Project VMT	31,264,100
Antelope Valley Planning Area Future Year (2040) With Project VMT	31,117,900
Change in VMT	-146,200
% Change	-0.5%

The above results show that while development within the project site will generate additional travel demand in the immediate project vicinity, the future VMT in the Antelope Valley will be lower with the project in place. This is because the project will create additional employment opportunities and will also provide expanded medical services for those residing in the Antelope Valley. Without the Health District Master Plan, residents would be traveling longer distances to commute to work

² Governor's Office of Planning and Research, Technical Advisory on Evaluating Transportation Impacts in CEQA, 2018.



and to reach medical services. The shift in travel patterns can be further explained by comparing the VMT generated by households and employees in the Antelope Valley.

Table 6 presents the Home-Based VMT and Home-Based Work VMT in the Antelope Valley. The Home-Based VMT captures all vehicle travel to and from households in the Antelope Valley, and the Home-Based Work VMT captures all vehicle travel between home and work for employees who work in the Antelope Valley. As shown, while Home-Based Work VMT increases with the Health District Master Plan due to the additional number of jobs in the area, the amount of Home-Based VMT is reduced because more people living in the Antelope Valley can work closer to home and can also access medical services closer to home.

Table 6: Additional VMT Metrics for the Antelope Valley

VMT Metrics	Future Year (2040) No Project VMT	Future Year (2040) with Project VMT	Change in VMT	% Change
Total VMT	31,264,100	31,117,900	-146,200	-0.5%
Home-Based VMT	10,980,200	10,596,300	-383,900	-3.5%
Home-Based Work VMT	987,300	1,187,500	200,200	20.3%

Based on the results shown in Tables 5 and 6, the Health District Master Plan site would reduce VMT in the Antelope Valley Planning Area under Year 2040 conditions, and therefore, would not result in a cumulative VMT impact.

Summary and Conclusions

This technical memorandum documents the process to determine the potential VMT impacts of the proposed Health District Master Plan site in the City of Lancaster. The following summarizes the results of the VMT analysis:

- The VMT analysis for the Health District Master Plan is based on the City’s new guidance for transportation impacts. The VMT analysis methodology for the Master Plan site is consistent with the methodology used to establish the Baseline VMT metrics and impact thresholds for projects in the City of Lancaster.
- For land use plans, the Total VMT per service population is analyzed for projects in the City. Given that the Master Plan site contains a combination of residential and employment generating uses and that the hospital, hotel, and retail uses will also generate visitor trips, the use of Total VMT per service population allows for all trip types to be captured in the analysis.
- Given that development of the Health District Master Plan site will be implemented over the next 20 years and that CEQA requires a comparison to baseline conditions, the Total



- VMT per service population generated by the Master Plan site under base year (2020) and future year (2040) conditions was compared to the Baseline VMT.
- The Lancaster Health District Master Plan site generates 34.0 Total VMT per service population in the base year (2020) and 28.7 Total VMT per service population under future conditions (2040) in comparison to the Antelope Valley Baseline VMT of 41.8. The project site is more VMT efficient due to the mixed-use nature of the land uses and the higher development densities in comparison to the broader Antelope Valley area. In addition, the location of the project in the urban core area of Lancaster provides closer proximity to other nearby uses that can result in shorter travel distances and reduce VMT.
 - To determine if the Lancaster Health District Master Plan site would result in a VMT impact, the Total VMT per service population was compared to the City's impact threshold. The total VMT per service population of the Master Plan site is more than 15% below the Antelope Valley Baseline VMT per service population, which means the Master Plan site does not result in a VMT impact.
 - In addition to analyzing VMT as an efficiency metric (i.e., Total VMT per service population), a project's effect on VMT can also be analyzed to determine if it would result in an overall increase in VMT in the region to determine the potential for cumulative transportation impacts. The total amount of VMT within the Antelope Valley was calculated with and without the buildout of the Health District Master Plan site, and the results showed that future VMT in the Antelope Valley will be approximately 0.5% lower with the project in place. This is because the project will create additional employment opportunities and will also provide expanded medical services for those residing in the Antelope Valley. Therefore, the Master Plan site would not result in a cumulative VMT impact.

Technical Memorandum

To: Matthew L. Simons, T.E., P.T.P.
Senior Engineer – Traffic
Development Services Dept.
City of Lancaster, CA 93534

From: Sri Chakravarthy, P.E., T.E.
Matt Stewart, P.E.
Kimley-Horn and Associates, Inc.

Date: October 12, 2020

Subject: Lancaster Health District Master Plan – Traffic Operational and Safety Analysis Addendum

INTRODUCTION

This technical memorandum is an addendum to the Operational and Safety Analysis Final Report (August 5, 2020) prepared by Kimley-Horn and Associates, Inc. (Kimley-Horn) and approved by the City of Lancaster. Since the finalization of the report, several changes to the Lancaster Health District (“Project”) internal roadway network were proposed by the Antelope Valley Hospital. These changes are limited to the internal roadway layout and network, and do not impact the size or type of land uses included on the Project site. The change to the internal roadway network is anticipated to result in changes to number of Project site trips at various access driveways and streets adjacent to the Project site. However, minimal to no impact is anticipated on the roadway network further away from the Project site.

This addendum to the Operational and Safety Analysis (Kimley-Horn, August 2020) documents the changes to the proposed internal roadway network and provides a revised analysis at ten (10) study intersections surrounding the Project site. These intersections include:

1. 20th Street West and Avenue J;
2. 18th Street West and Avenue J;
3. 15th Street West and Avenue J;
4. 15th Street West and Avenue J-3;
5. 20th Street West and Home Depot Southerly Street;
6. 20th Street West and SR-14 NB Ramps;
7. 20th Street West and Avenue J-8;
8. 15th Street West and Avenue J-8;
9. 18th Street West and Avenue J-8; and,
10. 15th Street West and Avenue J-5.

It is noted that the intersection of 15th Street West and Avenue J-5 was not included as part of the August 2020 Final Report, but is included as part of this revised analysis. Further, it is assumed that the changes to the internal roadway network would not result in changes to Vehicle Miles Traveled (VMT), hence VMT is not required to be reanalyzed.

SITE CIRCULATION

The following internal roadway network layout is proposed as part of the Project Master Plan:

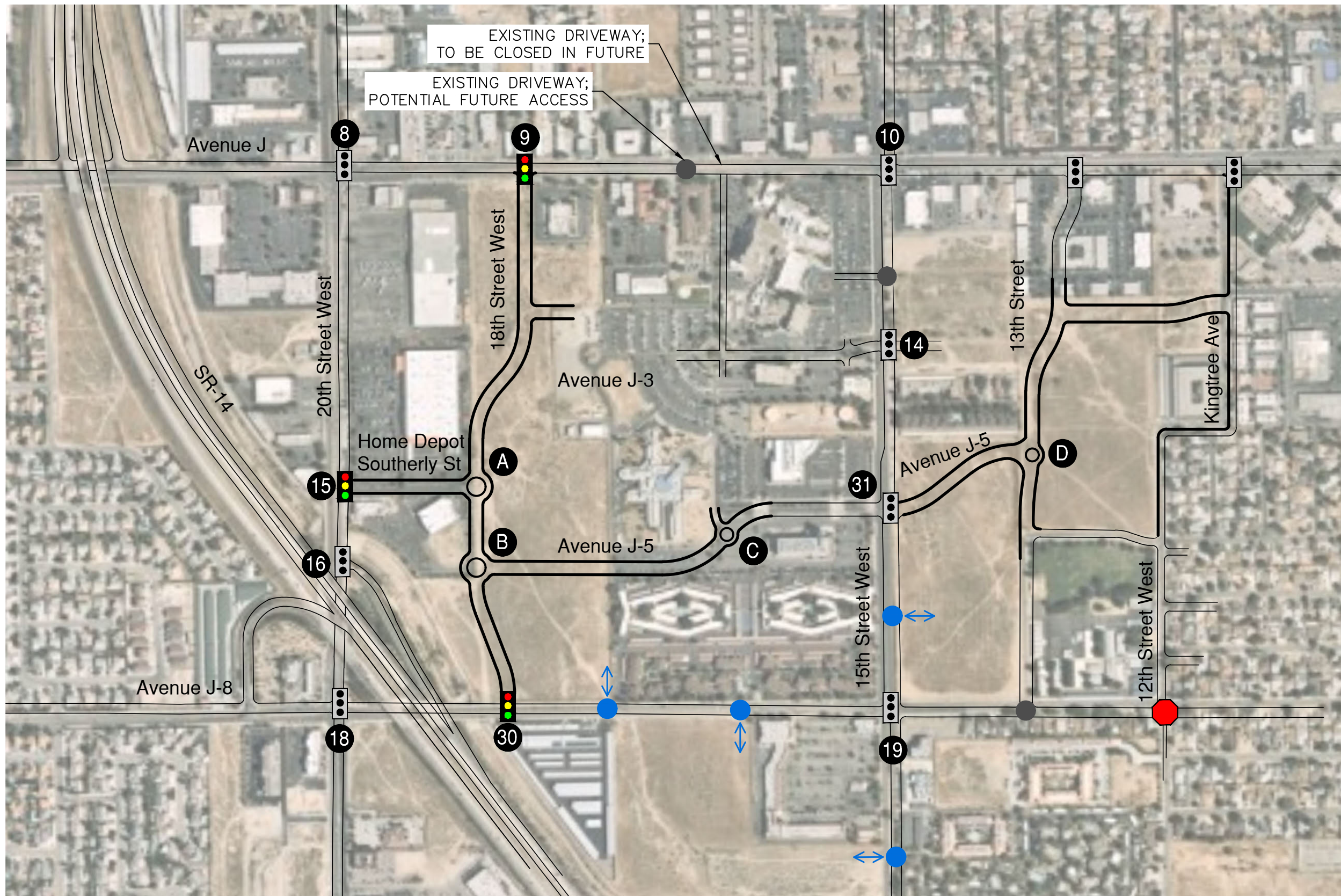
- Constructing 18th Street West from Avenue J to Avenue J-8
- Constructing Avenue J-5 from 18th Street West to 13th Street West
- Terminating Avenue J-3 at the proposed Antelope Valley Hospital
- Constructing 13th Street West between Avenue J-2 and Avenue J-5
- Constructing various other circulatory roadways around the proposed Antelope Valley Hospital including a roadway between 18th Street West and Avenue J-3, around the north side of the proposed hospital
- Constructing roundabouts at the following intersections within the District Core:
 - Home Depot Southerly Street and 18th Street West (3-leg roundabout with west, north, and south legs)
 - Avenue J-5 and 18th Street West (3 leg roundabout with north, east, and south legs)
 - Avenue J-5 and North/South Street east of Women & Infants Pavilion (3-leg roundabout with west, north, and east legs)
- Constructing roundabouts at the following intersections within the East Neighborhood:
 - Avenue J-5 and 13th Street West (3-leg roundabout with west, north, and south legs)

Compared to the internal roadway network proposed in the original study (Operational and Safety Analysis, August 2020), the following changes have been made:

- Avenue J-3 was previously analyzed as continuous between 18th Street and 15th Street but is now planned to terminate at the proposed Antelope Valley Hospital
- Avenue J-5 was not previously analyzed as continuous between 18th Street to 15th Street but is now analyzed as the primary east/west connector street within the Lancaster Health District
- Two driveways on Avenue J that were previously included in the trip distribution were removed from the analysis because they will be closed in the future
- The intersection of Avenue J-5 and 13th Street West was previously analyzed as a four-leg roundabout but is now analyzed as two offset intersections

Additional roundabouts may be planned and constructed at a future period. Traffic operations for future roundabouts should be reassessed when individual projects are proposed.

Figure 1 shows the study area with roadways and intersections that will be used to provide access to the Lancaster Health District. Access roadways and intersections that were included in this study include existing roadways and potential future access roadways based on the preliminary hospital and developer plans.



LEGEND
Study Intersections

- # Offsite Intersection
- X Onsite Roundabout

Site Access Points

- Proposed Signal
- Existing Signal
- All-Way Stop
- Potential Future Access Based on Preliminary Developer Plan
- Existing Driveway/Unsignalized Intersection



FIGURE 1
Lancaster Health District
Study Area & Circulation

STUDY METHODOLOGY

Existing morning and afternoon peak period traffic counts were developed at all study intersections as part of the original study (Operational and Safety Analysis, August 2020) except the 15th Street West and Avenue J-5. Existing and future traffic volumes at this intersection was estimated based on volumes at adjacent study intersections - 15th Street and Avenue J-8 for northbound volumes and 15th Street and Avenue J-3 for southbound volumes.

The changes to the proposed Lancaster Health District roadway network would not impact the external trip distribution patterns, but would impact how traffic accesses the site from adjacent roadways. Therefore, only the study intersections immediately adjacent to the project site were analyzed as part of this addendum. The study intersections as well as the existing and proposed control are tabulated in **Table 1**.

Table 1: Study Area Intersections

#	Intersection		Jurisdiction	Control (2019)	Control (w/ Project)
	North/South	East/West			
8	20th Street West	Avenue J	Lancaster	Signal	Signal
9	18th Street West	Avenue J	Lancaster	-	Signal
10	15th Street West	Avenue J	Lancaster	Signal	Signal
14	15th Street West	Avenue J-3	Lancaster	Signal	Signal
15	20th Street West	Home Depot Southerly Street	Lancaster	TWSC	Signal
16	20th Street West	SR-14 NB Ramps	Caltrans	Signal	Signal
18	20th Street West	Avenue J-8	Lancaster	Signal	Signal
19	15th Street West	Avenue J-8	Lancaster	Signal	Signal
30	18 th Street West	Avenue J-8	Lancaster	-	Signal
31	15 th Street West	Avenue J-5	Lancaster	Signal	Signal

For Level of Service (LOS) analysis, this technical memorandum provides analysis of the following two scenarios:

- Future (2040) with Project Conditions
- Future (2040) with Project and Roadway Improvements Conditions

Per City of Lancaster Traffic Impact Analysis guidelines, signalized intersections within the City of Lancaster jurisdiction were evaluated using the Intersection Capacity Utilization (ICU) methodology. Microsoft Excel was used to perform the ICU analysis. Signalized study intersections within Caltrans jurisdiction were evaluated using the Highway Capacity Manual (HCM), 6th Edition methodology. Synchro software, version 10 was used to model the study intersection.

The trip distribution was updated to reflect the changes to the internal roadway network. Compared to the trip distribution assignment in the original study, this addendum assumes a larger number of trips entering via 15th Street & Avenue J-5 and 18th Street and Avenue J. The project traffic shown in the original study was distributed to the street system within the study area via existing and future project driveways and roadways. The resulting Project Weekday Peak-Hour turning movement volumes are shown in **Figure 2**.

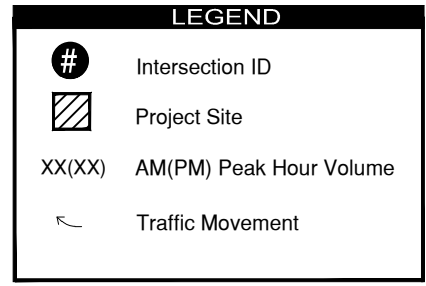
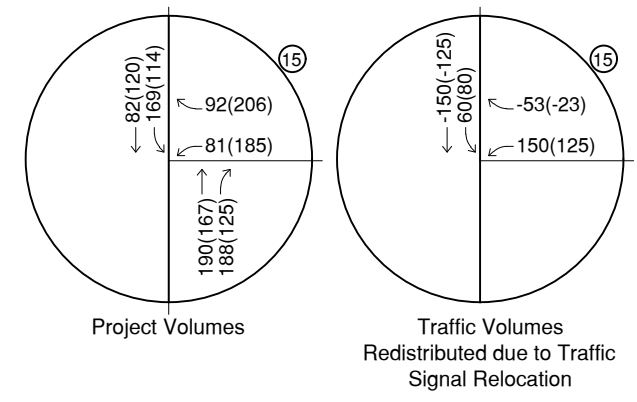
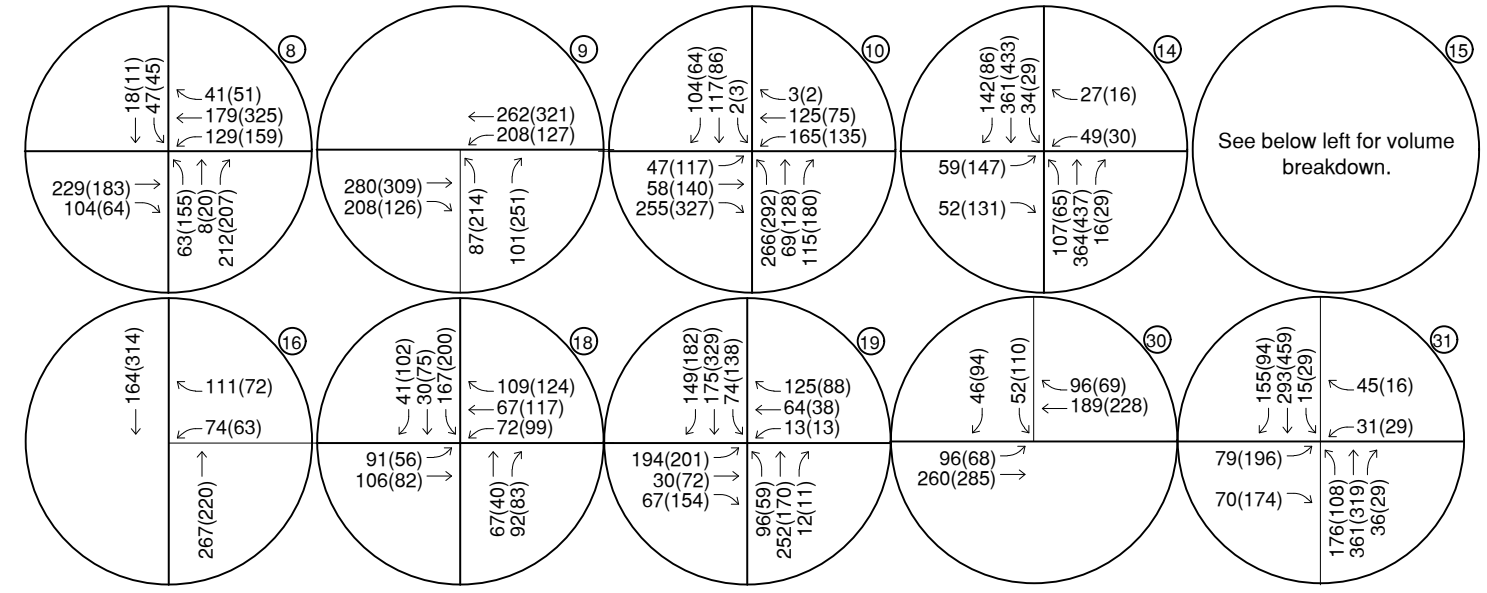
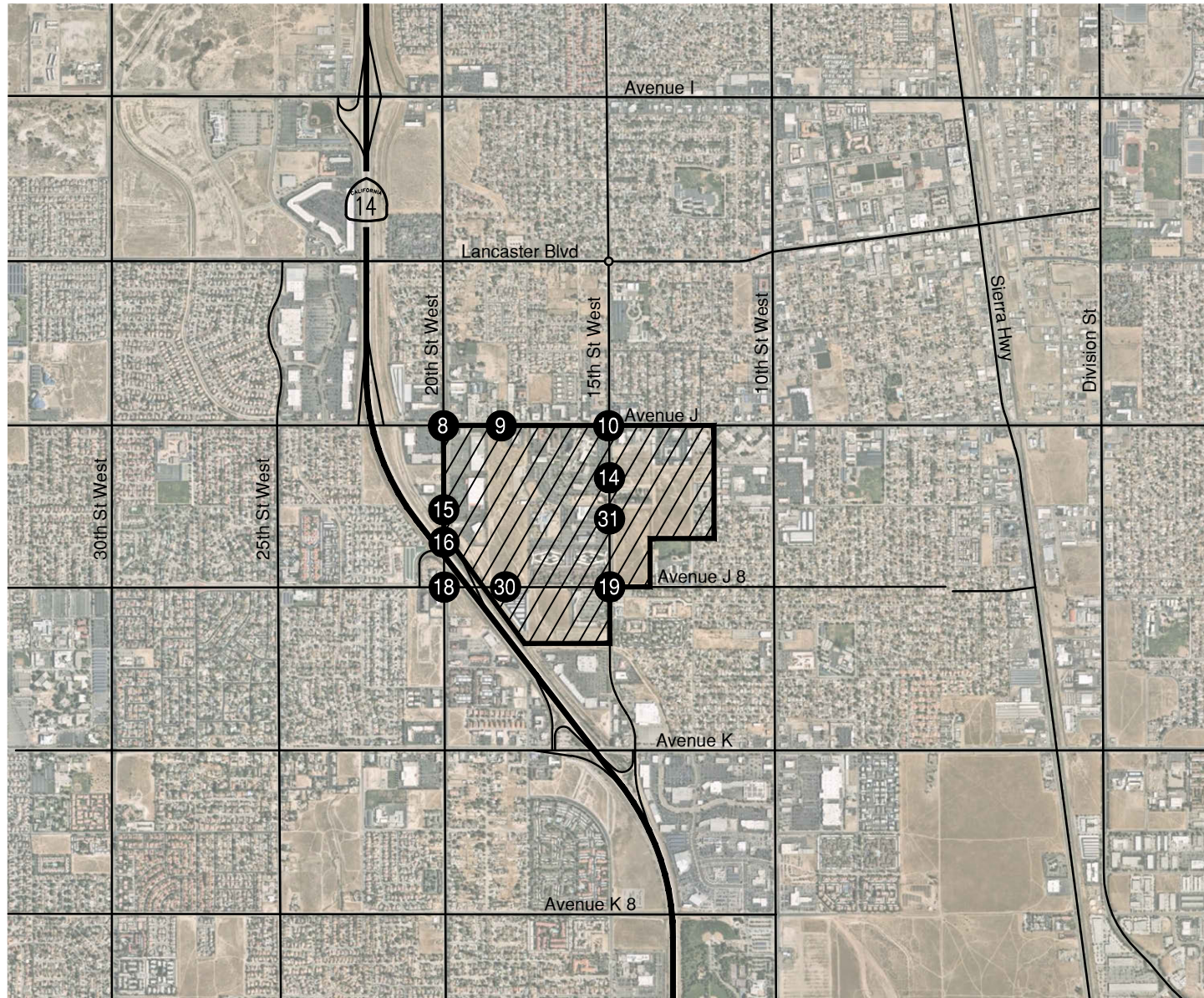


FIGURE 2
Lancaster Health District
Project Weekday Peak-Hour Turning Movement Volumes

FUTURE (2040) WITH PROJECT CONDITIONS

Estimated project traffic is added to the Future (2040) without Project conditions to develop Future (2040) with Project Conditions. This scenario is used to evaluate the net change in the traffic conditions and to identify potential operational issues associated with the proposed project for the buildout conditions.

Figure 3 illustrates the AM and PM peak hour traffic volumes at the study intersections for Future (2040) with Project Conditions. The Intersection Capacity Utilization (ICU) and Highway Capacity Manual (HCM) reports are provided in **Appendix A** for Future (2040) with Project Conditions.

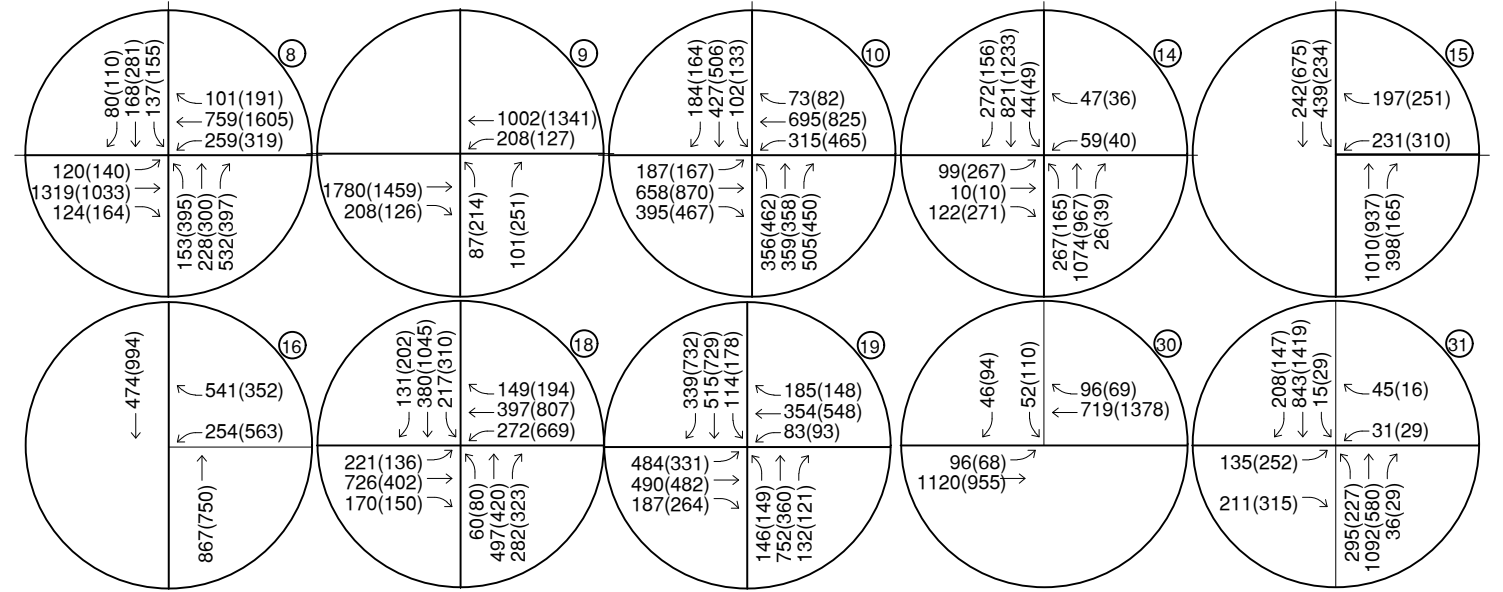
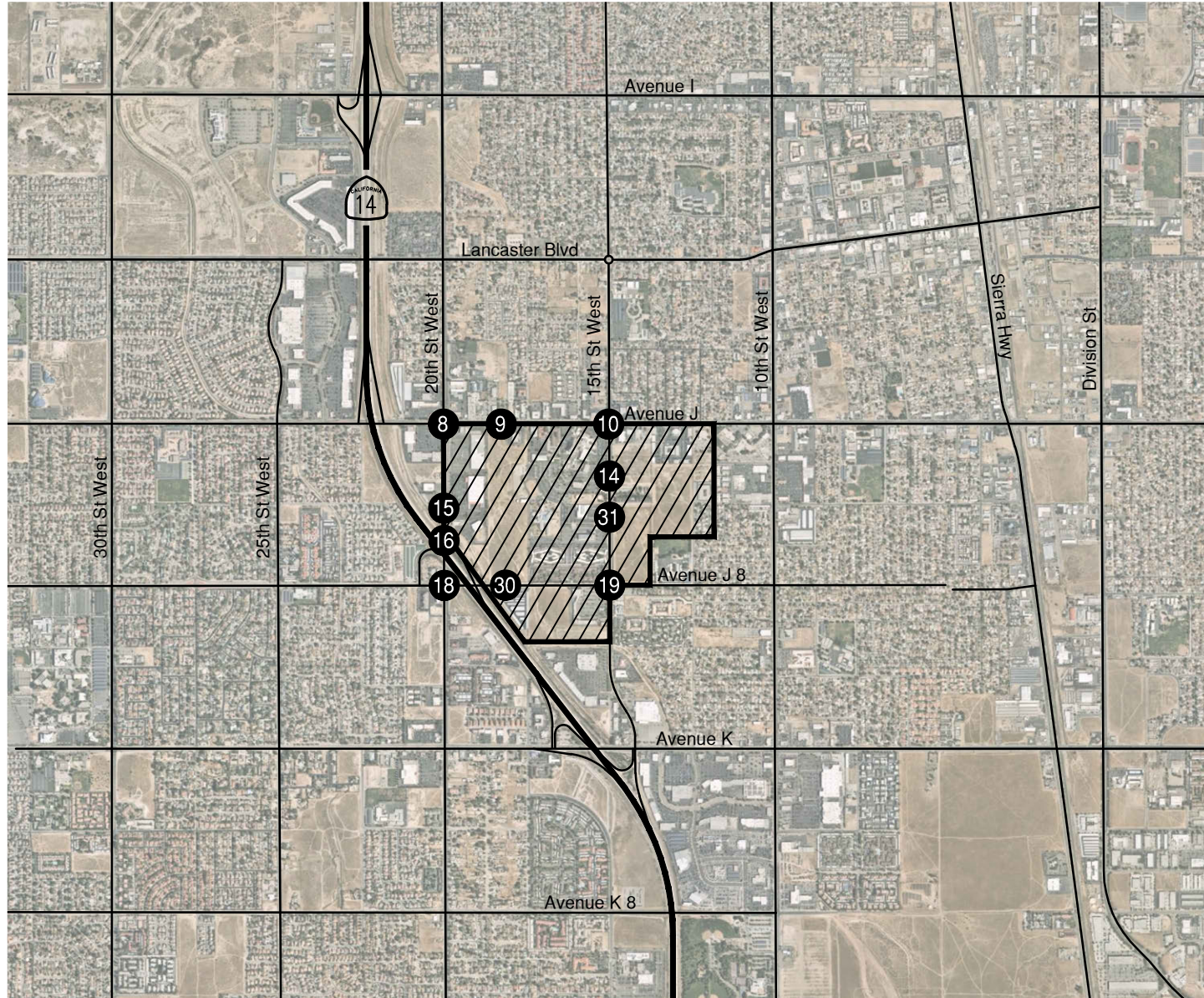
Table 2 presents a summary of the Future (2040) with Project Conditions for each intersection and tabulates the LOS and volume to capacity (V/C) ratio applicable to City intersections or delay (seconds) applicable to Caltrans intersection.

Table 2: Summary of Intersection Operations – Future (2040) with Project Conditions

Intersection			Jurisdiction	Control	AM Peak Hour		PM Peak Hour	
#	North/South	East/West			V/C Ratio	LOS	V/C Ratio	LOS
8	20th Street West	Avenue J	Lancaster	Signal	0.90	D	1.04	F
9	18th Street West	Avenue J	Lancaster	Signal	0.84	D	0.77	C
10	15th Street West	Avenue J	Lancaster	Signal	1.12	F	1.42	F
14	15th Street West	Avenue J-3	Lancaster	Signal	0.68	B	0.80	C
15	20th Street West	Home Depot Southerly Street	Lancaster	Signal	0.83	D	0.73	C
18	20th Street West	Avenue J-8	Lancaster	Signal	1.02	F	1.20	F
19	15th Street West	Avenue J-8	Lancaster	Signal	0.93	E	0.97	E
30	18th Street West	Avenue J-8	Lancaster	Signal	0.83	D	1.07	F
31	15 th Street West	Avenue J-5	Lancaster	Signal	0.62	B	0.84	D
Intersection			Jurisdiction	Control	AM Peak Hour		PM Peak Hour	
#	North/South	East/West			Delay (s)	LOS	Delay (s)	LOS
16	20th Street West	SR-14 NB Ramps	Caltrans	Signal	12.5	B	20.7	C

The Future (2040) with Project Conditions traffic analysis results presented in **Table 2** indicate that compared with the original study, all study intersections would operate at the same level of service but with a slightly different V/C ratio. Consistent with the original study, the following intersections have an increase in V/C ratio or delay above the threshold that may result in a potential operational and/or safety issue during the AM and PM peak periods:

- Intersection #8: 20th Street West and Avenue J
- Intersection #10: 15th Street West and Avenue J
- Intersection #18: 20th Street West and Avenue J-8
- Intersection #19: 15th Street West and Avenue J-8
- Intersection #30: 18th Street West and Avenue J-8



LEGEND	
#	Intersection ID
▨	Project Site
XX(XX)	AM(PM) Peak Hour Volume
↔	Traffic Movement

FIGURE 3
 Lancaster Health District
 Future (2040) with Project Weekday Peak-Hour Turning Movement Volumes

PROJECT OPERATIONAL AND SAFETY ISSUES AND POTENTIAL IMPROVEMENTS

This analysis per this addendum show that the study intersections that were shown to have potential operational or safety impacts in the original study would continue to have impacts during the same peak periods. Therefore, the roadway improvements recommended as part of the original study are retained.

Table 3 presents a summary of the V/C ratio or delay (seconds) and the corresponding LOS for each intersection. The ICU and HCM reports are provided in **Appendix B** for Future (2040) with Project and Roadway Improvements Conditions.

Table 3: Comparison of Intersection Operations – Future (2040) with Project Conditions without and with Roadway Improvements

Signalized Intersection			V/C or Delay	AM Peak Hour				PM Peak Hour			
#	North/South	East/West		V/C Ratio or Delay (s)	LOS	V/C Ratio or Delay (s)	LOS	V/C Ratio or Delay (s)	LOS	V/C Ratio or Delay (s)	LOS
				No Improvement		With Improvement		No Improvement		With Improvement	
8	20th Street West	Avenue J	V/C	-	-	-	-	1.04	F	HCM ¹	
			Delay	-	-	-	-	57.3	E	38.5	D
10	15th Street West	Avenue J	V/C	1.12	F	0.90	D	1.42	F	1.14	F
			Delay	110.3	F	50.9	D	192.5	F	67.2	E
18	20th Street West	Avenue J-8	V/C	1.02	F	1.02	F	1.20	F	1.15	F
			Delay	70.1	E	65.7	E	139.6	F	89.2	F
19	15th Street West	Avenue J-8	V/C	0.93	E	0.82	D	0.97	E	0.80	C
30	18 th Street West	Avenue J-8	V/C	-	-	-	-	1.07	F	1.07	F

¹Recommended improvements assessed based on HCM methodology. Improvements are a result of proposed right-turn overlaps.

Table 3 indicates that if the recommended roadway improvements are implemented, one study intersection would operate at LOS E (using the HCM delay methodology), and the other study intersections would operate at LOS D or better during the AM peak period. During the PM peak period, two study intersections would operate at LOS F, one at LOS E (using the HCM delay methodology), and the other study intersections would operate at LOS D or better. These results and recommendations are consistent with the findings of the original study.

**APPENDIX A – LOS RESULTS – FUTURE (2040) WITH PROJECT
CONDITIONS**

Intersection # 8
 North/South Street 20th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project				
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	177	2,880	0.06		-87	90	2,880	0.03		63	153	2,880	0.05
Northbound Through	225	1,600	0.14	*	-5	220	1,600	0.14	*	8	228	1,600	0.14
Northbound Right	420	1,600	0.03	*	-100	320	1,600	0.00		212	532	1,600	0.03
Southbound Left	61	1,600	0.04	*	29	90	1,600	0.06	*	47	137	1,600	0.09
Southbound Through	172	3,200	0.06		-22	150	3,200	0.07		18	168	3,200	0.08
Southbound Right	32	0	0.00		48	80	0	0.00		0	80	0	0.00
Eastbound Left	34	1,600	0.02		86	120	1,600	0.08		0	120	1,600	0.08
Eastbound Through	745	4,800	0.19	*	345	1,090	3,200	0.34	*	229	1319	3,200	0.41
Eastbound Right	147	0	0.00		-127	20	1,600	0.00		104	124	1,600	0.00
Westbound Left	144	1,600	0.09	*	-14	130	1,600	0.08	*	129	259	1,600	0.16
Westbound Through	458	4,800	0.10		122	580	3,200	0.20		179	759	3,200	0.27
Westbound Right	39	0	0.00		21	60	0	0.00		41	101	0	0.00
N/S Critical Movements			0.18					0.20					0.23
E/W Critical Movements			0.28					0.42					0.57
Clearance Interval			0.10	*				0.10	*				0.10
ICU			0.56					0.72					0.90
Level of Service (LOS)			A					C					D

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 8
 North/South Street 20th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project			
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	493	2,880	0.17	*	-253	240	2,880	0.08	155	395	2,880	0.14
Northbound Through	276	1,600	0.17		4	280	1,600	0.18	20	300	1,600	0.19
Northbound Right	223	1,600	0.00		-33	190	1,600	0.00	207	397	1,600	0.00
Southbound Left	70	1,600	0.04		40	110	1,600	0.07	45	155	1,600	0.10
Southbound Through	267	3,200	0.10	*	3	270	3,200	0.12	11	281	3,200	0.12
Southbound Right	40	0	0.00		70	110	0	0.00	0	110	0	0.00
Eastbound Left	56	1,600	0.04		84	140	1,600	0.09	0	140	1,600	0.09
Eastbound Through	611	4,800	0.19	*	239	850	3,200	0.27	183	1033	3,200	0.32
Eastbound Right	290	0	0.00		-190	100	1,600	0.00	64	164	1,600	0.00
Westbound Left	288	1,600	0.18	*	-128	160	1,600	0.10	159	319	1,600	0.20
Westbound Through	808	4,800	0.18		472	1,280	3,200	0.44	325	1605	3,200	0.56
Westbound Right	68	0	0.00		72	140	0	0.00	51	191	0	0.00
N/S Critical Movement			0.27					0.25				0.29
E/W Critical Movements			0.37					0.53				0.65
Clearance Interval			0.10	*				0.10				0.10
ICU			0.74					0.88				1.04
Level of Service (LOS)			C					D				F

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 9
 North/South Street 18th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Existing (2019)		Future (2040) without Project			Future (2040) with Project						
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	
Northbound Left								87	87	1,600	0.05	*
Northbound Through								0	0	0	0.00	
Northbound Right								101	101	1,600	0.00	
Southbound Left								0	0	0	0.00	
Southbound Through								0	0	0	0.00	*
Southbound Right								0	0	0	0.00	
Eastbound Left								0	0	0	0.00	
Eastbound Through								1780	1780	3,200	0.56	*
Eastbound Right								208	208	1,600	0.00	
Westbound Left								208	208	1,600	0.13	*
Westbound Through								1002	1002	3,200	0.31	
Westbound Right								0	0	0	0.00	
N/S Critical Movements											0.05	
E/W Critical Movements											0.69	
Clearance Interval											0.10	*
ICU											0.84	
Level of Service (LOS)											D	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 9
 North/South Street 18th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Existing (2019)			Future (2040) without Project			Future (2040) with Project					
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	
Northbound Left								214	214	1,600	0.13	*
Northbound Through								0	0	0	0.00	
Northbound Right								251	251	1,600	0.00	
Southbound Left								0	0	0	0.00	
Southbound Through								0	0	0	0.00	*
Southbound Right								0	0	0	0.00	
Eastbound Left								0	0	0	0.00	
Eastbound Through								1459	1459	3,200	0.46	*
Eastbound Right								126	126	1,600	0.00	
Westbound Left								127	127	1,600	0.08	*
Westbound Through								1341	1341	3,200	0.42	
Westbound Right								0	0	0	0.00	
N/S Critical Movement											0.13	
E/W Critical Movements											0.54	
Clearance Interval											0.10	*
ICU											0.77	
Level of Service (LOS)											C	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 10
 North/South Street 15th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	91	1,600	0.06	-1	90	1,600	0.06	266	356	1,600	0.22
Northbound Through	300	1,600	0.19	-10	290	1,600	0.18	69	359	1,600	0.22
Northbound Right	157	1,600	0.00	233	390	1,600	0.00	115	505	1,600	0.00
Southbound Left	96	1,600	0.06	4	100	1,600	0.06	2	102	1,600	0.06
Southbound Through	285	1,600	0.18	25	310	1,600	0.19	117	427	1,600	0.27
Southbound Right	80	1,600	0.00	0	80	1,600	0.00	104	184	1,600	0.00
Eastbound Left	123	1,600	0.08	17	140	1,600	0.09	47	187	1,600	0.12
Eastbound Through	645	3,200	0.20	-45	600	3,200	0.23	58	658	3,200	0.33
Eastbound Right	135	1,600	0.00	5	140	0	0.00	255	395	0	0.00
Westbound Left	159	1,600	0.10	-9	150	1,600	0.09	165	315	1,600	0.20
Westbound Through	587	3,200	0.20	-17	570	3,200	0.20	125	695	3,200	0.24
Westbound Right	61	0	0.00	9	70	0	0.00	3	73	0	0.00
N/S Critical Movements			0.25				0.25				0.49
E/W Critical Movements			0.30				0.32				0.53
Clearance Interval			0.10				0.10				0.10
ICU			0.65				0.67				1.12
Level of Service (LOS)			B				B				F

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 10
 North/South Street 15th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	149	1,600	0.09	*	21	170	1,600	0.11	*	292	462	1,600	0.29	*
Northbound Through	254	1,600	0.16		-24	230	1,600	0.14		128	358	1,600	0.22	
Northbound Right	212	1,600	0.00		58	270	1,600	0.00		180	450	1,600	0.00	
Southbound Left	102	1,600	0.06		28	130	1,600	0.08		3	133	1,600	0.08	
Southbound Through	262	1,600	0.16	*	158	420	1,600	0.26	*	86	506	1,600	0.32	*
Southbound Right	92	1,600	0.00		8	100	1,600	0.00		64	164	1,600	0.00	
Eastbound Left	63	1,600	0.04	*	-13	50	1,600	0.03		117	167	1,600	0.10	
Eastbound Through	712	3,200	0.22		18	730	3,200	0.27	*	140	870	3,200	0.42	*
Eastbound Right	143	1,600	0.00		-3	140	0	0.00		327	467	0	0.00	
Westbound Left	154	1,600	0.10		176	330	1,600	0.21	*	135	465	1,600	0.29	*
Westbound Through	827	3,200	0.28	*	-77	750	3,200	0.26		75	825	3,200	0.28	
Westbound Right	77	0	0.00		3	80	0	0.00		2	82	0	0.00	
N/S Critical Movement			0.25					0.37					0.61	
E/W Critical Movements			0.32					0.48					0.71	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.67					0.95					1.42	
Level of Service (LOS)			B					E					F	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 14
 North/South Street 15th Street West
 East/West Street Avenue J-3
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	148	1,600	0.09	*	12	160	1,600	0.10	*	107	267	1,600	0.17	*
Northbound Through	517	3,200	0.16		193	710	3,200	0.23		364	1074	3,200	0.34	
Northbound Right	1	0	0.00		9	10	0	0.00		16	26	0	0.00	
Southbound Left	8	1,600	0.01		2	10	1,600	0.01		34	44	1,600	0.03	
Southbound Through	503	3,200	0.19	*	-43	460	3,200	0.18	*	361	821	3,200	0.34	*
Southbound Right	119	0	0.00		11	130	0	0.00		142	272	0	0.00	
Eastbound Left	27	0	0.00		13	40	0	0.00		59	99	0	0.00	*
Eastbound Through	1	1,600	0.02	*	9	10	1,600	0.03	*	0	10	1,600	0.07	
Eastbound Right	52	1,600	0.00		18	70	1,600	0.00		52	122	1,600	0.00	
Westbound Left	8	0	0.00	*	2	10	0	0.00	*	49	59	0	0.00	
Westbound Through	0	1,600	0.01		0	0	1,600	0.02		0	0	1,600	0.07	*
Westbound Right	10	0	0.00		10	20	0	0.00		27	47	0	0.00	
N/S Critical Movements			0.28					0.28					0.51	
E/W Critical Movements			0.02					0.03					0.07	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.40					0.41					0.68	
Level of Service (LOS)			A					A					B	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 14
 North/South Street 15th Street West
 East/West Street Avenue J-3
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*
Northbound Left	81	1,600	0.05	*	19	100	1,600	0.06	*	65	165	1,600	0.10	*
Northbound Through	491	3,200	0.15		39	530	3,200	0.17		437	967	3,200	0.31	
Northbound Right	2	0	0.00		8	10	0	0.00		29	39	0	0.00	
Southbound Left	15	1,600	0.01		5	20	1,600	0.01		29	49	1,600	0.03	
Southbound Through	561	3,200	0.20	*	239	800	3,200	0.27	*	433	1233	3,200	0.43	*
Southbound Right	64	0	0.00		6	70	0	0.00		86	156	0	0.00	
Eastbound Left	88	0	0.00		32	120	0	0.00		147	267	0	0.00	
Eastbound Through	2	1,600	0.06	*	8	10	1,600	0.08	*	0	10	1,600	0.17	*
Eastbound Right	119	1,600	0.00		21	140	1,600	0.00		131	271	1,600	0.00	
Westbound Left	4	0	0.00	*	6	10	0	0.00	*	30	40	0	0.00	*
Westbound Through	0	1,600	0.01		0	0	1,600	0.02		0	0	1,600	0.05	
Westbound Right	9	0	0.00		11	20	0	0.00		16	36	0	0.00	
N/S Critical Movement			0.25					0.33					0.53	
E/W Critical Movements			0.06					0.08					0.17	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.41					0.51					0.80	
Level of Service (LOS)			A					A					C	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 15
 North/South Street 20th Street West
 East/West Street Home Depot Southerly Street
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Existing (2019)		Future (2040) without Project				Future (2040) with Project				
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left								0	0	0	0.00
Northbound Through								1010	1010	3,200	0.32 *
Northbound Right								398	398	1,600	0.00
Southbound Left								439	439	1,600	0.27 *
Southbound Through								242	242	3,200	0.08
Southbound Right								0	0	0	0.00
Eastbound Left								0	0	0	0.00
Eastbound Through								0	0	0	0.00 *
Eastbound Right								0	0	0	0.00
Westbound Left								231	231	1,600	0.14 *
Westbound Through								0	0	0	0.00
Westbound Right								197	197	1,600	0.00
N/S Critical Movements											0.59
E/W Critical Movements											0.14
Clearance Interval											0.10 *
ICU											0.83
Level of Service (LOS)											D

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 15
 North/South Street 20th Street West
 East/West Street Home Depot Southerly Street
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Existing (2019)			Future (2040) without Project			Future (2040) with Project				
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left								0	0	0	0.00
Northbound Through								937	937	3,200	0.29 *
Northbound Right								165	165	1,600	0.00
Southbound Left								234	234	1,600	0.15 *
Southbound Through								675	675	3,200	0.21
Southbound Right								0	0	0	0.00
Eastbound Left								0	0	0	0.00
Eastbound Through								0	0	0	0.00 *
Eastbound Right							Project Intersection	0	0	0	0.00
Westbound Left								310	310	1,600	0.19 *
Westbound Through								0	0	0	0.00
Westbound Right								251	251	1,600	0.00
N/S Critical Movement											0.44
E/W Critical Movements											0.19
Clearance Interval											0.10 *
ICU											0.73
Level of Service (LOS)											C

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 18
 North/South Street 20th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	64	1,600	0.04	-4	60	1,600	0.04	0	60	1,600	0.04
Northbound Through	278	3,200	0.09	152	430	3,200	0.13	67	497	3,200	0.16
Northbound Right	129	1,600	0.00	61	190	1,600	0.00	92	282	1,600	0.00
Southbound Left	65	1,600	0.04	-15	50	1,600	0.03	167	217	1,600	0.14
Southbound Through	239	3,200	0.07	111	350	3,200	0.11	30	380	3,200	0.12
Southbound Right	349	1,600	0.07	-259	90	1,600	0.00	41	131	1,600	0.00
Eastbound Left	115	1,600	0.07	15	130	1,600	0.08	91	221	1,600	0.14
Eastbound Through	484	3,200	0.17	136	620	3,200	0.25	106	726	1,600	0.45
Eastbound Right	66	0	0.00	104	170	0	0.00	0	170	1,600	0.00
Westbound Left	71	1,600	0.04	129	200	1,600	0.13	72	272	1,600	0.17
Westbound Through	382	3,200	0.13	-52	330	3,200	0.12	67	397	1,600	0.34
Westbound Right	34	0	0.00	6	40	0	0.00	109	149	0	0.00
N/S Critical Movements			0.13				0.16				0.30
E/W Critical Movements			0.21				0.38				0.62
Clearance Interval			0.10				0.10				0.10
ICU			0.44				0.64				1.02
Level of Service (LOS)			A				B				F

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 18
 North/South Street 20th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	133	1,600	0.08	*	-53	80	1,600	0.05	*	0	80	1,600	0.05	*
Northbound Through	397	3,200	0.12		-17	380	3,200	0.12		40	420	3,200	0.13	
Northbound Right	110	1,600	0.00		130	240	1,600	0.00		83	323	1,600	0.00	
Southbound Left	89	1,600	0.06		21	110	1,600	0.07		200	310	1,600	0.19	
Southbound Through	480	3,200	0.15	*	490	970	3,200	0.30	*	75	1045	3,200	0.33	*
Southbound Right	632	1,600	0.21	*	-532	100	1,600	0.00		102	202	1,600	0.00	
Eastbound Left	56	1,600	0.04	*	24	80	1,600	0.05		56	136	1,600	0.09	*
Eastbound Through	268	3,200	0.10		52	320	3,200	0.15	*	82	402	1,600	0.25	
Eastbound Right	56	0	0.00		94	150	0	0.00		0	150	1,600	0.00	
Westbound Left	124	1,600	0.08		446	570	1,600	0.36	*	99	669	1,600	0.42	
Westbound Through	540	3,200	0.19	*	150	690	3,200	0.24		117	807	1,600	0.63	*
Westbound Right	57	0	0.00		13	70	0	0.00		124	194	0	0.00	
N/S Critical Movement			0.23					0.35					0.38	
E/W Critical Movements			0.23					0.51					0.72	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.56					0.96					1.20	
Level of Service (LOS)			A					E					F	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 19
 North/South Street 15th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	44	1,600	0.03	6	50	1,600	0.03	96	146	1,600	0.09
Northbound Through	577	3,200	0.18 *	-77	500	3,200	0.16 *	252	752	3,200	0.24 *
Northbound Right	44	1,600	0.00	76	120	1,600	0.00	12	132	1,600	0.00
Southbound Left	33	1,600	0.02 *	7	40	1,600	0.03 *	74	114	1,600	0.07 *
Southbound Through	354	3,200	0.11	-14	340	3,200	0.11	175	515	3,200	0.16
Southbound Right	191	1,600	0.00	-1	190	1,600	0.00	149	339	1,600	0.00
Eastbound Left	242	1,600	0.15 *	48	290	1,600	0.18 *	194	484	1,600	0.30 *
Eastbound Through	331	1,600	0.21	129	460	1,600	0.29	30	490	1,600	0.31
Eastbound Right	114	1,600	0.00	6	120	1,600	0.00	67	187	1,600	0.00
Westbound Left	46	1,600	0.03	24	70	1,600	0.04	13	83	1,600	0.05
Westbound Through	250	1,600	0.16 *	40	290	1,600	0.18 *	64	354	1,600	0.22 *
Westbound Right	53	1,600	0.00	7	60	1,600	0.00	125	185	1,600	0.00
N/S Critical Movements			0.20				0.19				0.31
E/W Critical Movements			0.31				0.36				0.52
Clearance Interval			0.10 *				0.10 *				0.10 *
ICU			0.61				0.65				0.93
Level of Service (LOS)			B				B				E

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 19
 North/South Street 15th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	84	1,600	0.05	*	6	90	1,600	0.06	*	59	149	1,600	0.09	*
Northbound Through	409	3,200	0.13		-219	190	3,200	0.06		170	360	3,200	0.11	
Northbound Right	80	1,600	0.00		30	110	1,600	0.00		11	121	1,600	0.00	
Southbound Left	36	1,600	0.02		4	40	1,600	0.03		138	178	1,600	0.11	
Southbound Through	474	3,200	0.15	*	-74	400	3,200	0.13	*	329	729	3,200	0.23	*
Southbound Right	339	1,600	0.00		211	550	1,600	0.14	*	182	732	1,600	0.02	*
Eastbound Left	117	1,600	0.07	*	13	130	1,600	0.08	*	201	331	1,600	0.21	*
Eastbound Through	212	1,600	0.13		198	410	1,600	0.26		72	482	1,600	0.30	
Eastbound Right	88	1,600	0.00		22	110	1,600	0.00		154	264	1,600	0.00	
Westbound Left	53	1,600	0.03		27	80	1,600	0.05		13	93	1,600	0.06	
Westbound Through	308	1,600	0.19	*	202	510	1,600	0.32	*	38	548	1,600	0.34	*
Westbound Right	52	1,600	0.00		8	60	1,600	0.00		88	148	1,600	0.00	
N/S Critical Movement			0.20					0.19					0.32	
E/W Critical Movements			0.26					0.40					0.55	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.56					0.69					0.97	
Level of Service (LOS)			A					B					E	

Notes

V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 30
 North/South Street 18th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Existing (2019)		Future (2040) without Project				Future (2040) with Project				
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left								0	0	0	0.00
Northbound Through								0	0	0	0.00 *
Northbound Right								0	0	0	0.00
Southbound Left								52	52	1,600	0.03 *
Southbound Through								0	0	0	0.00
Southbound Right								46	46	1,600	0.00
Eastbound Left								96	96	1,600	0.06
Eastbound Through								1120	1120	1,600	0.70 *
Eastbound Right								0	0	0	0.00
Westbound Left								0	0	0	0.00 *
Westbound Through								719	719	1,600	0.45
Westbound Right								96	96	1,600	0.00
N/S Critical Movements											0.03
E/W Critical Movements											0.70
Clearance Interval											0.10 *
ICU											0.83
Level of Service (LOS)											D

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 30
 North/South Street 18th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Existing (2019)			Future (2040) without Project			Future (2040) with Project				
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left								0	0	0	0.00
Northbound Through								0	0	0	0.00 *
Northbound Right								0	0	0	0.00
Southbound Left								110	110	1,600	0.07 *
Southbound Through								0	0	0	0.00
Southbound Right								94	94	1,600	0.00
Eastbound Left								68	68	1,600	0.04 *
Eastbound Through								955	955	1,600	0.60
Eastbound Right							Project Intersection	0	0	0	0.00
Westbound Left								0	0	0	0.00
Westbound Through								1378	1378	1,600	0.86 *
Westbound Right								69	69	1,600	0.00
N/S Critical Movement											0.07
E/W Critical Movements											0.90
Clearance Interval											0.10 *
ICU											1.07
Level of Service (LOS)											F

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 31
 North/South Street 15th Street West
 East/West Street Avenue J-5
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	
Northbound Left	0	1,600	0.00	*	90	90	1,600	0.06		205	295	1,600	0.18	*
Northbound Through	0	3,200	0.00		760	760	3,200	0.24	*	332	1092	3,200	0.34	
Northbound Right	0	0	0.00		0	0	0	0.00		36	36	1,600	0.00	
Southbound Left	0	0	0.00		0	0	0	0.00	*	15	15	1,600	0.01	
Southbound Through	0	3,200	0.00	*	550	550	3,200	0.17		293	843	3,200	0.26	*
Southbound Right	0	1,600	0.00		90	90	1,600	0.00		118	208	1,600	0.00	
Eastbound Left	0	1,600	0.00	*	20	20	1,600	0.01	*	115	135	1,600	0.08	*
Eastbound Through	0	0	0.00		0	0	0	0.00		0	0	1,600	0.00	
Eastbound Right	0	1,600	0.00		20	20	1,600	0.00		191	211	1,600	0.00	
Westbound Left	0	0	0.00		0	0	0	0.00		31	31	1,600	0.02	
Westbound Through	0	0	0.00	*	0	0	0	0.00	*	0	0	1,600	0.00	*
Westbound Right	0	0	0.00		0	0	0	0.00		45	45	1,600	0.00	
N/S Critical Movements			0.00					0.24					0.44	
E/W Critical Movements			0.00					0.01					0.08	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.10					0.35					0.62	
Level of Service (LOS)			A					A					B	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 31
 North/South Street 15th Street West
 East/West Street Avenue J-5
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*
Northbound Left	0	1,600	0.00	*	50	50	1,600	0.03	*	177	227	1,600	0.14	*
Northbound Through	0	3,200	0.00		330	330	3,200	0.10		250	580	3,200	0.18	
Northbound Right	0	0	0.00		0	0	0	0.00		29	29	1,600	0.00	
Southbound Left	0	0	0.00		0	0	0	0.00		29	29	1,600	0.02	
Southbound Through	0	3,200	0.00	*	960	960	3,200	0.30	*	459	1419	3,200	0.44	*
Southbound Right	0	1,600	0.00		50	50	1,600	0.00		97	147	1,600	0.00	
Eastbound Left	0	1,600	0.00	*	40	40	1,600	0.03	*	212	252	1,600	0.16	*
Eastbound Through	0	0	0.00		0	0	0	0.00		0	0	1,600	0.00	
Eastbound Right	0	1,600	0.00		40	40	1,600	0.00		275	315	1,600	0.00	
Westbound Left	0	0	0.00		0	0	0	0.00		29	29	1,600	0.02	
Westbound Through	0	0	0.00	*	0	0	0	0.00	*	0	0	1,600	0.00	*
Westbound Right	0	0	0.00		0	0	0	0.00		16	16	1,600	0.00	
N/S Critical Movement			0.00					0.33					0.58	
E/W Critical Movements			0.00					0.03					0.16	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.10					0.46					0.84	
Level of Service (LOS)			A					A					D	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

HCM 6th Signalized Intersection Summary
 16: 20th St W & SR-14 NB Off-Ramp

10/12/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶	↶↶	↕↕			↕↕
Traffic Volume (veh/h)	254	541	867	0	0	474
Future Volume (veh/h)	254	541	867	0	0	474
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	0	1870
Adj Flow Rate, veh/h	276	588	942	0	0	515
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	0	2
Cap, veh/h	502	786	2099	0	0	2099
Arrive On Green	0.28	0.28	0.59	0.00	0.00	0.59
Sat Flow, veh/h	1781	2790	3741	0	0	3741
Grp Volume(v), veh/h	276	588	942	0	0	515
Grp Sat Flow(s),veh/h/ln	1781	1395	1777	0	0	1777
Q Serve(g_s), s	8.3	12.0	9.3	0.0	0.0	4.3
Cycle Q Clear(g_c), s	8.3	12.0	9.3	0.0	0.0	4.3
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	502	786	2099	0	0	2099
V/C Ratio(X)	0.55	0.75	0.45	0.00	0.00	0.25
Avail Cap(c_a), veh/h	2132	3339	2099	0	0	2099
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	19.1	20.5	7.1	0.0	0.0	6.1
Incr Delay (d2), s/veh	0.9	1.5	0.7	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	3.7	2.6	0.0	0.0	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.1	21.9	7.8	0.0	0.0	6.4
LnGrp LOS	C	C	A	A	A	A
Approach Vol, veh/h	864		942			515
Approach Delay, s/veh	21.3		7.8			6.4
Approach LOS	C		A			A
Timer - Assigned Phs		2				6
Phs Duration (G+Y+Rc), s		41.0				21.7
Change Period (Y+Rc), s		4.0				4.0
Max Green Setting (Gmax), s		37.0				75.0
Max Q Clear Time (g_c+I1), s		11.3				14.0
Green Ext Time (p_c), s		6.9				3.4
Intersection Summary						
HCM 6th Ctrl Delay			12.5			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary
 16: 20th St W & SR-14 NB Off-Ramp

10/12/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	563	352	750	0	0	994
Future Volume (veh/h)	563	352	750	0	0	994
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	0	1870
Adj Flow Rate, veh/h	612	383	815	0	0	1080
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	0	2
Cap, veh/h	682	1068	1905	0	0	1905
Arrive On Green	0.38	0.38	0.54	0.00	0.00	0.54
Sat Flow, veh/h	1781	2790	3741	0	0	3741
Grp Volume(v), veh/h	612	383	815	0	0	1080
Grp Sat Flow(s),veh/h/ln	1781	1395	1777	0	0	1777
Q Serve(g_s), s	31.9	9.7	13.6	0.0	0.0	20.0
Cycle Q Clear(g_c), s	31.9	9.7	13.6	0.0	0.0	20.0
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	682	1068	1905	0	0	1905
V/C Ratio(X)	0.90	0.36	0.43	0.00	0.00	0.57
Avail Cap(c_a), veh/h	1063	1665	1905	0	0	1905
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	28.7	21.8	13.8	0.0	0.0	15.3
Incr Delay (d2), s/veh	6.7	0.2	0.7	0.0	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.4	3.2	5.1	0.0	0.0	7.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.4	22.0	14.5	0.0	0.0	16.5
LnGrp LOS	D	C	B	A	A	B
Approach Vol, veh/h	995		815			1080
Approach Delay, s/veh	30.3		14.5			16.5
Approach LOS	C		B			B
Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		57.0			57.0	41.8
Change Period (Y+Rc), s		4.0			4.0	4.0
Max Green Setting (Gmax), s		53.0			53.0	59.0
Max Q Clear Time (g_c+I1), s		15.6			22.0	33.9
Green Ext Time (p_c), s		6.2			8.7	3.9
Intersection Summary						
HCM 6th Ctrl Delay			20.7			
HCM 6th LOS			C			

APPENDIX B – LOS RESULTS – FUTURE (2040) WITH IMPROVED PROJECT CONDITIONS

Intersection # 10
 North/South Street 15th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Future (2040) without Project				Future (2040) with Project				Future (2040) with Project + Mit					
	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*
Northbound Left	90	1,600	0.06	*	266	356	1,600	0.22	*	0	356	2,880	0.12	*
Northbound Through	290	1,600	0.18		69	359	1,600	0.22		0	359	1,600	0.22	
Northbound Right	390	1,600	0.00		115	505	1,600	0.00		0	505	1,600	0.00	
Southbound Left	100	1,600	0.06		2	102	1,600	0.06		0	102	1,600	0.06	
Southbound Through	310	1,600	0.19	*	117	427	1,600	0.27	*	0	427	1,600	0.27	*
Southbound Right	80	1,600	0.00		104	184	1,600	0.00		0	184	1,600	0.00	
Eastbound Left	140	1,600	0.09		47	187	1,600	0.12		0	187	1,600	0.12	
Eastbound Through	600	3,200	0.23	*	58	658	3,200	0.33	*	0	658	3,200	0.21	*
Eastbound Right	140	0	0.00		255	395	0	0.00		0	395	1,600	0.00	
Westbound Left	150	1,600	0.09	*	165	315	1,600	0.20	*	0	315	1,600	0.20	*
Westbound Through	570	3,200	0.20		125	695	3,200	0.24		0	695	3,200	0.24	
Westbound Right	70	0	0.00		3	73	0	0.00		0	73	0	0.00	
N/S Critical Movements			0.25					0.49					0.39	
E/W Critical Movements			0.32					0.53					0.41	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.67					1.12					0.90	
Level of Service (LOS)			B					F					D	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 10
 North/South Street 15th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Future (2040) without Project				Future (2040) with Project				Future (2040) with Project + Mit					
	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*
Northbound Left	170	1,600	0.11	*	292	462	1,600	0.29	*	0	462	2,880	0.16	*
Northbound Through	230	1,600	0.14		128	358	1,600	0.22		0	358	1,600	0.22	
Northbound Right	270	1,600	0.00		180	450	1,600	0.00		0	450	1,600	0.00	
Southbound Left	130	1,600	0.08		3	133	1,600	0.08		0	133	1,600	0.08	
Southbound Through	420	1,600	0.26	*	86	506	1,600	0.32	*	0	506	1,600	0.32	*
Southbound Right	100	1,600	0.00		64	164	1,600	0.00		0	164	1,600	0.00	
Eastbound Left	50	1,600	0.03		117	167	1,600	0.10		0	167	1,600	0.10	
Eastbound Through	730	3,200	0.27	*	140	870	3,200	0.42	*	0	870	3,200	0.27	*
Eastbound Right	140	0	0.00		327	467	0	0.00		0	467	1,600	0.00	
Westbound Left	330	1,600	0.21	*	135	465	1,600	0.29	*	0	465	1,600	0.29	*
Westbound Through	750	3,200	0.26		75	825	3,200	0.28		0	825	3,200	0.28	
Westbound Right	80	0	0.00		2	82	0	0.00		0	82	0	0.00	
N/S Critical Movement			0.37					0.61					0.48	
E/W Critical Movements			0.48					0.71					0.56	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.95					1.42					1.14	
Level of Service (LOS)			E					F					F	

Notes

V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 18
 North/South Street 20th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Future (2040) without Project			Future (2040) with Project				Future (2040) with Project + Mit			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	60	1,600	0.04	0	60	1,600	0.04	0	60	1,600	0.04
Northbound Through	430	3,200	0.13 *	67	497	3,200	0.16 *	0	497	3,200	0.16 *
Northbound Right	190	1,600	0.00	92	282	1,600	0.00	0	282	1,600	0.00
Southbound Left	50	1,600	0.03 *	167	217	1,600	0.14 *	0	217	1,600	0.14 *
Southbound Through	350	3,200	0.11	30	380	3,200	0.12	0	380	3,200	0.12
Southbound Right	90	1,600	0.00	41	131	1,600	0.00	0	131	1,600	0.00
Eastbound Left	130	1,600	0.08	91	221	1,600	0.14	0	221	1,600	0.14
Eastbound Through	620	3,200	0.25 *	106	726	1,600	0.45 *	0	726	1,600	0.45 *
Eastbound Right	170	0	0.00	0	170	1,600	0.00	0	170	1,600	0.00
Westbound Left	200	1,600	0.13 *	72	272	1,600	0.17 *	0	272	1,600	0.17 *
Westbound Through	330	3,200	0.12	67	397	1,600	0.34	0	397	3,200	0.17
Westbound Right	40	0	0.00	109	149	0	0.00	0	149	0	0.00
N/S Critical Movements			0.16				0.30				0.30
E/W Critical Movements			0.38				0.62				0.62
Clearance Interval			0.10 *				0.10 *				0.10 *
ICU			0.64				1.02				1.02
Level of Service (LOS)			B				F				F

Notes

V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 18
 North/South Street 20th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Future (2040) without Project				Future (2040) with Project				Future (2040) with Project + Mit					
	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*
Northbound Left	80	1,600	0.05	*	0	80	1,600	0.05	*	0	80	1,600	0.05	*
Northbound Through	380	3,200	0.12		40	420	3,200	0.13		0	420	3,200	0.13	
Northbound Right	240	1,600	0.00		83	323	1,600	0.00		0	323	1,600	0.00	
Southbound Left	110	1,600	0.07		200	310	1,600	0.19		0	310	1,600	0.19	
Southbound Through	970	3,200	0.30	*	75	1,045	3,200	0.33	*	0	1045	3,200	0.33	*
Southbound Right	100	1,600	0.00		102	202	1,600	0.00		0	202	1,600	0.00	
Eastbound Left	80	1,600	0.05		56	136	1,600	0.09	*	0	136	1,600	0.09	
Eastbound Through	320	3,200	0.15	*	82	402	1,600	0.25	*	0	402	1,600	0.25	*
Eastbound Right	150	0	0.00		0	150	1,600	0.00		0	150	1,600	0.00	
Westbound Left	570	1,600	0.36	*	99	669	1,600	0.42		0	669	1,600	0.42	*
Westbound Through	690	3,200	0.24		117	807	1,600	0.63	*	0	807	3,200	0.31	
Westbound Right	70	0	0.00		124	194	0	0.00		0	194	0	0.00	
N/S Critical Movement			0.35					0.38					0.38	
E/W Critical Movements			0.51					0.72					0.67	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.96					1.20					1.15	
Level of Service (LOS)			E					F					F	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 19
 North/South Street 15th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Future (2040) without Project			Future (2040) with Project				Future (2040) with Project + Mit			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	50	1,600	0.03	96	146	1,600	0.09	0	146	1,600	0.09
Northbound Through	500	3,200	0.16 *	252	752	3,200	0.24 *	0	752	3,200	0.24 *
Northbound Right	120	1,600	0.00	12	132	1,600	0.00	0	132	1,600	0.00
Southbound Left	40	1,600	0.03 *	74	114	1,600	0.07 *	0	114	1,600	0.07 *
Southbound Through	340	3,200	0.11	175	515	3,200	0.16	0	515	3,200	0.16
Southbound Right	190	1,600	0.00	149	339	1,600	0.00	0	339	1,600	0.00
Eastbound Left	290	1,600	0.18 *	194	484	1,600	0.30 *	0	484	1,600	0.30 *
Eastbound Through	460	1,600	0.29	30	490	1,600	0.31	0	490	1,600	0.31
Eastbound Right	120	1,600	0.00	67	187	1,600	0.00	0	187	1,600	0.00
Westbound Left	70	1,600	0.04	13	83	1,600	0.05	0	83	1,600	0.05
Westbound Through	290	1,600	0.18 *	64	354	1,600	0.22 *	0	354	3,200	0.11 *
Westbound Right	60	1,600	0.00	125	185	1,600	0.00	0	185	1,600	0.00
N/S Critical Movements			0.19				0.31				0.31
E/W Critical Movements			0.36				0.52				0.41
Clearance Interval			0.10 *				0.10 *				0.10 *
ICU			0.65				0.93				0.82
Level of Service (LOS)			B				E				D

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 19
 North/South Street 15th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Future (2040) without Project				Future (2040) with Project				Future (2040) with Project + Mit					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	90	1,600	0.06	*	59	149	1,600	0.09	*	0	149	1,600	0.09	*
Northbound Through	190	3,200	0.06		170	360	3,200	0.11		0	360	3,200	0.11	
Northbound Right	110	1,600	0.00		11	121	1,600	0.00		0	121	1,600	0.00	
Southbound Left	40	1,600	0.03		138	178	1,600	0.11		0	178	1,600	0.11	
Southbound Through	400	3,200	0.13	*	329	729	3,200	0.23	*	0	729	3,200	0.23	*
Southbound Right	550	1,600	0.14	*	182	732	1,600	0.02	*	0	732	1,600	0.02	*
Eastbound Left	130	1,600	0.08	*	201	331	1,600	0.21	*	0	331	1,600	0.21	*
Eastbound Through	410	1,600	0.26		72	482	1,600	0.30		0	482	1,600	0.30	
Eastbound Right	110	1,600	0.00		154	264	1,600	0.00		0	264	1,600	0.00	
Westbound Left	80	1,600	0.05		13	93	1,600	0.06		0	93	1,600	0.06	
Westbound Through	510	1,600	0.32	*	38	548	1,600	0.34	*	0	548	3,200	0.17	*
Westbound Right	60	1,600	0.00		88	148	1,600	0.00		0	148	1,600	0.00	
N/S Critical Movement			0.19					0.32					0.32	
E/W Critical Movements			0.40					0.55					0.38	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.69					0.97					0.80	
Level of Service (LOS)			B					E					C	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 30
 North/South Street 18th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 10/9/2020

Movement	Future (2040) without Project			Future (2040) with Project				Future (2040) with Project + Mit			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left				0	0	0	0.00	0	0	0	0.00
Northbound Through				0	0	0	0.00	0	0	0	0.00
Northbound Right				0	0	0	0.00	0	0	0	0.00
Southbound Left				52	52	1,600	0.03	0	52	1,600	0.03
Southbound Through				0	0	0	0.00	0	0	0	0.00
Southbound Right				46	46	1,600	0.00	0	46	1,600	0.00
Eastbound Left				96	96	1,600	0.06	0	96	1,600	0.06
Eastbound Through	Intersection constructed with Project			1120	1,120	1,600	0.70	0	1120	1,600	0.70
Eastbound Right				0	0	0	0.00	0	0	1,600	0.00
Westbound Left					0	0	0	0.00	0	0	0
Westbound Through				719	719	1,600	0.45	0	719	1,600	0.45
Westbound Right				96	96	1,600	0.00	0	96	1,600	0.00
N/S Critical Movements							0.03				0.03
E/W Critical Movements							0.70				0.70
Clearance Interval							0.10				0.10
ICU							0.83				0.83
Level of Service (LOS)							D				D

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 30
 North/South Street 18th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 10/9/2020

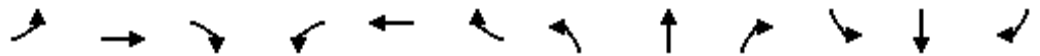
Movement	Future (2040) without Project			Future (2040) with Project				Future (2040) with Project + Mit			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left				0	0	0	0.00	0	0	0	0.00
Northbound Through				0	0	0	0.00	0	0	0	0.00
Northbound Right				0	0	0	0.00	0	0	0	0.00
Southbound Left				110	110	1,600	0.07	0	110	1,600	0.07
Southbound Through				0	0	0	0.00	0	0	0	0.00
Southbound Right				94	94	1,600	0.00	0	94	1,600	0.00
Eastbound Left				68	68	1,600	0.04	0	68	1,600	0.04
Eastbound Through				955	955	1,600	0.60	0	955	1,600	0.60
Eastbound Right				0	0	0	0.00	0	0	1,600	0.00
Westbound Left				0	0	0	0.00	0	0	0	0.00
Westbound Through				1378	1,378	1,600	0.86	0	1378	1,600	0.86
Westbound Right				69	69	1,600	0.00	0	69	1,600	0.00
N/S Critical Movement							0.07				0.07
E/W Critical Movements							0.90				0.90
Clearance Interval							0.10				0.10
ICU							1.07				1.07
Level of Service (LOS)							F				F

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

HCM 6th Signalized Intersection Summary

10: 15th St W & Ave J

10/12/2020

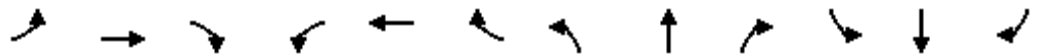


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	658	395	315	695	73	356	359	505	102	427	184
Future Volume (veh/h)	187	658	395	315	695	73	356	359	505	102	427	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	203	715	429	342	755	79	387	390	549	111	464	200
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	231	606	362	282	1013	106	312	533	452	239	405	343
Arrive On Green	0.13	0.28	0.28	0.16	0.31	0.31	0.05	0.09	0.09	0.07	0.22	0.22
Sat Flow, veh/h	1781	2138	1279	1781	3247	340	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	203	594	550	342	413	421	387	390	549	111	464	200
Grp Sat Flow(s),veh/h/ln	1781	1777	1640	1781	1777	1809	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	13.4	34.0	34.0	19.0	25.0	25.0	17.0	24.3	34.2	5.7	26.0	13.6
Cycle Q Clear(g_c), s	13.4	34.0	34.0	19.0	25.0	25.0	17.0	24.3	34.2	5.7	26.0	13.6
Prop In Lane	1.00		0.78	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	231	503	465	282	555	565	312	533	452	239	405	343
V/C Ratio(X)	0.88	1.18	1.18	1.21	0.74	0.75	1.24	0.73	1.21	0.46	1.14	0.58
Avail Cap(c_a), veh/h	267	503	465	282	555	565	312	533	452	243	405	343
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(l)	0.67	0.67	0.67	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.3	43.0	43.0	50.5	37.0	37.0	41.2	49.9	54.4	33.6	47.0	42.1
Incr Delay (d2), s/veh	17.9	94.3	97.0	123.8	8.8	8.7	110.2	0.8	98.5	1.4	90.5	7.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	27.6	25.8	18.0	11.9	12.1	17.6	12.3	26.9	2.5	22.0	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.2	137.3	140.0	174.3	45.8	45.7	151.3	50.7	152.9	35.0	137.5	49.2
LnGrp LOS	E	F	F	F	D	D	F	D	F	C	F	D
Approach Vol, veh/h		1347			1176			1326			775	
Approach Delay, s/veh		128.1			83.1			122.4			100.0	
Approach LOS		F			F			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.0	41.0	22.0	33.0	20.6	44.4	13.8	41.2				
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0				
Max Green Setting (Gmax), s	19.0	34.0	17.0	26.0	18.0	35.0	9.0	34.0				
Max Q Clear Time (g_c+l1), s	21.0	36.0	19.0	28.0	15.4	27.0	7.7	36.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	3.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay				110.3								
HCM 6th LOS				F								

HCM 6th Signalized Intersection Summary

18: 20th St W & Ave J-8

10/12/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	726	170	272	397	149	60	497	282	217	380	131
Future Volume (veh/h)	224	726	170	272	397	149	60	497	282	217	380	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	243	789	185	296	432	162	65	540	307	236	413	142
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	330	733	621	268	531	199	131	533	238	529	1386	618
Arrive On Green	0.13	0.52	0.52	0.12	0.41	0.41	0.07	0.15	0.15	0.30	0.39	0.39
Sat Flow, veh/h	1781	1870	1585	1781	1297	486	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	243	789	185	296	0	594	65	540	307	236	413	142
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1783	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	9.8	47.0	7.9	14.0	0.0	35.4	4.2	18.0	17.1	12.9	9.6	7.2
Cycle Q Clear(g_c), s	9.8	47.0	7.9	14.0	0.0	35.4	4.2	18.0	17.1	12.9	9.6	7.2
Prop In Lane	1.00		1.00	1.00		0.27	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	330	733	621	268	0	730	131	533	238	529	1386	618
V/C Ratio(X)	0.74	1.08	0.30	1.11	0.00	0.81	0.49	1.01	1.29	0.45	0.30	0.23
Avail Cap(c_a), veh/h	347	733	621	268	0	730	148	533	238	529	1386	618
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	0.00	1.00	0.58	0.58	0.58	0.95	0.95	0.95
Uniform Delay (d), s/veh	23.6	28.7	19.4	38.2	0.0	31.4	53.4	51.0	45.8	34.2	25.3	24.5
Incr Delay (d2), s/veh	6.7	54.1	0.2	86.2	0.0	7.1	1.7	33.0	148.3	0.6	0.5	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	28.1	2.8	10.4	0.0	15.8	1.9	10.3	16.4	5.5	4.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.3	82.8	19.6	124.4	0.0	38.5	55.1	84.0	194.1	34.7	25.8	25.3
LnGrp LOS	C	F	B	F	A	D	E	F	F	C	C	C
Approach Vol, veh/h		1217			890			912			791	
Approach Delay, s/veh		62.7			67.0			119.0			28.4	
Approach LOS		E			E			F			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	54.0	13.9	53.8	16.9	56.1	42.7	25.0				
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	7.0	* 7				
Max Green Setting (Gmax), s	14.0	47.0	10.0	25.0	13.0	48.0	17.0	* 18				
Max Q Clear Time (g_c+l1), s	16.0	49.0	6.2	11.6	11.8	37.4	14.9	20.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.5	0.1	2.7	0.1	0.0				

Intersection Summary

HCM 6th Ctrl Delay	70.1
HCM 6th LOS	E

Notes

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

HCM 6th Signalized Intersection Summary

10: 15th St W & Ave J

10/12/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	658	395	315	695	73	356	359	505	102	427	184
Future Volume (veh/h)	187	658	395	315	695	73	356	359	505	102	427	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	203	715	429	342	755	79	387	390	549	111	464	200
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	232	1072	478	371	1234	129	445	770	674	256	572	255
Arrive On Green	0.13	0.30	0.30	0.21	0.38	0.38	0.04	0.07	0.07	0.07	0.16	0.16
Sat Flow, veh/h	1781	3554	1585	1781	3247	340	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	203	715	429	342	413	421	387	390	549	111	464	200
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1809	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	13.4	21.1	31.1	22.6	22.5	22.6	13.4	12.7	26.0	6.1	15.1	14.5
Cycle Q Clear(g_c), s	13.4	21.1	31.1	22.6	22.5	22.6	13.4	12.7	26.0	6.1	15.1	14.5
Prop In Lane	1.00		1.00	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	232	1072	478	371	675	687	445	770	674	256	572	255
V/C Ratio(X)	0.88	0.67	0.90	0.92	0.61	0.61	0.87	0.51	0.81	0.43	0.81	0.78
Avail Cap(c_a), veh/h	297	1072	478	430	675	687	461	770	674	260	572	255
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(l)	0.65	0.65	0.65	1.00	1.00	1.00	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	36.6	40.1	46.5	30.1	30.1	56.4	49.5	34.6	37.7	48.6	48.3
Incr Delay (d2), s/veh	14.2	2.2	15.9	23.2	4.1	4.0	14.4	2.1	9.4	1.2	11.9	21.1
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	6.8	9.2	13.8	12.1	10.1	10.3	7.1	6.3	15.2	2.7	7.5	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.5	38.8	56.0	69.7	34.2	34.1	70.8	51.6	44.0	38.9	60.5	69.4
LnGrp LOS	E	D	E	E	C	C	E	D	D	D	E	E
Approach Vol, veh/h		1347			1176			1326			775	
Approach Delay, s/veh		48.3			44.5			54.1			59.7	
Approach LOS		D			D			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	43.2	20.5	26.3	20.6	52.6	13.8	33.0				
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0				
Max Green Setting (Gmax), s	29.0	32.0	16.0	19.0	20.0	41.0	9.0	26.0				
Max Q Clear Time (g_c+l1), s	24.6	33.1	15.4	17.1	15.4	24.6	8.1	28.0				
Green Ext Time (p_c), s	0.4	0.0	0.1	0.7	0.2	4.5	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			50.9									
HCM 6th LOS			D									

HCM 6th Signalized Intersection Summary

18: 20th St W & Ave J-8

10/12/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↕		↖	↕	↗	↖	↕	↗
Traffic Volume (veh/h)	221	726	170	272	387	149	60	497	282	217	380	131
Future Volume (veh/h)	221	726	170	272	387	149	60	497	282	217	380	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	240	789	185	296	421	162	65	540	307	236	413	142
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	476	748	634	268	1033	393	131	533	238	529	1386	618
Arrive On Green	0.13	0.53	0.53	0.12	0.41	0.41	0.07	0.15	0.15	0.30	0.39	0.39
Sat Flow, veh/h	1781	1870	1585	1781	2517	958	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	240	789	185	296	296	287	65	540	307	236	413	142
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1777	1698	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	9.5	48.0	7.8	14.0	14.1	14.4	4.2	18.0	17.2	12.9	9.6	7.2
Cycle Q Clear(g_c), s	9.5	48.0	7.8	14.0	14.1	14.4	4.2	18.0	17.2	12.9	9.6	7.2
Prop In Lane	1.00		1.00	1.00		0.56	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	476	748	634	268	729	697	131	533	238	529	1386	618
V/C Ratio(X)	0.50	1.05	0.29	1.11	0.41	0.41	0.49	1.01	1.29	0.45	0.30	0.23
Avail Cap(c_a), veh/h	524	748	634	268	729	697	148	533	238	529	1386	618
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.88	0.88	0.88	1.00	1.00	1.00	0.58	0.58	0.58	0.95	0.95	0.95
Uniform Delay (d), s/veh	17.9	28.1	18.7	38.4	25.0	25.1	53.4	51.0	46.7	34.2	25.3	24.5
Incr Delay (d2), s/veh	0.7	46.3	0.2	86.2	0.4	0.4	1.7	33.0	148.3	0.6	0.5	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	27.0	0.0	10.3	5.8	5.6	1.9	10.3	16.4	5.5	4.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.6	74.4	18.9	124.6	25.4	25.5	55.1	84.0	195.0	34.7	25.8	25.3
LnGrp LOS	B	F	B	F	C	C	E	F	F	C	C	C
Approach Vol, veh/h		1214			879			912			791	
Approach Delay, s/veh		54.9			58.8			119.3			28.4	
Approach LOS		D			E			F			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.0	55.0	13.9	53.8	16.7	56.3	42.7	25.0				
Change Period (Y+Rc), s	4.0	7.0	5.0	7.0	5.0	7.0	7.0	* 7				
Max Green Setting (Gmax), s	14.0	48.0	10.0	25.0	15.0	46.0	17.0	* 18				
Max Q Clear Time (g_c+l1), s	16.0	50.0	6.2	11.6	11.5	16.4	14.9	20.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.5	0.2	3.4	0.1	0.0				

Intersection Summary

HCM 6th Ctrl Delay	65.7
HCM 6th LOS	E

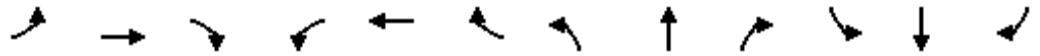
Notes

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

HCM 6th Signalized Intersection Summary

8: 20th St W & Ave J

10/12/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	140	1033	164	319	1605	191	395	300	397	155	281	110
Future Volume (veh/h)	140	1033	164	319	1605	191	395	300	397	155	281	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	1123	178	347	1745	208	429	326	432	168	305	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	148	1185	528	1400	3741	1669	432	343	291	163	474	211
Arrive On Green	0.08	0.33	0.33	0.79	1.00	1.00	0.13	0.18	0.18	0.09	0.13	0.13
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	1870	1585	1781	3554	1585
Grp Volume(v), veh/h	152	1123	178	347	1745	208	429	326	432	168	305	120
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1870	1585	1781	1777	1585
Q Serve(g_s), s	10.0	37.0	10.1	6.2	0.0	0.0	14.9	20.7	14.1	11.0	9.8	12.7
Cycle Q Clear(g_c), s	10.0	37.0	10.1	6.2	0.0	0.0	14.9	20.7	14.1	11.0	9.8	12.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	1185	528	1400	3741	1669	432	343	291	163	474	211
V/C Ratio(X)	1.02	0.95	0.34	0.25	0.47	0.12	0.99	0.95	1.49	1.03	0.64	0.57
Avail Cap(c_a), veh/h	148	1185	528	1400	3741	1669	432	343	291	163	474	211
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.83	0.83	0.83	0.77	0.77	0.77	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	39.0	30.0	3.4	0.0	0.0	52.4	48.5	20.3	54.5	49.3	108.8
Incr Delay (d2), s/veh	73.7	14.3	1.4	0.1	0.3	0.1	39.0	35.0	234.7	78.2	6.6	10.6
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	7.4	17.7	4.0	1.7	0.2	0.1	8.7	12.7	24.0	8.3	4.7	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	128.7	53.3	31.5	3.5	0.3	0.1	91.4	83.4	254.9	132.7	55.9	119.4
LnGrp LOS	F	D	C	A	A	A	F	F	F	F	E	F
Approach Vol, veh/h		1453			2300			1187			593	
Approach Delay, s/veh		58.5			0.8			148.7			90.5	
Approach LOS		E			A			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	103.3	47.0	22.0	23.0	15.0	135.3	16.0	29.0				
Change Period (Y+Rc), s	7.0	* 7	7.0	* 7	5.0	7.0	5.0	7.0				
Max Green Setting (Gmax), s	25.0	* 40	15.0	* 16	10.0	55.0	11.0	20.0				
Max Q Clear Time (g_c+I1), s	8.2	39.0	16.9	14.7	12.0	2.0	13.0	22.7				
Green Ext Time (p_c), s	0.9	0.8	0.0	0.3	0.0	23.6	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	57.3
HCM 6th LOS	E

Notes

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

HCM 6th Signalized Intersection Summary

10: 15th St W & Ave J

10/12/2020

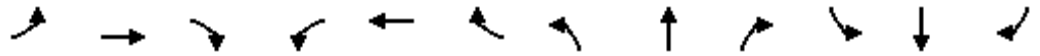


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	870	467	465	825	82	462	358	450	133	506	164
Future Volume (veh/h)	167	870	467	465	825	82	462	358	450	133	506	164
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	182	946	508	505	897	89	502	389	489	145	550	178
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	209	676	355	312	1168	116	268	468	396	222	390	330
Arrive On Green	0.12	0.30	0.30	0.17	0.36	0.36	0.04	0.08	0.08	0.08	0.21	0.21
Sat Flow, veh/h	1781	2252	1183	1781	3265	324	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	182	742	712	505	488	498	502	389	489	145	550	178
Grp Sat Flow(s),veh/h/ln	1781	1777	1657	1781	1777	1812	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	12.1	36.0	36.0	21.0	29.2	29.2	14.0	24.6	30.0	7.6	25.0	12.0
Cycle Q Clear(g_c), s	12.1	36.0	36.0	21.0	29.2	29.2	14.0	24.6	30.0	7.6	25.0	12.0
Prop In Lane	1.00		0.71	1.00		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	209	533	497	312	636	648	268	468	396	222	390	330
V/C Ratio(X)	0.87	1.39	1.43	1.62	0.77	0.77	1.87	0.83	1.23	0.65	1.41	0.54
Avail Cap(c_a), veh/h	223	533	497	312	636	648	268	468	396	222	390	330
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(l)	0.52	0.52	0.52	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.1	42.0	42.0	49.5	34.1	34.1	38.4	52.6	55.0	35.6	47.5	42.4
Incr Delay (d2), s/veh	16.8	182.4	200.4	293.4	8.7	8.5	394.8	1.7	107.4	6.7	199.9	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	42.2	41.9	34.5	13.7	13.9	36.0	12.5	24.6	3.6	33.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.9	224.4	242.4	342.9	42.8	42.6	433.2	54.2	162.5	42.3	247.4	48.6
LnGrp LOS	E	F	F	F	D	D	F	D	F	D	F	D
Approach Vol, veh/h		1636			1491			1380			873	
Approach Delay, s/veh		214.9			144.4			230.4			172.8	
Approach LOS		F			F			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.0	43.0	19.0	32.0	19.1	49.9	14.0	37.0				
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0				
Max Green Setting (Gmax), s	21.0	36.0	14.0	25.0	15.0	42.0	9.0	30.0				
Max Q Clear Time (g_c+l1), s	23.0	38.0	16.0	27.0	14.1	31.2	9.6	32.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.4	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay					192.5							
HCM 6th LOS					F							

HCM 6th Signalized Intersection Summary

18: 20th St W & Ave J-8

10/12/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	402	150	669	807	194	80	420	323	310	1045	202
Future Volume (veh/h)	136	402	150	669	807	194	80	420	323	310	1045	202
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	148	437	163	727	877	211	87	457	351	337	1136	220
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	468	396	471	571	137	140	563	251	715	1769	789
Arrive On Green	0.15	0.50	0.50	0.07	0.13	0.13	0.08	0.16	0.16	0.40	0.50	0.50
Sat Flow, veh/h	1781	1870	1585	1781	1457	350	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	148	437	163	727	0	1088	87	457	351	337	1136	220
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1807	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.4	26.3	7.8	26.0	0.0	47.0	5.7	14.9	17.3	16.8	28.3	9.7
Cycle Q Clear(g_c), s	7.4	26.3	7.8	26.0	0.0	47.0	5.7	14.9	17.3	16.8	28.3	9.7
Prop In Lane	1.00		1.00	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	194	468	396	471	0	708	140	563	251	715	1769	789
V/C Ratio(X)	0.76	0.93	0.41	1.54	0.00	1.54	0.62	0.81	1.40	0.47	0.64	0.28
Avail Cap(c_a), veh/h	194	468	396	471	0	708	148	563	251	715	1769	789
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(l)	0.99	0.99	0.99	0.09	0.00	0.09	0.69	0.69	0.69	0.67	0.67	0.67
Uniform Delay (d), s/veh	30.9	29.1	24.4	42.1	0.0	52.2	53.5	48.8	42.1	26.5	22.3	17.6
Incr Delay (d2), s/veh	16.3	26.0	0.7	245.4	0.0	242.3	4.9	8.7	195.3	0.3	1.2	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	3.7	11.2	2.6	42.2	0.0	70.3	2.7	7.2	20.3	7.0	11.5	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	55.0	25.1	287.5	0.0	294.6	58.5	57.4	237.4	26.8	23.5	18.2
LnGrp LOS	D	E	C	F	A	F	E	E	F	C	C	B
Approach Vol, veh/h		748			1815			895			1693	
Approach Delay, s/veh		47.0			291.7			128.1			23.4	
Approach LOS		D			F			F			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.0	37.0	14.4	66.7	14.0	54.0	55.2	26.0				
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	7.0	* 7				
Max Green Setting (Gmax), s	26.0	30.0	10.0	30.0	9.0	47.0	21.0	* 19				
Max Q Clear Time (g_c+I1), s	28.0	28.3	7.7	30.3	9.4	49.0	18.8	19.3				
Green Ext Time (p_c), s	0.0	0.6	0.0	0.0	0.0	0.0	0.2	0.0				

