



Technical Memorandum

To: EPC Environmental, Inc. Ernest Perea

From: Kevin P. Carr, MS., KPC EHS Consultants

Date: January 8, 2024, *Revised* February 19, 2025

Re: Avenue M, Lancaster Industrial Development Project – Noise Impact Technical Memorandum

1.0 Purpose

The purpose of this memorandum is to document the impacts of construction, mobile, and operational noise, and vibration as it relates to the potential environmental impacts associated with the construction and operation of the proposed warehouse project approximately 40.40 acres. The memorandum has been revised to include an updated project description.

2.0 Project Location & Description

2.1 Project Location: The proposed project site is located in the City of Lancaster, Los Angeles County, California on the north side of West Avenue M, west of Division Street.

2.2 Description: The Applicant is proposing to two speculative buildings on two separate parcels, proposed development includes two industrial buildings. Building 1 consists of 12,000 SF of office area, 343,973 SF warehouse area, 46,000 square foot (SF) manufacturing area, 213 parking spaces with 43 being parking for EV/Clean air vehicles, and 74 trailer parking spaces on an approximately 20.82-acre vacant parcel. Building 2 consists of 12,000 SF of office area, 347,032 SF warehouse area, 46,000 square foot (SF) manufacturing area, 230 parking spaces with 46 being parking for EV/Clean air vehicles, and 74 trailer parking spaces on an approximately 19.59 - acre vacant parcel.

3.0 Regulatory Setting

Lancaster General Plan 2030

The City of Lancaster's General Plan (GP) Objective 4.3 identifies noise standards for compatible land use relationships in Table 3-1 Noise Compatible Land Use Objectives. The maximum exterior Community Noise Equivalent Level (CNEL) for Commercial and Industrial land use areas is 70 dBA CNEL.

Lancaster Municipal Code

The City of Lancaster has set restrictions to control noise impacts from construction activities. Section 8.24.040 of the Lancaster Municipal Code restricts construction activities between the hours of 8:00 p.m. and 7:00 a.m. on weekdays and Saturdays, and construction will not be performed on Sundays.

4.0 Noise Impacts

4.1 Determination of Significance: The criteria used to determine the significance related to potential Project related noise impacts is based on the California Environmental Quality Act (CEQA) Environmental Checklist, Appendix G Thresholds.

Would the Project:

- a) Result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project more than standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- b) Generate excessive ground borne vibration or groundborne noise levels?
- c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

4.1.1 Significance Thresholds: The City of Lancaster does not establish quantified thresholds for temporary construction noise and vibration damage. Therefore, to evaluate potential construction noise and vibration impacts the following California Department of Transportation (Caltrans) thresholds for vibration and Federal Transit Administration (FTA) criteria for noise thresholds are used in this analysis.

- **Vibration Damage Potential (Old Structures):** 0.3 inches/second (in/sec) peak particle velocity (PPV) for continuous/Frequent Intermittent Sources at the facade of an older residential structures.
- **Vibration Damage Potential (New Structures):** 0.50 in/sec PPV at the façade for continuous/Frequent Intermittent Sources at the facade of a new residential structures.
- **Vibration Annoyance Criteria (Receptor Perception):** 0.24 in/sec PPV is classified by Caltrans as distinctly perceptible.
- **Construction:** 80 dBA Leq construction noise criterion at noise receptor property line.

Table 4-1 Caltrans Vibration Damage Potential Threshold Criteria

Structure and Condition	Significance Thresholds (in/sec PPV)	
	Transient Sources	Continuous/Frequent/Intermittent Sources
Extremely fragile historic buildings	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: California Department of Transportation, 2013

Table 4-2 Caltrans Vibration Annouance Criteria

Average Human Response	(in/sec PPV)
Severe	2.0
Strongly perceptible	0.9
Distinctly perceptible	0.24
Barely perceptible	0.035

Source: California Department of Transportation, 2013

4.2 Ambient Noise: The primary sources for existing ambient noise in the Project area is from traffic, commercial and industrial uses, the Palmdale Regional Airport. Traffic generated noise is from 8th Street West, 10th Street West, and Highway 14 which is approximately 0.44 miles to the west. The Palmdale Regional Airport is located approximately 2.4 miles southeast.

4.2.1 Existing Ambient Noise Level Measurements: To establish exiting conditions, an existing ambient noise survey was conducted August 9 through August 10, 2023. The ambient noise monitoring survey consisted of three short-term noise measurements (15-minutes) and two long-term noise measurements (24-hours). Short-term and long-term noise measurements were conducted using Soft dB, Piccolo Class 2 sound level meters (SLMs), which meet the American National Standards Institute for Type 2 instrumentation. The SLMs were set to “slow” response and “A” weighting (dBA). The SLMs were calibrated before and after the noise monitoring survey with a high precision Larson Davis CAL 200 calibrator. All SLMs were at least 5 feet above the ground and 5 feet from any other reflective surfaces and equipped with a windscreen. Meteorological conditions were favorable during the noise monitoring survey with average wind speeds of 7 miles per hour (mph) and temperatures of 89 degrees Fahrenheit (°F). Results from the noise monitoring survey are summarized in Table 4-2 and Table 4-3 followed by a brief description of each measurement location. Noise measurement locations are shown in Exhibit 4-A, Approximate Noise Monitoring Locations.

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Exhibit 4-A Noise Monitoring Map



Table 4-3 Ambient Noise Level Measurements (Long Term)

Location	Description	CNEL dBA	Daytime Average Noise Level dBA (Leq)	Nighttime Average Noise Level dBA (Leq)
LT-1	Eastern project property line/Division St between Sahara and Regal Motel	64	60	56
LT-2	Southern project property line along Ave M	80	75	73

- Long-term Location 1 (LT-1):** was placed next to approximately 25 feet north of the nearest west bound travel lane centerline (Avenue M). A 24-hour measurement began at 3:00 p.m. on Thursday, August 10, 2023. The noise environment is primarily characterized by traffic noise along Avenue M. Military aircraft overflights were observed while setting up the long-term meter but ceased flight activities prior to starting the long-term measurement.
- Long-term Location 1 (LT-1):** was placed along Division Street (unpaved road) and between Sahara and Regal Motels. The meter was also placed such that it had a direct

line-of-sight from Division Street to the railroad tracks to the east. A 24-hour measurement began at 3:00 p.m. on Thursday, August 10, 2023. The noise environment is primarily characterized by vehicular traffic along Sierra Freeway and Avenue M Street. Other noise sources observed included birds chirping and commercial aircraft overflights.

Table 4-4 Ambient Noise Level Measurements (Long Term)

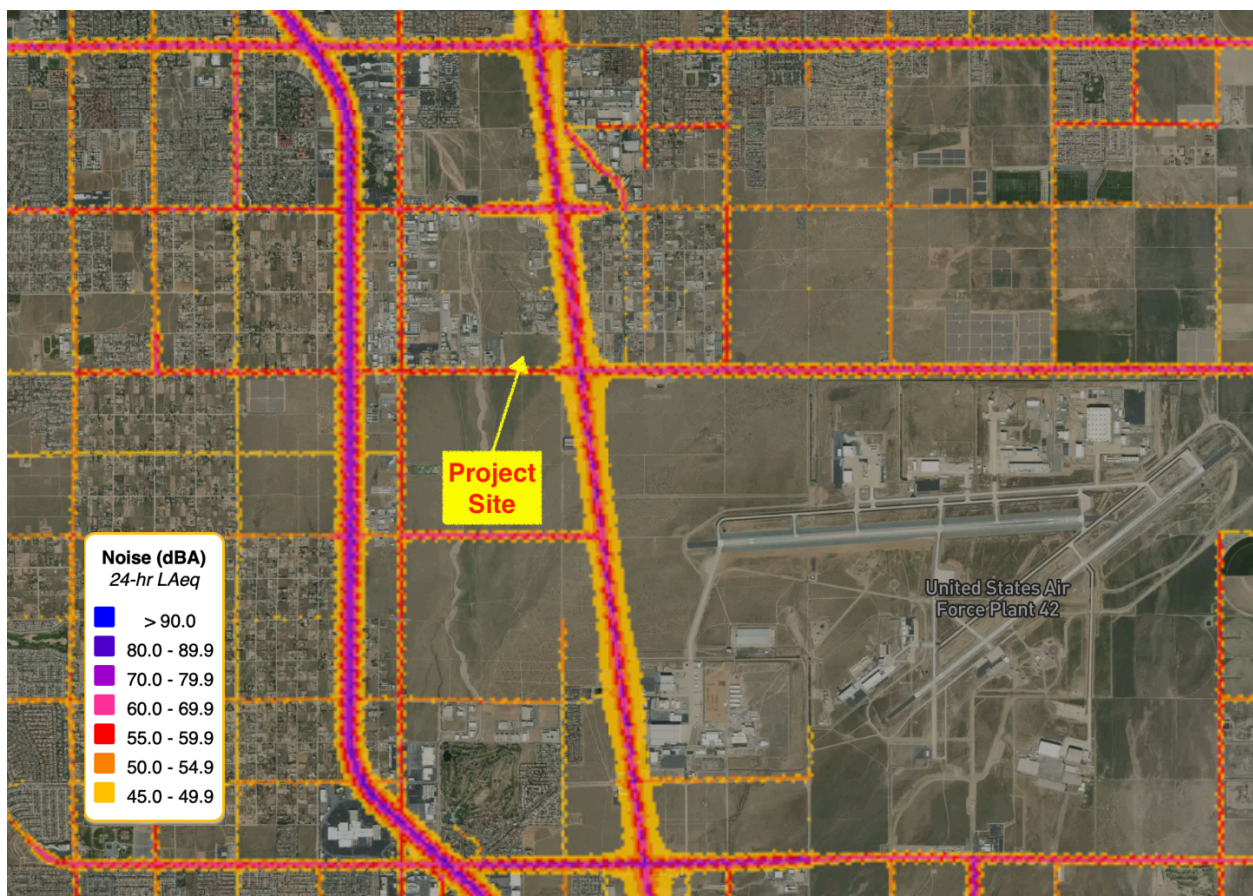
Location	Description	Average Noise Level dBA (Leq)
ST-1	Northern project property line adjacent to Paradise Landscape	55.6
ST-2	Eastern project property line/Division Street next to Sahara Motel	57.5
ST-3	Southern project property line along Avenue M	70.4
ST-4	Western project property next to vacant lot	54.0

- **Short-term Location 1 (ST-1):** measurement took place next along the northern project site boundary next to Paradise Landscape. A 15-minute measurement began at 3:36 p.m. on Thursday, August 10, 2023. The noise environment is primarily characterized by vehicular traffic along Avenue M. Roadway noise levels generally ranged between 50 dBA and 60 dBA. Other noise sources included occasional passenger vehicles entering or exiting Paradise Landscape through the unpaved and unnamed dirt road.
- **Short-term Location 2 (ST-2):** measurement took place along Division Street, an unpaved dirt road, next to Sahara Motel. A 15-minute measurement began at 4:02 p.m. on Thursday, August 10, 2023. The noise environment is primarily characterized by vehicular traffic along Sierra Freeway and Avenue M. Roadway noise levels generally ranged between 53 dBA and 60 dBA. Other noise sources included birds chirping.
- **Short-term Location 3 (ST-3):** measurement took place along Avenue M, approximately 25 north from the nearest west bound travel lane centerline. A 15-minute measurement began at 4:57 p.m. on Thursday, August 10, 2023. The noise environment is primarily characterized by vehicular traffic noise along Avenue M. Roadway noise levels generally ranged between 67 dBA and 77 dBA. Motorcycles and heavy-duty trucks generally ranged between 75 dBA and 83 dBA.
- **Short-term Location 4 (ST-4):** measurement took place along the western project boundary along an unnamed and unpaved dirt road. A 15-minute measurement began at 5:19 p.m. on Thursday, August 10, 2023. The noise environment is primarily characterized by vehicular traffic along Avenue M. Roadway noise levels generally ranged between 50 dBA and 55 dBA.

4.2.1 Existing Ambient Noise National Transportation Noise Map

The Bureau of Transportation Statistics provides the National Transportation Noise Map as a basis for understanding what-if scenarios and helping policy makers and planners to prioritize noise-related transportation investments.¹ The data on the noise map allows for viewing the potential exposure to aviation, highway, and rail noise. The current data for the Lancaster Area is from the 2016 – 2018 noise map and is presented in Exhibit 4-B. The Noise Map contours are representative of the measured ambient noise measurements as presented in Table 4-3 and 4-4.

Exhibit 4-B National Transportation Noise Map: Lancaster Area



¹ Bureau of Transportation Statistics, National Transportation Noise Map: <https://www.bts.gov/geospatial/national-transportation-noise-map> accessed December 21, 2023.

4.2.2 Receptors (Noise Sensitive Land Uses): Noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, churches, nursing homes, auditoriums, concert halls, amphitheaters, playgrounds, and parks are considered noise sensitive. The nearest receptors to the Project site are the Sahara Motel and Regal Lodge, located approximately 60 feet east of the property eastern boundary.

Table 4-5 Occupied Structures/Receptors

Business	Location	Distance
Sahara Motel	East adjacent to project site.	Occupied structure approximately 60 feet from eastern boundary.
Regal Lodge	East adjacent to project site.	Occupied structure approximately 60 feet from eastern boundary.
Los Angeles County Courthouse	West across 4 th Street West.	Occupied structures approximately 980 feet from west boundary.

4.3 Construction Noise: Construction activities that would create noise include: site preparation, grading, building construction, paving, and architectural coating. Noise levels associated with the construction will vary with the different types of construction equipment, the duration of the activity, and distance from the source. Construction noise will have a temporary or periodic increase in the ambient noise level above the existing levels within the Project vicinity. The nearest receptors to the Project site are the Sahara Motel and Regal Lodge, located approximately 60 feet east of the property eastern boundary and approximately 800 feet from the site's center. To estimate the potential impact of construction noise at the nearest receptors, equipment that is expected to be used during construction was input into the Federal Highway Administration Roadway Construction Noise Model (RCNM) to generate anticipated noise levels. The RCNM generates the maximum noise levels (Lmax) and the equivalent continuous sound level (Leq). The Leq is a calculation of the anticipated steady sound pressure level which, over a given time period (day, evening, night), has the same total energy as the actual fluctuating noise. The RCNM also uses an acoustical use factor in the noise calculations. The acoustical use factor is the percentage of time each piece of construction equipment is assumed to be operating at the full power level and is used to estimate the Leq values from the Lmax values. For example, typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Noise levels will be loudest during the site preparation and grading phases. Table 4-3 identifies the construction equipment noise levels at the nearest receptors and Table 4-4 identifies the construction equipment noise levels at 500 feet.

**Table 4-6 Construction Equipment Noise Levels at the Nearest Receptors
(Sahara Motel & Regal Lodge)**

Source	Approximate Distance to Nearest Receptor ¹ (Property Line to Construction Site) (feet)	Sound Level at Nearest Receptor		
		Lmax	Acoustical Use Factor (%)	Leq
Backhoe	60	76.0	40	72.0
Concrete Mixer Truck	60	77.2	40	73.2
Compressor (air)	60	76.1	40	72.1
Concrete Pump Truck	60	79.8	20	72.8
Crane	60	79.0	16	71.0
Dozer	60	80.1	40	76.1
Dump Truck	60	74.9	40	70.9
Excavator	60	79.1	40	75.1
Flat Bed Truck	60	72.7	40	68.7
Front End Loader	60	77.5	40	73.5
Generator	60	79.0	50	76.0
Grader	60	83.4	40	79.4
Man Lift	60	73.1	20	66.1
Paver	60	75.6	50	72.6
Pickup Truck	60	73.4	40	69.4
Roller	60	78.4	20	71.4
Scraper	60	82.0	40	78.0
Tractor	60	82.4	40	78.4
Welder / Torch	60	72.4	40	68.4

Source: FHWA – RCNM Version 1.1

Table 4-7 Construction Equipment Noise Levels at 500 feet

Source	Approximate Distance to Nearest Receptor ¹ (Property Line to Construction Site) (feet)	Sound Level at Nearest Receptor		
		Lmax	Acoustical Use Factor (%)	Leq
Backhoe	500	57.6	40	53.6
Concrete Mixer Truck	500	58.8	40	54.8
Compressor (air)	500	57.7	40	53.7
Concrete Pump Truck	500	61.4	20	54.4
Crane	500	60.6	16	52.6
Dozer	500	61.7	40	57.7
Dump Truck	500	65.5	40	52.5
Excavator	500	60.7	40	56.7
Flat Bed Truck	500	54.3	40	50.3
Front End Loader	500	59.1	40	55.1
Generator	500	60.6	50	57.6
Grader	500	65.0	40	61.0
Man Lift	500	54.7	20	47.7
Paver	500	57.2	50	54.2
Pickup Truck	500	55.0	40	51.0
Roller	500	60.0	20	53.0
Scraper	500	63.6	40	59.6
Tractor	500	64.0	40	60.0
Welder / Torch	500	54.0	40	50.0

Source: FHWA – RCNM Version 1.1

The properties immediately adjacent and surrounding the Project site are industrial uses, vacant undeveloped parcels (zoned Industrial), commercial uses, with the nearest receptors are located at the Sahara Motel and Regal Lodge (60 feet to the east) and the Project would be compatible with surrounding land uses and would not adversely impact receptors.

The City of Lancaster through the Municipal Code (MC) Title 8 – Health and Safety - Section 8.24.040 – Loud, unnecessary, and unusual noises prohibited – Construction and Building, has set restrictions for construction activities that will limit the impacts of construction noise on nearby receptors. MC 8.24.040 states:

Except as otherwise provided in this chapter, a person at any time on Sunday or any day between the hours of eight p.m. and seven a.m. shall not perform any construction or repair work of any kind upon any building or structure or perform any earth excavating,

filling, or moving where any of the foregoing entails the use of any air compressor, jack hammer, power-driven drill, riveting machine, excavator, diesel-powered truck, tractor or other earth-moving equipment, hard hammers on steel or iron or any other machine tool, device or equipment which makes loud noises within five hundred (500) feet of an occupied dwelling, apartment, hotel, mobile home, or other place of residence.

With implementation of the above standard condition of approval, construction noise impacts would be less than significant.

While the City establishes limits to the hours during which construction activity may take place, it does not identify specific noise level limits for construction noise levels. Therefore, to evaluate whether the Project will generate a substantial increase in the short-term noise levels at the offsite receptors (motels to the east), the construction-related noise level threshold is based on the Federal Transit Administration (FTA) criteria 80 dBA Leq construction noise criterion at noise receptor property line.

**Table 4-8 Worse Case Construction Noise Levels at Receptor
(Site Preparation & Grading)**

Phase	Equipment Type	Number of Units	Leq dBA/unit 60 feet	Leq dBA Total 60 feet	Leq dBA/unit 500 feet	Leq dBA Total 500 feet
Site Preparation	Tractor/Loader/Backhoe	4	72.0	78.0	53.6	59.5
Site Preparation	Rubber Tired Dozer	3	76.1	80.9	57.7	62.3
Site Preparation	Total Noise Level			82.7		64.1
Grading	Grader	1	79.4	79.4	61.0	61.0
Grading	Tractor/Loader/Backhoe	2	72.0	75.0	53.6	56.6
Grading	Rubber Tired Dozer	1	76.1	76.1	57.7	57.7
Grading	Excavator	2	75.1	78.1	56.7	59.7
Grading	Scraper	2	78.0	81.0	59.6	62.6
Grading	Total Noise Level			85.4		67.0

The highest equipment noise level at the nearest receptors the Sahara Motel and Regal Lodge located 60 -feet from the Project site boundary and approximately 800 feet from the Project site center. During the construction phase the noise levels will be the highest as heavy equipment pass along the Project site boundaries. If multiple pieces of construction equipment were to operate simultaneously and next to each other along the site's eastern boundary the combined noise levels at the nearest receiver would be 82.7 dBA Leq for site preparation and 85.4 dBA Leq during grading operations. During the site preparation and grading phases, which produce the highest noise levels, equipment will not be stationary, rather equipment will be moving throughout the site at varying speeds and power levels and as a result not operating at the maximum noise level for the entire workday. Therefore, if multiple pieces of construction equipment were to operate simultaneously and next to each other throughout the site (using 500-foot model as the average distance) the combined noise levels at the nearest receiver would be 64.1 dBA Leq for site preparation and 67.0 dBA Leq during grading.

The construction noise levels at the nearest receptors as indicated in Table 4-4 and 4.5 are above 80 dBA Leq if operating simultaneously along the eastern site boundary at 60-feet. Construction noise is of short-term duration and will not present any long-term impacts on the project site or the surrounding area.

In order to assure that the Motels located within 60 feet of the property boundary are not significantly impacted by noise or vibration levels the following mitigation measure is recommended:

Mitigation Measure (MM) NOI-1 Construction Noise Mitigation Plan

Prior to issuance of grading and/or building permits, a note shall be provided on grading and building plans indicating that, during grading and construction, the property owner/developer shall be responsible for requiring contractors to implement the following measures to limit construction-related noise:

- The construction contractor shall ensure that all internal combustion engine-driven equipment is equipped with mufflers that are in good condition and appropriate for the equipment.
- The construction contractor shall locate stationary noise-generating equipment as far as possible from receptors when receptors adjoin or are near a construction project area. In addition, the Project contractor shall place such stationary construction equipment so that emitted noise is directed away from receptors nearest the Project site.
- The construction contractor shall prohibit unnecessary idling (no more than 5 minutes) of internal combustion engines.
- Equipment shall not be operated along the eastern boundary of the site for more than 30 minutes in duration per hour during construction.
- The construction contractor shall, to the maximum extent practical, locate on-site equipment staging areas to maximize the distance between construction-related noise sources and noise-sensitive receptors nearest the Project site during all project construction.
- The construction contractor shall designate a “disturbance coordinator” who would be responsible for responding to any complaints about construction noise. The disturbance coordinator shall determine the cause of the noise complaint (e.g., a bad muffler) and shall require that measures be implemented to correct the problem.
- These measures may only be granted an exception if an application for construction-related exception is made to and considered by the Building Official of the City

With implementation of the City’s mandatory restrictions on construction noise hours and MM-NOI-1 construction noise impacts would be less than significant.

4.4 Operational Noise:

4.4.1 Offsite Traffic Noise Impacts

Vehicle noise is a combination of the noises produced by the engine, exhaust, and tires. The primary source of noise generated by the Project will be from the vehicle traffic generated by the vehicle ingress and egress to the Project site. Under existing conditions, the site does not generate any traffic noise that impacts the surrounding area.

According to the Federal Highway Administration, *Highway Traffic Noise Analysis and Abatement Policy and Guidance*, the level of roadway traffic noise depends on three things: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the number of trucks in the flow of the traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and greater numbers of trucks. These factors are discussed below.

- *The Volume of the Traffic*

As there are currently no known tenants of the future development the number of truck trips for the Project was calculated using the South Coast AQMDs Warehouse Truck Trip Study with an overall trip rate of 1.78 per 1,000 SF and a truck trip rate of 0.53 per 1,000 SF. According to the Local Transportation Assessment (LTA) (Appendix C) the average daily trips total is estimated to be 1,733 trips per day with 467 truck trips per day.

The current average daily vehicle trips (ADT) along West Avenue M west of Sierra Highway is 24,900 ADT, and along East Avenue M east of 4th Street is 20,950 ADT².

According to Caltrans, the human ear is able to begin to detect sound level increases of 3 decibels (dB) in typical noisy environments.³ A doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a 3-dBA increase in sound, would generally be barely detectable. Implementation of the Project will increase traffic volumes in the area occurring along W Avenue M but not to the extent that traffic volumes will be doubled creating a +3dBA noise increase or result in a perceivable noise increase. Therefore, operational noise impacts would be less than significant.

- *The Speed of Traffic*

W Avenue M is a 4-lane road and has a posted speed limit of 55 mph, as indicated in volume of traffic above, the anticipated increase in noise levels would be less than 3 dBA and less than significant on W Avenue M.

- *The Number of Trucks in the Flow of the Traffic*

The Project is a warehouse development in an industrial area and although it will generate noise from large trucks, the site is located in an industrial area with similar truck and traffic uses. According to the LTA (Appendix C) The total number of daily trips from both passenger

² City of Lancaster 2019 Average Daily Traffic Map.

<https://www.cityoflanasterca.org/home/showpublisheddocument/41344/637141754835800000> Accessed December 21, 2023

³ Caltrans, Traffic Noise Analysis Protocol, April 2020, p.7-1.

cars and trucks is calculated to be 1,733 ADT, of which 467 (27 %) will be from trucks. The morning and afternoon peak hour truck traffic is calculated to be 17 AM peak hour truck traffic and 25 PM peak hour truck traffic.

Truck traffic will also be required to use any State or City designated truck routes. The use of the truck routes will also decrease the impacts on receptors such as residential uses.

4.4.2 Facility Operations (Stationary Noise)

At the time this noise analysis was prepared, the future tenants of the proposed Project are unknown. The on-site Project-related noise sources are expected to include roof-top heating ventilation and air conditioning units (HVAC), refrigeration units, idling trucks, truck activities, backup alarms, as well as loading and unloading of dry goods, and parking lot vehicle movements. This noise analysis is intended to describe noise level impacts associated with the expected typical operational (stationary source) activities at the Project site.

Table 4-6 Reference Noise Level Measurements

Noise Source	Reference Distance (feet)	Reference Noise Level (dBA)	Distance to Receptor (feet)	Noise Level (dBA)
Rooftop HVAC ¹	1 ‘	88	525	54.4
Truck Loading Dock Activity ²	50 ‘	63.6	525	43.2
Truck Backup Alarm ²	50 ‘	75.0	525	54.6
Parking Lot Activity ²	25 ‘	54.4	525	28.0

¹ Reference Level Lennox 10-ton air handler unit (AHU) manufacturer specifications.

² Reference Level collected at Amazon Fulfillment Center ONT-6 (24208 San Michele Rd., Moreno Valley)

The proposed warehouse structure would include dock doors for truck loading and unloading. To determine the noise level impacts of the Project short-term reference noise level measurements were collect at the Amazon Fulfillment Center located at 24208 San Michele Road in the City of Moreno Valley. The noise measurements represent a typical weekday warehouse loading/unloading operation on a large single building distribution center, approximately 1.2 million square feet with 200 trailer parking spaces and 90 docks. Operations during the noise measurements included multiple trucks being loaded/unloaded, forklift, and truck/trailer movement.

The loading/unloading operations noise measurements were taken over a 15 – minute period taken from an area approximately at the center of the docking stations at 50’ feet from the building. The reference noise measurement obtained was 63.6 dBA L_{eq} and calculated attenuation for 525- foot distance at 43.2 dBA L_{eq} . The 60-foot distance is the closest distance from the property to the closest receptors to the east. No attenuation for shielding from buildings or walls was calculated as no detailed information on boundary walls/fencing.

Trucks at the Project site would utilize backup alarms during the loading/unloading activities, which according to ECCO, the first manufacturer of backup alarms, depending on the model, typically produce a noise level of 87 to 112 dBA at 1 foot⁴ and at 60 feet with no sound barriers (walls or buildings) the noise level would be between 51.4 to 76.4 dBA. Reference noise level measurements taken at 50 feet during truck movement and backup alarm operation were measured at 75 dBA max which would result in a 68.2 dBA noise level at 60 feet with no perimeter walls or buildings as shielding.

Parking lot areas for passenger vehicles and trailer parking were estimated to be located on the west and east sides of the proposed structure. Traffic associated with parking lots is typically not at a sufficient level to exceed the community noise standards. The total parking spaces estimated for the Project is approximately 482 stalls, the reference noise levels were taken at a parking lot that can accommodate approximately 1,000 stalls. The Project's parking lots are substantially smaller and no significant noise impacts offsite from the parking lot use would be anticipated.

The USEPA identifies noise levels affecting health and welfare as exposure levels over 70 dBA over a 24-hour period. Noise levels for various levels are identified according to the use of the area. Levels of 45 dBA are associated with indoor residential areas, hospitals, and schools, whereas 55 dBA is identified for outdoor areas where typical residential human activity takes place. According to the USEPA levels of 55 dBA outdoors and 45 dBA indoors are identified as levels of noise considered to permit spoken conversation and other activities such as sleeping, working, and recreation, which are part of the daily human condition.⁵ Levels exceeding 55 dBA in a residential setting are normally short in duration and not significant in affecting health and welfare of residents. As the Project site is located in an industrialized and commercial area that is zoned and planned for future industrial and commercial development, the nearest existing receptor is approximately 60 feet away to the east and no significant noise impacts are expected at that distance.

4.5 Vibration

During construction the operation and movement of heavy equipment create seismic waves that radiate along the ground-surface in all directions. These waves are felt as ground vibrations. Vibrations from construction can result in effects ranging from annoyance to people to structure damage. Vibration levels are impacted by geology, distance, and frequencies. According to the Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018⁶, while ground vibrations from construction activities do not often reach the levels that can damage structures, construction vibration may result in building damage or prolonged annoyance from activities such as blasting, piledriving, vibratory compaction, demolition, and drilling or excavation near structures. The Project does not require these types of extensive vibration construction activities.

⁴ ECCO Backup alarm manufacturer resources:

<https://www.eccoesg.com/us/en/SearchResults?searchText=backup+alarm+noise+levels> accessed December 21, 2023.

⁵ USEPA "EPA Identifies Noise Levels Affecting Health and Welfare" <https://archive.epa.gov/epa/aboutepa/epa-identifies-noise-levels-affecting-health-and-welfare.html> accessed December 22, 2023.

⁶ <https://www.transit.dot.gov/research-innovation/transit-noise-and-vibration-impact-assessment-manual-report-0123>

Vibration amplitude and impact decreases with distance and perceptible ground-borne vibration is generally limited to areas within one to two hundred feet of the construction activity.

The City does not have a vibration standard the Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, construction and vibration damage criteria for non-engineered timber and masonry building/structural category was used which sets the vibration threshold at 0.2 PPV, in/sec.

Table 4-7 Vibration Source Levels for Construction Equipment

Equipment	PPV (in/sec) at 25 feet
Small bulldozer	0.003
Jackhammer	0.035
Loaded Trucks	0.076
Large bulldozer	0.089

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, September 2018.

The closest receptor to the Project property line is approximately 60 feet from the property line. The estimated construction vibration level from a large bulldozer (worst case scenario) measured at 15-feet would create a vibration level of 0.191 in/sec which does not exceed the 0.3 PPV in/sec or 0.5 PPV in/sec thresholds for structural damage or the 0.24 PPV in/sec for human annoyance threshold. Therefore, the vibrations at the nearest receptor and structures will remain below the strongly perceptible annoyance criteria and potential vibration damage criteria threshold. This threshold requires that no vibration greater than 0.24 PPV be felt at or beyond the lot line. The proposed Project therefore is not considered to result in exposure of people to excessive ground vibration.

During operations of the Project following construction the primary source of vibration would be from vehicle traffic, primarily truck traffic. Truck vibration levels are dependent on vehicle characteristics, load, speed, and pavement conditions. Typical vibration levels from heavy truck activity at normal traffic speeds are in the order of 0.004 in/sec PPV at 25 feet based on the FTA's Transit Noise Impact and Vibration Assessment (2018). Trucks once on site will be travelling at very low speeds and it is expected that truck vibration impacts off site would not exceed the 0.3 PPV in/sec or 0.5 PPV in/sec thresholds for structural damage or the 0.24 PPV in/sec for human annoyance threshold.

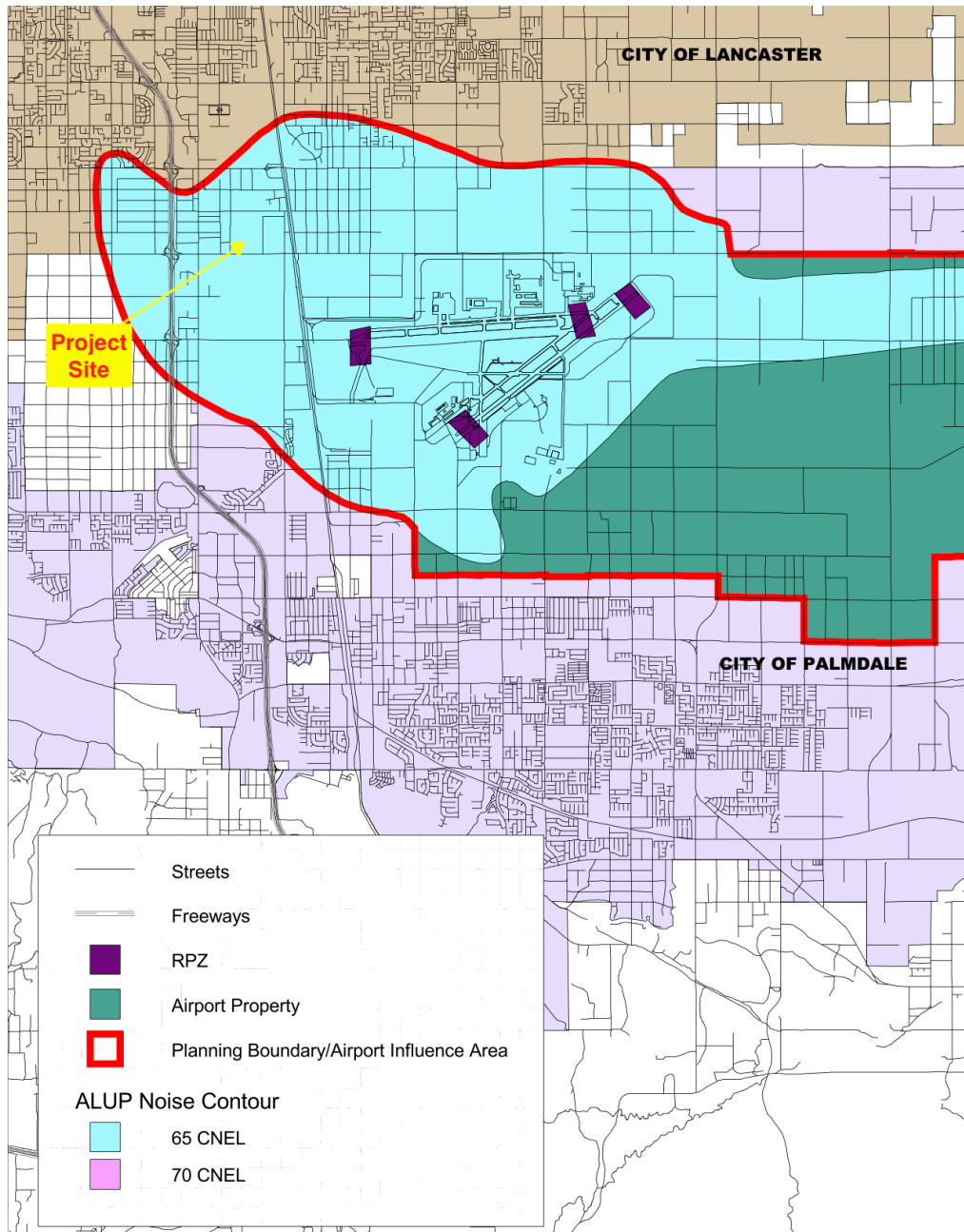
Ground-borne vibration levels from automobile traffic are generally overshadowed by vibration generated by heavy trucks that roll over the same uneven roadway surfaces. However, due to the rapid drop-off rate of ground-borne vibration and the short duration of the associated events, vehicular traffic-induced ground-borne vibration is rarely perceptible beyond the roadway right-of-way, and rarely results in vibration levels that would cause annoyance to people or damage to buildings in the vicinity.

4.6 Airport Noise

The Project site is located approximately 2.89 miles northwest of the Palmdale Regional Airport and United States Air Force Plant 42 and 1.5 miles northwest of the nearest end of a facility runway. Although the airport is not currently operating commercial flights the City of Palmdale is in negotiations with the United States Air Force and as such airport noise is included in this assessment. As shown in Exhibit 4-C Palmdale Regional Airport Influence Area and Noise Contour Map, the site is within the influence area and 65 CNEL noise contour. As the Project is an industrial use such uses are acceptable within the 65 CNEL noise contour and impacts would be less than significant.

Exhibit 4-C on following page.

Exhibit 4-C Palmdale Regional Airport Influence Area and Noise Contour Map



5.0 Conclusion

Based on the assessment in Section 4.0, through compliance with mandatory City requirements and ordinances to reduce noise during construction, the Project's construction noise impacts will not result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project. In addition, the Project's construction and operations vibration impacts as well as operational noise for mobile and stationary operational noise impacts to the environment are less than significant.

APPENDIX – A

Noise Measurements

Short Term Noise Measurements:

Number	Start Date	Start Time	End Time	Duration	Meas Mode	L _{Aeq}	L _{ASmax}	L _{ASmin}	L _{AS2%}	L _{AS8%}	L _{AS25%}	L _{AS50%}	L _{AS90%}
2	8/10/23	3:36:51 PM	3:51:50 PM	0:14:59	Single	55.6	68.3	44.1	62.7	59.7	55.8	52.6	48.1
3	8/10/23	4:01:31 PM	4:16:31 PM	0:15:00	Single	57.5	71	45.9	65.3	61.7	57.5	54.1	49.8
4	8/10/23	4:56:49 PM	5:11:48 PM	0:14:59	Single	70.4	86.2	49.8	76.5	73.8	71.3	68.3	59.1
5	8/10/23	5:18:55 PM	5:33:54 PM	0:14:59	Single	54	68.5	42.4	62.1	56.9	53.5	51.3	46.9
7	8/10/23	6:10:41 PM	6:12:11 PM	0:01:30	Auto	80.3	85.9	65	85.2	83.1	81.1	80	76.2
8	8/10/23	6:40:49 PM	6:42:43 PM	0:01:54	Auto	81	88.7	69.8	86.6	84.3	81.5	79.9	76.1

Long Term Noise Measurements:

LT-1

Number	Start Date	Start Time	End Time	Duration	L _{Zeq}	L _{Ceq}	L _{Aeq}	L _{Zfmax}	L _{Cfmax}	L _{Afmax}	L _{Zfmin}	L _{Cfmin}	L _{Afmin}	L _{AF10%}	L _{AF25%}	L _{AF50%}
1	8/10/23	1:56:11 PM	2:00:00 PM	0:03:49	83.4	79	68.6	98.2	92.1	88.5	63.1	59.6	44.9	70.9	65.3	61.4
2	8/10/23	2:00:02 PM	3:00:00 PM	0:59:58	93.2	87.7	68.5	110.5	107.2	97.1	67.7	64.2	49.5	68	64.1	60.6
3	8/10/23	3:00:02 PM	4:00:00 PM	0:59:58	90.8	85.4	62.1	105.7	100	89.4	67.6	63.8	46.4	63.7	60.6	57.6
4	8/10/23	4:00:02 PM	5:00:00 PM	0:59:58	88.6	83.1	58.6	106	99.5	78.9	64.8	62	45.3	61.5	58.6	55.9
5	8/10/23	5:00:02 PM	6:00:00 PM	0:59:58	86.7	81.5	59.1	102.6	98.1	84.1	63.2	60.9	45.5	60.7	57.6	54.5
6	8/10/23	6:00:02 PM	7:00:00 PM	0:59:58	88	82.9	60.5	104.7	100.7	83.7	60.6	59.1	46.4	62.1	58.1	54.9
7	8/10/23	7:00:02 PM	8:00:00 PM	0:59:58	86.3	80.7	57.3	104.2	99.4	84.3	60.8	58.6	45.6	59.3	56.1	53.5
8	8/10/23	8:00:02 PM	9:00:00 PM	0:59:58	82	76.3	55.6	105.6	98.8	84.8	61.3	58.8	43.9	57.2	54.7	52.6
9	8/10/23	9:00:02 PM	10:00:00 PM	0:59:58	76.4	72	55.1	94.7	90	75.7	56.4	54.7	42.2	56.2	53.8	51.6
10	8/10/23	10:00:02 PM	11:00:00 PM	0:59:58	69.6	65.4	51.8	92.5	86.8	69.6	56	54.4	42.4	54.1	51.8	49.7
11	8/10/23	11:00:02 PM	12:00:00 AM	0:59:58	80.5	75.4	61.8	99.7	95	92.7	54.7	52.7	41.5	55.9	52.3	49.6
12	8/11/23	12:00:02 AM	1:00:00 AM	0:59:58	79.5	74	57.4	99.1	93.9	87.2	55	52.8	39.3	54.3	50.5	47.5
13	8/11/23	1:00:02 AM	2:00:00 AM	0:59:58	72.8	67	50.2	92.2	85.2	77.1	54	51.4	37.6	50.3	47.7	45.4
14	8/11/23	2:00:02 AM	3:00:00 AM	0:59:58	79.3	73.5	52.3	98.2	92.8	75.5	53.9	51.8	38.5	54.5	51.4	47.9
15	8/11/23	3:00:02 AM	4:00:00 AM	0:59:58	70.9	67.9	56.1	88.8	88.5	80.9	55.6	52.4	39.6	55.8	51.5	48.6
16	8/11/23	4:00:02 AM	5:00:00 AM	0:59:58	80.5	74.8	55.9	99.8	91.9	80.8	58.6	55.7	40.7	56.7	54.4	52.3
17	8/11/23	5:00:02 AM	6:00:00 AM	0:59:58	71.6	69.9	53.6	87.2	86.8	76.2	57.5	55.6	43	55.3	53.4	51.6
18	8/11/23	6:00:02 AM	7:00:00 AM	0:59:58	70.4	67.6	54.6	87.3	87.1	77.4	59.1	56.6	44.7	56	54	52.2
19	8/11/23	7:00:02 AM	8:00:00 AM	0:59:58	73.4	69.8	54.9	91.5	85.5	75.6	61.5	59	44.4	56.6	54.1	52.2
20	8/11/23	8:00:02 AM	9:00:00 AM	0:59:58	79.1	74.2	56.4	100.2	94.3	81	62.5	59.5	41.8	57.3	54	51.4
21	8/11/23	9:00:02 AM	10:00:00 AM	0:59:58	77.6	72.6	53.5	98.3	91.1	76.3	59.4	56.8	40.9	54.5	52	49.7
22	8/11/23	10:00:02 AM	11:00:00 AM	0:59:58	78.1	73.4	57.4	108.6	103.4	84.2	58.6	56.2	41.4	54.7	51.7	49.4
23	8/11/23	11:00:02 AM	12:00:00 PM	0:59:58	80.5	76.2	61.8	102.7	98.7	89.8	58.9	56.1	40.3	56.9	52.8	49.5
24	8/11/23	12:00:02 PM	1:00:00 PM	0:59:58	79.1	74.2	54.3	99.1	93.7	75.2	60.7	58.1	42.3	56.8	52.8	50.3
25	8/11/23	1:00:02 PM	2:00:00 PM	0:59:58	81.8	77	56.5	100	93.8	82	61.1	58.9	43.3	57.8	54	51.4
26	8/11/23	2:00:02 PM	3:00:00 PM	0:59:58	84.6	79.7	57.5	105.1	100.9	79.4	62.1	59.8	43.5	60.5	56.2	52.5
27	8/11/23	3:00:02 PM	4:00:00 PM	0:59:58	86.6	81.7	59.1	105.3	98.3	84.6	61.8	59.5	44.9	61.5	58.4	55.4
28	8/11/23	4:00:00 PM	4:02:06 PM	0:02:06	83.1	79.3	78.3	104.6	99.3	100.8	64.5	61.6	45.4	77.6	67.2	55

LT-2

Number	Start Date	Start Time	End Time	Duration	LAeq	LAS25%	LAS50%
1	8/10/23	2:27:46 PM	3:00:00 PM	0:32:14	75.7	76.9	71.5
2	8/10/23	3:00:02 PM	4:00:00 PM	0:59:58	76.4	77.7	74.5
3	8/10/23	4:00:02 PM	5:00:00 PM	0:59:58	75.9	77.3	73.8
4	8/10/23	5:00:02 PM	6:00:00 PM	0:59:58	75.2	76.6	73.1
5	8/10/23	6:00:02 PM	7:00:00 PM	0:59:58	74.5	76	71.8
6	8/10/23	7:00:02 PM	8:00:00 PM	0:59:58	74	74.9	70.2
7	8/10/23	8:00:02 PM	9:00:00 PM	0:59:58	72.8	73.8	67.9
8	8/10/23	9:00:02 PM	10:00:00 PM	0:59:58	72.3	72.2	65
9	8/10/23	10:00:02 PM	11:00:00 PM	0:59:58	70.8	70.5	61.2
10	8/10/23	11:00:02 PM	12:00:00 AM	0:59:58	68.7	67.2	57.3
11	8/11/23	12:00:02 AM	1:00:00 AM	0:59:58	69.8	66.9	56.2
12	8/11/23	1:00:02 AM	2:00:00 AM	0:59:58	71.9	64.4	52.5
13	8/11/23	2:00:02 AM	3:00:00 AM	0:59:58	73.2	68.2	56.8
14	8/11/23	3:00:02 AM	4:00:00 AM	0:59:58	73.4	71.1	60.3
15	8/11/23	4:00:02 AM	5:00:00 AM	0:59:58	75.5	74.7	68.3
16	8/11/23	5:00:02 AM	6:00:00 AM	0:59:58	74.4	75.4	70
17	8/11/23	6:00:02 AM	7:00:00 AM	0:59:58	75.4	76.4	71.1
18	8/11/23	7:00:02 AM	8:00:00 AM	0:59:58	75.9	77.2	73.2
19	8/11/23	8:00:02 AM	9:00:00 AM	0:59:58	75	76.5	72.5
20	8/11/23	9:00:02 AM	10:00:00 AM	0:59:58	73.9	75	70.4
21	8/11/23	10:00:02 AM	11:00:00 AM	0:59:58	74.5	75.4	70.8
22	8/11/23	11:00:02 AM	12:00:00 PM	0:59:58	73.7	75	70.7
23	8/11/23	12:00:02 PM	1:00:00 PM	0:59:58	74.6	75.3	71
24	8/11/23	1:00:02 PM	2:00:00 PM	0:59:58	73.8	75.4	71.5
25	8/11/23	2:00:02 PM	3:00:00 PM	0:59:58	75.4	76	72.5
26	8/11/23	3:00:02 PM	4:00:00 PM	0:59:58	75.1	76.3	72.7
27	8/11/23	4:00:00 PM	4:11:43 PM	0:11:43	76	76.4	73.1

APPENDIX B

FHWA - RCNM Datasheets

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/08/2024
Case Description: Avenue M – Lancaster

**** Receptor #1 ****

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Motels to East	Residential	64.0	56.0	56.0

Equipment						
Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	60.0	0.0
Concrete Mixer Truck	No	40		78.8	60.0	0.0
Compressor (air)	No	40		77.7	60.0	0.0
Concrete Pump Truck	No	20		81.4	60.0	0.0
Crane	No	16		80.6	60.0	0.0
Dozer	No	40		81.7	60.0	0.0
Dump Truck	No	40		76.5	60.0	0.0
Excavator	No	40		80.7	60.0	0.0
Flat Bed Truck	No	40		74.3	60.0	0.0
Front End Loader	No	40		79.1	60.0	0.0
Generator	No	50		80.6	60.0	0.0
Grader	No	40	85.0		60.0	0.0
Man Lift	No	20		74.7	60.0	0.0
Paver	No	50		77.2	60.0	0.0
Pickup Truck	No	40		75.0	60.0	0.0
Roller	No	20		80.0	60.0	0.0
Scraper	No	40		83.6	60.0	0.0
Tractor	No	40	84.0		60.0	0.0
Welder / Torch	No	40		74.0	60.0	0.0

Results

Noise Limits (dBA)										
Noise Limit Exceedance (dBA)										

		Calculated (dBA)		Day		Evening		Night		
Day	Evening	Night								
Equipment		Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Leq	Lmax	Leq	Lmax	Leq						

Backhoe		76.0	72.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A							
Concrete Mixer Truck		77.2	73.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A							
Compressor (air)		76.1	72.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A							
Concrete Pump Truck		79.8	72.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A							
Crane		79.0	71.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A							
Dozer		80.1	76.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A							
Dump Truck		74.9	70.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A							
Excavator		79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A							
Flat Bed Truck		72.7	68.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A							
Front End Loader		77.5	73.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A							

Generator			79.0	76.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Grader			83.4	79.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Man Lift			73.1	66.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Paver			75.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Pickup Truck			73.4	69.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Roller			78.4	71.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Scraper			82.0	78.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Tractor			82.4	78.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Welder / Torch			72.4	68.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
		Total	83.4	87.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							

**** Receptor #2 ****

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
500 Feet From Site	Industrial	64.0	56.0	56.0

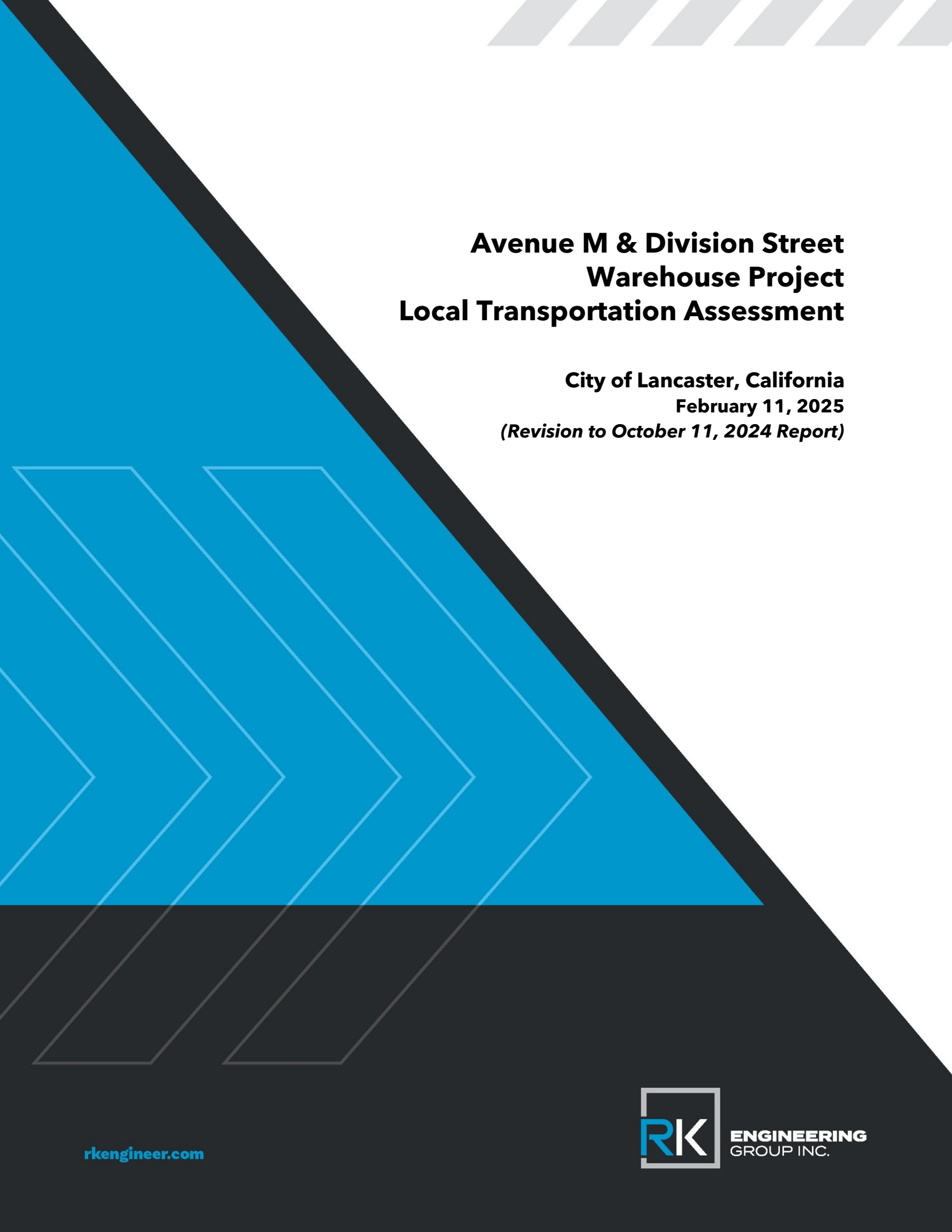
Description	Impact Device	Usage (%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	500.0	0.0
Concrete Mixer Truck	No	40		78.8	500.0	0.0
Compressor (air)	No	40		77.7	500.0	0.0
Concrete Pump Truck	No	20		81.4	500.0	0.0
Crane	No	16		80.6	500.0	0.0
Dozer	No	40		81.7	500.0	0.0
Dump Truck	No	40		76.5	500.0	0.0
Excavator	No	40		80.7	500.0	0.0
Flat Bed Truck	No	40		74.3	500.0	0.0
Front End Loader	No	40		79.1	500.0	0.0
Generator	No	50		80.6	500.0	0.0
Grader	No	40	85.0		500.0	0.0
Man Lift	No	20		74.7	500.0	0.0
Paver	No	50		77.2	500.0	0.0
Pickup Truck	No	40		75.0	500.0	0.0
Roller	No	20		80.0	500.0	0.0
Scraper	No	40		83.6	500.0	0.0
Tractor	No	40	84.0		500.0	0.0
Welder / Torch	No	40		74.0	500.0	0.0

Results

Noise Limit Exceedance (dBA)					Noise Limits (dBA)						
Day	Evening		Calculated (dBA)		Day	Evening		Night			
			Night								
Equipment			Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Leq	Lmax	Leq	Lmax	Leq							
Backhoe			57.6	53.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Concrete Mixer Truck			58.8	54.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							

Compressor (air)			57.7	53.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Concrete Pump Truck			61.4	54.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Crane			60.6	52.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Dozer			61.7	57.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Dump Truck			56.5	52.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Excavator			60.7	56.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Flat Bed Truck			54.3	50.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Front End Loader			59.1	55.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Generator			60.6	57.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Grader			65.0	61.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Man Lift			54.7	47.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Paver			57.2	54.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Pickup Truck			55.0	51.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Roller			60.0	53.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Scraper			63.6	59.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Tractor			64.0	60.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
Welder / Torch			54.0	50.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							
		Total	65.0	68.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A							

APPENDIX – C
Local Transportation Assessment
(LTA)



Avenue M & Division Street Warehouse Project Local Transportation Assessment

City of Lancaster, California
February 11, 2025
(Revision to October 11, 2024 Report)

Avenue M & Division Street Warehouse Project Revised Local Transportation Assessment

City of Lancaster, California

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1.0 Introduction

1.1 Purpose of Report & Study Objectives

The purpose of this traffic impact study is to evaluate the Avenue M & Division Street Warehouse Project (hereinafter referred to as "Project") from a traffic and circulation standpoint and to determine whether the Project has a significant traffic impact. This traffic study has been conducted pursuant to the *City of Lancaster Development Services Department Local Transportation Assessment Guidelines*, dated January 5, 2021 and the California Environmental Quality Act (CEQA) requirements.

This study is prepared in accordance with the scope of work that has been approved by the City of Lancaster, which is contained in **Appendix A**.

1.2 Site Location & Project Description

The project is located on the northwest corner of Avenue M and Division Street, in the City of Lancaster. The project site is currently vacant.

The proposed project consists of the construction of two warehouse/manufacturing buildings totaling 807,005 square feet (SF) on a 37.10-acre site. Building 1 is approximately 401,973 SF, which consists of 343,973 SF warehousing, 46,000 SF manufacturing, and 12,000 SF office. Building 2 is approximately 405,032 SF, which consists of 347,032 SF warehousing, 46,000 SF manufacturing, and 12,000 SF office.

A total of 443 auto parking spaces and 148 truck trailer parking spaces are proposed on-site. Access to the project is proposed via the following:

- One (1) full-access driveway along Avenue L-12;
- Three (3) full-access driveway along Division Street;
- One (1) full-access signalized driveway along Avenue M; and
- One (1) right-in/right-out driveway along Avenue M.

It should be noted that the full-access driveway along Avenue M will be aligned with the future signalized driveway of the Palmdale Logistics Park project, which is located directly south of the Project site.

The project will construct Division Street from Avenue L-12 to Avenue M, which will be improved as necessary to meet the City of Lancaster requirements. Additionally, the project will construct Avenue L-12 from the western Project site boundary to Division Street, which will be improved as necessary to meet the City of Lancaster requirements. The Project will coordinate with the properties north of the Project site to obtain adequate right-of-way for the realignment of Avenue L-12 to Sierra Highway.

The project is anticipated to open in 2026 and will be evaluated in one single phase.

Exhibit 1-1 shows the location map of the proposed project. **Exhibit 1-2** shows the proposed site plan.

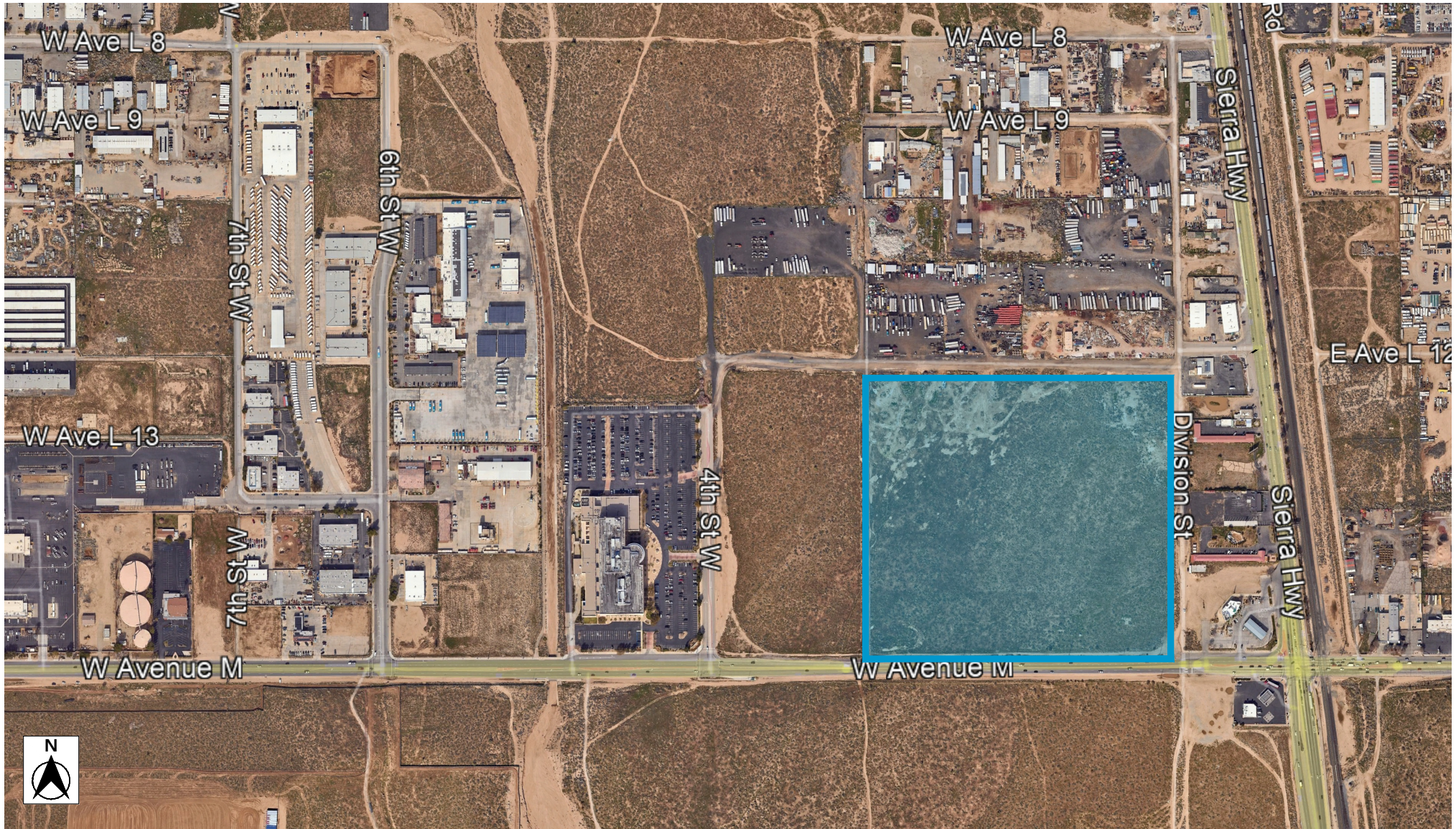
1.3 Traffic Study Area & Analysis Scenarios

Exhibit 1-3 illustrates the traffic analysis study area. The study area consists of the following six (6) study intersections, which are all located within the City of Lancaster.

1. SR-14 Southbound Ramps (N/S) at Avenue M (E/W);
2. SR-14 Northbound Ramps (N/S) at Avenue M (E/W);
3. 10th Street (N/S) at Avenue M (E/W);
4. Main Driveway (N/S) at Avenue M (E/W);
5. Sierra Highway (N/S) at Avenue M (E/W); and
6. Sierra Highway (N/S) at Avenue L-12 (E/W).

The analysis evaluates traffic conditions of the aforementioned study intersections for the following scenarios during the weekday (7:00 AM to 9:00 AM) and weekday PM (4:00 PM to 6:00 PM) peak periods, in accordance with the applicable jurisdictional traffic impact analysis guidelines for the City of Lancaster.

- Existing Conditions;
- Existing Plus Project Conditions;
- Existing Plus Project Conditions With Improvements;
- Existing Plus Ambient Growth and Related Projects Conditions;
- Existing Plus Ambient Growth and Related Projects Plus Project Conditions; and
- Existing Plus Ambient Growth and Related Projects Plus Project Conditions w/ Improvements.



Legend

— = Project Site Boundary

Exhibit 1-1 Location Map

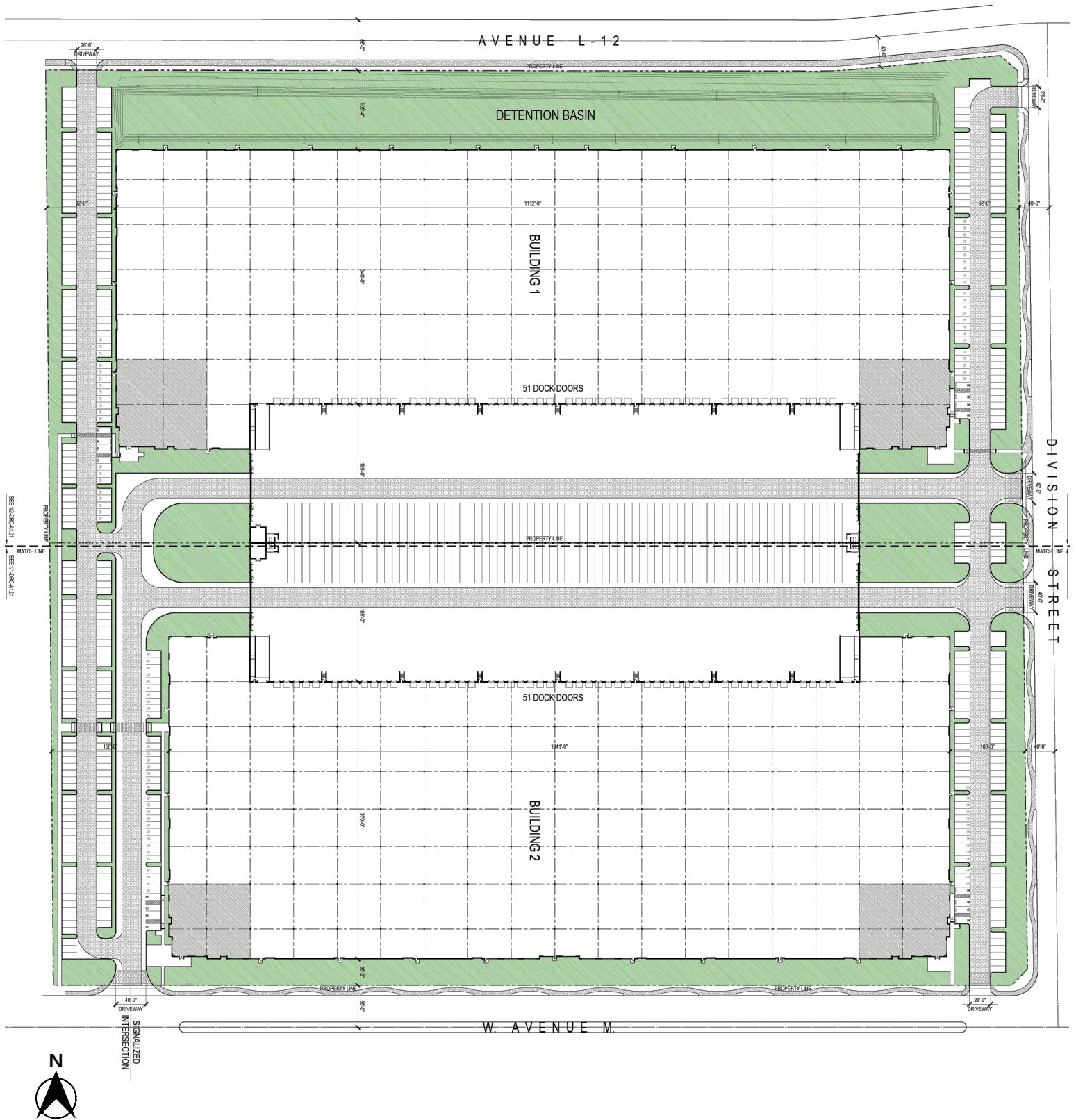
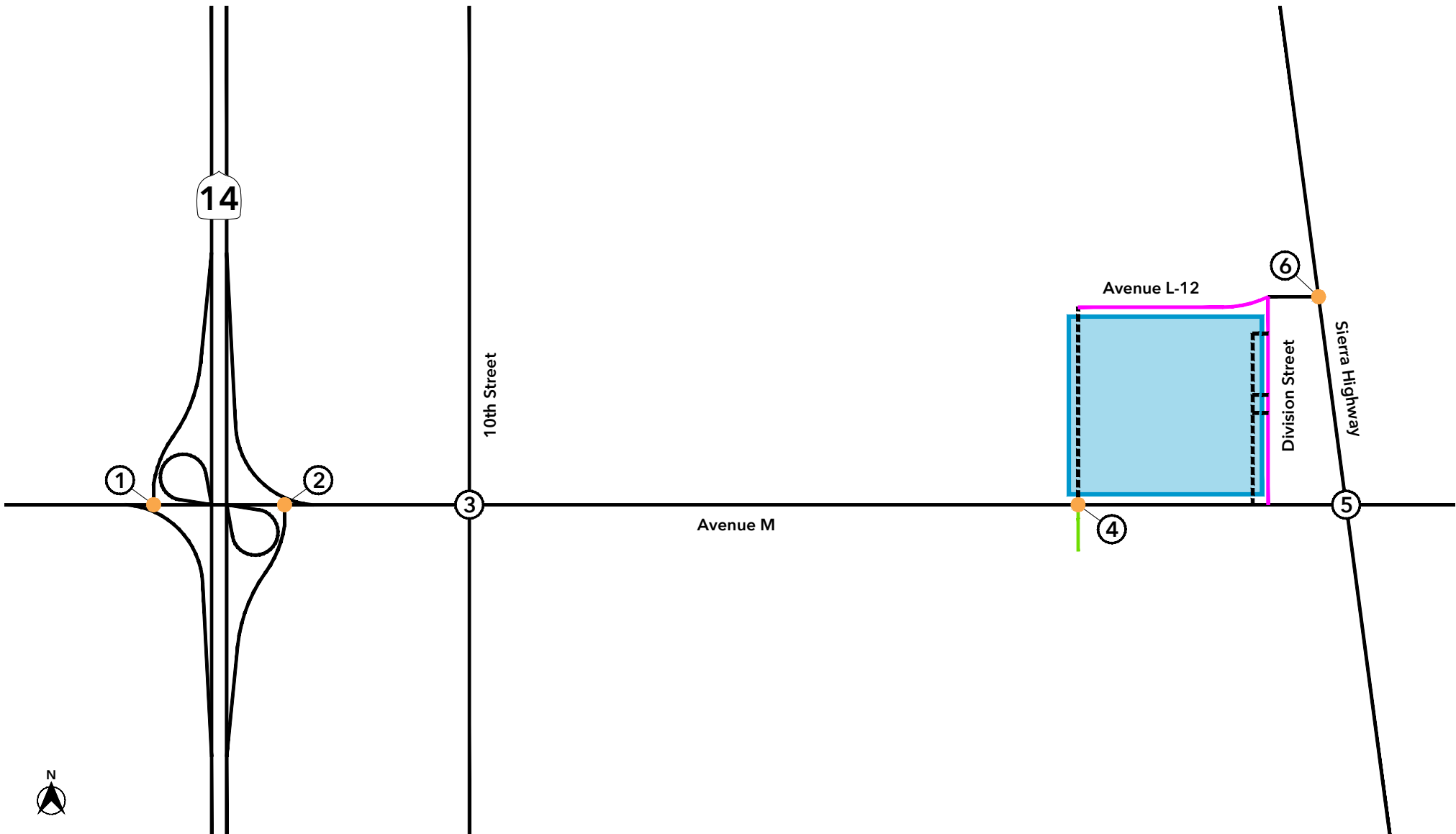


Exhibit 1-2

Site Plan



Legend

- ① = Study Intersection
- ② = Study Intersection
- ③ = Study Intersection
- ④ = Study Intersection
- ⑤ = Study Intersection
- ⑥ = Study Intersection
- = Project Site Boundary
- = Project-Specific Improvements
- = Future Palmdale Logistics Park Project Driveway
- - - = Project Access Driveway

Exhibit 1-3

Study Area

2.0 Analysis Methodologies & Performance Criteria

This section of the report summarizes the methodologies used to perform the traffic analyses in this report and discusses the agency-established applicable performance criteria and thresholds for requiring LOS improvements for the study facilities.

2.1 Study Intersection Peak Hour Level of Service (LOS) Analysis Methodology

In accordance with the *City of Lancaster Development Services Department Local Transportation Assessment Guidelines*, dated January 5, 2021 (TIA Guidelines), the Highway Capacity Manual Seventh Edition (HCM 7) is utilized as the technical guide in the evaluation of traffic operations.

The HCM defines level of service as a qualitative measure which describes operational conditions within a traffic stream, generally in terms of factors such as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. The criteria used to evaluate LOS (Level of Service) conditions vary based on the type of roadway and whether the traffic flow is considered interrupted or uninterrupted.

- **LOS A** (Free Flow / Insignificant Delays) describes traffic operations in which progression is exceptionally favorable or the cycle length is extremely short. Generally, LOS A operations for signalized intersections tend to result in most vehicles arriving during the green phase and traveling through the intersection without stopping.
- **LOS B** (Stable Operation / Minimal Delays) describes traffic operations in which progression slightly diminishes but is still considered highly favorable and the cycle length is short. Vehicles stop more often causing a marginal increase in average delay.
- **LOS C** (Stable Operation / Acceptable Delays) describes traffic operations in which progression is favorable and the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Many vehicles still pass through the intersection, but a significant number of vehicles are stopping. Average delay is fair.
- **LOS D** (Approaching Unstable / Tolerable Delays) describes traffic operations in which progression is ineffective and/or cycle length is long. Considerable amount of vehicles stop and individual cycle failures are noticeable. Average delay is adequate.
- **LOS E** (Unstable Operation / Significant Delays) describes traffic operations in which progression is unfavorable and the cycle length is exceedingly long. Individual cycle failures are frequent. Average delay is high.
- **LOS F** (Forced Flow / Excessive Delays) describes traffic operations in which progression is extremely poor and the cycle.

2.1.1 HCM (7th Edition) Methodology

Level of service is typically dependent on the quality of traffic flow at the intersection along a roadway. The Highway Capacity Manual 7th Edition (HCM 7) expresses the level of service at an intersection in terms of delay time for various intersection approaches. The HCM 7 uses different procedures depending on the type of intersection control. The levels of service determined in this study are calculated using the HCM 7 methodology.

For signalized intersections, average control delay per vehicle is used to determine the LOS. For all-way stop-controlled intersections, average control delay per vehicle is also used to determine the LOS.

For intersections with stop control on the minor approach only, the calculation of LOS is dependent on the occurrence of gaps in the free-flow traffic movement of the major street, and the LOS is determined based on the worst stop-controlled approach from the minor street or an individual movement from the major street, whichever is worse.

Table 2-1 shows the level of service criteria based on the HCM 7 methodology.

Table 2-1 | HCM Intersection LOS & Delay Ranges

LOS	Average Control Delay Per Vehicle (Seconds)	
	Signalized	Unsignalized
A	0.00 - 10.00	0.00 - 10.00
B	10.01 - 20.00	10.01 - 15.00
C	20.01 - 35.00	15.01 - 25.00
D	35.01 - 55.00	25.01 - 35.00
E	55.01 - 80.00	35.01 - 50.00
F	>80.00	>50.00

2.1.2 Analysis Parameters

For this study, the HCM level of service grades will be determined utilizing the HCM 7 methodology and the PTV Vistro analysis software. All analysis parameters utilized in this analysis are in accordance with the *City of Lancaster Development Services Department Local Transportation Assessment Guidelines*, dated January 5, 2021. Existing peak hour factors have been calculated based upon the manual turning movement counts collected at the study area intersections.

2.2 LOS Performance Criteria & Thresholds for Requiring LOS Improvements

The six (6) study intersections span over the following jurisdictions:

- City of Lancaster;
- Caltrans.

Hence, this study evaluates the potential traffic impacts associated with the proposed project for each study intersection based on the performance criteria and thresholds of significance set forth by the respective jurisdiction(s).

2.2.1 City of Lancaster

Determination of significant impacts will be based on a comparison of without and with project levels of service for each analysis year. A significant impact occurs if project traffic increases the average delay at an intersection by more than the thresholds identified below:

Table 2-2 | City of Lancaster Level of Service Criteria

Intersection Control	LOS Without Project	LOS With Project	Average Total Delay (Seconds Per Vehicle)	Project-Related Increase in LOS or Seconds of Average Total Delay
Signalized Intersections	A, B, C, or D	E or F	--	Any Increase in Delay
	E or F	E or F	>55.0	≥ 5.0 seconds
All-Way Stop	A, B, C, or D	E or F	--	Any Increase in Delay
	E or F	E or F	>35.0	≥ 3.0 seconds
Side-Street Stop	A, B, C, or D	LOS E	>35.0 to 50.0	LOS D or better to LOS E or worse and meets the peak hour warrant for a traffic signal
	LOS E	LOS F	>50.0	LOS E to LOS F, or > 10 seconds of delay for worst-case approach if already at LOS F; and meets the peak hour warrant for a traffic signal.

Additionally, if an all-way stop controlled intersection’s “plus project” LOS grade is E or F, the peak hour traffic signal and roundabout warrant analysis must be conducted.

Similarly for side-street stop intersections, the peak hour traffic signal warrant and/or all-way stop warrant should also be met as part of the performance criteria in order to ensure that minor street approaches with low traffic volumes are not identified as potentially needing improvements.

At intersections where a project impact is identified, improvements shall be recommended to offset the projects' effects.

2.2.2 Caltrans

The *Caltrans Guide for The Preparation of Traffic Impact Studies*, dated December 2002, previously defined Caltrans' methodology and significance thresholds for evaluating traffic operations on state highway facilities. These guidelines were subsequently replaced by the *Caltrans Vehicle Miles Traveled-Focused Transportation Impact Study Guide*, dated May 2020, in response to automobile delay no longer considered as a significant impact under the California Environmental Quality Act (CEQA) and Senate Bill (SB-743). Consequently, Caltrans now primarily focuses on vehicle miles traveled (VMT) when reviewing the impact of a land use project. Additionally, the *Caltrans Local Development Review (LDR) Safety Review Practitioner's Guidance*, dated February 2024, indicates that a local agency partner must alert Caltrans about a development review, in which Caltrans will determine if a safety review is required based on the screening criteria defined in the guidelines.

Furthermore, although Caltrans no longer requires an LOS analysis for review of development projects, the City of Lancaster still requires an LOS analysis to understand the possible influences the proposed project will have on the State Highway. As such, for the purpose of this analysis, the minimum acceptable level of service for state-controlled intersections is assumed to match the City of Lancaster's minimum standards.

2.2.3 Minimum Acceptable Level of Service

Given the LOS performance criteria and thresholds described above, this analysis utilizes the most constrained minimum acceptable LOS applicable to each study intersection. As such, the minimum acceptable LOS for all study intersections is LOS D.

3.0 Circulation System & Existing Conditions

This section provides a discussion of existing study area conditions and traffic volumes.

3.1 Existing Traffic Controls & Intersection Geometrics

Exhibit 3-1 identifies the existing roadway conditions for the study area roadways. The number of through traffic lanes for existing roadways and the existing intersection controls are identified. The type of traffic control and number of lanes at an intersection are key inputs for the calculation of level of service.

3.2 Existing Traffic Volumes

Existing conditions intersection level of service calculations are based upon manual AM and PM peak hour turning movement counts taken in May 2024 during typical weekday conditions. The weekday AM and PM peak hour traffic volumes were determined by counting the two-hour peak period from 7:00 AM to 9:00 AM, and from 4:00 PM to 6:00 PM, respectively, and using the highest hour within each two-hour peak period.

Traffic counts were converted to Passenger Car Equivalents (PCE) based on vehicle classifications. The following PCE conversion factors were utilized:

- 2-Axle Trucks - 1.5 PCE
- 3-Axle Trucks - 2.0 PCE
- 4+ Axle Trucks - 3.0 PCE

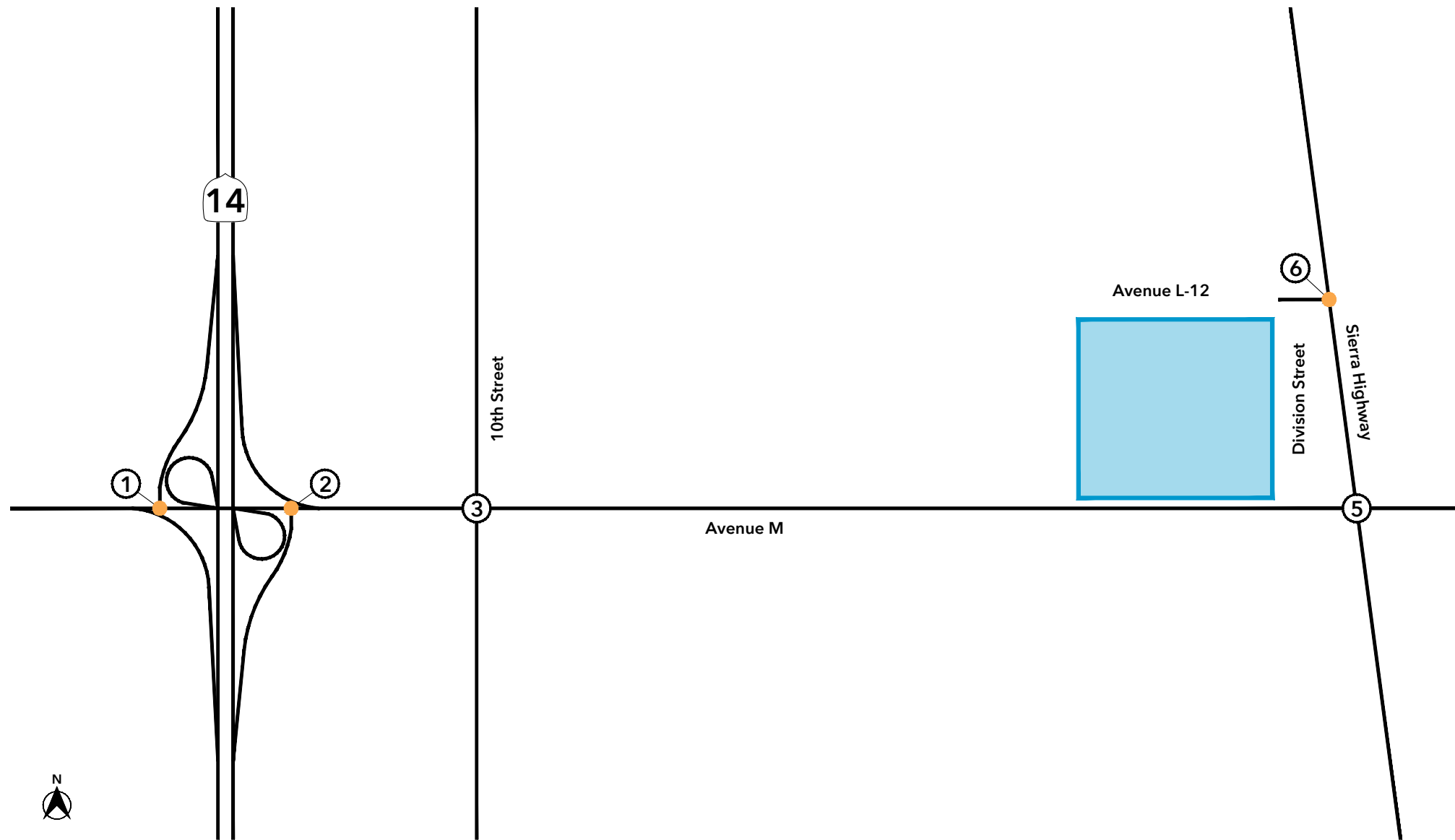
The traffic count worksheets are included in **Appendix B**. Existing PCE traffic volumes are provided in **Exhibit 3-2**.

3.3 City of Lancaster Master Plan of Streets and Highways

The City of Lancaster Master Plan of Streets and Highways is shown on **Exhibit 3-3**. The City of Lancaster Complete Streets Suggested Roadway Cross-Sections are shown on **Exhibit 3-4**.

The classifications for the roadway segments of the study intersections that appear as a major route or is part of a highway system that serves as principal network for through traffic are as follows:

- Avenue M - Major Arterial (Divided 6 lanes, 100 feet right-of-way)
- Sierra Highway - Major Arterial (Divided 6 lanes, 100 feet right-of-way)



Legend

- ① = Study Intersection
- = Project Site Boundary
- ⬤ = Traffic Signal
- ⬤ = Stop Sign
- ↗ = Free Right-Turn

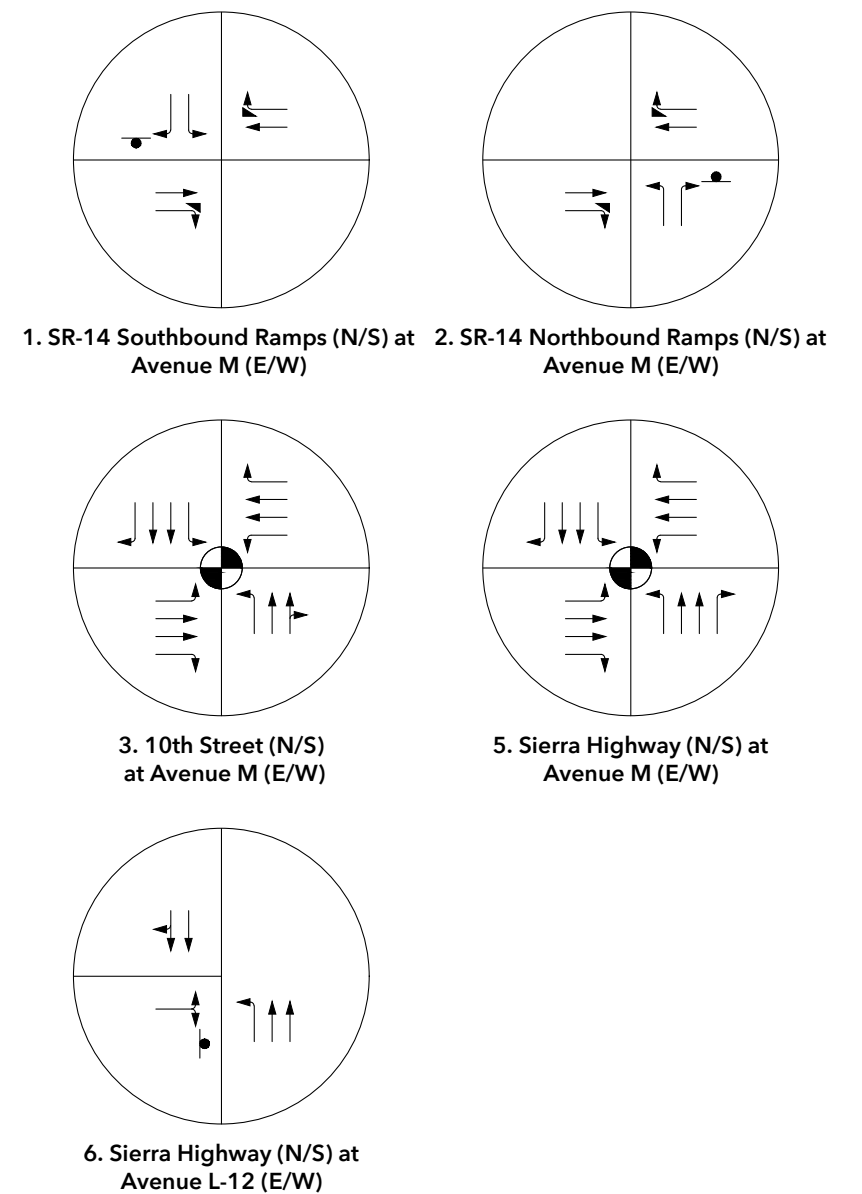
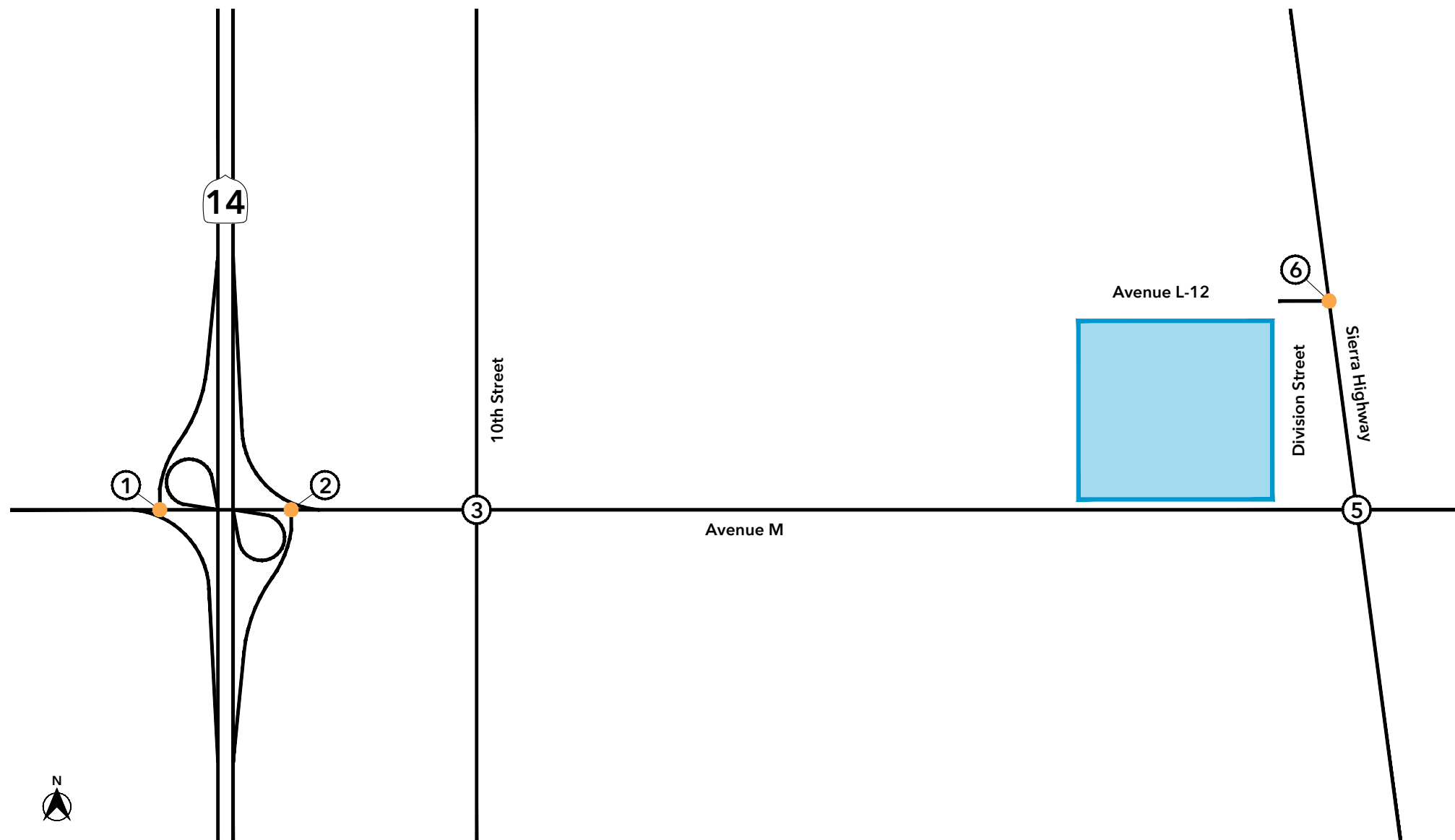


Exhibit 3-1

Existing Lane Geometry & Traffic Controls

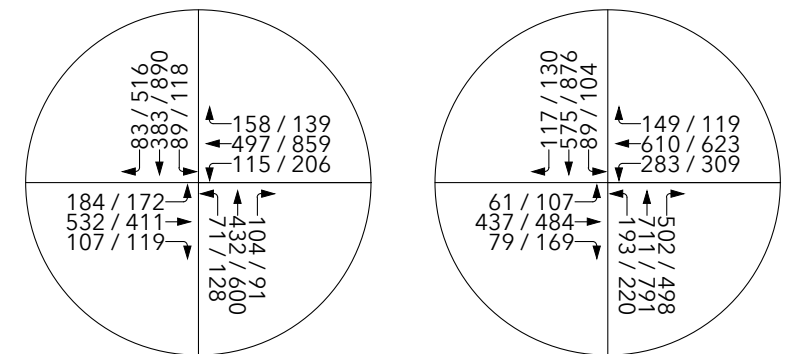


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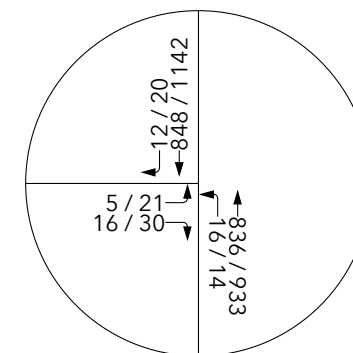
- ① = Study Intersection
- = Project Site Boundary
- = Project Access Driveway
- X / X = AM / PM Peak Hour Volumes



1. SR-14 Southbound Ramps (N/S) at Avenue M (E/W) 2. SR-14 Northbound Ramps (N/S) at Avenue M (E/W)



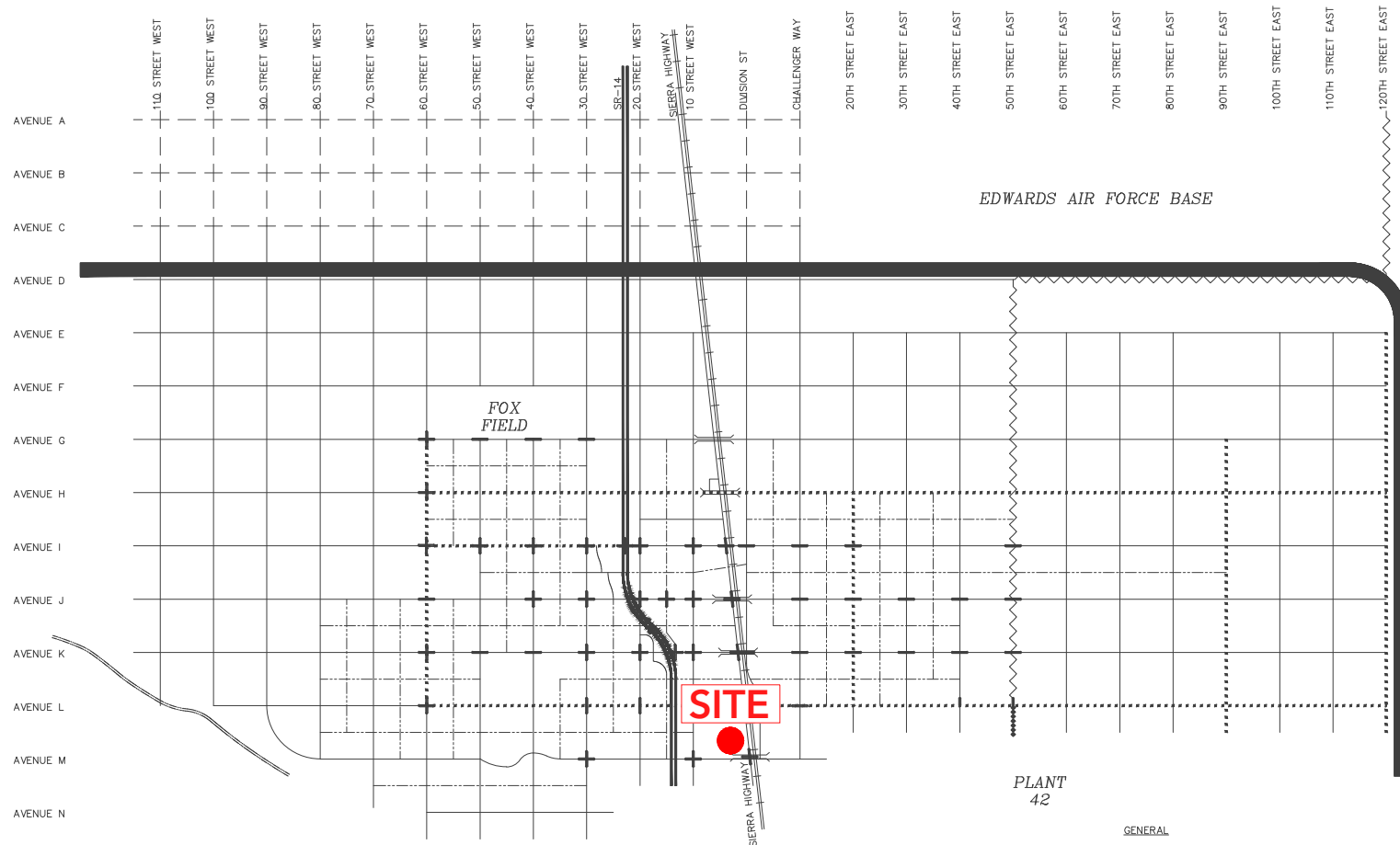
3. 10th Street (N/S) at Avenue M (E/W) 5. Sierra Highway (N/S) at Avenue M (E/W)



6. Sierra Highway (N/S) at Avenue L-12 (E/W)

Exhibit 3-2

Existing Passenger Vehicles Equivalent (PCE) Traffic Volumes



LEGEND

- | | | | |
|--|---|--|--|
| | FREEWAY | | INCREASED CAPACITY INTERSECTION (ALL APPROACHES) |
| | EXPRESSWAY (150' R/W) | | INCREASED CAPACITY INTERSECTION (EAST/WEST APPROACHES) |
| | PROPOSED HWY 138 BYPASS (300' R/W)
(ALIGNMENT NOT ADOPTED) | | INCREASED CAPACITY INTERSECTION (NORTH/SOUTH APPROACHES) |
| | REGIONAL ARTERIAL (120' R/W) | | PROPOSED GRADE SEPARATION |
| | MAJOR ARTERIAL (100' R/W) | | |
| | SECONDARY ARTERIAL (84' R/W) | | |
| | PROPOSED AEROSPACE VEHICLE TRANSPORT ROUTE (200' R/W) | | |
| | ROADWAY OF UNDEFINED WIDTH | | |

GENERAL

1. RIGHT-OF-WAY (R/W) ARE FOR MID-BLOCK LOCATIONS AND DO NOT INCLUDE ADDITIONAL R/W REQUIREMENTS FOR ACCELERATION AND/OR DECELERATION LANES, ADDITIONAL TURNING MOVEMENT LANES, TRANSIT TURNOUTS, TRAILS, BIKEWAYS, INCREASED CAPACITY INTERSECTIONS, OR FREEWAY INTERCHANGES.
2. INCREASED CAPACITY INTERSECTION INCLUDES PROVISIONS FOR DUAL LEFT-TURN LANES, SEPARATE RIGHT-TURN LANES PLUS THE FUTURE AMOUNT OF THROUGH TRAVEL LANES AND BIKE LANES (IF ROADWAY IS A PART OF TRAILS IN SYSTEM).
3. ALL ARTERIAL TO ARTERIAL STREETS (ANY CLASSIFIED ARTERIAL) AND ARTERIAL TO COLLECTOR STREETS SHALL HAVE A MINIMUM OF A SEPARATE RIGHT-TURN LANE IN ADDITION TO THE FUTURE AMOUNT OF THROUGH VEHICULAR LANES AND BIKE LANES, EXCEPT THOSE INTERSECTIONS DESIGNATED AS INCREASED CAPACITY INTERSECTIONS.
4. COLLECTOR STREETS (NOT SHOWN) WILL NORMALLY INTERSECT A REGIONAL AND MAJOR ARTERIAL STREETS AT THE QUARTER SECTION LINE WITH EXCEPTION FOR COLLECTOR STREET RESTRICTED TO RIGHT-TURN ONLY AT EIGHT SECTION LINES. COLLECTOR STREETS WILL NORMALLY INTERSECT SECONDARY ARTERIAL STREETS AT THE EIGHTH SECTION LINE.



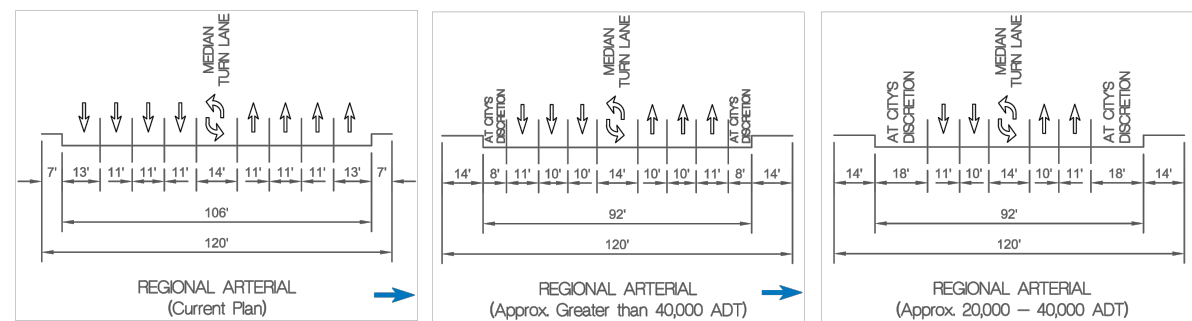
Legend

= Project Site

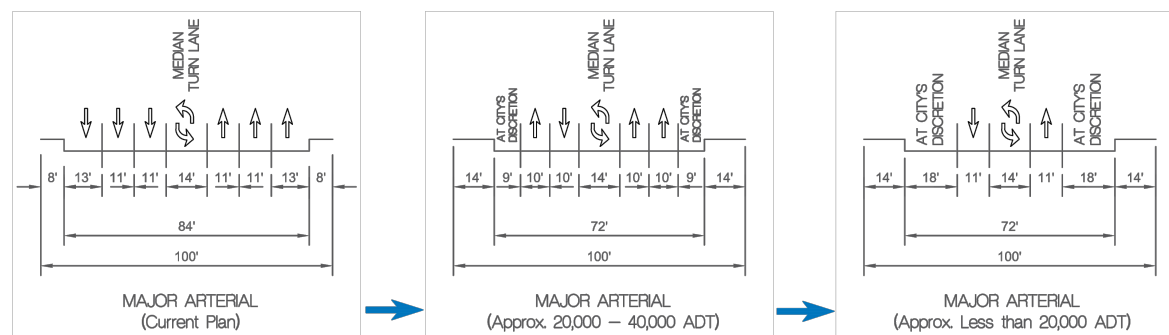
Exhibit 3-3

City of Lancaster Master Plan of Streets and Highways

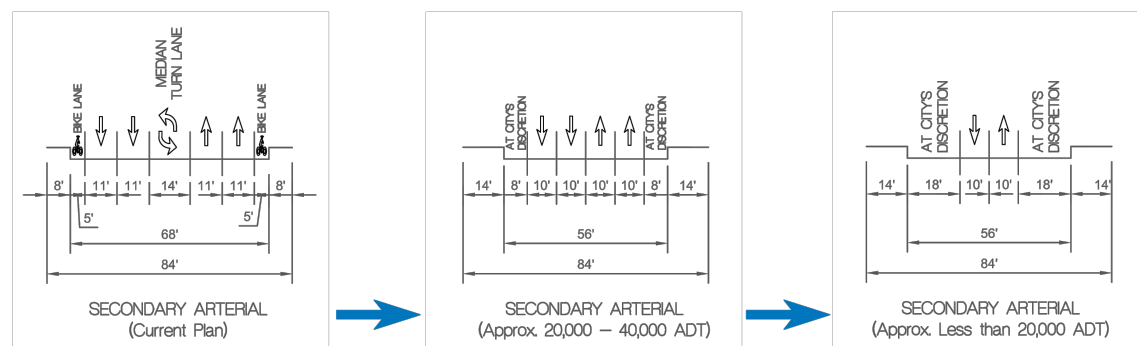




REGIONAL ARTERIALS: 120'+ ROW

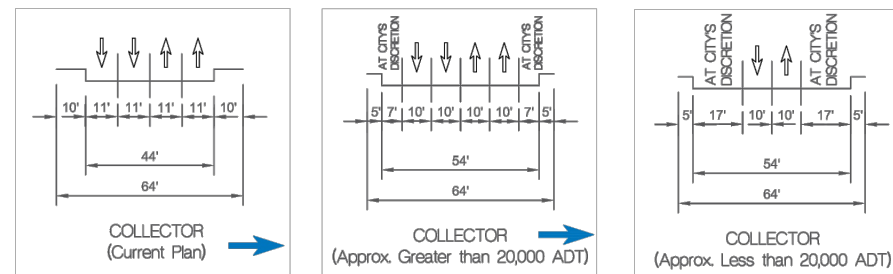


MAJOR ARTERIALS: 100'+ ROW

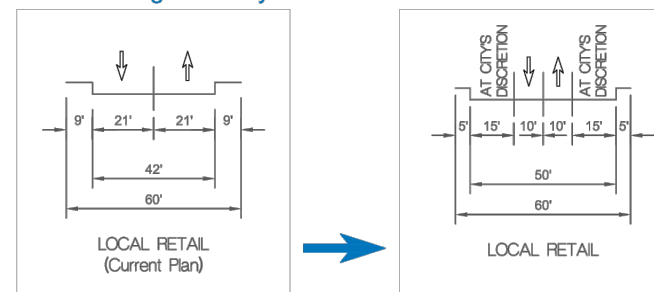


SECONDARY ARTERIALS: 84'+ ROW

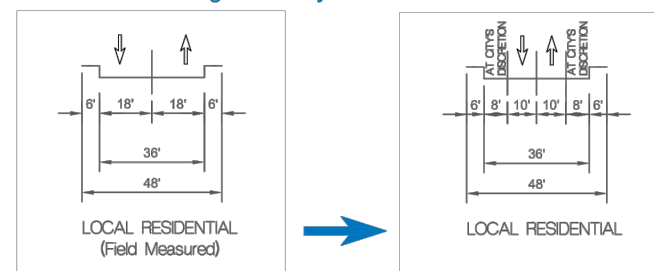
Collector Road Right-of-Way Distribution



Local Retail Right-of-Way Distribution



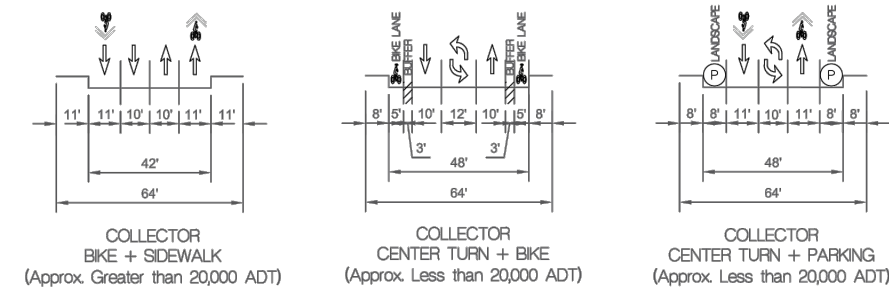
Local Residential Right-of-Way-Distribution



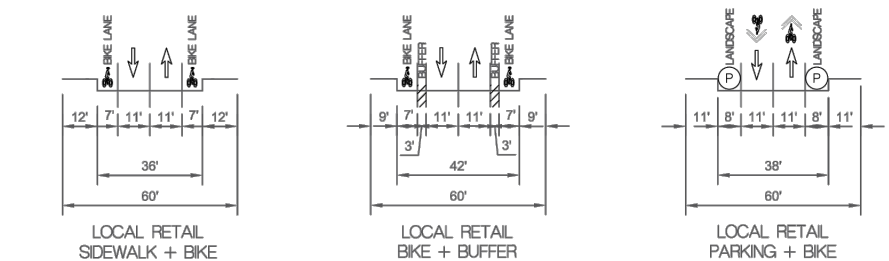
Lancaster Complete Streets - Suggested Road Cross Sections

COLLECTORS (64'+ ROW) & LOCAL ROADS (60' or Less ROW)

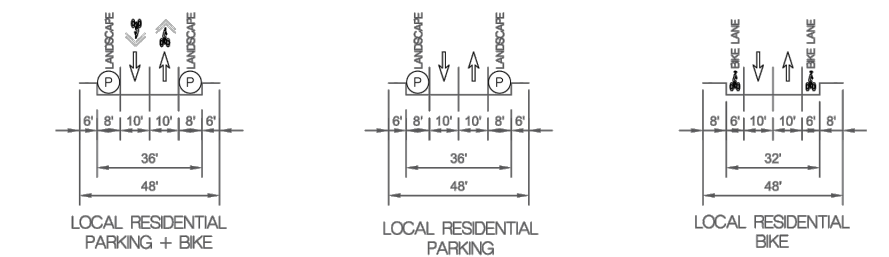
Example Road Cross Section Configurations for City Reference:



Example Road Cross Section Configurations for City Reference:



Example Road Cross Section Configurations for City Reference:



4.0 Future Traffic Volumes

This section provides a discussion on methodologies utilized to derive future traffic volumes for the study area.

4.1 Project Traffic Conditions

4.1.1 Project Trip Generation

Trip generation represents the amount of traffic that is attracted and produced by a development. Typically, trip generation rates from the latest Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition, 2021) are used when calculating a proposed project's trip generation forecast. This publication provides a comprehensive evaluation of trip generation rates for a variety of land uses.

As previously discussed, the project is proposing to construct two warehouse/manufacturing buildings totaling 807,005 square feet. The two buildings have a total gross floor area (GFA) of 691,005 SF warehousing, 92,000 SF manufacturing, and 24,000 SF of office use. It should be noted that the descriptions of these industrial uses, per the ITE Trip General Manual, 11th Edition, already include "office" as part of the GFA. However, to provide a conservative analysis, the 24,000 SF of office use is included in the trip generation for the manufacturing land use, which has a more intensive trip rate than the warehouse land use. As such, ITE Land Use 140: Manufacturing trip rates and ITE Land Use 150: Warehousing trip rates are the most appropriate for this project.

ITE land use 140: Manufacturing trip rates contain the following split percentages of passenger vehicles and trucks:

- AM Peak Hour - (95.6% passenger cars & 4.4% trucks)
- PM Peak Hour - (95.9% passenger cars & 4.1% trucks)
- Weekday Daily - (90.5% passenger cars & 9.5% trucks)

ITE land use 150: Warehousing trip rates contain the following split percentages of passenger vehicles and trucks:

- AM Peak Hour - (88.2% passenger cars & 11.8 % trucks)
- PM Peak Hour - (83.3% passenger cars & 16.7 trucks)
- Weekday Daily - (64.9% passenger cars & 35.1% trucks)

Moreover, these truck percentages were further broken down by axle type per the following South Coast Air Quality Management District (SCAQMD) recommended truck mix for "Without Cold Storage" uses: 2-Axle = 16.7%; 3-Axle = 20.7%; 4+-Axle = 62.5%.

Table 4-1 and **Table 4-2** show the ITE trip generation rates (11th Edition) utilized for the trip generation analysis of the proposed project land uses as well as the project's forecast peak hour and daily traffic volumes for ITE land use 140 and ITE land use 150.

Table 4-1 | Project Trip Generations & Forecasts¹
Manufacturing Land Use

Land Use	ITE Code	Quantity	Units ¹	Trip Type	Peak Hour						Daily
					AM			PM			
					In	Out	Total	In	Out	Total	
Trip Generation Rates ²											
Manufacturing	140	--	TSF	All Vehicles	0.52	0.16	0.68	0.23	0.51	0.74	4.75
				Trucks	0.02	0.01	0.03	0.01	0.02	0.03	0.45
				Passenger Cars	0.50	0.15	0.65	0.22	0.49	0.71	4.30
Vehicle Trip Generation											
Manufacturing	140	116.000	TSF	All Vehicles	60	19	79	27	59	86	551
Vehicle Mix Trip Generation ³											
Passenger Vehicles					58	18	76	26	56	82	499
2-Axle Trucks (16.7% of Total Trucks)					0	1	1	0	1	1	9
3-Axle Trucks (20.7% of Total Trucks)					1	0	1	0	1	1	11
4-Axle Trucks (62.5% of Total Trucks)					1	0	1	1	1	2	32
Total Trucks ⁴					2	1	3	1	3	4	52
Total Non-PCE Trip Generation					60	19	79	27	59	86	551
PCE Trip Generation ⁵											
Passenger Vehicles (PCE = 1.0)					58	18	76	26	56	82	499
2-Axle Trucks (PCE = 1.5)					0	2	2	0	2	2	14
3-Axle Trucks (PCE = 2.0)					2	0	2	0	2	2	22
4-Axle Trucks (PCE = 3.0)					3	0	3	3	3	6	96
Total PCE Trip Generation					63	20	83	29	63	92	631

¹ TSF = Thousand Square Feet

² Source: ITE Trip Generation Manual (11th Edition, 2021).

³ The truck fleet mix is based on South Coast Air Quality Management District's (SCAQMD) recommended truck fleet mix normalized percentages, by axle type, utilizing the "Without Cold Storage" building type.

⁴ The total truck percentages are based on the ITE Trip Generation Manual (11th Edition, 2021) recommended truck percentages based on land use type for the AM peak hour, PM peak hour, and ADT.

⁵ PCE = Passenger Car Equivalent

Table 4-2 | Project Trip Generations & Forecasts¹
Warehouse Land Use

Land Use	ITE Code	Quantity	Units ¹	Trip Type	Peak Hour						Daily
					AM			PM			
					In	Out	Total	In	Out	Total	
Trip Generation Rates ²											
Warehouse	150	--	TSF	All Vehicles	0.13	0.04	0.17	0.05	0.13	0.18	1.71
				Trucks	0.01	0.01	0.02	0.02	0.01	0.03	0.60
				Passenger Cars	0.12	0.03	0.15	0.03	0.12	0.15	1.11
Vehicle Trip Generation											
Warehouse	150	691.005	TSF	All Vehicles	90	27	117	35	89	124	1,182
Vehicle Mix Trip Generation ³											
Passenger Vehicles					83	20	103	24	79	103	767
2-Axle Trucks (16.7% of Total Trucks)					1	1	2	2	1	3	69
3-Axle Trucks (20.7% of Total Trucks)					1	2	3	2	2	4	86
4-Axle Trucks (62.5% of Total Trucks)					5	4	9	7	7	14	260
Total Trucks ⁴					7	7	14	11	10	21	415
Total Non-PCE Trip Generation					90	27	117	35	89	124	1,182
PCE Trip Generation ⁵											
Passenger Vehicles (PCE = 1.0)					83	20	103	24	79	103	767
2-Axle Trucks (PCE = 1.5)					2	1	3	3	2	5	104
3-Axle Trucks (PCE = 2.0)					2	4	6	4	4	8	172
4-Axle Trucks (PCE = 3.0)					15	12	27	21	21	42	780
Total PCE Trip Generation					102	37	139	52	106	158	1,823

¹ TSF = Thousand Square Feet

² Source: ITE Trip Generation Manual (11th Edition, 2021).

³ The truck fleet mix is based on South Coast Air Quality Management District's (SCAQMD) recommended truck fleet mix normalized percentages, by axle type, utilizing the "Without Cold Storage" building type.

⁴ The total truck percentages are based on the ITE Trip Generation Manual (11th Edition, 2021) recommended truck percentages based on land use type for the AM peak hour, PM peak hour, and ADT.

⁵ PCE = Passenger Car Equivalent

Table 4-3 summarizes the gross PCE project trip generation from Table 1 and 2.

Table 4-3 | Total Project Trip Generations & Forecasts¹

Land Use (ITE Code)	Quantity	Units ²	Weekday						Daily
			AM Peak Hour			PM Peak Hour			
			In	Out	Total	In	Out	Total	
Proposed PCE Trip Generation Forecast									
Manufacturing (140)	674.156	TSF	63	20	83	29	63	92	631
Warehouse (150)	121.195	TSF	102	37	139	52	106	158	1,823
Total PCE Project Trip Generation Forecast			165	57	222	81	169	250	2,454

¹ Source: ITE Trip Generation Manual (11th Edition, 2021)

² TSF = Thousand Square Feet

As shown in Table 4-3, based on the Institute of Transportation Engineers (ITE) trip generation rates, the proposed project is forecast to generate approximately 2,454 gross daily weekday trips, which include approximately 222 gross AM peak hour trips and 250 gross PM peak hour trips.

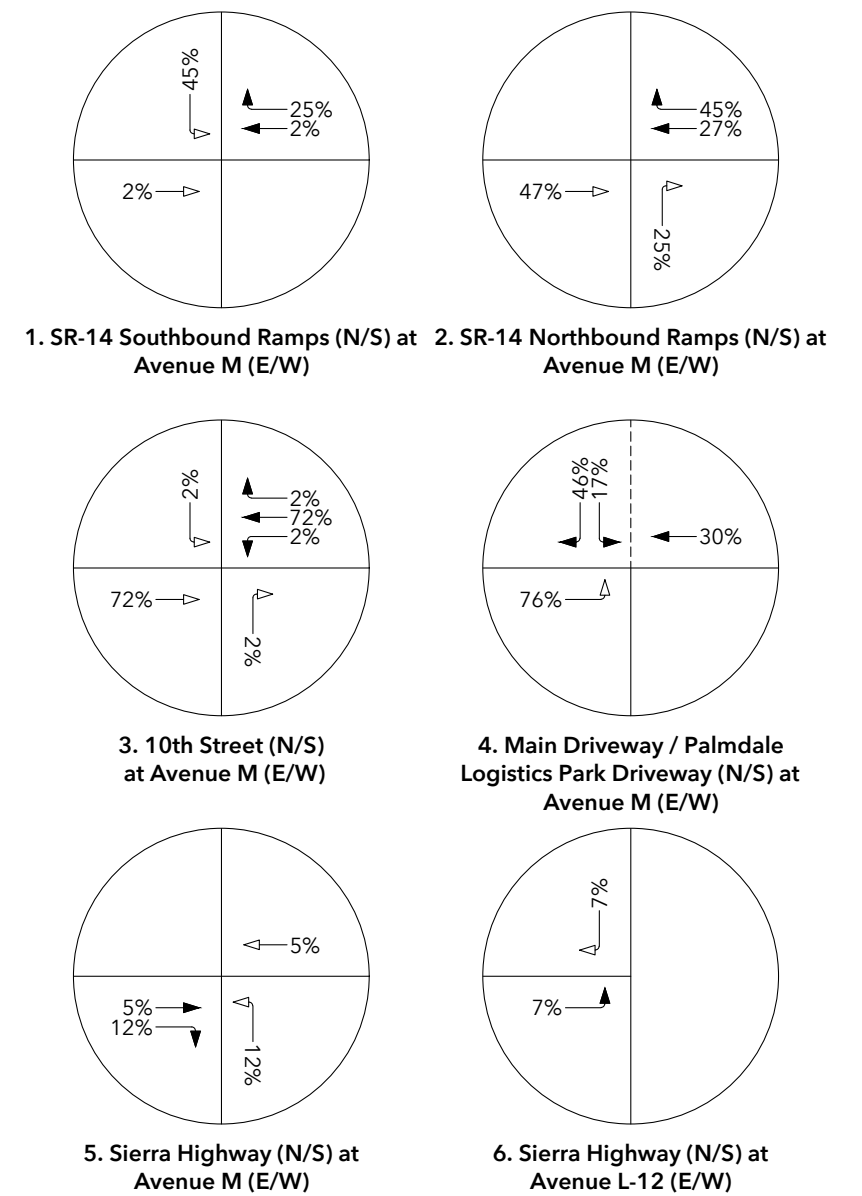
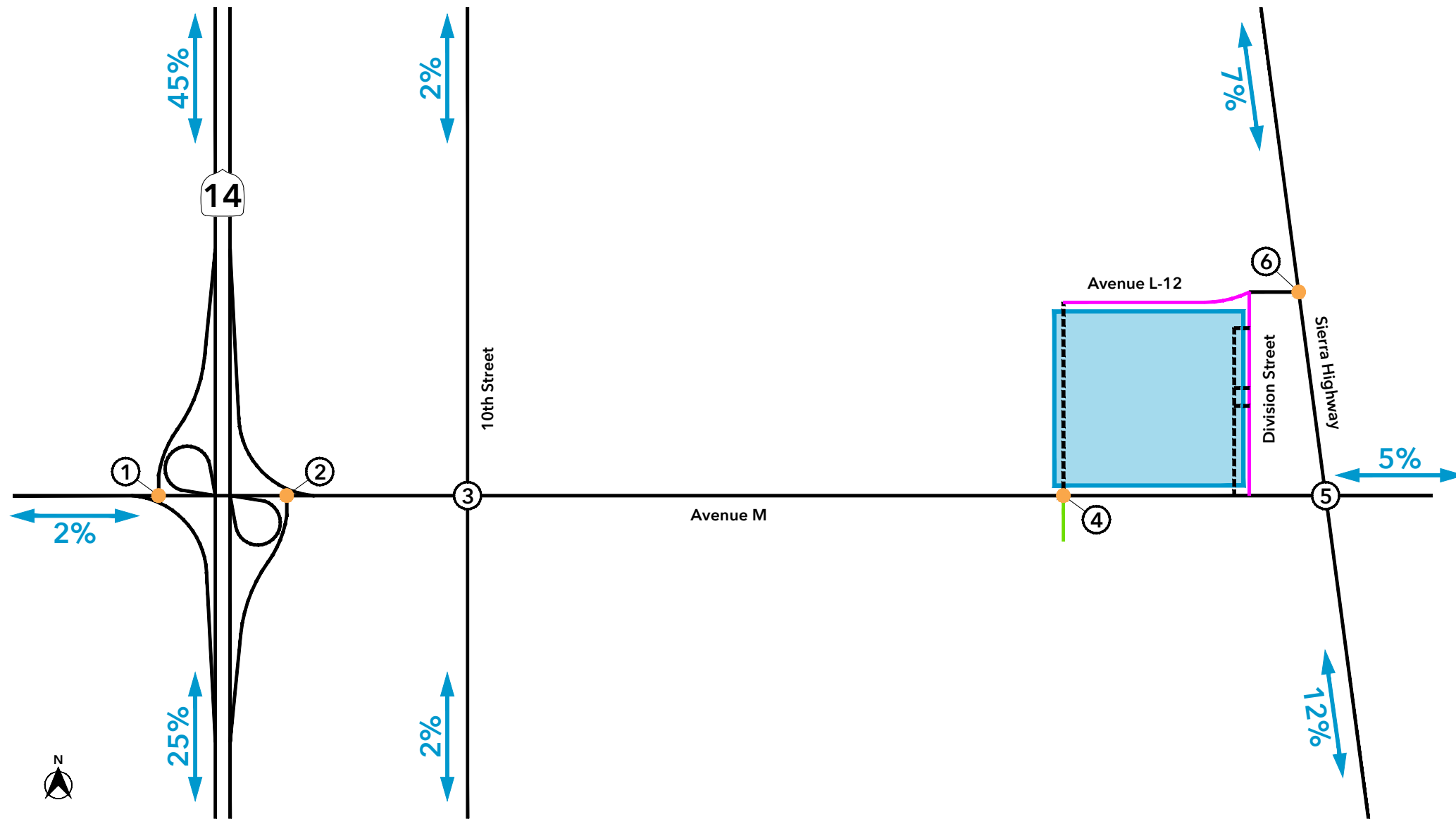
4.1.2 Project Specific Improvements

As previously discussed, the project will construct Division Street from Avenue L-12 to Avenue M, which will be improved as necessary to meet the City of Lancaster requirements. Additionally, the project will construct Avenue L-12 from the western Project site boundary to Division Street, which will be improved as necessary to meet the City of Lancaster requirements. The Project will coordinate with the properties north of the Project site to obtain adequate right-of-way for the alignment of Avenue L-12 at Sierra Highway.

4.1.3 Project Trip Distribution & Assignment

Trip distribution represents the directional orientation of traffic to and from the project site. Trip distribution is heavily influenced by the geographical location of the site, the location of residential, employment and recreational opportunities, and the proximity to the regional freeway system. The directional orientation of traffic was determined by evaluating existing and proposed land uses, highways within the community, and existing traffic volumes. The assignment of traffic from the project site to the adjoining roadway system has been based upon the site's trip generation, trip distribution, existing and proposed arterial highways, and local street systems, which would be in place by the time of initial occupancy of the site.

Exhibit 4-1 and **Exhibit 4-2** shows forecast project trip distribution for passenger vehicles and trucks, respectively.

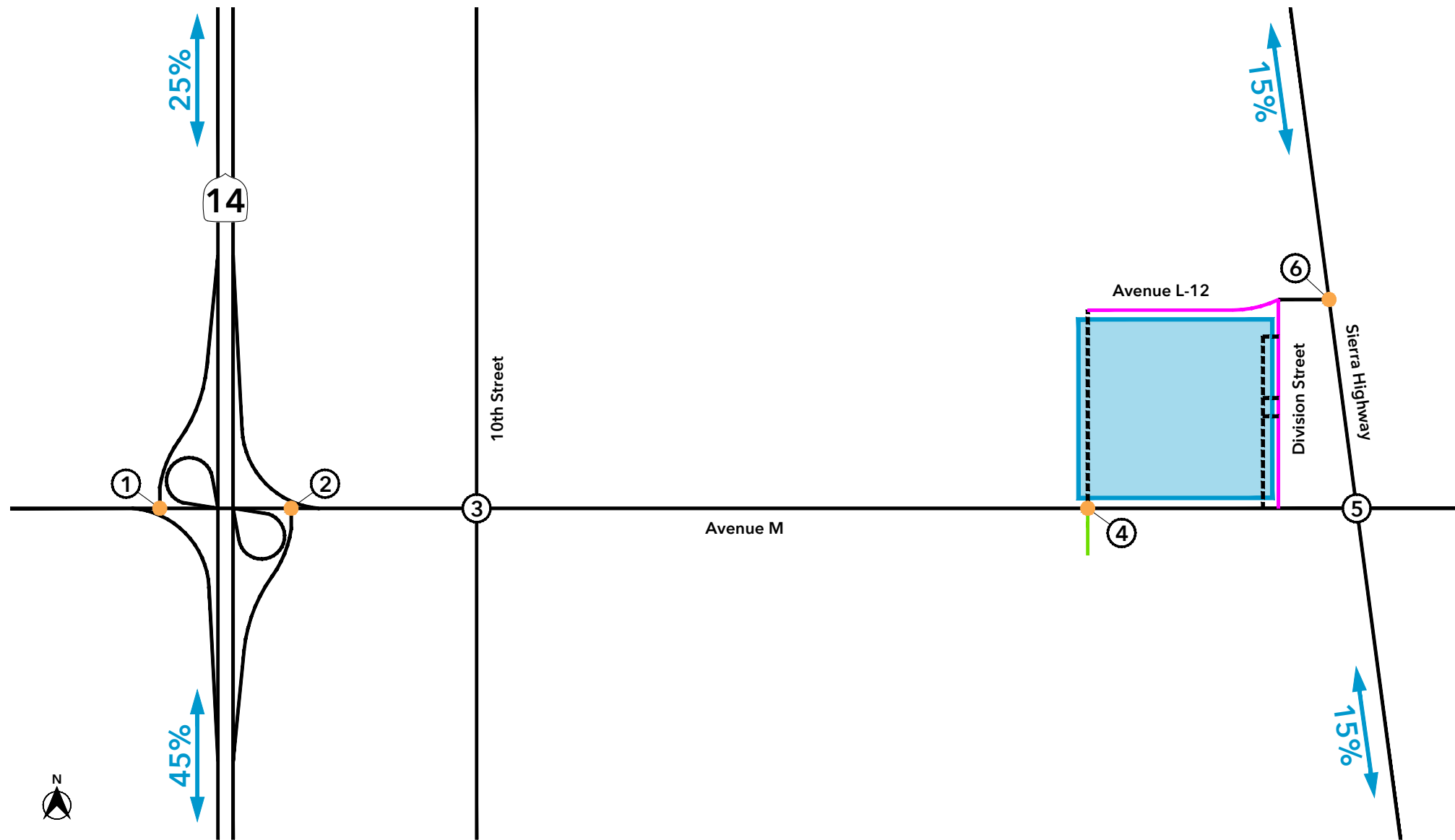


Legend

- ① = Study Intersection
- = Project Site Boundary
- - - = Project Access Driveway
- = Project-Specific Improvements
- = Future Palmdale Logistics Park Project Driveway
- ← = Outbound Percentage
- ← = Inbound Percentage

Exhibit 4-1

Project Trip Distribution - Passenger Vehicles



Legend

- ① = Study Intersection
- = Project Site Boundary
- - - = Project Access Driveway
- = Project-Specific Improvements
- = Future Palmdale Logistics Park Project Driveway
- ← = Outbound Percentage
- ↔ = Inbound Percentage

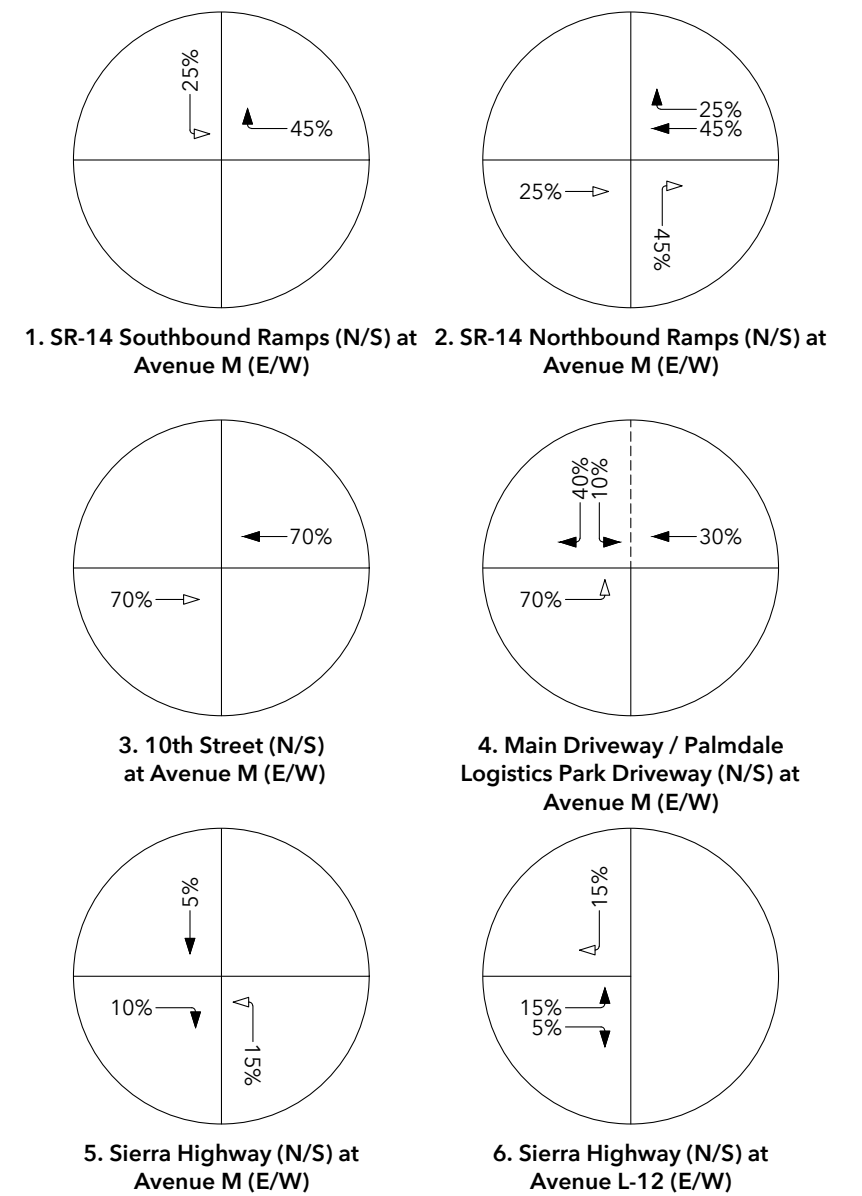


Exhibit 4-2

Project Trip Distribution - Trucks

4.1.4 Modal Split

Modal split denotes the proportion of traffic generated by a project that would use any of the transportation modes, namely buses, cars, bicycles, motorcycles, trains, carpools, etc. The traffic-reducing potential of public transit and other modes is significant. However, the traffic projections in this study are conservative in that public transit and alternative transportation may be able to reduce the traffic volumes, but no modal split reduction is applied to the projections. With the implementation of transit service and provision of alternative transportation ideas and incentives, the automobile traffic demand can be reduced significantly.

4.1.5 Project Peak Hour Traffic Volumes

Project peak hour and daily traffic volumes have been calculated throughout the study area. The project's AM and PM peak hour intersection turning movement volumes are shown on **Exhibit 4-3**.

4.1.6 Existing Plus Project Conditions Peak Hour Traffic Volumes

Existing Plus Project Conditions traffic volumes consist of existing traffic volumes plus traffic generated by the proposed project.

Existing Plus Project Conditions traffic volumes are shown on **Exhibit 4-4**.

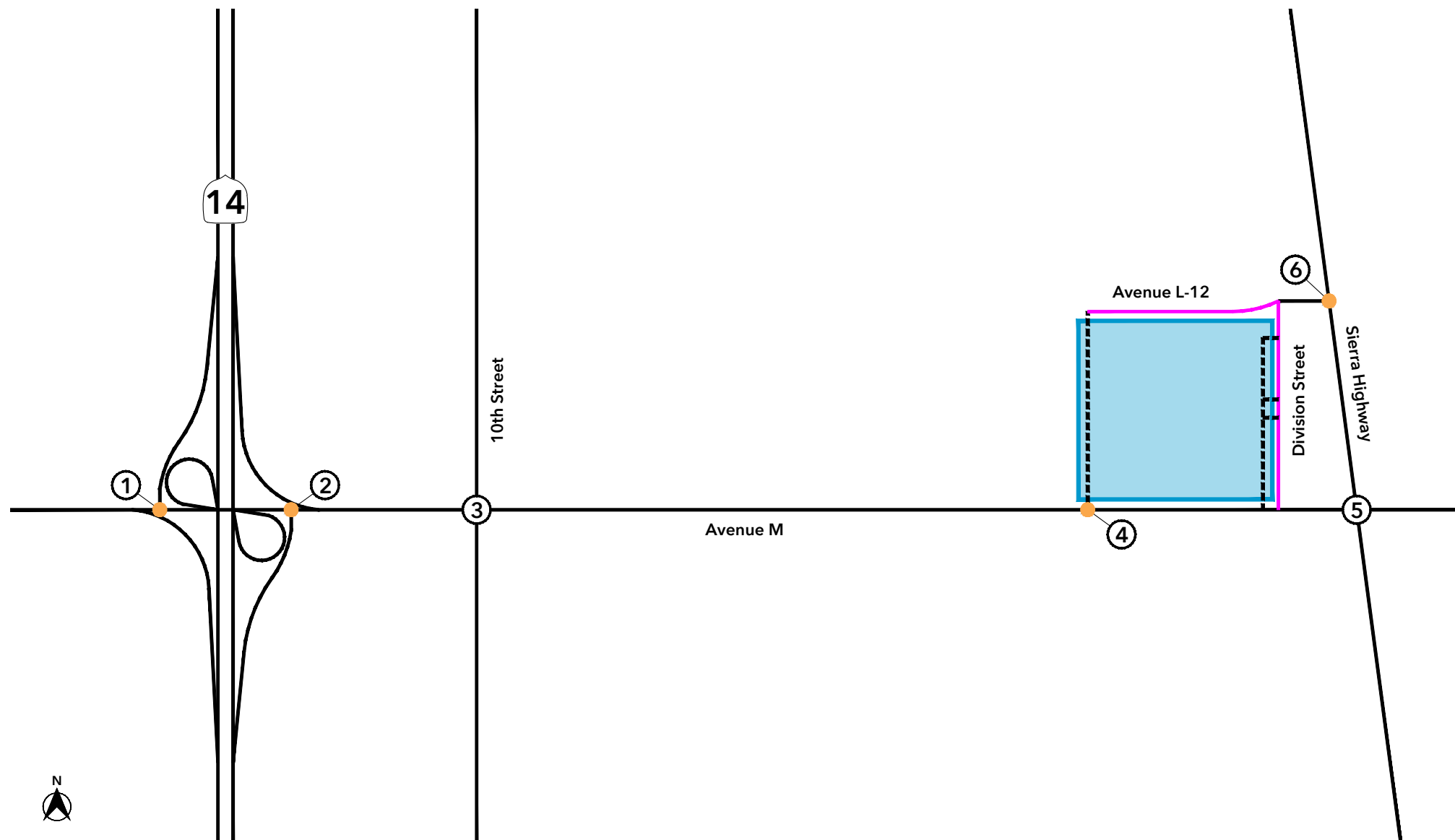
4.2 Planned Improvements

The existing intersection lane geometry at Intersection #3: 10th Street (N/S) at Avenue M (E/W) will be reconfigured as a result of the traffic improvement plan for the Palmdale Warehouse/Distribution Center Project (MM 22-057 / SPR 21-005). It is RK's understanding that the following are the proposed lane geometries after this planned improvement:

Intersection #3: 10th Street (N/S) at Avenue M (E/W)

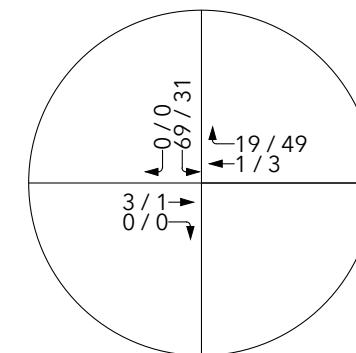
- The northbound approach is proposed to provide exclusive northbound dual left-turn lanes, three (3) northbound through lanes, and one (1) exclusive northbound right-turn lane.
- The southbound approach is proposed to provide exclusive southbound dual left-turn lanes, two (2) southbound through lanes, and one (1) exclusive southbound right-turn lane.
- The eastbound approach is proposed to provide exclusive eastbound dual left turns, one (1) eastbound through lane, and one (1) shared eastbound through/right-turn lane.
- The westbound approach is proposed to provide exclusive westbound dual left-turn lanes, two (2) westbound through lanes, and one (1) exclusive westbound right-turn lane.

The planned improvement at Intersection #3 is illustrated in **Exhibit 4-5**. Exhibit 4-5 also shows the planned improvements (i.e., driveway access for the Palmdale Warehouse/Distribution Center Project) and project-specific improvements at Intersection 4.

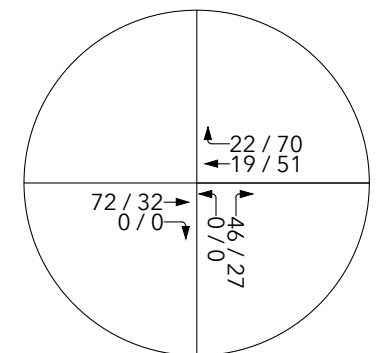


Legend

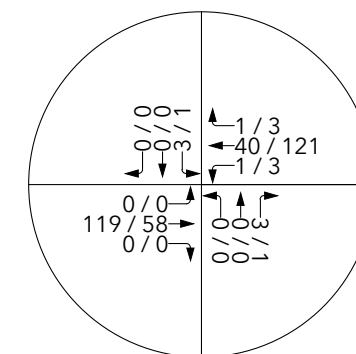
- ① = Study Intersection
- = Project Site Boundary
- = Project Access Driveway
- = Project-Specific Improvements
- X / X = AM / PM Peak Hour Volumes



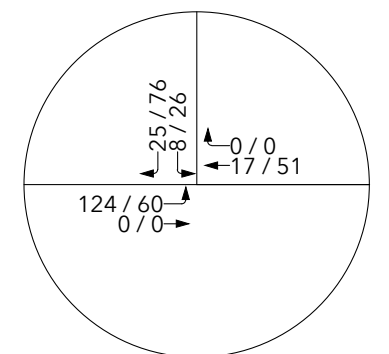
1. SR-14 Southbound Ramps (N/S) at Avenue M (E/W)



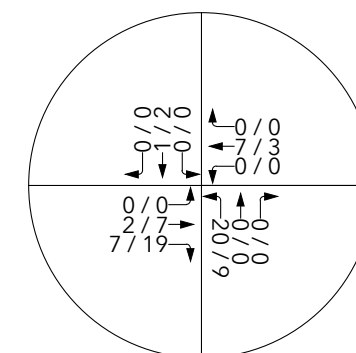
2. SR-14 Northbound Ramps (N/S) at Avenue M (E/W)



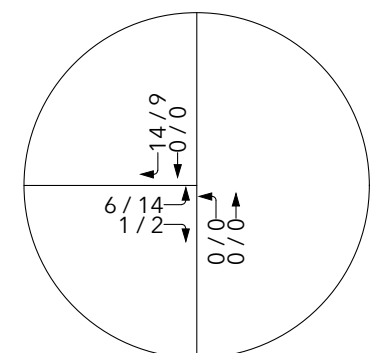
3. 10th Street (N/S) at Avenue M (E/W)



4. Main Driveway / Palmdale Logistics Park Driveway (N/S) at Avenue M (E/W)



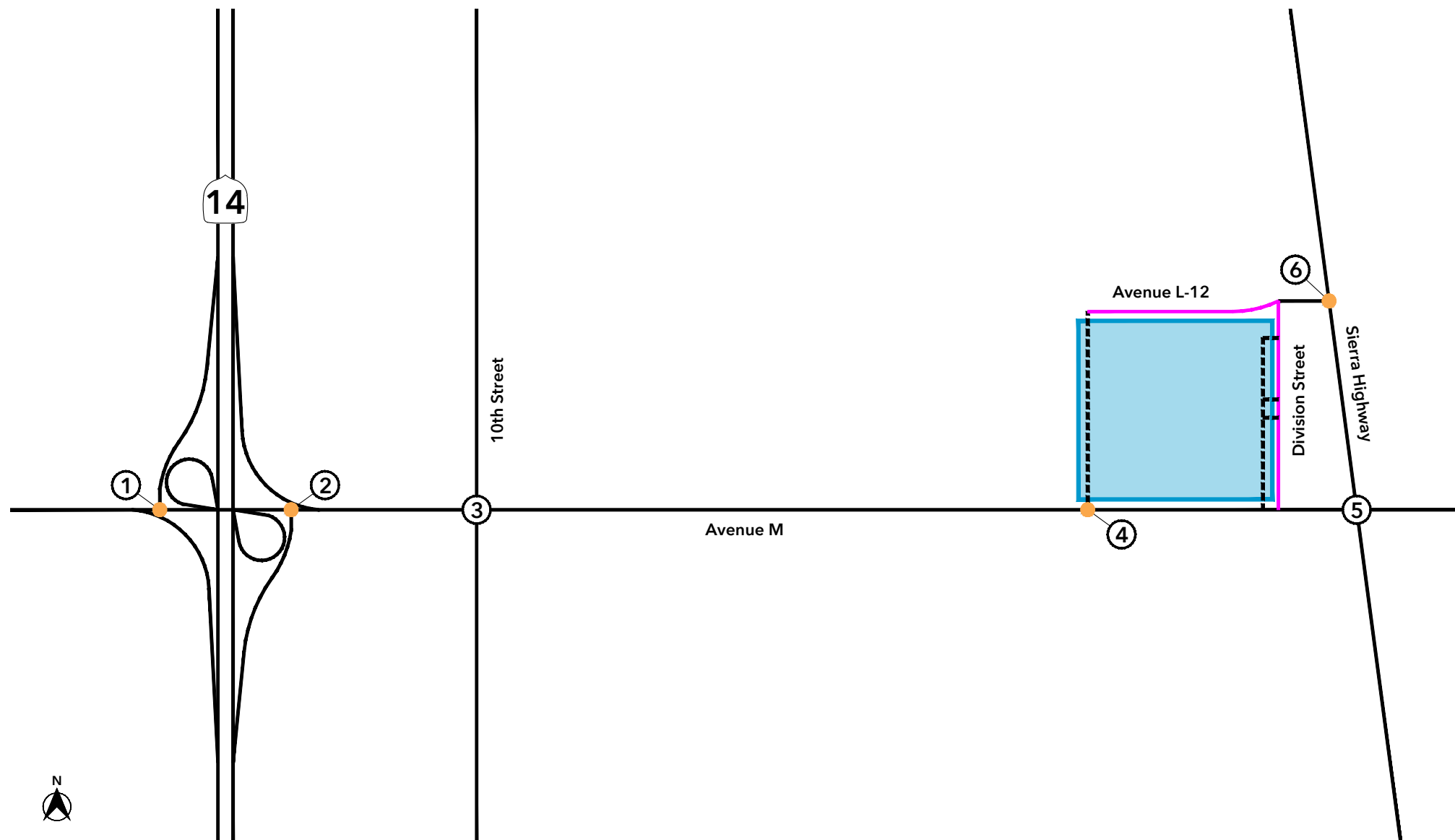
5. Sierra Highway (N/S) at Avenue M (E/W)



6. Sierra Highway (N/S) at Avenue L-12 (E/W)

Exhibit 4-3

Project Traffic Volumes



Legend

- ① = Study Intersection
- = Project Site Boundary
- - - = Project Access Driveway
- = Project-Specific Improvements
- X / X = AM / PM Peak Hour Volumes

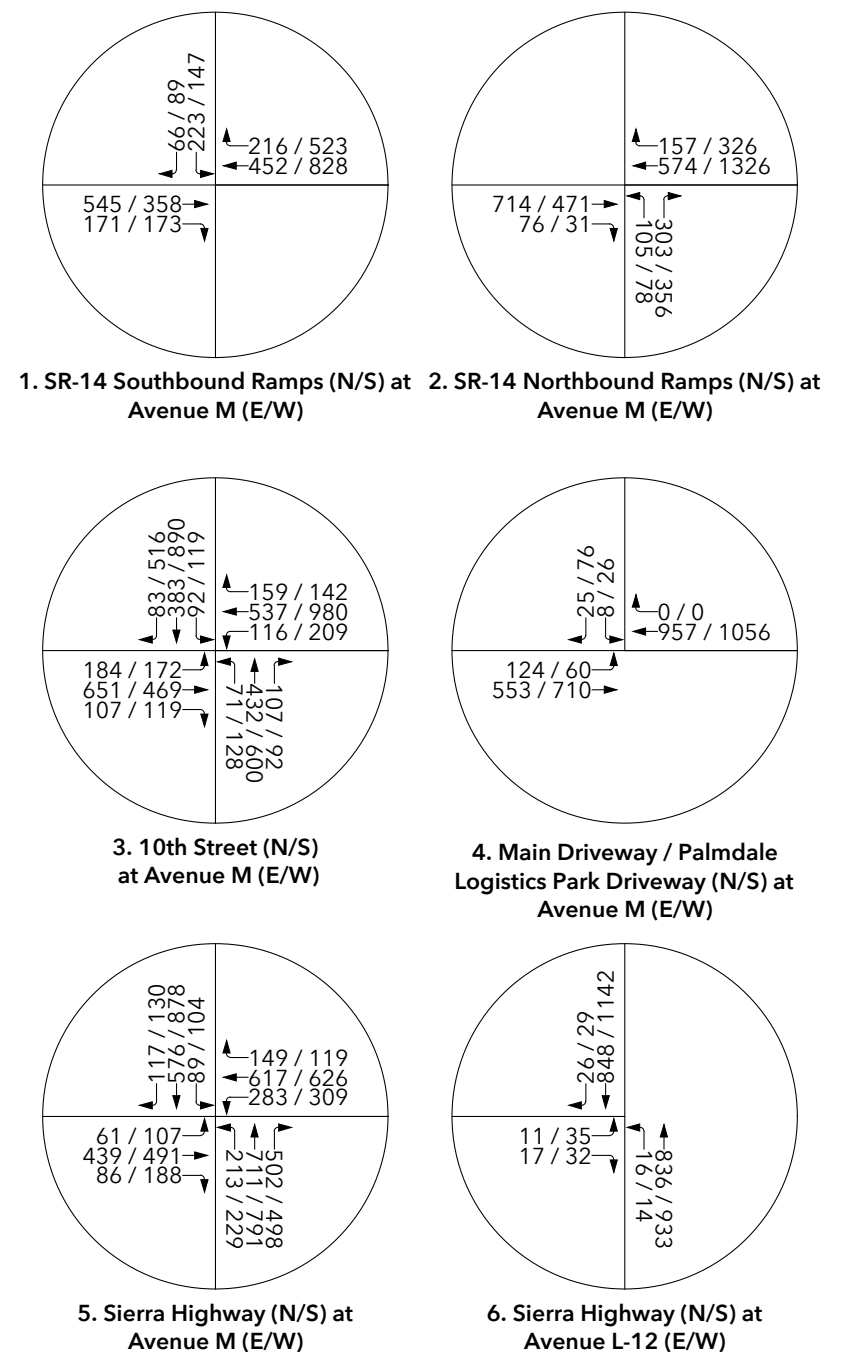
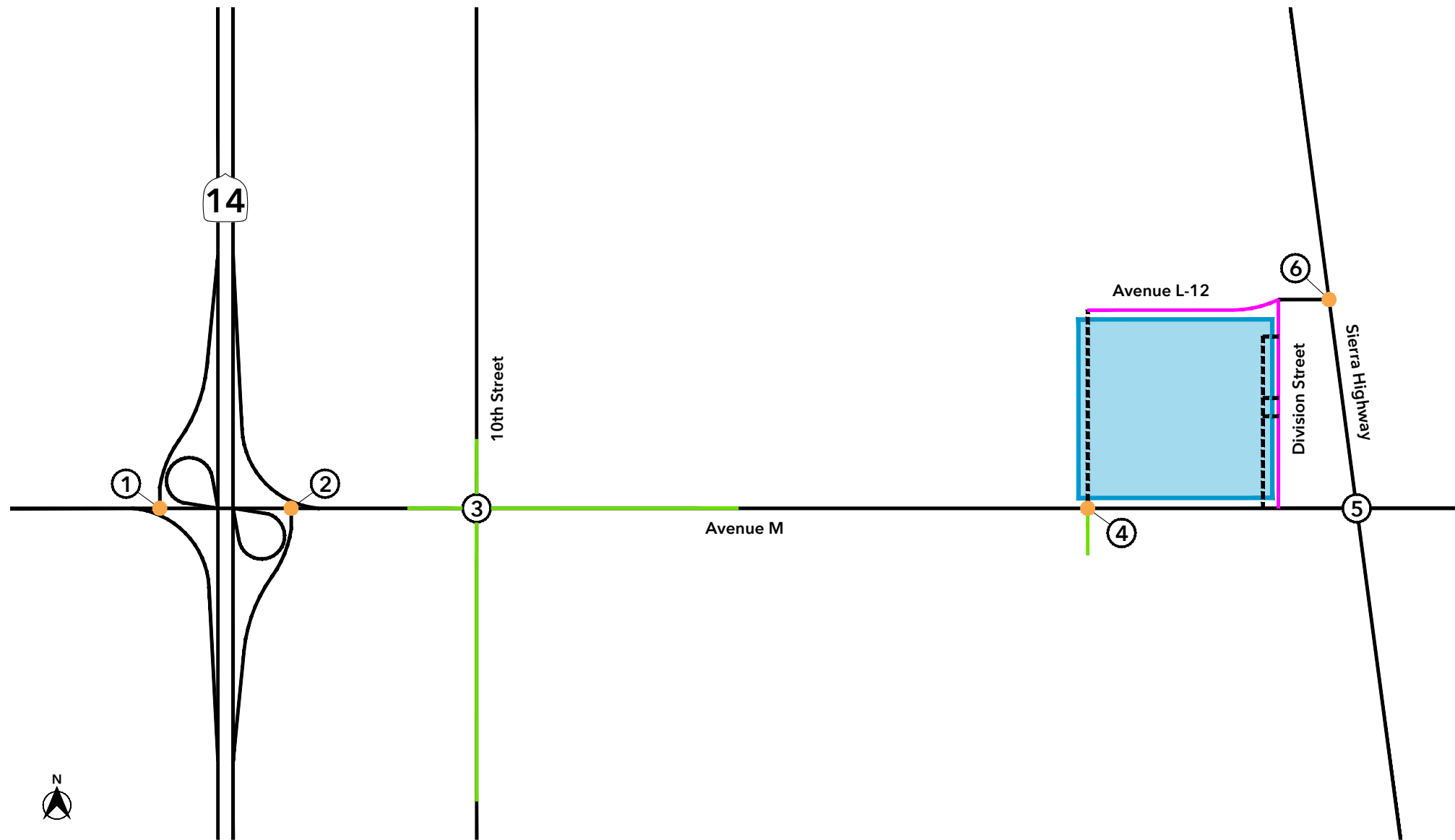


Exhibit 4-4

Existing Plus Project Conditions Traffic Volumes



Legend

- ① = Study Intersection
- = Project Site Boundary
- - - = Project Access Driveway
- = Project-Specific Improvements
- = Planned Improvements
- ⬤ = Traffic Signal
- = Stop Sign
- ↗ = Free Right-Turn

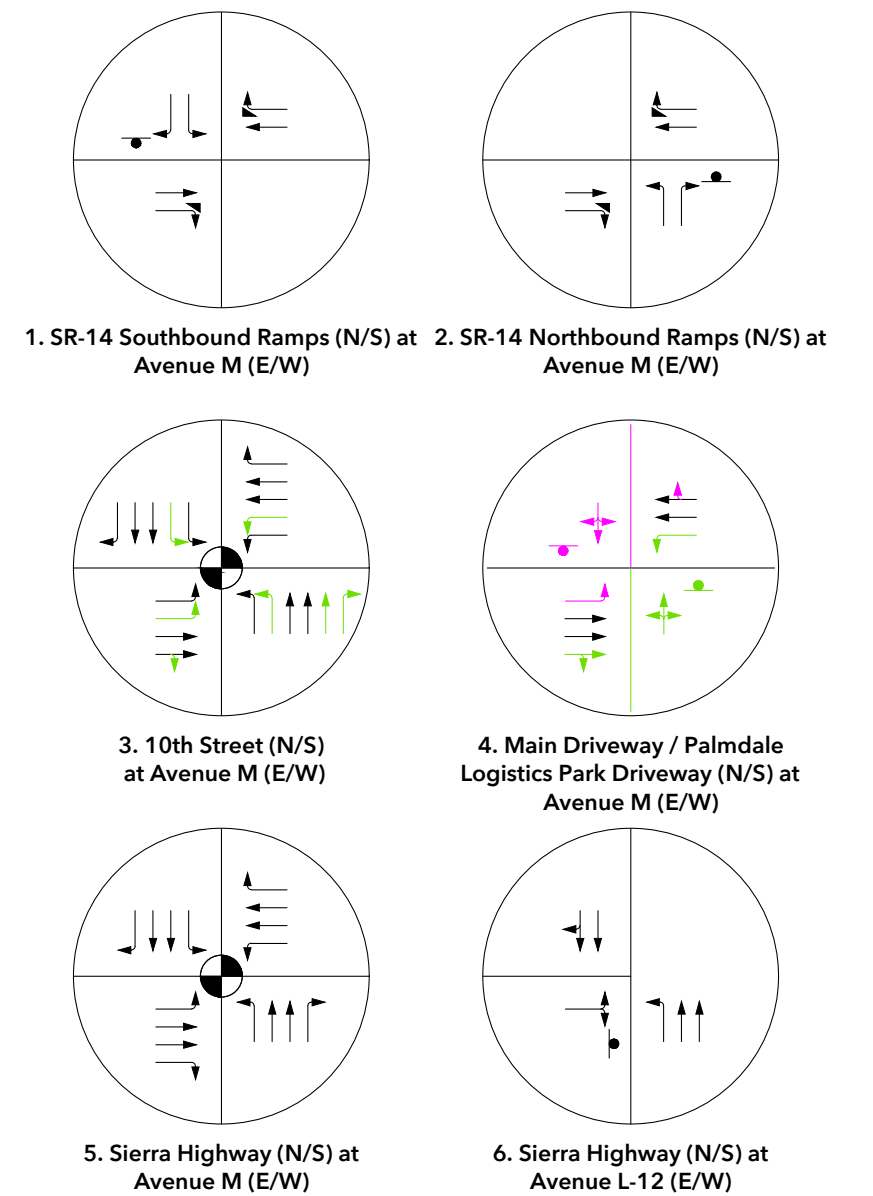


Exhibit 4-5

Planned & Project-Specific Improvements

4.3 Background Traffic for Existing Plus Ambient Growth Plus Related Projects Conditions

4.3.1 Method of Projection

To assess future Existing Plus Ambient Growth Plus Related Projects traffic conditions, project traffic is combined with existing traffic and area-wide growth. As directed by City staff, to account for area-wide/ambient growth in the study area, an annual compounded growth rate of 1.25 percent (1.25%) per year over a period of two (2) years to existing traffic volumes (i.e., 2.52% total growth from Year 2024) and addition of traffic associated with specific cumulative projects in the area provided by the City. The 1.25% annual growth rate is consistent with the *City of Lancaster's Local Transportation Assessment Guidelines*, dated January 5, 2021.

4.3.2 Cumulative Projects Traffic Volumes

Information on future projects in the vicinity of the study area has been provided by City of Lancaster and City of Palmdale staff for inclusion in this analysis and is shown in **Table 4-4**. Table 4-4 shows the land uses, and daily and peak hour trip generation for the nearby cumulative projects provided by the public agencies.

A location map of the cumulative projects is shown on **Exhibit 4-6**. Cumulative projects traffic volumes are shown on **Exhibit 4-7**.

In reality, some of the cumulative projects may be downsized or may not be developed by the project opening year 2026. In addition, many of the cumulative projects have been or will be subject to a variety of mitigation measures that will reduce the potential environmental impacts associated with those projects. However, those mitigation measures have not been taken into account in projecting the environmental impact of the related projects. Therefore, the cumulative analyses set forth below are conservative and could result in greater impacts than actually anticipated.

Table 4-4 | Cumulative Projects Trip Generation^{1, 2}

ID	Jurisdiction	Project Name / Case Number	Land Use	Quantity	Units ³	Weekday						Daily
						AM Peak Hour			PM Peak Hour			
						In	Out	Total	In	Out	Total	
TAZ 1												
L-1	City of Lancaster	SPR 23-030	-- ⁴	--	--	82	79	161	68	63	131	1,680
TAZ 1 Total						82	79	161	68	63	131	1,680
TAZ 2												
L-2	City of Lancaster	SPR 23-014	Warehousing	92.528	TSF	14	6	20	7	15	22	246
L-3	City of Lancaster	SPR 21-005	General Light Industrial & Warehousing	37.000	TSF	21	2	23	3	18	21	175
L-4	City of Lancaster	SPR 22-008	Warehousing	21.628	TSF	3	1	4	1	5	6	57
L-5	City of Lancaster	SPR 21-016	General Light Industrial	19.488	TSF	13	1	14	2	11	13	103
TAZ 2 Total						51	10	61	13	49	62	581
TAZ 3 ⁵												
L-6	City of Lancaster	SPR 21-007	AVTA Solar facility and battery storage	--	--	--	--	--	--	--	--	--
L-7	City of Lancaster	SPR 21-006	Truck Parking Facility	--	--	--	--	--	--	--	--	--
TAZ 3 Total						--	--	--	--	--	--	--
TAZ 4												
L-8	City of Lancaster	SPR 22-016	General Light Industrial	15.000	TSF	10	1	11	1	9	10	79
L-9	City of Lancaster	SPR 22-007	General Light Industrial	15.000	TSF	10	1	11	1	9	10	79
TAZ 4 Total						20	2	22	2	18	20	158
TAZ 5												
L-10	City of Lancaster	SPR 22-002	Warehousing	28.895	TSF	4	3	7	1	6	7	75
L-11	City of Lancaster	SPR 22-003	Mini-Warehouse	93.465	TSF	5	3	8	7	7	14	136
L-12	City of Lancaster	CUP 24-004	Marijuana Cultivation & Processing Facility	76.242	TSF	49	4	53	14	35	49	530
L-13	City of Lancaster	SPR 22-014 / Avenue L-4 Warehouse	-- ⁶	--	--	49	13	62	17	46	63	664
L-14	City of Lancaster	SPR 23-007	Warehousing	96.634	TSF	15	5	20	8	14	22	254
L-15	City of Lancaster	SPR 22-011 / Forbes & Market Warehouses	-- ⁷	--	--	53	13	66	18	49	67	708
TAZ 5 Total						175	41	216	65	157	222	2,367
TAZ 6												
L-16	City of Lancaster	SPR 22-009	Commissary Facility	1.335	TSF	34	24	58	22	23	45	604
TAZ 6 Total						34	24	58	22	23	45	604
TAZ 7												
L-17	City of Lancaster	DR 24-063	Multifamily Housing (Low-Rise) (220)	26	DU	2	8	10	8	5	13	175
L-18	City of Lancaster	DR 24-062	Multifamily Housing (Low-Rise) (220)	14	DU	1	5	6	4	3	7	94
TAZ 7 Total						3	13	16	12	8	20	269

Table 4-4 | Cumulative Projects Trip Generation^{1, 2}

ID	Jurisdiction	Project Name / Case Number	Land Use	Quantity	Units ³	Weekday						Daily
						AM Peak Hour			PM Peak Hour			
						In	Out	Total	In	Out	Total	
TAZ 8												
L-19	City of Lancaster	DR 24-061	Multifamily Housing (Low-Rise) (220)	20	DU	2	6	8	6	4	10	135
TAZ 8 Total						2	6	8	6	4	10	135
TAZ 9												
L-20	City of Lancaster	CUP 21-006 / Lancaster Waste to Renewable Hydrogen Project	-- ⁸	--	--	40	15	55	15	40	55	506
TAZ 9 Total						40	15	55	15	40	55	506
TAZ 10												
P1	City of Palmdale	Palmdale Warehouse / Palmdale Distribution Center	-- ⁹	--	--	123	36	159	91	140	231	2,163
TAZ 10 Total						123	36	159	91	140	231	2,163
TAZ 11												
P2	City of Palmdale	Palmdale Logistics Park	-- ¹⁰	--	--	384	81	465	112	316	428	4,228
TAZ 11 Total						384	81	465	112	316	428	4,228
TAZ 12												
P3	City of Palmdale	Antelope Valley Commerce Center Phase 1	-- ¹¹	--	--	117	27	144	34	108	142	1,404
TAZ 12 Total						117	27	144	34	108	142	1,404
Total Cumulative Project Developments Trip Generation						1,031	334	1,365	440	926	1,366	14,095

¹ Cumulative project information provided by the City of Lancaster and City of Palmdale staff.

² Source: ITE Trip Generation Manual (11th Edition, 2021).

⁴ Source: 10th Street West and West Avenue L Commercial Project Traffic Study, prepared by Linscott Law & Greenspan.

⁵ The AVTA solar facility and battery storage project (SPR 21-007) and the Truck Parking Facility (SPR 21-006) are typically not trip generating land uses. As such, these projects are not included in the technical analysis due to their low trip generating nature but have been included as part of the list of cumulative projects per direction from City of Lancaster staff.

⁶ Source: Avenue L-4 Warehouse, prepared by Urban Crossroads, dated August 21, 2023

⁷ Source: Forbes & Market Warehouses Traffic Analysis, prepared by Urban Crossroads, dated February 22, 2023

⁸ Source: Lancaster Waste to Renewable Hydrogen Project Conditional Use Permit (CUP) No. 21-06 Initial Study, prepared by the City of Lancaster Development Services Department, dated August 2022.

⁹ Source: Palmdale Warehouse Project Traffic Operational Analysis, dated January 2022, prepared by Kimley Horn

¹⁰ Source: Palmdale Logistics Park Traffic Analysis, dated June 2, 2023, prepared by Urban Crossroads

¹¹ Source: Antelope Valley Commerce Center Traffic Analysis, dated November 10, 2022, prepared by Urban Crossroads



Legend

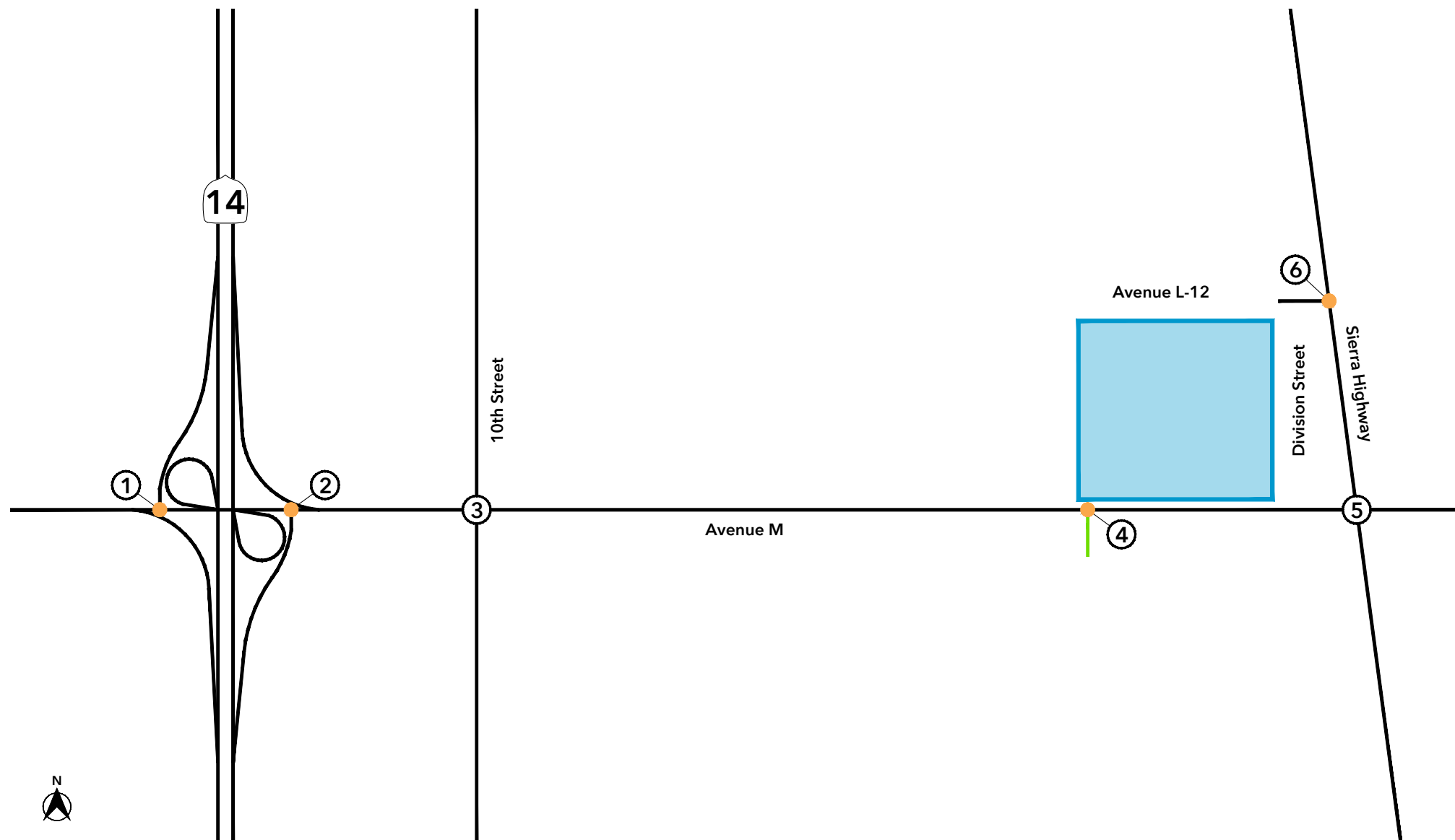
- = Project Site Boundary
- = City of Lancaster Cumulative Projects

- = City of Palmdale Cumulative Projects

Note: Additional information and details regarding the cumulative projects are provided in Table 4-4.

Exhibit 4-6

Cumulative Projects Location Map



Legend

- ① = Study Intersection
- = Project Site Boundary
- = Future Palmdale Logistics Park Project Driveway
- X / X = AM / PM Peak Hour Volumes

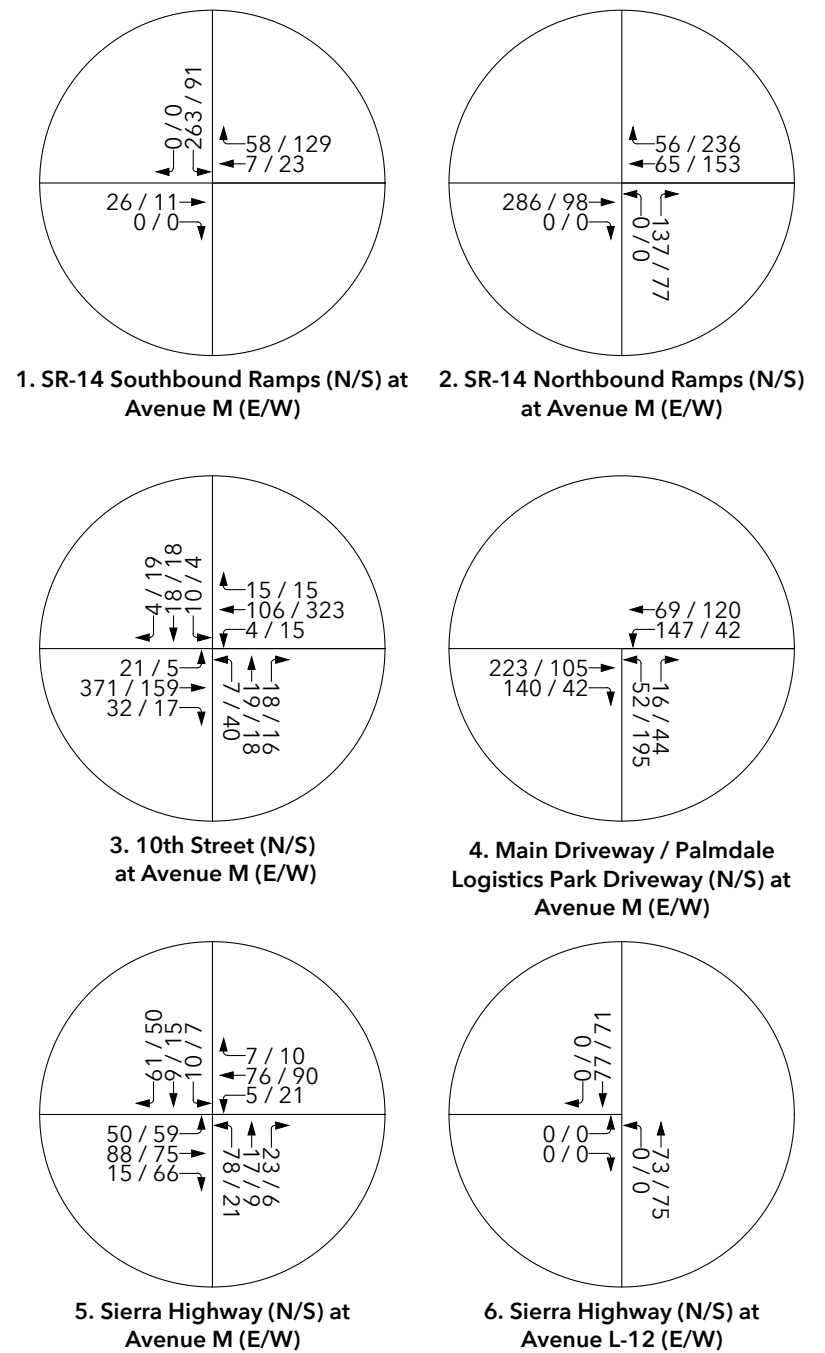


Exhibit 4-7

Cumulative Projects Traffic Volumes

4.3.3 Existing Plus Ambient Growth Plus Related Projects Conditions Traffic Volumes

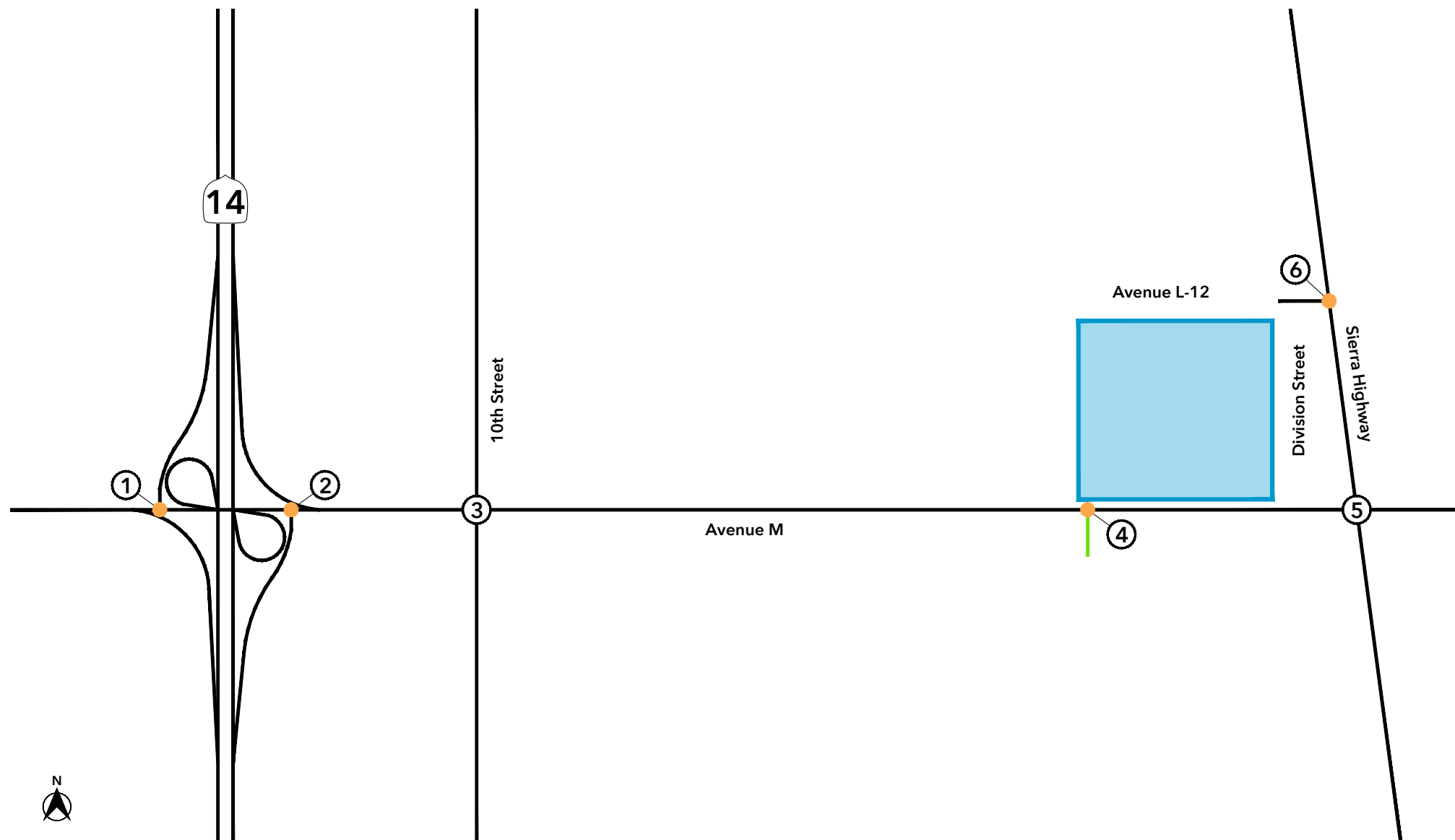
Existing Plus Ambient Growth Plus Related Projects Conditions traffic volumes consist of two (2) years of compounded annual growth on top of existing (2024) traffic volumes at 1.25 percent (1.25%) per year (i.e. 2.52% total growth) plus traffic generated by the cumulative projects.

Existing Plus Ambient Growth Plus Related Projects Conditions traffic volumes are shown on **Exhibit 4-8**.

4.3.4 Existing Plus Ambient Growth Plus Related Projects Plus Project Conditions Traffic Volumes

Existing Plus Ambient Growth Plus Related Projects Plus Project Conditions traffic volumes consist of two (2) years of compounded annual growth on top of existing (2024) traffic volumes at 1.25 percent (1.25%) per year (i.e. 2.52% total growth) plus traffic generated by the cumulative projects and the proposed Project.

Existing Plus Ambient Growth Plus Related Projects Plus Project Conditions traffic volumes are shown on **Exhibit 4-9**.



Legend

- ① = Study Intersection
- = Project Site Boundary
- = Future Palmdale Logistics Park Project Driveway
- X / X = AM / PM Peak Hour Volumes

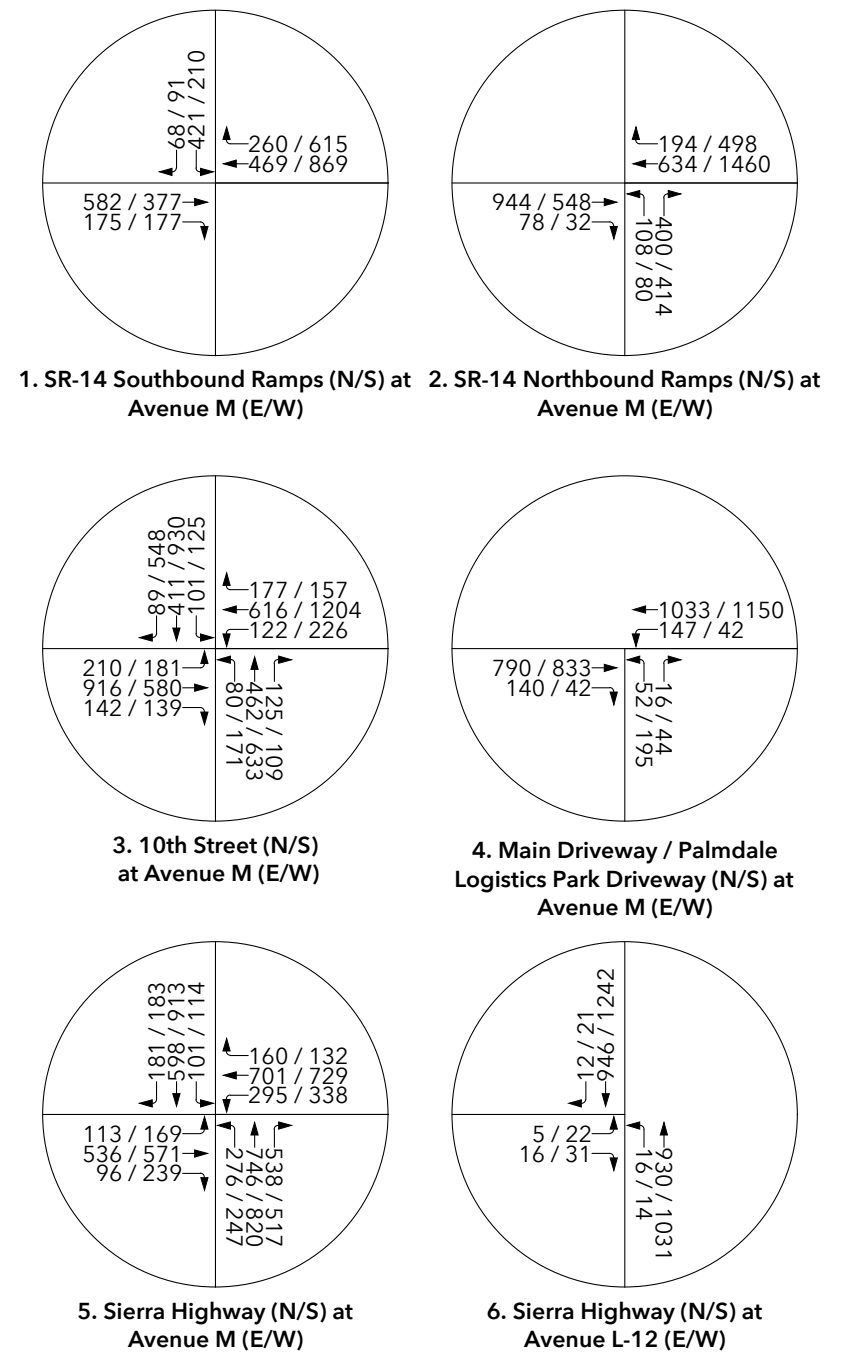
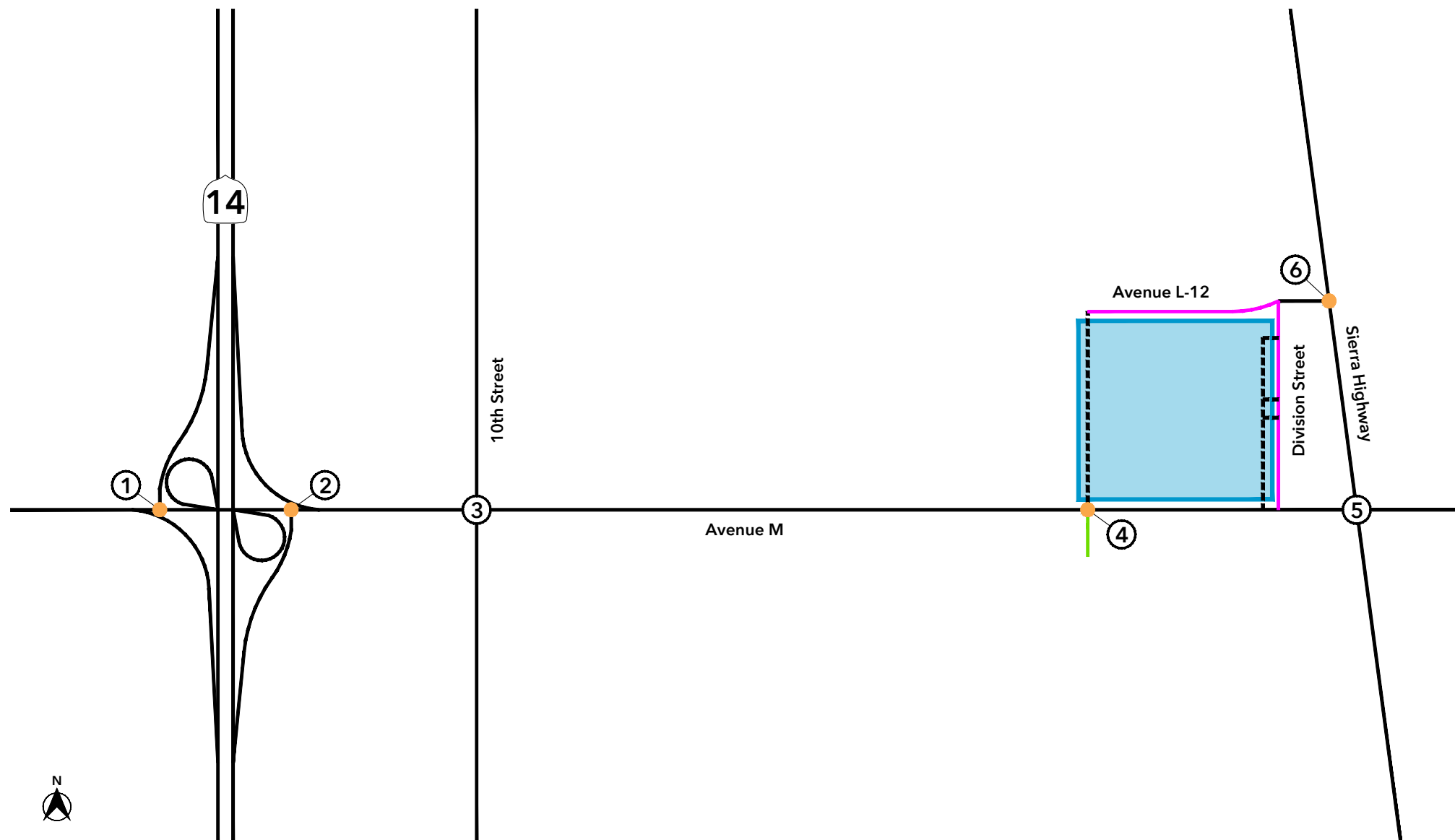


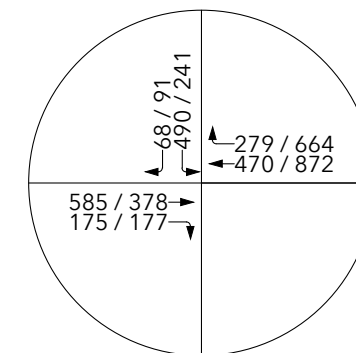
Exhibit 4-8

Existing Plus Ambient Growth and Related Projects Conditions Traffic Volumes

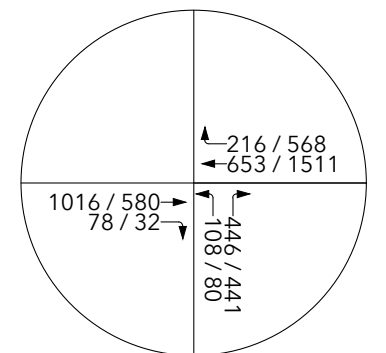


Legend

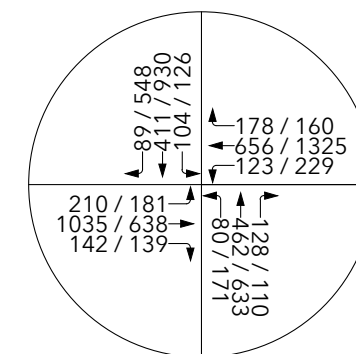
- ① = Study Intersection
- = Project Site Boundary
- - - = Project Access Driveway
- = Project-Specific Improvements
- = Future Palmdale Logistics Park Project Driveway
- X / X = AM / PM Peak Hour Volumes



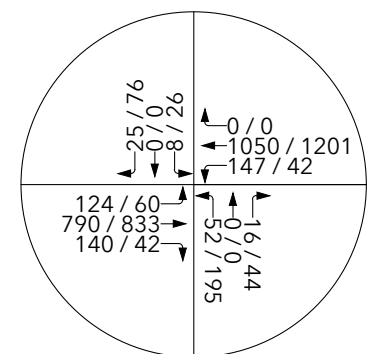
1. SR-14 Southbound Ramps (N/S) at Avenue M (E/W)



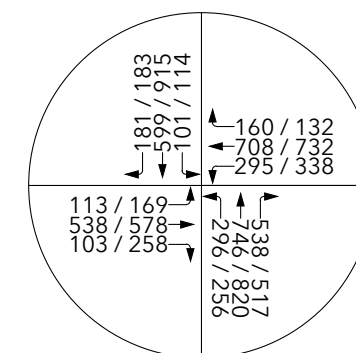
2. SR-14 Northbound Ramps (N/S) at Avenue M (E/W)



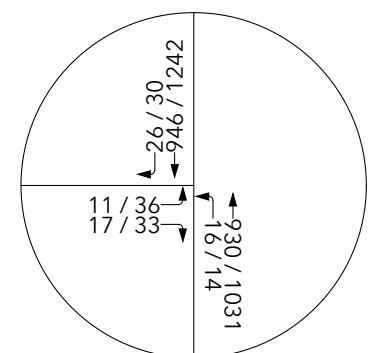
3. 10th Street (N/S) at Avenue M (E/W)



4. Main Driveway / Palmdale Logistics Park Driveway (N/S) at Avenue M (E/W)



5. Sierra Highway (N/S) at Avenue M (E/W)



6. Sierra Highway (N/S) at Avenue L-12 (E/W)

Exhibit 4-9

Existing Plus Ambient Growth and Related Projects Plus Project Conditions Traffic Volumes

5.0 Study Intersection Peak Hour Level of Service Analysis

This section of the report provides a discussion on the study intersection peak hour LOS analysis and findings. As discussed in Section 2.3, improvements shall be identified for any of the key study intersections deemed to be impacted with the proposed Project.

5.1 Existing Conditions Level of Service

Existing LOS calculations for the study intersections are shown on **Table 5-1** and are based on the existing lane geometry shown on Exhibit 3-1 and the Existing AM and PM peak hour traffic volumes shown on Exhibit 3-2.

As shown in Table 5-1, the study intersections currently operates at an acceptable LOS during the AM and PM peak hours under Existing Conditions, with the exception of the following intersections:

- Intersection 1: SR-14 Southbound Ramps (N/S) at Avenue M (E/W) (AM & PM Peak Hours); and
- Intersection 2: SR-14 Northbound Ramps (N/S) at Avenue M (E/W) (AM & PM Peak Hours).

Detailed LOS analysis worksheets for Existing Conditions are contained in **Appendix C**.

5.2 Existing Plus Project Conditions Level of Service

Existing Plus Project Conditions LOS calculations for the study intersections are also shown on Table 5-1 and are based on the Existing Plus Project AM and PM peak hour traffic volumes shown on Exhibit 4-4 and the existing lane geometry shown on Exhibit 3-1.

As shown in Table 5-1, the study intersections are forecast to continue to operate at an acceptable LOS during the AM and PM peak hours under Existing Plus Project Conditions with the exception of the following intersections:

- Intersection 1: SR-14 Southbound Ramps (N/S) at Avenue M (E/W) (AM & PM Peak Hours); and
- Intersection 2: SR-14 Northbound Ramps (N/S) at Avenue M (E/W) (AM & PM Peak Hours).

As previously discussed, improvements would be required at side street stop intersections if the project contributes more than 10 seconds of delay and meets the peak hour warrant. A peak hour warrant analysis for Existing Plus Project Conditions has been performed for Intersection 1 and Intersection 2 in Section 6.0, where the peak hour warrant is identified to have been met for both intersections. As such, improvements are required at Intersection 1 and Intersection 2.

Detailed LOS analysis worksheets for Existing Plus Project Conditions are contained in **Appendix D**.

Table 5-1 | Study Intersection LOS Summary - Existing Conditions

Study Intersection	Traffic Control ¹	Methodology	Acceptable LOS	No Project Conditions				Plus Project Conditions							
				Delay (sec/veh) ^{2,3}		Level of Service		Delay (sec/veh) ^{3, 4}		Level of Service		Increase in Delay		Requires LOS Improvement?	
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1. SR-14 Southbound Ramps (N/S) at Avenue M (E/W)	CSS	HCM	D	86.6	75.5	F	F	214.9	126.8	F	F	128.3	51.3	Yes	Yes
With Alternative 1 (Roundabout)	R	HCM	D	--	--	--	--	8.5	37.2	A	E	--	--	--	--
With Alternative 2 (Signalization)	TS	HCM	D	--	--	--	--	10.4	8.4	B	A	--	--	--	--
2. SR-14 Northbound Ramps (N/S) at Avenue M (E/W)	CSS	HCM	D	52.7	109.0	F	F	78.3	140.1	F	F	25.6	31.1	Yes	Yes
With Alternative 1 (Roundabout)	R	HCM	D	--	--	--	--	10.0	126.1	A	F	--	--	--	--
With Alternative 2 (Signalization)	TS	HCM	D	--	--	--	--	13.8	16.4	B	B	--	--	--	--
3. 10 th Street (N/S) at Avenue M (E/W)	TS	HCM	D	37.6	45.8	D	D	36.8	48.4	D	D	0.1	2.6	No	No
4. Main Driveway (N/S) at Avenue M (E/W)	TS	HCM	D	Does Not Currently Exist				7.8	7.9	A	A	--	--	No	No
5. Sierra Highway (N/S) at Avenue M (E/W)	TS	HCM	D	43.1	44.0	D	D	45.0	44.3	D	D	1.9	0.3	No	No
6. Sierra Highway (N/S) at Avenue L-12 (E/W)	CSS	HCM	D	14.0	18.7	B	C	15.4	21.2	C	C	1.4	2.5	No	No

¹ TS = Traffic Signal
CSS = Cross-Street Stop
R = Roundabout
³ Deficient operations shown in **Bold**.
⁴ HCM Analysis Software: PTV Vistro, Version 2024.

5.2.1 Alternative Improvements Assessment for Existing Plus Project Conditions

In partnership with Caltrans, the County of Los Angeles, and the City of Palmdale, the ultimate design of the SR-14/Avenue M interchange has been fully analyzed as part of the *Avenue M Interchange Improvement Project Final Initial Study with Mitigated Negative Declaration*, prepared by the State of California Department of Transportation, dated June 2018. The following six (6) alternatives were analyzed as part of the aforementioned study:

- Alternative 1: Roundabouts Intersections - One Lane on Avenue M
- Alternative 2: Signalized Intersections - One Lane on Avenue M
- Alternative 3: Signalized Intersections – Two Lanes on Avenue M
- Alternative 4: Roundabouts With Hook Ramps
- Alternative 5: No-Build
- Alternative 6 (Interim): Roundabouts at Intersections – One Lane on Avenue M & Elimination of Northbound On-Ramp
- Alternative 6 (Ultimate): Roundabouts at Intersections – Two Lanes on Avenue M & Elimination of Northbound On-Ramp

Excerpts describing the six (6) alternatives from the *Avenue M Interchange Improvement Project Final Initial Study with Mitigated Negative Declaration*, prepared by the State of California Department of Transportation, dated June 2018, are provided in **Appendix E**

For the purposes of identifying operational improvements, Caltrans Alternative 1: Roundabout Intersections (One Lane) and Caltrans Alternative 2: Signalized Intersections (One Lane) were analyzed for both SR-14/Avenue M intersections.

Table 5-1 also shows the LOS calculations for the study intersections under Existing Plus Project Conditions with each improvement alternative. As shown in Table 5-1, the signalization improvement alternative (i.e., Caltrans Alternative 1) improves the delay at Intersection 1 and Intersection 2 to acceptable levels. However, while the roundabout improvement alternative (i.e., Caltrans Alternative 2) does improve delay, it does not improve delay to acceptable levels for all study intersections.

Detailed LOS analysis worksheets for Existing Plus Project Conditions with both improvement alternatives are contained in **Appendix F**.

5.3 Existing Plus Ambient Growth and Related Projects Conditions Level of Service

Existing Plus Ambient Growth and Related Projects Conditions LOS calculations for the study intersection is shown on **Table 5-2** and is based on the Existing Plus Ambient Growth and Related Projects AM and PM peak hour traffic volumes shown on Exhibit 4-8, the existing lane geometry shown on Exhibit 3-1, and the planned project improvement at Intersection 3 shown on 4-5.

As shown in Table 5-2, the study intersections are forecast to operate at an acceptable LOS during the AM and PM peak hours under Existing Plus Ambient Growth and Related Projects Conditions, with the exception of the following intersections:

- Intersection 1: SR-14 Southbound Ramps (N/S) at Avenue M (E/W) (AM & PM Peak Hours); and
- Intersection 2: SR-14 Northbound Ramps (N/S) at Avenue M (E/W) (AM & PM Peak Hours).

Detailed LOS analysis worksheets for Project Existing Plus Ambient Growth and Related Projects Conditions are contained in **Appendix G**.

5.4 Existing Plus Ambient Growth and Related Projects Plus Project Conditions Level of Service

Existing Plus Ambient Growth and Related Projects Plus Project Conditions LOS calculations for the study intersection is shown on **Table 5-2** and is based on the Existing Plus Ambient Growth and Related Projects Plus Project AM and PM peak hour traffic volumes shown on Exhibit 4-9, the existing lane geometry shown on Exhibit 3-1, and the planned project improvement shown on Exhibit 4-5.

As shown in Table 5-2, the study intersections are forecast to continue to operate at an acceptable LOS during the AM and PM peak hours under Existing Plus Ambient Growth and Related Projects Plus Project Conditions with the exception of the following intersections:

- Intersection 1: SR-14 Southbound Ramps (N/S) at Avenue M (E/W) (AM & PM Peak Hours); and
- Intersection 2: SR-14 Northbound Ramps (N/S) at Avenue M (E/W) (AM & PM Peak Hours).

As previously discussed, improvements would be required at side street stop intersections if the project contributes more than 10 seconds of delay and meets the peak hour warrant. A peak hour warrant analysis for Existing Plus Project Conditions has been performed for Intersection 1 and Intersection 2 in Section 6.0, where the peak hour warrant is identified to have been met for both intersections. As such, improvements are required at Intersection 1 and Intersection 2.

Detailed LOS analysis worksheets for Existing Plus Ambient Growth and Related Projects Plus Project Conditions are contained in **Appendix H**.

Table 5-2 | Study Intersection LOS Summary - Existing With Ambient Growth and Related Projects Conditions

Study Intersection	Traffic Control ¹	Methodology	Acceptable LOS	No Project Conditions				Plus Project Conditions							
				Delay (sec/veh) ^{2,3}		Level of Service		Delay (sec/veh) ^{3, 4}		Level of Service		Increase in Delay		Requires LOS Improvement?	
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1. SR-14 Southbound Ramps (N/S) at Avenue M (E/W)	CSS	HCM	D	819.0	334.2	F	F	1,035.5	438.4	F	F	216.5	104.2	Yes	Yes
With Alternative 1 (Roundabout)	R	HCM	D	--	--	--	--	15.2	71.3	C	F	--	--	--	--
With Alternative 2 (Signalization)	TS	HCM	D	--	--	--	--	17.5	11.7	B	B	--	--	--	--
2. SR-14 Northbound Ramps (N/S) at Avenue M (E/W)	CSS	HCM	D	327.2	261.7	F	F	482.2	327.7	F	F	155	66	Yes	Yes
With Alternative 1 (Roundabout)	R	HCM	D	--	--	--	--	22.3	232.4	C	F	--	--	--	--
With Alternative 2 (Signalization)	TS	HCM	D	--	--	--	--	17.2	34.0	B	C	--	--	--	--
3. 10 th Street (N/S) at Avenue M (E/W)	TS	HCM	D	30.3	45.1	C	D	30.3	51.8	C	D	0	6.7	No	No
4. Main Driveway (N/S) at Avenue M (E/W)	TS	HCM	D	7.8	10.5	A	B	12.1	16.2	B	B	4.3	5.7	No	No
5. Sierra Highway (N/S) at Avenue M (E/W)	TS	HCM	D	43.8	47.9	D	D	43.9	48.6	D	D	0.1	0.7	No	No
6. Sierra Highway (N/S) at Avenue L-12 (E/W)	CSS	HCM	D	15.1	20.8	C	C	16.8	23.9	C	C	1.7	3.1	No	No

¹ TS = Traffic Signal
CSS = Cross-Street Stop
R = Roundabout
³ Deficient operations shown in **Bold**.
⁴ HCM Analysis Software: PTV Vistro, Version 2024.