Intersection Summary

HCM 6th Ctrl Delay	139.6
HCM 6th LOS	F

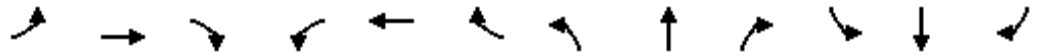
Notes

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

HCM 6th Signalized Intersection Summary

8: 20th St W & Ave J

10/12/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	1033	164	319	1605	191	395	300	397	155	281	110
Future Volume (veh/h)	140	1033	164	319	1605	191	395	300	397	155	281	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	1123	178	347	1745	208	429	326	432	168	305	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	148	1185	528	1400	3741	1669	432	343	1537	163	474	211
Arrive On Green	0.08	0.33	0.33	0.79	1.00	1.00	0.13	0.18	0.18	0.09	0.13	0.13
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	1870	1585	1781	3554	1585
Grp Volume(v), veh/h	152	1123	178	347	1745	208	429	326	432	168	305	120
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1870	1585	1781	1777	1585
Q Serve(g_s), s	10.0	37.0	10.1	6.2	0.0	0.0	14.9	20.7	6.0	11.0	9.8	12.7
Cycle Q Clear(g_c), s	10.0	37.0	10.1	6.2	0.0	0.0	14.9	20.7	6.0	11.0	9.8	12.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	1185	528	1400	3741	1669	432	343	1537	163	474	211
V/C Ratio(X)	1.02	0.95	0.34	0.25	0.47	0.12	0.99	0.95	0.28	1.03	0.64	0.57
Avail Cap(c_a), veh/h	148	1185	528	1400	3741	1669	432	343	1537	163	474	211
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.83	0.83	0.83	0.74	0.74	0.74	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	39.0	30.0	3.4	0.0	0.0	52.4	48.5	14.1	54.5	49.3	108.8
Incr Delay (d2), s/veh	73.7	14.3	1.4	0.1	0.3	0.1	39.0	35.0	0.4	78.2	6.6	10.6
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	7.4	17.7	4.0	1.7	0.2	0.1	8.7	12.7	5.9	8.3	4.7	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	128.7	53.3	31.5	3.5	0.3	0.1	91.4	83.4	14.5	132.7	55.9	119.4
LnGrp LOS	F	D	C	A	A	A	F	F	B	F	E	F
Approach Vol, veh/h		1453			2300			1187			593	
Approach Delay, s/veh		58.5			0.8			61.2			90.5	
Approach LOS		E			A			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	103.3	47.0	22.0	23.0	15.0	135.3	16.0	29.0				
Change Period (Y+Rc), s	7.0	* 7	7.0	* 7	5.0	7.0	5.0	7.0				
Max Green Setting (Gmax), s	25.0	* 40	15.0	* 16	10.0	55.0	11.0	20.0				
Max Q Clear Time (g_c+I1), s	8.2	39.0	16.9	14.7	12.0	2.0	13.0	22.7				
Green Ext Time (p_c), s	0.9	0.8	0.0	0.3	0.0	23.6	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	38.5
HCM 6th LOS	D

Notes

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

HCM 6th Signalized Intersection Summary

10: 15th St W & Ave J

10/12/2020

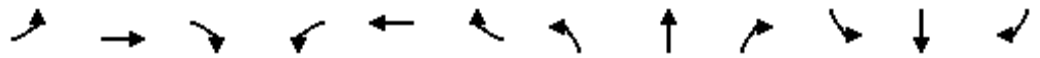


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	870	467	465	825	82	462	358	450	133	506	164
Future Volume (veh/h)	167	870	467	465	825	82	462	358	450	133	506	164
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	182	946	508	505	897	89	502	389	489	145	550	178
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	209	929	634	480	1350	134	478	716	746	269	519	232
Arrive On Green	0.12	0.26	0.26	0.27	0.41	0.41	0.14	0.20	0.20	0.08	0.15	0.15
Sat Flow, veh/h	1781	3554	1585	1781	3265	324	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	182	946	508	505	488	498	502	389	489	145	550	178
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1812	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	13.1	34.0	34.0	35.0	28.9	28.9	18.0	12.8	26.2	8.9	19.0	14.0
Cycle Q Clear(g_c), s	13.1	34.0	34.0	35.0	28.9	28.9	18.0	12.8	26.2	8.9	19.0	14.0
Prop In Lane	1.00		1.00	1.00		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	209	929	634	480	734	749	478	716	746	269	519	232
V/C Ratio(X)	0.87	1.02	0.80	1.05	0.66	0.66	1.05	0.54	0.66	0.54	1.06	0.77
Avail Cap(c_a), veh/h	288	929	634	480	734	749	478	716	746	271	519	232
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.68	0.68	1.00	1.00	1.00	0.76	0.76	0.76	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.4	48.0	34.4	47.5	30.8	30.8	56.0	46.6	26.3	42.2	55.5	53.4
Incr Delay (d2), s/veh	13.5	28.9	7.2	55.8	4.7	4.6	49.4	2.3	3.4	2.1	56.0	21.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	18.4	15.0	22.5	13.0	13.2	11.0	5.8	11.9	4.0	12.4	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.9	76.9	41.6	103.3	35.6	35.5	105.4	48.8	29.8	44.3	111.5	74.8
LnGrp LOS	E	F	D	F	D	D	F	D	C	D	F	E
Approach Vol, veh/h		1636			1491			1380			873	
Approach Delay, s/veh		65.2			58.5			62.7			92.9	
Approach LOS		E			E			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	40.0	41.0	23.0	26.0	20.3	60.7	15.8	33.2				
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0				
Max Green Setting (Gmax), s	35.0	34.0	18.0	19.0	21.0	48.0	11.0	26.0				
Max Q Clear Time (g_c+l1), s	37.0	36.0	20.0	21.0	15.1	30.9	10.9	28.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.2	5.7	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			67.2									
HCM 6th LOS			E									

HCM 6th Signalized Intersection Summary

18: 20th St W & Ave J-8

10/12/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↕		↖	↕	↗	↖	↕	↗
Traffic Volume (veh/h)	136	402	150	669	807	194	80	420	323	310	1045	202
Future Volume (veh/h)	136	402	150	669	807	194	80	420	323	310	1045	202
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	148	437	163	727	877	211	87	457	351	337	1136	220
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	250	358	304	520	1046	251	140	563	251	588	1516	676
Arrive On Green	0.11	0.25	0.25	0.26	0.37	0.37	0.08	0.16	0.16	0.33	0.43	0.43
Sat Flow, veh/h	1781	1870	1585	1781	2841	683	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	148	437	163	727	548	540	87	457	351	337	1136	220
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1777	1747	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.9	23.0	10.7	31.0	33.8	33.9	5.7	14.9	14.4	18.8	32.3	11.1
Cycle Q Clear(g_c), s	7.9	23.0	10.7	31.0	33.8	33.9	5.7	14.9	14.4	18.8	32.3	11.1
Prop In Lane	1.00		1.00	1.00		0.39	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	250	358	304	520	654	643	140	563	251	588	1516	676
V/C Ratio(X)	0.59	1.22	0.54	1.40	0.84	0.84	0.62	0.81	1.40	0.57	0.75	0.33
Avail Cap(c_a), veh/h	253	358	304	520	654	643	148	563	251	588	1516	676
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.99	0.99	0.99	1.00	1.00	1.00	0.69	0.69	0.69	0.66	0.66	0.66
Uniform Delay (d), s/veh	34.4	44.7	40.1	35.3	34.7	34.7	53.5	48.8	29.1	33.2	29.0	22.9
Incr Delay (d2), s/veh	3.5	121.1	1.8	190.4	9.4	9.6	4.9	8.7	195.3	0.9	2.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	21.7	4.1	40.2	15.6	15.4	2.7	7.2	19.0	8.0	13.7	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.9	165.8	41.9	225.7	44.1	44.3	58.5	57.4	224.4	34.1	31.3	23.8
LnGrp LOS	D	F	D	F	D	D	E	E	F	C	C	C
Approach Vol, veh/h		748			1815			895			1693	
Approach Delay, s/veh		113.5			116.9			123.0			30.9	
Approach LOS		F			F			F			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	36.0	30.0	14.4	58.2	14.8	51.2	46.6	26.0				
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	7.0	* 7				
Max Green Setting (Gmax), s	31.0	23.0	10.0	32.0	10.0	44.0	23.0	* 19				
Max Q Clear Time (g_c+l1), s	33.0	25.0	7.7	34.3	9.9	35.9	20.8	16.9				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.0	0.2	0.9				

Intersection Summary

HCM 6th Ctrl Delay	89.2
HCM 6th LOS	F

Notes

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



Operational and Safety Analysis

LANCASTER HEALTH DISTRICT MASTER PLAN

AUGUST 2020 | FINAL REPORT

Prepared For:

Prepared By:

Kimley»»Horn

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Appendix B – ICU Results

Appendix C – HCM Results – Existing (2019) Conditions

Appendix D – HCM Results – Future (2040) without Project Conditions

Appendix E – Internal Capture Worksheets

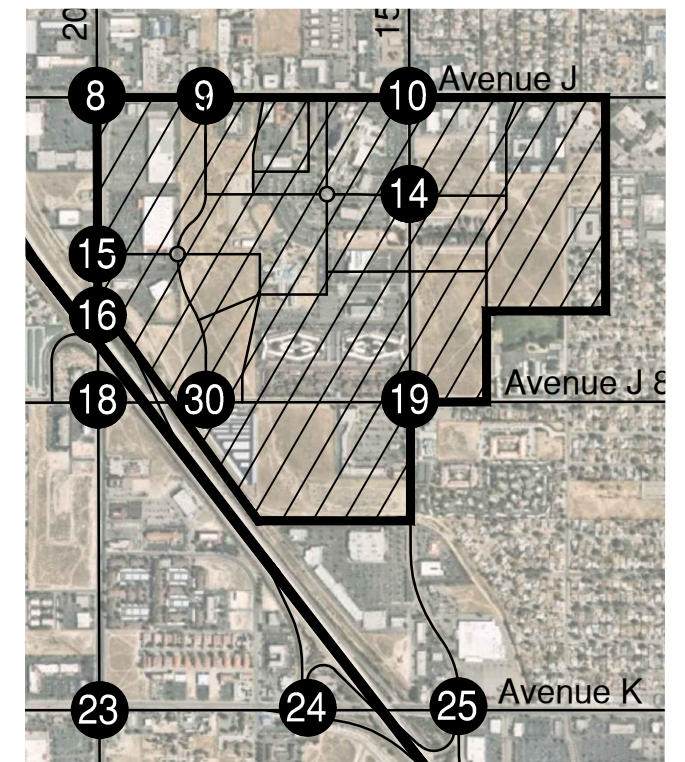
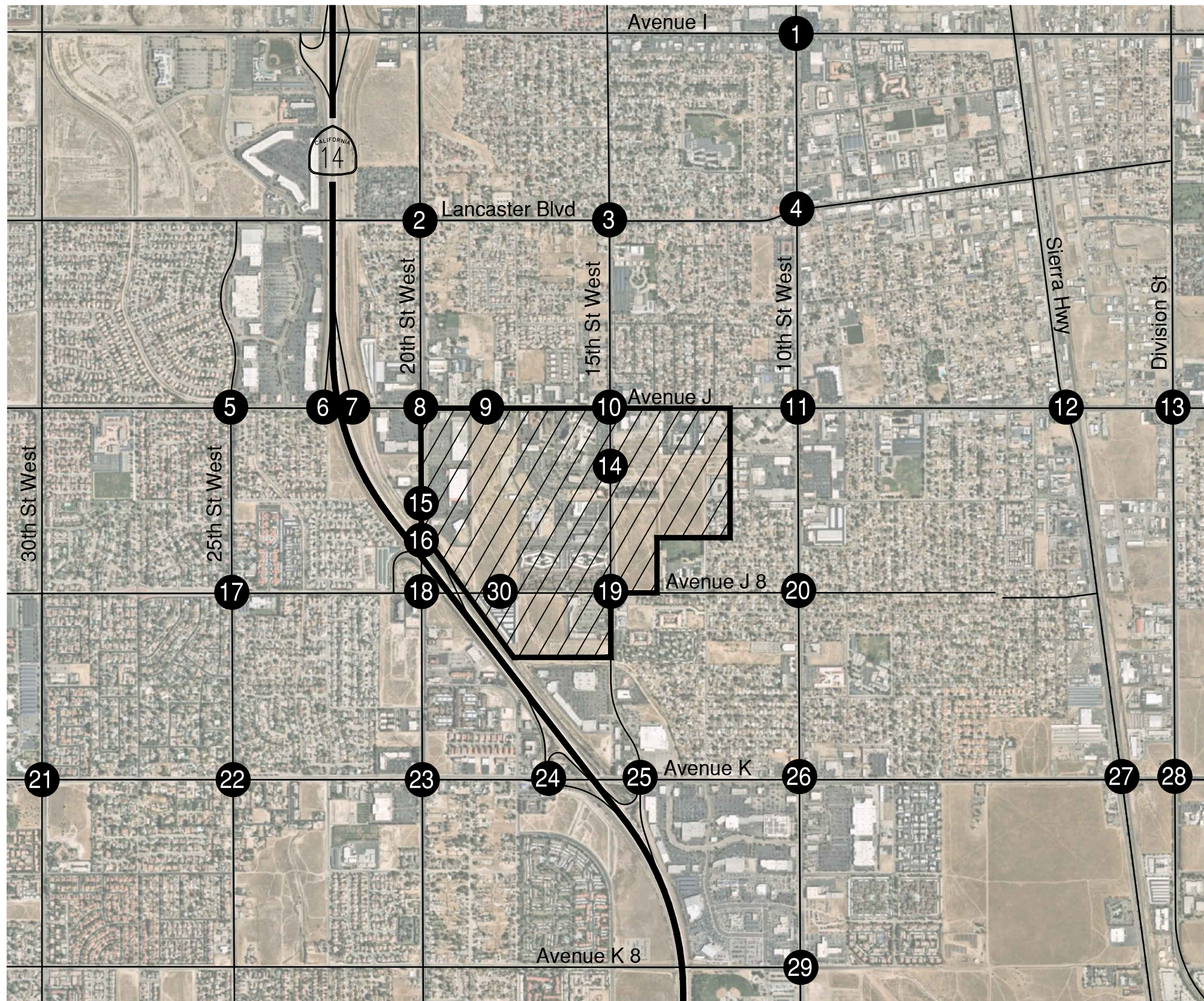
Appendix F – HCM Results – Future (2040) with Project Conditions

Appendix G – ICU and HCM Results – Future (2040) with Improved Project Conditions

I. INTRODUCTION

This report documents an Operational and Safety Analysis conducted for the Lancaster Health District Master Plan for the City of Lancaster. The Lancaster Health District Master Plan consists of a master planned mixed-use development that is projected to occur over the next twenty years. The project site is located primarily between 20th Street West, Avenue J, 15th Street West, and Avenue J-8 in the City of Lancaster, CA. The project will also include development east of 15th Street West in the East Neighborhood and south of Avenue J-8 in the South Neighborhood. The site is currently occupied primarily by the Antelope Valley Hospital and some associated facilities, all of which would be replaced as part of the project. The project site also includes a mixture of existing retail, residential, and restaurant land uses that would remain as the project is developed. The remainder of the site is occupied by surface parking lots and unimproved land. The project will include a new Antelope Valley Hospital with 380 beds along with additional development of 284 hospital beds for sub-acute care, up to 150 KSF of retail space, 90 KSF of restaurant space, 200 KSF of office space, 400 KSF of medical-dental office space, 180 hotel rooms, a 70 KSF convention center, 300 senior housing dwelling units, 100 assisted living dwelling units, 250 single-family residential dwelling units, and 1,350 multifamily residential dwelling units. The Master Plan also includes the redesign of the internal circulation system.

Figure 1 illustrates the study area and project location in its regional setting.



LEGEND	
#	Intersection ID
[Hatched Box]	Project Site

FIGURE 1
Lancaster Health District
Existing Street Location/Project Site Location

PROJECT DESCRIPTION

The Lancaster Health District Master Plan covers three areas of the project site – the District Core, East Neighborhood, and South Neighborhood. The majority of the development is projected to occur in the District Core. The primary purpose for the project is to replace the existing 342 bed Antelope Valley Hospital with a new hospital facility consisting of 300 general hospital beds, 40 psych hospital beds, 40 rehab hospital beds, 160 skilled nursing hospital beds, 24 drug rehab hospital beds, and 100 rehab hospital beds. The project would also include development of up to 1,350 multi-family residential units, 250 single family residential units, 300 senior housing units, 100 assisted living beds, a hotel with 180 rooms, a conference center of up to 70 KSF, up to 400 KSF of medical-dental office buildings, up to 200 KSF of general office buildings, up to 150 KSF of retail, and up to 90 KSF of restaurant. The project would also include the construction of a parking garage with up to 1,100 stalls.

The majority of the development is projected to occur in the District Core, which is generally bound by SR-14 and 20th Street West to the west, Avenue J to the north, 15th Street West to the east, and Avenue J-8 to the south. Development of retail, restaurant, and residential land uses will occur in the East Neighborhood, which is generally bound by 15th Street West to the west, Avenue J to the north, Kingtree Avenue and 12th Street West to the east, and Avenue J-8 to the south. Development of retail, restaurant, and residential land uses will also occur in the South Neighborhood, which is generally bound by SR-14 to the west, Avenue J-8 to the north, 15th Street West to the east, and the Antelope Valley Center Shopping Center to the south.

The land-use and building area summary associated with the proposed project is as follows:

Table 1: Land Use and Building Area Summary

Project Component	Unit	Size			
		Total	District Core	East Neighborhood	South Neighborhood
Hospital (Total Net New)	Bed(s)	300	300		
<i>Existing (To Be Removed)</i>	<i>Bed(s)</i>	<i>-342</i>	<i>-342</i>		
Psych	Bed(s)	40	40		
Rehab	Bed(s)	40	40		
Skilled Nursing	Bed(s)	160	160		
Drug Rehab	Bed(s)	24	24		
Rehab	Bed(s)	100	100		
Multi-Family Residential	Dwelling Unit(s)	1,350	802	465	83
Single Family Residential	Dwelling Unit(s)	250	0	40	210
Senior Housing	Dwelling Unit(s)	300	300		
Assisted Living	Bed(s)	100	100		
Hotel	Room(s)	180	180		
Conference Center	1,000 SF	70	70		
Medical-Dental Office Building	1,000 SF	400	400		
General Office Building	1,000 SF	200	200		
Retail	1,000 SF	150	75	37.5	37.5
Restaurant	1,000 SF	90	45	22.5	22.5
Parking Garage	Parking Stalls	1,100	1,100		

Access to the site would be provided by several new and existing full access driveways as well as new and existing right-in-right-out driveways. The following intersections would serve as the primary access points for the project site:

- 20th Street West & Avenue J-5 (existing driveway would be converted to a traffic signal)
- 18th Street West & Avenue J (new traffic signal)
- 15th Street West & Avenue J-3 (existing traffic signal)
- 15th Street West & Avenue J-5 (existing traffic signal)
- 18th Street West & Avenue J-8 (new traffic signal)

Additional existing and new driveways would provide access to the project site from Avenue J, 15th Street West, and Avenue J-8.

STUDY METHODOLOGY

The project site is located in the City of Lancaster in the County of Los Angeles. The format of the operational and safety analysis follows the City of Lancaster guidelines. The study area and intersections for this project were identified in consultation with the City of Lancaster.

For LOS analysis, this study provides analysis of the following four scenarios:

- Existing (2019) Conditions
- Future (2040) without Project Conditions
- Future (2040) with Project Conditions
- Future (2040) with Project and Roadway Improvements Conditions

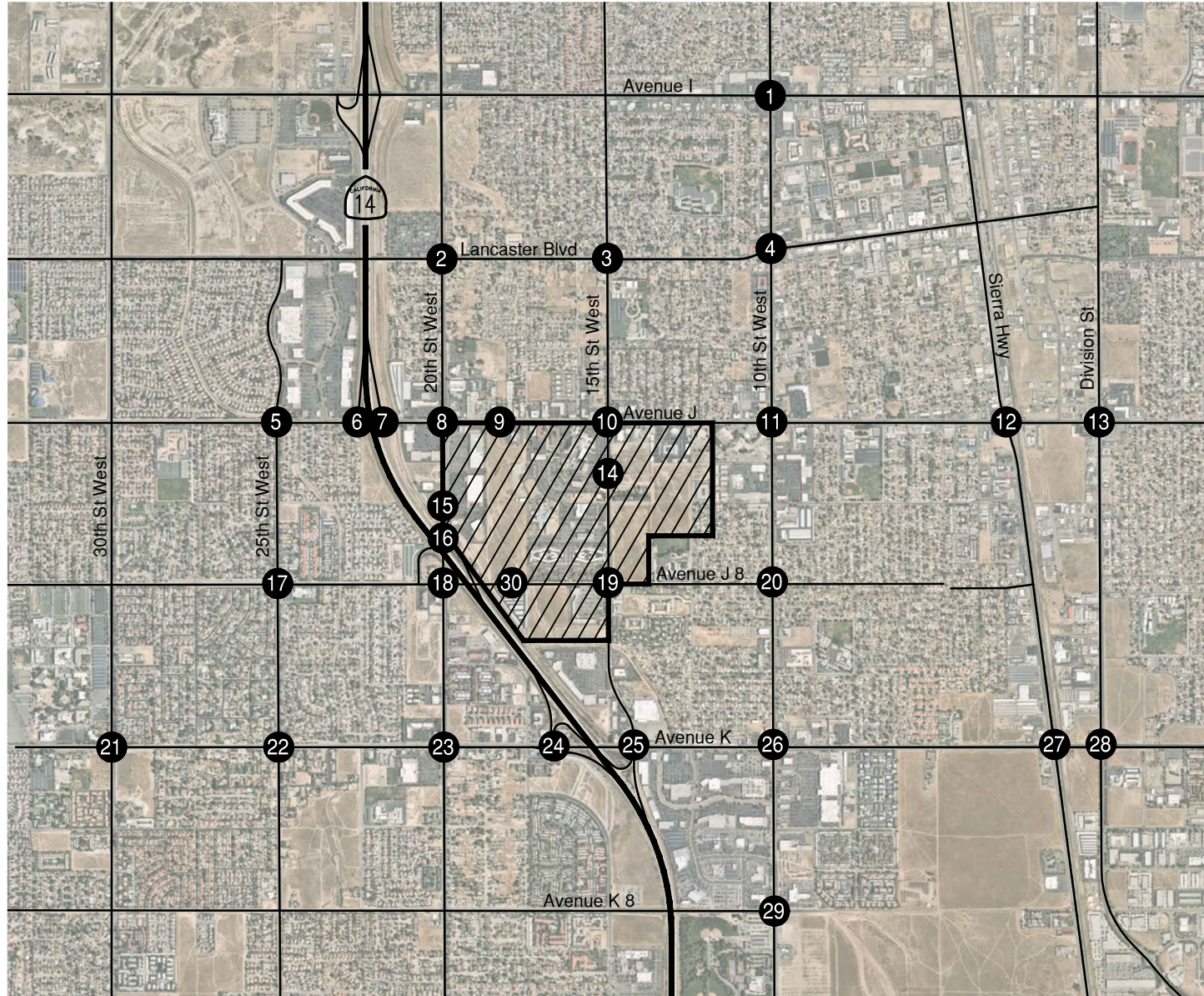
II. EXISTING CONDITIONS

STUDY AREA

30 study intersections were identified in conjunction with City staff and are listed below in **Table 2**. Existing lane configuration and traffic control for the study intersections are illustrated in **Figure 2** on the following page.

Table 2: Study Area Intersections

#	Intersection		Jurisdiction	Control (2019)	Control (w/ Project)
	North/South	East/West			
1	10th Street West	Avenue I	Lancaster	Signal	Signal
2	20th Street West	Lancaster Boulevard	Lancaster	Signal	Signal
3	15th Street West	Lancaster Boulevard	Lancaster	ROB	ROB
4	10th Street West	Lancaster Boulevard	Lancaster	Signal	Signal
5	25th Street West	Avenue J	Lancaster	Signal	Signal
6	SR-14 SB Ramps	Avenue J	Caltrans	Signal	Signal
7	SR-14 NB Ramps	Avenue J	Caltrans	TWSC	Signal
8	20th Street West	Avenue J	Lancaster	Signal	Signal
9	18th Street West	Avenue J	Lancaster	-	Signal
10	15th Street West	Avenue J	Lancaster	Signal	Signal
11	10th Street West	Avenue J	Lancaster	Signal	Signal
12	Sierra Highway	Avenue J	Lancaster	Signal	Signal
13	Division Street	Avenue J	Lancaster	Signal	Signal
14	15th Street West	Avenue J-3	Lancaster	Signal	Signal
15	20th Street West	Home Depot Southerly Street	Lancaster	TWSC	Signal
16	20th Street West	SR-14 NB Ramps	Caltrans	Signal	Signal
17	25th Street West	Avenue J-8	Lancaster	Signal	Signal
18	20th Street West	Avenue J-8	Lancaster	Signal	Signal
19	15th Street West	Avenue J-8	Lancaster	Signal	Signal
20	10th Street West	Avenue J-8	Lancaster	Signal	Signal
21	30th Street West	Avenue K	Lancaster	Signal	Signal
22	25th Street West	Avenue K	Lancaster	Signal	Signal
23	20th Street West	Avenue K	Lancaster	Signal	Signal
24	SR-14 SB Ramps	Avenue K	Caltrans	Signal	Signal
25	15th Street West/SR-14 NB Ramps	Avenue K	Caltrans	Signal	Signal
26	10th Street West	Avenue K	Lancaster	Signal	Signal
27	Sierra Highway	Avenue K	Lancaster	Signal	Signal
28	Division Street	Avenue K	Lancaster	Signal	Signal
29	10th Street West	Avenue K-8	Lancaster	Signal	Signal
30	18 th Street West	Avenue J-8	Lancaster	-	Signal



LEGEND			
#	Intersection ID	●●●	Existing Traffic Signal
▨	Project Site	○	Existing Roundabout
↔	Lane Use	*	Functional Right Turn
STOP	Stop Controlled Intersection	**	Yield Left Turn

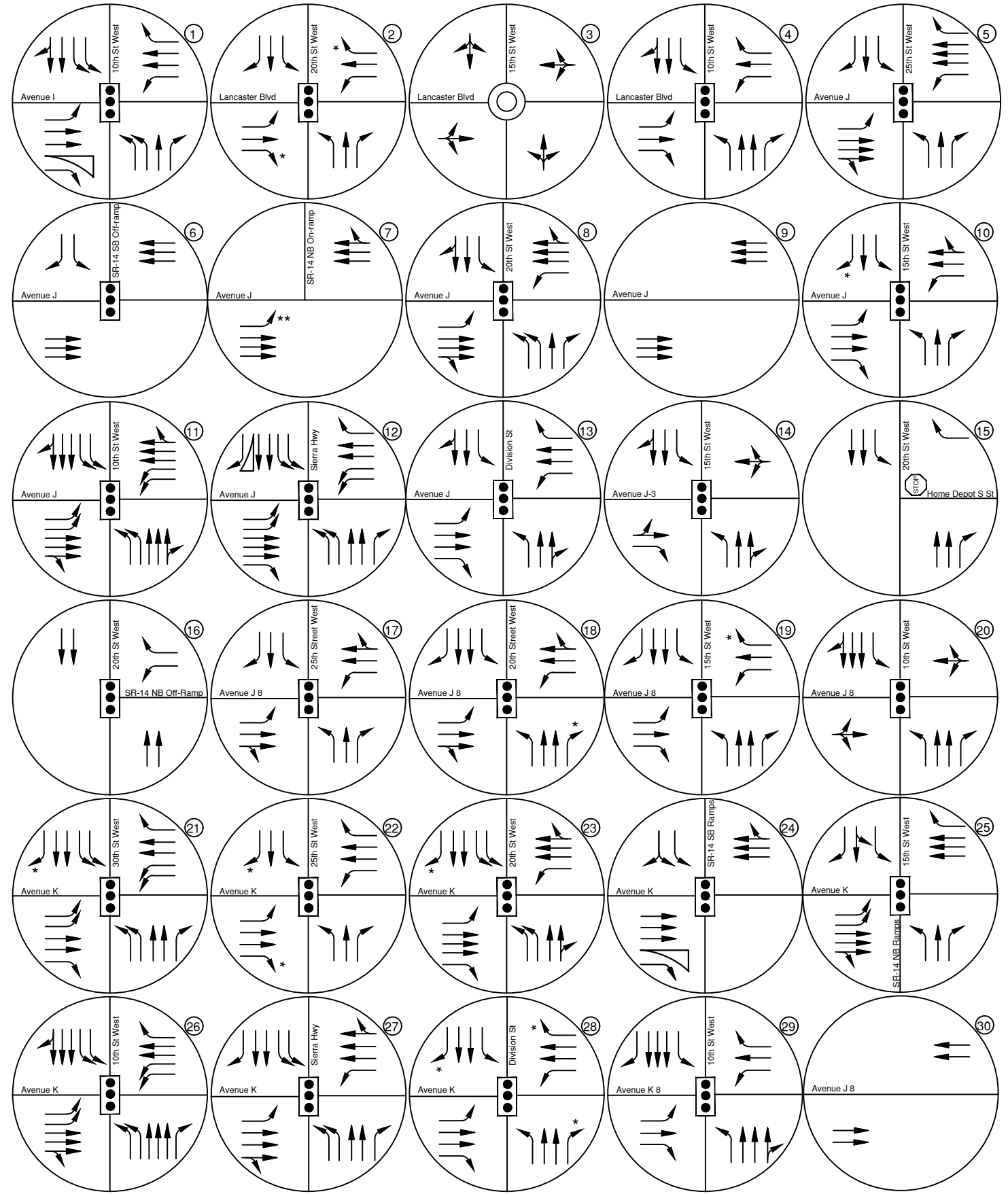


FIGURE 2
Lancaster Health District
Existing (2019) Intersection Lane Configuration and Traffic Control Diagrams

EXISTING ROADWAY SYSTEM

The following sections describe the roadway system including arterials, collectors, and local streets that traverse the study intersections and serve the project site.

Avenue I is an east-west major arterial that is located north of the project site. It has three lanes in each direction with a raised median that is broken to provide access to driveways and intersections and on-street parking is prohibited. Between 15th Street West and 10th Street West, there are two lanes in each direction and parking is permitted on the north side between 13th Street West and 10th Street West. The posted speed limit ranges between 40 and 45 mph. There are Class II bike lanes in each direction between 15th Street and 10th Street.

Lancaster Boulevard is an east-west secondary arterial that is located at north of the project site. East of Valley Central Way it has one lane in each direction and a TWLT median that provides access to driveways and local streets. On-street parking is prohibited on both sides of Lancaster Boulevard the posted speed limit is 40 mph. There are Class II bike lanes in each direction.

Avenue J is an east-west major arterial that is located at the north end of the project site. It has three lanes in each direction and a raised median that is broken to provide access to driveways and intersections. On-street parking is prohibited on both sides of Avenue J and the posted speed limit is 40 mph east of 20th Street West and 45 mph west of 20th Street West.

Avenue J-8 is an east-west secondary arterial that is located between the District Core and South Neighborhood of the project site. West of 15th Street West it has two lanes in each direction with a TWLT median that provides access to driveways and local streets. On-street parking is prohibited on both sides of Avenue J-8 and the posted speed limit is 45 mph. It also has Class II bike lanes in each direction. East of 15th Street West it has one lane in each direction, narrows down to have no median, and on-street parking is permitted in both directions. The posted speed limit is 35 mph and there are no bike lanes.

Avenue K is an east-west major arterial that is located south of the project site. East of 25th Street West it has three lanes in each direction and a mix between a raised and flush median that allows access to driveways and intersections. On-street parking is prohibited on both sides of Avenue K and the posted speed limit ranges between 40 and 50 mph.

Avenue K-8 is an east-west secondary arterial that is located south of the project site. It has one lane in each direction with no median. On-street parking is prohibited and the posted speed limit is 45 mph. There are Class II bike lanes in each direction.

30th Street West is a north-south major arterial that is located west of the project site. It has two lanes in each direction with a mix of a flush and raised median. On-street parking is prohibited and the posted speed limit is 50 mph. There are Class II bike lanes in each direction.

25th Street West is a north-south secondary arterial that is located west of the project site. It has two lanes in each direction with a TWLTL median that provides access to driveways and local streets. On-street parking is prohibited and the posted speed limit is 45 mph. There are Class II bike lanes in each direction.

20th Street West is a north-south major arterial that is located on the west end of the project site. South of Avenue J, it has two lanes in each direction and a raised median that is broken to provide access to driveways and intersections. North of Avenue J, there is one lane in each direction. On-street parking is prohibited on both sides of 20th Street West and the posted speed limit is 40 mph. There are Class II bike lanes in each direction.

15th Street West is a north-south secondary arterial that is located between the District Core and the East Neighborhood of the project site. South of Avenue J there are two lanes in each direction with a mix between raised and flush median. On-street parking is prohibited on both sides of 15th Street West and the posted speed limit is 40 mph. North of Avenue J there is one lane in each direction with Class II bike lanes and on-street parking is permitted in both directions.

10th Street West is a north-south major arterial that is located east of the project site. There are three lanes in each direction with a flush median. North of Lancaster Blvd there are two southbound lanes and three northbound lanes. On-street parking is prohibited on both sides of 10th Street West and the posted speed limit ranges between 40 and 45 mph. There are no bike lanes.

Sierra Highway is a north-south major arterial, located east of the project site, that runs northwest to southeast along railroad tracks. There are two lanes in each direction with a flush median. On-street parking is prohibited on both sides of Sierra Highway and posted speed limit ranges between 45 and 55 mph. There is a Class I two-way bike path that is raised and separated from the street that runs parallel to Sierra Highway on the east side. There are also several at grade railroad crossings that occur immediately east of Sierra Highway.

Division Street is a north-south major arterial located east of the project site and east of Sierra Highway. There are two lanes in each direction with a flush median. There are two lanes in each direction with a flush median. On-street parking is prohibited on both sides of Division Street and posted speed limit is 45 mph. There are Class II bike lanes in each direction.

EXISTING TRANSIT SYSTEM

The existing public transit lines that operate within the study area are shown in **Table 3** on the following page. Local bus service is provided by Antelope Valley Transit Authority (AVTA), which provides four lines that operate adjacent to the project site. Commuter rail service is provided by Metrolink on the Antelope Valley Line which operates with primarily outbound trips toward downtown Los Angeles in the early morning and primarily inbound trips in the afternoon and evening. Trains depart from the Lancaster Metrolink Station, approximately 1.25 miles northeast of the project site. Commuter bus service is also provided by AVTA with buses departing from Owen Memorial Park, approximately 1 mile southeast of the project site.

Table 3: Existing Public Transit Service Summary

Agency	Line	From	To	Via	Weekday Peak Frequency	Saturday Peak Frequency
Metrolink	Antelope Valley Line	Lancaster Metrolink Station	Downtown LA	Santa Clarita, San Fernando Valley	30-60 minutes	2 hours
Antelope Valley Transit Authority (AVTA)	1	Metrolink Station	Palmdale	10 th Street West	15 minutes	30 minutes
Antelope Valley Transit Authority (AVTA)	7	Metrolink Station	Palmdale	Avenue J	60 minutes	60 minutes
Antelope Valley Transit Authority (AVTA)	8	Antelope Valley College Palmdale Center	Antelope Valley College Lancaster Campus	Avenue K and Sierra Highway	80-90 minutes	N/A
Antelope Valley Transit Authority (AVTA)	9	Quartz Hill	Lancaster City Park	Avenue I, Sierra Highway, Avenue K	95-100 minutes	95-100 minutes
Antelope Valley Transit Authority (AVTA)	11	Owen Memorial Park	Northeast Lancaster	15 th Street West	30 minutes	60 minutes
Antelope Valley Transit Authority (AVTA)	12	Owen Memorial Park	Northeast Lancaster	Avenue J	30 minutes	60 minutes

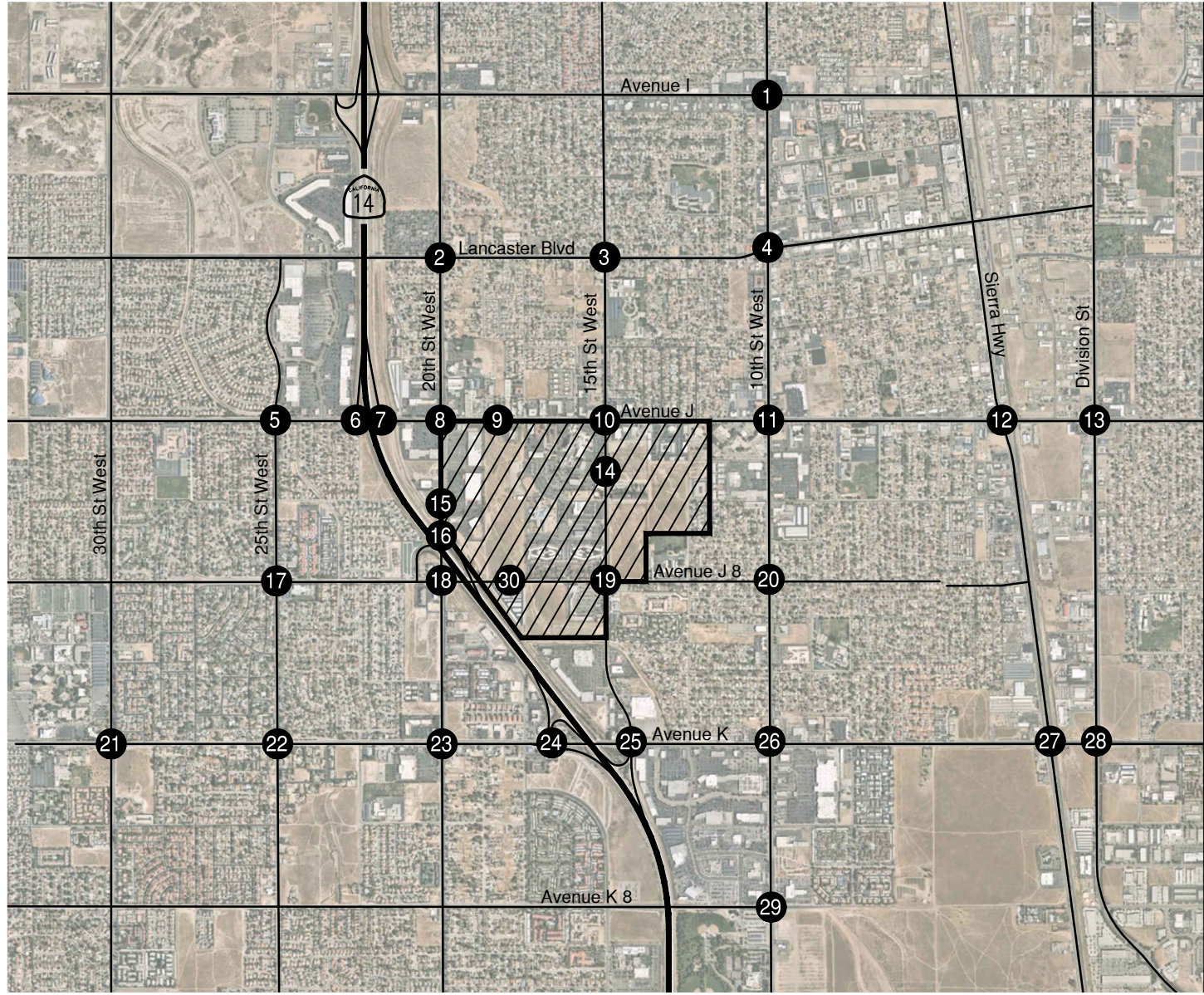
EXISTING TRAFFIC VOLUMES

Existing morning and evening peak hour turning movement counts were collected for the study intersections between 2014 and 2019. It should be noted that when this Operational and Safety Analysis was prepared, the COVID-19 pandemic was causing unusual traffic volumes on City roads. Therefore, no new traffic counts were collected during the study. However, all existing counts were grown to reflect a 2019 estimate based on growth rates from the City’s travel demand model developed by Fehr and Peers. Existing (2019) traffic counts are shown in **Figure 3**.

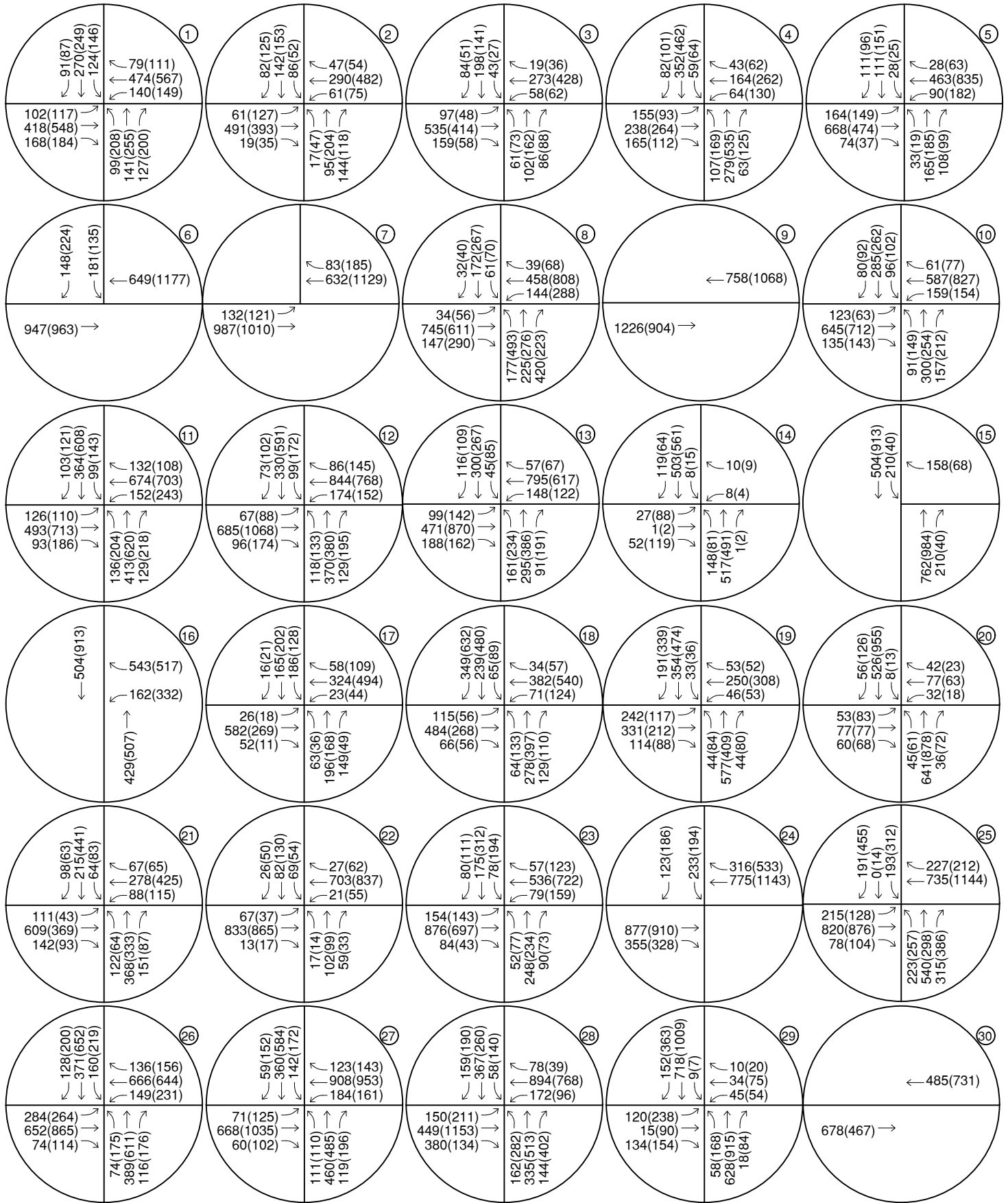
Due to a lack of existing traffic counts, traffic volumes for the following intersections were estimated:

- Intersection #9 – 18th Street West and Avenue J – Eastbound through volumes estimated based on traffic volumes at Intersection #8 (20th Street West and Avenue J). Westbound through volumes estimated based on traffic volumes at Intersection #10 (15th Street West and Avenue J).
- Intersection #15 – 20th Street West and Home Depot Southerly Street – Northbound and southbound through volumes estimated based on traffic volumes at Intersection #16 (20th Street West and SR-14 NB Ramp). Traffic volumes for northbound right, southbound left, and westbound right were estimated based on trip generation patterns for the Learn4Life Lancaster West school.
- Intersection #30 – 18th Street West and Avenue J-8 – Eastbound through volumes estimated based on traffic volumes at Intersection #18 (20th Street West and Avenue J-8). Westbound through volumes estimated based on traffic volumes at Intersection #19 (15th Street West and Avenue J-8).

Copies of the traffic data worksheets are provided in **Appendix A**.



LEGEND	
#	Intersection ID
	Project Site
XX(X)	AM(PM) Peak Hour Volume
	Traffic Movement



INTERSECTION ANALYSIS METHODOLOGY

Study intersections were evaluated to assess operational and/or safety issues. Per City of Lancaster Traffic Impact Analysis guidelines, signalized study intersections within the City of Lancaster jurisdiction were evaluated using the Intersection Capacity Utilization (ICU) methodology. Microsoft Excel was used to perform the ICU analysis. The roundabout study intersection and proposed Master Plan roundabouts were evaluated using the Highway Capacity Manual (HCM), 6th Edition methodology. Sidra software, version 8, was used to model roundabout intersections.

Signalized study intersections within Caltrans jurisdiction were evaluated using the Highway Capacity Manual (HCM), 6th Edition methodology. Synchro software, version 10, was used to model signalized intersections

Operating conditions are expressed in terms of Level of Service. Level of Service designations range from LOS “A” to “F,” with LOS “A” representing comfortable, free-flowing traffic conditions with minimal delays and LOS “F” representing congested conditions with long delays. A qualitative description of each Level of Service is presented in **Tables 4-6**.

Table 4: ICU LOS Definitions (City of Lancaster Signals)

LOS	V/C Ratio	Description
A	0.00 – 0.60	Free flow conditions; low traffic volumes and density; high speeds; no restriction to maneuver pass; drivers can maintain desired speeds with little or no delay
B	0.61 – 0.70	Stable flow; operating speeds beginning to be restricted; drivers still have some freedom to select speed and lane of operation
C	0.71 – 0.80	Still in the stable flow zone; Speeds and maneuverability closely controlled by higher volumes; most drivers' freedom restricted to select their own speed and lane; relatively satisfactory speed is still obtained
D	0.81 – 0.90	Approaches unstable flow; tolerable operating speeds still maintained; fluctuations in volume and temporary restrictions to flow may substantially drop operating speeds; drivers have little freedom to maneuver
E	0.91 – 1.00	Unstable flow at or near capacity; lower operating speeds typically, but not always, 30 mph; stoppages for momentary duration
F	1.00+	Forced flow operation at low speeds; volumes are below capacity; in extreme cases both speed and volume can drop to zero; stoppages may occur for short or long periods of time due to downstream congestion

Source: Intersection Capacity Utilization Guidelines

Table 5: HCM LOS Definitions (Roundabouts)

LOS	Control Delay (sec/veh)
A	10 or less
B	Between 10 and 15
C	Between 15 and 25
D	Between 25 and 35
E	Between 35 and 50
F	Greater than 50

Source: Highway Capacity Manual (HCM) Guidelines

Table 6: HCM LOS Definitions (Caltrans Signals)

LOS	Control Delay (sec/veh)	Description
A	10 or less	The volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
B	Between 10 and 20	Progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
C	Between 20 and 35	Progression is favorable or the cycle length is moderate. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
D	Between 35 and 55	Progression is favorable or the cycle length is moderate. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
E	Between 55 and 80	The volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
F	Greater than 80	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.

Source: Highway Capacity Manual (HCM) Guidelines

LEVEL OF SERVICE THRESHOLDS

The City of Lancaster assesses the level of service at study intersections for without project and with project conditions. The City of Lancaster’s threshold for potential operational and/or safety issues for roadways and intersections is LOS D. For the City of Lancaster, an operational and/or safety issue may occur, per the current guidelines, if:

- 1) The project would degrade the level of service at a location from LOS A, B, C, or D to LOS E or F; or
- 2) The project adds a significant number of trips to an intersection that is currently or is projected to operate at LOS E or F. The project could result in an operational and/or safety issue if it increases the V/C ratio by V/C 0.02 or more at signalized intersections.

Per the City's General Plan Article 14.1.1(c), as part of the development review process, the city will evaluate the potential impacts of traffic generated by projects using a dual analysis process and determine the effects on adjacent land uses and surrounding neighborhoods, while utilizing a more flexible LOS criteria that encourages transit ridership, bicycling, and walking. In the event a development project significantly degrades the effective use or safety of City streets; improvements may still be required. Required improvements should consider transit, bicycle, and pedestrian improvements as well as road improvements.

For Caltrans, an operational or safety issue would occur if the level of service would degrade below LOS D.

EXISTING (2019) CONDITIONS

Existing (2019) forecast morning and evening peak hour traffic volumes were used for analysis of 29 study intersections. The ICU reports are provided in **Appendix B** and the HCM reports are provided in **Appendix C** for Existing (2019) Conditions.

Table 7 on the next page presents a summary of the Existing (2019) Conditions V/C ratio or delay (seconds) and the corresponding LOS for each study intersection.

Table 7: Summary of Intersection Operations – Existing (2019) Conditions

Intersection			Jurisdiction	Control	AM Peak Hour		PM Peak Hour	
#	North/South	East/West			V/C Ratio	LOS	V/C Ratio	LOS
1	10th Street West	Avenue I	Lancaster	Signal	0.46	A	0.57	A
2	20th Street West	Lancaster Boulevard	Lancaster	Signal	0.43	A	0.64	B
4	10th Street West	Lancaster Boulevard	Lancaster	Signal	0.51	A	0.64	B
5	25th Street West	Avenue J	Lancaster	Signal	0.43	A	0.50	A
8	20th Street West	Avenue J	Lancaster	Signal	0.56	A	0.74	C
9	18th Street West	Avenue J	Lancaster	-	-	-	-	-
10	15th Street West	Avenue J	Lancaster	Signal	0.65	B	0.67	B
11	10th Street West	Avenue J	Lancaster	Signal	0.46	A	0.59	A
12	Sierra Highway	Avenue J	Lancaster	Signal	0.53	A	0.60	A
13	Division Street	Avenue J	Lancaster	Signal	0.64	B	0.72	C
14	15th Street West	Avenue J-3	Lancaster	Signal	0.40	A	0.41	A
17	25th Street West	Avenue J-8	Lancaster	Signal	0.55	A	0.49	A
18	20th Street West	Avenue J-8	Lancaster	Signal	0.44	A	0.56	A
19	15th Street West	Avenue J-8	Lancaster	Signal	0.61	B	0.56	A
20	10th Street West	Avenue J-8	Lancaster	Signal	0.43	A	0.52	A
21	30th Street West	Avenue K	Lancaster	Signal	0.46	A	0.42	A
22	25th Street West	Avenue K	Lancaster	Signal	0.47	A	0.49	A
23	20th Street West	Avenue K	Lancaster	Signal	0.47	A	0.54	A
26	10th Street West	Avenue K	Lancaster	Signal	0.55	A	0.63	B
27	Sierra Highway	Avenue K	Lancaster	Signal	0.56	A	0.66	B
28	Division Street	Avenue K	Lancaster	Signal	0.68	B	0.78	C
29	10th Street West	Avenue K-8	Lancaster	Signal	0.39	A	0.62	B
30	18th Street West	Avenue J-8	Lancaster	-	-	-	-	-
Intersection			Jurisdiction	Control	AM Peak Hour		PM Peak Hour	
#	North/South	East/West			Delay (s)	LOS	Delay (s)	LOS
3	15th Street West	Lancaster Boulevard	Lancaster	ROB	16.9	C	10.1	B
6	SR-14 SB Ramps	Avenue J	Caltrans	Signal	5.3	A	6.1	A
7	SR-14 NB Ramps	Avenue J	Caltrans	N/A ¹	-	-	-	-
15	20th Street West	Home Depot Southerly Street	Lancaster	TWSC ²	13.6	B	13.6	B
16	20th Street West	SR-14 NB Ramps	Caltrans	Signal	17.1	B	21.7	C
24	SR-14 SB Ramps	Avenue K	Caltrans	Signal	6.9	A	7.7	A
25	15th Street West/SR-14 NB Ramps	Avenue K	Caltrans	Signal	29.1	C	42.2	D

¹ Delay not reported because no movements are required to stop

² Delay reported by minor street approach

The Existing (2019) Conditions traffic analysis results presented in **Table 7** indicate that during the AM peak period, all built-out study intersections would operate at an acceptable LOS D or better. During the PM peak period, all built-out study intersections would operate at an acceptable LOS D or better.

III. FUTURE (2040) WITHOUT PROJECT CONDITIONS

FUTURE (2040) ROADWAY IMPROVEMENTS

Based upon available information, any upcoming street improvement projects that are programmed by the City, Caltrans, or County of Los Angeles on study intersections and roadways were identified and included in the analysis. The following are planned projects within the study area that are programmed to be completed prior to 2040. The planned roadway improvements are summarized below:

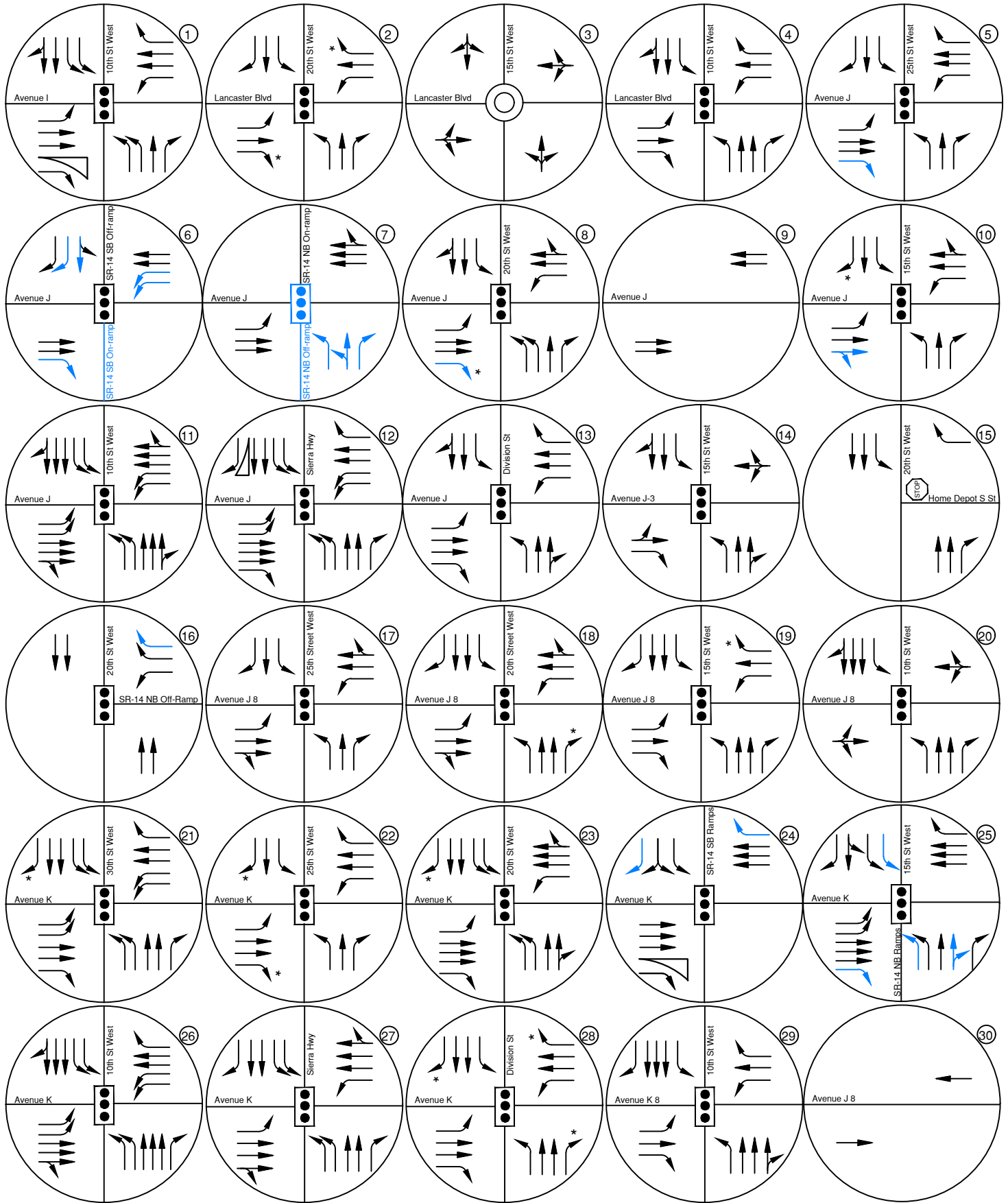
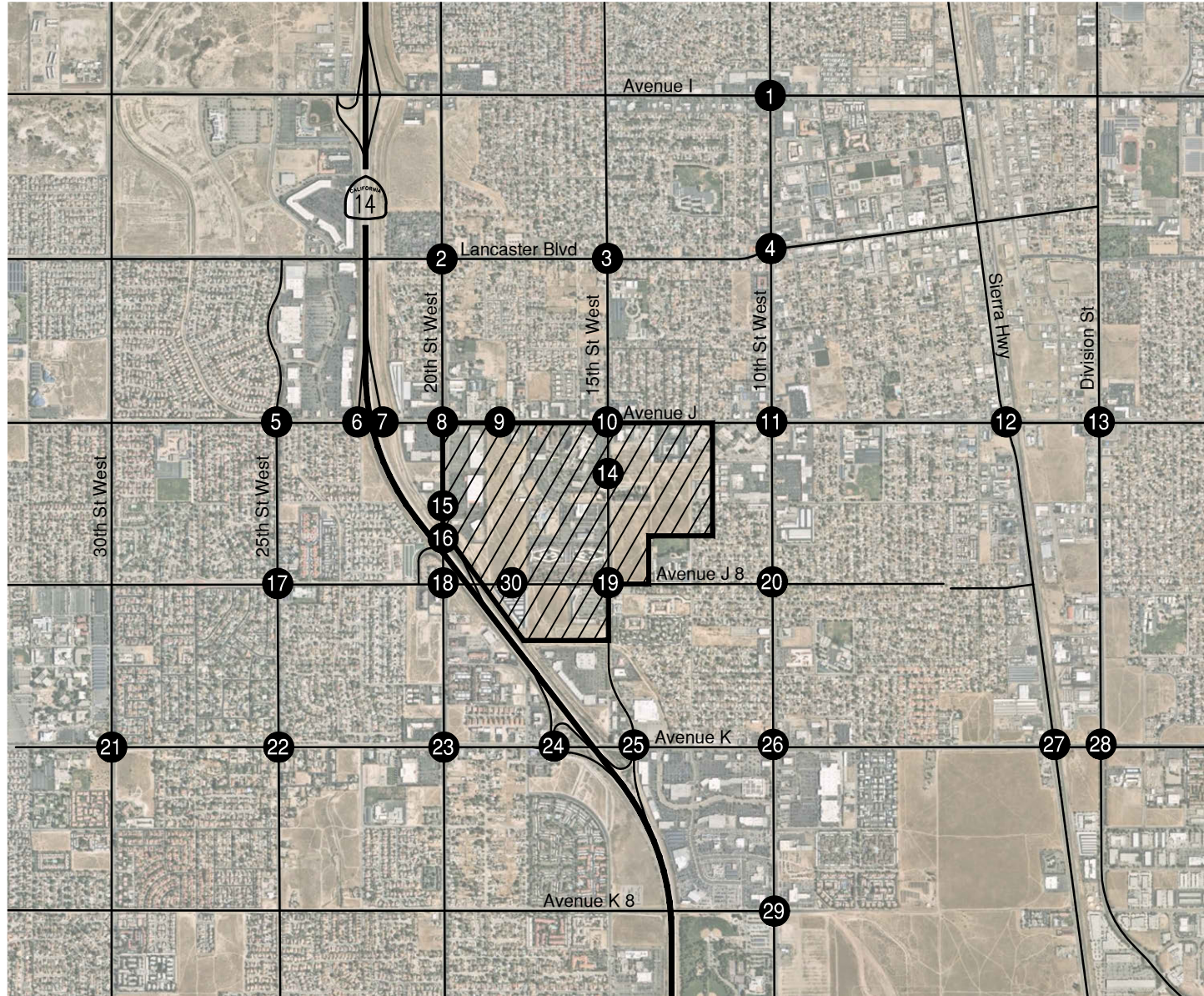
- Avenue J/J-8 Design Alternative 2B
 - Adding two ramps from SR-14 at Avenue J to create a full interchange, allowing full access to and from the south (study intersections 6 and 7). Signalization will be added to the interchange on the east side (study intersection 7)
 - Adding capacity to the existing off-ramp at Avenue J (study intersection 6).
 - Reducing to the number of through lanes along Avenue J to add a bike lane (study intersections 5, 6, 7, 8, 9, and 10)
 - Adding capacity to the existing northbound off-ramp at 20th Street West (study intersection 16).
 - Removing the existing southbound on-ramp at Avenue J-8.
- Avenue K Interchange
 - Adding capacity to the existing northbound ramps at Avenue K and 15th Street West and intersection capacity improvements (study intersection 25)
 - Adding capacity to the existing southbound off-ramp at Avenue K and adding a westbound right-turn lane (study intersection 24)
- Pedestrian Gap Project
 - Constructing bulb outs at 15th Street/Avenue J-8 (study intersection 19)

Figure 4 on the following page shows the Future (2040) Intersection Lane Configuration and Traffic Control.

FUTURE (2040) VOLUME DEVELOPMENT

Future (2040) traffic volumes were forecast by Fehr and Peers for all study intersections based on the City of Lancaster Travel Demand Forecasting (TDF) Model. The model contains future year 2040 growth projections for the City including projected developments and planned local and regional transportation improvements.

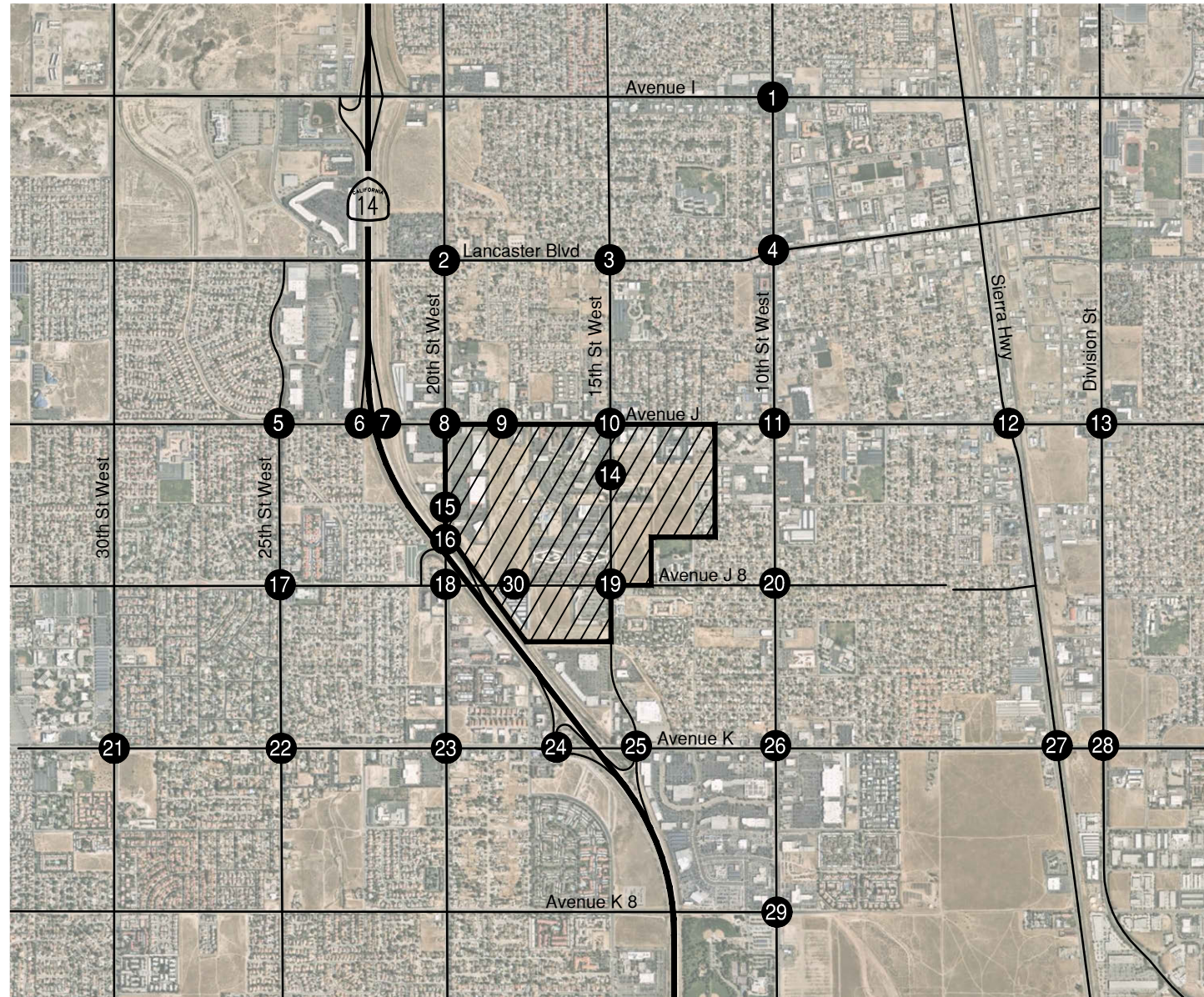
Figure 5 illustrates the AM and PM peak hour traffic volumes at the study intersections for the Future (2040) without Project conditions. The ICU reports are provided in **Appendix B** and the HCM reports are provided in **Appendix D** for Future (2040) without Project conditions.



LEGEND			
#	Intersection ID		Project Site
	Stop Controlled Intersection		Roundabout
*	Functional Right Turn	**	Yield Left Turn
	Existing		Proposed
	Existing		Proposed
	Lane Use		Traffic Signal



FIGURE 4
Lancaster Health District
Future (2040) Intersection Lane Configuration and Traffic Control



LEGEND	
#	Intersection ID
	Project Site
XX(X)	AM(PM) Peak Hour Volume
	Traffic Movement

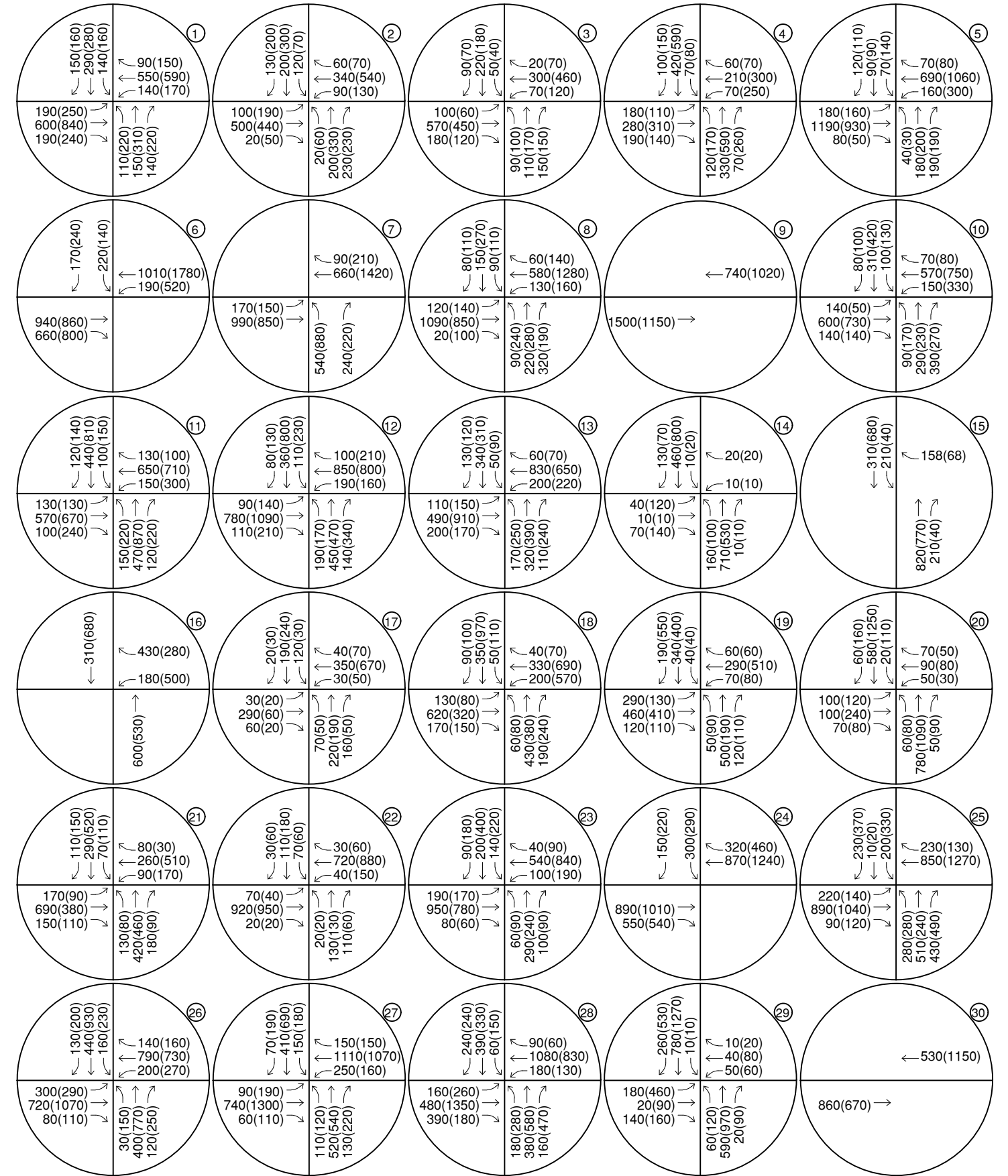


FIGURE 5
Lancaster Health District
Future (2040) Weekday Peak-Hour Turning Movement Volumes

Table 8 below presents a summary of the Future (2040) without Project Conditions V/C ratio or delay (seconds) and the corresponding LOS for each intersection.

Table 8: Summary of Intersection Operations – Future (2040) without Project Conditions

Intersection			Jurisdiction	Control	AM Peak Hour		PM Peak Hour	
#	North/South	East/West			V/C Ratio	LOS	V/C Ratio	LOS
1	10th Street West	Avenue I	Lancaster	Signal	0.57	A	0.72	C
2	20th Street West	Lancaster Boulevard	Lancaster	Signal	0.58	A	0.81	D
4	10th Street West	Lancaster Boulevard	Lancaster	Signal	0.58	A	0.79	C
5	25th Street West	Avenue J	Lancaster	Signal	0.72	C	0.80	C
8	20th Street West	Avenue J	Lancaster	Signal	0.72	C	0.88	D
9	18th Street West	Avenue J	Lancaster	-	-	-	-	-
10	15th Street West	Avenue J	Lancaster	Signal	0.67	B	0.95	E
11	10th Street West	Avenue J	Lancaster	Signal	0.48	A	0.67	B
12	Sierra Highway	Avenue J	Lancaster	Signal	0.58	A	0.71	C
13	Division Street	Avenue J	Lancaster	Signal	0.69	B	0.81	D
14	15th Street West	Avenue J-3	Lancaster	Signal	0.41	A	0.51	A
17	25th Street West	Avenue J-8	Lancaster	Signal	0.46	A	0.52	A
18	20th Street West	Avenue J-8	Lancaster	Signal	0.64	B	0.96	E
19	15th Street West	Avenue J-8	Lancaster	Signal	0.65	B	0.69	B
20	10th Street West	Avenue J-8	Lancaster	Signal	0.52	A	0.79	C
21	30th Street West	Avenue K	Lancaster	Signal	0.50	A	0.48	A
22	25th Street West	Avenue K	Lancaster	Signal	0.54	A	0.61	B
23	20th Street West	Avenue K	Lancaster	Signal	0.53	A	0.58	A
26	10th Street West	Avenue K	Lancaster	Signal	0.59	A	0.73	C
27	Sierra Highway	Avenue K	Lancaster	Signal	0.64	B	0.75	C
28	Division Street	Avenue K	Lancaster	Signal	0.77	C	0.88	D
29	10th Street West	Avenue K-8	Lancaster	Signal	0.44	A	0.78	C
30	18th Street West	Avenue J-8	Lancaster	-	-	-	-	-
Intersection			Jurisdiction	Control	AM Peak Hour		PM Peak Hour	
#	North/South	East/West			Delay (s)	LOS	Delay (s)	LOS
3	15th Street West	Lancaster Boulevard	Lancaster	ROB	26.2	D	16.0	C
6	SR-14 SB Ramps	Avenue J	Caltrans	Signal	13.0	B	22.6	C
7	SR-14 NB Ramps	Avenue J	Caltrans	Signal	11.5	B	33.9	C
15	20th Street West	Home Depot Southerly Street	Lancaster	TWSC ¹	14.2	B	12.1	B
16	20th Street West	SR-14 NB Ramps	Caltrans	Signal	11.7	B	18.3	B
24	SR-14 SB Ramps	Avenue K	Caltrans	Signal	6.8	A	7.3	A
25	15th Street West/SR-14 NB Ramps	Avenue K	Caltrans	Signal	26.1	C	28.4	C

¹ Delay reported by minor street approach

The Future (2040) without Project Conditions traffic analysis results presented in **Table 6** indicate that all intersections are projected to operate at LOS D or better during the AM peak period. During the PM peak

period, two intersections are projected to operate at LOS E, and the other 26 intersections are projected to operate at LOS D or better.

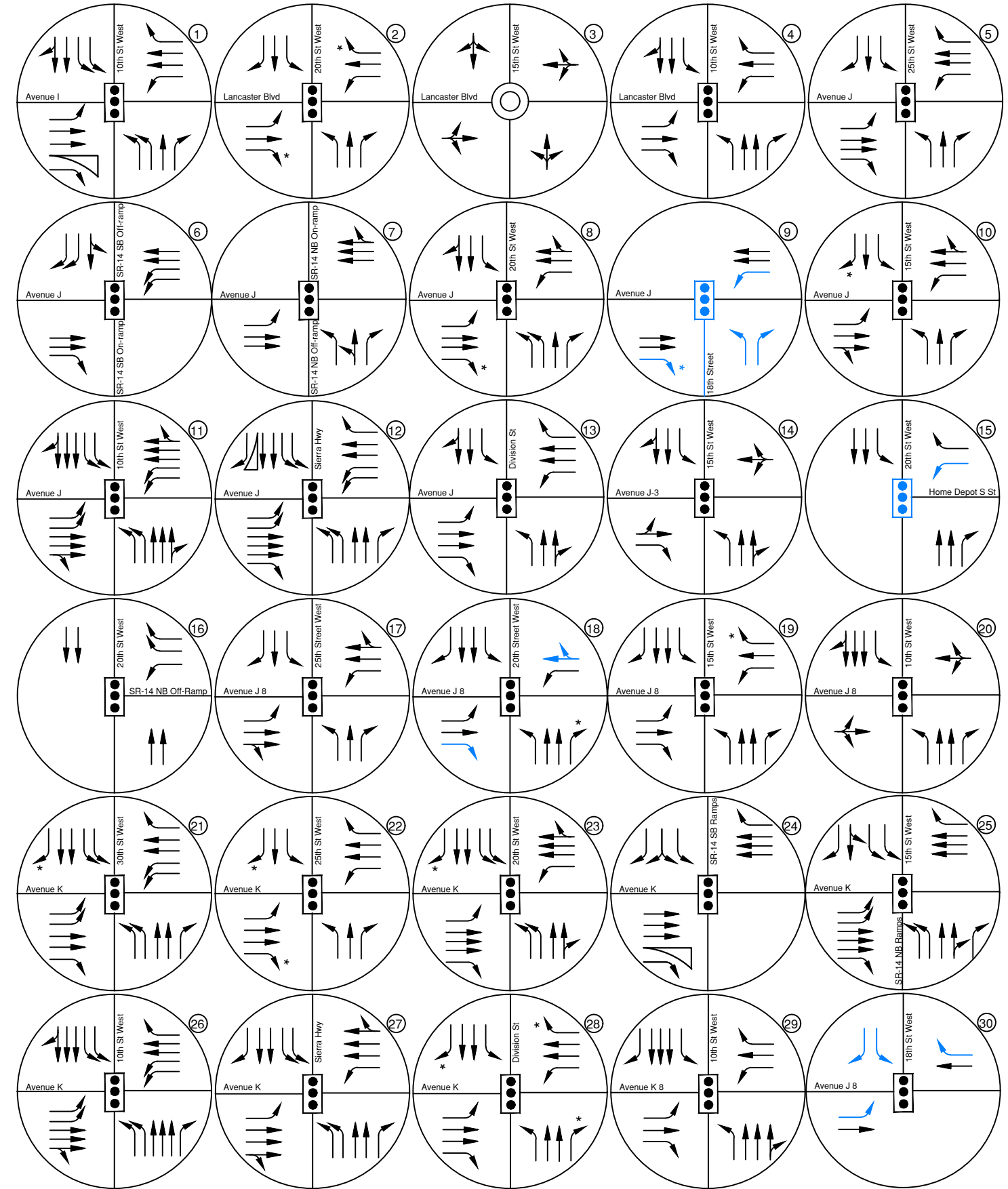
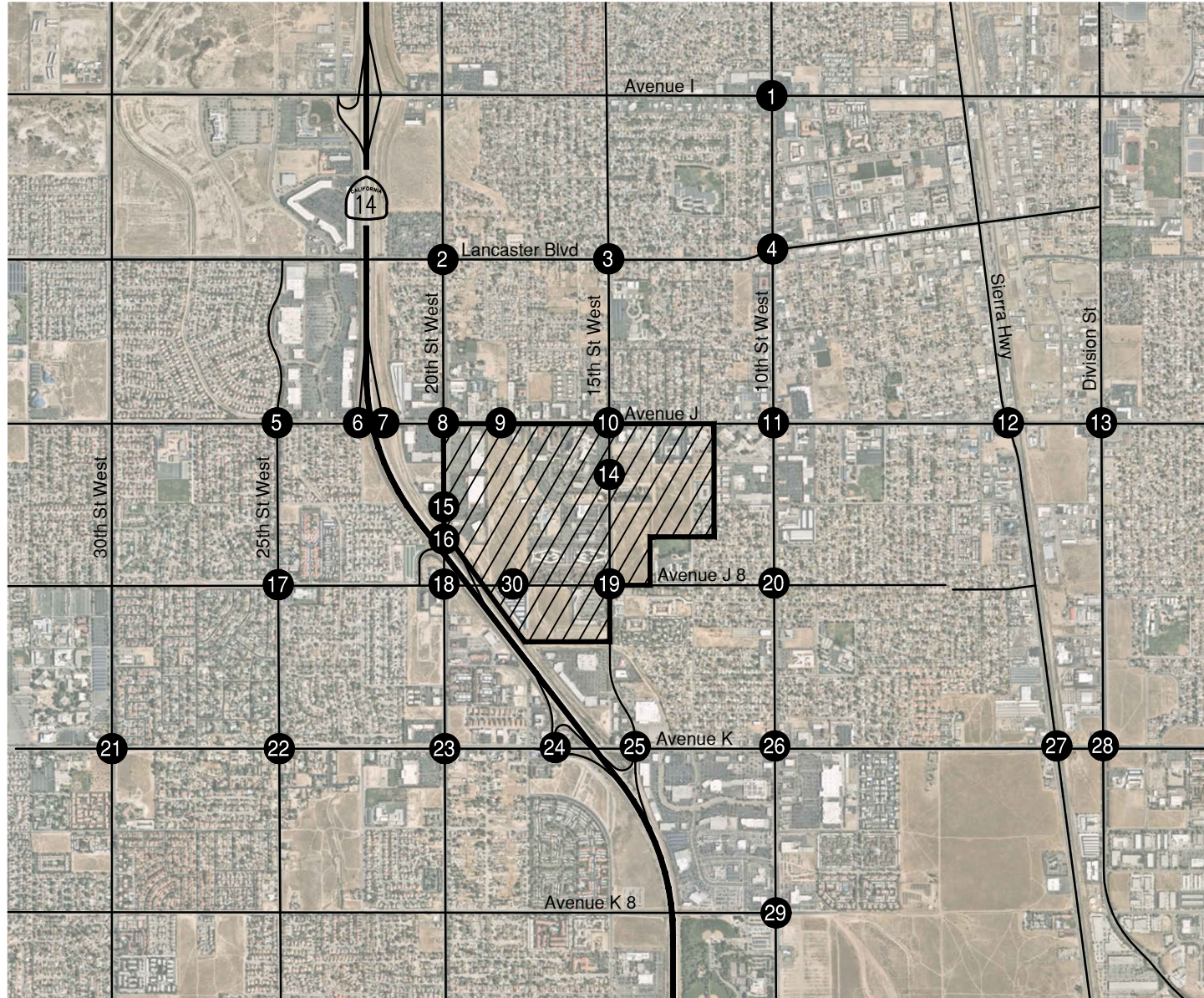
IV. FUTURE (2040) WITH PROJECT CONDITIONS

PROJECT ROADWAY IMPROVEMENTS

The Lancaster Health District Master Plan includes roadway improvements internal to the site and along the project boundaries. The proposed project roadway improvements internal to the project site are listed below:

- Medical Main Street Project
 - Extending Avenue J-3 from 15th Street West to 18th Street West.
 - Constructing 18th Street West between Avenue J and Avenue J-8.
 - Installation of a new traffic signal at intersection of Avenue J and 18th Street West (study intersection 9)
 - Installation of a new traffic signal at intersection of Avenue J-8 and 18th Street West
 - Constructing “Home Depot Southerly Street” south of Home Depot to link 20th Street West and 18th Street West.
 - Installation of a new traffic signal at the intersection of “Home Depot Southerly Street” and 20th Street West (study intersection 15)
 - Removal of existing traffic signal at 20th Street West and Home Depot Driveway.
 - Constructing 13th Street West between Avenue J-2 and J-8.
 - Extending Avenue J-5 from 15th Street West to 13th Street West, widening it between 13th Street West and 12th Street West.
 - The existing traffic signal at Avenue J-5 and 15th Street West will be modified to include the addition of the east leg.
 - Avenue J-8 Project
 - Addition of buffered Class II bicycle lanes and reduction in lanes from four to two between 15th Street West and 20th Street West (study intersections 18 and 19)

Figure 6 on the following page shows the Future (2040) with Project Intersection Lane Configuration and Traffic Control.



LEGEND			
#	Intersection ID		Project Site
	Stop Controlled Intersection		Roundabout
*	Functional Right Turn	**	Yield Left Turn
	Existing		Proposed
	Lane Use		Traffic Signal



FIGURE 6
Lancaster Health District
Future (2040) with Project and Roadway Improvements Intersection Lane Configuration and Traffic Control

PROJECT TRAFFIC

Trip generation estimates were calculated for the proposed development in order to determine the potential operational or safety issues as a result of the proposed project on the study intersections providing access to the project site. The following paragraphs describe trip generation, distribution, and assignment for the project.

PROJECT TRAFFIC GENERATION

Weekday daily, AM, and PM peak hour trips were estimated for the project using trip generation rates from the Institute of Transportation Engineers (ITE) publication entitled *Trip Generation*, 10th Edition. The morning and evening peak hours correspond to the peak hours of the adjacent street system. Trip generation rates are summarized in **Table 9**.

Trip generation was calculated separately for project trips from the District Core, East Neighborhood, and South Neighborhood. The resulting trips that would be generated by the proposed project are summarized in **Tables 10-12** for each neighborhood. The trip generation estimate includes the following two types of credits:

- 1) The first trip generation credit is for internal capture of trips using multiple land uses within the project site. Internal capture credits are applied to projects where some of the trips generated by the project are expected to be captured by other land uses within the project. Since the Lancaster Health District Master Plan includes several land uses in close proximity, some percentage of visitors to a given land use could visit other land uses of the Lancaster Health District on a single trip before leaving. Internal capture of trips is expected to occur throughout the Lancaster Health District, with people arriving at the site in one area of the District and walking to other land uses in the District Core, East Neighborhood, and South Neighborhood, before leaving. To be conservative, this analysis assumes that internal capture of trips would only occur within the land uses among each neighborhood within the Lancaster Health District.

Internal capture of trips in each neighborhood was calculated per the NCHRP Internal Trip Capture Estimation Tool. The Internal Capture calculation spreadsheets are shown in **Appendix E**.

- 2) The second trip generation credit is the pass-by reduction. Pass-by trips are trips that would already be on the adjacent roadways (and so are already counted in the existing traffic) and will be shown as turning into the site while passing-by. Pass-by trip reductions are provided by the ITE *Trip Generation* manual.

Table 9: ITE Trip Generation Rates

ITE Code	Land Use Description	Independent Variable	Trip Generation Rate			% AM Trips In	% AM Trips Out	% PM Trips In	% PM Trips Out
			Daily	AM	PM				
210	Single-Family Detached Housing	Dwelling Unit(s)	9.44	0.74	0.99	25%	75%	63%	37%
220	Multifamily Housing (Low-Rise)	Dwelling Unit(s)	7.32	0.46	0.56	0.23	0.77	0.63	0.37
251	Senior Adult Housing-Detached	Dwelling Unit(s)	4.27	0.24	0.30	0.33	0.67	0.61	0.39
254	Assisted Living	Bed(s)	2.60	0.19	0.26	0.63	0.37	0.38	0.62
310	Hotel	Room(s)	8.36	0.47	0.60	0.59	0.41	0.51	0.49
610	Hospital (New Only)	Bed(s)	22.32	1.84	1.89	0.72	0.28	0.28	0.72
710	General Office Building	1,000 Sq Ft	9.74	1.16	1.15	0.86	0.14	0.16	0.84
720	Medical-Dental Office Building	1,000 Sq Ft	34.80	2.78	3.46	0.78	0.22	0.28	0.72
820	Shopping Center	1,000 Sq Ft GLA	37.75	0.94	3.81	0.62	0.38	0.48	0.52
932	High-Turnover (Sit-Down) Restaurant	1,000 Sq Ft	112.18	9.94	9.77	0.55	0.45	0.62	0.38

Source: Trip Generation Manual (ITE 10th Edition)

Table 10: Project Trip Generation (District Core Neighborhood)

ITE Code	Land Use Description	Independent Variable	Number of Units	Project Generated Trips				
				Daily	AM In	AM Out	PM In	PM Out
220	Multifamily Housing (Low-Rise)	Dwelling Unit(s)	802	5,872	85	284	283	166
251	Senior Adult Housing-Detached	Dwelling Unit(s)	300	1,282	24	48	55	35
254	Assisted Living	Bed(s)	100	260	12	7	10	16
310	Hotel	Room(s)	180	1,506	50	35	55	53
610	Hospital (New Only)	Bed(s)	322	7,188	426	166	171	438
710	General Office Building	1 KSF	200	1,948	200	32	37	193
720	Medical-Dental Office Building	1 KSF	400	13,920	867	245	388	996
820	Shopping Center	1 KSF	75	2,832	44	27	137	149
932	High-Turnover (Sit-Down) Restaurant	1 KSF	45	5,050	246	201	273	167
Subtotal of Trips Generated				39,858	1,954	1,045	1,409	2,213
Trip Credits								
Internal Capture (per NCHRP 684)				7,334	249	249	322	322
Pass-By (34% for Commercial)				1,334	52	48	73	37
Subtotal of Trip Credits				8,668	301	297	395	359
Net Project Total				31,190	1,653	748	1,014	1,854

Table 11: Project Trip Generation (East Neighborhood)

ITE Code	Land Use Description	Independent Variable	Number of Units	Project Generated Trips				
				Daily	AM In	AM Out	PM In	PM Out
210	Single-Family Detached Housing	Dwelling Unit(s)	40	378	8	22	25	15
220	Multifamily Housing (Low-Rise)	Dwelling Unit(s)	465	3,404	49	165	164	96
820	Shopping Center	1 KSF	38	1,416	22	13	69	74
932	High-Turnover (Sit-Down) Restaurant	1 KSF	23	2,526	123	101	136	84
Subtotal of Trips Generated				7,724	202	301	394	269
Trip Credits								
Internal Capture (per NCHRP 684)				1,848	35	35	115	115
Pass-By (34% for Commercial)				921	39	36	42	23
Subtotal of Trip Credits				2,769	74	71	157	138
Net Project Total				4,955	128	230	237	131

Table 12: Project Trip Generation (South Neighborhood)

ITE Code	Land Use Description	Independent Variable	Number of Units	Project Generated Trips				
				Daily	AM In	AM Out	PM In	PM Out
210	Single-Family Detached Housing	Dwelling Unit(s)	210	1,984	39	116	131	77
220	Multifamily Housing (Low-Rise)	Dwelling Unit(s)	83	608	9	29	29	17
820	Shopping Center	1 KSF	38	1,416	22	13	69	74
932	High-Turnover (Sit-Down) Restaurant	1 KSF	23	2,526	123	101	136	84
Subtotal of Trips Generated				6,534	193	259	365	252
Trip Credits								
Internal Capture (per NCHRP 684)				1,706	33	33	115	115
Pass-By (34% for Commercial)				930	39	36	42	23
Subtotal of Trip Credits				2,636	72	69	157	138
Net Project Total				3,898	121	190	208	114

Tables 10, 11, and 12 indicate that the proposed project will generate approximately 40,043 new daily trips, with 3,070 new trips during the AM peak hour and 3,558 new trips during the PM peak hour.

PROJECT TRAFFIC DISTRIBUTION AND ASSIGNMENT

Trip distribution assumptions for the project trips were developed based on the roadway system and land uses in the vicinity of the project. The project traffic shown in Tables 10, 11, and 12 was distributed to the street system within the study area based on the trip distribution percentages shown on Figure 7. Project trips were distributed to the external road network via several existing and future project driveways and roadways.

The resulting Project Weekday Peak-Hour turning movement volumes are shown on Figure 8.

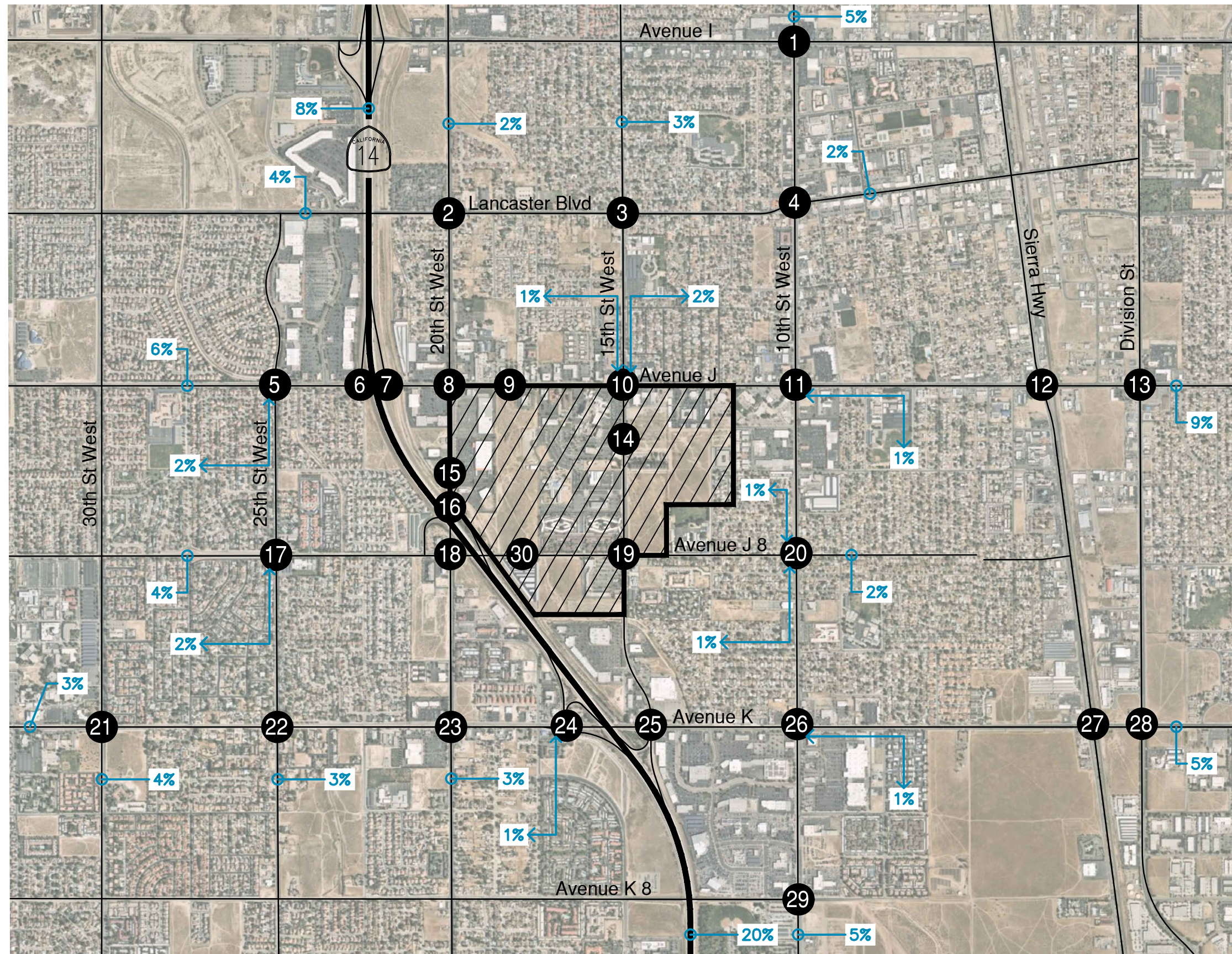
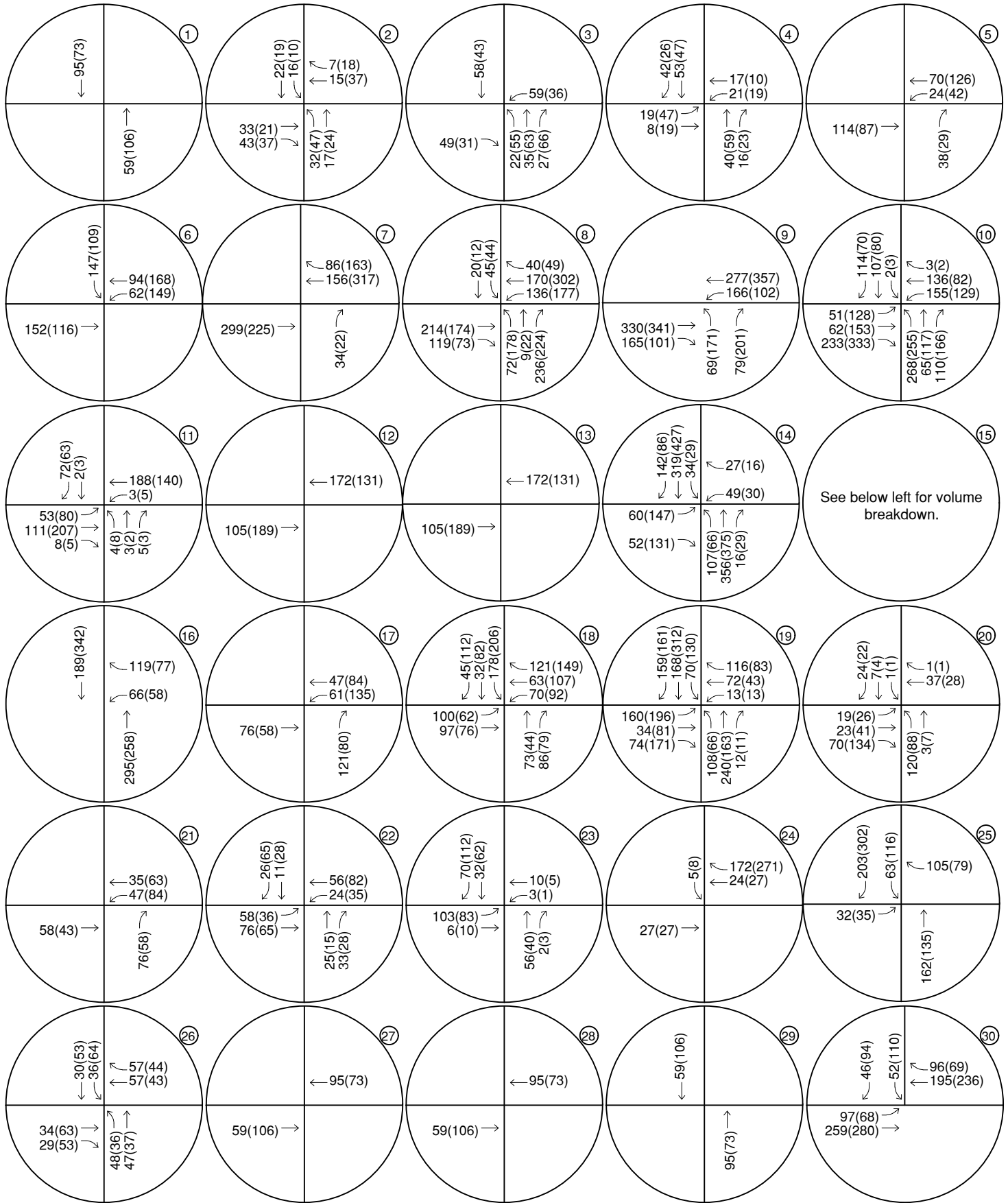
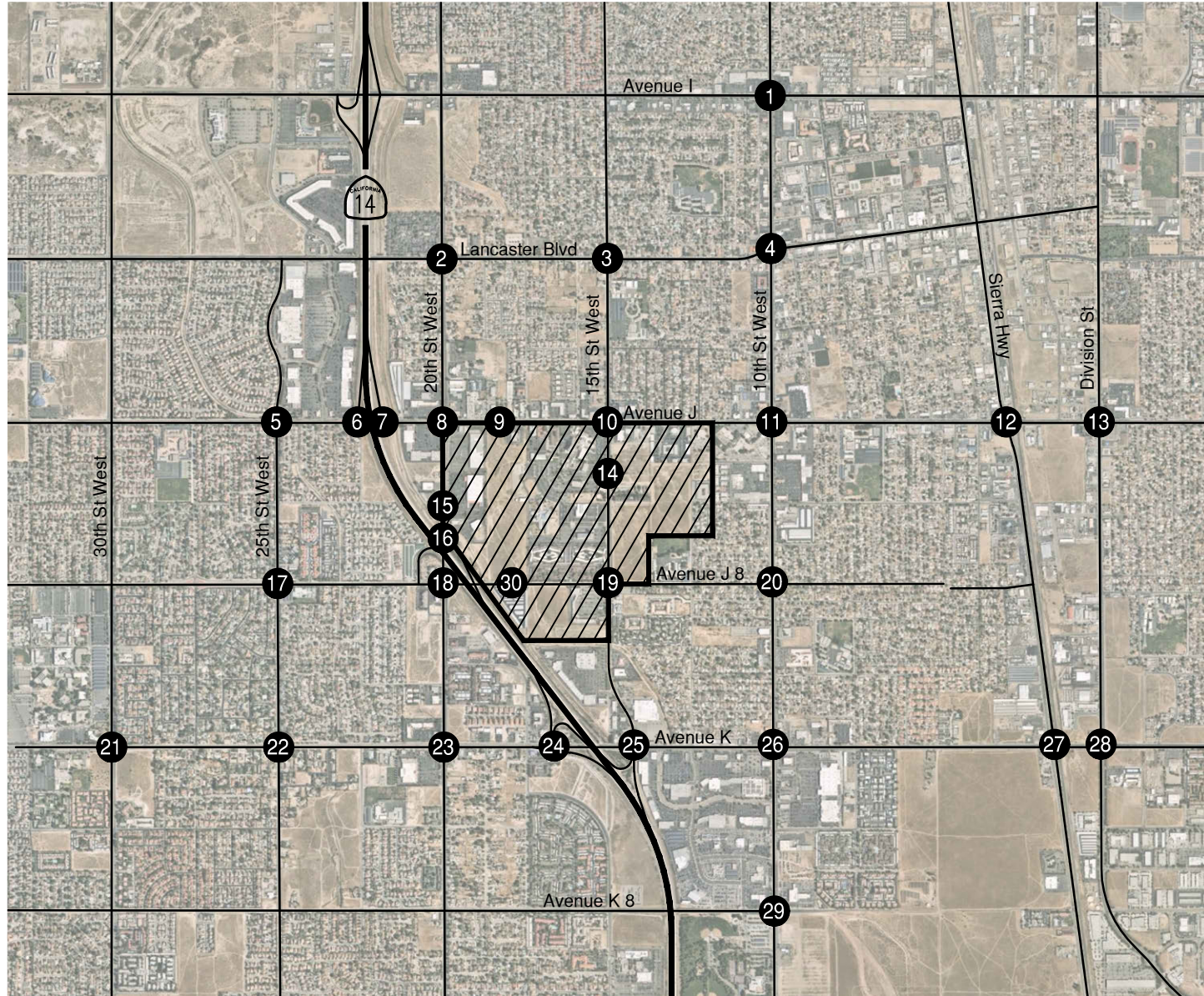


FIGURE 7
Lancaster Health District
Project Trip Distribution



LEGEND

- # Intersection ID
- ▨ Project Site
- XX(X) AM(PM) Peak Hour Volume
- ↔ Traffic Movement

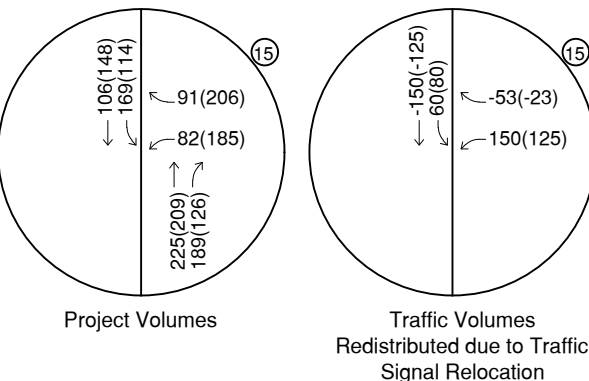


FIGURE 8
 Lancaster Health District
 Project Weekday Peak-Hour Turning Movement Volumes

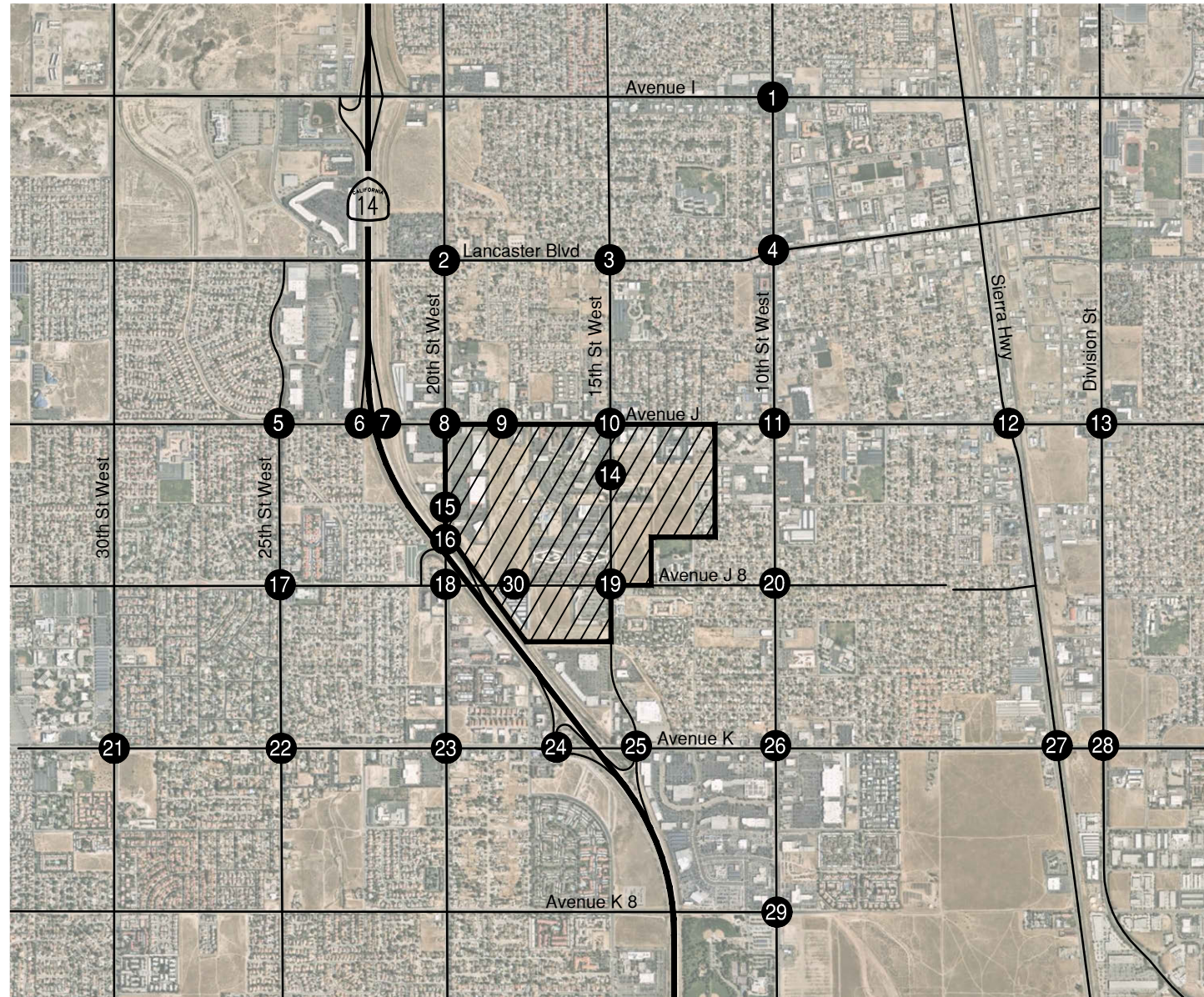
FUTURE (2040) WITH PROJECT CONDITIONS

Estimated project traffic is added to the Future (2040) without Project conditions to create Future (2040) with Project Conditions. This scenario is used to evaluate the net change in the traffic conditions and to identify potential operational or safety issues associated with the proposed project. Future (2040) with Project volumes were assigned to the street network and study intersections to evaluate the net change in the traffic conditions and to identify potential operational or safety issues associated with the proposed project for the buildout conditions.

The existing signal at Home Depot is being relocated south to the proposed Home Depot Southerly Street, and the left-in/left-out movements at the existing access point will be closed. Because of these changes, existing traffic volumes for Home Depot and Desert Sands Charter High School were rerouted through the new intersection #15 in the following ways:

- For Home Depot
 - WBL and SBL volumes were rerouted through Home Depot Southerly Street.
 - NBR and WBR were assumed to remain accessing Home Depot through the existing driveway and that a negligible amount would use the new signal.
- For Desert Sands Charter High School
 - It was assumed that there was a 50/50 split for vehicles going northbound/southbound leaving the school, and that for vehicles going southbound, there was a 50/50 split between vehicles driving through Home Depot and making a WBL at the existing signal and vehicles making a WBR from Home Depot Southerly Street in order to make a U-turn at the existing signal. All of these trips have been rerouted to make a WBL at the new signal, which results in a reduction in SBT and WBR at this location.

Figure 9 on the following page illustrates the AM and PM peak hour traffic volumes at the study intersections for Future (2040) with Project Conditions. The ICU reports are provided in **Appendix B** and the HCM reports are provided in **Appendix F** for Future (2040) with Project Conditions.



LEGEND	
#	Intersection ID
	Project Site
XX(XX)	AM(PM) Peak Hour Volume
	Traffic Movement

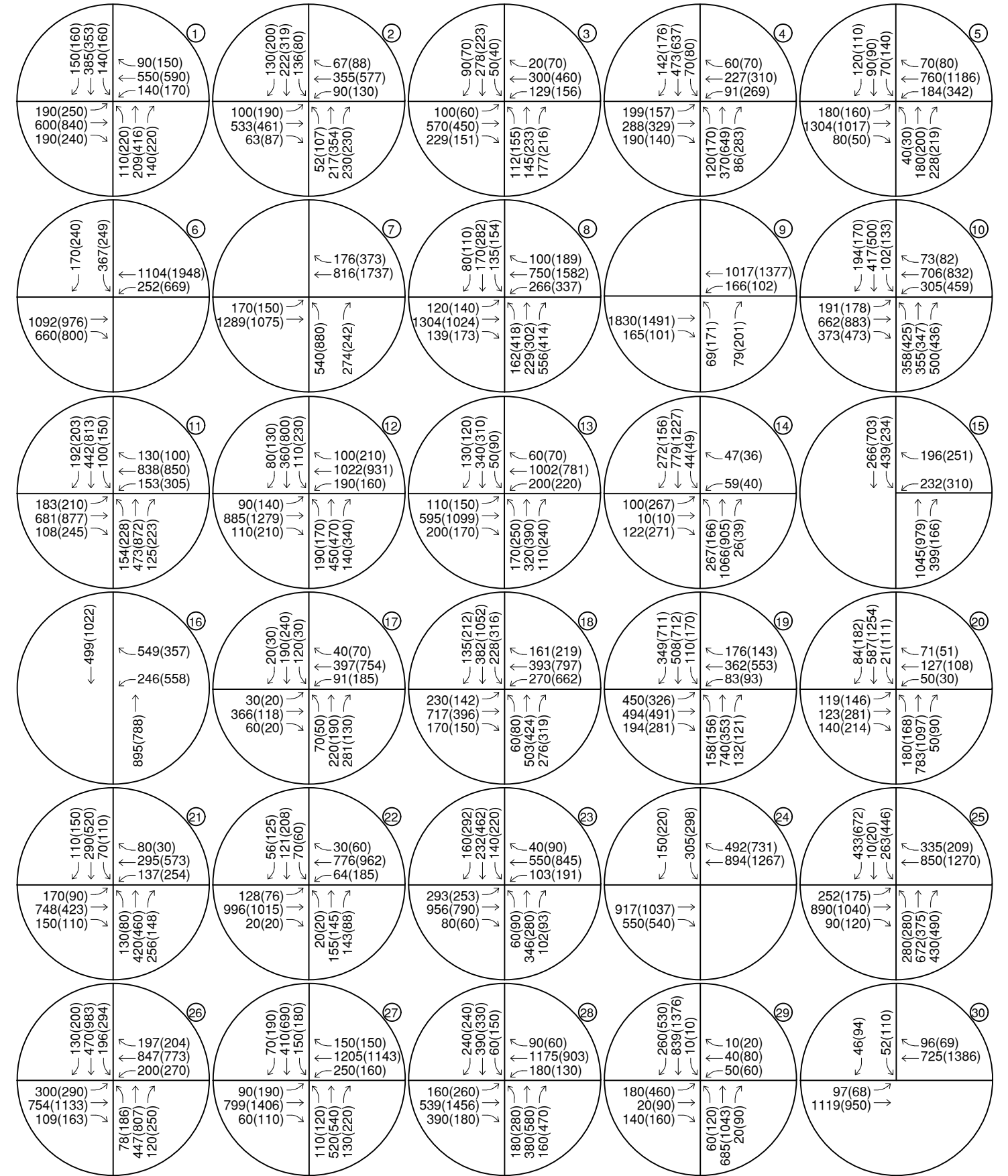


FIGURE 9
 Lancaster Health District
 Future (2040) with Project Weekday Peak-Hour Turning Movement Volumes

Table 13 below presents a summary of the Future (2040) with Project Conditions V/C ratio or delay (seconds) and the corresponding LOS for each intersection.

Table 13: Summary of Intersection Operations – Future (2040) with Project Conditions

Intersection			Jurisdiction	Control	AM Peak Hour		PM Peak Hour	
#	North/South	East/West			V/C Ratio	LOS	V/C Ratio	LOS
1	10th Street West	Avenue I	Lancaster	Signal	0.60	A	0.79	C
2	20th Street West	Lancaster Boulevard	Lancaster	Signal	0.61	B	0.85	D
4	10th Street West	Lancaster Boulevard	Lancaster	Signal	0.63	B	0.84	D
5	25th Street West	Avenue J	Lancaster	Signal	0.78	C	0.85	D
8	20th Street West	Avenue J	Lancaster	Signal	0.90	D	1.03	F
9	18th Street West	Avenue J	Lancaster	Signal	0.81	D	0.74	D
10	15th Street West	Avenue J	Lancaster	Signal	1.09	F	1.39	F
11	10th Street West	Avenue J	Lancaster	Signal	0.54	A	0.73	C
12	Sierra Highway	Avenue J	Lancaster	Signal	0.63	B	0.75	C
13	Division Street	Avenue J	Lancaster	Signal	0.74	C	0.87	D
14	15th Street West	Avenue J-3	Lancaster	Signal	0.67	B	0.80	C
15	20th Street West	Home Depot Southerly Street	Lancaster	Signal	0.85	D	0.75	C
17	25th Street West	Avenue J-8	Lancaster	Signal	0.51	A	0.55	A
18	20th Street West	Avenue J-8	Lancaster	Signal	1.02	F	1.21	F
19	15th Street West	Avenue J-8	Lancaster	Signal	0.91	E	0.97	E
20	10th Street West	Avenue J-8	Lancaster	Signal	0.59	A	0.91	E
21	30th Street West	Avenue K	Lancaster	Signal	0.53	A	0.51	A
22	25th Street West	Avenue K	Lancaster	Signal	0.59	A	0.68	B
23	20th Street West	Avenue K	Lancaster	Signal	0.59	A	0.65	B
26	10th Street West	Avenue K	Lancaster	Signal	0.62	B	0.77	C
27	Sierra Highway	Avenue K	Lancaster	Signal	0.65	B	0.78	C
28	Division Street	Avenue K	Lancaster	Signal	0.80	C	0.92	E
29	10th Street West	Avenue K-8	Lancaster	Signal	0.45	A	0.81	D
30	18th Street West	Avenue J-8	Lancaster	Signal	0.83	D	1.08	F
Intersection			Jurisdiction	Control	AM Peak Hour		PM Peak Hour	
#	North/South	East/West			Delay (s)	LOS	Delay (s)	LOS
3	15th Street West	Lancaster Boulevard	Lancaster	ROB	53.9	F	28.2	D
6	SR-14 SB Ramps	Avenue J	Caltrans	Signal	23.0	C	38.8	D
7	SR-14 NB Ramps	Avenue J	Caltrans	Signal	13.4	B	42.0	D
16	20th Street West	SR-14 NB Ramps	Caltrans	Signal	12.5	B	20.5	C
24	SR-14 SB Ramps	Avenue K	Caltrans	Signal	6.9	A	7.8	A
25	15th Street West/SR-14 NB Ramps	Avenue K	Caltrans	Signal	30.8	C	51.4	D

The Future (2040) with Project Conditions traffic analysis results presented in **Table 13** indicate that three intersections are projected to operate at LOS F, one intersection is projected to operate at LOS E, and the remaining 26 study intersections are projected to operate at LOS D or better during the AM peak period.

During the PM peak period, four intersections are projected to operate at LOS F, three intersections are projected to operate at LOS E, and the remaining 23 study intersections are projected to operate at LOS D or better.

For the Future (2040) with Project Conditions, the following intersections have an increase in V/C ratio or delay above the threshold that may result in a potential operational and/or safety issue during the AM and PM peak periods.

- Intersection #3: 15th Street West and Lancaster Boulevard
- Intersection #8: 20th Street West and Avenue J
- Intersection #10: 15th Street West and Avenue J
- Intersection #18: 20th Street West and Avenue J-8
- Intersection #19: 15th Street West and Avenue J-8
- Intersection #20: 10th Street West and Avenue J-8
- Intersection #28: Division Street and Avenue K
- Intersection #30: 18th Street West and Avenue J-8

V. SITE CIRCULATION

As described in previous sections, the Lancaster Health District Master Plan includes several new roadways and intersections. Primary internal street network connections include the extensions of Avenue J-3 and J-5 to provide east-west connectivity, and 18th Street West and 13th Street West/Lowtree Avenue to provide north-south connectivity. All internal roadways will be two-lane facilities with sidewalks and will operate at acceptable levels of service with the forecast traffic levels. Construction of internal street improvements will be sequenced in coordination with individual developments and construction of the new hospital building.

Figure 10 on the following page shows the roadways and intersections that will be used to provide access to the Lancaster Health District. Access roadways and intersections that were included in this study include existing roadways and potential future access roadways based on the preliminary developer plan.

An analysis was conducted of traffic operations at the roundabouts on the Lancaster Health District Master Plan site. Future traffic volumes at Master Plan roundabouts were estimated based upon the locations proposed for specific components of the Master Plan. Traffic operations for the following existing and proposed roundabouts were analyzed:

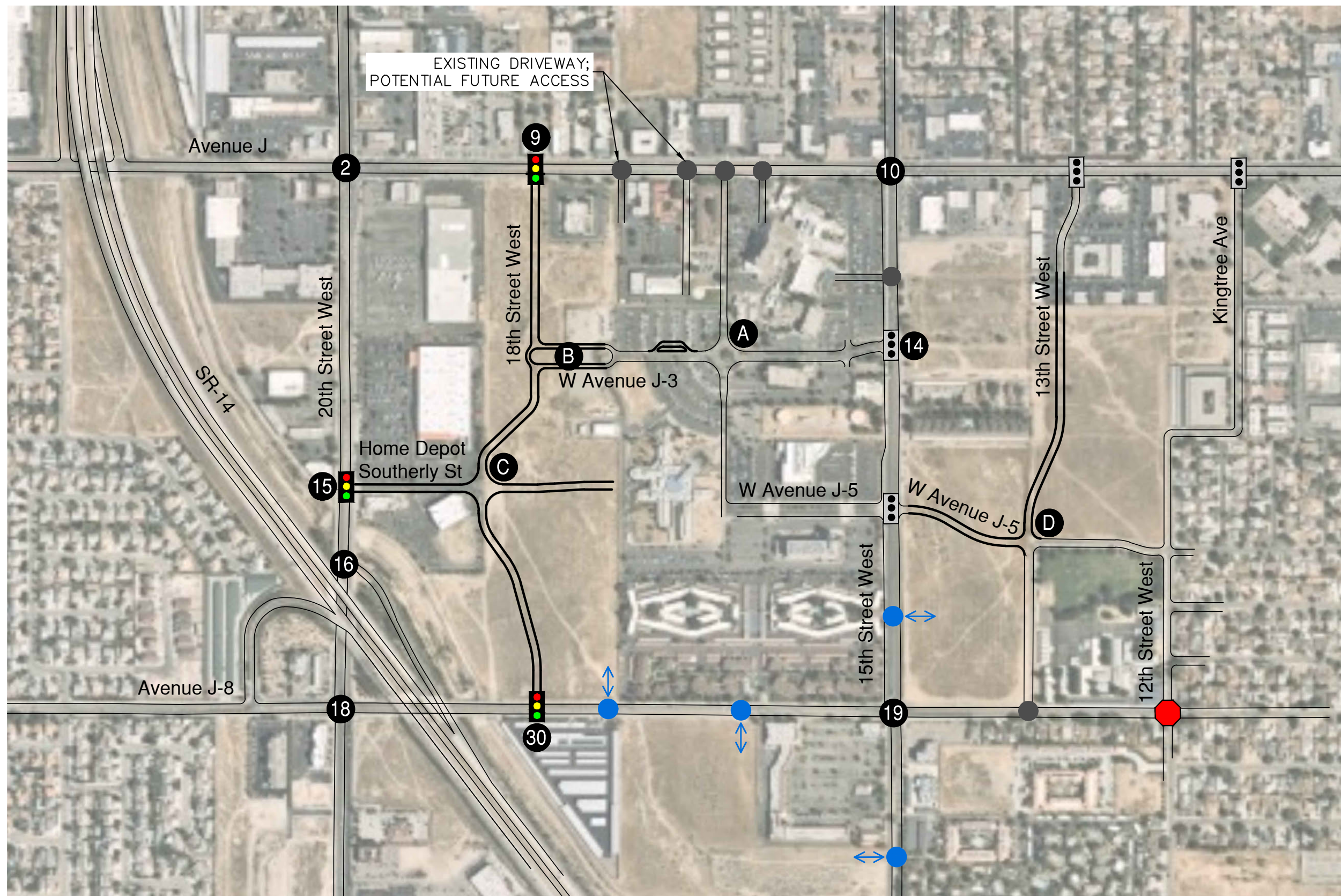
District Core

- Home Depot Southerly Street and 18th Street West – Expected to operate at LOS A in the Future (2040) with Project Conditions
- Avenue J-3 and 18th Street West – This oblong roundabout is expected to operate in a one-way counter-clockwise direction. Yield control is recommended for side street approaches to the roundabout. Expected to operate at LOS A in the Future (2040) with Project Conditions.
- Avenue J-3 and North/South Street – This is an existing dual-lane roundabout with single northbound, eastbound, and southbound approach lanes and dual westbound approach lanes. The roundabout is proposed to be modified to a single-entry lane from all directions. Expected to operate at LOS A in Future (2040) with Project Conditions.

East Neighborhood

- Avenue J-5 and 13th Street West – Expected to operate at LOS A in the Future (2040) with Project Conditions.

Additional roundabouts may be planned and constructed at a future period. Traffic operations for future roundabouts should be reassessed when individual projects are proposed.



LEGEND
Study Intersections

- # Offsite Intersection
- X Onsite Roundabout

Site Access Points

- Proposed Signal
- Existing Signal
- All-Way Stop
- Potential Future Access Based on Preliminary Developer Plan
- Existing Driveway/Unsignalized Intersection



FIGURE 10
Lancaster Health District
Site Circulation

VI. PROJECT OPERATIONAL AND SAFETY ISSUES AND POTENTIAL IMPROVEMENTS

LEVEL OF SERVICE OPERATIONAL AND SAFETY ISSUES

The Future (2040) with Project and Roadway Improvements analysis shows that potential operational and/or safety issues may occur at 8 study intersections.

Per the City's General Plan Article 14.1.1(c), as part of the development review process, the city will evaluate the potential impacts of traffic generated by projects using a dual analysis process and determine the effects on adjacent land uses and surrounding neighborhoods, while utilizing a more flexible LOS criteria that encourages transit ridership, bicycling, and walking. In the event a development project significantly degrades the effective use or safety of City streets; improvements may still be required. Required improvements should consider transit, bicycle, and pedestrian improvements as well as road improvements.

LEVEL OF SERVICE WITH ROADWAY IMPROVEMENTS

Possible roadway improvements for study intersections include demand management techniques and capacity enhancement techniques. Demand management could be accomplished by implementing Transportation Demand Management measures. Potential capacity enhancements include providing additional lanes, modifying traffic signal timing, coordinating traffic signal timing along arterials, and modifying traffic signal phasing.

The following physical capacity enhancements and other improvements are recommended for study intersections. Typically, level of service as measured by ICU methodology improves when there are capacity enhancements. Where there is no physical capacity enhancement possible, improvements in level of service can be measured by HCM methodology. HCM methodology can calculate improvements in LOS as a result of implementing improvements including signal phasing changes and optimized signal synchronization.

- Intersection #3: 15th Street West and Lancaster Boulevard
 - Physical capacity constrained. No feasible capacity enhancements
- Intersection #8: 20th Street West and Avenue J
 - Physical capacity constrained. No feasible capacity enhancements
 - Signal modification to add Northbound Right overlap
- Intersection #10: 15th Street West and Avenue J
 - Add additional northbound left turn lane (dual lefts)
 - Add eastbound right turn lane
- Intersection #18: 20th Street West and Avenue J-8
 - Avenue J-8 road diet project will reduce westbound through lanes from 2 to 1
 - Add westbound through/right turn lane
- Intersection #19: 15th Street West and Avenue J-8
 - Add westbound through/right turn lane
- Intersection #20: 10th Street West and Avenue J-8
 - Restripe the eastbound approach to create an Eastbound Left/Through lane and a de facto right turn lane. This could be accomplished by restriping the double yellow line on the west leg of the intersection to the north.

- Intersection #28: Division Street and Avenue K
 - Physical capacity constrained. No feasible capacity enhancements.
 - Add Eastbound Right turn overlap
- Intersection #30: 18th Street West and Avenue J-8
 - No feasible capacity enhancement due to road diet for eastbound & westbound.

Table 14 presents a summary of the Future (2040) with Project and Roadway Improvements Conditions V/C ratio or delay (seconds) and the corresponding LOS for each intersection. The ICU and HCM reports are provided in **Appendix G** for Future (2040) with Project and Roadway Improvements Conditions.

Table 14: Summary of Intersection Operations – Future (2040) with Project and Roadway Improvements Conditions

Intersection			Control	AM Peak Hour				PM Peak Hour			
#	North/South	East/West		V/C Ratio or Delay (s)	LOS	V/C Ratio or Delay (s)	LOS	V/C Ratio or Delay (s)	LOS	V/C Ratio or Delay (s)	LOS
				No Improvement		With Improvement		No Improvement		With Improvement	
3	15th Street West	Lancaster Boulevard	ROB	53.9	F	53.9	F	-	-	-	-
8	20th Street West	Avenue J	Signal	-	-	-	-	1.03	F	HCM ¹	
				-	-	-	-	61.4	E	39.9	D
10	15th Street West	Avenue J	Signal	1.09	F	0.88	D	1.39	F	1.13	F
				105.4	F	50.4	D	184.8	F	64.7	E
18	20th Street West	Avenue J-8	Signal	1.02	F	1.02	F	1.21	F	1.14	F
				67.9	E	63.2	E	137.1	F	91.1	F
19	15th Street West	Avenue J-8	Signal	0.91	E	0.79	C	0.97	E	0.79	C
20	10th Street West	Avenue J-8	Signal	-	-	-	-	0.91	E	0.78	C
28	Division Street	Avenue K	Signal	-	-	-	-	0.92	E	HCM ¹	
				-	-	-	-	85.0	F	49.3	D
30	18 th Street West	Avenue J-8	Signal	-	-	-	-	1.08	F	1.08	F

¹Recommended improvements assessed based on HCM methodology. Improvements are a result of proposed right-turn overlaps.

The Future (2040) with Project and Roadway Improvements traffic analysis results presented in **Table 14** indicate that if the recommended roadway improvements are implemented, one study intersection would operate at LOS F, one at LOS E, and the other study intersections would operate at LOS D or better during the AM peak period. During the PM peak period, two study intersections would operate at LOS F, one at LOS E, and the other study intersections would operate at LOS D or better.

Development of the complete LHD Master Plan is expected to occur over a 20-year timeframe. The operational and safety impacts that may result from the LHD Master Plan and ambient traffic growth in the City of Lancaster would not be expected to occur for up to 20 years. The results in Tables 13 and 14 present the LOS results when the full buildout of LHD occurs. In the early stages of the LHD development, the study intersections are not expected to experience any operational or safety impacts. Over time as individual projects within the Master Plan are proposed, additional operational and safety analyses should be conducted to determine the then operational performance of the adjacent intersections and identify any improvements due to the traffic generated by individual development projects. Additional roadway improvements not listed in this report may be identified in the future as a result of the development of specific projects.

APPENDIX A – TRAFFIC DATA COLLECTION WORKSHEETS

City of Lancaster
 N/S: 10th Street West
 E/W: Avenue I
 Weather: Clear

File Name : LAN10IAM
 Site Code : 10814234
 Start Date : 6/3/2014
 Page No : 1

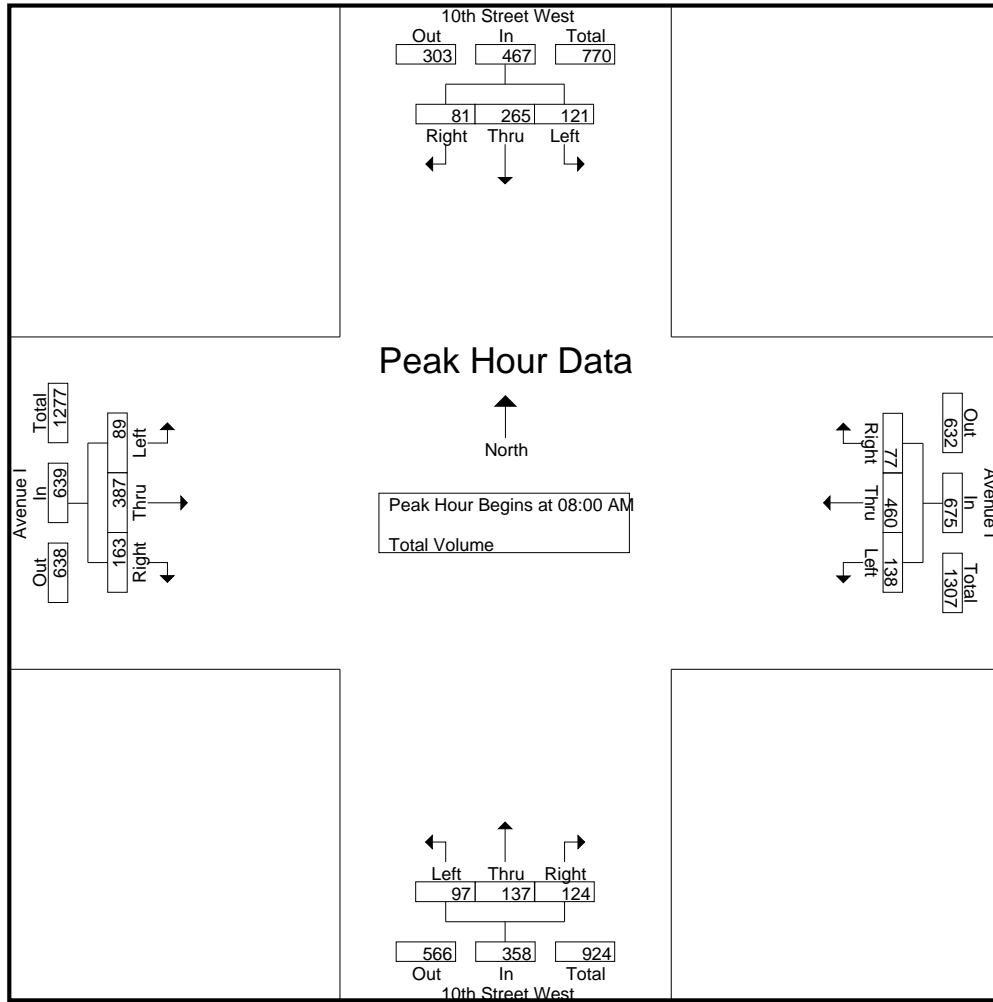
Groups Printed- Total Volume

Start Time	10th Street West Southbound				Avenue I Westbound				10th Street West Northbound				Avenue I Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:00 AM	11	14	6	31	5	42	7	54	5	9	5	19	1	34	2	37	141
06:15 AM	3	15	5	23	5	49	8	62	2	12	5	19	0	34	6	40	144
06:30 AM	11	16	5	32	10	70	9	89	4	11	5	20	4	45	6	55	196
06:45 AM	9	26	7	42	14	69	12	95	8	10	8	26	4	63	14	81	244
Total	34	71	23	128	34	230	36	300	19	42	23	84	9	176	28	213	725
07:00 AM	10	23	10	43	12	66	10	88	5	16	10	31	10	68	11	89	251
07:15 AM	8	24	13	45	17	67	9	93	8	14	12	34	7	65	26	98	270
07:30 AM	18	44	12	74	8	89	10	107	16	19	9	44	9	100	31	140	365
07:45 AM	26	59	10	95	26	115	21	162	16	21	14	51	14	147	66	227	535
Total	62	150	45	257	63	337	50	450	45	70	45	160	40	380	134	554	1421
08:00 AM	33	60	30	123	20	90	26	136	25	32	33	90	18	119	37	174	523
08:15 AM	31	76	17	124	31	142	21	194	20	29	27	76	19	83	38	140	534
08:30 AM	30	75	20	125	36	106	19	161	14	38	34	86	30	88	40	158	530
08:45 AM	27	54	14	95	51	122	11	184	38	38	30	106	22	97	48	167	552
Total	121	265	81	467	138	460	77	675	97	137	124	358	89	387	163	639	2139
Grand Total	217	486	149	852	235	1027	163	1425	161	249	192	602	138	943	325	1406	4285
Apprch %	25.5	57	17.5		16.5	72.1	11.4		26.7	41.4	31.9		9.8	67.1	23.1		
Total %	5.1	11.3	3.5	19.9	5.5	24	3.8	33.3	3.8	5.8	4.5	14	3.2	22	7.6	32.8	

Start Time	10th Street West Southbound				Avenue I Westbound				10th Street West Northbound				Avenue I Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	33	60	30	123	20	90	26	136	25	32	33	90	18	119	37	174	523
08:15 AM	31	76	17	124	31	142	21	194	20	29	27	76	19	83	38	140	534
08:30 AM	30	75	20	125	36	106	19	161	14	38	34	86	30	88	40	158	530
08:45 AM	27	54	14	95	51	122	11	184	38	38	30	106	22	97	48	167	552
Total Volume	121	265	81	467	138	460	77	675	97	137	124	358	89	387	163	639	2139
% App. Total	25.9	56.7	17.3		20.4	68.1	11.4		27.1	38.3	34.6		13.9	60.6	25.5		
PHF	.917	.872	.675	.934	.676	.810	.740	.870	.638	.901	.912	.844	.742	.813	.849	.918	.969

City of Lancaster
 N/S: 10th Street West
 E/W: Avenue I
 Weather: Clear

File Name : LAN10IAM
 Site Code : 10814234
 Start Date : 6/3/2014
 Page No : 2



Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:45 AM				08:00 AM				08:00 AM				07:45 AM			
+0 mins.	26	59	10	95	20	90	26	136	25	32	33	90	14	147	66	227
+15 mins.	33	60	30	123	31	142	21	194	20	29	27	76	18	119	37	174
+30 mins.	31	76	17	124	36	106	19	161	14	38	34	86	19	83	38	140
+45 mins.	30	75	20	125	51	122	11	184	38	38	30	106	30	88	40	158
Total Volume	120	270	77	467	138	460	77	675	97	137	124	358	81	437	181	699
% App. Total	25.7	57.8	16.5		20.4	68.1	11.4		27.1	38.3	34.6		11.6	62.5	25.9	
PHF	.909	.888	.642	.934	.676	.810	.740	.870	.638	.901	.912	.844	.675	.743	.686	.770

City of Lancaster
 N/S: 10th Street West
 E/W: Avenue I
 Weather: Clear

File Name : LAN10IPM
 Site Code : 10814234
 Start Date : 6/3/2014
 Page No : 1

Groups Printed- Total Volume

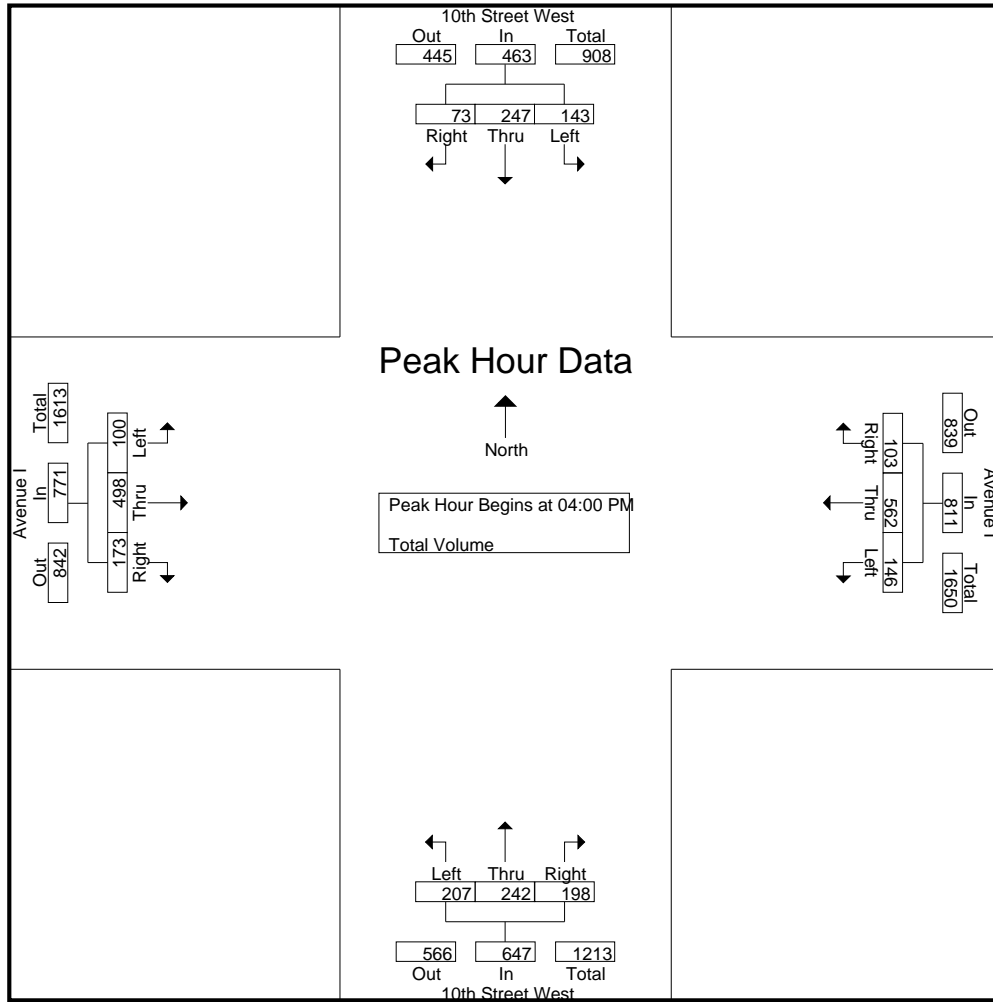
Start Time	10th Street West Southbound				Avenue I Westbound				10th Street West Northbound				Avenue I Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	41	59	21	121	46	139	31	216	59	63	52	174	31	111	46	188	699
04:15 PM	42	64	20	126	34	136	21	191	49	45	45	139	26	136	43	205	661
04:30 PM	23	59	16	98	34	153	30	217	40	58	48	146	20	136	43	199	660
04:45 PM	37	65	16	118	32	134	21	187	59	76	53	188	23	115	41	179	672
Total	143	247	73	463	146	562	103	811	207	242	198	647	100	498	173	771	2692
05:00 PM	22	57	17	96	31	143	34	208	69	64	56	189	19	130	36	185	678
05:15 PM	30	47	21	98	38	153	37	228	47	58	39	144	21	108	42	171	641
05:30 PM	23	57	14	94	25	153	24	202	54	60	30	144	25	107	40	172	612
05:45 PM	32	46	20	98	29	121	23	173	62	57	42	161	19	99	46	164	596
Total	107	207	72	386	123	570	118	811	232	239	167	638	84	444	164	692	2527
06:00 PM	32	46	23	101	26	130	31	187	46	72	39	157	25	112	21	158	603
06:15 PM	21	49	12	82	16	119	19	154	26	31	24	81	28	102	22	152	469
06:30 PM	22	39	20	81	24	98	22	144	34	54	29	117	26	81	29	136	478
06:45 PM	24	31	17	72	20	99	15	134	34	35	21	90	22	93	26	141	437
Total	99	165	72	336	86	446	87	619	140	192	113	445	101	388	98	587	1987
Grand Total	349	619	217	1185	355	1578	308	2241	579	673	478	1730	285	1330	435	2050	7206
Apprch %	29.5	52.2	18.3		15.8	70.4	13.7		33.5	38.9	27.6		13.9	64.9	21.2		
Total %	4.8	8.6	3	16.4	4.9	21.9	4.3	31.1	8	9.3	6.6	24	4	18.5	6	28.4	

Start Time	10th Street West Southbound				Avenue I Westbound				10th Street West Northbound				Avenue I Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	41	59	21	121	46	139	31	216	59	63	52	174	31	111	46	188	699
04:15 PM	42	64	20	126	34	136	21	191	49	45	45	139	26	136	43	205	661
04:30 PM	23	59	16	98	34	153	30	217	40	58	48	146	20	136	43	199	660
04:45 PM	37	65	16	118	32	134	21	187	59	76	53	188	23	115	41	179	672
Total Volume	143	247	73	463	146	562	103	811	207	242	198	647	100	498	173	771	2692
% App. Total	30.9	53.3	15.8		18	69.3	12.7		32	37.4	30.6		13	64.6	22.4		
PHF	.851	.950	.869	.919	.793	.918	.831	.934	.877	.796	.934	.860	.806	.915	.940	.940	.963

Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Lancaster
 N/S: 10th Street West
 E/W: Avenue I
 Weather: Clear

File Name : LAN10IPM
 Site Code : 10814234
 Start Date : 6/3/2014
 Page No : 2



Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:00 PM				04:30 PM				04:30 PM				04:00 PM			
+0 mins.	41	59	21	121	34	153	30	217	40	58	48	146	31	111	46	188
+15 mins.	42	64	20	126	32	134	21	187	59	76	53	188	26	136	43	205
+30 mins.	23	59	16	98	31	143	34	208	69	64	56	189	20	136	43	199
+45 mins.	37	65	16	118	38	153	37	228	47	58	39	144	23	115	41	179
Total Volume	143	247	73	463	135	583	122	840	215	256	196	667	100	498	173	771
% App. Total	30.9	53.3	15.8		16.1	69.4	14.5		32.2	38.4	29.4		13	64.6	22.4	
PHF	.851	.950	.869	.919	.888	.953	.824	.921	.779	.842	.875	.882	.806	.915	.940	.940

Location: Lancaster
 N/S: 10th Street West
 E/W: Avenue I



Date: 6/3/2014

WEEKDAY

	North Leg 10th Street West	East Leg Avenue I	South Leg 10th Street West	West Leg Avenue I	TOTAL
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
6:00 AM	1	1	1	0	3
6:15 AM	3	5	1	1	10
6:30 AM	2	5	1	4	12
6:45 AM	3	2	2	0	7
7:00 AM	3	0	2	2	7
7:15 AM	2	3	0	2	7
7:30 AM	4	6	3	0	13
7:45 AM	6	4	8	3	21
8:00 AM	8	3	4	4	19
8:15 AM	7	6	8	4	25
8:30 AM	4	4	4	6	18
8:45 AM	13	4	8	10	35
TOTAL VOLUMES:	56	43	42	36	177

	North Leg 10th Street West	East Leg Avenue I	South Leg 10th Street West	West Leg Avenue I	TOTAL
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	5	5	3	3	16
4:15 PM	13	10	6	4	33
4:30 PM	6	5	5	5	21
4:45 PM	6	4	4	5	19
5:00 PM	8	2	5	8	23
5:15 PM	6	1	1	3	11
5:30 PM	9	5	1	5	20
5:45 PM	14	6	3	4	27
6:00 PM	10	17	11	13	51
6:15 PM	6	2	8	14	30
6:30 PM	7	6	3	7	23
6:45 PM	15	8	3	7	33
TOTAL VOLUMES:	105	71	53	78	307

Location: Lancaster
 N/S: 10th Street West
 E/W: Avenue I



Date: 6/3/2014

WEEKDAY

	North Leg 10th Street West	East Leg Avenue I	South Leg 10th Street West	West Leg Avenue I	TOTAL
	Bicycles	Bicycles	Bicycles	Bicycles	
6:00 AM	1	0	1	1	3
6:15 AM	0	0	0	1	1
6:30 AM	0	0	0	0	0
6:45 AM	1	0	2	0	3
7:00 AM	0	0	0	0	0
7:15 AM	2	1	0	0	3
7:30 AM	2	0	0	1	3
7:45 AM	2	0	0	3	5
8:00 AM	4	0	0	0	4
8:15 AM	1	2	0	0	3
8:30 AM	0	2	1	0	3
8:45 AM	0	1	1	1	3
TOTAL VOLUMES:	13	6	5	7	31

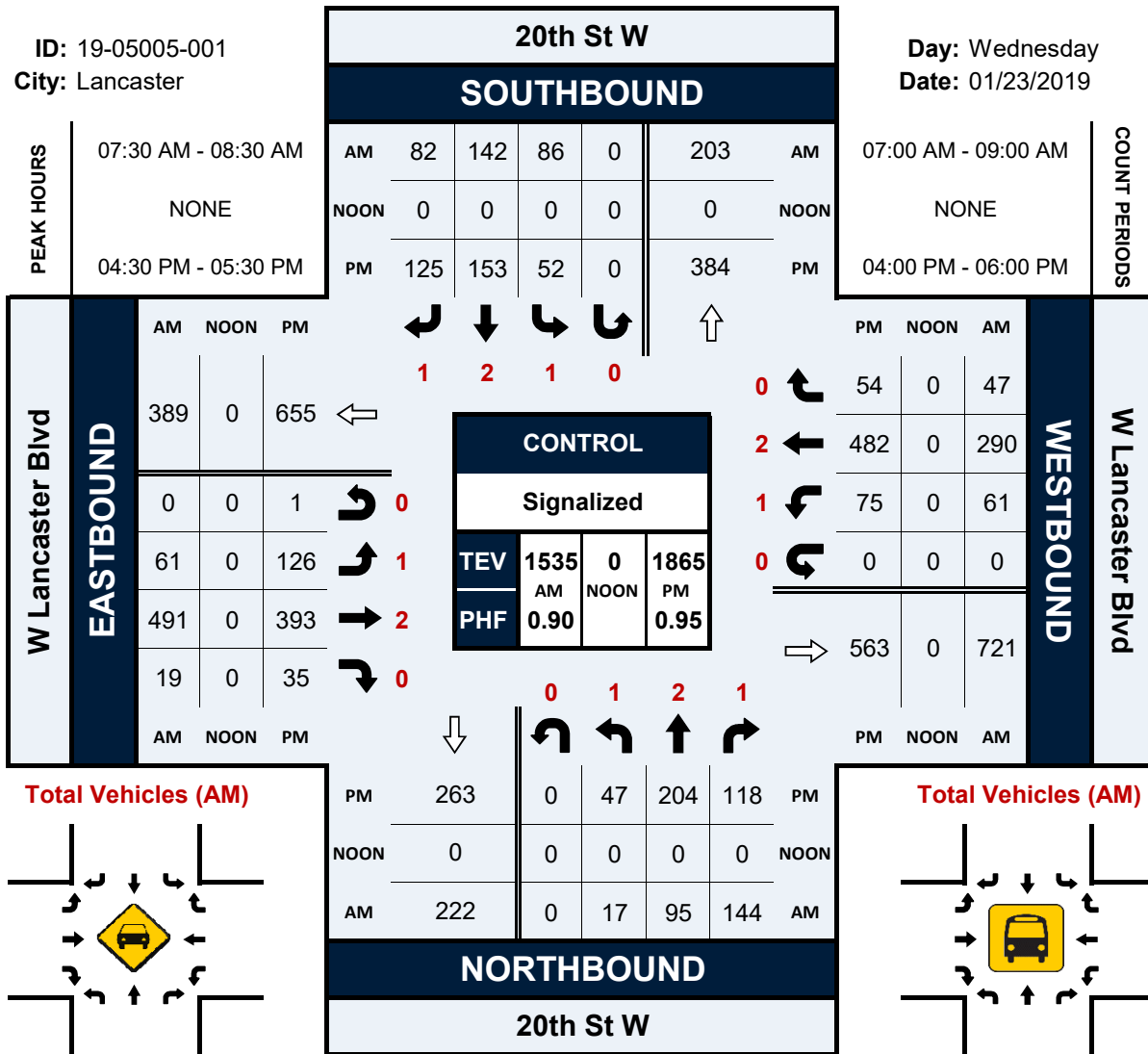
	North Leg 10th Street West	East Leg Avenue I	South Leg 10th Street West	West Leg Avenue I	TOTAL
	Bicycles	Bicycles	Bicycles	Bicycles	
4:00 PM	0	1	0	1	2
4:15 PM	3	0	0	0	3
4:30 PM	0	2	1	1	4
4:45 PM	2	1	0	1	4
5:00 PM	3	2	0	0	5
5:15 PM	0	1	2	2	5
5:30 PM	5	2	0	1	8
5:45 PM	2	1	2	1	6
6:00 PM	3	5	2	0	10
6:15 PM	2	4	0	0	6
6:30 PM	0	1	0	2	3
6:45 PM	0	2	0	0	2
TOTAL VOLUMES:	20	22	7	9	58

20th St W & W Lancaster Blvd

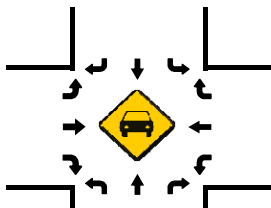
Peak Hour Turning Movement Count

ID: 19-05005-001
City: Lancaster

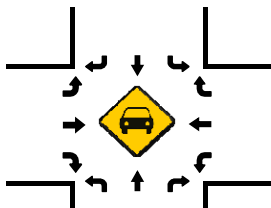
Day: Wednesday
Date: 01/23/2019



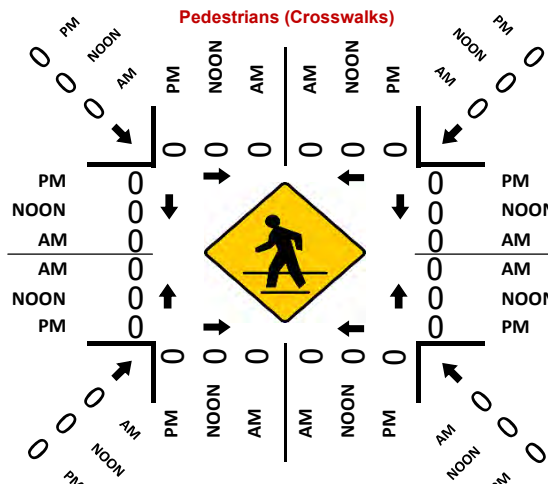
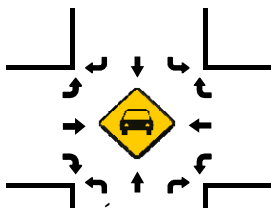
Total Vehicles (AM)



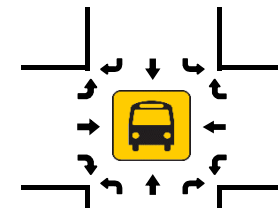
Total Vehicles (NOON)



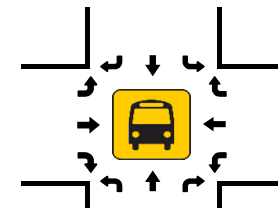
Total Vehicles (PM)



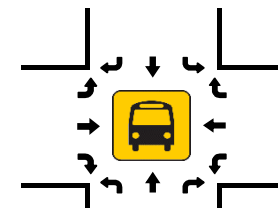
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)

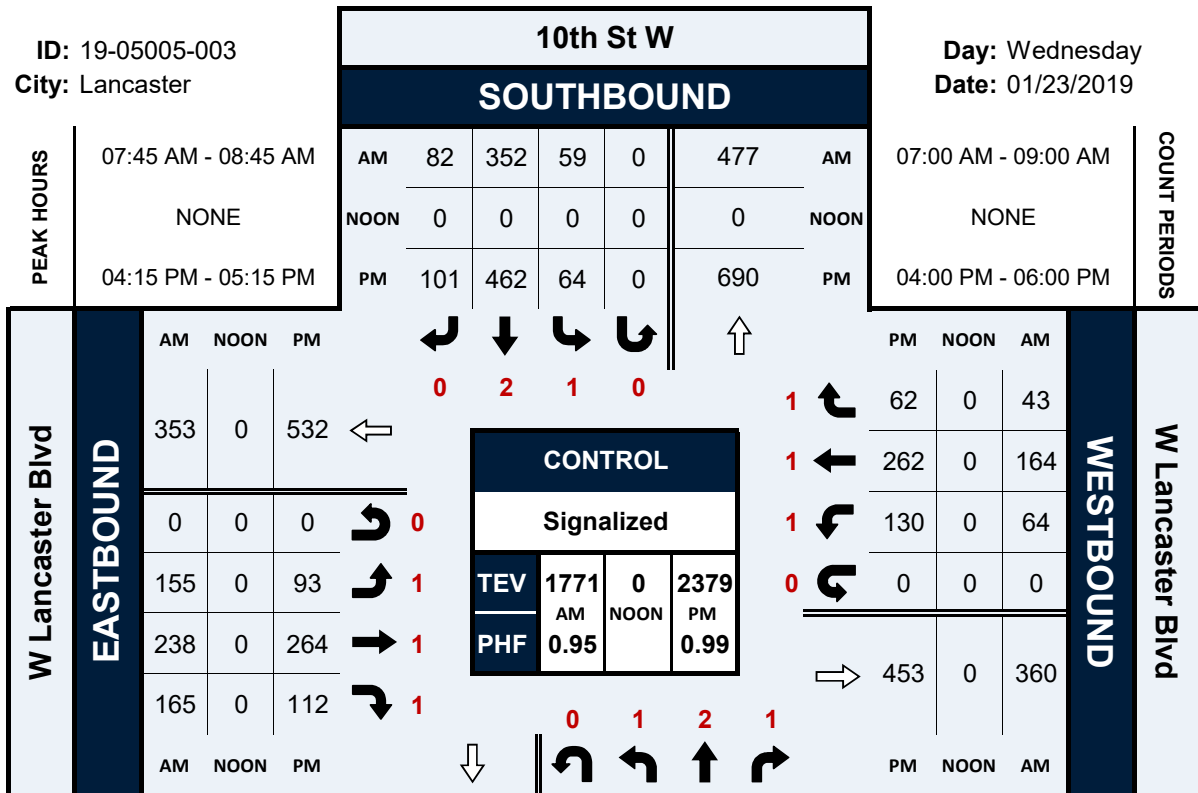


10th St W & W Lancaster Blvd

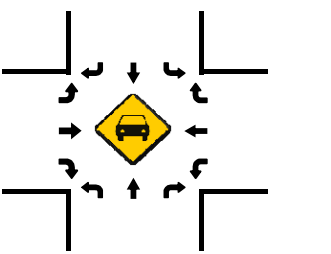
Peak Hour Turning Movement Count

ID: 19-05005-003
City: Lancaster

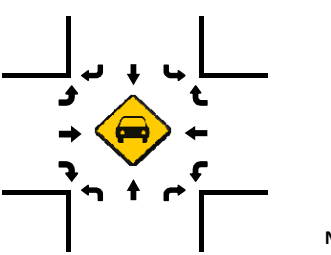
Day: Wednesday
Date: 01/23/2019



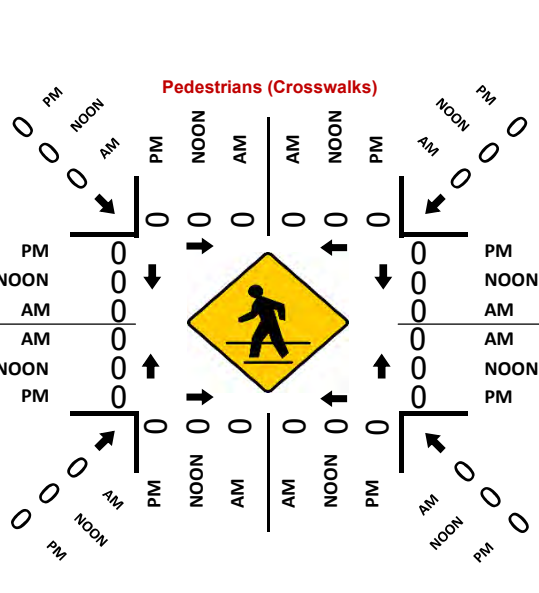
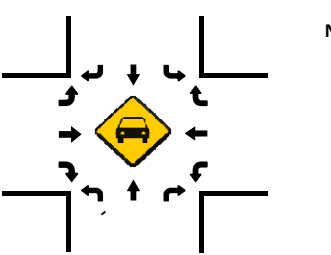
Total Vehicles (AM)



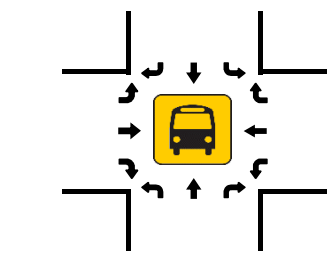
Total Vehicles (NOON)



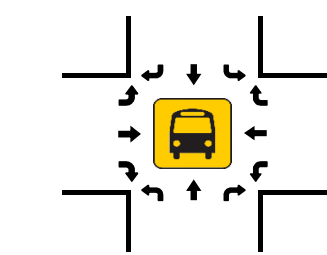
Total Vehicles (PM)



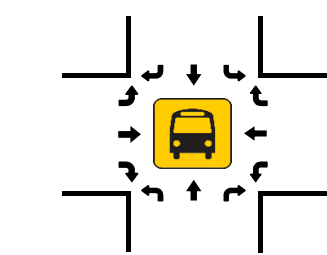
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



City of Lancaster
 N/S: 25th Street West
 E/W: Avenue J
 Weather: Clear

File Name : LAN25JAM
 Site Code : 10814234
 Start Date : 6/3/2014
 Page No : 1

Groups Printed- Total Volume

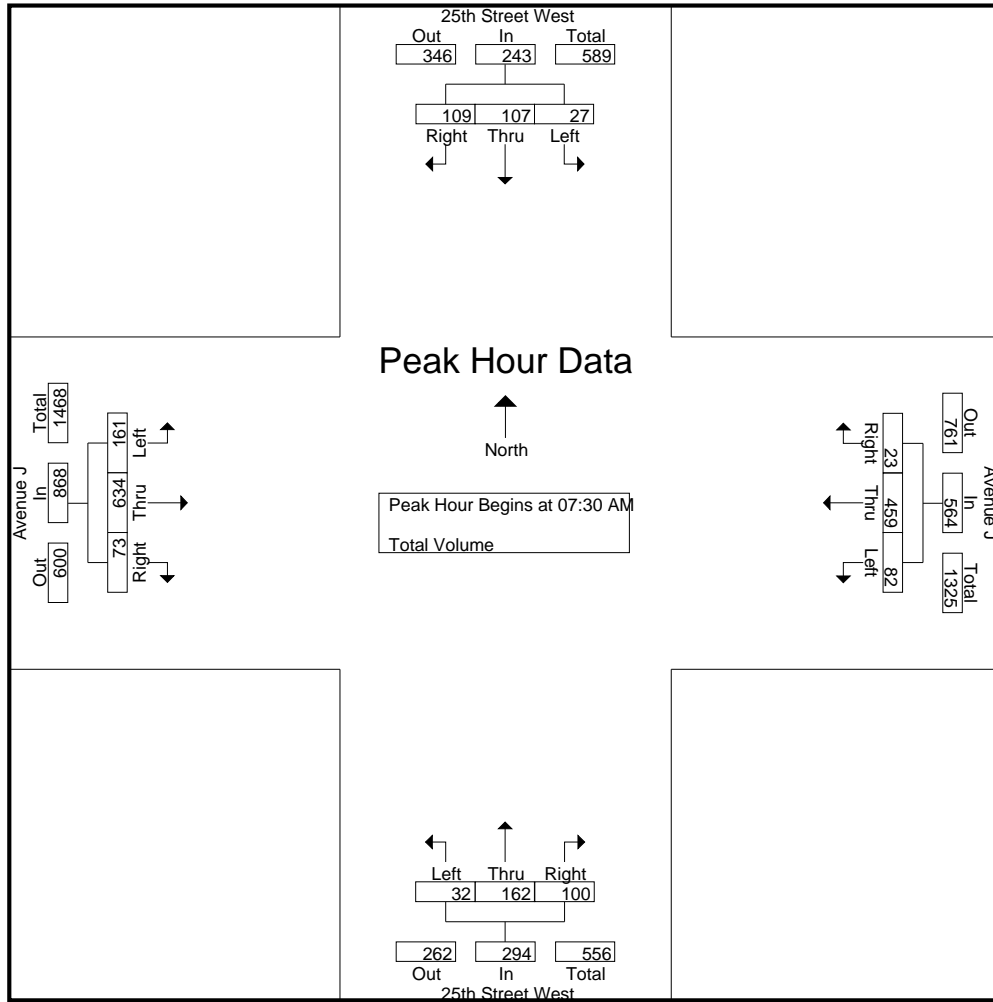
Start Time	25th Street West Southbound				Avenue J Westbound				25th Street West Northbound				Avenue J Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:00 AM	1	8	1	10	4	18	4	26	2	8	8	18	5	37	6	48	102
06:15 AM	2	16	4	22	7	37	2	46	0	8	12	20	9	60	4	73	161
06:30 AM	0	12	1	13	8	28	8	44	1	12	15	28	9	68	9	86	171
06:45 AM	4	12	7	23	7	52	3	62	0	21	12	33	8	96	13	117	235
Total	7	48	13	68	26	135	17	178	3	49	47	99	31	261	32	324	669
07:00 AM	4	22	12	38	11	56	6	73	5	18	18	41	11	77	5	93	245
07:15 AM	5	25	17	47	13	67	6	86	9	27	20	56	16	103	11	130	319
07:30 AM	5	30	18	53	33	83	6	122	4	44	39	87	36	136	9	181	443
07:45 AM	10	27	24	61	16	120	2	138	4	36	13	53	32	181	13	226	478
Total	24	104	71	199	73	326	20	419	22	125	90	237	95	497	38	630	1485
08:00 AM	5	24	38	67	11	116	7	134	19	32	22	73	33	158	16	207	481
08:15 AM	7	26	29	62	22	140	8	170	5	50	26	81	60	159	35	254	567
08:30 AM	3	27	19	49	21	78	10	109	4	38	6	48	26	130	19	175	381
08:45 AM	6	28	12	46	22	68	7	97	6	34	22	62	17	115	10	142	347
Total	21	105	98	224	76	402	32	510	34	154	76	264	136	562	80	778	1776
Grand Total	52	257	182	491	175	863	69	1107	59	328	213	600	262	1320	150	1732	3930
Apprch %	10.6	52.3	37.1		15.8	78	6.2		9.8	54.7	35.5		15.1	76.2	8.7		
Total %	1.3	6.5	4.6	12.5	4.5	22	1.8	28.2	1.5	8.3	5.4	15.3	6.7	33.6	3.8	44.1	

Start Time	25th Street West Southbound				Avenue J Westbound				25th Street West Northbound				Avenue J Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:30 AM	5	30	18	53	33	83	6	122	4	44	39	87	36	136	9	181	443
07:45 AM	10	27	24	61	16	120	2	138	4	36	13	53	32	181	13	226	478
08:00 AM	5	24	38	67	11	116	7	134	19	32	22	73	33	158	16	207	481
08:15 AM	7	26	29	62	22	140	8	170	5	50	26	81	60	159	35	254	567
Total Volume	27	107	109	243	82	459	23	564	32	162	100	294	161	634	73	868	1969
% App. Total	11.1	44	44.9		14.5	81.4	4.1		10.9	55.1	34		18.5	73	8.4		
PHF	.675	.892	.717	.907	.621	.820	.719	.829	.421	.810	.641	.845	.671	.876	.521	.854	.868

Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:30 AM

City of Lancaster
 N/S: 25th Street West
 E/W: Avenue J
 Weather: Clear

File Name : LAN25JAM
 Site Code : 10814234
 Start Date : 6/3/2014
 Page No : 2



Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	5	30	18	53	33	83	6	122	4	44	39	87	36	136	9	181
+15 mins.	10	27	24	61	16	120	2	138	4	36	13	53	32	181	13	226
+30 mins.	5	24	38	67	11	116	7	134	19	32	22	73	33	158	16	207
+45 mins.	7	26	29	62	22	140	8	170	5	50	26	81	60	159	35	254
Total Volume	27	107	109	243	82	459	23	564	32	162	100	294	161	634	73	868
% App. Total	11.1	44	44.9		14.5	81.4	4.1		10.9	55.1	34		18.5	73	8.4	
PHF	.675	.892	.717	.907	.621	.820	.719	.829	.421	.810	.641	.845	.671	.876	.521	.854

City of Lancaster
 N/S: 25th Street West
 E/W: Avenue J
 Weather: Clear

File Name : LAN25JPM
 Site Code : 10814234
 Start Date : 6/3/2014
 Page No : 1

Groups Printed- Total Volume

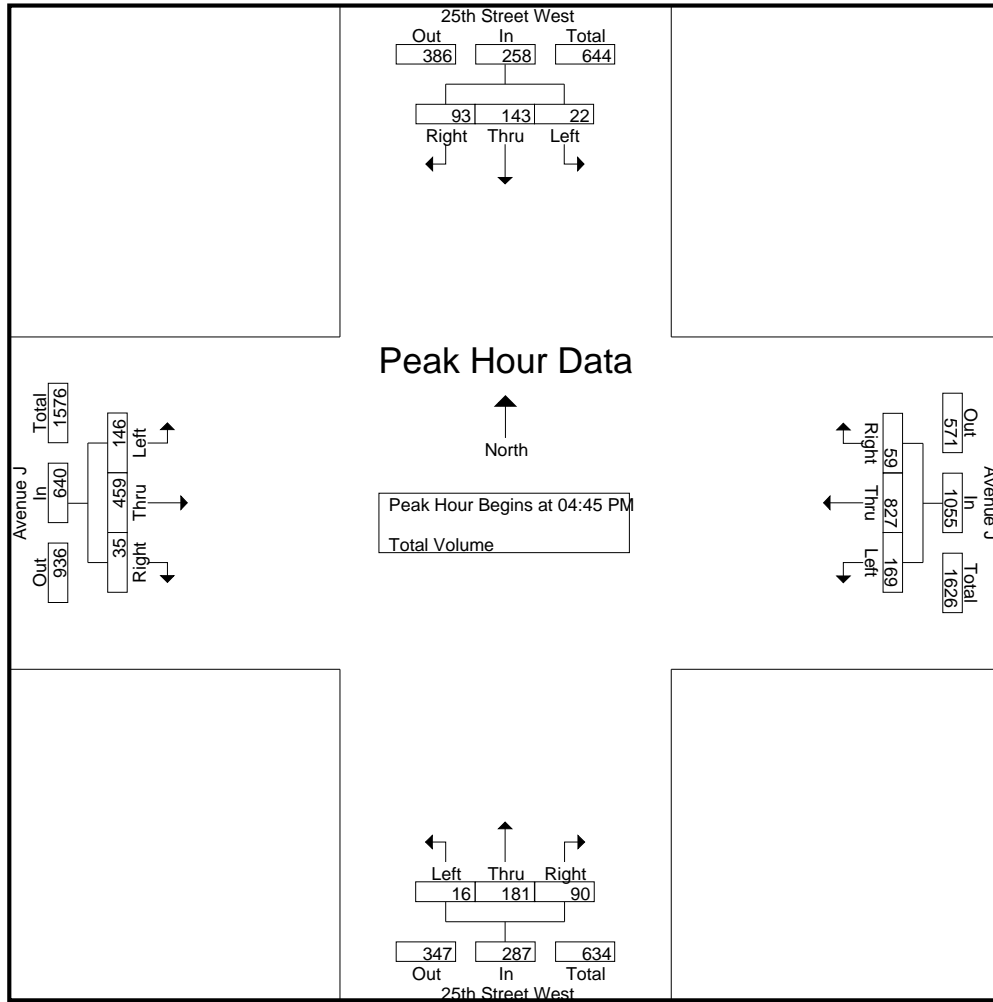
Start Time	25th Street West Southbound				Avenue J Westbound				25th Street West Northbound				Avenue J Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	6	33	17	56	44	180	17	241	6	38	17	61	30	89	12	131	489
04:15 PM	6	32	13	51	36	155	12	203	1	39	21	61	31	94	5	130	445
04:30 PM	12	46	27	85	32	159	15	206	11	39	18	68	28	105	12	145	504
04:45 PM	6	36	24	66	48	189	13	250	5	57	24	86	40	111	15	166	568
Total	30	147	81	258	160	683	57	900	23	173	80	276	129	399	44	572	2006
05:00 PM	4	44	26	74	38	213	13	264	5	41	23	69	40	126	6	172	579
05:15 PM	6	34	17	57	50	214	22	286	3	47	24	74	34	111	4	149	566
05:30 PM	6	29	26	61	33	211	11	255	3	36	19	58	32	111	10	153	527
05:45 PM	11	42	12	65	39	167	17	223	2	51	21	74	30	93	9	132	494
Total	27	149	81	257	160	805	63	1028	13	175	87	275	136	441	29	606	2166
06:00 PM	6	43	24	73	43	176	12	231	8	39	17	64	24	71	8	103	471
06:15 PM	8	33	16	57	35	163	10	208	0	44	13	57	27	84	9	120	442
06:30 PM	6	33	13	52	37	135	9	181	4	34	22	60	29	98	4	131	424
06:45 PM	11	28	22	61	36	102	12	150	2	51	13	66	34	66	6	106	383
Total	31	137	75	243	151	576	43	770	14	168	65	247	114	319	27	460	1720
Grand Total	88	433	237	758	471	2064	163	2698	50	516	232	798	379	1159	100	1638	5892
Apprch %	11.6	57.1	31.3		17.5	76.5	6		6.3	64.7	29.1		23.1	70.8	6.1		
Total %	1.5	7.3	4	12.9	8	35	2.8	45.8	0.8	8.8	3.9	13.5	6.4	19.7	1.7	27.8	

Start Time	25th Street West Southbound				Avenue J Westbound				25th Street West Northbound				Avenue J Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:45 PM	6	36	24	66	48	189	13	250	5	57	24	86	40	111	15	166	568
05:00 PM	4	44	26	74	38	213	13	264	5	41	23	69	40	126	6	172	579
05:15 PM	6	34	17	57	50	214	22	286	3	47	24	74	34	111	4	149	566
05:30 PM	6	29	26	61	33	211	11	255	3	36	19	58	32	111	10	153	527
Total Volume	22	143	93	258	169	827	59	1055	16	181	90	287	146	459	35	640	2240
% App. Total	8.5	55.4	36		16	78.4	5.6		5.6	63.1	31.4		22.8	71.7	5.5		
PHF	.917	.813	.894	.872	.845	.966	.670	.922	.800	.794	.938	.834	.913	.911	.583	.930	.967

Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:45 PM

City of Lancaster
 N/S: 25th Street West
 E/W: Avenue J
 Weather: Clear

File Name : LAN25JPM
 Site Code : 10814234
 Start Date : 6/3/2014
 Page No : 2



Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:30 PM				04:45 PM				04:30 PM				04:45 PM			
+0 mins.	12	46	27	85	48	189	13	250	11	39	18	68	40	111	15	166
+15 mins.	6	36	24	66	38	213	13	264	5	57	24	86	40	126	6	172
+30 mins.	4	44	26	74	50	214	22	286	5	41	23	69	34	111	4	149
+45 mins.	6	34	17	57	33	211	11	255	3	47	24	74	32	111	10	153
Total Volume	28	160	94	282	169	827	59	1055	24	184	89	297	146	459	35	640
% App. Total	9.9	56.7	33.3		16	78.4	5.6		8.1	62	30		22.8	71.7	5.5	
PHF	.583	.870	.870	.829	.845	.966	.670	.922	.545	.807	.927	.863	.913	.911	.583	.930

Location: Lancaster
 N/S: 25th Street West
 E/W: Avenue J



Date: 6/3/2014

WEEKDAY

	North Leg 25th Street West	East Leg Avenue J	South Leg 25th Street West	West Leg Avenue J	TOTAL
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
6:00 AM	0	0	0	0	0
6:15 AM	0	0	0	0	0
6:30 AM	1	1	1	0	3
6:45 AM	0	2	0	0	2
7:00 AM	2	1	0	0	3
7:15 AM	1	2	0	0	3
7:30 AM	1	0	3	1	5
7:45 AM	1	1	0	0	2
8:00 AM	2	0	1	0	3
8:15 AM	1	5	2	1	9
8:30 AM	0	1	0	0	1
8:45 AM	0	2	0	0	2
TOTAL VOLUMES:	9	15	7	2	33

	North Leg 25th Street West	East Leg Avenue J	South Leg 25th Street West	West Leg Avenue J	TOTAL
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	3	0	0	3
4:15 PM	2	1	1	1	5
4:30 PM	8	4	0	7	19
4:45 PM	0	2	0	0	2
5:00 PM	2	2	2	1	7
5:15 PM	3	5	4	3	15
5:30 PM	5	2	2	0	9
5:45 PM	1	1	0	0	2
6:00 PM	0	4	0	0	4
6:15 PM	3	2	0	6	11
6:30 PM	2	2	0	3	7
6:45 PM	3	4	1	2	10
TOTAL VOLUMES:	29	32	10	23	94

Location: Lancaster
 N/S: 25th Street West
 E/W: Avenue J



Date: 6/3/2014

WEEKDAY

	North Leg 25th Street West	East Leg Avenue J	South Leg 25th Street West	West Leg Avenue J	TOTAL
	Bicycles	Bicycles	Bicycles	Bicycles	
6:00 AM	0	0	0	0	0
6:15 AM	1	0	0	0	1
6:30 AM	2	0	0	0	2
6:45 AM	0	0	0	0	0
7:00 AM	0	0	0	0	0
7:15 AM	0	2	2	0	4
7:30 AM	2	0	0	0	2
7:45 AM	0	2	0	1	3
8:00 AM	0	1	1	0	2
8:15 AM	0	1	2	0	3
8:30 AM	0	0	2	0	2
8:45 AM	2	0	1	0	3
TOTAL VOLUMES:	7	6	8	1	22

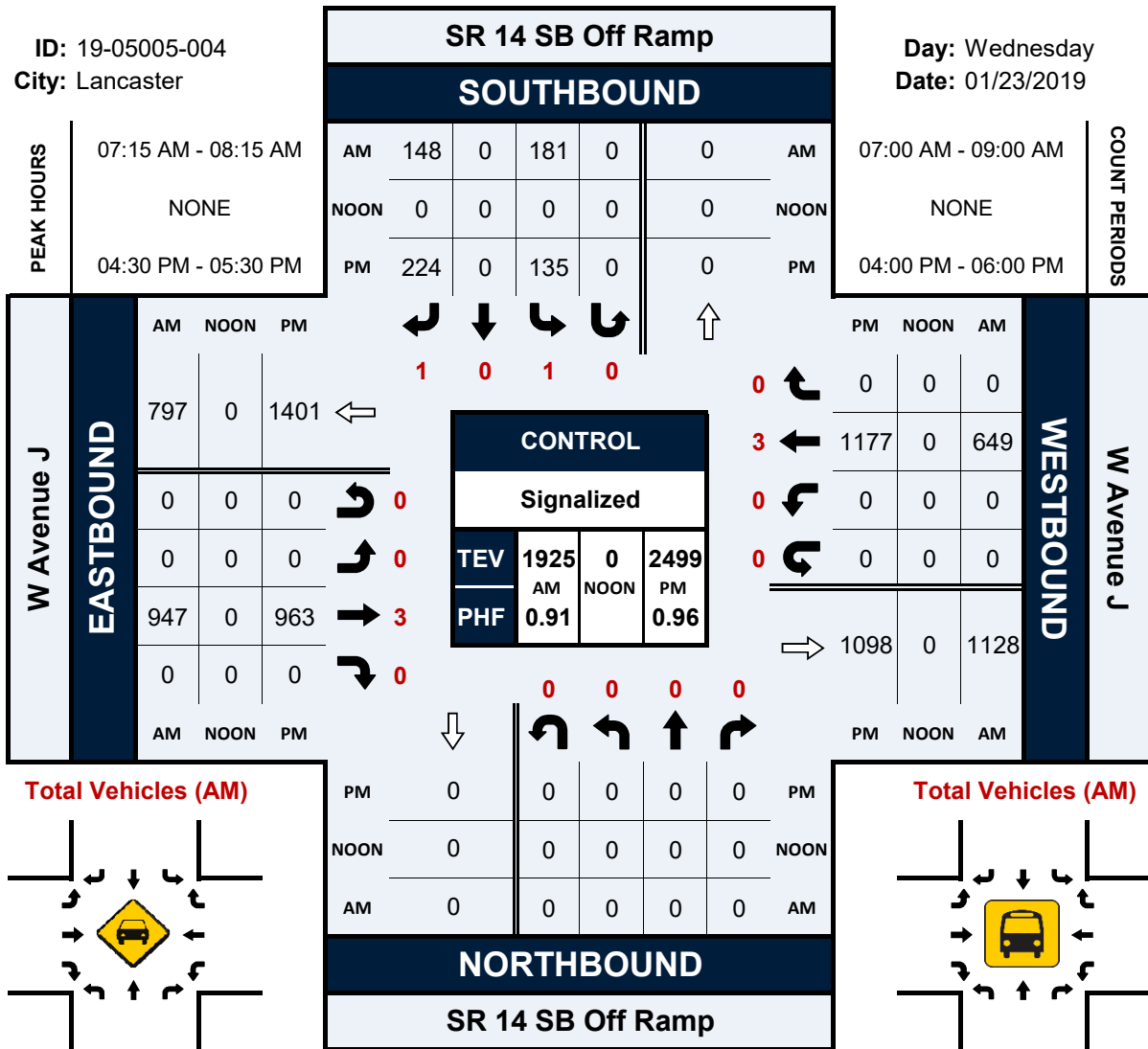
	North Leg 25th Street West	East Leg Avenue J	South Leg 25th Street West	West Leg Avenue J	TOTAL
	Bicycles	Bicycles	Bicycles	Bicycles	
4:00 PM	0	0	0	0	0
4:15 PM	0	0	1	0	1
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	1	1	1	1	4
5:15 PM	0	0	1	0	1
5:30 PM	0	0	0	0	0
5:45 PM	0	0	1	0	1
6:00 PM	0	1	2	1	4
6:15 PM	1	2	2	0	5
6:30 PM	0	1	0	1	2
6:45 PM	0	0	0	0	0
TOTAL VOLUMES:	2	5	8	3	18

SR 14 SB Off Ramp & W Avenue J

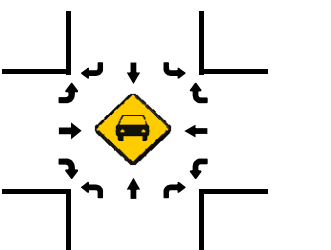
Peak Hour Turning Movement Count

ID: 19-05005-004
City: Lancaster

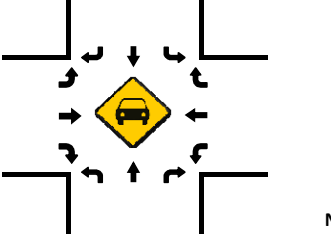
Day: Wednesday
Date: 01/23/2019



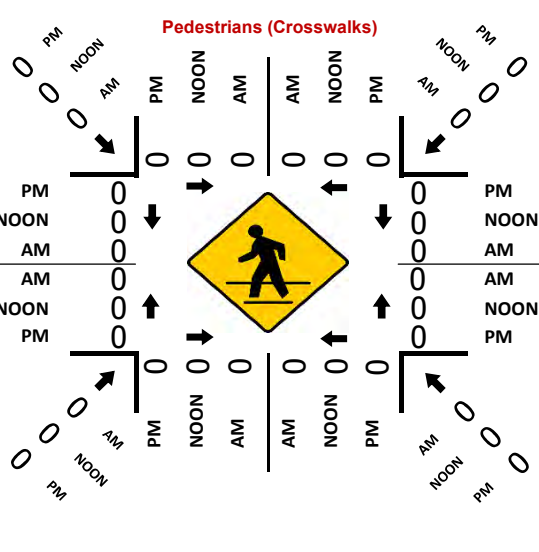
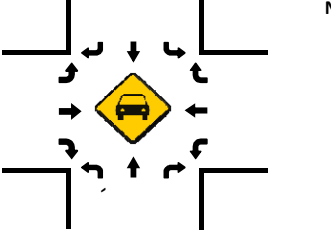
Total Vehicles (AM)



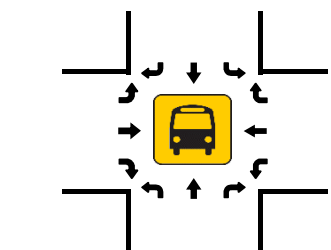
Total Vehicles (NOON)



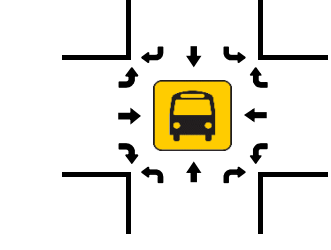
Total Vehicles (PM)



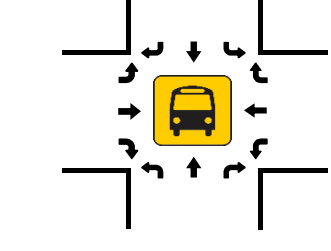
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)