5.4.1 Alternative Improvements Assessment for Existing Plus Ambient Growth and Related Projects Plus Project Conditions

As previously discussed in Section 5.2.1., for the purposes of identifying operational improvements, Caltrans Alternative 1: Roundabouts Intersections (One Lane) and Caltrans Alternative 2: Signalized Intersections (One Lane) were analyzed for both SR-14/Avenue M intersections.

Table 5-2 also shows the LOS calculations for the study intersections under Existing Plus Ambient Growth and Related Projects Plus Project Conditions with each improvement alternative. As shown in Table 5-2, the signalization improvement alternative (i.e., Caltrans Alternative 1) improves the delay at Intersection 1 and Intersection 2 to acceptable levels. However, while the roundabout improvement alternative (i.e., Caltrans Alternative 2) does improve delay, it does not improve delay to acceptable levels for all study scenarios.

Detailed LOS analysis worksheets for Existing Plus Ambient Growth and Related Projects Plus Project Conditions with both improvement alternatives are contained in **Appendix I**.

5.5 Local and Regional Funding Mechanism

As previously shown in Section 5.2.1. and 5.4.1., improvements are required for Study Intersections #1 and #2 (i.e., the two SR-14/Avenue M ramp intersections). In partnership with Caltrans, the County of Los Angeles, and the City of Palmdale, the ultimate design of the SR-14/Avenue M interchange has been fully analyzed as part of the *Avenue M Interchange Improvement Project Final Initial Study with Mitigated Negative Declaration*, prepared by the State of California Department of Transportation, dated June 2018. Six alternatives were analyzed as part of the study, most notably consisting of traffic signals or roundabouts at both Avenue M ramp intersections. It is RK's understanding that these improvements are locally funded by the Los Angeles County Metropolitan Transportation Authority's (LACMTA) Measure R Highway Equity Funds. As such, the Project shall coordinate with Metro on appropriate contribution efforts towards these improvements.

6.0 CA MUTCD Peak Hour Traffic Signal Warrant Analysis

As discussed in Section 5.0, the following study intersections have been identified to have a deficient level of service and have an increase in delay of more than 10 seconds. As such, these study intersections have been evaluated for a traffic signal utilizing the peak hour warrant (i.e., Warrant #3) under all analysis scenarios as part of the performance criteria in order to ensure that minor street approaches with low traffic volumes are not identified as potentially needing improvements.

- Intersection 1: SR-14 Southbound Ramps (N/S) at Avenue M (E/W)
- Intersection 2: SR-14 Northbound Ramps (N/S) at Avenue M (E/W)

6.1 Peak Hour Warrant

Warrant 3 states that a traffic signal could be implemented at an intersection where for a minimum of one (1) hour of average day, the minor street traffic suffers undue delay when entering or crossing the major street.

In Part A, three criteria related to delay must be met in order to satisfy Warrant 3.

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equal or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach.
2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes.
3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.

In Part B, a plot is created for vehicles per hour and the corresponding volume for both approaches of the major street, and the higher volume approach of the minor street. If the plotted points fall above the applicable curves in MUTCD Figure 4C-3 or 4C-4, Part B is satisfied.

6.1.1 Peak Hour Warrant Assessment

Table 6-1 summarizes the results of the MUTCD peak hour traffic signal warrant analysis at the aforementioned study intersections under all analysis scenarios evaluated in this study. As shown in Table 6-1, the study intersections satisfy the peak hour traffic signal warrant for all scenarios.

Detailed CA MUTCD peak our warrant traffic signal worksheets are provided in **Appendix J**.

Table 6-1 | CA MUTCD Peak Hour Traffic Signal Warrant Summary

Study Intersection	Analysis Scenarios							
	Existing Conditions		Existing Plus Project Conditions		Existing Plus Ambient Growth and Related Projects Conditions		Existing Plus Ambient Growth and Related Projects Plus Project Conditions	
	AM	PM	AM	PM	AM	PM	AM	PM
1. SR-14 Southbound Ramps (N/S) at Avenue M (E/W)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2. SR-14 Northbound Ramps (N/S) at Avenue M (E/W)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

¹Study intersections that meet the MUTCD peak hour traffic signal warrant (i.e., Warrant 3) under all analysis scenarios are shown in **Bold**.

7.0 CA MUTCD Full Traffic Signal Warrant Analysis

RK has conducted a traffic signal warrant analyses for Intersection 6: Sierra Highway (N/S) at Avenue L-12 (E/W) under Existing Conditions. This evaluation has been conducted based on the traffic signal warrants and procedures contained in the *California Manual on Uniform Traffic Control Devices (CA MUTCD), 2014 Edition, Revision 4 (March 29, 2019)*.

7.1 Existing Traffic Volumes

Existing traffic volumes were conducted in May 2024. These traffic count worksheets are also included in Appendix A. A summary of the hourly traffic counts for Intersection 6 is provided in **Table 7-1**. The peak eight-hour traffic volumes are denoted in orange in Table 7-1.

Table 7-1 | Existing Hourly Traffic Counts
Sierra Highway (N/S) at Avenue L-12 (E/W)

End Time	Sierra Highway (N/S)			Avenue L-12 (E/W)			Total
	NB	SB	Subtotal NB + SB	EB	WB	Subtotal EB+WB	
1:00 AM	276	122	398	8	0	8	406
2:00 AM	180	99	279	6	0	6	285
3:00 AM	148	71	219	5	0	5	224
4:00 AM	126	159	285	7	0	7	292
5:00 AM	196	355	551	4	0	4	555
6:00 AM	356	405	761	4	0	4	765
7:00 AM	413	392	805	9	0	9	814
8:00 AM	779	641	1,420	29	0	29	1,449
9:00 AM	774	770	1,544	25	0	25	1,569
10:00 AM	626	623	1,249	23	0	23	1,272
11:00 AM	633	691	1,324	30	0	30	1,354
12:00 PM	683	721	1,404	20	0	20	1,424
1:00 PM	678	647	1,325	30	0	30	1,355
2:00 PM	699	875	1,574	30	0	30	1,604
3:00 PM	821	984	1,805	42	0	42	1,847
4:00 PM	816	1,120	1,936	35	0	35	1,971
5:00 PM	978	1,151	2,129	45	0	45	2,174
6:00 PM	866	1,000	1,866	43	0	43	1,909
7:00 PM	742	739	1,481	31	0	31	1,512
8:00 PM	495	478	973	21	0	21	994
9:00 PM	468	517	985	27	0	27	1,012
10:00 PM	541	373	914	11	0	11	925
11:00 PM	606	311	917	14	0	14	931
12:00 AM	311	197	508	9	0	9	517
TOTAL	13,211	13,441	26,652	508	0	508	27,160

7.2 Accident Collision Data

RK has obtained accident collision data from the UC Berkeley’ Transportation Injury Mapping System (TIMS), which maps out crashes based on the Statewide Integrated Traffic Records System (SWITRS) crash data. It should be noted that at the time of this study, SWITRS has been off-line due to maintenance since March 2024. As such, the collision data was obtained for the following timeframes:

- January 1, 2020 to December 31, 2020
- January 1, 2021 to December 31, 2021
- January 1, 2022 to December 31, 2022
- January 1, 2023 to December 31, 2023

The study intersections collision report summary is shown in **Table 7-2**.

Table 7-2 | Accident Collisions Data Summary¹

Intersection	Year				Total
	2020	2021	2022	2023	
6. Sierra Highway (N/S) at Avenue L-12 (E/W)	1	0	1	1	3

¹ Source: UC Berkeley Transportation Injury Mapping System (TIMS). Accessed October 2024.

As shown in Table 7-2, a maximum of one (1) collision in a 12-month span over the previous four (4) years has been reported.

A copy of the focused collision data is included in **Appendix K**.

7.3 CA MUTCD Traffic Signal Warrant Assessment

Intersection 6: Sierra Highway (N/S) at Avenue L-12 (E/W) has been evaluated for a full traffic signal warrant. Detailed MUTCD traffic warrant analysis worksheets are included in **Appendix L**.

Table 7-3 summarizes the findings of the traffic signal warrant analysis.

Table 7-3 | Traffic Signal Warrant Analysis Summary

Warrant	Description	Findings	Determination
1	Eight Hour Vehicular Volume	Minor street volume does not meet minimum threshold.	Does Not Satisfy
2	Four Hour Vehicular Volume	Minor street volume does not meet minimum threshold.	Does Not Satisfy
3	Peak Hour Vehicular Volume	Minor street volume does not meet minimum threshold.	Does Not Satisfy
4	Pedestrian Volume	Pedestrian volume does not meet minimum thresholds.	Does Not Satisfy
5	School Crossing	Not applicable since the intersection is not located near a school.	Does Not Satisfy
6	Coordinated Signal System	Proposed and adjacent traffic control signals is unlikely to collectively provide a progressive operation.	Does Not Satisfy
7	Crash Warrant	Less than 5 collisions have been reported within a 12-month period over the previous 4 years.	Does Not Satisfy
8	Roadway Network	Does not satisfy Warrant 1, 2, or 3.	Does Not Satisfy

As shown in Appendix K and summarized in Table 7-3, Intersection 6 does not meet any of the traffic signal warrant criteria. As such, a traffic signal is not recommended for Intersection 6.

8.0 Intersection Queue Analysis

The purpose of this analysis is to determine whether adequate storage capacity is provided without and with the proposed project. The queue analysis has been performed utilizing the HCM 7 95th percentile queue evaluation methodology. Queue lengths have been reported for the following turning movements for all analysis scenarios analyzed in this study:

- **Intersection 4: Main Driveway (N/S) at Avenue M (E/W)**
 - Eastbound Left-Turn
- **Intersection 6: Sierra Highway (N/S) at Avenue L-12 (E/W)**
 - Eastbound Left-Turn

Table 8-1 shows the results of the queue analysis under Existing Conditions and Existing Plus Project Conditions. **Table 8-2** shows the results of the queue analysis under Existing Plus Ambient Growth and Related Projects Conditions and Existing Plus Ambient Growth and Related Projects Plus Project Conditions.

As shown in Table 8-1 and Table 8-2, the 95th percentile queue in the eastbound left-turn movement at Intersection 6: Sierra Highway (N/S) at Avenue L-12 (E/W) is satisfied by the existing capacity of 100 feet.

As shown in Table 8-1 and Table 8-2, the eastbound left-turn movement at Intersection 4: Main Driveway (N/S) at Avenue M (E/W) does not currently exist and will be constructed by the project to provide access into the project site. As also shown in Table 8-1 and Table 8-2, the maximum 95th percentile queue length is 142 feet, which occurs during the AM peak hour. As such, a left-turn lane length of 150 feet is recommended for the eastbound left-turn movement at Intersection 4.

Table 8-1 | 95th Percentile Queue Summary
Existing Conditions

Intersection	Movement	Existing/ Proposed Storage Length Per Lane (Feet) ²	No Project Conditions				Plus Project Conditions			
			HCM 95th Percentile Queue Length (Feet)		Adequate Storage Provided?		HCM 95th Percentile Queue Length (Feet)		Adequate Storage Provided?	
			AM	PM	AM	PM	AM	PM	AM	PM
4. Main Driveway (N/S) at Avenue M (E/W)	Eastbound Left-Turn	150	Does Not Currently Exist				142	70	Yes	Yes
6. Sierra Highway (N/S) at Avenue L-12 (E/W)	Eastbound Left-Turn	100	25 ³	25 ³	Yes	Yes	25 ³	25 ³	Yes	Yes

¹HCM Analysis Software: Vistro, Version 2024.
²Storage length for turning movements with dedicated turn lanes is measured as the length of the turn lanes. Storage length for through movements and turning movements without dedicated turn lanes is measured as the distance to the next intersection.
³Although the calculated queue length is less, a minimum vehicle length of 25 feet is assumed for the purposes of this analysis.

Table 8-2 | 95th Percentile Queue Summary
Existing Plus Ambient Growth and Related Projects Conditions

Intersection	Movement	Existing/ Proposed Storage Length Per Lane (Feet) ²	No Project Conditions				Plus Project Conditions			
			HCM 95th Percentile Queue Length (Feet)		Adequate Storage Provided?		HCM 95th Percentile Queue Length (Feet)		Adequate Storage Provided?	
			AM	PM	AM	PM	AM	PM	AM	PM
4. Main Driveway (N/S) at Avenue M (E/W)	Eastbound Left-Turn	150	Does Not Currently Exist				142	70	Yes	Yes
6. Sierra Highway (N/S) at Avenue L-12 (E/W)	Eastbound Left-Turn	100	25 ³	25 ³	Yes	Yes	25 ³	27	Yes	Yes

¹HCM Analysis Software: Vistro, Version 2024.
²Storage length for turning movements with dedicated turn lanes is measured as the length of the turn lanes. Storage length for through movements and turning movements without dedicated turn lanes is measured as the distance to the next intersection.
³Although the calculated queue length is less, a minimum vehicle length of 25 feet is assumed for the purposes of this analysis.

9.0 Conclusion

The purpose of this traffic impact study is to evaluate the Avenue M & Division Street Warehouse Project (hereinafter referred to as "Project") from a traffic and circulation standpoint and to determine whether the Project has a significant traffic impact. This traffic study has been conducted pursuant to the *City of Lancaster Development Services Department Local Transportation Assessment Guidelines*, dated January 5, 2021 and the California Environmental Quality Act (CEQA) requirements.

9.1 Site Location & Project Description Summary

The project is located on the northwest corner of Avenue M and Division Street, in the City of Lancaster. The project site is currently vacant.

The proposed project consists of the construction of two warehouse/manufacturing buildings totaling 807,005 square feet (SF) on a 37.10-acre site. Building 1 is approximately 401,973 SF, which consists of 343,973 SF warehousing, 46,000 SF manufacturing, and 12,000 SF office. Building 2 is approximately 405,032 SF, which consists of 347,032 SF warehousing, 46,000 SF manufacturing, and 12,000 SF office.

A total of 443 auto parking spaces and 148 truck trailer parking spaces are proposed on-site. Access to the project is proposed via the following:

- One (1) full-access driveway along Avenue L-12;
- Three (3) full-access driveway along Division Street;
- One (1) full-access driveway along Avenue M; and
- One (1) right-in/right-out driveway along Avenue M.

It should be noted that the full-access driveway along Avenue M will be aligned with the future signalized driveway of the Palmdale Logistics Park project, which is located directly south of the Project site.

9.2 Traffic Study Area & Analysis Scenarios Summary

The study area consists of the following six (6) study intersections, which are all located within the City of Lancaster.

1. SR-14 Southbound Ramps (N/S) at Avenue M (E/W);
2. SR-14 Northbound Ramps (N/S) at Avenue M (E/W);
3. 10th Street (N/S) at Avenue M (E/W);

4. Main Driveway (N/S) at Avenue M (E/W);
5. Sierra Highway (N/S) at Avenue M (E/W); and
6. Sierra Highway (N/S) at Avenue L-12 (E/W).

The analysis evaluates traffic conditions of the aforementioned study intersections for the following scenarios during the weekday (7:00 AM to 9:00 AM) and weekday PM (4:00 PM to 6:00 PM) peak periods, in accordance with the applicable jurisdictional traffic impact analysis guidelines for the City of Lancaster.

- Existing Conditions;
- Existing Plus Project Conditions;
- Existing Plus Project Conditions With Improvements;
- Existing Plus Ambient Growth and Related Projects Conditions;
- Existing Plus Ambient Growth and Related Projects Plus Project Conditions; and
- Existing Plus Ambient Growth and Related Projects Plus Project Conditions w/ Improvements.

9.3 Project-Specific Improvements Summary

The project will construct Division Street from Avenue L-12 to Avenue M, which will be improved as necessary to meet the City of Lancaster requirements. Additionally, the project will construct Avenue L-12 from the eastern Project site boundary to Division Street, which will be improved as necessary to meet the City of Lancaster requirements. The Project will coordinate with the properties north of the Project site to obtain adequate right-of-way for the alignment of Avenue L-12 at Sierra Highway.

9.4 Planned Improvements Summary

The existing intersection lane geometry at Intersection #3: 10th Street (N/S) at Avenue M (E/W) will be reconfigured as a result of the traffic improvement plan for the Palmdale Warehouse/Distribution Center Project (MM 22-057 / SPR 21-005). It is RK's understanding that the following are the proposed lane geometries after this planned improvement:

Intersection #3: 10th Street (N/S) at Avenue M (E/W)

- The northbound approach is proposed to provide exclusive northbound dual left-turn lanes, three (3) northbound through lanes, and one (1) exclusive northbound right-turn lane.
- The southbound approach is proposed to provide exclusive southbound dual left-turn lanes, two (2) southbound through lanes, and one (1) exclusive southbound right-turn lane.
- The eastbound approach is proposed to provide exclusive eastbound dual left turns, one (1) eastbound through lane, and one (1) shared eastbound through/right-turn lane.
- The westbound approach is proposed to provide exclusive westbound dual left-turn lanes, two (2) westbound through lanes, and one (1) exclusive westbound right-turn lane.

9.5 Project Trip Generation Summary

Based on the Institute of Transportation Engineers (ITE) trip generation rates for ITE Land Use 140: Manufacturing trip rates and ITE Land Use 150: Warehousing, the proposed project is forecast to generate approximately 2,454 gross daily weekday trips, which include approximately 222 gross AM peak hour trips and 250 gross PM peak hour trips.

9.6 Study Intersection Peak Hour Level of Service Analysis Summary

The intersection level of service analysis has been performed at six (6) study intersections. The following intersections were forecast to operate at an unacceptable LOS during the AM and PM peak hours under all analysis scenarios:

- Intersection 1: SR-14 Southbound Ramps (N/S) at Avenue M (E/W)
- Intersection 2: SR-14 Northbound Ramps (N/S) at Avenue M (E/W)

The remaining four (4) study intersections are currently operating at and are forecast to continue to operate at an acceptable LOS during the AM and PM peak hours under all analysis scenarios.

The two (2) deficient study intersections have been evaluated for a traffic signal utilizing the peak hour warrant (i.e., Warrant #3) under all analysis scenarios as part of the performance criteria in order to ensure that minor street approaches with low traffic volumes are not identified as potentially needing improvements. Based on the results of the peak hour warrant analyses, Intersection 1 and Intersection 2 meet the peak hour warrant for the AM and PM peak hours under all scenarios. As such, operational improvements are required to offset the project's increase in delay.

9.7 Caltrans Improvements Alternatives Summary

In partnership with Caltrans, the County of Los Angeles, and the City of Palmdale, the ultimate design of the SR-14/Avenue M interchange has been fully analyzed as part of the *Avenue M Interchange Improvement Project Final Initial Study with Mitigated Negative Declaration*, prepared by the State of

California Department of Transportation, dated June 2018. The following six (6) alternatives were analyzed as part of the aforementioned study:

- Alternative 1: Roundabouts Intersections - One Lane on Avenue M
- Alternative 2: Signalized Intersections - One Lane on Avenue M
- Alternative 3: Signalized Intersections – Two Lanes on Avenue M
- Alternative 4: Roundabouts With Hook Ramps
- Alternative 5: No-Build
- Alternative 6 (Interim): Roundabouts at Intersections – One Lane on Avenue M & Elimination of Northbound On-Ramp
- Alternative 6 (Ultimate): Roundabouts at Intersections – Two Lanes on Avenue M & Elimination of Northbound On-Ramp

The signalization improvement alternative (i.e., Caltrans Alternative 1) improves the delay at Intersection 1 and Intersection 2 to acceptable levels. However, while the roundabout improvement alternative (i.e., Caltrans Alternative 2) does improve delay, it does not improve delay to acceptable levels for all study intersections.

9.8 Local and Regional Funding Mechanism Summary

Based on the LOS analysis, improvements are required for Study Intersections #1 and #2 (i.e., the two SR-14/Avenue M ramp intersections). In partnership with Caltrans, the County of Los Angeles, and the City of Palmdale, the ultimate design of the SR-14/Avenue M interchange has been fully analyzed as part of the *Avenue M Interchange Improvement Project Final Initial Study with Mitigated Negative Declaration*, prepared by the State of California Department of Transportation, dated June 2018. Six alternatives were analyzed as part of the study, most notably consisting of traffic signals or roundabouts at both Avenue M ramp intersections. It is RK's understanding that these improvements are locally funded by the Los Angeles County Metropolitan Transportation Authority's (LACMTA) Measure R Highway Equity Funds. As such, the Project shall coordinate with Metro on appropriate contribution efforts towards these improvements.

9.9 CA MUTCD Traffic Signal Warrant Analysis Summary

Intersection 6: Sierra Highway (N/S) at Avenue L-12 (E/W) has been evaluated for a full traffic signal warrant per the CA MUTCD. Intersection 6 does not meet any of the traffic signal warrant criteria. As such, a traffic signal is not recommended at Intersection 6.

9.10 Intersection Queue Analysis Summary

The queue analysis has been performed utilizing the HCM 7 95th percentile queue evaluation methodology.

Queue lengths have been reported for the following turning movements for all analysis scenarios analyzed in this study:

- **Intersection 4: Main Driveway (N/S) at Avenue M (E/W)**
 - Eastbound Left-Turn
- **Intersection 6: Sierra Highway (N/S) at Avenue L-12 (E/W)**
 - Eastbound Left-Turn

The 95th percentile queue in the eastbound left-turn movement at Intersection 6: Sierra Highway (N/S) at Avenue L-12 (E/W) is satisfied by the existing capacity of 100 feet. A left-turn lane length of 150 feet is recommended for the eastbound left-turn movement at Intersection 4.



Appendices



Appendix A

Approved Scope of Work

AVENUE M & DIVISION STREET WAREHOUSE PROJECT LOCAL TRANSPORTATION ASSESSMENT SCOPING AGREEMENT

September 5, 2024

The following provides information on the proposed project, summarizes the analysis scope, parameters, and assumptions for review and approval, and also includes request for information on items related to the study.

A. Project Description: The proposed Avenue M & Division Street Warehouse Project (hereinafter referred to as “project”) is located on the northwest corner of Avenue M and Division Street, in the City of Lancaster. The project site is currently vacant.

The proposed project consists of the construction of two warehouse/manufacturing buildings totaling 807,005 square feet (SF) on a 37.10-acre site. Building 1 is approximately 401,973 SF, which consists of 343,973 SF warehousing, 46,000 SF manufacturing, and 12,000 SF office. Building 2 is approximately 405,032 SF, which consists of 347,032 SF warehousing, 46,000 SF manufacturing, and 12,000 SF office.

A total of 443 auto parking spaces and 148 truck trailer parking spaces are proposed on-site. Access to the project is proposed via the following:

- One (1) full-access driveway along Avenue L-12;
- Three (3) full-access driveway along Division Street;
- One (1) full-access driveway along Avenue M; and
- One (1) right-in/right-out driveway along Avenue M.

It should be noted that the full-access driveway along Avenue M will be aligned with the future signalized driveway of the Palmdale Logistics Park project, which is located directly south of the Project site.

The project is planned to open in 2026 and will be evaluated in one (1) single phase.

The project will construct Division Street from Avenue L-12 to Avenue M, which will be improved as necessary to meet the City of Lancaster requirements. Additionally, the project will construct Avenue L-12 from the eastern Project site boundary to Division Street, which will be improved as necessary to meet the City of Lancaster requirements. The Project will coordinate with the properties north of the Project site to obtain adequate right-of-way for the alignment of Avenue L-12 at Sierra Highway.

Exhibit A shows the aerial location map of the proposed project. **Exhibit B** presents the proposed site plan.

B. Project Trip Generation: Trip generation represents the amount of traffic that is attracted and produced by a development.

Trip generation is typically estimated based on the trip generation rates from the latest *Institute of Transportation Engineers (ITE) Trip Generation Manual*. The latest and most recent version (11th Edition, 2021) of the ITE Manual has been utilized for this scoping agreement. This publication provides a comprehensive evaluation of trip generation rates for a variety of land uses.

As previously discussed, the project is proposing to construct two warehouse/manufacturing buildings totaling 807,005 square feet. The two buildings have a total gross floor area (GFA) of 691,005 SF warehousing, 92,000 SF manufacturing, and 24,000 SF of office use. It should be noted that the descriptions of these industrial uses, per the ITE Trip General Manual, 11th Edition, already include “office” as part of the GFA. However, to provide a conservative analysis, the 24,000 SF of office use is included in the trip generation for the manufacturing land use, which has a more intensive trip rate than the warehouse land use. As such, ITE Land Use 140: Manufacturing trip rates and ITE Land Use 150: Warehousing trip rates are the most appropriate for this project.

ITE land use 140: Manufacturing trip rates contain the following split percentages of passenger vehicles and trucks:

- AM Peak Hour - (95.6% passenger cars & 4.4% trucks)
- PM Peak Hour - (95.9% passenger cars & 4.1% trucks)
- Weekday Daily - (90.5% passenger cars & 35.1% trucks)

ITE land use 150: Warehousing trip rates contain the following split percentages of passenger vehicles and trucks:

- AM Peak Hour - (88.2% passenger cars & 11.8 % trucks)
- PM Peak Hour - (83.3% passenger cars & 16.7 trucks)
- Weekday Daily - (64.9% passenger cars & 35.1% trucks)

Moreover, these truck percentages were further broken down by axle type per the following South Coast Air Quality Management District (SCAQMD) recommended truck mix for “Without Cold Storage” uses: 2-Axle = 16.7%; 3-Axle = 20.7%; 4+-Axle = 62.5%.

Table 1 and **Table 2** show the ITE trip generation rates (11th Edition) utilized for the trip generation analysis of the proposed project land uses as well as the project’s forecast peak hour and daily traffic volumes for ITE land use 140 and ITE land use 150.

Table 1 | Project Trip Generations & Forecasts¹
Manufacturing Land Use

Land Use	ITE Code	Quantity	Units ¹	Trip Type	Peak Hour						Daily
					AM			PM			
					In	Out	Total	In	Out	Total	
Trip Generation Rates ²											
Manufacturing	140	--	TSF	All Vehicles	0.52	0.16	0.68	0.23	0.51	0.74	4.75
				Trucks	0.02	0.01	0.03	0.01	0.02	0.03	0.45
				Passenger Cars	0.50	0.15	0.65	0.22	0.49	0.71	4.30
Vehicle Trip Generation											
Manufacturing	140	116.000	TSF	All Vehicles	60	19	79	27	59	86	551
Vehicle Mix Trip Generation ³											
Passenger Vehicles					58	18	76	26	56	82	499
2-Axle Trucks (16.7% of Total Trucks)					0	1	1	0	1	1	9
3-Axle Trucks (20.7% of Total Trucks)					1	0	1	0	1	1	11
4-Axle Trucks (62.5% of Total Trucks)					1	0	1	1	1	2	32
Total Trucks ⁴					2	1	3	1	3	4	52
Total Non-PCE Trip Generation					60	19	79	27	59	86	551
PCE Trip Generation ⁵											
Passenger Vehicles (PCE = 1.0)					58	18	76	26	56	82	499
2-Axle Trucks (PCE = 1.5)					0	2	2	0	2	2	14
3-Axle Trucks (PCE = 2.0)					2	0	2	0	2	2	22
4-Axle Trucks (PCE = 3.0)					3	0	3	3	3	6	96
Total PCE Trip Generation					63	20	83	29	63	92	631

¹ TSF = Thousand Square Feet

² Source: ITE Trip Generation Manual (11th Edition, 2021).

³ The truck fleet mix is based on South Coast Air Quality Management District's (SCAQMD) recommended truck fleet mix normalized percentages, by axle type, utilizing the "Without Cold Storage" building type.

⁴ The total truck percentages are based on the ITE Trip Generation Manual (11th Edition, 2021) recommended truck percentages based on land use type for the AM peak hour, PM peak hour, and ADT.

⁵ PCE = Passenger Car Equivalent

Table 2 | Project Trip Generations & Forecasts¹
Warehouse Land Use

Land Use	ITE Code	Quantity	Units ¹	Trip Type	Peak Hour						Daily
					AM			PM			
					In	Out	Total	In	Out	Total	
Trip Generation Rates ²											
Warehouse	150	--	TSF	All Vehicles	0.13	0.04	0.17	0.05	0.13	0.18	1.71
				Trucks	0.01	0.01	0.02	0.02	0.01	0.03	0.60
				Passenger Cars	0.12	0.03	0.15	0.03	0.12	0.15	1.11
Vehicle Trip Generation											
Warehouse	150	691.005	TSF	All Vehicles	90	27	117	35	89	124	1,182
Vehicle Mix Trip Generation ³											
Passenger Vehicles					83	20	103	24	79	103	767
2-Axle Trucks (16.7% of Total Trucks)					1	1	2	2	1	3	69
3-Axle Trucks (20.7% of Total Trucks)					1	2	3	2	2	4	86
4-Axle Trucks (62.5% of Total Trucks)					5	4	9	7	7	14	260
Total Trucks ⁴					7	7	14	11	10	21	415
Total Non-PCE Trip Generation					90	27	117	35	89	124	1,182
PCE Trip Generation ⁵											
Passenger Vehicles (PCE = 1.0)					83	20	103	24	79	103	767
2-Axle Trucks (PCE = 1.5)					2	1	3	3	2	5	104
3-Axle Trucks (PCE = 2.0)					2	4	6	4	4	8	172
4-Axle Trucks (PCE = 3.0)					15	12	27	21	21	42	780
Total PCE Trip Generation					102	37	139	52	106	158	1,823

¹ TSF = Thousand Square Feet

² Source: ITE Trip Generation Manual (11th Edition, 2021).

³ The truck fleet mix is based on South Coast Air Quality Management District's (SCAQMD) recommended truck fleet mix normalized percentages, by axle type, utilizing the "Without Cold Storage" building type.

⁴ The total truck percentages are based on the ITE Trip Generation Manual (11th Edition, 2021) recommended truck percentages based on land use type for the AM peak hour, PM peak hour, and ADT.

⁵ PCE = Passenger Car Equivalent

Table 3 summarizes the gross PCE project trip generation from Table 1 and 2.

Table 3 | Total Project Trip Generations & Forecasts¹

Land Use (ITE Code)	Quantity	Units ²	Weekday						Daily
			AM Peak Hour			PM Peak Hour			
			In	Out	Total	In	Out	Total	
Proposed PCE Trip Generation Forecast									
Manufacturing (140)	674.156	TSF	63	20	83	29	63	92	631
Warehouse (150)	121.195	TSF	102	37	139	52	106	158	1,823
Total PCE Project Trip Generation Forecast [B]			165	57	222	81	169	250	2,454

¹ Source: ITE Trip Generation Manual (11th Edition, 2021)

² TSF = Thousand Square Feet

DU = Dwelling Units

GFA = Gross Floor Area

As shown in Table 3, based on the preliminary evaluation of the project trip generation utilizing the Institute of Transportation Engineers (ITE) trip generation rates, the proposed project is forecast to generate approximately 2,454 gross daily weekday trips, which include approximately 222 gross AM peak hour trips and 250 gross PM peak hour trips.

C. Study Intersections: Per the City of Lancaster's *Local Transportation Assessment Guidelines*, dated January 5, 2021, a Local Transportation Assessment is required if the Project is anticipated to generate net new trips of 100 or more during any peak hour. However, RK has received initial input from City staff regarding the study area and as such, RK will propose analysis of the following six (6) study intersections/project driveway:

1. SR-14 Southbound Ramps (N/S) at Avenue M (E/W);
2. SR-14 Northbound Ramps (N/S) at Avenue M (E/W);
3. 10th Street (N/S) & Avenue M (E/W);
4. Main Driveway (N/S) & Avenue M (E/W);
5. Sierra Highway (N/S) & Avenue M (E/W) and
6. Sierra Highway (N/S) & Avenue L-12 (E/W).

Exhibit C illustrates the project's study area.

D. Project Trip Distribution: It is RK's understanding the *Palmdale Logistics Park Traffic Analysis*, prepared by Urban Crossroads, dated June 2, 2023, has been recently completed. The Palmdale Logistics Park Project is located within close proximity of the proposed project site, just south of Avenue M. Both projects are also industrial land uses. As such, the project's trip distribution has been developed in a manner consistent with the trip distribution utilized in the Palmdale Logistics Park TA Report.

Exhibit D-1 shows the outbound and inbound trip distribution for the proposed project for passenger vehicles. **Exhibit D-2** shows the outbound and inbound trip distribution for the proposed project for trucks.

E. Analysis Scenarios: The analysis will evaluate traffic conditions for the following scenarios during the weekday AM peak hours (7:00 AM to 9:00 AM) and weekday PM peak hours (4:00 PM to 6:00 PM):

- Existing Conditions;
- Existing Plus Project Conditions;
- Existing Plus Project Conditions Plus Improvements (if necessary);
- Existing Plus Ambient Growth Plus Related Projects Conditions;
- Existing Plus Ambient Growth Plus Related Projects Plus Project Conditions; and
- Existing Plus Amb. Growth Plus RP's Plus Project Conditions Plus Improvements (if necessary).

F. Traffic Analysis Parameters: The analysis will utilize the following parameters:

- PTV Vistro software and the latest edition of the Highway Capacity Manual (HCM) methodology; and
- Optimized Signal Timing.

G. Existing Traffic Counts: The analysis will utilize existing traffic counts conducted in May 2024 when local schools were in session. These traffic counts include vehicle classification.

- Weekday AM peak period counts were collected during one typical weekday from 7:00 AM to 9:00 AM.
- Weekday PM peak period counts were collected during one typical weekday from 4:00 PM to 6:00 PM.

H. Existing Plus Ambient Growth Plus Related Projects Conditions Traffic Volumes: Existing Plus Ambient Growth Plus Related Projects Conditions background traffic volumes will be derived by applying an annual compounded growth rate of 1.25 percent (1.25%) per year-over a period of two (2) years to existing traffic volumes (i.e., 2.5% total growth from Year 2024) and addition of traffic associated with specific cumulative projects in the area provided by the City. The 1.25% annual growth rate is consistent with the City of Lancaster's *Local Transportation Assessment Guidelines*, dated January 5, 2021.

I. Performance Criteria

City of Lancaster

Determination of significant impacts will be based on a comparison of without and with project levels of service for each analysis year. A significant impact occurs if project traffic increases the average delay at an intersection by more than the thresholds identified below:

Table 4 | City of Lancaster Level of Service Criteria

Intersection Control	LOS Without Project	LOS With Project	Average Total Delay (Seconds Per Vehicle)	Project-Related Increase in Seconds of Average Total Delay
Signalized Intersections	A, B, C, or D	E or F	--	Any Increase in Delay
	E or F	E or F	>55.0	≥ 5.0 seconds
All-Way Stop	E or F	--	Any Increase in Delay	E or F
	E or F	>35.0	≥ 3.0 seconds	E or F
Side-Street Stop	>35.0 to 50.0	LOS D or better to LOS E or worse and meets the peak hour warrant for a traffic signal	>35.0 to 50.0	LOS D or better to LOS E or worse and meets the peak hour warrant for a traffic signal
	>50.0	LOS E to LOS F, or > 10 seconds of delay for worst-case approach if already at LOS F; and meets the peak hour warrant for a traffic signal.	>50.0	LOS E to LOS F, or > 10 seconds of delay for worst-case approach if already at LOS F; and meets the peak hour warrant for a traffic signal.

Additionally, if an all-way stop controlled intersection's "plus project" LOS grade is E or F, the peak hour traffic signal and roundabout warrant analysis must be conducted.

Similarly for side-street stop intersections, the peak hour traffic signal warrant and/or all-way stop warrant should also be met as part of the performance criteria in order to ensure that minor street approaches with low traffic volumes are not identified as potentially needing improvements.

At intersections where a project impact is identified, improvements shall be recommended to offset the projects' effects.

Caltrans

The *Caltrans Guide for The Preparation of Traffic Impact Studies*, dated December 2002, previously defined Caltrans' methodology and significance thresholds for evaluating traffic operations on state highway facilities. These guidelines were subsequently replaced by the *Caltrans Vehicle Miles Traveled-Focused Transportation Impact Study Guide*, dated May 2020, in response to automobile delay no longer considered as a significant impact under the California Environmental Quality Act (CEQA) and Senate Bill (SB-743). Consequently, Caltrans now primarily focuses on vehicle miles traveled (VMT) when reviewing the impact of a land use project. Additionally, the *Caltrans Local Development Review (LDR) Safety Review Practitioner's Guidance*, dated February 2024, indicates that a local agency partner must alert Caltrans about a development review, in which Caltrans will determine if a safety review is required based on the screening criteria defined in the guidelines.

Furthermore, although Caltrans no longer requires an LOS analysis for review of development projects, the City of Lancaster still requires an LOS analysis to understand the possible influences the proposed project will have on the State Highway. As such, for the purpose of this analysis, the minimum acceptable level of service for state-controlled intersections is assumed to match the City's minimum standards.

J. Vehicle Miles Traveled (VMT) Analysis: RK previously prepared the Avenue M & Division Street Warehouse Project Vehicle Miles Traveled (VMT) Analysis, dated April 10, 2024. As such, no additional VMT analysis will be included in the Local Mobility Analysis.

K. Queuing Analysis: RK has received initial input from City staff regarding the study area and as such, RK will propose a queuing analysis of up to the following two (2) movements at the following intersections:

- Main Driveway (N/S) & Avenue M (E/W) - Eastbound Left-Turn
- Sierra Highway (N/S) & Avenue L-12 (E/W) - Eastbound Left-Turn

L. Traffic Signal Warrant Analysis: A traffic signal warrant analysis will be performed at the intersection of Sierra Highway (N/S) at Avenue L-12 (E/W).

M. Request for Information: Please provide information on the following for use in the traffic study:

- Information on cumulative projects that need to be included in the traffic analysis (location, land use type(s), and land use quantities);
- Information on future roadway and circulation system modifications/improvements that are planned within the study area and would potentially affect the analysis. **Received 09/05/24.**

If you have any questions, or would like further review, please call us at (949) 474-0809.

Sincerely,

RK ENGINEERING GROUP, INC.



Justin Tucker, P.E., T.E.
Associate Principal

Attachments

Approved by:



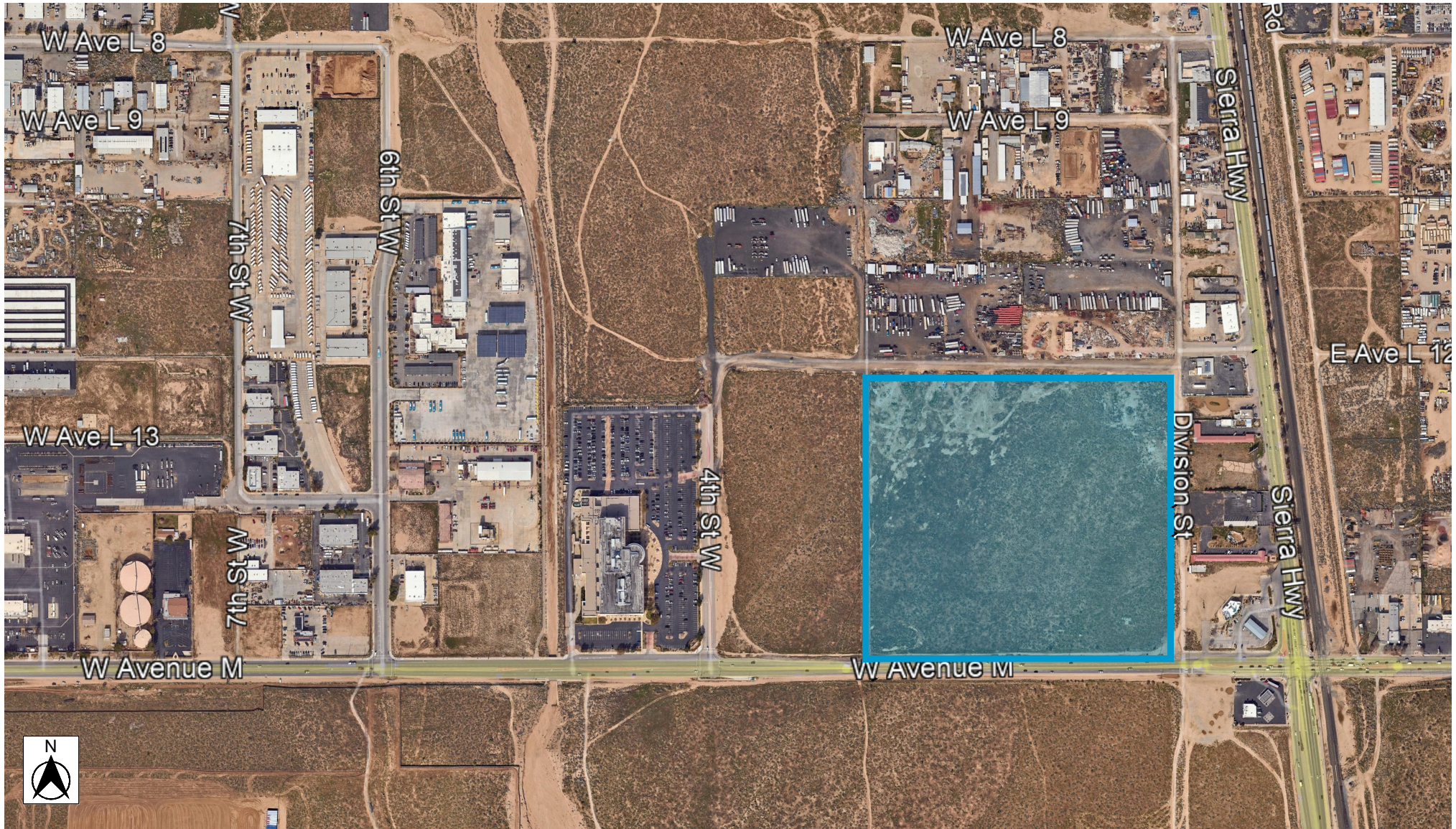
City of Lancaster

9/6/2024

Date



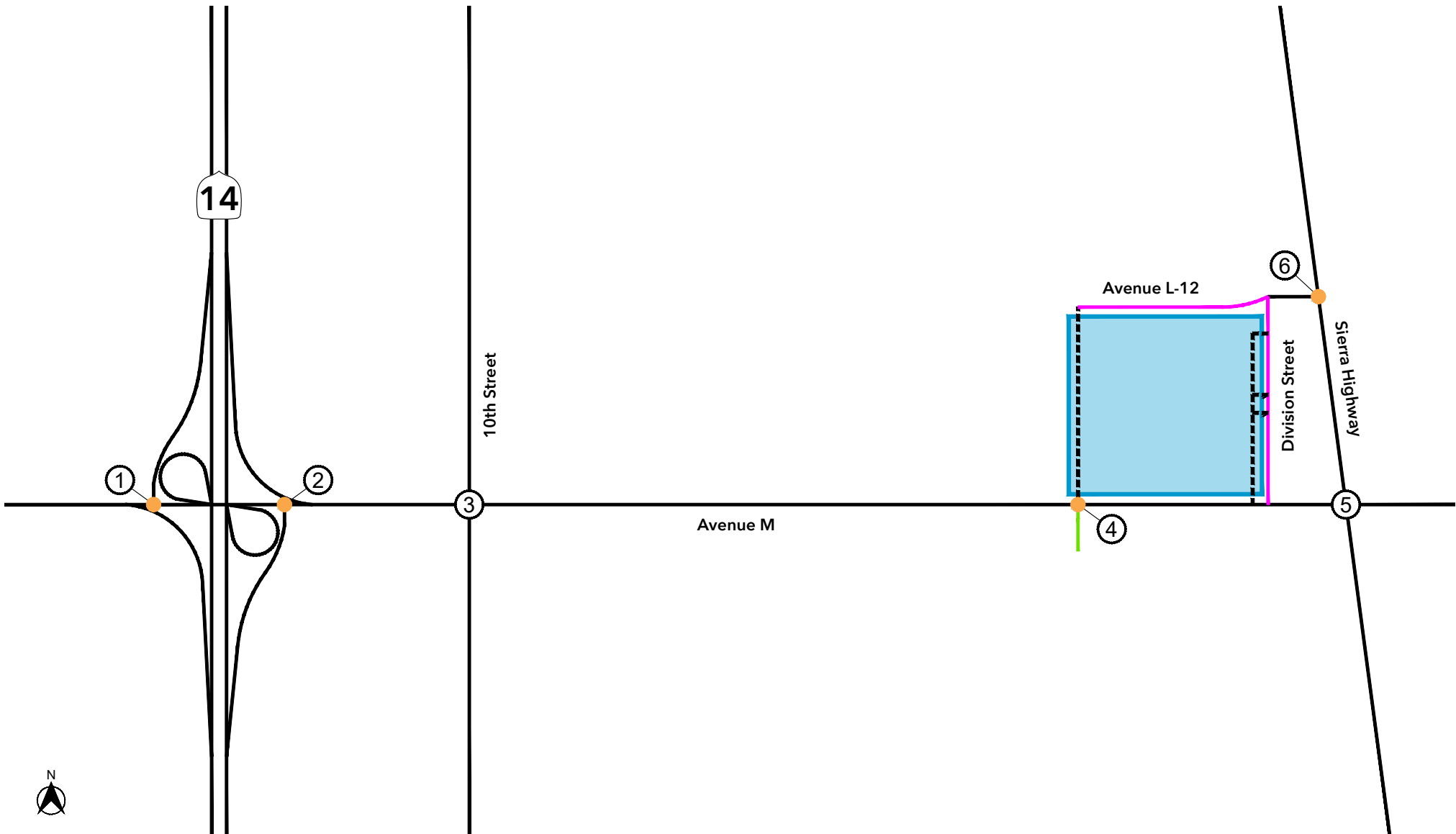
Exhibits



Legend

— = Project Site Boundary

Exhibit A Location Map



Legend

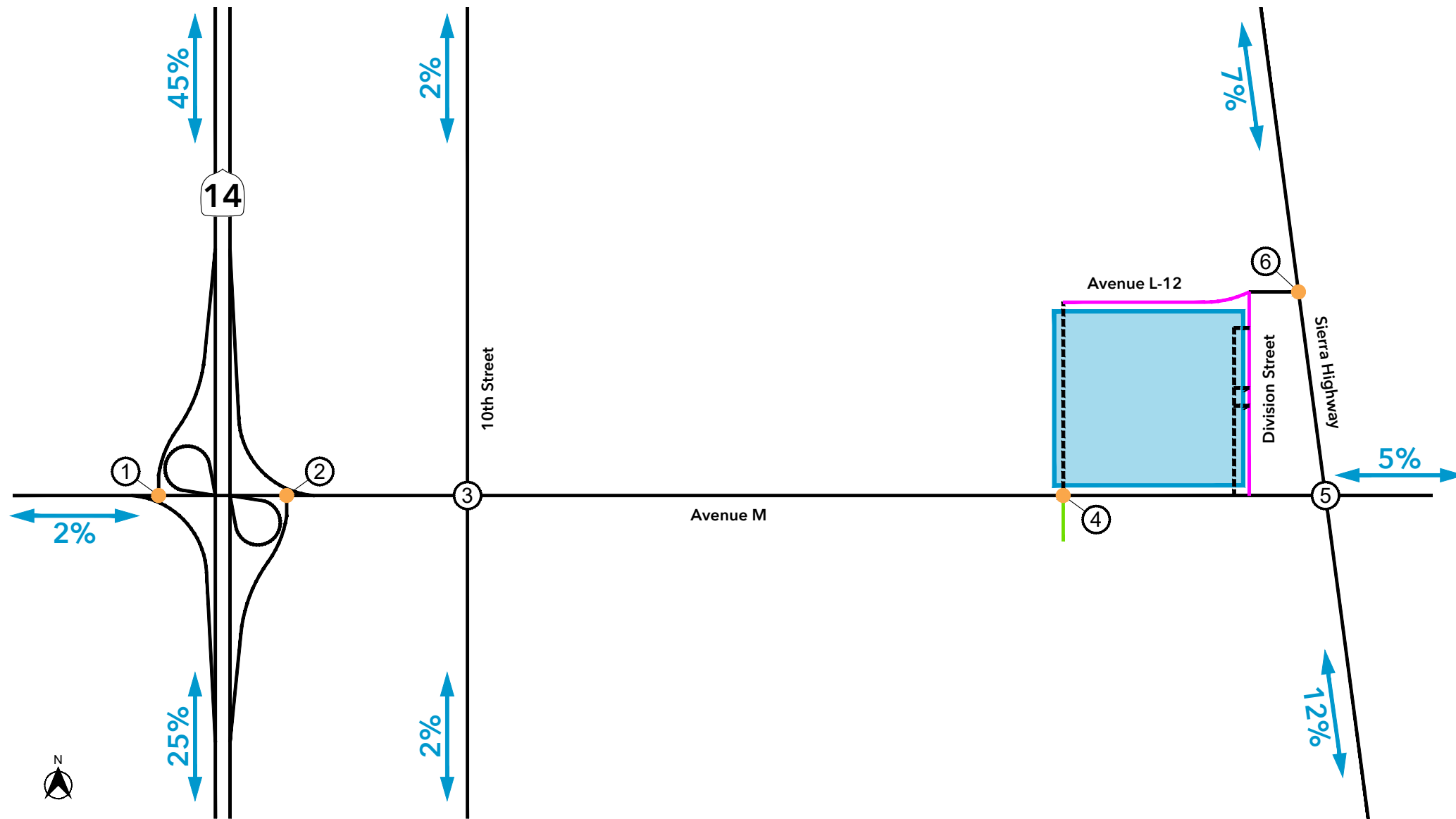
- ① = Study Intersection
- ② = Project Site Boundary
- ③ = Project-Specific Improvements
- ④ = Future Palmdale Logistics Park Project Driveway
- ⑤ = Project Access Driveway

Exhibit C

Study Area



ENGINEERING
GROUP INC.



Legend

- ① = Study Intersection
- = Project Site Boundary
- - - = Project Access Driveway
- = Project-Specific Improvements
- = Future Palmdale Logistics Park Project Driveway
- = Outbound Percentage
- ← = Inbound Percentage

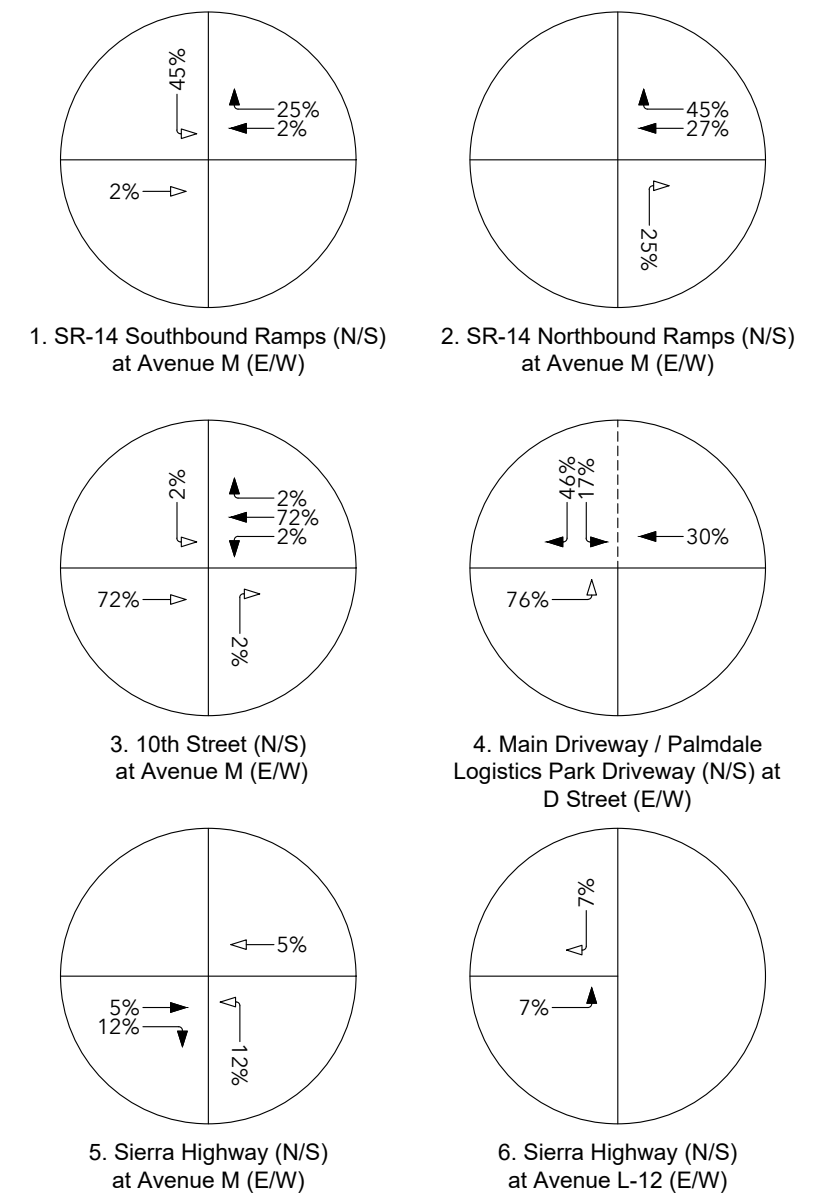
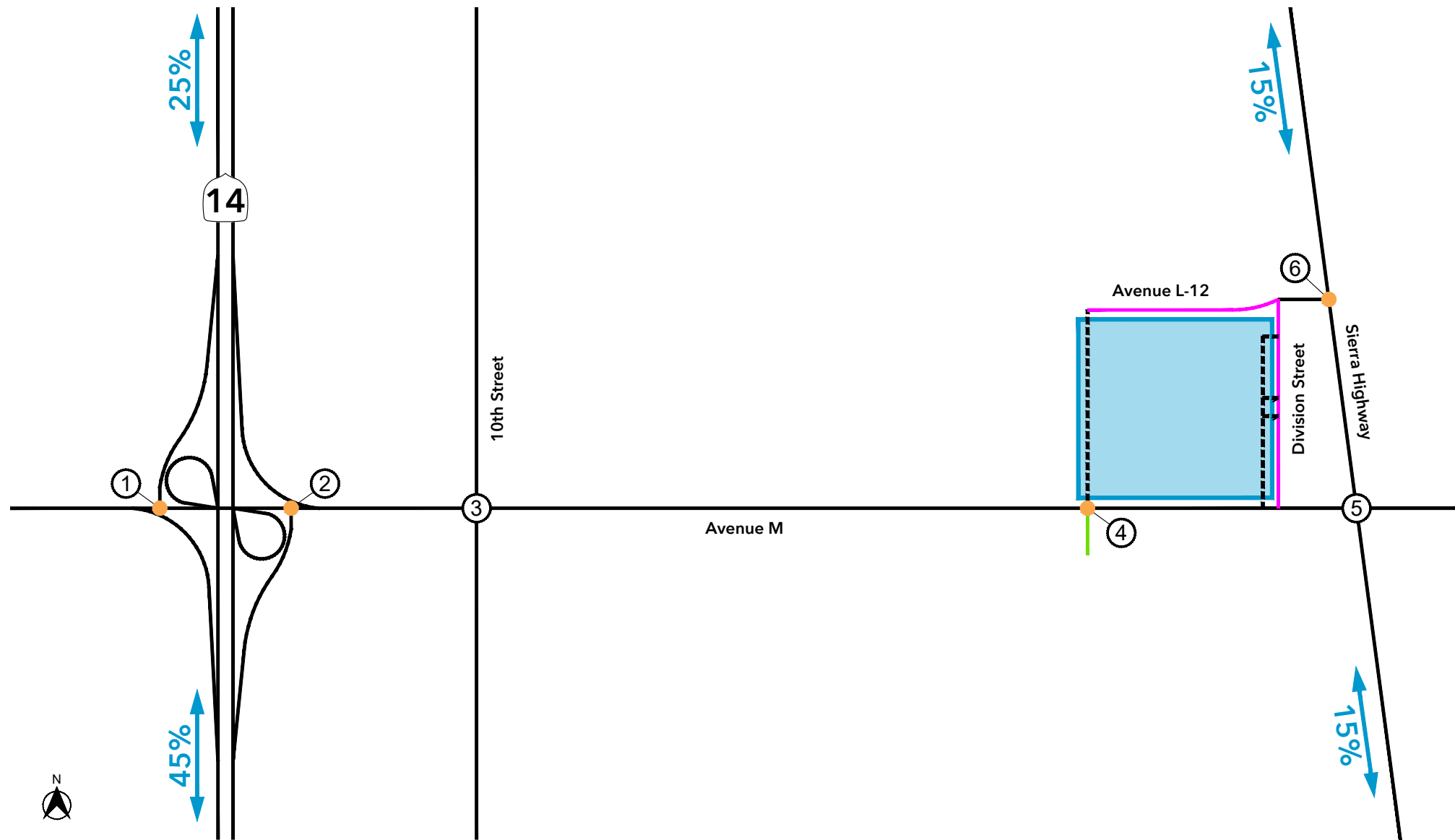


Exhibit D-1

Project Trip Distribution - Passenger Vehicles



Legend

- ① = Study Intersection
- = Project Site Boundary
- - - = Project Access Driveway
- = Project-Specific Improvements
- = Future Palmdale Logistics Park Project Driveway
- ← = Outbound Percentage
- ↔ = Inbound Percentage

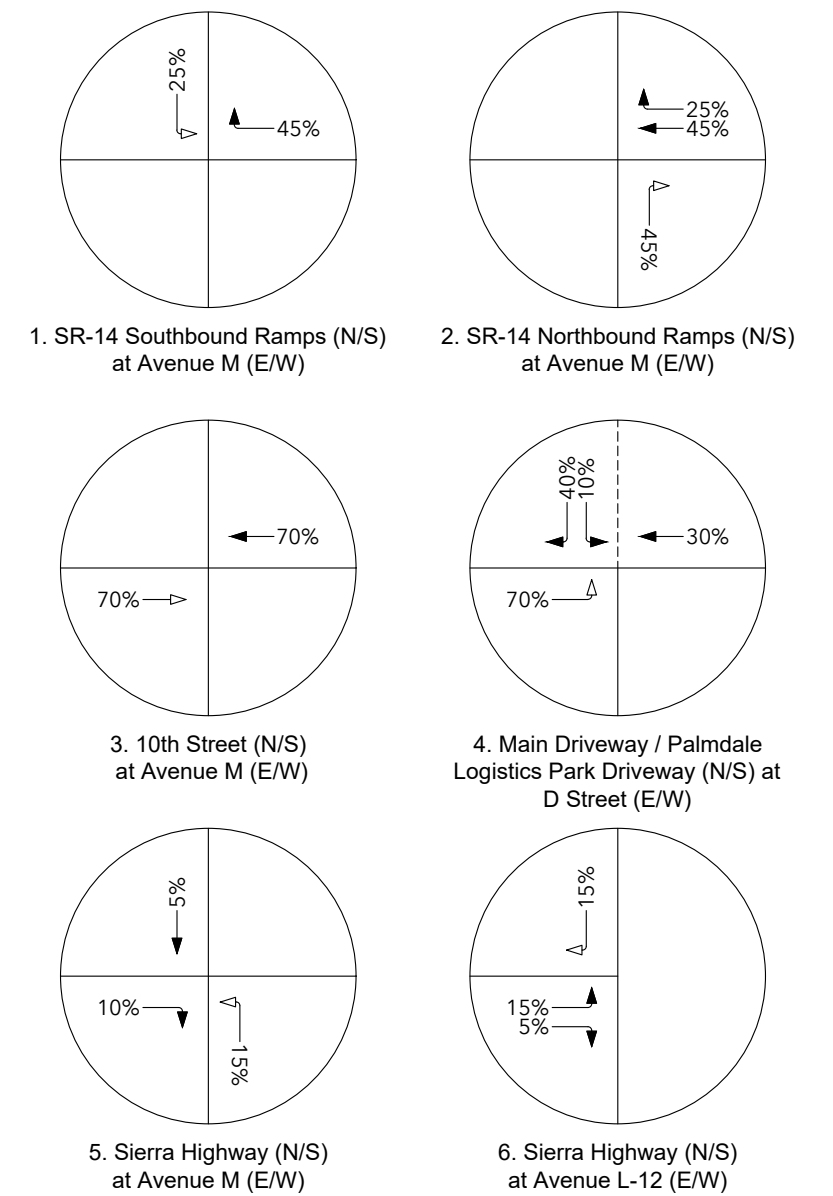


Exhibit D-2

Project Trip Distribution - Trucks



Appendix B

Existing Traffic Volume Counts

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Lancaster
N/S: SR-14 Southbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 06_LAN_14S_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

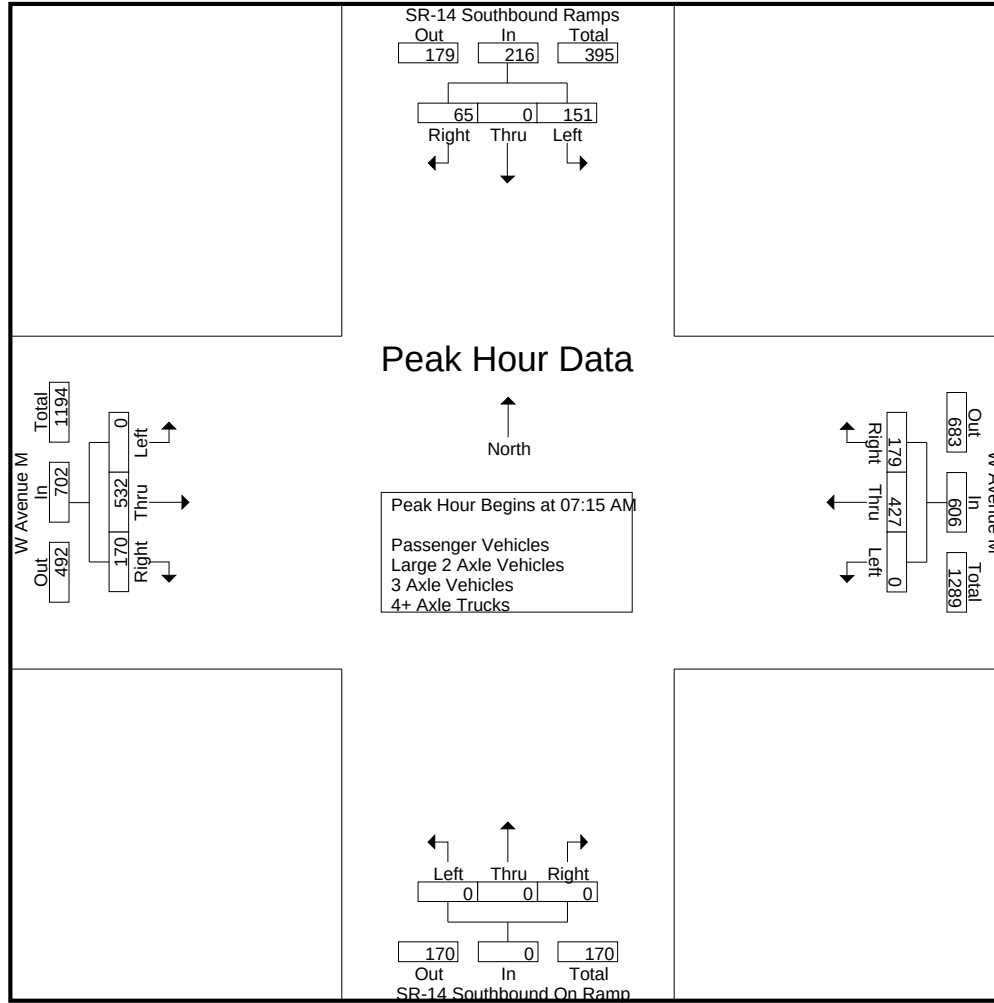
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	SR-14 Southbound Ramps Southbound				W Avenue M Westbound				SR-14 Southbound On Ramp Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	21	0	19	40	0	86	38	124	0	0	0	0	0	94	25	119	283
07:15 AM	46	0	21	67	0	115	45	160	0	0	0	0	0	101	39	140	367
07:30 AM	39	0	15	54	0	127	45	172	0	0	0	0	0	144	40	184	410
07:45 AM	33	0	18	51	0	102	44	146	0	0	0	0	0	162	54	216	413
Total	139	0	73	212	0	430	172	602	0	0	0	0	0	501	158	659	1473
08:00 AM	33	0	11	44	0	83	45	128	0	0	0	0	0	125	37	162	334
08:15 AM	35	0	10	45	0	83	46	129	0	0	0	0	0	86	30	116	290
08:30 AM	31	0	13	44	0	82	56	138	0	0	0	0	0	126	54	180	362
08:45 AM	32	0	7	39	0	83	35	118	0	0	0	0	0	127	31	158	315
Total	131	0	41	172	0	331	182	513	0	0	0	0	0	464	152	616	1301
Grand Total	270	0	114	384	0	761	354	1115	0	0	0	0	0	965	310	1275	2774
Apprch %	70.3	0	29.7		0	68.3	31.7		0	0	0		0	75.7	24.3		
Total %	9.7	0	4.1	13.8	0	27.4	12.8	40.2	0	0	0	0	0	34.8	11.2	46	
Passenger Vehicles	264	0	112	376	0	702	319	1021	0	0	0	0	0	929	306	1235	2632
% Passenger Vehicles	97.8	0	98.2	97.9	0	92.2	90.1	91.6	0	0	0	0	0	96.3	98.7	96.9	94.9
Large 2 Axle Vehicles	3	0	2	5	0	46	21	67	0	0	0	0	0	30	1	31	103
% Large 2 Axle Vehicles	1.1	0	1.8	1.3	0	6	5.9	6	0	0	0	0	0	3.1	0.3	2.4	3.7
3 Axle Vehicles	1	0	0	1	0	9	6	15	0	0	0	0	0	6	2	8	24
% 3 Axle Vehicles	0.4	0	0	0.3	0	1.2	1.7	1.3	0	0	0	0	0	0.6	0.6	0.6	0.9
4+ Axle Trucks	2	0	0	2	0	4	8	12	0	0	0	0	0	0	1	1	15
% 4+ Axle Trucks	0.7	0	0	0.5	0	0.5	2.3	1.1	0	0	0	0	0	0	0.3	0.1	0.5

	SR-14 Southbound Ramps Southbound				W Avenue M Westbound				SR-14 Southbound On Ramp Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	46	0	21	67	0	115	45	160	0	0	0	0	0	101	39	140	367
07:30 AM	39	0	15	54	0	127	45	172	0	0	0	0	0	144	40	184	410
07:45 AM	33	0	18	51	0	102	44	146	0	0	0	0	0	162	54	216	413
08:00 AM	33	0	11	44	0	83	45	128	0	0	0	0	0	125	37	162	334
Total Volume	151	0	65	216	0	427	179	606	0	0	0	0	0	532	170	702	1524
% App. Total	69.9	0	30.1		0	70.5	29.5		0	0	0		0	75.8	24.2		
PHF	.821	.000	.774	.806	.000	.841	.994	.881	.000	.000	.000	.000	.000	.821	.787	.813	.923

City of Lancaster
N/S: SR-14 Southbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 06_LAN_14S_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:00 AM				07:15 AM			
+0 mins.	46	0	21	67	0	115	45	160	0	0	0	0	0	101	39	140
+15 mins.	39	0	15	54	0	127	45	172	0	0	0	0	0	144	40	184
+30 mins.	33	0	18	51	0	102	44	146	0	0	0	0	0	162	54	216
+45 mins.	33	0	11	44	0	83	45	128	0	0	0	0	0	125	37	162
Total Volume	151	0	65	216	0	427	179	606	0	0	0	0	0	532	170	702
% App. Total	69.9	0	30.1		0	70.5	29.5		0	0	0	0	0	75.8	24.2	
PHF	.821	.000	.774	.806	.000	.841	.994	.881	.000	.000	.000	.000	.000	.821	.787	.813

City of Lancaster
N/S: SR-14 Southbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 06_LAN_14S_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

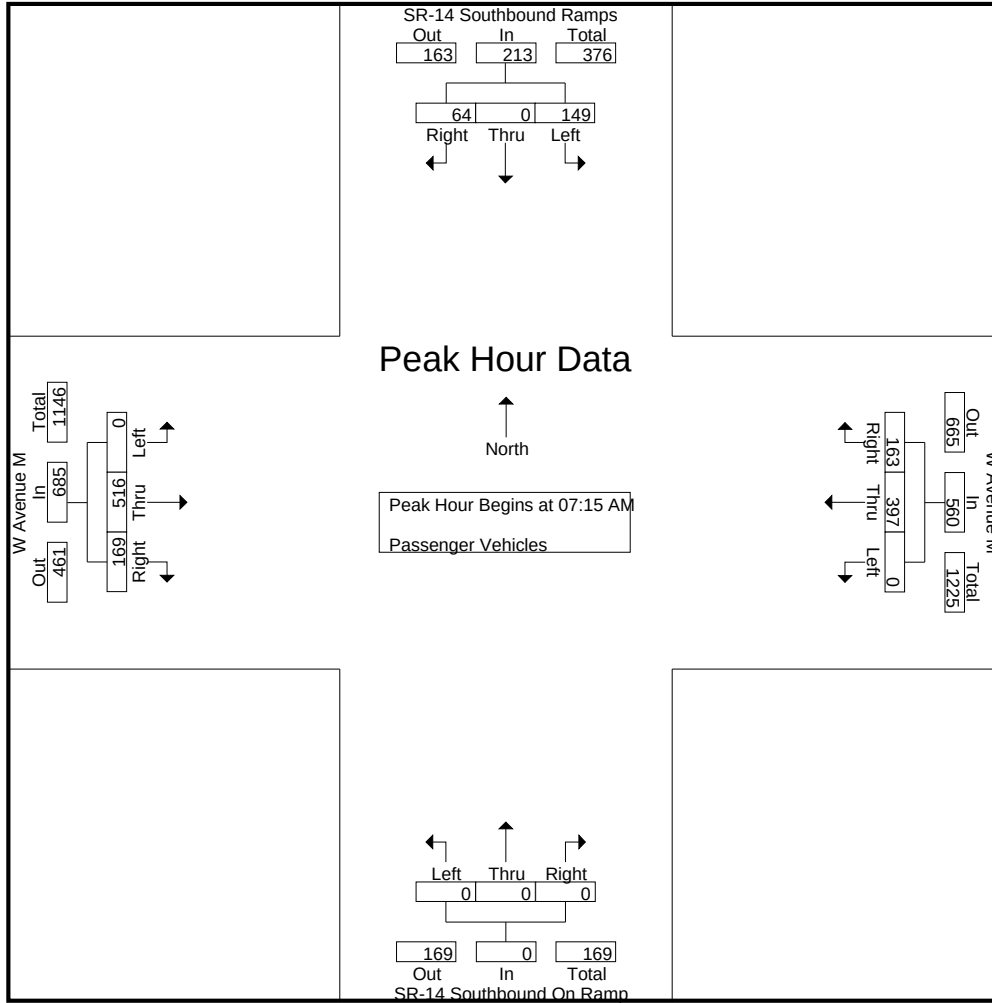
Groups Printed- Passenger Vehicles

	SR-14 Southbound Ramps Southbound				W Avenue M Westbound				SR-14 Southbound On Ramp Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	20	0	19	39	0	71	34	105	0	0	0	0	0	92	24	116	260
07:15 AM	45	0	21	66	0	107	38	145	0	0	0	0	0	95	39	134	345
07:30 AM	39	0	14	53	0	117	43	160	0	0	0	0	0	139	40	179	392
07:45 AM	33	0	18	51	0	94	37	131	0	0	0	0	0	160	53	213	395
Total	137	0	72	209	0	389	152	541	0	0	0	0	0	486	156	642	1392
08:00 AM	32	0	11	43	0	79	45	124	0	0	0	0	0	122	37	159	326
08:15 AM	33	0	10	43	0	78	42	120	0	0	0	0	0	82	29	111	274
08:30 AM	31	0	13	44	0	77	48	125	0	0	0	0	0	119	54	173	342
08:45 AM	31	0	6	37	0	79	32	111	0	0	0	0	0	120	30	150	298
Total	127	0	40	167	0	313	167	480	0	0	0	0	0	443	150	593	1240
Grand Total	264	0	112	376	0	702	319	1021	0	0	0	0	0	929	306	1235	2632
Apprch %	70.2	0	29.8		0	68.8	31.2		0	0	0		0	75.2	24.8		
Total %	10	0	4.3	14.3	0	26.7	12.1	38.8	0	0	0	0	0	35.3	11.6	46.9	

	SR-14 Southbound Ramps Southbound				W Avenue M Westbound				SR-14 Southbound On Ramp Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	45	0	21	66	0	107	38	145	0	0	0	0	0	95	39	134	345
07:30 AM	39	0	14	53	0	117	43	160	0	0	0	0	0	139	40	179	392
07:45 AM	33	0	18	51	0	94	37	131	0	0	0	0	0	160	53	213	395
08:00 AM	32	0	11	43	0	79	45	124	0	0	0	0	0	122	37	159	326
Total Volume	149	0	64	213	0	397	163	560	0	0	0	0	0	516	169	685	1458
% App. Total	70	0	30		0	70.9	29.1		0	0	0		0	75.3	24.7		
PHF	.828	.000	.762	.807	.000	.848	.906	.875	.000	.000	.000	.000	.000	.806	.797	.804	.923

City of Lancaster
N/S: SR-14 Southbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 06_LAN_14S_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	45	0	21	66	0	107	38	145	0	0	0	0	0	95	39	134
+15 mins.	39	0	14	53	0	117	43	160	0	0	0	0	0	139	40	179
+30 mins.	33	0	18	51	0	94	37	131	0	0	0	0	0	160	53	213
+45 mins.	32	0	11	43	0	79	45	124	0	0	0	0	0	122	37	159
Total Volume	149	0	64	213	0	397	163	560	0	0	0	0	0	516	169	685
% App. Total	70	0	30		0	70.9	29.1		0	0	0	0	0	75.3	24.7	
PHF	.828	.000	.762	.807	.000	.848	.906	.875	.000	.000	.000	.000	.000	.806	.797	.804

City of Lancaster
N/S: SR-14 Southbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 06_LAN_14S_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

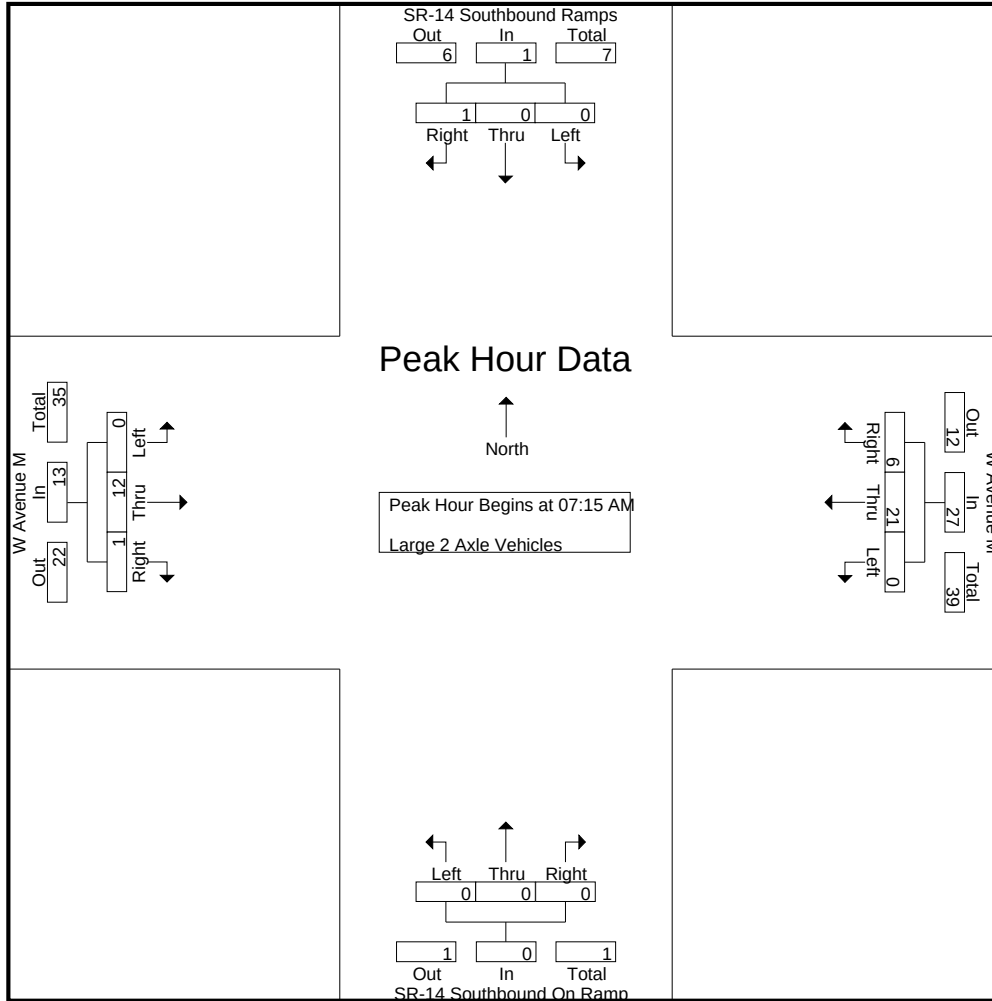
Groups Printed- Large 2 Axle Vehicles

	SR-14 Southbound Ramps Southbound				W Avenue M Westbound				SR-14 Southbound On Ramp Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	0	0	1	0	13	3	16	0	0	0	0	0	1	0	1	18
07:15 AM	0	0	0	0	0	7	2	9	0	0	0	0	0	4	0	4	13
07:30 AM	0	0	1	1	0	7	1	8	0	0	0	0	0	4	0	4	13
07:45 AM	0	0	0	0	0	4	3	7	0	0	0	0	0	1	1	2	9
Total	1	0	1	2	0	31	9	40	0	0	0	0	0	10	1	11	53
08:00 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	3	0	3	6
08:15 AM	1	0	0	1	0	4	2	6	0	0	0	0	0	3	0	3	10
08:30 AM	0	0	0	0	0	5	7	12	0	0	0	0	0	7	0	7	19
08:45 AM	1	0	1	2	0	3	3	6	0	0	0	0	0	7	0	7	15
Total	2	0	1	3	0	15	12	27	0	0	0	0	0	20	0	20	50
Grand Total	3	0	2	5	0	46	21	67	0	0	0	0	0	30	1	31	103
Apprch %	60	0	40		0	68.7	31.3		0	0	0		0	96.8	3.2		
Total %	2.9	0	1.9	4.9	0	44.7	20.4	65	0	0	0	0	0	29.1	1	30.1	

	SR-14 Southbound Ramps Southbound				W Avenue M Westbound				SR-14 Southbound On Ramp Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	7	2	9	0	0	0	0	0	4	0	4	13
07:30 AM	0	0	1	1	0	7	1	8	0	0	0	0	0	4	0	4	13
07:45 AM	0	0	0	0	0	4	3	7	0	0	0	0	0	1	1	2	9
08:00 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	3	0	3	6
Total Volume	0	0	1	1	0	21	6	27	0	0	0	0	0	12	1	13	41
% App. Total	0	0	100		0	77.8	22.2		0	0	0		0	92.3	7.7		
PHF	.000	.000	.250	.250	.000	.750	.500	.750	.000	.000	.000	.000	.000	.750	.250	.813	.788

City of Lancaster
N/S: SR-14 Southbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 06_LAN_14S_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	7	2	9	0	0	0	0	0	4	0	4
+15 mins.	0	0	1	1	0	7	1	8	0	0	0	0	0	4	0	4
+30 mins.	0	0	0	0	0	4	3	7	0	0	0	0	0	1	1	2
+45 mins.	0	0	0	0	0	3	0	3	0	0	0	0	0	3	0	3
Total Volume	0	0	1	1	0	21	6	27	0	0	0	0	0	12	1	13
% App. Total	0	0	100		0	77.8	22.2		0	0	0		0	92.3	7.7	
PHF	.000	.000	.250	.250	.000	.750	.500	.750	.000	.000	.000	.000	.000	.750	.250	.813

City of Lancaster
N/S: SR-14 Southbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 06_LAN_14S_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

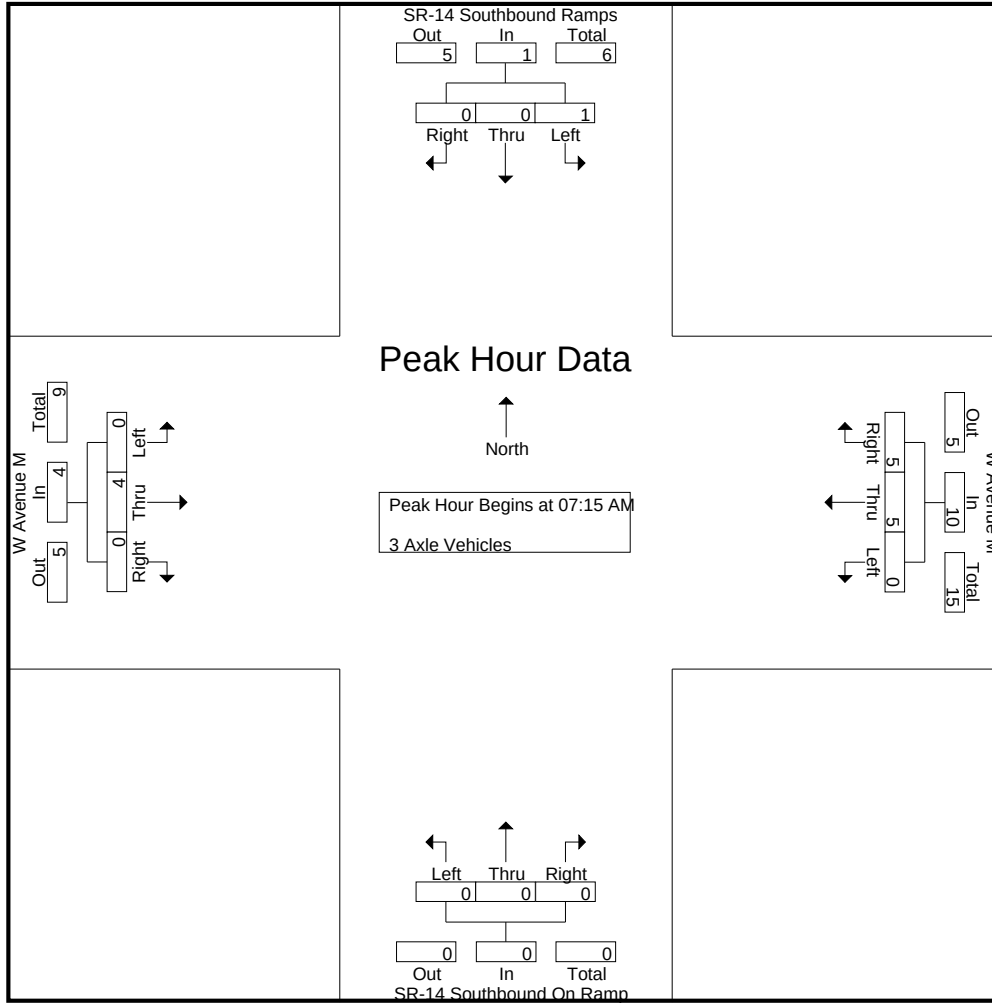
Groups Printed- 3 Axle Vehicles

	SR-14 Southbound Ramps Southbound				W Avenue M Westbound				SR-14 Southbound On Ramp Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	2	1	3	0	0	0	0	0	1	1	2	5
07:15 AM	0	0	0	0	0	1	2	3	0	0	0	0	0	2	0	2	5
07:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
07:45 AM	0	0	0	0	0	2	3	5	0	0	0	0	0	1	0	1	6
Total	0	0	0	0	0	6	6	12	0	0	0	0	0	5	1	6	18
08:00 AM	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
08:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	2
Total	1	0	0	1	0	3	0	3	0	0	0	0	0	1	1	2	6
Grand Total	1	0	0	1	0	9	6	15	0	0	0	0	0	6	2	8	24
Apprch %	100	0	0		0	60	40		0	0	0		0	75	25		
Total %	4.2	0	0	4.2	0	37.5	25	62.5	0	0	0	0	0	25	8.3	33.3	

	SR-14 Southbound Ramps Southbound				W Avenue M Westbound				SR-14 Southbound On Ramp Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	1	2	3	0	0	0	0	0	2	0	2	5
07:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
07:45 AM	0	0	0	0	0	2	3	5	0	0	0	0	0	1	0	1	6
08:00 AM	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
Total Volume	1	0	0	1	0	5	5	10	0	0	0	0	0	4	0	4	15
% App. Total	100	0	0		0	50	50		0	0	0		0	100	0		
PHF	.250	.000	.000	.250	.000	.625	.417	.500	.000	.000	.000	.000	.000	.500	.000	.500	.625

City of Lancaster
N/S: SR-14 Southbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 06_LAN_14S_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	1	2	3	0	0	0	0	0	2	0	2
+15 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
+30 mins.	0	0	0	0	0	2	3	5	0	0	0	0	0	1	0	1
+45 mins.	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0
Total Volume	1	0	0	1	0	5	5	10	0	0	0	0	0	4	0	4
% App. Total	100	0	0		0	50	50		0	0	0		0	100	0	
PHF	.250	.000	.000	.250	.000	.625	.417	.500	.000	.000	.000	.000	.000	.500	.000	.500

File Name : 06_LAN_14S_W Ave M AM
Site Code : 10524525
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[illegible][illegible]

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Lancaster
N/S: SR-14 Southbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 06_LAN_14S_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
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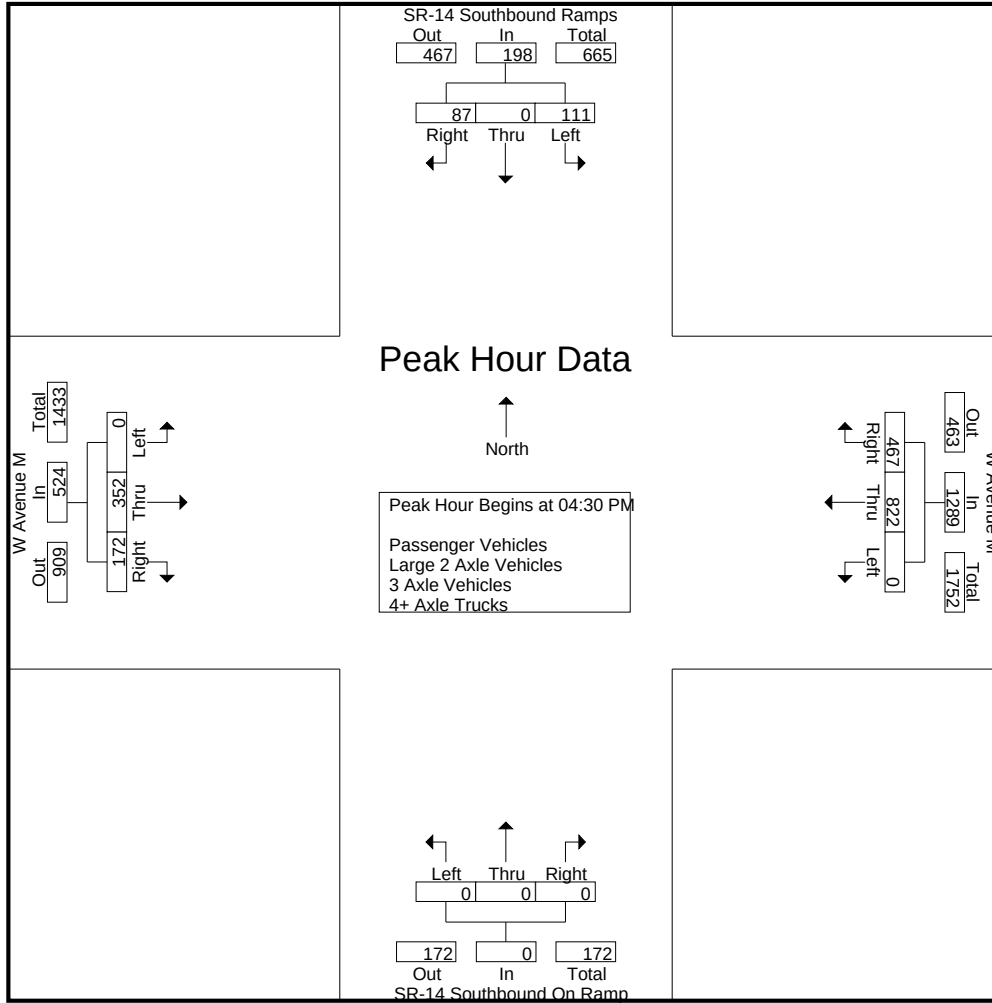
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	SR-14 Southbound Ramps Southbound				W Avenue M Westbound				SR-14 Southbound On Ramp Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	34	0	33	67	0	202	115	317	0	0	0	0	0	78	42	120	504
04:15 PM	24	0	17	41	0	193	113	306	0	0	0	0	0	90	27	117	464
04:30 PM	31	0	25	56	0	190	122	312	0	0	0	0	0	85	41	126	494
04:45 PM	27	0	17	44	0	206	107	313	0	0	0	0	0	81	36	117	474
Total	116	0	92	208	0	791	457	1248	0	0	0	0	0	334	146	480	1936
05:00 PM	15	0	22	37	0	226	128	354	0	0	0	0	0	91	36	127	518
05:15 PM	38	0	23	61	0	200	110	310	0	0	0	0	0	95	59	154	525
05:30 PM	39	0	18	57	0	180	106	286	0	0	0	0	0	71	41	112	455
05:45 PM	36	0	30	66	0	122	48	170	0	0	0	0	0	86	27	113	349
Total	128	0	93	221	0	728	392	1120	0	0	0	0	0	343	163	506	1847
Grand Total	244	0	185	429	0	1519	849	2368	0	0	0	0	0	677	309	986	3783
Apprch %	56.9	0	43.1		0	64.1	35.9		0	0	0		0	68.7	31.3		
Total %	6.4	0	4.9	11.3	0	40.2	22.4	62.6	0	0	0	0	0	17.9	8.2	26.1	
Passenger Vehicles	235	0	182	417	0	1514	840	2354	0	0	0	0	0	658	305	963	3734
% Passenger Vehicles	96.3	0	98.4	97.2	0	99.7	98.9	99.4	0	0	0	0	0	97.2	98.7	97.7	98.7
Large 2 Axle Vehicles	6	0	2	8	0	4	4	8	0	0	0	0	0	18	4	22	38
% Large 2 Axle Vehicles	2.5	0	1.1	1.9	0	0.3	0.5	0.3	0	0	0	0	0	2.7	1.3	2.2	1
3 Axle Vehicles	0	0	1	1	0	0	3	3	0	0	0	0	0	1	0	1	5
% 3 Axle Vehicles	0	0	0.5	0.2	0	0	0.4	0.1	0	0	0	0	0	0.1	0	0.1	0.1
4+ Axle Trucks	3	0	0	3	0	1	2	3	0	0	0	0	0	0	0	0	6
% 4+ Axle Trucks	1.2	0	0	0.7	0	0.1	0.2	0.1	0	0	0	0	0	0	0	0	0.2

	SR-14 Southbound Ramps Southbound				W Avenue M Westbound				SR-14 Southbound On Ramp Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	31	0	25	56	0	190	122	312	0	0	0	0	0	85	41	126	494
04:45 PM	27	0	17	44	0	206	107	313	0	0	0	0	0	81	36	117	474
05:00 PM	15	0	22	37	0	226	128	354	0	0	0	0	0	91	36	127	518
05:15 PM	38	0	23	61	0	200	110	310	0	0	0	0	0	95	59	154	525
Total Volume	111	0	87	198	0	822	467	1289	0	0	0	0	0	352	172	524	2011
% App. Total	56.1	0	43.9		0	63.8	36.2		0	0	0		0	67.2	32.8		
PHF	.730	.000	.870	.811	.000	.909	.912	.910	.000	.000	.000	.000	.000	.926	.729	.851	.958

City of Lancaster
N/S: SR-14 Southbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 06_LAN_14S_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				04:30 PM				04:00 PM				04:30 PM			
+0 mins.	15	0	22	37	0	190	122	312	0	0	0	0	0	85	41	126
+15 mins.	38	0	23	61	0	206	107	313	0	0	0	0	0	81	36	117
+30 mins.	39	0	18	57	0	226	128	354	0	0	0	0	0	91	36	127
+45 mins.	36	0	30	66	0	200	110	310	0	0	0	0	0	95	59	154
Total Volume	128	0	93	221	0	822	467	1289	0	0	0	0	0	352	172	524
% App. Total	57.9	0	42.1		0	63.8	36.2		0	0	0		0	67.2	32.8	
PHF	.821	.000	.775	.837	.000	.909	.912	.910	.000	.000	.000	.000	.000	.926	.729	.851

City of Lancaster
N/S: SR-14 Southbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 06_LAN_14S_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

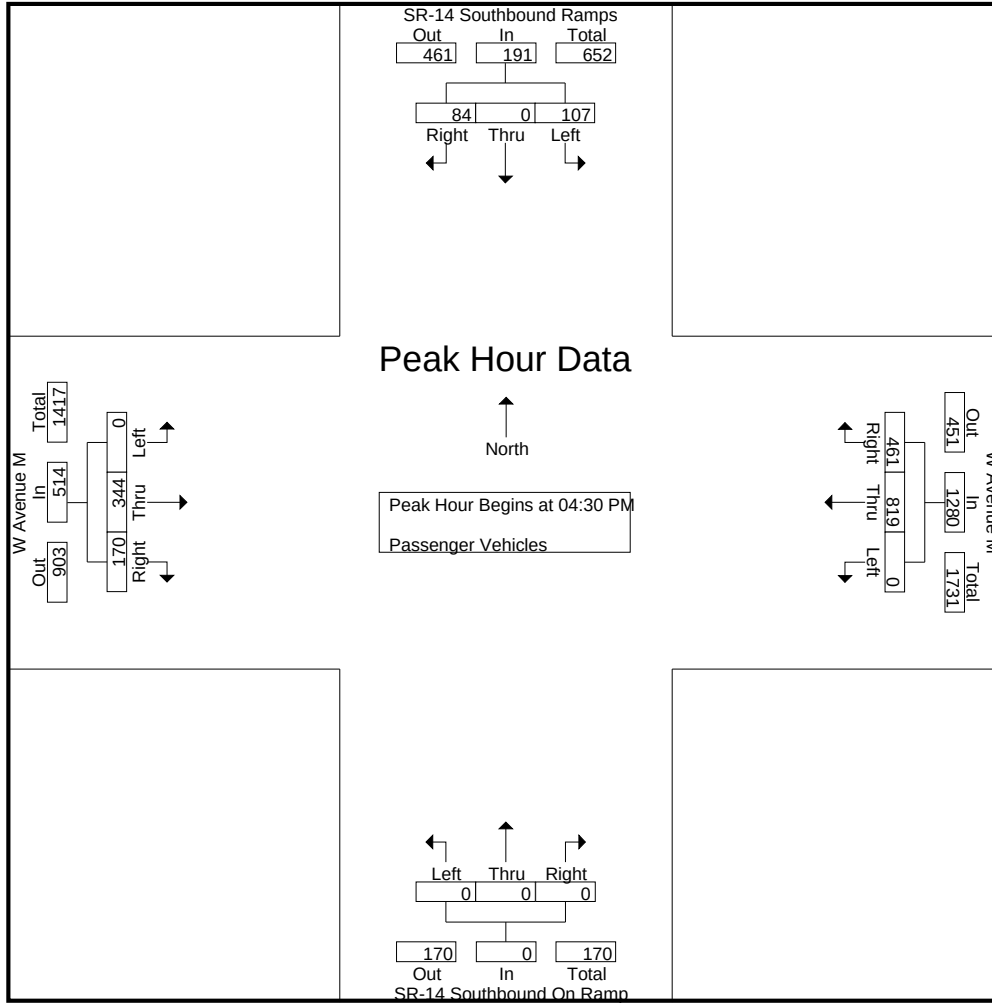
Groups Printed- Passenger Vehicles

	SR-14 Southbound Ramps Southbound				W Avenue M Westbound				SR-14 Southbound On Ramp Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	33	0	33	66	0	200	112	312	0	0	0	0	0	74	41	115	493
04:15 PM	24	0	17	41	0	193	113	306	0	0	0	0	0	86	26	112	459
04:30 PM	30	0	25	55	0	189	121	310	0	0	0	0	0	81	39	120	485
04:45 PM	26	0	17	43	0	204	105	309	0	0	0	0	0	79	36	115	467
Total	113	0	92	205	0	786	451	1237	0	0	0	0	0	320	142	462	1904
05:00 PM	14	0	20	34	0	226	127	353	0	0	0	0	0	89	36	125	512
05:15 PM	37	0	22	59	0	200	108	308	0	0	0	0	0	95	59	154	521
05:30 PM	39	0	18	57	0	180	106	286	0	0	0	0	0	71	41	112	455
05:45 PM	32	0	30	62	0	122	48	170	0	0	0	0	0	83	27	110	342
Total	122	0	90	212	0	728	389	1117	0	0	0	0	0	338	163	501	1830
Grand Total	235	0	182	417	0	1514	840	2354	0	0	0	0	0	658	305	963	3734
Apprch %	56.4	0	43.6		0	64.3	35.7		0	0	0		0	68.3	31.7		
Total %	6.3	0	4.9	11.2	0	40.5	22.5	63	0	0	0	0	0	17.6	8.2	25.8	