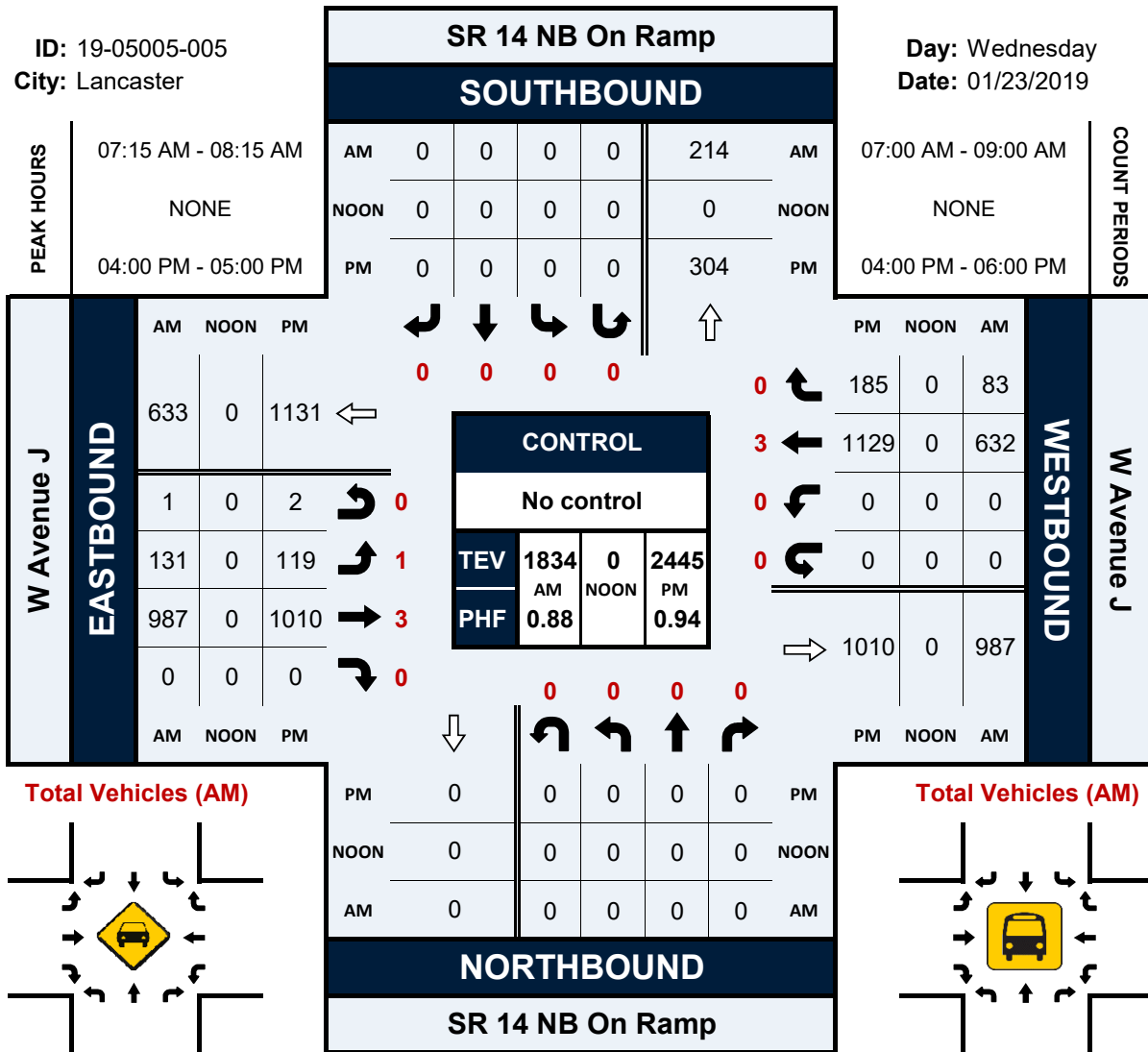


SR 14 NB On Ramp & W Avenue J

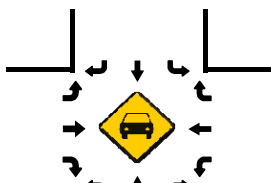
Peak Hour Turning Movement Count

ID: 19-05005-005
City: Lancaster

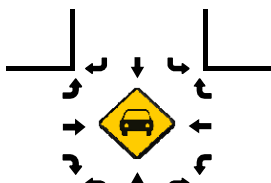
Day: Wednesday
Date: 01/23/2019



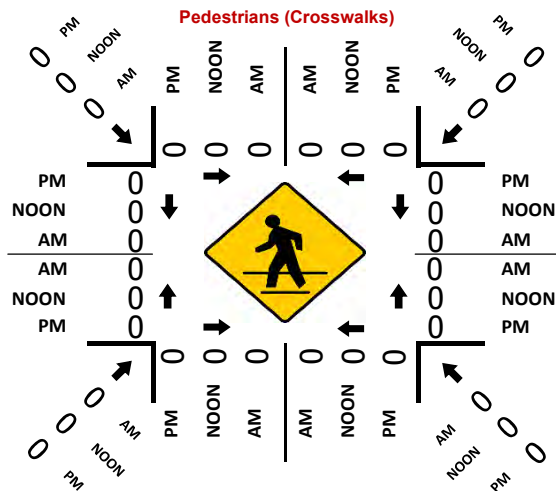
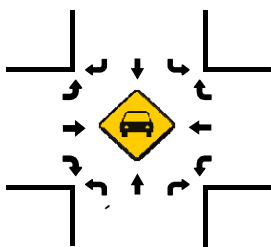
Total Vehicles (AM)



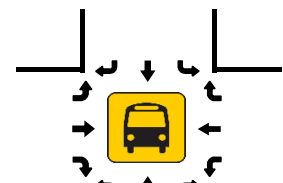
Total Vehicles (NOON)



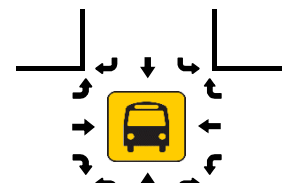
Total Vehicles (PM)



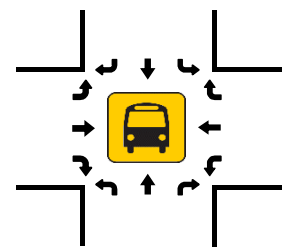
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)

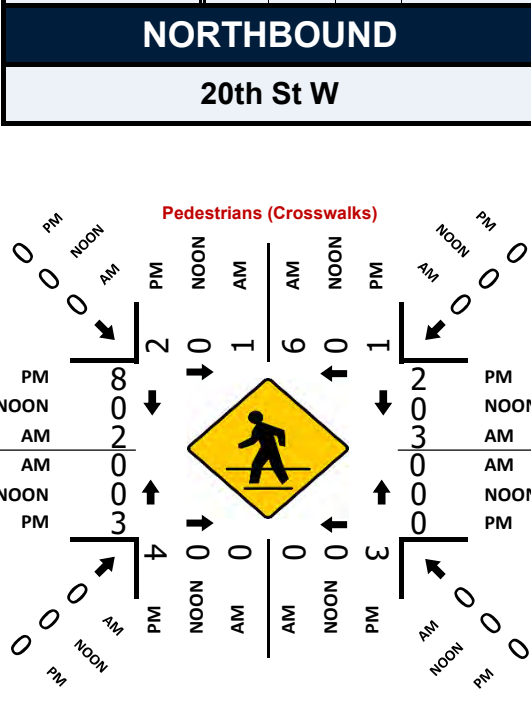
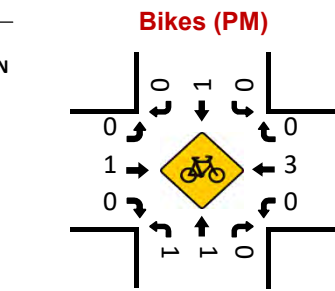
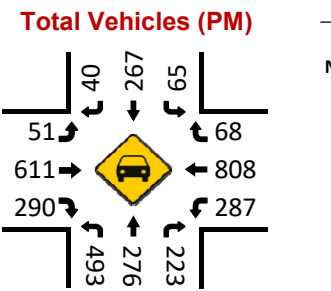
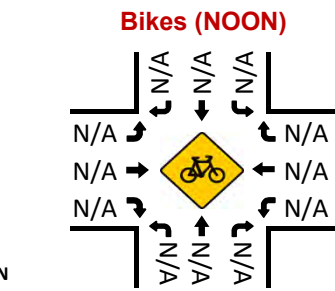
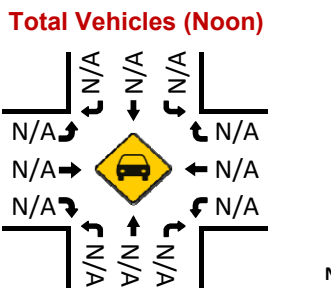
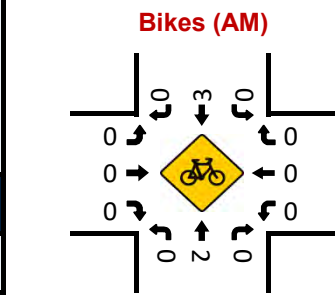
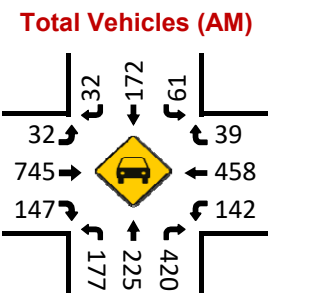
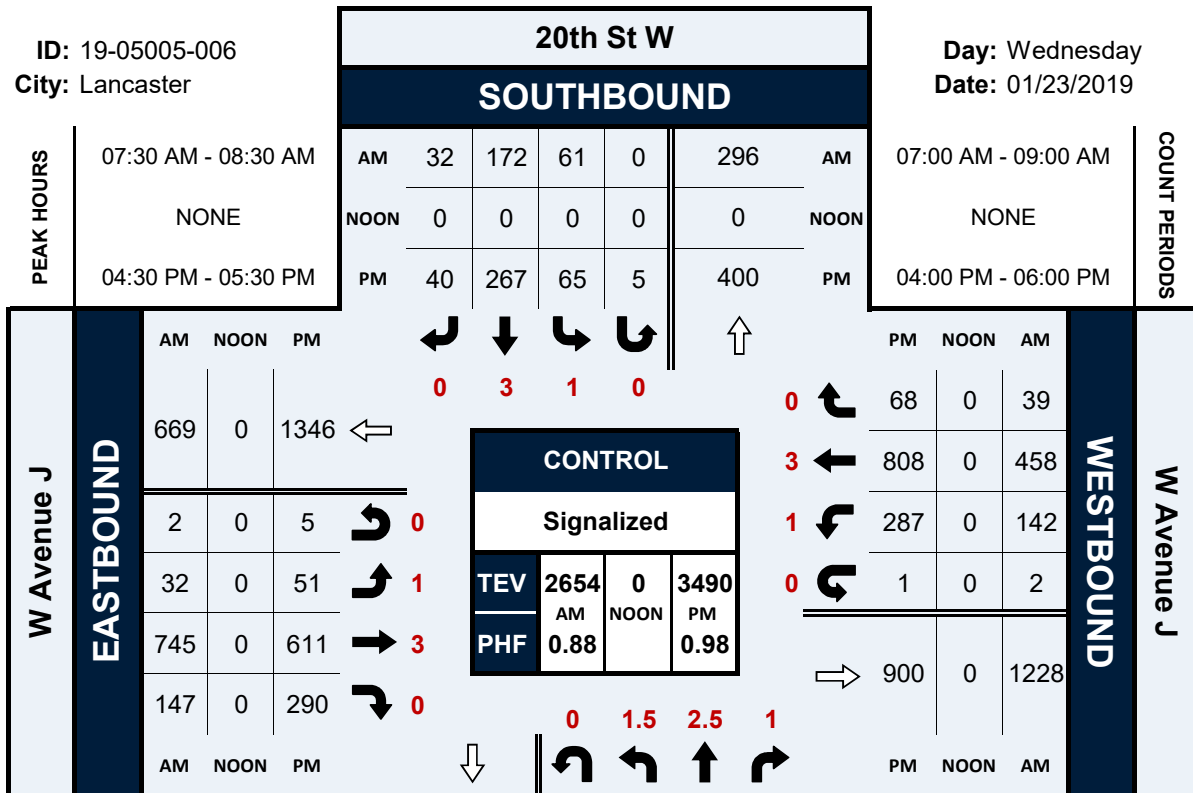


20th St W & W Avenue J

Peak Hour Turning Movement Count

ID: 19-05005-006
City: Lancaster

Day: Wednesday
Date: 01/23/2019

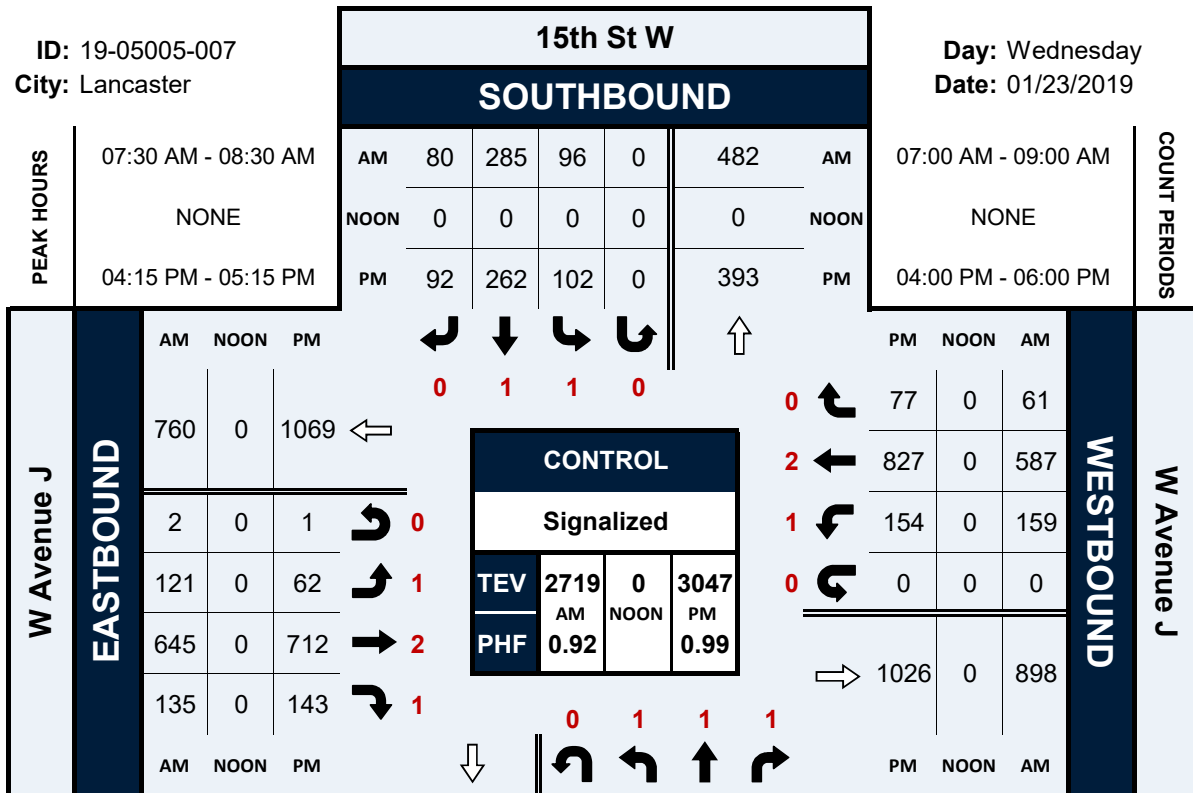


15th St W & W Avenue J

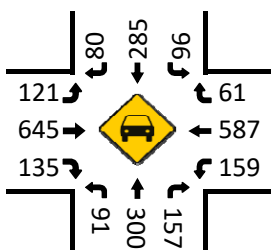
Peak Hour Turning Movement Count

ID: 19-05005-007
City: Lancaster

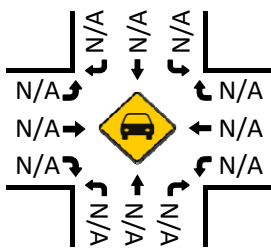
Day: Wednesday
Date: 01/23/2019



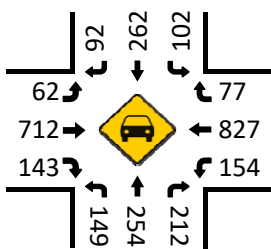
Total Vehicles (AM)



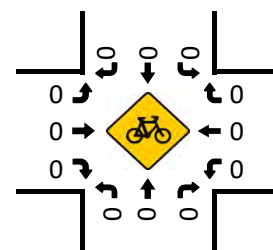
Total Vehicles (Noon)



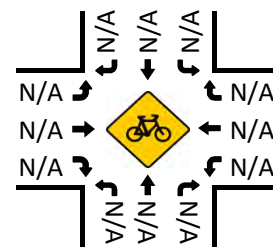
Total Vehicles (PM)



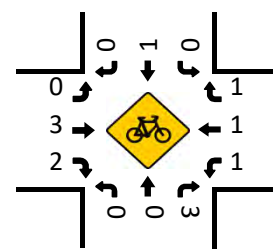
Bikes (AM)



Bikes (NOON)



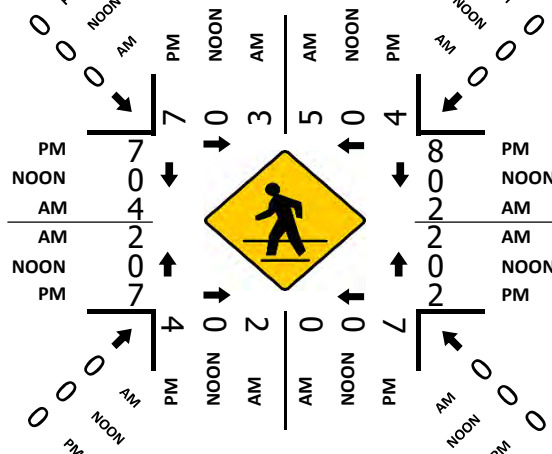
Bikes (PM)



15th St W NORTHBOUND

	15th St W NORTHBOUND				
	PM	NOON	AM	NOON	AM
PM	559	0	149	254	212
NOON	0	0	0	0	0
AM	579	0	91	300	157

Pedestrians (Crosswalks)

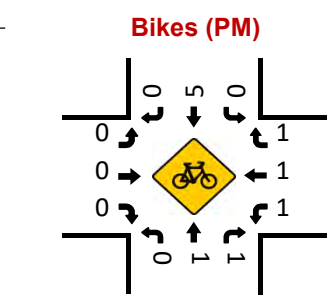
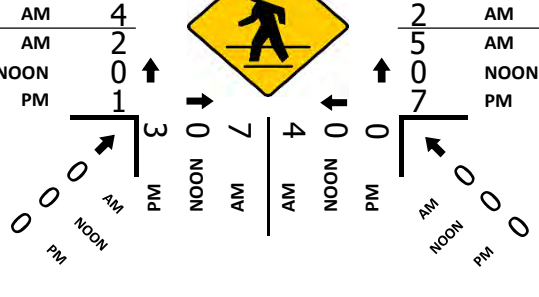
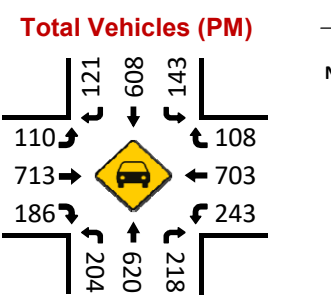
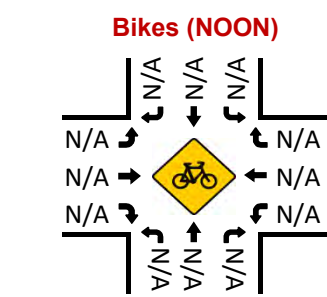
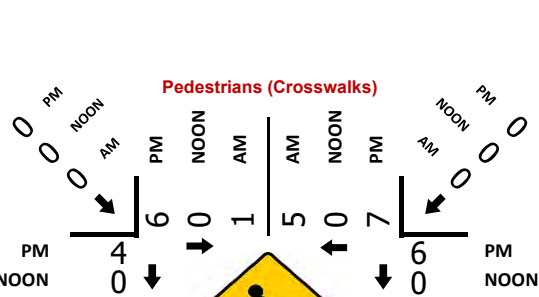
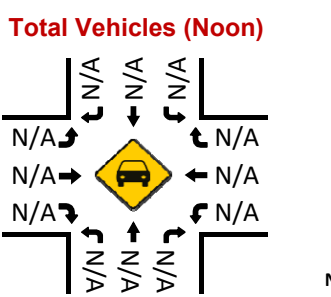
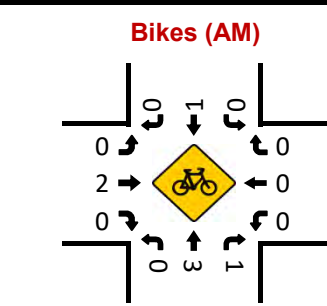
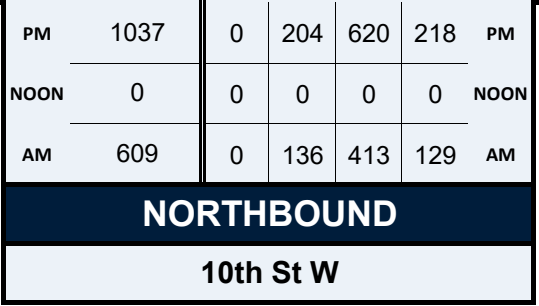
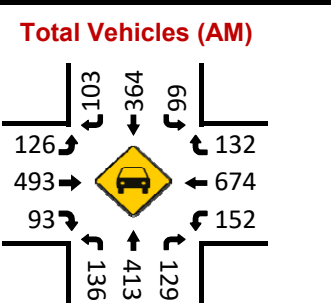
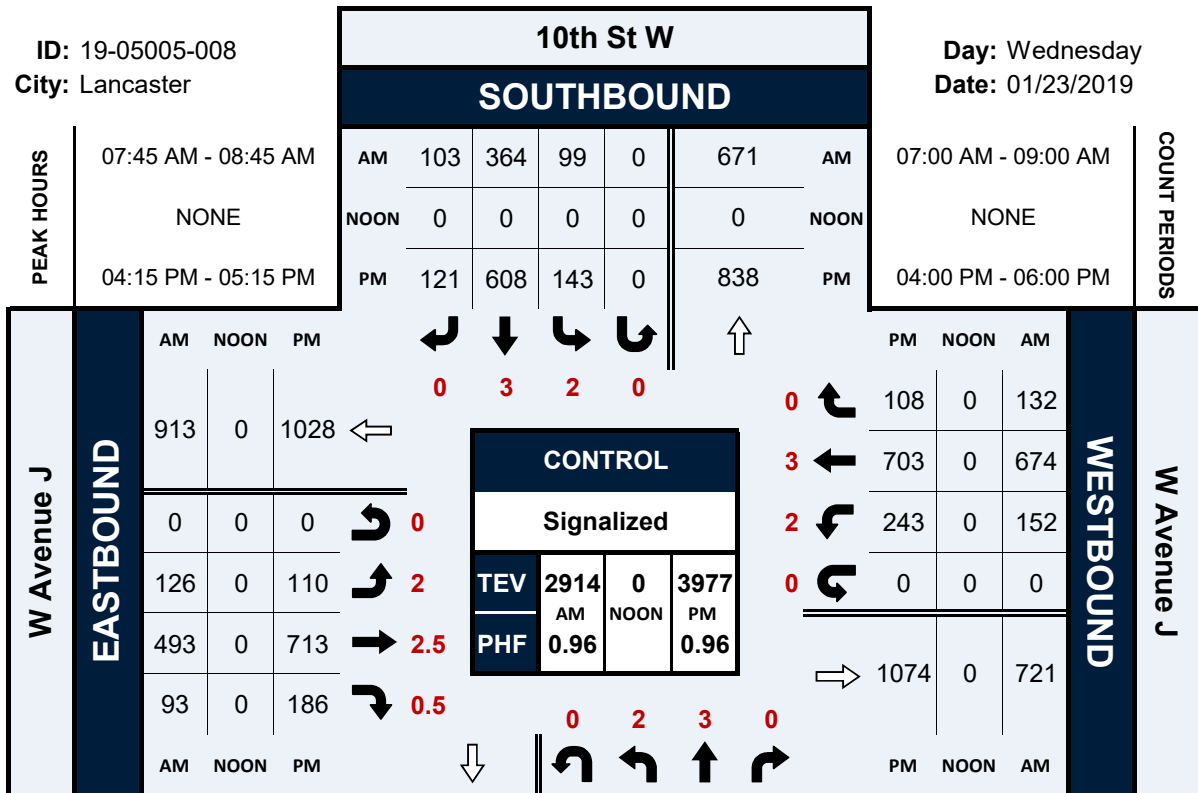


10th St W & W Avenue J

Peak Hour Turning Movement Count

ID: 19-05005-008
City: Lancaster

Day: Wednesday
Date: 01/23/2019



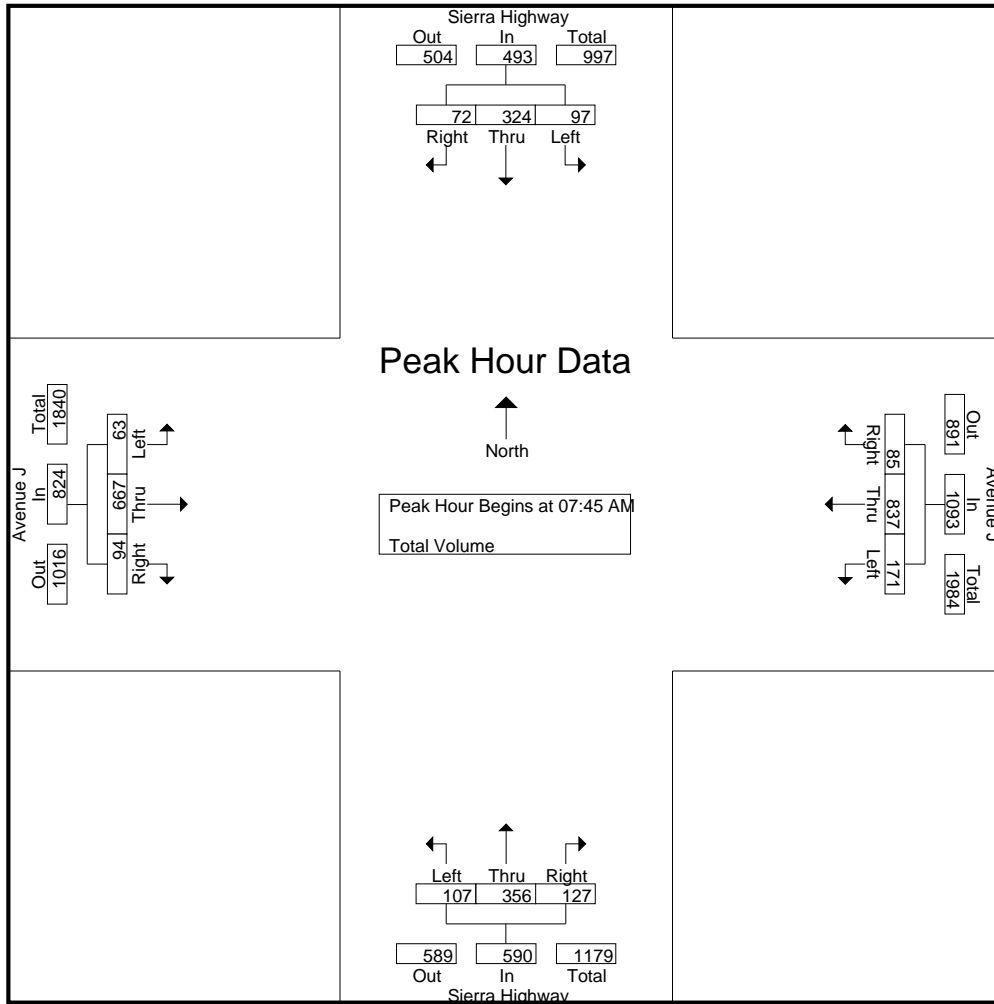
City of Lancaster
 N/S: Sierra Highway
 E/W: Avenue J
 Weather: Clear

File Name : LAN_SIERRA_AVE J_AM
 Site Code : 10815556
 Start Date : 10/20/2015
 Page No : 1

Groups Printed- Total Volume

Start Time	Sierra Highway Southbound				Avenue J Westbound				Sierra Highway Northbound				Avenue J Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:45 AM	30	83	26	139	45	233	14	292	30	107	31	168	19	187	14	220	819
Total	30	83	26	139	45	233	14	292	30	107	31	168	19	187	14	220	819
08:00 AM	27	76	19	122	37	226	23	286	22	86	51	159	11	203	30	244	811
08:15 AM	17	90	13	120	47	199	18	264	39	65	29	133	17	157	34	208	725
08:30 AM	23	75	14	112	42	179	30	251	16	98	16	130	16	120	16	152	645
08:45 AM	37	92	20	149	42	178	24	244	36	116	37	189	28	128	25	181	763
Total	104	333	66	503	168	782	95	1045	113	365	133	611	72	608	105	785	2944
09:00 AM	23	72	12	107	31	159	29	219	19	85	22	126	21	94	17	132	584
09:15 AM	21	67	19	107	27	220	23	270	22	74	33	129	26	150	23	199	705
09:30 AM	20	78	10	108	28	164	21	213	26	72	27	125	19	115	16	150	596
Grand Total	198	633	133	964	299	1558	182	2039	210	703	246	1159	157	1154	175	1486	5648
Apprch %	20.5	65.7	13.8		14.7	76.4	8.9		18.1	60.7	21.2		10.6	77.7	11.8		
Total %	3.5	11.2	2.4	17.1	5.3	27.6	3.2	36.1	3.7	12.4	4.4	20.5	2.8	20.4	3.1	26.3	

Start Time	Sierra Highway Southbound				Avenue J Westbound				Sierra Highway Northbound				Avenue J Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 09:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	30	83	26	139	45	233	14	292	30	107	31	168	19	187	14	220	819
08:00 AM	27	76	19	122	37	226	23	286	22	86	51	159	11	203	30	244	811
08:15 AM	17	90	13	120	47	199	18	264	39	65	29	133	17	157	34	208	725
08:30 AM	23	75	14	112	42	179	30	251	16	98	16	130	16	120	16	152	645
Total Volume	97	324	72	493	171	837	85	1093	107	356	127	590	63	667	94	824	3000
% App. Total	19.7	65.7	14.6		15.6	76.6	7.8		18.1	60.3	21.5		7.6	80.9	11.4		
PHF	.808	.900	.692	.887	.910	.898	.708	.936	.686	.832	.623	.878	.829	.821	.691	.844	.916



Peak Hour Analysis From 07:45 AM to 09:30 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	08:00 AM				07:45 AM				08:00 AM				07:45 AM			
+0 mins.	27	76	19	122	45	233	14	292	22	86	51	159	19	187	14	220
+15 mins.	17	90	13	120	37	226	23	286	39	65	29	133	11	203	30	244
+30 mins.	23	75	14	112	47	199	18	264	16	98	16	130	17	157	34	208
+45 mins.	37	92	20	149	42	179	30	251	36	116	37	189	16	120	16	152
Total Volume	104	333	66	503	171	837	85	1093	113	365	133	611	63	667	94	824
% App. Total	20.7	66.2	13.1		15.6	76.6	7.8		18.5	59.7	21.8		7.6	80.9	11.4	
PHF	.703	.905	.825	.844	.910	.898	.708	.936	.724	.787	.652	.808	.829	.821	.691	.844

City of Lancaster
 N/S: Sierra Highway
 E/W: Avenue J
 Weather: Clear

File Name : LAN_SIERRA_AVE J_MD
 Site Code : 10815556
 Start Date : 10/20/2015
 Page No : 1

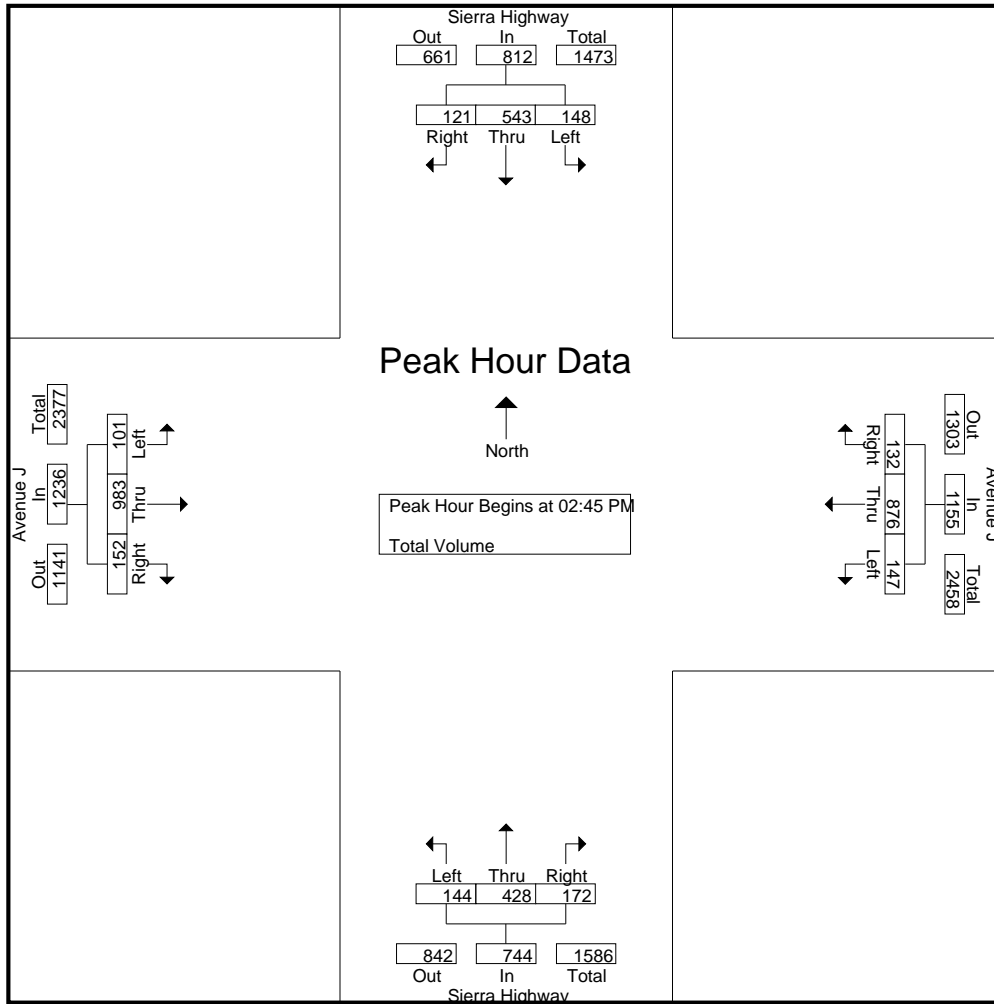
Groups Printed- Total Volume

Start Time	Sierra Highway Southbound				Avenue J Westbound				Sierra Highway Northbound				Avenue J Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
01:45 PM	39	106	25	170	34	203	31	268	35	80	26	141	24	204	35	263	842
Total	39	106	25	170	34	203	31	268	35	80	26	141	24	204	35	263	842
02:00 PM	33	90	24	147	30	160	25	215	25	74	40	139	23	239	35	297	798
02:15 PM	33	103	25	161	35	176	22	233	32	101	35	168	28	217	39	284	846
02:30 PM	38	112	27	177	49	215	29	293	23	92	40	155	31	213	23	267	892
02:45 PM	36	108	25	169	32	216	32	280	38	91	38	167	15	242	38	295	911
Total	140	413	101	654	146	767	108	1021	118	358	153	629	97	911	135	1143	3447
03:00 PM	44	141	41	226	35	228	31	294	26	130	34	190	36	254	31	321	1031
03:15 PM	33	119	25	177	30	206	32	268	46	110	52	208	24	255	47	326	979
03:30 PM	35	175	30	240	50	226	37	313	34	97	48	179	26	232	36	294	1026
Grand Total	291	954	222	1467	295	1630	239	2164	259	775	313	1347	207	1856	284	2347	7325
Apprch %	19.8	65	15.1		13.6	75.3	11		19.2	57.5	23.2		8.8	79.1	12.1		
Total %	4	13	3	20	4	22.3	3.3	29.5	3.5	10.6	4.3	18.4	2.8	25.3	3.9	32	

Start Time	Sierra Highway Southbound				Avenue J Westbound				Sierra Highway Northbound				Avenue J Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 01:45 PM to 03:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:45 PM																	
02:45 PM	36	108	25	169	32	216	32	280	38	91	38	167	15	242	38	295	911
03:00 PM	44	141	41	226	35	228	31	294	26	130	34	190	36	254	31	321	1031
03:15 PM	33	119	25	177	30	206	32	268	46	110	52	208	24	255	47	326	979
03:30 PM	35	175	30	240	50	226	37	313	34	97	48	179	26	232	36	294	1026
Total Volume	148	543	121	812	147	876	132	1155	144	428	172	744	101	983	152	1236	3947
% App. Total	18.2	66.9	14.9		12.7	75.8	11.4		19.4	57.5	23.1		8.2	79.5	12.3		
PHF	.841	.776	.738	.846	.735	.961	.892	.923	.783	.823	.827	.894	.701	.964	.809	.948	.957

City of Lancaster
 N/S: Sierra Highway
 E/W: Avenue J
 Weather: Clear

File Name : LAN_SIERRA_AVE J_MD
 Site Code : 10815556
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Peak Hour Analysis From 01:45 PM to 03:30 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	02:45 PM				02:45 PM				02:45 PM				02:45 PM			
+0 mins.	36	108	25	169	32	216	32	280	38	91	38	167	15	242	38	295
+15 mins.	44	141	41	226	35	228	31	294	26	130	34	190	36	254	31	321
+30 mins.	33	119	25	177	30	206	32	268	46	110	52	208	24	255	47	326
+45 mins.	35	175	30	240	50	226	37	313	34	97	48	179	26	232	36	294
Total Volume	148	543	121	812	147	876	132	1155	144	428	172	744	101	983	152	1236
% App. Total	18.2	66.9	14.9		12.7	75.8	11.4		19.4	57.5	23.1		8.2	79.5	12.3	
PHF	.841	.776	.738	.846	.735	.961	.892	.923	.783	.823	.827	.894	.701	.964	.809	.948

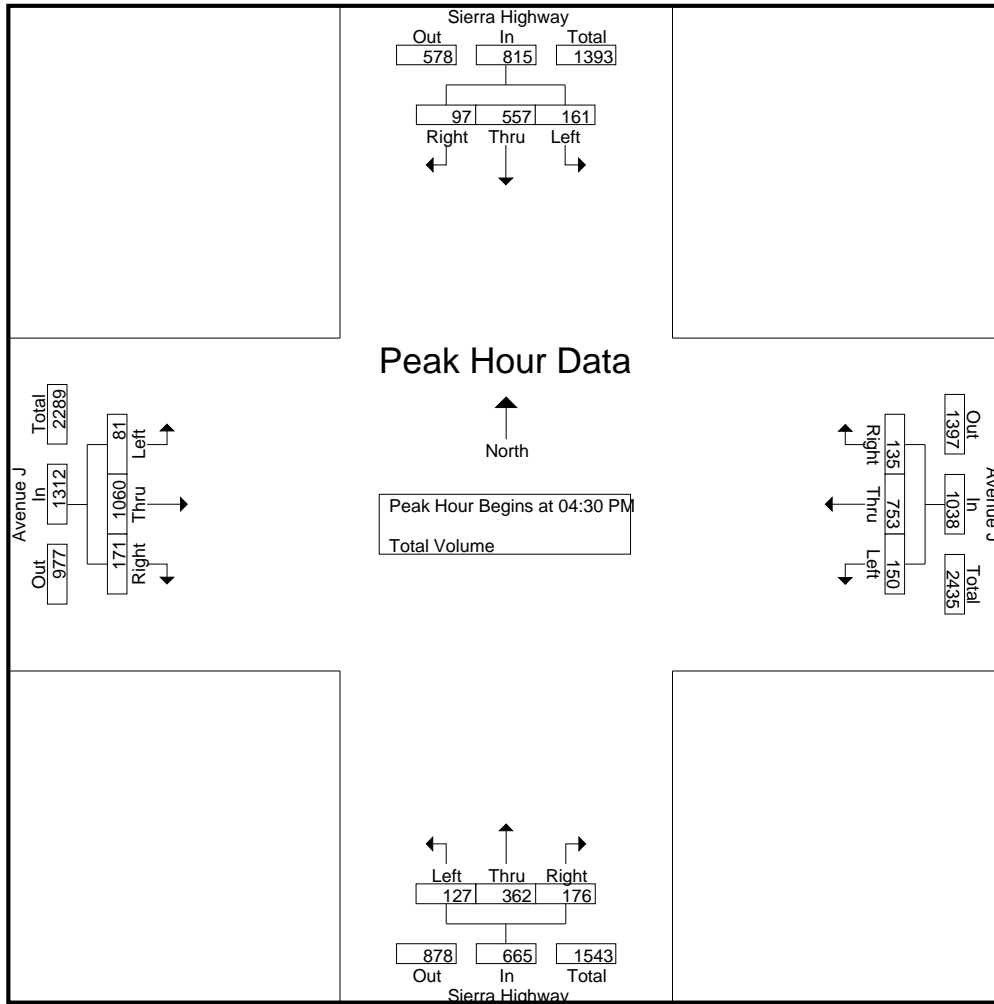
City of Lancaster
 N/S: Sierra Highway
 E/W: Avenue J
 Weather: Clear

File Name : LAN_SIERRA_AVE J_PM
 Site Code : 10815556
 Start Date : 10/20/2015
 Page No : 1

Groups Printed- Total Volume

Start Time	Sierra Highway Southbound				Avenue J Westbound				Sierra Highway Northbound				Avenue J Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
03:45 PM	33	126	34	193	42	203	27	272	36	96	44	176	32	242	34	308	949
Total	33	126	34	193	42	203	27	272	36	96	44	176	32	242	34	308	949
04:00 PM	46	144	23	213	35	191	31	257	23	76	32	131	19	227	36	282	883
04:15 PM	43	102	24	169	34	209	33	276	36	94	32	162	32	234	45	311	918
04:30 PM	35	157	23	215	40	188	20	248	35	80	45	160	17	216	52	285	908
04:45 PM	42	120	30	192	47	181	38	266	44	101	48	193	21	274	40	335	986
Total	166	523	100	789	156	769	122	1047	138	351	157	646	89	951	173	1213	3695
05:00 PM	45	160	27	232	30	177	36	243	25	77	41	143	25	295	42	362	980
05:15 PM	39	120	17	176	33	207	41	281	23	104	42	169	18	275	37	330	956
05:30 PM	28	136	33	197	38	173	35	246	34	122	38	194	25	202	37	264	901
Grand Total	311	1065	211	1587	299	1529	261	2089	256	750	322	1328	189	1965	323	2477	7481
Apprch %	19.6	67.1	13.3		14.3	73.2	12.5		19.3	56.5	24.2		7.6	79.3	13		
Total %	4.2	14.2	2.8	21.2	4	20.4	3.5	27.9	3.4	10	4.3	17.8	2.5	26.3	4.3	33.1	

Start Time	Sierra Highway Southbound				Avenue J Westbound				Sierra Highway Northbound				Avenue J Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 03:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	35	157	23	215	40	188	20	248	35	80	45	160	17	216	52	285	908
04:45 PM	42	120	30	192	47	181	38	266	44	101	48	193	21	274	40	335	986
05:00 PM	45	160	27	232	30	177	36	243	25	77	41	143	25	295	42	362	980
05:15 PM	39	120	17	176	33	207	41	281	23	104	42	169	18	275	37	330	956
Total Volume	161	557	97	815	150	753	135	1038	127	362	176	665	81	1060	171	1312	3830
% App. Total	19.8	68.3	11.9		14.5	72.5	13		19.1	54.4	26.5		6.2	80.8	13		
PHF	.894	.870	.808	.878	.798	.909	.823	.923	.722	.870	.917	.861	.810	.898	.822	.906	.971



Peak Hour Analysis From 03:45 PM to 05:30 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:30 PM				03:45 PM				04:45 PM				04:30 PM			
+0 mins.	35	157	23	215	42	203	27	272	44	101	48	193	17	216	52	285
+15 mins.	42	120	30	192	35	191	31	257	25	77	41	143	21	274	40	335
+30 mins.	45	160	27	232	34	209	33	276	23	104	42	169	25	295	42	362
+45 mins.	39	120	17	176	40	188	20	248	34	122	38	194	18	275	37	330
Total Volume	161	557	97	815	151	791	111	1053	126	404	169	699	81	1060	171	1312
% App. Total	19.8	68.3	11.9		14.3	75.1	10.5		18	57.8	24.2		6.2	80.8	13	
PHF	.894	.870	.808	.878	.899	.946	.841	.954	.716	.828	.880	.901	.810	.898	.822	.906

Location: Lancaster
 N/S: Sierra Highway
 E/W: Avenue J



Date: 10/20/2015
 Day: Tuesday

PEDESTRIANS

	North Leg Sierra Highway	East Leg Avenue J	South Leg Sierra Highway	West Leg Avenue J	TOTAL
7:45 AM	0	9	9	2	20
8:00 AM	7	2	2	8	19
8:15 AM	1	4	4	6	15
8:30 AM	2	0	2	0	4
8:45 AM	7	3	3	10	23
9:00 AM	0	1	1	0	2
9:15 AM	2	2	2	1	7
9:30 AM	0	0	0	6	6
TOTAL VOLUMES:	19	21	23	33	96

	North Leg Sierra Highway	East Leg Avenue J	South Leg Sierra Highway	West Leg Avenue J	TOTAL
1:45 PM	4	2	2	5	13
2:00 PM	1	4	4	5	14
2:15 PM	1	1	1	2	5
2:30 PM	3	0	8	2	13
2:45 PM	3	2	2	11	18
3:00 PM	7	4	4	8	23
3:15 PM	1	10	10	11	32
3:30 PM	2	2	2	4	10
TOTAL VOLUMES:	22	25	33	48	128

	North Leg Sierra Highway	East Leg Avenue J	South Leg Sierra Highway	West Leg Avenue J	TOTAL
3:45 PM	2	0	6	3	11
4:00 PM	0	1	5	4	10
4:15 PM	5	1	8	2	16
4:30 PM	2	0	4	3	9
4:45 PM	5	0	8	4	17
5:00 PM	0	4	0	4	8
5:15 PM	2	0	2	8	12
5:30 PM	2	1	5	4	12
TOTAL VOLUMES:	18	7	38	32	95

Location: Lancaster
 N/S: Sierra Highway
 E/W: Avenue J



Date: 10/20/2015
 Day: Tuesday

BICYCLES

	North Leg Sierra Highway	East Leg Avenue J	South Leg Sierra Highway	West Leg Avenue J	TOTAL
7:45 AM	0	0	2	1	3
8:00 AM	0	0	1	3	4
8:15 AM	0	0	2	1	3
8:30 AM	0	0	1	0	1
8:45 AM	1	1	1	1	4
9:00 AM	0	0	4	0	4
9:15 AM	0	0	4	0	4
9:30 AM	1	3	2	2	8
TOTAL VOLUMES:	2	4	17	8	31

	North Leg Sierra Highway	East Leg Avenue J	South Leg Sierra Highway	West Leg Avenue J	TOTAL
1:45 PM	0	1	0	0	1
2:00 PM	1	0	1	1	3
2:15 PM	0	0	2	0	2
2:30 PM	0	0	1	2	3
2:45 PM	3	0	2	1	6
3:00 PM	1	0	3	1	5
3:15 PM	2	3	2	0	7
3:30 PM	3	0	1	1	5
TOTAL VOLUMES:	10	4	12	6	32

	North Leg Sierra Highway	East Leg Avenue J	South Leg Sierra Highway	West Leg Avenue J	TOTAL
3:45 PM	1	0	1	0	2
4:00 PM	0	2	2	1	5
4:15 PM	1	0	0	0	1
4:30 PM	0	0	0	0	0
4:45 PM	0	1	1	0	2
5:00 PM	1	1	0	3	5
5:15 PM	0	0	0	0	0
5:30 PM	1	2	3	1	7
TOTAL VOLUMES:	4	6	7	5	22

City of Lancaster
 N/S: Division Street
 E/W: Avenue J
 Weather: Clear

File Name : LAN_DIVISION_AVE J_AM
 Site Code : 10815556
 Start Date : 10/20/2015
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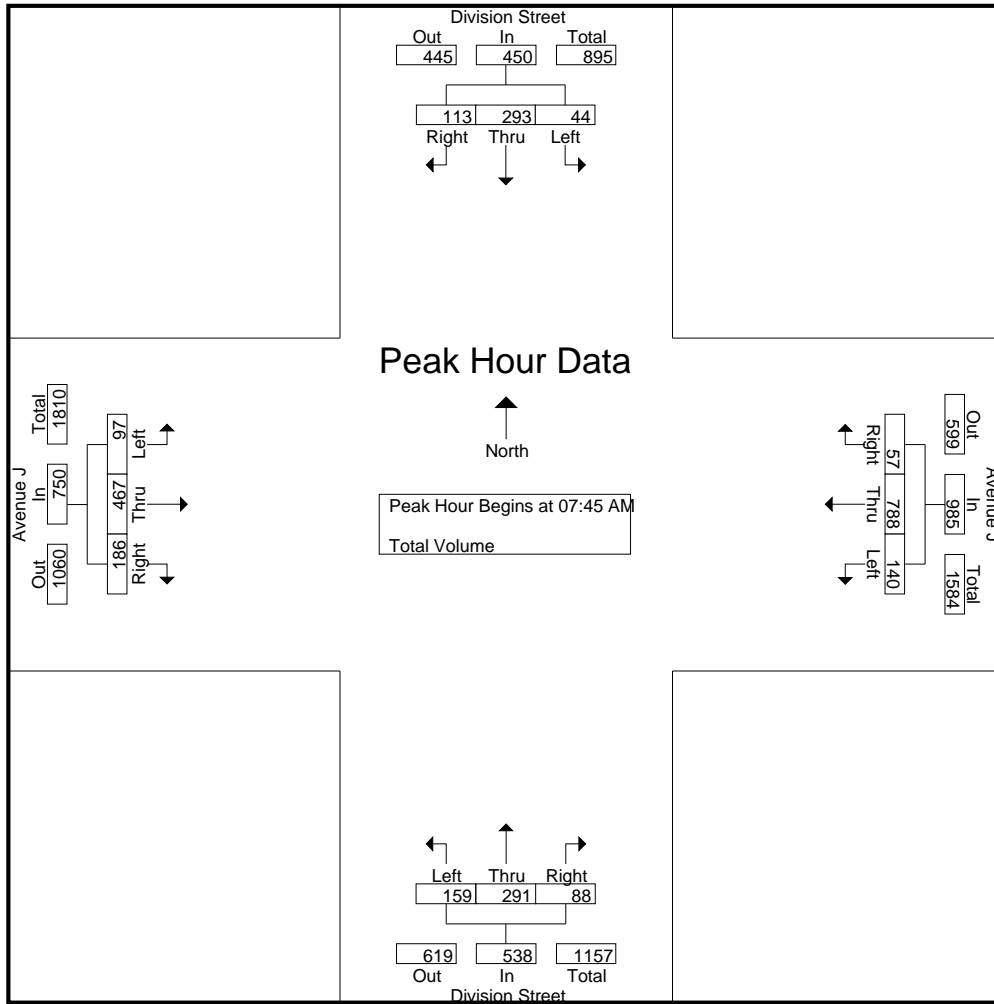
Groups Printed- Total Volume

Start Time	Division Street Southbound				Avenue J Westbound				Division Street Northbound				Avenue J Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:45 AM	11	75	35	121	25	212	16	253	39	79	26	144	20	124	51	195	713
Total	11	75	35	121	25	212	16	253	39	79	26	144	20	124	51	195	713
08:00 AM	10	74	24	108	42	191	13	246	42	72	24	138	35	154	50	239	731
08:15 AM	8	87	19	114	36	211	12	259	36	72	22	130	28	106	50	184	687
08:30 AM	15	57	35	107	37	174	16	227	42	68	16	126	14	83	35	132	592
08:45 AM	15	53	28	96	33	157	12	202	53	72	29	154	22	108	47	177	629
Total	48	271	106	425	148	733	53	934	173	284	91	548	99	451	182	732	2639
09:00 AM	8	40	17	65	24	172	3	199	49	61	23	133	19	100	30	149	546
09:15 AM	11	42	21	74	22	143	13	178	46	59	23	128	14	116	35	165	545
09:30 AM	8	58	19	85	21	159	14	194	39	56	13	108	21	97	27	145	532
Grand Total	86	486	198	770	240	1419	99	1758	346	539	176	1061	173	888	325	1386	4975
Apprch %	11.2	63.1	25.7		13.7	80.7	5.6		32.6	50.8	16.6		12.5	64.1	23.4		
Total %	1.7	9.8	4	15.5	4.8	28.5	2	35.3	7	10.8	3.5	21.3	3.5	17.8	6.5	27.9	

Start Time	Division Street Southbound				Avenue J Westbound				Division Street Northbound				Avenue J Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 09:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	11	75	35	121	25	212	16	253	39	79	26	144	20	124	51	195	713
08:00 AM	10	74	24	108	42	191	13	246	42	72	24	138	35	154	50	239	731
08:15 AM	8	87	19	114	36	211	12	259	36	72	22	130	28	106	50	184	687
08:30 AM	15	57	35	107	37	174	16	227	42	68	16	126	14	83	35	132	592
Total Volume	44	293	113	450	140	788	57	985	159	291	88	538	97	467	186	750	2723
% App. Total	9.8	65.1	25.1		14.2	80	5.8		29.6	54.1	16.4		12.9	62.3	24.8		
PHF	.733	.842	.807	.930	.833	.929	.891	.951	.946	.921	.846	.934	.693	.758	.912	.785	.931

City of Lancaster
 N/S: Division Street
 E/W: Avenue J
 Weather: Clear

File Name : LAN_DIVISION_AVE J_AM
 Site Code : 10815556
 Start Date : 10/20/2015
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Peak Hour Analysis From 07:45 AM to 09:30 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				08:00 AM				07:45 AM			
+0 mins.	11	75	35	121	25	212	16	253	42	72	24	138	20	124	51	195
+15 mins.	10	74	24	108	42	191	13	246	36	72	22	130	35	154	50	239
+30 mins.	8	87	19	114	36	211	12	259	42	68	16	126	28	106	50	184
+45 mins.	15	57	35	107	37	174	16	227	53	72	29	154	14	83	35	132
Total Volume	44	293	113	450	140	788	57	985	173	284	91	548	97	467	186	750
% App. Total	9.8	65.1	25.1		14.2	80	5.8		31.6	51.8	16.6		12.9	62.3	24.8	
PHF	.733	.842	.807	.930	.833	.929	.891	.951	.816	.986	.784	.890	.693	.758	.912	.785

City of Lancaster
 N/S: Division Street
 E/W: Avenue J
 Weather: Clear

File Name : LAN_DIVISION_AVE J_MD
 Site Code : 10815556
 Start Date : 10/20/2015
 Page No : 1

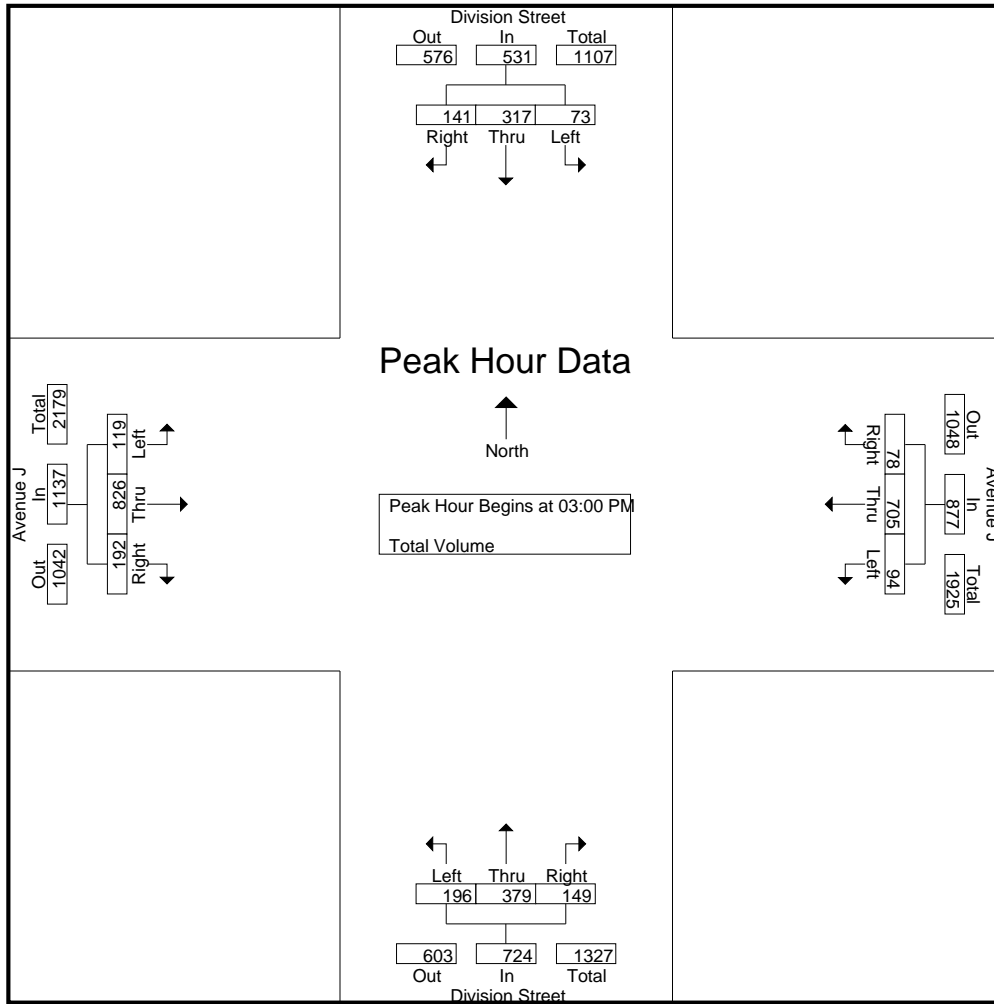
Groups Printed- Total Volume

Start Time	Division Street Southbound				Avenue J Westbound				Division Street Northbound				Avenue J Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
02:00 PM	17	58	24	99	23	146	9	178	40	72	34	146	30	187	41	258	681
02:15 PM	18	72	27	117	19	153	19	191	42	94	30	166	32	160	40	232	706
02:30 PM	26	104	41	171	23	157	28	208	57	92	32	181	32	184	43	259	819
02:45 PM	19	77	34	130	25	186	17	228	44	89	30	163	31	192	53	276	797
Total	80	311	126	517	90	642	73	805	183	347	126	656	125	723	177	1025	3003
03:00 PM	14	66	33	113	24	178	19	221	48	86	35	169	38	207	58	303	806
03:15 PM	21	93	47	161	22	162	11	195	47	97	33	177	39	225	45	309	842
03:30 PM	16	74	38	128	25	184	26	235	58	101	47	206	26	178	47	251	820
03:45 PM	22	84	23	129	23	181	22	226	43	95	34	172	16	216	42	274	801
Total	73	317	141	531	94	705	78	877	196	379	149	724	119	826	192	1137	3269
Grand Total	153	628	267	1048	184	1347	151	1682	379	726	275	1380	244	1549	369	2162	6272
Apprch %	14.6	59.9	25.5		10.9	80.1	9		27.5	52.6	19.9		11.3	71.6	17.1		
Total %	2.4	10	4.3	16.7	2.9	21.5	2.4	26.8	6	11.6	4.4	22	3.9	24.7	5.9	34.5	

Start Time	Division Street Southbound				Avenue J Westbound				Division Street Northbound				Avenue J Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	14	66	33	113	24	178	19	221	48	86	35	169	38	207	58	303	806
03:15 PM	21	93	47	161	22	162	11	195	47	97	33	177	39	225	45	309	842
03:30 PM	16	74	38	128	25	184	26	235	58	101	47	206	26	178	47	251	820
03:45 PM	22	84	23	129	23	181	22	226	43	95	34	172	16	216	42	274	801
Total Volume	73	317	141	531	94	705	78	877	196	379	149	724	119	826	192	1137	3269
% App. Total	13.7	59.7	26.6		10.7	80.4	8.9		27.1	52.3	20.6		10.5	72.6	16.9		
PHF	.830	.852	.750	.825	.940	.958	.750	.933	.845	.938	.793	.879	.763	.918	.828	.920	.971

City of Lancaster
 N/S: Division Street
 E/W: Avenue J
 Weather: Clear

File Name : LAN_DIVISION_AVE J_MD
 Site Code : 10815556
 Start Date : 10/20/2015
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Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	02:30 PM				02:45 PM				03:00 PM				03:15 PM			
+0 mins.	26	104	41	171	25	186	17	228	48	86	35	169	32	184	43	259
+15 mins.	19	77	34	130	24	178	19	221	47	97	33	177	31	192	53	276
+30 mins.	14	66	33	113	22	162	11	195	58	101	47	206	38	207	58	303
+45 mins.	21	93	47	161	25	184	26	235	43	95	34	172	39	225	45	309
Total Volume	80	340	155	575	96	710	73	879	196	379	149	724	140	808	199	1147
% App. Total	13.9	59.1	27		10.9	80.8	8.3		27.1	52.3	20.6		12.2	70.4	17.3	
PHF	.769	.817	.824	.841	.960	.954	.702	.935	.845	.938	.793	.879	.897	.898	.858	.928

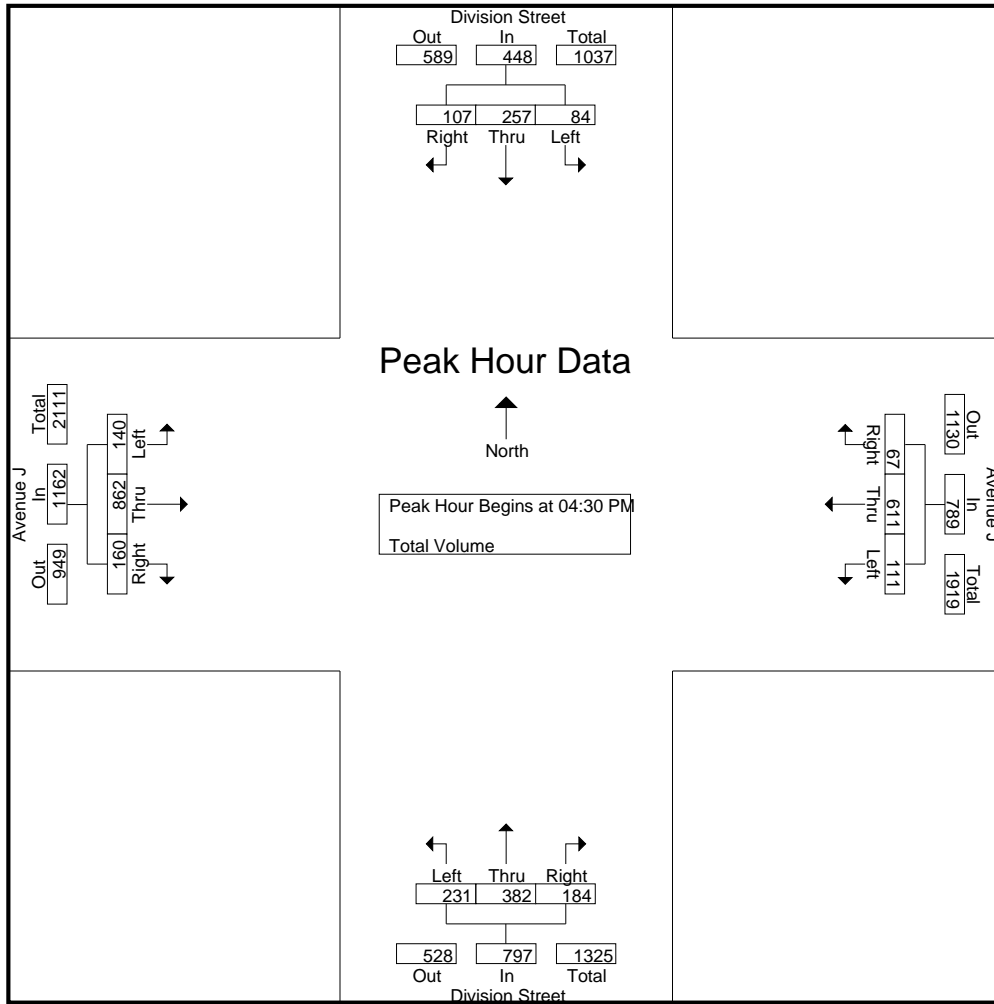
City of Lancaster
 N/S: Division Street
 E/W: Avenue J
 Weather: Clear

File Name : LAN_DIVISION_AVE J_PM
 Site Code : 10815556
 Start Date : 10/20/2015
 Page No : 1

Groups Printed- Total Volume

Start Time	Division Street Southbound				Avenue J Westbound				Division Street Northbound				Avenue J Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	17	59	33	109	23	153	19	195	51	94	33	178	35	193	47	275	757
04:15 PM	17	59	26	102	22	169	12	203	51	80	34	165	35	219	46	300	770
04:30 PM	17	59	26	102	32	153	17	202	56	88	35	179	22	179	31	232	715
04:45 PM	24	65	18	107	24	153	16	193	54	109	39	202	48	212	44	304	806
Total	75	242	103	420	101	628	64	793	212	371	141	724	140	803	168	1111	3048
05:00 PM	31	79	29	139	24	135	17	176	65	105	59	229	36	237	49	322	866
05:15 PM	12	54	34	100	31	170	17	218	56	80	51	187	34	234	36	304	809
05:30 PM	14	45	21	80	18	169	14	201	40	78	37	155	23	203	36	262	698
05:45 PM	17	45	38	100	25	160	13	198	32	63	28	123	32	214	45	291	712
Total	74	223	122	419	98	634	61	793	193	326	175	694	125	888	166	1179	3085
Grand Total	149	465	225	839	199	1262	125	1586	405	697	316	1418	265	1691	334	2290	6133
Apprch %	17.8	55.4	26.8		12.5	79.6	7.9		28.6	49.2	22.3		11.6	73.8	14.6		
Total %	2.4	7.6	3.7	13.7	3.2	20.6	2	25.9	6.6	11.4	5.2	23.1	4.3	27.6	5.4	37.3	

Start Time	Division Street Southbound				Avenue J Westbound				Division Street Northbound				Avenue J Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	17	59	26	102	32	153	17	202	56	88	35	179	22	179	31	232	715
04:45 PM	24	65	18	107	24	153	16	193	54	109	39	202	48	212	44	304	806
05:00 PM	31	79	29	139	24	135	17	176	65	105	59	229	36	237	49	322	866
05:15 PM	12	54	34	100	31	170	17	218	56	80	51	187	34	234	36	304	809
Total Volume	84	257	107	448	111	611	67	789	231	382	184	797	140	862	160	1162	3196
% App. Total	18.8	57.4	23.9		14.1	77.4	8.5		29	47.9	23.1		12	74.2	13.8		
PHF	.677	.813	.787	.806	.867	.899	.985	.905	.888	.876	.780	.870	.729	.909	.816	.902	.923



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:15 PM				04:00 PM				04:30 PM				04:45 PM			
+0 mins.	17	59	26	102	23	153	19	195	56	88	35	179	48	212	44	304
+15 mins.	17	59	26	102	22	169	12	203	54	109	39	202	36	237	49	322
+30 mins.	24	65	18	107	32	153	17	202	65	105	59	229	34	234	36	304
+45 mins.	31	79	29	139	24	153	16	193	56	80	51	187	23	203	36	262
Total Volume	89	262	99	450	101	628	64	793	231	382	184	797	141	886	165	1192
% App. Total	19.8	58.2	22		12.7	79.2	8.1		29	47.9	23.1		11.8	74.3	13.8	
PHF	.718	.829	.853	.809	.789	.929	.842	.977	.888	.876	.780	.870	.734	.935	.842	.925

Location: Lancaster
 N/S: Division Street
 E/W: Avenue J



Date: 10/20/2015
 Day: Tuesday

PEDESTRIANS

	North Leg Division Street	East Leg Avenue J	South Leg Division Street	West Leg Avenue J	TOTAL
7:45 AM	4	3	3	3	13
8:00 AM	1	2	1	1	5
8:15 AM	6	5	0	0	11
8:30 AM	2	0	0	0	2
8:45 AM	6	2	0	0	8
9:00 AM	2	2	1	1	6
9:15 AM	2	7	0	0	9
9:30 AM	4	3	1	1	9
TOTAL VOLUMES:	27	24	6	6	63

	North Leg Division Street	East Leg Avenue J	South Leg Division Street	West Leg Avenue J	TOTAL
2:00 PM	0	4	2	2	8
2:15 PM	1	8	3	3	15
2:30 PM	6	15	4	4	29
2:45 PM	4	0	0	0	4
3:00 PM	5	17	0	0	22
3:15 PM	3	9	0	0	12
3:30 PM	5	4	3	3	15
3:45 PM	0	3	2	2	7
TOTAL VOLUMES:	24	60	14	14	112

	North Leg Division Street	East Leg Avenue J	South Leg Division Street	West Leg Avenue J	TOTAL
4:00 PM	1	4	3	0	8
4:15 PM	1	5	1	8	15
4:30 PM	2	4	1	4	11
4:45 PM	4	0	6	1	11
5:00 PM	4	3	4	4	15
5:15 PM	0	7	1	0	8
5:30 PM	1	0	4	3	8
5:45 PM	0	3	4	0	7
TOTAL VOLUMES:	13	26	24	20	83

Location: Lancaster
 N/S: Division Street
 E/W: Avenue J



Date: 10/20/2015
 Day: Tuesday

BICYCLES

	North Leg Division Street	East Leg Avenue J	South Leg Division Street	West Leg Avenue J	TOTAL
7:45 AM	1	1	2	0	4
8:00 AM	0	1	0	0	1
8:15 AM	0	0	2	0	2
8:30 AM	0	0	1	2	3
8:45 AM	1	0	1	3	5
9:00 AM	2	0	2	0	4
9:15 AM	1	1	0	1	3
9:30 AM	3	3	2	0	8
TOTAL VOLUMES:	8	6	10	6	30

	North Leg Division Street	East Leg Avenue J	South Leg Division Street	West Leg Avenue J	TOTAL
2:00 PM	1	0	1	1	3
2:15 PM	2	0	0	0	2
2:30 PM	2	2	1	0	5
2:45 PM	0	0	3	1	4
3:00 PM	1	0	1	1	3
3:15 PM	2	3	2	1	8
3:30 PM	1	2	1	1	5
3:45 PM	0	0	1	0	1
TOTAL VOLUMES:	9	7	10	5	31

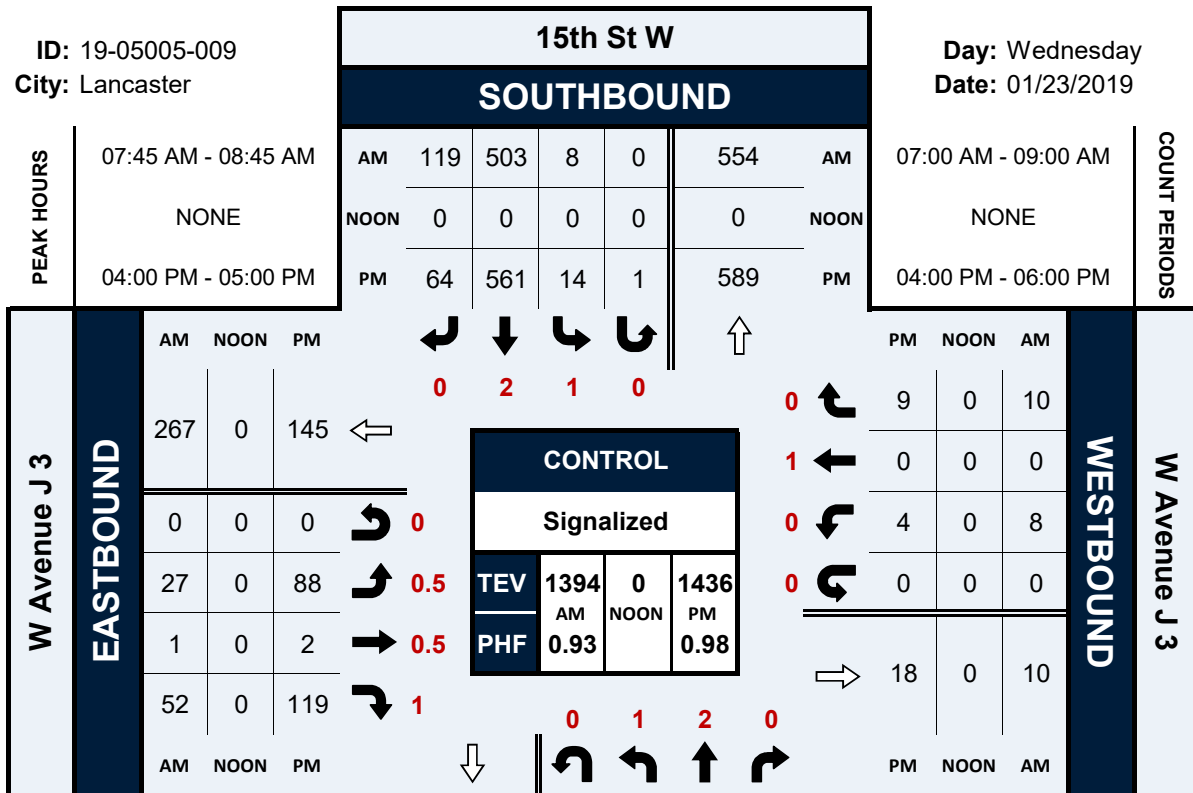
	North Leg Division Street	East Leg Avenue J	South Leg Division Street	West Leg Avenue J	TOTAL
4:00 PM	1	1	1	0	3
4:15 PM	1	0	0	0	1
4:30 PM	0	0	1	1	2
4:45 PM	0	0	2	0	2
5:00 PM	2	0	0	0	2
5:15 PM	1	1	0	0	2
5:30 PM	0	0	3	1	4
5:45 PM	1	1	1	2	5
TOTAL VOLUMES:	6	3	8	4	21

15th St W & W Avenue J 3

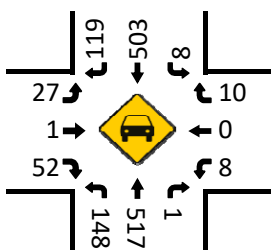
Peak Hour Turning Movement Count

ID: 19-05005-009
City: Lancaster

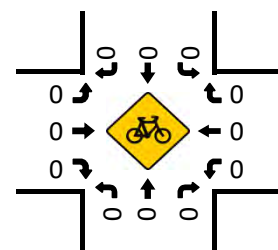
Day: Wednesday
Date: 01/23/2019



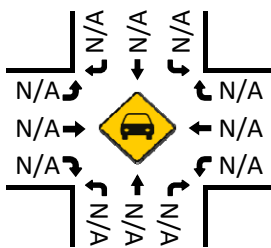
Total Vehicles (AM)



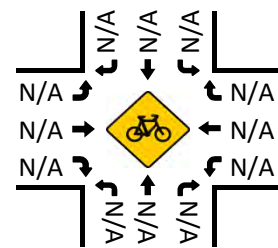
Bikes (AM)



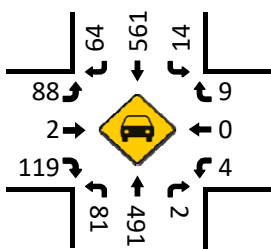
Total Vehicles (Noon)



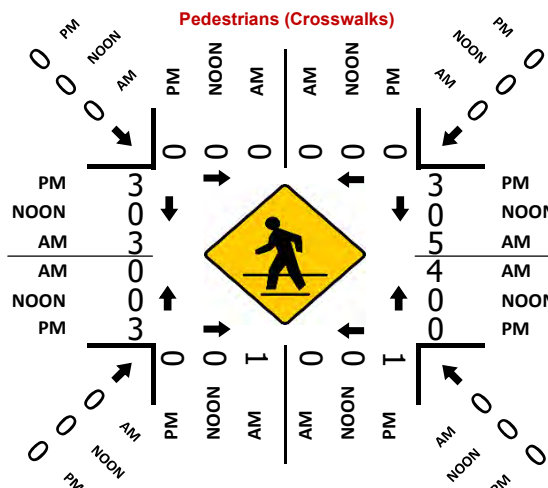
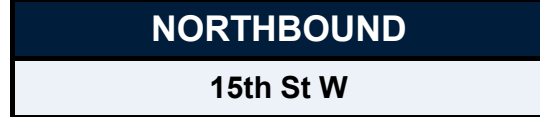
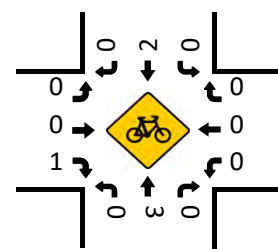
Bikes (NOON)



Total Vehicles (PM)



Bikes (PM)

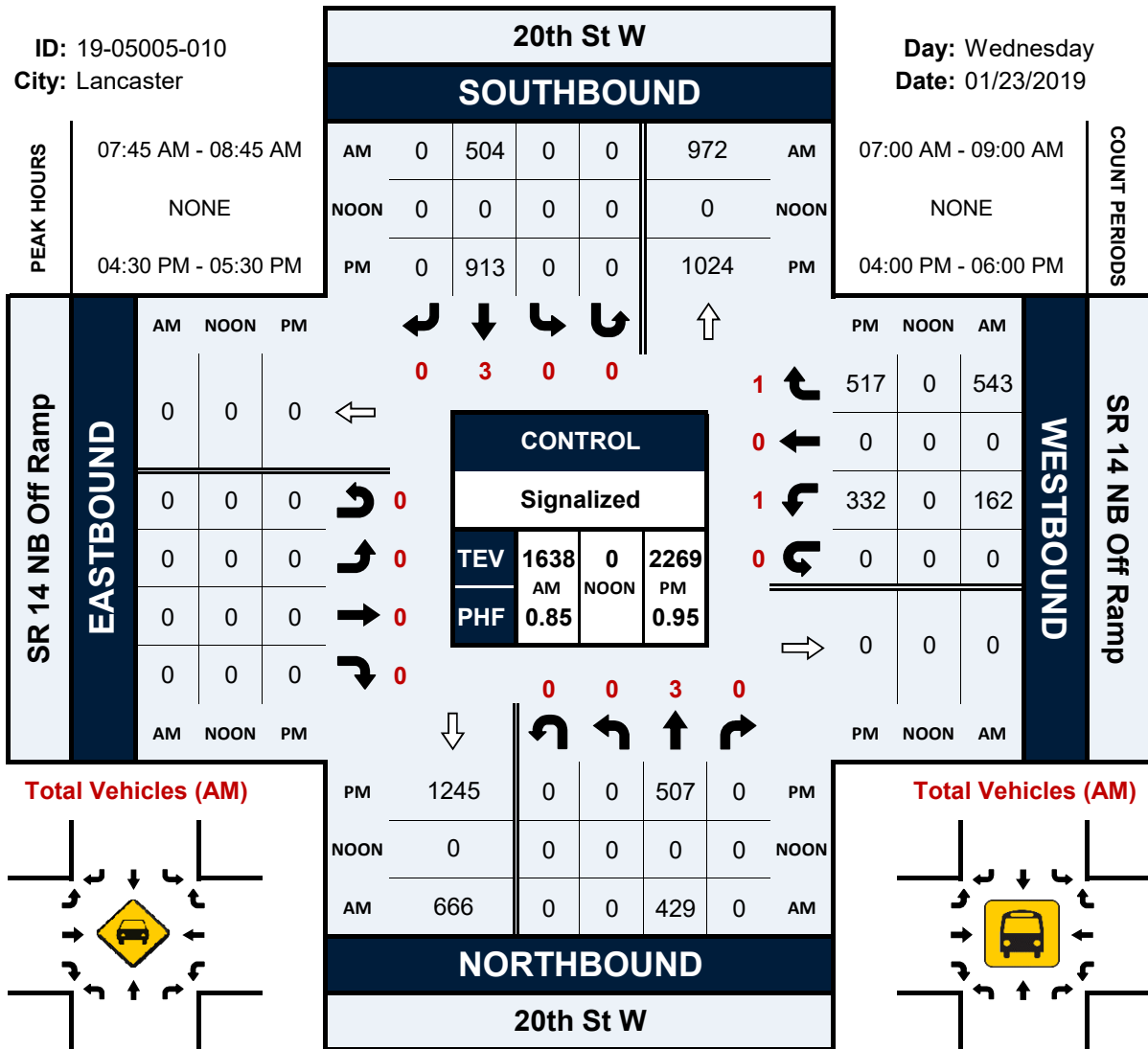


20th St W & SR 14 NB Off Ramp

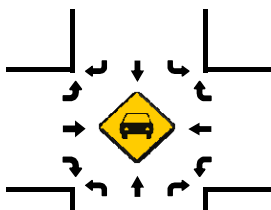
Peak Hour Turning Movement Count

ID: 19-05005-010
City: Lancaster

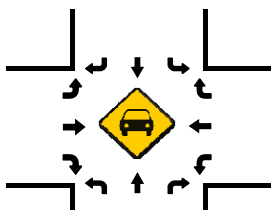
Day: Wednesday
Date: 01/23/2019



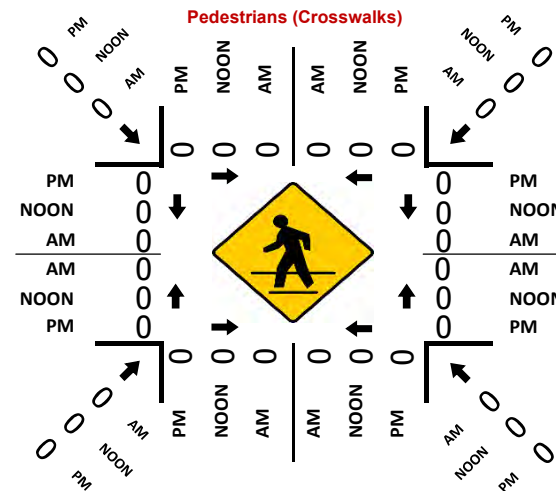
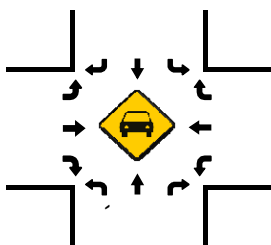
Total Vehicles (AM)



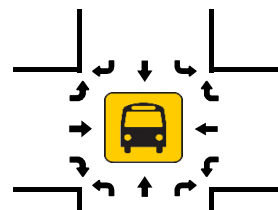
Total Vehicles (NOON)



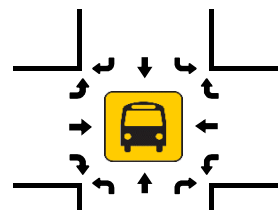
Total Vehicles (PM)



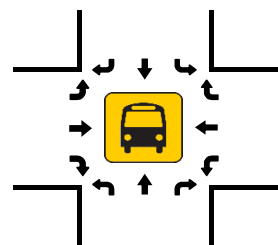
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



City of Lancaster
 N/S: 25th Street West
 E/W: Avenue J-8
 Weather: Clear

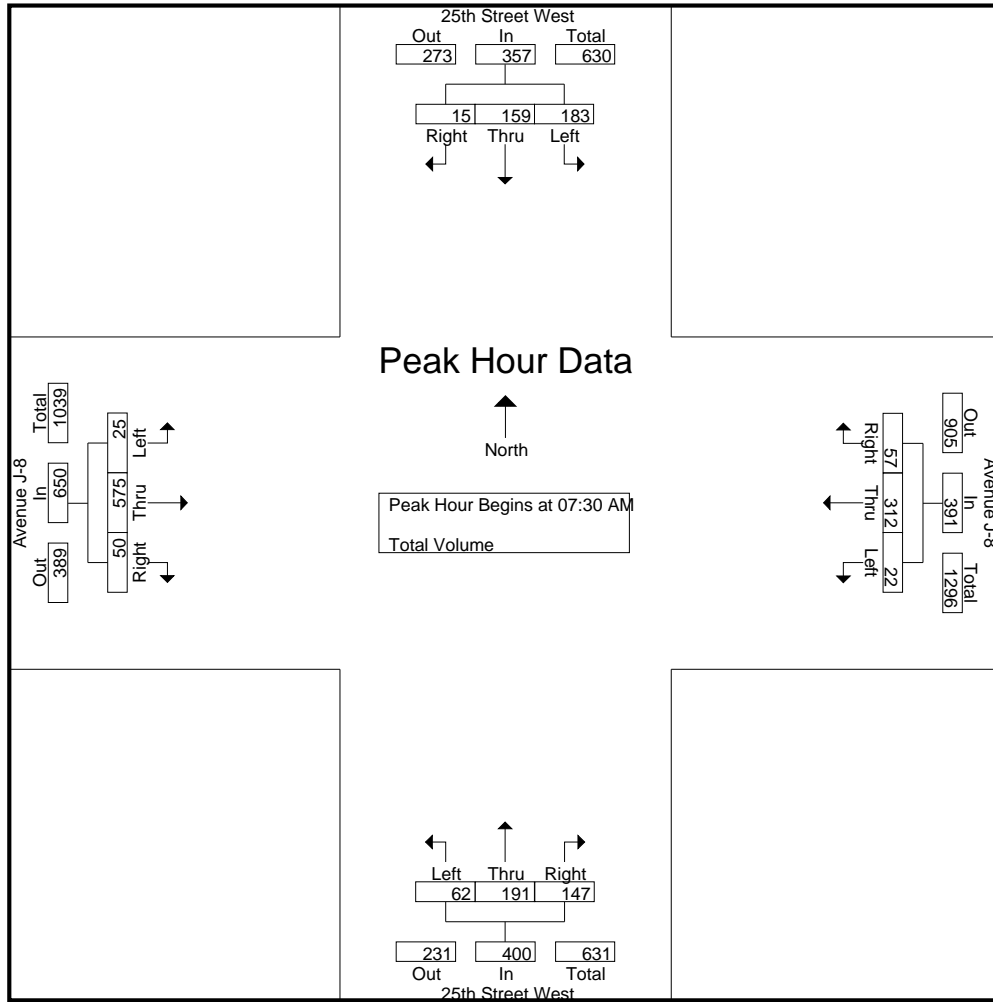
File Name : LAN25J8AM
 Site Code : 10814234
 Start Date : 6/4/2014
 Page No : 1

Groups Printed- Total Volume

Start Time	25th Street West Southbound				Avenue J-8 Westbound				25th Street West Northbound				Avenue J-8 Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:00 AM	16	5	0	21	0	10	4	14	1	8	1	10	4	51	2	57	102
06:15 AM	31	6	2	39	2	14	7	23	0	8	4	12	1	44	2	47	121
06:30 AM	21	13	0	34	1	19	7	27	8	16	10	34	3	98	1	102	197
06:45 AM	21	9	2	32	0	28	4	32	1	11	12	24	4	81	0	85	173
Total	89	33	4	126	3	71	22	96	10	43	27	80	12	274	5	291	593
07:00 AM	24	20	7	51	2	34	14	50	4	18	17	39	3	79	6	88	228
07:15 AM	40	27	2	69	5	51	9	65	15	36	39	90	7	126	4	137	361
07:30 AM	50	36	3	89	6	70	7	83	18	75	100	193	1	192	12	205	570
07:45 AM	43	35	5	83	4	67	12	83	8	45	22	75	10	155	7	172	413
Total	157	118	17	292	17	222	42	281	45	174	178	397	21	552	29	602	1572
08:00 AM	49	43	4	96	3	83	23	109	13	34	10	57	4	113	14	131	393
08:15 AM	41	45	3	89	9	92	15	116	23	37	15	75	10	115	17	142	422
08:30 AM	43	35	6	84	6	57	17	80	7	28	15	50	8	97	12	117	331
08:45 AM	27	26	6	59	2	39	12	53	5	40	14	59	3	106	6	115	286
Total	160	149	19	328	20	271	67	358	48	139	54	241	25	431	49	505	1432
Grand Total	406	300	40	746	40	564	131	735	103	356	259	718	58	1257	83	1398	3597
Apprch %	54.4	40.2	5.4		5.4	76.7	17.8		14.3	49.6	36.1		4.1	89.9	5.9		
Total %	11.3	8.3	1.1	20.7	1.1	15.7	3.6	20.4	2.9	9.9	7.2	20	1.6	34.9	2.3	38.9	

Start Time	25th Street West Southbound				Avenue J-8 Westbound				25th Street West Northbound				Avenue J-8 Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:30 AM	50	36	3	89	6	70	7	83	18	75	100	193	1	192	12	205	570
07:45 AM	43	35	5	83	4	67	12	83	8	45	22	75	10	155	7	172	413
08:00 AM	49	43	4	96	3	83	23	109	13	34	10	57	4	113	14	131	393
08:15 AM	41	45	3	89	9	92	15	116	23	37	15	75	10	115	17	142	422
Total Volume	183	159	15	357	22	312	57	391	62	191	147	400	25	575	50	650	1798
% App. Total	51.3	44.5	4.2		5.6	79.8	14.6		15.5	47.8	36.8		3.8	88.5	7.7		
PHF	.915	.883	.750	.930	.611	.848	.620	.843	.674	.637	.368	.518	.625	.749	.735	.793	.789

Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:30 AM



Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:15 AM				07:30 AM			
+0 mins.	50	36	3	89	6	70	7	83	15	36	39	90	1	192	12	205
+15 mins.	43	35	5	83	4	67	12	83	18	75	100	193	10	155	7	172
+30 mins.	49	43	4	96	3	83	23	109	8	45	22	75	4	113	14	131
+45 mins.	41	45	3	89	9	92	15	116	13	34	10	57	10	115	17	142
Total Volume	183	159	15	357	22	312	57	391	54	190	171	415	25	575	50	650
% App. Total	51.3	44.5	4.2		5.6	79.8	14.6		13	45.8	41.2		3.8	88.5	7.7	
PHF	.915	.883	.750	.930	.611	.848	.620	.843	.750	.633	.428	.538	.625	.749	.735	.793

City of Lancaster
 N/S: 25th Street West
 E/W: Avenue J-8
 Weather: Clear

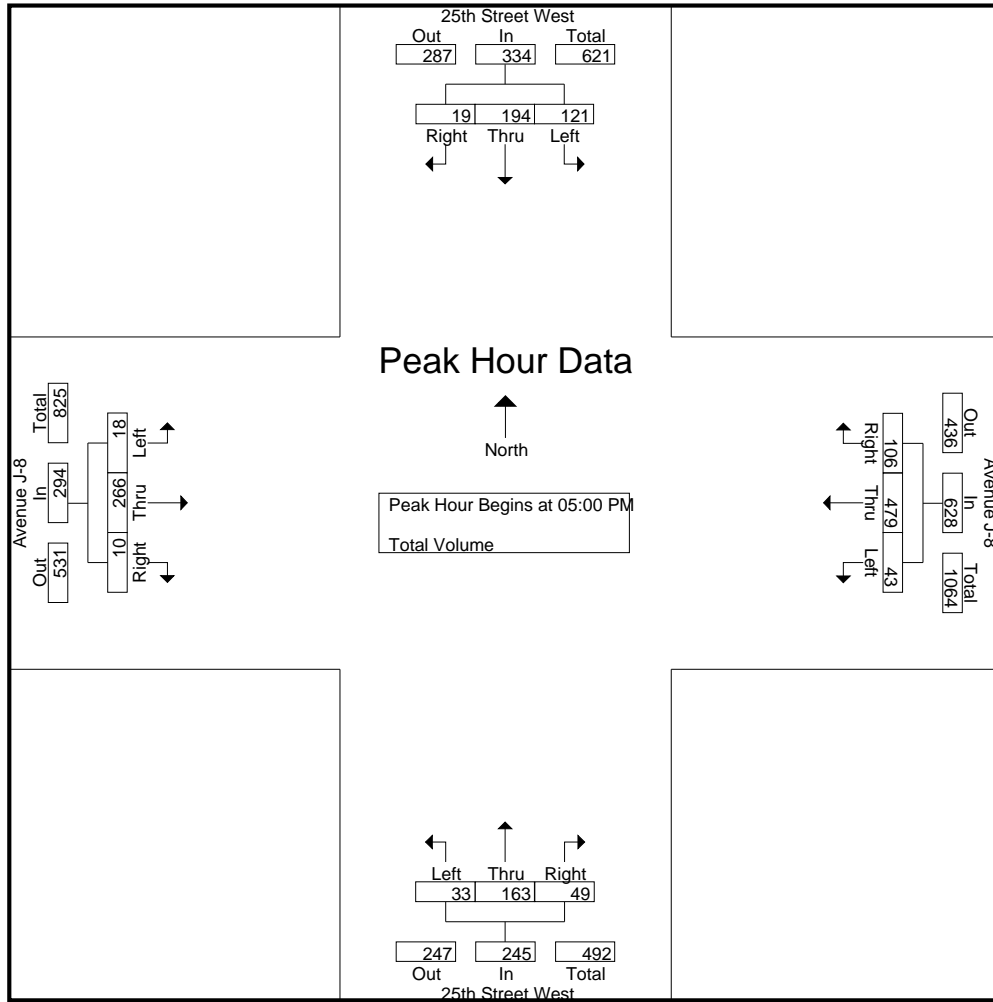
File Name : LAN25J8PM
 Site Code : 10814234
 Start Date : 6/4/2014
 Page No : 1

Groups Printed- Total Volume

Start Time	25th Street West Southbound				Avenue J-8 Westbound				25th Street West Northbound				Avenue J-8 Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	41	49	8	98	12	91	24	127	9	26	21	56	4	84	4	92	373
04:15 PM	28	41	9	78	18	119	30	167	13	35	15	63	5	68	5	78	386
04:30 PM	32	47	7	86	13	82	28	123	4	33	7	44	10	70	4	84	337
04:45 PM	25	40	10	75	9	142	27	178	3	37	9	49	5	62	4	71	373
Total	126	177	34	337	52	434	109	595	29	131	52	212	24	284	17	325	1469
05:00 PM	28	50	5	83	7	127	21	155	7	43	9	59	5	70	3	78	375
05:15 PM	29	36	8	73	7	106	28	141	7	37	7	51	5	67	2	74	339
05:30 PM	26	50	2	78	19	132	32	183	14	41	18	73	5	69	4	78	412
05:45 PM	38	58	4	100	10	114	25	149	5	42	15	62	3	60	1	64	375
Total	121	194	19	334	43	479	106	628	33	163	49	245	18	266	10	294	1501
06:00 PM	24	31	7	62	10	81	25	116	5	36	9	50	6	60	2	68	296
06:15 PM	23	33	3	59	14	91	21	126	5	36	6	47	3	69	6	78	310
06:30 PM	22	27	2	51	7	90	4	101	6	23	6	35	3	69	8	80	267
06:45 PM	21	27	6	54	9	63	18	90	5	35	15	55	2	63	3	68	267
Total	90	118	18	226	40	325	68	433	21	130	36	187	14	261	19	294	1140
Grand Total	337	489	71	897	135	1238	283	1656	83	424	137	644	56	811	46	913	4110
Apprch %	37.6	54.5	7.9		8.2	74.8	17.1		12.9	65.8	21.3		6.1	88.8	5		
Total %	8.2	11.9	1.7	21.8	3.3	30.1	6.9	40.3	2	10.3	3.3	15.7	1.4	19.7	1.1	22.2	

Start Time	25th Street West Southbound				Avenue J-8 Westbound				25th Street West Northbound				Avenue J-8 Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
05:00 PM	28	50	5	83	7	127	21	155	7	43	9	59	5	70	3	78	375
05:15 PM	29	36	8	73	7	106	28	141	7	37	7	51	5	67	2	74	339
05:30 PM	26	50	2	78	19	132	32	183	14	41	18	73	5	69	4	78	412
05:45 PM	38	58	4	100	10	114	25	149	5	42	15	62	3	60	1	64	375
Total Volume	121	194	19	334	43	479	106	628	33	163	49	245	18	266	10	294	1501
% App. Total	36.2	58.1	5.7		6.8	76.3	16.9		13.5	66.5	20		6.1	90.5	3.4		
PHF	.796	.836	.594	.835	.566	.907	.828	.858	.589	.948	.681	.839	.900	.950	.625	.942	.911

Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 05:00 PM



Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:00 PM				04:45 PM				05:00 PM				06:00 PM			
+0 mins.	41	49	8	98	9	142	27	178	7	43	9	59	4	84	4	92
+15 mins.	28	41	9	78	7	127	21	155	7	37	7	51	5	68	5	78
+30 mins.	32	47	7	86	7	106	28	141	14	41	18	73	10	70	4	84
+45 mins.	25	40	10	75	19	132	32	183	5	42	15	62	5	62	4	71
Total Volume	126	177	34	337	42	507	108	657	33	163	49	245	24	284	17	325
% App. Total	37.4	52.5	10.1		6.4	77.2	16.4		13.5	66.5	20		7.4	87.4	5.2	
PHF	.768	.903	.850	.860	.553	.893	.844	.898	.589	.948	.681	.839	.600	.845	.850	.883

Location: Lancaster
 N/S: 25th Street West
 E/W: Avenue J-8



Date: 6/3/2014

WEEKDAY

	North Leg 25th Street West	East Leg Avenue J-8	South Leg 25th Street West	West Leg Avenue J-8	TOTAL
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
6:00 AM	0	0	0	0	0
6:15 AM	0	0	0	0	0
6:30 AM	0	0	1	0	1
6:45 AM	0	0	0	0	0
7:00 AM	1	0	0	0	1
7:15 AM	1	4	1	0	6
7:30 AM	0	1	7	7	15
7:45 AM	1	0	2	0	3
8:00 AM	4	2	3	3	12
8:15 AM	1	2	0	0	3
8:30 AM	0	2	2	1	5
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	8	11	16	11	46

	North Leg 25th Street West	East Leg Avenue J-8	South Leg 25th Street West	West Leg Avenue J-8	TOTAL
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	1	0	0	1
4:15 PM	1	0	0	0	1
4:30 PM	0	0	0	1	1
4:45 PM	3	0	0	1	4
5:00 PM	1	0	2	0	3
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	4	2	0	6
6:00 PM	0	0	2	0	2
6:15 PM	1	1	1	0	3
6:30 PM	0	0	0	0	0
6:45 PM	0	1	0	0	1
TOTAL VOLUMES:	6	7	7	2	22

Location: Lancaster
 N/S: 25th Street West
 E/W: Avenue J-8



Date: 6/3/2014

WEEKDAY

	North Leg 25th Street West	East Leg Avenue J-8	South Leg 25th Street West	West Leg Avenue J-8	TOTAL
	Bicycles	Bicycles	Bicycles	Bicycles	
6:00 AM	0	0	0	0	0
6:15 AM	1	0	0	0	1
6:30 AM	1	0	0	1	2
6:45 AM	0	1	1	0	2
7:00 AM	0	0	1	2	3
7:15 AM	0	0	0	0	0
7:30 AM	0	0	2	1	3
7:45 AM	0	0	1	0	1
8:00 AM	0	0	0	0	0
8:15 AM	2	0	0	0	2
8:30 AM	0	0	0	0	0
8:45 AM	1	0	0	0	1
TOTAL VOLUMES:	5	1	5	4	15

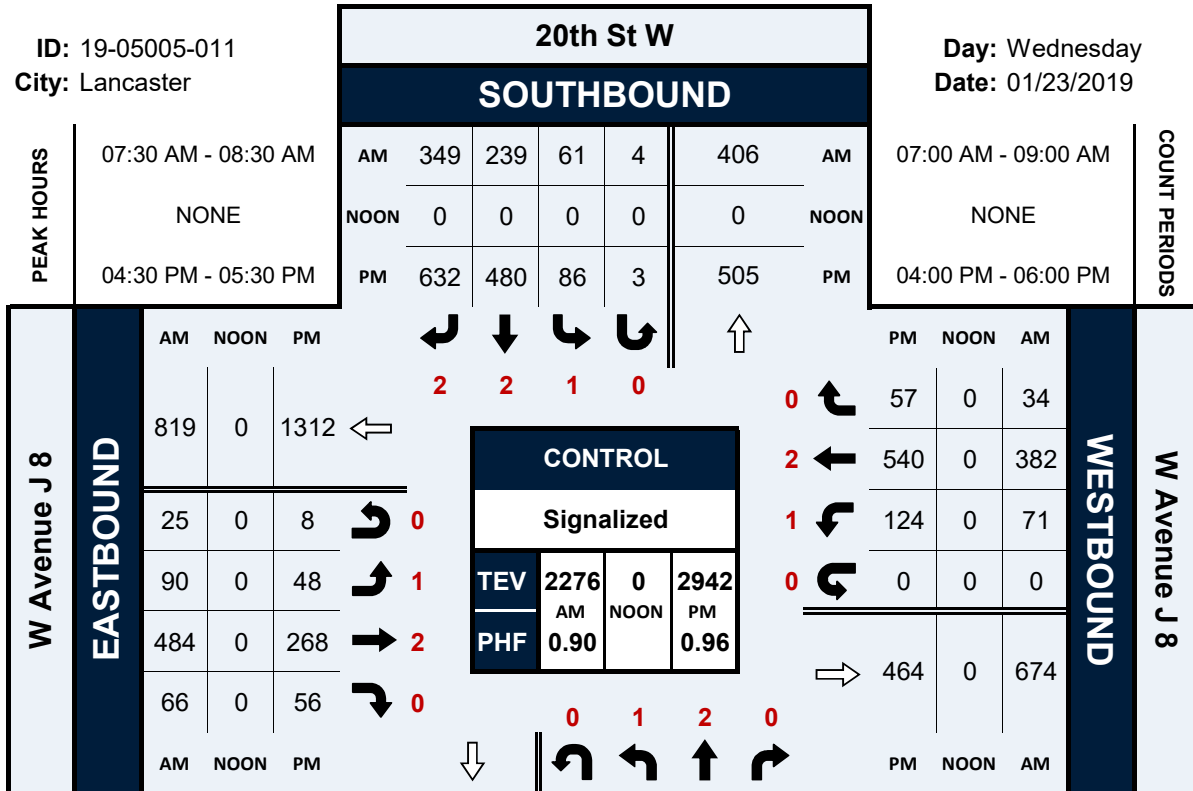
	North Leg 25th Street West	East Leg Avenue J-8	South Leg 25th Street West	West Leg Avenue J-8	TOTAL
	Bicycles	Bicycles	Bicycles	Bicycles	
4:00 PM	0	0	0	0	0
4:15 PM	1	0	0	0	1
4:30 PM	0	0	1	0	1
4:45 PM	1	0	0	0	1
5:00 PM	0	0	1	0	1
5:15 PM	1	0	1	0	2
5:30 PM	0	0	0	0	0
5:45 PM	2	0	1	0	3
6:00 PM	0	0	0	0	0
6:15 PM	0	0	0	0	0
6:30 PM	0	0	0	0	0
6:45 PM	0	0	0	0	0
TOTAL VOLUMES:	5	0	4	0	9

20th St W & W Avenue J 8

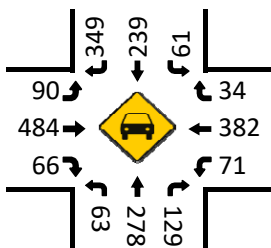
Peak Hour Turning Movement Count

ID: 19-05005-011
City: Lancaster

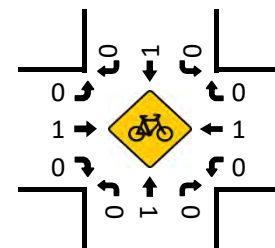
Day: Wednesday
Date: 01/23/2019



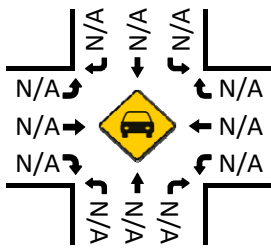
Total Vehicles (AM)



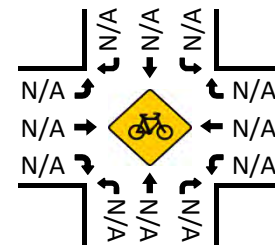
Bikes (AM)



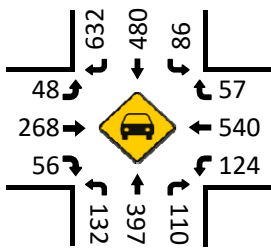
Total Vehicles (Noon)



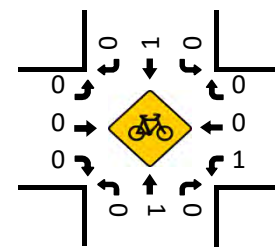
Bikes (NOON)



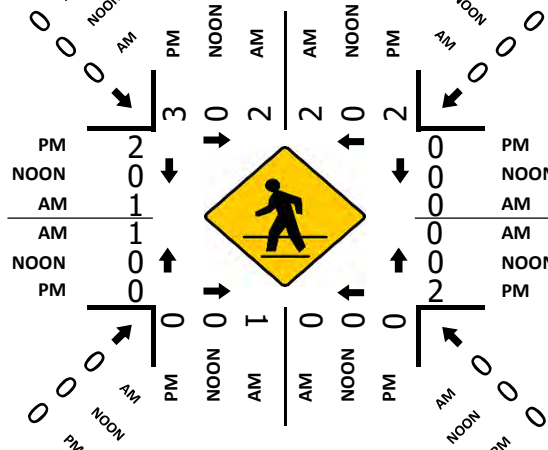
Total Vehicles (PM)



Bikes (PM)



Pedestrians (Crosswalks)

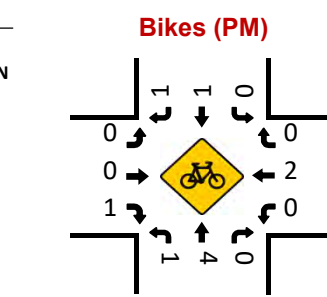
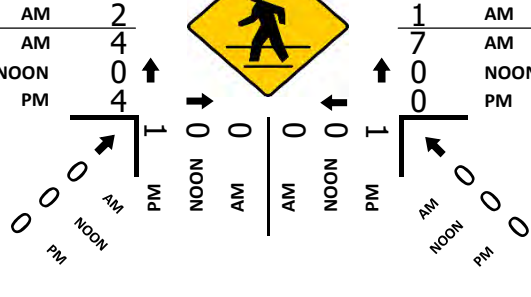
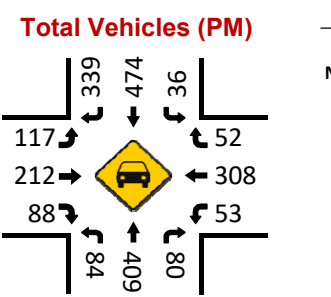
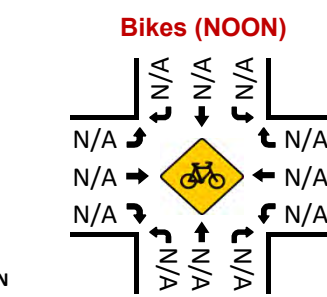
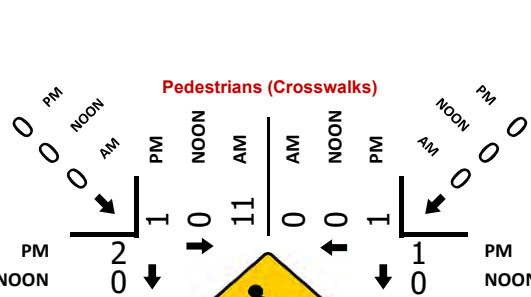
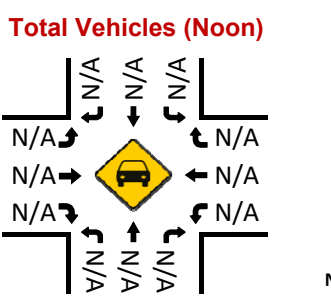
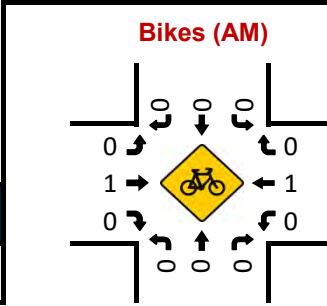
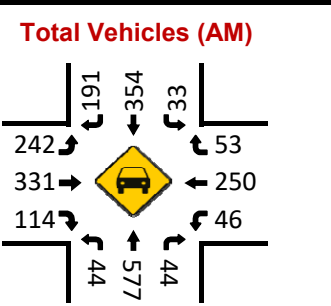
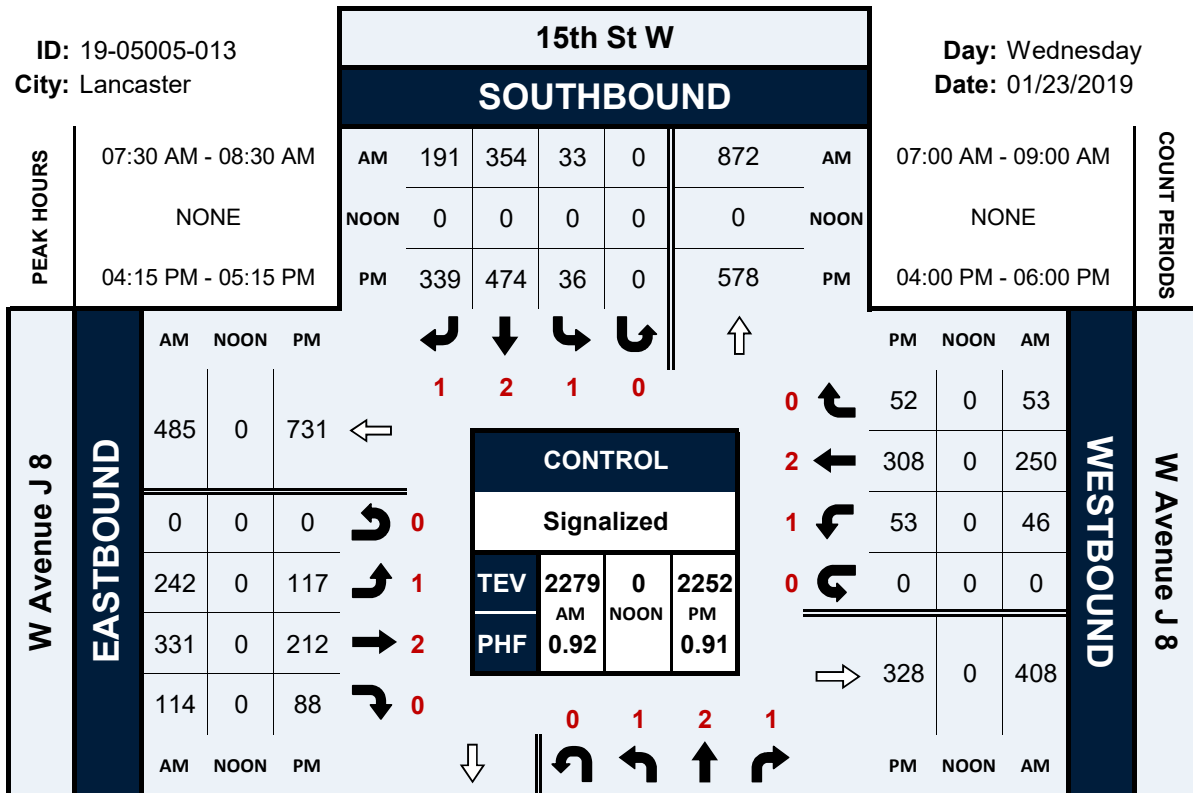


15th St W & W Avenue J 8

Peak Hour Turning Movement Count

ID: 19-05005-013
City: Lancaster

Day: Wednesday
Date: 01/23/2019

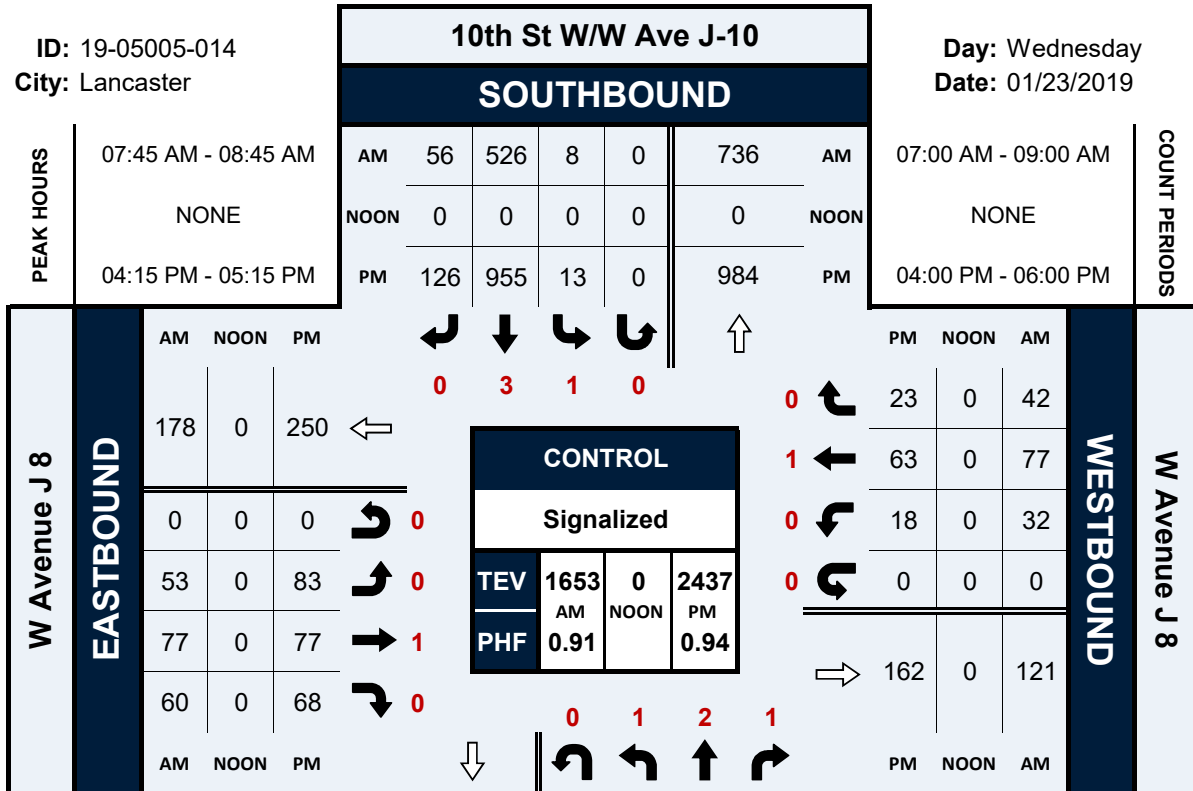


10th St W/W Ave J-10 & W Avenue J 8

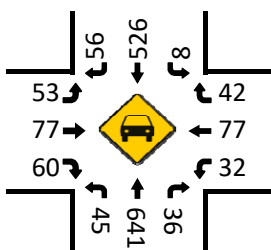
Peak Hour Turning Movement Count

ID: 19-05005-014
City: Lancaster

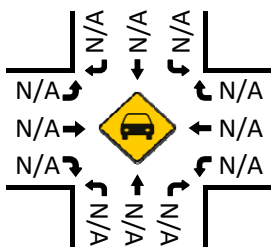
Day: Wednesday
Date: 01/23/2019



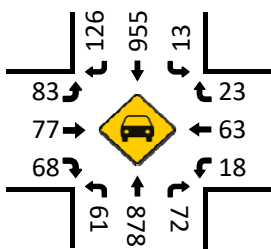
Total Vehicles (AM)



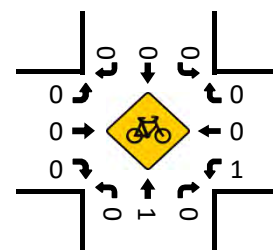
Total Vehicles (Noon)



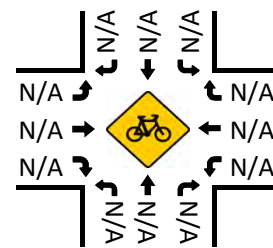
Total Vehicles (PM)



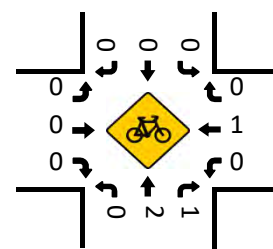
Bikes (AM)



Bikes (NOON)



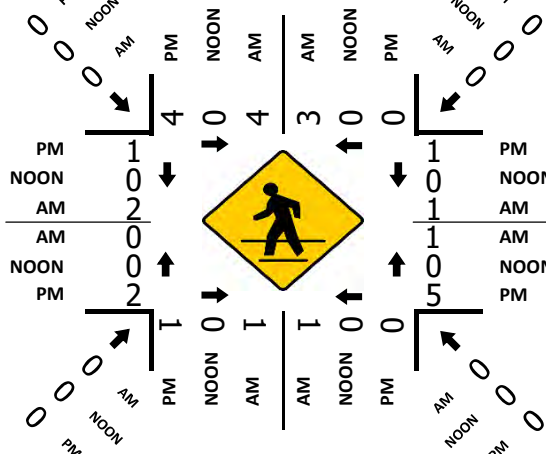
Bikes (PM)



10th St W/W Ave J-10

NORTHBOUND		10th St W/W Ave J-10				
PM	1041	0	61	878	72	PM
NOON	0	0	0	0	0	NOON
AM	618	0	45	641	36	AM

Pedestrians (Crosswalks)



Location: Lancaster
 N/S: 30th Street
 E/W: Avenue K



Date: 6/3/2014
 Day: Tuesday

	30th Street Southbound			Avenue K Westbound			30th Street Northbound			Avenue K Eastbound			TOTAL
	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	
6:00 AM	2	20	3	5	28	4	1	15	11	0	60	9	158
6:15 AM	6	14	5	1	28	5	5	19	16	3	66	4	172
6:30 AM	2	21	8	4	33	2	9	27	13	3	77	10	209
6:45 AM	6	23	9	10	42	9	15	34	24	2	96	7	277
7:00 AM	5	49	10	10	42	6	12	45	22	7	97	6	311
7:15 AM	9	56	13	17	59	15	26	78	28	11	115	13	440
7:30 AM	9	63	29	24	56	10	25	108	45	24	153	31	577
7:45 AM	12	54	21	20	69	15	29	124	36	31	162	30	603
8:00 AM	20	46	27	24	72	15	32	59	36	28	128	40	527
8:15 AM	22	39	18	19	78	18	34	64	32	24	142	35	525
8:30 AM	16	77	11	22	73	13	14	60	22	18	133	26	485
8:45 AM	11	41	4	18	67	17	14	66	28	9	126	16	417

	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	TOTAL
TOTAL VOLUMES:	120	503	158	174	647	129	216	699	313	160	1355	227	4701

AM Peak Hr Begins at: 830 AM

PEAK VOLUMES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	63	202	95	87	275	58	120	355	149	107	585	136	2232

PEAK HR FACTOR:	0.891			0.913			0.825			0.928			0.925
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	30th Street Southbound			Avenue K Westbound			30th Street Northbound			Avenue K Eastbound			TOTAL
	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	
4:00 PM	16	91	19	23	91	15	11	78	26	11	71	15	467
4:15 PM	22	81	21	30	88	12	12	65	30	10	89	29	489
4:30 PM	23	79	20	30	103	15	13	58	25	15	98	30	509
4:45 PM	10	91	17	24	100	17	16	62	27	8	102	27	501
5:00 PM	23	124	21	21	93	15	19	90	21	14	70	24	535
5:15 PM	20	100	13	32	100	10	12	70	21	10	99	20	507
5:30 PM	19	105	10	35	105	22	14	80	17	10	91	18	526
5:45 PM	15	100	17	20	95	11	11	62	17	16	77	8	449
6:00 PM	18	88	11	28	92	9	15	93	17	7	94	15	487
6:15 PM	12	76	12	21	83	10	19	72	24	11	82	12	434
6:30 PM	13	59	14	29	84	17	6	70	14	11	80	18	415
6:45 PM	5	75	7	19	68	17	10	81	23	9	71	10	395

	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	TOTAL
TOTAL VOLUMES:	196	1069	182	312	1102	170	158	881	262	132	1024	226	5714

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	72	420	61	112	398	64	61	302	86	42	362	89	2069

PEAK HR FACTOR:	0.823			0.886			0.863			0.900			0.967
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City of Lancaster
 N/S: 25th Street West
 E/W: Avenue K
 Weather: Clear

File Name : LAN_25W_AVE K_AM
 Site Code : 10815556
 Start Date : 10/21/2015
 Page No : 1

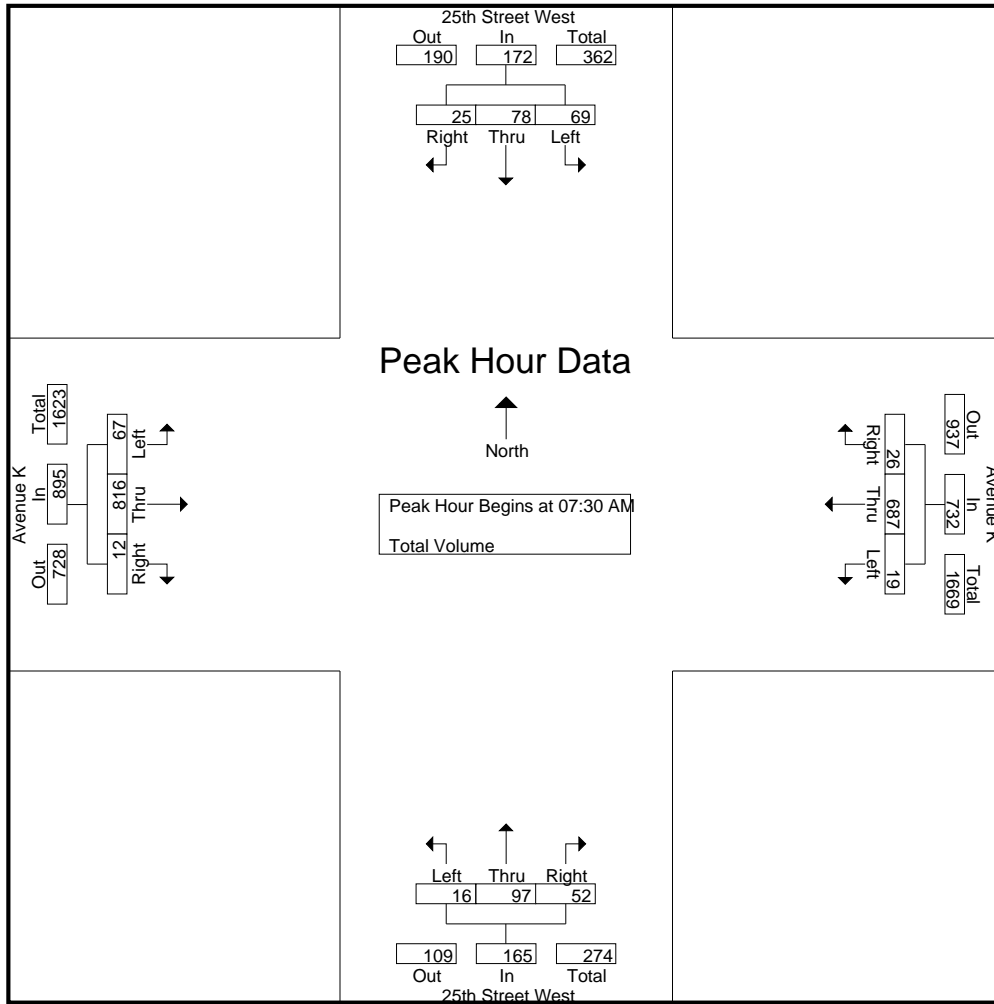
Groups Printed- Total Volume

Start Time	25th Street West Southbound				Avenue K Westbound				25th Street West Northbound				Avenue K Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:30 AM	19	22	11	52	6	218	9	233	5	34	10	49	21	190	4	215	549
07:45 AM	17	24	10	51	4	263	6	273	8	27	17	52	16	249	4	269	645
Total	36	46	21	103	10	481	15	506	13	61	27	101	37	439	8	484	1194
08:00 AM	18	18	2	38	6	112	5	123	1	18	18	37	23	189	2	214	412
08:15 AM	15	14	2	31	3	94	6	103	2	18	7	27	7	188	2	197	358
08:30 AM	9	20	2	31	5	102	7	114	3	17	21	41	8	160	2	170	356
08:45 AM	18	15	7	40	5	92	15	112	1	27	19	47	4	161	1	166	365
Total	60	67	13	140	19	400	33	452	7	80	65	152	42	698	7	747	1491
09:00 AM	15	14	11	40	8	190	9	207	3	14	5	22	10	126	5	141	410
09:15 AM	10	17	5	32	3	193	11	207	3	13	10	26	7	229	7	243	508
Grand Total	121	144	50	315	40	1264	68	1372	26	168	107	301	96	1492	27	1615	3603
Apprch %	38.4	45.7	15.9		2.9	92.1	5		8.6	55.8	35.5		5.9	92.4	1.7		
Total %	3.4	4	1.4	8.7	1.1	35.1	1.9	38.1	0.7	4.7	3	8.4	2.7	41.4	0.7	44.8	

Start Time	25th Street West Southbound				Avenue K Westbound				25th Street West Northbound				Avenue K Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	19	22	11	52	6	218	9	233	5	34	10	49	21	190	4	215	549
07:45 AM	17	24	10	51	4	263	6	273	8	27	17	52	16	249	4	269	645
08:00 AM	18	18	2	38	6	112	5	123	1	18	18	37	23	189	2	214	412
08:15 AM	15	14	2	31	3	94	6	103	2	18	7	27	7	188	2	197	358
Total Volume	69	78	25	172	19	687	26	732	16	97	52	165	67	816	12	895	1964
% App. Total	40.1	45.3	14.5		2.6	93.9	3.6		9.7	58.8	31.5		7.5	91.2	1.3		
PHF	.908	.813	.568	.827	.792	.653	.722	.670	.500	.713	.722	.793	.728	.819	.750	.832	.761

City of Lancaster
 N/S: 25th Street West
 E/W: Avenue K
 Weather: Clear

File Name : LAN_25W_AVE K_AM
 Site Code : 10815556
 Start Date : 10/21/2015
 Page No : 2



Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	19	22	11	52	6	218	9	233	5	34	10	49	21	190	4	215
+15 mins.	17	24	10	51	4	263	6	273	8	27	17	52	16	249	4	269
+30 mins.	18	18	2	38	6	112	5	123	1	18	18	37	23	189	2	214
+45 mins.	15	14	2	31	3	94	6	103	2	18	7	27	7	188	2	197
Total Volume	69	78	25	172	19	687	26	732	16	97	52	165	67	816	12	895
% App. Total	40.1	45.3	14.5		2.6	93.9	3.6		9.7	58.8	31.5		7.5	91.2	1.3	
PHF	.908	.813	.568	.827	.792	.653	.722	.670	.500	.713	.722	.793	.728	.819	.750	.832

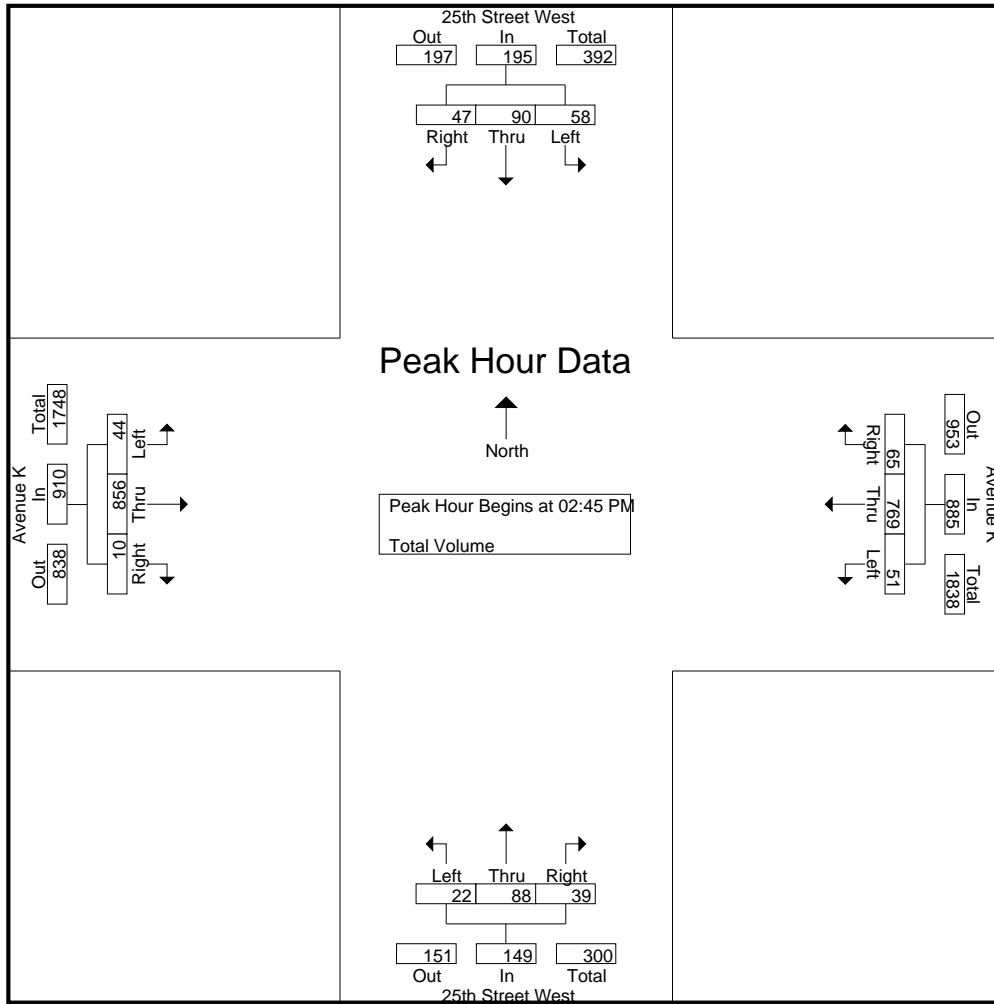
City of Lancaster
 N/S: 25th Street West
 E/W: Avenue K
 Weather: Clear

File Name : LAN_25W_AVE K_MD
 Site Code : 10815556
 Start Date : 10/21/2015
 Page No : 1

Groups Printed- Total Volume

Start Time	25th Street West Southbound				Avenue K Westbound				25th Street West Northbound				Avenue K Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
02:00 PM	20	31	4	55	13	182	16	211	2	33	7	42	7	217	4	228	536
02:15 PM	8	27	4	39	14	165	22	201	2	15	14	31	13	186	6	205	476
02:30 PM	13	23	13	49	12	125	17	154	1	22	8	31	17	184	3	204	438
02:45 PM	19	27	10	56	10	189	15	214	7	17	8	32	10	170	2	182	484
Total	60	108	31	199	49	661	70	780	12	87	37	136	47	757	15	819	1934
03:00 PM	12	21	8	41	18	144	13	175	6	20	9	35	11	215	4	230	481
03:15 PM	13	22	16	51	9	236	16	261	6	26	11	43	16	218	1	235	590
03:30 PM	14	20	13	47	14	200	21	235	3	25	11	39	7	253	3	263	584
03:45 PM	12	35	13	60	7	177	21	205	6	23	10	39	9	167	2	178	482
Total	51	98	50	199	48	757	71	876	21	94	41	156	43	853	10	906	2137
Grand Total	111	206	81	398	97	1418	141	1656	33	181	78	292	90	1610	25	1725	4071
Apprch %	27.9	51.8	20.4		5.9	85.6	8.5		11.3	62	26.7		5.2	93.3	1.4		
Total %	2.7	5.1	2	9.8	2.4	34.8	3.5	40.7	0.8	4.4	1.9	7.2	2.2	39.5	0.6	42.4	

Start Time	25th Street West Southbound				Avenue K Westbound				25th Street West Northbound				Avenue K Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:45 PM																	
02:45 PM	19	27	10	56	10	189	15	214	7	17	8	32	10	170	2	182	484
03:00 PM	12	21	8	41	18	144	13	175	6	20	9	35	11	215	4	230	481
03:15 PM	13	22	16	51	9	236	16	261	6	26	11	43	16	218	1	235	590
03:30 PM	14	20	13	47	14	200	21	235	3	25	11	39	7	253	3	263	584
Total Volume	58	90	47	195	51	769	65	885	22	88	39	149	44	856	10	910	2139
% App. Total	29.7	46.2	24.1		5.8	86.9	7.3		14.8	59.1	26.2		4.8	94.1	1.1		
PHF	.763	.833	.734	.871	.708	.815	.774	.848	.786	.846	.886	.866	.688	.846	.625	.865	.906



Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	02:00 PM				02:45 PM				03:00 PM				02:45 PM			
+0 mins.	20	31	4	55	10	189	15	214	6	20	9	35	10	170	2	182
+15 mins.	8	27	4	39	18	144	13	175	6	26	11	43	11	215	4	230
+30 mins.	13	23	13	49	9	236	16	261	3	25	11	39	16	218	1	235
+45 mins.	19	27	10	56	14	200	21	235	6	23	10	39	7	253	3	263
Total Volume	60	108	31	199	51	769	65	885	21	94	41	156	44	856	10	910
% App. Total	30.2	54.3	15.6		5.8	86.9	7.3		13.5	60.3	26.3		4.8	94.1	1.1	
PHF	.750	.871	.596	.888	.708	.815	.774	.848	.875	.904	.932	.907	.688	.846	.625	.865

City of Lancaster
 N/S: 25th Street West
 E/W: Avenue K
 Weather: Clear

File Name : LAN_25W_AVE K_PM
 Site Code : 10815556
 Start Date : 10/21/2015
 Page No : 1

Groups Printed- Total Volume

Start Time	25th Street West Southbound				Avenue K Westbound				25th Street West Northbound				Avenue K Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	18	34	9	61	20	193	20	233	5	29	11	45	13	159	2	174	513
04:15 PM	17	40	10	67	15	203	20	238	3	24	13	40	10	180	3	193	538
04:30 PM	11	28	14	53	9	184	8	201	0	13	6	19	5	207	3	215	488
04:45 PM	12	31	12	55	10	191	21	222	3	33	10	46	7	231	1	239	562
Total	58	133	45	236	54	771	69	894	11	99	40	150	35	777	9	821	2101
05:00 PM	16	36	15	67	19	225	13	257	6	21	4	31	14	216	5	235	590
05:15 PM	14	27	7	48	12	220	20	252	4	27	9	40	11	186	7	204	544
05:30 PM	17	34	3	54	12	157	21	190	3	22	7	32	8	165	3	176	452
05:45 PM	15	26	7	48	12	212	24	248	2	32	10	44	12	180	1	193	533
Total	62	123	32	217	55	814	78	947	15	102	30	147	45	747	16	808	2119
Grand Total	120	256	77	453	109	1585	147	1841	26	201	70	297	80	1524	25	1629	4220
Apprch %	26.5	56.5	17		5.9	86.1	8		8.8	67.7	23.6		4.9	93.6	1.5		
Total %	2.8	6.1	1.8	10.7	2.6	37.6	3.5	43.6	0.6	4.8	1.7	7	1.9	36.1	0.6	38.6	

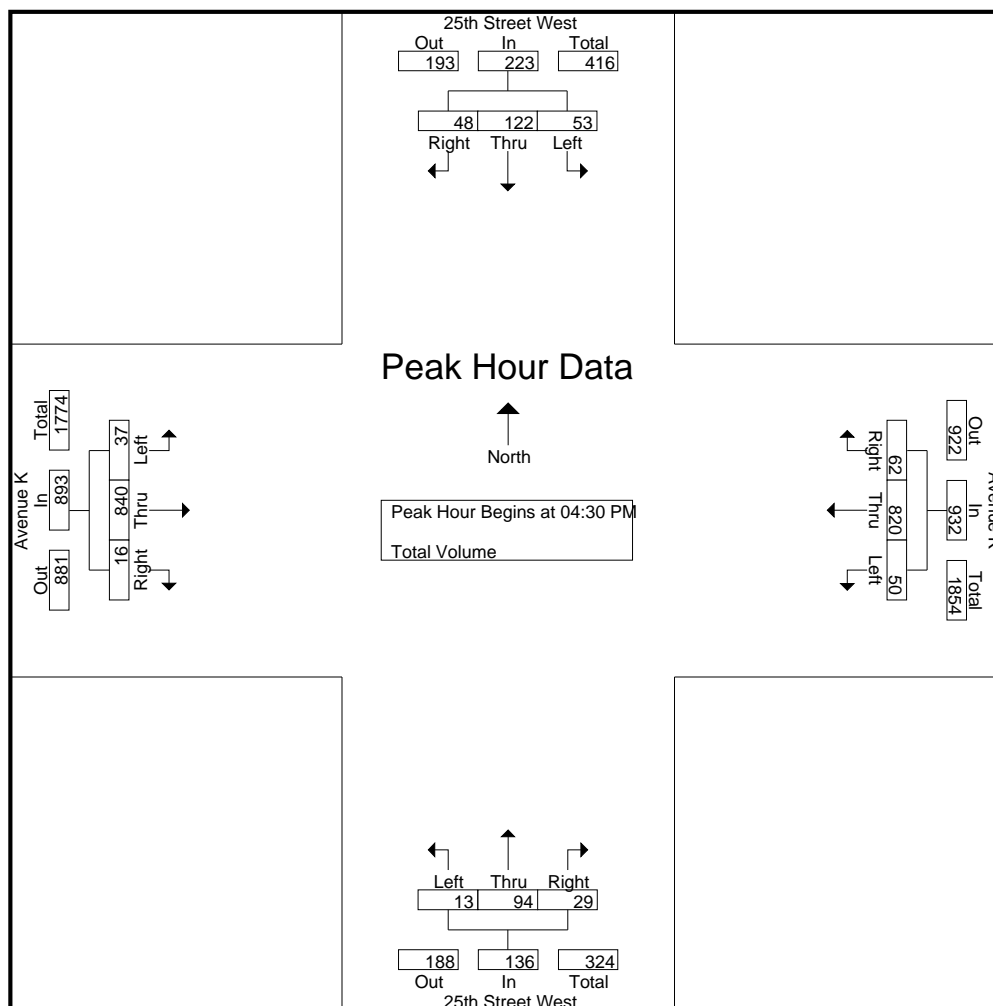
Start Time	25th Street West Southbound				Avenue K Westbound				25th Street West Northbound				Avenue K Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:30 PM	11	28	14	53	9	184	8	201	0	13	6	19	5	207	3	215	488
04:45 PM	12	31	12	55	10	191	21	222	3	33	10	46	7	231	1	239	562
05:00 PM	16	36	15	67	19	225	13	257	6	21	4	31	14	216	5	235	590
05:15 PM	14	27	7	48	12	220	20	252	4	27	9	40	11	186	7	204	544
Total Volume	53	122	48	223	50	820	62	932	13	94	29	136	37	840	16	893	2184
% App. Total	23.8	54.7	21.5		5.4	88	6.7		9.6	69.1	21.3		4.1	94.1	1.8		
PHF	.828	.847	.800	.832	.658	.911	.738	.907	.542	.712	.725	.739	.661	.909	.571	.934	.925

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:30 PM

City of Lancaster
 N/S: 25th Street West
 E/W: Avenue K
 Weather: Clear

File Name : LAN_25W_AVE K_PM
 Site Code : 10815556
 Start Date : 10/21/2015
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:15 PM				05:00 PM				04:00 PM				04:30 PM			
+0 mins.	17	40	10	67	19	225	13	257	5	29	11	45	5	207	3	215
+15 mins.	11	28	14	53	12	220	20	252	3	24	13	40	7	231	1	239
+30 mins.	12	31	12	55	12	157	21	190	0	13	6	19	14	216	5	235
+45 mins.	16	36	15	67	12	212	24	248	3	33	10	46	11	186	7	204
Total Volume	56	135	51	242	55	814	78	947	11	99	40	150	37	840	16	893
% App. Total	23.1	55.8	21.1		5.8	86	8.2		7.3	66	26.7		4.1	94.1	1.8	
PHF	.824	.844	.850	.903	.724	.904	.813	.921	.550	.750	.769	.815	.661	.909	.571	.934

Location: Lancaster
 N/S: 25th Street West
 E/W: Avenue K



Date: 10/21/2015
 Day: Wednesday

PEDESTRIANS

	North Leg 25th Street West	East Leg Avenue K	South Leg 25th Street West	West Leg Avenue K	TOTAL
7:30 AM	0	0	2	0	2
7:45 AM	1	0	0	0	1
8:00 AM	0	0	1	1	2
8:15 AM	0	0	2	0	2
8:30 AM	2	0	1	1	4
8:45 AM	0	0	2	0	2
9:00 AM	1	0	1	0	2
9:15 AM	0	0	0	0	0
TOTAL VOLUMES:	4	0	9	2	15

	North Leg 25th Street West	East Leg Avenue K	South Leg 25th Street West	West Leg Avenue K	TOTAL
2:00 PM	2	1	2	0	5
2:15 PM	0	2	0	0	2
2:30 PM	2	3	7	0	12
2:45 PM	0	0	0	0	0
3:00 PM	0	0	2	0	2
3:15 PM	0	0	7	0	7
3:30 PM	0	0	3	0	3
3:45 PM	0	0	2	1	3
TOTAL VOLUMES:	4	6	23	1	34

	North Leg 25th Street West	East Leg Avenue K	South Leg 25th Street West	West Leg Avenue K	TOTAL
4:00 PM	1	17	1	0	19
4:15 PM	6	4	0	4	14
4:30 PM	1	7	1	0	9
4:45 PM	2	0	1	6	9
5:00 PM	1	2	2	2	7
5:15 PM	1	0	1	0	2
5:30 PM	0	0	0	0	0
5:45 PM	0	0	2	0	2
TOTAL VOLUMES:	12	30	8	12	62

Location: Lancaster
 N/S: 25th Street West
 E/W: Avenue K



Date: 10/21/2015
 Day: Wednesday

BICYCLES

	North Leg 25th Street West	East Leg Avenue K	South Leg 25th Street West	West Leg Avenue K	TOTAL
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	1	0	0	0	1
8:30 AM	2	0	0	1	3
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	1	1
TOTAL VOLUMES:	3	0	0	2	5

	North Leg 25th Street West	East Leg Avenue K	South Leg 25th Street West	West Leg Avenue K	TOTAL
2:00 PM	0	0	0	0	0
2:15 PM	0	0	0	0	0
2:30 PM	0	0	0	0	0
2:45 PM	1	0	0	0	1
3:00 PM	1	0	0	0	1
3:15 PM	0	0	1	0	1
3:30 PM	0	0	0	0	0
3:45 PM	0	2	0	0	2
TOTAL VOLUMES:	2	2	1	0	5

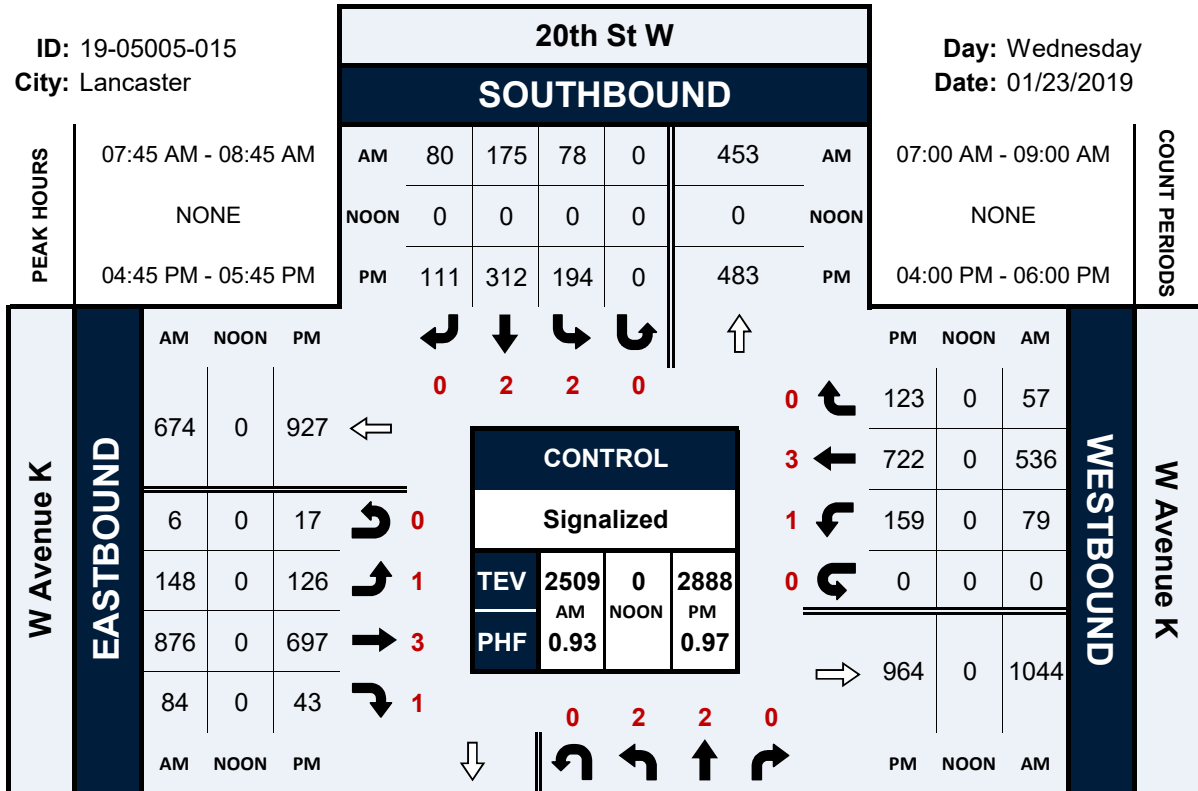
	North Leg 25th Street West	East Leg Avenue K	South Leg 25th Street West	West Leg Avenue K	TOTAL
4:00 PM	0	0	0	0	0
4:15 PM	0	0	1	0	1
4:30 PM	0	0	0	0	0
4:45 PM	1	0	0	0	1
5:00 PM	0	0	1	0	1
5:15 PM	1	0	0	0	1
5:30 PM	0	1	2	0	3
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	2	1	4	0	7

20th St W & W Avenue K

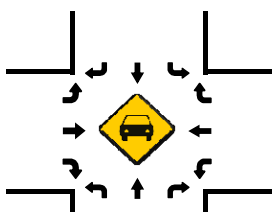
Peak Hour Turning Movement Count

ID: 19-05005-015
City: Lancaster

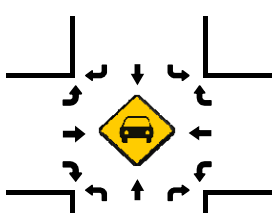
Day: Wednesday
Date: 01/23/2019



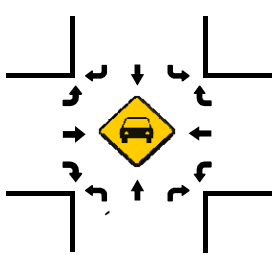
Total Vehicles (AM)



Total Vehicles (NOON)

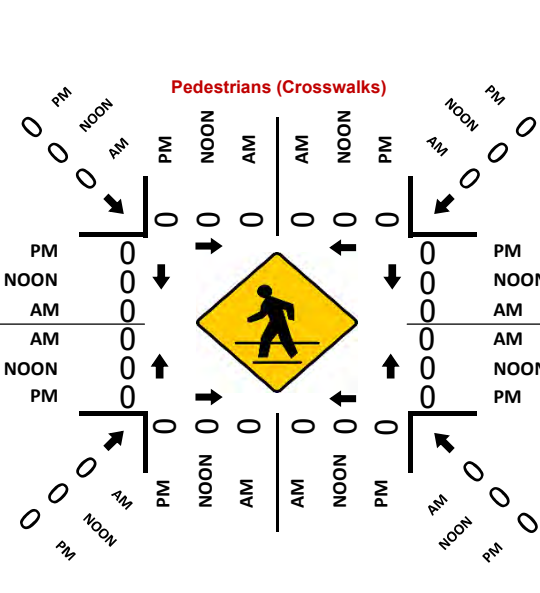


Total Vehicles (PM)

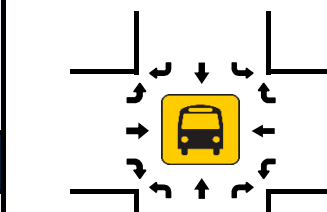


PM	514	0	77	234	73	PM
NOON	0	0	0	0	0	NOON
AM	338	0	52	248	90	AM

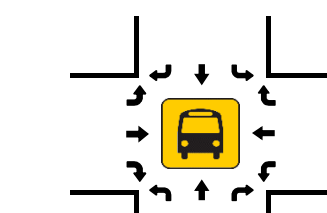
NORTHBOUND 20th St W



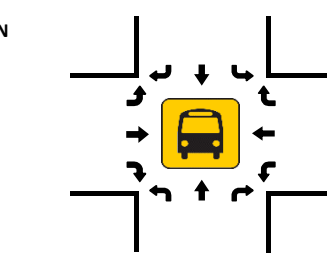
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)

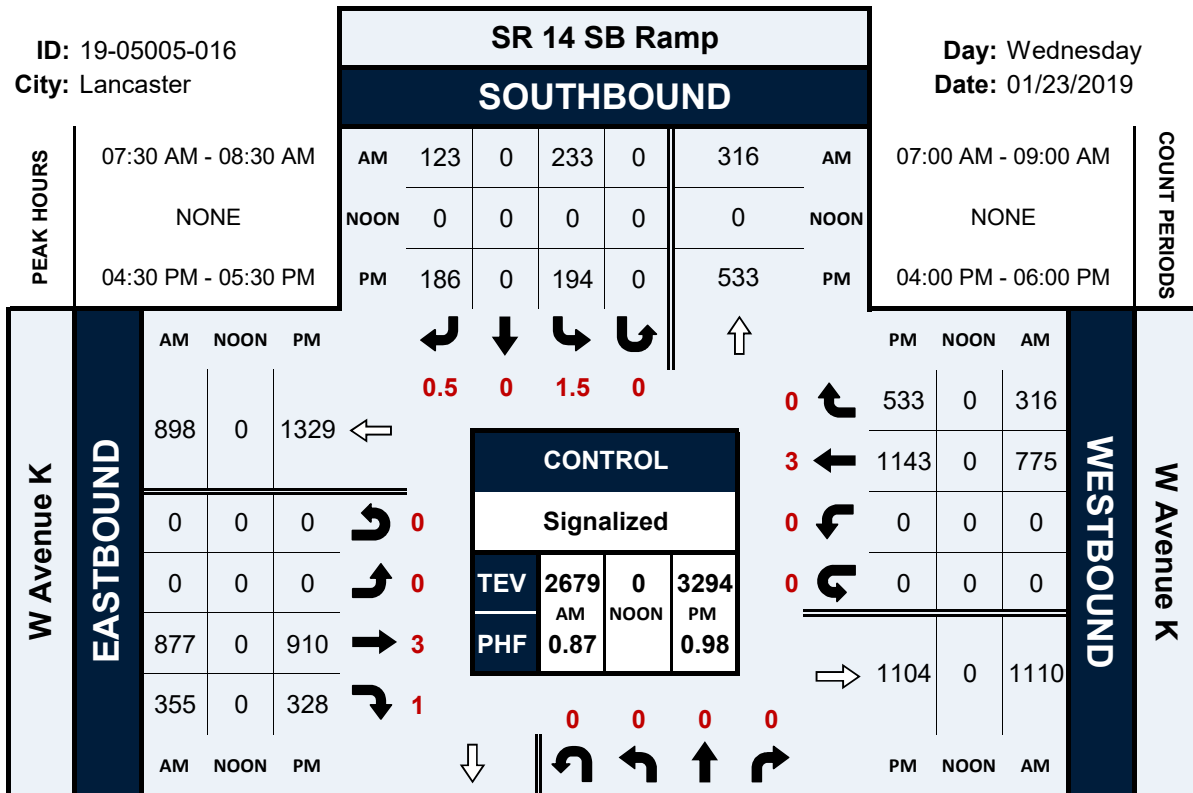


SR 14 SB Ramp & W Avenue K

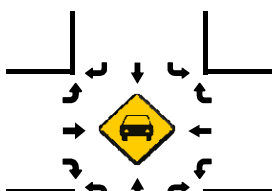
Peak Hour Turning Movement Count

ID: 19-05005-016
City: Lancaster

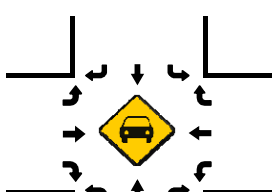
Day: Wednesday
Date: 01/23/2019



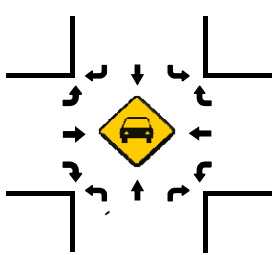
Total Vehicles (AM)



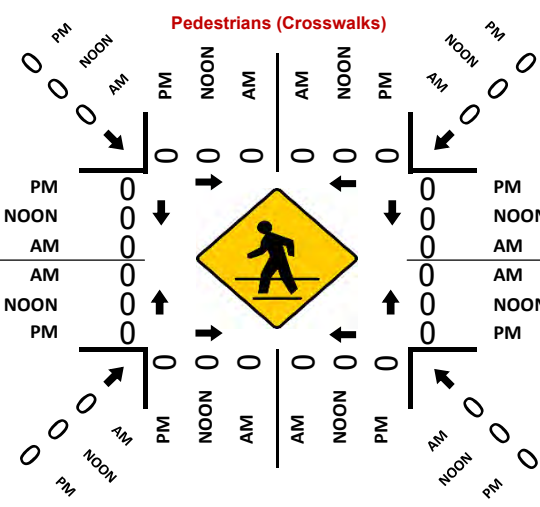
Total Vehicles (NOON)



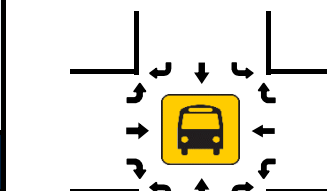
Total Vehicles (PM)



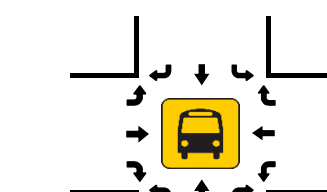
NORTHBOUND SR 14 SB Ramp



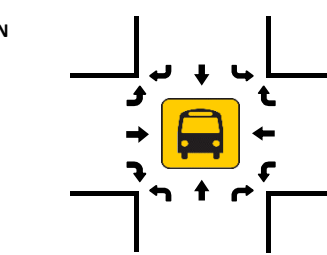
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)

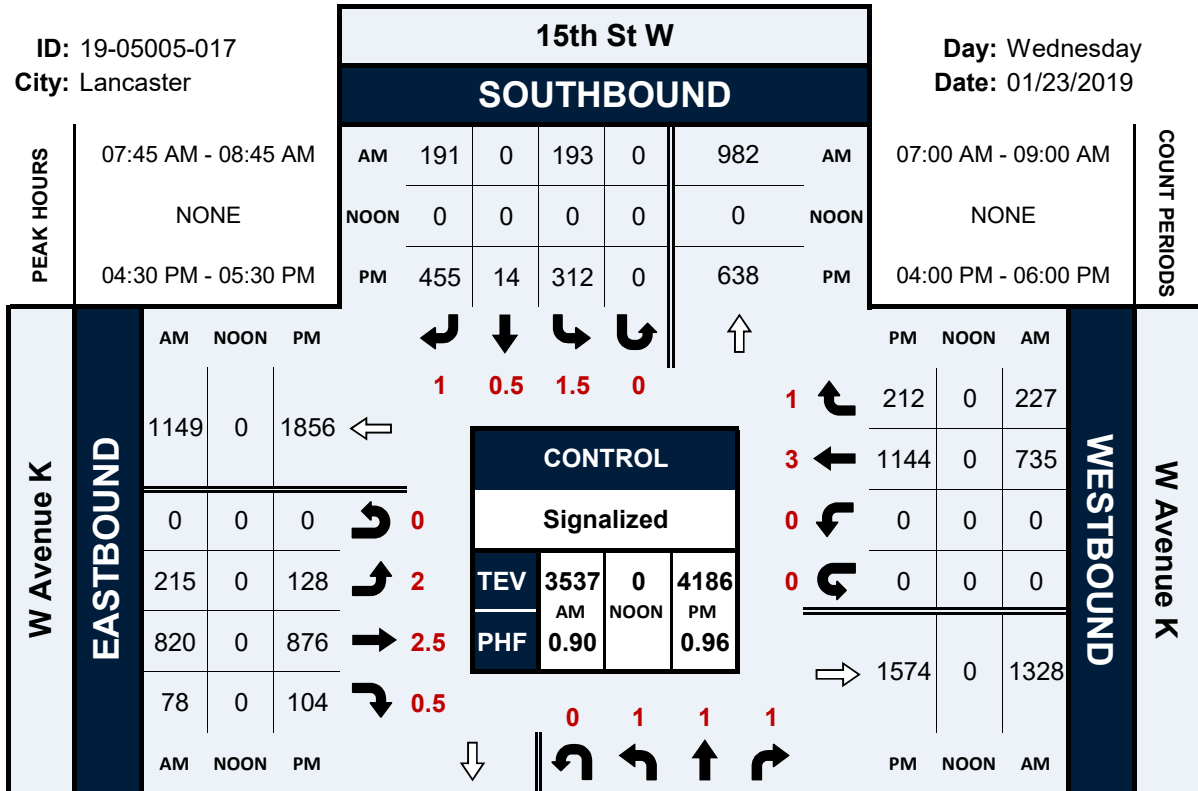


15th St W & W Avenue K

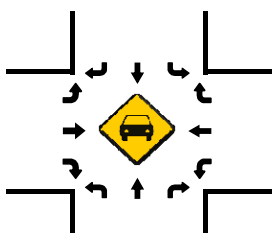
Peak Hour Turning Movement Count

ID: 19-05005-017
City: Lancaster

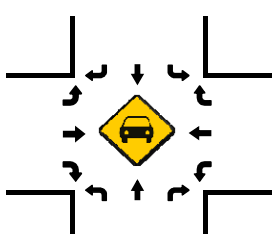
Day: Wednesday
Date: 01/23/2019



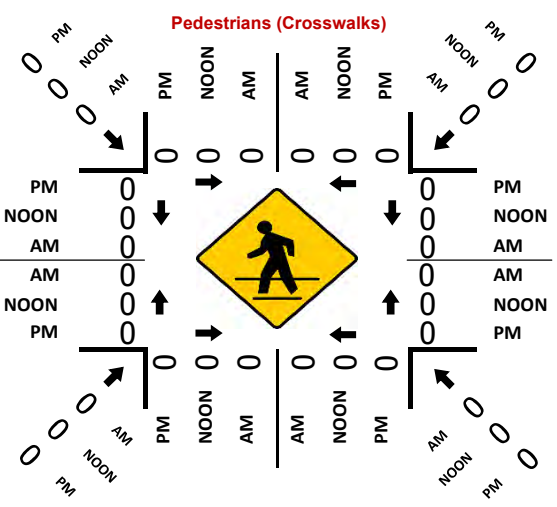
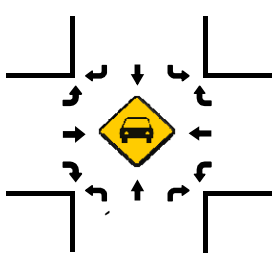
Total Vehicles (AM)



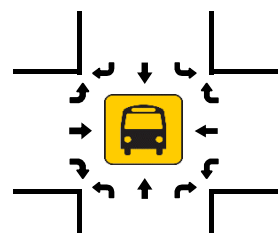
Total Vehicles (NOON)



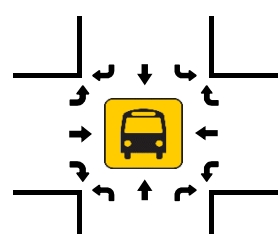
Total Vehicles (PM)



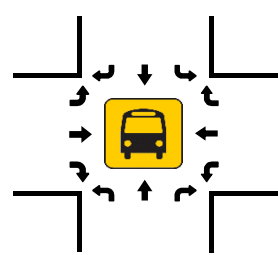
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)

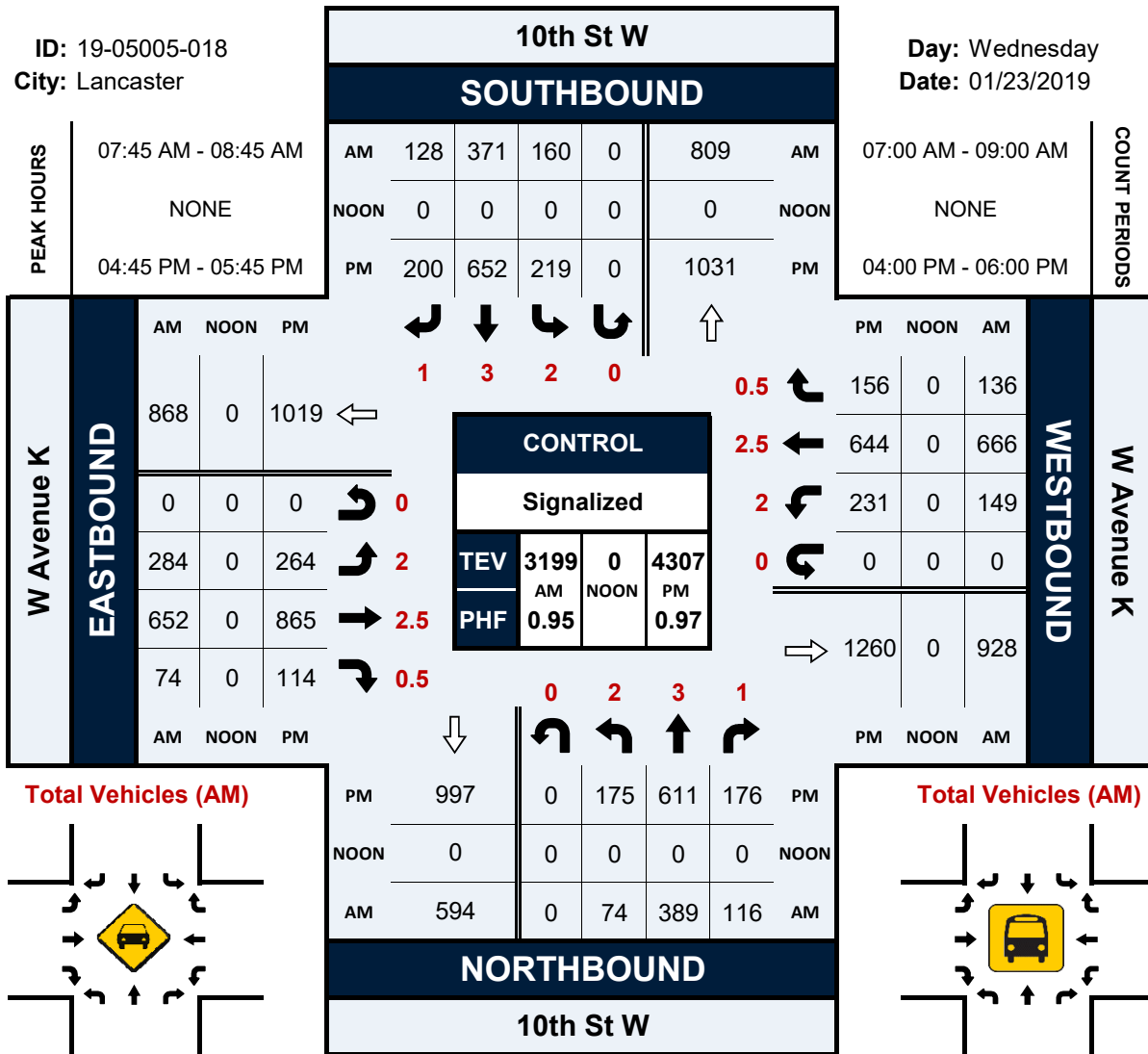


10th St W & W Avenue K

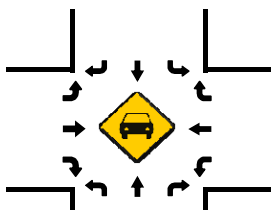
Peak Hour Turning Movement Count

ID: 19-05005-018
City: Lancaster

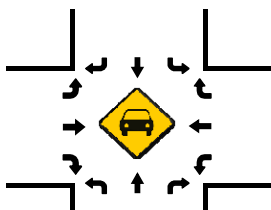
Day: Wednesday
Date: 01/23/2019



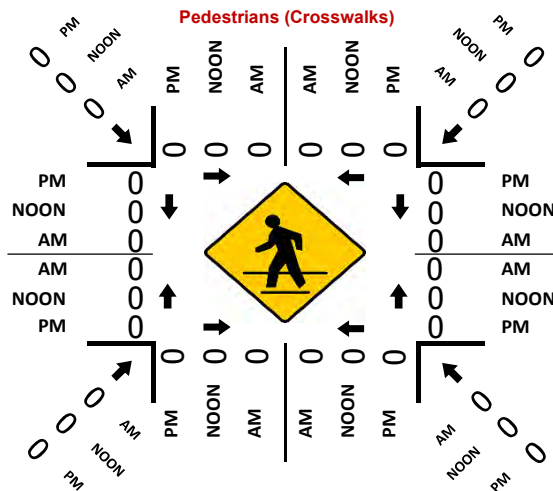
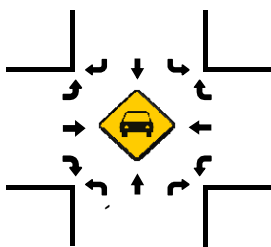
Total Vehicles (AM)



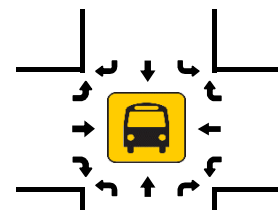
Total Vehicles (NOON)



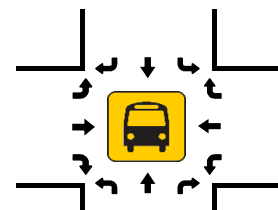
Total Vehicles (PM)



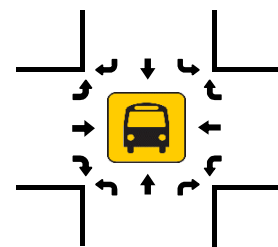
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



City of Lancaster
 N/S: Sierra Highway
 E/W: Avenue K
 Weather: Clear

File Name : LAN_SIERRA_AVE K_AM
 Site Code : 10815556
 Start Date : 10/21/2015
 Page No : 1

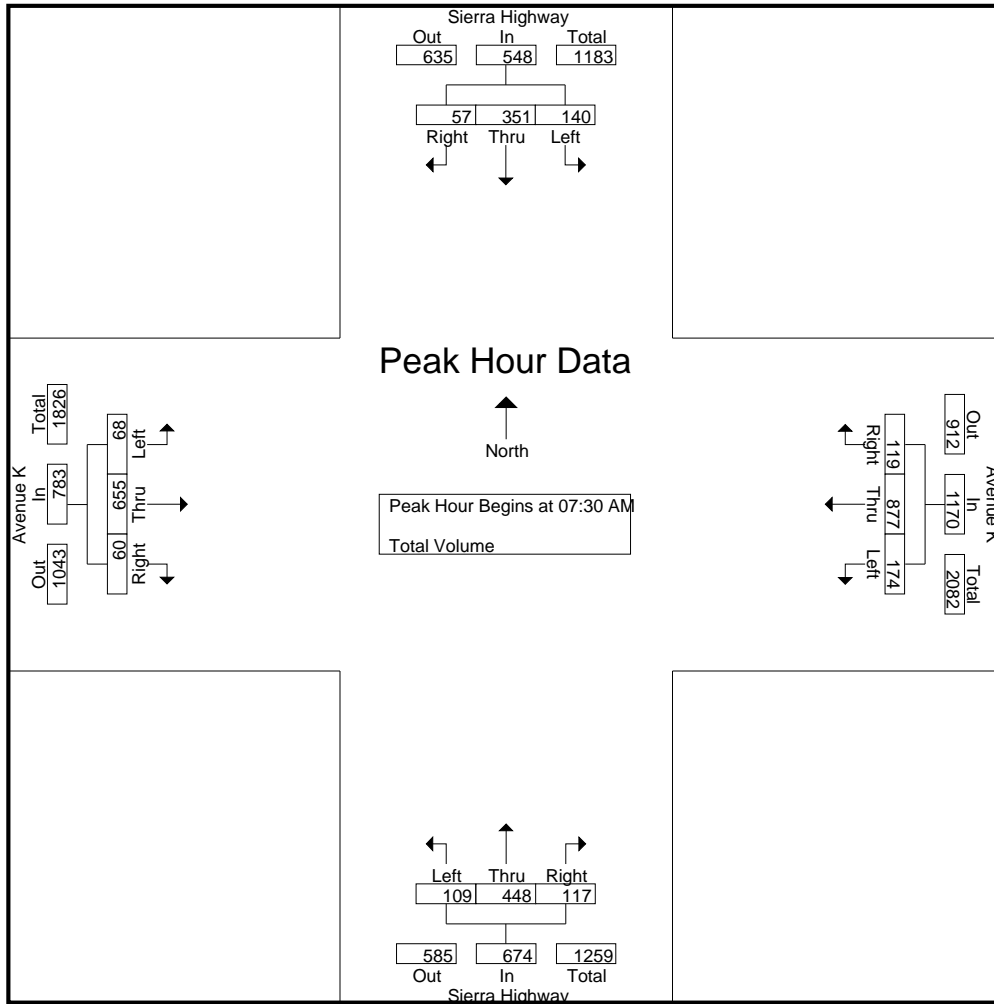
Groups Printed- Total Volume

Start Time	Sierra Highway Southbound				Avenue K Westbound				Sierra Highway Northbound				Avenue K Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:30 AM	28	89	13	130	43	223	26	292	31	99	33	163	11	152	16	179	764
07:45 AM	46	86	7	139	52	242	38	332	35	135	39	209	19	185	24	228	908
Total	74	175	20	269	95	465	64	624	66	234	72	372	30	337	40	407	1672
08:00 AM	24	92	16	132	48	201	24	273	21	99	29	149	17	161	8	186	740
08:15 AM	42	84	21	147	31	211	31	273	22	115	16	153	21	157	12	190	763
08:30 AM	22	69	21	112	42	218	32	292	16	121	30	167	24	151	17	192	763
08:45 AM	25	104	28	157	41	215	33	289	15	130	32	177	38	157	19	214	837
Total	113	349	86	548	162	845	120	1127	74	465	107	646	100	626	56	782	3103
09:00 AM	19	72	33	124	37	230	25	292	23	86	18	127	23	136	25	184	727
09:15 AM	26	64	29	119	37	212	35	284	18	84	23	125	19	169	21	209	737
Grand Total	232	660	168	1060	331	1752	244	2327	181	869	220	1270	172	1268	142	1582	6239
Apprch %	21.9	62.3	15.8		14.2	75.3	10.5		14.3	68.4	17.3		10.9	80.2	9		
Total %	3.7	10.6	2.7	17	5.3	28.1	3.9	37.3	2.9	13.9	3.5	20.4	2.8	20.3	2.3	25.4	

Start Time	Sierra Highway Southbound				Avenue K Westbound				Sierra Highway Northbound				Avenue K Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	28	89	13	130	43	223	26	292	31	99	33	163	11	152	16	179	764
07:45 AM	46	86	7	139	52	242	38	332	35	135	39	209	19	185	24	228	908
08:00 AM	24	92	16	132	48	201	24	273	21	99	29	149	17	161	8	186	740
08:15 AM	42	84	21	147	31	211	31	273	22	115	16	153	21	157	12	190	763
Total Volume	140	351	57	548	174	877	119	1170	109	448	117	674	68	655	60	783	3175
% App. Total	25.5	64.1	10.4		14.9	75	10.2		16.2	66.5	17.4		8.7	83.7	7.7		
PHF	.761	.954	.679	.932	.837	.906	.783	.881	.779	.830	.750	.806	.810	.885	.625	.859	.874

City of Lancaster
 N/S: Sierra Highway
 E/W: Avenue K
 Weather: Clear

File Name : LAN_SIERRA_AVE K_AM
 Site Code : 10815556
 Start Date : 10/21/2015
 Page No : 2



Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:45 AM				08:30 AM			
+0 mins.	28	89	13	130	43	223	26	292	35	135	39	209	24	151	17	192
+15 mins.	46	86	7	139	52	242	38	332	21	99	29	149	38	157	19	214
+30 mins.	24	92	16	132	48	201	24	273	22	115	16	153	23	136	25	184
+45 mins.	42	84	21	147	31	211	31	273	16	121	30	167	19	169	21	209
Total Volume	140	351	57	548	174	877	119	1170	94	470	114	678	104	613	82	799
% App. Total	25.5	64.1	10.4		14.9	75	10.2		13.9	69.3	16.8		13	76.7	10.3	
PHF	.761	.954	.679	.932	.837	.906	.783	.881	.671	.870	.731	.811	.684	.907	.820	.933

City of Lancaster
 N/S: Sierra Highway
 E/W: Avenue K
 Weather: Clear

File Name : LAN_SIERRA_AVE K_MD
 Site Code : 10815556
 Start Date : 10/21/2015
 Page No : 1

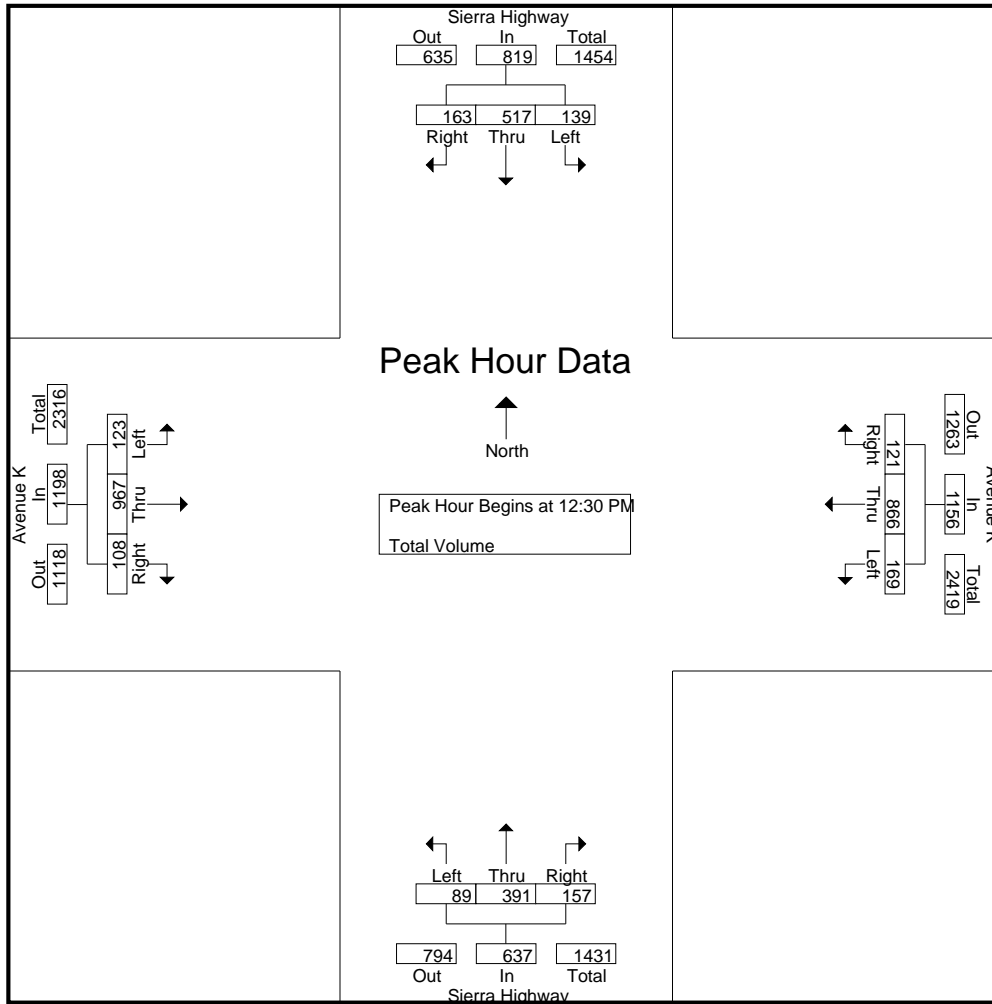
Groups Printed- Total Volume

Start Time	Sierra Highway Southbound				Avenue K Westbound				Sierra Highway Northbound				Avenue K Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
11:45 AM	36	108	39	183	39	232	27	298	17	111	26	154	34	211	16	261	896
Total	36	108	39	183	39	232	27	298	17	111	26	154	34	211	16	261	896
12:00 PM	40	129	51	220	42	204	43	289	28	106	23	157	40	209	25	274	940
12:15 PM	35	110	44	189	34	219	22	275	19	88	37	144	28	225	26	279	887
12:30 PM	24	126	42	192	48	226	21	295	19	102	38	159	31	259	28	318	964
12:45 PM	39	130	37	206	37	211	34	282	26	84	45	155	30	245	31	306	949
Total	138	495	174	807	161	860	120	1141	92	380	143	615	129	938	110	1177	3740
01:00 PM	34	134	39	207	42	225	33	300	31	101	32	164	26	219	26	271	942
01:15 PM	42	127	45	214	42	204	33	279	13	104	42	159	36	244	23	303	955
01:30 PM	32	110	51	193	46	232	28	306	22	88	34	144	27	224	26	277	920
Grand Total	282	974	348	1604	330	1753	241	2324	175	784	277	1236	252	1836	201	2289	7453
Apprch %	17.6	60.7	21.7		14.2	75.4	10.4		14.2	63.4	22.4		11	80.2	8.8		
Total %	3.8	13.1	4.7	21.5	4.4	23.5	3.2	31.2	2.3	10.5	3.7	16.6	3.4	24.6	2.7	30.7	

Start Time	Sierra Highway Southbound				Avenue K Westbound				Sierra Highway Northbound				Avenue K Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 11:45 AM to 01:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:30 PM																	
12:30 PM	24	126	42	192	48	226	21	295	19	102	38	159	31	259	28	318	964
12:45 PM	39	130	37	206	37	211	34	282	26	84	45	155	30	245	31	306	949
01:00 PM	34	134	39	207	42	225	33	300	31	101	32	164	26	219	26	271	942
01:15 PM	42	127	45	214	42	204	33	279	13	104	42	159	36	244	23	303	955
Total Volume	139	517	163	819	169	866	121	1156	89	391	157	637	123	967	108	1198	3810
% App. Total	17	63.1	19.9		14.6	74.9	10.5		14	61.4	24.6		10.3	80.7	9		
PHF	.827	.965	.906	.957	.880	.958	.890	.963	.718	.940	.872	.971	.854	.933	.871	.942	.988

City of Lancaster
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Peak Hour Analysis From 11:45 AM to 01:30 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	12:45 PM				12:45 PM				12:30 PM				12:30 PM			
+0 mins.	39	130	37	206	37	211	34	282	19	102	38	159	31	259	28	318
+15 mins.	34	134	39	207	42	225	33	300	26	84	45	155	30	245	31	306
+30 mins.	42	127	45	214	42	204	33	279	31	101	32	164	26	219	26	271
+45 mins.	32	110	51	193	46	232	28	306	13	104	42	159	36	244	23	303
Total Volume	147	501	172	820	167	872	128	1167	89	391	157	637	123	967	108	1198
% App. Total	17.9	61.1	21		14.3	74.7	11		14	61.4	24.6		10.3	80.7	9	
PHF	.875	.935	.843	.958	.908	.940	.941	.953	.718	.940	.872	.971	.854	.933	.871	.942

City of Lancaster
 N/S: Sierra Highway
 E/W: Avenue K
 Weather: Clear

File Name : LAN_SIERRA_AVE K_PM
 Site Code : 10815556
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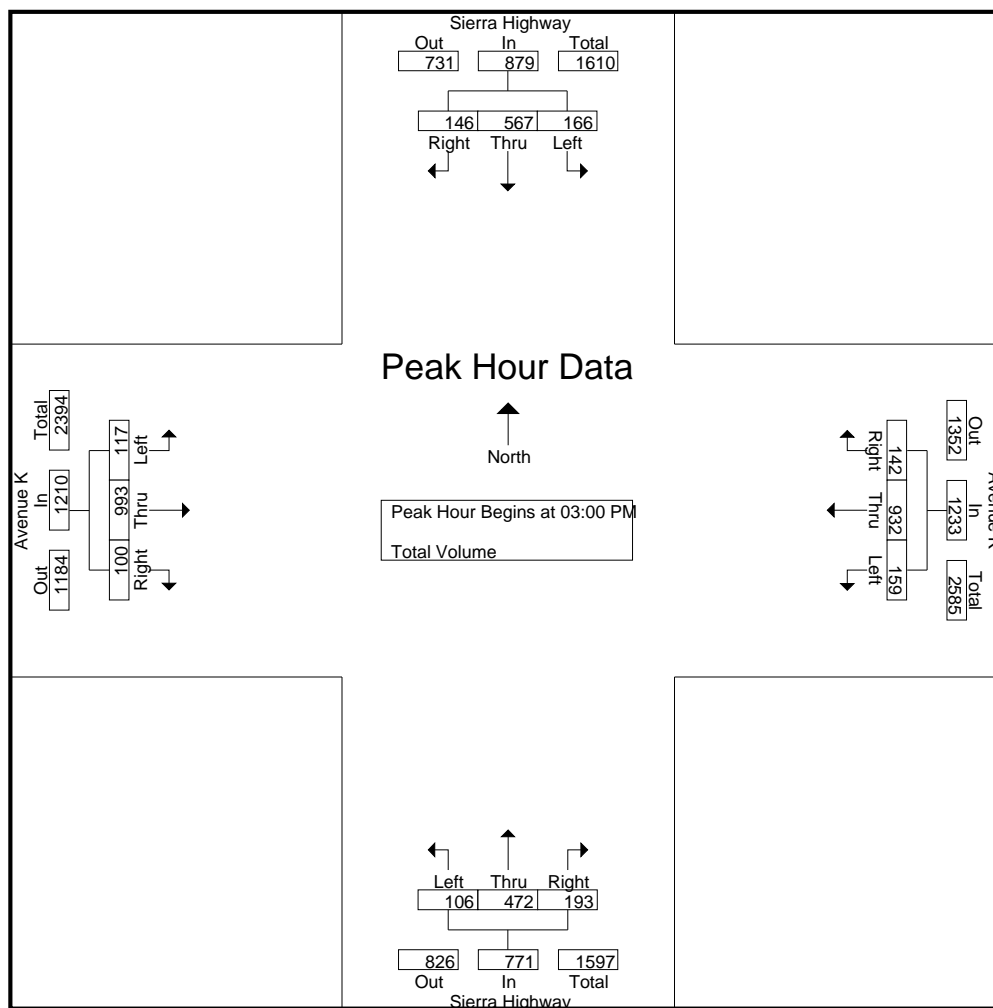
Groups Printed- Total Volume