	SR-14 Southbound Ramps Southbound				W Avenue M Westbound				SR-14 Southbound On Ramp Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	30	0	25	55	0	189	121	310	0	0	0	0	0	81	39	120	485
04:45 PM	26	0	17	43	0	204	105	309	0	0	0	0	0	79	36	115	467
05:00 PM	14	0	20	34	0	226	127	353	0	0	0	0	0	89	36	125	512
05:15 PM	37	0	22	59	0	200	108	308	0	0	0	0	0	95	59	154	521
Total Volume	107	0	84	191	0	819	461	1280	0	0	0	0	0	344	170	514	1985
% App. Total	56	0	44		0	64	36		0	0	0		0	66.9	33.1		
PHF	.723	.000	.840	.809	.000	.906	.907	.907	.000	.000	.000	.000	.000	.905	.720	.834	.952

City of Lancaster
N/S: SR-14 Southbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 06_LAN_14S_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 2



Peak Hour Analysis From 04:30 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				04:30 PM			
+0 mins.	30	0	25	55	0	189	121	310	0	0	0	0	0	81	39	120
+15 mins.	26	0	17	43	0	204	105	309	0	0	0	0	0	79	36	115
+30 mins.	14	0	20	34	0	226	127	353	0	0	0	0	0	89	36	125
+45 mins.	37	0	22	59	0	200	108	308	0	0	0	0	0	95	59	154
Total Volume	107	0	84	191	0	819	461	1280	0	0	0	0	0	344	170	514
% App. Total	56	0	44		0	64	36		0	0	0		0	66.9	33.1	
PHF	.723	.000	.840	.809	.000	.906	.907	.907	.000	.000	.000	.000	.000	.905	.720	.834

City of Lancaster
N/S: SR-14 Southbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 06_LAN_14S_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

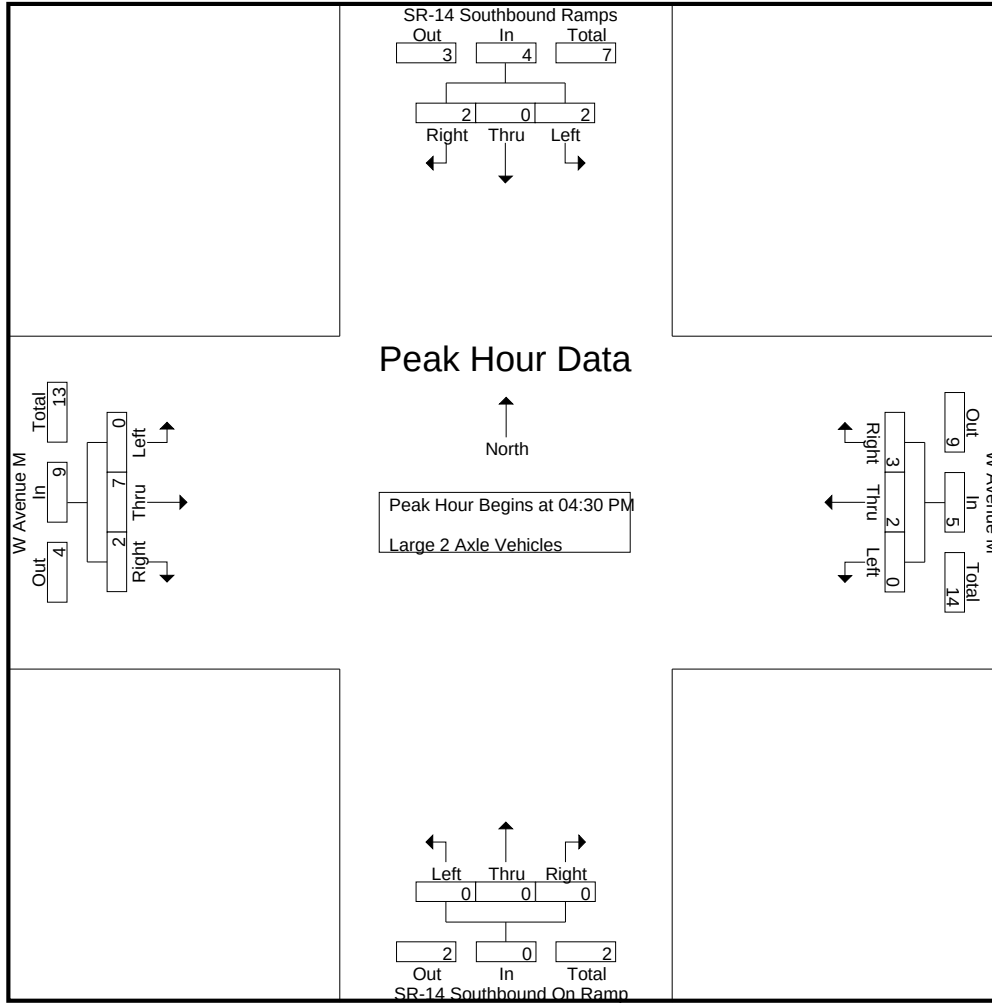
Groups Printed- Large 2 Axle Vehicles

	SR-14 Southbound Ramps Southbound				W Avenue M Westbound				SR-14 Southbound On Ramp Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	0	0	1	0	2	1	3	0	0	0	0	0	4	1	5	9
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	5	5
04:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	3	2	5	6
04:45 PM	1	0	0	1	0	2	0	2	0	0	0	0	0	2	0	2	5
Total	2	0	0	2	0	4	2	6	0	0	0	0	0	13	4	17	25
05:00 PM	0	0	2	2	0	0	1	1	0	0	0	0	0	2	0	2	5
05:15 PM	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	3	0	0	3	0	0	0	0	0	0	0	0	0	3	0	3	6
Total	4	0	2	6	0	0	2	2	0	0	0	0	0	5	0	5	13
Grand Total	6	0	2	8	0	4	4	8	0	0	0	0	0	18	4	22	38
Apprch %	75	0	25		0	50	50		0	0	0		0	81.8	18.2		
Total %	15.8	0	5.3	21.1	0	10.5	10.5	21.1	0	0	0	0	0	47.4	10.5	57.9	

	SR-14 Southbound Ramps Southbound				W Avenue M Westbound				SR-14 Southbound On Ramp Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	3	2	5	6
04:45 PM	1	0	0	1	0	2	0	2	0	0	0	0	0	2	0	2	5
05:00 PM	0	0	2	2	0	0	1	1	0	0	0	0	0	2	0	2	5
05:15 PM	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
Total Volume	2	0	2	4	0	2	3	5	0	0	0	0	0	7	2	9	18
% App. Total	50	0	50		0	40	60		0	0	0		0	77.8	22.2		
PHF	.500	.000	.250	.500	.000	.250	.750	.625	.000	.000	.000	.000	.000	.583	.250	.450	.750

City of Lancaster
N/S: SR-14 Southbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 06_LAN_14S_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
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Peak Hour Analysis From 04:30 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				04:30 PM			
+0 mins.	0	0	0	0	0	0	1	1	0	0	0	0	0	3	2	5
+15 mins.	1	0	0	1	0	2	0	2	0	0	0	0	0	2	0	2
+30 mins.	0	0	2	2	0	0	1	1	0	0	0	0	0	2	0	2
+45 mins.	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
Total Volume	2	0	2	4	0	2	3	5	0	0	0	0	0	7	2	9
% App. Total	50	0	50		0	40	60		0	0	0		0	77.8	22.2	
PHF	.500	.000	.250	.500	.000	.250	.750	.625	.000	.000	.000	.000	.000	.583	.250	.450

City of Lancaster
N/S: SR-14 Southbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 06_LAN_14S_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

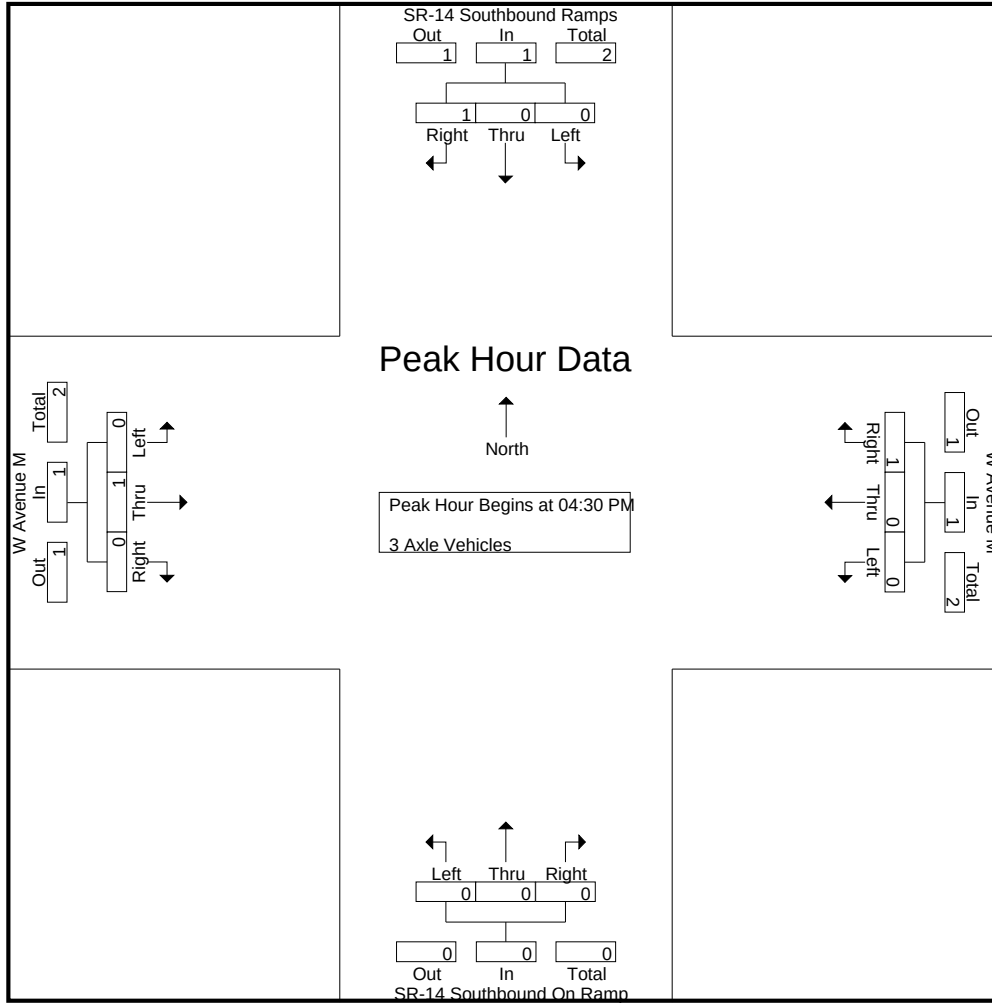
Groups Printed- 3 Axle Vehicles

	SR-14 Southbound Ramps Southbound				W Avenue M Westbound				SR-14 Southbound On Ramp Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	2	2	0	0	0	0	0	1	0	1	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	2
Grand Total	0	0	1	1	0	0	3	3	0	0	0	0	0	1	0	1	5
Apprch %	0	0	100		0	0	100		0	0	0		0	100	0		
Total %	0	0	20	20	0	0	60	60	0	0	0	0	0	20	0	20	

	SR-14 Southbound Ramps Southbound				W Avenue M Westbound				SR-14 Southbound On Ramp Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	2
Total Volume	0	0	1	1	0	0	1	1	0	0	0	0	0	1	0	1	3
% App. Total	0	0	100		0	0	100		0	0	0		0	100	0		
PHF	.000	.000	.250	.250	.000	.000	.250	.250	.000	.000	.000	.000	.000	.250	.000	.250	.375

City of Lancaster
N/S: SR-14 Southbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 06_LAN_14S_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 2



Peak Hour Analysis From 04:30 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				04:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	0	1	1	0	0	0	0	0	1	0	1
% App. Total	0	0	100		0	0	100		0	0	0		0	100	0	
PHF	.000	.000	.250	.250	.000	.000	.250	.250	.000	.000	.000	.000	.000	.250	.000	.250

File Name : 06_LAN_14S_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

	SR-14 Southbound Ramps Southbound				W Avenue M Westbound				SR-14 Southbound On Ramp Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2
Total	1	0	0	1	0	1	2	3	0	0	0	0	0	0	0	0	4
05:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Grand Total	3	0	0	3	0	1	2	3	0	0	0	0	0	0	0	0	6
Apprch %	100	0	0		0	33.3	66.7		0	0	0		0	0	0		
Total %	50	0	0	50	0	16.7	33.3	50	0	0	0	0	0	0	0	0	

[illegible]

City of Lancaster
N/S: SR-14 Northbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 05_LAN_14N_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

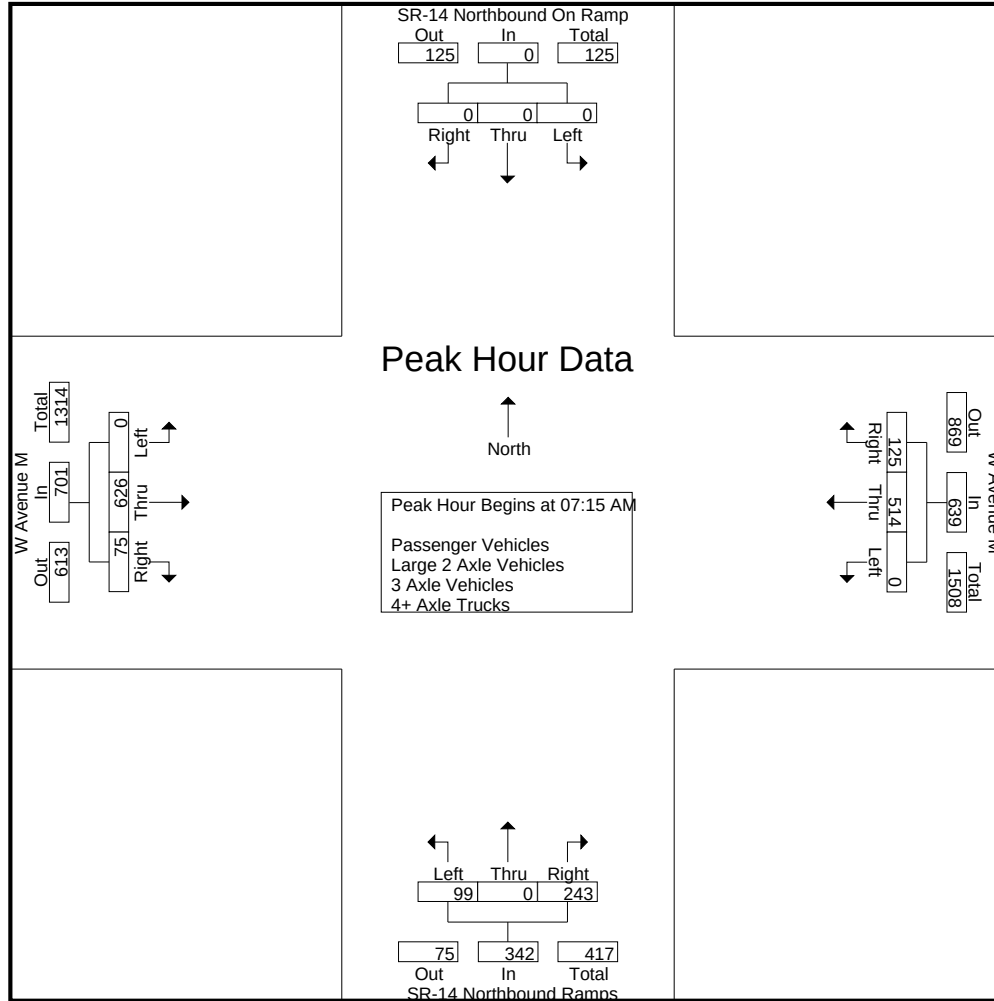
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	SR-14 Northbound On Ramp Southbound				W Avenue M Westbound				SR-14 Northbound Ramps Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	114	25	139	12	0	49	61	0	106	4	110	310
07:15 AM	0	0	0	0	0	140	32	172	23	0	51	74	0	131	20	151	397
07:30 AM	0	0	0	0	0	143	27	170	28	0	56	84	0	151	26	177	431
07:45 AM	0	0	0	0	0	123	31	154	29	0	64	93	0	187	17	204	451
Total	0	0	0	0	0	520	115	635	92	0	220	312	0	575	67	642	1589
08:00 AM	0	0	0	0	0	108	35	143	19	0	72	91	0	157	12	169	403
08:15 AM	0	0	0	0	0	122	34	156	21	0	68	89	0	109	10	119	364
08:30 AM	0	0	0	0	0	114	39	153	11	1	47	59	0	152	6	158	370
08:45 AM	0	0	0	0	0	122	28	150	9	0	69	78	0	143	14	157	385
Total	0	0	0	0	0	466	136	602	60	1	256	317	0	561	42	603	1522
Grand Total	0	0	0	0	0	986	251	1237	152	1	476	629	0	1136	109	1245	3111
Apprch %	0	0	0	0	0	79.7	20.3		24.2	0.2	75.7		0	91.2	8.8		
Total %	0	0	0	0	0	31.7	8.1	39.8	4.9	0	15.3	20.2	0	36.5	3.5	40	
Passenger Vehicles	0	0	0	0	0	879	223	1102	146	1	453	600	0	1081	107	1188	2890
% Passenger Vehicles	0	0	0	0	0	89.1	88.8	89.1	96.1	100	95.2	95.4	0	95.2	98.2	95.4	92.9
Large 2 Axle Vehicles	0	0	0	0	0	81	19	100	4	0	14	18	0	46	2	48	166
% Large 2 Axle Vehicles	0	0	0	0	0	8.2	7.6	8.1	2.6	0	2.9	2.9	0	4	1.8	3.9	5.3
3 Axle Vehicles	0	0	0	0	0	15	3	18	0	0	6	6	0	7	0	7	31
% 3 Axle Vehicles	0	0	0	0	0	1.5	1.2	1.5	0	0	1.3	1	0	0.6	0	0.6	1
4+ Axle Trucks	0	0	0	0	0	11	6	17	2	0	3	5	0	2	0	2	24
% 4+ Axle Trucks	0	0	0	0	0	1.1	2.4	1.4	1.3	0	0.6	0.8	0	0.2	0	0.2	0.8

	SR-14 Northbound On Ramp Southbound				W Avenue M Westbound				SR-14 Northbound Ramps Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	140	32	172	23	0	51	74	0	131	20	151	397
07:30 AM	0	0	0	0	0	143	27	170	28	0	56	84	0	151	26	177	431
07:45 AM	0	0	0	0	0	123	31	154	29	0	64	93	0	187	17	204	451
08:00 AM	0	0	0	0	0	108	35	143	19	0	72	91	0	157	12	169	403
Total Volume	0	0	0	0	0	514	125	639	99	0	243	342	0	626	75	701	1682
% App. Total	0	0	0	0	0	80.4	19.6		28.9	0	71.1		0	89.3	10.7		
PHF	.000	.000	.000	.000	.000	.899	.893	.929	.853	.000	.844	.919	.000	.837	.721	.859	.932

City of Lancaster
N/S: SR-14 Northbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 05_LAN_14N_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:15 AM				07:30 AM				07:45 AM			
+0 mins.	0	0	0	0	0	140	32	172	28	0	56	84	0	131	20	151
+15 mins.	0	0	0	0	0	143	27	170	29	0	64	93	0	151	26	177
+30 mins.	0	0	0	0	0	123	31	154	19	0	72	91	0	187	17	204
+45 mins.	0	0	0	0	0	108	35	143	21	0	68	89	0	157	12	169
Total Volume	0	0	0	0	0	514	125	639	97	0	260	357	0	626	75	701
% App. Total	0	0	0	0	0	80.4	19.6		27.2	0	72.8		0	89.3	10.7	
PHF	.000	.000	.000	.000	.000	.899	.893	.929	.836	.000	.903	.960	.000	.837	.721	.859

City of Lancaster
N/S: SR-14 Northbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 05_LAN_14N_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

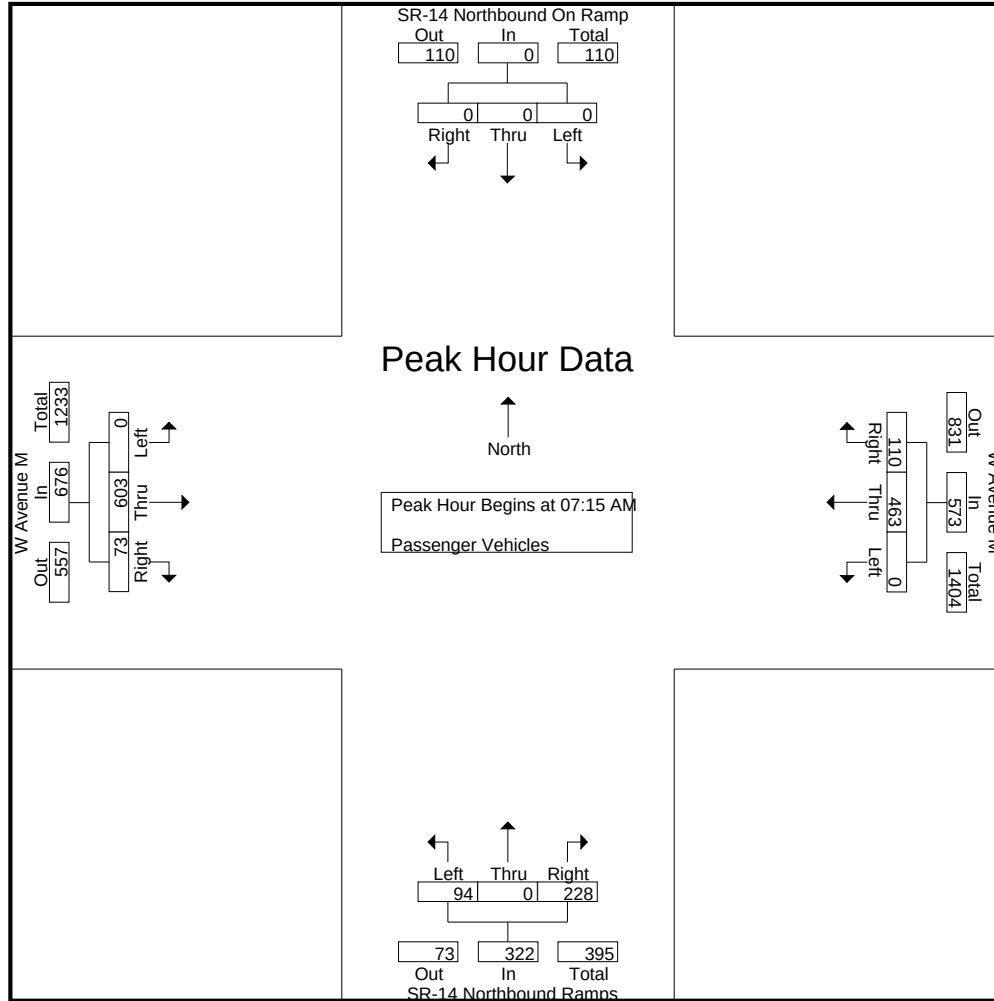
Groups Printed- Passenger Vehicles

	SR-14 Northbound On Ramp Southbound				W Avenue M Westbound				SR-14 Northbound Ramps Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	94	22	116	12	0	46	58	0	101	4	105	279
07:15 AM	0	0	0	0	0	122	26	148	22	0	47	69	0	124	20	144	361
07:30 AM	0	0	0	0	0	130	21	151	27	0	53	80	0	144	25	169	400
07:45 AM	0	0	0	0	0	109	29	138	28	0	61	89	0	183	17	200	427
Total	0	0	0	0	0	455	98	553	89	0	207	296	0	552	66	618	1467
08:00 AM	0	0	0	0	0	102	34	136	17	0	67	84	0	152	11	163	383
08:15 AM	0	0	0	0	0	111	29	140	21	0	66	87	0	99	10	109	336
08:30 AM	0	0	0	0	0	97	37	134	10	1	47	58	0	143	6	149	341
08:45 AM	0	0	0	0	0	114	25	139	9	0	66	75	0	135	14	149	363
Total	0	0	0	0	0	424	125	549	57	1	246	304	0	529	41	570	1423
Grand Total	0	0	0	0	0	879	223	1102	146	1	453	600	0	1081	107	1188	2890
Apprch %	0	0	0		0	79.8	20.2		24.3	0.2	75.5		0	91	9		
Total %	0	0	0		0	30.4	7.7	38.1	5.1	0	15.7	20.8	0	37.4	3.7	41.1	

	SR-14 Northbound On Ramp Southbound				W Avenue M Westbound				SR-14 Northbound Ramps Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	122	26	148	22	0	47	69	0	124	20	144	361
07:30 AM	0	0	0	0	0	130	21	151	27	0	53	80	0	144	25	169	400
07:45 AM	0	0	0	0	0	109	29	138	28	0	61	89	0	183	17	200	427
08:00 AM	0	0	0	0	0	102	34	136	17	0	67	84	0	152	11	163	383
Total Volume	0	0	0	0	0	463	110	573	94	0	228	322	0	603	73	676	1571
% App. Total	0	0	0		0	80.8	19.2		29.2	0	70.8		0	89.2	10.8		
PHF	.000	.000	.000	.000	.000	.890	.809	.949	.839	.000	.851	.904	.000	.824	.730	.845	.920

City of Lancaster
N/S: SR-14 Northbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 05_LAN_14N_W Ave M AM
Site Code : 10524525
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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	122	26	148	22	0	47	69	0	124	20	144
+15 mins.	0	0	0	0	0	130	21	151	27	0	53	80	0	144	25	169
+30 mins.	0	0	0	0	0	109	29	138	28	0	61	89	0	183	17	200
+45 mins.	0	0	0	0	0	102	34	136	17	0	67	84	0	152	11	163
Total Volume	0	0	0	0	0	463	110	573	94	0	228	322	0	603	73	676
% App. Total	0	0	0	0	0	80.8	19.2		29.2	0	70.8		0	89.2	10.8	
PHF	.000	.000	.000	.000	.000	.890	.809	.949	.839	.000	.851	.904	.000	.824	.730	.845

City of Lancaster
N/S: SR-14 Northbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 05_LAN_14N_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

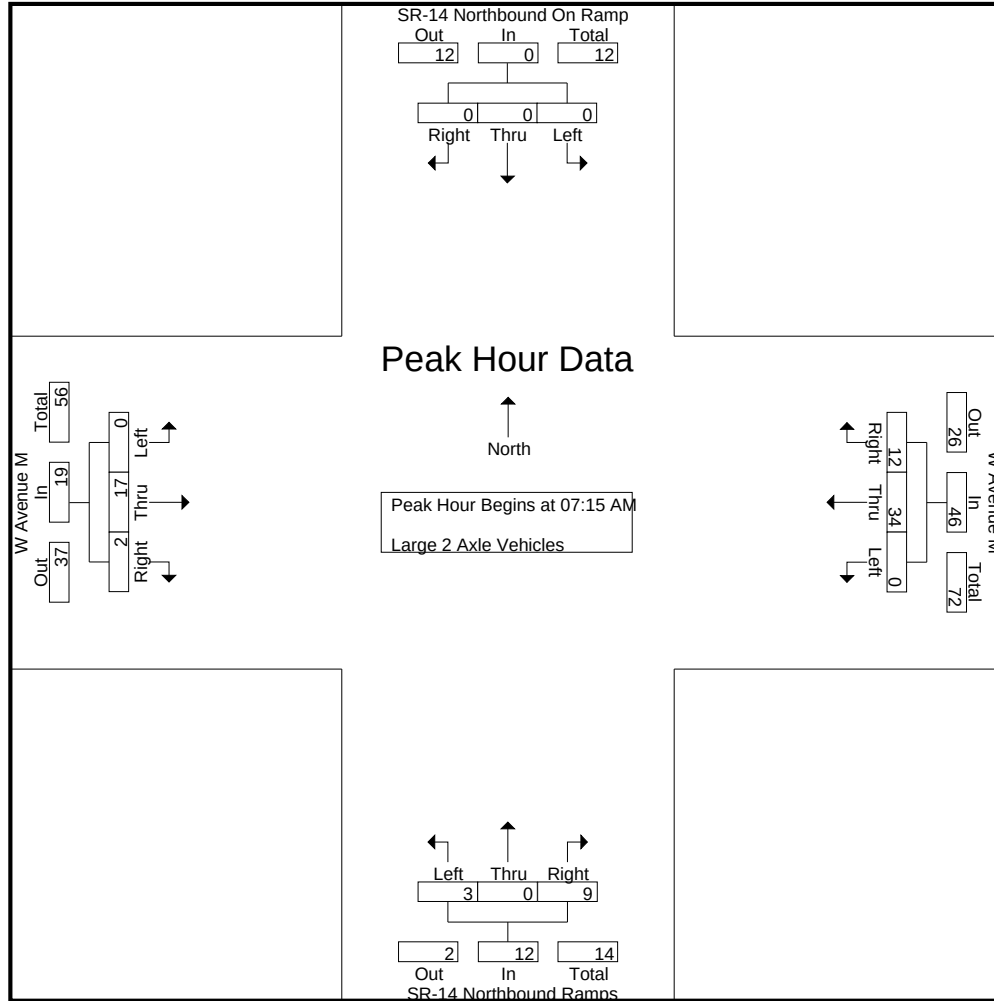
Groups Printed- Large 2 Axle Vehicles

	SR-14 Northbound On Ramp Southbound				W Avenue M Westbound				SR-14 Northbound Ramps Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	17	1	18	0	0	2	2	0	4	0	4	24
07:15 AM	0	0	0	0	0	12	4	16	0	0	2	2	0	4	0	4	22
07:30 AM	0	0	0	0	0	11	5	16	0	0	2	2	0	6	1	7	25
07:45 AM	0	0	0	0	0	6	2	8	1	0	2	3	0	3	0	3	14
Total	0	0	0	0	0	46	12	58	1	0	8	9	0	17	1	18	85
08:00 AM	0	0	0	0	0	5	1	6	2	0	3	5	0	4	1	5	16
08:15 AM	0	0	0	0	0	8	3	11	0	0	0	0	0	8	0	8	19
08:30 AM	0	0	0	0	0	15	1	16	1	0	0	1	0	9	0	9	26
08:45 AM	0	0	0	0	0	7	2	9	0	0	3	3	0	8	0	8	20
Total	0	0	0	0	0	35	7	42	3	0	6	9	0	29	1	30	81
Grand Total	0	0	0	0	0	81	19	100	4	0	14	18	0	46	2	48	166
Apprch %	0	0	0		0	81	19		22.2	0	77.8		0	95.8	4.2		
Total %	0	0	0		0	48.8	11.4	60.2	2.4	0	8.4	10.8	0	27.7	1.2	28.9	

	SR-14 Northbound On Ramp Southbound				W Avenue M Westbound				SR-14 Northbound Ramps Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	12	4	16	0	0	2	2	0	4	0	4	22
07:30 AM	0	0	0	0	0	11	5	16	0	0	2	2	0	6	1	7	25
07:45 AM	0	0	0	0	0	6	2	8	1	0	2	3	0	3	0	3	14
08:00 AM	0	0	0	0	0	5	1	6	2	0	3	5	0	4	1	5	16
Total Volume	0	0	0	0	0	34	12	46	3	0	9	12	0	17	2	19	77
% App. Total	0	0	0		0	73.9	26.1		25	0	75		0	89.5	10.5		
PHF	.000	.000	.000	.000	.000	.708	.600	.719	.375	.000	.750	.600	.000	.708	.500	.679	.770

City of Lancaster
N/S: SR-14 Northbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 05_LAN_14N_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	12	4	16	0	0	2	2	0	4	0	4
+15 mins.	0	0	0	0	0	11	5	16	0	0	2	2	0	6	1	7
+30 mins.	0	0	0	0	0	6	2	8	1	0	2	3	0	3	0	3
+45 mins.	0	0	0	0	0	5	1	6	2	0	3	5	0	4	1	5
Total Volume	0	0	0	0	0	34	12	46	3	0	9	12	0	17	2	19
% App. Total	0	0	0	0	0	73.9	26.1		25	0	75		0	89.5	10.5	
PHF	.000	.000	.000	.000	.000	.708	.600	.719	.375	.000	.750	.600	.000	.708	.500	.679

City of Lancaster
N/S: SR-14 Northbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 05_LAN_14N_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

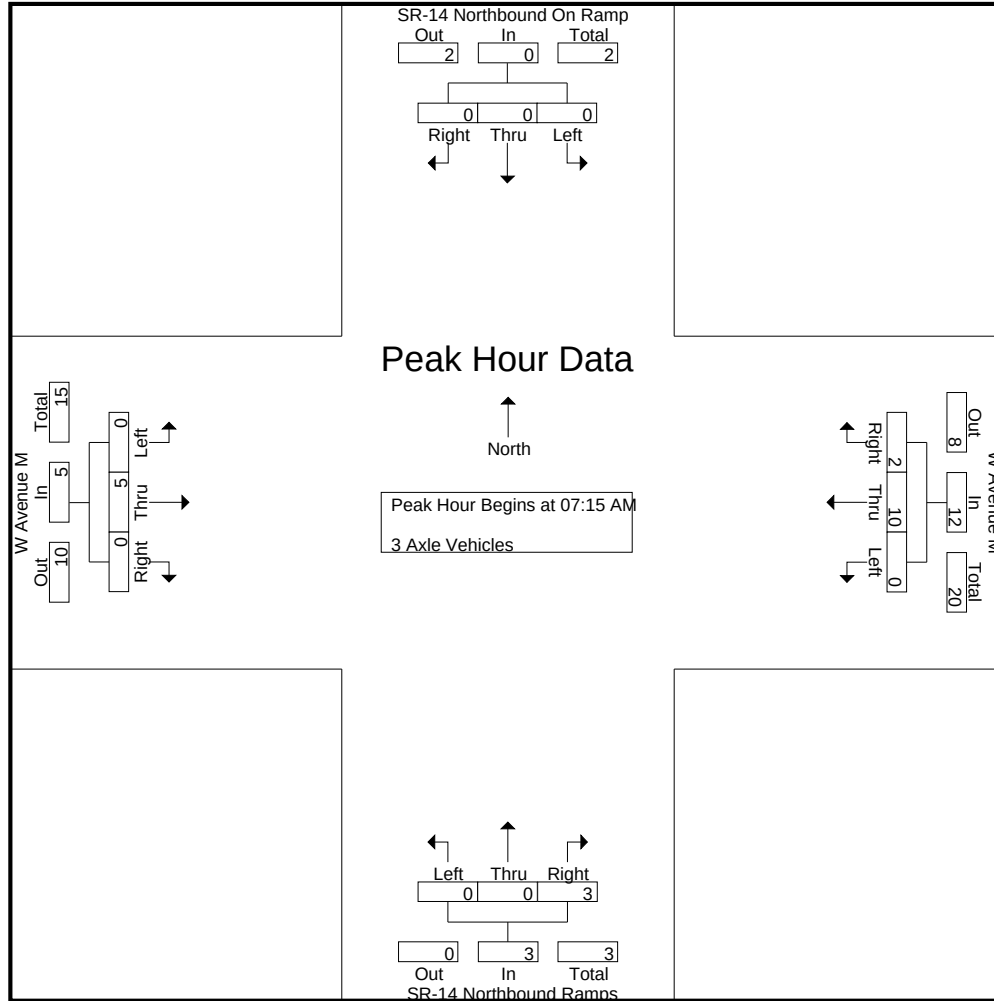
Groups Printed- 3 Axle Vehicles

	SR-14 Northbound On Ramp Southbound				W Avenue M Westbound				SR-14 Northbound Ramps Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	3	0	3	0	0	1	1	0	1	0	1	5
07:15 AM	0	0	0	0	0	2	2	4	0	0	1	1	0	2	0	2	7
07:30 AM	0	0	0	0	0	1	0	1	0	0	1	1	0	1	0	1	3
07:45 AM	0	0	0	0	0	6	0	6	0	0	0	0	0	1	0	1	7
Total	0	0	0	0	0	12	2	14	0	0	3	3	0	5	0	5	22
08:00 AM	0	0	0	0	0	1	0	1	0	0	1	1	0	1	0	1	3
08:15 AM	0	0	0	0	0	1	0	1	0	0	2	2	0	1	0	1	4
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	3	1	4	0	0	3	3	0	2	0	2	9
Grand Total	0	0	0	0	0	15	3	18	0	0	6	6	0	7	0	7	31
Apprch %	0	0	0		0	83.3	16.7		0	0	100		0	100	0		
Total %	0	0	0	0	0	48.4	9.7	58.1	0	0	19.4	19.4	0	22.6	0	22.6	

	SR-14 Northbound On Ramp Southbound				W Avenue M Westbound				SR-14 Northbound Ramps Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	2	2	4	0	0	1	1	0	2	0	2	7
07:30 AM	0	0	0	0	0	1	0	1	0	0	1	1	0	1	0	1	3
07:45 AM	0	0	0	0	0	6	0	6	0	0	0	0	0	1	0	1	7
08:00 AM	0	0	0	0	0	1	0	1	0	0	1	1	0	1	0	1	3
Total Volume	0	0	0	0	0	10	2	12	0	0	3	3	0	5	0	5	20
% App. Total	0	0	0		0	83.3	16.7		0	0	100		0	100	0		
PHF	.000	.000	.000	.000	.000	.417	.250	.500	.000	.000	.750	.750	.000	.625	.000	.625	.714

City of Lancaster
N/S: SR-14 Northbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 05_LAN_14N_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	2	2	4	0	0	1	1	0	2	0	2
+15 mins.	0	0	0	0	0	1	0	1	0	0	1	1	0	1	0	1
+30 mins.	0	0	0	0	0	6	0	6	0	0	0	0	0	1	0	1
+45 mins.	0	0	0	0	0	1	0	1	0	0	1	1	0	1	0	1
Total Volume	0	0	0	0	0	10	2	12	0	0	3	3	0	5	0	5
% App. Total	0	0	0	0	0	83.3	16.7		0	0	100		0	100	0	
PHF	.000	.000	.000	.000	.000	.417	.250	.500	.000	.000	.750	.750	.000	.625	.000	.625

City of Lancaster
N/S: SR-14 Northbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 05_LAN_14N_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

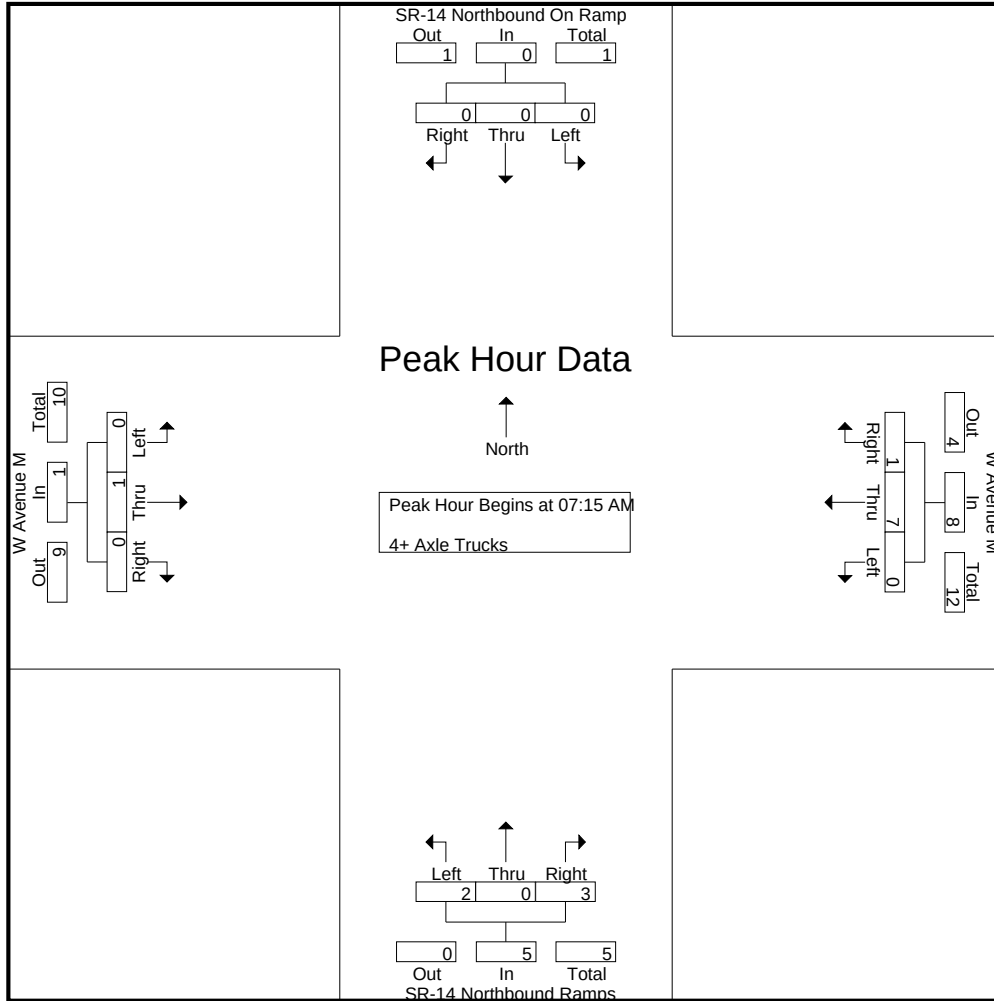
Groups Printed- 4+ Axle Trucks

	SR-14 Northbound On Ramp Southbound				W Avenue M Westbound				SR-14 Northbound Ramps Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2
07:15 AM	0	0	0	0	0	4	0	4	1	0	1	2	0	1	0	1	7
07:30 AM	0	0	0	0	0	1	1	2	1	0	0	1	0	0	0	0	3
07:45 AM	0	0	0	0	0	2	0	2	0	0	1	1	0	0	0	0	3
Total	0	0	0	0	0	7	3	10	2	0	2	4	0	1	0	1	15
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
08:15 AM	0	0	0	0	0	2	2	4	0	0	0	0	0	1	0	1	5
08:30 AM	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	3
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	4	3	7	0	0	1	1	0	1	0	1	9
Grand Total	0	0	0	0	0	11	6	17	2	0	3	5	0	2	0	2	24
Apprch %	0	0	0		0	64.7	35.3		40	0	60		0	100	0		
Total %	0	0	0	0	0	45.8	25	70.8	8.3	0	12.5	20.8	0	8.3	0	8.3	

	SR-14 Northbound On Ramp Southbound				W Avenue M Westbound				SR-14 Northbound Ramps Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	4	0	4	1	0	1	2	0	1	0	1	7
07:30 AM	0	0	0	0	0	1	1	2	1	0	0	1	0	0	0	0	3
07:45 AM	0	0	0	0	0	2	0	2	0	0	1	1	0	0	0	0	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Total Volume	0	0	0	0	0	7	1	8	2	0	3	5	0	1	0	1	14
% App. Total	0	0	0		0	87.5	12.5		40	0	60		0	100	0		
PHF	.000	.000	.000	.000	.000	.438	.250	.500	.500	.000	.750	.625	.000	.250	.000	.250	.500

City of Lancaster
N/S: SR-14 Northbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 05_LAN_14N_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	4	0	4	1	0	1	2	0	1	0	1
+15 mins.	0	0	0	0	0	1	1	2	1	0	0	1	0	0	0	0
+30 mins.	0	0	0	0	0	2	0	2	0	0	1	1	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
Total Volume	0	0	0	0	0	7	1	8	2	0	3	5	0	1	0	1
% App. Total	0	0	0	0	0	87.5	12.5		40	0	60		0	100	0	
PHF	.000	.000	.000	.000	.000	.438	.250	.500	.500	.000	.750	.625	.000	.250	.000	.250

City of Lancaster
N/S: SR-14 Northbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 05_LAN_14N_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
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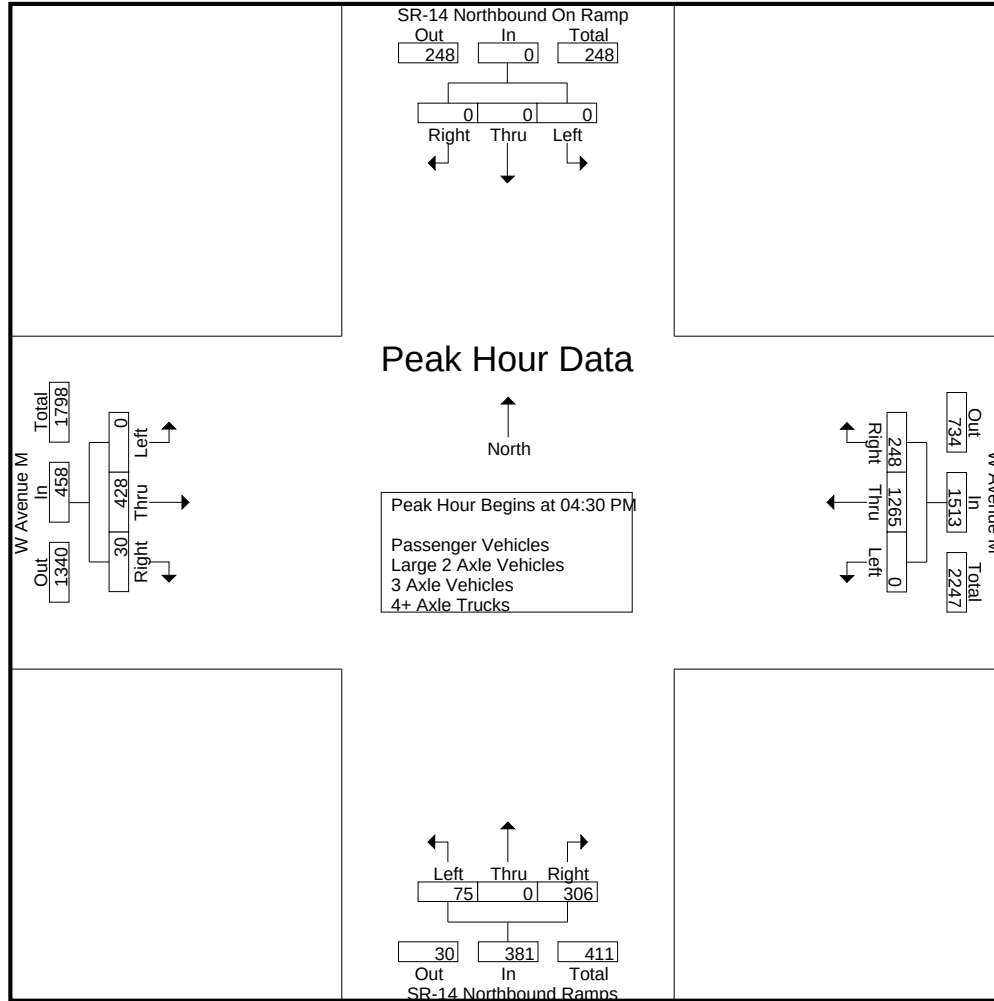
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	SR-14 Northbound On Ramp Southbound				W Avenue M Westbound				SR-14 Northbound Ramps Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	323	47	370	19	0	45	64	0	106	7	113	547
04:15 PM	0	0	0	0	0	293	50	343	17	0	71	88	0	103	8	111	542
04:30 PM	0	0	0	0	0	319	61	380	14	0	68	82	0	104	10	114	576
04:45 PM	0	0	0	0	0	305	75	380	21	0	72	93	0	103	6	109	582
Total	0	0	0	0	0	1240	233	1473	71	0	256	327	0	416	31	447	2247
05:00 PM	0	0	0	0	0	354	60	414	20	0	77	97	0	99	5	104	615
05:15 PM	0	0	0	0	0	287	52	339	20	0	89	109	0	122	9	131	579
05:30 PM	0	0	0	0	0	261	51	312	18	0	69	87	0	104	7	111	510
05:45 PM	0	0	0	0	0	144	43	187	29	0	49	78	0	118	9	127	392
Total	0	0	0	0	0	1046	206	1252	87	0	284	371	0	443	30	473	2096
Grand Total	0	0	0	0	0	2286	439	2725	158	0	540	698	0	859	61	920	4343
Apprch %	0	0	0	0	0	83.9	16.1		22.6	0	77.4		0	93.4	6.6		
Total %	0	0	0	0	0	52.6	10.1	62.7	3.6	0	12.4	16.1	0	19.8	1.4	21.2	
Passenger Vehicles	0	0	0	0	0	2265	420	2685	156	0	507	663	0	823	60	883	4231
% Passenger Vehicles	0	0	0	0	0	99.1	95.7	98.5	98.7	0	93.9	95	0	95.8	98.4	96	97.4
Large 2 Axle Vehicles	0	0	0	0	0	16	15	31	1	0	21	22	0	29	1	30	83
% Large 2 Axle Vehicles	0	0	0	0	0	0.7	3.4	1.1	0.6	0	3.9	3.2	0	3.4	1.6	3.3	1.9
3 Axle Vehicles	0	0	0	0	0	3	1	4	0	0	4	4	0	4	0	4	12
% 3 Axle Vehicles	0	0	0	0	0	0.1	0.2	0.1	0	0	0.7	0.6	0	0.5	0	0.4	0.3
4+ Axle Trucks	0	0	0	0	0	2	3	5	1	0	8	9	0	3	0	3	17
% 4+ Axle Trucks	0	0	0	0	0	0.1	0.7	0.2	0.6	0	1.5	1.3	0	0.3	0	0.3	0.4

	SR-14 Northbound On Ramp Southbound				W Avenue M Westbound				SR-14 Northbound Ramps Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	319	61	380	14	0	68	82	0	104	10	114	576
04:45 PM	0	0	0	0	0	305	75	380	21	0	72	93	0	103	6	109	582
05:00 PM	0	0	0	0	0	354	60	414	20	0	77	97	0	99	5	104	615
05:15 PM	0	0	0	0	0	287	52	339	20	0	89	109	0	122	9	131	579
Total Volume	0	0	0	0	0	1265	248	1513	75	0	306	381	0	428	30	458	2352
% App. Total	0	0	0	0	0	83.6	16.4		19.7	0	80.3		0	93.4	6.6		
PHF	.000	.000	.000	.000	.000	.893	.827	.914	.893	.000	.860	.874	.000	.877	.750	.874	.956

City of Lancaster
N/S: SR-14 Northbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 05_LAN_14N_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
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:

	04:00 PM				04:15 PM				04:45 PM				05:00 PM			
+0 mins.	0	0	0	0	0	293	50	343	21	0	72	93	0	99	5	104
+15 mins.	0	0	0	0	0	319	61	380	20	0	77	97	0	122	9	131
+30 mins.	0	0	0	0	0	305	75	380	20	0	89	109	0	104	7	111
+45 mins.	0	0	0	0	0	354	60	414	18	0	69	87	0	118	9	127
Total Volume	0	0	0	0	0	1271	246	1517	79	0	307	386	0	443	30	473
% App. Total	0	0	0	0	0	83.8	16.2		20.5	0	79.5		0	93.7	6.3	
PHF	.000	.000	.000	.000	.000	.898	.820	.916	.940	.000	.862	.885	.000	.908	.833	.903

City of Lancaster
N/S: SR-14 Northbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 05_LAN_14N_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

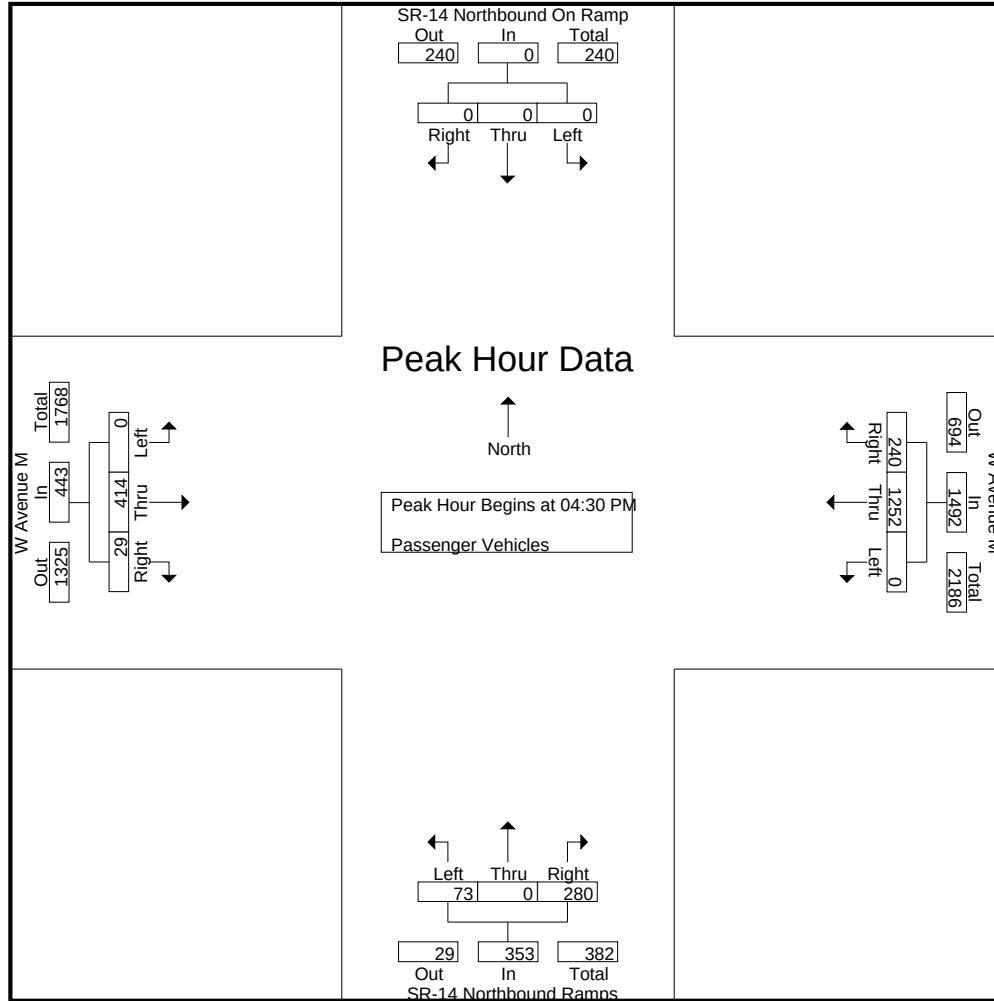
Groups Printed- Passenger Vehicles

	SR-14 Northbound On Ramp Southbound				W Avenue M Westbound				SR-14 Northbound Ramps Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	316	45	361	19	0	41	60	0	100	7	107	528
04:15 PM	0	0	0	0	0	292	48	340	17	0	68	85	0	96	8	104	529
04:30 PM	0	0	0	0	0	317	59	376	13	0	64	77	0	99	10	109	562
04:45 PM	0	0	0	0	0	299	75	374	20	0	66	86	0	101	5	106	566
Total	0	0	0	0	0	1224	227	1451	69	0	239	308	0	396	30	426	2185
05:00 PM	0	0	0	0	0	353	55	408	20	0	71	91	0	94	5	99	598
05:15 PM	0	0	0	0	0	283	51	334	20	0	79	99	0	120	9	129	562
05:30 PM	0	0	0	0	0	261	47	308	18	0	69	87	0	104	7	111	506
05:45 PM	0	0	0	0	0	144	40	184	29	0	49	78	0	109	9	118	380
Total	0	0	0	0	0	1041	193	1234	87	0	268	355	0	427	30	457	2046
Grand Total	0	0	0	0	0	2265	420	2685	156	0	507	663	0	823	60	883	4231
Apprch %	0	0	0		0	84.4	15.6		23.5	0	76.5		0	93.2	6.8		
Total %	0	0	0		0	53.5	9.9	63.5	3.7	0	12	15.7	0	19.5	1.4	20.9	

	SR-14 Northbound On Ramp Southbound				W Avenue M Westbound				SR-14 Northbound Ramps Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	317	59	376	13	0	64	77	0	99	10	109	562
04:45 PM	0	0	0	0	0	299	75	374	20	0	66	86	0	101	5	106	566
05:00 PM	0	0	0	0	0	353	55	408	20	0	71	91	0	94	5	99	598
05:15 PM	0	0	0	0	0	283	51	334	20	0	79	99	0	120	9	129	562
Total Volume	0	0	0	0	0	1252	240	1492	73	0	280	353	0	414	29	443	2288
% App. Total	0	0	0		0	83.9	16.1		20.7	0	79.3		0	93.5	6.5		
PHF	.000	.000	.000	.000	.000	.887	.800	.914	.913	.000	.886	.891	.000	.863	.725	.859	.957

City of Lancaster
N/S: SR-14 Northbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 05_LAN_14N_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 2



Peak Hour Analysis From 04:30 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				04:30 PM			
+0 mins.	0	0	0	0	0	317	59	376	13	0	64	77	0	99	10	109
+15 mins.	0	0	0	0	0	299	75	374	20	0	66	86	0	101	5	106
+30 mins.	0	0	0	0	0	353	55	408	20	0	71	91	0	94	5	99
+45 mins.	0	0	0	0	0	283	51	334	20	0	79	99	0	120	9	129
Total Volume	0	0	0	0	0	1252	240	1492	73	0	280	353	0	414	29	443
% App. Total	0	0	0	0	0	83.9	16.1		20.7	0	79.3		0	93.5	6.5	
PHF	.000	.000	.000	.000	.000	.887	.800	.914	.913	.000	.886	.891	.000	.863	.725	.859

City of Lancaster
N/S: SR-14 Northbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 05_LAN_14N_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

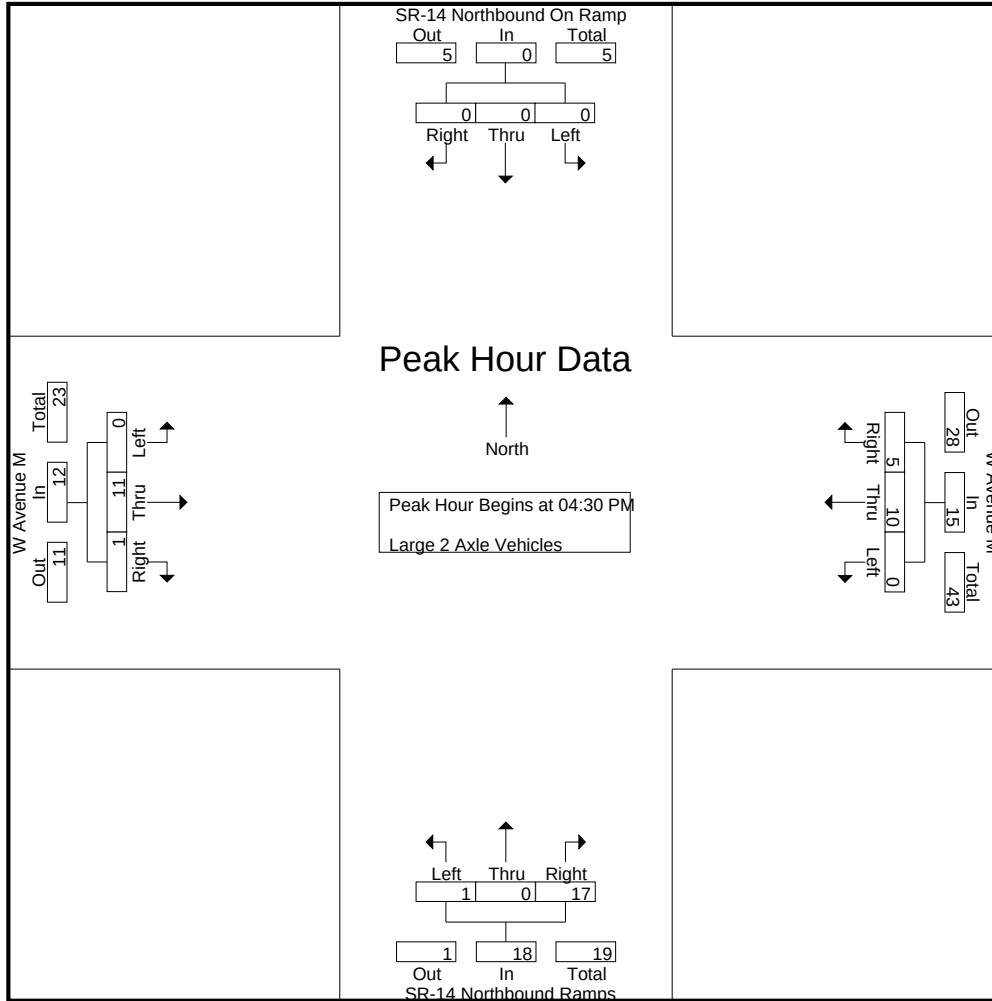
Groups Printed- Large 2 Axle Vehicles

	SR-14 Northbound On Ramp Southbound				W Avenue M Westbound				SR-14 Northbound Ramps Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	5	2	7	0	0	1	1	0	6	0	6	14
04:15 PM	0	0	0	0	0	1	2	3	0	0	3	3	0	6	0	6	12
04:30 PM	0	0	0	0	0	2	1	3	0	0	3	3	0	3	0	3	9
04:45 PM	0	0	0	0	0	4	0	4	1	0	5	6	0	2	1	3	13
Total	0	0	0	0	0	12	5	17	1	0	12	13	0	17	1	18	48
05:00 PM	0	0	0	0	0	1	3	4	0	0	3	3	0	4	0	4	11
05:15 PM	0	0	0	0	0	3	1	4	0	0	6	6	0	2	0	2	12
05:30 PM	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	3
05:45 PM	0	0	0	0	0	0	3	3	0	0	0	0	0	6	0	6	9
Total	0	0	0	0	0	4	10	14	0	0	9	9	0	12	0	12	35
Grand Total	0	0	0	0	0	16	15	31	1	0	21	22	0	29	1	30	83
Apprch %	0	0	0		0	51.6	48.4		4.5	0	95.5		0	96.7	3.3		
Total %	0	0	0		0	19.3	18.1	37.3	1.2	0	25.3	26.5	0	34.9	1.2	36.1	

	SR-14 Northbound On Ramp Southbound				W Avenue M Westbound				SR-14 Northbound Ramps Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	2	1	3	0	0	3	3	0	3	0	3	9
04:45 PM	0	0	0	0	0	4	0	4	1	0	5	6	0	2	1	3	13
05:00 PM	0	0	0	0	0	1	3	4	0	0	3	3	0	4	0	4	11
05:15 PM	0	0	0	0	0	3	1	4	0	0	6	6	0	2	0	2	12
Total Volume	0	0	0	0	0	10	5	15	1	0	17	18	0	11	1	12	45
% App. Total	0	0	0		0	66.7	33.3		5.6	0	94.4		0	91.7	8.3		
PHF	.000	.000	.000	.000	.000	.625	.417	.938	.250	.000	.708	.750	.000	.688	.250	.750	.865

City of Lancaster
N/S: SR-14 Northbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 05_LAN_14N_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
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Peak Hour Analysis From 04:30 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				04:30 PM			
+0 mins.	0	0	0	0	0	2	1	3	0	0	3	3	0	3	0	3
+15 mins.	0	0	0	0	0	4	0	4	1	0	5	6	0	2	1	3
+30 mins.	0	0	0	0	0	1	3	4	0	0	3	3	0	4	0	4
+45 mins.	0	0	0	0	0	3	1	4	0	0	6	6	0	2	0	2
Total Volume	0	0	0	0	0	10	5	15	1	0	17	18	0	11	1	12
% App. Total	0	0	0	0	0	66.7	33.3		5.6	0	94.4		0	91.7	8.3	
PHF	.000	.000	.000	.000	.000	.625	.417	.938	.250	.000	.708	.750	.000	.688	.250	.750

City of Lancaster
N/S: SR-14 Northbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 05_LAN_14N_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

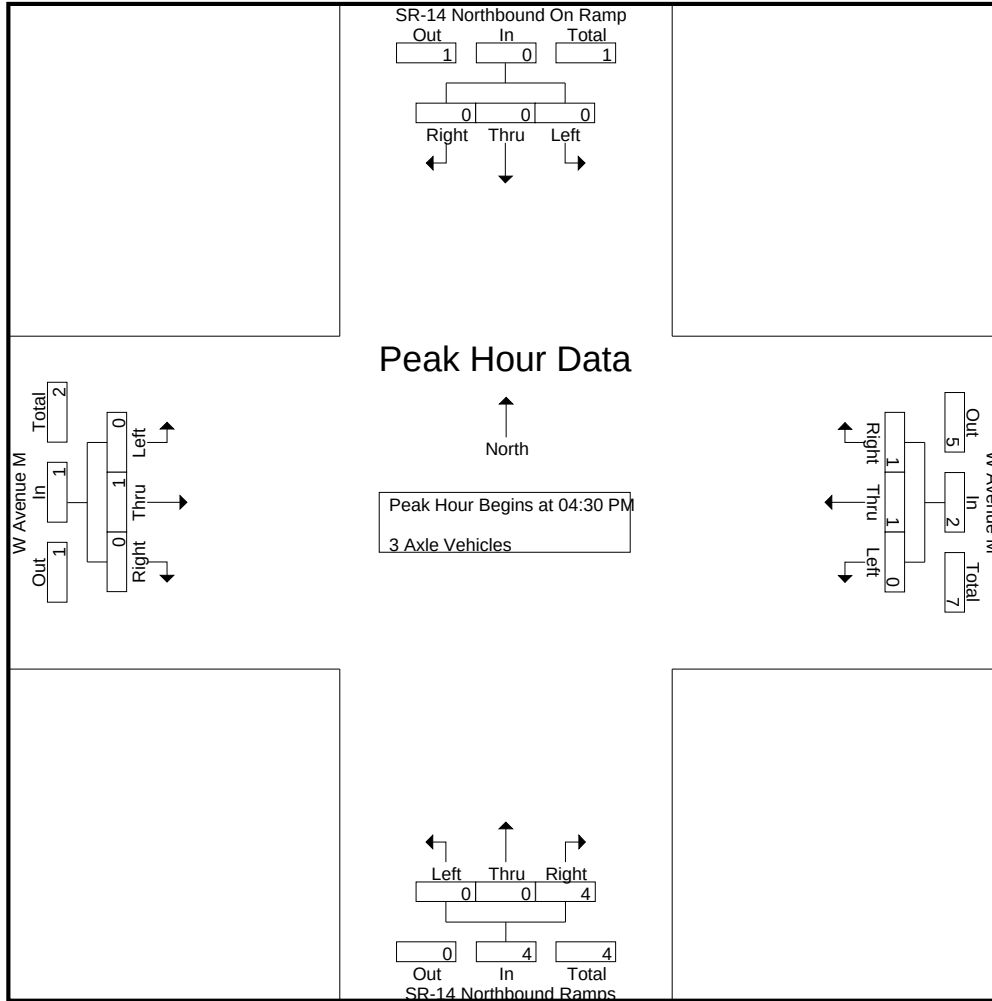
Groups Printed- 3 Axle Vehicles

	SR-14 Northbound On Ramp Southbound				W Avenue M Westbound				SR-14 Northbound Ramps Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
05:00 PM	0	0	0	0	0	0	1	1	0	0	2	2	0	0	0	0	3
05:15 PM	0	0	0	0	0	1	0	1	0	0	2	2	0	0	0	0	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
Total	0	0	0	0	0	1	1	2	0	0	4	4	0	2	0	2	8
Grand Total	0	0	0	0	0	3	1	4	0	0	4	4	0	4	0	4	12
Apprch %	0	0	0		0	75	25		0	0	100		0	100	0		
Total %	0	0	0		0	25	8.3	33.3	0	0	33.3	33.3	0	33.3	0	33.3	

	SR-14 Northbound On Ramp Southbound				W Avenue M Westbound				SR-14 Northbound Ramps Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	1	1	0	0	2	2	0	0	0	0	3
05:15 PM	0	0	0	0	0	1	0	1	0	0	2	2	0	0	0	0	3
Total Volume	0	0	0	0	0	1	1	2	0	0	4	4	0	1	0	1	7
% App. Total	0	0	0		0	50	50		0	0	100		0	100	0		
PHF	.000	.000	.000	.000	.000	.250	.250	.500	.000	.000	.500	.500	.000	.250	.000	.250	.583

City of Lancaster
N/S: SR-14 Northbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 05_LAN_14N_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 2



Peak Hour Analysis From 04:30 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				04:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	1	1	0	0	2	2	0	0	0	0
+45 mins.	0	0	0	0	0	1	0	1	0	0	2	2	0	0	0	0
Total Volume	0	0	0	0	0	1	1	2	0	0	4	4	0	1	0	1
% App. Total	0	0	0	0	0	50	50		0	0	100		0	100	0	
PHF	.000	.000	.000	.000	.000	.250	.250	.500	.000	.000	.500	.500	.000	.250	.000	.250

City of Lancaster
N/S: SR-14 Northbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 05_LAN_14N_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

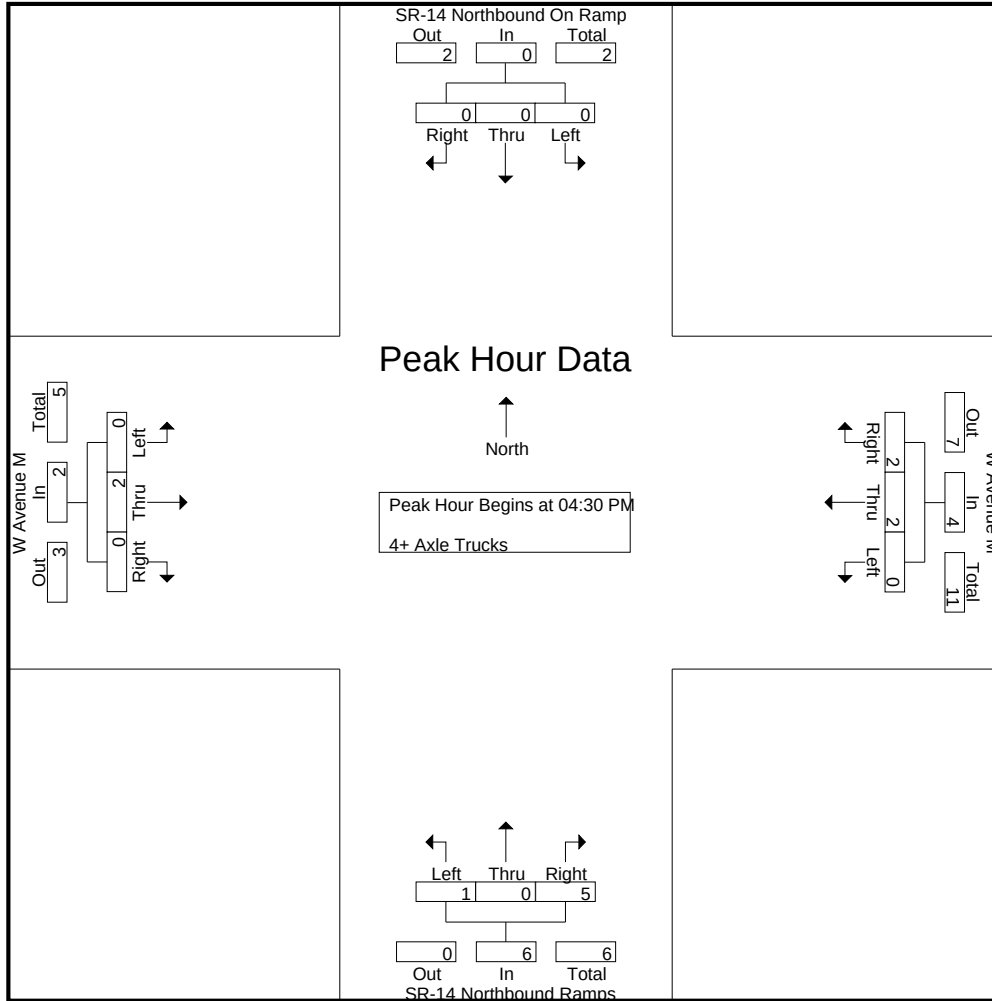
Groups Printed- 4+ Axle Trucks

	SR-14 Northbound On Ramp Southbound				W Avenue M Westbound				SR-14 Northbound Ramps Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	1	1	1	0	1	2	0	1	0	1	4
04:45 PM	0	0	0	0	0	2	0	2	0	0	1	1	0	0	0	0	3
Total	0	0	0	0	0	2	1	3	1	0	5	6	0	1	0	1	10
05:00 PM	0	0	0	0	0	0	1	1	0	0	1	1	0	1	0	1	3
05:15 PM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	2	2	0	0	3	3	0	2	0	2	7
Grand Total	0	0	0	0	0	2	3	5	1	0	8	9	0	3	0	3	17
Apprch %	0	0	0		0	40	60		11.1	0	88.9		0	100	0		
Total %	0	0	0		0	11.8	17.6	29.4	5.9	0	47.1	52.9	0	17.6	0	17.6	

	SR-14 Northbound On Ramp Southbound				W Avenue M Westbound				SR-14 Northbound Ramps Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	1	1	1	0	1	2	0	1	0	1	4
04:45 PM	0	0	0	0	0	2	0	2	0	0	1	1	0	0	0	0	3
05:00 PM	0	0	0	0	0	0	1	1	0	0	1	1	0	1	0	1	3
05:15 PM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
Total Volume	0	0	0	0	0	2	2	4	1	0	5	6	0	2	0	2	12
% App. Total	0	0	0		0	50	50		16.7	0	83.3		0	100	0		
PHF	.000	.000	.000	.000	.000	.250	.500	.500	.250	.000	.625	.750	.000	.500	.000	.500	.750

City of Lancaster
N/S: SR-14 Northbound Ramps
E/W: W Avenue M
Weather: Clear

File Name : 05_LAN_14N_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 2



Peak Hour Analysis From 04:30 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				04:30 PM			
+0 mins.	0	0	0	0	0	0	1	1	1	0	1	2	0	1	0	1
+15 mins.	0	0	0	0	0	2	0	2	0	0	1	1	0	0	0	0
+30 mins.	0	0	0	0	0	0	1	1	0	0	1	1	0	1	0	1
+45 mins.	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0
Total Volume	0	0	0	0	0	2	2	4	1	0	5	6	0	2	0	2
% App. Total	0	0	0	0	0	50	50		16.7	0	83.3		0	100	0	
PHF	.000	.000	.000	.000	.000	.250	.500	.500	.250	.000	.625	.750	.000	.500	.000	.500

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

File Name : 01_LAN_10th St W_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

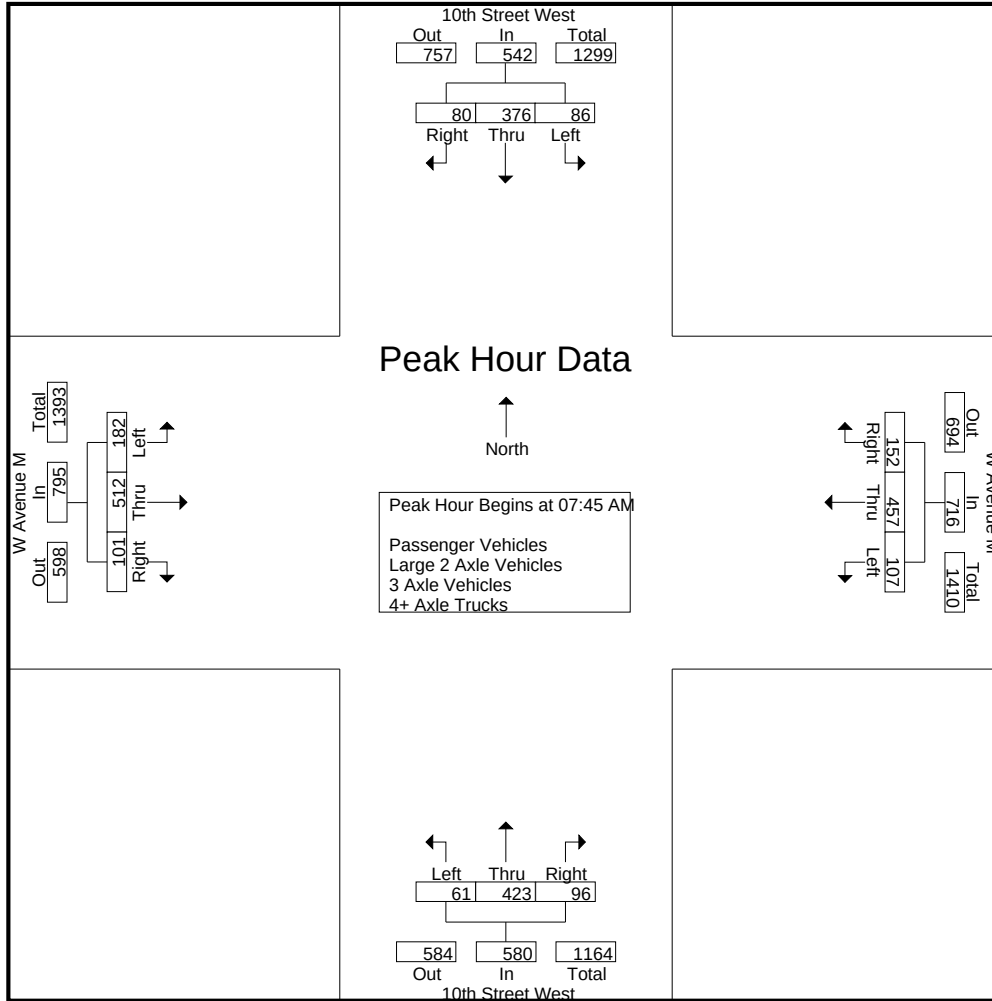
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	10th Street West Southbound				W Avenue M Westbound				10th Street West Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	12	32	11	55	12	116	37	165	2	53	13	68	26	105	10	141	429
07:15 AM	16	53	22	91	17	127	18	162	15	67	13	95	23	131	17	171	519
07:30 AM	13	68	18	99	32	133	28	193	10	91	30	131	24	162	18	204	627
07:45 AM	22	102	19	143	34	111	41	186	18	121	28	167	50	137	33	220	716
Total	63	255	70	388	95	487	124	706	45	332	84	461	123	535	78	736	2291
08:00 AM	29	74	11	114	19	125	36	180	13	106	27	146	49	148	26	223	663
08:15 AM	20	112	16	148	26	122	38	186	14	79	20	113	40	110	19	169	616
08:30 AM	15	88	34	137	28	99	37	164	16	117	21	154	43	117	23	183	638
08:45 AM	14	85	23	122	35	110	42	187	14	106	16	136	59	134	13	206	651
Total	78	359	84	521	108	456	153	717	57	408	84	549	191	509	81	781	2568
Grand Total	141	614	154	909	203	943	277	1423	102	740	168	1010	314	1044	159	1517	4859
Apprch %	15.5	67.5	16.9		14.3	66.3	19.5		10.1	73.3	16.6		20.7	68.8	10.5		
Total %	2.9	12.6	3.2	18.7	4.2	19.4	5.7	29.3	2.1	15.2	3.5	20.8	6.5	21.5	3.3	31.2	
Passenger Vehicles	138	598	146	882	180	825	262	1267	89	717	152	958	305	992	150	1447	4554
% Passenger Vehicles	97.9	97.4	94.8	97	88.7	87.5	94.6	89	87.3	96.9	90.5	94.9	97.1	95	94.3	95.4	93.7
Large 2 Axle Vehicles	2	8	6	16	13	91	13	117	8	15	8	31	9	36	7	52	216
% Large 2 Axle Vehicles	1.4	1.3	3.9	1.8	6.4	9.7	4.7	8.2	7.8	2	4.8	3.1	2.9	3.4	4.4	3.4	4.4
3 Axle Vehicles	0	6	0	6	5	17	0	22	0	6	3	9	0	12	0	12	49
% 3 Axle Vehicles	0	1	0	0.7	2.5	1.8	0	1.5	0	0.8	1.8	0.9	0	1.1	0	0.8	1
4+ Axle Trucks	1	2	2	5	5	10	2	17	5	2	5	12	0	4	2	6	40
% 4+ Axle Trucks	0.7	0.3	1.3	0.6	2.5	1.1	0.7	1.2	4.9	0.3	3	1.2	0	0.4	1.3	0.4	0.8

	10th Street West Southbound				W Avenue M Westbound				10th Street West Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	22	102	19	143	34	111	41	186	18	121	28	167	50	137	33	220	716
08:00 AM	29	74	11	114	19	125	36	180	13	106	27	146	49	148	26	223	663
08:15 AM	20	112	16	148	26	122	38	186	14	79	20	113	40	110	19	169	616
08:30 AM	15	88	34	137	28	99	37	164	16	117	21	154	43	117	23	183	638
Total Volume	86	376	80	542	107	457	152	716	61	423	96	580	182	512	101	795	2633
% App. Total	15.9	69.4	14.8		14.9	63.8	21.2		10.5	72.9	16.6		22.9	64.4	12.7		
PHF	.741	.839	.588	.916	.787	.914	.927	.962	.847	.874	.857	.868	.910	.865	.765	.891	.919

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

File Name : 01_LAN_10th St W_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:30 AM				07:45 AM				07:15 AM			
+0 mins.	22	102	19	143	32	133	28	193	18	121	28	167	23	131	17	171
+15 mins.	29	74	11	114	34	111	41	186	13	106	27	146	24	162	18	204
+30 mins.	20	112	16	148	19	125	36	180	14	79	20	113	50	137	33	220
+45 mins.	15	88	34	137	26	122	38	186	16	117	21	154	49	148	26	223
Total Volume	86	376	80	542	111	491	143	745	61	423	96	580	146	578	94	818
% App. Total	15.9	69.4	14.8		14.9	65.9	19.2		10.5	72.9	16.6		17.8	70.7	11.5	
PHF	.741	.839	.588	.916	.816	.923	.872	.965	.847	.874	.857	.868	.730	.892	.712	.917

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

File Name : 01_LAN_10th St W_W Ave M AM
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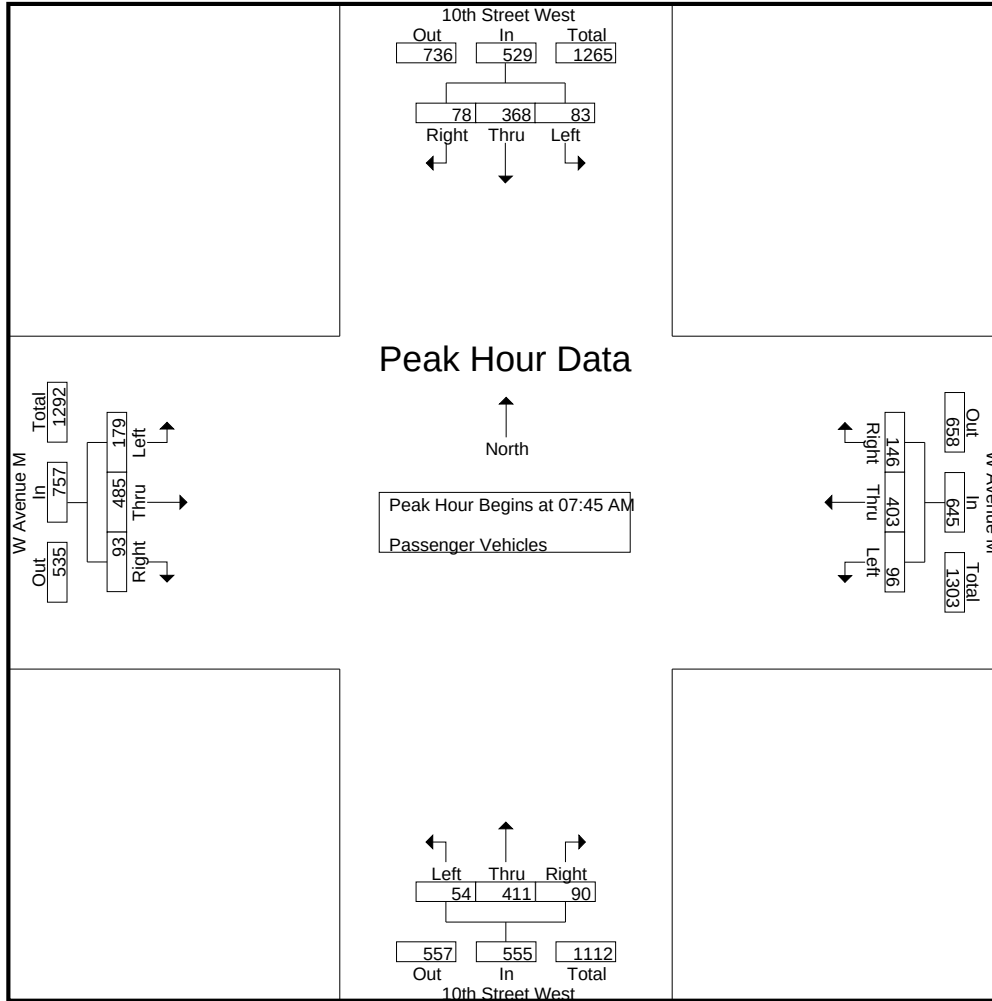
Groups Printed- Passenger Vehicles

	10th Street West Southbound				W Avenue M Westbound				10th Street West Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	12	31	10	53	9	95	36	140	1	50	11	62	25	101	10	136	391
07:15 AM	16	49	19	84	15	108	13	136	13	65	10	88	22	121	17	160	468
07:30 AM	13	67	18	98	28	117	27	172	9	89	26	124	24	155	17	196	590
07:45 AM	22	101	19	142	30	96	37	163	16	120	28	164	50	132	31	213	682
Total	63	248	66	377	82	416	113	611	39	324	75	438	121	509	75	705	2131
08:00 AM	28	73	11	112	16	115	36	167	12	98	26	136	46	144	23	213	628
08:15 AM	19	107	16	142	25	108	36	169	11	78	17	106	40	100	18	158	575
08:30 AM	14	87	32	133	25	84	37	146	15	115	19	149	43	109	21	173	601
08:45 AM	14	83	21	118	32	102	40	174	12	102	15	129	55	130	13	198	619
Total	75	350	80	505	98	409	149	656	50	393	77	520	184	483	75	742	2423
Grand Total	138	598	146	882	180	825	262	1267	89	717	152	958	305	992	150	1447	4554
Apprch %	15.6	67.8	16.6		14.2	65.1	20.7		9.3	74.8	15.9		21.1	68.6	10.4		
Total %	3	13.1	3.2	19.4	4	18.1	5.8	27.8	2	15.7	3.3	21	6.7	21.8	3.3	31.8	

	10th Street West Southbound				W Avenue M Westbound				10th Street West Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	22	101	19	142	30	96	37	163	16	120	28	164	50	132	31	213	682
08:00 AM	28	73	11	112	16	115	36	167	12	98	26	136	46	144	23	213	628
08:15 AM	19	107	16	142	25	108	36	169	11	78	17	106	40	100	18	158	575
08:30 AM	14	87	32	133	25	84	37	146	15	115	19	149	43	109	21	173	601
Total Volume	83	368	78	529	96	403	146	645	54	411	90	555	179	485	93	757	2486
% App. Total	15.7	69.6	14.7		14.9	62.5	22.6		9.7	74.1	16.2		23.6	64.1	12.3		
PHF	.741	.860	.609	.931	.800	.876	.986	.954	.844	.856	.804	.846	.895	.842	.750	.888	.911

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

File Name : 01_LAN_10th St W_W Ave M AM
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Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	22	101	19	142	30	96	37	163	16	120	28	164	50	132	31	213
+15 mins.	28	73	11	112	16	115	36	167	12	98	26	136	46	144	23	213
+30 mins.	19	107	16	142	25	108	36	169	11	78	17	106	40	100	18	158
+45 mins.	14	87	32	133	25	84	37	146	15	115	19	149	43	109	21	173
Total Volume	83	368	78	529	96	403	146	645	54	411	90	555	179	485	93	757
% App. Total	15.7	69.6	14.7		14.9	62.5	22.6		9.7	74.1	16.2		23.6	64.1	12.3	
PHF	.741	.860	.609	.931	.800	.876	.986	.954	.844	.856	.804	.846	.895	.842	.750	.888

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

File Name : 01_LAN_10th St W_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
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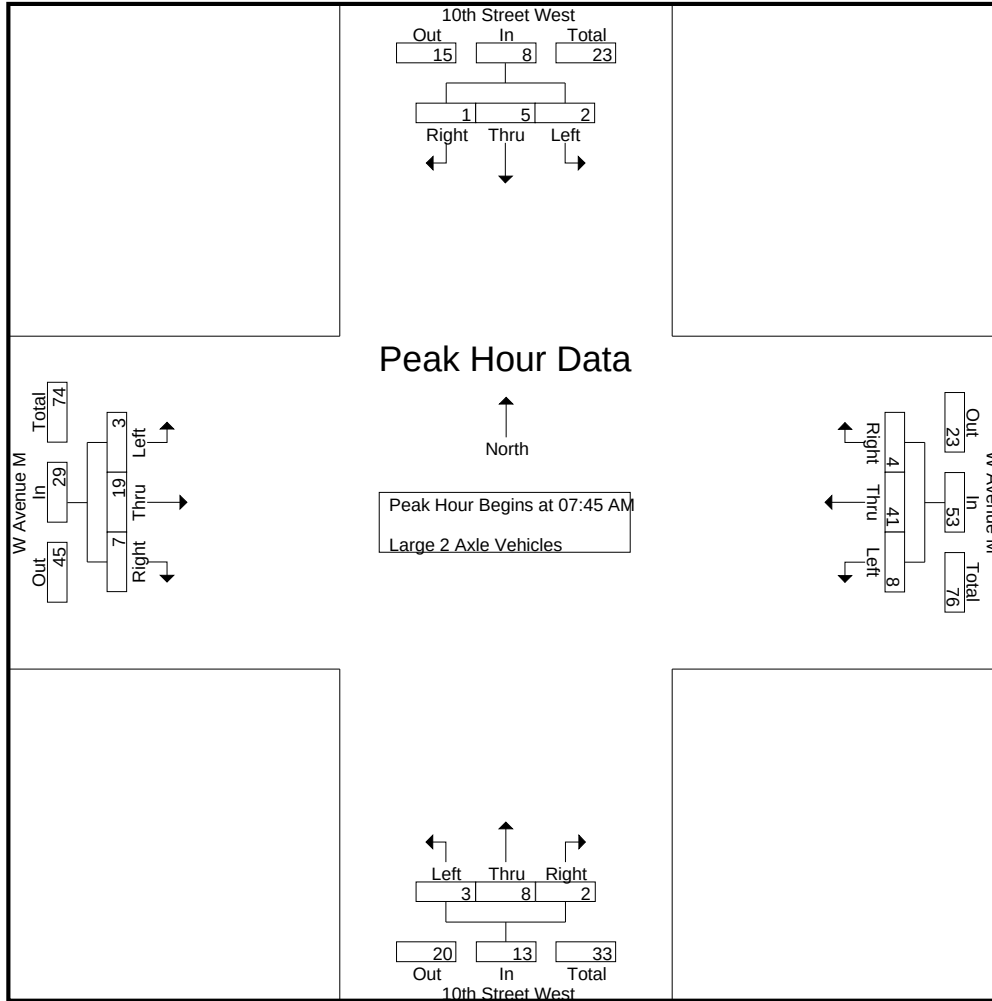
Groups Printed- Large 2 Axle Vehicles

	10th Street West Southbound				W Avenue M Westbound				10th Street West Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	1	1	1	18	1	20	1	2	2	5	1	2	0	3	29
07:15 AM	0	3	2	5	0	13	5	18	1	1	2	4	1	6	0	7	34
07:30 AM	0	0	0	0	3	13	1	17	1	2	2	5	0	5	0	5	27
07:45 AM	0	1	0	1	3	9	2	14	0	1	0	1	0	4	1	5	21
Total	0	4	3	7	7	53	9	69	3	6	6	15	2	17	1	20	111
08:00 AM	1	0	0	1	2	9	0	11	1	6	0	7	3	1	3	7	26
08:15 AM	1	4	0	5	1	10	2	13	1	1	1	3	0	6	1	7	28
08:30 AM	0	0	1	1	2	13	0	15	1	0	1	2	0	8	2	10	28
08:45 AM	0	0	2	2	1	6	2	9	2	2	0	4	4	4	0	8	23
Total	2	4	3	9	6	38	4	48	5	9	2	16	7	19	6	32	105
Grand Total	2	8	6	16	13	91	13	117	8	15	8	31	9	36	7	52	216
Apprch %	12.5	50	37.5		11.1	77.8	11.1		25.8	48.4	25.8		17.3	69.2	13.5		
Total %	0.9	3.7	2.8	7.4	6	42.1	6	54.2	3.7	6.9	3.7	14.4	4.2	16.7	3.2	24.1	

	10th Street West Southbound				W Avenue M Westbound				10th Street West Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	1	0	1	3	9	2	14	0	1	0	1	0	4	1	5	21
08:00 AM	1	0	0	1	2	9	0	11	1	6	0	7	3	1	3	7	26
08:15 AM	1	4	0	5	1	10	2	13	1	1	1	3	0	6	1	7	28
08:30 AM	0	0	1	1	2	13	0	15	1	0	1	2	0	8	2	10	28
Total Volume	2	5	1	8	8	41	4	53	3	8	2	13	3	19	7	29	103
% App. Total	25	62.5	12.5		15.1	77.4	7.5		23.1	61.5	15.4		10.3	65.5	24.1		
PHF	.500	.313	.250	.400	.667	.788	.500	.883	.750	.333	.500	.464	.250	.594	.583	.725	.920

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

File Name : 01_LAN_10th St W_W Ave M AM
Site Code : 10524525
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Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	1	0	1	3	9	2	14	0	1	0	1	0	4	1	5
+15 mins.	1	0	0	1	2	9	0	11	1	6	0	7	3	1	3	7
+30 mins.	1	4	0	5	1	10	2	13	1	1	1	3	0	6	1	7
+45 mins.	0	0	1	1	2	13	0	15	1	0	1	2	0	8	2	10
Total Volume	2	5	1	8	8	41	4	53	3	8	2	13	3	19	7	29
% App. Total	25	62.5	12.5		15.1	77.4	7.5		23.1	61.5	15.4		10.3	65.5	24.1	
PHF	.500	.313	.250	.400	.667	.788	.500	.883	.750	.333	.500	.464	.250	.594	.583	.725

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

File Name : 01_LAN_10th St W_W Ave M AM
Site Code : 10524525
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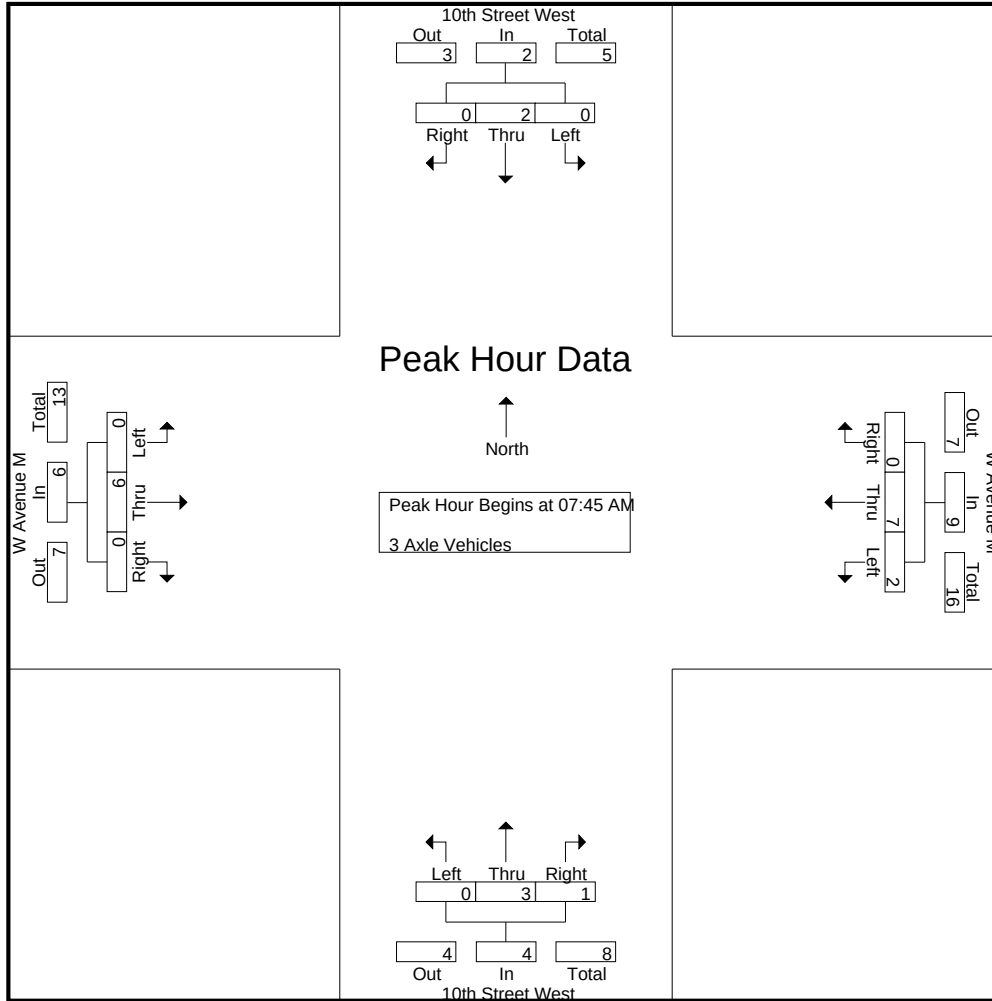
Groups Printed- 3 Axle Vehicles