Start Time	Sierra Highway Southbound				Avenue K Westbound				Sierra Highway Northbound				Avenue K Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
02:00 PM	31	109	42	182	37	204	36	277	24	113	33	170	22	213	18	253	882
02:15 PM	35	126	29	190	32	212	34	278	34	105	35	174	22	249	17	288	930
02:30 PM	38	117	33	188	32	195	31	258	28	98	39	165	27	275	27	329	940
02:45 PM	34	125	34	193	31	253	38	322	25	126	44	195	30	258	20	308	1018
Total	138	477	138	753	132	864	139	1135	111	442	151	704	101	995	82	1178	3770
03:00 PM	60	149	37	246	36	233	50	319	26	110	48	184	28	232	30	290	1039
03:15 PM	47	154	38	239	40	236	31	307	25	129	45	199	30	263	18	311	1056
03:30 PM	22	127	35	184	49	234	33	316	19	100	45	164	26	245	25	296	960
03:45 PM	37	137	36	210	34	229	28	291	36	133	55	224	33	253	27	313	1038
Total	166	567	146	879	159	932	142	1233	106	472	193	771	117	993	100	1210	4093
Grand Total	304	1044	284	1632	291	1796	281	2368	217	914	344	1475	218	1988	182	2388	7863
Apprch %	18.6	64	17.4		12.3	75.8	11.9		14.7	62	23.3		9.1	83.2	7.6		
Total %	3.9	13.3	3.6	20.8	3.7	22.8	3.6	30.1	2.8	11.6	4.4	18.8	2.8	25.3	2.3	30.4	

Start Time	Sierra Highway Southbound				Avenue K Westbound				Sierra Highway Northbound				Avenue K Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	60	149	37	246	36	233	50	319	26	110	48	184	28	232	30	290	1039
03:15 PM	47	154	38	239	40	236	31	307	25	129	45	199	30	263	18	311	1056
03:30 PM	22	127	35	184	49	234	33	316	19	100	45	164	26	245	25	296	960
03:45 PM	37	137	36	210	34	229	28	291	36	133	55	224	33	253	27	313	1038
Total Volume	166	567	146	879	159	932	142	1233	106	472	193	771	117	993	100	1210	4093
% App. Total	18.9	64.5	16.6		12.9	75.6	11.5		13.7	61.2	25		9.7	82.1	8.3		
PHF	.692	.920	.961	.893	.811	.987	.710	.966	.736	.887	.877	.860	.886	.944	.833	.966	.969

City of Lancaster
 N/S: Sierra Highway
 E/W: Avenue K
 Weather: Clear

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Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	03:00 PM				02:45 PM				03:00 PM				02:30 PM			
+0 mins.	60	149	37	246	31	253	38	322	26	110	48	184	27	275	27	329
+15 mins.	47	154	38	239	36	233	50	319	25	129	45	199	30	258	20	308
+30 mins.	22	127	35	184	40	236	31	307	19	100	45	164	28	232	30	290
+45 mins.	37	137	36	210	49	234	33	316	36	133	55	224	30	263	18	311
Total Volume	166	567	146	879	156	956	152	1264	106	472	193	771	115	1028	95	1238
% App. Total	18.9	64.5	16.6		12.3	75.6	12		13.7	61.2	25		9.3	83	7.7	
PHF	.692	.920	.961	.893	.796	.945	.760	.981	.736	.887	.877	.860	.958	.935	.792	.941

Location: Lancaster
 N/S: Sierra Highway
 E/W: Avenue K



Date: 10/21/2015
 Day: Wednesday

PEDESTRIANS

	North Leg Sierra Highway	East Leg Avenue K	South Leg Sierra Highway	West Leg Avenue K	TOTAL
7:30 AM	0	1	1	0	2
7:45 AM	0	0	3	0	3
8:00 AM	2	0	4	2	8
8:15 AM	1	2	0	1	4
8:30 AM	0	1	2	0	3
8:45 AM	2	1	2	2	7
9:00 AM	2	1	1	2	6
9:15 AM	0	0	2	0	2
TOTAL VOLUMES:	7	6	15	7	35

	North Leg Sierra Highway	East Leg Avenue K	South Leg Sierra Highway	West Leg Avenue K	TOTAL
11:45 AM	1	0	0	1	2
12:00 PM	1	1	3	1	6
12:15 PM	1	1	5	1	8
12:30 PM	1	0	0	1	2
12:45 PM	0	1	1	0	2
1:00 PM	2	3	0	2	7
1:15 PM	0	0	4	0	4
1:30 PM	0	1	2	0	3
TOTAL VOLUMES:	6	7	15	6	34

	North Leg Sierra Highway	East Leg Avenue K	South Leg Sierra Highway	West Leg Avenue K	TOTAL
2:00 PM	0	0	3	0	3
2:15 PM	0	1	0	0	1
2:30 PM	0	1	0	0	1
2:45 PM	0	0	0	0	0
3:00 PM	1	1	5	1	8
3:15 PM	3	1	5	2	11
3:30 PM	2	1	1	0	4
3:45 PM	1	1	5	1	8
TOTAL VOLUMES:	7	6	19	4	36

Location: Lancaster
 N/S: Sierra Highway
 E/W: Avenue K



Date: 10/21/2015
 Day: Wednesday

BICYCLES

	North Leg Sierra Highway	East Leg Avenue K	South Leg Sierra Highway	West Leg Avenue K	TOTAL
7:30 AM	0	2	1	0	3
7:45 AM	1	0	0	0	1
8:00 AM	0	0	0	0	0
8:15 AM	1	2	2	0	5
8:30 AM	0	0	0	0	0
8:45 AM	0	2	1	0	3
9:00 AM	0	0	1	1	2
9:15 AM	0	0	2	0	2
TOTAL VOLUMES:	2	6	7	1	16

	North Leg Sierra Highway	East Leg Avenue K	South Leg Sierra Highway	West Leg Avenue K	TOTAL
11:45 AM	1	0	0	1	2
12:00 PM	0	0	2	0	2
12:15 PM	0	0	3	0	3
12:30 PM	0	1	0	0	1
12:45 PM	0	1	0	1	2
1:00 PM	1	2	1	0	4
1:15 PM	0	1	0	0	1
1:30 PM	0	0	0	0	0
TOTAL VOLUMES:	2	5	6	2	15

	North Leg Sierra Highway	East Leg Avenue K	South Leg Sierra Highway	West Leg Avenue K	TOTAL
2:00 PM	0	0	0	0	0
2:15 PM	0	1	0	0	1
2:30 PM	0	0	0	0	0
2:45 PM	0	0	2	0	2
3:00 PM	3	0	1	0	4
3:15 PM	3	1	0	0	4
3:30 PM	0	0	1	0	1
3:45 PM	1	0	2	1	4
TOTAL VOLUMES:	7	2	6	1	16

City of Lancaster
 N/S: Division Street
 E/W: Avenue K
 Weather: Clear

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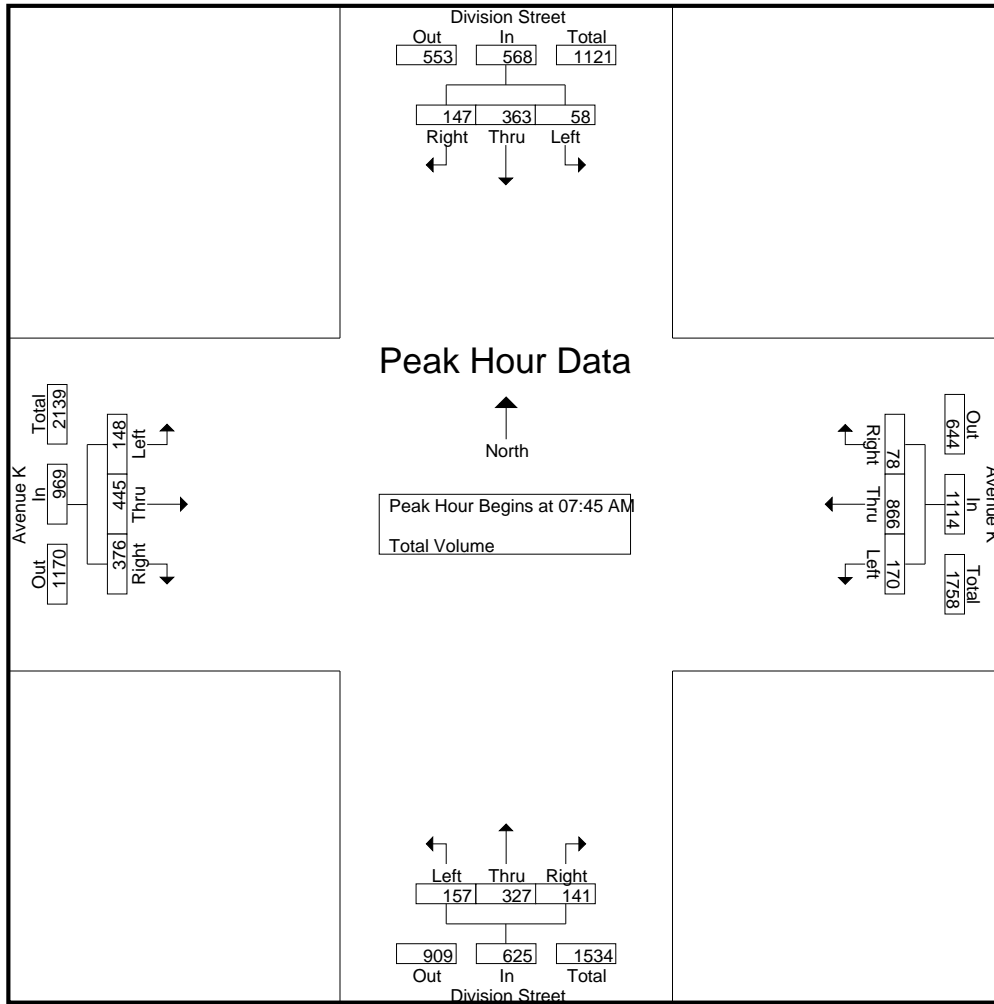
Groups Printed- Total Volume

Start Time	Division Street Southbound				Avenue K Westbound				Division Street Northbound				Avenue K Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:30 AM	12	78	35	125	49	247	9	305	18	60	39	117	29	121	62	212	759
07:45 AM	16	106	38	160	40	266	23	329	22	65	37	124	46	139	120	305	918
Total	28	184	73	285	89	513	32	634	40	125	76	241	75	260	182	517	1677
08:00 AM	12	91	32	135	39	194	17	250	34	87	46	167	43	118	74	235	787
08:15 AM	12	89	43	144	46	197	22	265	47	86	27	160	31	85	105	221	790
08:30 AM	18	77	34	129	45	209	16	270	54	89	31	174	28	103	77	208	781
08:45 AM	15	85	49	149	53	200	18	271	51	83	40	174	37	91	91	219	813
Total	57	342	158	557	183	800	73	1056	186	345	144	675	139	397	347	883	3171
09:00 AM	9	55	29	93	45	193	14	252	61	83	36	180	31	95	56	182	707
09:15 AM	8	55	38	101	37	198	7	242	51	86	40	177	32	130	59	221	741
Grand Total	102	636	298	1036	354	1704	126	2184	338	639	296	1273	277	882	644	1803	6296
Apprch %	9.8	61.4	28.8		16.2	78	5.8		26.6	50.2	23.3		15.4	48.9	35.7		
Total %	1.6	10.1	4.7	16.5	5.6	27.1	2	34.7	5.4	10.1	4.7	20.2	4.4	14	10.2	28.6	

Start Time	Division Street Southbound				Avenue K Westbound				Division Street Northbound				Avenue K Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	16	106	38	160	40	266	23	329	22	65	37	124	46	139	120	305	918
08:00 AM	12	91	32	135	39	194	17	250	34	87	46	167	43	118	74	235	787
08:15 AM	12	89	43	144	46	197	22	265	47	86	27	160	31	85	105	221	790
08:30 AM	18	77	34	129	45	209	16	270	54	89	31	174	28	103	77	208	781
Total Volume	58	363	147	568	170	866	78	1114	157	327	141	625	148	445	376	969	3276
% App. Total	10.2	63.9	25.9		15.3	77.7	7		25.1	52.3	22.6		15.3	45.9	38.8		
PHF	.806	.856	.855	.888	.924	.814	.848	.847	.727	.919	.766	.898	.804	.800	.783	.794	.892

City of Lancaster
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Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:45 AM				07:30 AM				08:30 AM				07:30 AM			
+0 mins.	16	106	38	160	49	247	9	305	54	89	31	174	29	121	62	212
+15 mins.	12	91	32	135	40	266	23	329	51	83	40	174	46	139	120	305
+30 mins.	12	89	43	144	39	194	17	250	61	83	36	180	43	118	74	235
+45 mins.	18	77	34	129	46	197	22	265	51	86	40	177	31	85	105	221
Total Volume	58	363	147	568	174	904	71	1149	217	341	147	705	149	463	361	973
% App. Total	10.2	63.9	25.9		15.1	78.7	6.2		30.8	48.4	20.9		15.3	47.6	37.1	
PHF	.806	.856	.855	.888	.888	.850	.772	.873	.889	.958	.919	.979	.810	.833	.752	.798

City of Lancaster
 N/S: Division Street
 E/W: Avenue K
 Weather: Clear

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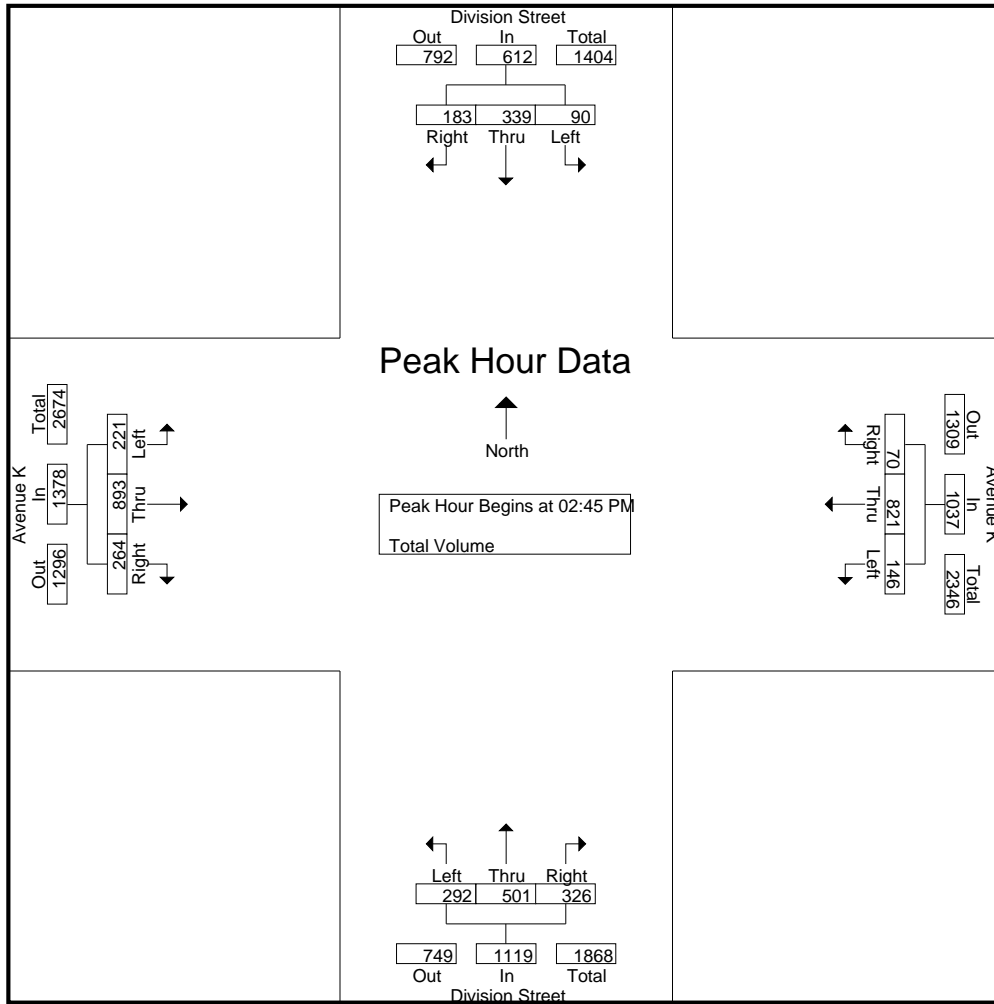
Groups Printed- Total Volume

Start Time	Division Street Southbound				Avenue K Westbound				Division Street Northbound				Avenue K Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
02:00 PM	16	73	38	127	25	191	12	228	44	102	70	216	45	180	66	291	862
02:15 PM	18	78	37	133	32	207	7	246	38	83	65	186	40	217	68	325	890
02:30 PM	27	86	38	151	37	169	20	226	66	125	75	266	46	224	76	346	989
02:45 PM	20	79	48	147	47	213	19	279	68	115	78	261	53	219	73	345	1032
Total	81	316	161	558	141	780	58	979	216	425	288	929	184	840	283	1307	3773
03:00 PM	30	77	43	150	29	205	17	251	79	120	83	282	62	217	72	351	1034
03:15 PM	16	99	33	148	37	203	19	259	73	144	70	287	56	232	72	360	1054
03:30 PM	24	84	59	167	33	200	15	248	72	122	95	289	50	225	47	322	1026
03:45 PM	24	78	34	136	38	205	17	260	54	106	73	233	54	228	46	328	957
Total	94	338	169	601	137	813	68	1018	278	492	321	1091	222	902	237	1361	4071
Grand Total	175	654	330	1159	278	1593	126	1997	494	917	609	2020	406	1742	520	2668	7844
Apprch %	15.1	56.4	28.5		13.9	79.8	6.3		24.5	45.4	30.1		15.2	65.3	19.5		
Total %	2.2	8.3	4.2	14.8	3.5	20.3	1.6	25.5	6.3	11.7	7.8	25.8	5.2	22.2	6.6	34	

Start Time	Division Street Southbound				Avenue K Westbound				Division Street Northbound				Avenue K Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:45 PM																	
02:45 PM	20	79	48	147	47	213	19	279	68	115	78	261	53	219	73	345	1032
03:00 PM	30	77	43	150	29	205	17	251	79	120	83	282	62	217	72	351	1034
03:15 PM	16	99	33	148	37	203	19	259	73	144	70	287	56	232	72	360	1054
03:30 PM	24	84	59	167	33	200	15	248	72	122	95	289	50	225	47	322	1026
Total Volume	90	339	183	612	146	821	70	1037	292	501	326	1119	221	893	264	1378	4146
% App. Total	14.7	55.4	29.9		14.1	79.2	6.8		26.1	44.8	29.1		16	64.8	19.2		
PHF	.750	.856	.775	.916	.777	.964	.921	.929	.924	.870	.858	.968	.891	.962	.904	.957	.983

City of Lancaster
 N/S: Division Street
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Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	02:45 PM				02:45 PM				02:45 PM				02:30 PM			
+0 mins.	20	79	48	147	47	213	19	279	68	115	78	261	46	224	76	346
+15 mins.	30	77	43	150	29	205	17	251	79	120	83	282	53	219	73	345
+30 mins.	16	99	33	148	37	203	19	259	73	144	70	287	62	217	72	351
+45 mins.	24	84	59	167	33	200	15	248	72	122	95	289	56	232	72	360
Total Volume	90	339	183	612	146	821	70	1037	292	501	326	1119	217	892	293	1402
% App. Total	14.7	55.4	29.9		14.1	79.2	6.8		26.1	44.8	29.1		15.5	63.6	20.9	
PHF	.750	.856	.775	.916	.777	.964	.921	.929	.924	.870	.858	.968	.875	.961	.964	.974

City of Lancaster
 N/S: Division Street
 E/W: Avenue K
 Weather: Clear

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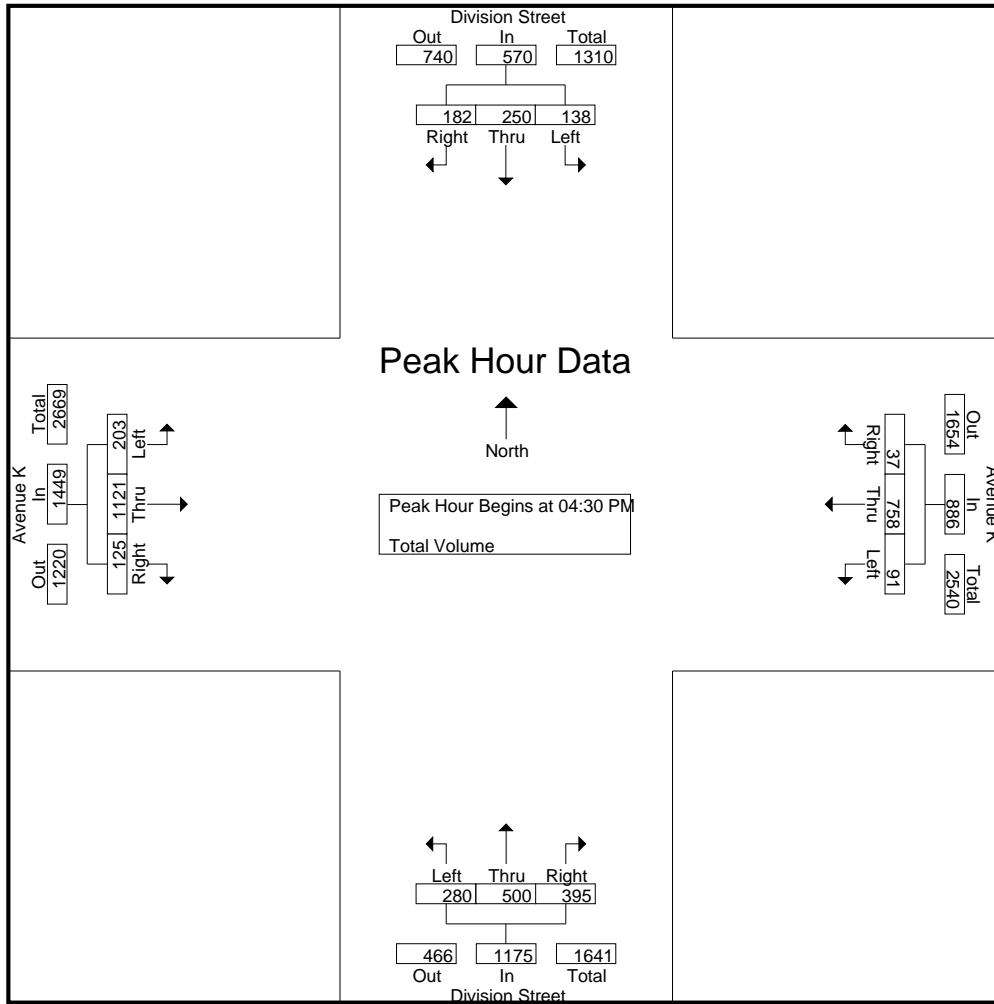
Groups Printed- Total Volume

Start Time	Division Street Southbound				Avenue K Westbound				Division Street Northbound				Avenue K Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:15 PM	34	66	40	140	22	169	15	206	70	112	90	272	47	256	43	346	964
04:30 PM	31	65	44	140	25	211	6	242	79	116	110	305	45	231	36	312	999
04:45 PM	35	66	63	164	22	174	12	208	63	113	89	265	66	271	30	367	1004
Total	100	197	147	444	69	554	33	656	212	341	289	842	158	758	109	1025	2967
05:00 PM	32	66	42	140	12	185	12	209	90	169	110	369	48	295	30	373	1091
05:15 PM	40	53	33	126	32	188	7	227	48	102	86	236	44	324	29	397	986
05:30 PM	28	49	35	112	22	194	19	235	43	101	100	244	57	232	11	300	891
05:45 PM	32	42	51	125	16	180	16	212	39	92	107	238	43	252	16	311	886
Total	132	210	161	503	82	747	54	883	220	464	403	1087	192	1103	86	1381	3854
06:00 PM	20	58	40	118	23	169	10	202	41	91	70	202	20	265	20	305	827
Grand Total	252	465	348	1065	174	1470	97	1741	473	896	762	2131	370	2126	215	2711	7648
Apprch %	23.7	43.7	32.7		10	84.4	5.6		22.2	42	35.8		13.6	78.4	7.9		
Total %	3.3	6.1	4.6	13.9	2.3	19.2	1.3	22.8	6.2	11.7	10	27.9	4.8	27.8	2.8	35.4	

Start Time	Division Street Southbound				Avenue K Westbound				Division Street Northbound				Avenue K Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:15 PM to 06:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	31	65	44	140	25	211	6	242	79	116	110	305	45	231	36	312	999
04:45 PM	35	66	63	164	22	174	12	208	63	113	89	265	66	271	30	367	1004
05:00 PM	32	66	42	140	12	185	12	209	90	169	110	369	48	295	30	373	1091
05:15 PM	40	53	33	126	32	188	7	227	48	102	86	236	44	324	29	397	986
Total Volume	138	250	182	570	91	758	37	886	280	500	395	1175	203	1121	125	1449	4080
% App. Total	24.2	43.9	31.9		10.3	85.6	4.2		23.8	42.6	33.6		14	77.4	8.6		
PHF	.863	.947	.722	.869	.711	.898	.771	.915	.778	.740	.898	.796	.769	.865	.868	.912	.935

City of Lancaster
 N/S: Division Street
 E/W: Avenue K
 Weather: Clear

File Name : LAN_DIVISION_AVE K_PM
 Site Code : 10815556
 Start Date : 10/21/2015
 Page No : 2



Peak Hour Analysis From 04:15 PM to 06:00 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:15 PM				04:30 PM				04:15 PM				04:30 PM			
+0 mins.	34	66	40	140	25	211	6	242	70	112	90	272	45	231	36	312
+15 mins.	31	65	44	140	22	174	12	208	79	116	110	305	66	271	30	367
+30 mins.	35	66	63	164	12	185	12	209	63	113	89	265	48	295	30	373
+45 mins.	32	66	42	140	32	188	7	227	90	169	110	369	44	324	29	397
Total Volume	132	263	189	584	91	758	37	886	302	510	399	1211	203	1121	125	1449
% App. Total	22.6	45	32.4		10.3	85.6	4.2		24.9	42.1	32.9		14	77.4	8.6	
PHF	.943	.996	.750	.890	.711	.898	.771	.915	.839	.754	.907	.820	.769	.865	.868	.912

Location: Lancaster
 N/S: Division Street
 E/W: Avenue K



Date: 10/21/2015
 Day: Wednesday

PEDESTRIANS

	North Leg Division Street	East Leg Avenue K	South Leg Division Street	West Leg Avenue K	TOTAL
7:30 AM	0	0	1	1	2
7:45 AM	0	0	2	0	2
8:00 AM	2	2	1	0	5
8:15 AM	0	0	3	3	6
8:30 AM	0	0	2	0	2
8:45 AM	0	0	0	1	1
9:00 AM	0	0	1	0	1
9:15 AM	2	2	1	1	6
TOTAL VOLUMES:	4	4	11	6	25

	North Leg Division Street	East Leg Avenue K	South Leg Division Street	West Leg Avenue K	TOTAL
2:00 PM	3	3	1	0	7
2:15 PM	1	1	1	0	3
2:30 PM	1	1	1	1	4
2:45 PM	1	1	0	2	4
3:00 PM	1	1	4	2	8
3:15 PM	0	0	2	1	3
3:30 PM	1	1	0	1	3
3:45 PM	4	4	2	1	11
TOTAL VOLUMES:	12	12	11	8	43

	North Leg Division Street	East Leg Avenue K	South Leg Division Street	West Leg Avenue K	TOTAL
4:15 PM	4	2	0	1	7
4:30 PM	5	2	0	0	7
4:45 PM	0	0	4	0	4
5:00 PM	1	1	1	0	3
5:15 PM	1	0	0	0	1
5:30 PM	0	1	3	0	4
5:45 PM	2	2	0	1	5
6:00 PM	2	3	1	0	6
TOTAL VOLUMES:	15	11	9	2	37

Location: Lancaster
 N/S: Division Street
 E/W: Avenue K



Date: 10/21/2015
 Day: Wednesday

BICYCLES

	North Leg Division Street	East Leg Avenue K	South Leg Division Street	West Leg Avenue K	TOTAL
7:30 AM	2	0	1	1	4
7:45 AM	1	1	0	0	2
8:00 AM	0	1	0	1	2
8:15 AM	1	0	1	1	3
8:30 AM	0	0	0	1	1
8:45 AM	1	2	1	0	4
9:00 AM	0	1	1	2	4
9:15 AM	0	1	0	0	1
TOTAL VOLUMES:	5	6	4	6	21

	North Leg Division Street	East Leg Avenue K	South Leg Division Street	West Leg Avenue K	TOTAL
2:00 PM	0	0	0	0	0
2:15 PM	0	1	0	0	1
2:30 PM	0	0	0	1	1
2:45 PM	0	1	2	1	4
3:00 PM	5	2	1	1	9
3:15 PM	2	1	1	1	5
3:30 PM	0	1	1	0	2
3:45 PM	0	1	1	0	2
TOTAL VOLUMES:	7	7	6	4	24

	North Leg Division Street	East Leg Avenue K	South Leg Division Street	West Leg Avenue K	TOTAL
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	1	1
4:45 PM	0	0	0	0	0
5:00 PM	0	0	1	0	1
5:15 PM	0	1	1	0	2
5:30 PM	1	0	0	0	1
5:45 PM	1	0	0	0	1
6:00 PM	2	0	0	0	2
TOTAL VOLUMES:	4	1	2	1	8

City of Lancaster
 N/S: 10th Street West
 E/W: Avenue K-8
 Weather: Clear

File Name : LAN_10W_AVE K-8_AM
 Site Code : 10815556
 Start Date : 10/22/2015
 Page No : 1

Groups Printed- Total Volume

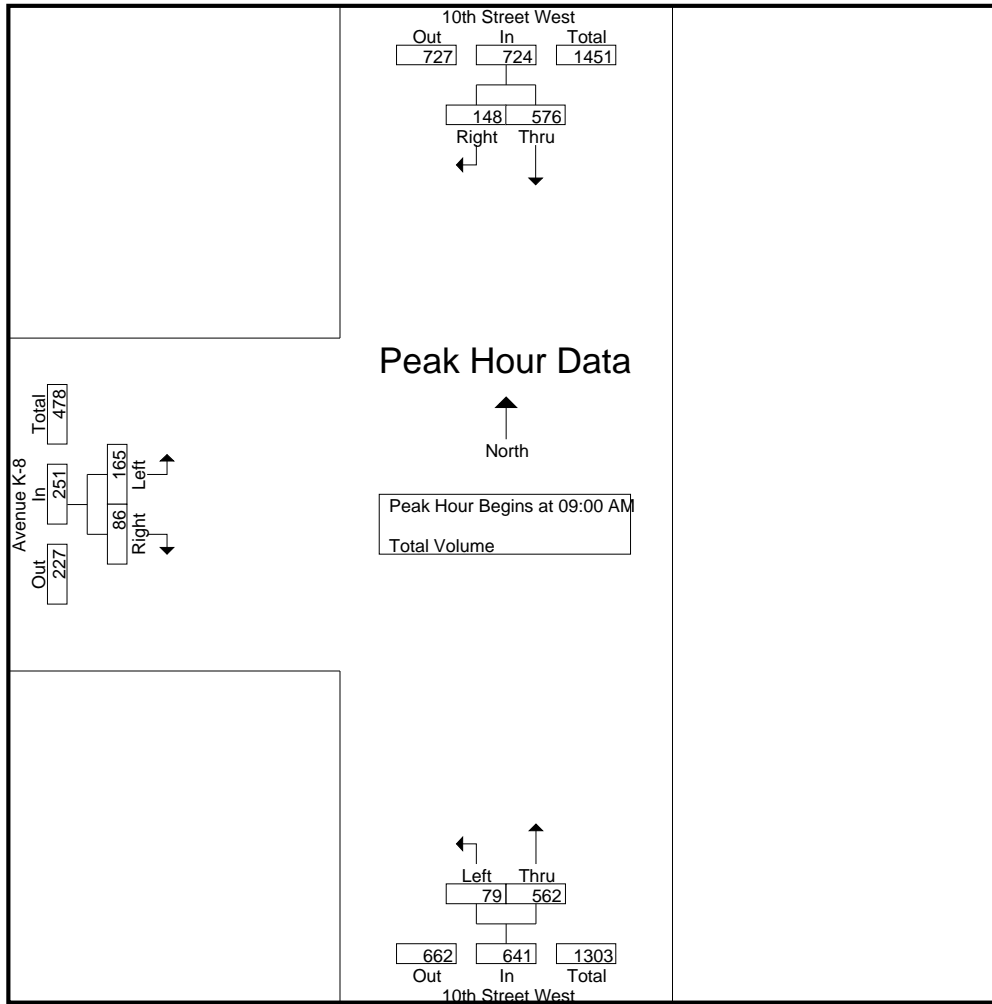
Start Time	10th Street West Southbound			10th Street West Northbound			Avenue K-8 Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
08:00 AM	122	38	160	20	131	151	60	18	78	389
08:15 AM	140	51	191	14	91	105	43	26	69	365
08:30 AM	123	27	150	21	113	134	44	26	70	354
08:45 AM	138	37	175	21	130	151	54	21	75	401
Total	523	153	676	76	465	541	201	91	292	1509
09:00 AM	113	38	151	14	116	130	41	17	58	339
09:15 AM	129	34	163	14	145	159	31	23	54	376
09:30 AM	153	38	191	30	146	176	47	24	71	438
09:45 AM	181	38	219	21	155	176	46	22	68	463
Total	576	148	724	79	562	641	165	86	251	1616
Grand Total	1099	301	1400	155	1027	1182	366	177	543	3125
Apprch %	78.5	21.5		13.1	86.9		67.4	32.6		
Total %	35.2	9.6	44.8	5	32.9	37.8	11.7	5.7	17.4	

Start Time	10th Street West Southbound			10th Street West Northbound			Avenue K-8 Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
09:00 AM	113	38	151	14	116	130	41	17	58	339
09:15 AM	129	34	163	14	145	159	31	23	54	376
09:30 AM	153	38	191	30	146	176	47	24	71	438
09:45 AM	181	38	219	21	155	176	46	22	68	463
Total Volume	576	148	724	79	562	641	165	86	251	1616
% App. Total	79.6	20.4		12.3	87.7		65.7	34.3		
PHF	.796	.974	.826	.658	.906	.911	.878	.896	.884	.873

Peak Hour Analysis From 08:00 AM to 09:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 09:00 AM

City of Lancaster
 N/S: 10th Street West
 E/W: Avenue K-8
 Weather: Clear

File Name : LAN_10W_AVE K-8_AM
 Site Code : 10815556
 Start Date : 10/22/2015
 Page No : 2



Peak Hour Analysis From 08:00 AM to 09:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	09:00 AM			09:00 AM			08:00 AM		
+0 mins.	113	38	151	14	116	130	60	18	78
+15 mins.	129	34	163	14	145	159	43	26	69
+30 mins.	153	38	191	30	146	176	44	26	70
+45 mins.	181	38	219	21	155	176	54	21	75
Total Volume	576	148	724	79	562	641	201	91	292
% App. Total	79.6	20.4		12.3	87.7		68.8	31.2	
PHF	.796	.974	.826	.658	.906	.911	.838	.875	.936

City of Lancaster
 N/S: 10th Street West
 E/W: Avenue K-8
 Weather: Clear

File Name : LAN_10W_AVE K-8_MD
 Site Code : 10815556
 Start Date : 10/22/2015
 Page No : 1

Groups Printed- Total Volume

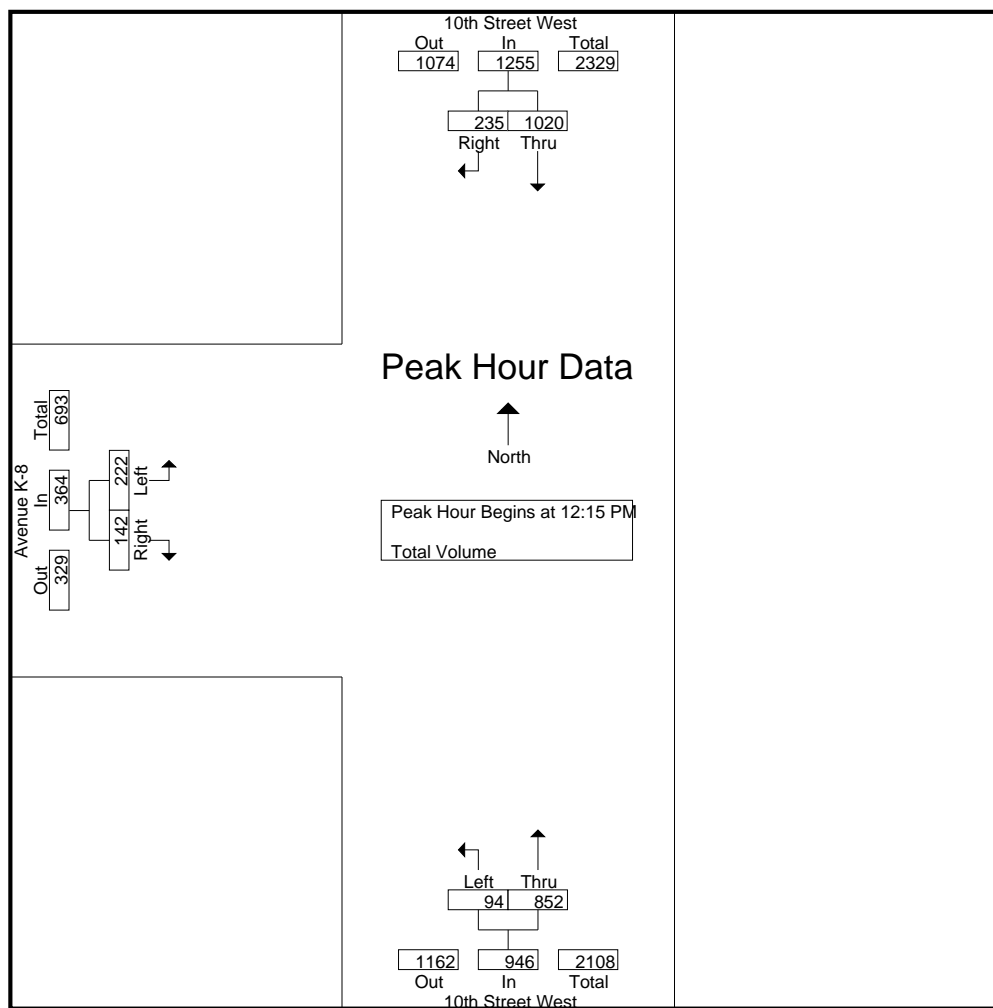
Start Time	10th Street West Southbound			10th Street West Northbound			Avenue K-8 Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
11:15 AM	218	43	261	10	182	192	39	38	77	530
11:30 AM	192	58	250	24	202	226	32	23	55	531
11:45 AM	226	60	286	19	213	232	51	37	88	606
Total	636	161	797	53	597	650	122	98	220	1667
12:00 PM	245	35	280	23	243	266	52	32	84	630
12:15 PM	226	50	276	20	236	256	51	37	88	620
12:30 PM	256	60	316	33	212	245	61	33	94	655
12:45 PM	248	57	305	18	209	227	58	36	94	626
Total	975	202	1177	94	900	994	222	138	360	2531
01:00 PM	290	68	358	23	195	218	52	36	88	664
Grand Total	1901	431	2332	170	1692	1862	396	272	668	4862
Apprch %	81.5	18.5		9.1	90.9		59.3	40.7		
Total %	39.1	8.9	48	3.5	34.8	38.3	8.1	5.6	13.7	

Start Time	10th Street West Southbound			10th Street West Northbound			Avenue K-8 Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
12:15 PM	226	50	276	20	236	256	51	37	88	620
12:30 PM	256	60	316	33	212	245	61	33	94	655
12:45 PM	248	57	305	18	209	227	58	36	94	626
01:00 PM	290	68	358	23	195	218	52	36	88	664
Total Volume	1020	235	1255	94	852	946	222	142	364	2565
% App. Total	81.3	18.7		9.9	90.1		61	39		
PHF	.879	.864	.876	.712	.903	.924	.910	.959	.968	.966

Peak Hour Analysis From 11:15 AM to 01:00 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 12:15 PM

City of Lancaster
 N/S: 10th Street West
 E/W: Avenue K-8
 Weather: Clear

File Name : LAN_10W_AVE K-8_MD
 Site Code : 10815556
 Start Date : 10/22/2015
 Page No : 2



Peak Hour Analysis From 11:15 AM to 01:00 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	12:15 PM			11:45 AM			12:15 PM		
+0 mins.	226	50	276	19	213	232	51	37	88
+15 mins.	256	60	316	23	243	266	61	33	94
+30 mins.	248	57	305	20	236	256	58	36	94
+45 mins.	290	68	358	33	212	245	52	36	88
Total Volume	1020	235	1255	95	904	999	222	142	364
% App. Total	81.3	18.7		9.5	90.5		61	39	
PHF	.879	.864	.876	.720	.930	.939	.910	.959	.968

City of Lancaster
 N/S: 10th Street West
 E/W: Avenue K-8
 Weather: Clear

File Name : LAN_10W_AVE K-8_PM
 Site Code : 10815556
 Start Date : 10/22/2015
 Page No : 1

Groups Printed- Total Volume

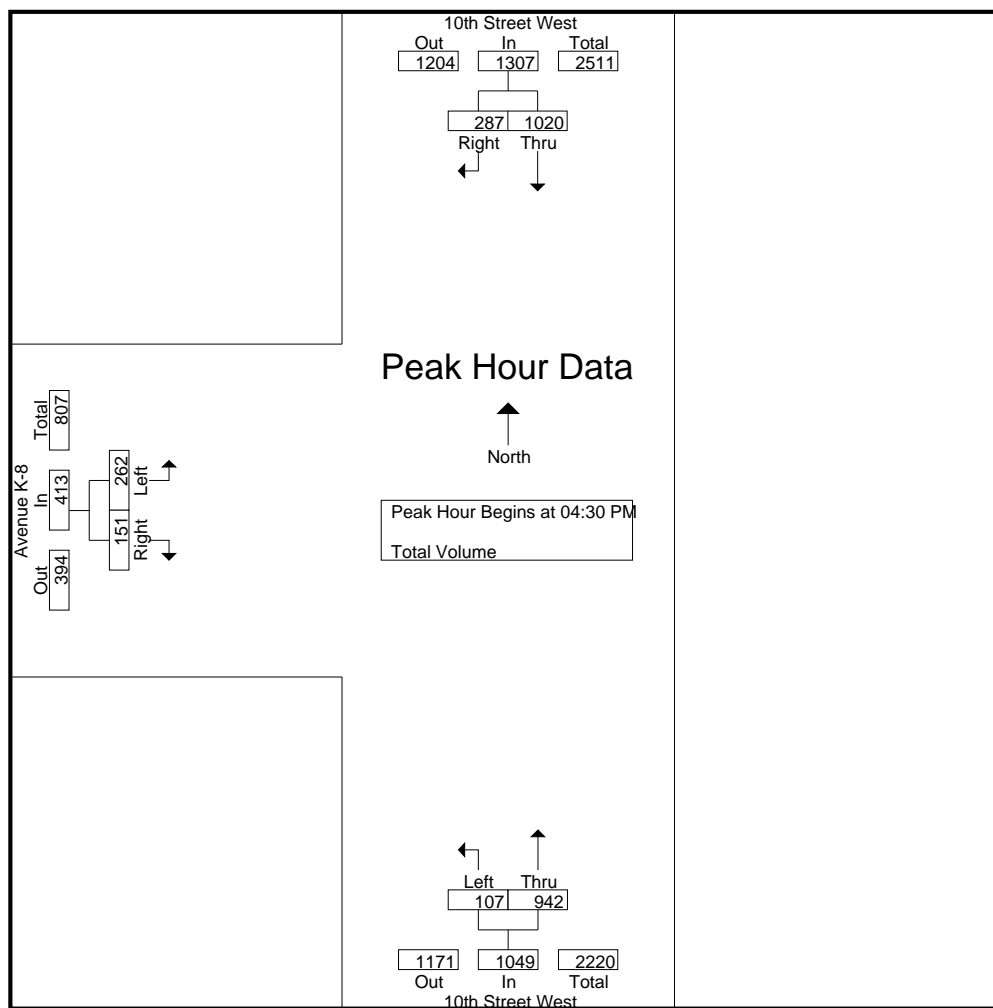
Start Time	10th Street West Southbound			10th Street West Northbound			Avenue K-8 Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
03:30 PM	228	73	301	32	231	263	56	23	79	643
03:45 PM	245	78	323	28	210	238	54	25	79	640
Total	473	151	624	60	441	501	110	48	158	1283
04:00 PM	252	48	300	22	231	253	55	24	79	632
04:15 PM	254	69	323	16	221	237	47	32	79	639
04:30 PM	241	70	311	39	245	284	70	35	105	700
04:45 PM	237	63	300	16	234	250	59	28	87	637
Total	984	250	1234	93	931	1024	231	119	350	2608
05:00 PM	288	82	370	27	241	268	60	47	107	745
05:15 PM	254	72	326	25	222	247	73	41	114	687
Grand Total	1999	555	2554	205	1835	2040	474	255	729	5323
Apprch %	78.3	21.7		10	90		65	35		
Total %	37.6	10.4	48	3.9	34.5	38.3	8.9	4.8	13.7	

Start Time	10th Street West Southbound			10th Street West Northbound			Avenue K-8 Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:30 PM	241	70	311	39	245	284	70	35	105	700
04:45 PM	237	63	300	16	234	250	59	28	87	637
05:00 PM	288	82	370	27	241	268	60	47	107	745
05:15 PM	254	72	326	25	222	247	73	41	114	687
Total Volume	1020	287	1307	107	942	1049	262	151	413	2769
% App. Total	78	22		10.2	89.8		63.4	36.6		
PHF	.885	.875	.883	.686	.961	.923	.897	.803	.906	.929

Peak Hour Analysis From 03:30 PM to 05:15 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:30 PM

City of Lancaster
 N/S: 10th Street West
 E/W: Avenue K-8
 Weather: Clear

File Name : LAN_10W_AVE K-8_PM
 Site Code : 10815556
 Start Date : 10/22/2015
 Page No : 2



Peak Hour Analysis From 03:30 PM to 05:15 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			04:30 PM		
+0 mins.	241	70	311	39	245	284	70	35	105
+15 mins.	237	63	300	16	234	250	59	28	87
+30 mins.	288	82	370	27	241	268	60	47	107
+45 mins.	254	72	326	25	222	247	73	41	114
Total Volume	1020	287	1307	107	942	1049	262	151	413
% App. Total	78	22		10.2	89.8		63.4	36.6	
PHF	.885	.875	.883	.686	.961	.923	.897	.803	.906

Location: Lancaster
 N/S: 10th Street West
 E/W: Avenue K-8



Date: 10/22/2015
 Day: Thursday

PEDESTRIANS

	North Leg 10th Street West	East Leg Avenue K-8	South Leg 10th Street West	West Leg Avenue K-8	TOTAL
8:00 AM	0	0	0	2	2
8:15 AM	0	0	0	3	3
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	1	1
9:00 AM	0	0	0	1	1
9:15 AM	0	0	0	2	2
9:30 AM	0	0	0	1	1
9:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	10	10

	North Leg 10th Street West	East Leg Avenue K-8	South Leg 10th Street West	West Leg Avenue K-8	TOTAL
11:15 AM	0	0	0	5	5
11:30 AM	0	0	0	3	3
11:45 AM	0	0	0	0	0
12:00 PM	0	0	0	0	0
12:15 PM	0	0	0	2	2
12:30 PM	0	0	0	2	2
12:45 PM	0	0	0	0	0
1:00 PM	0	0	0	3	3
TOTAL VOLUMES:	0	0	0	15	15

	North Leg 10th Street West	East Leg Avenue K-8	South Leg 10th Street West	West Leg Avenue K-8	TOTAL
3:30 PM	0	0	0	2	2
3:45 PM	0	0	10	1	11
4:00 PM	0	0	5	1	6
4:15 PM	0	0	4	4	8
4:30 PM	0	0	4	2	6
4:45 PM	0	0	2	2	4
5:00 PM	0	0	1	4	5
5:15 PM	0	0	1	7	8
TOTAL VOLUMES:	0	0	27	23	50

Location: Lancaster
 N/S: 10th Street West
 E/W: Avenue K-8



Date: 10/22/2015
 Day: Thursday

BICYCLES

	North Leg 10th Street West	East Leg Avenue K-8	South Leg 10th Street West	West Leg Avenue K-8	TOTAL
8:00 AM	0	0	1	0	1
8:15 AM	0	0	1	0	1
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	0	0	0	1	1
9:30 AM	0	0	0	1	1
9:45 AM	0	0	0	2	2
TOTAL VOLUMES:	0	0	2	4	6

	North Leg 10th Street West	East Leg Avenue K-8	South Leg 10th Street West	West Leg Avenue K-8	TOTAL
11:15 AM	0	0	1	0	1
11:30 AM	0	0	0	0	0
11:45 AM	0	0	0	0	0
12:00 PM	0	0	1	1	2
12:15 PM	0	0	0	0	0
12:30 PM	0	0	0	0	0
12:45 PM	0	0	0	0	0
1:00 PM	0	0	0	0	0
TOTAL VOLUMES:	0	0	2	1	3

	North Leg 10th Street West	East Leg Avenue K-8	South Leg 10th Street West	West Leg Avenue K-8	TOTAL
3:30 PM	0	0	1	0	1
3:45 PM	0	0	0	1	1
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	2	2
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	1	3	4
5:15 PM	0	0	1	1	2
TOTAL VOLUMES:	0	0	3	7	10

APPENDIX B – ICU RESULTS

Intersection # 1
 North/South Street 10th Street West
 East/West Street Avenue I
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*
Northbound Left	99	2,880	0.03	*	11	110	2,880	0.04	*	0	110	2,880	0.04	*
Northbound Through	141	1,600	0.09		9	150	1,600	0.09		59	209	1,600	0.13	
Northbound Right	127	1,600	0.00		13	140	1,600	0.00		0	140	1,600	0.00	
Southbound Left	124	2,880	0.04		16	140	2,880	0.05		0	140	2,880	0.05	
Southbound Through	270	3,200	0.11	*	20	290	3,200	0.14	*	95	385	3,200	0.17	*
Southbound Right	91	0	0.00		59	150	0	0.00		0	150	0	0.00	
Eastbound Left	102	1,600	0.06		88	190	1,600	0.12	*	0	190	1,600	0.12	*
Eastbound Through	418	3,200	0.13	*	182	600	3,200	0.19		0	600	3,200	0.19	
Eastbound Right	168	1,600	0.00		22	190	1,600	0.00		0	190	1,600	0.00	
Westbound Left	140	1,600	0.09	*	0	140	1,600	0.09		0	140	1,600	0.09	
Westbound Through	474	3,200	0.15		76	550	3,200	0.17	*	0	550	3,200	0.17	*
Westbound Right	79	1,600	0.00		11	90	1,600	0.00		0	90	1,600	0.00	
N/S Critical Movements			0.14					0.18					0.21	
E/W Critical Movements			0.22					0.29					0.29	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.46					0.57					0.60	
Level of Service (LOS)			A					A					A	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 1
 North/South Street 10th Street West
 East/West Street Avenue I
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	208	2,880	0.07	12	220	2,880	0.08	0	220	2,880	0.08
Northbound Through	255	1,600	0.16	55	310	1,600	0.19	106	416	1,600	0.26
Northbound Right	200	1,600	0.00	20	220	1,600	0.00	0	220	1,600	0.00
Southbound Left	146	2,880	0.05	14	160	2,880	0.06	0	160	2,880	0.06
Southbound Through	249	3,200	0.11	31	280	3,200	0.14	73	353	3,200	0.16
Southbound Right	87	0	0.00	73	160	0	0.00	0	160	0	0.00
Eastbound Left	117	1,600	0.07	133	250	1,600	0.16	0	250	1,600	0.16
Eastbound Through	548	3,200	0.17	292	840	3,200	0.26	0	840	3,200	0.26
Eastbound Right	184	1,600	0.00	56	240	1,600	0.00	0	240	1,600	0.00
Westbound Left	149	1,600	0.09	21	170	1,600	0.11	0	170	1,600	0.11
Westbound Through	567	3,200	0.18	23	590	3,200	0.18	0	590	3,200	0.18
Westbound Right	111	1,600	0.00	39	150	1,600	0.00	0	150	1,600	0.00
N/S Critical Movement			0.21				0.25				0.32
E/W Critical Movements			0.26				0.37				0.37
Clearance Interval			0.10				0.10				0.10
ICU			0.57				0.72				0.79
Level of Service (LOS)			A				C				C

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 2
 North/South Street 20th Street West
 East/West Street Lancaster Boulevard
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	17	1,600	0.01	3	20	1,600	0.01	32	52	1,600	0.03
Northbound Through	95	1,600	0.06	105	200	1,600	0.13	17	217	1,600	0.14
Northbound Right	144	1,600	0.00	86	230	1,600	0.00	0	230	1,600	0.00
Southbound Left	86	1,600	0.05	34	120	1,600	0.08	16	136	1,600	0.09
Southbound Through	142	1,600	0.09	58	200	1,600	0.13	22	222	1,600	0.14
Southbound Right	82	1,600	0.00	48	130	1,600	0.00	0	130	1,600	0.00
Eastbound Left	61	1,600	0.04	39	100	1,600	0.06	0	100	1,600	0.06
Eastbound Through	491	3,200	0.16	9	500	3,200	0.16	33	533	3,200	0.19
Eastbound Right	19	0	0.00	1	20	0	0.00	43	63	0	0.00
Westbound Left	61	1,600	0.04	29	90	1,600	0.06	0	90	1,600	0.06
Westbound Through	290	1,600	0.18	50	340	1,600	0.21	15	355	1,600	0.22
Westbound Right	47	1,600	0.00	13	60	1,600	0.00	7	67	1,600	0.00
N/S Critical Movements			0.11				0.21				0.23
E/W Critical Movements			0.22				0.27				0.28
Clearance Interval			0.10				0.10				0.10
ICU			0.43				0.58				0.61
Level of Service (LOS)			A				A				B

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 2
 North/South Street 20th Street West
 East/West Street Lancaster Boulevard
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project				
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	
Northbound Left	47	1,600	0.03	13	60	1,600	0.04	47	107	1,600	0.07	*
Northbound Through	204	1,600	0.13	126	330	1,600	0.21	24	354	1,600	0.22	*
Northbound Right	118	1,600	0.00	112	230	1,600	0.00	0	230	1,600	0.00	
Southbound Left	52	1,600	0.03	18	70	1,600	0.04	10	80	1,600	0.05	*
Southbound Through	153	1,600	0.10	147	300	1,600	0.19	19	319	1,600	0.20	*
Southbound Right	125	1,600	0.00	75	200	1,600	0.00	0	200	1,600	0.00	
Eastbound Left	127	1,600	0.08	63	190	1,600	0.12	0	190	1,600	0.12	*
Eastbound Through	393	3,200	0.13	47	440	3,200	0.15	21	461	3,200	0.17	*
Eastbound Right	35	0	0.00	15	50	0	0.00	37	87	0	0.00	
Westbound Left	75	1,600	0.05	55	130	1,600	0.08	0	130	1,600	0.08	*
Westbound Through	482	1,600	0.30	58	540	1,600	0.34	37	577	1,600	0.36	*
Westbound Right	54	1,600	0.00	16	70	1,600	0.00	18	88	1,600	0.00	
N/S Critical Movement			0.16				0.25				0.27	
E/W Critical Movements			0.38				0.46				0.48	
Clearance Interval			0.10				0.10				0.10	*
ICU			0.64				0.81				0.85	
Level of Service (LOS)			B				D				D	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 4
 North/South Street 10th Street West
 East/West Street Lancaster Boulevard
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	107	1,600	0.07	*	13	120	1,600	0.08	*	0	120	1,600	0.08	*
Northbound Through	279	3,200	0.09		51	330	3,200	0.10		40	370	3,200	0.12	
Northbound Right	63	1,600	0.00		7	70	1,600	0.00		16	86	1,600	0.00	
Southbound Left	59	1,600	0.04		11	70	1,600	0.04		0	70	1,600	0.04	
Southbound Through	352	3,200	0.14	*	68	420	3,200	0.16	*	53	473	3,200	0.19	*
Southbound Right	82	0	0.00		18	100	0	0.00		42	142	0	0.00	
Eastbound Left	155	1,600	0.10	*	25	180	1,600	0.11	*	19	199	1,600	0.12	*
Eastbound Through	238	1,600	0.15		42	280	1,600	0.18		8	288	1,600	0.18	
Eastbound Right	165	1,600	0.00		25	190	1,600	0.00		0	190	1,600	0.00	
Westbound Left	64	1,600	0.04		6	70	1,600	0.04		21	91	1,600	0.06	
Westbound Through	164	1,600	0.10	*	46	210	1,600	0.13	*	17	227	1,600	0.14	*
Westbound Right	43	1,600	0.00		17	60	1,600	0.00		0	60	1,600	0.00	
N/S Critical Movements			0.21					0.24					0.27	
E/W Critical Movements			0.20					0.24					0.26	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.51					0.58					0.63	
Level of Service (LOS)			A					A					B	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 4
 North/South Street 10th Street West
 East/West Street Lancaster Boulevard
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	169	1,600	0.11	*	1	170	1,600	0.11	*	0	170	1,600	0.11	*
Northbound Through	535	3,200	0.17		55	590	3,200	0.18		59	649	3,200	0.20	
Northbound Right	125	1,600	0.00		135	260	1,600	0.00		23	283	1,600	0.00	
Southbound Left	64	1,600	0.04		16	80	1,600	0.05		0	80	1,600	0.05	
Southbound Through	462	3,200	0.18	*	128	590	3,200	0.23	*	47	637	3,200	0.25	*
Southbound Right	101	0	0.00		49	150	0	0.00		26	176	0	0.00	
Eastbound Left	93	1,600	0.06		17	110	1,600	0.07		47	157	1,600	0.10	
Eastbound Through	264	1,600	0.17	*	46	310	1,600	0.19	*	19	329	1,600	0.21	*
Eastbound Right	112	1,600	0.00		28	140	1,600	0.00		0	140	1,600	0.00	
Westbound Left	130	1,600	0.08	*	120	250	1,600	0.16	*	19	269	1,600	0.17	*
Westbound Through	262	1,600	0.16		38	300	1,600	0.19		10	310	1,600	0.19	
Westbound Right	62	1,600	0.00		8	70	1,600	0.00		0	70	1,600	0.00	
N/S Critical Movement			0.29					0.34					0.36	
E/W Critical Movements			0.25					0.35					0.38	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.64					0.79					0.84	
Level of Service (LOS)			B					C					D	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 5
 North/South Street 25th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	33	1,600	0.02	7	40	1,600	0.03	0	40	1,600	0.03
Northbound Through	165	1,600	0.10	15	180	1,600	0.11	0	180	1,600	0.11
Northbound Right	108	1,600	0.00	82	190	1,600	0.00	38	228	1,600	0.00
Southbound Left	28	1,600	0.02	42	70	1,600	0.04	0	70	1,600	0.04
Southbound Through	111	1,600	0.07	-21	90	1,600	0.06	0	90	1,600	0.06
Southbound Right	111	1,600	0.00	9	120	1,600	0.00	0	120	1,600	0.00
Eastbound Left	164	1,600	0.10	16	180	1,600	0.11	0	180	1,600	0.11
Eastbound Through	668	4,800	0.15	522	1,190	3,200	0.37	114	1304	3,200	0.41
Eastbound Right	74	0	0.00	6	80	1,600	0.00	0	80	1,600	0.00
Westbound Left	90	1,600	0.06	70	160	1,600	0.10	24	184	1,600	0.12
Westbound Through	463	4,800	0.10	227	690	3,200	0.22	70	760	3,200	0.24
Westbound Right	28	1,600	0.00	42	70	1,600	0.00	0	70	1,600	0.00
N/S Critical Movements			0.12				0.15				0.15
E/W Critical Movements			0.21				0.47				0.53
Clearance Interval			0.10				0.10				0.10
ICU			0.43				0.72				0.78
Level of Service (LOS)			A				C				C

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 5
 North/South Street 25th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	19	1,600	0.01	11	30	1,600	0.02	0	30	1,600	0.02
Northbound Through	185	1,600	0.12 *	15	200	1,600	0.13 *	0	200	1,600	0.13 *
Northbound Right	99	1,600	0.00	91	190	1,600	0.00	29	219	1,600	0.00
Southbound Left	25	1,600	0.02 *	115	140	1,600	0.09 *	0	140	1,600	0.09 *
Southbound Through	151	1,600	0.09	-61	90	1,600	0.06	0	90	1,600	0.06
Southbound Right	96	1,600	0.00	14	110	1,600	0.00	0	110	1,600	0.00
Eastbound Left	149	1,600	0.09 *	11	160	1,600	0.10	0	160	1,600	0.10
Eastbound Through	474	4,800	0.11	456	930	3,200	0.29 *	87	1017	3,200	0.32 *
Eastbound Right	37	0	0.00	13	50	1,600	0.00	0	50	1,600	0.00
Westbound Left	182	1,600	0.11	118	300	1,600	0.19 *	42	342	1,600	0.21 *
Westbound Through	835	4,800	0.17 *	225	1,060	3,200	0.33	126	1186	3,200	0.37
Westbound Right	63	1,600	0.00	17	80	1,600	0.00	0	80	1,600	0.00
N/S Critical Movement			0.14				0.22				0.22
E/W Critical Movements			0.26				0.48				0.53
Clearance Interval			0.10 *				0.10 *				0.10 *
ICU			0.50				0.80				0.85
Level of Service (LOS)			A				C				D

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 8
 North/South Street 20th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project				
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	177	2,880	0.06		-87	90	2,880	0.03		72	162	2,880	0.06
Northbound Through	225	1,600	0.14	*	-5	220	1,600	0.14	*	9	229	1,600	0.14
Northbound Right	420	1,600	0.03	*	-100	320	1,600	0.00		236	556	1,600	0.04
Southbound Left	61	1,600	0.04	*	29	90	1,600	0.06	*	45	135	1,600	0.08
Southbound Through	172	3,200	0.06		-22	150	3,200	0.07		20	170	3,200	0.08
Southbound Right	32	0	0.00		48	80	0	0.00		0	80	0	0.00
Eastbound Left	34	1,600	0.02		86	120	1,600	0.08		0	120	1,600	0.08
Eastbound Through	745	4,800	0.19	*	345	1,090	3,200	0.34	*	214	1304	3,200	0.41
Eastbound Right	147	0	0.00		-127	20	1,600	0.00		119	139	1,600	0.00
Westbound Left	144	1,600	0.09	*	-14	130	1,600	0.08	*	136	266	1,600	0.17
Westbound Through	458	4,800	0.10		122	580	3,200	0.20		170	750	3,200	0.27
Westbound Right	39	0	0.00		21	60	0	0.00		40	100	0	0.00
N/S Critical Movements			0.18					0.20					0.22
E/W Critical Movements			0.28					0.42					0.58
Clearance Interval			0.10	*				0.10	*				0.10
ICU			0.56					0.72					0.90
Level of Service (LOS)			A					C					D

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 8
 North/South Street 20th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project			
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	493	2,880	0.17	*	-253	240	2,880	0.08	178	418	2,880	0.15
Northbound Through	276	1,600	0.17		4	280	1,600	0.18	22	302	1,600	0.19
Northbound Right	223	1,600	0.00		-33	190	1,600	0.00	224	414	1,600	0.00
Southbound Left	70	1,600	0.04		40	110	1,600	0.07	44	154	1,600	0.10
Southbound Through	267	3,200	0.10	*	3	270	3,200	0.12	12	282	3,200	0.12
Southbound Right	40	0	0.00		70	110	0	0.00	0	110	0	0.00
Eastbound Left	56	1,600	0.04		84	140	1,600	0.09	0	140	1,600	0.09
Eastbound Through	611	4,800	0.19	*	239	850	3,200	0.27	174	1024	3,200	0.32
Eastbound Right	290	0	0.00		-190	100	1,600	0.00	73	173	1,600	0.00
Westbound Left	288	1,600	0.18	*	-128	160	1,600	0.10	177	337	1,600	0.21
Westbound Through	808	4,800	0.18		472	1,280	3,200	0.44	302	1582	3,200	0.55
Westbound Right	68	0	0.00		72	140	0	0.00	49	189	0	0.00
N/S Critical Movement			0.27					0.25				0.29
E/W Critical Movements			0.37					0.53				0.64
Clearance Interval			0.10	*				0.10				0.10
ICU			0.74					0.88				1.03
Level of Service (LOS)			C					D				F

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 9
 North/South Street 18th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 8/5/2020

Movement	Existing (2019)			Future (2040) without Project			Future (2040) with Project					
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	
Northbound Left								69	69	1,600	0.04	*
Northbound Through								0	0	0	0.00	
Northbound Right								79	79	1,600	0.00	
Southbound Left								0	0	0	0.00	
Southbound Through								0	0	0	0.00	*
Southbound Right								0	0	0	0.00	
Eastbound Left								0	0	0	0.00	
Eastbound Through								1830	1830	3,200	0.57	*
Eastbound Right								165	165	1,600	0.00	
Westbound Left								166	166	1,600	0.10	*
Westbound Through								1017	1017	3,200	0.32	
Westbound Right								0	0	0	0.00	
N/S Critical Movements											0.04	
E/W Critical Movements											0.67	
Clearance Interval											0.10	*
ICU											0.81	
Level of Service (LOS)											D	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 9
 North/South Street 18th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 8/5/2020

Movement	Existing (2019)			Future (2040) without Project			Future (2040) with Project					
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	
Northbound Left								171	171	1,600	0.11	*
Northbound Through								0	0	0	0.00	
Northbound Right								201	201	1,600	0.00	
Southbound Left								0	0	0	0.00	
Southbound Through								0	0	0	0.00	*
Southbound Right								0	0	0	0.00	
Eastbound Left								0	0	0	0.00	
Eastbound Through								1491	1491	3,200	0.47	*
Eastbound Right							Project Intersection	101	101	1,600	0.00	
Westbound Left								102	102	1,600	0.06	*
Westbound Through								1377	1377	3,200	0.43	
Westbound Right								0	0	0	0.00	
N/S Critical Movement											0.11	
E/W Critical Movements											0.53	
Clearance Interval											0.10	*
ICU											0.74	
Level of Service (LOS)											C	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 10
 North/South Street 15th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	91	1,600	0.06	-1	90	1,600	0.06	268	358	1,600	0.22
Northbound Through	300	1,600	0.19	-10	290	1,600	0.18	65	355	1,600	0.22
Northbound Right	157	1,600	0.00	233	390	1,600	0.00	110	500	1,600	0.00
Southbound Left	96	1,600	0.06	4	100	1,600	0.06	2	102	1,600	0.06
Southbound Through	285	1,600	0.18	25	310	1,600	0.19	107	417	1,600	0.26
Southbound Right	80	1,600	0.00	0	80	1,600	0.00	114	194	1,600	0.00
Eastbound Left	123	1,600	0.08	17	140	1,600	0.09	51	191	1,600	0.12
Eastbound Through	645	3,200	0.20	-45	600	3,200	0.23	62	662	3,200	0.32
Eastbound Right	135	1,600	0.00	5	140	0	0.00	233	373	0	0.00
Westbound Left	159	1,600	0.10	-9	150	1,600	0.09	155	305	1,600	0.19
Westbound Through	587	3,200	0.20	-17	570	3,200	0.20	136	706	3,200	0.24
Westbound Right	61	0	0.00	9	70	0	0.00	3	73	0	0.00
N/S Critical Movements			0.25				0.25				0.48
E/W Critical Movements			0.30				0.32				0.51
Clearance Interval			0.10				0.10				0.10
ICU			0.65				0.67				1.09
Level of Service (LOS)			B				B				F

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 10
 North/South Street 15th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	149	1,600	0.09	*	21	170	1,600	0.11	*	255	425	1,600	0.27	*
Northbound Through	254	1,600	0.16		-24	230	1,600	0.14		117	347	1,600	0.22	
Northbound Right	212	1,600	0.00		58	270	1,600	0.00		166	436	1,600	0.00	
Southbound Left	102	1,600	0.06		28	130	1,600	0.08		3	133	1,600	0.08	
Southbound Through	262	1,600	0.16	*	158	420	1,600	0.26	*	80	500	1,600	0.31	*
Southbound Right	92	1,600	0.00		8	100	1,600	0.00		70	170	1,600	0.00	
Eastbound Left	63	1,600	0.04	*	-13	50	1,600	0.03		128	178	1,600	0.11	
Eastbound Through	712	3,200	0.22		18	730	3,200	0.27	*	153	883	3,200	0.42	*
Eastbound Right	143	1,600	0.00		-3	140	0	0.00		333	473	0	0.00	
Westbound Left	154	1,600	0.10		176	330	1,600	0.21	*	129	459	1,600	0.29	*
Westbound Through	827	3,200	0.28	*	-77	750	3,200	0.26		82	832	3,200	0.29	
Westbound Right	77	0	0.00		3	80	0	0.00		2	82	0	0.00	
N/S Critical Movement			0.25					0.37					0.58	
E/W Critical Movements			0.32					0.48					0.71	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.67					0.95					1.39	
Level of Service (LOS)			B					E					F	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 11
 North/South Street 10th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	136	2,880	0.05	*	14	150	2,880	0.05	*	4	154	2,880	0.05	*
Northbound Through	413	4,800	0.11		57	470	4,800	0.12		3	473	4,800	0.12	
Northbound Right	129	0	0.00		-9	120	0	0.00		5	125	0	0.00	
Southbound Left	99	2,880	0.03		1	100	2,880	0.03		0	100	2,880	0.03	
Southbound Through	364	4,800	0.10	*	76	440	4,800	0.12	*	2	442	4,800	0.13	*
Southbound Right	103	0	0.00		17	120	0	0.00		72	192	0	0.00	
Eastbound Left	126	2,880	0.04	*	4	130	2,880	0.05	*	53	183	2,880	0.06	*
Eastbound Through	493	4,800	0.12		77	570	4,800	0.14		111	681	4,800	0.16	
Eastbound Right	93	0	0.00		7	100	0	0.00		8	108	0	0.00	
Westbound Left	152	2,880	0.05		-2	150	2,880	0.05		3	153	2,880	0.05	
Westbound Through	674	4,800	0.17	*	-24	650	4,800	0.16	*	188	838	4,800	0.20	*
Westbound Right	132	0	0.00		-2	130	0	0.00		0	130	0	0.00	
N/S Critical Movements			0.15					0.17					0.18	
E/W Critical Movements			0.21					0.21					0.26	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.46					0.48					0.54	
Level of Service (LOS)			A					A					A	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 11
 North/South Street 10th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	204	2,880	0.07	*	16	220	2,880	0.08	*	8	228	2,880	0.08	*
Northbound Through	620	4,800	0.17		250	870	4,800	0.23		2	872	4,800	0.23	
Northbound Right	218	0	0.00		2	220	0	0.00		3	223	0	0.00	
Southbound Left	143	2,880	0.05		7	150	2,880	0.05		0	150	2,880	0.05	
Southbound Through	608	4,800	0.15	*	202	810	4,800	0.20	*	3	813	4,800	0.21	*
Southbound Right	121	0	0.00		19	140	0	0.00		63	203	0	0.00	
Eastbound Left	110	2,880	0.04		20	130	2,880	0.05		80	210	2,880	0.07	
Eastbound Through	713	4,800	0.19	*	-43	670	4,800	0.19	*	207	877	4,800	0.23	*
Eastbound Right	186	0	0.00		54	240	0	0.00		5	245	0	0.00	
Westbound Left	243	2,880	0.08	*	57	300	2,880	0.10	*	5	305	2,880	0.11	*
Westbound Through	703	4,800	0.17		7	710	4,800	0.17		140	850	4,800	0.20	
Westbound Right	108	0	0.00		-8	100	0	0.00		0	100	0	0.00	
N/S Critical Movement			0.22					0.28					0.29	
E/W Critical Movements			0.27					0.29					0.34	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.59					0.67					0.73	
Level of Service (LOS)			A					B					C	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 12
 North/South Street Sierra Highway
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	118	2,880	0.04	72	190	2,880	0.07	0	190	2,880	0.07
Northbound Through	370	3,200	0.12	80	450	3,200	0.14	0	450	3,200	0.14
Northbound Right	129	1,600	0.00	11	140	1,600	0.00	0	140	1,600	0.00
Southbound Left	99	2,880	0.03	11	110	2,880	0.04	0	110	2,880	0.04
Southbound Through	330	3,200	0.10	30	360	3,200	0.11	0	360	3,200	0.11
Southbound Right	73	1,600	0.00	7	80	1,600	0.00	0	80	1,600	0.00
Eastbound Left	67	2,880	0.02	23	90	2,880	0.03	0	90	2,880	0.03
Eastbound Through	685	4,800	0.14	95	780	4,800	0.16	105	885	4,800	0.18
Eastbound Right	96	1,600	0.00	14	110	1,600	0.00	0	110	1,600	0.00
Westbound Left	174	2,880	0.06	16	190	2,880	0.07	0	190	2,880	0.07
Westbound Through	844	3,200	0.26	6	850	3,200	0.27	172	1022	3,200	0.32
Westbound Right	86	1,600	0.00	14	100	1,600	0.00	0	100	1,600	0.00
N/S Critical Movements			0.15				0.18				0.18
E/W Critical Movements			0.28				0.30				0.35
Clearance Interval			0.10				0.10				0.10
ICU			0.53				0.58				0.63
Level of Service (LOS)			A				A				B

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 12
 North/South Street Sierra Highway
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	133	2,880	0.05	*	37	170	2,880	0.06	*	0	170	2,880	0.06	*
Northbound Through	380	3,200	0.12		90	470	3,200	0.15		0	470	3,200	0.15	
Northbound Right	195	1,600	0.00		145	340	1,600	0.01	*	0	340	1,600	0.01	*
Southbound Left	172	2,880	0.06		58	230	2,880	0.08		0	230	2,880	0.08	
Southbound Through	591	3,200	0.18	*	209	800	3,200	0.25	*	0	800	3,200	0.25	*
Southbound Right	102	1,600	0.00		28	130	1,600	0.00		0	130	1,600	0.00	
Eastbound Left	88	2,880	0.03	*	52	140	2,880	0.05	*	0	140	2,880	0.05	*
Eastbound Through	1,068	4,800	0.22		22	1,090	4,800	0.23		189	1279	4,800	0.27	
Eastbound Right	174	1,600	0.00		36	210	1,600	0.00		0	210	1,600	0.00	
Westbound Left	152	2,880	0.05		8	160	2,880	0.06		0	160	2,880	0.06	
Westbound Through	768	3,200	0.24	*	32	800	3,200	0.25	*	131	931	3,200	0.29	*
Westbound Right	145	1,600	0.00		65	210	1,600	0.00		0	210	1,600	0.00	
N/S Critical Movement			0.23					0.31					0.31	
E/W Critical Movements			0.27					0.30					0.34	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.60					0.71					0.75	
Level of Service (LOS)			A					C					C	

Notes

V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 13
 North/South Street Division Street
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*
Northbound Left	161	1,600	0.10	*	9	170	1,600	0.11	*	0	170	1,600	0.11	*
Northbound Through	295	3,200	0.12		25	320	3,200	0.13		0	320	3,200	0.13	
Northbound Right	91	0	0.00		19	110	0	0.00		0	110	0	0.00	
Southbound Left	45	1,600	0.03		5	50	1,600	0.03		0	50	1,600	0.03	
Southbound Through	300	3,200	0.13	*	40	340	3,200	0.15	*	0	340	3,200	0.15	*
Southbound Right	116	0	0.00		14	130	0	0.00		0	130	0	0.00	
Eastbound Left	99	1,600	0.06	*	11	110	1,600	0.07	*	0	110	1,600	0.07	*
Eastbound Through	471	3,200	0.15		19	490	3,200	0.15		105	595	3,200	0.19	
Eastbound Right	188	1,600	0.00		12	200	1,600	0.00		0	200	1,600	0.00	
Westbound Left	148	1,600	0.09		52	200	1,600	0.13		0	200	1,600	0.13	
Westbound Through	795	3,200	0.25	*	35	830	3,200	0.26	*	172	1002	3,200	0.31	*
Westbound Right	57	1,600	0.00		3	60	1,600	0.00		0	60	1,600	0.00	
N/S Critical Movements			0.23					0.26					0.26	
E/W Critical Movements			0.31					0.33					0.38	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.64					0.69					0.74	
Level of Service (LOS)			B					B					C	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 13
 North/South Street Division Street
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	234	1,600	0.15	*	16	250	1,600	0.16	*	0	250	1,600	0.16	*
Northbound Through	386	3,200	0.18		4	390	3,200	0.20		0	390	3,200	0.20	
Northbound Right	191	0	0.00		49	240	0	0.00		0	240	0	0.00	
Southbound Left	85	1,600	0.05		5	90	1,600	0.06		0	90	1,600	0.06	
Southbound Through	267	3,200	0.12	*	43	310	3,200	0.13	*	0	310	3,200	0.13	*
Southbound Right	109	0	0.00		11	120	0	0.00		0	120	0	0.00	
Eastbound Left	142	1,600	0.09		8	150	1,600	0.09		0	150	1,600	0.09	
Eastbound Through	870	3,200	0.27	*	40	910	3,200	0.28	*	189	1099	3,200	0.34	*
Eastbound Right	162	1,600	0.00		8	170	1,600	0.00		0	170	1,600	0.00	
Westbound Left	122	1,600	0.08	*	98	220	1,600	0.14	*	0	220	1,600	0.14	*
Westbound Through	617	3,200	0.19		33	650	3,200	0.20		131	781	3,200	0.24	
Westbound Right	67	1,600	0.00		3	70	1,600	0.00		0	70	1,600	0.00	
N/S Critical Movement			0.27					0.29					0.29	
E/W Critical Movements			0.35					0.42					0.48	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.72					0.81					0.87	
Level of Service (LOS)			C					D					D	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 14
 North/South Street 15th Street West
 East/West Street Avenue J-3
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	148	1,600	0.09	*	12	160	1,600	0.10	*	107	267	1,600	0.17	*
Northbound Through	517	3,200	0.16		193	710	3,200	0.23		356	1066	3,200	0.34	
Northbound Right	1	0	0.00		9	10	0	0.00		16	26	0	0.00	
Southbound Left	8	1,600	0.01		2	10	1,600	0.01		34	44	1,600	0.03	
Southbound Through	503	3,200	0.19	*	-43	460	3,200	0.18	*	319	779	3,200	0.33	*
Southbound Right	119	0	0.00		11	130	0	0.00		142	272	0	0.00	
Eastbound Left	27	0	0.00		13	40	0	0.00		60	100	0	0.00	*
Eastbound Through	1	1,600	0.02	*	9	10	1,600	0.03	*	0	10	1,600	0.07	
Eastbound Right	52	1,600	0.00		18	70	1,600	0.00		52	122	1,600	0.00	
Westbound Left	8	0	0.00	*	2	10	0	0.00	*	49	59	0	0.00	
Westbound Through	0	1,600	0.01		0	0	1,600	0.02		0	0	1,600	0.07	*
Westbound Right	10	0	0.00		10	20	0	0.00		27	47	0	0.00	
N/S Critical Movements			0.28					0.28					0.50	
E/W Critical Movements			0.02					0.03					0.07	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.40					0.41					0.67	
Level of Service (LOS)			A					A					B	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 14
 North/South Street 15th Street West
 East/West Street Avenue J-3
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*
Northbound Left	81	1,600	0.05	*	19	100	1,600	0.06	*	66	166	1,600	0.10	*
Northbound Through	491	3,200	0.15		39	530	3,200	0.17		375	905	3,200	0.30	
Northbound Right	2	0	0.00		8	10	0	0.00		29	39	0	0.00	
Southbound Left	15	1,600	0.01		5	20	1,600	0.01		29	49	1,600	0.03	
Southbound Through	561	3,200	0.20	*	239	800	3,200	0.27	*	427	1227	3,200	0.43	*
Southbound Right	64	0	0.00		6	70	0	0.00		86	156	0	0.00	
Eastbound Left	88	0	0.00		32	120	0	0.00		147	267	0	0.00	
Eastbound Through	2	1,600	0.06	*	8	10	1,600	0.08	*	0	10	1,600	0.17	*
Eastbound Right	119	1,600	0.00		21	140	1,600	0.00		131	271	1,600	0.00	
Westbound Left	4	0	0.00	*	6	10	0	0.00	*	30	40	0	0.00	*
Westbound Through	0	1,600	0.01		0	0	1,600	0.02		0	0	1,600	0.05	
Westbound Right	9	0	0.00		11	20	0	0.00		16	36	0	0.00	
N/S Critical Movement			0.25					0.33					0.53	
E/W Critical Movements			0.06					0.08					0.17	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.41					0.51					0.80	
Level of Service (LOS)			A					A					C	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 15
 North/South Street 20th Street West
 East/West Street Home Depot Southerly Street
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)		Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	
Northbound Left								0	0	0	0.00	
Northbound Through								1045	1045	3,200	0.33	*
Northbound Right								399	399	1,600	0.00	
Southbound Left								439	439	1,600	0.27	*
Southbound Through								266	266	3,200	0.08	
Southbound Right								0	0	0	0.00	
Eastbound Left								0	0	0	0.00	
Eastbound Through								0	0	0	0.00	*
Eastbound Right								0	0	0	0.00	
Westbound Left								232	232	1,600	0.15	*
Westbound Through								0	0	0	0.00	
Westbound Right								196	196	1,600	0.00	
N/S Critical Movements											0.60	
E/W Critical Movements											0.15	
Clearance Interval											0.10	*
ICU											0.85	
Level of Service (LOS)											D	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 15
 North/South Street 20th Street West
 East/West Street Home Depot Southerly Street
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)			Future (2040) without Project			Future (2040) with Project				
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left								0	0	0	0.00
Northbound Through								979	979	3,200	0.31 *
Northbound Right								166	166	1,600	0.00
Southbound Left								234	234	1,600	0.15 *
Southbound Through								703	703	3,200	0.22
Southbound Right								0	0	0	0.00
Eastbound Left								0	0	0	0.00
Eastbound Through								0	0	0	0.00 *
Eastbound Right							Project Intersection	0	0	0	0.00
Westbound Left								310	310	1,600	0.19 *
Westbound Through								0	0	0	0.00
Westbound Right								251	251	1,600	0.00
N/S Critical Movement											0.46
E/W Critical Movements											0.19
Clearance Interval											0.10 *
ICU											0.75
Level of Service (LOS)											C

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 17
 North/South Street 25th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project				
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	63	1,600	0.04		7	70	1,600	0.04		0	70	1,600	0.04
Northbound Through	196	1,600	0.12	*	24	220	1,600	0.14	*	0	220	1,600	0.14
Northbound Right	149	1,600	0.00		11	160	1,600	0.00		121	281	1,600	0.00
Southbound Left	186	1,600	0.12	*	-66	120	1,600	0.08	*	0	120	1,600	0.08
Southbound Through	165	1,600	0.10		25	190	1,600	0.12		0	190	1,600	0.12
Southbound Right	16	1,600	0.00		4	20	1,600	0.00		0	20	1,600	0.00
Eastbound Left	26	1,600	0.02		4	30	1,600	0.02	*	0	30	1,600	0.02
Eastbound Through	582	3,200	0.20	*	-292	290	3,200	0.11		76	366	3,200	0.13
Eastbound Right	52	0	0.00		8	60	0	0.00		0	60	0	0.00
Westbound Left	23	1,600	0.01	*	7	30	1,600	0.02		61	91	1,600	0.06
Westbound Through	324	3,200	0.12		26	350	3,200	0.12	*	47	397	3,200	0.14
Westbound Right	58	0	0.00		-18	40	0	0.00		0	40	0	0.00
N/S Critical Movements			0.24					0.22					0.22
E/W Critical Movements			0.21					0.14					0.19
Clearance Interval			0.10	*				0.10	*				0.10
ICU			0.55					0.46					0.51
Level of Service (LOS)			A					A					A

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 17
 North/South Street 25th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project						
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio			
Northbound Left	36	1,600	0.02	14	50	1,600	0.03	*	0	50	1,600	0.03	*	
Northbound Through	168	1,600	0.11	*	22	190	1,600	0.12	*	0	190	1,600	0.12	*
Northbound Right	49	1,600	0.00		1	50	1,600	0.00		80	130	1,600	0.00	
Southbound Left	128	1,600	0.08	*	-98	30	1,600	0.02		0	30	1,600	0.02	
Southbound Through	202	1,600	0.13		38	240	1,600	0.15	*	0	240	1,600	0.15	*
Southbound Right	21	1,600	0.00		9	30	1,600	0.00		0	30	1,600	0.00	
Eastbound Left	18	1,600	0.01	*	2	20	1,600	0.01	*	0	20	1,600	0.01	*
Eastbound Through	269	3,200	0.09		-209	60	3,200	0.03		58	118	3,200	0.04	
Eastbound Right	11	0	0.00		9	20	0	0.00		0	20	0	0.00	
Westbound Left	44	1,600	0.03		6	50	1,600	0.03		135	185	1,600	0.12	
Westbound Through	494	3,200	0.19	*	176	670	3,200	0.23	*	84	754	3,200	0.26	*
Westbound Right	109	0	0.00		-39	70	0	0.00		0	70	0	0.00	
N/S Critical Movement			0.19				0.18					0.18		
E/W Critical Movements			0.20				0.24					0.27		
Clearance Interval			0.10	*			0.10	*				0.10	*	
ICU			0.49				0.52					0.55		
Level of Service (LOS)			A				A					A		

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 18
 North/South Street 20th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	64	1,600	0.04	-4	60	1,600	0.04	0	60	1,600	0.04
Northbound Through	278	3,200	0.09	152	430	3,200	0.13	73	503	3,200	0.16
Northbound Right	129	1,600	0.00	61	190	1,600	0.00	86	276	1,600	0.00
Southbound Left	65	1,600	0.04	-15	50	1,600	0.03	178	228	1,600	0.14
Southbound Through	239	3,200	0.07	111	350	3,200	0.11	32	382	3,200	0.12
Southbound Right	349	1,600	0.07	-259	90	1,600	0.00	45	135	1,600	0.00
Eastbound Left	115	1,600	0.07	15	130	1,600	0.08	100	230	1,600	0.14
Eastbound Through	484	3,200	0.17	136	620	3,200	0.25	97	717	1,600	0.45
Eastbound Right	66	0	0.00	104	170	0	0.00	0	170	1,600	0.00
Westbound Left	71	1,600	0.04	129	200	1,600	0.13	70	270	1,600	0.17
Westbound Through	382	3,200	0.13	-52	330	3,200	0.12	63	393	1,600	0.35
Westbound Right	34	0	0.00	6	40	0	0.00	121	161	0	0.00
N/S Critical Movements			0.13				0.16				0.30
E/W Critical Movements			0.21				0.38				0.62
Clearance Interval			0.10				0.10				0.10
ICU			0.44				0.64				1.02
Level of Service (LOS)			A				B				F

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 18
 North/South Street 20th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*
Northbound Left	133	1,600	0.08	*	-53	80	1,600	0.05	*	0	80	1,600	0.05	*
Northbound Through	397	3,200	0.12		-17	380	3,200	0.12		44	424	3,200	0.13	
Northbound Right	110	1,600	0.00		130	240	1,600	0.00		79	319	1,600	0.00	
Southbound Left	89	1,600	0.06		21	110	1,600	0.07		206	316	1,600	0.20	
Southbound Through	480	3,200	0.15	*	490	970	3,200	0.30	*	82	1052	3,200	0.33	*
Southbound Right	632	1,600	0.21	*	-532	100	1,600	0.00		112	212	1,600	0.00	
Eastbound Left	56	1,600	0.04	*	24	80	1,600	0.05		62	142	1,600	0.09	*
Eastbound Through	268	3,200	0.10		52	320	3,200	0.15	*	76	396	1,600	0.25	
Eastbound Right	56	0	0.00		94	150	0	0.00		0	150	1,600	0.00	
Westbound Left	124	1,600	0.08		446	570	1,600	0.36	*	92	662	1,600	0.41	
Westbound Through	540	3,200	0.19	*	150	690	3,200	0.24		107	797	1,600	0.64	*
Westbound Right	57	0	0.00		13	70	0	0.00		149	219	0	0.00	
N/S Critical Movement			0.23					0.35					0.38	
E/W Critical Movements			0.23					0.51					0.73	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.56					0.96					1.21	
Level of Service (LOS)			A					E					F	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 19
 North/South Street 15th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	44	1,600	0.03	6	50	1,600	0.03	108	158	1,600	0.10
Northbound Through	577	3,200	0.18	-77	500	3,200	0.16	240	740	3,200	0.23
Northbound Right	44	1,600	0.00	76	120	1,600	0.00	12	132	1,600	0.00
Southbound Left	33	1,600	0.02	7	40	1,600	0.03	70	110	1,600	0.07
Southbound Through	354	3,200	0.11	-14	340	3,200	0.11	168	508	3,200	0.16
Southbound Right	191	1,600	0.00	-1	190	1,600	0.00	159	349	1,600	0.00
Eastbound Left	242	1,600	0.15	48	290	1,600	0.18	160	450	1,600	0.28
Eastbound Through	331	1,600	0.21	129	460	1,600	0.29	34	494	1,600	0.31
Eastbound Right	114	1,600	0.00	6	120	1,600	0.00	74	194	1,600	0.00
Westbound Left	46	1,600	0.03	24	70	1,600	0.04	13	83	1,600	0.05
Westbound Through	250	1,600	0.16	40	290	1,600	0.18	72	362	1,600	0.23
Westbound Right	53	1,600	0.00	7	60	1,600	0.00	116	176	1,600	0.00
N/S Critical Movements			0.20				0.19				0.30
E/W Critical Movements			0.31				0.36				0.51
Clearance Interval			0.10				0.10				0.10
ICU			0.61				0.65				0.91
Level of Service (LOS)			B				B				E

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 19
 North/South Street 15th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	84	1,600	0.05	*	6	90	1,600	0.06	*	66	156	1,600	0.10	*
Northbound Through	409	3,200	0.13		-219	190	3,200	0.06		163	353	3,200	0.11	
Northbound Right	80	1,600	0.00		30	110	1,600	0.00		11	121	1,600	0.00	
Southbound Left	36	1,600	0.02		4	40	1,600	0.03		130	170	1,600	0.11	
Southbound Through	474	3,200	0.15	*	-74	400	3,200	0.13	*	312	712	3,200	0.22	*
Southbound Right	339	1,600	0.00		211	550	1,600	0.14	*	161	711	1,600	0.02	*
Eastbound Left	117	1,600	0.07	*	13	130	1,600	0.08	*	196	326	1,600	0.20	*
Eastbound Through	212	1,600	0.13		198	410	1,600	0.26		81	491	1,600	0.31	
Eastbound Right	88	1,600	0.00		22	110	1,600	0.00		171	281	1,600	0.00	
Westbound Left	53	1,600	0.03		27	80	1,600	0.05		13	93	1,600	0.06	
Westbound Through	308	1,600	0.19	*	202	510	1,600	0.32	*	43	553	1,600	0.35	*
Westbound Right	52	1,600	0.00		8	60	1,600	0.00		83	143	1,600	0.00	
N/S Critical Movement			0.20					0.19					0.32	
E/W Critical Movements			0.26					0.40					0.55	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.56					0.69					0.97	
Level of Service (LOS)			A					B					E	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 20
 North/South Street 10th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project				
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	
Northbound Left	45	1,600	0.03	15	60	1,600	0.04	120	180	1,600	0.11	*
Northbound Through	641	3,200	0.20	139	780	3,200	0.24	3	783	3,200	0.24	
Northbound Right	36	1,600	0.00	14	50	1,600	0.00	0	50	1,600	0.00	
Southbound Left	8	1,600	0.01	12	20	1,600	0.01	1	21	1,600	0.01	
Southbound Through	526	4,800	0.12	54	580	4,800	0.13	7	587	4,800	0.14	*
Southbound Right	56	0	0.00	4	60	0	0.00	24	84	0	0.00	
Eastbound Left	53	0	0.00	47	100	0	0.00	19	119	0	0.00	
Eastbound Through	77	1,600	0.12	23	100	1,600	0.17	23	123	1,600	0.24	*
Eastbound Right	60	0	0.00	10	70	0	0.00	70	140	0	0.00	
Westbound Left	32	0	0.00	18	50	0	0.00	0	50	0	0.00	*
Westbound Through	77	1,600	0.09	13	90	1,600	0.13	37	127	1,600	0.16	
Westbound Right	42	0	0.00	28	70	0	0.00	1	71	0	0.00	
N/S Critical Movements			0.21				0.25				0.25	
E/W Critical Movements			0.12				0.17				0.24	
Clearance Interval			0.10				0.10				0.10	*
ICU			0.43				0.52				0.59	
Level of Service (LOS)			A				A				A	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 20
 North/South Street 10th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project				
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	
Northbound Left	61	1,600	0.04	19	80	1,600	0.05	88	168	1,600	0.11	*
Northbound Through	878	3,200	0.27	212	1,090	3,200	0.34	7	1097	3,200	0.34	*
Northbound Right	72	1,600	0.00	18	90	1,600	0.00	0	90	1,600	0.00	
Southbound Left	13	1,600	0.01	97	110	1,600	0.07	1	111	1,600	0.07	*
Southbound Through	955	4,800	0.23	295	1,250	4,800	0.29	4	1254	4,800	0.30	*
Southbound Right	126	0	0.00	34	160	0	0.00	22	182	0	0.00	
Eastbound Left	83	0	0.00	37	120	0	0.00	26	146	0	0.00	
Eastbound Through	77	1,600	0.14	163	240	1,600	0.28	41	281	1,600	0.40	*
Eastbound Right	68	0	0.00	12	80	0	0.00	134	214	0	0.00	
Westbound Left	18	0	0.00	12	30	0	0.00	0	30	0	0.00	*
Westbound Through	63	1,600	0.07	17	80	1,600	0.10	28	108	1,600	0.12	
Westbound Right	23	0	0.00	27	50	0	0.00	1	51	0	0.00	
N/S Critical Movement			0.28				0.41				0.41	
E/W Critical Movements			0.14				0.28				0.40	
Clearance Interval			0.10				0.10				0.10	*
ICU			0.52				0.79				0.91	
Level of Service (LOS)			A				C				E	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 21
 North/South Street 30th Street West
 East/West Street Avenue K
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	122	2,880	0.04	8	130	2,880	0.05	0	130	2,880	0.05
Northbound Through	368	3,200	0.12	52	420	3,200	0.13	0	420	3,200	0.13
Northbound Right	151	1,600	0.00	29	180	1,600	0.00	76	256	1,600	0.00
Southbound Left	64	2,880	0.02	6	70	2,880	0.02	0	70	2,880	0.02
Southbound Through	215	3,200	0.07	75	290	3,200	0.09	0	290	3,200	0.09
Southbound Right	98	1,600	0.00	12	110	1,600	0.00	0	110	1,600	0.00
Eastbound Left	111	2,880	0.04	59	170	2,880	0.06	0	170	2,880	0.06
Eastbound Through	609	3,200	0.19	81	690	3,200	0.22	58	748	3,200	0.23
Eastbound Right	142	1,600	0.00	8	150	1,600	0.00	0	150	1,600	0.00
Westbound Left	88	2,880	0.03	2	90	2,880	0.03	47	137	2,880	0.05
Westbound Through	278	3,200	0.09	-18	260	3,200	0.08	35	295	3,200	0.09
Westbound Right	67	1,600	0.00	13	80	1,600	0.00	0	80	1,600	0.00
N/S Critical Movements			0.14				0.15				0.15
E/W Critical Movements			0.22				0.25				0.28
Clearance Interval			0.10				0.10				0.10
ICU			0.46				0.50				0.53
Level of Service (LOS)			A				A				A

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 21
 North/South Street 30th Street West
 East/West Street Avenue K
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	64	2,880	0.02	*	16	80	2,880	0.03	*	0	80	2,880	0.03	*
Northbound Through	333	3,200	0.10		127	460	3,200	0.14		0	460	3,200	0.14	
Northbound Right	87	1,600	0.00		3	90	1,600	0.00		58	148	1,600	0.00	
Southbound Left	83	2,880	0.03		27	110	2,880	0.04		0	110	2,880	0.04	
Southbound Through	441	3,200	0.14	*	79	520	3,200	0.16	*	0	520	3,200	0.16	*
Southbound Right	63	1,600	0.00		87	150	1,600	0.00		0	150	1,600	0.00	
Eastbound Left	43	2,880	0.01		47	90	2,880	0.03	*	0	90	2,880	0.03	
Eastbound Through	369	3,200	0.12	*	11	380	3,200	0.12		43	423	3,200	0.13	*
Eastbound Right	93	1,600	0.00		17	110	1,600	0.00		0	110	1,600	0.00	
Westbound Left	115	2,880	0.04	*	55	170	2,880	0.06		84	254	2,880	0.09	*
Westbound Through	425	3,200	0.13		85	510	3,200	0.16	*	63	573	3,200	0.18	
Westbound Right	65	1,600	0.00		-35	30	1,600	0.00		0	30	1,600	0.00	
N/S Critical Movement			0.16					0.19					0.19	
E/W Critical Movements			0.16					0.19					0.22	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.42					0.48					0.51	
Level of Service (LOS)			A					A					A	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 22
 North/South Street 25th Street West
 East/West Street Avenue K
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	17	1,600	0.01	3	20	1,600	0.01	0	20	1,600	0.01
Northbound Through	102	1,600	0.06 *	28	130	1,600	0.08 *	25	155	1,600	0.10 *
Northbound Right	59	1,600	0.00	51	110	1,600	0.00	33	143	1,600	0.00
Southbound Left	69	1,600	0.04 *	1	70	1,600	0.04 *	0	70	1,600	0.04 *
Southbound Through	82	1,600	0.05	28	110	1,600	0.07	11	121	1,600	0.08
Southbound Right	26	1,600	0.00	4	30	1,600	0.00	26	56	1,600	0.00
Eastbound Left	67	1,600	0.04	3	70	1,600	0.04	58	128	1,600	0.08
Eastbound Through	833	3,200	0.26 *	87	920	3,200	0.29 *	76	996	3,200	0.31 *
Eastbound Right	13	1,600	0.00	7	20	1,600	0.00	0	20	1,600	0.00
Westbound Left	21	1,600	0.01 *	19	40	1,600	0.03 *	24	64	1,600	0.04 *
Westbound Through	703	3,200	0.22	17	720	3,200	0.23	56	776	3,200	0.24
Westbound Right	27	1,600	0.00	3	30	1,600	0.00	0	30	1,600	0.00
N/S Critical Movements			0.10				0.12				0.14
E/W Critical Movements			0.27				0.32				0.35
Clearance Interval			0.10 *				0.10 *				0.10 *
ICU			0.47				0.54				0.59
Level of Service (LOS)			A				A				A

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 22
 North/South Street 25th Street West
 East/West Street Avenue K
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	14	1,600	0.01	*	6	20	1,600	0.01	*	0	20	1,600	0.01	*
Northbound Through	99	1,600	0.06		31	130	1,600	0.08		15	145	1,600	0.09	
Northbound Right	33	1,600	0.00		27	60	1,600	0.00		28	88	1,600	0.00	
Southbound Left	54	1,600	0.03		6	60	1,600	0.04		0	60	1,600	0.04	
Southbound Through	130	1,600	0.08	*	50	180	1,600	0.11	*	28	208	1,600	0.13	*
Southbound Right	50	1,600	0.00		10	60	1,600	0.00		65	125	1,600	0.00	
Eastbound Left	37	1,600	0.02		3	40	1,600	0.03		36	76	1,600	0.05	
Eastbound Through	865	3,200	0.27	*	85	950	3,200	0.30	*	65	1015	3,200	0.32	*
Eastbound Right	17	1,600	0.00		3	20	1,600	0.00		0	20	1,600	0.00	
Westbound Left	55	1,600	0.03	*	95	150	1,600	0.09	*	35	185	1,600	0.12	*
Westbound Through	837	3,200	0.26		43	880	3,200	0.28		82	962	3,200	0.30	
Westbound Right	62	1,600	0.00		-2	60	1,600	0.00		0	60	1,600	0.00	
N/S Critical Movement			0.09					0.12					0.14	
E/W Critical Movements			0.30					0.39					0.44	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.49					0.61					0.68	
Level of Service (LOS)			A					B					B	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 23
 North/South Street 20th Street West
 East/West Street Avenue K
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	52	2,880	0.02	8	60	2,880	0.02	0	60	2,880	0.02
Northbound Through	248	3,200	0.11 *	42	290	3,200	0.12 *	56	346	3,200	0.14 *
Northbound Right	90	0	0.00	10	100	0	0.00	2	102	0	0.00
Southbound Left	78	2,880	0.03 *	62	140	2,880	0.05 *	0	140	2,880	0.05 *
Southbound Through	175	3,200	0.05	25	200	3,200	0.06	32	232	3,200	0.07
Southbound Right	80	1,600	0.00	10	90	1,600	0.00	70	160	1,600	0.00
Eastbound Left	154	1,600	0.10	36	190	1,600	0.12	103	293	1,600	0.18 *
Eastbound Through	876	4,800	0.18 *	74	950	4,800	0.20 *	6	956	4,800	0.20
Eastbound Right	84	1,600	0.00	-4	80	1,600	0.00	0	80	1,600	0.00
Westbound Left	79	1,600	0.05 *	21	100	1,600	0.06 *	3	103	1,600	0.06
Westbound Through	536	4,800	0.12	4	540	4,800	0.12	10	550	4,800	0.12 *
Westbound Right	57	0	0.00	-17	40	0	0.00	0	40	0	0.00
N/S Critical Movements			0.14				0.17				0.19
E/W Critical Movements			0.23				0.26				0.30
Clearance Interval			0.10 *				0.10 *				0.10 *
ICU			0.47				0.53				0.59
Level of Service (LOS)			A				A				A

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 23
 North/South Street 20th Street West
 East/West Street Avenue K
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	77	2,880	0.03	13	90	2,880	0.03	0	90	2,880	0.03
Northbound Through	234	3,200	0.10 *	6	240	3,200	0.10 *	40	280	3,200	0.12 *
Northbound Right	73	0	0.00	17	90	0	0.00	3	93	0	0.00
Southbound Left	194	2,880	0.07 *	26	220	2,880	0.08 *	0	220	2,880	0.08 *
Southbound Through	312	3,200	0.10	88	400	3,200	0.13	62	462	3,200	0.14
Southbound Right	111	1,600	0.00	69	180	1,600	0.00	112	292	1,600	0.00
Eastbound Left	143	1,600	0.09 *	27	170	1,600	0.11 *	83	253	1,600	0.16 *
Eastbound Through	697	4,800	0.15	83	780	4,800	0.16	10	790	4,800	0.16
Eastbound Right	43	1,600	0.00	17	60	1,600	0.00	0	60	1,600	0.00
Westbound Left	159	1,600	0.10	31	190	1,600	0.12	1	191	1,600	0.12
Westbound Through	722	4,800	0.18 *	118	840	4,800	0.19 *	5	845	4,800	0.19 *
Westbound Right	123	0	0.00	-33	90	0	0.00	0	90	0	0.00
N/S Critical Movement			0.17				0.18				0.20
E/W Critical Movements			0.27				0.30				0.35
Clearance Interval			0.10 *				0.10 *				0.10 *
ICU			0.54				0.58				0.65
Level of Service (LOS)			A				A				B

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 26
 North/South Street 10th Street West
 East/West Street Avenue K
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project				
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	
Northbound Left	74	2,880	0.03	-44	30	2,880	0.01	48	78	2,880	0.03	*
Northbound Through	389	4,800	0.08	11	400	4,800	0.08	47	447	4,800	0.09	
Northbound Right	116	1,600	0.00	4	120	1,600	0.00	0	120	1,600	0.00	
Southbound Left	160	2,880	0.06	0	160	2,880	0.06	36	196	2,880	0.07	*
Southbound Through	371	4,800	0.10	69	440	4,800	0.12	30	470	4,800	0.13	*
Southbound Right	128	0	0.00	2	130	0	0.00	0	130	0	0.00	
Eastbound Left	284	2,880	0.10	16	300	2,880	0.10	0	300	2,880	0.10	*
Eastbound Through	652	4,800	0.15	68	720	4,800	0.17	34	754	4,800	0.18	
Eastbound Right	74	0	0.00	6	80	0	0.00	29	109	0	0.00	
Westbound Left	149	2,880	0.05	51	200	2,880	0.07	0	200	2,880	0.07	
Westbound Through	666	3,200	0.21	124	790	3,200	0.25	57	847	3,200	0.26	*
Westbound Right	136	1,600	0.00	4	140	1,600	0.00	57	197	1,600	0.00	
N/S Critical Movements			0.14				0.14				0.16	
E/W Critical Movements			0.31				0.35				0.36	
Clearance Interval			0.10				0.10				0.10	*
ICU			0.55				0.59				0.62	
Level of Service (LOS)			A				A				B	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 26
 North/South Street 10th Street West
 East/West Street Avenue K
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	175	2,880	0.06	*	-25	150	2,880	0.05	*	36	186	2,880	0.06	*
Northbound Through	611	4,800	0.13		159	770	4,800	0.16		37	807	4,800	0.17	
Northbound Right	176	1,600	0.00		74	250	1,600	0.00		0	250	1,600	0.00	
Southbound Left	219	2,880	0.08		11	230	2,880	0.08		64	294	2,880	0.10	
Southbound Through	652	4,800	0.18	*	278	930	4,800	0.24	*	53	983	4,800	0.25	*
Southbound Right	200	0	0.00		0	200	0	0.00		0	200	0	0.00	
Eastbound Left	264	2,880	0.09	*	26	290	2,880	0.10		0	290	2,880	0.10	
Eastbound Through	865	4,800	0.20		205	1,070	4,800	0.25	*	63	1133	4,800	0.27	*
Eastbound Right	114	0	0.00		-4	110	0	0.00		53	163	0	0.00	
Westbound Left	231	2,880	0.08		39	270	2,880	0.09	*	0	270	2,880	0.09	*
Westbound Through	644	3,200	0.20	*	86	730	3,200	0.23		43	773	3,200	0.24	
Westbound Right	156	1,600	0.00		4	160	1,600	0.00		44	204	1,600	0.00	
N/S Critical Movement			0.24					0.29					0.31	
E/W Critical Movements			0.29					0.34					0.36	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.63					0.73					0.77	
Level of Service (LOS)			B					C					C	

Notes

V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 27
 North/South Street Sierra Highway
 East/West Street Avenue K
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)			Future (2040) without Project				Future (2040) with Project			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	111	2,880	0.04	-1	110	2,880	0.04	0	110	2,880	0.04
Northbound Through	460	3,200	0.14	60	520	3,200	0.16	0	520	3,200	0.16
Northbound Right	119	1,600	0.00	11	130	1,600	0.00	0	130	1,600	0.00
Southbound Left	142	2,880	0.05	8	150	2,880	0.05	0	150	2,880	0.05
Southbound Through	360	3,200	0.11	50	410	3,200	0.13	0	410	3,200	0.13
Southbound Right	59	1,600	0.00	11	70	1,600	0.00	0	70	1,600	0.00
Eastbound Left	71	1,600	0.04	19	90	1,600	0.06	0	90	1,600	0.06
Eastbound Through	668	4,800	0.15	72	740	4,800	0.17	59	799	4,800	0.18
Eastbound Right	60	0	0.00	0	60	0	0.00	0	60	0	0.00
Westbound Left	184	1,600	0.12	66	250	1,600	0.16	0	250	1,600	0.16
Westbound Through	908	4,800	0.21	202	1,110	4,800	0.26	95	1205	4,800	0.28
Westbound Right	123	0	0.00	27	150	0	0.00	0	150	0	0.00
N/S Critical Movements			0.19				0.21				0.21
E/W Critical Movements			0.27				0.33				0.34
Clearance Interval			0.10				0.10				0.10
ICU			0.56				0.64				0.65
Level of Service (LOS)			A				B				B

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 27
 North/South Street Sierra Highway
 East/West Street Avenue K
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	110	2,880	0.04	*	10	120	2,880	0.04	*	0	120	2,880	0.04	*
Northbound Through	485	3,200	0.15		55	540	3,200	0.17		0	540	3,200	0.17	
Northbound Right	196	1,600	0.00		24	220	1,600	0.00		0	220	1,600	0.00	
Southbound Left	172	2,880	0.06		8	180	2,880	0.06		0	180	2,880	0.06	
Southbound Through	584	3,200	0.18	*	106	690	3,200	0.22	*	0	690	3,200	0.22	*
Southbound Right	152	1,600	0.00		38	190	1,600	0.00		0	190	1,600	0.00	
Eastbound Left	125	1,600	0.08		65	190	1,600	0.12		0	190	1,600	0.12	
Eastbound Through	1,035	4,800	0.24	*	265	1,300	4,800	0.29	*	106	1406	4,800	0.32	*
Eastbound Right	102	0	0.00		8	110	0	0.00		0	110	0	0.00	
Westbound Left	161	1,600	0.10	*	-1	160	1,600	0.10	*	0	160	1,600	0.10	*
Westbound Through	953	4,800	0.23		117	1,070	4,800	0.25		73	1143	4,800	0.27	
Westbound Right	143	0	0.00		7	150	0	0.00		0	150	0	0.00	
N/S Critical Movement			0.22					0.26					0.26	
E/W Critical Movements			0.34					0.39					0.42	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.66					0.75					0.78	
Level of Service (LOS)			B					C					C	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 28
 North/South Street Division Street
 East/West Street Avenue K
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	162	1,600	0.10	*	18	180	1,600	0.11	*	0	180	1,600	0.11	*
Northbound Through	335	3,200	0.10		45	380	3,200	0.12		0	380	3,200	0.12	
Northbound Right	144	1,600	0.00		16	160	1,600	0.00		0	160	1,600	0.00	
Southbound Left	58	1,600	0.04		2	60	1,600	0.04		0	60	1,600	0.04	
Southbound Through	367	3,200	0.11	*	23	390	3,200	0.12	*	0	390	3,200	0.12	*
Southbound Right	159	1,600	0.00		81	240	1,600	0.00		0	240	1,600	0.00	
Eastbound Left	150	1,600	0.09	*	10	160	1,600	0.10	*	0	160	1,600	0.10	*
Eastbound Through	449	3,200	0.14		31	480	3,200	0.15		59	539	3,200	0.17	
Eastbound Right	380	1,600	0.00		10	390	1,600	0.00		0	390	1,600	0.00	
Westbound Left	172	1,600	0.11		8	180	1,600	0.11		0	180	1,600	0.11	
Westbound Through	894	3,200	0.28	*	186	1,080	3,200	0.34	*	95	1175	3,200	0.37	*
Westbound Right	78	1,600	0.00		12	90	1,600	0.00		0	90	1,600	0.00	
N/S Critical Movements			0.21					0.23					0.23	
E/W Critical Movements			0.37					0.44					0.47	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.68					0.77					0.80	
Level of Service (LOS)			B					C					C	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 28
 North/South Street Division Street
 East/West Street Avenue K
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	
Northbound Left	282	1,600	0.18	*	-2	280	1,600	0.18	*	0	280	1,600	0.18	*
Northbound Through	513	3,200	0.16		67	580	3,200	0.18		0	580	3,200	0.18	
Northbound Right	402	1,600	0.02	*	68	470	1,600	0.03	*	0	470	1,600	0.03	*
Southbound Left	140	1,600	0.09		10	150	1,600	0.09		0	150	1,600	0.09	
Southbound Through	260	3,200	0.08	*	70	330	3,200	0.10	*	0	330	3,200	0.10	*
Southbound Right	190	1,600	0.00		50	240	1,600	0.00		0	240	1,600	0.00	
Eastbound Left	211	1,600	0.13		49	260	1,600	0.16		0	260	1,600	0.16	
Eastbound Through	1,153	3,200	0.36	*	197	1,350	3,200	0.42	*	106	1456	3,200	0.46	*
Eastbound Right	134	1,600	0.00		46	180	1,600	0.00		0	180	1,600	0.00	
Westbound Left	96	1,600	0.06	*	34	130	1,600	0.08	*	0	130	1,600	0.08	*
Westbound Through	768	3,200	0.24		62	830	3,200	0.26		73	903	3,200	0.28	
Westbound Right	39	1,600	0.00		21	60	1,600	0.00		0	60	1,600	0.00	
N/S Critical Movement			0.26					0.28					0.28	
E/W Critical Movements			0.42					0.50					0.54	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.78					0.88					0.92	
Level of Service (LOS)			C					D					E	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 29
 North/South Street 10th Street West
 East/West Street Avenue K-8
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*
Northbound Left	58	1,600	0.04	*	2	60	1,600	0.04	*	0	60	1,600	0.04	*
Northbound Through	628	4,800	0.13		-38	590	4,800	0.13		95	685	4,800	0.15	
Northbound Right	18	0	0.00		2	20	0	0.00		0	20	0	0.00	
Southbound Left	9	1,600	0.01		1	10	1,600	0.01		0	10	1,600	0.01	
Southbound Through	718	4,800	0.15	*	62	780	4,800	0.16	*	59	839	4,800	0.17	*
Southbound Right	152	1,600	0.00		108	260	1,600	0.00		0	260	1,600	0.00	
Eastbound Left	120	1,600	0.08	*	60	180	1,600	0.11	*	0	180	1,600	0.11	*
Eastbound Through	15	1,600	0.01		5	20	1,600	0.01		0	20	1,600	0.01	
Eastbound Right	134	1,600	0.00		6	140	1,600	0.00		0	140	1,600	0.00	
Westbound Left	45	1,600	0.03		5	50	1,600	0.03		0	50	1,600	0.03	
Westbound Through	34	1,600	0.02	*	6	40	1,600	0.03	*	0	40	1,600	0.03	*
Westbound Right	10	1,600	0.00		0	10	1,600	0.00		0	10	1,600	0.00	
N/S Critical Movements			0.19					0.20					0.21	
E/W Critical Movements			0.10					0.14					0.14	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.39					0.44					0.45	
Level of Service (LOS)			A					A					A	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 29
 North/South Street 10th Street West
 East/West Street Avenue K-8
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Existing (2019)				Future (2040) without Project				Future (2040) with Project					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	168	1,600	0.11	*	-48	120	1,600	0.08	*	0	120	1,600	0.08	*
Northbound Through	915	4,800	0.21		55	970	4,800	0.22		73	1043	4,800	0.24	
Northbound Right	84	0	0.00		6	90	0	0.00		0	90	0	0.00	
Southbound Left	7	1,600	0.00		3	10	1,600	0.01		0	10	1,600	0.01	
Southbound Through	1,009	4,800	0.21	*	261	1,270	4,800	0.26	*	106	1376	4,800	0.29	*
Southbound Right	363	1,600	0.00		167	530	1,600	0.00		0	530	1,600	0.00	
Eastbound Left	238	1,600	0.15	*	222	460	1,600	0.29	*	0	460	1,600	0.29	*
Eastbound Through	90	1,600	0.06		0	90	1,600	0.06		0	90	1,600	0.06	
Eastbound Right	154	1,600	0.00		6	160	1,600	0.00		0	160	1,600	0.00	
Westbound Left	54	1,600	0.03		6	60	1,600	0.04		0	60	1,600	0.04	
Westbound Through	75	1,600	0.05	*	5	80	1,600	0.05	*	0	80	1,600	0.05	*
Westbound Right	20	1,600	0.00		0	20	1,600	0.00		0	20	1,600	0.00	
N/S Critical Movement			0.32					0.34					0.37	
E/W Critical Movements			0.20					0.34					0.34	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.62					0.78					0.81	
Level of Service (LOS)			B					C					D	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 30
 North/South Street 18th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 8/5/2020

Movement	Existing (2019)		Future (2040) without Project			Future (2040) with Project					
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left								0	0	0	0.00
Northbound Through								0	0	0	0.00 *
Northbound Right								0	0	0	0.00
Southbound Left								52	52	1,600	0.03 *
Southbound Through								0	0	0	0.00
Southbound Right								46	46	1,600	0.00
Eastbound Left								97	97	1,600	0.06
Eastbound Through								1119	1119	1,600	0.70 *
Eastbound Right								0	0	0	0.00
Westbound Left								0	0	0	0.00 *
Westbound Through								725	725	1,600	0.45
Westbound Right								96	96	1,600	0.00
N/S Critical Movements											0.03
E/W Critical Movements											0.70
Clearance Interval											0.10 *
ICU											0.83
Level of Service (LOS)											D

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 30
 North/South Street 18th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 8/5/2020

Movement	Existing (2019)			Future (2040) without Project			Future (2040) with Project				
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left								0	0	0	0.00
Northbound Through								0	0	0	0.00 *
Northbound Right								0	0	0	0.00
Southbound Left								110	110	1,600	0.07 *
Southbound Through								0	0	0	0.00
Southbound Right								94	94	1,600	0.00
Eastbound Left								68	68	1,600	0.04 *
Eastbound Through								950	950	1,600	0.59
Eastbound Right							Project Intersection	0	0	0	0.00
Westbound Left								0	0	0	0.00
Westbound Through								1386	1386	1,600	0.87 *
Westbound Right								69	69	1,600	0.00
N/S Critical Movement											0.07
E/W Critical Movements											0.91
Clearance Interval											0.10 *
ICU											1.08
Level of Service (LOS)											F

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

APPENDIX C – HCM RESULTS – EXISTING (2019) CONDITIONS

HCM 6th Signalized Intersection Summary
6: Ave J & SR-14 SB Off-Ramp

2019 Existing AM Peak
05/19/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↘	↘
Traffic Volume (veh/h)	0	947	649	0	181	148
Future Volume (veh/h)	0	947	649	0	181	148
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1029	705	0	197	161
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	2575	2575	0	358	319
Arrive On Green	0.00	0.50	0.50	0.00	0.20	0.20
Sat Flow, veh/h	0	5443	5443	0	1781	1585
Grp Volume(v), veh/h	0	1029	705	0	197	161
Grp Sat Flow(s),veh/h/ln	0	1702	1702	0	1781	1585
Q Serve(g_s), s	0.0	3.4	2.2	0.0	2.7	2.5
Cycle Q Clear(g_c), s	0.0	3.4	2.2	0.0	2.7	2.5
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	2575	2575	0	358	319
V/C Ratio(X)	0.00	0.40	0.27	0.00	0.55	0.51
Avail Cap(c_a), veh/h	0	12037	12037	0	3149	2802
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.2	3.9	0.0	9.7	9.6
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.0	1.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.1	0.0	0.8	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	4.3	3.9	0.0	11.1	10.9
LnGrp LOS	A	A	A	A	B	B
Approach Vol, veh/h		1029	705		358	
Approach Delay, s/veh		4.3	3.9		11.0	
Approach LOS		A	A		B	
Timer - Assigned Phs				4	6	8
Phs Duration (G+Y+Rc), s				17.7	9.5	17.7
Change Period (Y+Rc), s				4.0	4.0	4.0
Max Green Setting (Gmax), s				64.0	48.0	64.0
Max Q Clear Time (g_c+I1), s				5.4	4.7	4.2
Green Ext Time (p_c), s				8.3	1.2	5.3
Intersection Summary						
HCM 6th Ctrl Delay			5.3			
HCM 6th LOS			A			

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕	↗	↖	↕
Traffic Vol, veh/h	0	158	762	210	210	504
Future Vol, veh/h	0	158	762	210	210	504
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	172	828	228	228	548

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	414	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	587	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	-	587	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	3.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	587	655
HCM Lane V/C Ratio	-	-	0.293	0.348
HCM Control Delay (s)	-	-	13.6	13.4
HCM Lane LOS	-	-	B	B
HCM 95th %tile Q(veh)	-	-	1.2	1.6

HCM 6th Signalized Intersection Summary
 16: 20th St W & SR-14 NB Off-Ramp

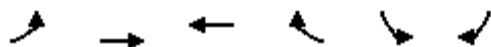
2019 Existing AM Peak
 05/19/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶	↶	↕	↷	↷	↕
Traffic Volume (veh/h)	162	543	429	0	0	504
Future Volume (veh/h)	162	543	429	0	0	504
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	0	1870
Adj Flow Rate, veh/h	176	590	466	0	0	548
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	0	2
Cap, veh/h	737	656	1713	0	0	1713
Arrive On Green	0.41	0.41	0.48	0.00	0.00	0.48
Sat Flow, veh/h	1781	1585	3741	0	0	3741
Grp Volume(v), veh/h	176	590	466	0	0	548
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	0	0	1777
Q Serve(g_s), s	4.9	26.7	6.0	0.0	0.0	7.2
Cycle Q Clear(g_c), s	4.9	26.7	6.0	0.0	0.0	7.2
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	737	656	1713	0	0	1713
V/C Ratio(X)	0.24	0.90	0.27	0.00	0.00	0.32
Avail Cap(c_a), veh/h	1741	1549	1713	0	0	1713
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	14.6	21.0	11.8	0.0	0.0	12.2
Incr Delay (d2), s/veh	0.2	4.8	0.4	0.0	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	9.9	2.2	0.0	0.0	2.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.8	25.8	12.2	0.0	0.0	12.7
LnGrp LOS	B	C	B	A	A	B
Approach Vol, veh/h	766		466			548
Approach Delay, s/veh	23.3		12.2			12.7
Approach LOS	C		B			B
Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		41.0			41.0	35.7
Change Period (Y+Rc), s		4.0			4.0	4.0
Max Green Setting (Gmax), s		37.0			37.0	75.0
Max Q Clear Time (g_c+I1), s		8.0			9.2	28.7
Green Ext Time (p_c), s		3.0			3.6	3.1
Intersection Summary						
HCM 6th Ctrl Delay			17.1			
HCM 6th LOS			B			

HCM Signalized Intersection Capacity Analysis
24: Avenue K & SR-14 SB Ramps

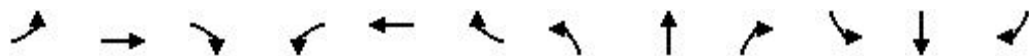
2019 Existing AM Peak
07/23/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↑↑↑	
Traffic Volume (vph)	0	877	775	316	233	123
Future Volume (vph)	0	877	775	316	233	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		0.91	0.91		0.97	
Frt		1.00	0.96		0.95	
Flt Protected		1.00	1.00		0.97	
Satd. Flow (prot)		5085	4865		3318	
Flt Permitted		1.00	1.00		0.97	
Satd. Flow (perm)		5085	4865		3318	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	953	842	343	253	134
RTOR Reduction (vph)	0	0	76	0	67	0
Lane Group Flow (vph)	0	953	1109	0	320	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Actuated Green, G (s)		16.8	16.8		10.2	
Effective Green, g (s)		17.7	17.7		10.8	
Actuated g/C Ratio		0.48	0.48		0.30	
Clearance Time (s)		4.9	4.9		4.6	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		2465	2359		981	
v/s Ratio Prot		0.19	c0.23			
v/s Ratio Perm					c0.10	
v/c Ratio		0.39	0.47		0.33	
Uniform Delay, d1		6.0	6.3		10.0	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		0.1	0.1		0.2	
Delay (s)		6.1	6.4		10.2	
Level of Service		A	A		B	
Approach Delay (s)		6.1	6.4		10.2	
Approach LOS		A	A		B	
Intersection Summary						
HCM 2000 Control Delay			6.9		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.42			
Actuated Cycle Length (s)			36.5		Sum of lost time (s)	8.6
Intersection Capacity Utilization			39.2%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM 6th Signalized Intersection Summary
 25: SR-14 NB Off-Ramp/15th St W & Avenue K

2019 Existing AM Peak
 05/19/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑			↑↑↑	↔	↔	↑	↔	↔	↔	↔
Traffic Volume (veh/h)	215	820	78	0	735	227	223	540	315	193	0	191
Future Volume (veh/h)	215	820	78	0	735	227	223	540	315	193	0	191
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	234	891	85	0	799	247	242	587	342	210	0	208
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	306	1649	157	0	1092	578	643	675	572	554	0	410
Arrive On Green	0.09	0.35	0.34	0.00	0.21	0.21	0.36	0.36	0.36	0.16	0.00	0.16
Sat Flow, veh/h	3456	4742	451	0	5274	1585	1781	1870	1585	3563	0	1585
Grp Volume(v), veh/h	234	639	337	0	799	247	242	587	342	210	0	208
Grp Sat Flow(s),veh/h/ln	1728	1702	1789	0	1702	1585	1781	1870	1585	1781	0	1585
Q Serve(g_s), s	5.9	13.3	13.4	0.0	12.9	10.4	8.9	25.8	15.5	4.7	0.0	9.9
Cycle Q Clear(g_c), s	5.9	13.3	13.4	0.0	12.9	10.4	8.9	25.8	15.5	4.7	0.0	9.9
Prop In Lane	1.00		0.25	0.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	306	1183	622	0	1092	578	643	675	572	554	0	410
V/C Ratio(X)	0.76	0.54	0.54	0.00	0.73	0.43	0.38	0.87	0.60	0.38	0.00	0.51
Avail Cap(c_a), veh/h	313	1452	763	0	1485	700	766	804	682	899	0	564
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.4	23.2	23.3	0.0	32.4	21.1	20.9	26.3	23.0	33.5	0.0	27.9
Incr Delay (d2), s/veh	9.4	0.1	0.3	0.0	0.7	0.2	0.1	7.9	0.4	0.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	4.8	5.2	0.0	5.2	4.8	3.5	12.0	5.4	2.0	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.8	23.3	23.6	0.0	33.1	21.3	21.0	34.2	23.4	33.6	0.0	28.3
LnGrp LOS	D	C	C	A	C	C	C	C	C	C	A	C
Approach Vol, veh/h		1210			1046			1171				418
Approach Delay, s/veh		28.3			30.3			28.3				31.0
Approach LOS		C			C			C				C
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		34.7		17.7	11.8	22.9		35.9				
Change Period (Y+Rc), s		4.9		5.3	4.0	4.9		5.7				
Max Green Setting (Gmax), s		36.8		21.0	8.0	24.8		36.3				
Max Q Clear Time (g_c+I1), s		15.4		11.9	7.9	14.9		27.8				
Green Ext Time (p_c), s		3.6		0.6	0.0	3.1		2.4				

Intersection Summary

HCM 6th Ctrl Delay	29.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
6: Ave J & SR-14 SB Off-Ramp

2019 Existing PM Peak
05/19/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↙	↗
Traffic Volume (veh/h)	0	963	1177	0	135	224
Future Volume (veh/h)	0	963	1177	0	135	224
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1047	1279	0	147	243
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	2790	2790	0	406	361
Arrive On Green	0.00	0.55	0.55	0.00	0.23	0.23
Sat Flow, veh/h	0	5443	5443	0	1781	1585
Grp Volume(v), veh/h	0	1047	1279	0	147	243
Grp Sat Flow(s),veh/h/ln	0	1702	1702	0	1781	1585
Q Serve(g_s), s	0.0	4.1	5.4	0.0	2.5	5.0
Cycle Q Clear(g_c), s	0.0	4.1	5.4	0.0	2.5	5.0
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	2790	2790	0	406	361
V/C Ratio(X)	0.00	0.38	0.46	0.00	0.36	0.67
Avail Cap(c_a), veh/h	0	9216	9216	0	2411	2146
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.6	4.9	0.0	11.5	12.5
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.0	0.5	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.4	0.7	0.0	0.8	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	4.7	5.0	0.0	12.1	14.7
LnGrp LOS	A	A	A	A	B	B
Approach Vol, veh/h		1047	1279		390	
Approach Delay, s/veh		4.7	5.0		13.7	
Approach LOS		A	A		B	
Timer - Assigned Phs				4	6	8
Phs Duration (G+Y+Rc), s				23.4	12.1	23.4
Change Period (Y+Rc), s				4.0	4.0	4.0
Max Green Setting (Gmax), s				64.0	48.0	64.0
Max Q Clear Time (g_c+I1), s				6.1	7.0	7.4
Green Ext Time (p_c), s				8.5	1.3	12.0
Intersection Summary						
HCM 6th Ctrl Delay			6.1			
HCM 6th LOS			A			

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕	↗	↖	↕
Traffic Vol, veh/h	0	68	984	40	40	913
Future Vol, veh/h	0	68	984	40	40	913
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	74	1070	43	43	992

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	535	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	490	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	-	490	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	490	623
HCM Lane V/C Ratio	-	-	0.151	0.07
HCM Control Delay (s)	-	-	13.6	11.2
HCM Lane LOS	-	-	B	B
HCM 95th %tile Q(veh)	-	-	0.5	0.2

HCM 6th Signalized Intersection Summary
 16: 20th St W & SR-14 NB Off-Ramp

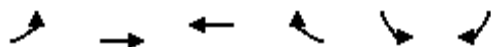
2019 Existing PM Peak
 05/19/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	332	517	507	0	0	913
Future Volume (veh/h)	332	517	507	0	0	913
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	0	1870
Adj Flow Rate, veh/h	361	562	551	0	0	992
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	0	2
Cap, veh/h	694	618	1884	0	0	1884
Arrive On Green	0.39	0.39	0.53	0.00	0.00	0.53
Sat Flow, veh/h	1781	1585	3741	0	0	3741
Grp Volume(v), veh/h	361	562	551	0	0	992
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	0	0	1777
Q Serve(g_s), s	15.5	33.5	8.6	0.0	0.0	18.2
Cycle Q Clear(g_c), s	15.5	33.5	8.6	0.0	0.0	18.2
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	694	618	1884	0	0	1884
V/C Ratio(X)	0.52	0.91	0.29	0.00	0.00	0.53
Avail Cap(c_a), veh/h	1051	935	1884	0	0	1884
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	23.3	28.8	13.1	0.0	0.0	15.3
Incr Delay (d2), s/veh	0.6	9.0	0.4	0.0	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	13.8	3.3	0.0	0.0	7.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.9	37.8	13.5	0.0	0.0	16.4
LnGrp LOS	C	D	B	A	A	B
Approach Vol, veh/h	923		551			992
Approach Delay, s/veh	32.4		13.5			16.4
Approach LOS	C		B			B
Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		57.0			57.0	43.0
Change Period (Y+Rc), s		4.0			4.0	4.0
Max Green Setting (Gmax), s		53.0			53.0	59.0
Max Q Clear Time (g_c+l1), s		10.6			20.2	35.5
Green Ext Time (p_c), s		3.9			7.8	3.5
Intersection Summary						
HCM 6th Ctrl Delay			21.7			
HCM 6th LOS			C			

HCM Signalized Intersection Capacity Analysis
 24: Avenue K & SR-14 SB Ramps

2019 Existing PM Peak
 07/23/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↑↑↑	
Traffic Volume (vph)	0	910	1143	533	194	186
Future Volume (vph)	0	910	1143	533	194	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		0.91	0.91		0.97	
Frt		1.00	0.95		0.93	
Flt Protected		1.00	1.00		0.98	
Satd. Flow (prot)		5085	4843		3265	
Flt Permitted		1.00	1.00		0.98	
Satd. Flow (perm)		5085	4843		3265	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	989	1242	579	211	202
RTOR Reduction (vph)	0	0	70	0	57	0
Lane Group Flow (vph)	0	989	1751	0	356	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Actuated Green, G (s)		33.1	33.1		12.5	
Effective Green, g (s)		34.0	34.0		13.1	
Actuated g/C Ratio		0.62	0.62		0.24	
Clearance Time (s)		4.9	4.9		4.6	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		3137	2988		776	
v/s Ratio Prot		0.19	c0.36			
v/s Ratio Perm					c0.11	
v/c Ratio		0.32	0.59		0.46	
Uniform Delay, d1		5.0	6.3		18.0	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		0.1	0.3		0.4	
Delay (s)		5.1	6.6		18.4	
Level of Service		A	A		B	
Approach Delay (s)		5.1	6.6		18.4	
Approach LOS		A	A		B	






























Intersection Summary

HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	55.1	Sum of lost time (s)	8.6
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Signalized Intersection Summary
 25: SR-14 NB Off-Ramp/15th St W & Avenue K

2019 Existing PM Peak
 05/19/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  					 	 	
Traffic Volume (veh/h)	128	876	104	0	1144	212	257	298	386	312	14	455
Future Volume (veh/h)	128	876	104	0	1144	212	257	298	386	312	14	455
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	139	952	113	0	1243	230	279	324	420	350	0	495
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	202	1798	213	0	1480	806	480	504	427	793	0	466
Arrive On Green	0.06	0.39	0.38	0.00	0.29	0.29	0.27	0.27	0.27	0.22	0.00	0.22
Sat Flow, veh/h	3456	4628	548	0	5274	1585	1781	1870	1585	3563	0	1585
Grp Volume(v), veh/h	139	700	365	0	1243	230	279	324	420	350	0	495
Grp Sat Flow(s),veh/h/ln	1728	1702	1772	0	1702	1585	1781	1870	1585	1781	0	1585
Q Serve(g_s), s	4.0	15.9	16.0	0.0	22.9	8.4	13.6	15.3	26.4	8.5	0.0	22.3
Cycle Q Clear(g_c), s	4.0	15.9	16.0	0.0	22.9	8.4	13.6	15.3	26.4	8.5	0.0	22.3
Prop In Lane	1.00		0.31	0.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	1322	688	0	1480	806	480	504	427	793	0	466
V/C Ratio(X)	0.69	0.53	0.53	0.00	0.84	0.29	0.58	0.64	0.98	0.44	0.00	1.06
Avail Cap(c_a), veh/h	448	1654	861	0	1615	848	480	504	427	793	0	466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.3	23.6	23.7	0.0	33.4	14.2	31.7	32.4	36.4	33.6	0.0	35.4
Incr Delay (d2), s/veh	1.5	0.1	0.2	0.0	3.5	0.1	1.2	2.2	39.0	0.1	0.0	59.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	5.9	6.2	0.0	9.6	4.5	5.8	7.0	14.3	3.6	0.0	18.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.8	23.7	24.0	0.0	36.9	14.2	32.9	34.5	75.4	33.7	0.0	94.5
LnGrp LOS	D	C	C	A	D	B	C	C	E	C	A	F
Approach Vol, veh/h		1204			1473			1023				845
Approach Delay, s/veh		26.6			33.4			50.9				69.3
Approach LOS		C			C			D				E
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		42.9		26.3	9.9	33.1		31.0				
Change Period (Y+Rc), s		4.9		5.3	4.0	4.9		5.7				
Max Green Setting (Gmax), s		47.8		21.0	13.0	30.8		25.3				
Max Q Clear Time (g_c+I1), s		18.0		24.3	6.0	24.9		28.4				
Green Ext Time (p_c), s		4.3		0.0	0.0	3.3		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				42.2								
HCM 6th LOS				D								
Notes												
User approved volume balancing among the lanes for turning movement.												

MOVEMENT SUMMARY

 **Site: 1 [LHD - Existing AM - Int 3]**

Roundabout with 1-lane approaches and circulating road
 MUTCD (FHWA 2009) example number: 2B-22
 Roundabout Guide (TRB 2010) example number: A-1
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: 15th St West												
3	L2	66	0.0	0.415	11.4	LOS B	2.3	56.5	0.72	0.81	0.93	27.4
8	T1	111	0.0	0.415	11.4	LOS B	2.3	56.5	0.72	0.81	0.93	27.5
18	R2	93	0.0	0.415	11.4	LOS B	2.3	56.5	0.72	0.81	0.93	21.9
Approach		271	0.0	0.415	11.4	LOS B	2.3	56.5	0.72	0.81	0.93	25.9
East: Lancaster Blvd												
1	L2	63	0.0	0.368	7.3	LOS A	2.0	51.0	0.53	0.42	0.53	26.6
6	T1	297	0.0	0.368	7.3	LOS A	2.0	51.0	0.53	0.42	0.53	29.4
16	R2	21	0.0	0.368	7.3	LOS A	2.0	51.0	0.53	0.42	0.53	28.5
Approach		380	0.0	0.368	7.3	LOS A	2.0	51.0	0.53	0.42	0.53	28.9
North: 15th St West												
7	L2	47	0.0	0.395	8.6	LOS A	2.1	52.2	0.63	0.58	0.63	25.6
4	T1	215	0.0	0.395	8.6	LOS A	2.1	52.2	0.63	0.58	0.63	27.5
14	R2	91	0.0	0.395	8.6	LOS A	2.1	52.2	0.63	0.58	0.63	28.5
Approach		353	0.0	0.395	8.6	LOS A	2.1	52.2	0.63	0.58	0.63	27.6
West: Lancaster Blvd												
5	L2	105	0.0	0.868	26.2	LOS D	25.4	633.8	1.00	1.65	2.35	23.7
2	T1	582	0.0	0.868	26.2	LOS D	25.4	633.8	1.00	1.65	2.35	19.7
12	R2	173	0.0	0.868	26.2	LOS D	25.4	633.8	1.00	1.65	2.35	21.4
Approach		860	0.0	0.868	26.2	LOS D	25.4	633.8	1.00	1.65	2.35	20.6
All Vehicles		1864	0.0	0.868	16.9	LOS C	25.4	633.8	0.79	1.07	1.44	23.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 Site: 1 [LHD - Existing PM - Int 3]

Roundabout with 1-lane approaches and circulating road
 MUTCD (FHWA 2009) example number: 2B-22
 Roundabout Guide (TRB 2010) example number: A-1
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: 15th St West												
3	L2	79	0.0	0.438	10.1	LOS B	2.7	67.0	0.69	0.76	0.85	28.0
8	T1	176	0.0	0.438	10.1	LOS B	2.7	67.0	0.69	0.76	0.85	28.1
18	R2	96	0.0	0.438	10.1	LOS B	2.7	67.0	0.69	0.76	0.85	22.6
Approach		351	0.0	0.438	10.1	LOS B	2.7	67.0	0.69	0.76	0.85	26.9
East: Lancaster Blvd												
1	L2	67	0.0	0.567	11.0	LOS B	5.3	132.9	0.68	0.69	0.88	24.6
6	T1	465	0.0	0.567	11.0	LOS B	5.3	132.9	0.68	0.69	0.88	27.5
16	R2	39	0.0	0.567	11.0	LOS B	5.3	132.9	0.68	0.69	0.88	26.8
Approach		572	0.0	0.567	11.0	LOS B	5.3	132.9	0.68	0.69	0.88	27.2
North: 15th St West												
7	L2	29	0.0	0.322	8.8	LOS A	1.5	37.1	0.66	0.66	0.66	25.5
4	T1	153	0.0	0.322	8.8	LOS A	1.5	37.1	0.66	0.66	0.66	27.4
14	R2	55	0.0	0.322	8.8	LOS A	1.5	37.1	0.66	0.66	0.66	28.5
Approach		238	0.0	0.322	8.8	LOS A	1.5	37.1	0.66	0.66	0.66	27.5
West: Lancaster Blvd												
5	L2	52	0.0	0.529	9.7	LOS A	3.6	90.5	0.61	0.48	0.61	28.7
2	T1	450	0.0	0.529	9.7	LOS A	3.6	90.5	0.61	0.48	0.61	25.3
12	R2	63	0.0	0.529	9.7	LOS A	3.6	90.5	0.61	0.48	0.61	26.5
Approach		565	0.0	0.529	9.7	LOS A	3.6	90.5	0.61	0.48	0.61	25.8
All Vehicles		1726	0.0	0.567	10.1	LOS B	5.3	132.9	0.66	0.63	0.75	26.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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APPENDIX D – HCM RESULTS – FUTURE (2040) WITHOUT PROJECT CONDITIONS

HCM 6th Signalized Intersection Summary
6: SR-14 SB Ramps & Ave J

2040 Future No-Build AM Peak
05/18/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖↗	↑↑						↖	↖↗
Traffic Volume (veh/h)	0	940	660	190	1010	0	0	0	0	220	0	170
Future Volume (veh/h)	0	940	660	190	1010	0	0	0	0	220	0	170
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1022	717	207	1098	0				239	0	185
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2008	896	306	2517	0				324	0	507
Arrive On Green	0.00	0.56	0.56	0.09	0.71	0.00				0.18	0.00	0.18
Sat Flow, veh/h	0	3647	1585	3456	3647	0				1781	0	2790
Grp Volume(v), veh/h	0	1022	717	207	1098	0				239	0	185
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1777	0				1781	0	1395
Q Serve(g_s), s	0.0	12.8	26.2	4.2	9.5	0.0				9.2	0.0	4.2
Cycle Q Clear(g_c), s	0.0	12.8	26.2	4.2	9.5	0.0				9.2	0.0	4.2
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2008	896	306	2517	0				324	0	507
V/C Ratio(X)	0.00	0.51	0.80	0.68	0.44	0.00				0.74	0.00	0.36
Avail Cap(c_a), veh/h	0	3267	1457	569	4048	0				709	0	1110
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.7	12.6	32.2	4.5	0.0				28.2	0.0	26.1
Incr Delay (d2), s/veh	0.0	0.2	1.7	2.6	0.1	0.0				3.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.8	7.3	1.8	2.1	0.0				4.1	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	9.9	14.3	34.8	4.6	0.0				31.4	0.0	26.6
LnGrp LOS	A	A	B	C	A	A				C	A	C
Approach Vol, veh/h		1739			1305					424		
Approach Delay, s/veh		11.7			9.4					29.3		
Approach LOS		B			A					C		
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			10.4	45.2		17.3		55.6				
Change Period (Y+Rc), s			4.0	4.0		4.0		4.0				
Max Green Setting (Gmax), s			12.0	67.0		29.0		83.0				
Max Q Clear Time (g_c+l1), s			6.2	28.2		11.2		11.5				
Green Ext Time (p_c), s			0.3	13.0		2.0		9.9				
Intersection Summary												
HCM 6th Ctrl Delay			13.0									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary
7: SR-14 NB Ramps & Ave J

2040 Future No-Build AM Peak
05/18/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑			↑↑↑		↗	↑	↗			
Traffic Volume (veh/h)	170	990	0	0	660	90	540	0	240	0	0	0
Future Volume (veh/h)	170	990	0	0	660	90	540	0	240	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	185	1076	0	0	717	98	587	0	261			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	249	1919	0	0	1388	188	964	0	429			
Arrive On Green	0.14	0.54	0.00	0.00	0.31	0.31	0.27	0.00	0.27			
Sat Flow, veh/h	1781	3647	0	0	4716	616	3563	0	1585			
Grp Volume(v), veh/h	185	1076	0	0	535	280	587	0	261			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1702	1759	1781	0	1585			
Q Serve(g_s), s	4.2	8.4	0.0	0.0	5.5	5.5	6.1	0.0	6.1			
Cycle Q Clear(g_c), s	4.2	8.4	0.0	0.0	5.5	5.5	6.1	0.0	6.1			
Prop In Lane	1.00		0.00	0.00		0.35	1.00		1.00			
Lane Grp Cap(c), veh/h	249	1919	0	0	1039	537	964	0	429			
V/C Ratio(X)	0.74	0.56	0.00	0.00	0.51	0.52	0.61	0.00	0.61			
Avail Cap(c_a), veh/h	1181	5470	0	0	2660	1375	3965	0	1764			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	17.4	6.4	0.0	0.0	12.1	12.1	13.4	0.0	13.4			
Incr Delay (d2), s/veh	4.3	0.3	0.0	0.0	0.4	0.8	0.6	0.0	1.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.6	1.5	0.0	0.0	1.6	1.7	2.1	0.0	1.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.8	6.7	0.0	0.0	12.5	12.9	14.1	0.0	14.8			
LnGrp LOS	C	A	A	A	B	B	B	A	B			
Approach Vol, veh/h		1261			815			848				
Approach Delay, s/veh		8.9			12.6			14.3				
Approach LOS		A			B			B				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		15.4		26.8			9.9	16.9				
Change Period (Y+Rc), s		4.0		4.0			4.0	4.0				
Max Green Setting (Gmax), s		47.0		65.0			28.0	33.0				
Max Q Clear Time (g_c+I1), s		8.1		10.4			6.2	7.5				
Green Ext Time (p_c), s		3.4		9.0			0.5	5.3				

Intersection Summary

HCM 6th Ctrl Delay	11.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Intersection						
Int Delay, s/veh	3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕	↗	↖	↕
Traffic Vol, veh/h	0	158	820	210	210	310
Future Vol, veh/h	0	158	820	210	210	310
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	172	891	228	228	337

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	446	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	560	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	-	560	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.2	0	5.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	560	620
HCM Lane V/C Ratio	-	-	0.307	0.368
HCM Control Delay (s)	-	-	14.2	14.2
HCM Lane LOS	-	-	B	B
HCM 95th %tile Q(veh)	-	-	1.3	1.7

HCM 6th Signalized Intersection Summary
 16: 20th St W & SR-14 NB Off-Ramp

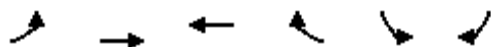
2040 Future No-Build AM Peak
 05/18/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶	↶↶	↕↕			↕↕
Traffic Volume (veh/h)	180	430	600	0	0	310
Future Volume (veh/h)	180	430	600	0	0	310
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	0	1870
Adj Flow Rate, veh/h	196	467	652	0	0	337
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	0	2
Cap, veh/h	416	652	2239	0	0	2239
Arrive On Green	0.23	0.23	0.63	0.00	0.00	0.63
Sat Flow, veh/h	1781	2790	3741	0	0	3741
Grp Volume(v), veh/h	196	467	652	0	0	337
Grp Sat Flow(s),veh/h/ln	1781	1395	1777	0	0	1777
Q Serve(g_s), s	5.6	9.0	4.9	0.0	0.0	2.3
Cycle Q Clear(g_c), s	5.6	9.0	4.9	0.0	0.0	2.3
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	416	652	2239	0	0	2239
V/C Ratio(X)	0.47	0.72	0.29	0.00	0.00	0.15
Avail Cap(c_a), veh/h	2275	3563	2239	0	0	2239
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	19.4	20.7	4.9	0.0	0.0	4.4
Incr Delay (d2), s/veh	0.8	1.5	0.3	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	2.8	1.2	0.0	0.0	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.2	22.2	5.3	0.0	0.0	4.6
LnGrp LOS	C	C	A	A	A	A
Approach Vol, veh/h	663		652			337
Approach Delay, s/veh	21.6		5.3			4.6
Approach LOS	C		A			A
Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		41.0			41.0	17.7
Change Period (Y+Rc), s		4.0			4.0	4.0
Max Green Setting (Gmax), s		37.0			37.0	75.0
Max Q Clear Time (g_c+l1), s		6.9			4.3	11.0
Green Ext Time (p_c), s		4.5			2.2	2.7
Intersection Summary						
HCM 6th Ctrl Delay			11.7			
HCM 6th LOS			B			

HCM Signalized Intersection Capacity Analysis
 24: Avenue K & SR-14 SB Ramps

2040 Future No-Build AM Peak
 07/23/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↗	↘↘↘	↗
Traffic Volume (vph)	0	890	870	320	300	150
Future Volume (vph)	0	890	870	320	300	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.9	4.0	4.0
Lane Util. Factor		0.91	0.91	1.00	0.97	0.91
Frt		1.00	1.00	0.85	0.99	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		5085	5085	1583	3425	1441
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		5085	5085	1583	3425	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	967	946	348	326	163
RTOR Reduction (vph)	0	0	0	187	4	90
Lane Group Flow (vph)	0	967	946	161	338	57
Turn Type		NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases				6	4	4
Actuated Green, G (s)		17.2	17.2	17.2	10.4	10.4
Effective Green, g (s)		18.1	18.1	17.2	11.0	11.0
Actuated g/C Ratio		0.49	0.49	0.46	0.30	0.30
Clearance Time (s)		4.9	4.9	4.9	4.6	4.6
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		2480	2480	733	1015	427
v/s Ratio Prot		c0.19	0.19			
v/s Ratio Perm				0.10	c0.10	0.04
v/c Ratio		0.39	0.38	0.22	0.33	0.13
Uniform Delay, d1		6.0	6.0	5.9	10.2	9.6
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1	0.2	0.2	0.1
Delay (s)		6.1	6.1	6.1	10.4	9.7
Level of Service		A	A	A	B	A
Approach Delay (s)		6.1	6.1		10.2	
Approach LOS		A	A		B	

Intersection Summary

HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	37.1	Sum of lost time (s)	8.6
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 25: SR-14 NB Off-Ramp/15th St W & Avenue K

2040 Future No-Build AM Peak
 07/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↗		↑↑↑	↗	↖↗	↑↔	↗	↖↗	↖	↗
Traffic Volume (vph)	220	890	90	0	850	230	280	510	430	200	10	230
Future Volume (vph)	220	890	90	0	850	230	280	510	430	200	10	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.9		4.0	4.4	4.0	4.0	4.0	4.0	4.0	2.7
Lane Util. Factor	0.97	0.91	1.00		0.91	1.00	0.97	0.91	0.91	0.91	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.97	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (prot)	3433	5085	1583		5085	1583	3433	3280	1441	3221	1626	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (perm)	3433	5085	1583		5085	1583	3433	3280	1441	3221	1626	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	967	98	0	924	250	304	554	467	217	11	250
RTOR Reduction (vph)	0	0	51	0	0	66	0	23	83	0	0	153
Lane Group Flow (vph)	239	967	47	0	924	184	304	685	230	152	76	97
Turn Type	Prot	NA	Perm		NA	pm+ov	Split	NA	Perm	Split	NA	pm+ov
Protected Phases	5	2			6	4	8	8		4	4	5
Permitted Phases			2			6			8			4
Actuated Green, G (s)	8.2	33.1	33.1		20.9	33.0	25.1	25.1	25.1	12.1	12.1	20.3
Effective Green, g (s)	8.2	34.0	33.1		21.8	34.8	26.8	26.8	26.8	13.4	13.4	22.9
Actuated g/C Ratio	0.10	0.39	0.38		0.25	0.40	0.31	0.31	0.31	0.16	0.16	0.27
Clearance Time (s)	4.0	4.9	4.9		4.9	5.3	5.7	5.7	5.7	5.3	5.3	4.0
Vehicle Extension (s)	1.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0
Lane Grp Cap (vph)	326	2005	607		1285	639	1067	1019	448	500	252	420
v/s Ratio Prot	c0.07	0.19			c0.18	0.04	0.09	c0.21		c0.05	0.05	0.03
v/s Ratio Perm			0.03			0.07			0.16			0.04
v/c Ratio	0.73	0.48	0.08		0.72	0.29	0.28	0.67	0.51	0.30	0.30	0.23
Uniform Delay, d1	37.9	19.5	16.9		29.4	17.3	22.5	25.9	24.4	32.3	32.3	24.8
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.2	0.1	0.0		1.6	0.1	0.1	1.4	0.4	0.1	0.2	0.1
Delay (s)	45.1	19.6	16.9		31.0	17.4	22.5	27.3	24.8	32.4	32.5	24.9
Level of Service	D	B	B		C	B	C	C	C	C	C	C
Approach Delay (s)		24.1			28.1			25.6			28.5	
Approach LOS		C			C			C			C	

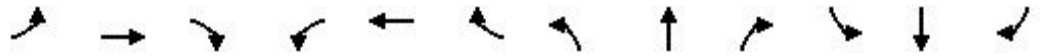
Intersection Summary

HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	86.2	Sum of lost time (s)	16.4
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Signalized Intersection Summary
6: SR-14 SB Ramps & Ave J

2040 Future No-Build PM Peak
05/18/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑						↑	↑↑
Traffic Volume (veh/h)	0	860	800	520	1780	0	0	0	0	140	0	240
Future Volume (veh/h)	0	860	800	520	1780	0	0	0	0	140	0	240
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	935	870	565	1935	0				152	0	261
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2029	905	648	2833	0				223	0	350
Arrive On Green	0.00	0.57	0.57	0.19	0.80	0.00				0.13	0.00	0.13
Sat Flow, veh/h	0	3647	1585	3456	3647	0				1781	0	2790
Grp Volume(v), veh/h	0	935	870	565	1935	0				152	0	261
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1777	0				1781	0	1395
Q Serve(g_s), s	0.0	15.8	53.9	16.4	25.0	0.0				8.4	0.0	9.3
Cycle Q Clear(g_c), s	0.0	15.8	53.9	16.4	25.0	0.0				8.4	0.0	9.3
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2029	905	648	2833	0				223	0	350
V/C Ratio(X)	0.00	0.46	0.96	0.87	0.68	0.00				0.68	0.00	0.75
Avail Cap(c_a), veh/h	0	2063	920	769	2992	0				431	0	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.9	21.1	40.8	4.7	0.0				43.2	0.0	43.6
Incr Delay (d2), s/veh	0.0	0.2	20.6	9.5	0.6	0.0				3.6	0.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.6	22.1	7.6	5.5	0.0				3.9	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.1	41.7	50.3	5.3	0.0				46.8	0.0	46.8
LnGrp LOS	A	B	D	D	A	A				D	A	D
Approach Vol, veh/h		1805			2500							413
Approach Delay, s/veh		26.9			15.4							46.8
Approach LOS		C			B							D
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			23.4	63.0		17.0		86.4				
Change Period (Y+Rc), s			4.0	4.0		4.0		4.0				
Max Green Setting (Gmax), s			23.0	60.0		25.0		87.0				
Max Q Clear Time (g_c+l1), s			18.4	55.9		11.3		27.0				
Green Ext Time (p_c), s			1.0	3.1		1.6		27.8				
Intersection Summary												
HCM 6th Ctrl Delay			22.6									
HCM 6th LOS			C									

HCM 6th Signalized Intersection Summary
7: SR-14 NB Ramps & Ave J

2040 Future No-Build PM Peak
05/18/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑			↑↑↑		↗	↖	↗			
Traffic Volume (veh/h)	150	850	0	0	1420	210	880	0	220	0	0	0
Future Volume (veh/h)	150	850	0	0	1420	210	880	0	220	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	163	924	0	0	1543	228	957	0	239			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	192	1881	0	0	1737	256	1428	0	635			
Arrive On Green	0.11	0.53	0.00	0.00	0.39	0.39	0.40	0.00	0.40			
Sat Flow, veh/h	1781	3647	0	0	4661	662	3563	0	1585			
Grp Volume(v), veh/h	163	924	0	0	1168	603	957	0	239			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1702	1751	1781	0	1585			
Q Serve(g_s), s	10.3	19.0	0.0	0.0	36.8	36.9	25.2	0.0	12.2			
Cycle Q Clear(g_c), s	10.3	19.0	0.0	0.0	36.8	36.9	25.2	0.0	12.2			
Prop In Lane	1.00		0.00	0.00		0.38	1.00		1.00			
Lane Grp Cap(c), veh/h	192	1881	0	0	1316	677	1428	0	635			
V/C Ratio(X)	0.85	0.49	0.00	0.00	0.89	0.89	0.67	0.00	0.38			
Avail Cap(c_a), veh/h	248	2044	0	0	1365	702	1428	0	635			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(l)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	50.3	17.2	0.0	0.0	32.9	32.9	28.2	0.0	24.2			
Incr Delay (d2), s/veh	19.0	0.2	0.0	0.0	7.3	13.2	2.5	0.0	1.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.5	7.2	0.0	0.0	15.7	17.4	11.1	0.0	4.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.2	17.4	0.0	0.0	40.2	46.1	30.7	0.0	25.9			
LnGrp LOS	E	B	A	A	D	D	C	A	C			
Approach Vol, veh/h		1087			1771			1196				
Approach Delay, s/veh		25.1			42.2			29.7				
Approach LOS		C			D			C				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		50.0		64.7			16.4	48.4				
Change Period (Y+Rc), s		4.0		4.0			4.0	4.0				
Max Green Setting (Gmax), s		46.0		66.0			16.0	46.0				
Max Q Clear Time (g_c+l1), s		27.2		21.0			12.3	38.9				
Green Ext Time (p_c), s		4.7		7.1			0.1	5.4				
Intersection Summary												
HCM 6th Ctrl Delay				33.9								
HCM 6th LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕	↗	↖	↕
Traffic Vol, veh/h	0	68	770	40	40	680
Future Vol, veh/h	0	68	770	40	40	680
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	74	837	43	43	739

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	419	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	583	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	-	583	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	583	764
HCM Lane V/C Ratio	-	-	0.127	0.057
HCM Control Delay (s)	-	-	12.1	10
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0.2

HCM 6th Signalized Intersection Summary
 16: 20th St W & SR-14 NB Off-Ramp

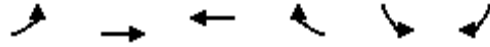
2040 Future No-Build PM Peak
 05/18/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶	↶↶	↶↶			↷↷
Traffic Volume (veh/h)	500	280	530	0	0	680
Future Volume (veh/h)	500	280	530	0	0	680
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	0	1870
Adj Flow Rate, veh/h	543	304	576	0	0	739
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	0	2
Cap, veh/h	613	960	2025	0	0	2025
Arrive On Green	0.34	0.34	0.57	0.00	0.00	0.57
Sat Flow, veh/h	1781	2790	3741	0	0	3741
Grp Volume(v), veh/h	543	304	576	0	0	739
Grp Sat Flow(s),veh/h/ln	1781	1395	1777	0	0	1777
Q Serve(g_s), s	26.7	7.5	7.7	0.0	0.0	10.5
Cycle Q Clear(g_c), s	26.7	7.5	7.7	0.0	0.0	10.5
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	613	960	2025	0	0	2025
V/C Ratio(X)	0.89	0.32	0.28	0.00	0.00	0.36
Avail Cap(c_a), veh/h	1130	1770	2025	0	0	2025
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	28.8	22.5	10.3	0.0	0.0	10.9
Incr Delay (d2), s/veh	4.5	0.2	0.4	0.0	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	2.4	2.8	0.0	0.0	3.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.3	22.6	10.6	0.0	0.0	11.4
LnGrp LOS	C	C	B	A	A	B
Approach Vol, veh/h	847		576			739
Approach Delay, s/veh	29.5		10.6			11.4
Approach LOS	C		B			B
Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		57.0			57.0	36.0
Change Period (Y+Rc), s		4.0			4.0	4.0
Max Green Setting (Gmax), s		53.0			53.0	59.0
Max Q Clear Time (g_c+l1), s		9.7			12.5	28.7
Green Ext Time (p_c), s		4.1			5.5	3.2
Intersection Summary						
HCM 6th Ctrl Delay			18.3			
HCM 6th LOS			B			

HCM Signalized Intersection Capacity Analysis
 24: Avenue K & SR-14 SB Ramps

2040 Future No-Build PM Peak
 07/23/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↗	↘↘↘	↘
Traffic Volume (vph)	0	1010	1240	460	290	220
Future Volume (vph)	0	1010	1240	460	290	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.9	4.0	4.0
Lane Util. Factor		0.91	0.91	1.00	0.97	0.91
Frt		1.00	1.00	0.85	0.97	0.85
Flt Protected		1.00	1.00	1.00	0.96	1.00
Satd. Flow (prot)		5085	5085	1583	3381	1441
Flt Permitted		1.00	1.00	1.00	0.96	1.00
Satd. Flow (perm)		5085	5085	1583	3381	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1098	1348	500	315	239
RTOR Reduction (vph)	0	0	0	212	17	44
Lane Group Flow (vph)	0	1098	1348	288	363	130
Turn Type		NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases				6	4	4
Actuated Green, G (s)		28.9	28.9	28.9	11.8	11.8
Effective Green, g (s)		29.8	29.8	28.9	12.4	12.4
Actuated g/C Ratio		0.59	0.59	0.58	0.25	0.25
Clearance Time (s)		4.9	4.9	4.9	4.6	4.6
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		3018	3018	911	835	355
v/s Ratio Prot		0.22	c0.27			
v/s Ratio Perm				0.18	c0.11	0.09
v/c Ratio		0.36	0.45	0.32	0.44	0.36
Uniform Delay, d1		5.3	5.6	5.5	15.9	15.6
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1	0.2	0.4	0.6
Delay (s)		5.4	5.7	5.7	16.3	16.3
Level of Service		A	A	A	B	B
Approach Delay (s)		5.4	5.7		16.3	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	50.2	Sum of lost time (s)	8.6
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
25: SR-14 NB Off-Ramp/15th St W & Avenue K

2040 Future No-Build PM Peak
07/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↗		↑↑↑	↗	↖↗	↑↔	↗	↖↗	↖	↗
Traffic Volume (vph)	140	1040	120	0	1270	130	280	240	490	330	20	370
Future Volume (vph)	140	1040	120	0	1270	130	280	240	490	330	20	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.9		4.0	4.4	4.0	4.0	4.0	4.0	4.0	2.7
Lane Util. Factor	0.97	0.91	1.00		0.91	1.00	0.97	0.91	0.91	0.91	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.92	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (prot)	3433	5085	1583		5085	1583	3433	3133	1441	3221	1628	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (perm)	3433	5085	1583		5085	1583	3433	3133	1441	3221	1628	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	1130	130	0	1380	141	304	261	533	359	22	402
RTOR Reduction (vph)	0	0	57	0	0	73	0	44	85	0	0	71
Lane Group Flow (vph)	152	1130	73	0	1380	68	304	484	181	255	126	331
Turn Type	Prot	NA	Perm		NA	pm+ov	Split	NA	Perm	Split	NA	pm+ov
Protected Phases	5	2			6	4	8	8		4	4	5
Permitted Phases			2			6			8			4
Actuated Green, G (s)	10.3	44.2	44.2		29.9	43.2	20.0	20.0	20.0	13.3	13.3	23.6
Effective Green, g (s)	10.3	45.1	44.2		30.8	45.0	21.7	21.7	21.7	14.6	14.6	26.2
Actuated g/C Ratio	0.11	0.48	0.47		0.33	0.48	0.23	0.23	0.23	0.16	0.16	0.28
Clearance Time (s)	4.0	4.9	4.9		4.9	5.3	5.7	5.7	5.7	5.3	5.3	4.0
Vehicle Extension (s)	1.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0
Lane Grp Cap (vph)	378	2455	749		1676	762	797	727	334	503	254	444
v/s Ratio Prot	0.04	0.22			c0.27	0.01	0.09	c0.15		0.08	0.08	c0.09
v/s Ratio Perm			0.05			0.03			0.13			0.12
v/c Ratio	0.40	0.46	0.10		0.82	0.09	0.38	0.67	0.54	0.51	0.50	0.75
Uniform Delay, d1	38.7	16.1	13.6		28.8	13.1	30.2	32.6	31.5	36.1	36.0	30.6
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	0.0		3.3	0.0	0.1	1.8	1.0	0.3	0.6	5.9
Delay (s)	38.9	16.1	13.6		32.0	13.1	30.3	34.4	32.4	36.4	36.6	36.5
Level of Service	D	B	B		C	B	C	C	C	D	D	D
Approach Delay (s)		18.3			30.3			32.8			36.5	
Approach LOS		B			C			C			D	

Intersection Summary

HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	93.4	Sum of lost time (s)	16.4
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

MOVEMENT SUMMARY

 Site: 1 [LHD - Future 2040 No-Build AM - Int 3]

Roundabout with 1-lane approaches and circulating road
 MUTCD (FHWA 2009) example number: 2B-22
 Roundabout Guide (TRB 2010) example number: A-1
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: 15th St West												
3	L2	98	0.0	0.612	17.6	LOS C	4.6	116.0	0.82	1.06	1.41	25.1
8	T1	120	0.0	0.612	17.6	LOS C	4.6	116.0	0.82	1.06	1.41	25.1
18	R2	163	0.0	0.612	17.6	LOS C	4.6	116.0	0.82	1.06	1.41	19.4
Approach		380	0.0	0.612	17.6	LOS C	4.6	116.0	0.82	1.06	1.41	23.1
East: Lancaster Blvd												
1	L2	76	0.0	0.428	8.5	LOS A	2.5	61.7	0.59	0.50	0.59	25.9
6	T1	326	0.0	0.428	8.5	LOS A	2.5	61.7	0.59	0.50	0.59	28.7
16	R2	22	0.0	0.428	8.5	LOS A	2.5	61.7	0.59	0.50	0.59	27.9
Approach		424	0.0	0.428	8.5	LOS A	2.5	61.7	0.59	0.50	0.59	28.2
North: 15th St West												
7	L2	54	0.0	0.472	10.5	LOS B	3.2	79.8	0.70	0.79	0.90	24.8
4	T1	239	0.0	0.472	10.5	LOS B	3.2	79.8	0.70	0.79	0.90	26.7
14	R2	98	0.0	0.472	10.5	LOS B	3.2	79.8	0.70	0.79	0.90	27.9
Approach		391	0.0	0.472	10.5	LOS B	3.2	79.8	0.70	0.79	0.90	26.8
West: Lancaster Blvd												
5	L2	109	0.0	0.976	44.5	LOS E	40.5	1011.6	1.00	2.27	3.50	19.9
2	T1	620	0.0	0.976	44.5	LOS E	40.5	1011.6	1.00	2.27	3.50	15.9
12	R2	196	0.0	0.976	44.5	LOS E	40.5	1011.6	1.00	2.27	3.50	17.6
Approach		924	0.0	0.976	44.5	LOS E	40.5	1011.6	1.00	2.27	3.50	16.8
All Vehicles		2120	0.0	0.976	26.2	LOS D	40.5	1011.6	0.83	1.43	2.07	20.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 1 [LHD - Future 2040 No-Build PM - Int 3]

Roundabout with 1-lane approaches and circulating road
 MUTCD (FHWA 2009) example number: 2B-22
 Roundabout Guide (TRB 2010) example number: A-1
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: 15th St West												
3	L2	109	0.0	0.609	15.0	LOS C	5.3	133.5	0.80	1.03	1.33	26.0
8	T1	185	0.0	0.609	15.0	LOS C	5.3	133.5	0.80	1.03	1.33	26.1
18	R2	163	0.0	0.609	15.0	LOS C	5.3	133.5	0.80	1.03	1.33	20.4
Approach		457	0.0	0.609	15.0	LOS C	5.3	133.5	0.80	1.03	1.33	24.4
East: Lancaster Blvd												
1	L2	130	0.0	0.738	17.2	LOS C	12.4	309.6	0.88	1.20	1.61	21.4
6	T1	500	0.0	0.738	17.2	LOS C	12.4	309.6	0.88	1.20	1.61	24.6
16	R2	76	0.0	0.738	17.2	LOS C	12.4	309.6	0.88	1.20	1.61	24.0
Approach		707	0.0	0.738	17.2	LOS C	12.4	309.6	0.88	1.20	1.61	24.0
North: 15th St West												
7	L2	43	0.0	0.485	13.1	LOS B	3.0	75.1	0.76	0.89	1.09	23.8
4	T1	196	0.0	0.485	13.1	LOS B	3.0	75.1	0.76	0.89	1.09	25.7
14	R2	76	0.0	0.485	13.1	LOS B	3.0	75.1	0.76	0.89	1.09	27.0
Approach		315	0.0	0.485	13.1	LOS B	3.0	75.1	0.76	0.89	1.09	25.8
West: Lancaster Blvd												
5	L2	65	0.0	0.723	16.7	LOS C	11.4	283.8	0.87	1.17	1.56	26.4
2	T1	489	0.0	0.723	16.7	LOS C	11.4	283.8	0.87	1.17	1.56	22.6
12	R2	130	0.0	0.723	16.7	LOS C	11.4	283.8	0.87	1.17	1.56	24.1
Approach		685	0.0	0.723	16.7	LOS C	11.4	283.8	0.87	1.17	1.56	23.3
All Vehicles		2163	0.0	0.738	16.0	LOS C	12.4	309.6	0.84	1.11	1.46	24.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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APPENDIX E – INTERNAL CAPTURE WORKSHEETS

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Lancaster Health District	Organization:	Kimley-Horn and Associates, Inc.
Project Location:	Lancaster, CA	Performed By:	
Scenario Description:		Date:	
Analysis Year:	2040	Checked By:	
Analysis Period:	AM Street Peak Hour	Date:	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office		600	1,000 Sq Ft	1,344	1,067	277
Retail		75	1,000 Sq Ft	71	44	27
Restaurant		45	1,000 Sq Ft	447	246	201
Cinema/Entertainment		-	Screen(s)	0	0	0
Residential		1,202	Dwelling Unit(s)	460	121	339
Hotel		180	Room(s)	85	50	35
All Other Land Uses ²		322	0	592	426	166
				2,999	1,954	1,045

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.00	0%	0%	1.00	0%	0%
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant	1.00	0%	0%	1.00	0%	0%
Cinema/Entertainment	1.00	0%	0%	1.00	0%	0%
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses ²	1.00	0%	0%	1.00	0%	0%

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail	8		4	0	2	0
Restaurant	62	4		0	6	2
Cinema/Entertainment	0	0	0		0	0
Residential	7	3	49	0		0
Hotel	26	2	3	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	2,999	1,954	1,045
Internal Capture Percentage	17%	13%	24%
External Vehicle-Trips ⁵	2,501	1,705	796
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	10%	26%
Retail	52%	52%
Restaurant	46%	37%
Cinema/Entertainment	N/A	N/A
Residential	7%	17%
Hotel	4%	89%

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Lancaster Health District
Analysis Period:	AM Street Peak Hour

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	1067	1067	1.00	277	277
Retail	1.00	44	44	1.00	27	27
Restaurant	1.00	246	246	1.00	201	201
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	121	121	1.00	339	339
Hotel	1.00	50	50	1.00	35	35

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		78	175	0	3	0
Retail	8		4	0	4	0
Restaurant	62	28		0	8	6
Cinema/Entertainment	0	0	0		0	0
Residential	7	3	68	0		0
Hotel	26	5	3	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		14	57	0	0	0
Retail	43		123	0	2	0
Restaurant	149	4		0	6	2
Cinema/Entertainment	0	0	0		0	0
Residential	32	7	49	0		0
Hotel	32	2	15	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	103	964	1067	964	0	0
Retail	23	21	44	21	0	0
Restaurant	113	133	246	133	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	8	113	121	113	0	0
Hotel	2	48	50	48	0	0
All Other Land Uses ³	0	426	426	426	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	71	206	277	206	0	0
Retail	14	13	27	13	0	0
Restaurant	74	127	201	127	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	59	280	339	280	0	0
Hotel	31	4	35	4	0	0
All Other Land Uses ³	0	166	166	166	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool

Project Name:		Organization:	Kimley-Horn and Associates, Inc.
Project Location:		Performed By:	
Scenario Description:		Date:	
Analysis Year:		Checked By:	
Analysis Period:	PM Street Peak Hour	Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office		600	1,000 Sq Ft	1,614	425	1,189
Retail		75	1,000 Sq Ft	286	137	149
Restaurant		45	1,000 Sq Ft	440	273	167
Cinema/Entertainment		-	Screen(s)	0	0	0
Residential		1,202	Dwelling Unit(s)	565	348	217
Hotel		180	Room(s)	108	55	53
All Other Land Uses ²		322	0	609	171	438
				3,622	1,409	2,213

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.00	0%	0%	1.00	0%	0%
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant	1.00	0%	0%	1.00	0%	0%
Cinema/Entertainment	1.00	0%	0%	1.00	0%	0%
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses ²	1.00	0%	0%	1.00	0%	0%

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		11	5	0	14	0
Retail	3		43	0	39	7
Restaurant	5	68		0	30	12
Cinema/Entertainment	0	0	0		0	0
Residential	9	14	38	0		7
Hotel	0	3	14	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	3,622	1,409	2,213
Internal Capture Percentage	18%	23%	15%
External Vehicle-Trips ⁵	2,978	1,087	1,891
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	4%	3%
Retail	70%	62%
Restaurant	37%	69%
Cinema/Entertainment	N/A	N/A
Residential	24%	31%
Hotel	47%	32%

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	0
Analysis Period:	PM Street Peak Hour

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	425	425	1.00	1189	1189
Retail	1.00	137	137	1.00	149	149
Restaurant	1.00	273	273	1.00	167	167
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	348	348	1.00	217	217
Hotel	1.00	55	55	1.00	53	53

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		238	48	0	24	0
Retail	3		43	6	39	7
Restaurant	5	68		13	30	12
Cinema/Entertainment	0	0	0		0	0
Residential	9	91	46	0		7
Hotel	0	8	36	0	1	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		11	5	0	14	0
Retail	132		79	0	160	9
Restaurant	128	69		0	56	39
Cinema/Entertainment	26	5	8		14	1
Residential	242	14	38	0		7
Hotel	0	3	14	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	17	408	425	408	0	0
Retail	96	41	137	41	0	0
Restaurant	100	173	273	173	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	83	265	348	265	0	0
Hotel	26	29	55	29	0	0
All Other Land Uses ³	0	171	171	171	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	30	1159	1189	1159	0	0
Retail	92	57	149	57	0	0
Restaurant	115	52	167	52	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	68	149	217	149	0	0
Hotel	17	36	53	36	0	0
All Other Land Uses ³	0	438	438	438	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P
²Person-Trips
³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator
*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Lancaster Health District	Organization:	Kimley-Horn and Associates, Inc.
Project Location:	Lancaster, CA	Performed By:	
Scenario Description:		Date:	
Analysis Year:	2040	Checked By:	
Analysis Period:	AM Street Peak Hour	Date:	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office		-	1,000 Sq Ft	0	0	0
Retail		38	1,000 Sq Ft	35	22	13
Restaurant		23	1,000 Sq Ft	224	123	101
Cinema/Entertainment		-	Screen(s)	0	0	0
Residential		505	Dwelling Unit(s)	244	57	187
Hotel		-	Room(s)	0	0	0
All Other Land Uses ²		-	0	0	0	0
				503	202	301

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.00	0%	0%	1.00	0%	0%
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant	1.00	0%	0%	1.00	0%	0%
Cinema/Entertainment	1.00	0%	0%	1.00	0%	0%
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses ²	1.00	0%	0%	1.00	0%	0%

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail	0		2	0	1	0
Restaurant	0	2		0	3	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	2	25	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	503	202	301
Internal Capture Percentage	14%	17%	12%
External Vehicle-Trips ⁵	433	167	266
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	18%	23%
Restaurant	22%	5%
Cinema/Entertainment	N/A	N/A
Residential	7%	14%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Lancaster Health District
Analysis Period:	AM Street Peak Hour

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	22	22	1.00	13	13
Restaurant	1.00	123	123	1.00	101	101
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	57	57	1.00	187	187
Hotel	1.00	0	0	1.00	0	0

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	4		2	0	2	0
Restaurant	31	14		0	4	3
Cinema/Entertainment	0	0	0		0	0
Residential	4	2	37	0		0
Hotel	0	0	0	0	0	

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	28	0	0	0
Retail	0		62	0	1	0
Restaurant	0	2		0	3	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	4	25	0		0
Hotel	0	1	7	0	0	

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	4	18	22	18	0	0
Restaurant	27	96	123	96	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	4	53	57	53	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	3	10	13	10	0	0
Restaurant	5	96	101	96	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	27	160	187	160	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool

Project Name:		Organization:	Kimley-Horn and Associates, Inc.
Project Location:		Performed By:	
Scenario Description:		Date:	
Analysis Year:		Checked By:	
Analysis Period:	PM Street Peak Hour	Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office		-	1,000 Sq Ft	0	0	0
Retail		38	1,000 Sq Ft	143	69	74
Restaurant		23	1,000 Sq Ft	220	136	84
Cinema/Entertainment		-	Screen(s)	0	0	0
Residential		505	Dwelling Unit(s)	300	189	111
Hotel		-	Room(s)	0	0	0
All Other Land Uses ²		-	0	0	0	0
				663	394	269

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.00	0%	0%	1.00	0%	0%
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant	1.00	0%	0%	1.00	0%	0%
Cinema/Entertainment	1.00	0%	0%	1.00	0%	0%
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses ²	1.00	0%	0%	1.00	0%	0%

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		21	0	19	0
Restaurant	0	34		0	15	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	7	19	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	663	394	269
Internal Capture Percentage	35%	29%	43%
External Vehicle-Trips ⁵	433	279	154
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	59%	54%
Restaurant	29%	58%
Cinema/Entertainment	N/A	N/A
Residential	18%	23%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	0
Analysis Period:	PM Street Peak Hour

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	69	69	1.00	74	74
Restaurant	1.00	136	136	1.00	84	84
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	189	189	1.00	111	111
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	1		21	3	19	4
Restaurant	3	34		7	15	6
Cinema/Entertainment	0	0	0		0	0
Residential	4	47	23	0		3
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		6	3	0	8	0
Retail	0		39	0	87	0
Restaurant	0	35		0	30	0
Cinema/Entertainment	0	3	4		8	0
Residential	0	7	19	0		0
Hotel	0	1	7	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	41	28	69	28	0	0
Restaurant	40	96	136	96	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	34	155	189	155	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	40	34	74	34	0	0
Restaurant	49	35	84	35	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	26	85	111	85	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Lancaster Health District	Organization:	Kimley-Horn and Associates, Inc.
Project Location:	Lancaster, CA	Performed By:	
Scenario Description:		Date:	
Analysis Year:	2040	Checked By:	
Analysis Period:	AM Street Peak Hour	Date:	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office		-	1,000 Sq Ft	0	0	0
Retail		38	1,000 Sq Ft	35	22	13
Restaurant		23	1,000 Sq Ft	224	123	101
Cinema/Entertainment		-	Screen(s)	0	0	0
Residential		293	Dwelling Unit(s)	193	48	145
Hotel		-	Room(s)	0	0	0
All Other Land Uses ²		-	0	0	0	0
				452	193	259

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.00	0%	0%	1.00	0%	0%
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant	1.00	0%	0%	1.00	0%	0%
Cinema/Entertainment	1.00	0%	0%	1.00	0%	0%
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses ²	1.00	0%	0%	1.00	0%	0%

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail	0		2	0	1	0
Restaurant	0	2		0	2	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	25	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	452	193	259
Internal Capture Percentage	15%	17%	13%
External Vehicle-Trips ⁵	386	160	226
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	14%	23%
Restaurant	22%	4%
Cinema/Entertainment	N/A	N/A
Residential	6%	18%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Lancaster Health District
Analysis Period:	AM Street Peak Hour

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	22	22	1.00	13	13
Restaurant	1.00	123	123	1.00	101	101
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	48	48	1.00	145	145
Hotel	1.00	0	0	1.00	0	0

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	4		2	0	2	0
Restaurant	31	14		0	4	3
Cinema/Entertainment	0	0	0		0	0
Residential	3	1	29	0		0
Hotel	0	0	0	0	0	

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	28	0	0	0
Retail	0		62	0	1	0
Restaurant	0	2		0	2	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	4	25	0		0
Hotel	0	1	7	0	0	

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	3	19	22	19	0	0
Restaurant	27	96	123	96	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3	45	48	45	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	3	10	13	10	0	0
Restaurant	4	97	101	97	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	26	119	145	119	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A
²Person-Trips
³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator
*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool

Project Name:		Organization:	Kimley-Horn and Associates, Inc.
Project Location:		Performed By:	
Scenario Description:		Date:	
Analysis Year:		Checked By:	
Analysis Period:	PM Street Peak Hour	Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office		-	1,000 Sq Ft	0	0	0
Retail		38	1,000 Sq Ft	143	69	74
Restaurant		23	1,000 Sq Ft	220	136	84
Cinema/Entertainment		-	Screen(s)	0	0	0
Residential		293	Dwelling Unit(s)	254	160	94
Hotel		-	Room(s)	0	0	0
All Other Land Uses ²		-	0	0	0	0
				617	365	252

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.00	0%	0%	1.00	0%	0%
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant	1.00	0%	0%	1.00	0%	0%
Cinema/Entertainment	1.00	0%	0%	1.00	0%	0%
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses ²	1.00	0%	0%	1.00	0%	0%

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		21	0	19	0
Restaurant	0	34		0	15	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	7	19	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	617	365	252
Internal Capture Percentage	37%	32%	46%
External Vehicle-Trips ⁵	387	250	137
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	59%	54%
Restaurant	29%	58%
Cinema/Entertainment	N/A	N/A
Residential	21%	28%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	0
Analysis Period:	PM Street Peak Hour

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	69	69	1.00	74	74
Restaurant	1.00	136	136	1.00	84	84
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	160	160	1.00	94	94
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	1		21	3	19	4
Restaurant	3	34		7	15	6
Cinema/Entertainment	0	0	0		0	0
Residential	4	39	20	0		3
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		6	3	0	6	0
Retail	0		39	0	74	0
Restaurant	0	35		0	26	0
Cinema/Entertainment	0	3	4		6	0
Residential	0	7	19	0		0
Hotel	0	1	7	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	41	28	69	28	0	0
Restaurant	40	96	136	96	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	34	126	160	126	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0













Table 9-P (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	40	34	74	34	0	0
Restaurant	49	35	84	35	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	26	68	94	68	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P
²Person-Trips
³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator
*Indicates computation that has been rounded to the nearest whole number.