	10th Street West Southbound				W Avenue M Westbound				10th Street West Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	3	0	3	0	1	0	1	0	2	0	2	6
07:15 AM	0	1	0	1	0	4	0	4	0	0	0	0	0	2	0	2	7
07:30 AM	0	1	0	1	1	1	0	2	0	0	1	1	0	2	0	2	6
07:45 AM	0	0	0	0	1	5	0	6	0	0	0	0	0	1	0	1	7
Total	0	2	0	2	2	13	0	15	0	1	1	2	0	7	0	7	26
08:00 AM	0	0	0	0	0	1	0	1	0	1	0	1	0	2	0	2	4
08:15 AM	0	1	0	1	0	1	0	1	0	0	1	1	0	3	0	3	6
08:30 AM	0	1	0	1	1	0	0	1	0	2	0	2	0	0	0	0	4
08:45 AM	0	2	0	2	2	2	0	4	0	2	1	3	0	0	0	0	9
Total	0	4	0	4	3	4	0	7	0	5	2	7	0	5	0	5	23
Grand Total	0	6	0	6	5	17	0	22	0	6	3	9	0	12	0	12	49
Apprch %	0	100	0		22.7	77.3	0		0	66.7	33.3		0	100	0		
Total %	0	12.2	0	12.2	10.2	34.7	0	44.9	0	12.2	6.1	18.4	0	24.5	0	24.5	

	10th Street West Southbound				W Avenue M Westbound				10th Street West Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	1	5	0	6	0	0	0	0	0	1	0	1	7
08:00 AM	0	0	0	0	0	1	0	1	0	1	0	1	0	2	0	2	4
08:15 AM	0	1	0	1	0	1	0	1	0	0	1	1	0	3	0	3	6
08:30 AM	0	1	0	1	1	0	0	1	0	2	0	2	0	0	0	0	4
Total Volume	0	2	0	2	2	7	0	9	0	3	1	4	0	6	0	6	21
% App. Total	0	100	0		22.2	77.8	0		0	75	25		0	100	0		
PHF	.000	.500	.000	.500	.500	.350	.000	.375	.000	.375	.250	.500	.000	.500	.000	.500	.750

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

File Name : 01_LAN_10th St W_W Ave M AM
Site Code : 10524525
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Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	1	5	0	6	0	0	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	1	0	1	0	1	0	0	0	2	0	2
+30 mins.	0	1	0	1	0	1	0	1	0	0	1	1	0	3	0	3
+45 mins.	0	1	0	1	1	0	0	1	0	2	0	2	0	0	0	0
Total Volume	0	2	0	2	2	7	0	9	0	3	1	4	0	6	0	6
% App. Total	0	100	0		22.2	77.8	0		0	75	25		0	100	0	
PHF	.000	.500	.000	.500	.500	.350	.000	.375	.000	.375	.250	.500	.000	.500	.000	.500

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

File Name : 01_LAN_10th St W_W Ave M AM
Site Code : 10524525
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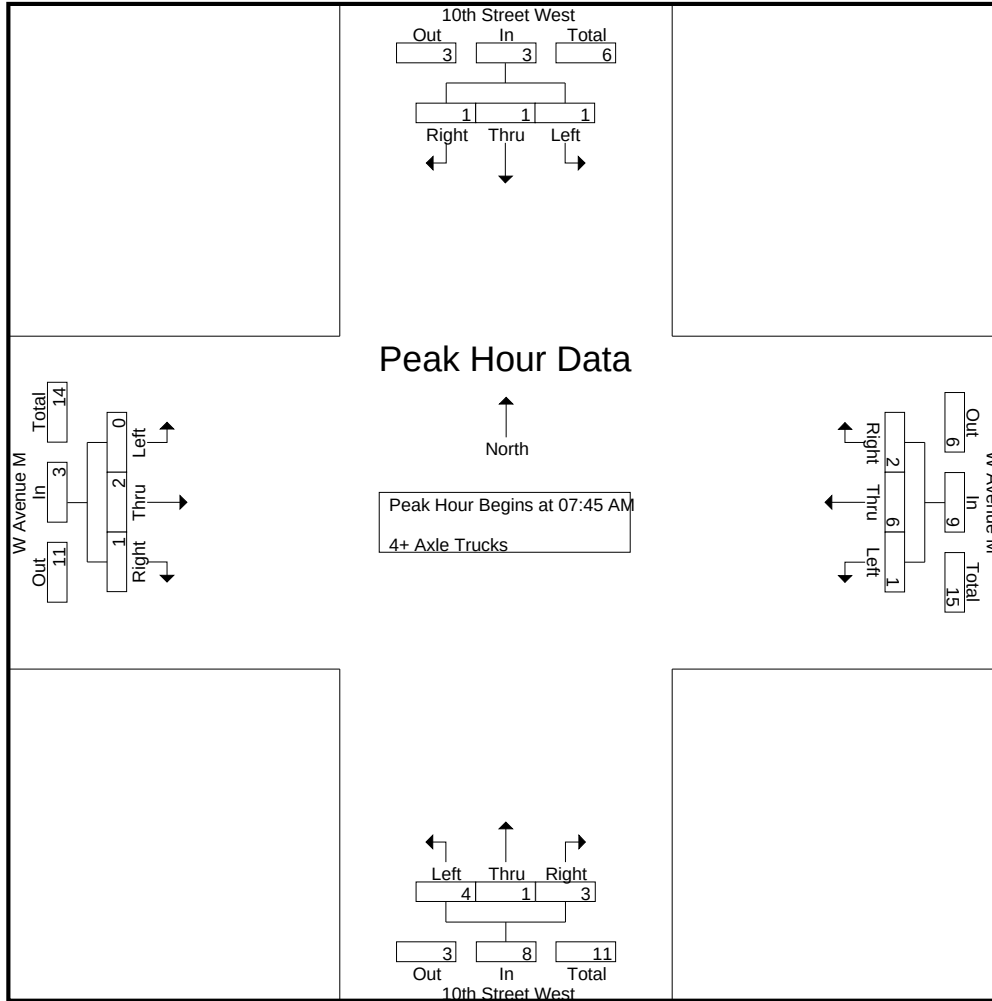
Groups Printed- 4+ Axle Trucks

	10th Street West Southbound				W Avenue M Westbound				10th Street West Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	0	1	2	0	0	2	0	0	0	0	0	0	0	0	3
07:15 AM	0	0	1	1	2	2	0	4	1	1	1	3	0	2	0	2	10
07:30 AM	0	0	0	0	0	2	0	2	0	0	1	1	0	0	1	1	4
07:45 AM	0	0	0	0	0	1	2	3	2	0	0	2	0	0	1	1	6
Total	0	1	1	2	4	5	2	11	3	1	2	6	0	2	2	4	23
08:00 AM	0	1	0	1	1	0	0	1	0	1	1	2	0	1	0	1	5
08:15 AM	0	0	0	0	0	3	0	3	2	0	1	3	0	1	0	1	7
08:30 AM	1	0	1	2	0	2	0	2	0	0	1	1	0	0	0	0	5
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	1	1	3	1	5	0	6	2	1	3	6	0	2	0	2	17
Grand Total	1	2	2	5	5	10	2	17	5	2	5	12	0	4	2	6	40
Apprch %	20	40	40		29.4	58.8	11.8		41.7	16.7	41.7		0	66.7	33.3		
Total %	2.5	5	5	12.5	12.5	25	5	42.5	12.5	5	12.5	30	0	10	5	15	

	10th Street West Southbound				W Avenue M Westbound				10th Street West Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	1	2	3	2	0	0	2	0	0	1	1	6
08:00 AM	0	1	0	1	1	0	0	1	0	1	1	2	0	1	0	1	5
08:15 AM	0	0	0	0	0	3	0	3	2	0	1	3	0	1	0	1	7
08:30 AM	1	0	1	2	0	2	0	2	0	0	1	1	0	0	0	0	5
Total Volume	1	1	1	3	1	6	2	9	4	1	3	8	0	2	1	3	23
% App. Total	33.3	33.3	33.3		11.1	66.7	22.2		50	12.5	37.5		0	66.7	33.3		
PHF	.250	.250	.250	.375	.250	.500	.250	.750	.500	.250	.750	.667	.000	.500	.250	.750	.821

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

File Name : 01_LAN_10th St W_W Ave M AM
Site Code : 10524525
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Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	1	2	3	2	0	0	2	0	0	1	1
+15 mins.	0	1	0	1	1	0	0	1	0	1	1	2	0	1	0	1
+30 mins.	0	0	0	0	0	3	0	3	2	0	1	3	0	1	0	1
+45 mins.	1	0	1	2	0	2	0	2	0	0	1	1	0	0	0	0
Total Volume	1	1	1	3	1	6	2	9	4	1	3	8	0	2	1	3
% App. Total	33.3	33.3	33.3		11.1	66.7	22.2		50	12.5	37.5		0	66.7	33.3	
PHF	.250	.250	.250	.375	.250	.500	.250	.750	.500	.250	.750	.667	.000	.500	.250	.750

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

File Name : 01_LAN_10th St W_W Ave M PM
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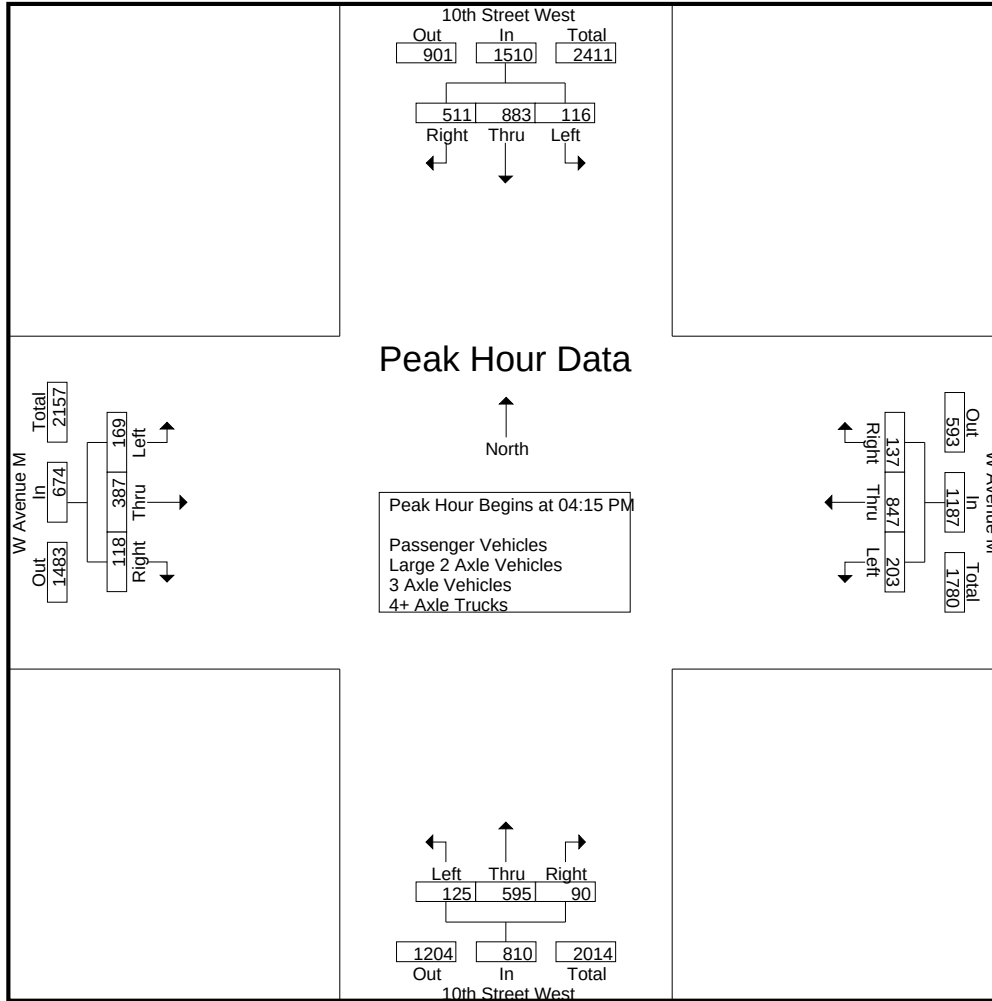
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	10th Street West Southbound				W Avenue M Westbound				10th Street West Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	24	187	103	314	52	222	41	315	40	132	33	205	46	82	34	162	996
04:15 PM	25	211	121	357	52	201	31	284	36	174	18	228	41	106	31	178	1047
04:30 PM	32	231	126	389	41	215	38	294	20	160	27	207	40	73	36	149	1039
04:45 PM	23	227	107	357	52	210	34	296	31	126	27	184	39	89	29	157	994
Total	104	856	457	1417	197	848	144	1189	127	592	105	824	166	350	130	646	4076
05:00 PM	36	214	157	407	58	221	34	313	38	135	18	191	49	119	22	190	1101
05:15 PM	28	210	126	364	52	175	28	255	34	169	27	230	46	104	46	196	1045
05:30 PM	33	214	107	354	32	160	25	217	31	127	35	193	41	107	44	192	956
05:45 PM	26	158	42	226	27	96	18	141	19	129	14	162	26	89	32	147	676
Total	123	796	432	1351	169	652	105	926	122	560	94	776	162	419	144	725	3778
Grand Total	227	1652	889	2768	366	1500	249	2115	249	1152	199	1600	328	769	274	1371	7854
Apprch %	8.2	59.7	32.1		17.3	70.9	11.8		15.6	72	12.4		23.9	56.1	20		
Total %	2.9	21	11.3	35.2	4.7	19.1	3.2	26.9	3.2	14.7	2.5	20.4	4.2	9.8	3.5	17.5	
Passenger Vehicles	223	1633	880	2736	355	1473	245	2073	242	1142	190	1574	318	714	266	1298	7681
% Passenger Vehicles	98.2	98.8	99	98.8	97	98.2	98.4	98	97.2	99.1	95.5	98.4	97	92.8	97.1	94.7	97.8
Large 2 Axle Vehicles	4	16	8	28	10	19	3	32	6	8	6	20	10	39	6	55	135
% Large 2 Axle Vehicles	1.8	1	0.9	1	2.7	1.3	1.2	1.5	2.4	0.7	3	1.2	3	5.1	2.2	4	1.7
3 Axle Vehicles	0	2	0	2	1	4	1	6	0	2	3	5	0	7	0	7	20
% 3 Axle Vehicles	0	0.1	0	0.1	0.3	0.3	0.4	0.3	0	0.2	1.5	0.3	0	0.9	0	0.5	0.3
4+ Axle Trucks	0	1	1	2	0	4	0	4	1	0	0	1	0	9	2	11	18
% 4+ Axle Trucks	0	0.1	0.1	0.1	0	0.3	0	0.2	0.4	0	0	0.1	0	1.2	0.7	0.8	0.2

	10th Street West Southbound				W Avenue M Westbound				10th Street West Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	25	211	121	357	52	201	31	284	36	174	18	228	41	106	31	178	1047
04:30 PM	32	231	126	389	41	215	38	294	20	160	27	207	40	73	36	149	1039
04:45 PM	23	227	107	357	52	210	34	296	31	126	27	184	39	89	29	157	994
05:00 PM	36	214	157	407	58	221	34	313	38	135	18	191	49	119	22	190	1101
Total Volume	116	883	511	1510	203	847	137	1187	125	595	90	810	169	387	118	674	4181
% App. Total	7.7	58.5	33.8		17.1	71.4	11.5		15.4	73.5	11.1		25.1	57.4	17.5		
PHF	.806	.956	.814	.928	.875	.958	.901	.948	.822	.855	.833	.888	.862	.813	.819	.887	.949

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

File Name : 01_LAN_10th St W_W Ave M PM
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:00 PM				04:00 PM				04:45 PM			
+0 mins.	32	231	126	389	52	222	41	315	40	132	33	205	39	89	29	157
+15 mins.	23	227	107	357	52	201	31	284	36	174	18	228	49	119	22	190
+30 mins.	36	214	157	407	41	215	38	294	20	160	27	207	46	104	46	196
+45 mins.	28	210	126	364	52	210	34	296	31	126	27	184	41	107	44	192
Total Volume	119	882	516	1517	197	848	144	1189	127	592	105	824	175	419	141	735
% App. Total	7.8	58.1	34		16.6	71.3	12.1		15.4	71.8	12.7		23.8	57	19.2	
PHF	.826	.955	.822	.932	.947	.955	.878	.944	.794	.851	.795	.904	.893	.880	.766	.938

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

File Name : 01_LAN_10th St W_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
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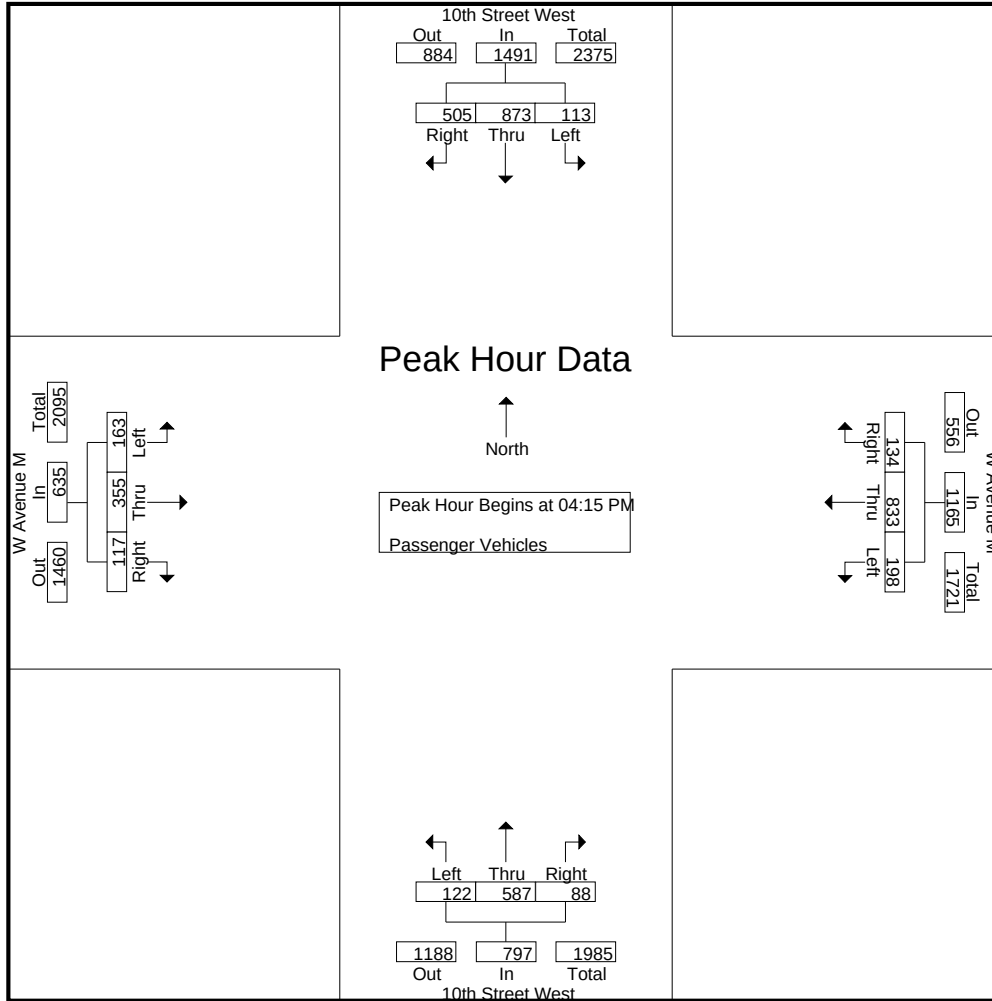
Groups Printed- Passenger Vehicles

	10th Street West Southbound				W Avenue M Westbound				10th Street West Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	24	185	100	309	49	217	41	307	39	132	33	204	44	71	34	149	969
04:15 PM	24	211	120	355	51	199	31	281	35	171	17	223	39	97	30	166	1025
04:30 PM	31	228	123	382	40	212	37	289	20	157	27	204	39	65	36	140	1015
04:45 PM	22	221	106	349	50	206	33	289	30	125	27	182	37	82	29	148	968
Total	101	845	449	1395	190	834	142	1166	124	585	104	813	159	315	129	603	3977
05:00 PM	36	213	156	405	57	216	33	306	37	134	17	188	48	111	22	181	1080
05:15 PM	28	206	126	360	52	172	28	252	33	168	26	227	45	96	43	184	1023
05:30 PM	32	212	107	351	30	158	24	212	29	126	31	186	40	107	44	191	940
05:45 PM	26	157	42	225	26	93	18	137	19	129	12	160	26	85	28	139	661
Total	122	788	431	1341	165	639	103	907	118	557	86	761	159	399	137	695	3704
Grand Total	223	1633	880	2736	355	1473	245	2073	242	1142	190	1574	318	714	266	1298	7681
Apprch %	8.2	59.7	32.2		17.1	71.1	11.8		15.4	72.6	12.1		24.5	55	20.5		
Total %	2.9	21.3	11.5	35.6	4.6	19.2	3.2	27	3.2	14.9	2.5	20.5	4.1	9.3	3.5	16.9	

	10th Street West Southbound				W Avenue M Westbound				10th Street West Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	24	211	120	355	51	199	31	281	35	171	17	223	39	97	30	166	1025
04:30 PM	31	228	123	382	40	212	37	289	20	157	27	204	39	65	36	140	1015
04:45 PM	22	221	106	349	50	206	33	289	30	125	27	182	37	82	29	148	968
05:00 PM	36	213	156	405	57	216	33	306	37	134	17	188	48	111	22	181	1080
Total Volume	113	873	505	1491	198	833	134	1165	122	587	88	797	163	355	117	635	4088
% App. Total	7.6	58.6	33.9		17	71.5	11.5		15.3	73.7	11		25.7	55.9	18.4		
PHF	.785	.957	.809	.920	.868	.964	.905	.952	.824	.858	.815	.893	.849	.800	.813	.877	.946

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

File Name : 01_LAN_10th St W_W Ave M PM
Site Code : 10524525
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Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:15 PM				04:15 PM			
+0 mins.	24	211	120	355	51	199	31	281	35	171	17	223	39	97	30	166
+15 mins.	31	228	123	382	40	212	37	289	20	157	27	204	39	65	36	140
+30 mins.	22	221	106	349	50	206	33	289	30	125	27	182	37	82	29	148
+45 mins.	36	213	156	405	57	216	33	306	37	134	17	188	48	111	22	181
Total Volume	113	873	505	1491	198	833	134	1165	122	587	88	797	163	355	117	635
% App. Total	7.6	58.6	33.9		17	71.5	11.5		15.3	73.7	11		25.7	55.9	18.4	
PHF	.785	.957	.809	.920	.868	.964	.905	.952	.824	.858	.815	.893	.849	.800	.813	.877

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

File Name : 01_LAN_10th St W_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
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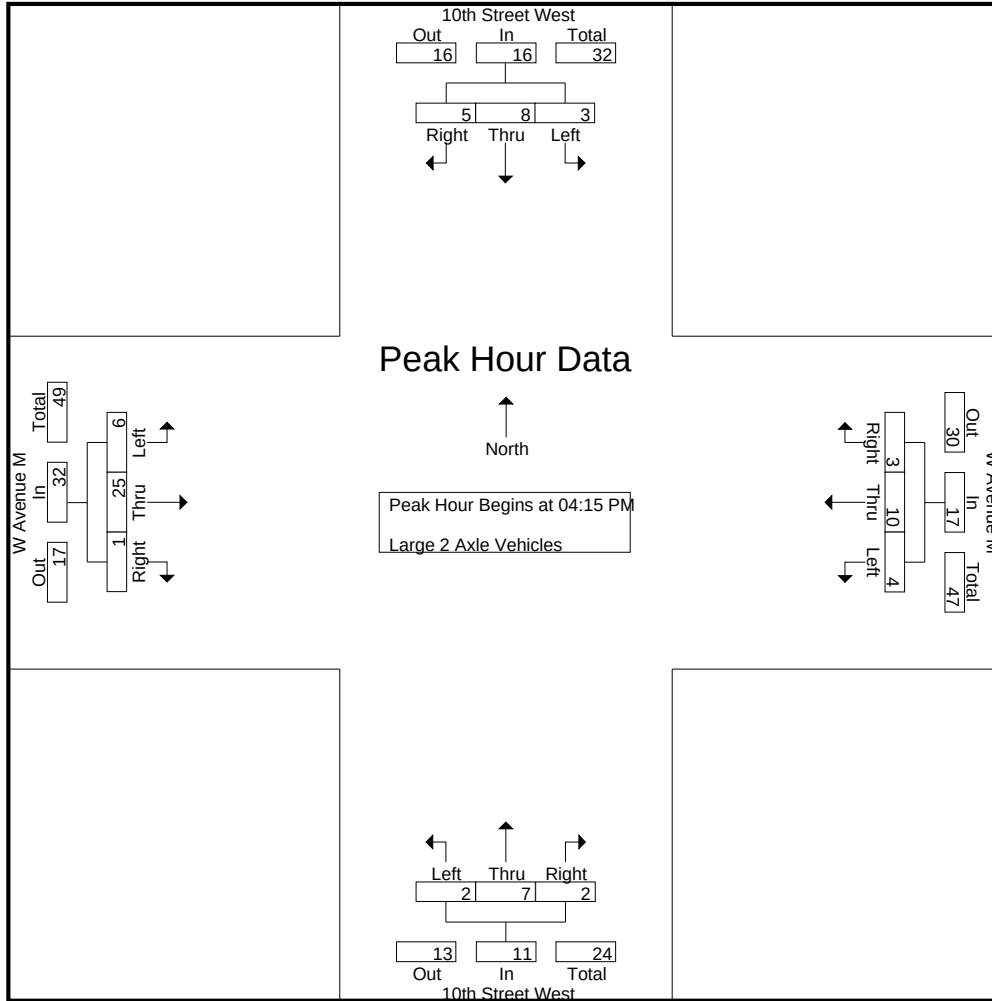
Groups Printed- Large 2 Axle Vehicles

	10th Street West Southbound				W Avenue M Westbound				10th Street West Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	2	3	5	3	3	0	6	1	0	0	1	2	7	0	9	21
04:15 PM	1	0	1	2	1	2	0	3	1	3	1	5	2	8	1	11	21
04:30 PM	1	2	3	6	1	2	1	4	0	3	0	3	1	5	0	6	19
04:45 PM	1	5	1	7	1	2	1	4	0	0	0	0	2	6	0	8	19
Total	3	9	8	20	6	9	2	17	2	6	1	9	7	26	1	34	80
05:00 PM	0	1	0	1	1	4	1	6	1	1	1	3	1	6	0	7	17
05:15 PM	0	4	0	4	0	2	0	2	1	0	1	2	1	5	2	8	16
05:30 PM	1	2	0	3	2	1	0	3	2	1	2	5	1	0	0	1	12
05:45 PM	0	0	0	0	1	3	0	4	0	0	1	1	0	2	3	5	10
Total	1	7	0	8	4	10	1	15	4	2	5	11	3	13	5	21	55
Grand Total	4	16	8	28	10	19	3	32	6	8	6	20	10	39	6	55	135
Apprch %	14.3	57.1	28.6		31.2	59.4	9.4		30	40	30		18.2	70.9	10.9		
Total %	3	11.9	5.9	20.7	7.4	14.1	2.2	23.7	4.4	5.9	4.4	14.8	7.4	28.9	4.4	40.7	

	10th Street West Southbound				W Avenue M Westbound				10th Street West Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	1	0	1	2	1	2	0	3	1	3	1	5	2	8	1	11	21
04:30 PM	1	2	3	6	1	2	1	4	0	3	0	3	1	5	0	6	19
04:45 PM	1	5	1	7	1	2	1	4	0	0	0	0	2	6	0	8	19
05:00 PM	0	1	0	1	1	4	1	6	1	1	1	3	1	6	0	7	17
Total Volume	3	8	5	16	4	10	3	17	2	7	2	11	6	25	1	32	76
% App. Total	18.8	50	31.2		23.5	58.8	17.6		18.2	63.6	18.2		18.8	78.1	3.1		
PHF	.750	.400	.417	.571	1.00	.625	.750	.708	.500	.583	.500	.550	.750	.781	.250	.727	.905

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

File Name : 01_LAN_10th St W_W Ave M PM
Site Code : 10524525
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Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:15 PM				04:15 PM			
+0 mins.	1	0	1	2	1	2	0	3	1	3	1	5	2	8	1	11
+15 mins.	1	2	3	6	1	2	1	4	0	3	0	3	1	5	0	6
+30 mins.	1	5	1	7	1	2	1	4	0	0	0	0	2	6	0	8
+45 mins.	0	1	0	1	1	4	1	6	1	1	1	3	1	6	0	7
Total Volume	3	8	5	16	4	10	3	17	2	7	2	11	6	25	1	32
% App. Total	18.8	50	31.2		23.5	58.8	17.6		18.2	63.6	18.2		18.8	78.1	3.1	
PHF	.750	.400	.417	.571	1.000	.625	.750	.708	.500	.583	.500	.550	.750	.781	.250	.727

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

File Name : 01_LAN_10th St W_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
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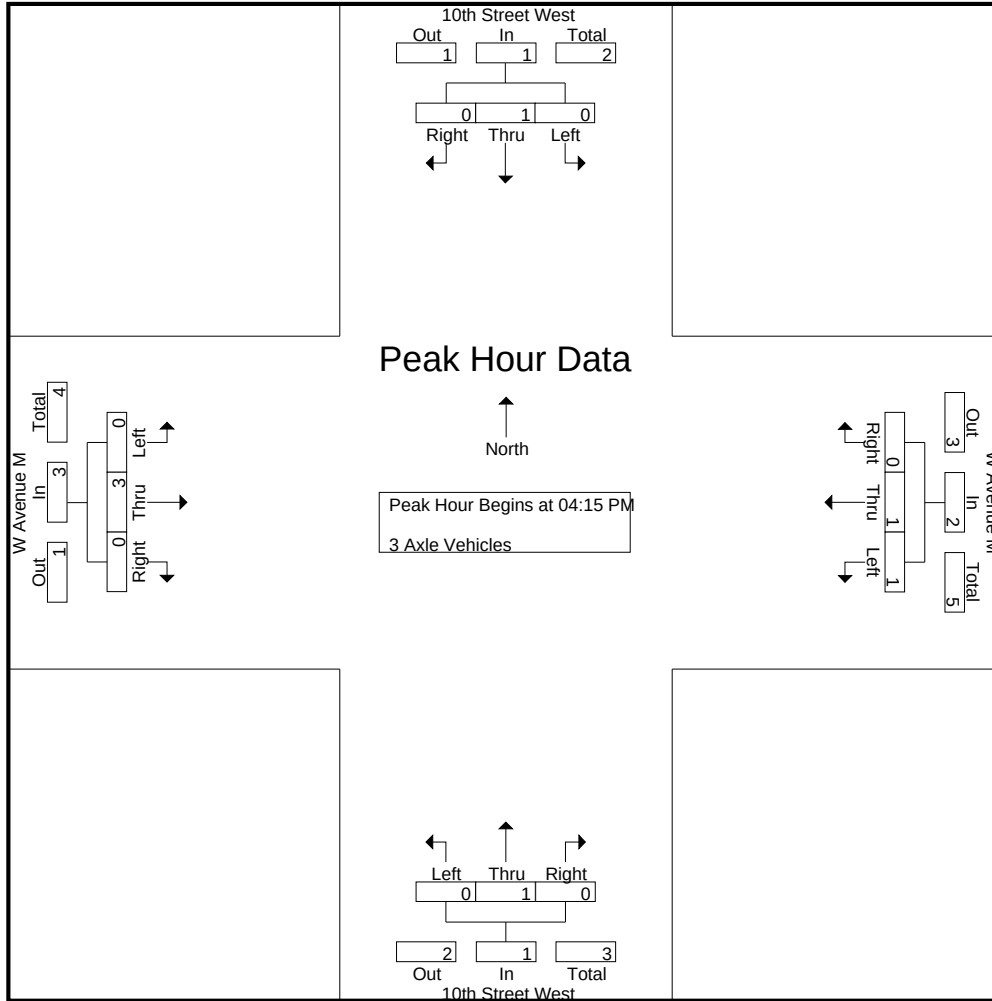
Groups Printed- 3 Axle Vehicles

	10th Street West Southbound				W Avenue M Westbound				10th Street West Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
04:45 PM	0	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0	2
Total	0	1	0	1	1	2	0	3	0	1	0	1	0	2	0	2	7
05:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
05:15 PM	0	0	0	0	0	1	0	1	0	1	0	1	0	2	0	2	4
05:30 PM	0	0	0	0	0	0	1	1	0	0	2	2	0	0	0	0	3
05:45 PM	0	1	0	1	0	0	0	0	0	0	1	1	0	2	0	2	4
Total	0	1	0	1	0	2	1	3	0	1	3	4	0	5	0	5	13
Grand Total	0	2	0	2	1	4	1	6	0	2	3	5	0	7	0	7	20
Apprch %	0	100	0		16.7	66.7	16.7		0	40	60		0	100	0		
Total %	0	10	0	10	5	20	5	30	0	10	15	25	0	35	0	35	

	10th Street West Southbound				W Avenue M Westbound				10th Street West Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
04:45 PM	0	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0	2
05:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
Total Volume	0	1	0	1	1	1	0	2	0	1	0	1	0	3	0	3	7
% App. Total	0	100	0		50	50	0		0	100	0		0	100	0		
PHF	.000	.250	.000	.250	.250	.250	.000	.500	.000	.250	.000	.250	.000	.750	.000	.750	.875

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

File Name : 01_LAN_10th St W_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
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Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:15 PM				04:15 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
+15 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
+30 mins.	0	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
Total Volume	0	1	0	1	1	1	0	2	0	1	0	1	0	3	0	3
% App. Total	0	100	0		50	50	0		0	100	0		0	100	0	
PHF	.000	.250	.000	.250	.250	.250	.000	.500	.000	.250	.000	.250	.000	.750	.000	.750

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

File Name : 01_LAN_10th St W_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

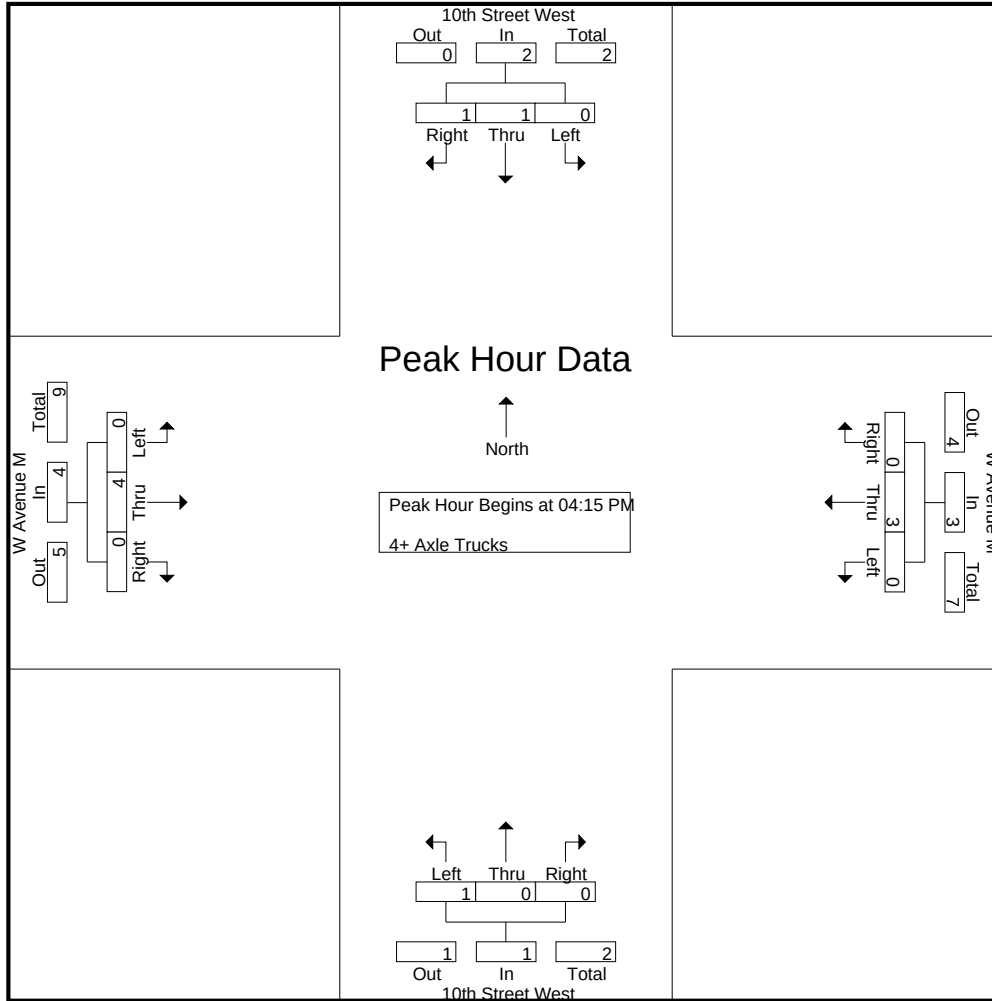
Groups Printed- 4+ Axle Trucks

	10th Street West Southbound				W Avenue M Westbound				10th Street West Northbound				W Avenue M Eastbound				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	4
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
04:45 PM	0	1	0	1	0	2	0	2	1	0	0	1	0	1	0	1	5
Total	0	1	0	1	0	3	0	3	1	0	0	1	0	7	0	7	12
05:00 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2
05:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total	0	0	1	1	0	1	0	1	0	0	0	0	0	2	2	4	6
Grand Total	0	1	1	2	0	4	0	4	1	0	0	1	0	9	2	11	18
Apprch %	0	50	50		0	100	0		100	0	0		0	81.8	18.2		
Total %	0	5.6	5.6	11.1	0	22.2	0	22.2	5.6	0	0	5.6	0	50	11.1	61.1	

	10th Street West Southbound				W Avenue M Westbound				10th Street West Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
04:45 PM	0	1	0	1	0	2	0	2	1	0	0	1	0	1	0	1	5
05:00 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1	2
Total Volume	0	1	1	2	0	3	0	3	1	0	0	1	0	4	0	4	10
% App. Total	0	50	50		0	100	0		100	0	0		0	100	0		
PHF	.000	.250	.250	.500	.000	.375	.000	.375	.250	.000	.000	.250	.000	.500	.000	.500	.500

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

File Name : 01_LAN_10th St W_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 2



Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:15 PM				04:15 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2
+30 mins.	0	1	0	1	0	2	0	2	1	0	0	1	0	1	0	1
+45 mins.	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1
Total Volume	0	1	1	2	0	3	0	3	1	0	0	1	0	4	0	4
% App. Total	0	50	50		0	100	0		100	0	0		0	100	0	
PHF	.000	.250	.250	.500	.000	.375	.000	.375	.250	.000	.000	.250	.000	.500	.000	.500

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue M/ Columbia Way
Weather: Clear

File Name : 03_LAN_Sierra_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

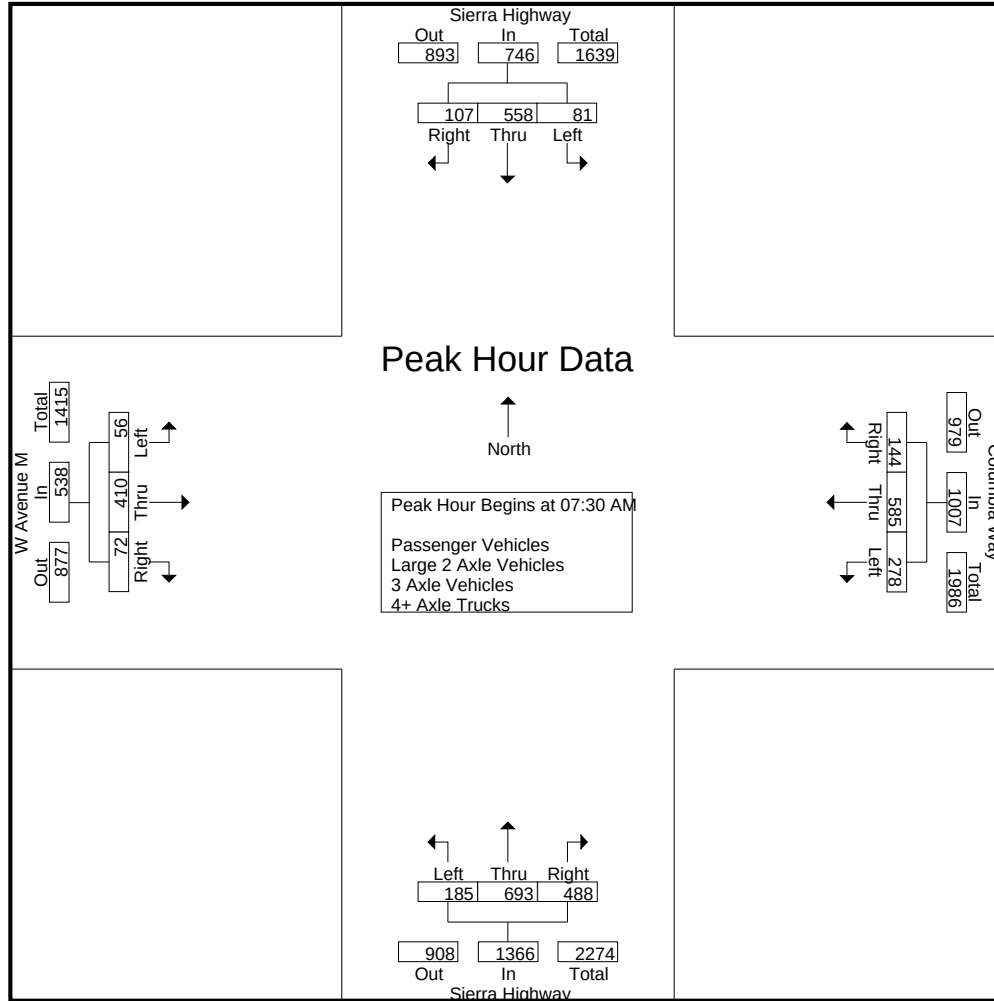
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Sierra Highway Southbound				Columbia Way Westbound				Sierra Highway Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	12	63	13	88	55	108	30	193	37	86	74	197	11	103	15	129	607
07:15 AM	16	112	19	147	57	121	24	202	26	118	90	234	11	101	17	129	712
07:30 AM	18	125	20	163	64	143	40	247	49	175	125	349	23	127	18	168	927
07:45 AM	22	153	22	197	79	150	36	265	62	207	143	412	15	102	17	134	1008
Total	68	453	74	595	255	522	130	907	174	586	432	1192	60	433	67	560	3254
08:00 AM	21	145	35	201	68	135	25	228	36	163	128	327	8	111	18	137	893
08:15 AM	20	135	30	185	67	157	43	267	38	148	92	278	10	70	19	99	829
08:30 AM	13	155	25	193	76	119	44	239	56	135	86	277	17	62	25	104	813
08:45 AM	20	130	29	179	73	120	38	231	46	145	76	267	24	71	28	123	800
Total	74	565	119	758	284	531	150	965	176	591	382	1149	59	314	90	463	3335
Grand Total	142	1018	193	1353	539	1053	280	1872	350	1177	814	2341	119	747	157	1023	6589
Apprch %	10.5	75.2	14.3		28.8	56.2	15		15	50.3	34.8		11.6	73	15.3		
Total %	2.2	15.4	2.9	20.5	8.2	16	4.2	28.4	5.3	17.9	12.4	35.5	1.8	11.3	2.4	15.5	
Passenger Vehicles	124	981	166	1271	520	990	270	1780	335	1142	782	2259	108	700	140	948	6258
% Passenger Vehicles	87.3	96.4	86	93.9	96.5	94	96.4	95.1	95.7	97	96.1	96.5	90.8	93.7	89.2	92.7	95
Large 2 Axle Vehicles	8	25	23	56	16	40	6	62	12	25	19	56	7	28	13	48	222
% Large 2 Axle Vehicles	5.6	2.5	11.9	4.1	3	3.8	2.1	3.3	3.4	2.1	2.3	2.4	5.9	3.7	8.3	4.7	3.4
3 Axle Vehicles	5	6	3	14	3	14	2	19	1	3	9	13	4	12	3	19	65
% 3 Axle Vehicles	3.5	0.6	1.6	1	0.6	1.3	0.7	1	0.3	0.3	1.1	0.6	3.4	1.6	1.9	1.9	1
4+ Axle Trucks	5	6	1	12	0	9	2	11	2	7	4	13	0	7	1	8	44
% 4+ Axle Trucks	3.5	0.6	0.5	0.9	0	0.9	0.7	0.6	0.6	0.6	0.5	0.6	0	0.9	0.6	0.8	0.7

	Sierra Highway Southbound				Columbia Way Westbound				Sierra Highway Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	18	125	20	163	64	143	40	247	49	175	125	349	23	127	18	168	927
07:45 AM	22	153	22	197	79	150	36	265	62	207	143	412	15	102	17	134	1008
08:00 AM	21	145	35	201	68	135	25	228	36	163	128	327	8	111	18	137	893
08:15 AM	20	135	30	185	67	157	43	267	38	148	92	278	10	70	19	99	829
Total Volume	81	558	107	746	278	585	144	1007	185	693	488	1366	56	410	72	538	3657
% App. Total	10.9	74.8	14.3		27.6	58.1	14.3		13.5	50.7	35.7		10.4	76.2	13.4		
PHF	.920	.912	.764	.928	.880	.932	.837	.943	.746	.837	.853	.829	.609	.807	.947	.801	.907

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue M/ Columbia Way
Weather: Clear

File Name : 03_LAN_Sierra_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:30 AM				07:30 AM				07:15 AM			
+0 mins.	22	153	22	197	64	143	40	247	49	175	125	349	11	101	17	129
+15 mins.	21	145	35	201	79	150	36	265	62	207	143	412	23	127	18	168
+30 mins.	20	135	30	185	68	135	25	228	36	163	128	327	15	102	17	134
+45 mins.	13	155	25	193	67	157	43	267	38	148	92	278	8	111	18	137
Total Volume	76	588	112	776	278	585	144	1007	185	693	488	1366	57	441	70	568
% App. Total	9.8	75.8	14.4		27.6	58.1	14.3		13.5	50.7	35.7		10	77.6	12.3	
PHF	.864	.948	.800	.965	.880	.932	.837	.943	.746	.837	.853	.829	.620	.868	.972	.845

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue M/ Columbia Way
Weather: Clear

File Name : 03_LAN_Sierra_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

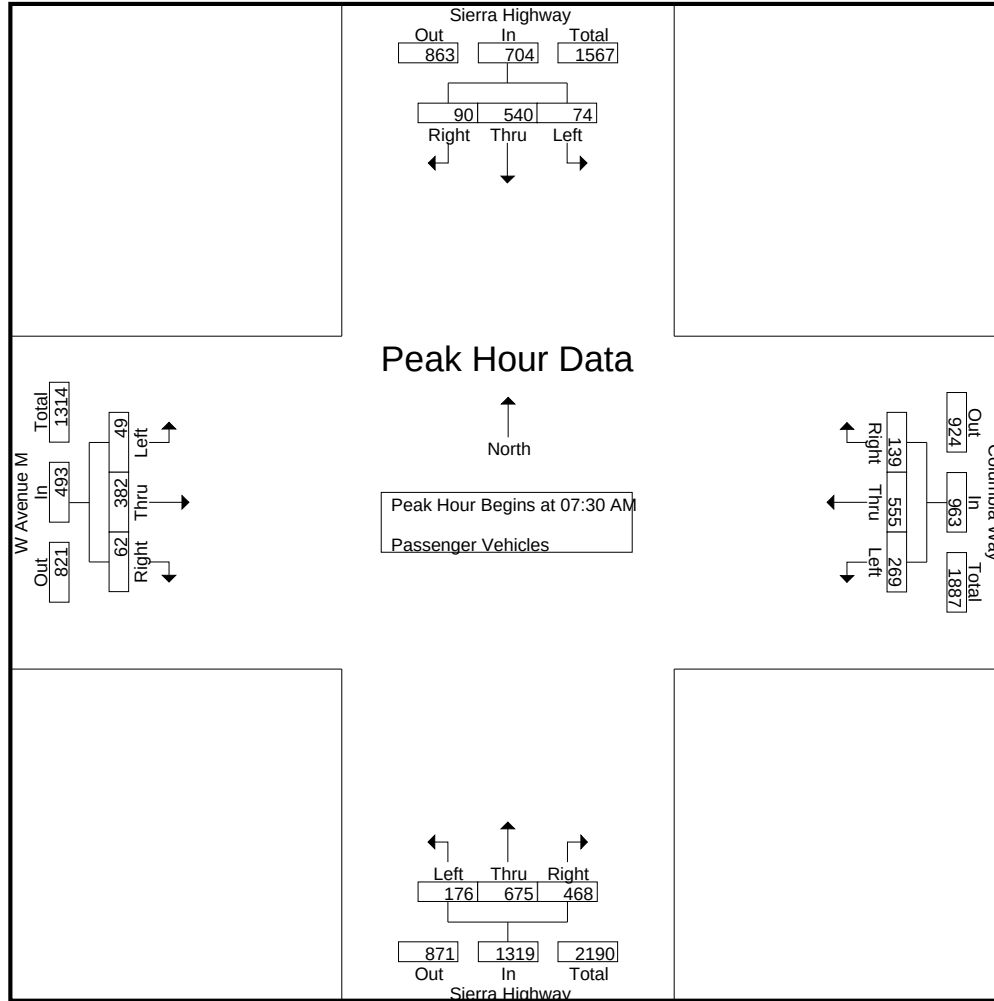
Groups Printed- Passenger Vehicles

	Sierra Highway Southbound				Columbia Way Westbound				Sierra Highway Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	9	60	11	80	54	102	28	184	36	85	73	194	9	96	14	119	577
07:15 AM	13	107	17	137	52	112	24	188	25	112	89	226	11	93	17	121	672
07:30 AM	18	121	15	154	62	136	38	236	44	170	123	337	22	119	17	158	885
07:45 AM	21	149	20	190	77	143	35	255	61	202	134	397	13	94	14	121	963
Total	61	437	63	561	245	493	125	863	166	569	419	1154	55	402	62	519	3097
08:00 AM	17	141	31	189	64	132	25	221	35	157	122	314	8	106	16	130	854
08:15 AM	18	129	24	171	66	144	41	251	36	146	89	271	6	63	15	84	777
08:30 AM	10	146	22	178	73	110	42	225	54	133	81	268	17	59	23	99	770
08:45 AM	18	128	26	172	72	111	37	220	44	137	71	252	22	70	24	116	760
Total	63	544	103	710	275	497	145	917	169	573	363	1105	53	298	78	429	3161
Grand Total	124	981	166	1271	520	990	270	1780	335	1142	782	2259	108	700	140	948	6258
Apprch %	9.8	77.2	13.1		29.2	55.6	15.2		14.8	50.6	34.6		11.4	73.8	14.8		
Total %	2	15.7	2.7	20.3	8.3	15.8	4.3	28.4	5.4	18.2	12.5	36.1	1.7	11.2	2.2	15.1	

	Sierra Highway Southbound				Columbia Way Westbound				Sierra Highway Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	18	121	15	154	62	136	38	236	44	170	123	337	22	119	17	158	885
07:45 AM	21	149	20	190	77	143	35	255	61	202	134	397	13	94	14	121	963
08:00 AM	17	141	31	189	64	132	25	221	35	157	122	314	8	106	16	130	854
08:15 AM	18	129	24	171	66	144	41	251	36	146	89	271	6	63	15	84	777
Total Volume	74	540	90	704	269	555	139	963	176	675	468	1319	49	382	62	493	3479
% App. Total	10.5	76.7	12.8		27.9	57.6	14.4		13.3	51.2	35.5		9.9	77.5	12.6		
PHF	.881	.906	.726	.926	.873	.964	.848	.944	.721	.835	.873	.831	.557	.803	.912	.780	.903

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue M/ Columbia Way
Weather: Clear

File Name : 03_LAN_Sierra_W Ave M AM
Site Code : 10524525
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Peak Hour Analysis From 07:30 AM to 08:15 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.	18	121	15	154	62	136	38	236	44	170	123	337	22	119	17	158
+15 mins.	21	149	20	190	77	143	35	255	61	202	134	397	13	94	14	121
+30 mins.	17	141	31	189	64	132	25	221	35	157	122	314	8	106	16	130
+45 mins.	18	129	24	171	66	144	41	251	36	146	89	271	6	63	15	84
Total Volume	74	540	90	704	269	555	139	963	176	675	468	1319	49	382	62	493
% App. Total	10.5	76.7	12.8		27.9	57.6	14.4		13.3	51.2	35.5		9.9	77.5	12.6	
PHF	.881	.906	.726	.926	.873	.964	.848	.944	.721	.835	.873	.831	.557	.803	.912	.780

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue M/ Columbia Way
Weather: Clear

File Name : 03_LAN_Sierra_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

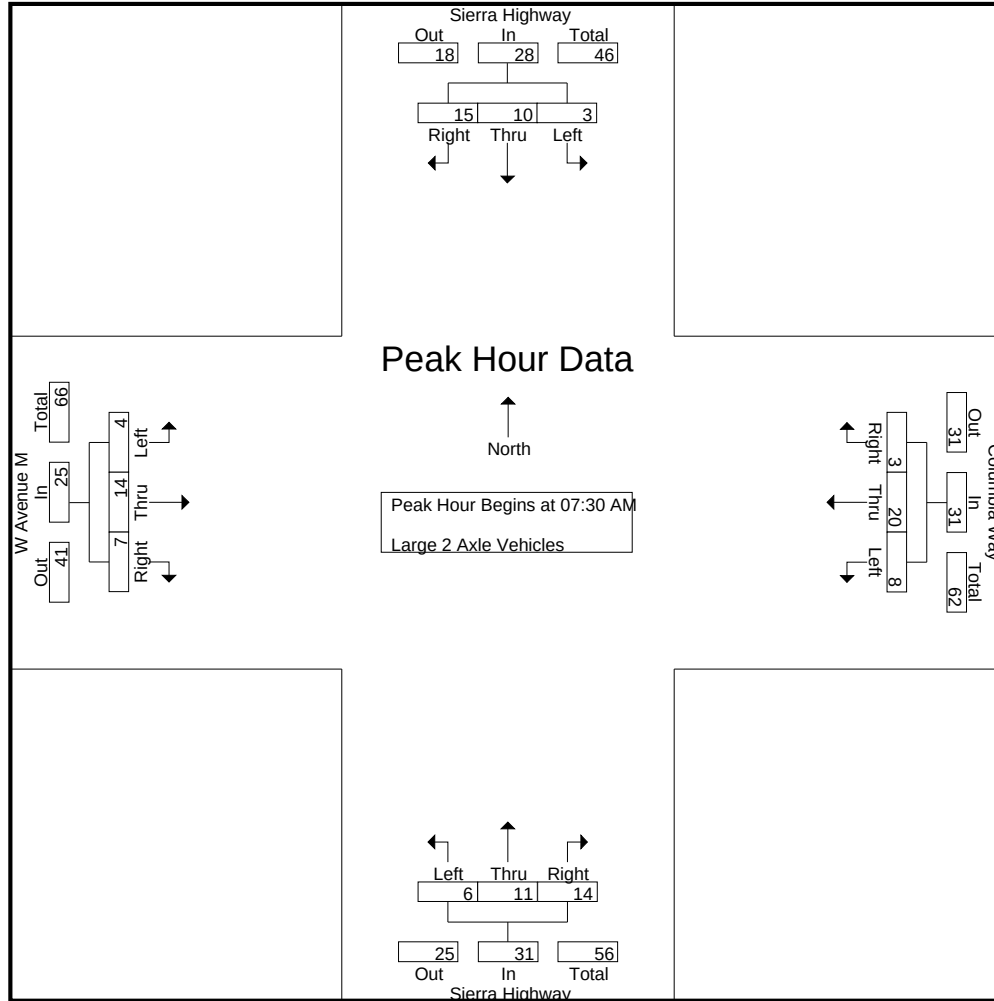
Groups Printed- Large 2 Axle Vehicles

	Sierra Highway Southbound				Columbia Way Westbound				Sierra Highway Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	2	3	2	7	1	3	2	6	1	0	0	1	2	6	1	9	23
07:15 AM	1	2	1	4	4	4	0	8	1	5	0	6	0	6	0	6	24
07:30 AM	0	3	5	8	2	5	2	9	4	3	2	9	0	6	1	7	33
07:45 AM	1	3	0	4	2	4	0	6	1	3	5	9	2	4	2	8	27
Total	4	11	8	23	9	16	4	29	7	11	7	25	4	22	4	30	107
08:00 AM	0	3	4	7	4	3	0	7	0	5	5	10	0	2	2	4	28
08:15 AM	2	1	6	9	0	8	1	9	1	0	2	3	2	2	2	6	27
08:30 AM	1	9	3	13	2	7	1	10	2	2	3	7	0	2	1	3	33
08:45 AM	1	1	2	4	1	6	0	7	2	7	2	11	1	0	4	5	27
Total	4	14	15	33	7	24	2	33	5	14	12	31	3	6	9	18	115
Grand Total	8	25	23	56	16	40	6	62	12	25	19	56	7	28	13	48	222
Apprch %	14.3	44.6	41.1		25.8	64.5	9.7		21.4	44.6	33.9		14.6	58.3	27.1		
Total %	3.6	11.3	10.4	25.2	7.2	18	2.7	27.9	5.4	11.3	8.6	25.2	3.2	12.6	5.9	21.6	

	Sierra Highway Southbound				Columbia Way Westbound				Sierra Highway Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	3	5	8	2	5	2	9	4	3	2	9	0	6	1	7	33
07:45 AM	1	3	0	4	2	4	0	6	1	3	5	9	2	4	2	8	27
08:00 AM	0	3	4	7	4	3	0	7	0	5	5	10	0	2	2	4	28
08:15 AM	2	1	6	9	0	8	1	9	1	0	2	3	2	2	2	6	27
Total Volume	3	10	15	28	8	20	3	31	6	11	14	31	4	14	7	25	115
% App. Total	10.7	35.7	53.6		25.8	64.5	9.7		19.4	35.5	45.2		16	56	28		
PHF	.375	.833	.625	.778	.500	.625	.375	.861	.375	.550	.700	.775	.500	.583	.875	.781	.871

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue M/ Columbia Way
Weather: Clear

File Name : 03_LAN_Sierra_W Ave M AM
Site Code : 10524525
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Peak Hour Analysis From 07:30 AM to 08:15 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.	0	3	5	8	2	5	2	9	4	3	2	9	0	6	1	7
+15 mins.	1	3	0	4	2	4	0	6	1	3	5	9	2	4	2	8
+30 mins.	0	3	4	7	4	3	0	7	0	5	5	10	0	2	2	4
+45 mins.	2	1	6	9	0	8	1	9	1	0	2	3	2	2	2	6
Total Volume	3	10	15	28	8	20	3	31	6	11	14	31	4	14	7	25
% App. Total	10.7	35.7	53.6		25.8	64.5	9.7		19.4	35.5	45.2		16	56	28	
PHF	.375	.833	.625	.778	.500	.625	.375	.861	.375	.550	.700	.775	.500	.583	.875	.781

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue M/ Columbia Way
Weather: Clear

File Name : 03_LAN_Sierra_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
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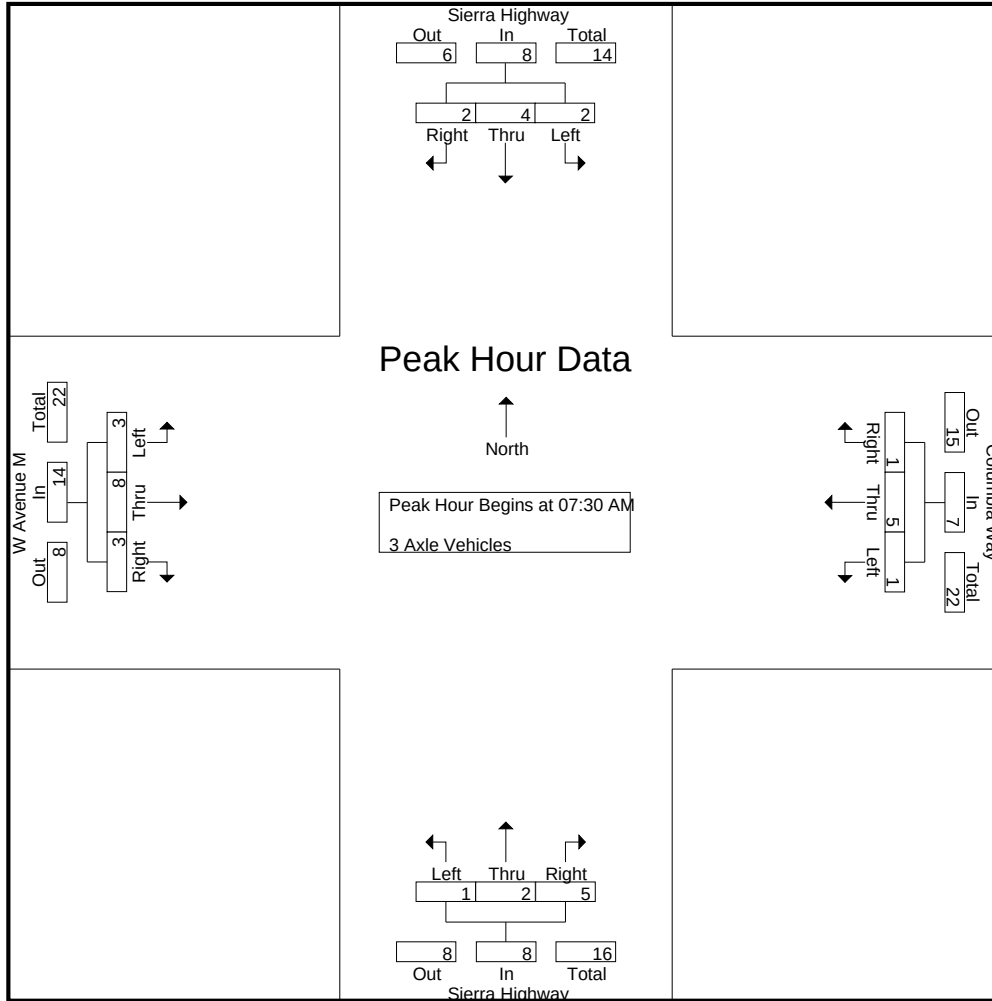
Groups Printed- 3 Axle Vehicles

	Sierra Highway Southbound				Columbia Way Westbound				Sierra Highway Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	2	0	2	0	0	1	1	0	1	0	1	4
07:15 AM	2	1	1	4	1	4	0	5	0	1	1	2	0	2	0	2	13
07:30 AM	0	0	0	0	0	1	0	1	1	1	0	2	1	0	0	1	4
07:45 AM	0	0	2	2	0	1	1	2	0	0	3	3	0	3	1	4	11
Total	2	1	3	6	1	8	1	10	1	2	5	8	1	6	1	8	32
08:00 AM	2	0	0	2	0	0	0	0	0	0	1	1	0	1	0	1	4
08:15 AM	0	4	0	4	1	3	0	4	0	1	1	2	2	4	2	8	18
08:30 AM	1	0	0	1	1	1	0	2	0	0	1	1	0	0	0	0	4
08:45 AM	0	1	0	1	0	2	1	3	0	0	1	1	1	1	0	2	7
Total	3	5	0	8	2	6	1	9	0	1	4	5	3	6	2	11	33
Grand Total	5	6	3	14	3	14	2	19	1	3	9	13	4	12	3	19	65
Apprch %	35.7	42.9	21.4		15.8	73.7	10.5		7.7	23.1	69.2		21.1	63.2	15.8		
Total %	7.7	9.2	4.6	21.5	4.6	21.5	3.1	29.2	1.5	4.6	13.8	20	6.2	18.5	4.6	29.2	

	Sierra Highway Southbound				Columbia Way Westbound				Sierra Highway Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	1	0	1	1	1	0	2	1	0	0	1	4
07:45 AM	0	0	2	2	0	1	1	2	0	0	3	3	0	3	1	4	11
08:00 AM	2	0	0	2	0	0	0	0	0	0	1	1	0	1	0	1	4
08:15 AM	0	4	0	4	1	3	0	4	0	1	1	2	2	4	2	8	18
Total Volume	2	4	2	8	1	5	1	7	1	2	5	8	3	8	3	14	37
% App. Total	25	50	25		14.3	71.4	14.3		12.5	25	62.5		21.4	57.1	21.4		
PHF	.250	.250	.250	.500	.250	.417	.250	.438	.250	.500	.417	.667	.375	.500	.375	.438	.514

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue M/ Columbia Way
Weather: Clear

File Name : 03_LAN_Sierra_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
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Peak Hour Analysis From 07:30 AM to 08:15 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.	0	0	0	0	0	1	0	1	1	1	0	2	1	0	0	1
+15 mins.	0	0	2	2	0	1	1	2	0	0	3	3	0	3	1	4
+30 mins.	2	0	0	2	0	0	0	0	0	0	1	1	0	1	0	1
+45 mins.	0	4	0	4	1	3	0	4	0	1	1	2	2	4	2	8
Total Volume	2	4	2	8	1	5	1	7	1	2	5	8	3	8	3	14
% App. Total	25	50	25		14.3	71.4	14.3		12.5	25	62.5		21.4	57.1	21.4	
PHF	.250	.250	.250	.500	.250	.417	.250	.438	.250	.500	.417	.667	.375	.500	.375	.438

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue M/ Columbia Way
Weather: Clear

File Name : 03_LAN_Sierra_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
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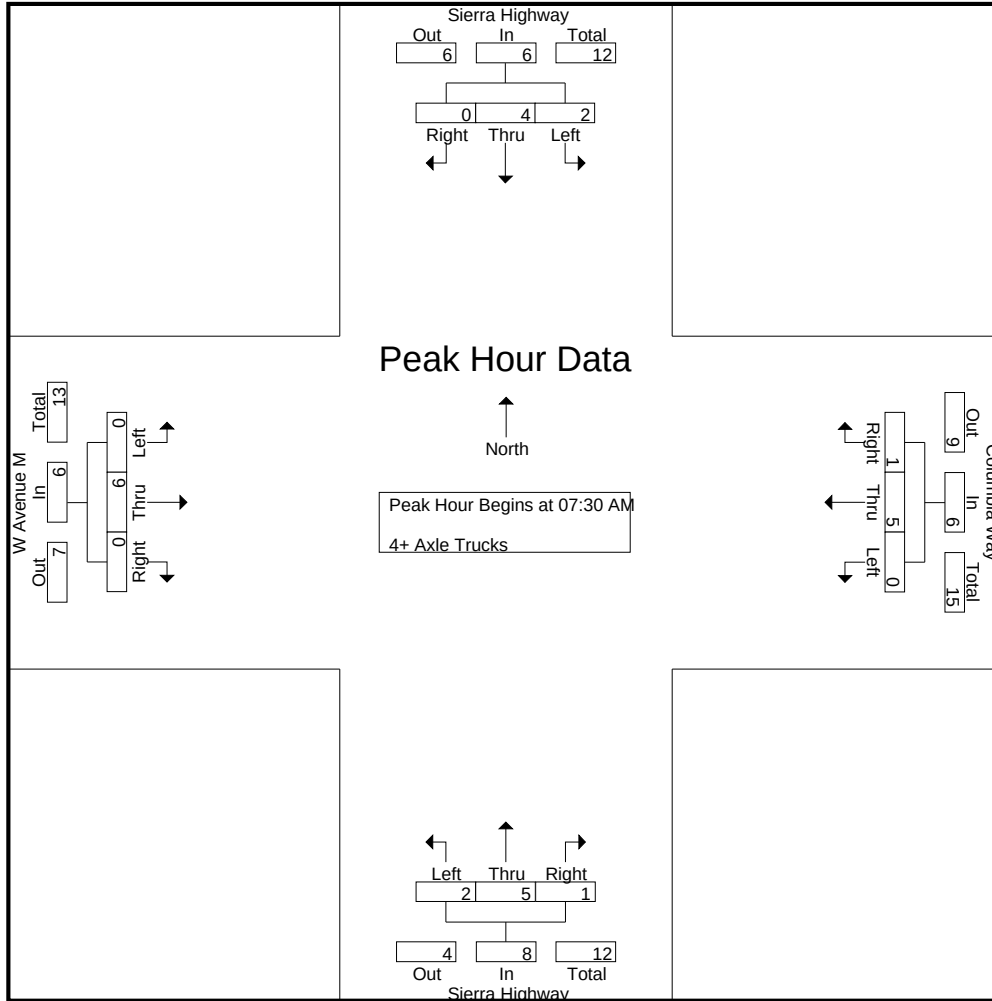
Groups Printed- 4+ Axle Trucks

	Sierra Highway Southbound				Columbia Way Westbound				Sierra Highway Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	0	0	1	0	1	0	1	0	1	0	1	0	0	0	0	3
07:15 AM	0	2	0	2	0	1	0	1	0	0	0	0	0	0	0	0	3
07:30 AM	0	1	0	1	0	1	0	1	0	1	0	1	0	2	0	2	5
07:45 AM	0	1	0	1	0	2	0	2	0	2	1	3	0	1	0	1	7
Total	1	4	0	5	0	5	0	5	0	4	1	5	0	3	0	3	18
08:00 AM	2	1	0	3	0	0	0	0	1	1	0	2	0	2	0	2	7
08:15 AM	0	1	0	1	0	2	1	3	1	1	0	2	0	1	0	1	7
08:30 AM	1	0	0	1	0	1	1	2	0	0	1	1	0	1	1	2	6
08:45 AM	1	0	1	2	0	1	0	1	0	1	2	3	0	0	0	0	6
Total	4	2	1	7	0	4	2	6	2	3	3	8	0	4	1	5	26
Grand Total	5	6	1	12	0	9	2	11	2	7	4	13	0	7	1	8	44
Apprch %	41.7	50	8.3		0	81.8	18.2		15.4	53.8	30.8		0	87.5	12.5		
Total %	11.4	13.6	2.3	27.3	0	20.5	4.5	25	4.5	15.9	9.1	29.5	0	15.9	2.3	18.2	

	Sierra Highway Southbound				Columbia Way Westbound				Sierra Highway Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	1	0	1	0	1	0	1	0	1	0	1	0	2	0	2	5
07:45 AM	0	1	0	1	0	2	0	2	0	2	1	3	0	1	0	1	7
08:00 AM	2	1	0	3	0	0	0	0	1	1	0	2	0	2	0	2	7
08:15 AM	0	1	0	1	0	2	1	3	1	1	0	2	0	1	0	1	7
Total Volume	2	4	0	6	0	5	1	6	2	5	1	8	0	6	0	6	26
% App. Total	33.3	66.7	0		0	83.3	16.7		25	62.5	12.5		0	100	0		
PHF	.250	1.00	.000	.500	.000	.625	.250	.500	.500	.625	.250	.667	.000	.750	.000	.750	.929

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue M/ Columbia Way
Weather: Clear

File Name : 03_LAN_Sierra_W Ave M AM
Site Code : 10524525
Start Date : 5/30/2024
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Peak Hour Analysis From 07:30 AM to 08:15 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.	0	1	0	1	0	1	0	1	0	1	0	1	0	2	0	2
+15 mins.	0	1	0	1	0	2	0	2	0	2	1	3	0	1	0	1
+30 mins.	2	1	0	3	0	0	0	0	1	1	0	2	0	2	0	2
+45 mins.	0	1	0	1	0	2	1	3	1	1	0	2	0	1	0	1
Total Volume	2	4	0	6	0	5	1	6	2	5	1	8	0	6	0	6
% App. Total	33.3	66.7	0		0	83.3	16.7		25	62.5	12.5		0	100	0	
PHF	.250	1.000	.000	.500	.000	.625	.250	.500	.500	.625	.250	.667	.000	.750	.000	.750

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue M/ Columbia Way
Weather: Clear

File Name : 03_LAN_Sierra_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

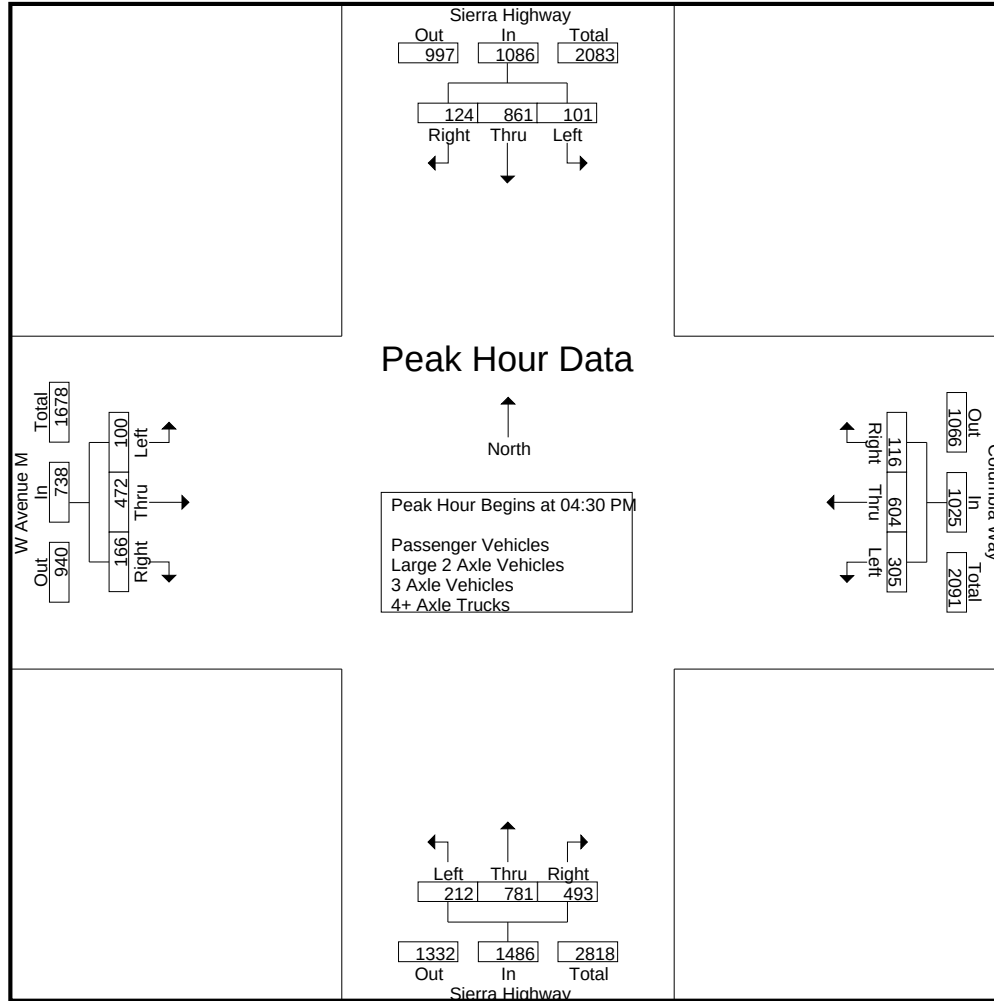
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Sierra Highway Southbound				Columbia Way Westbound				Sierra Highway Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	20	213	26	259	69	167	34	270	55	206	128	389	23	118	32	173	1091
04:15 PM	21	190	25	236	79	164	25	268	56	165	130	351	23	106	30	159	1014
04:30 PM	24	226	32	282	77	147	36	260	38	185	109	332	20	109	42	171	1045
04:45 PM	35	203	27	265	81	153	27	261	63	212	121	396	24	101	45	170	1092
Total	100	832	110	1042	306	631	122	1059	212	768	488	1468	90	434	149	673	4242
05:00 PM	20	202	30	252	68	153	28	249	57	189	121	367	26	136	50	212	1080
05:15 PM	22	230	35	287	79	151	25	255	54	195	142	391	30	126	29	185	1118
05:30 PM	22	203	12	237	76	119	19	214	39	130	96	265	27	128	39	194	910
05:45 PM	24	160	16	200	61	82	21	164	36	171	131	338	15	100	31	146	848
Total	88	795	93	976	284	505	93	882	186	685	490	1361	98	490	149	737	3956
Grand Total	188	1627	203	2018	590	1136	215	1941	398	1453	978	2829	188	924	298	1410	8198
Apprch %	9.3	80.6	10.1		30.4	58.5	11.1		14.1	51.4	34.6		13.3	65.5	21.1		
Total %	2.3	19.8	2.5	24.6	7.2	13.9	2.6	23.7	4.9	17.7	11.9	34.5	2.3	11.3	3.6	17.2	
Passenger Vehicles	181	1592	195	1968	581	1094	209	1884	375	1426	965	2766	178	903	292	1373	7991
% Passenger Vehicles	96.3	97.8	96.1	97.5	98.5	96.3	97.2	97.1	94.2	98.1	98.7	97.8	94.7	97.7	98	97.4	97.5
Large 2 Axle Vehicles	3	26	6	35	8	35	4	47	19	16	11	46	5	10	6	21	149
% Large 2 Axle Vehicles	1.6	1.6	3	1.7	1.4	3.1	1.9	2.4	4.8	1.1	1.1	1.6	2.7	1.1	2	1.5	1.8
3 Axle Vehicles	2	7	1	10	1	3	1	5	4	5	0	9	4	5	0	9	33
% 3 Axle Vehicles	1.1	0.4	0.5	0.5	0.2	0.3	0.5	0.3	1	0.3	0	0.3	2.1	0.5	0	0.6	0.4
4+ Axle Trucks	2	2	1	5	0	4	1	5	0	6	2	8	1	6	0	7	25
% 4+ Axle Trucks	1.1	0.1	0.5	0.2	0	0.4	0.5	0.3	0	0.4	0.2	0.3	0.5	0.6	0	0.5	0.3

	Sierra Highway Southbound				Columbia Way Westbound				Sierra Highway Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	24	226	32	282	77	147	36	260	38	185	109	332	20	109	42	171	1045
04:45 PM	35	203	27	265	81	153	27	261	63	212	121	396	24	101	45	170	1092
05:00 PM	20	202	30	252	68	153	28	249	57	189	121	367	26	136	50	212	1080
05:15 PM	22	230	35	287	79	151	25	255	54	195	142	391	30	126	29	185	1118
Total Volume	101	861	124	1086	305	604	116	1025	212	781	493	1486	100	472	166	738	4335
% App. Total	9.3	79.3	11.4		29.8	58.9	11.3		14.3	52.6	33.2		13.6	64	22.5		
PHF	.721	.936	.886	.946	.941	.987	.806	.982	.841	.921	.868	.938	.833	.868	.830	.870	.969

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue M/ Columbia Way
Weather: Clear

File Name : 03_LAN_Sierra_W Ave M PM
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:00 PM				04:30 PM				04:45 PM			
+0 mins.	24	226	32	282	69	167	34	270	38	185	109	332	24	101	45	170
+15 mins.	35	203	27	265	79	164	25	268	63	212	121	396	26	136	50	212
+30 mins.	20	202	30	252	77	147	36	260	57	189	121	367	30	126	29	185
+45 mins.	22	230	35	287	81	153	27	261	54	195	142	391	27	128	39	194
Total Volume	101	861	124	1086	306	631	122	1059	212	781	493	1486	107	491	163	761
% App. Total	9.3	79.3	11.4		28.9	59.6	11.5		14.3	52.6	33.2		14.1	64.5	21.4	
PHF	.721	.936	.886	.946	.944	.945	.847	.981	.841	.921	.868	.938	.892	.903	.815	.897

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue M/ Columbia Way
Weather: Clear

File Name : 03_LAN_Sierra_W Ave M PM
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Page No : 1

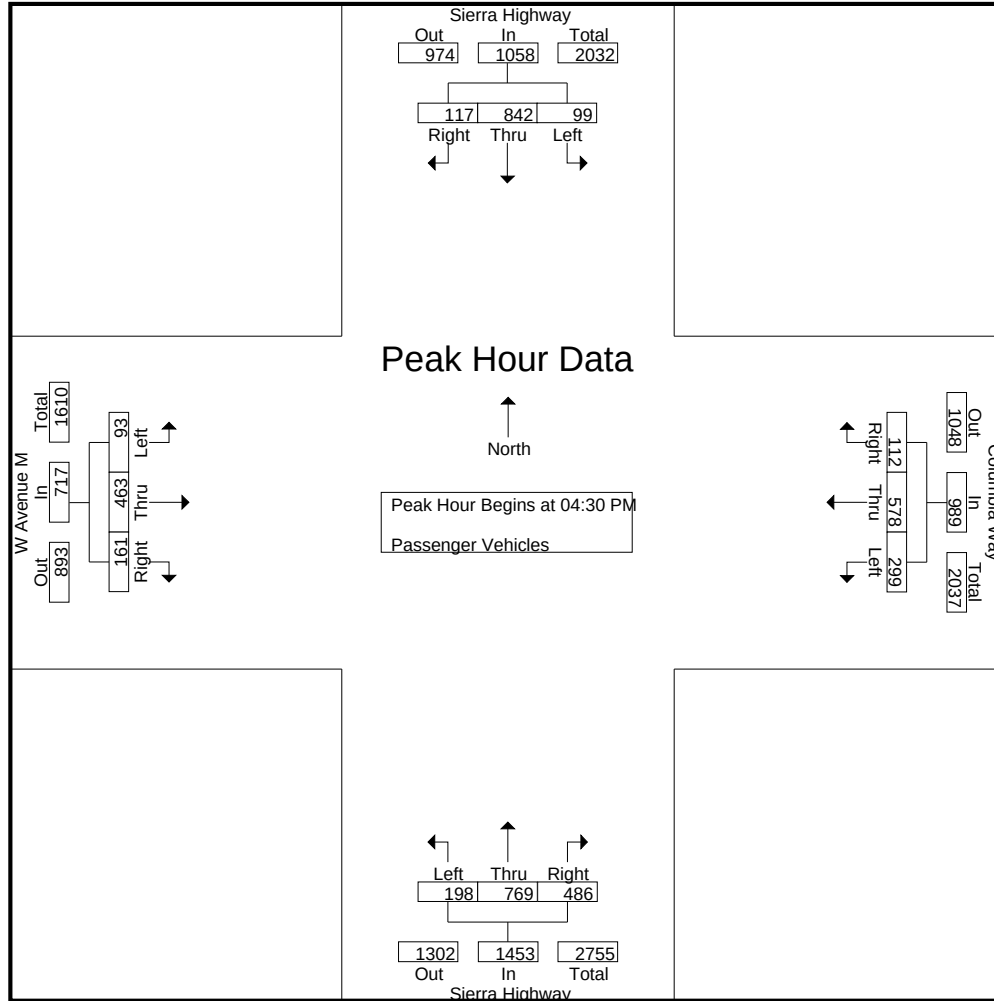
Groups Printed- Passenger Vehicles

	Sierra Highway Southbound				Columbia Way Westbound				Sierra Highway Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	17	209	25	251	69	163	33	265	53	201	127	381	22	112	32	166	1063
04:15 PM	19	187	25	231	77	162	24	263	54	160	128	342	23	104	29	156	992
04:30 PM	24	219	31	274	76	137	36	249	35	184	105	324	20	105	41	166	1013
04:45 PM	35	201	26	262	79	145	26	250	61	209	120	390	22	99	44	165	1067
Total	95	816	107	1018	301	607	119	1027	203	754	480	1437	87	420	146	653	4135
05:00 PM	20	193	30	243	67	148	27	242	53	185	121	359	22	134	49	205	1049
05:15 PM	20	229	30	279	77	148	23	248	49	191	140	380	29	125	27	181	1088
05:30 PM	22	196	12	230	75	113	19	207	35	127	96	258	26	124	39	189	884
05:45 PM	24	158	16	198	61	78	21	160	35	169	128	332	14	100	31	145	835
Total	86	776	88	950	280	487	90	857	172	672	485	1329	91	483	146	720	3856
Grand Total	181	1592	195	1968	581	1094	209	1884	375	1426	965	2766	178	903	292	1373	7991
Apprch %	9.2	80.9	9.9		30.8	58.1	11.1		13.6	51.6	34.9		13	65.8	21.3		
Total %	2.3	19.9	2.4	24.6	7.3	13.7	2.6	23.6	4.7	17.8	12.1	34.6	2.2	11.3	3.7	17.2	

	Sierra Highway Southbound				Columbia Way Westbound				Sierra Highway Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	24	219	31	274	76	137	36	249	35	184	105	324	20	105	41	166	1013
04:45 PM	35	201	26	262	79	145	26	250	61	209	120	390	22	99	44	165	1067
05:00 PM	20	193	30	243	67	148	27	242	53	185	121	359	22	134	49	205	1049
05:15 PM	20	229	30	279	77	148	23	248	49	191	140	380	29	125	27	181	1088
Total Volume	99	842	117	1058	299	578	112	989	198	769	486	1453	93	463	161	717	4217
% App. Total	9.4	79.6	11.1		30.2	58.4	11.3		13.6	52.9	33.4		13	64.6	22.5		
PHF	.707	.919	.944	.948	.946	.976	.778	.989	.811	.920	.868	.931	.802	.864	.821	.874	.969

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue M/ Columbia Way
Weather: Clear

File Name : 03_LAN_Sierra_W Ave M PM
Site Code : 10524525
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Peak Hour Analysis From 04:30 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				04:30 PM			
+0 mins.	24	219	31	274	76	137	36	249	35	184	105	324	20	105	41	166
+15 mins.	35	201	26	262	79	145	26	250	61	209	120	390	22	99	44	165
+30 mins.	20	193	30	243	67	148	27	242	53	185	121	359	22	134	49	205
+45 mins.	20	229	30	279	77	148	23	248	49	191	140	380	29	125	27	181
Total Volume	99	842	117	1058	299	578	112	989	198	769	486	1453	93	463	161	717
% App. Total	9.4	79.6	11.1		30.2	58.4	11.3		13.6	52.9	33.4		13	64.6	22.5	
PHF	.707	.919	.944	.948	.946	.976	.778	.989	.811	.920	.868	.931	.802	.864	.821	.874

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue M/ Columbia Way
Weather: Clear

File Name : 03_LAN_Sierra_W Ave M PM
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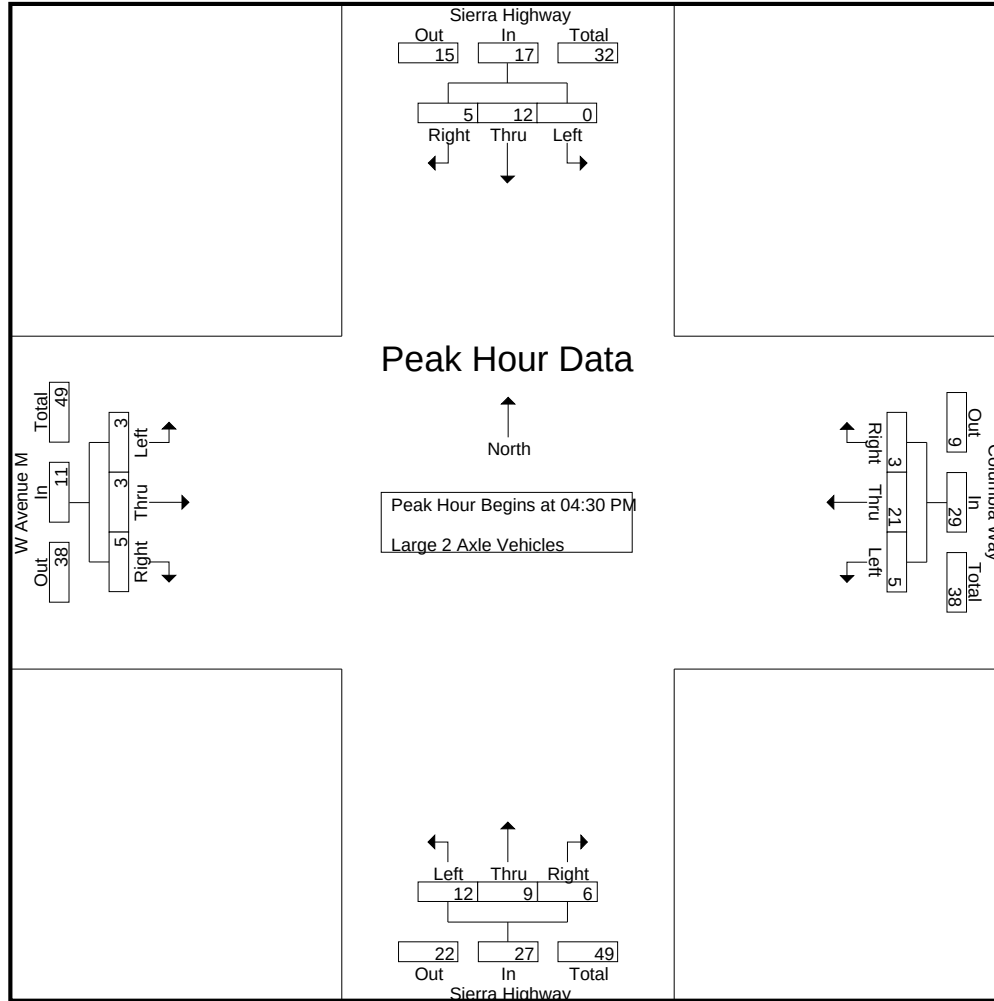
Groups Printed- Large 2 Axle Vehicles

	Sierra Highway Southbound				Columbia Way Westbound				Sierra Highway Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	2	3	1	6	0	3	1	4	1	2	0	3	1	3	0	4	17
04:15 PM	1	2	0	3	2	2	0	4	2	3	2	7	0	2	1	3	17
04:30 PM	0	7	1	8	1	8	0	9	3	1	3	7	0	1	1	2	26
04:45 PM	0	0	0	0	2	6	1	9	2	2	1	5	0	1	1	2	16
Total	3	12	2	17	5	19	2	26	8	8	6	22	1	7	3	11	76
05:00 PM	0	4	0	4	1	5	1	7	4	2	0	6	2	1	1	4	21
05:15 PM	0	1	4	5	1	2	1	4	3	4	2	9	1	0	2	3	21
05:30 PM	0	7	0	7	1	5	0	6	4	2	0	6	1	2	0	3	22
05:45 PM	0	2	0	2	0	4	0	4	0	0	3	3	0	0	0	0	9
Total	0	14	4	18	3	16	2	21	11	8	5	24	4	3	3	10	73
Grand Total	3	26	6	35	8	35	4	47	19	16	11	46	5	10	6	21	149
Apprch %	8.6	74.3	17.1		17	74.5	8.5		41.3	34.8	23.9		23.8	47.6	28.6		
Total %	2	17.4	4	23.5	5.4	23.5	2.7	31.5	12.8	10.7	7.4	30.9	3.4	6.7	4	14.1	

	Sierra Highway Southbound				Columbia Way Westbound				Sierra Highway Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	7	1	8	1	8	0	9	3	1	3	7	0	1	1	2	26
04:45 PM	0	0	0	0	2	6	1	9	2	2	1	5	0	1	1	2	16
05:00 PM	0	4	0	4	1	5	1	7	4	2	0	6	2	1	1	4	21
05:15 PM	0	1	4	5	1	2	1	4	3	4	2	9	1	0	2	3	21
Total Volume	0	12	5	17	5	21	3	29	12	9	6	27	3	3	5	11	84
% App. Total	0	70.6	29.4		17.2	72.4	10.3		44.4	33.3	22.2		27.3	27.3	45.5		
PHF	.000	.429	.313	.531	.625	.656	.750	.806	.750	.563	.500	.750	.375	.750	.625	.688	.808

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue M/ Columbia Way
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File Name : 03_LAN_Sierra_W Ave M PM
Site Code : 10524525
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Peak Hour Analysis From 04:30 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				04:30 PM			
+0 mins.	0	7	1	8	1	8	0	9	3	1	3	7	0	1	1	2
+15 mins.	0	0	0	0	2	6	1	9	2	2	1	5	0	1	1	2
+30 mins.	0	4	0	4	1	5	1	7	4	2	0	6	2	1	1	4
+45 mins.	0	1	4	5	1	2	1	4	3	4	2	9	1	0	2	3
Total Volume	0	12	5	17	5	21	3	29	12	9	6	27	3	3	5	11
% App. Total	0	70.6	29.4		17.2	72.4	10.3		44.4	33.3	22.2		27.3	27.3	45.5	
PHF	.000	.429	.313	.531	.625	.656	.750	.806	.750	.563	.500	.750	.375	.750	.625	.688

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue M/ Columbia Way
Weather: Clear

File Name : 03_LAN_Sierra_W Ave M PM
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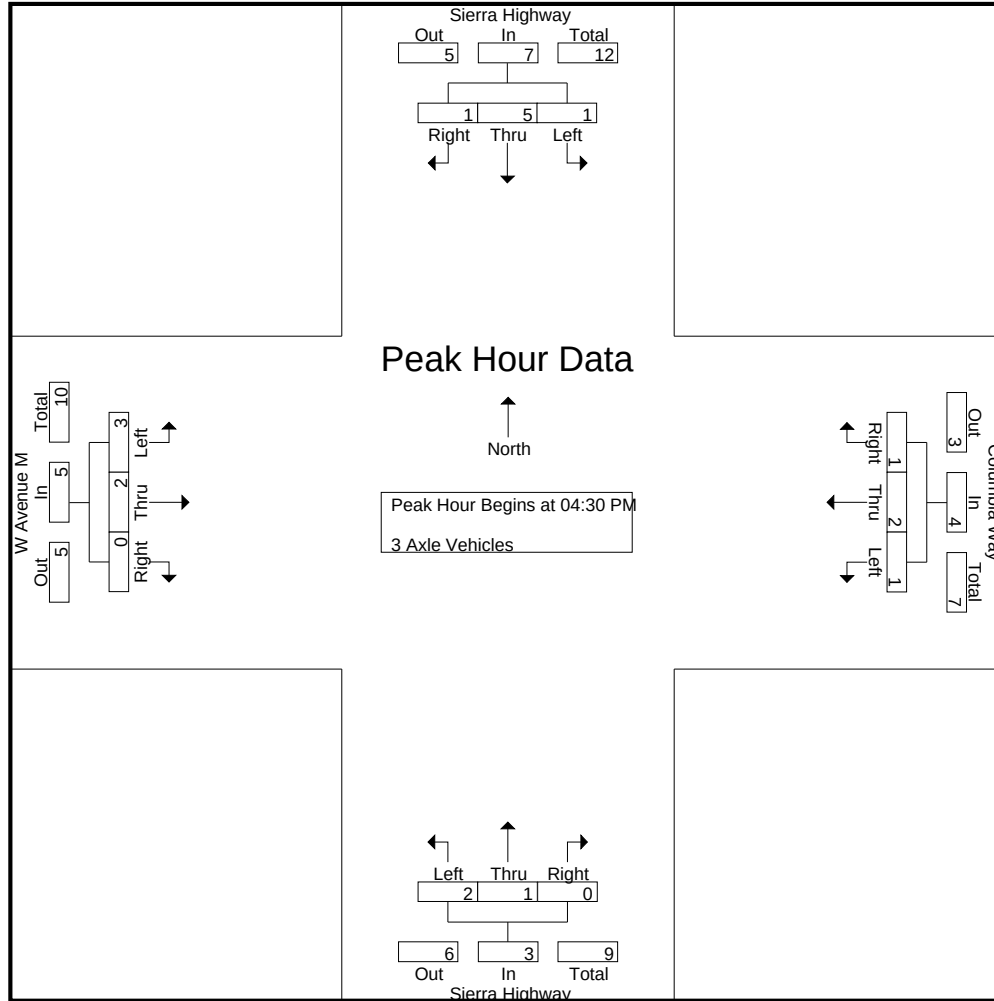
Groups Printed- 3 Axle Vehicles

	Sierra Highway Southbound				Columbia Way Westbound				Sierra Highway Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	1	0	1	0	1	0	1	1	2	0	3	0	1	0	1	6
04:15 PM	1	1	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:45 PM	0	1	0	1	0	1	0	1	0	0	0	0	1	0	0	1	3
Total	1	3	0	4	0	2	0	2	1	3	0	4	1	2	0	3	13
05:00 PM	0	4	0	4	0	0	0	0	0	1	0	1	2	0	0	2	7
05:15 PM	1	0	1	2	1	1	1	3	2	0	0	2	0	1	0	1	8
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
05:45 PM	0	0	0	0	0	0	0	0	1	1	0	2	1	0	0	1	3
Total	1	4	1	6	1	1	1	3	3	2	0	5	3	3	0	6	20
Grand Total	2	7	1	10	1	3	1	5	4	5	0	9	4	5	0	9	33
Apprch %	20	70	10		20	60	20		44.4	55.6	0		44.4	55.6	0		
Total %	6.1	21.2	3	30.3	3	9.1	3	15.2	12.1	15.2	0	27.3	12.1	15.2	0	27.3	

	Sierra Highway Southbound				Columbia Way Westbound				Sierra Highway Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:45 PM	0	1	0	1	0	1	0	1	0	0	0	0	1	0	0	1	3
05:00 PM	0	4	0	4	0	0	0	0	0	1	0	1	2	0	0	2	7
05:15 PM	1	0	1	2	1	1	1	3	2	0	0	2	0	1	0	1	8
Total Volume	1	5	1	7	1	2	1	4	2	1	0	3	3	2	0	5	19
% App. Total	14.3	71.4	14.3		25	50	25		66.7	33.3	0		60	40	0		
PHF	.250	.313	.250	.438	.250	.500	.250	.333	.250	.250	.000	.375	.375	.500	.000	.625	.594

City of Lancaster
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File Name : 03_LAN_Sierra_W Ave M PM
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Peak Hour Analysis From 04:30 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				04:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
+15 mins.	0	1	0	1	0	1	0	1	0	0	0	0	1	0	0	1
+30 mins.	0	4	0	4	0	0	0	0	0	1	0	1	2	0	0	2
+45 mins.	1	0	1	2	1	1	1	3	2	0	0	2	0	1	0	1
Total Volume	1	5	1	7	1	2	1	4	2	1	0	3	3	2	0	5
% App. Total	14.3	71.4	14.3		25	50	25		66.7	33.3	0		60	40	0	
PHF	.250	.313	.250	.438	.250	.500	.250	.333	.250	.250	.000	.375	.375	.500	.000	.625

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue M/ Columbia Way
Weather: Clear

File Name : 03_LAN_Sierra_W Ave M PM
Site Code : 10524525
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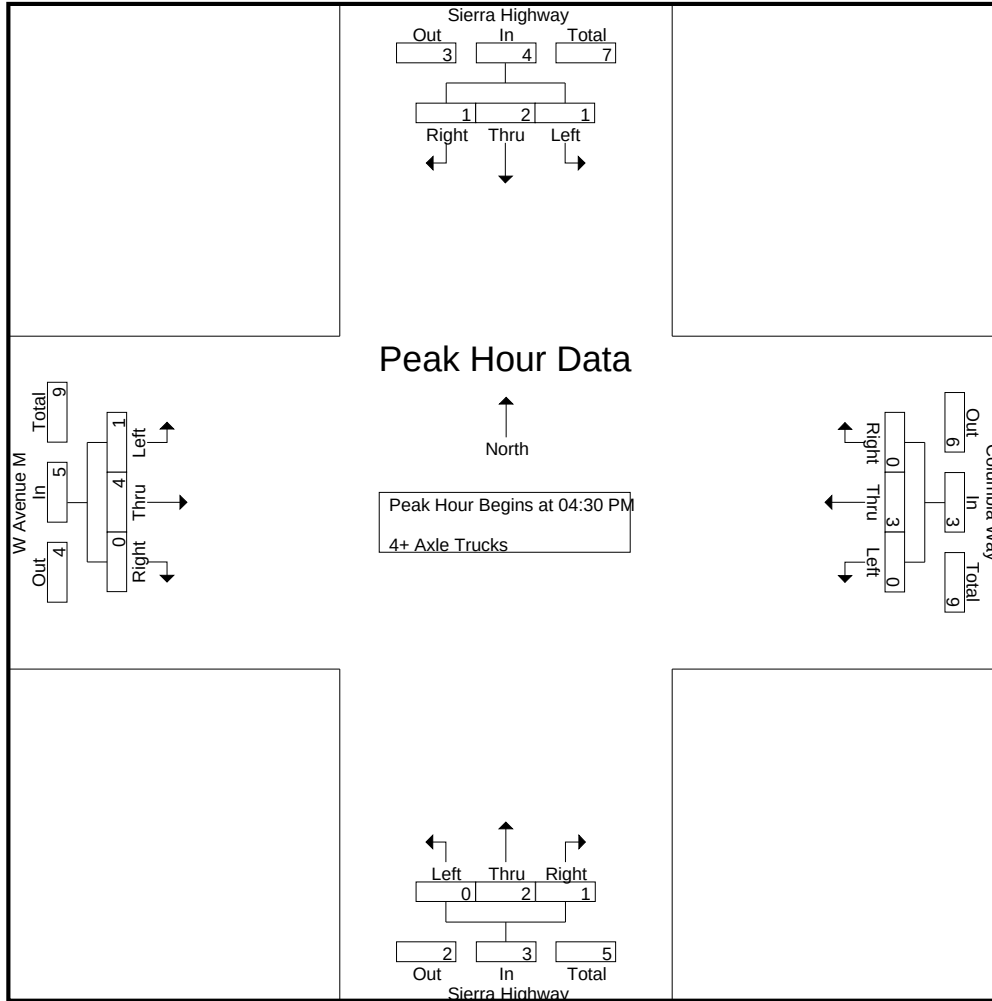
Groups Printed- 4+ Axle Trucks

	Sierra Highway Southbound				Columbia Way Westbound				Sierra Highway Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	0	0	1	0	0	0	0	0	1	1	2	0	2	0	2	5
04:15 PM	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	2
04:30 PM	0	0	0	0	0	2	0	2	0	0	1	1	0	2	0	2	5
04:45 PM	0	1	1	2	0	1	0	1	0	1	0	1	1	1	0	2	6
Total	1	1	1	3	0	3	1	4	0	3	2	5	1	5	0	6	18
05:00 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	1	0	1	3
05:15 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	1	1	0	2	0	1	0	1	0	3	0	3	0	1	0	1	7
Grand Total	2	2	1	5	0	4	1	5	0	6	2	8	1	6	0	7	25
Apprch %	40	40	20		0	80	20		0	75	25		14.3	85.7	0		
Total %	8	8	4	20	0	16	4	20	0	24	8	32	4	24	0	28	

	Sierra Highway Southbound				Columbia Way Westbound				Sierra Highway Northbound				W Avenue M Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	2	0	2	0	0	1	1	0	2	0	2	5
04:45 PM	0	1	1	2	0	1	0	1	0	1	0	1	1	1	0	2	6
05:00 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	1	0	1	3
05:15 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	1	2	1	4	0	3	0	3	0	2	1	3	1	4	0	5	15
% App. Total	25	50	25		0	100	0		0	66.7	33.3		20	80	0		
PHF	.250	.500	.250	.500	.000	.375	.000	.375	.000	.500	.250	.750	.250	.500	.000	.625	.625

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue M/ Columbia Way
Weather: Clear

File Name : 03_LAN_Sierra_W Ave M PM
Site Code : 10524525
Start Date : 5/30/2024
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Peak Hour Analysis From 04:30 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				04:30 PM			
+0 mins.	0	0	0	0	0	2	0	2	0	0	1	1	0	2	0	2
+15 mins.	0	1	1	2	0	1	0	1	0	1	0	1	1	1	0	2
+30 mins.	0	1	0	1	0	0	0	0	0	1	0	1	0	1	0	1
+45 mins.	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	2	1	4	0	3	0	3	0	2	1	3	1	4	0	5
% App. Total	25	50	25		0	100	0		0	66.7	33.3		20	80	0	
PHF	.250	.500	.250	.500	.000	.375	.000	.375	.000	.500	.250	.750	.250	.500	.000	.625

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue L-12
Weather: Clear

File Name : 04_LAN_Sierra_Ave L-12 AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

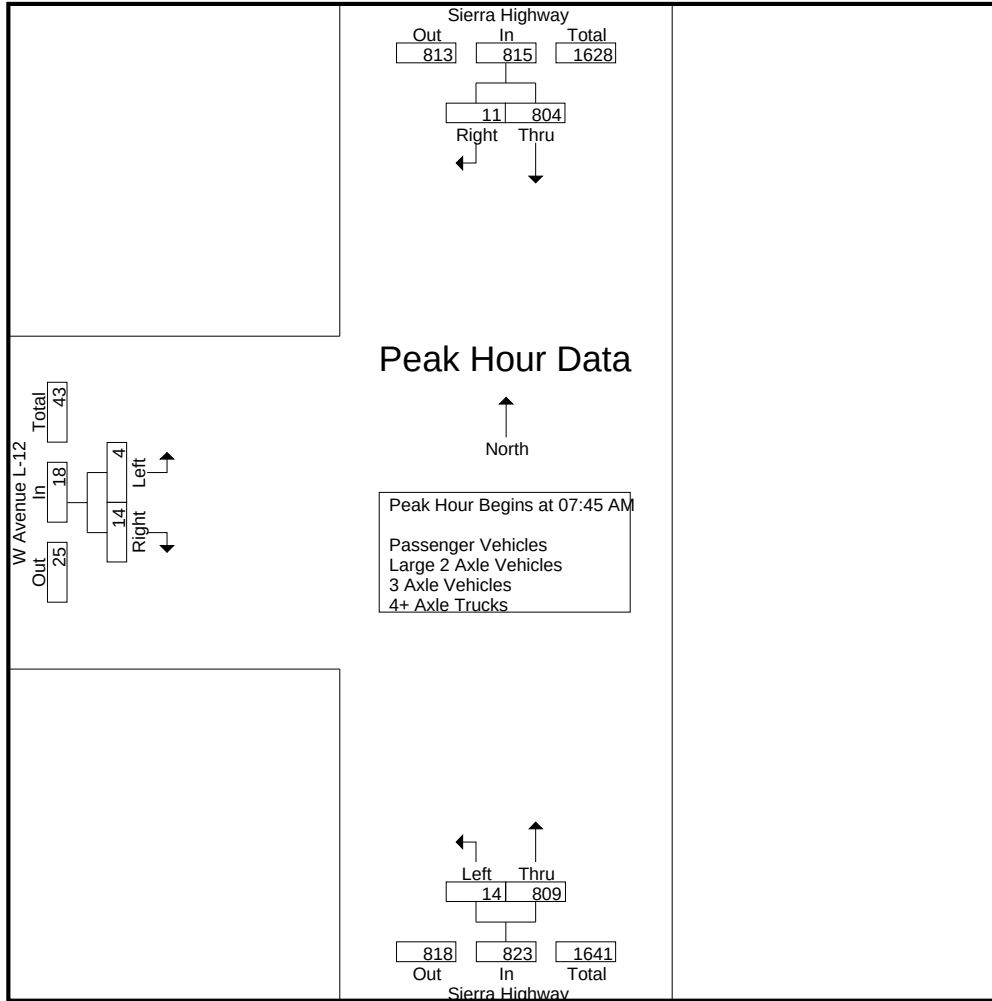
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Sierra Highway Southbound			Sierra Highway Northbound			W Avenue L-12 Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
07:00 AM	100	3	103	3	122	125	1	8	9	237
07:15 AM	151	2	153	3	143	146	0	4	4	303
07:30 AM	162	4	166	1	220	221	7	4	11	398
07:45 AM	221	1	222	2	256	258	1	3	4	484
Total	634	10	644	9	741	750	9	19	28	1422
08:00 AM	190	2	192	6	182	188	1	4	5	385
08:15 AM	184	4	188	1	192	193	1	5	6	387
08:30 AM	209	4	213	5	179	184	1	2	3	400
08:45 AM	162	2	164	4	188	192	2	5	7	363
Total	745	12	757	16	741	757	5	16	21	1535
Grand Total	1379	22	1401	25	1482	1507	14	35	49	2957
Apprch %	98.4	1.6		1.7	98.3		28.6	71.4		
Total %	46.6	0.7	47.4	0.8	50.1	51	0.5	1.2	1.7	
Passenger Vehicles	1279	20	1299	19	1418	1437	7	21	28	2764
% Passenger Vehicles	92.7	90.9	92.7	76	95.7	95.4	50	60	57.1	93.5
Large 2 Axle Vehicles	78	2	80	5	46	51	4	10	14	145
% Large 2 Axle Vehicles	5.7	9.1	5.7	20	3.1	3.4	28.6	28.6	28.6	4.9
3 Axle Vehicles	10	0	10	1	9	10	1	4	5	25
% 3 Axle Vehicles	0.7	0	0.7	4	0.6	0.7	7.1	11.4	10.2	0.8
4+ Axle Trucks	12	0	12	0	9	9	2	0	2	23
% 4+ Axle Trucks	0.9	0	0.9	0	0.6	0.6	14.3	0	4.1	0.8

	Sierra Highway Southbound			Sierra Highway Northbound			W Avenue L-12 Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	221	1	222	2	256	258	1	3	4	484
08:00 AM	190	2	192	6	182	188	1	4	5	385
08:15 AM	184	4	188	1	192	193	1	5	6	387
08:30 AM	209	4	213	5	179	184	1	2	3	400
Total Volume	804	11	815	14	809	823	4	14	18	1656
% App. Total	98.7	1.3		1.7	98.3		22.2	77.8		
PHF	.910	.688	.918	.583	.790	.797	1.00	.700	.750	.855

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue L-12
Weather: Clear

File Name : 04_LAN_Sierra_Ave L-12 AM
Site Code : 10524525
Start Date : 5/30/2024
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:45 AM			07:30 AM			07:00 AM		
+0 mins.	221	1	222	1	220	221	1	8	9
+15 mins.	190	2	192	2	256	258	0	4	4
+30 mins.	184	4	188	6	182	188	7	4	11
+45 mins.	209	4	213	1	192	193	1	3	4
Total Volume	804	11	815	10	850	860	9	19	28
% App. Total	98.7	1.3		1.2	98.8		32.1	67.9	
PHF	.910	.688	.918	.417	.830	.833	.321	.594	.636

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue L-12
Weather: Clear

File Name : 04_LAN_Sierra_Ave L-12 AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

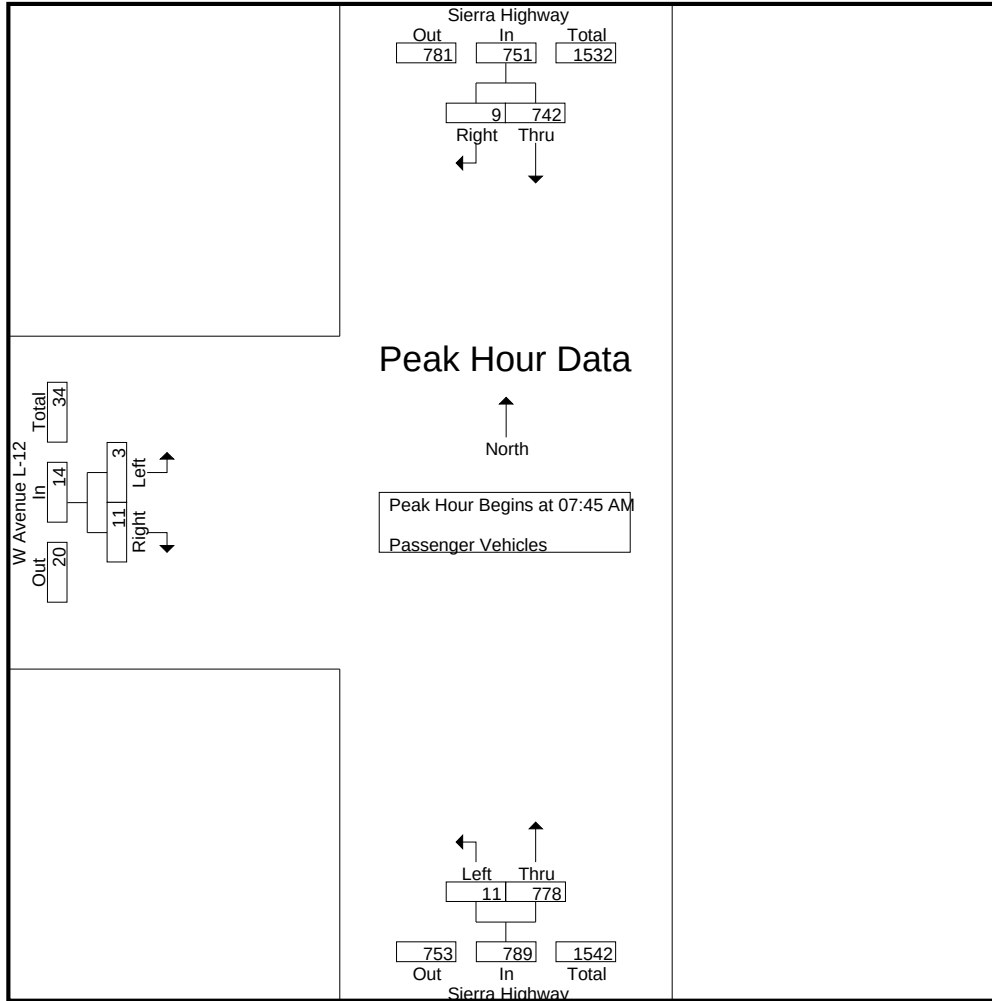
Groups Printed- Passenger Vehicles

	Sierra Highway Southbound			Sierra Highway Northbound			W Avenue L-12 Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
07:00 AM	91	3	94	3	114	117	0	1	1	212
07:15 AM	138	2	140	3	136	139	0	1	1	280
07:30 AM	153	4	157	0	212	212	3	3	6	375
07:45 AM	208	1	209	2	246	248	0	3	3	460
Total	590	10	600	8	708	716	3	8	11	1327
08:00 AM	177	2	179	5	174	179	1	3	4	362
08:15 AM	169	2	171	1	183	184	1	5	6	361
08:30 AM	188	4	192	3	175	178	1	0	1	371
08:45 AM	155	2	157	2	178	180	1	5	6	343
Total	689	10	699	11	710	721	4	13	17	1437
Grand Total	1279	20	1299	19	1418	1437	7	21	28	2764
Apprch %	98.5	1.5		1.3	98.7		25	75		
Total %	46.3	0.7	47	0.7	51.3	52	0.3	0.8	1	

	Sierra Highway Southbound			Sierra Highway Northbound			W Avenue L-12 Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	208	1	209	2	246	248	0	3	3	460
08:00 AM	177	2	179	5	174	179	1	3	4	362
08:15 AM	169	2	171	1	183	184	1	5	6	361
08:30 AM	188	4	192	3	175	178	1	0	1	371
Total Volume	742	9	751	11	778	789	3	11	14	1554
% App. Total	98.8	1.2		1.4	98.6		21.4	78.6		
PHF	.892	.563	.898	.550	.791	.795	.750	.550	.583	.845

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue L-12
Weather: Clear

File Name : 04_LAN_Sierra_Ave L-12 AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM			07:45 AM			07:45 AM		
+0 mins.	208	1	209	2	246	248	0	3	3
+15 mins.	177	2	179	5	174	179	1	3	4
+30 mins.	169	2	171	1	183	184	1	5	6
+45 mins.	188	4	192	3	175	178	1	0	1
Total Volume	742	9	751	11	778	789	3	11	14
% App. Total	98.8	1.2		1.4	98.6		21.4	78.6	
PHF	.892	.563	.898	.550	.791	.795	.750	.550	.583

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue L-12
Weather: Clear

File Name : 04_LAN_Sierra_Ave L-12 AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

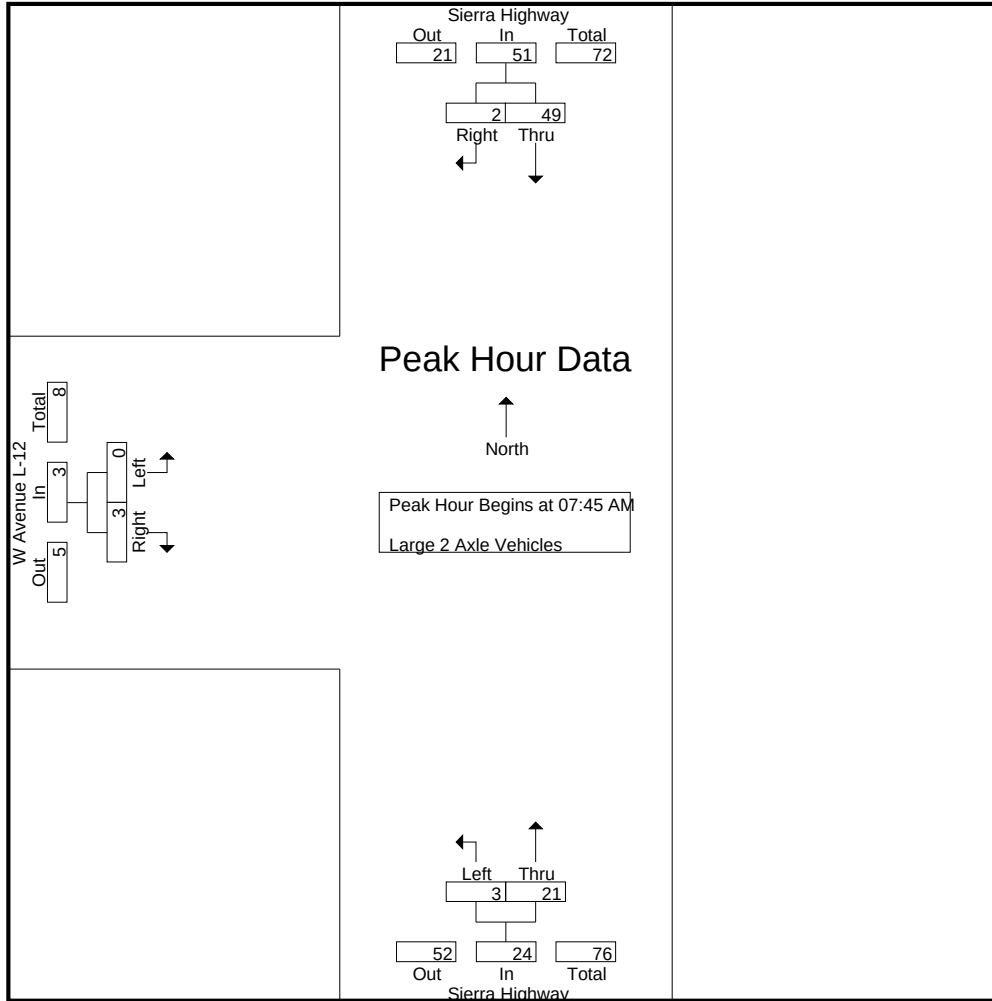
Groups Printed- Large 2 Axle Vehicles

	Sierra Highway Southbound			Sierra Highway Northbound			W Avenue L-12 Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
07:00 AM	8	0	8	0	7	7	1	6	7	22
07:15 AM	9	0	9	0	6	6	0	0	0	15
07:30 AM	8	0	8	1	4	5	2	1	3	16
07:45 AM	9	0	9	0	7	7	0	0	0	16
Total	34	0	34	1	24	25	3	7	10	69
08:00 AM	8	0	8	1	7	8	0	1	1	17
08:15 AM	12	2	14	0	5	5	0	0	0	19
08:30 AM	20	0	20	2	2	4	0	2	2	26
08:45 AM	4	0	4	1	8	9	1	0	1	14
Total	44	2	46	4	22	26	1	3	4	76
Grand Total	78	2	80	5	46	51	4	10	14	145
Apprch %	97.5	2.5		9.8	90.2		28.6	71.4		
Total %	53.8	1.4	55.2	3.4	31.7	35.2	2.8	6.9	9.7	

	Sierra Highway Southbound			Sierra Highway Northbound			W Avenue L-12 Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	9	0	9	0	7	7	0	0	0	16
08:00 AM	8	0	8	1	7	8	0	1	1	17
08:15 AM	12	2	14	0	5	5	0	0	0	19
08:30 AM	20	0	20	2	2	4	0	2	2	26
Total Volume	49	2	51	3	21	24	0	3	3	78
% App. Total	96.1	3.9		12.5	87.5		0	100		
PHF	.613	.250	.638	.375	.750	.750	.000	.375	.375	.750

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue L-12
Weather: Clear

File Name : 04_LAN_Sierra_Ave L-12 AM
Site Code : 10524525
Start Date : 5/30/2024
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Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM			07:45 AM			07:45 AM		
+0 mins.	9	0	9	0	7	7	0	0	0
+15 mins.	8	0	8	1	7	8	0	1	1
+30 mins.	12	2	14	0	5	5	0	0	0
+45 mins.	20	0	20	2	2	4	0	2	2
Total Volume	49	2	51	3	21	24	0	3	3
% App. Total	96.1	3.9		12.5	87.5		0	100	
PHF	.613	.250	.638	.375	.750	.750	.000	.375	.375

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue L-12
Weather: Clear

File Name : 04_LAN_Sierra_Ave L-12 AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

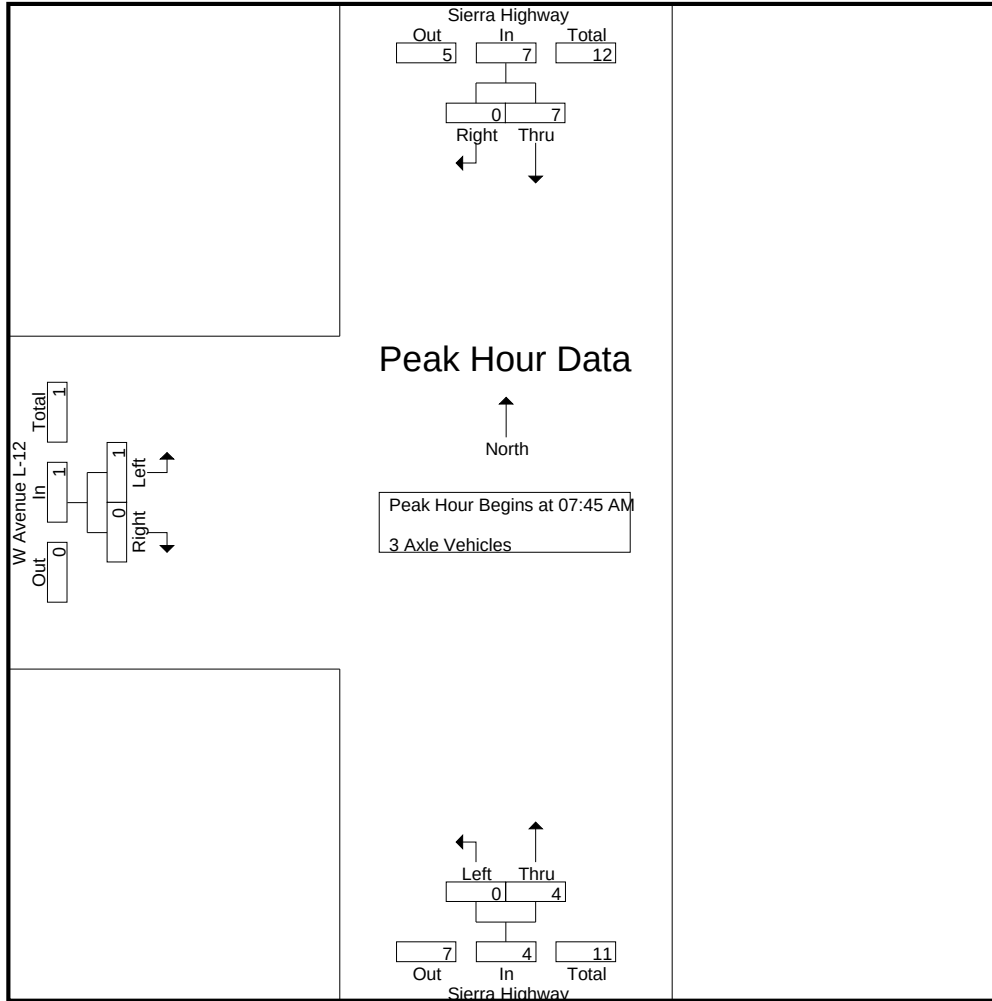
Groups Printed- 3 Axle Vehicles

	Sierra Highway Southbound			Sierra Highway Northbound			W Avenue L-12 Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	1	1	1
07:15 AM	2	0	2	0	1	1	0	3	3	6
07:30 AM	0	0	0	0	3	3	0	0	0	3
07:45 AM	2	0	2	0	1	1	1	0	1	4
Total	4	0	4	0	5	5	1	4	5	14
08:00 AM	2	0	2	0	0	0	0	0	0	2
08:15 AM	3	0	3	0	2	2	0	0	0	5
08:30 AM	0	0	0	0	1	1	0	0	0	1
08:45 AM	1	0	1	1	1	2	0	0	0	3
Total	6	0	6	1	4	5	0	0	0	11
Grand Total	10	0	10	1	9	10	1	4	5	25
Apprch %	100	0		10	90		20	80		
Total %	40	0	40	4	36	40	4	16	20	

	Sierra Highway Southbound			Sierra Highway Northbound			W Avenue L-12 Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	2	0	2	0	1	1	1	0	1	4
08:00 AM	2	0	2	0	0	0	0	0	0	2
08:15 AM	3	0	3	0	2	2	0	0	0	5
08:30 AM	0	0	0	0	1	1	0	0	0	1
Total Volume	7	0	7	0	4	4	1	0	1	12
% App. Total	100	0		0	100		100	0		
PHF	.583	.000	.583	.000	.500	.500	.250	.000	.250	.600

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue L-12
Weather: Clear

File Name : 04_LAN_Sierra_Ave L-12 AM
Site Code : 10524525
Start Date : 5/30/2024
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Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:45 AM			07:45 AM			07:45 AM		
+0 mins.	2	0	2	0	1	1	1	0	1
+15 mins.	2	0	2	0	0	0	0	0	0
+30 mins.	3	0	3	0	2	2	0	0	0
+45 mins.	0	0	0	0	1	1	0	0	0
Total Volume	7	0	7	0	4	4	1	0	1
% App. Total	100	0		0	100		100	0	
PHF	.583	.000	.583	.000	.500	.500	.250	.000	.250

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue L-12
Weather: Clear

File Name : 04_LAN_Sierra_Ave L-12 AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

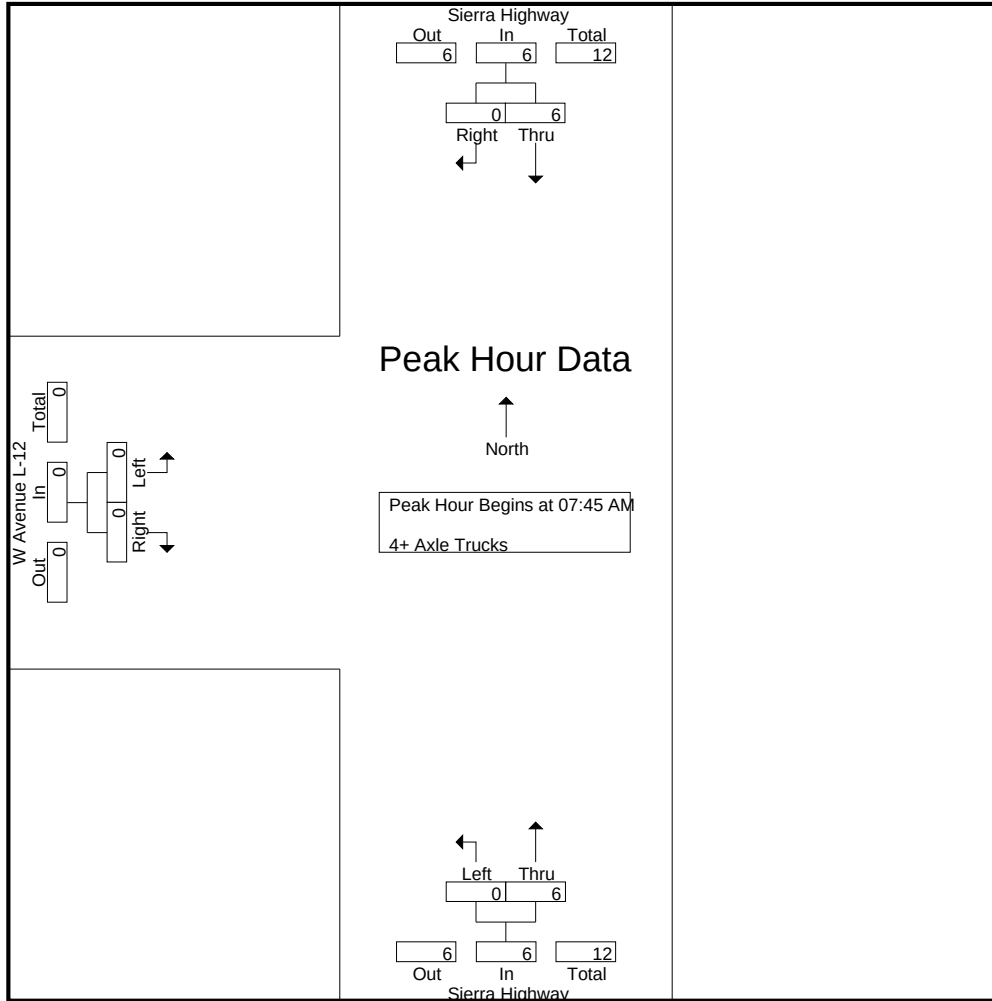
Groups Printed- 4+ Axle Trucks

	Sierra Highway Southbound			Sierra Highway Northbound			W Avenue L-12 Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
07:00 AM	1	0	1	0	1	1	0	0	0	2
07:15 AM	2	0	2	0	0	0	0	0	0	2
07:30 AM	1	0	1	0	1	1	2	0	2	4
07:45 AM	2	0	2	0	2	2	0	0	0	4
Total	6	0	6	0	4	4	2	0	2	12
08:00 AM	3	0	3	0	1	1	0	0	0	4
08:15 AM	0	0	0	0	2	2	0	0	0	2
08:30 AM	1	0	1	0	1	1	0	0	0	2
08:45 AM	2	0	2	0	1	1	0	0	0	3
Total	6	0	6	0	5	5	0	0	0	11
Grand Total	12	0	12	0	9	9	2	0	2	23
Apprch %	100	0		0	100		100	0		
Total %	52.2	0	52.2	0	39.1	39.1	8.7	0	8.7	

	Sierra Highway Southbound			Sierra Highway Northbound			W Avenue L-12 Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	2	0	2	0	2	2	0	0	0	4
08:00 AM	3	0	3	0	1	1	0	0	0	4
08:15 AM	0	0	0	0	2	2	0	0	0	2
08:30 AM	1	0	1	0	1	1	0	0	0	2
Total Volume	6	0	6	0	6	6	0	0	0	12
% App. Total	100	0		0	100		0	0		
PHF	.500	.000	.500	.000	.750	.750	.000	.000	.000	.750

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue L-12
Weather: Clear

File Name : 04_LAN_Sierra_Ave L-12 AM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:45 AM			07:45 AM			07:45 AM		
+0 mins.	2	0	2	0	2	2	0	0	0
+15 mins.	3	0	3	0	1	1	0	0	0
+30 mins.	0	0	0	0	2	2	0	0	0
+45 mins.	1	0	1	0	1	1	0	0	0
Total Volume	6	0	6	0	6	6	0	0	0
% App. Total	100	0		0	100		0	0	
PHF	.500	.000	.500	.000	.750	.750	.000	.000	.000

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue L-12
Weather: Clear

File Name : 04_LAN_Sierra_Ave L-12PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

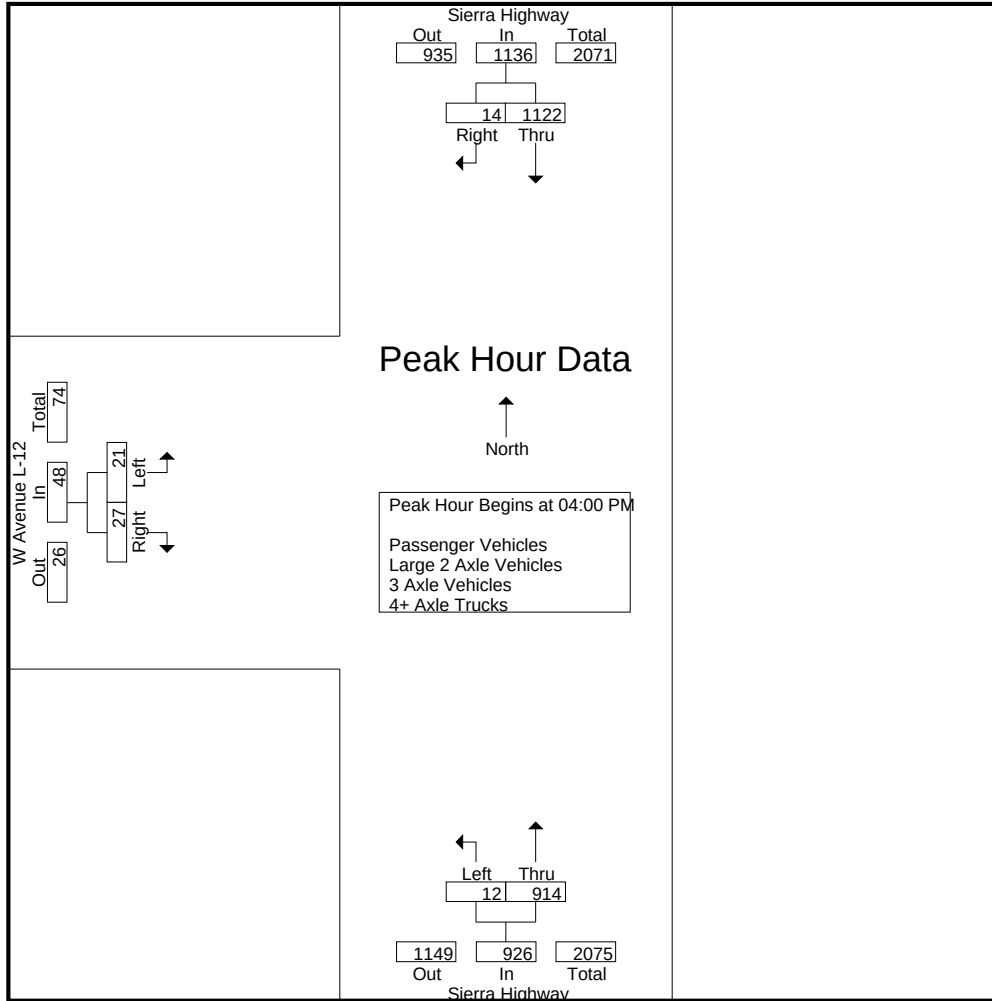
	Sierra Highway Southbound			Sierra Highway Northbound			W Avenue L-12 Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
04:00 PM	280	5	285	3	237	240	5	9	14	539
04:15 PM	265	0	265	1	203	204	6	6	12	481
04:30 PM	306	3	309	4	224	228	4	5	9	546
04:45 PM	271	6	277	4	250	254	6	7	13	544
Total	1122	14	1136	12	914	926	21	27	48	2110
05:00 PM	281	5	286	5	215	220	6	7	13	519
05:15 PM	272	4	276	3	208	211	4	8	12	499
05:30 PM	254	1	255	4	169	173	4	5	9	437
05:45 PM	196	2	198	2	206	208	3	7	10	416
Total	1003	12	1015	14	798	812	17	27	44	1871
Grand Total	2125	26	2151	26	1712	1738	38	54	92	3981
Apprch %	98.8	1.2		1.5	98.5		41.3	58.7		
Total %	53.4	0.7	54	0.7	43	43.7	1	1.4	2.3	
Passenger Vehicles	2072	18	2090	24	1666	1690	38	48	86	3866
% Passenger Vehicles	97.5	69.2	97.2	92.3	97.3	97.2	100	88.9	93.5	97.1
Large 2 Axle Vehicles	40	4	44	1	29	30	0	3	3	77
% Large 2 Axle Vehicles	1.9	15.4	2	3.8	1.7	1.7	0	5.6	3.3	1.9
3 Axle Vehicles	8	2	10	0	10	10	0	3	3	23
% 3 Axle Vehicles	0.4	7.7	0.5	0	0.6	0.6	0	5.6	3.3	0.6
4+ Axle Trucks	5	2	7	1	7	8	0	0	0	15
% 4+ Axle Trucks	0.2	7.7	0.3	3.8	0.4	0.5	0	0	0	0.4

	Sierra Highway Southbound			Sierra Highway Northbound			W Avenue L-12 Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
04:00 PM	280	5	285	3	237	240	5	9	14	539
04:15 PM	265	0	265	1	203	204	6	6	12	481
04:30 PM	306	3	309	4	224	228	4	5	9	546
04:45 PM	271	6	277	4	250	254	6	7	13	544
Total Volume	1122	14	1136	12	914	926	21	27	48	2110
% App. Total	98.8	1.2		1.3	98.7		43.8	56.2		
PHF	.917	.583	.919	.750	.914	.911	.875	.750	.857	.966

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

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue L-12
Weather: Clear

File Name : 04_LAN_Sierra_Ave L-12PM
Site Code : 10524525
Start Date : 5/30/2024
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:

	04:30 PM			04:00 PM			04:00 PM		
+0 mins.	306	3	309	3	237	240	5	9	14
+15 mins.	271	6	277	1	203	204	6	6	12
+30 mins.	281	5	286	4	224	228	4	5	9
+45 mins.	272	4	276	4	250	254	6	7	13
Total Volume	1130	18	1148	12	914	926	21	27	48
% App. Total	98.4	1.6		1.3	98.7		43.8	56.2	
PHF	.923	.750	.929	.750	.914	.911	.875	.750	.857

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue L-12
Weather: Clear

File Name : 04_LAN_Sierra_Ave L-12PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

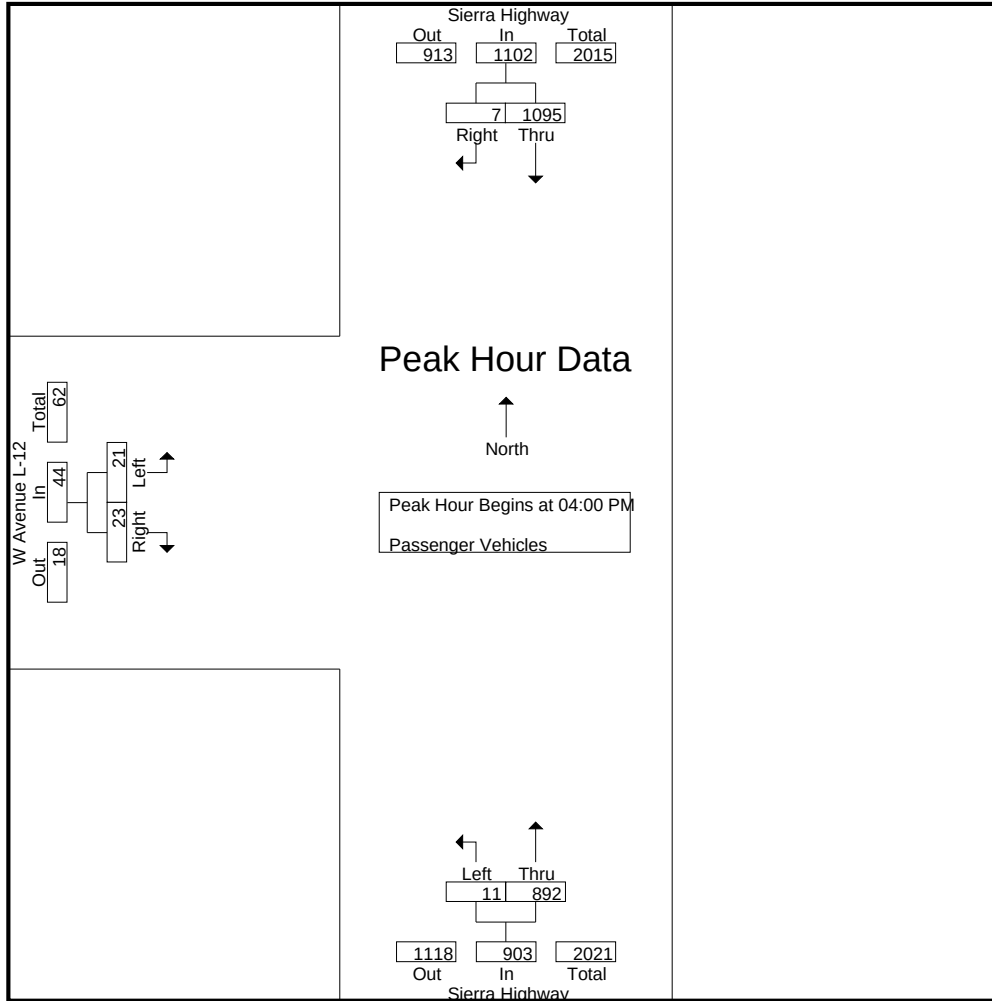
Groups Printed- Passenger Vehicles

	Sierra Highway Southbound			Sierra Highway Northbound			W Avenue L-12 Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
04:00 PM	274	3	277	3	231	234	5	7	12	523
04:15 PM	256	0	256	1	198	199	6	5	11	466
04:30 PM	299	1	300	4	220	224	4	5	9	533
04:45 PM	266	3	269	3	243	246	6	6	12	527
Total	1095	7	1102	11	892	903	21	23	44	2049
05:00 PM	273	5	278	4	208	212	6	6	12	502
05:15 PM	263	4	267	3	199	202	4	7	11	480
05:30 PM	250	1	251	4	165	169	4	5	9	429
05:45 PM	191	1	192	2	202	204	3	7	10	406
Total	977	11	988	13	774	787	17	25	42	1817
Grand Total	2072	18	2090	24	1666	1690	38	48	86	3866
Apprch %	99.1	0.9		1.4	98.6		44.2	55.8		
Total %	53.6	0.5	54.1	0.6	43.1	43.7	1	1.2	2.2	

	Sierra Highway Southbound			Sierra Highway Northbound			W Avenue L-12 Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	274	3	277	3	231	234	5	7	12	523
04:15 PM	256	0	256	1	198	199	6	5	11	466
04:30 PM	299	1	300	4	220	224	4	5	9	533
04:45 PM	266	3	269	3	243	246	6	6	12	527
Total Volume	1095	7	1102	11	892	903	21	23	44	2049
% App. Total	99.4	0.6		1.2	98.8		47.7	52.3		
PHF	.916	.583	.918	.688	.918	.918	.875	.821	.917	.961

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue L-12
Weather: Clear

File Name : 04_LAN_Sierra_Ave L-12PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 2



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

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	274	3	277	3	231	234	5	7	12
+15 mins.	256	0	256	1	198	199	6	5	11
+30 mins.	299	1	300	4	220	224	4	5	9
+45 mins.	266	3	269	3	243	246	6	6	12
Total Volume	1095	7	1102	11	892	903	21	23	44
% App. Total	99.4	0.6		1.2	98.8		47.7	52.3	
PHF	.916	.583	.918	.688	.918	.918	.875	.821	.917

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue L-12
Weather: Clear

File Name : 04_LAN_Sierra_Ave L-12PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

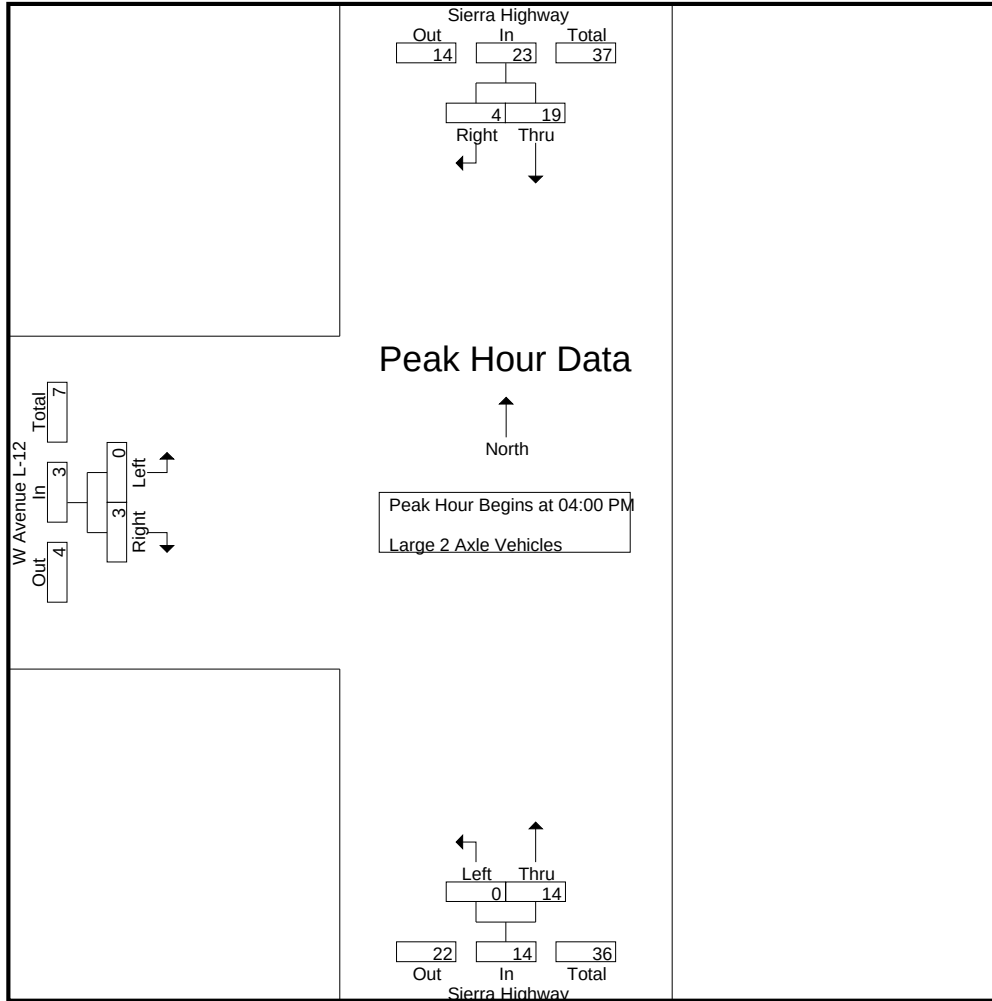
Groups Printed- Large 2 Axle Vehicles

	Sierra Highway Southbound			Sierra Highway Northbound			W Avenue L-12 Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
04:00 PM	5	1	6	0	3	3	0	1	1	10
04:15 PM	7	0	7	0	2	2	0	1	1	10
04:30 PM	6	2	8	0	4	4	0	0	0	12
04:45 PM	1	1	2	0	5	5	0	1	1	8
Total	19	4	23	0	14	14	0	3	3	40
05:00 PM	6	0	6	1	4	5	0	0	0	11
05:15 PM	7	0	7	0	7	7	0	0	0	14
05:30 PM	4	0	4	0	3	3	0	0	0	7
05:45 PM	4	0	4	0	1	1	0	0	0	5
Total	21	0	21	1	15	16	0	0	0	37
Grand Total	40	4	44	1	29	30	0	3	3	77
Apprch %	90.9	9.1		3.3	96.7		0	100		
Total %	51.9	5.2	57.1	1.3	37.7	39	0	3.9	3.9	

	Sierra Highway Southbound			Sierra Highway Northbound			W Avenue L-12 Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	5	1	6	0	3	3	0	1	1	10
04:15 PM	7	0	7	0	2	2	0	1	1	10
04:30 PM	6	2	8	0	4	4	0	0	0	12
04:45 PM	1	1	2	0	5	5	0	1	1	8
Total Volume	19	4	23	0	14	14	0	3	3	40
% App. Total	82.6	17.4		0	100		0	100		
PHF	.679	.500	.719	.000	.700	.700	.000	.750	.750	.833

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue L-12
Weather: Clear

File Name : 04_LAN_Sierra_Ave L-12PM
Site Code : 10524525
Start Date : 5/30/2024
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Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	5	1	6	0	3	3	0	1	1
+15 mins.	7	0	7	0	2	2	0	1	1
+30 mins.	6	2	8	0	4	4	0	0	0
+45 mins.	1	1	2	0	5	5	0	1	1
Total Volume	19	4	23	0	14	14	0	3	3
% App. Total	82.6	17.4		0	100		0	100	
PHF	.679	.500	.719	.000	.700	.700	.000	.750	.750

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue L-12
Weather: Clear

File Name : 04_LAN_Sierra_Ave L-12PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

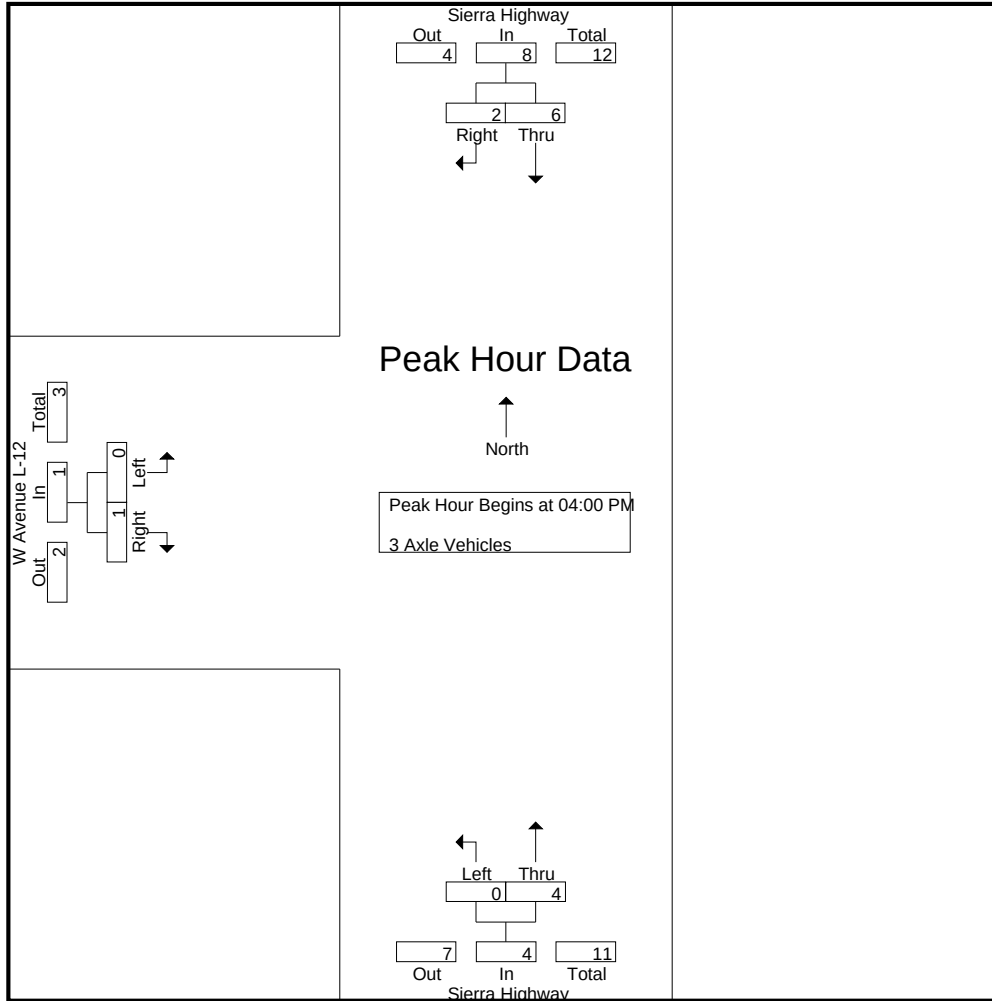
Groups Printed- 3 Axle Vehicles

	Sierra Highway Southbound			Sierra Highway Northbound			W Avenue L-12 Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
04:00 PM	1	1	2	0	2	2	0	1	1	5
04:15 PM	2	0	2	0	1	1	0	0	0	3
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	3	1	4	0	1	1	0	0	0	5
Total	6	2	8	0	4	4	0	1	1	13
05:00 PM	1	0	1	0	2	2	0	1	1	4
05:15 PM	1	0	1	0	2	2	0	1	1	4
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	2	2	0	0	0	2
Total	2	0	2	0	6	6	0	2	2	10
Grand Total	8	2	10	0	10	10	0	3	3	23
Apprch %	80	20		0	100		0	100		
Total %	34.8	8.7	43.5	0	43.5	43.5	0	13	13	

	Sierra Highway Southbound			Sierra Highway Northbound			W Avenue L-12 Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	1	1	2	0	2	2	0	1	1	5
04:15 PM	2	0	2	0	1	1	0	0	0	3
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	3	1	4	0	1	1	0	0	0	5
Total Volume	6	2	8	0	4	4	0	1	1	13
% App. Total	75	25		0	100		0	100		
PHF	.500	.500	.500	.000	.500	.500	.000	.250	.250	.650

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue L-12
Weather: Clear

File Name : 04_LAN_Sierra_Ave L-12PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 2



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

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	1	1	2	0	2	2	0	1	1
+15 mins.	2	0	2	0	1	1	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	3	1	4	0	1	1	0	0	0
Total Volume	6	2	8	0	4	4	0	1	1
% App. Total	75	25		0	100		0	100	
PHF	.500	.500	.500	.000	.500	.500	.000	.250	.250

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue L-12
Weather: Clear

File Name : 04_LAN_Sierra_Ave L-12PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 1

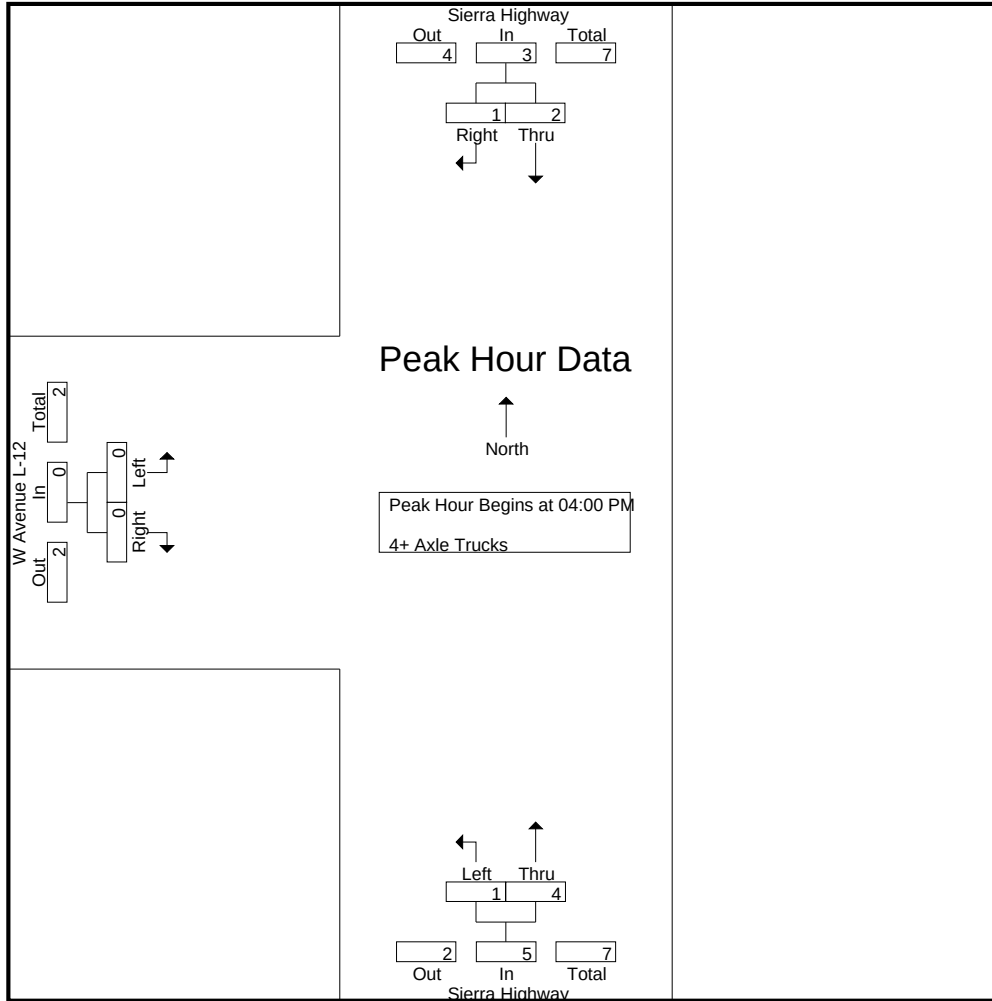
Groups Printed- 4+ Axle Trucks

	Sierra Highway Southbound			Sierra Highway Northbound			W Avenue L-12 Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	1	1	0	0	0	1
04:15 PM	0	0	0	0	2	2	0	0	0	2
04:30 PM	1	0	1	0	0	0	0	0	0	1
04:45 PM	1	1	2	1	1	2	0	0	0	4
Total	2	1	3	1	4	5	0	0	0	8
05:00 PM	1	0	1	0	1	1	0	0	0	2
05:15 PM	1	0	1	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	1	1	0	0	0	1
05:45 PM	1	1	2	0	1	1	0	0	0	3
Total	3	1	4	0	3	3	0	0	0	7
Grand Total	5	2	7	1	7	8	0	0	0	15
Apprch %	71.4	28.6		12.5	87.5		0	0		
Total %	33.3	13.3	46.7	6.7	46.7	53.3	0	0	0	

	Sierra Highway Southbound			Sierra Highway Northbound			W Avenue L-12 Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	1	1	0	0	0	1
04:15 PM	0	0	0	0	2	2	0	0	0	2
04:30 PM	1	0	1	0	0	0	0	0	0	1
04:45 PM	1	1	2	1	1	2	0	0	0	4
Total Volume	2	1	3	1	4	5	0	0	0	8
% App. Total	66.7	33.3		20	80		0	0		
PHF	.500	.250	.375	.250	.500	.625	.000	.000	.000	.500

City of Lancaster
N/S: Sierra Highway
E/W: W Avenue L-12
Weather: Clear

File Name : 04_LAN_Sierra_Ave L-12PM
Site Code : 10524525
Start Date : 5/30/2024
Page No : 2



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

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	0	1	1	0	0	0
+15 mins.	0	0	0	0	2	2	0	0	0
+30 mins.	1	0	1	0	0	0	0	0	0
+45 mins.	1	1	2	1	1	2	0	0	0
Total Volume	2	1	3	1	4	5	0	0	0
% App. Total	66.7	33.3		20	80		0	0	
PHF	.500	.250	.375	.250	.500	.625	.000	.000	.000

Counts Unlimited, Inc.

City of Lancaster
Sierra Highway
N/ West Avenue L-12
24 Hour Directional Classification Count

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

LAN001
Site Code: 105-24525

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/30/24	1	239	24	1	3	0	0	0	7	0	1	0	0	276
01:00	0	162	8	0	0	0	0	1	5	0	0	3	0	179
02:00	1	116	24	0	1	0	0	0	3	0	1	0	0	146
03:00	1	97	19	0	2	1	0	0	1	0	1	0	0	122
04:00	1	165	18	2	4	0	0	0	3	0	3	0	0	196
05:00	4	261	71	4	6	1	1	3	6	0	0	0	0	357
06:00	2	287	91	3	7	3	2	1	3	0	0	0	0	399
07:00	1	632	129	3	6	2	2	1	6	0	0	0	0	782
08:00	0	609	134	4	8	1	0	2	4	0	0	0	0	762
09:00	2	465	130	4	19	0	0	0	4	0	0	0	0	624
10:00	3	461	143	0	20	4	3	1	2	0	0	0	0	637
11:00	2	507	140	5	19	1	1	0	5	0	0	0	0	680
12 PM	0	529	117	3	21	2	1	2	0	0	0	0	0	675
13:00	4	546	126	1	14	3	0	1	3	0	0	0	0	698
14:00	5	664	132	3	11	1	0	2	0	0	0	0	0	818
15:00	2	680	123	3	10	0	0	0	0	0	0	0	0	818
16:00	9	805	164	1	10	3	0	0	4	0	0	0	0	996
17:00	4	718	132	4	10	1	2	0	3	0	0	0	0	874
18:00	2	644	94	6	6	0	0	1	0	0	0	0	0	753
19:00	0	426	62	3	4	0	1	0	2	0	0	0	0	498
20:00	1	404	53	3	5	0	1	0	3	0	0	0	0	470
21:00	1	492	32	3	7	0	0	0	4	0	0	0	0	539
22:00	0	544	43	1	7	0	0	0	9	0	0	0	0	604
23:00	2	279	21	0	2	1	0	0	5	0	0	0	0	310
Total	48	10732	2030	57	202	24	14	15	82	0	6	3	0	13213
Percent	0.4%	81.2%	15.4%	0.4%	1.5%	0.2%	0.1%	0.1%	0.6%	0.0%	0.0%	0.0%	0.0%	
AM Peak	05:00	07:00	10:00	11:00	10:00	10:00	10:00	05:00	00:00		04:00	01:00		07:00
Vol.	4	632	143	5	20	4	3	3	7		3	3		782
PM Peak	16:00	16:00	16:00	18:00	12:00	13:00	17:00	12:00	22:00					16:00
Vol.	9	805	164	6	21	3	2	2	9					996
Grand Total	48	10732	2030	57	202	24	14	15	82	0	6	3	0	13213
Percent	0.4%	81.2%	15.4%	0.4%	1.5%	0.2%	0.1%	0.1%	0.6%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

City of Lancaster
Sierra Highway
N/ West Avenue L-12
24 Hour Directional Classification Count

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

LAN001
Site Code: 105-24525

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/30/24	0	113	6	0	0	0	0	0	3	0	0	0	0	122
01:00	1	93	2	1	2	0	0	0	1	0	0	0	0	100
02:00	0	56	10	1	1	1	1	0	1	0	0	0	0	71
03:00	0	130	16	0	3	4	0	0	5	1	0	0	0	159
04:00	5	259	70	5	10	1	0	0	2	8	0	0	0	360
05:00	2	312	80	3	2	1	1	1	3	2	0	0	0	407
06:00	1	259	111	4	14	2	0	0	2	0	0	0	0	393
07:00	5	495	109	4	24	4	0	0	5	0	0	0	0	646
08:00	1	600	110	4	43	5	0	1	6	1	0	0	0	771
09:00	3	447	130	3	35	4	0	1	3	0	0	0	0	626
10:00	3	487	160	5	30	3	0	1	5	0	0	0	0	694
11:00	1	551	146	3	12	3	2	0	4	0	0	0	0	722
12 PM	4	486	130	2	16	4	1	3	5	0	0	0	0	651
13:00	2	699	136	5	25	2	1	4	2	1	0	0	0	877
14:00	3	780	166	2	23	1	4	3	4	1	0	0	0	987
15:00	3	914	164	6	24	1	2	4	5	0	0	0	0	1123
16:00	3	929	189	2	16	3	9	1	2	0	0	0	0	1154
17:00	4	835	144	2	14	0	1	0	4	0	0	0	0	1004
18:00	5	618	101	4	10	0	3	0	3	0	0	0	0	744
19:00	2	430	41	2	4	0	0	0	1	0	0	0	0	480
20:00	2	432	74	2	6	0	2	0	1	0	0	0	0	519
21:00	0	353	11	2	6	0	0	0	1	0	0	0	0	373
22:00	0	301	6	0	2	0	0	0	2	0	0	0	0	311
23:00	0	195	1	1	0	0	0	0	0	0	0	0	0	197
Total	50	10774	2113	63	322	39	27	19	70	14	0	0	0	13491
Percent	0.4%	79.9%	15.7%	0.5%	2.4%	0.3%	0.2%	0.1%	0.5%	0.1%	0.0%	0.0%	0.0%	
AM Peak	04:00	08:00	10:00	04:00	08:00	08:00	11:00	05:00	08:00	04:00				08:00
Vol.	5	600	160	5	43	5	2	1	6	8				771
PM Peak	18:00	16:00	16:00	15:00	13:00	12:00	16:00	13:00	12:00	13:00				16:00
Vol.	5	929	189	6	25	4	9	4	5	1				1154
Grand Total	50	10774	2113	63	322	39	27	19	70	14	0	0	0	13491
Percent	0.4%	79.9%	15.7%	0.5%	2.4%	0.3%	0.2%	0.1%	0.5%	0.1%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

City of Lancaster
Sierra Highway
N/ West Avenue L-12
24 Hour Directional Classification Count

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

LAN001
Site Code: 105-24525

Northbound, Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/30/24	1	352	30	1	3	0	0	0	10	0	1	0	0	398
01:00	1	255	10	1	2	0	0	1	6	0	0	3	0	279
02:00	1	172	34	1	2	1	1	0	4	0	1	0	0	217
03:00	1	227	35	0	5	5	0	0	6	1	1	0	0	281
04:00	6	424	88	7	14	1	0	0	5	8	3	0	0	556
05:00	6	573	151	7	8	2	2	4	9	2	0	0	0	764
06:00	3	546	202	7	21	5	2	1	5	0	0	0	0	792
07:00	6	1127	238	7	30	6	2	1	11	0	0	0	0	1428
08:00	1	1209	244	8	51	6	0	3	10	1	0	0	0	1533
09:00	5	912	260	7	54	4	0	1	7	0	0	0	0	1250
10:00	6	948	303	5	50	7	3	2	7	0	0	0	0	1331
11:00	3	1058	286	8	31	4	3	0	9	0	0	0	0	1402
12 PM	4	1015	247	5	37	6	2	5	5	0	0	0	0	1326
13:00	6	1245	262	6	39	5	1	5	5	1	0	0	0	1575
14:00	8	1444	298	5	34	2	4	5	4	1	0	0	0	1805
15:00	5	1594	287	9	34	1	2	4	5	0	0	0	0	1941
16:00	12	1734	353	3	26	6	9	1	6	0	0	0	0	2150
17:00	8	1553	276	6	24	1	3	0	7	0	0	0	0	1878
18:00	7	1262	195	10	16	0	3	1	3	0	0	0	0	1497
19:00	2	856	103	5	8	0	1	0	3	0	0	0	0	978
20:00	3	836	127	5	11	0	3	0	4	0	0	0	0	989
21:00	1	845	43	5	13	0	0	0	5	0	0	0	0	912
22:00	0	845	49	1	9	0	0	0	11	0	0	0	0	915
23:00	2	474	22	1	2	1	0	0	5	0	0	0	0	507
Total	98	21506	4143	120	524	63	41	34	152	14	6	3	0	26704
Percent	0.4%	80.5%	15.5%	0.4%	2.0%	0.2%	0.2%	0.1%	0.6%	0.1%	0.0%	0.0%	0.0%	
AM Peak	04:00	08:00	10:00	08:00	09:00	10:00	10:00	05:00	07:00	04:00	04:00	01:00		08:00
Vol.	6	1209	303	8	54	7	3	4	11	8	3	3		1533
PM Peak	16:00	16:00	16:00	18:00	13:00	12:00	16:00	12:00	22:00	13:00				16:00
Vol.	12	1734	353	10	39	6	9	5	11	1				2150
Grand Total	98	21506	4143	120	524	63	41	34	152	14	6	3	0	26704
Percent	0.4%	80.5%	15.5%	0.4%	2.0%	0.2%	0.2%	0.1%	0.6%	0.1%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

City of Lancaster
Sierra Highway
S/ West Avenue L-12
24 Hour Directional Classification Count

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

LAN002
Site Code: 105-24525

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/30/24	1	240	24	1	3	0	0	0	7	0	1	0	0	277
01:00	0	163	8	0	0	0	0	1	5	0	0	3	0	180
02:00	1	118	25	0	1	0	0	0	3	0	1	0	0	149
03:00	1	102	19	0	2	1	0	0	1	0	1	0	0	127
04:00	1	166	18	2	4	0	0	0	3	0	3	0	0	197
05:00	4	262	73	4	6	1	1	3	6	0	0	0	0	360
06:00	2	294	99	3	8	3	2	1	3	0	0	0	0	415
07:00	1	635	127	3	6	1	2	1	4	0	0	0	0	780
08:00	0	616	137	4	9	2	0	2	4	0	0	0	0	774
09:00	2	465	131	4	20	2	0	0	4	0	0	0	0	628
10:00	3	460	142	0	21	4	3	1	2	0	0	0	0	636
11:00	2	509	142	5	20	1	1	0	5	0	0	0	0	685
12 PM	0	531	118	3	21	2	1	2	0	0	0	0	0	678
13:00	3	546	130	1	14	3	0	2	3	0	0	0	0	702
14:00	5	666	134	3	12	2	0	2	2	0	0	0	0	826
15:00	2	679	122	3	10	0	0	0	2	0	0	0	0	818
16:00	9	798	161	1	10	3	0	0	5	0	0	0	0	987
17:00	4	713	132	4	11	1	2	0	3	0	0	0	0	870
18:00	2	639	90	6	6	0	0	1	0	0	0	0	0	744
19:00	0	421	64	3	4	0	1	0	2	0	0	0	0	495
20:00	1	406	50	3	5	0	1	0	3	0	0	0	0	469
21:00	1	494	32	3	7	0	0	0	4	1	0	0	0	542
22:00	0	548	41	1	7	0	0	0	9	0	0	0	0	606
23:00	2	282	21	0	2	1	0	0	5	0	0	0	0	313
Total	47	10753	2040	57	209	27	14	16	85	1	6	3	0	13258
Percent	0.4%	81.1%	15.4%	0.4%	1.6%	0.2%	0.1%	0.1%	0.6%	0.0%	0.0%	0.0%	0.0%	
AM Peak	05:00	07:00	10:00	11:00	10:00	10:00	10:00	05:00	00:00		04:00	01:00		07:00
Vol.	4	635	142	5	21	4	3	3	7		3	3		780
PM Peak	16:00	16:00	16:00	18:00	12:00	13:00	17:00	12:00	22:00	21:00				16:00
Vol.	9	798	161	6	21	3	2	2	9	1				987
Grand Total	47	10753	2040	57	209	27	14	16	85	1	6	3	0	13258
Percent	0.4%	81.1%	15.4%	0.4%	1.6%	0.2%	0.1%	0.1%	0.6%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

City of Lancaster
Sierra Highway
S/ West Avenue L-12
24 Hour Directional Classification Count

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

LAN002
Site Code: 105-24525

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/30/24	0	114	7	0	0	0	0	0	3	0	0	0	0	124
01:00	1	94	2	1	2	0	0	0	1	0	0	0	0	101
02:00	0	58	10	1	1	1	1	0	2	0	0	0	0	74
03:00	0	131	17	0	3	4	0	0	7	1	0	0	0	163
04:00	5	255	69	5	10	1	0	0	5	8	0	0	0	358
05:00	2	311	81	3	2	1	1	1	4	2	0	0	0	408
06:00	1	256	112	4	14	2	1	0	3	0	0	0	0	393
07:00	5	490	116	4	27	7	0	1	5	0	0	0	0	655
08:00	1	602	112	4	48	5	0	1	6	1	0	0	0	780
09:00	3	453	132	3	36	6	0	1	3	0	0	0	0	637
10:00	3	489	163	5	29	4	0	1	4	0	0	0	0	698
11:00	1	555	151	3	13	3	2	0	5	0	0	0	0	733
12 PM	4	494	133	2	15	3	1	3	4	0	0	0	0	659
13:00	2	699	139	5	23	4	1	4	1	0	0	0	0	878
14:00	3	786	171	2	23	2	4	3	4	0	0	0	0	998
15:00	3	913	171	6	24	0	2	3	5	0	0	0	0	1127
16:00	3	937	196	2	15	2	10	1	1	0	0	0	0	1167
17:00	4	839	154	2	14	2	1	0	3	0	0	0	0	1019
18:00	5	628	103	4	10	0	3	0	3	0	0	0	0	756
19:00	2	434	43	2	4	0	0	0	1	1	0	0	0	487
20:00	2	439	78	2	6	0	2	0	1	0	0	0	0	530
21:00	0	358	13	2	6	0	0	0	1	0	0	0	0	380
22:00	0	300	7	0	2	0	0	0	2	0	0	0	0	311
23:00	0	199	1	1	0	0	0	0	0	0	0	0	0	201
Total	50	10834	2181	63	327	47	29	19	74	13	0	0	0	13637
Percent	0.4%	79.4%	16.0%	0.5%	2.4%	0.3%	0.2%	0.1%	0.5%	0.1%	0.0%	0.0%	0.0%	
AM Peak	04:00	08:00	10:00	04:00	08:00	07:00	11:00	05:00	03:00	04:00				08:00
Vol.	5	602	163	5	48	7	2	1	7	8				780
PM Peak	18:00	16:00	16:00	15:00	15:00	13:00	16:00	13:00	15:00	19:00				16:00
Vol.	5	937	196	6	24	4	10	4	5	1				1167
Grand Total	50	10834	2181	63	327	47	29	19	74	13	0	0	0	13637
Percent	0.4%	79.4%	16.0%	0.5%	2.4%	0.3%	0.2%	0.1%	0.5%	0.1%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

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City of Lancaster
Sierra Highway
S/ West Avenue L-12
24 Hour Directional Classification Count

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

LAN002
Site Code: 105-24525

Northbound, Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/30/24	1	354	31	1	3	0	0	0	10	0	1	0	0	401
01:00	1	257	10	1	2	0	0	1	6	0	0	3	0	281
02:00	1	176	35	1	2	1	1	0	5	0	1	0	0	223
03:00	1	233	36	0	5	5	0	0	8	1	1	0	0	290
04:00	6	421	87	7	14	1	0	0	8	8	3	0	0	555
05:00	6	573	154	7	8	2	2	4	10	2	0	0	0	768
06:00	3	550	211	7	22	5	3	1	6	0	0	0	0	808
07:00	6	1125	243	7	33	8	2	2	9	0	0	0	0	1435
08:00	1	1218	249	8	57	7	0	3	10	1	0	0	0	1554
09:00	5	918	263	7	56	8	0	1	7	0	0	0	0	1265
10:00	6	949	305	5	50	8	3	2	6	0	0	0	0	1334
11:00	3	1064	293	8	33	4	3	0	10	0	0	0	0	1418
12 PM	4	1025	251	5	36	5	2	5	4	0	0	0	0	1337
13:00	5	1245	269	6	37	7	1	6	4	0	0	0	0	1580
14:00	8	1452	305	5	35	4	4	5	6	0	0	0	0	1824
15:00	5	1592	293	9	34	0	2	3	7	0	0	0	0	1945
16:00	12	1735	357	3	25	5	10	1	6	0	0	0	0	2154
17:00	8	1552	286	6	25	3	3	0	6	0	0	0	0	1889
18:00	7	1267	193	10	16	0	3	1	3	0	0	0	0	1500
19:00	2	855	107	5	8	0	1	0	3	1	0	0	0	982
20:00	3	845	128	5	11	0	3	0	4	0	0	0	0	999
21:00	1	852	45	5	13	0	0	0	5	1	0	0	0	922
22:00	0	848	48	1	9	0	0	0	11	0	0	0	0	917
23:00	2	481	22	1	2	1	0	0	5	0	0	0	0	514
Total	97	21587	4221	120	536	74	43	35	159	14	6	3	0	26895
Percent	0.4%	80.3%	15.7%	0.4%	2.0%	0.3%	0.2%	0.1%	0.6%	0.1%	0.0%	0.0%	0.0%	
AM Peak	04:00	08:00	10:00	08:00	08:00	07:00	06:00	05:00	00:00	04:00	04:00	01:00		08:00
Vol.	6	1218	305	8	57	8	3	4	10	8	3	3		1554
PM Peak	16:00	16:00	16:00	18:00	13:00	13:00	16:00	13:00	22:00	19:00				16:00
Vol.	12	1735	357	10	37	7	10	6	11	1				2154
Grand Total	97	21587	4221	120	536	74	43	35	159	14	6	3	0	26895
Percent	0.4%	80.3%	15.7%	0.4%	2.0%	0.3%	0.2%	0.1%	0.6%	0.1%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

City of Lancaster
West Avenue L-12
W/ Sierra Highway
24 Hour Directional Classification Count

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

LAN003
Site Code: 105-24525

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/30/24	0	7	1	0	0	0	0	0	0	0	0	0	0	8
01:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
02:00	0	4	0	0	0	0	0	0	1	0	0	0	0	5
03:00	0	3	1	0	0	0	0	0	3	0	0	0	0	7
04:00	0	1	0	0	0	0	0	0	3	0	0	0	0	4
05:00	0	2	1	0	0	0	0	0	1	0	0	0	0	4
06:00	0	3	4	0	0	0	1	0	1	0	0	0	0	9
07:00	0	4	14	0	4	4	0	1	2	0	0	0	0	29
08:00	0	10	9	0	6	0	0	0	0	0	0	0	0	25
09:00	0	12	7	0	2	2	0	0	0	0	0	0	0	23
10:00	0	11	12	0	5	2	0	0	0	0	0	0	0	30
11:00	0	7	10	1	1	0	0	0	1	0	0	0	0	20
12 PM	0	20	10	0	0	0	0	0	0	0	0	0	0	30
13:00	1	18	10	0	0	2	0	0	0	0	0	0	0	31
14:00	0	27	14	0	0	1	0	0	0	0	0	0	0	42
15:00	0	15	20	0	0	0	0	0	0	0	0	0	0	35
16:00	0	23	21	0	0	0	1	0	0	0	0	0	0	45
17:00	0	22	19	0	0	2	0	0	0	0	0	0	0	43
18:00	0	23	8	0	0	0	0	0	0	0	0	0	0	31
19:00	0	12	8	0	0	0	0	0	0	1	0	0	0	21
20:00	0	14	13	0	0	0	0	0	0	0	0	0	0	27
21:00	0	9	2	0	0	0	0	0	0	0	0	0	0	11
22:00	0	11	3	0	0	0	0	0	0	0	0	0	0	14
23:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
Total	1	273	187	1	18	13	2	1	12	1	0	0	0	509
Percent	0.2%	53.6%	36.7%	0.2%	3.5%	2.6%	0.4%	0.2%	2.4%	0.2%	0.0%	0.0%	0.0%	
AM Peak		09:00	07:00	11:00	08:00	07:00	06:00	07:00	03:00					10:00
Vol.		12	14	1	6	4	1	1	3					30
PM Peak	13:00	14:00	16:00			13:00	16:00			19:00				16:00
Vol.	1	27	21			2	1			1				45
Grand Total	1	273	187	1	18	13	2	1	12	1	0	0	0	509
Percent	0.2%	53.6%	36.7%	0.2%	3.5%	2.6%	0.4%	0.2%	2.4%	0.2%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

City of Lancaster
West Avenue L-12
W/ Sierra Highway
24 Hour Directional Classification Count

PO Box 1178
Corona, CA 92878
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Page 2

LAN003
Site Code: 105-24525

Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/30/24	0	7	0	0	0	0	0	0	0	0	0	0	0	7
01:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
02:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
03:00	0	7	0	0	0	0	0	0	1	0	0	0	0	8
04:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
05:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
06:00	0	13	11	0	1	0	0	0	0	0	0	0	0	25
07:00	0	12	5	0	1	0	0	0	0	0	0	0	0	18
08:00	0	15	10	0	2	1	0	0	0	0	0	0	0	28
09:00	0	6	6	0	2	2	0	0	0	0	0	0	0	16
10:00	0	8	8	0	7	1	0	0	1	0	0	0	0	25
11:00	0	5	7	1	1	0	0	0	0	0	0	0	0	14
12 PM	0	14	8	0	1	1	0	0	1	0	0	0	0	25
13:00	0	18	11	0	2	0	0	1	1	1	0	0	0	34
14:00	0	23	11	0	1	1	0	0	2	1	0	0	0	39
15:00	0	15	12	0	0	1	0	1	2	0	0	0	0	31
16:00	0	8	11	0	1	1	0	0	2	0	0	0	0	23
17:00	0	13	9	0	1	0	0	0	1	0	0	0	0	24
18:00	0	8	2	0	0	0	0	0	0	0	0	0	0	10
19:00	0	3	8	0	0	0	0	0	0	0	0	0	0	11
20:00	0	9	6	0	0	0	0	0	0	0	0	0	0	15
21:00	0	6	0	0	0	0	0	0	0	1	0	0	0	7
22:00	0	16	0	0	0	0	0	0	0	0	0	0	0	16
23:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
Total	0	234	129	1	20	8	0	2	11	3	0	0	0	408
Percent	0.0%	57.4%	31.6%	0.2%	4.9%	2.0%	0.0%	0.5%	2.7%	0.7%	0.0%	0.0%	0.0%	
AM Peak		08:00	06:00	11:00	10:00	09:00			03:00					08:00
Vol.		15	11	1	7	2			1					28
PM Peak		14:00	15:00		13:00	12:00		13:00	14:00	13:00				14:00
Vol.		23	12		2	1		1	2	1				39
Grand Total	0	234	129	1	20	8	0	2	11	3	0	0	0	408
Percent	0.0%	57.4%	31.6%	0.2%	4.9%	2.0%	0.0%	0.5%	2.7%	0.7%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

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West Avenue L-12
W/ Sierra Highway
24 Hour Directional Classification Count

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LAN003
Site Code: 105-24525

Eastbound, Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/30/24	0	14	1	0	0	0	0	0	0	0	0	0	0	15
01:00	0	12	0	0	0	0	0	0	0	0	0	0	0	12
02:00	0	8	1	0	0	0	0	0	1	0	0	0	0	10
03:00	0	10	1	0	0	0	0	0	4	0	0	0	0	15
04:00	0	7	1	0	0	0	0	0	3	0	0	0	0	11
05:00	0	6	3	0	0	0	0	0	1	0	0	0	0	10
06:00	0	16	15	0	1	0	1	0	1	0	0	0	0	34
07:00	0	16	19	0	5	4	0	1	2	0	0	0	0	47
08:00	0	25	19	0	8	1	0	0	0	0	0	0	0	53
09:00	0	18	13	0	4	4	0	0	0	0	0	0	0	39
10:00	0	19	20	0	12	3	0	0	1	0	0	0	0	55
11:00	0	12	17	2	2	0	0	0	1	0	0	0	0	34
12 PM	0	34	18	0	1	1	0	0	1	0	0	0	0	55
13:00	1	36	21	0	2	2	0	1	1	1	0	0	0	65
14:00	0	50	25	0	1	2	0	0	2	1	0	0	0	81
15:00	0	30	32	0	0	1	0	1	2	0	0	0	0	66
16:00	0	31	32	0	1	1	1	0	2	0	0	0	0	68
17:00	0	35	28	0	1	2	0	0	1	0	0	0	0	67
18:00	0	31	10	0	0	0	0	0	0	0	0	0	0	41
19:00	0	15	16	0	0	0	0	0	0	1	0	0	0	32
20:00	0	23	19	0	0	0	0	0	0	0	0	0	0	42
21:00	0	15	2	0	0	0	0	0	0	1	0	0	0	18
22:00	0	27	3	0	0	0	0	0	0	0	0	0	0	30
23:00	0	17	0	0	0	0	0	0	0	0	0	0	0	17
Total	1	507	316	2	38	21	2	3	23	4	0	0	0	917
Percent	0.1%	55.3%	34.5%	0.2%	4.1%	2.3%	0.2%	0.3%	2.5%	0.4%	0.0%	0.0%	0.0%	
AM Peak		08:00	10:00	11:00	10:00	07:00	06:00	07:00	03:00					10:00
Vol.		25	20	2	12	4	1	1	4					55
PM Peak	13:00	14:00	15:00		13:00	13:00	16:00	13:00	14:00	13:00				14:00
Vol.	1	50	32		2	2	1	1	2	1				81
Grand Total	1	507	316	2	38	21	2	3	23	4	0	0	0	917
Percent	0.1%	55.3%	34.5%	0.2%	4.1%	2.3%	0.2%	0.3%	2.5%	0.4%	0.0%	0.0%	0.0%	



Appendix C

Level of Service Analysis Worksheets for Existing Conditions

Intersection Level Of Service Report
Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	118.7
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.981

Intersection Setup

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				↔↔			↔↔			↔↔		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	0	0	0	154	0	66	0	542	171	0	451	197
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	154	0	66	0	542	171	0	451	197
Peak Hour Factor	0.9500	0.9500	0.9500	0.9230	0.9500	0.9230	0.9500	0.9230	0.9230	0.9500	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	42	0	18	0	147	46	0	122	53
Total Analysis Volume [veh/h]	0	0	0	167	0	72	0	587	185	0	489	213
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance		No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.98	0.00	0.12	0.00	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	118.66	0.00	12.10	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS				F		B		A	A		A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	7.72	0.00	0.42	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	192.91	0.00	10.58	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			86.56			0.00			0.00		
Approach LOS	A			F			A			A		
d_I, Intersection Delay [s/veh]	12.08											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	119.6
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.895

Intersection Setup

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	105	0	257	0	0	0	0	642	76	0	555	135
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	0	257	0	0	0	0	642	76	0	555	135
Peak Hour Factor	0.9320	0.9500	0.9320	0.9500	0.9500	0.9500	0.9500	0.9320	0.9320	0.9500	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	0	69	0	0	0	0	172	20	0	149	36
Total Analysis Volume [veh/h]	113	0	276	0	0	0	0	689	82	0	595	145
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No			
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.89	0.00	0.62	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	119.55	0.00	25.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	F		D					A	A		A	A
95th-Percentile Queue Length [veh/ln]	5.73	0.00	4.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	143.30	0.00	102.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	52.70			0.00			0.00			0.00		
Approach LOS	F			A			A			A		
d_I, Intersection Delay [s/veh]	10.79											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: 10th Street (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	37.5
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.554

Intersection Setup

Name	10th Street			10th Street			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	265.00	100.00	100.00	280.00	100.00	200.00	135.00	100.00	140.00	220.00	100.00	220.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	10th Street			10th Street			Avenue M			Avenue M		
Base Volume Input [veh/h]	71	432	104	89	383	83	184	532	107	115	497	158
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	71	432	104	89	383	83	184	532	107	115	497	158
Peak Hour Factor	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	118	28	24	104	23	50	145	29	31	135	43
Total Analysis Volume [veh/h]	77	470	113	97	417	90	200	579	116	125	541	172
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing (Basic)

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	29	0	0	25	0	0	31	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	14	40	0	14	40	0	24	42	0	24	42	0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	R
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	22	22	8	24	24	15	63	63	10	58	58
g / C, Green / Cycle	0.06	0.18	0.18	0.07	0.20	0.20	0.13	0.53	0.53	0.09	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.04	0.16	0.16	0.05	0.12	0.06	0.11	0.16	0.07	0.07	0.15	0.11
s, saturation flow rate [veh/h]	1781	1870	1747	1781	3560	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	99	346	323	121	703	314	229	1878	838	154	1728	771
d1, Uniform Delay [s]	55.96	47.50	47.56	55.13	43.77	40.97	51.33	16.00	14.45	53.86	18.74	17.82
k, delay calibration	0.11	0.11	0.11	0.14	0.11	0.11	0.20	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.49	6.71	7.45	14.76	0.80	0.50	16.54	0.43	0.34	9.81	0.47	0.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.87	0.88	0.80	0.59	0.29	0.87	0.31	0.14	0.81	0.31	0.22
d, Delay for Lane Group [s/veh]	68.45	54.21	55.01	69.89	44.58	41.46	67.87	16.42	14.80	63.67	19.21	18.49
Lane Group LOS	E	D	E	E	D	D	E	B	B	E	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.55	8.93	8.48	3.29	5.50	2.23	6.69	4.16	1.54	3.97	4.30	2.67
50th-Percentile Queue Length [ft/ln]	63.82	223.36	211.89	82.36	137.55	55.86	167.29	103.93	38.61	99.37	107.44	66.83
95th-Percentile Queue Length [veh/ln]	4.60	13.84	13.25	5.93	9.35	4.02	10.93	7.48	2.78	7.15	7.70	4.81
95th-Percentile Queue Length [ft/ln]	114.88	345.91	331.25	148.26	233.73	100.55	273.35	187.07	69.51	178.86	192.43	120.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	68.45	54.50	55.01	69.89	44.58	41.46	67.87	16.42	14.80	63.67	19.21	18.49
Movement LOS	E	D	E	E	D	D	E	B	B	E	B	B
d_A, Approach Delay [s/veh]	56.21			48.18			27.71			25.70		
Approach LOS	E			D			C			C		
d_I, Intersection Delay [s/veh]	37.55											
Intersection LOS	D											
Intersection V/C	0.554											

Emissions

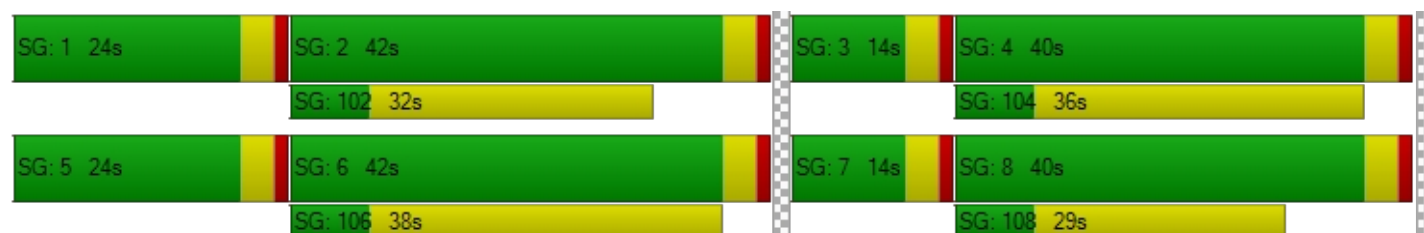
Vehicle Miles Traveled [mph]	1.82	7.10	6.67	2.29	9.85	2.13	4.75	13.74	2.75	2.97	12.84	4.08
Stops [stops/h]	76.59	268.03	254.27	98.84	330.13	67.03	200.75	249.43	46.34	119.24	257.85	80.19
Fuel consumption [US gal/h]	2.56	8.53	8.11	2.97	9.18	1.86	6.65	7.03	1.30	3.93	7.33	2.27
CO [g/h]	178.65	596.23	566.83	207.83	641.67	129.98	464.80	491.25	91.01	274.95	512.66	158.90
NOx [g/h]	34.76	116.01	110.28	40.44	124.85	25.29	90.43	95.58	17.71	53.50	99.75	30.92
VOC [g/h]	41.40	138.18	131.37	48.17	148.71	30.12	107.72	113.85	21.09	63.72	118.81	36.83

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersectio	2.785			2.858			2.944			2.951		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	600			600			633			633		
d_b, Bicycle Delay [s]	29.40			29.40			28.02			28.02		
I_b,int, Bicycle LOS Score for Intersection	2.104			2.058			2.298			2.251		
Bicycle LOS	B			B			B			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Sierra Highway (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	43.1
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.773

Intersection Setup

Name	Sierra Highway			Sierra Highway			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	410.00	100.00	405.00	175.00	100.00	160.00	185.00	100.00	185.00	200.00	100.00	210.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Sierra Highway			Sierra Highway			Avenue M			Avenue M		
Base Volume Input [veh/h]	193	711	502	89	575	117	61	437	79	283	610	149
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	193	711	502	89	575	117	61	437	79	283	610	149
Peak Hour Factor	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	184	130	23	149	30	16	113	20	73	158	39
Total Analysis Volume [veh/h]	200	735	519	92	595	121	63	452	82	293	631	154
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing (Basic)

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	29	0	0	26	0	0	30	0	0	0	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	18	45	0	10	37	0	40	41	0	24	25	0
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	43	43	8	37	37	6	33	33	20	47	47
g / C, Green / Cycle	0.12	0.36	0.36	0.07	0.31	0.31	0.05	0.28	0.28	0.17	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.11	0.21	0.33	0.05	0.17	0.08	0.04	0.13	0.05	0.16	0.18	0.10
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	208	1278	570	117	1096	489	84	981	438	297	1407	628
d1, Uniform Delay [s]	52.74	31.08	36.63	55.23	34.51	31.11	56.50	36.08	33.21	49.87	26.68	24.30
k, delay calibration	0.38	0.11	0.15	0.11	0.11	0.11	0.11	0.50	0.50	0.42	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	45.39	0.41	7.82	10.96	0.42	0.26	12.76	1.56	0.94	44.73	1.04	0.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.96	0.58	0.91	0.79	0.54	0.25	0.75	0.46	0.19	0.99	0.45	0.25
d, Delay for Lane Group [s/veh]	98.13	31.49	44.45	66.19	34.93	31.37	69.26	37.64	34.16	94.61	27.71	25.23
Lane Group LOS	F	C	D	E	C	C	E	D	C	F	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.60	8.63	15.49	3.10	7.27	2.68	2.18	5.72	1.95	12.42	6.82	3.11
50th-Percentile Queue Length [ft/ln]	215.09	215.87	387.18	77.44	181.85	66.98	54.59	142.95	48.85	310.46	170.57	77.65
95th-Percentile Queue Length [veh/ln]	13.41	13.45	21.94	5.58	11.70	4.82	3.93	9.64	3.52	18.20	11.11	5.59
95th-Percentile Queue Length [ft/ln]	335.35	336.35	548.53	139.39	292.42	120.56	98.27	240.99	87.92	454.94	277.66	139.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	98.13	31.49	44.45	66.19	34.93	31.37	69.26	37.64	34.16	94.61	27.71	25.23
Movement LOS	F	C	D	E	C	C	E	D	C	F	C	C
d_A, Approach Delay [s/veh]	45.28			37.96			40.50			45.54		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	43.12											
Intersection LOS	D											
Intersection V/C	0.773											

Emissions

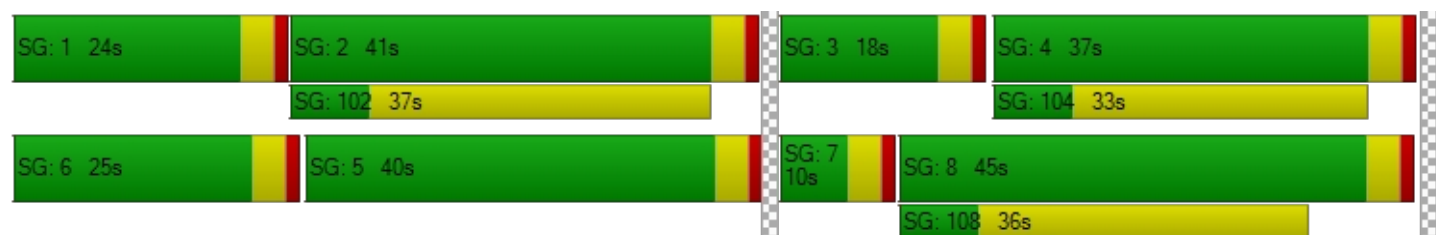
Vehicle Miles Traveled [mph]	9.96	36.60	25.84	5.88	38.06	7.74	5.38	38.58	7.00	21.72	46.78	11.42
Stops [stops/h]	258.11	518.09	464.61	92.93	436.43	80.37	65.51	343.09	58.62	372.55	409.36	93.18
Fuel consumption [US gal/h]	5.83	9.08	8.33	1.99	8.21	1.54	1.47	6.95	1.18	8.59	7.75	1.78
CO [g/h]	407.46	634.66	581.93	139.43	573.67	107.30	102.83	485.48	82.61	600.62	541.41	124.10
NOx [g/h]	79.28	123.48	113.22	27.13	111.62	20.88	20.01	94.46	16.07	116.86	105.34	24.15
VOC [g/h]	94.43	147.09	134.87	32.31	132.95	24.87	23.83	112.51	19.15	139.20	125.48	28.76