APPENDIX F – HCM RESULTS – FUTURE (2040) WITH PROJECT CONDITIONS

HCM 6th Signalized Intersection Summary
6: SR-14 SB Ramps & Ave J

2040 Future + Project AM Peak
05/18/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↘↗	↑↑						↖	↘↗
Traffic Volume (veh/h)	0	1092	660	252	1104	0	0	0	0	367	0	170
Future Volume (veh/h)	0	1092	660	252	1104	0	0	0	0	367	0	170
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1187	717	274	1200	0				399	0	185
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1892	844	343	2384	0				446	0	699
Arrive On Green	0.00	0.53	0.53	0.10	0.67	0.00				0.25	0.00	0.25
Sat Flow, veh/h	0	3647	1585	3456	3647	0				1781	0	2790
Grp Volume(v), veh/h	0	1187	717	274	1200	0				399	0	185
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1777	0				1781	0	1395
Q Serve(g_s), s	0.0	23.9	39.3	7.9	17.1	0.0				22.0	0.0	5.4
Cycle Q Clear(g_c), s	0.0	23.9	39.3	7.9	17.1	0.0				22.0	0.0	5.4
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1892	844	343	2384	0				446	0	699
V/C Ratio(X)	0.00	0.63	0.85	0.80	0.50	0.00				0.89	0.00	0.26
Avail Cap(c_a), veh/h	0	2339	1043	407	2898	0				508	0	795
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	16.7	20.3	44.9	8.3	0.0				36.8	0.0	30.6
Incr Delay (d2), s/veh	0.0	0.4	5.7	9.3	0.2	0.0				16.7	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.7	14.0	3.7	5.5	0.0				11.5	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.1	26.0	54.1	8.5	0.0				53.5	0.0	30.8
LnGrp LOS	A	B	C	D	A	A				D	A	C
Approach Vol, veh/h		1904			1474						584	
Approach Delay, s/veh		20.4			17.0						46.3	
Approach LOS		C			B						D	
Timer - Assigned Phs			3	4		6			8			
Phs Duration (G+Y+Rc), s			14.1	58.2		29.5			72.3			
Change Period (Y+Rc), s			4.0	4.0		4.0			4.0			
Max Green Setting (Gmax), s			12.0	67.0		29.0			83.0			
Max Q Clear Time (g_c+l1), s			9.9	41.3		24.0			19.1			
Green Ext Time (p_c), s			0.2	12.9		1.5			11.4			
Intersection Summary												
HCM 6th Ctrl Delay			23.0									
HCM 6th LOS			C									

HCM 6th Signalized Intersection Summary

2040 Future + Project AM Peak

05/18/2020

7: SR-14 SB Ramps & Ave J



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑↑		↘	↙	↗			
Traffic Volume (veh/h)	170	1289	0	0	816	176	540	0	274	0	0	0
Future Volume (veh/h)	170	1289	0	0	816	176	540	0	274	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	185	1401	0	0	887	191	587	0	298			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	244	2043	0	0	1524	327	973	0	433			
Arrive On Green	0.14	0.57	0.00	0.00	0.36	0.36	0.27	0.00	0.27			
Sat Flow, veh/h	1781	3647	0	0	4378	902	3563	0	1585			
Grp Volume(v), veh/h	185	1401	0	0	716	362	587	0	298			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1702	1708	1781	0	1585			
Q Serve(g_s), s	5.3	14.6	0.0	0.0	8.9	9.0	7.5	0.0	8.9			
Cycle Q Clear(g_c), s	5.3	14.6	0.0	0.0	8.9	9.0	7.5	0.0	8.9			
Prop In Lane	1.00		0.00	0.00		0.53	1.00		1.00			
Lane Grp Cap(c), veh/h	244	2043	0	0	1232	618	973	0	433			
V/C Ratio(X)	0.76	0.69	0.00	0.00	0.58	0.58	0.60	0.00	0.69			
Avail Cap(c_a), veh/h	948	4390	0	0	2135	1071	3182	0	1416			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(l)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	21.9	7.9	0.0	0.0	13.6	13.6	16.6	0.0	17.1			
Incr Delay (d2), s/veh	4.8	0.4	0.0	0.0	0.4	0.9	0.6	0.0	2.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.2	3.2	0.0	0.0	2.8	2.9	2.8	0.0	3.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.7	8.3	0.0	0.0	14.0	14.5	17.2	0.0	19.1			
LnGrp LOS	C	A	A	A	B	B	B	A	B			
Approach Vol, veh/h		1586			1078			885				
Approach Delay, s/veh		10.4			14.2			17.9				
Approach LOS		B			B			B				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		18.4		34.2			11.2	23.0				
Change Period (Y+Rc), s		4.0		4.0			4.0	4.0				
Max Green Setting (Gmax), s		47.0		65.0			28.0	33.0				
Max Q Clear Time (g_c+l1), s		10.9		16.6			7.3	11.0				
Green Ext Time (p_c), s		3.5		13.7			0.5	7.2				

Intersection Summary

HCM 6th Ctrl Delay	13.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 16: 20th St W & SR-14 NB Off-Ramp

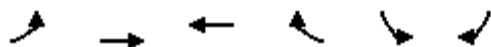
2040 Future + Project AM Peak
 07/23/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	246	549	895	0	0	499
Future Volume (veh/h)	246	549	895	0	0	499
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	0	1870
Adj Flow Rate, veh/h	267	597	973	0	0	542
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	0	2
Cap, veh/h	507	794	2090	0	0	2090
Arrive On Green	0.28	0.28	0.59	0.00	0.00	0.59
Sat Flow, veh/h	1781	2790	3741	0	0	3741
Grp Volume(v), veh/h	267	597	973	0	0	542
Grp Sat Flow(s),veh/h/ln	1781	1395	1777	0	0	1777
Q Serve(g_s), s	7.9	12.3	9.8	0.0	0.0	4.7
Cycle Q Clear(g_c), s	7.9	12.3	9.8	0.0	0.0	4.7
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	507	794	2090	0	0	2090
V/C Ratio(X)	0.53	0.75	0.47	0.00	0.00	0.26
Avail Cap(c_a), veh/h	2124	3326	2090	0	0	2090
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	18.9	20.5	7.3	0.0	0.0	6.3
Incr Delay (d2), s/veh	0.9	1.5	0.7	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	3.8	2.8	0.0	0.0	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.8	21.9	8.1	0.0	0.0	6.6
LnGrp LOS	B	C	A	A	A	A
Approach Vol, veh/h	864		973			542
Approach Delay, s/veh	21.3		8.1			6.6
Approach LOS	C		A			A
Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		41.0			41.0	21.9
Change Period (Y+Rc), s		4.0			4.0	4.0
Max Green Setting (Gmax), s		37.0			37.0	75.0
Max Q Clear Time (g_c+I1), s		11.8			6.7	14.3
Green Ext Time (p_c), s		7.1			3.6	3.7
Intersection Summary						
HCM 6th Ctrl Delay			12.5			
HCM 6th LOS			B			

HCM Signalized Intersection Capacity Analysis
24: Avenue K & SR-14 SB Ramps

2040 Future + Project AM Peak
07/23/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↗	↘↘↘	↗
Traffic Volume (vph)	0	917	894	492	305	150
Future Volume (vph)	0	917	894	492	305	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.9	4.0	4.0
Lane Util. Factor		0.91	0.91	1.00	0.97	0.91
Frt		1.00	1.00	0.85	0.99	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		5085	5085	1583	3425	1441
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		5085	5085	1583	3425	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	997	972	535	332	163
RTOR Reduction (vph)	0	0	0	272	4	87
Lane Group Flow (vph)	0	997	972	263	344	60
Turn Type		NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases				6	4	4
Actuated Green, G (s)		19.5	19.5	19.5	10.7	10.7
Effective Green, g (s)		20.4	20.4	19.5	11.3	11.3
Actuated g/C Ratio		0.51	0.51	0.49	0.28	0.28
Clearance Time (s)		4.9	4.9	4.9	4.6	4.6
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		2612	2612	777	974	410
v/s Ratio Prot		c0.20	0.19			
v/s Ratio Perm				0.17	c0.10	0.04
v/c Ratio		0.38	0.37	0.34	0.35	0.15
Uniform Delay, d1		5.8	5.8	6.2	11.3	10.6
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1	0.3	0.2	0.2
Delay (s)		5.9	5.9	6.4	11.5	10.8
Level of Service		A	A	A	B	B
Approach Delay (s)		5.9	6.1		11.3	
Approach LOS		A	A		B	

Intersection Summary

HCM 2000 Control Delay	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	39.7	Sum of lost time (s)	8.6
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
25: SR-14 NB Off-Ramp/15th St W & Avenue K

2040 Future + Project AM Peak

07/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↗		↑↑↑	↗	↖↗	↑↔	↗	↖↗	↖	↗
Traffic Volume (vph)	252	890	90	0	850	335	280	672	430	263	10	433
Future Volume (vph)	252	890	90	0	850	335	280	672	430	263	10	433
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.9		4.0	4.4	4.0	4.0	4.0	4.0	4.0	2.7
Lane Util. Factor	0.97	0.91	1.00		0.91	1.00	0.97	0.91	0.91	0.91	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.98	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (prot)	3433	5085	1583		5085	1583	3433	3327	1441	3221	1623	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (perm)	3433	5085	1583		5085	1583	3433	3327	1441	3221	1623	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	274	967	98	0	924	364	304	730	467	286	11	471
RTOR Reduction (vph)	0	0	52	0	0	40	0	10	73	0	0	155
Lane Group Flow (vph)	274	967	46	0	924	324	304	823	291	197	100	316
Turn Type	Prot	NA	Perm		NA	pm+ov	Split	NA	Perm	Split	NA	pm+ov
Protected Phases	5	2			6	4	8	8		4	4	5
Permitted Phases			2			6			8			4
Actuated Green, G (s)	8.2	33.7	33.7		21.5	34.2	29.4	29.4	29.4	12.7	12.7	20.9
Effective Green, g (s)	8.2	34.6	33.7		22.4	36.0	31.1	31.1	31.1	14.0	14.0	23.5
Actuated g/C Ratio	0.09	0.38	0.37		0.24	0.39	0.34	0.34	0.34	0.15	0.15	0.26
Clearance Time (s)	4.0	4.9	4.9		4.9	5.3	5.7	5.7	5.7	5.3	5.3	4.0
Vehicle Extension (s)	1.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0
Lane Grp Cap (vph)	306	1918	581		1242	621	1164	1128	488	491	247	405
v/s Ratio Prot	0.08	0.19			c0.18	0.08	0.09	c0.25		0.06	0.06	c0.08
v/s Ratio Perm			0.03			0.13			0.20			0.12
v/c Ratio	0.90	0.50	0.08		0.74	0.52	0.26	0.73	0.60	0.40	0.40	0.78
Uniform Delay, d1	41.3	22.0	18.9		32.0	21.3	22.0	26.6	25.1	35.1	35.1	31.7
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.0	0.1	0.0		2.1	0.4	0.0	2.0	1.3	0.2	0.4	8.4
Delay (s)	67.3	22.0	18.9		34.2	21.6	22.0	28.6	26.4	35.3	35.5	40.1
Level of Service	E	C	B		C	C	C	C	C	D	D	D
Approach Delay (s)		31.1			30.6			26.8			38.2	
Approach LOS		C			C			C			D	

Intersection Summary













HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	91.7	Sum of lost time (s)	16.4
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Signalized Intersection Summary
6: SR-14 SB Ramps & Ave J

2040 Future + Project PM Peak

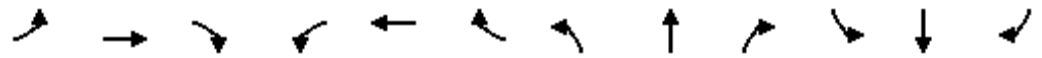
05/18/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖↗	↑↑						↖	↖↗
Traffic Volume (veh/h)	0	976	800	669	1948	0	0	0	0	249	0	240
Future Volume (veh/h)	0	976	800	669	1948	0	0	0	0	249	0	240
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1061	870	727	2117	0				271	0	261
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1847	824	688	2678	0				316	0	495
Arrive On Green	0.00	0.52	0.52	0.20	0.75	0.00				0.18	0.00	0.18
Sat Flow, veh/h	0	3647	1585	3456	3647	0				1781	0	2790
Grp Volume(v), veh/h	0	1061	870	727	2117	0				271	0	261
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1777	0				1781	0	1395
Q Serve(g_s), s	0.0	23.6	60.0	23.0	41.9	0.0				17.0	0.0	9.8
Cycle Q Clear(g_c), s	0.0	23.6	60.0	23.0	41.9	0.0				17.0	0.0	9.8
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1847	824	688	2678	0				316	0	495
V/C Ratio(X)	0.00	0.57	1.06	1.06	0.79	0.00				0.86	0.00	0.53
Avail Cap(c_a), veh/h	0	1847	824	688	2678	0				386	0	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	19.0	27.7	46.2	8.7	0.0				46.1	0.0	43.1
Incr Delay (d2), s/veh	0.0	0.4	47.3	50.1	1.7	0.0				14.9	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.1	31.1	14.4	12.6	0.0				8.8	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	19.4	75.0	96.3	10.4	0.0				61.0	0.0	44.0
LnGrp LOS	A	B	F	F	B	A				E	A	D
Approach Vol, veh/h		1931			2844						532	
Approach Delay, s/veh		44.5			32.3						52.7	
Approach LOS		D			C						D	
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			27.0	64.0		24.5		91.0				
Change Period (Y+Rc), s			4.0	4.0		4.0		4.0				
Max Green Setting (Gmax), s			23.0	60.0		25.0		87.0				
Max Q Clear Time (g_c+I1), s			25.0	62.0		19.0		43.9				
Green Ext Time (p_c), s			0.0	0.0		1.4		27.3				
Intersection Summary												
HCM 6th Ctrl Delay			38.8									
HCM 6th LOS			D									

HCM 6th Signalized Intersection Summary
 7: SR-14 NB Ramps & Ave J

2040 Future + Project PM Peak

05/22/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑			↑↑↑		↗	↑	↗			
Traffic Volume (veh/h)	150	1075	0	0	1737	373	880	0	242	0	0	0
Future Volume (veh/h)	150	1075	0	0	1737	373	880	0	242	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	163	1168	0	0	1888	405	957	0	263			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	178	2103	0	0	1938	406	1217	0	542			
Arrive On Green	0.10	0.59	0.00	0.00	0.46	0.46	0.34	0.00	0.34			
Sat Flow, veh/h	1781	3647	0	0	4396	887	3563	0	1585			
Grp Volume(v), veh/h	163	1168	0	0	1512	781	957	0	263			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1702	1711	1781	0	1585			
Q Serve(g_s), s	10.9	24.0	0.0	0.0	51.9	54.7	29.0	0.0	15.7			
Cycle Q Clear(g_c), s	10.9	24.0	0.0	0.0	51.9	54.7	29.0	0.0	15.7			
Prop In Lane	1.00		0.00	0.00		0.52	1.00		1.00			
Lane Grp Cap(c), veh/h	178	2103	0	0	1560	784	1217	0	542			
V/C Ratio(X)	0.92	0.56	0.00	0.00	0.97	1.00	0.79	0.00	0.49			
Avail Cap(c_a), veh/h	178	2103	0	0	1560	784	1217	0	542			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	53.5	14.9	0.0	0.0	31.7	32.4	35.6	0.0	31.2			
Incr Delay (d2), s/veh	43.9	0.3	0.0	0.0	16.0	31.2	5.2	0.0	3.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.9	8.8	0.0	0.0	23.4	27.9	13.3	0.0	6.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.4	15.2	0.0	0.0	47.6	63.6	40.7	0.0	34.3			
LnGrp LOS	F	B	A	A	D	E	D	A	C			
Approach Vol, veh/h		1331			2293			1220				
Approach Delay, s/veh		25.3			53.1			39.3				
Approach LOS		C			D			D				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		45.0		75.0			16.0	59.0				
Change Period (Y+Rc), s		4.0		4.0			4.0	4.0				
Max Green Setting (Gmax), s		41.0		71.0			12.0	55.0				
Max Q Clear Time (g_c+I1), s		31.0		26.0			12.9	56.7				
Green Ext Time (p_c), s		3.7		10.1			0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	42.0
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 16: 20th St W & SR-14 NB Off-Ramp

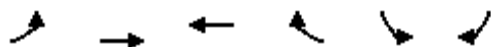
2040 Future + Project PM Peak
 07/23/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	558	357	788	0	0	1022
Future Volume (veh/h)	558	357	788	0	0	1022
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	0	1870
Adj Flow Rate, veh/h	607	388	857	0	0	1111
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	0	2
Cap, veh/h	678	1061	1913	0	0	1913
Arrive On Green	0.38	0.38	0.54	0.00	0.00	0.54
Sat Flow, veh/h	1781	2790	3741	0	0	3741
Grp Volume(v), veh/h	607	388	857	0	0	1111
Grp Sat Flow(s),veh/h/ln	1781	1395	1777	0	0	1777
Q Serve(g_s), s	31.5	9.9	14.4	0.0	0.0	20.7
Cycle Q Clear(g_c), s	31.5	9.9	14.4	0.0	0.0	20.7
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	678	1061	1913	0	0	1913
V/C Ratio(X)	0.90	0.37	0.45	0.00	0.00	0.58
Avail Cap(c_a), veh/h	1067	1672	1913	0	0	1913
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	28.7	21.9	13.8	0.0	0.0	15.3
Incr Delay (d2), s/veh	6.5	0.2	0.8	0.0	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.2	3.2	5.4	0.0	0.0	7.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.1	22.2	14.6	0.0	0.0	16.6
LnGrp LOS	D	C	B	A	A	B
Approach Vol, veh/h	995		857			1111
Approach Delay, s/veh	30.1		14.6			16.6
Approach LOS	C		B			B
Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		57.0			57.0	41.5
Change Period (Y+Rc), s		4.0			4.0	4.0
Max Green Setting (Gmax), s		53.0			53.0	59.0
Max Q Clear Time (g_c+I1), s		16.4			22.7	33.5
Green Ext Time (p_c), s		6.6			9.0	3.9
Intersection Summary						
HCM 6th Ctrl Delay			20.5			
HCM 6th LOS			C			

HCM Signalized Intersection Capacity Analysis
 24: Avenue K & SR-14 SB Ramps

2040 Future + Project PM Peak
 07/23/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↗	↘↘↘	↘
Traffic Volume (vph)	0	1037	1267	731	298	220
Future Volume (vph)	0	1037	1267	731	298	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.9	4.0	4.0
Lane Util. Factor		0.91	0.91	1.00	0.97	0.91
Frt		1.00	1.00	0.85	0.98	0.85
Flt Protected		1.00	1.00	1.00	0.96	1.00
Satd. Flow (prot)		5085	5085	1583	3385	1441
Flt Permitted		1.00	1.00	1.00	0.96	1.00
Satd. Flow (perm)		5085	5085	1583	3385	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1127	1377	795	324	239
RTOR Reduction (vph)	0	0	0	303	15	42
Lane Group Flow (vph)	0	1127	1377	492	371	135
Turn Type		NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases				6	4	4
Actuated Green, G (s)		36.5	36.5	36.5	13.0	13.0
Effective Green, g (s)		37.4	37.4	36.5	13.6	13.6
Actuated g/C Ratio		0.63	0.63	0.62	0.23	0.23
Clearance Time (s)		4.9	4.9	4.9	4.6	4.6
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		3223	3223	979	780	332
v/s Ratio Prot		0.22	0.27			
v/s Ratio Perm				c0.31	c0.11	0.09
v/c Ratio		0.35	0.43	0.50	0.48	0.41
Uniform Delay, d1		5.1	5.4	6.2	19.6	19.3
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1	0.4	0.5	0.8
Delay (s)		5.1	5.5	6.6	20.1	20.1
Level of Service		A	A	A	C	C
Approach Delay (s)		5.1	5.9		20.1	
Approach LOS		A	A		C	

Intersection Summary

HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
25: SR-14 NB Off-Ramp/15th St W & Avenue K

2040 Future + Project PM Peak
07/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖		↑↑↑	↖	↖↗	↑↔	↖	↖↗	↖	↖
Traffic Volume (vph)	175	1040	120	0	1270	209	280	375	490	446	20	672
Future Volume (vph)	175	1040	120	0	1270	209	280	375	490	446	20	672
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.9		4.0	4.4	4.0	4.0	4.0	4.0	4.0	2.7
Lane Util. Factor	0.97	0.91	1.00		0.91	1.00	0.97	0.91	0.91	0.91	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.94	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (prot)	3433	5085	1583		5085	1583	3433	3202	1441	3221	1625	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (perm)	3433	5085	1583		5085	1583	3433	3202	1441	3221	1625	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	1130	130	0	1380	227	304	408	533	485	22	730
RTOR Reduction (vph)	0	0	54	0	0	122	0	46	83	0	0	42
Lane Group Flow (vph)	190	1130	76	0	1380	105	304	602	210	339	168	688
Turn Type	Prot	NA	Perm		NA	pm+ov	Split	NA	Perm	Split	NA	pm+ov
Protected Phases	5	2			6	4	8	8		4	4	5
Permitted Phases			2			6			8			4
Actuated Green, G (s)	26.0	63.1	63.1		33.1	49.9	19.9	19.9	19.9	16.8	16.8	42.8
Effective Green, g (s)	26.0	64.0	63.1		34.0	51.7	21.6	21.6	21.6	18.1	18.1	45.4
Actuated g/C Ratio	0.22	0.55	0.55		0.29	0.45	0.19	0.19	0.19	0.16	0.16	0.39
Clearance Time (s)	4.0	4.9	4.9		4.9	5.3	5.7	5.7	5.7	5.3	5.3	4.0
Vehicle Extension (s)	1.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0
Lane Grp Cap (vph)	771	2812	863		1494	707	640	597	269	503	254	621
v/s Ratio Prot	0.06	0.22			c0.27	0.02	0.09	c0.19		0.11	0.10	c0.26
v/s Ratio Perm			0.05			0.04			0.15			0.17
v/c Ratio	0.25	0.40	0.09		0.92	0.15	0.47	1.01	0.78	0.67	0.66	1.11
Uniform Delay, d1	36.8	14.9	12.6		39.6	19.0	42.0	47.0	44.8	46.0	45.9	35.1
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.0		9.7	0.0	0.2	39.1	12.7	2.8	4.9	69.4
Delay (s)	36.9	14.9	12.6		49.3	19.0	42.2	86.2	57.5	48.8	50.9	104.6
Level of Service	D	B	B		D	B	D	F	E	D	D	F
Approach Delay (s)		17.6			45.0			68.7			82.0	
Approach LOS		B			D			E			F	

Intersection Summary

HCM 2000 Control Delay	51.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	115.7	Sum of lost time (s)	16.4
Intersection Capacity Utilization	91.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

MOVEMENT SUMMARY

Site: 1 [LHD - Future 2040 with Project AM - Int 3]

Roundabout with 1-lane approaches and circulating road
 MUTCD (FHWA 2009) example number: 2B-22
 Roundabout Guide (TRB 2010) example number: A-1
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: 15th St West												
3	L2	122	0.0	0.684	19.1	LOS C	6.6	164.4	0.86	1.17	1.61	24.6
8	T1	158	0.0	0.684	19.1	LOS C	6.6	164.4	0.86	1.17	1.61	24.6
18	R2	192	0.0	0.684	19.1	LOS C	6.6	164.4	0.86	1.17	1.61	18.9
Approach		472	0.0	0.684	19.1	LOS C	6.6	164.4	0.86	1.17	1.61	22.6
East: Lancaster Blvd												
1	L2	140	0.0	0.517	10.4	LOS B	4.1	102.2	0.68	0.71	0.86	24.5
6	T1	326	0.0	0.517	10.4	LOS B	4.1	102.2	0.68	0.71	0.86	27.4
16	R2	22	0.0	0.517	10.4	LOS B	4.1	102.2	0.68	0.71	0.86	26.7
Approach		488	0.0	0.517	10.4	LOS B	4.1	102.2	0.68	0.71	0.86	26.7
North: 15th St West												
7	L2	54	0.0	0.600	14.6	LOS B	5.2	130.0	0.80	1.02	1.30	23.2
4	T1	302	0.0	0.600	14.6	LOS B	5.2	130.0	0.80	1.02	1.30	25.2
14	R2	98	0.0	0.600	14.6	LOS B	5.2	130.0	0.80	1.02	1.30	26.5
Approach		454	0.0	0.600	14.6	LOS B	5.2	130.0	0.80	1.02	1.30	25.3
West: Lancaster Blvd												
5	L2	109	0.0	1.175	110.8	LOS F	72.4	1810.2	1.00	3.89	7.17	12.5
2	T1	620	0.0	1.175	110.8	LOS F	72.4	1810.2	1.00	3.89	7.17	9.3
12	R2	249	0.0	1.175	110.8	LOS F	72.4	1810.2	1.00	3.89	7.17	10.8
Approach		977	0.0	1.175	110.8	LOS F	72.4	1810.2	1.00	3.89	7.17	10.1
All Vehicles		2391	0.0	1.175	53.9	LOS F	72.4	1810.2	0.87	2.16	3.67	15.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 1 [LHD - Future 2040 with Project PM - Int 3]**

Roundabout with 1-lane approaches and circulating road
 MUTCD (FHWA 2009) example number: 2B-22
 Roundabout Guide (TRB 2010) example number: A-1
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: 15th St West												
3	L2	168	0.0	0.875	32.9	LOS D	16.5	412.0	1.00	1.75	2.70	20.8
8	T1	253	0.0	0.875	32.9	LOS D	16.5	412.0	1.00	1.75	2.70	20.8
18	R2	235	0.0	0.875	32.9	LOS D	16.5	412.0	1.00	1.75	2.70	15.3
Approach		657	0.0	0.875	32.9	LOS D	16.5	412.0	1.00	1.75	2.70	19.1
East: Lancaster Blvd												
1	L2	170	0.0	0.888	32.0	LOS D	20.8	520.5	1.00	1.82	2.73	16.6
6	T1	500	0.0	0.888	32.0	LOS D	20.8	520.5	1.00	1.82	2.73	19.8
16	R2	76	0.0	0.888	32.0	LOS D	20.8	520.5	1.00	1.82	2.73	19.4
Approach		746	0.0	0.888	32.0	LOS D	20.8	520.5	1.00	1.82	2.73	19.1
North: 15th St West												
7	L2	43	0.0	0.617	18.6	LOS C	4.5	112.8	0.82	1.06	1.44	21.9
4	T1	242	0.0	0.617	18.6	LOS C	4.5	112.8	0.82	1.06	1.44	23.9
14	R2	76	0.0	0.617	18.6	LOS C	4.5	112.8	0.82	1.06	1.44	25.4
Approach		362	0.0	0.617	18.6	LOS C	4.5	112.8	0.82	1.06	1.44	24.1
West: Lancaster Blvd												
5	L2	65	0.0	0.828	24.8	LOS C	16.4	409.3	1.00	1.61	2.26	24.1
2	T1	489	0.0	0.828	24.8	LOS C	16.4	409.3	1.00	1.61	2.26	20.1
12	R2	164	0.0	0.828	24.8	LOS C	16.4	409.3	1.00	1.61	2.26	21.8
Approach		718	0.0	0.828	24.8	LOS C	16.4	409.3	1.00	1.61	2.26	21.0
All Vehicles		2483	0.0	0.888	28.2	LOS D	20.8	520.5	0.97	1.63	2.40	20.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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APPENDIX G – ICU AND HCM RESULTS – FUTURE (2040) WITH IMPROVED PROJECT CONDITIONS

Intersection # 8
 North/South Street 20th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Future (2040) without Project			Future (2040) with Project				Future (2040) with Project + Mit			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	90	2,880	0.03	72	162	2,880	0.06	0	162	2,880	0.06
Northbound Through	220	1,600	0.14 *	9	229	1,600	0.14 *	0	229	1,600	0.14 *
Northbound Right	320	1,600	0.00	236	556	1,600	0.04 *	0	556	1,600	0.04 *
Southbound Left	90	1,600	0.06 *	45	135	1,600	0.08 *	0	135	1,600	0.08 *
Southbound Through	150	3,200	0.07	20	170	3,200	0.08	0	170	3,200	0.08
Southbound Right	80	0	0.00	0	80	0	0.00	0	80	0	0.00
Eastbound Left	120	1,600	0.08	0	120	1,600	0.08	0	120	1,600	0.08
Eastbound Through	1,090	3,200	0.34 *	214	1,304	3,200	0.41 *	0	1304	3,200	0.41 *
Eastbound Right	20	1,600	0.00	119	139	1,600	0.00	0	139	1,600	0.00
Westbound Left	130	1,600	0.08 *	136	266	1,600	0.17 *	0	266	1,600	0.17 *
Westbound Through	580	3,200	0.20	170	750	3,200	0.27	0	750	3,200	0.27
Westbound Right	60	0	0.00	40	100	0	0.00	0	100	0	0.00
N/S Critical Movements			0.20				0.22				0.22
E/W Critical Movements			0.42				0.58				0.58
Clearance Interval			0.10 *				0.10 *				0.10 *
ICU			0.72				0.90				0.90
Level of Service (LOS)			C				D				D

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Recommended mitigation based on HCM methodology

Intersection # 8
 North/South Street 20th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Future (2040) without Project			Future (2040) with Project				Future (2040) with Project + Mit			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	240	2,880	0.08	178	418	2,880	0.15	0	418	2,880	0.15
Northbound Through	280	1,600	0.18 *	22	302	1,600	0.19 *	0	302	1,600	0.19 *
Northbound Right	190	1,600	0.00	224	414	1,600	0.00	0	414	1,600	0.00
Southbound Left	110	1,600	0.07 *	44	154	1,600	0.10 *	0	154	1,600	0.10 *
Southbound Through	270	3,200	0.12	12	282	3,200	0.12	0	282	3,200	0.12
Southbound Right	110	0	0.00	0	110	0	0.00	0	110	0	0.00
Eastbound Left	140	1,600	0.09 *	0	140	1,600	0.09 *	0	140	1,600	0.09 *
Eastbound Through	850	3,200	0.27	174	1,024	3,200	0.32	0	1024	3,200	0.32
Eastbound Right	100	1,600	0.00	73	173	1,600	0.00	0	173	1,600	0.00
Westbound Left	160	1,600	0.10	177	337	1,600	0.21	0	337	1,600	0.21
Westbound Through	1,280	3,200	0.44 *	302	1,582	3,200	0.55 *	0	1582	3,200	0.55 *
Westbound Right	140	0	0.00	49	189	0	0.00	0	189	0	0.00
N/S Critical Movement			0.25				0.29				0.29
E/W Critical Movements			0.53				0.64				0.64
Clearance Interval			0.10 *				0.10 *				0.10 *
ICU			0.88				1.03				1.03
Level of Service (LOS)			D				F				F

Notes

V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Recommended mitigation based on HCM methodology

Intersection # 10
 North/South Street 15th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Future (2040) without Project				Future (2040) with Project				Future (2040) with Project + Mit					
	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*
Northbound Left	90	1,600	0.06	*	268	358	1,600	0.22	*	0	358	2,880	0.12	*
Northbound Through	290	1,600	0.18		65	355	1,600	0.22		0	355	1,600	0.22	
Northbound Right	390	1,600	0.00		110	500	1,600	0.00		0	500	1,600	0.00	
Southbound Left	100	1,600	0.06		2	102	1,600	0.06		0	102	1,600	0.06	
Southbound Through	310	1,600	0.19	*	107	417	1,600	0.26	*	0	417	1,600	0.26	*
Southbound Right	80	1,600	0.00		114	194	1,600	0.00		0	194	1,600	0.00	
Eastbound Left	140	1,600	0.09		51	191	1,600	0.12		0	191	1,600	0.12	
Eastbound Through	600	3,200	0.23	*	62	662	3,200	0.32	*	0	662	3,200	0.21	*
Eastbound Right	140	0	0.00		233	373	0	0.00		0	373	1,600	0.00	
Westbound Left	150	1,600	0.09	*	155	305	1,600	0.19	*	0	305	1,600	0.19	*
Westbound Through	570	3,200	0.20		136	706	3,200	0.24		0	706	3,200	0.24	
Westbound Right	70	0	0.00		3	73	0	0.00		0	73	0	0.00	
N/S Critical Movements			0.25					0.48					0.38	
E/W Critical Movements			0.32					0.51					0.40	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.67					1.09					0.88	
Level of Service (LOS)			B					F					D	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 10
 North/South Street 15th Street West
 East/West Street Avenue J
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Future (2040) without Project				Future (2040) with Project				Future (2040) with Project + Mit					
	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*
Northbound Left	170	1,600	0.11	*	255	425	1,600	0.27	*	0	425	2,880	0.15	*
Northbound Through	230	1,600	0.14		117	347	1,600	0.22		0	347	1,600	0.22	
Northbound Right	270	1,600	0.00		166	436	1,600	0.00		0	436	1,600	0.00	
Southbound Left	130	1,600	0.08		3	133	1,600	0.08		0	133	1,600	0.08	
Southbound Through	420	1,600	0.26	*	80	500	1,600	0.31	*	0	500	1,600	0.31	*
Southbound Right	100	1,600	0.00		70	170	1,600	0.00		0	170	1,600	0.00	
Eastbound Left	50	1,600	0.03		128	178	1,600	0.11		0	178	1,600	0.11	
Eastbound Through	730	3,200	0.27	*	153	883	3,200	0.42	*	0	883	3,200	0.28	*
Eastbound Right	140	0	0.00		333	473	0	0.00		0	473	1,600	0.00	
Westbound Left	330	1,600	0.21	*	129	459	1,600	0.29	*	0	459	1,600	0.29	*
Westbound Through	750	3,200	0.26		82	832	3,200	0.29		0	832	3,200	0.29	
Westbound Right	80	0	0.00		2	82	0	0.00		0	82	0	0.00	
N/S Critical Movement			0.37					0.58					0.46	
E/W Critical Movements			0.48					0.71					0.57	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.95					1.39					1.13	
Level of Service (LOS)			E					F					F	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 18
 North/South Street 20th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Future (2040) without Project			Future (2040) with Project				Future (2040) with Project + Mit			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	60	1,600	0.04	0	60	1,600	0.04	0	60	1,600	0.04
Northbound Through	430	3,200	0.13 *	73	503	3,200	0.16 *	0	503	3,200	0.16 *
Northbound Right	190	1,600	0.00	86	276	1,600	0.00	0	276	1,600	0.00
Southbound Left	50	1,600	0.03 *	178	228	1,600	0.14 *	0	228	1,600	0.14 *
Southbound Through	350	3,200	0.11	32	382	3,200	0.12	0	382	3,200	0.12
Southbound Right	90	1,600	0.00	45	135	1,600	0.00	0	135	1,600	0.00
Eastbound Left	130	1,600	0.08	100	230	1,600	0.14	0	230	1,600	0.14
Eastbound Through	620	3,200	0.25 *	97	717	1,600	0.45 *	0	717	1,600	0.45 *
Eastbound Right	170	0	0.00	0	170	1,600	0.00	0	170	1,600	0.00
Westbound Left	200	1,600	0.13 *	70	270	1,600	0.17 *	0	270	1,600	0.17 *
Westbound Through	330	3,200	0.12	63	393	1,600	0.35	0	393	3,200	0.17
Westbound Right	40	0	0.00	121	161	0	0.00	0	161	0	0.00
N/S Critical Movements			0.16				0.30				0.30
E/W Critical Movements			0.38				0.62				0.62
Clearance Interval			0.10 *				0.10 *				0.10 *
ICU			0.64				1.02				1.02
Level of Service (LOS)			B				F				F

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 18
 North/South Street 20th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Future (2040) without Project				Future (2040) with Project				Future (2040) with Project + Mit					
	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*
Northbound Left	80	1,600	0.05	*	0	80	1,600	0.05	*	0	80	1,600	0.05	*
Northbound Through	380	3,200	0.12		44	424	3,200	0.13		0	424	3,200	0.13	
Northbound Right	240	1,600	0.00		79	319	1,600	0.00		0	319	1,600	0.00	
Southbound Left	110	1,600	0.07		206	316	1,600	0.20		0	316	1,600	0.20	
Southbound Through	970	3,200	0.30	*	82	1,052	3,200	0.33	*	0	1052	3,200	0.33	*
Southbound Right	100	1,600	0.00		112	212	1,600	0.00		0	212	1,600	0.00	
Eastbound Left	80	1,600	0.05		62	142	1,600	0.09	*	0	142	1,600	0.09	
Eastbound Through	320	3,200	0.15	*	76	396	1,600	0.25	*	0	396	1,600	0.25	*
Eastbound Right	150	0	0.00		0	150	1,600	0.00		0	150	1,600	0.00	
Westbound Left	570	1,600	0.36	*	92	662	1,600	0.41		0	662	1,600	0.41	*
Westbound Through	690	3,200	0.24		107	797	1,600	0.64	*	0	797	3,200	0.32	
Westbound Right	70	0	0.00		149	219	0	0.00		0	219	0	0.00	
N/S Critical Movement			0.35					0.38					0.38	
E/W Critical Movements			0.51					0.73					0.66	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.96					1.21					1.14	
Level of Service (LOS)			E					F					F	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 19
 North/South Street 15th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Future (2040) without Project			Future (2040) with Project				Future (2040) with Project + Mit			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	50	1,600	0.03	108	158	1,600	0.10	0	158	1,600	0.10
Northbound Through	500	3,200	0.16 *	240	740	3,200	0.23 *	0	740	3,200	0.23 *
Northbound Right	120	1,600	0.00	12	132	1,600	0.00	0	132	1,600	0.00
Southbound Left	40	1,600	0.03 *	70	110	1,600	0.07 *	0	110	1,600	0.07 *
Southbound Through	340	3,200	0.11	168	508	3,200	0.16	0	508	3,200	0.16
Southbound Right	190	1,600	0.00	159	349	1,600	0.00	0	349	1,600	0.00
Eastbound Left	290	1,600	0.18 *	160	450	1,600	0.28 *	0	450	1,600	0.28 *
Eastbound Through	460	1,600	0.29	34	494	1,600	0.31	0	494	1,600	0.31
Eastbound Right	120	1,600	0.00	74	194	1,600	0.00	0	194	1,600	0.00
Westbound Left	70	1,600	0.04	13	83	1,600	0.05	0	83	1,600	0.05
Westbound Through	290	1,600	0.18 *	72	362	1,600	0.23 *	0	362	3,200	0.11 *
Westbound Right	60	1,600	0.00	116	176	1,600	0.00	0	176	1,600	0.00
N/S Critical Movements			0.19				0.30				0.30
E/W Critical Movements			0.36				0.51				0.39
Clearance Interval			0.10 *				0.10 *				0.10 *
ICU			0.65				0.91				0.79
Level of Service (LOS)			B				E				C

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 19
 North/South Street 15th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Future (2040) without Project				Future (2040) with Project				Future (2040) with Project + Mit					
	Volume	Capacity	V/C Ratio		Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left	90	1,600	0.06	*	66	156	1,600	0.10	*	0	156	1,600	0.10	*
Northbound Through	190	3,200	0.06		163	353	3,200	0.11		0	353	3,200	0.11	
Northbound Right	110	1,600	0.00		11	121	1,600	0.00		0	121	1,600	0.00	
Southbound Left	40	1,600	0.03		130	170	1,600	0.11		0	170	1,600	0.11	
Southbound Through	400	3,200	0.13	*	312	712	3,200	0.22	*	0	712	3,200	0.22	*
Southbound Right	550	1,600	0.14	*	161	711	1,600	0.02	*	0	711	1,600	0.02	*
Eastbound Left	130	1,600	0.08	*	196	326	1,600	0.20	*	0	326	1,600	0.20	*
Eastbound Through	410	1,600	0.26		81	491	1,600	0.31		0	491	1,600	0.31	
Eastbound Right	110	1,600	0.00		171	281	1,600	0.00		0	281	1,600	0.00	
Westbound Left	80	1,600	0.05		13	93	1,600	0.06		0	93	1,600	0.06	
Westbound Through	510	1,600	0.32	*	43	553	1,600	0.35	*	0	553	3,200	0.17	*
Westbound Right	60	1,600	0.00		83	143	1,600	0.00		0	143	1,600	0.00	
N/S Critical Movement			0.19					0.32					0.32	
E/W Critical Movements			0.40					0.55					0.37	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.69					0.97					0.79	
Level of Service (LOS)			B					E					C	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 20
 North/South Street 10th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Future (2040) without Project			Future (2040) with Project				Future (2040) with Project + Mit			
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio
Northbound Left	60	1,600	0.04	120	180	1,600	0.11	0	180	1,600	0.11
Northbound Through	780	3,200	0.24 *	3	783	3,200	0.24	0	783	3,200	0.24
Northbound Right	50	1,600	0.00	0	50	1,600	0.00	0	50	1,600	0.00
Southbound Left	20	1,600	0.01 *	1	21	1,600	0.01	0	21	1,600	0.01
Southbound Through	580	4,800	0.13	7	587	4,800	0.14 *	0	587	4,800	0.14 *
Southbound Right	60	0	0.00	24	84	0	0.00	0	84	0	0.00
Eastbound Left	100	0	0.00	19	119	0	0.00	0	119	0	0.00 *
Eastbound Through	100	1,600	0.17 *	23	123	1,600	0.24 *	0	123	1,600	0.15
Eastbound Right	70	0	0.00	70	140	0	0.00	0	140	1,600	0.00
Westbound Left	50	0	0.00 *	0	50	0	0.00 *	0	50	0	0.00
Westbound Through	90	1,600	0.13	37	127	1,600	0.16	0	127	1,600	0.16 *
Westbound Right	70	0	0.00	1	71	0	0.00	0	71	0	0.00
N/S Critical Movements			0.25				0.25				0.25
E/W Critical Movements			0.17				0.24				0.16
Clearance Interval			0.10 *				0.10 *				0.10 *
ICU			0.52				0.59				0.51
Level of Service (LOS)			A				A				A

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 20
 North/South Street 10th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Future (2040) without Project			Future (2040) with Project				Future (2040) with Project + Mit						
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio			
Northbound Left	80	1,600	0.05	88	168	1,600	0.11	*	0	168	1,600	0.11	*	
Northbound Through	1,090	3,200	0.34	*	7	1,097	3,200	0.34	*	0	1097	3,200	0.34	*
Northbound Right	90	1,600	0.00	0	90	1,600	0.00	0	90	1,600	0.00			
Southbound Left	110	1,600	0.07	*	1	111	1,600	0.07	0	111	1,600	0.07		
Southbound Through	1,250	4,800	0.29		4	1,254	4,800	0.30	*	0	1254	4,800	0.30	*
Southbound Right	160	0	0.00	22	182	0	0.00	0	182	0	0.00			
Eastbound Left	120	0	0.00	26	146	0	0.00	0	146	0	0.00			
Eastbound Through	240	1,600	0.28	*	41	281	1,600	0.40	*	0	281	1,600	0.27	*
Eastbound Right	80	0	0.00	134	214	0	0.00	0	214	1,600	0.00			
Westbound Left	30	0	0.00	*	0	30	0	0.00	*	0	30	0	0.00	*
Westbound Through	80	1,600	0.10	28	108	1,600	0.12	0	108	1,600	0.12			
Westbound Right	50	0	0.00	1	51	0	0.00	0	51	0	0.00			
N/S Critical Movement			0.41				0.41					0.41		
E/W Critical Movements			0.28				0.40					0.27		
Clearance Interval			0.10	*			0.10	*				0.10	*	
ICU			0.79				0.91					0.78		
Level of Service (LOS)			C				E					C		

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 28
 North/South Street Division Street
 East/West Street Avenue K
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Future (2040) without Project				Future (2040) with Project				Future (2040) with Project + Mit					
	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*
Northbound Left	180	1,600	0.11	*	0	180	1,600	0.11	*	0	180	1,600	0.11	*
Northbound Through	380	3,200	0.12		0	380	3,200	0.12		0	380	3,200	0.12	
Northbound Right	160	1,600	0.00		0	160	1,600	0.00		0	160	1,600	0.00	
Southbound Left	60	1,600	0.04		0	60	1,600	0.04		0	60	1,600	0.04	
Southbound Through	390	3,200	0.12	*	0	390	3,200	0.12	*	0	390	3,200	0.12	*
Southbound Right	240	1,600	0.00		0	240	1,600	0.00		0	240	1,600	0.00	
Eastbound Left	160	1,600	0.10	*	0	160	1,600	0.10	*	0	160	1,600	0.10	*
Eastbound Through	480	3,200	0.15		59	539	3,200	0.17		0	539	3,200	0.17	
Eastbound Right	390	1,600	0.00		0	390	1,600	0.00		0	390	1,600	0.00	
Westbound Left	180	1,600	0.11		0	180	1,600	0.11		0	180	1,600	0.11	
Westbound Through	1,080	3,200	0.34	*	95	1,175	3,200	0.37	*	0	1175	3,200	0.37	*
Westbound Right	90	1,600	0.00		0	90	1,600	0.00		0	90	1,600	0.00	
N/S Critical Movements			0.23					0.23					0.23	
E/W Critical Movements			0.44					0.47					0.47	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.77					0.80					0.80	
Level of Service (LOS)			C					C					C	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Recommended mitigation based on HCM methodology

Intersection # 28
 North/South Street Division Street
 East/West Street Avenue K
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Future (2040) without Project				Future (2040) with Project				Future (2040) with Project + Mit					
	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*	Added Volume	Volume	Capacity	V/C Ratio	*
Northbound Left	280	1,600	0.18	*	0	280	1,600	0.18	*	0	280	1,600	0.18	*
Northbound Through	580	3,200	0.18		0	580	3,200	0.18		0	580	3,200	0.18	
Northbound Right	470	1,600	0.03	*	0	470	1,600	0.03	*	0	470	1,600	0.03	*
Southbound Left	150	1,600	0.09		0	150	1,600	0.09		0	150	1,600	0.09	
Southbound Through	330	3,200	0.10	*	0	330	3,200	0.10	*	0	330	3,200	0.10	*
Southbound Right	240	1,600	0.00		0	240	1,600	0.00		0	240	1,600	0.00	
Eastbound Left	260	1,600	0.16		0	260	1,600	0.16		0	260	1,600	0.16	
Eastbound Through	1,350	3,200	0.42	*	106	1,456	3,200	0.46	*	0	1456	3,200	0.46	*
Eastbound Right	180	1,600	0.00		0	180	1,600	0.00		0	180	1,600	0.00	
Westbound Left	130	1,600	0.08	*	0	130	1,600	0.08	*	0	130	1,600	0.08	*
Westbound Through	830	3,200	0.26		73	903	3,200	0.28		0	903	3,200	0.28	
Westbound Right	60	1,600	0.00		0	60	1,600	0.00		0	60	1,600	0.00	
N/S Critical Movement			0.28					0.28					0.28	
E/W Critical Movements			0.50					0.54					0.54	
Clearance Interval			0.10	*				0.10	*				0.10	*
ICU			0.88					0.92					0.92	
Level of Service (LOS)			D					E					E	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Recommended mitigation based on HCM methodology

Intersection # 30
 North/South Street 18th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period AM Peak
 Count Date 2019
 Date 7/23/2020

Movement	Future (2040) without Project			Future (2040) with Project				Future (2040) with Project + Mit					
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left				0	0	0	0.00	*	0	0	0	0.00	*
Northbound Through				0	0	0	0.00		0	0	0	0.00	
Northbound Right				0	0	0	0.00		0	0	0	0.00	
Southbound Left				52	52	0	0.00		0	52	0	0.00	
Southbound Through				0	0	1,600	0.06	*	0	0	1,600	0.06	*
Southbound Right				46	46	0	0.00		0	46	0	0.00	
Eastbound Left				97	97	1,600	0.06		0	97	1,600	0.06	
Eastbound Through	Intersection constructed with Project			1119	1,119	1,600	0.70	*	0	1119	1,600	0.70	*
Eastbound Right				0	0	0	0.00		0	0	1,600	0.00	
Westbound Left					0	0	0	0.00	*	0	0	0	0.00
Westbound Through				725	725	1,600	0.51		0	725	1,600	0.51	
Westbound Right				96	96	0	0.00		0	96	0	0.00	
N/S Critical Movements							0.06					0.06	
E/W Critical Movements							0.70					0.70	
Clearance Interval							0.10	*				0.10	*
ICU							0.86					0.86	
Level of Service (LOS)							D					D	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

Intersection # 30
 North/South Street 18th Street West
 East/West Street Avenue J-8
 Project Lancaster Health District Master Plan

Time Period PM Peak
 Count Date 2019
 Date 7/23/2020

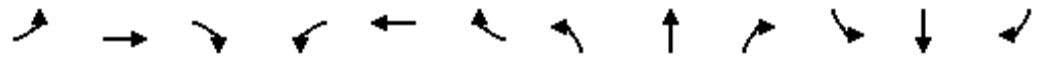
Movement	Future (2040) without Project			Future (2040) with Project				Future (2040) with Project + Mit					
	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio	Added Volume	Volume	Capacity	V/C Ratio		
Northbound Left				0	0	0	0.00	*	0	0	0	0.00	*
Northbound Through				0	0	0	0.00		0	0	0	0.00	
Northbound Right				0	0	0	0.00		0	0	0	0.00	
Southbound Left				110	110	0	0.00		0	110	0	0.00	
Southbound Through				0	0	1,600	0.13	*	0	0	1,600	0.13	*
Southbound Right				94	94	0	0.00		0	94	0	0.00	
Eastbound Left				68	68	1,600	0.04	*	0	68	1,600	0.04	*
Eastbound Through				950	950	1,600	0.59		0	950	1,600	0.59	
Eastbound Right				0	0	0	0.00		0	0	1,600	0.00	
Westbound Left				0	0	0	0.00		0	0	0	0.00	
Westbound Through				1386	1,386	1,600	0.91	*	0	1386	1,600	0.91	*
Westbound Right				69	69	0	0.00		0	69	0	0.00	
N/S Critical Movement							0.13					0.13	
E/W Critical Movements							0.95					0.95	
Clearance Interval							0.10	*				0.10	*
ICU							1.18					1.18	
Level of Service (LOS)							F					F	

Notes V/C = Volume to Capacity Ratio
 Right Turn Conditions:

HCM 6th Signalized Intersection Summary
10: 15th St W & Ave J

2040 Future + Project AM Peak

07/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	191	662	373	305	706	73	358	355	500	102	417	194
Future Volume (veh/h)	191	662	373	305	706	73	358	355	500	102	417	194
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	208	720	405	332	767	79	389	386	543	111	453	211
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	236	622	349	282	1006	104	312	533	452	241	405	343
Arrive On Green	0.13	0.28	0.28	0.16	0.31	0.31	0.05	0.09	0.09	0.07	0.22	0.22
Sat Flow, veh/h	1781	2194	1231	1781	3252	335	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	208	583	542	332	419	427	389	386	543	111	453	211
Grp Sat Flow(s),veh/h/ln	1781	1777	1649	1781	1777	1810	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	13.8	34.0	34.0	19.0	25.6	25.6	17.0	24.1	34.2	5.7	26.0	14.4
Cycle Q Clear(g_c), s	13.8	34.0	34.0	19.0	25.6	25.6	17.0	24.1	34.2	5.7	26.0	14.4
Prop In Lane	1.00		0.75	1.00		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	236	503	467	282	550	560	312	533	452	241	405	343
V/C Ratio(X)	0.88	1.16	1.16	1.18	0.76	0.76	1.25	0.72	1.20	0.46	1.12	0.61
Avail Cap(c_a), veh/h	267	503	467	282	550	560	312	533	452	245	405	343
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(l)	0.67	0.67	0.67	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	43.0	43.0	50.5	37.4	37.5	41.2	49.8	54.4	33.6	47.0	42.5
Incr Delay (d2), s/veh	18.6	85.5	87.8	110.4	9.6	9.5	113.0	0.8	92.6	1.4	80.7	8.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	26.4	24.8	16.9	12.2	12.5	17.8	12.2	26.1	2.5	20.9	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.7	128.5	130.8	160.9	47.1	46.9	154.2	50.5	147.0	34.9	127.7	50.5
LnGrp LOS	E	F	F	F	D	D	F	D	F	C	F	D
Approach Vol, veh/h		1333			1178			1318			775	
Approach Delay, s/veh		120.2			79.1			120.9			93.4	
Approach LOS		F			E			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.0	41.0	22.0	33.0	20.9	44.1	13.8	41.2				
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0				
Max Green Setting (Gmax), s	19.0	34.0	17.0	26.0	18.0	35.0	9.0	34.0				
Max Q Clear Time (g_c+l1), s	21.0	36.0	19.0	28.0	15.8	27.6	7.7	36.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	2.9	0.0	0.0				

Intersection Summary

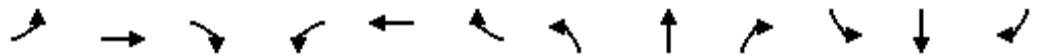
HCM 6th Ctrl Delay	105.4
HCM 6th LOS	F

HCM 6th Signalized Intersection Summary

2040 Future + Project AM Peak

18: 20th St W & Ave J-8

07/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	717	170	270	393	161	60	503	276	228	382	135
Future Volume (veh/h)	230	717	170	270	393	161	60	503	276	228	382	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	250	779	185	293	427	175	65	547	300	248	415	147
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	325	733	621	268	513	210	131	533	238	600	1527	681
Arrive On Green	0.13	0.52	0.52	0.12	0.41	0.41	0.07	0.15	0.15	0.34	0.43	0.43
Sat Flow, veh/h	1781	1870	1585	1781	1261	517	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	250	779	185	293	0	602	65	547	300	248	415	147
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1777	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	10.1	47.0	7.9	14.0	0.0	36.5	4.2	18.0	17.9	12.9	9.0	7.0
Cycle Q Clear(g_c), s	10.1	47.0	7.9	14.0	0.0	36.5	4.2	18.0	17.9	12.9	9.0	7.0
Prop In Lane	1.00		1.00	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	325	733	621	268	0	723	131	533	238	600	1527	681
V/C Ratio(X)	0.77	1.06	0.30	1.09	0.00	0.83	0.49	1.03	1.26	0.41	0.27	0.22
Avail Cap(c_a), veh/h	337	733	621	268	0	723	148	533	238	600	1527	681
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.88	0.88	0.88	1.00	0.00	1.00	0.58	0.58	0.58	0.95	0.95	0.95
Uniform Delay (d), s/veh	24.1	28.7	19.4	38.2	0.0	31.9	53.4	51.0	50.4	30.7	22.1	21.5
Incr Delay (d2), s/veh	8.9	49.5	0.2	82.4	0.0	8.2	1.7	36.5	136.1	0.4	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	27.2	2.8	10.2	0.0	16.4	1.9	10.5	15.9	5.5	3.8	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.0	78.2	19.6	120.7	0.0	40.1	55.1	87.5	186.5	31.1	22.5	22.2
LnGrp LOS	C	F	B	F	A	D	E	F	F	C	C	C
Approach Vol, veh/h		1214			895			912			810	
Approach Delay, s/veh		60.0			66.5			117.8			25.1	
Approach LOS		E			E			F			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	54.0	13.9	58.6	17.2	55.8	47.4	25.0				
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	7.0	* 7				
Max Green Setting (Gmax), s	14.0	47.0	10.0	25.0	13.0	48.0	17.0	* 18				
Max Q Clear Time (g_c+l1), s	16.0	49.0	6.2	11.0	12.1	38.5	14.9	20.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.6	0.1	2.6	0.2	0.0				

Intersection Summary

HCM 6th Ctrl Delay	67.9
HCM 6th LOS	E

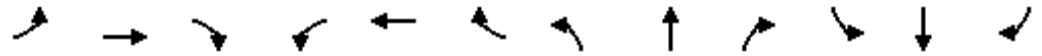
Notes

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

HCM 6th Signalized Intersection Summary
10: 15th St W & Ave J

2040 Future Project + Mitigations AM Peak

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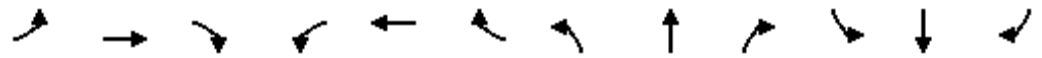


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗		↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	191	662	373	305	706	73	358	355	500	102	417	194
Future Volume (veh/h)	191	662	373	305	706	73	358	355	500	102	417	194
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	208	720	405	332	767	79	389	386	543	111	453	211
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	237	1091	487	362	1227	126	451	770	665	258	566	252
Arrive On Green	0.13	0.31	0.31	0.20	0.38	0.38	0.04	0.07	0.07	0.07	0.16	0.16
Sat Flow, veh/h	1781	3554	1585	1781	3252	335	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	208	720	405	332	419	427	389	386	543	111	453	211
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1810	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	13.8	21.1	28.5	21.9	23.1	23.1	13.4	12.6	26.0	6.1	14.7	15.5
Cycle Q Clear(g_c), s	13.8	21.1	28.5	21.9	23.1	23.1	13.4	12.6	26.0	6.1	14.7	15.5
Prop In Lane	1.00		1.00	1.00		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	237	1091	487	362	670	683	451	770	665	258	566	252
V/C Ratio(X)	0.88	0.66	0.83	0.92	0.63	0.63	0.86	0.50	0.82	0.43	0.80	0.84
Avail Cap(c_a), veh/h	297	1091	487	430	670	683	490	770	665	261	566	252
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(l)	0.65	0.65	0.65	1.00	1.00	1.00	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	36.1	38.7	46.8	30.4	30.5	56.3	49.5	35.1	37.9	48.6	48.9
Incr Delay (d2), s/veh	14.9	2.1	10.5	22.2	4.4	4.3	12.5	2.1	9.6	1.1	11.3	26.7
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	7.0	9.2	12.2	11.7	10.4	10.5	7.0	6.2	15.1	2.7	7.3	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.0	38.2	49.2	69.0	34.8	34.7	68.8	51.5	44.7	39.0	60.0	75.6
LnGrp LOS	E	D	D	E	C	C	E	D	D	D	E	E
Approach Vol, veh/h		1333			1178			1318			775	
Approach Delay, s/veh		45.9			44.4			53.8			61.2	
Approach LOS		D			D			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	29.4	43.8	20.7	26.1	21.0	52.3	13.8	33.0				
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0				
Max Green Setting (Gmax), s	29.0	32.0	17.0	18.0	20.0	41.0	9.0	26.0				
Max Q Clear Time (g_c+l1), s	23.9	30.5	15.4	17.5	15.8	25.1	8.1	28.0				
Green Ext Time (p_c), s	0.5	0.9	0.2	0.2	0.2	4.6	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			50.4									
HCM 6th LOS			D									

HCM 6th Signalized Intersection Summary
18: 20th St W & Ave J-8

2040 Future Project + Mitigations AM Peak

07/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	717	170	270	393	161	60	503	276	228	382	135
Future Volume (veh/h)	230	717	170	270	393	161	60	503	276	228	382	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	250	779	185	293	427	175	65	547	300	248	415	147
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	470	748	634	268	1004	407	131	533	238	600	1527	681
Arrive On Green	0.13	0.53	0.53	0.12	0.41	0.41	0.07	0.15	0.15	0.34	0.43	0.43
Sat Flow, veh/h	1781	1870	1585	1781	2466	1001	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	250	779	185	293	306	296	65	547	300	248	415	147
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1777	1690	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	9.9	48.0	7.8	14.0	14.8	15.1	4.2	18.0	18.0	12.9	9.0	7.0
Cycle Q Clear(g_c), s	9.9	48.0	7.8	14.0	14.8	15.1	4.2	18.0	18.0	12.9	9.0	7.0
Prop In Lane	1.00		1.00	1.00		0.59	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	470	748	634	268	723	688	131	533	238	600	1527	681
V/C Ratio(X)	0.53	1.04	0.29	1.09	0.42	0.43	0.49	1.03	1.26	0.41	0.27	0.22
Avail Cap(c_a), veh/h	513	748	634	268	723	688	148	533	238	600	1527	681
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.88	0.88	0.88	1.00	1.00	1.00	0.58	0.58	0.58	0.95	0.95	0.95
Uniform Delay (d), s/veh	17.9	28.1	18.7	38.4	25.5	25.6	53.4	51.0	51.9	30.7	22.1	21.5
Incr Delay (d2), s/veh	0.8	42.1	0.2	82.4	0.4	0.4	1.7	36.5	136.1	0.4	0.4	0.7
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	3.7	26.1	0.0	10.1	6.1	5.9	1.9	10.5	16.0	5.5	3.8	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.7	70.2	18.9	120.9	25.9	26.0	55.1	87.5	188.0	31.1	22.5	22.2
LnGrp LOS	B	F	B	F	C	C	E	F	F	C	C	C
Approach Vol, veh/h		1214			895			912			810	
Approach Delay, s/veh		51.8			57.0			118.3			25.1	
Approach LOS		D			E			F			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.0	55.0	13.9	58.6	17.1	55.9	47.4	25.0				
Change Period (Y+Rc), s	4.0	7.0	5.0	7.0	5.0	7.0	7.0	* 7				
Max Green Setting (Gmax), s	14.0	48.0	10.0	25.0	15.0	46.0	17.0	* 18				
Max Q Clear Time (g_c+l1), s	16.0	50.0	6.2	11.0	11.9	17.1	14.9	20.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.6	0.2	3.6	0.2	0.0				

Intersection Summary

HCM 6th Ctrl Delay	63.2
HCM 6th LOS	E

Notes

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

Phasings
8: 20th St W & Ave J

2040 Future + Project PM Peak

07/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Minimum Initial (s)	10.0	9.0	9.0	10.0	7.0	7.0	11.0	8.0	8.0	11.0	7.0	7.0
Minimum Split (s)	15.0	23.0	23.0	15.0	23.0	23.0	16.0	23.0	23.0	16.0	23.0	23.0
Total Split (s)	15.0	47.0	47.0	30.0	62.0	62.0	20.0	27.0	27.0	16.0	23.0	23.0
Total Split (%)	12.5%	39.2%	39.2%	25.0%	51.7%	51.7%	16.7%	22.5%	22.5%	13.3%	19.2%	19.2%
Maximum Green (s)	10.0	40.0	40.0	25.0	55.0	55.0	15.0	20.0	20.0	11.0	16.0	16.0
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
90th %ile Green (s)	10.0	40.0	40.0	25.0	55.0	55.0	15.0	20.0	20.0	11.0	16.0	16.0
90th %ile Term Code	Max	Coord	Coord	Max	Coord	Coord	Max	MaxR	MaxR	Max	MaxR	MaxR
70th %ile Green (s)	10.0	40.0	40.0	25.0	55.0	55.0	15.0	20.0	20.0	11.0	16.0	16.0
70th %ile Term Code	Max	Coord	Coord	Max	Coord	Coord	Max	MaxR	MaxR	Max	MaxR	MaxR
50th %ile Green (s)	10.0	40.0	40.0	25.0	55.0	55.0	15.0	20.0	20.0	11.0	16.0	16.0
50th %ile Term Code	Max	Coord	Coord	Max	Coord	Coord	Max	MaxR	MaxR	Max	MaxR	MaxR
30th %ile Green (s)	10.0	40.0	40.0	25.0	55.0	55.0	15.0	20.0	20.0	11.0	16.0	16.0
30th %ile Term Code	Max	Coord	Coord	Max	Coord	Coord	Max	MaxR	MaxR	Max	MaxR	MaxR
10th %ile Green (s)	10.0	40.0	40.0	25.0	55.0	55.0	15.0	20.0	20.0	11.0	16.0	16.0
10th %ile Term Code	Max	Coord	Coord	Max	Coord	Coord	Max	MaxR	MaxR	Max	MaxR	MaxR

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Control Type: Actuated-Coordinated

HCM 6th Signalized Intersection Summary
8: 20th St W & Ave J

2040 Future + Project PM Peak
07/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	140	1024	173	337	1582	189	418	302	414	154	282	110
Future Volume (veh/h)	140	1024	173	337	1582	189	418	302	414	154	282	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	1113	188	366	1720	205	454	328	450	167	307	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	148	1185	528	1446	3832	1709	432	343	291	163	474	211
Arrive On Green	0.08	0.33	0.33	0.81	1.00	1.00	0.13	0.18	0.18	0.09	0.13	0.13
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	1870	1585	1781	3554	1585
Grp Volume(v), veh/h	152	1113	188	366	1720	205	454	328	450	167	307	120
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1870	1585	1781	1777	1585
Q Serve(g_s), s	10.0	36.5	10.8	5.8	0.0	0.0	15.0	20.8	14.1	11.0	9.8	13.0
Cycle Q Clear(g_c), s	10.0	36.5	10.8	5.8	0.0	0.0	15.0	20.8	14.1	11.0	9.8	13.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	1185	528	1446	3832	1709	432	343	291	163	474	211
V/C Ratio(X)	1.02	0.94	0.36	0.25	0.45	0.12	1.05	0.96	1.55	1.02	0.65	0.57
Avail Cap(c_a), veh/h	148	1185	528	1446	3832	1709	432	343	291	163	474	211
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	0.83	0.74	0.74	0.74	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	38.8	30.3	2.7	0.0	0.0	52.5	48.5	20.3	54.5	49.3	113.1
Incr Delay (d2), s/veh	73.7	13.2	1.6	0.1	0.3	0.1	54.9	36.1	261.5	76.5	6.7	10.6
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	7.4	17.3	4.3	1.4	0.2	0.1	9.7	12.9	26.1	8.3	4.7	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	128.7	52.0	31.8	2.7	0.3	0.1	107.4	84.6	281.8	131.0	56.0	123.7
LnGrp LOS	F	D	C	A	A	A	F	F	F	F	E	F
Approach Vol, veh/h		1453			2291			1232			594	
Approach Delay, s/veh		57.4			0.7			165.0			90.8	
Approach LOS		E			A			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	106.4	47.0	22.0	23.0	15.0	138.4	16.0	29.0				
Change Period (Y+Rc), s	7.0	* 7	7.0	* 7	5.0	7.0	5.0	7.0				
Max Green Setting (Gmax), s	25.0	* 40	15.0	* 16	10.0	55.0	11.0	20.0				
Max Q Clear Time (g_c+I1), s	7.8	38.5	17.0	15.0	12.0	2.0	13.0	22.8				
Green Ext Time (p_c), s	1.0	1.1	0.0	0.2	0.0	23.0	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	61.4
HCM 6th LOS	E

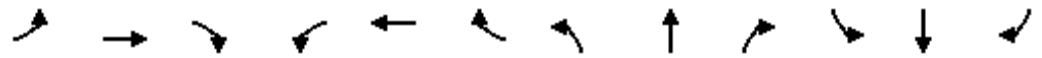
Notes

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

HCM 6th Signalized Intersection Summary
10: 15th St W & Ave J

2040 Future + Project PM Peak

07/23/2020

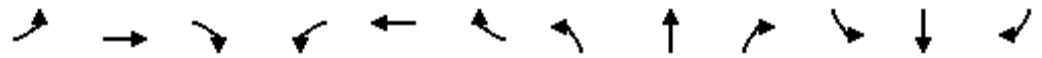


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	883	473	459	832	82	425	347	436	133	500	170
Future Volume (veh/h)	178	883	473	459	832	82	425	347	436	133	500	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	193	960	514	499	904	89	462	377	474	145	543	185
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	219	677	354	312	1150	113	268	468	396	227	390	330
Arrive On Green	0.12	0.30	0.30	0.17	0.35	0.35	0.04	0.08	0.08	0.08	0.21	0.21
Sat Flow, veh/h	1781	2256	1179	1781	3268	322	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	193	751	723	499	492	501	462	377	474	145	543	185
Grp Sat Flow(s),veh/h/ln	1781	1777	1658	1781	1777	1812	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	12.8	36.0	36.0	21.0	29.7	29.7	14.0	23.8	30.0	7.6	25.0	12.6
Cycle Q Clear(g_c), s	12.8	36.0	36.0	21.0	29.7	29.7	14.0	23.8	30.0	7.6	25.0	12.6
Prop In Lane	1.00		0.71	1.00		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	219	533	497	312	625	638	268	468	396	227	390	330
V/C Ratio(X)	0.88	1.41	1.45	1.60	0.79	0.79	1.73	0.81	1.20	0.64	1.39	0.56
Avail Cap(c_a), veh/h	223	533	497	312	625	638	268	468	396	227	390	330
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(l)	0.68	0.68	0.68	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	42.0	42.0	49.5	34.8	34.8	38.4	52.2	55.0	35.4	47.5	42.6
Incr Delay (d2), s/veh	22.8	191.8	211.5	284.9	9.6	9.5	327.7	1.4	90.7	5.8	192.2	6.7
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	7.0	43.6	43.4	33.8	14.1	14.3	31.0	12.1	22.7	3.6	32.1	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.5	233.8	253.5	334.4	44.5	44.3	366.1	53.6	145.8	41.3	239.7	49.3
LnGrp LOS	E	F	F	F	D	D	F	D	F	D	F	D
Approach Vol, veh/h		1667			1492			1313			873	
Approach Delay, s/veh		223.9			141.4			196.8			166.4	
Approach LOS		F			F			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.0	43.0	19.0	32.0	19.8	49.2	14.0	37.0				
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0				
Max Green Setting (Gmax), s	21.0	36.0	14.0	25.0	15.0	42.0	9.0	30.0				
Max Q Clear Time (g_c+l1), s	23.0	38.0	16.0	27.0	14.8	31.7	9.6	32.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.3	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay				184.8								
HCM 6th LOS				F								

HCM 6th Signalized Intersection Summary
18: 20th St W & Ave J-8

2040 Future + Project PM Peak

07/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	396	150	662	797	219	80	424	319	316	1052	212
Future Volume (veh/h)	142	396	150	662	797	219	80	424	319	316	1052	212
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	154	430	163	720	866	238	87	461	347	343	1143	230
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	468	396	477	553	152	140	563	251	739	1815	810
Arrive On Green	0.15	0.50	0.50	0.22	0.39	0.39	0.08	0.16	0.16	0.41	0.51	0.51
Sat Flow, veh/h	1781	1870	1585	1781	1412	388	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	154	430	163	720	0	1104	87	461	347	343	1143	230
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1800	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.8	25.5	7.8	26.0	0.0	47.0	5.7	15.1	17.6	16.8	27.8	10.0
Cycle Q Clear(g_c), s	7.8	25.5	7.8	26.0	0.0	47.0	5.7	15.1	17.6	16.8	27.8	10.0
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	194	468	396	477	0	705	140	563	251	739	1815	810
V/C Ratio(X)	0.80	0.92	0.41	1.51	0.00	1.57	0.62	0.82	1.38	0.46	0.63	0.28
Avail Cap(c_a), veh/h	194	468	396	477	0	705	148	563	251	739	1815	810
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.99	0.99	0.99	1.00	0.00	1.00	0.69	0.69	0.69	0.66	0.66	0.66
Uniform Delay (d), s/veh	31.0	28.9	24.4	32.6	0.0	36.5	53.5	48.8	43.5	25.5	21.2	16.8
Incr Delay (d2), s/veh	20.0	23.2	0.7	240.5	0.0	261.4	4.9	9.0	188.5	0.3	1.1	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	4.0	10.6	2.6	40.7	0.0	70.6	2.7	7.2	19.9	6.9	11.2	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.0	52.1	25.1	273.1	0.0	297.9	58.5	57.9	232.0	25.8	22.3	17.4
LnGrp LOS	D	D	C	F	A	F	E	E	F	C	C	B
Approach Vol, veh/h		747			1824			895			1716	
Approach Delay, s/veh		46.0			288.1			125.4			22.3	
Approach LOS		D			F			F			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.0	37.0	14.4	68.3	14.0	54.0	56.8	26.0				
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	7.0	* 7				
Max Green Setting (Gmax), s	26.0	30.0	10.0	30.0	9.0	47.0	21.0	* 19				
Max Q Clear Time (g_c+l1), s	28.0	27.5	7.7	29.8	9.8	49.0	18.8	19.6				
Green Ext Time (p_c), s	0.0	0.8	0.0	0.1	0.0	0.0	0.3	0.0				

Intersection Summary

HCM 6th Ctrl Delay	137.1
HCM 6th LOS	F

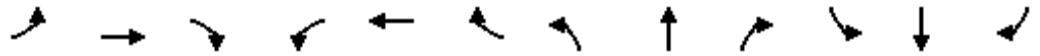
Notes

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

Phasings
28: Division St & Avenue K

2040 Future + Project PM Peak

07/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Minimum Initial (s)	10.0	8.0	8.0	10.0	7.0	7.0	10.0	7.0	7.0	9.0	7.0	7.0
Minimum Split (s)	15.0	23.0	23.0	15.0	23.0	23.0	15.0	23.0	23.0	14.0	23.0	23.0
Total Split (s)	28.0	58.0	58.0	15.0	45.0	45.0	24.0	31.0	31.0	16.0	23.0	23.0
Total Split (%)	23.3%	48.3%	48.3%	12.5%	37.5%	37.5%	20.0%	25.8%	25.8%	13.3%	19.2%	19.2%
Maximum Green (s)	23.0	51.0	51.0	10.0	38.0	38.0	19.0	24.0	24.0	11.0	16.0	16.0
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
90th %ile Green (s)	23.0	51.0	51.0	10.0	38.0	38.0	19.0	24.0	24.0	11.0	16.0	16.0
90th %ile Term Code	Max	Coord	Coord	Max	Coord	Coord	Max	Max	Max	Max	Max	Max
70th %ile Green (s)	23.0	51.0	51.0	10.0	38.0	38.0	19.0	24.0	24.0	11.0	16.0	16.0
70th %ile Term Code	Max	Coord	Coord	Max	Coord	Coord	Max	Max	Max	Max	Max	Max
50th %ile Green (s)	23.0	51.0	51.0	10.0	38.0	38.0	19.0	24.0	24.0	11.0	16.0	16.0
50th %ile Term Code	Max	Coord	Coord	Max	Coord	Coord	Max	Max	Max	Max	Max	Max
30th %ile Green (s)	23.0	51.0	51.0	10.0	38.0	38.0	19.0	24.0	24.0	11.0	16.0	16.0
30th %ile Term Code	Hold	Coord	Coord	Max	Coord	Coord	Max	Max	Max	Max	Hold	Hold
10th %ile Green (s)	23.0	51.0	51.0	10.0	38.0	38.0	19.0	24.0	24.0	11.0	16.0	16.0
10th %ile Term Code	Hold	Coord	Coord	Max	Coord	Coord	Max	Max	Max	Max	Hold	Hold

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Control Type: Actuated-Coordinated

HCM 6th Signalized Intersection Summary
28: Division St & Avenue K

2040 Future + Project PM Peak
07/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	260	1456	180	130	903	60	280	580	470	150	330	240
Future Volume (veh/h)	260	1456	180	130	903	60	280	580	470	150	330	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	283	1583	196	141	982	65	304	630	511	163	359	261
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	312	1510	674	148	1125	502	282	711	317	163	474	211
Arrive On Green	0.35	0.85	0.85	0.08	0.32	0.32	0.16	0.20	0.20	0.09	0.13	0.13
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	283	1583	196	141	982	65	304	630	511	163	359	261
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	18.2	51.0	3.0	9.5	31.3	2.5	19.0	20.7	24.0	11.0	11.7	10.6
Cycle Q Clear(g_c), s	18.2	51.0	3.0	9.5	31.3	2.5	19.0	20.7	24.0	11.0	11.7	10.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	312	1510	674	148	1125	502	282	711	317	163	474	211
V/C Ratio(X)	0.91	1.05	0.29	0.95	0.87	0.13	1.08	0.89	1.61	1.00	0.76	1.23
Avail Cap(c_a), veh/h	341	1510	674	148	1125	502	282	711	317	163	474	211
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.35	0.35	0.35	1.00	1.00	1.00	1.00	1.00	1.00	0.71	0.71	0.71
Uniform Delay (d), s/veh	38.1	9.0	5.4	54.8	38.7	15.1	50.5	46.7	48.0	54.5	50.1	22.9
Incr Delay (d2), s/veh	11.4	28.5	0.4	58.7	9.4	0.5	75.9	13.0	289.6	58.8	5.0	131.3
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	7.1	9.4	0.9	6.5	14.3	1.3	14.1	10.0	34.6	7.4	5.3	11.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.5	37.5	5.8	113.5	48.1	15.7	126.4	59.6	337.6	113.3	55.1	154.2
LnGrp LOS	D	F	A	F	D	B	F	E	F	F	E	F
Approach Vol, veh/h		2062			1188			1445			783	
Approach Delay, s/veh		36.2			54.1			172.0			100.3	
Approach LOS		D			D			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	58.0	24.0	23.0	28.0	45.0	16.0	31.0				
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	7.0	* 7	5.0	7.0				
Max Green Setting (Gmax), s	10.0	51.0	19.0	16.0	23.0	* 38	11.0	24.0				
Max Q Clear Time (g_c+l1), s	11.5	53.0	21.0	13.7	20.2	33.3	13.0	26.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.7	0.2	2.5	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	85.0
HCM 6th LOS	F

Notes

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

Phasings
8: 20th St W & Ave J

07/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			2			6			8			4
Minimum Initial (s)	10.0	9.0	9.0	10.0	7.0	7.0	11.0	8.0	10.0	11.0	7.0	7.0
Minimum Split (s)	15.0	23.0	23.0	15.0	23.0	23.0	16.0	23.0	15.0	16.0	23.0	23.0
Total Split (s)	15.0	47.0	47.0	30.0	62.0	62.0	20.0	27.0	30.0	16.0	23.0	23.0
Total Split (%)	12.5%	39.2%	39.2%	25.0%	51.7%	51.7%	16.7%	22.5%	25.0%	13.3%	19.2%	19.2%
Maximum Green (s)	10.0	40.0	40.0	25.0	55.0	55.0	15.0	20.0	25.0	11.0	16.0	16.0
Yellow Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	1.0	1.0	2.0	2.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	None	None	Max	Max
Walk Time (s)		5.0	5.0		5.0	5.0		5.0			5.0	5.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
90th %ile Green (s)	10.0	40.0	40.0	25.0	55.0	55.0	15.0	20.0	25.0	11.0	16.0	16.0
90th %ile Term Code	Max	Coord	Coord	Max	Coord	Coord	Max	MaxR	Max	Max	MaxR	MaxR
70th %ile Green (s)	10.0	40.0	40.0	25.0	55.0	55.0	15.0	20.0	25.0	11.0	16.0	16.0
70th %ile Term Code	Max	Coord	Coord	Max	Coord	Coord	Max	MaxR	Max	Max	MaxR	MaxR
50th %ile Green (s)	10.0	40.0	40.0	25.0	55.0	55.0	15.0	20.0	25.0	11.0	16.0	16.0
50th %ile Term Code	Max	Coord	Coord	Max	Coord	Coord	Max	MaxR	Max	Max	MaxR	MaxR
30th %ile Green (s)	10.0	40.0	40.0	25.0	55.0	55.0	15.0	20.0	25.0	11.0	16.0	16.0
30th %ile Term Code	Max	Coord	Coord	Max	Coord	Coord	Max	MaxR	Max	Max	MaxR	MaxR
10th %ile Green (s)	10.0	40.0	40.0	25.0	55.0	55.0	15.0	20.0	25.0	11.0	16.0	16.0
10th %ile Term Code	Max	Coord	Coord	Max	Coord	Coord	Max	MaxR	Max	Max	MaxR	MaxR

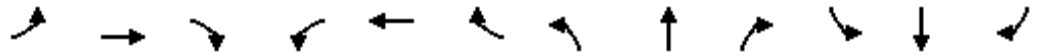
Intersection Summary

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

HCM 6th Signalized Intersection Summary

8: 20th St W & Ave J

07/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗	↘↗	↑	↗	↘	↑↑	↗
Traffic Volume (veh/h)	140	1024	173	337	1582	189	418	302	414	154	282	110
Future Volume (veh/h)	140	1024	173	337	1582	189	418	302	414	154	282	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	1113	188	366	1720	205	454	328	450	167	307	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	148	1185	528	1446	3832	1709	432	343	1577	163	474	211
Arrive On Green	0.08	0.33	0.33	0.81	1.00	1.00	0.13	0.18	0.18	0.09	0.13	0.13
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	1870	1585	1781	3554	1585
Grp Volume(v), veh/h	152	1113	188	366	1720	205	454	328	450	167	307	120
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1870	1585	1781	1777	1585
Q Serve(g_s), s	10.0	36.5	10.8	5.8	0.0	0.0	15.0	20.8	6.3	11.0	9.8	13.0
Cycle Q Clear(g_c), s	10.0	36.5	10.8	5.8	0.0	0.0	15.0	20.8	6.3	11.0	9.8	13.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	1185	528	1446	3832	1709	432	343	1577	163	474	211
V/C Ratio(X)	1.02	0.94	0.36	0.25	0.45	0.12	1.05	0.96	0.29	1.02	0.65	0.57
Avail Cap(c_a), veh/h	148	1185	528	1446	3832	1709	432	343	1577	163	474	211
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	0.83	0.74	0.74	0.74	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	38.8	30.3	2.7	0.0	0.0	52.5	48.5	14.3	54.5	49.3	113.1
Incr Delay (d2), s/veh	73.7	13.2	1.6	0.1	0.3	0.1	54.9	36.1	0.4	76.5	6.7	10.6
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	7.4	17.3	4.3	1.4	0.2	0.1	9.7	12.9	6.3	8.3	4.7	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	128.7	52.0	31.8	2.7	0.3	0.1	107.4	84.6	14.7	131.0	56.0	123.7
LnGrp LOS	F	D	C	A	A	A	F	F	B	F	E	F
Approach Vol, veh/h		1453			2291			1232			594	
Approach Delay, s/veh		57.4			0.7			67.5			90.8	
Approach LOS		E			A			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	106.4	47.0	22.0	23.0	15.0	138.4	16.0	29.0				
Change Period (Y+Rc), s	7.0	* 7	7.0	* 7	5.0	7.0	5.0	7.0				
Max Green Setting (Gmax), s	25.0	* 40	15.0	* 16	10.0	55.0	11.0	20.0				
Max Q Clear Time (g_c+I1), s	7.8	38.5	17.0	15.0	12.0	2.0	13.0	22.8				
Green Ext Time (p_c), s	1.0	1.1	0.0	0.2	0.0	23.0	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	39.9
HCM 6th LOS	D

Notes

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

HCM 6th Signalized Intersection Summary

10: 15th St W & Ave J

07/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	883	473	459	832	82	425	347	436	133	500	170
Future Volume (veh/h)	178	883	473	459	832	82	425	347	436	133	500	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	193	960	514	499	904	89	462	377	474	145	543	185
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	984	646	466	1357	134	452	688	722	267	519	232
Arrive On Green	0.12	0.28	0.28	0.26	0.42	0.42	0.13	0.19	0.19	0.08	0.15	0.15
Sat Flow, veh/h	1781	3554	1585	1781	3268	322	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	193	960	514	499	492	501	462	377	474	145	543	185
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1812	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	13.8	34.8	36.0	34.0	29.1	29.1	17.0	12.4	25.2	8.9	19.0	14.7
Cycle Q Clear(g_c), s	13.8	34.8	36.0	34.0	29.1	29.1	17.0	12.4	25.2	8.9	19.0	14.7
Prop In Lane	1.00		1.00	1.00		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	220	984	646	466	738	753	452	688	722	267	519	232
V/C Ratio(X)	0.88	0.98	0.80	1.07	0.67	0.67	1.02	0.55	0.66	0.54	1.05	0.80
Avail Cap(c_a), veh/h	274	984	646	466	738	753	452	688	722	270	519	232
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.68	0.68	1.00	1.00	1.00	0.76	0.76	0.76	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.0	46.6	33.7	48.0	30.7	30.7	56.5	47.3	27.5	42.2	55.5	53.7
Incr Delay (d2), s/veh	16.7	18.5	6.9	62.0	4.7	4.6	42.7	2.4	3.5	2.2	51.9	24.3
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	7.1	17.5	15.0	22.7	13.1	13.3	10.0	5.7	11.7	4.0	12.1	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.7	65.1	40.6	110.0	35.5	35.4	99.2	49.7	31.1	44.4	107.4	77.9
LnGrp LOS	E	E	D	F	D	D	F	D	C	D	F	E
Approach Vol, veh/h		1667			1492			1313			873	
Approach Delay, s/veh		58.4			60.4			60.4			90.7	
Approach LOS		E			E			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	39.0	43.0	22.0	26.0	21.0	61.0	15.8	32.2				
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0				
Max Green Setting (Gmax), s	34.0	36.0	17.0	19.0	20.0	50.0	11.0	25.0				
Max Q Clear Time (g_c+I1), s	36.0	38.0	19.0	21.0	15.8	31.1	10.9	27.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.2	6.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			64.7									
HCM 6th LOS			E									

HCM 6th Signalized Intersection Summary

18: 20th St W & Ave J-8

07/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↕		↖	↕	↗	↖	↕	↗
Traffic Volume (veh/h)	142	396	150	662	797	219	80	424	319	316	1052	212
Future Volume (veh/h)	142	396	150	662	797	219	80	424	319	316	1052	212
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	154	430	163	720	866	238	87	461	347	343	1143	230
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	235	343	291	505	964	265	140	592	264	552	1473	657
Arrive On Green	0.11	0.24	0.24	0.25	0.35	0.35	0.08	0.17	0.17	0.31	0.41	0.41
Sat Flow, veh/h	1781	1870	1585	1781	2755	756	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	154	430	163	720	558	546	87	461	347	343	1143	230
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1777	1734	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.3	22.0	10.8	30.0	35.7	35.8	5.7	14.9	14.6	19.7	33.3	11.9
Cycle Q Clear(g_c), s	8.3	22.0	10.8	30.0	35.7	35.8	5.7	14.9	14.6	19.7	33.3	11.9
Prop In Lane	1.00		1.00	1.00		0.44	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	235	343	291	505	622	607	140	592	264	552	1473	657
V/C Ratio(X)	0.66	1.25	0.56	1.42	0.90	0.90	0.62	0.78	1.31	0.62	0.78	0.35
Avail Cap(c_a), veh/h	235	343	291	505	622	607	148	592	264	552	1473	657
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.99	0.99	0.99	1.00	1.00	1.00	0.69	0.69	0.69	0.66	0.66	0.66
Uniform Delay (d), s/veh	35.7	45.4	41.1	35.4	37.0	37.0	53.5	47.9	26.8	35.4	30.3	24.1
Incr Delay (d2), s/veh	6.4	135.9	2.4	202.5	15.9	16.3	4.9	6.9	158.6	1.4	2.7	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	22.2	4.2	40.7	17.5	17.2	2.7	7.0	17.0	8.6	14.2	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.1	181.3	43.6	237.8	52.8	53.3	58.5	54.8	185.4	36.8	33.0	25.0
LnGrp LOS	D	F	D	F	D	D	E	D	F	D	C	C
Approach Vol, veh/h		747			1824			895			1716	
Approach Delay, s/veh		122.5			126.0			105.8			32.7	
Approach LOS		F			F			F			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	35.0	29.0	14.4	56.8	15.0	49.0	44.2	27.0				
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	5.0	7.0	7.0	* 7				
Max Green Setting (Gmax), s	30.0	22.0	10.0	34.0	10.0	42.0	24.0	* 20				
Max Q Clear Time (g_c+I1), s	32.0	24.0	7.7	35.3	10.3	37.8	21.7	16.9				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.4	0.3	1.3				

Intersection Summary

HCM 6th Ctrl Delay	91.1
HCM 6th LOS	F

Notes

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

Phasings

28: Division St & Avenue K

07/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6				8		4
Minimum Initial (s)	10.0	8.0	10.0	10.0	7.0	7.0	10.0	7.0	7.0	9.0	7.0	7.0
Minimum Split (s)	15.0	23.0	15.0	15.0	23.0	23.0	15.0	23.0	23.0	14.0	23.0	23.0
Total Split (s)	21.0	44.0	26.0	17.0	40.0	40.0	26.0	41.0	41.0	18.0	33.0	33.0
Total Split (%)	17.5%	36.7%	21.7%	14.2%	33.3%	33.3%	21.7%	34.2%	34.2%	15.0%	27.5%	27.5%
Maximum Green (s)	16.0	37.0	21.0	12.0	33.0	33.0	21.0	34.0	34.0	13.0	26.0	26.0
Yellow Time (s)	4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.0	2.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	None	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		5.0			5.0	5.0		5.0	5.0		5.0	5.0
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
90th %ile Green (s)	16.0	37.0	21.0	12.0	33.0	33.0	21.0	34.0	34.0	13.0	26.0	26.0
90th %ile Term Code	Max	Coord	Max	Max	Coord	Coord	Max	Max	Max	Max	Hold	Hold
70th %ile Green (s)	16.0	37.0	21.0	12.0	33.0	33.0	21.0	34.0	34.0	13.0	26.0	26.0
70th %ile Term Code	Max	Coord	Max	Max	Coord	Coord	Max	Max	Max	Max	Hold	Hold
50th %ile Green (s)	16.0	37.0	21.0	15.3	36.3	36.3	21.0	30.7	30.7	13.0	22.7	22.7
50th %ile Term Code	Max	Coord	Max	Max	Coord	Coord	Max	Gap	Gap	Max	Hold	Hold
30th %ile Green (s)	16.0	42.8	21.0	13.5	40.3	40.3	21.0	26.7	26.7	13.0	18.7	18.7
30th %ile Term Code	Max	Coord	Max	Gap	Coord	Coord	Max	Gap	Gap	Max	Hold	Hold
10th %ile Green (s)	16.0	51.4	21.0	10.3	45.7	45.7	21.0	22.4	22.4	11.9	13.3	13.3
10th %ile Term Code	Max	Coord	Max	Gap	Coord	Coord	Max	Gap	Gap	Gap	Hold	Hold

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

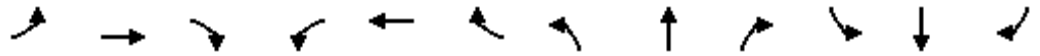
Offset: 116 (97%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Control Type: Actuated-Coordinated

HCM 6th Signalized Intersection Summary

28: Division St & Avenue K

07/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗	↘	↑↑	↗	↘	↑↑	↗
Traffic Volume (veh/h)	260	1456	180	130	903	60	280	580	470	150	330	240
Future Volume (veh/h)	260	1456	180	130	903	60	280	580	470	150	330	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	283	1583	196	141	982	65	304	630	511	163	359	261
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1047	2791	1522	167	977	436	312	1007	449	189	763	340
Arrive On Green	0.39	0.53	0.53	0.09	0.28	0.28	0.17	0.28	0.28	0.11	0.21	0.21
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	283	1583	196	141	982	65	304	630	511	163	359	261
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	12.9	36.1	1.4	9.3	33.0	5.1	20.4	18.5	34.0	10.8	10.6	13.0
Cycle Q Clear(g_c), s	12.9	36.1	1.4	9.3	33.0	5.1	20.4	18.5	34.0	10.8	10.6	13.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1047	2791	1522	167	977	436	312	1007	449	189	763	340
V/C Ratio(X)	0.27	0.57	0.13	0.84	1.00	0.15	0.98	0.63	1.14	0.86	0.47	0.77
Avail Cap(c_a), veh/h	1047	2791	1522	178	977	436	312	1007	449	193	770	343
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)	0.35	0.35	0.35	1.00	1.00	1.00	1.00	1.00	1.00	0.71	0.71	0.71
Uniform Delay (d), s/veh	18.9	14.7	0.3	53.5	43.5	61.0	49.2	37.5	43.0	52.8	41.2	21.7
Incr Delay (d2), s/veh	0.0	0.3	0.1	27.9	30.0	0.7	44.1	1.2	85.9	23.1	0.3	7.2
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	5.5	15.3	0.0	5.3	17.8	1.5	12.5	7.9	23.3	5.9	4.5	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.0	14.9	0.3	81.4	73.5	61.7	93.3	38.7	128.9	75.8	41.5	29.0
LnGrp LOS	B	B	A	F	F	E	F	D	F	E	D	C
Approach Vol, veh/h		2062			1188			1445			783	
Approach Delay, s/veh		14.1			73.8			82.1			44.5	
Approach LOS		B			E			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.3	102.0	26.0	32.8	78.3	40.0	17.8	41.0				
Change Period (Y+Rc), s	5.0	7.0	5.0	7.0	7.0	* 7	5.0	7.0				
Max Green Setting (Gmax), s	12.0	37.0	21.0	26.0	16.0	* 33	13.0	34.0				
Max Q Clear Time (g_c+I1), s	11.3	38.1	22.4	15.0	14.9	35.0	12.8	36.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.2	0.1	0.0	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	49.3
HCM 6th LOS	D

Notes

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