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			0.00			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersectio	2.861			0.000			2.718			2.815		
Crosswalk LOS	C			F			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	683			550			617			350		
d_b, Bicycle Delay [s]	26.00			31.54			28.70			40.84		
I_b,int, Bicycle LOS Score for Intersection	2.759			2.226			2.052			2.449		
Bicycle LOS	C			B			B			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Sierra Highway (N/S) at Avenue L-12 (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	18.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

Name	Sierra Highway		Sierra Highway		Avenue L-12	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sierra Highway		Sierra Highway		Avenue L-12	
Base Volume Input [veh/h]	16	836	848	12	5	16
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	836	848	12	5	16
Peak Hour Factor	0.8550	0.8550	0.8550	0.8550	0.8550	0.8550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	244	248	4	1	5
Total Analysis Volume [veh/h]	19	978	992	14	6	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.00	0.02	0.04
d_M, Delay for Movement [s/veh]	10.41	0.00	0.00	0.00	18.70	12.54
Movement LOS	B	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.09	0.00	0.00	0.00	0.19	0.19
95th-Percentile Queue Length [ft/ln]	2.14	0.00	0.00	0.00	4.68	4.68
d_A, Approach Delay [s/veh]	0.20		0.00		14.02	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.27					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	119.2
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.911

Intersection Setup

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				↔			↔			↔		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	0	0	0	116	0	89	0	357	173	0	825	474
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	116	0	89	0	357	173	0	825	474
Peak Hour Factor	0.9500	0.9500	0.9500	0.9580	0.9500	0.9580	0.9500	0.9580	0.9580	0.9500	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	30	0	23	0	93	45	0	215	124
Total Analysis Volume [veh/h]	0	0	0	121	0	93	0	373	181	0	861	495
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings				
Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance		No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results												
V/C, Movement V/C Ratio	0.00	0.00	0.00	0.91	0.00	0.26	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	119.21	0.00	18.70	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS				F		C		A	A		A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	6.03	0.00	1.03	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	150.84	0.00	25.80	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			75.53			0.00			0.00		
Approach LOS	A			F			A			A		
d_I, Intersection Delay [s/veh]	7.61											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	488.2
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.631

Intersection Setup

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	78	0	329	0	0	0	0	439	31	0	1275	256
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	0	329	0	0	0	0	439	31	0	1275	256
Peak Hour Factor	0.9560	0.9500	0.9560	0.9500	0.9500	0.9500	0.9500	0.9560	0.9560	0.9500	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	0	86	0	0	0	0	115	8	0	333	67
Total Analysis Volume [veh/h]	82	0	344	0	0	0	0	459	32	0	1334	268
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No			
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.63	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	488.21	0.00	18.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	F		C					A	A		A	A
95th-Percentile Queue Length [veh/ln]	7.87	0.00	3.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	196.79	0.00	89.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	109.03			0.00			0.00			0.00		
Approach LOS	F			A			A			A		
d_I, Intersection Delay [s/veh]	18.44											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: 10th Street (N/S) at Avenue M (E/W)

Control Type:

Signalized

Delay (sec / veh):

45.8

Analysis Method:

HCM 7th Edition

Level Of Service:

D

Analysis Period:

15 minutes

Volume to Capacity (v/c):

0.893

Intersection Setup

Name	10th Street			10th Street			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	265.00	100.00	100.00	280.00	100.00	200.00	135.00	100.00	140.00	220.00	100.00	220.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	10th Street			10th Street			Avenue M			Avenue M		
Base Volume Input [veh/h]	128	600	91	118	890	516	172	411	119	206	859	139
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	128	600	91	118	890	516	172	411	119	206	859	139
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	158	24	31	234	136	45	108	31	54	226	37
Total Analysis Volume [veh/h]	135	632	96	124	938	544	181	433	125	217	905	146
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing (Basic)

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	29	0	0	25	0	0	31	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	13	41	0	20	48	0	17	36	0	23	42	0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lag	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	R
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	44	44	10	43	43	13	33	33	16	37	37
g / C, Green / Cycle	0.09	0.37	0.37	0.09	0.36	0.36	0.11	0.28	0.28	0.14	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.08	0.20	0.20	0.07	0.26	0.34	0.10	0.12	0.08	0.12	0.25	0.09
s, saturation flow rate [veh/h]	1781	1870	1785	1781	3560	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	159	684	653	153	1289	575	193	989	441	245	1093	488
d1, Uniform Delay [s]	53.83	30.15	30.15	53.91	33.17	37.14	53.10	35.63	33.97	50.81	38.63	31.73
k, delay calibration	0.25	0.14	0.14	0.11	0.11	0.40	0.35	0.50	0.50	0.26	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	23.19	0.85	0.90	9.89	0.80	22.77	40.65	1.41	1.60	21.09	7.25	1.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.54	0.54	0.81	0.73	0.95	0.94	0.44	0.28	0.89	0.83	0.30
d, Delay for Lane Group [s/veh]	77.02	31.00	31.05	63.80	33.97	59.91	93.75	37.04	35.58	71.91	45.88	33.30
Lane Group LOS	E	C	C	E	C	E	F	D	D	E	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.87	8.11	7.76	3.98	11.28	18.10	7.36	5.14	2.92	7.55	12.68	3.28
50th-Percentile Queue Length [ft/ln]	121.75	202.82	193.93	99.45	281.97	452.54	183.92	128.42	72.94	188.68	316.99	82.02
95th-Percentile Queue Length [veh/ln]	8.49	12.78	12.32	7.16	16.79	25.08	11.81	8.85	5.25	12.05	18.52	5.91
95th-Percentile Queue Length [ft/ln]	212.23	319.59	308.12	179.02	419.67	626.98	295.13	221.35	131.29	301.32	462.98	147.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	77.02	31.02	31.05	63.80	33.97	59.91	93.75	37.04	35.58	71.91	45.88	33.30
Movement LOS	E	C	C	E	C	E	F	D	D	E	D	C
d_A, Approach Delay [s/veh]	38.22			45.06			50.69			48.88		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	45.75											
Intersection LOS	D											
Intersection V/C	0.893											

Emissions

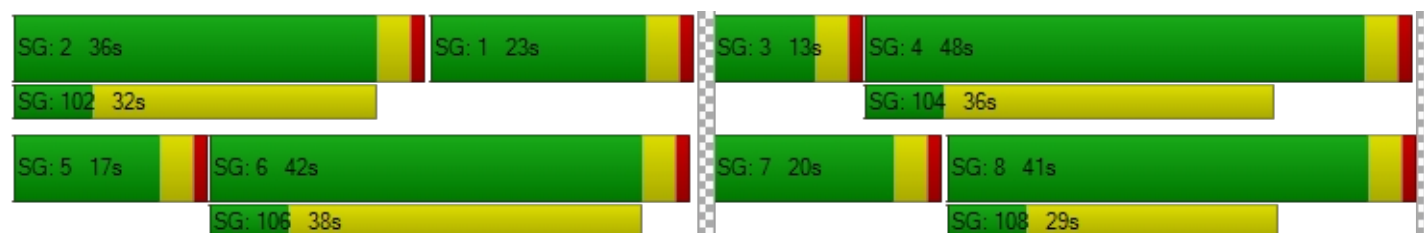
Vehicle Miles Traveled [mph]	3.19	8.79	8.40	2.93	22.15	12.85	4.29	10.27	2.97	5.15	21.47	3.46
Stops [stops/h]	146.10	243.38	232.71	119.34	676.73	543.05	220.71	308.21	87.52	226.42	760.77	98.42
Fuel consumption [US gal/h]	4.94	7.16	6.85	3.54	17.61	15.40	7.70	9.33	2.63	7.55	23.30	2.93
CO [g/h]	345.03	500.76	478.86	247.43	1231.24	1076.34	537.95	652.35	183.82	527.94	1628.53	205.03
NOx [g/h]	67.13	97.43	93.17	48.14	239.56	209.42	104.67	126.92	35.77	102.72	316.85	39.89
VOC [g/h]	79.96	116.06	110.98	57.34	285.35	249.45	124.67	151.19	42.60	122.36	377.43	47.52

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersectio	3.080			3.161			3.159			3.039		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	617			733			533			633		
d_b, Bicycle Delay [s]	28.70			24.07			32.27			28.02		
I_b,int, Bicycle LOS Score for Intersection	2.272			2.885			2.169			2.606		
Bicycle LOS	B			C			B			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Sierra Highway (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	44.0
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.811

Intersection Setup

Name	Sierra Highway			Sierra Highway			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	410.00	100.00	405.00	175.00	100.00	160.00	185.00	100.00	185.00	200.00	100.00	210.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Sierra Highway			Sierra Highway			Avenue M			Avenue M		
Base Volume Input [veh/h]	220	791	498	104	876	130	107	484	169	309	623	119
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	220	791	498	104	876	130	107	484	169	309	623	119
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	204	128	27	226	34	28	125	44	80	161	31
Total Analysis Volume [veh/h]	227	816	514	107	904	134	110	499	174	319	643	123
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing (Basic)

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	29	0	0	26	0	0	30	0	0	0	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	10	40	0	10	40	0	60	41	0	29	10	0
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	43	43	9	33	33	9	29	29	23	43	43
g / C, Green / Cycle	0.16	0.36	0.36	0.08	0.28	0.28	0.08	0.24	0.24	0.19	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.13	0.23	0.32	0.06	0.25	0.08	0.06	0.14	0.11	0.18	0.18	0.08
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	281	1275	569	134	981	438	139	852	380	345	1263	564
d1, Uniform Delay [s]	48.76	32.06	36.52	54.58	42.20	34.38	54.33	40.39	39.00	47.49	30.48	27.07
k, delay calibration	0.50	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.34	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	21.49	0.54	5.62	10.28	4.15	0.39	9.48	2.94	3.93	24.84	1.47	0.89
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

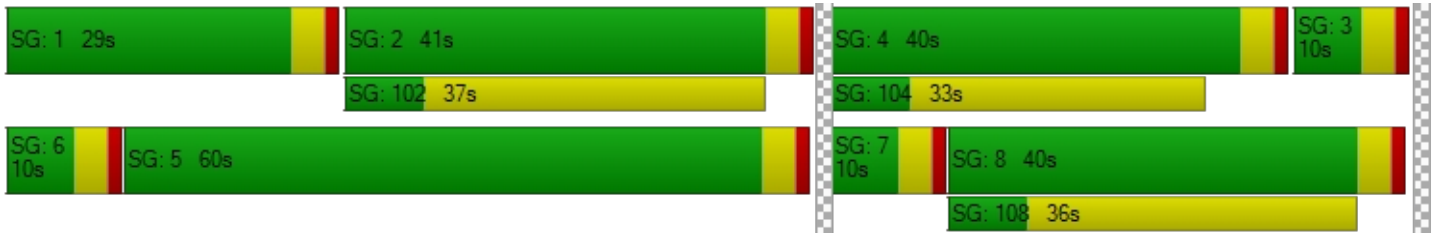
X, volume / capacity	0.81	0.64	0.90	0.80	0.92	0.31	0.79	0.59	0.46	0.92	0.51	0.22
d, Delay for Lane Group [s/veh]	70.25	32.60	42.14	64.86	46.35	34.77	63.80	43.34	42.93	72.33	31.94	27.96
Lane Group LOS	E	C	D	E	D	C	E	D	D	E	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.23	9.89	14.95	3.56	13.45	3.16	3.63	6.87	4.81	11.70	7.56	2.62
50th-Percentile Queue Length [ft/ln]	205.74	247.31	373.72	89.08	336.15	78.97	90.82	171.78	120.19	292.61	188.97	65.50
95th-Percentile Queue Length [veh/ln]	12.93	15.05	21.29	6.41	19.46	5.69	6.54	11.17	8.40	17.31	12.07	4.72
95th-Percentile Queue Length [ft/ln]	323.36	376.26	532.24	160.34	486.50	142.15	163.48	279.26	210.09	432.87	301.69	117.90

Movement, Approach, & Intersection Results												
d_M, Delay for Movement [s/veh]	70.25	32.60	42.14	64.86	46.35	34.77	63.80	43.34	42.93	72.33	31.94	27.96
Movement LOS	E	C	D	E	D	C	E	D	D	E	C	C
d_A, Approach Delay [s/veh]	41.24			46.72			46.12			43.37		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	43.95											
Intersection LOS	D											
Intersection V/C	0.811											

Emissions												
Vehicle Miles Traveled [mph]	11.30	40.63	25.59	6.84	57.82	8.57	9.39	42.59	14.85	23.65	47.67	9.12
Stops [stops/h]	246.89	593.54	448.46	106.89	806.77	94.77	108.98	412.28	144.23	351.13	453.52	78.60
Fuel consumption [US gal/h]	5.07	10.37	7.94	2.28	15.36	1.82	2.42	8.43	2.93	7.61	8.65	1.51
CO [g/h]	354.68	724.54	554.95	159.69	1073.85	127.54	168.93	589.36	204.69	531.83	604.46	105.50
NOx [g/h]	69.01	140.97	107.97	31.07	208.93	24.81	32.87	114.67	39.83	103.47	117.61	20.53
VOC [g/h]	82.20	167.92	128.62	37.01	248.87	29.56	39.15	136.59	47.44	123.26	140.09	24.45

Other Modes												
g_Walk,mi, Effective Walk Time [s]	11.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			0.00			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersectio	2.947			0.000			2.757			2.825		
Crosswalk LOS	C			F			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	600			600			617			100		
d_b, Bicycle Delay [s]	29.40			29.40			28.70			54.15		
I_b,int, Bicycle LOS Score for Intersection	2.844			2.504			2.206			2.455		
Bicycle LOS	C			B			B			B		

Sequence																
Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Sierra Highway (N/S) at Avenue L-12 (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	23.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.098

Intersection Setup

Name	Sierra Highway		Sierra Highway		Avenue L-12	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sierra Highway		Sierra Highway		Avenue L-12	
Base Volume Input [veh/h]	14	933	1142	20	21	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	933	1142	20	21	30
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	241	296	5	5	8
Total Analysis Volume [veh/h]	14	966	1182	21	22	31
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.01	0.00	0.10	0.07
d_M, Delay for Movement [s/veh]	11.41	0.00	0.00	0.00	23.40	15.43
Movement LOS	B	A	A	A	C	C
95th-Percentile Queue Length [veh/ln]	0.07	0.00	0.00	0.00	0.60	0.60
95th-Percentile Queue Length [ft/ln]	1.87	0.00	0.00	0.00	14.91	14.91
d_A, Approach Delay [s/veh]	0.16		0.00		18.74	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.52					
Intersection LOS	C					



Appendix D

Level of Service Analysis Worksheets for Existing Plus Project Conditions

Intersection Level Of Service Report
Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	275.2
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.431

Intersection Setup

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				↵↵			↵↵			↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	0	0	0	223	0	66	0	545	171	0	452	216
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	223	0	66	0	545	171	0	452	216
Peak Hour Factor	0.9500	0.9500	0.9500	0.9230	0.9500	0.9230	0.9500	0.9230	0.9230	0.9500	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	60	0	18	0	148	46	0	122	59
Total Analysis Volume [veh/h]	0	0	0	242	0	72	0	590	185	0	490	234
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance		No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	1.43	0.00	0.12	0.00	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	275.25	0.00	12.11	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS				F		B		A	A		A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	15.11	0.00	0.42	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	377.85	0.00	10.60	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			214.91			0.00			0.00		
Approach LOS	A			F			A			A		
d_I, Intersection Delay [s/veh]	37.22											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	182.3
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.066

Intersection Setup

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	105	0	303	0	0	0	0	714	76	0	574	157
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	0	303	0	0	0	0	714	76	0	574	157
Peak Hour Factor	0.9320	0.9500	0.9320	0.9500	0.9500	0.9500	0.9500	0.9320	0.9320	0.9500	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	0	81	0	0	0	0	192	20	0	154	42
Total Analysis Volume [veh/h]	113	0	325	0	0	0	0	766	82	0	616	168
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No			
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.07	0.00	0.81	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	182.26	0.00	42.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	F		E					A	A		A	A
95th-Percentile Queue Length [veh/ln]	6.96	0.00	7.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	174.02	0.00	180.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	78.31			0.00			0.00			0.00		
Approach LOS	F			A			A			A		
d_I, Intersection Delay [s/veh]	16.57											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: 10th Street (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	36.8
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.571

Intersection Setup

Name	10th Street			10th Street			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	265.00	100.00	100.00	280.00	100.00	200.00	135.00	100.00	140.00	220.00	100.00	220.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	10th Street			10th Street			Avenue M			Avenue M		
Base Volume Input [veh/h]	71	432	107	92	383	83	184	651	107	116	537	159
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	71	432	107	92	383	83	184	651	107	116	537	159
Peak Hour Factor	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	118	29	25	104	23	50	177	29	32	146	43
Total Analysis Volume [veh/h]	77	470	116	100	417	90	200	708	116	126	584	173
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing (Basic)

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	29	0	0	25	0	0	31	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	14	40	0	14	40	0	24	42	0	24	42	0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	R
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	22	22	8	24	24	15	63	63	10	58	58
g / C, Green / Cycle	0.06	0.19	0.19	0.07	0.20	0.20	0.13	0.52	0.52	0.09	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.04	0.16	0.16	0.06	0.12	0.06	0.11	0.20	0.07	0.07	0.16	0.11
s, saturation flow rate [veh/h]	1781	1870	1744	1781	3560	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	99	347	324	124	713	318	229	1866	833	155	1718	767
d1, Uniform Delay [s]	55.96	47.44	47.51	55.01	43.47	40.68	51.33	16.96	14.66	53.82	19.22	18.03
k, delay calibration	0.11	0.11	0.11	0.16	0.11	0.11	0.20	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.49	6.71	7.46	15.83	0.77	0.48	16.54	0.59	0.35	9.80	0.54	0.68
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.87	0.88	0.80	0.59	0.28	0.87	0.38	0.14	0.81	0.34	0.23
d, Delay for Lane Group [s/veh]	68.45	54.15	54.97	70.83	44.24	41.17	67.87	17.55	15.01	63.63	19.75	18.71
Lane Group LOS	E	D	D	E	D	D	E	B	B	E	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.55	8.98	8.51	3.43	5.48	2.22	6.69	5.37	1.56	4.01	4.74	2.71
50th-Percentile Queue Length [ft/ln]	63.82	224.61	212.79	85.75	136.94	55.62	167.29	134.33	38.98	100.13	118.56	67.74
95th-Percentile Queue Length [veh/ln]	4.60	13.90	13.30	6.17	9.32	4.00	10.93	9.17	2.81	7.21	8.31	4.88
95th-Percentile Queue Length [ft/ln]	114.88	347.50	332.41	154.34	232.90	100.11	273.35	229.36	70.17	180.23	207.85	121.93

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	68.45	54.44	54.97	70.83	44.24	41.17	67.87	17.55	15.01	63.63	19.75	18.71
Movement LOS	E	D	D	E	D	D	E	B	B	E	B	B
d_A, Approach Delay [s/veh]	56.16			48.16			27.09			25.81		
Approach LOS	E			D			C			C		
d_I, Intersection Delay [s/veh]	36.83											
Intersection LOS	D											
Intersection V/C	0.571											

Emissions

Vehicle Miles Traveled [mph]	1.82	7.14	6.70	2.36	9.85	2.13	4.75	16.80	2.75	2.99	13.86	4.10
Stops [stops/h]	76.59	269.53	255.35	102.90	328.66	66.74	200.75	322.39	46.78	120.16	284.54	81.29
Fuel consumption [US gal/h]	2.56	8.57	8.14	3.10	9.13	1.85	6.65	9.08	1.32	3.96	8.10	2.31
CO [g/h]	178.65	599.39	569.10	216.68	638.09	129.29	464.80	634.58	91.93	277.02	565.94	161.18
NOx [g/h]	34.76	116.62	110.73	42.16	124.15	25.15	90.43	123.47	17.89	53.90	110.11	31.36
VOC [g/h]	41.40	138.91	131.89	50.22	147.88	29.96	107.72	147.07	21.31	64.20	131.16	37.35

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersectio	2.786			2.859			2.995			3.005		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	600			600			633			633		
d_b, Bicycle Delay [s]	29.40			29.40			28.02			28.02		
I_b,int, Bicycle LOS Score for Intersection	2.107			2.060			2.404			2.288		
Bicycle LOS	B			B			B			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Main Driveway (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	7.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.420

Intersection Setup

Name	Main Driveway		Avenue M		Avenue M	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Main Driveway		Avenue M		Avenue M	
Base Volume Input [veh/h]	8	25	124	553	957	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	25	124	553	957	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	7	33	146	252	0
Total Analysis Volume [veh/h]	8	26	131	582	1007	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal Group	7	0	5	2	6	0
Auxiliary Signal Groups						
Maximum Green [s]	29	0	6	83	83	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Walk [s]	7	0	0	7	7	0
Pedestrian Clearance [s]	21	0	0	10	7	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	32	0	40	58	18	0
Lead / Lag	Lead	-	Lead	-	-	-
Minimum Green [s]	6	0	6	6	6	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	L	C	C	C
C, Calculated Cycle Length [s]	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	8	79	66	66
g / C, Green / Cycle	0.04	0.09	0.87	0.73	0.73
(v / s)_i Volume / Saturation Flow Rate	0.02	0.07	0.16	0.27	0.27
s, saturation flow rate [veh/h]	1631	1781	3560	1870	1870
c, Capacity [veh/h]	64	168	3104	1371	1371
d1, Uniform Delay [s]	42.42	39.86	0.88	4.38	4.38
k, delay calibration	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.68	7.68	0.13	0.76	0.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.53	0.78	0.19	0.37	0.37
d, Delay for Lane Group [s/veh]	49.10	47.54	1.02	5.14	5.14
Lane Group LOS	D	D	A	A	A
Critical Lane Group	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.85	3.15	0.16	2.88	2.88
50th-Percentile Queue Length [ft/ln]	21.33	78.83	4.10	72.04	72.04
95th-Percentile Queue Length [veh/ln]	1.54	5.68	0.30	5.19	5.19
95th-Percentile Queue Length [ft/ln]	38.39	141.90	7.38	129.67	129.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.10	49.10	47.54	1.02	5.14	5.14
Movement LOS	D	D	D	A	A	A
d_A, Approach Delay [s/veh]	49.10		9.56		5.14	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	7.79					
Intersection LOS	A					
Intersection V/C	0.420					

Emissions

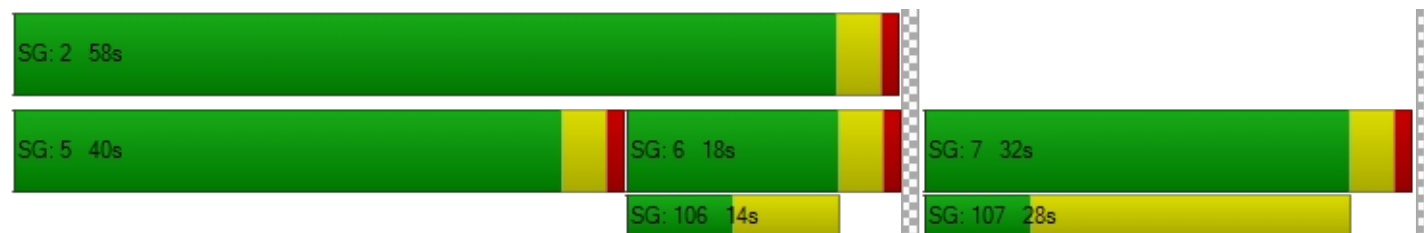
Vehicle Miles Traveled [mph]	0.80	3.11	13.81	28.24	28.24
Stops [stops/h]	34.12	126.13	13.12	115.27	115.27
Fuel consumption [US gal/h]	0.56	2.09	0.76	2.33	2.33
CO [g/h]	39.23	146.23	53.22	162.61	162.61
NOx [g/h]	7.63	28.45	10.35	31.64	31.64
VOC [g/h]	9.09	33.89	12.33	37.69	37.69

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersectio	1.795	2.640	2.520
Crosswalk LOS	A	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	622	1200	311
d_b, Bicycle Delay [s]	21.36	7.20	32.09
I_b,int, Bicycle LOS Score for Intersection	1.616	2.148	2.390
Bicycle LOS	A	B	B

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Sierra Highway (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	45.0
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.773

Intersection Setup

Name	Sierra Highway			Sierra Highway			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	410.00	100.00	405.00	175.00	100.00	160.00	185.00	100.00	185.00	200.00	100.00	210.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Sierra Highway			Sierra Highway			Avenue M			Avenue M		
Base Volume Input [veh/h]	213	711	502	89	576	117	61	439	86	283	617	149
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	213	711	502	89	576	117	61	439	86	283	617	149
Peak Hour Factor	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	184	130	23	149	30	16	113	22	73	160	39
Total Analysis Volume [veh/h]	220	735	519	92	596	121	63	454	89	293	638	154
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing (Basic)

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	29	0	0	26	0	0	30	0	0	0	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	18	45	0	10	37	0	40	41	0	24	25	0
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	43	43	8	37	37	6	33	33	20	47	47
g / C, Green / Cycle	0.12	0.36	0.36	0.07	0.31	0.31	0.05	0.28	0.28	0.17	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.12	0.21	0.33	0.05	0.17	0.08	0.04	0.13	0.06	0.16	0.18	0.10
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	208	1278	570	117	1096	489	84	981	438	297	1407	628
d1, Uniform Delay [s]	53.00	31.08	36.63	55.23	34.52	31.11	56.50	36.10	33.37	49.87	26.74	24.30
k, delay calibration	0.44	0.11	0.15	0.11	0.11	0.11	0.11	0.50	0.50	0.42	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	75.10	0.41	7.82	10.96	0.42	0.26	12.76	1.57	1.05	44.73	1.06	0.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.06	0.58	0.91	0.79	0.54	0.25	0.75	0.46	0.20	0.99	0.45	0.25
d, Delay for Lane Group [s/veh]	128.10	31.49	44.45	66.19	34.94	31.37	69.26	37.67	34.41	94.61	27.80	25.23
Lane Group LOS	F	C	D	E	C	C	E	D	C	F	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	10.58	8.63	15.49	3.10	7.29	2.68	2.18	5.75	2.13	12.42	6.92	3.11
50th-Percentile Queue Length [ft/ln]	264.55	215.87	387.18	77.44	182.22	66.98	54.59	143.69	53.31	310.46	172.91	77.65
95th-Percentile Queue Length [veh/ln]	16.31	13.45	21.94	5.58	11.72	4.82	3.93	9.68	3.84	18.20	11.23	5.59
95th-Percentile Queue Length [ft/ln]	407.69	336.35	548.53	139.39	292.90	120.56	98.27	241.99	95.96	454.94	280.73	139.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	128.10	31.49	44.45	66.19	34.94	31.37	69.26	37.67	34.41	94.61	27.80	25.23
Movement LOS	F	C	D	E	C	C	E	D	C	F	C	C
d_A, Approach Delay [s/veh]	50.48			37.96			40.48			45.47		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	45.04											
Intersection LOS	D											
Intersection V/C	0.773											

Emissions

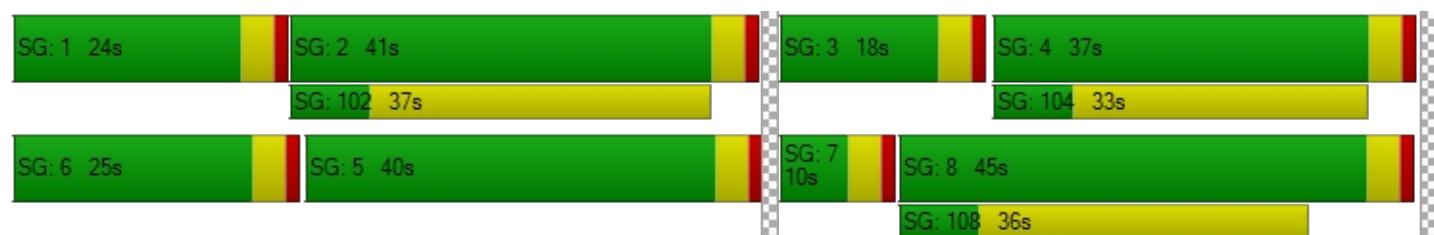
Vehicle Miles Traveled [mph]	10.96	36.60	25.84	5.88	38.12	7.74	5.38	38.75	7.60	21.72	47.30	11.42
Stops [stops/h]	317.46	518.09	464.61	92.93	437.32	80.37	65.51	344.87	63.97	372.55	414.97	93.18
Fuel consumption [US gal/h]	7.94	9.08	8.33	1.99	8.22	1.54	1.47	6.98	1.29	8.59	7.85	1.78
CO [g/h]	554.94	634.66	581.93	139.43	574.81	107.30	102.83	487.96	90.13	600.62	548.60	124.10
NOx [g/h]	107.97	123.48	113.22	27.13	111.84	20.88	20.01	94.94	17.54	116.86	106.74	24.15
VOC [g/h]	128.61	147.09	134.87	32.31	133.22	24.87	23.83	113.09	20.89	139.20	127.14	28.76

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	0.00	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersectio	2.865	0.000	2.724	2.816
Crosswalk LOS	C	F	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	683	550	617	350
d_b, Bicycle Delay [s]	26.00	31.54	28.70	40.84
I_b,int, Bicycle LOS Score for Intersection	2.776	2.227	2.060	2.455
Bicycle LOS	C	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Sierra Highway (N/S) at Avenue L-12 (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	19.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.048

Intersection Setup

Name	Sierra Highway		Sierra Highway		Avenue L-12	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sierra Highway		Sierra Highway		Avenue L-12	
Base Volume Input [veh/h]	16	836	848	26	11	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	836	848	26	11	17
Peak Hour Factor	0.8550	0.8550	0.8550	0.8550	0.8550	0.8550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	244	248	8	3	5
Total Analysis Volume [veh/h]	19	978	992	30	13	20
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.00	0.05	0.04
d_M, Delay for Movement [s/veh]	10.49	0.00	0.00	0.00	19.19	13.00
Movement LOS	B	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.09	0.00	0.00	0.00	0.29	0.29
95th-Percentile Queue Length [ft/ln]	2.17	0.00	0.00	0.00	7.13	7.13
d_A, Approach Delay [s/veh]	0.20		0.00		15.44	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.35					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	192.4
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.159

Intersection Setup

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				↔			↔			↔		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	0	0	0	147	0	89	0	358	173	0	828	523
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	147	0	89	0	358	173	0	828	523
Peak Hour Factor	0.9500	0.9500	0.9500	0.9580	0.9500	0.9580	0.9500	0.9580	0.9580	0.9500	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	38	0	23	0	93	45	0	216	136
Total Analysis Volume [veh/h]	0	0	0	153	0	93	0	374	181	0	864	546
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance		No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	1.16	0.00	0.26	0.00	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	192.42	0.00	18.77	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS				F		C		A	A		A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	9.00	0.00	1.04	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	224.91	0.00	25.93	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			126.77			0.00			0.00		
Approach LOS	A			F			A			A		
d_I, Intersection Delay [s/veh]	14.10											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	676.2
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.997

Intersection Setup

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	78	0	356	0	0	0	0	471	31	0	1326	326
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	0	356	0	0	0	0	471	31	0	1326	326
Peak Hour Factor	0.9560	0.9500	0.9560	0.9500	0.9500	0.9500	0.9500	0.9560	0.9560	0.9500	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	0	93	0	0	0	0	123	8	0	347	85
Total Analysis Volume [veh/h]	82	0	372	0	0	0	0	493	32	0	1387	341
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings				
Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No			
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results												
V/C, Movement V/C Ratio	2.00	0.00	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	676.16	0.00	21.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	F		C					A	A		A	A
95th-Percentile Queue Length [veh/ln]	8.67	0.00	4.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	216.63	0.00	115.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	140.09			0.00			0.00			0.00		
Approach LOS	F			A			A			A		
d_I, Intersection Delay [s/veh]	23.50											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: 10th Street (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	48.4
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.934

Intersection Setup

Name	10th Street			10th Street			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	265.00	100.00	100.00	280.00	100.00	200.00	135.00	100.00	140.00	220.00	100.00	220.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	10th Street			10th Street			Avenue M			Avenue M		
Base Volume Input [veh/h]	128	600	92	119	890	516	172	469	119	209	980	142
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	128	600	92	119	890	516	172	469	119	209	980	142
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	158	24	31	234	136	45	124	31	55	258	37
Total Analysis Volume [veh/h]	135	632	97	125	938	544	181	494	125	220	1033	150
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing (Basic)

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	29	0	0	25	0	0	31	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	13	41	0	20	48	0	17	36	0	23	42	0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lag	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	R
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	44	44	10	43	43	13	33	33	17	37	37
g / C, Green / Cycle	0.09	0.37	0.37	0.09	0.36	0.36	0.11	0.28	0.28	0.14	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.08	0.20	0.20	0.07	0.26	0.34	0.10	0.14	0.08	0.12	0.29	0.09
s, saturation flow rate [veh/h]	1781	1870	1784	1781	3560	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	159	682	650	154	1287	575	193	985	440	248	1095	489
d1, Uniform Delay [s]	53.84	30.26	30.27	53.88	33.21	37.19	53.10	36.45	34.07	50.72	40.53	31.77
k, delay calibration	0.25	0.14	0.14	0.11	0.11	0.41	0.35	0.50	0.50	0.27	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	23.88	0.87	0.92	9.89	0.81	23.05	40.65	1.82	1.62	21.61	16.60	1.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.55	0.55	0.81	0.73	0.95	0.94	0.50	0.28	0.89	0.94	0.31
d, Delay for Lane Group [s/veh]	77.72	31.14	31.19	63.77	34.02	60.24	93.75	38.28	35.69	72.33	57.13	33.39
Lane Group LOS	E	C	C	E	C	E	F	D	D	E	E	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.90	8.15	7.79	4.01	11.29	18.16	7.36	6.01	2.92	7.68	16.40	3.38
50th-Percentile Queue Length [ft/ln]	122.49	203.72	194.71	100.23	282.23	453.89	183.92	150.29	73.09	192.06	409.96	84.46
95th-Percentile Queue Length [veh/ln]	8.53	12.83	12.37	7.22	16.80	25.14	11.81	10.03	5.26	12.23	23.04	6.08
95th-Percentile Queue Length [ft/ln]	213.24	320.76	309.13	180.41	419.99	628.59	295.13	250.82	131.55	305.70	575.99	152.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	77.72	31.16	31.19	63.77	34.02	60.24	93.75	38.28	35.69	72.33	57.13	33.39
Movement LOS	E	C	C	E	C	E	F	D	D	E	E	C
d_A, Approach Delay [s/veh]	38.44			45.21			50.42			56.98		
Approach LOS	D			D			D			E		
d_I, Intersection Delay [s/veh]	48.38											
Intersection LOS	D											
Intersection V/C	0.934											

Emissions

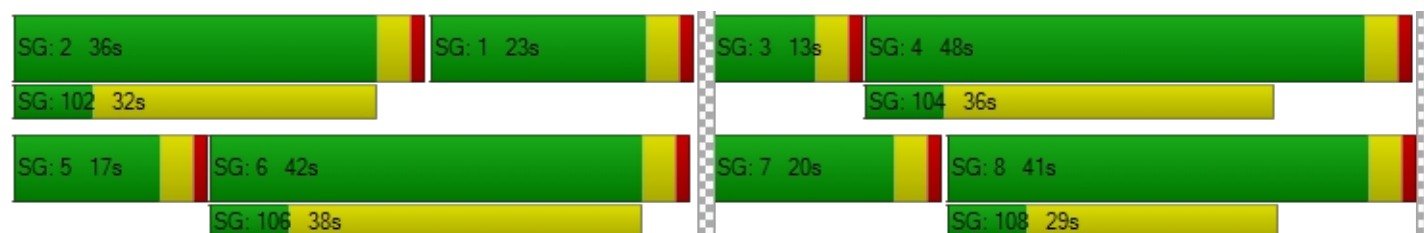
Vehicle Miles Traveled [mph]	3.19	8.81	8.41	2.95	22.15	12.85	4.29	11.72	2.97	5.22	24.51	3.56
Stops [stops/h]	146.99	244.46	233.66	120.28	677.36	544.67	220.71	360.70	87.70	230.47	983.91	101.35
Fuel consumption [US gal/h]	4.97	7.20	6.88	3.57	17.63	15.46	7.70	10.94	2.64	7.69	31.10	3.02
CO [g/h]	347.53	503.17	480.97	249.33	1232.54	1080.64	537.95	764.67	184.26	537.78	2174.24	211.16
NOx [g/h]	67.62	97.90	93.58	48.51	239.81	210.25	104.67	148.78	35.85	104.63	423.03	41.08
VOC [g/h]	80.54	116.62	111.47	57.79	285.65	250.45	124.67	177.22	42.71	124.63	503.90	48.94

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersectio	3.081			3.163			3.215			3.098		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	617			733			533			633		
d_b, Bicycle Delay [s]	28.70			24.07			32.27			28.02		
I_b,int, Bicycle LOS Score for Intersection	2.272			2.885			2.220			2.717		
Bicycle LOS	B			C			B			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Main Driveway (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	7.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.459

Intersection Setup

Name	Main Driveway		Avenue M		Avenue M	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Main Driveway		Avenue M		Avenue M	
Base Volume Input [veh/h]	26	76	60	710	1056	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	76	60	710	1056	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	20	16	187	278	0
Total Analysis Volume [veh/h]	27	80	63	747	1112	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal Group	7	0	5	2	6	0
Auxiliary Signal Groups						
Maximum Green [s]	48	0	6	64	64	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Walk [s]	7	0	0	7	7	0
Pedestrian Clearance [s]	21	0	0	10	7	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	47	0	10	43	33	0
Lead / Lag	Lead	-	Lead	-	-	-
Minimum Green [s]	6	0	6	6	6	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	L	C	C	C
C, Calculated Cycle Length [s]	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	5	74	66	66
g / C, Green / Cycle	0.08	0.05	0.83	0.73	0.73
(v / s)_i Volume / Saturation Flow Rate	0.07	0.04	0.21	0.30	0.30
s, saturation flow rate [veh/h]	1634	1781	3560	1870	1870
c, Capacity [veh/h]	139	94	2941	1362	1362
d1, Uniform Delay [s]	40.31	41.84	1.72	4.72	4.72
k, delay calibration	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.62	7.87	0.21	0.91	0.91
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.67	0.25	0.41	0.41
d, Delay for Lane Group [s/veh]	48.93	49.71	1.93	5.63	5.63
Lane Group LOS	D	D	A	A	A
Critical Lane Group	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.62	1.56	0.77	3.41	3.41
50th-Percentile Queue Length [ft/ln]	65.61	39.11	19.14	85.22	85.22
95th-Percentile Queue Length [veh/ln]	4.72	2.82	1.38	6.14	6.14
95th-Percentile Queue Length [ft/ln]	118.11	70.39	34.45	153.40	153.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.93	48.93	49.71	1.93	5.63	5.63
Movement LOS	D	D	D	A	A	A
d_A, Approach Delay [s/veh]	48.93		5.65		5.63	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	7.92					
Intersection LOS	A					
Intersection V/C	0.459					

Emissions

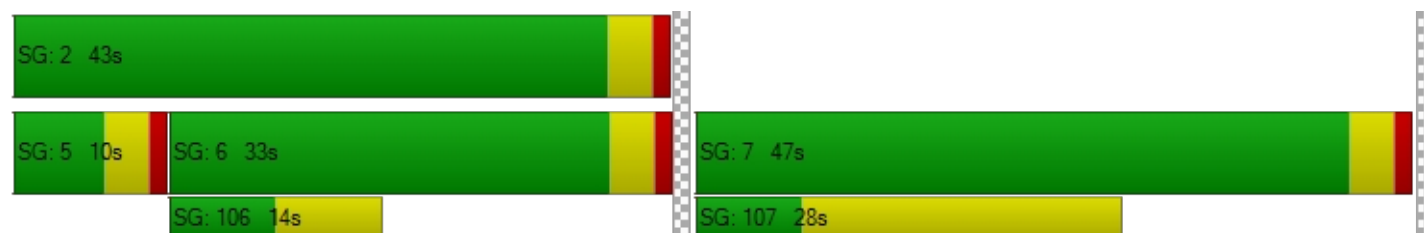
Vehicle Miles Traveled [mph]	2.53	1.49	17.72	13.19	13.19
Stops [stops/h]	104.98	62.57	61.25	136.35	136.35
Fuel consumption [US gal/h]	1.75	1.04	1.36	1.93	1.93
CO [g/h]	122.28	73.01	95.19	135.12	135.12
NOx [g/h]	23.79	14.21	18.52	26.29	26.29
VOC [g/h]	28.34	16.92	22.06	31.31	31.31

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersectio	1.797	2.690	2.590
Crosswalk LOS	A	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	956	867	644
d_b, Bicycle Delay [s]	12.27	14.45	20.67
I_b,int, Bicycle LOS Score for Intersection	1.736	2.228	2.477
Bicycle LOS	A	B	B

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Sierra Highway (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	44.3
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.817

Intersection Setup

Name	Sierra Highway			Sierra Highway			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	410.00	100.00	405.00	175.00	100.00	160.00	185.00	100.00	185.00	200.00	100.00	210.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Sierra Highway			Sierra Highway			Avenue M			Avenue M		
Base Volume Input [veh/h]	229	791	498	104	878	130	107	491	188	309	626	119
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	229	791	498	104	878	130	107	491	188	309	626	119
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	204	128	27	227	34	28	127	49	80	162	31
Total Analysis Volume [veh/h]	236	816	514	107	906	134	110	507	194	319	646	123
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing (Basic)

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	29	0	0	26	0	0	30	0	0	0	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	10	40	0	10	40	0	60	41	0	29	10	0
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	43	43	9	33	33	9	29	29	23	43	43
g / C, Green / Cycle	0.16	0.36	0.36	0.08	0.28	0.28	0.08	0.24	0.24	0.19	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.13	0.23	0.32	0.06	0.25	0.08	0.06	0.14	0.12	0.18	0.18	0.08
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	280	1275	569	134	983	439	139	852	380	345	1263	564
d1, Uniform Delay [s]	49.10	32.06	36.52	54.58	42.17	34.34	54.33	40.50	39.56	47.49	30.51	27.07
k, delay calibration	0.50	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.34	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	25.22	0.54	5.62	10.28	4.16	0.39	9.48	3.06	4.83	24.84	1.48	0.89
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.84	0.64	0.90	0.80	0.92	0.31	0.79	0.60	0.51	0.92	0.51	0.22
d, Delay for Lane Group [s/veh]	74.32	32.60	42.14	64.86	46.34	34.73	63.80	43.56	44.39	72.33	31.99	27.96
Lane Group LOS	E	C	D	E	D	C	E	D	D	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.82	9.89	14.95	3.56	13.48	3.16	3.63	7.01	5.48	11.70	7.60	2.62
50th-Percentile Queue Length [ft/ln]	220.47	247.31	373.72	89.08	336.95	78.91	90.82	175.17	136.93	292.61	190.07	65.50
95th-Percentile Queue Length [veh/ln]	13.69	15.05	21.29	6.41	19.50	5.68	6.54	11.35	9.32	17.31	12.12	4.72
95th-Percentile Queue Length [ft/ln]	342.23	376.26	532.24	160.34	487.47	142.04	163.48	283.70	232.89	432.87	303.12	117.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	74.32	32.60	42.14	64.86	46.34	34.73	63.80	43.56	44.39	72.33	31.99	27.96
Movement LOS	E	C	D	E	D	C	E	D	D	E	C	C
d_A, Approach Delay [s/veh]	42.02			46.71			46.50			43.36		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	44.29											
Intersection LOS	D											
Intersection V/C	0.817											

Emissions

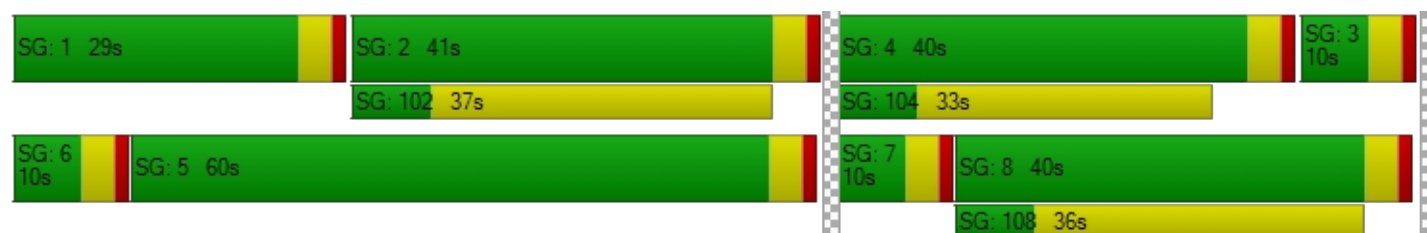
Vehicle Miles Traveled [mph]	11.75	40.63	25.59	6.84	57.95	8.57	9.39	43.28	16.56	23.65	47.89	9.12
Stops [stops/h]	264.57	593.54	448.46	106.89	808.68	94.70	108.98	420.40	164.32	351.13	456.17	78.60
Fuel consumption [US gal/h]	5.51	10.37	7.94	2.28	15.40	1.82	2.42	8.60	3.34	7.61	8.70	1.51
CO [g/h]	385.45	724.54	554.95	159.69	1076.19	127.42	168.93	600.98	233.59	531.83	607.90	105.50
NOx [g/h]	74.99	140.97	107.97	31.07	209.39	24.79	32.87	116.93	45.45	103.47	118.28	20.53
VOC [g/h]	89.33	167.92	128.62	37.01	249.42	29.53	39.15	139.28	54.14	123.26	140.89	24.45

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			0.00			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersectio	2.952			0.000			2.764			2.827		
Crosswalk LOS	C			F			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	600			600			617			100		
d_b, Bicycle Delay [s]	29.40			29.40			28.70			54.15		
I_b,int, Bicycle LOS Score for Intersection	2.852			2.506			2.229			2.457		
Bicycle LOS	C			B			B			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Sierra Highway (N/S) at Avenue L-12 (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	25.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.162

Intersection Setup

Name	Sierra Highway		Sierra Highway		Avenue L-12	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sierra Highway		Sierra Highway		Avenue L-12	
Base Volume Input [veh/h]	14	933	1142	29	35	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	933	1142	29	35	32
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	241	296	8	9	8
Total Analysis Volume [veh/h]	14	966	1182	30	36	33
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.01	0.00	0.16	0.07
d_M, Delay for Movement [s/veh]	11.46	0.00	0.00	0.00	24.97	16.97
Movement LOS	B	A	A	A	C	C
95th-Percentile Queue Length [veh/ln]	0.08	0.00	0.00	0.00	0.90	0.90
95th-Percentile Queue Length [ft/ln]	1.88	0.00	0.00	0.00	22.54	22.54
d_A, Approach Delay [s/veh]	0.16		0.00		21.15	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.72					
Intersection LOS	C					



Appendix E

Level of Service Analysis Worksheets for Existing Plus Project Conditions With Improvements

Intersection Level Of Service Report
Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)Control Type:
Analysis Method:
Analysis Period:Roundabout
HCM 7th Edition
15 minutesDelay (sec / veh):
Level Of Service:8.5
A**Intersection Setup**

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				⬆			⬆			⬆		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	0	0	0	223	0	66	0	545	171	0	452	216
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	223	0	66	0	545	171	0	452	216
Peak Hour Factor	0.9500	0.9500	0.9500	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	60	0	18	0	148	46	0	122	59
Total Analysis Volume [veh/h]	0	0	0	242	0	72	0	590	185	0	490	234
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	849			500			247			0		
Exiting Flow Rate [veh/h]	189			239			573			849		
Demand Flow Rate [veh/h]	0	0	0	223	0	66	0	545	171	0	452	216
Adjusted Demand Flow Rate [veh/h]	0	0	0	242	0	72	0	590	185	0	490	234

Lanes

Override Calculated Critical Headway		No	No	No	No
User-Defined Critical Headway [s]		4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time		No	No	No	No
User-Defined Follow-Up Time [s]		3.00	3.00	3.00	3.00
A (intercept)		1380.00	1420.00	1420.00	1380.00
B (coefficient)		0.00102	0.00091	0.00091	0.00102
HV Adjustment Factor		0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]		321	602	189	739
Capacity of Entry and Bypass Lanes [veh/h]		829	1135	1135	1380
Pedestrian Impedance		1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]		813	1113	1113	1353
X, volume / capacity		0.39	0.53	0.17	0.54

Movement, Approach, & Intersection Results

Lane LOS		A	A	A	A
95th-Percentile Queue Length [veh]		1.84	3.23	0.60	3.31
95th-Percentile Queue Length [ft]		45.88	80.76	14.89	82.84
Approach Delay [s/veh]	0.00	9.12	8.35		8.36
Approach LOS	A	A	A		A
Intersection Delay [s/veh]	8.49				
Intersection LOS	A				

Intersection Level Of Service Report
Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)Control Type:
Analysis Method:
Analysis Period:Roundabout
HCM 7th Edition
15 minutesDelay (sec / veh):
Level Of Service:10.0
A**Intersection Setup**

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	105	0	303	0	0	0	0	714	76	0	574	157
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	0	303	0	0	0	0	714	76	0	574	157
Peak Hour Factor	0.9320	0.9320	0.9320	0.9500	0.9500	0.9500	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	0	81	0	0	0	0	192	20	0	154	42
Total Analysis Volume [veh/h]	113	0	325	0	0	0	0	766	82	0	616	168
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	781			744			0			115		
Exiting Flow Rate [veh/h]	84			171			744			1113		
Demand Flow Rate [veh/h]	105	0	303	0	0	0	0	714	76	0	574	157
Adjusted Demand Flow Rate [veh/h]	113	0	325	0	0	0	0	766	82	0	616	168

Lanes

Override Calculated Critical Headway	No	No		No	No	No
User-Defined Critical Headway [s]	4.00	4.00		4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No		No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00		3.00	3.00	3.00
A (intercept)	1420.00	1420.00		1420.00	1420.00	1380.00
B (coefficient)	0.00091	0.00091		0.00091	0.00091	0.00102
HV Adjustment Factor	0.98	0.98		0.98	0.98	0.98
Entry Flow Rate [veh/h]	116	332		782	84	800
Capacity of Entry and Bypass Lanes [veh/h]	698	698		1420	1420	1227
Pedestrian Impedance	1.00	1.00		1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	684	684		1393	1393	1203
X, volume / capacity	0.17	0.48		0.55	0.06	0.65

Movement, Approach, & Intersection Results

Lane LOS	A	B		A	A	B
95th-Percentile Queue Length [veh]	0.59	2.57		3.51	0.19	5.12
95th-Percentile Queue Length [ft]	14.73	64.26		87.81	4.69	127.88
Approach Delay [s/veh]	10.98		0.00	7.93		11.67
Approach LOS	B		A	A		B
Intersection Delay [s/veh]	9.99					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)Control Type:
Analysis Method:
Analysis Period:Roundabout
HCM 7th Edition
15 minutesDelay (sec / veh):
Level Of Service:37.2
E**Intersection Setup**

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				⬆			⬆			⬆		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	0	0	0	147	0	89	0	358	173	0	828	523
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	147	0	89	0	358	173	0	828	523
Peak Hour Factor	0.9500	0.9500	0.9500	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	38	0	23	0	93	45	0	216	136
Total Analysis Volume [veh/h]	0	0	0	153	0	93	0	374	181	0	864	546
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	538			881			156			0		
Exiting Flow Rate [veh/h]	185			557			976			538		
Demand Flow Rate [veh/h]	0	0	0	147	0	89	0	358	173	0	828	523
Adjusted Demand Flow Rate [veh/h]	0	0	0	153	0	93	0	374	181	0	864	546

Lanes

Override Calculated Critical Headway		No	No	No	No
User-Defined Critical Headway [s]		4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time		No	No	No	No
User-Defined Follow-Up Time [s]		3.00	3.00	3.00	3.00
A (intercept)		1380.00	1420.00	1420.00	1380.00
B (coefficient)		0.00102	0.00091	0.00091	0.00102
HV Adjustment Factor		0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]		251	382	185	1439
Capacity of Entry and Bypass Lanes [veh/h]		562	1233	1233	1380
Pedestrian Impedance		1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]		551	1208	1208	1353
X, volume / capacity		0.45	0.31	0.15	1.04

Movement, Approach, & Intersection Results

Lane LOS		B	A	A	F
95th-Percentile Queue Length [veh]		2.29	1.33	0.53	26.84
95th-Percentile Queue Length [ft]		57.13	33.22	13.17	670.89
Approach Delay [s/veh]	0.00	13.94	5.34		53.73
Approach LOS	A	B	A		F
Intersection Delay [s/veh]	37.15				
Intersection LOS	E				

Intersection Level Of Service Report
Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)Control Type:
Analysis Method:
Analysis Period:Roundabout
HCM 7th Edition
15 minutesDelay (sec / veh):
Level Of Service:126.1
F**Intersection Setup**

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	78	0	356	0	0	0	0	471	31	0	1326	326
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	0	356	0	0	0	0	471	31	0	1326	326
Peak Hour Factor	0.9560	0.9560	0.9560	0.9500	0.9500	0.9500	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	0	93	0	0	0	0	123	8	0	347	85
Total Analysis Volume [veh/h]	82	0	372	0	0	0	0	493	32	0	1387	341
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	503			1498			0			84		
Exiting Flow Rate [veh/h]	33			348			1498			882		
Demand Flow Rate [veh/h]	78	0	356	0	0	0	0	471	31	0	1326	326
Adjusted Demand Flow Rate [veh/h]	82	0	372	0	0	0	0	493	32	0	1387	341

Lanes

Override Calculated Critical Headway	No	No		No	No	No
User-Defined Critical Headway [s]	4.00	4.00		4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No		No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00		3.00	3.00	3.00
A (intercept)	1420.00	1420.00		1420.00	1420.00	1380.00
B (coefficient)	0.00091	0.00091		0.00091	0.00091	0.00102
HV Adjustment Factor	0.98	0.98		0.98	0.98	0.98
Entry Flow Rate [veh/h]	84	380		503	33	1763
Capacity of Entry and Bypass Lanes [veh/h]	899	899		1420	1420	1268
Pedestrian Impedance	1.00	1.00		1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	881	881		1393	1393	1243
X, volume / capacity	0.09	0.42		0.35	0.02	1.39

Movement, Approach, & Intersection Results

Lane LOS	A	A		A	A	F
95th-Percentile Queue Length [veh]	0.31	2.12		1.62	0.07	69.97
95th-Percentile Queue Length [ft]	7.67	53.05		40.54	1.76	1749.32
Approach Delay [s/veh]	8.40		0.00	5.58		193.60
Approach LOS	A		A	A		F
Intersection Delay [s/veh]	126.07					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	10.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.396

Intersection Setup

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	0	0	0	223	0	66	0	545	171	0	452	216
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	223	0	66	0	545	171	0	452	216
Peak Hour Factor	0.9500	0.9500	0.9500	0.9230	0.9500	0.9230	0.9500	0.9230	0.9230	0.9500	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	60	0	18	0	148	46	0	122	59
Total Analysis Volume [veh/h]	0	0	0	242	0	72	0	590	185	0	490	234
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	0	0	7	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Maximum Green [s]	0	0	0	27	6	0	0	55	0	0	55	0
Amber [s]	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Walk [s]	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Clearance [s]	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delayed Vehicle Green [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
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	0.0	0.0	0.0	49.0	94.0	0.0	0.0	41.0	0.0	0.0	41.0	0.0
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	6	0	0	6	0	0	6	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	C	C	C
C, Calculated Cycle Length [s]		90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		14.7	14.7	67.3	67.3	67.3	67.3
g / C, Green / Cycle		0.16	0.16	0.75	0.75	0.75	0.75
(v / s)_i Volume / Saturation Flow Rate		0.14	0.05	0.21	0.22	0.19	0.22
s, saturation flow rate [veh/h]		1781	1589	1870	1725	1870	1679
c, Capacity [veh/h]		292	261	1397	1288	1397	1254
d1, Uniform Delay [s]		36.38	32.93	3.63	3.72	3.57	3.67
k, delay calibration		0.11	0.11	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		5.94	0.57	0.49	0.60	0.45	0.58
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.83	0.28	0.28	0.30	0.26	0.29
d, Delay for Lane Group [s/veh]		42.32	33.50	4.13	4.32	4.02	4.26
Lane Group LOS		D	C	A	A	A	A
Critical Lane Group		Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]		5.53	1.40	1.31	1.35	1.20	1.25
50th-Percentile Queue Length [ft/ln]		138.35	35.04	32.63	33.83	29.93	31.35
95th-Percentile Queue Length [veh/ln]		9.39	2.52	2.35	2.44	2.16	2.26
95th-Percentile Queue Length [ft/ln]		234.80	63.07	58.73	60.90	53.88	56.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	42.32	0.00	33.50	0.00	4.19	4.32	0.00	4.08	4.26
Movement LOS				D		C		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			40.30			4.22			4.14		
Approach LOS	A			D			A			A		
d_I, Intersection Delay [s/veh]	10.44											
Intersection LOS	B											
Intersection V/C	0.396											

Emissions

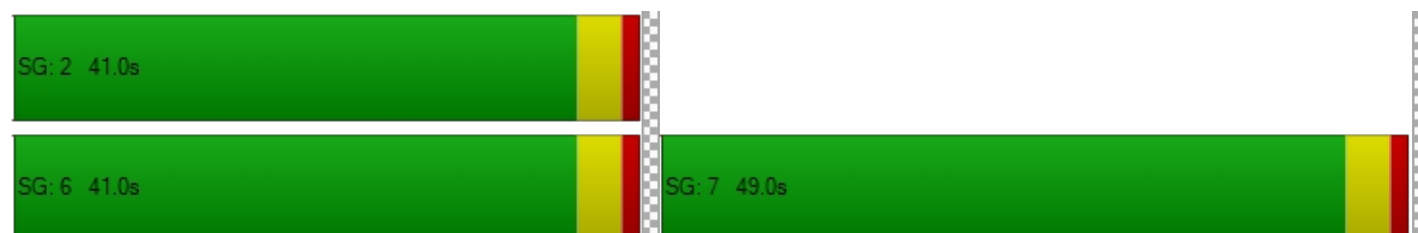
Vehicle Miles Traveled [mph]		18.82	5.60	46.58	46.58	22.48	22.48
Stops [stops/h]		221.36	56.06	52.21	54.13	47.89	50.16
Fuel consumption [US gal/h]		4.08	1.03	2.85	2.90	1.94	2.00
CO [g/h]		285.30	72.06	199.46	202.99	135.47	139.61
NOx [g/h]		55.51	14.02	38.81	39.49	26.36	27.16
VOC [g/h]		66.12	16.70	46.23	47.04	31.40	32.36

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1000	822	822
d_b, Bicycle Delay [s]	45.00	11.25	15.61	15.61
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.199	2.157
Bicycle LOS	D	A	B	B

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)**

Control Type:	Signalized	Delay (sec / veh):	13.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.482

Intersection Setup

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	105	0	303	0	0	0	0	714	76	0	731	157
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	0	303	0	0	0	0	714	76	0	731	157
Peak Hour Factor	0.9320	0.9500	0.9320	0.9500	0.9500	0.9500	0.9500	0.9320	0.9320	0.9500	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	0	81	0	0	0	0	192	20	0	196	42
Total Analysis Volume [veh/h]	113	0	325	0	0	0	0	766	82	0	784	168
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Maximum Green [s]	28	0	0	0	0	0	0	54	0	0	54	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Walk [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
Pedestrian Clearance [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
Delayed Vehicle Green [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
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	32.0	0.0	0.0	0.0	0.0	0.0	0.0	58.0	0.0	0.0	58.0	0.0
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	6	0	0	6	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		C	C	C
C, Calculated Cycle Length [s]	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	20.7	20.7		61.3	61.3	61.3
g / C, Green / Cycle	0.23	0.23		0.68	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.06	0.20		0.23	0.23	0.22
s, saturation flow rate [veh/h]	1781	1589		1870	1808	3560
c, Capacity [veh/h]	412	367		1272	1230	2421
d1, Uniform Delay [s]	28.41	33.45		5.96	6.02	5.91
k, delay calibration	0.11	0.20		0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.36	12.04		0.71	0.77	0.36
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.88		0.33	0.34	0.32
d, Delay for Lane Group [s/veh]	28.77	45.49		6.66	6.79	6.26
Lane Group LOS	C	D		A	A	A
Critical Lane Group	No	Yes		No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.02	7.91		2.42	2.45	2.11
50th-Percentile Queue Length [ft/ln]	50.38	197.86		60.41	61.28	52.66
95th-Percentile Queue Length [veh/ln]	3.63	12.53		4.35	4.41	3.79
95th-Percentile Queue Length [ft/ln]	90.69	313.20		108.74	110.31	94.78

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.77	0.00	45.49	0.00	0.00	0.00	0.00	6.72	6.79	0.00	6.26	0.00
Movement LOS	C		D					A	A		A	
d_A, Approach Delay [s/veh]	41.17			0.00			6.72			6.26		
Approach LOS	D			A			A			A		
d_I, Intersection Delay [s/veh]	13.84											
Intersection LOS	B											
Intersection V/C	0.482											

Emissions

Vehicle Miles Traveled [mph]	7.64	21.98		29.23	29.23	54.55
Stops [stops/h]	80.62	316.57		96.66	98.06	168.50
Fuel consumption [US gal/h]	1.42	5.66		3.35	3.38	5.95
CO [g/h]	99.36	395.77		234.03	236.58	416.18
NOx [g/h]	19.33	77.00		45.53	46.03	80.97
VOC [g/h]	23.03	91.72		54.24	54.83	96.45

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	622	0	1200	1200
d_b, Bicycle Delay [s]	21.36	45.00	7.20	7.20
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.259	2.206
Bicycle LOS	A	D	B	B

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	8.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.562

Intersection Setup

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	0	0	0	147	0	89	0	358	173	0	828	523
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	147	0	89	0	358	173	0	828	523
Peak Hour Factor	0.9500	0.9500	0.9500	0.9580	0.9500	0.9580	0.9500	0.9580	0.9580	0.9500	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	38	0	23	0	93	45	0	216	136
Total Analysis Volume [veh/h]	0	0	0	153	0	93	0	374	181	0	864	546
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Maximum Green [s]	0	0	0	14	0	0	0	68	0	0	68	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Walk [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
Pedestrian Clearance [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
Delayed Vehicle Green [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
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	0.0	0.0	0.0	23.0	0.0	0.0	0.0	72.0	0.0	0.0	72.0	0.0
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	0	6	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	C	C	C
C, Calculated Cycle Length [s]		95	95	95	95	95	95
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		10.4	10.4	76.6	76.6	76.6	76.6
g / C, Green / Cycle		0.11	0.11	0.81	0.81	0.81	0.81
(v / s)_i Volume / Saturation Flow Rate		0.09	0.06	0.15	0.17	0.38	0.43
s, saturation flow rate [veh/h]		1781	1589	1870	1677	1870	1645
c, Capacity [veh/h]		197	176	1506	1350	1506	1325
d1, Uniform Delay [s]		41.11	39.91	2.12	2.16	2.89	3.15
k, delay calibration		0.11	0.11	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		6.47	2.46	0.27	0.34	1.05	1.53
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.78	0.53	0.18	0.21	0.47	0.53
d, Delay for Lane Group [s/veh]		47.59	42.38	2.39	2.50	3.94	4.69
Lane Group LOS		D	D	A	A	A	A
Critical Lane Group		Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		3.80	2.16	0.47	0.49	1.68	1.91
50th-Percentile Queue Length [ft/ln]		95.11	53.91	11.73	12.32	41.88	47.83
95th-Percentile Queue Length [veh/ln]		6.85	3.88	0.84	0.89	3.02	3.44
95th-Percentile Queue Length [ft/ln]		171.19	97.03	21.11	22.17	75.38	86.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	47.59	0.00	42.38	0.00	2.42	2.50	0.00	4.08	4.69
Movement LOS				D		D		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			45.62			2.44			4.31		
Approach LOS	A			D			A			A		
d_I, Intersection Delay [s/veh]	8.44											
Intersection LOS	A											
Intersection V/C	0.562											

Emissions

Vehicle Miles Traveled [mph]		11.90	7.23	33.36	33.36	43.78	43.78
Stops [stops/h]		144.16	81.71	17.77	18.67	63.48	72.49
Fuel consumption [US gal/h]		2.77	1.55	1.58	1.60	3.21	3.48
CO [g/h]		193.46	108.42	110.49	112.11	224.30	243.50
NOx [g/h]		37.64	21.09	21.50	21.81	43.64	47.38
VOC [g/h]		44.84	25.13	25.61	25.98	51.98	56.43

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	400	1432	1432
d_b, Bicycle Delay [s]	47.50	30.40	3.84	3.84
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.017	2.723
Bicycle LOS	D	A	B	B

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)**

Control Type:	Signalized	Delay (sec / veh):	16.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.790

Intersection Setup

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	78	0	356	0	0	0	0	471	31	0	1652	326
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	0	356	0	0	0	0	471	31	0	1652	326
Peak Hour Factor	0.9560	0.9500	0.9560	0.9500	0.9500	0.9500	0.9500	0.9560	0.9560	0.9500	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	0	93	0	0	0	0	123	8	0	432	85
Total Analysis Volume [veh/h]	82	0	372	0	0	0	0	493	32	0	1728	341
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Maximum Green [s]	22	0	0	0	0	0	0	90	0	0	90	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Walk [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
Pedestrian Clearance [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
Delayed Vehicle Green [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
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	37.0	0.0	0.0	0.0	0.0	0.0	0.0	53.0	0.0	0.0	53.0	0.0
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	6	0	0	6	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		C	C	C
C, Calculated Cycle Length [s]	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	23.4	23.4		58.6	58.6	58.6
g / C, Green / Cycle	0.26	0.26		0.65	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.05	0.23		0.14	0.14	0.49
s, saturation flow rate [veh/h]	1781	1589		1870	1831	3560
c, Capacity [veh/h]	465	415		1215	1190	2314
d1, Uniform Delay [s]	25.75	32.07		6.42	6.44	10.72
k, delay calibration	0.11	0.19		0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.18	11.31		0.41	0.43	2.25
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.18	0.90		0.22	0.22	0.75
d, Delay for Lane Group [s/veh]	25.93	43.37		6.82	6.87	12.97
Lane Group LOS	C	D		A	A	B
Critical Lane Group	No	Yes		No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.37	8.89		1.57	1.58	8.62
50th-Percentile Queue Length [ft/ln]	34.13	222.16		39.35	39.58	215.51
95th-Percentile Queue Length [veh/ln]	2.46	13.78		2.83	2.85	13.44
95th-Percentile Queue Length [ft/ln]	61.43	344.38		70.84	71.24	335.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.93	0.00	43.37	0.00	0.00	0.00	0.00	6.84	6.87	0.00	12.97	0.00
Movement LOS	C		D					A	A		B	
d_A, Approach Delay [s/veh]	40.22			0.00			6.84			12.97		
Approach LOS	D			A			A			B		
d_I, Intersection Delay [s/veh]	16.35											
Intersection LOS	B											
Intersection V/C	0.790											

Emissions

Vehicle Miles Traveled [mph]	5.54	25.16		18.09	18.09	120.23
Stops [stops/h]	54.61	355.45		62.97	63.32	689.65
Fuel consumption [US gal/h]	0.96	6.28		2.14	2.15	21.39
CO [g/h]	67.28	439.15		149.54	150.16	1495.25
NOx [g/h]	13.09	85.44		29.10	29.22	290.92
VOC [g/h]	15.59	101.78		34.66	34.80	346.54

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	0	1089	1089
d_b, Bicycle Delay [s]	18.05	45.00	9.34	9.34
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	1.993	2.985
Bicycle LOS	A	D	A	C

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Appendix F
Excerpts from Avenue M Interchange Improvement
Project Final Initial Study with Mitigated Negative
Declaration, prepared by Caltrans, dated June 2018,



Avenue M Interchange Improvement Project

Final Initial Study with Mitigated Negative Declaration



Prepared by the State of California Department of Transportation

Los Angeles County, California
EA: 30580/ EFIS#: 0714000114
District 7 - LA - 14/138 (PM 64.68)



June 2018

2 Project Description

2.1 Alternatives

Five (5) build alternatives and one (1) no build alternative have been proposed for this project.

2.1.1 Alternative No.1: Roundabout

This Alternative proposes to construct roundabouts at the following three intersections:

- 20th Street West/Avenue M
- South bound ramps/Avenue M
- North bound ramps/Avenue M

Summary statistics for the Alternative 1 lane configurations at the roundabouts are outlined below in Table 2-1.

Table 2-1 Alternative 1 Roundabout Summary

	20 th Street West and Avenue M	SR 14 SB Ramps and Avenue M	SR 14 NB Ramps and Avenue M
Number of Circulating Lanes in Each Direction	1*	1	1*
Number of Entry Lanes:			
- East Approach	2**	1	1
- West Approach	2**	2**	2**
- South Approach	1	N/A	2
- North Approach	2	1	N/A
Number of Exit Lanes:			
- East Approach	1	1	2
- West Approach	1	1	1
- South Approach	2	1	2
- North Approach	1	1	2

*: Combination of 1 and 2 lanes

** : Lane No. 2 is a short lane

In addition, this alternative proposes to widen Avenue M west of the SR-14 ramps to accommodate one (1) 11' lane, 4' striped buffer with 7' Class II bike lane (shoulder), and 6' meandering sidewalk with a landscaped buffer on the north side and one 11' lane, 4' striped buffer with 7' Class II bike lane (shoulder), 4' landscape buffer and 8' non-meandering sidewalk on the south side. A 10' median two-way left turn lane would be included where feasible.

East of the SR-14 ramps, Avenue M would be widened to accommodate two (2) 11' lanes, 4' striped buffer with 7' Class II bike lane (shoulder), and 8' sidewalk (where new sidewalk is provided) on the north side and two (2) 11' lanes (a left and right turn lane), 4' striped buffer with 7' Class II bike lane (shoulder), and 8' sidewalk (not meandering) on the south side. Due to

the widening on Avenue M, access points and driveways would be impacted and would be replaced in-kind.

This alternative widens the Avenue M overcrossing by 13.5' on the north side of the existing bridge. Due to the close proximity of the proposed roundabouts at the north bound (NB) and the south bound (SB) ramps, this area was considered to be within the envelope of the roundabouts and a continuous 10' splitter island was recommended between the two roundabouts. The remaining cross section on Avenue M overcrossing in each direction would consist of a 12' lane, 4' raised buffer, and a 10' sidewalk to accommodate shared use by pedestrians and bicyclists.

Ramp metering would be implemented as part of this alternative and widening of the on-ramps to two (2) lanes would be required.

The realignment of the SB on-ramp from east bound (EB) Avenue M will require retaining walls both in cut and fill. In addition, due to the widening per the Ramp Metering requirements on the SB on-ramp from west bound (WB) Avenue M and NB on-ramp from WB Avenue M, retaining walls would also be required.

Due to the realignment of the SB on-ramp from EB Avenue M, the existing open channel would be relocated to the west side of the proposed SB on-ramp and the existing triple box culvert under Avenue M would be moved to align with the new open channel. In addition, it is proposed to remove the portion of the open channel on the northwest quadrant that is in conflict with the roundabout. Other features include installing new drainage inlets and adjusting existing manholes.

Full cut-off lighting fixtures would also be installed to minimize visual impacts due to glare and sky-glow.

Right-of-Way

Implementation of Alternative 1 may require both partial and complete right-of-way acquisition. These acquisitions are highlighted below by Assessor's Parcel Number (APN) in Table 2-2. Right-of-Way Design Plans have been included in Appendix E.

Table 2-2 Alternative 1 Proposed Right-of-Way Acquisitions

APN	Land Use	APN	Land Use	APN	Land Use
3111-012-099	VL	3109-023-046	I	3111-012-029	VL
3111-008-031	SFR	3109-022-031	VL	3109-022-025	SFR
3111-008-012	SFR	3111-012-090	VL	3109-022-024	VL
3109-013-077	VL	3109-022-029	SFR	3111-012-028	VL
3109-023-057	VL	3109-022-027	SFR	3109-022-023	SFR
3109-022-033	VL	3109-022-026	SFR	3109-022-022	SFR
3111-012-036	VL	3109-022-021	VL	3109-022-020	I
3111-012-035	VL	3111-012-092	VL	3109-023-021	VL
3109-023-062	VL	3109-023-052	SFR	3109-023-031	VL
3109-023-045	MISC				

APN: Assessor's Parcel Number

VL: Vacant Land

SFR: Single Family Residential

I: Industrial

MISC: Miscellaneous

Figure 2-1 illustrates what the design elements of Alternative 1 would look like.

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Figure 2-1 Alternative 1 Design Elements (Roundabouts at Intersections - One Lane on Avenue M)



2.1.2 Alternative No.2: Minimum

This Alternative proposes to construct two (2) new traffic signals at the intersections of Avenue M with the SR 14 NB and SB off-ramps, and proposes to realign the ramp entrances and exits to minimize the skew angles. Currently the NB and SB off-ramp approaches are stop sign-controlled.

In addition, this alternative proposes to widen Avenue M west of the SR 14 ramps to accommodate one 11' lane, a 4' striped buffer with 7' Class II bike lane (shoulder), and a 6' meandering sidewalk with landscaped buffer on the north side and one 11' lane, a 4' striped buffer with 7' Class II bike lane (shoulder), a 4' landscape buffer and 8' non-meandering sidewalk on the south side and a 10' median two-way left turn lane where feasible.

East of the SR-14 ramps, Avenue M would be widened to accommodate two (2) 11' lanes, 4' striped buffer with 7' Class II bike lane (shoulder), and 8' sidewalk (where new sidewalk is provided) on the north side and two (2) 11' lanes (a left and right turn lane), 4' striped buffer with 7' Class II bike lane (shoulder), and 8' sidewalk (not meandering) on the south side. Due to the widening on Avenue M, access points and driveways would be impacted and would be replaced in-kind.

The posted speed limit on Avenue M is 55 miles per hour (mph) and due to the high speed a deceleration lane is required at both the SB and NB ramps. A barrier separation between the roadway and the sidewalk would also be required at the overcrossing due to the high speed of the facility. Therefore, this alternative widens the Avenue M overcrossing by 48' on the north side of the existing bridge to accommodate one 12' lane, one 12' deceleration/right turn lane, a 4' striped buffer with 7' Class II bike lane (shoulder), a concrete barrier separation, and a minimum 6' sidewalk, in each direction with a 10' striped median.

Ramp metering would be implemented as part of this project and widening of the on-ramps to two (2) lanes would be required.

The realignment of the SB on-ramp from EB Avenue M would require retaining walls both in cut and fill. In addition, due to the widening per the Ramp Metering requirements on the SB on-ramp from WB Avenue M and NB on-ramp from WB Avenue M, retaining walls would also be required.

Like Alternative 1, this alternative would also impact the existing open channel due to the realignment of the SB on-ramp from EB Avenue M and the similar recommendations are proposed. Other features include installing new drainage inlets and adjusting existing manholes.

Full cut-off lighting fixtures would also be installed to minimize visual impacts due to glare and sky-glow.

Right-of-Way

Implementation of Alternative 2 may require both partial and complete right-of-way acquisition. These acquisitions are highlighted below by Assessor's Parcel Number (APN) in Table 2-3. Right-of-Way Design Plans have been included in Appendix E.

Table 2-2 Alternative 2 Proposed Right-of-Way Acquisitions

APN	Land Use	APN	Land Use	APN	Land Use
3109-023-062	VL	3109-022-033	VL	3111-008-012	SFR
3109-022-031	VL	3111-012-090	VL	3109-022-029	SFR
3109-022-027	SFR	3109-022-026	SFR	3111-012-029	VL
3109-022-025	SFR	3109-022-024	VL	3109-022-023	SFR
3111-012-028	VL	3109-022-022	SFR	3111-012-036	VL
3109-022-021	VL	3111-012-035	VL	3109-022-020	I
3109-023-021	VL	3111-012-092	VL	3111-012-056	VL
3111-012-099	VL	3109-023-031	VL	3109-023-057	VL
3109-023-046	I	3109-023-052	I	3109-023-045	MISC

APN: Assessor's Parcel Number

VL: Vacant Land

SFR: Single Family Residential

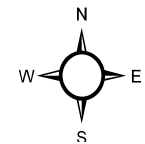
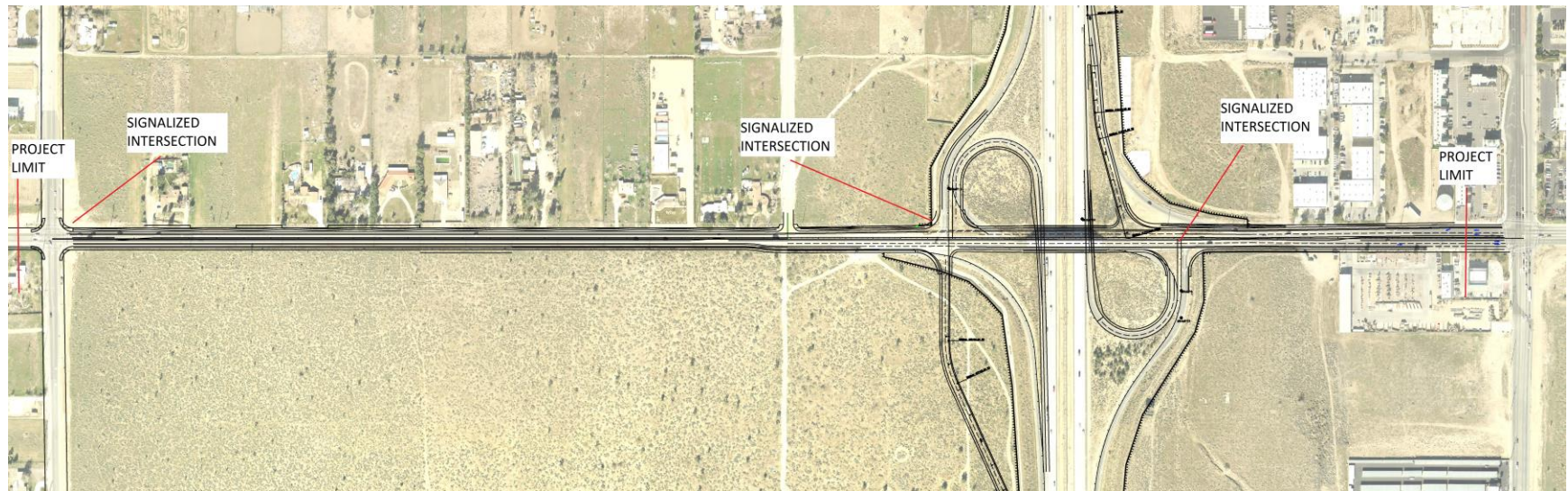
I: Industrial

MISC: Miscellaneous

Figure 2-2 illustrates what the design elements of Alternative 2 would look like.

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Figure 2-2 Alternative 2 Design Elements (Signalized Intersections - One Lane on Avenue M)



2.1.3 Alternative No.3: Ultimate

This Alternative is similar to Alternative 2 in that it proposes to construct two (2) new traffic signals at the intersections of Avenue M with the SR 14 NB and SB off-ramps, as well as widen Avenue M. However, this alternative also proposes to widen Avenue M to an ultimate width that would allow for two (2) travel lanes in each direction.

This alternative proposes to widen the Avenue M overcrossing by a total of 60.5' on the north side and 10' on the south side of the existing bridge. This width would accommodate two (2) 12' lanes, one 12' deceleration/right turn lane, a 4' striped buffer with a 7' Class II bike lane (shoulder), a concrete barrier separation, and a minimum 6' sidewalk, in each direction, with a 10' striped median.

Ramp metering would be implemented as part of this project and widening of the on-ramps to two (2) lanes would be required. The profile of the SB on-ramp from west bound (WB) Avenue M within the south side of the Avenue M over crossing would need to be lowered approximately one (1) foot to be able to maintain the standard vertical clearance over the widened ramp.

The realignment of the SB on-ramp from EB Avenue M would require retaining walls both in cut and fill sections. In addition, due to the widening per the Ramp Metering requirements on the SB on-ramp from WB Avenue M and NB on-ramp from WB Avenue M, retaining walls would also be required.

This alternative also impacts the existing open channel due to the realignment of the SB on-ramp from EB Avenue M and similar recommendations as those provided in Alternatives 1 and 2 are proposed. Other features include installing new drainage inlets and adjusting existing manholes.

Full cut-off lighting fixtures would also be installed to minimize visual impacts due to glare and sky-glow.

Right-of-Way

Implementation of Alternative 3 may require both partial and complete right-of-way acquisition. These acquisitions are highlighted below by Assessor's Parcel Number (APN) in Table 2-4. Right-of-Way Design Plans have been included in Appendix E.

Table 2-4 Alternative 3 Proposed Right-of-Way Acquisitions

APN	Land Use	APN	Land Use	APN	Land Use
3111-012-092	VL	3109-022-033	VL	3111-012-100	VL
3109-022-040	SFR	3109-022-031	VL	3111-012-090	VL
3109-022-029	SFR	3109-023-031	VL	3109-022-020	I
3109-023-021	VL	3109-022-027	SFR	3109-023-062	VL
3111-012-029	VL	3109-022-025	SFR	3109-022-024	VL
3111-012-028	VL	3109-022-022	SFR	3111-012-036	VL
3109-022-021	VL	3111-012-035	VL	3109-023-046	I
3111-008-012	SFR	3111-012-099	VL	3109-022-037	SFR
3109-022-038	SFR	3109-022-039	VL	3109-023-045	MISC
3109-022-023	SFR	3109-022-026	SFR	3109-023-057	VL
3109-023-052	I				

APN: Assessor's Parcel Number

VL: Vacant Land

SFR: Single Family Residential

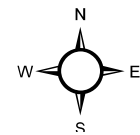
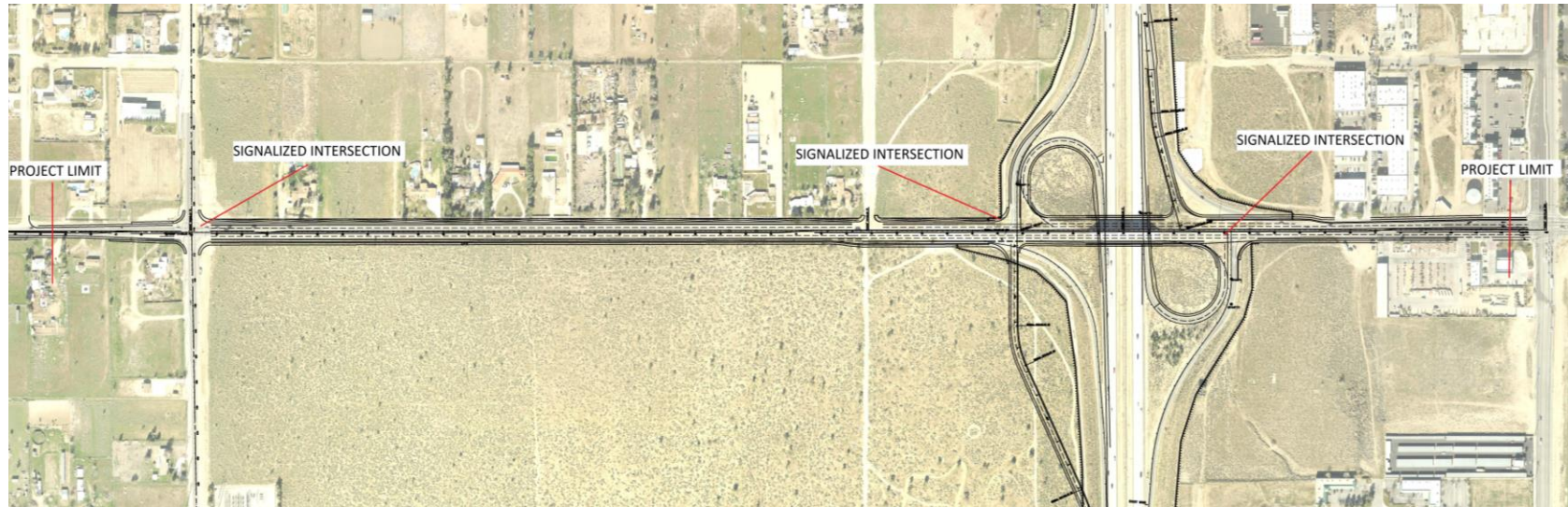
I: Industrial

MISC: Miscellaneous

Figure 2-3 illustrates what the design elements of Alternative 3 would look like.

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Figure 2-3 Alternative 3 Design Elements (Signalized Intersections – Two Lanes on Avenue M)



2.1.4 Alternative No.4: Roundabout with hook ramps

This Alternative proposes to construct roundabouts at the following three (3) intersections:

- 20th Street West/Avenue M
- South bound ramps/Avenue M
- North bound ramps/Avenue M

A summary of Alternative 4 lane configurations is outlined below in Table 2-5.

Table 2-5 Alternative 4 Roundabout Summary

	20 th Street West and Avenue M	SR 14 SB Ramps and Avenue M	SR 14 NB Ramps and Avenue M
Number of Circulating Lanes in Each Direction	1*	2	2
Number of Entry Lanes:			
- East Approach	2**	2	2
- West Approach	2**	2	2***
- South Approach	1	2	2
- North Approach	1	N/A	N/A
Number of Exit Lanes:			
- East Approach	1	2	2
- West Approach	1	2	2
- South Approach	2	2	2
- North Approach	2	N/A	N/A

*: Combination of 1 and 2 lanes

**: Lane No. 2 is a bypass lane

***: Lane No. 2 is a short lane

With this Alternative, the SB and NB on-ramps on the north side are eliminated and the SB off ramp is realigned providing a loop off-ramp on the south side of the Avenue M.

In addition, this Alternative proposes to widen Avenue M west of the SR-14 ramps to accommodate one (1) 11' lane, a 4' striped buffer, a 7' Class II bike lane (shoulder), and a 6' meandering sidewalk with landscaped buffers on the north side and one 11-ft lane, a 4-foot striped buffer with a 7' Class II bike lane (shoulder), a 4' landscaped buffer and an 8' non-meandering sidewalk on the south side and a 10' median two-way left turn lane where feasible.

East of the SR-14 ramps, Avenue M would be widened to accommodate two (2) 11' lanes, a 4' striped buffer with a 7' Class II bike lane (shoulder), and a 8' meandering sidewalk (where new sidewalk is provided) with landscaped buffers on the north side and two (2) 11' lanes (a left and right turn lane), a 4' striped buffer with a 7' Class II bike lane (shoulder), and an 8' sidewalk (not meandering) on the south side. The Class II bike lane and the sidewalk on the south side of Avenue M terminate at the roundabout at the SB ramps. To minimize the crossing conflicts, pedestrians and bicyclists are taken to the north side of Avenue M where a Class IV two-way

separated bike lane and a sidewalk are proposed. The limits of the Class IV two-way separated bike lane extends just east of the NB ramps, where the bicyclists are then taken across Avenue M to the south side to continue EB on Avenue M. Pedestrians wishing to continue EB on Avenue M may continue on the north side or may cross at the pedestrian crossing to the south side to continue on Avenue M.

This configuration widens the Avenue M overcrossing by 36' on the north side of the existing bridge. Due to the close proximity of the proposed roundabouts at the NB and the SB ramps, this area was considered to be within the envelope of the roundabouts and a continuous 10' splitter island was proposed between the two (2) roundabouts. The overall cross section on the Avenue M overcrossing consists of two (2) 12' travel lanes, a 4' shoulder on the South side of the splitter island, two (2) 12' travel lanes, a 4' raised buffer, a 12' Class IV two-way separated bike lane and a 6' sidewalk on the North side of the splitter island.

Due to the widening on Avenue M, access points/driveways would be impacted and replaced in-kind.

Ramp metering would be implemented as part of this project and widening of the on-ramps to two (2) lanes would be required.

The realignment of the SB on-ramp from EB Avenue M and the SB off-ramp would require retaining walls both in cut and fill.

This alternative also impacts the existing open channel due to the realignment of the SB on-ramp from EB Avenue M and recommendations similar to the other build alternatives are proposed. Other features include relocating and constructing inlets due to the removal of the ramps, installing new drainage inlets along Avenue M and adjusting existing manholes.

Full cut-off lighting fixtures would also be installed to minimize visual impacts due to glare and sky-glow.

Right-of-Way

Implementation of Alternative 4 may require both partial and complete right-of-way acquisition. These acquisitions are highlighted below by Assessor's Parcel Number (APN) in Table 2-6. Right-of-Way Design Plans have been included in Appendix E.

Table 2-6 Alternative 4 Proposed Right-of-Way Acquisitions

APN	Land Use	APN	Land Use	APN	Land Use
3111-008-031	SFR	3109-023-045	MISC	3111-008-012	SFR
3109-013-077	VL	3109-023-031	VL	3109-022-033	VL
3111-012-099	VL	3109-022-031	VL	3111-012-090	VL
3109-022-029	SFR	3109-023-062	VL	3111-012-029	VL
3111-012-028	VL	3111-012-036	VL	3111-012-035	VL
3109-022-027	SFR	3109-022-026	SFR	3109-022-025	SFR
3109-022-023	SFR	3109-022-021	VL	3109-022-020	I
3111-012-092	VL	3109-023-021	VL	3109-022-024	SFR
3109-023-057	VL	3111-012-056	VL	3111-012-087	VL
3109-022-029	SFR	3109-023-046	I	3109-023-052	I
3109-022-022	SFR				

APN: Assessor's Parcel Number

VL: Vacant Land

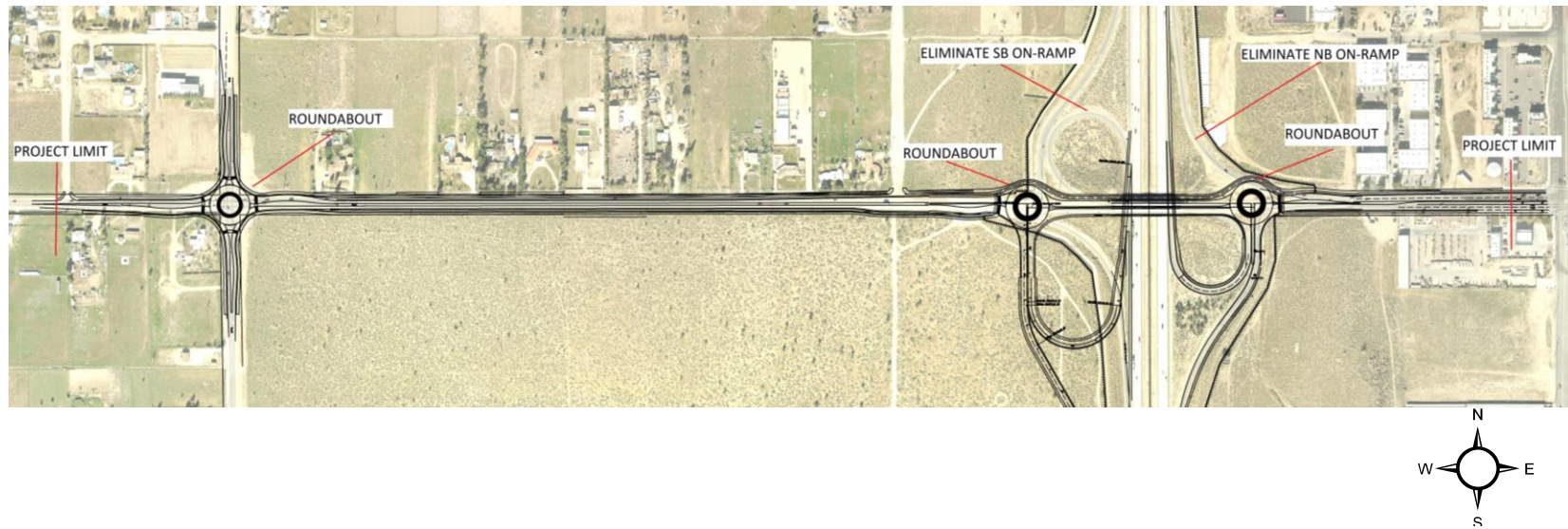
SFR: Single Family Residential

I: Industrial

MISC: Miscellaneous

Figure 2-4 illustrates what the design elements of Alternative 4 would look like.

Figure 2-4 Alternative 4 Design Elements (Roundabouts at Intersections - One Lane on Avenue M)



2.1.5 Alternative No.5: No Build

This Alternative would maintain the facility as is and therefore would not improve traffic operation and safety in this area. In addition, not providing any improvements would not be consistent with the City of Lancaster's overall intent of the Master Plan of Trails and Bikeways to create a connected network of on-road and off-road trails and bikeway facilities to accommodate users of all ages and abilities.

2.1.6 Alternative No.6: Roundabout (Interim/Ultimate Condition)

This Alternative would be a two-phase project and consists of an Interim (Phase 1) and an Ultimate (Phase 2) condition. Phase 1 would be constructed as part of this project and Phase 2 would be constructed when the projected traffic volumes dictate the need for expansion. Alternative 6 has been identified as the locally preferred alternative.

Alternative No. 6: Roundabout (Interim Condition) – One Lane Each Direction on Ave M

The Interim Condition of Alternative 6 is similar to Alternative 1 with the exception that the NB on-ramp from EB Avenue M is eliminated. Roundabouts are proposed at the following intersections:

- 20th Street West/Avenue M
- South bound ramps/Avenue M
- North bound ramps/Avenue M

A summary of Alternative 6 lane configurations for the interim condition is outlined below in Table 2-7.

Table 2-7 Alternative 6 (Interim) Roundabout Lane Summary

	20 th Street West and Avenue M	SR 14 SB Ramps and Avenue M	SR 14 NB Ramps and Avenue M
Number of Circulating Lanes in Each Direction	1*	1	1*
Number of Entry Lanes:			
- East Approach	2**	2**	2
- West Approach	2**	1	1
- South Approach	1	N/A	2**
- North Approach	1	1	N/A
Number of Exit Lanes:			
- East Approach	1	1	1
- West Approach	1	1	2
- South Approach	1	2	N/A
- North Approach	1	2	2

*: Combination of 1 and 2 lanes

** : Lane No. 2 is a short lane

The Alternative 6 Interim Condition proposes to widen Avenue M west of the SR 14 ramps to accommodate one (1) 11' lane, a 4' striped buffer, a 7' Class II bike lane (shoulder), a 6' meandering sidewalk with landscaped buffers in each direction on the north side and one (1) 11' lane, a 4' striped buffer with a 7' Class II bike lane (shoulder), a 4' landscape buffer and an 8' non-meandering sidewalk on the south side and a 10' two-way left turn lane median.

East of the SR-14 ramps, Avenue M would be widened to accommodate two (2) 11' lanes, a 4' striped buffer with 7' Class II bike lane (shoulder), and a 8' meandering sidewalk (where new sidewalk is provided) with landscaped buffers on the north side and two (2) 11' lanes (a left and right turn lane), a 4' striped buffer with a 7' Class II bike lane (shoulder), and an 8' sidewalk (not meandering) on the south side.

The Interim Condition would also widen the Avenue M overcrossing by 27.5' on the north side of the existing bridge. Due to the close proximity of the proposed roundabouts at the NB and the SB ramps, this area is considered to be within the envelope of the roundabouts and a continuous 12' splitter island is proposed between the two roundabouts. The remaining cross section of the Avenue M overcrossing in each direction would consist of a 12' lane, a 4' shoulder, a 6' raised hardscaped buffer and a 10' sidewalk to accommodate shared use by pedestrians and bicyclists.

Ramp metering would be implemented as part of this project alternative and widening of the on-ramps to two (2) lanes would be required.

The realignment of the SB on-ramp from EB Avenue M would require retaining walls both in cut and fill sections. In addition, due to the widening per the Ramp Metering requirements on the SB on-ramp from WB Avenue M and NB on-ramp from WB Avenue M, retaining walls would also be required.

Due to the realignment of the SB on-ramp from EB Avenue M, it is proposed to relocate the existing open channel to the west side of the proposed SB on-ramp and relocate the existing triple box culvert under Avenue M to align it with the realigned open channel. In addition, it is proposed to remove the portion of the open channel on the northwest quadrant that is in conflict with the roundabout. Other features include installing new drainage inlets and adjusting existing manholes.

Full cut-off lighting fixtures would also be installed to minimize visual impacts due to glare and sky-glow.

Right-of-Way

Implementation of Alternative 6 (Interim) may require both partial and complete right-of-way acquisition. These acquisitions are highlighted below by Assessor's Parcel Number (APN) in Table 2-8. Right-of-Way Design Plans have been included in Appendix E.

Table 2-8 Alternative 6 (Interim) Proposed Right-of-Way Acquisitions

APN	Land Use	APN	Land Use	APN	Land Use
3111-008-031	SFR	3111-008-012	SFR	3109-023-062	VL
3111-012-099	VL	3109-013-077	VL	3109-022-033	VL
3109-022-031	VL	3109-022-029	SFR	3111-012-090	VL
3109-023-057	VL	3111-012-028	VL	3111-012-036	VL
3111-012-035	VL	3109-022-027	SFR	3109-022-026	SFR
3109-022-025	SFR	3109-022-024	VL	3109-022-023	SFR
3109-022-022	SFR	3109-022-021	VL	3109-023-046	I
3111-012-092	VL	3109-023-021	VL	3109-023-031	VL
3109-023-045	MISC	3109-022-020	I	311-012-056	VL

APN: Assessor's Parcel Number

VL: Vacant Land

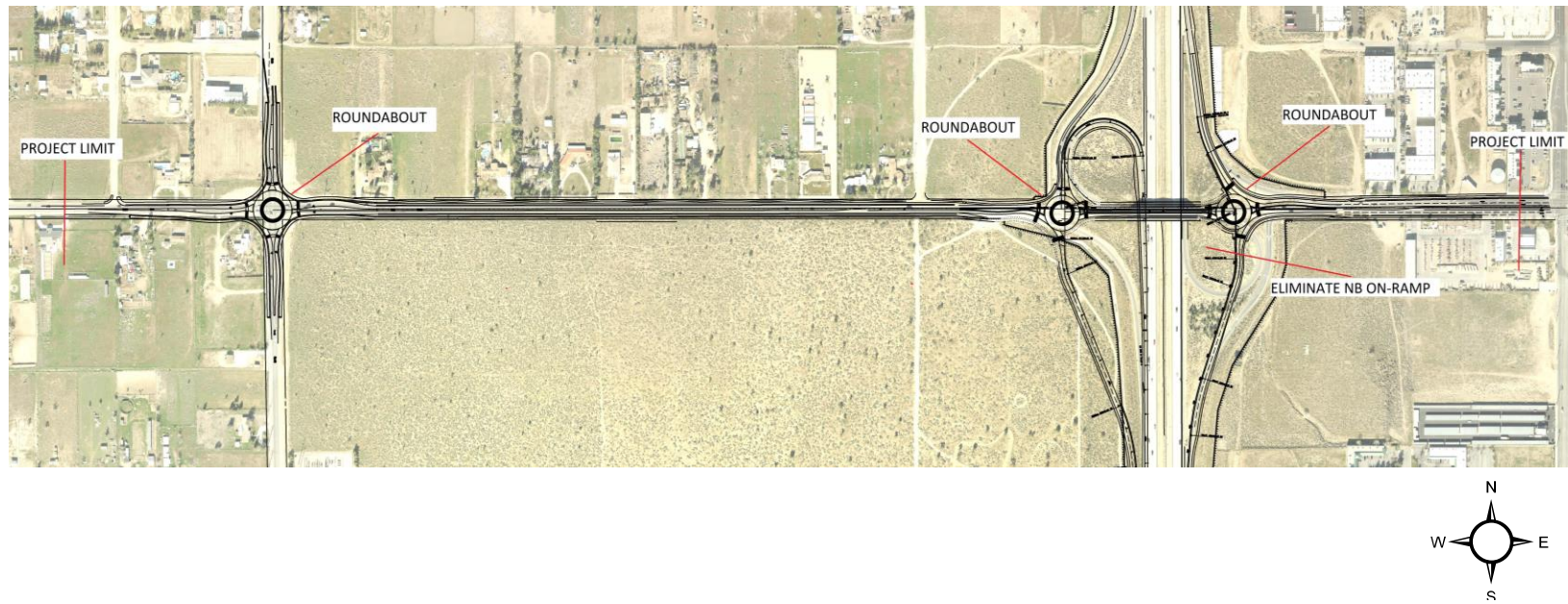
SFR: Single Family Residential

I: Industrial

MISC: Miscellaneous

Figure 2-5 illustrates what the design elements of Alternative 6 (Interim) would look like.

Figure 2-5 Alternative 6 (Interim) Design Elements (Roundabouts at Intersections - One Lane on Avenue M & Elimination of North bound On-Ramp)



Alternative No. 6: Roundabout (Ultimate Condition) – Two Lanes Each Direction on Avenue M

The Ultimate Condition of Alternative 6 includes all of the elements included in the Interim Condition but adds an additional travel lane in each direction on Avenue M and at the roundabouts.

A summary of Alternative 6 lane configurations for the ultimate condition is outlined below in Table 2-9.

Table 2-9 Alternative 6 (Ultimate) Roundabout Lane Summary

	20 th Street West and Avenue M	SR 14 SB Ramps and Avenue M	SR 14 NB Ramps and Avenue M
Number of Circulating Lanes in Each Direction	2*	2	2
Number of Entry Lanes:			
- East Approach	2	2	2
- West Approach	2	2	2
- South Approach	1	N/A	2**
- North Approach	1	1	N/A
Number of Exit Lanes:			
- East Approach	2	2	2
- West Approach	2	2	2
- South Approach	2	2	N/A
- North Approach	2	2	2

*: Combination of 1 and 2 lanes

**: Lane No. 2 is a short lane

Right-of-Way

Implementation of Alternative 6 (Ultimate) may require both partial and complete right-of-way acquisition. These acquisitions are highlighted below by Assessor's Parcel Number (APN) in Table 2-10. Right-of-Way Design Plans have been included in Appendix E

Table 2-10 Alternative 6 (Ultimate) Proposed Right-of-Way Acquisitions

APN	Land Use	APN	Land Use	APN	Land Use
3111-008-012	SFR	3109-013-034	SFR	3111-012-100	VL
3109-023-062	VL	3111-012-029	VL	3111-012-090	VL
3109-013-077	VL	3109-022-033	VL	3109-022-026	SFR
3109-022-031	VL	3109-022-029	SFR	3111-012-028	VL
3109-013-012	VL	3109-022-027	SFR	3109-023-045	MISC
3109-022-025	SFR	3109-022-024	VL	3109-022-021	VL
3111-008-031	SFR	3111-012-035	VL	3109-023-031	VL
3109-022-023	SFR	3109-022-022	SFR	3109-023-021	VL
3109-022-020	I	3109-022-037	SFR	3109-022-038	SFR
3109-022-039	VL	3109-022-040	SFR	3111-012-099	VL
3111-012-036	VL	3111-012-092	VL	3109-023-057	VL
3109-023-046	I	3109-023-052	I		

APN: Assessor's Parcel Number

VL: Vacant Land

SFR: Single Family Residential

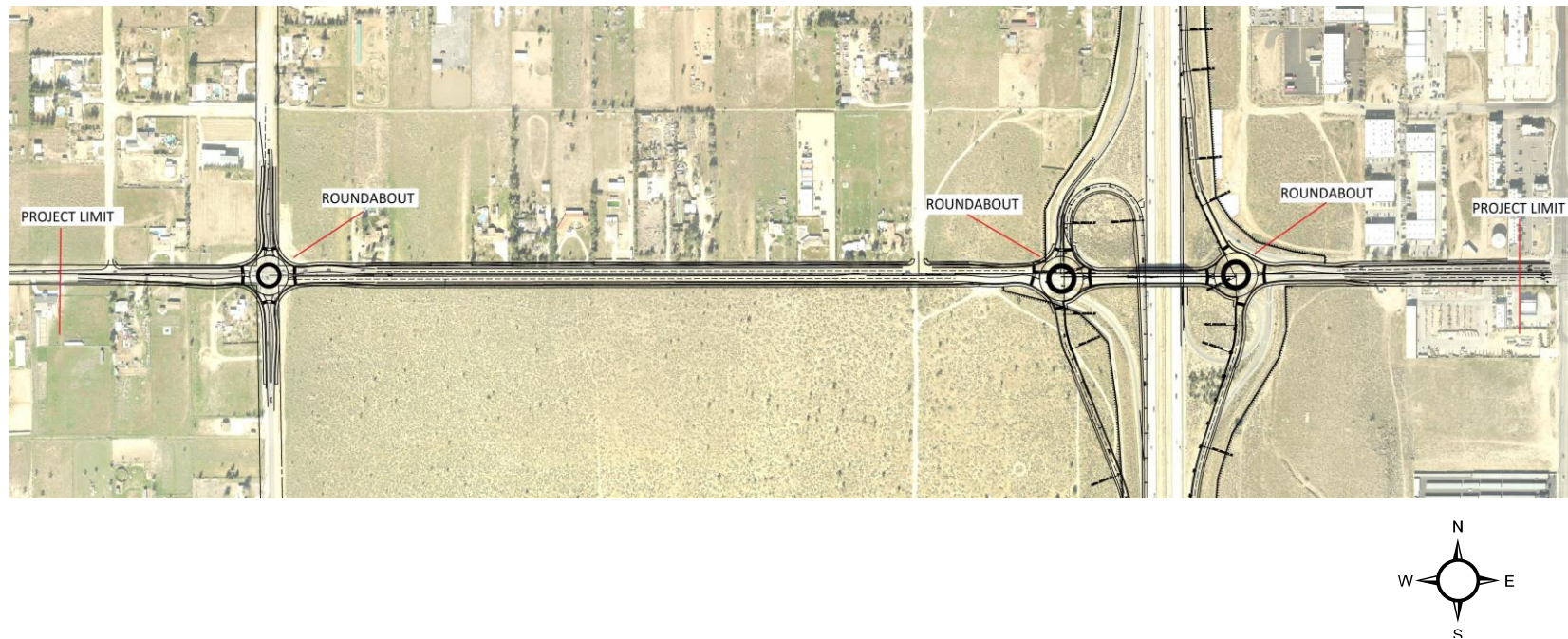
I: Industrial

MISC: Miscellaneous

Figure 2-6 illustrates what the design elements of Alternative 6 (Ultimate) would look like.

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Figure 2-6 Alternative 6 (Ultimate) Design Elements (Roundabouts at Intersections - Two Lanes on Avenue M & Elimination of North bound On-Ramp)



Comparison of Alternative Features

Table 2-11 identifies common and unique features that are included in each of the build alternatives.

Table 2-11 Build Alternatives Comparison of Features

Over-Crossing Improvement	Alt 1 (Roundabout)	Alt 2 (Minimum)	Alt 3 (Ultimate)	Alt 4 (Roundabout w/ Hook ramps)	Alt 6	
					Interim Condition	Ultimate Condition
Signalized off ramps	No	Yes	Yes	No	No	No
Roundabout at off ramps	Yes	No	No	Yes	Yes	Yes
7' Bike Lane	Yes	Yes	Yes	Yes	Yes	Yes
Additional bridge width – North side	13.5'	-	60.5'	36'	27.5'	-
Additional bridge width – South side	-	-	10'	-	-	-
Dedicated left turn lane	Yes	Yes	Yes	Yes	Yes	Yes

2.1.7 Identification of the Preferred Alternative

Caltrans and the City of Lancaster have identified Alternative 6 (Interim) as the Preferred Alternative. The decision was made after comparing and weighing the benefits and impacts of the feasible alternatives and taking into account the public comments received during Draft Initial Study circulation. The main features of the selected alternative include:

- Converting 3 signalized or stop sign-controlled intersections on Avenue M to roundabouts - at the SR-14 off ramps and at 20th St. West.
- Widening Avenue M to accommodate a Class II bike lane, sidewalk, and landscaped buffer.
- Adding a second lane on Ave M east of SR-14.
- Widening the Avenue M bridge over SR-14.

Factors Considered in the Identification of the Preferred Alternative

The following section will go over the factors for supporting the Preferred Alternative. Please note the following list does not represent the order of importance associated with the selection of the Preferred Alternative.

Purpose and Need

The purpose of this project is to improve traffic operations, access, and safety for motorists, bicyclists and pedestrians. The project proposes to widen the existing roadway (Avenue M) and bridge structure, improve bike access and sidewalks, and modify existing intersections.

The need for this project centers around three (3) areas:

- Safety when making left turns across Avenue M
- Interchange Level of Service (LOS)
- Lack of a bike path and sidewalk

All of the build alternatives satisfy the purpose and need of the proposed project. Design features of each of the alternatives will enhance the safety of the traveling public, reduce delays, and provide safe mobility for multi-modal users. However, studies have shown that roundabouts are safer than traditional stop sign or signal-controlled intersections and have shown an improvement in the overall safety performance. Roundabouts have fewer vehicular conflict points, provide low speeds which help reduce crash severity, and typically reduce injury crashes by 75 percent at intersections where stop signs or signals were previously used for traffic control. Therefore, Alternatives 1, 4, 6 Interim, and 6 Ultimate would lead to the greatest increase in public safety.

Environmental Impacts

Chapter 3 of this document discusses the potential impacts to each of the environmental resource areas as required by CEQA. Each of the build alternatives would occupy a similar footprint and would result in a similar level of environmental disturbance. Although there are slight differences, there are no potential impacts that would lead to the selection of one alternative over another.

Traffic Impacts

An Intersection Control Evaluation analysis was performed as part of the Traffic Study for this project. The analysis looked at several key performance criteria in the horizon year (2040), including peak hour vehicle delay (seconds/vehicle), Level of Service, peak hour vehicle queues on Avenue M (feet), and peak hour fuel consumption (gallons). Based on this analysis, Alternatives 1 and Alternative 6 (interim) provide the highest benefit to cost ratio, which is a representation of how much the benefits outweigh the cost. The costs and analysis for the key performance criteria are very similar for these two Alternatives. The peak hour vehicle queues on Avenue M are the same at 20th Street West and SB ramps, but are slightly different at the NB ramps, yet the LOS provided for both Alternatives are the same at all intersections.

Of these two Alternatives, the initial feedback from the City of Lancaster has indicated Alternative 6 (interim) is their preferred Alternative. The Benefit to Cost ratios for Alternatives

2, 3, and 4 are lower than those for Alternatives 1 and 6 (interim) and they were therefore eliminated from consideration as the preferred alternative. The operational standards are met for the design year with a single lane/hybrid roundabout, therefore the larger footprint and additional cost of a two-lane roundabout for Alternative 6 (ultimate) is not warranted.



Appendix G

**Level of Service Analysis Worksheets for
Existing Plus Ambient Growth and Related Projects Conditions**

Intersection Level Of Service Report
Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	949.9
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.972

Intersection Setup

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				↔			↔			↔		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	0	0	0	421	0	68	0	582	175	0	469	260
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	421	0	68	0	582	175	0	469	260
Peak Hour Factor	0.9500	0.9500	0.9500	0.9230	0.9500	0.9230	0.9500	0.9230	0.9230	0.9500	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	114	0	18	0	158	47	0	127	70
Total Analysis Volume [veh/h]	0	0	0	456	0	74	0	631	190	0	508	282
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance		No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	2.97	0.00	0.13	0.00	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	949.87	0.00	12.33	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS				F		B		A	A		A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	41.90	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	1047.53	0.00	11.22	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			818.97			0.00			0.00		
Approach LOS	A			F			A			A		
d_I, Intersection Delay [s/veh]	202.73											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	552.4
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.867

Intersection Setup

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	108	0	400	0	0	0	0	944	78	0	634	194
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	0	400	0	0	0	0	944	78	0	634	194
Peak Hour Factor	0.9320	0.9500	0.9320	0.9500	0.9500	0.9500	0.9500	0.9320	0.9320	0.9500	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	0	107	0	0	0	0	253	21	0	170	52
Total Analysis Volume [veh/h]	116	0	429	0	0	0	0	1013	84	0	680	208
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No			
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.87	0.00	1.48	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	552.37	0.00	266.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	F		F					A	A		A	A
95th-Percentile Queue Length [veh/ln]	10.77	0.00	24.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	269.27	0.00	601.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	327.21			0.00			0.00			0.00		
Approach LOS	F			A			A			A		
d_I, Intersection Delay [s/veh]	70.49											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: 10th Street (N/S) at Avenue M (E/W)

Control Type:Signalized

Analysis Method:HCM 7th Edition

Analysis Period:15 minutes

Delay (sec / veh):30.2

Level Of Service:C

Volume to Capacity (v/c):0.592

Intersection Setup

Name	10th Street			10th Street			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	515.00	100.00	410.00	300.00	100.00	300.00	202.00	100.00	100.00	320.00	100.00	305.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	10th Street			10th Street			Avenue M			Avenue M		
Base Volume Input [veh/h]	80	462	125	101	411	89	210	916	142	122	616	177
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	462	125	101	411	89	210	916	142	122	616	177
Peak Hour Factor	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	126	34	27	112	24	57	249	39	33	168	48
Total Analysis Volume [veh/h]	87	503	136	110	447	97	229	997	155	133	670	193
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing (Basic)

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	29	0	0	25	0	0	31	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	10	45	0	10	45	0	13	45	0	10	42	0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Calculated Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	16	16	6	17	17	9	66	66	6	63	63
g / C, Green / Cycle	0.05	0.15	0.15	0.05	0.15	0.15	0.08	0.60	0.60	0.05	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.03	0.10	0.09	0.03	0.13	0.06	0.07	0.31	0.32	0.04	0.19	0.12
s, saturation flow rate [veh/h]	3459	5094	1589	3459	3560	1589	3459	1870	1784	3459	3560	1589
c, Capacity [veh/h]	176	765	239	182	542	242	283	1117	1065	189	2029	906
d1, Uniform Delay [s]	50.83	44.07	43.43	50.98	45.21	42.11	49.66	13.02	13.07	51.13	12.54	11.59
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.15	0.97	2.13	3.19	3.26	1.07	5.48	1.77	1.89	4.76	0.44	0.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.50	0.66	0.57	0.60	0.83	0.40	0.81	0.53	0.53	0.71	0.33	0.21
d, Delay for Lane Group [s/veh]	52.99	45.04	45.56	54.17	48.47	43.18	55.14	14.79	14.96	55.89	12.97	12.12
Lane Group LOS	D	D	D	D	D	D	E	B	B	E	B	B
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.17	4.16	3.41	1.51	5.90	2.36	3.16	7.63	7.39	1.84	3.88	2.13
50th-Percentile Queue Length [ft/ln]	29.18	103.89	85.22	37.74	147.58	58.98	79.06	190.67	184.75	46.11	96.95	53.35
95th-Percentile Queue Length [veh/ln]	2.10	7.48	6.14	2.72	9.89	4.25	5.69	12.16	11.85	3.32	6.98	3.84
95th-Percentile Queue Length [ft/ln]	52.53	187.00	153.39	67.94	247.19	106.16	142.31	303.90	296.21	83.00	174.50	96.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.99	45.04	45.56	54.17	48.47	43.18	55.14	14.86	14.96	55.89	12.97	12.12
Movement LOS	D	D	D	D	D	D	E	B	B	E	B	B
d_A, Approach Delay [s/veh]	46.09			48.64			21.55			18.54		
Approach LOS	D			D			C			B		
d_I, Intersection Delay [s/veh]	30.21											
Intersection LOS	C											
Intersection V/C	0.592											

Emissions

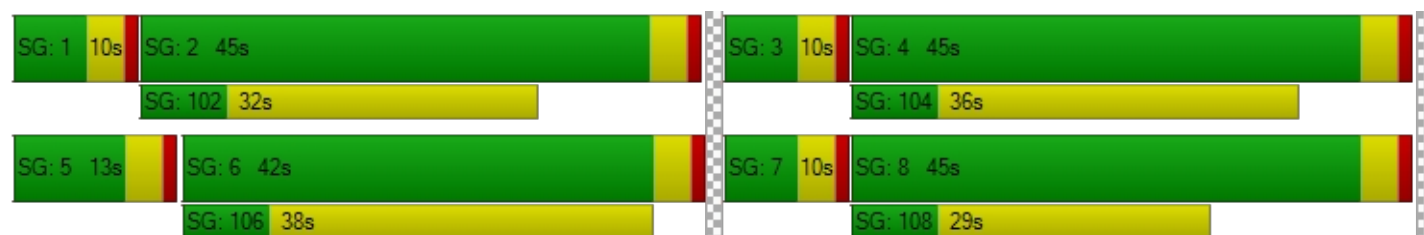
Vehicle Miles Traveled [mph]	7.43	42.94	11.61	7.70	31.30	6.79	25.47	65.32	62.81	13.27	66.83	19.25
Stops [stops/h]	76.41	408.01	111.56	98.82	386.39	77.20	207.00	249.61	241.86	120.73	253.82	69.84
Fuel consumption [US gal/h]	2.61	13.62	3.72	2.99	11.39	2.26	7.27	8.59	8.31	4.20	8.72	2.42
CO [g/h]	182.14	952.35	260.13	208.82	796.04	158.32	507.91	600.38	581.05	293.49	609.49	168.98
NOx [g/h]	35.44	185.29	50.61	40.63	154.88	30.80	98.82	116.81	113.05	57.10	118.58	32.88
VOC [g/h]	42.21	220.72	60.29	48.40	184.49	36.69	117.71	139.14	134.66	68.02	141.25	39.16

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	44.55			44.55			44.55			44.55		
I_p,int, Pedestrian LOS Score for Intersectio	3.061			3.056			3.128			3.175		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	745			745			745			691		
d_b, Bicycle Delay [s]	21.64			21.64			21.64			23.56		
I_b,int, Bicycle LOS Score for Intersection	1.959			2.099			2.699			2.381		
Bicycle LOS	A			B			B			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Main Driveway (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	7.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.400

Intersection Setup

Name	Palmdale Logistics Park Driveway		Avenue M		Avenue M	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	150.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Palmdale Logistics Park Driveway		Avenue M		Avenue M	
Base Volume Input [veh/h]	52	16	790	140	147	1033
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	52	16	790	140	147	1033
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	4	208	37	39	272
Total Analysis Volume [veh/h]	55	17	832	147	155	1087
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	3	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	38	0	74	0	6	74
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Walk [s]	7	0	7	0	0	7
Pedestrian Clearance [s]	21	0	7	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	32	0	18	0	40	58
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	0	6	0	6	6
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	L	C
C, Calculated Cycle Length [s]	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	63	63	10	77
g / C, Green / Cycle	0.06	0.70	0.70	0.11	0.85
(v / s)_i Volume / Saturation Flow Rate	0.04	0.18	0.19	0.09	0.31
s, saturation flow rate [veh/h]	1732	3560	1732	1781	3560
c, Capacity [veh/h]	98	2496	1214	194	3042
d1, Uniform Delay [s]	41.78	4.93	4.96	39.13	1.37
k, delay calibration	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.09	0.26	0.54	7.32	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.73	0.26	0.27	0.80	0.36
d, Delay for Lane Group [s/veh]	51.87	5.18	5.50	46.45	1.70
Lane Group LOS	D	A	A	D	A
Critical Lane Group	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.83	1.92	2.02	3.69	0.72
50th-Percentile Queue Length [ft/ln]	45.77	47.88	50.54	92.20	17.98
95th-Percentile Queue Length [veh/ln]	3.30	3.45	3.64	6.64	1.29
95th-Percentile Queue Length [ft/ln]	82.39	86.19	90.98	165.97	32.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.87	51.87	5.25	5.50	46.45	1.70
Movement LOS	D	D	A	A	D	A
d_A, Approach Delay [s/veh]	51.87		5.29		7.29	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	7.83					
Intersection LOS	A					
Intersection V/C	0.400					

Emissions

Vehicle Miles Traveled [mph]	1.70	15.49	7.74	3.68	25.79
Stops [stops/h]	73.24	153.23	80.87	147.53	57.53
Fuel consumption [US gal/h]	1.23	2.17	1.13	2.43	1.76
CO [g/h]	86.30	151.86	79.06	169.96	122.72
NOx [g/h]	16.79	29.55	15.38	33.07	23.88
VOC [g/h]	20.00	35.19	18.32	39.39	28.44

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersectio	1.897	2.713	2.792
Crosswalk LOS	A	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	622	311	1200
d_b, Bicycle Delay [s]	21.36	32.09	7.20
I_b,int, Bicycle LOS Score for Intersection	1.678	2.098	2.584
Bicycle LOS	A	B	B

Sequence

Ring 1	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Sierra Highway (N/S) at Avenue M (E/W)

Control Type:Signalized

Analysis Method:HCM 7th Edition

Analysis Period:15 minutes

Delay (sec / veh):43.7

Level Of Service:D

Volume to Capacity (v/c):0.848

Intersection Setup

Name	Sierra Highway			Sierra Highway			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	410.00	100.00	405.00	175.00	100.00	160.00	185.00	100.00	185.00	200.00	100.00	210.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Sierra Highway			Sierra Highway			Avenue M			Avenue M		
Base Volume Input [veh/h]	276	746	538	101	598	181	113	536	96	295	701	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	276	746	538	101	598	181	113	536	96	295	701	160
Peak Hour Factor	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	71	193	139	26	155	47	29	139	25	76	181	41
Total Analysis Volume [veh/h]	285	771	556	104	618	187	117	554	99	305	725	165
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing (Basic)

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	29	0	0	26	0	0	30	0	0	0	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	10	40	0	10	40	0	60	41	0	29	10	0
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	31	46	46	9	24	24	10	27	27	22	39	39
g / C, Green / Cycle	0.26	0.38	0.38	0.07	0.20	0.20	0.08	0.22	0.22	0.19	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.16	0.22	0.35	0.06	0.17	0.12	0.07	0.16	0.06	0.17	0.20	0.10
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	457	1364	609	131	712	318	147	796	355	332	1166	521
d1, Uniform Delay [s]	39.48	29.15	35.12	54.70	46.46	43.52	54.05	42.84	38.58	47.90	34.07	30.27
k, delay calibration	0.47	0.11	0.12	0.11	0.11	0.11	0.11	0.50	0.50	0.31	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.93	0.37	6.47	10.36	3.39	1.73	9.35	5.00	1.95	23.21	2.50	1.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.62	0.57	0.91	0.79	0.87	0.59	0.80	0.70	0.28	0.92	0.62	0.32
d, Delay for Lane Group [s/veh]	45.41	29.52	41.59	65.07	49.86	45.25	63.40	47.84	40.53	71.11	36.57	31.87
Lane Group LOS	D	C	D	E	D	D	E	D	D	E	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.18	8.77	16.21	3.47	9.23	5.19	3.85	8.10	2.62	11.06	9.29	3.82
50th-Percentile Queue Length [ft/ln]	204.51	219.23	405.32	86.72	230.70	129.83	96.30	202.46	65.51	276.49	232.24	95.61
95th-Percentile Queue Length [veh/ln]	12.87	13.63	22.82	6.24	14.21	8.93	6.93	12.77	4.72	16.51	14.29	6.88
95th-Percentile Queue Length [ft/ln]	321.77	340.65	570.41	156.10	355.25	223.27	173.35	319.14	117.92	412.84	357.20	172.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.41	29.52	41.59	65.07	49.86	45.25	63.40	47.84	40.53	71.11	36.57	31.87
Movement LOS	D	C	D	E	D	D	E	D	D	E	D	C
d_A, Approach Delay [s/veh]	36.49			50.65			49.27			44.73		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	43.75											
Intersection LOS	D											
Intersection V/C	0.848											

Emissions

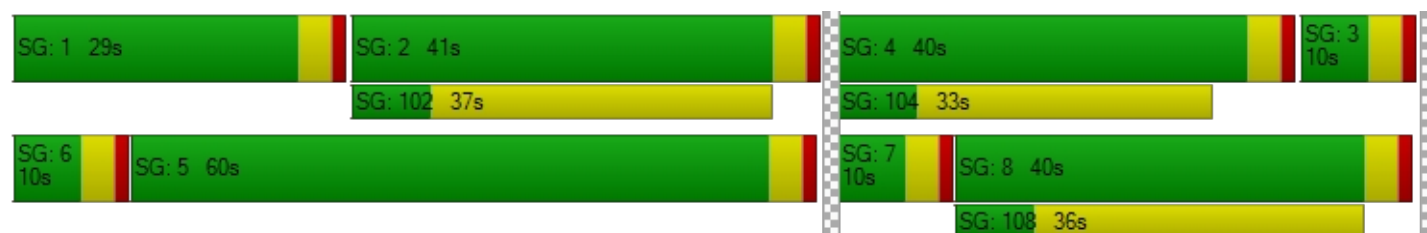
Vehicle Miles Traveled [mph]	14.19	38.39	27.69	6.65	39.53	11.96	9.99	47.29	8.45	22.61	53.75	12.23
Stops [stops/h]	245.41	526.16	486.39	104.07	553.68	155.80	115.57	485.90	78.62	331.79	557.37	114.73
Fuel consumption [US gal/h]	4.57	9.12	8.53	2.23	10.96	3.07	2.56	10.02	1.60	7.18	10.69	2.21
CO [g/h]	319.69	637.38	596.45	155.57	765.80	214.94	178.87	700.71	111.74	501.65	746.98	154.30
NOx [g/h]	62.20	124.01	116.05	30.27	149.00	41.82	34.80	136.33	21.74	97.60	145.33	30.02
VOC [g/h]	74.09	147.72	138.23	36.06	177.48	49.81	41.46	162.40	25.90	116.26	173.12	35.76

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			0.00			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersectio	2.895			0.000			2.786			2.858		
Crosswalk LOS	C			F			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	600			600			617			100		
d_b, Bicycle Delay [s]	29.40			29.40			28.70			54.15		
I_b,int, Bicycle LOS Score for Intersection	2.890			2.310			2.195			2.545		
Bicycle LOS	C			B			B			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Sierra Highway (N/S) at Avenue L-12 (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	20.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.025

Intersection Setup

Name	Sierra Highway		Sierra Highway		Avenue L-12	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sierra Highway		Sierra Highway		Avenue L-12	
Base Volume Input [veh/h]	16	930	946	12	5	16
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	930	946	12	5	16
Peak Hour Factor	0.8550	0.8550	0.8550	0.8550	0.8550	0.8550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	272	277	4	1	5
Total Analysis Volume [veh/h]	19	1088	1106	14	6	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.00	0.03	0.04
d_M, Delay for Movement [s/veh]	11.00	0.00	0.00	0.00	20.75	13.29
Movement LOS	B	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.09	0.00	0.00	0.00	0.21	0.21
95th-Percentile Queue Length [ft/ln]	2.37	0.00	0.00	0.00	5.23	5.23
d_A, Approach Delay [s/veh]	0.19		0.00		15.08	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.26					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	470.6
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.840

Intersection Setup

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				↵↵			↵↵			↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	0	0	0	210	0	91	0	377	177	0	869	615
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	210	0	91	0	377	177	0	869	615
Peak Hour Factor	0.9500	0.9500	0.9500	0.9580	0.9500	0.9580	0.9500	0.9580	0.9580	0.9500	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	55	0	24	0	98	46	0	227	160
Total Analysis Volume [veh/h]	0	0	0	219	0	95	0	394	185	0	907	642
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance		No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	1.84	0.00	0.28	0.00	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	470.55	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS				F		C		A	A		A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	17.25	0.00	1.15	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	431.34	0.00	28.70	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			334.24			0.00			0.00		
Approach LOS	A			F			A			A		
d_I, Intersection Delay [s/veh]	42.98											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	1,415.3
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	3.414

Intersection Setup

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	80	0	414	0	0	0	0	548	32	0	1460	498
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	0	414	0	0	0	0	548	32	0	1460	498
Peak Hour Factor	0.9560	0.9500	0.9560	0.9500	0.9500	0.9500	0.9500	0.9560	0.9560	0.9500	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	0	108	0	0	0	0	143	8	0	382	130
Total Analysis Volume [veh/h]	84	0	433	0	0	0	0	573	33	0	1527	521
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No			
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	3.41	0.00	0.83	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	1415.34	0.00	37.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	F		E					A	A		A	A
95th-Percentile Queue Length [veh/ln]	10.44	0.00	8.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	261.03	0.00	211.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	261.67			0.00			0.00			0.00		
Approach LOS	F			A			A			A		
d_I, Intersection Delay [s/veh]	42.66											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: 10th Street (N/S) at Avenue M (E/W)

Control Type:Signalized

Analysis Method:HCM 7th Edition

Analysis Period:15 minutes

Delay (sec / veh):45.1

Level Of Service:D

Volume to Capacity (v/c):0.954

Intersection Setup

Name	10th Street			10th Street			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	515.00	100.00	410.00	300.00	100.00	300.00	202.00	100.00	100.00	320.00	100.00	305.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	10th Street			10th Street			Avenue M			Avenue M		
Base Volume Input [veh/h]	171	633	109	125	930	548	181	580	139	226	1204	157
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	171	633	109	125	930	548	181	580	139	226	1204	157
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	167	29	33	245	144	48	153	37	60	317	41
Total Analysis Volume [veh/h]	180	667	115	132	980	577	191	611	146	238	1269	165
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing (Basic)

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	29	0	0	25	0	0	31	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	11	50	0	11	50	0	11	43	0	16	48	0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	46	46	6	45	45	7	41	41	10	45	45
g / C, Green / Cycle	0.06	0.38	0.38	0.05	0.38	0.38	0.06	0.34	0.34	0.09	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.05	0.13	0.07	0.04	0.28	0.36	0.06	0.21	0.21	0.07	0.36	0.10
s, saturation flow rate [veh/h]	3459	5094	1589	3459	3560	1589	3459	1870	1747	3459	3560	1589
c, Capacity [veh/h]	202	1950	608	186	1347	601	202	643	601	297	1323	591
d1, Uniform Delay [s]	56.13	26.30	24.64	55.84	31.99	36.39	56.31	32.66	32.66	53.83	36.82	26.44
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.43	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.65	0.10	0.15	4.87	0.77	25.32	19.07	4.25	4.54	4.98	16.73	1.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.34	0.19	0.71	0.73	0.96	0.95	0.61	0.61	0.80	0.96	0.28
d, Delay for Lane Group [s/veh]	68.78	26.40	24.79	60.71	32.75	61.71	75.39	36.90	37.20	58.81	53.54	27.62
Lane Group LOS	E	C	C	E	C	E	E	D	D	E	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.95	4.25	2.08	2.03	11.59	19.56	3.30	9.59	9.00	3.59	19.76	3.31
50th-Percentile Queue Length [ft/ln]	73.82	106.31	51.92	50.76	289.72	489.11	82.52	239.63	225.09	89.67	493.98	82.73
95th-Percentile Queue Length [veh/ln]	5.32	7.63	3.74	3.65	17.17	26.82	5.94	14.66	13.92	6.46	27.05	5.96
95th-Percentile Queue Length [ft/ln]	132.88	190.86	93.46	91.36	429.29	670.46	148.54	366.57	348.12	161.41	676.23	148.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	68.78	26.40	24.79	60.71	32.75	61.71	75.39	37.01	37.20	58.81	53.54	27.62
Movement LOS	E	C	C	E	C	E	E	D	D	E	D	C
d_A, Approach Delay [s/veh]	34.14			44.83			44.77			51.73		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	45.06											
Intersection LOS	D											
Intersection V/C	0.954											

Emissions

Vehicle Miles Traveled [mph]	15.37	56.94	9.82	9.24	68.63	40.41	21.24	43.53	40.67	23.74	126.58	16.46
Stops [stops/h]	177.17	382.73	62.30	121.81	695.32	586.94	198.06	287.56	270.11	215.21	1185.56	99.27
Fuel consumption [US gal/h]	6.32	12.60	2.07	3.81	19.50	17.61	7.32	9.74	9.15	7.64	40.08	3.32
CO [g/h]	442.05	880.56	144.39	266.32	1363.28	1230.82	511.62	680.59	639.24	534.00	2801.71	232.19
NOx [g/h]	86.01	171.32	28.09	51.82	265.25	239.47	99.54	132.42	124.37	103.90	545.11	45.18
VOC [g/h]	102.45	204.08	33.46	61.72	315.95	285.25	118.57	157.73	148.15	123.76	649.32	53.81

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersectio	3.259			3.290			3.353			3.254		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	767			767			650			733		
d_b, Bicycle Delay [s]	22.82			22.82			27.34			24.07		
I_b,int, Bicycle LOS Score for Intersection	2.089			2.953			2.342			2.939		
Bicycle LOS	B			C			B			C		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Main Driveway (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	10.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.559

Intersection Setup

Name	Palmdale Logistics Park Driveway		Avenue M		Avenue M	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↰		↱		↰	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	150.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Palmdale Logistics Park Driveway		Avenue M		Avenue M	
Base Volume Input [veh/h]	195	44	833	42	42	1150
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	195	44	833	42	42	1150
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	12	219	11	11	303
Total Analysis Volume [veh/h]	205	46	877	44	44	1211
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	3	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	38	0	74	0	6	74
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Walk [s]	7	0	7	0	0	7
Pedestrian Clearance [s]	21	0	7	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	62	0	18	0	10	28
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	0	6	0	6	6
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	L	C
C, Calculated Cycle Length [s]	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	59	59	4	67
g / C, Green / Cycle	0.17	0.65	0.65	0.04	0.74
(v / s)_i Volume / Saturation Flow Rate	0.14	0.17	0.17	0.02	0.34
s, saturation flow rate [veh/h]	1742	3560	1824	1781	3560
c, Capacity [veh/h]	296	2323	1190	80	2640
d1, Uniform Delay [s]	36.25	6.57	6.54	42.11	4.56
k, delay calibration	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.74	0.28	0.53	5.89	0.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.26	0.26	0.55	0.46
d, Delay for Lane Group [s/veh]	42.98	6.85	7.06	48.00	5.13
Lane Group LOS	D	A	A	D	A
Critical Lane Group	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.80	2.24	2.31	1.08	3.48
50th-Percentile Queue Length [ft/ln]	144.98	55.94	57.77	26.94	87.05
95th-Percentile Queue Length [veh/ln]	9.75	4.03	4.16	1.94	6.27
95th-Percentile Queue Length [ft/ln]	243.71	100.69	103.98	48.49	156.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.98	42.98	6.91	7.06	48.00	5.13
Movement LOS	D	D	A	A	D	A
d_A, Approach Delay [s/veh]	42.98		6.92		6.64	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	10.50					
Intersection LOS	B					
Intersection V/C	0.559					

Emissions

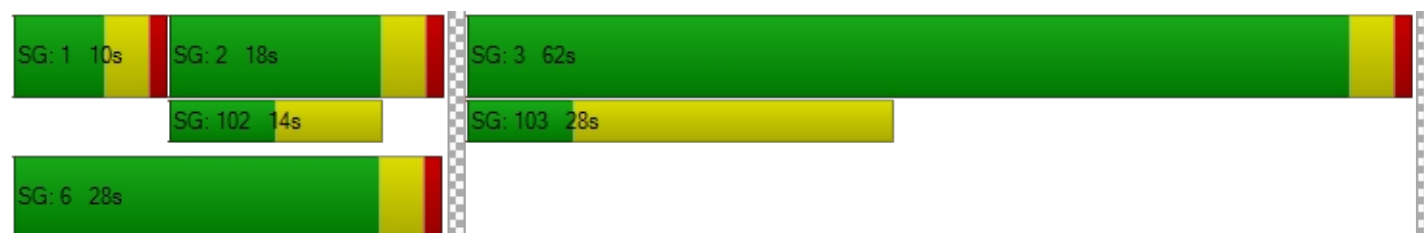
Vehicle Miles Traveled [mph]	5.93	14.57	7.28	1.04	28.73
Stops [stops/h]	231.96	179.00	92.43	43.10	278.55
Fuel consumption [US gal/h]	3.72	2.44	1.25	0.71	3.99
CO [g/h]	260.10	170.88	87.51	49.69	278.72
NOx [g/h]	50.61	33.25	17.03	9.67	54.23
VOC [g/h]	60.28	39.60	20.28	11.52	64.60

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersectio	1.880	2.755	2.806
Crosswalk LOS	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1289	311	533
d_b, Bicycle Delay [s]	5.69	32.09	24.20
I_b,int, Bicycle LOS Score for Intersection	1.974	2.066	2.595
Bicycle LOS	A	B	B

Sequence

Ring 1	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Sierra Highway (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	47.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.887

Intersection Setup

Name	Sierra Highway			Sierra Highway			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	410.00	100.00	405.00	175.00	100.00	160.00	185.00	100.00	185.00	200.00	100.00	210.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Sierra Highway			Sierra Highway			Avenue M			Avenue M		
Base Volume Input [veh/h]	247	820	517	114	913	183	169	571	239	338	729	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	247	820	517	114	913	183	169	571	239	338	729	132
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	212	133	29	236	47	44	147	62	87	188	34
Total Analysis Volume [veh/h]	255	846	534	118	942	189	174	589	247	349	752	136
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing (Basic)

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	29	0	0	26	0	0	30	0	0	0	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	10	40	0	10	40	0	60	41	0	29	10	0
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	45	45	10	34	34	14	25	25	25	36	36
g / C, Green / Cycle	0.17	0.37	0.37	0.08	0.28	0.28	0.12	0.20	0.20	0.21	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.14	0.24	0.34	0.07	0.26	0.12	0.10	0.17	0.16	0.20	0.21	0.09
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	300	1322	590	145	1013	452	208	731	326	371	1058	472
d1, Uniform Delay [s]	48.43	31.10	35.70	54.20	41.76	34.85	51.89	45.40	44.86	46.77	37.59	32.42
k, delay calibration	0.50	0.11	0.13	0.11	0.11	0.11	0.11	0.50	0.50	0.40	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	24.91	0.52	6.58	10.32	4.45	0.62	8.63	9.22	15.07	29.26	4.06	1.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.64	0.90	0.81	0.93	0.42	0.84	0.81	0.76	0.94	0.71	0.29
d, Delay for Lane Group [s/veh]	73.34	31.62	42.28	64.53	46.20	35.47	60.52	54.62	59.93	76.03	41.65	33.96
Lane Group LOS	E	C	D	E	D	D	E	D	E	E	D	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	9.46	10.12	15.61	3.92	14.05	4.57	5.62	9.27	8.27	13.22	10.39	3.26
50th-Percentile Queue Length [ft/ln]	236.56	253.00	390.20	97.98	351.29	114.35	140.62	231.77	206.84	330.46	259.68	81.40
95th-Percentile Queue Length [veh/ln]	14.51	15.34	22.09	7.05	20.20	8.08	9.51	14.26	12.99	19.18	15.67	5.86
95th-Percentile Queue Length [ft/ln]	362.68	383.43	552.17	176.37	504.97	202.04	237.85	356.61	324.77	479.52	391.82	146.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	73.34	31.62	42.28	64.53	46.20	35.47	60.52	54.62	59.93	76.03	41.65	33.96
Movement LOS	E	C	D	E	D	D	E	D	E	E	D	C
d_A, Approach Delay [s/veh]	41.61			46.31			56.93			50.50		
Approach LOS	D			D			E			D		
d_I, Intersection Delay [s/veh]	47.91											
Intersection LOS	D											
Intersection V/C	0.887											

Emissions

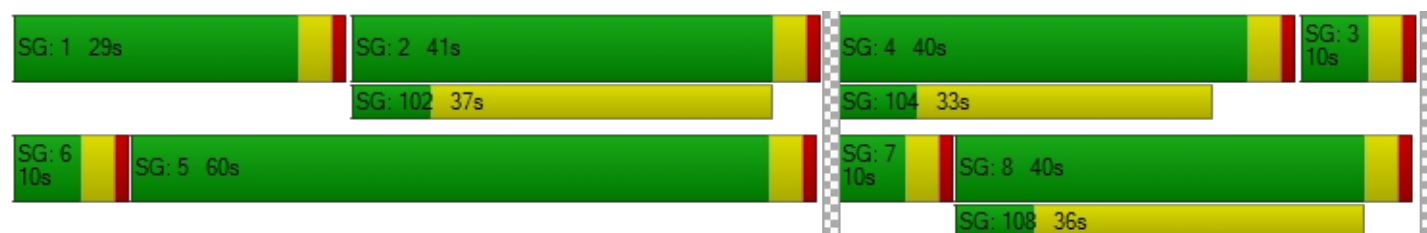
Vehicle Miles Traveled [mph]	12.70	42.13	26.59	7.55	60.25	12.09	14.85	50.28	21.08	25.87	55.75	10.08
Stops [stops/h]	283.87	607.20	468.23	117.58	843.08	137.22	168.74	556.26	248.21	396.55	623.22	97.68
Fuel consumption [US gal/h]	5.90	10.53	8.28	2.51	15.99	2.62	3.69	11.69	5.25	8.66	12.11	1.89
CO [g/h]	412.17	736.20	578.49	175.42	1118.00	183.12	257.68	817.06	367.06	604.99	846.55	132.42
NOx [g/h]	80.19	143.24	112.55	34.13	217.52	35.63	50.14	158.97	71.42	117.71	164.71	25.76
VOC [g/h]	95.52	170.62	134.07	40.66	259.11	42.44	59.72	189.36	85.07	140.21	196.20	30.69

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			0.00			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersectio	2.982			0.000			2.825			2.869		
Crosswalk LOS	C			F			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	600			600			617			100		
d_b, Bicycle Delay [s]	29.40			29.40			28.70			54.15		
I_b,int, Bicycle LOS Score for Intersection	2.908			2.590			2.393			2.580		
Bicycle LOS	C			B			B			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Sierra Highway (N/S) at Avenue L-12 (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	26.3
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.117

Intersection Setup

Name	Sierra Highway		Sierra Highway		Avenue L-12	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sierra Highway		Sierra Highway		Avenue L-12	
Base Volume Input [veh/h]	14	1031	1242	21	22	31
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	1031	1242	21	22	31
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	267	321	5	6	8
Total Analysis Volume [veh/h]	14	1067	1286	22	23	32
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.00	0.12	0.08
d_M, Delay for Movement [s/veh]	12.05	0.00	0.00	0.00	26.35	16.86
Movement LOS	B	A	A	A	D	C
95th-Percentile Queue Length [veh/ln]	0.08	0.00	0.00	0.00	0.71	0.71
95th-Percentile Queue Length [ft/ln]	2.05	0.00	0.00	0.00	17.72	17.72
d_A, Approach Delay [s/veh]	0.16		0.00		20.83	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.54					
Intersection LOS	D					



Appendix H

**Level of Service Analysis Worksheets for
Existing Plus Ambient Growth and Related Projects Plus Project Conditions**

Intersection Level Of Service Report
Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	1,178.0
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	3.483

Intersection Setup

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				↔			↔			↔		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	0	0	0	490	0	68	0	585	175	0	470	279
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	490	0	68	0	585	175	0	470	279
Peak Hour Factor	0.9500	0.9500	0.9500	0.9230	0.9500	0.9230	0.9500	0.9230	0.9230	0.9500	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	133	0	18	0	158	47	0	127	76
Total Analysis Volume [veh/h]	0	0	0	531	0	74	0	634	190	0	509	302
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance		No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	3.48	0.00	0.13	0.00	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	1178.03	0.00	12.34	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS				F		B		A	A		A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	51.21	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	1280.13	0.00	11.24	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			1035.45			0.00			0.00		
Approach LOS	A			F			A			A		
d_I, Intersection Delay [s/veh]	279.66											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	734.6
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.233

Intersection Setup

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	108	0	446	0	0	0	0	1016	78	0	653	216
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	0	446	0	0	0	0	1016	78	0	653	216
Peak Hour Factor	0.9320	0.9500	0.9320	0.9500	0.9500	0.9500	0.9500	0.9320	0.9320	0.9500	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	0	120	0	0	0	0	273	21	0	175	58
Total Analysis Volume [veh/h]	116	0	479	0	0	0	0	1090	84	0	701	232
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No			
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	2.23	0.00	1.83	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	734.63	0.00	421.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	F		F					A	A		A	A
95th-Percentile Queue Length [veh/ln]	11.72	0.00	32.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	292.97	0.00	816.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	482.19			0.00			0.00			0.00		
Approach LOS	F			A			A			A		
d_I, Intersection Delay [s/veh]	106.18											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: 10th Street (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	30.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.634

Intersection Setup

Name	10th Street			10th Street			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	515.00	100.00	410.00	300.00	100.00	300.00	202.00	100.00	100.00	320.00	100.00	305.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	10th Street			10th Street			Avenue M			Avenue M		
Base Volume Input [veh/h]	80	462	128	104	411	89	210	1035	142	123	656	178
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	462	128	104	411	89	210	1035	142	123	656	178
Peak Hour Factor	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	126	35	28	112	24	57	282	39	33	178	48
Total Analysis Volume [veh/h]	87	503	139	113	447	97	229	1126	155	134	714	194
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing (Basic)

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	29	0	0	25	0	0	31	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	10	45	0	10	45	0	12	45	0	10	43	0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Calculated Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	16	16	6	17	17	8	66	66	6	64	64
g / C, Green / Cycle	0.05	0.15	0.15	0.05	0.15	0.15	0.07	0.60	0.60	0.05	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.03	0.10	0.09	0.03	0.13	0.06	0.07	0.35	0.35	0.04	0.20	0.12
s, saturation flow rate [veh/h]	3459	5094	1589	3459	3560	1589	3459	1870	1792	3459	3560	1589
c, Capacity [veh/h]	176	764	239	183	542	242	252	1117	1070	189	2061	920
d1, Uniform Delay [s]	50.83	44.08	43.54	51.01	45.21	42.11	50.64	13.69	13.78	51.15	12.20	11.11
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.15	0.97	2.25	3.38	3.26	1.07	12.09	2.22	2.39	4.87	0.46	0.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.50	0.66	0.58	0.62	0.83	0.40	0.91	0.58	0.59	0.71	0.35	0.21
d, Delay for Lane Group [s/veh]	52.99	45.06	45.79	54.39	48.47	43.18	62.73	15.91	16.17	56.02	12.66	11.63
Lane Group LOS	D	D	D	D	D	D	E	B	B	E	B	B
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.17	4.16	3.50	1.55	5.90	2.36	3.40	8.92	8.76	1.86	4.07	2.08
50th-Percentile Queue Length [ft/ln]	29.18	103.92	87.40	38.87	147.58	58.98	85.09	223.10	218.97	46.52	101.79	52.07
95th-Percentile Queue Length [veh/ln]	2.10	7.48	6.29	2.80	9.89	4.25	6.13	13.82	13.61	3.35	7.33	3.75
95th-Percentile Queue Length [ft/ln]	52.53	187.05	157.33	69.96	247.19	106.16	153.16	345.58	340.31	83.74	183.22	93.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.99	45.06	45.79	54.39	48.47	43.18	62.73	16.02	16.17	56.02	12.66	11.63
Movement LOS	D	D	D	D	D	D	E	B	B	E	B	B
d_A, Approach Delay [s/veh]	46.14			48.71			23.12			18.05		
Approach LOS	D			D			C			B		
d_I, Intersection Delay [s/veh]	30.31											
Intersection LOS	C											
Intersection V/C	0.634											

Emissions

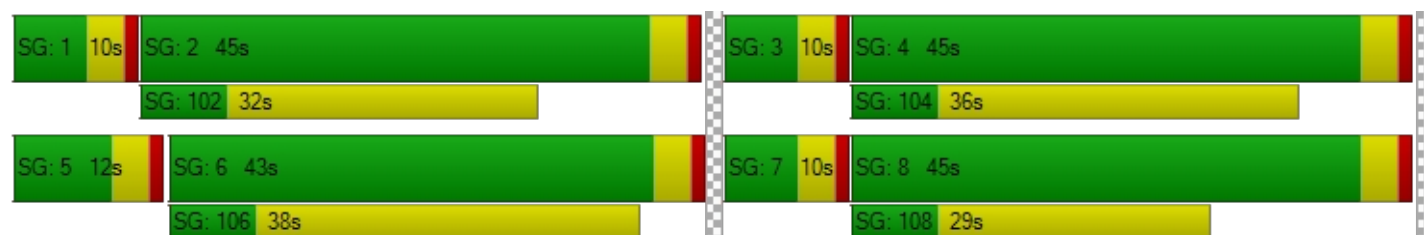
Vehicle Miles Traveled [mph]	7.43	42.94	11.87	7.91	31.30	6.79	25.47	72.30	70.18	13.37	71.22	19.35
Stops [stops/h]	76.41	408.12	114.42	101.76	386.39	77.20	222.77	292.06	286.65	121.81	266.49	68.16
Fuel consumption [US gal/h]	2.61	13.63	3.82	3.08	11.39	2.26	7.91	9.95	9.75	4.24	9.17	2.37
CO [g/h]	182.14	952.65	266.83	215.13	796.04	158.32	553.12	695.33	681.39	296.17	641.14	165.84
NOx [g/h]	35.44	185.35	51.92	41.86	154.88	30.80	107.62	135.29	132.57	57.62	124.74	32.27
VOC [g/h]	42.21	220.79	61.84	49.86	184.49	36.69	128.19	161.15	157.92	68.64	148.59	38.44

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	44.55			44.55			44.55			44.55		
I_p,int, Pedestrian LOS Score for Intersectio	3.062			3.057			3.180			3.221		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	745			745			745			709		
d_b, Bicycle Delay [s]	21.64			21.64			21.64			22.91		
I_b,int, Bicycle LOS Score for Intersection	1.961			2.102			2.805			2.419		
Bicycle LOS	A			B			C			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Main Driveway (N/S) at Avenue M (E/W)

Control Type:

Signalized

Delay (sec / veh):

12.1

Analysis Method:

HCM 7th Edition

Level Of Service:

B

Analysis Period:

15 minutes

Volume to Capacity (v/c):

0.475

Intersection Setup

Name	Pa Lo			Main Driveway			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⬆			⬆			⬆⬆⬆			⬆⬆		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pa Lo			Main Driveway			Avenue M			Avenue M		
Base Volume Input [veh/h]	52	0	16	8	0	25	124	790	140	147	1050	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	52	0	16	8	0	25	124	790	140	147	1050	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	0	4	2	0	7	33	208	37	39	276	0
Total Analysis Volume [veh/h]	55	0	17	8	0	26	131	832	147	155	1105	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Maximum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	21	0	0	7	0	0	7	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	0	32	0	0	32	0	40	18	0	40	18	0
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
C, Calculated Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	5	8	63	63	10	64	64
g / C, Green / Cycle	0.06	0.06	0.09	0.70	0.70	0.11	0.72	0.72
(v / s)_i Volume / Saturation Flow Rate	0.04	0.02	0.07	0.18	0.19	0.09	0.30	0.30
s, saturation flow rate [veh/h]	1678	1767	1781	3560	1730	1781	1870	1870
c, Capacity [veh/h]	166	150	168	2494	1212	195	1338	1338
d1, Uniform Delay [s]	41.70	40.87	39.83	4.95	4.96	39.10	5.17	5.17
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.78	0.76	7.58	0.26	0.53	7.23	0.94	0.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.23	0.78	0.26	0.26	0.80	0.41	0.41
d, Delay for Lane Group [s/veh]	43.48	41.63	47.42	5.21	5.49	46.33	6.12	6.12
Lane Group LOS	D	D	D	A	A	D	A	A
Critical Lane Group	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.64	0.75	3.15	1.94	1.99	3.68	3.65	3.65
50th-Percentile Queue Length [ft/ln]	40.89	18.76	78.72	48.45	49.65	92.07	91.24	91.24
95th-Percentile Queue Length [veh/ln]	2.94	1.35	5.67	3.49	3.57	6.63	6.57	6.57
95th-Percentile Queue Length [ft/ln]	73.59	33.78	141.69	87.22	89.37	165.73	164.23	164.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.48	43.48	43.48	41.63	41.63	41.63	47.42	5.27	5.49	46.33	6.12	6.12
Movement LOS	D	D	D	D	D	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	43.48			41.63			10.27			11.06		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	12.07											
Intersection LOS	B											
Intersection V/C	0.475											

Emissions

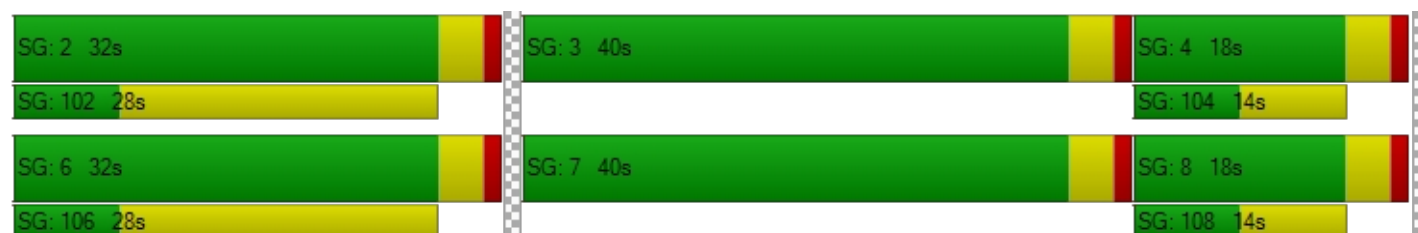
Vehicle Miles Traveled [mph]	1.70	0.80	3.11	15.61	7.62	3.68	13.11	13.11
Stops [stops/h]	65.42	30.02	125.95	155.05	79.44	147.32	145.98	145.98
Fuel consumption [US gal/h]	1.07	0.49	2.09	2.20	1.11	2.43	2.03	2.03
CO [g/h]	74.69	34.04	145.93	153.56	77.68	169.62	142.17	142.17
NOx [g/h]	14.53	6.62	28.39	29.88	15.11	33.00	27.66	27.66
VOC [g/h]	17.31	7.89	33.82	35.59	18.00	39.31	32.95	32.95

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersectio	1.897	1.795	2.904	2.808
Crosswalk LOS	A	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	622	622	311	311
d_b, Bicycle Delay [s]	21.36	21.36	32.09	32.09
I_b,int, Bicycle LOS Score for Intersection	1.678	1.616	2.170	2.599
Bicycle LOS	A	A	B	B

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Sierra Highway (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	43.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.849

Intersection Setup

Name	Sierra Highway			Sierra Highway			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	410.00	100.00	405.00	175.00	100.00	160.00	185.00	100.00	185.00	200.00	100.00	210.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Sierra Highway			Sierra Highway			Avenue M			Avenue M		
Base Volume Input [veh/h]	296	746	538	101	599	181	113	538	103	295	708	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	296	746	538	101	599	181	113	538	103	295	708	160
Peak Hour Factor	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	77	193	139	26	155	47	29	139	27	76	183	41
Total Analysis Volume [veh/h]	306	771	556	104	619	187	117	556	107	305	732	165
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing (Basic)

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	29	0	0	26	0	0	30	0	0	0	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	10	40	0	10	40	0	60	41	0	29	10	0
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	31	46	46	9	24	24	10	27	27	22	39	39
g / C, Green / Cycle	0.26	0.38	0.38	0.07	0.20	0.20	0.08	0.22	0.22	0.19	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.17	0.22	0.35	0.06	0.17	0.12	0.07	0.16	0.07	0.17	0.21	0.10
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	456	1364	609	131	713	318	147	796	355	332	1166	521
d1, Uniform Delay [s]	40.08	29.15	35.12	54.70	46.45	43.49	54.05	42.87	38.79	47.90	34.15	30.27
k, delay calibration	0.50	0.11	0.12	0.11	0.11	0.11	0.11	0.50	0.50	0.31	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.64	0.37	6.47	10.36	3.39	1.72	9.35	5.06	2.17	23.21	2.56	1.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.67	0.57	0.91	0.79	0.87	0.59	0.80	0.70	0.30	0.92	0.63	0.32
d, Delay for Lane Group [s/veh]	47.71	29.52	41.59	65.07	49.84	45.21	63.40	47.93	40.96	71.11	36.71	31.87
Lane Group LOS	D	C	D	E	D	D	E	D	D	E	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	9.06	8.77	16.21	3.47	9.24	5.19	3.85	8.14	2.85	11.06	9.41	3.82
50th-Percentile Queue Length [ft/ln]	226.52	219.23	405.32	86.72	231.06	129.77	96.30	203.42	71.32	276.49	235.19	95.61
95th-Percentile Queue Length [veh/ln]	14.00	13.63	22.82	6.24	14.23	8.93	6.93	12.82	5.14	16.51	14.44	6.88
95th-Percentile Queue Length [ft/ln]	349.93	340.65	570.41	156.10	355.71	223.18	173.35	320.38	128.38	412.84	360.95	172.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.71	29.52	41.59	65.07	49.84	45.21	63.40	47.93	40.96	71.11	36.71	31.87
Movement LOS	D	C	D	E	D	D	E	D	D	E	D	C
d_A, Approach Delay [s/veh]	37.04			50.63			49.29			44.77		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	43.94											
Intersection LOS	D											
Intersection V/C	0.849											

Emissions

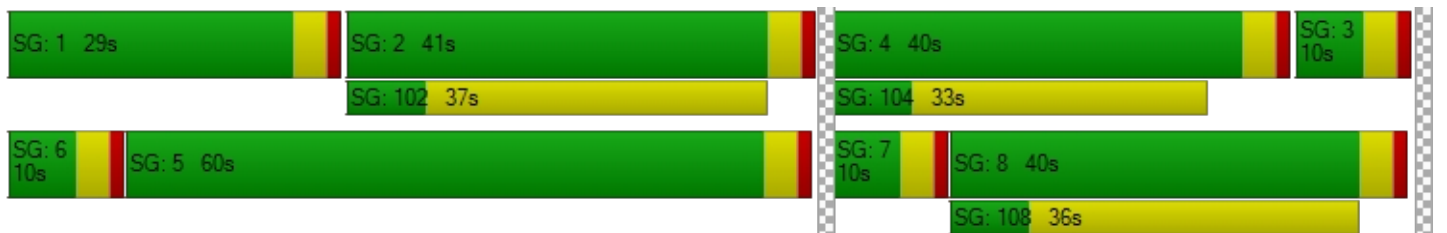
Vehicle Miles Traveled [mph]	15.24	38.39	27.69	6.65	39.59	11.96	9.99	47.46	9.13	22.61	54.26	12.23
Stops [stops/h]	271.82	526.16	486.39	104.07	554.54	155.73	115.57	488.22	85.59	331.79	564.46	114.73
Fuel consumption [US gal/h]	5.10	9.12	8.53	2.23	10.97	3.07	2.56	10.07	1.74	7.18	10.82	2.21
CO [g/h]	356.48	637.38	596.45	155.57	766.87	214.81	178.87	704.13	121.67	501.65	756.39	154.30
NOx [g/h]	69.36	124.01	116.05	30.27	149.21	41.79	34.80	137.00	23.67	97.60	147.17	30.02
VOC [g/h]	82.62	147.72	138.23	36.06	177.73	49.78	41.46	163.19	28.20	116.26	175.30	35.76

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			0.00			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersectio	2.900			0.000			2.792			2.860		
Crosswalk LOS	C			F			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	600			600			617			100		
d_b, Bicycle Delay [s]	29.40			29.40			28.70			54.15		
I_b,int, Bicycle LOS Score for Intersection	2.907			2.310			2.203			2.551		
Bicycle LOS	C			B			B			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Sierra Highway (N/S) at Avenue L-12 (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	21.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.055

Intersection Setup

Name	Sierra Highway		Sierra Highway		Avenue L-12	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sierra Highway		Sierra Highway		Avenue L-12	
Base Volume Input [veh/h]	16	930	946	26	11	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	930	946	26	11	17
Peak Hour Factor	0.8550	0.8550	0.8550	0.8550	0.8550	0.8550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	272	277	8	3	5
Total Analysis Volume [veh/h]	19	1088	1106	30	13	20
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.00	0.05	0.04
d_M, Delay for Movement [s/veh]	11.08	0.00	0.00	0.00	21.38	13.88
Movement LOS	B	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.10	0.00	0.00	0.00	0.32	0.32
95th-Percentile Queue Length [ft/ln]	2.40	0.00	0.00	0.00	8.07	8.07
d_A, Approach Delay [s/veh]	0.19		0.00		16.83	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.34					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	596.1
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.130

Intersection Setup

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				↔			↔			↔		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	0	0	0	241	0	91	0	378	177	0	872	664
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	241	0	91	0	378	177	0	872	664
Peak Hour Factor	0.9500	0.9500	0.9500	0.9580	0.9500	0.9580	0.9500	0.9580	0.9580	0.9500	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	63	0	24	0	99	46	0	228	173
Total Analysis Volume [veh/h]	0	0	0	252	0	95	0	395	185	0	910	693
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance		No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	2.13	0.00	0.29	0.00	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	596.12	0.00	20.09	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS				F		C		A	A		A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	21.18	0.00	1.15	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	529.40	0.00	28.85	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			438.42			0.00			0.00		
Approach LOS	A			F			A			A		
d_I, Intersection Delay [s/veh]	60.13											
Intersection LOS	F											

Intersection Level Of Service Report**Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)**

Control Type:	Two-way stop	Delay (sec / veh):	1,832.0
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	4.201

Intersection Setup

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	80	0	441	0	0	0	0	580	32	0	1511	568
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	0	441	0	0	0	0	580	32	0	1511	568
Peak Hour Factor	0.9560	0.9500	0.9560	0.9500	0.9500	0.9500	0.9500	0.9560	0.9560	0.9500	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	0	115	0	0	0	0	152	8	0	395	149
Total Analysis Volume [veh/h]	84	0	461	0	0	0	0	607	33	0	1581	594
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No			
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	4.20	0.00	0.93	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	1831.99	0.00	53.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	F		F					A	A		A	A
95th-Percentile Queue Length [veh/ln]	10.89	0.00	11.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	272.31	0.00	278.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	327.68			0.00			0.00			0.00		
Approach LOS	F			A			A			A		
d_I, Intersection Delay [s/veh]	53.15											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: 10th Street (N/S) at Avenue M (E/W)

Control Type:Signalized

Analysis Method:HCM 7th Edition

Analysis Period:15 minutes

Delay (sec / veh):51.8

Level Of Service:D

Volume to Capacity (v/c):0.995

Intersection Setup

Name	10th Street			10th Street			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	515.00	100.00	410.00	300.00	100.00	300.00	202.00	100.00	100.00	320.00	100.00	305.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	10th Street			10th Street			Avenue M			Avenue M		
Base Volume Input [veh/h]	171	633	110	126	930	548	181	638	139	229	1325	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	171	633	110	126	930	548	181	638	139	229	1325	160
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	167	29	33	245	144	48	168	37	60	349	42
Total Analysis Volume [veh/h]	180	667	116	133	980	577	191	672	146	241	1396	169
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing (Basic)

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	29	0	0	25	0	0	31	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	11	50	0	11	50	0	11	43	0	16	48	0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	46	46	6	45	45	7	41	41	10	45	45
g / C, Green / Cycle	0.06	0.38	0.38	0.05	0.38	0.38	0.06	0.34	0.34	0.09	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.05	0.13	0.07	0.04	0.28	0.36	0.06	0.23	0.23	0.07	0.39	0.11
s, saturation flow rate [veh/h]	3459	5094	1589	3459	3560	1589	3459	1870	1756	3459	3560	1589
c, Capacity [veh/h]	202	1949	608	187	1347	601	202	642	603	300	1323	591
d1, Uniform Delay [s]	56.13	26.32	24.68	55.82	31.99	36.39	56.31	33.43	33.43	53.79	37.70	26.51
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.43	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.65	0.10	0.15	4.89	0.77	25.32	19.07	5.21	5.53	5.01	40.69	1.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.34	0.19	0.71	0.73	0.96	0.95	0.66	0.66	0.80	1.06	0.29
d, Delay for Lane Group [s/veh]	68.78	26.43	24.83	60.70	32.75	61.71	75.39	38.63	38.96	58.80	78.40	27.73
Lane Group LOS	E	C	C	E	C	E	E	D	D	E	F	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.95	4.26	2.10	2.05	11.59	19.56	3.30	10.66	10.06	3.63	25.29	3.40
50th-Percentile Queue Length [ft/ln]	73.82	106.38	52.44	51.14	289.72	489.11	82.52	266.43	251.56	90.81	632.34	85.00
95th-Percentile Queue Length [veh/ln]	5.32	7.64	3.78	3.68	17.17	26.82	5.94	16.01	15.26	6.54	34.83	6.12
95th-Percentile Queue Length [ft/ln]	132.88	190.95	94.39	92.05	429.29	670.46	148.54	400.28	381.62	163.46	870.73	153.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	68.78	26.43	24.83	60.70	32.75	61.71	75.39	38.75	38.96	58.80	78.40	27.73
Movement LOS	E	C	C	E	C	E	E	D	D	E	F	C
d_A, Approach Delay [s/veh]	34.15			44.84			45.72			71.04		
Approach LOS	C			D			D			E		
d_I, Intersection Delay [s/veh]	51.77											
Intersection LOS	D											
Intersection V/C	0.995											

Emissions

Vehicle Miles Traveled [mph]	15.37	56.94	9.90	9.31	68.63	40.41	21.24	46.92	44.06	24.04	139.25	16.86
Stops [stops/h]	177.17	382.96	62.93	122.73	695.32	586.94	198.06	319.72	301.87	217.95	1517.62	102.00
Fuel consumption [US gal/h]	6.32	12.60	2.09	3.84	19.50	17.61	7.32	10.82	10.22	7.74	55.12	3.41
CO [g/h]	442.05	881.07	145.82	268.33	1363.28	1230.82	511.62	756.63	714.49	540.75	3852.65	238.52
NOx [g/h]	86.01	171.43	28.37	52.21	265.25	239.47	99.54	147.21	139.01	105.21	749.59	46.41
VOC [g/h]	102.45	204.20	33.80	62.19	315.95	285.25	118.57	175.36	165.59	125.32	892.89	55.28

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersectio	3.260			3.291			3.409			3.304		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	767			767			650			733		
d_b, Bicycle Delay [s]	22.82			22.82			27.34			24.07		
I_b,int, Bicycle LOS Score for Intersection	2.089			2.954			2.392			3.050		
Bicycle LOS	B			C			B			C		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Main Driveway (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	16.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.655

Intersection Setup

Name	Pa Lo			Main Driveway			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pa Lo			Main Driveway			Avenue M			Avenue M		
Base Volume Input [veh/h]	195	0	44	26	0	76	60	833	42	42	1201	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	195	0	44	26	0	76	60	833	42	42	1201	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	0	12	7	0	20	16	219	11	11	316	0
Total Analysis Volume [veh/h]	205	0	46	27	0	80	63	877	44	44	1264	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Maximum Green [s]	0	28	0	0	28	0	6	54	0	6	54	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	17	0	0	7	0	0	7	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	0	32	0	0	32	0	10	48	0	10	48	0
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
C, Calculated Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20	5	54	54	4	54	54
g / C, Green / Cycle	0.22	0.22	0.05	0.61	0.61	0.04	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.19	0.06	0.04	0.17	0.17	0.02	0.34	0.34
s, saturation flow rate [veh/h]	1290	1734	1781	3560	1825	1781	1870	1870
c, Capacity [veh/h]	351	425	94	2158	1106	79	1118	1118
d1, Uniform Delay [s]	34.71	29.57	41.84	8.42	8.43	42.12	11.00	11.00
k, delay calibration	0.17	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.31	0.31	7.90	0.33	0.64	5.92	2.07	2.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.71	0.25	0.67	0.28	0.28	0.55	0.57	0.57
d, Delay for Lane Group [s/veh]	39.02	29.88	49.74	8.75	9.07	48.04	13.08	13.08
Lane Group LOS	D	C	D	A	A	D	B	B
Critical Lane Group	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.65	1.95	1.56	2.66	2.83	1.08	7.51	7.51
50th-Percentile Queue Length [ft/ln]	141.13	48.65	39.12	66.52	70.79	26.95	187.80	187.80
95th-Percentile Queue Length [veh/ln]	9.54	3.50	2.82	4.79	5.10	1.94	12.01	12.01
95th-Percentile Queue Length [ft/ln]	238.54	87.58	70.42	119.74	127.43	48.51	300.18	300.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.02	39.02	39.02	29.88	29.88	29.88	49.74	8.85	9.07	48.04	13.08	13.08
Movement LOS	D	D	D	C	C	C	D	A	A	D	B	B
d_A, Approach Delay [s/veh]	39.02			29.88			11.48			14.25		
Approach LOS	D			C			B			B		
d_I, Intersection Delay [s/veh]	16.20											
Intersection LOS	B											
Intersection V/C	0.655											

Emissions

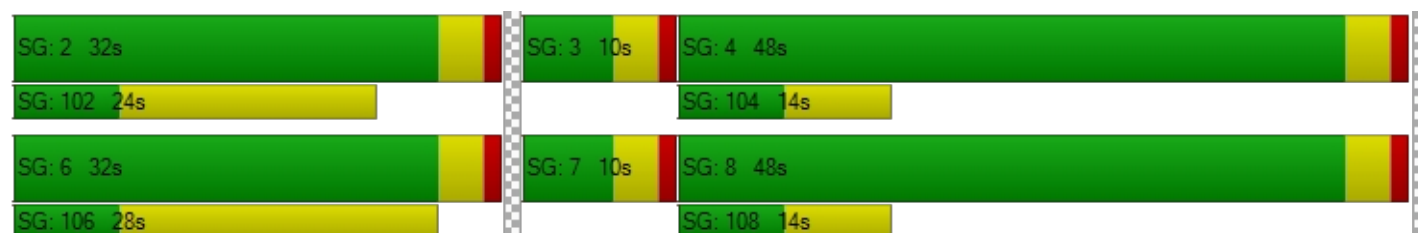
Vehicle Miles Traveled [mph]	5.93	2.53	1.49	14.44	7.42	1.04	15.00	15.00
Stops [stops/h]	225.81	77.85	62.60	212.88	113.27	43.12	300.49	300.49
Fuel consumption [US gal/h]	3.48	1.18	1.05	2.85	1.51	0.71	3.96	3.96
CO [g/h]	243.57	82.81	73.05	199.49	105.41	49.72	276.75	276.75
NOx [g/h]	47.39	16.11	14.21	38.81	20.51	9.67	53.85	53.85
VOC [g/h]	56.45	19.19	16.93	46.23	24.43	11.52	64.14	64.14

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersectio	1.880	1.797	3.156	2.858
Crosswalk LOS	A	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	622	622	978	978
d_b, Bicycle Delay [s]	21.36	21.36	11.76	11.76
I_b,int, Bicycle LOS Score for Intersection	1.974	1.736	2.101	2.639
Bicycle LOS	A	A	B	B

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Sierra Highway (N/S) at Avenue M (E/W)

Control Type:Signalized

Analysis Method:HCM 7th Edition

Analysis Period:15 minutes

Delay (sec / veh):48.6

Level Of Service:D

Volume to Capacity (v/c):0.896

Intersection Setup

Name	Sierra Highway			Sierra Highway			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	410.00	100.00	405.00	175.00	100.00	160.00	185.00	100.00	185.00	200.00	100.00	210.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Sierra Highway			Sierra Highway			Avenue M			Avenue M		
Base Volume Input [veh/h]	256	820	517	114	915	183	169	578	258	338	732	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	256	820	517	114	915	183	169	578	258	338	732	132
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	212	133	29	236	47	44	149	67	87	189	34
Total Analysis Volume [veh/h]	264	846	534	118	944	189	174	596	266	349	755	136
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing (Basic)

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	29	0	0	26	0	0	30	0	0	0	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	10	40	0	10	40	0	60	41	0	29	10	0
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	45	45	10	34	34	14	25	25	25	36	36
g / C, Green / Cycle	0.17	0.37	0.37	0.08	0.29	0.29	0.12	0.20	0.20	0.21	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.15	0.24	0.34	0.07	0.27	0.12	0.10	0.17	0.17	0.20	0.21	0.09
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	299	1322	590	145	1015	453	208	731	326	371	1058	472
d1, Uniform Delay [s]	48.77	31.10	35.70	54.20	41.74	34.81	51.89	45.50	45.50	46.77	37.63	32.42
k, delay calibration	0.50	0.11	0.13	0.11	0.11	0.11	0.11	0.50	0.50	0.40	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	29.16	0.52	6.58	10.32	4.47	0.61	8.63	9.72	19.64	29.26	4.11	1.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.64	0.90	0.81	0.93	0.42	0.84	0.82	0.81	0.94	0.71	0.29
d, Delay for Lane Group [s/veh]	77.93	31.62	42.28	64.53	46.21	35.42	60.52	55.22	65.14	76.03	41.74	33.96
Lane Group LOS	E	C	D	E	D	D	E	E	E	E	D	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	10.12	10.12	15.61	3.92	14.09	4.57	5.62	9.44	9.33	13.22	10.44	3.26
50th-Percentile Queue Length [ft/ln]	253.02	253.00	390.20	97.98	352.14	114.27	140.62	236.00	233.15	330.46	261.11	81.40
95th-Percentile Queue Length [veh/ln]	15.34	15.34	22.09	7.05	20.24	8.08	9.51	14.48	14.33	19.18	15.74	5.86
95th-Percentile Queue Length [ft/ln]	383.46	383.43	552.17	176.37	506.02	201.93	237.85	361.97	358.36	479.52	393.62	146.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	77.93	31.62	42.28	64.53	46.21	35.42	60.52	55.22	65.14	76.03	41.74	33.96
Movement LOS	E	C	D	E	D	D	E	E	E	E	D	C
d_A, Approach Delay [s/veh]	42.52			46.31			58.66			50.54		
Approach LOS	D			D			E			D		
d_I, Intersection Delay [s/veh]	48.59											
Intersection LOS	D											
Intersection V/C	0.896											

Emissions

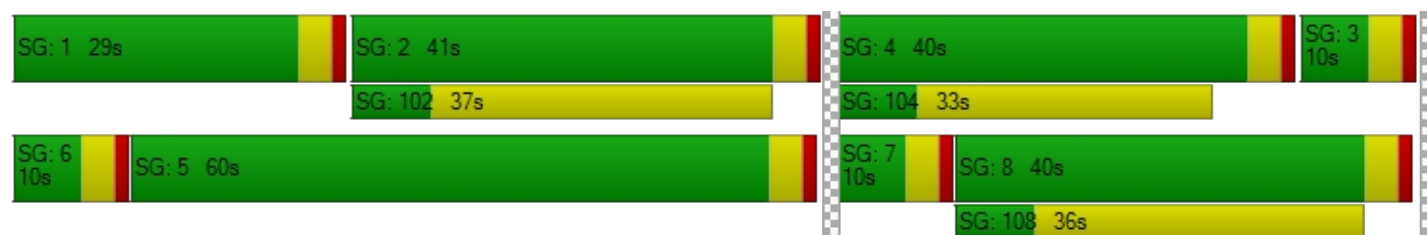
Vehicle Miles Traveled [mph]	13.15	42.13	26.59	7.55	60.38	12.09	14.85	50.87	22.71	25.87	55.97	10.08
Stops [stops/h]	303.63	607.20	468.23	117.58	845.14	137.12	168.74	566.40	279.78	396.55	626.67	97.68
Fuel consumption [US gal/h]	6.40	10.53	8.28	2.51	16.03	2.62	3.69	11.92	6.01	8.66	12.18	1.89
CO [g/h]	447.71	736.20	578.49	175.42	1120.59	182.97	257.68	833.22	419.83	604.99	851.31	132.42
NOx [g/h]	87.11	143.24	112.55	34.13	218.03	35.60	50.14	162.11	81.68	117.71	165.63	25.76
VOC [g/h]	103.76	170.62	134.07	40.66	259.71	42.41	59.72	193.11	97.30	140.21	197.30	30.69

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			0.00			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersectio	2.987			0.000			2.831			2.871		
Crosswalk LOS	C			F			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	600			600			617			100		
d_b, Bicycle Delay [s]	29.40			29.40			28.70			54.15		
I_b,int, Bicycle LOS Score for Intersection	2.916			2.592			2.414			2.583		
Bicycle LOS	C			B			B			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Sierra Highway (N/S) at Avenue L-12 (E/W)

Control Type:	Two-way stop	Delay (sec / veh):	28.5
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.189

Intersection Setup

Name	Sierra Highway		Sierra Highway		Avenue L-12	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sierra Highway		Sierra Highway		Avenue L-12	
Base Volume Input [veh/h]	14	1031	1242	30	36	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	1031	1242	30	36	33
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	267	321	8	9	9
Total Analysis Volume [veh/h]	14	1067	1286	31	37	34
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.00	0.19	0.08
d_M, Delay for Movement [s/veh]	12.10	0.00	0.00	0.00	28.47	18.95
Movement LOS	B	A	A	A	D	C
95th-Percentile Queue Length [veh/ln]	0.08	0.00	0.00	0.00	1.07	1.07
95th-Percentile Queue Length [ft/ln]	2.07	0.00	0.00	0.00	26.87	26.87
d_A, Approach Delay [s/veh]	0.16		0.00		23.91	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.76					
Intersection LOS	D					



Appendix I

Level of Service Analysis Worksheets for Existing Plus Ambient Growth and Related Projects Plus Project Conditions With Improvements

Intersection Level Of Service Report
Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)Control Type:
Analysis Method:
Analysis Period:Roundabout
HCM 7th Edition
15 minutesDelay (sec / veh):
Level Of Service:15.2
C**Intersection Setup**

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				⬆			⬆			⬆		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	0	0	0	490	0	68	0	585	175	0	470	279
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	490	0	68	0	585	175	0	470	279
Peak Hour Factor	0.9500	0.9500	0.9500	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	133	0	18	0	158	47	0	127	76
Total Analysis Volume [veh/h]	0	0	0	531	0	74	0	634	190	0	509	302
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	1188			519			542			0		
Exiting Flow Rate [veh/h]	194			308			595			1188		
Demand Flow Rate [veh/h]	0	0	0	490	0	68	0	585	175	0	470	279
Adjusted Demand Flow Rate [veh/h]	0	0	0	531	0	74	0	634	190	0	509	302

Lanes

Override Calculated Critical Headway		No	No	No	No
User-Defined Critical Headway [s]		4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time		No	No	No	No
User-Defined Follow-Up Time [s]		3.00	3.00	3.00	3.00
A (intercept)		1380.00	1420.00	1420.00	1380.00
B (coefficient)		0.00102	0.00091	0.00091	0.00102
HV Adjustment Factor		0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]		618	647	194	828
Capacity of Entry and Bypass Lanes [veh/h]		813	868	868	1380
Pedestrian Impedance		1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]		797	851	851	1353
X, volume / capacity		0.76	0.75	0.22	0.60

Movement, Approach, & Intersection Results

Lane LOS		C	C	A	A
95th-Percentile Queue Length [veh]		7.27	6.98	0.85	4.23
95th-Percentile Queue Length [ft]		181.63	174.62	21.36	105.65
Approach Delay [s/veh]	0.00	21.07	16.32		9.56
Approach LOS	A	C	C		A
Intersection Delay [s/veh]	15.16				
Intersection LOS	C				

Intersection Level Of Service Report
Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)Control Type:
Analysis Method:
Analysis Period:Roundabout
HCM 7th Edition
15 minutesDelay (sec / veh):
Level Of Service:22.3
C**Intersection Setup**

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	108	0	446	0	0	0	0	1016	78	0	653	216
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	0	446	0	0	0	0	1016	78	0	653	216
Peak Hour Factor	0.9320	0.9320	0.9320	0.9500	0.9500	0.9500	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	0	120	0	0	0	0	273	21	0	175	58
Total Analysis Volume [veh/h]	116	0	479	0	0	0	0	1090	84	0	701	232
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	1112			833			0			118		
Exiting Flow Rate [veh/h]	86			237			833			1600		
Demand Flow Rate [veh/h]	108	0	446	0	0	0	0	1016	78	0	653	216
Adjusted Demand Flow Rate [veh/h]	116	0	479	0	0	0	0	1090	84	0	701	232

Lanes

Override Calculated Critical Headway	No	No		No	No	No
User-Defined Critical Headway [s]	4.00	4.00		4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No		No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00		3.00	3.00	3.00
A (intercept)	1420.00	1420.00		1420.00	1420.00	1380.00
B (coefficient)	0.00091	0.00091		0.00091	0.00091	0.00102
HV Adjustment Factor	0.98	0.98		0.98	0.98	0.98
Entry Flow Rate [veh/h]	119	489		1112	86	952
Capacity of Entry and Bypass Lanes [veh/h]	517	517		1420	1420	1224
Pedestrian Impedance	1.00	1.00		1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	507	507		1393	1393	1200
X, volume / capacity	0.23	0.95		0.78	0.06	0.78

Movement, Approach, & Intersection Results

Lane LOS	B	F		C	A	C
95th-Percentile Queue Length [veh]	0.88	11.81		8.78	0.19	8.40
95th-Percentile Queue Length [ft]	21.90	295.29		219.52	4.81	209.94
Approach Delay [s/veh]	47.19		0.00	14.22		16.49
Approach LOS	E		A	B		C
Intersection Delay [s/veh]	22.26					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)Control Type:
Analysis Method:
Analysis Period:Roundabout
HCM 7th Edition
15 minutesDelay (sec / veh):
Level Of Service:71.3
F**Intersection Setup**

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				⬆			⬆			⬆		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	0	0	0	241	0	91	0	378	177	0	872	664
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	241	0	91	0	378	177	0	872	664
Peak Hour Factor	0.9500	0.9500	0.9500	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	63	0	24	0	99	46	0	228	173
Total Analysis Volume [veh/h]	0	0	0	252	0	95	0	395	185	0	910	693
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	660			928			257			0		
Exiting Flow Rate [veh/h]	189			707			1025			660		
Demand Flow Rate [veh/h]	0	0	0	241	0	91	0	378	177	0	872	664
Adjusted Demand Flow Rate [veh/h]	0	0	0	252	0	95	0	395	185	0	910	693

Lanes

Override Calculated Critical Headway		No	No	No	No
User-Defined Critical Headway [s]		4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time		No	No	No	No
User-Defined Follow-Up Time [s]		3.00	3.00	3.00	3.00
A (intercept)		1380.00	1420.00	1420.00	1380.00
B (coefficient)		0.00102	0.00091	0.00091	0.00102
HV Adjustment Factor		0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]		354	403	189	1636
Capacity of Entry and Bypass Lanes [veh/h]		536	1124	1124	1380
Pedestrian Impedance		1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]		525	1102	1102	1353
X, volume / capacity		0.66	0.36	0.17	1.18

Movement, Approach, & Intersection Results

Lane LOS		C	A	A	F
95th-Percentile Queue Length [veh]		4.81	1.65	0.60	44.70
95th-Percentile Queue Length [ft]		120.25	41.15	15.06	1117.60
Approach Delay [s/veh]	0.00	22.53	6.20		105.35
Approach LOS	A	C	A		F
Intersection Delay [s/veh]	71.26				
Intersection LOS	F				

Intersection Level Of Service Report
Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)Control Type:
Analysis Method:
Analysis Period:Roundabout
HCM 7th Edition
15 minutesDelay (sec / veh):
Level Of Service:232.4
F**Intersection Setup**

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	80	0	441	0	0	0	0	580	32	0	1511	568
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	0	441	0	0	0	0	580	32	0	1511	568
Peak Hour Factor	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	0	115	0	0	0	0	152	8	0	395	149
Total Analysis Volume [veh/h]	84	0	461	0	0	0	0	607	33	0	1581	594
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	619			1698			0			86		
Exiting Flow Rate [veh/h]	34			606			1698			1089		
Demand Flow Rate [veh/h]	80	0	441	0	0	0	0	580	32	0	1511	568
Adjusted Demand Flow Rate [veh/h]	84	0	461	0	0	0	0	607	33	0	1581	594

Lanes

Override Calculated Critical Headway	No	No		No	No	No
User-Defined Critical Headway [s]	4.00	4.00		4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No		No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00		3.00	3.00	3.00
A (intercept)	1420.00	1420.00		1420.00	1420.00	1380.00
B (coefficient)	0.00091	0.00091		0.00091	0.00091	0.00102
HV Adjustment Factor	0.98	0.98		0.98	0.98	0.98
Entry Flow Rate [veh/h]	86	471		620	34	2219
Capacity of Entry and Bypass Lanes [veh/h]	809	809		1420	1420	1265
Pedestrian Impedance	1.00	1.00		1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	793	793		1393	1393	1240
X, volume / capacity	0.11	0.58		0.44	0.02	1.75

Movement, Approach, & Intersection Results

Lane LOS	A	B		A	A	F
95th-Percentile Queue Length [veh]	0.35	3.82		2.27	0.07	123.51
95th-Percentile Queue Length [ft]	8.86	95.50		56.67	1.82	3087.83
Approach Delay [s/veh]	12.34		0.00	6.54		354.02
Approach LOS	B		A	A		F
Intersection Delay [s/veh]	232.41					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	17.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.597

Intersection Setup

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	0	0	0	490	0	68	0	585	175	0	470	279
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	490	0	68	0	585	175	0	470	279
Peak Hour Factor	0.9500	0.9500	0.9500	0.9230	0.9500	0.9230	0.9500	0.9230	0.9230	0.9500	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	133	0	18	0	158	47	0	127	76
Total Analysis Volume [veh/h]	0	0	0	531	0	74	0	634	190	0	509	302
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Maximum Green [s]	0	0	0	49	0	0	0	33	0	0	33	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Walk [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
Pedestrian Clearance [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
Delayed Vehicle Green [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
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	0.0	0.0	0.0	53.0	0.0	0.0	0.0	37.0	0.0	0.0	37.0	0.0
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	0	6	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	C	C	C
C, Calculated Cycle Length [s]		90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		29.4	29.4	52.6	52.6	52.6	52.6
g / C, Green / Cycle		0.33	0.33	0.58	0.58	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate		0.30	0.05	0.22	0.24	0.22	0.25
s, saturation flow rate [veh/h]		1781	1589	1870	1729	1870	1653
c, Capacity [veh/h]		583	520	1091	1009	1091	965
d1, Uniform Delay [s]		29.00	21.35	10.00	10.24	9.96	10.33
k, delay calibration		0.13	0.11	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		6.90	0.12	1.00	1.22	0.97	1.35
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.91	0.14	0.38	0.41	0.37	0.42
d, Delay for Lane Group [s/veh]		35.91	21.47	11.00	11.46	10.93	11.68
Lane Group LOS		D	C	B	B	B	B
Critical Lane Group		Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		11.68	1.10	3.66	3.78	3.59	3.78
50th-Percentile Queue Length [ft/ln]		291.95	27.53	91.57	94.58	89.69	94.45
95th-Percentile Queue Length [veh/ln]		17.28	1.98	6.59	6.81	6.46	6.80
95th-Percentile Queue Length [ft/ln]		432.06	49.55	164.82	170.24	161.44	170.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	35.91	0.00	21.47	0.00	11.16	11.46	0.00	11.08	11.68
Movement LOS				D		C		B	B		B	B
d_A, Approach Delay [s/veh]	0.00			34.14			11.23			11.31		
Approach LOS	A			C			B			B		
d_I, Intersection Delay [s/veh]	17.45											
Intersection LOS	B											
Intersection V/C	0.597											

Emissions

Vehicle Miles Traveled [mph]		41.29	5.75	49.52	49.52	25.18	25.18
Stops [stops/h]		467.11	44.05	146.51	151.32	143.50	151.12
Fuel consumption [US gal/h]		8.16	0.80	5.30	5.43	4.41	4.61
CO [g/h]		570.40	56.17	370.49	379.45	308.25	322.47
NOx [g/h]		110.98	10.93	72.08	73.83	59.97	62.74
VOC [g/h]		132.20	13.02	85.86	87.94	71.44	74.74

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1089	733	733
d_b, Bicycle Delay [s]	45.00	9.34	18.05	18.05
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.239	2.229
Bicycle LOS	D	A	B	B

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	17.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.684

Intersection Setup

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	108	0	446	0	0	0	0	1016	78	0	869	216
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	0	446	0	0	0	0	1016	78	0	869	216
Peak Hour Factor	0.9320	0.9500	0.9320	0.9500	0.9500	0.9500	0.9500	0.9320	0.9320	0.9500	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	0	120	0	0	0	0	273	21	0	233	58
Total Analysis Volume [veh/h]	116	0	479	0	0	0	0	1090	84	0	932	232
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Maximum Green [s]	41	0	0	0	0	0	0	71	0	0	71	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Walk [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
Pedestrian Clearance [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
Delayed Vehicle Green [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
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	54.0	0.0	0.0	0.0	0.0	0.0	0.0	36.0	0.0	0.0	36.0	0.0
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	6	0	0	6	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		C	C	C
C, Calculated Cycle Length [s]	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	29.7	29.7		52.3	52.3	52.3
g / C, Green / Cycle	0.33	0.33		0.58	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.07	0.30		0.31	0.32	0.26
s, saturation flow rate [veh/h]	1781	1589		1870	1824	3560
c, Capacity [veh/h]	590	527		1084	1057	2064
d1, Uniform Delay [s]	21.51	28.79		11.59	11.73	10.77
k, delay calibration	0.11	0.12		0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.16	7.25		1.94	2.10	0.72
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.20	0.91		0.54	0.56	0.45
d, Delay for Lane Group [s/veh]	21.67	36.04		13.53	13.83	11.49
Lane Group LOS	C	D		B	B	B
Critical Lane Group	No	Yes		No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.75	10.56		6.11	6.21	4.28
50th-Percentile Queue Length [ft/ln]	43.64	264.03		152.83	155.26	107.10
95th-Percentile Queue Length [veh/ln]	3.14	15.89		10.17	10.30	7.68
95th-Percentile Queue Length [ft/ln]	78.55	397.28		254.21	257.44	191.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	21.67	0.00	36.04	0.00	0.00	0.00	0.00	13.67	13.83	0.00	11.49	0.00
Movement LOS	C		D					B	B		B	
d_A, Approach Delay [s/veh]	33.24			0.00			13.68			11.49		
Approach LOS	C			A			B			B		
d_I, Intersection Delay [s/veh]	17.23											
Intersection LOS	B											
Intersection V/C	0.684											

Emissions

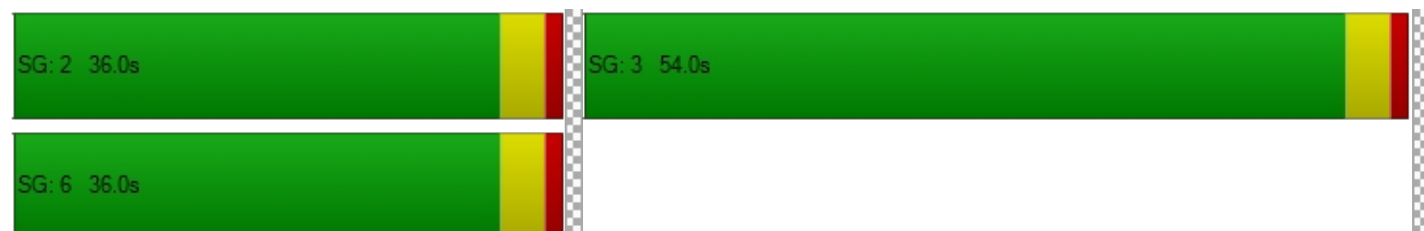
Vehicle Miles Traveled [mph]	7.84	32.39		40.46	40.46	64.85
Stops [stops/h]	69.83	422.45		244.54	248.42	342.72
Fuel consumption [US gal/h]	1.22	7.18		7.51	7.62	10.71
CO [g/h]	85.30	501.91		525.12	532.63	748.91
NOx [g/h]	16.60	97.65		102.17	103.63	145.71
VOC [g/h]	19.77	116.32		121.70	123.44	173.57

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1111	0	711	711
d_b, Bicycle Delay [s]	8.89	45.00	18.69	18.69
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.528	2.329
Bicycle LOS	A	D	B	B

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	11.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.698

Intersection Setup

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 SB Ramps			SR-14 SB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	0	0	0	241	0	91	0	378	177	0	872	664
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	241	0	91	0	378	177	0	872	664
Peak Hour Factor	0.9500	0.9500	0.9500	0.9580	0.9500	0.9580	0.9500	0.9580	0.9580	0.9500	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	63	0	24	0	99	46	0	228	173
Total Analysis Volume [veh/h]	0	0	0	252	0	95	0	395	185	0	910	693
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Maximum Green [s]	0	0	0	20	0	0	0	62	0	0	62	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Walk [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
Pedestrian Clearance [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
Delayed Vehicle Green [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
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	0.0	0.0	0.0	24.0	0.0	0.0	0.0	66.0	0.0	0.0	66.0	0.0
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	0	6	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	C	C	C
C, Calculated Cycle Length [s]		90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		14.9	14.9	67.1	67.1	67.1	67.1
g / C, Green / Cycle		0.17	0.17	0.75	0.75	0.75	0.75
(v / s)_i Volume / Saturation Flow Rate		0.14	0.06	0.16	0.17	0.43	0.49
s, saturation flow rate [veh/h]		1781	1589	1870	1681	1870	1622
c, Capacity [veh/h]		297	265	1392	1251	1392	1208
d1, Uniform Delay [s]		36.40	33.23	3.48	3.55	5.14	5.81
k, delay calibration		0.17	0.11	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		10.08	0.82	0.34	0.43	1.74	2.89
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.85	0.36	0.21	0.23	0.58	0.66
d, Delay for Lane Group [s/veh]		46.47	34.05	3.82	3.99	6.88	8.69
Lane Group LOS		D	C	A	A	A	A
Critical Lane Group		Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		6.11	1.88	0.94	0.97	3.96	4.68
50th-Percentile Queue Length [ft/ln]		152.68	46.91	23.39	24.29	98.96	116.96
95th-Percentile Queue Length [veh/ln]		10.16	3.38	1.68	1.75	7.13	8.23
95th-Percentile Queue Length [ft/ln]		254.00	84.44	42.10	43.72	178.13	205.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	46.47	0.00	34.05	0.00	3.86	3.99	0.00	7.10	8.69
Movement LOS				D		C		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			43.07			3.90			7.79		
Approach LOS	A			D			A			A		
d_I, Intersection Delay [s/veh]	11.74											
Intersection LOS	B											
Intersection V/C	0.698											

Emissions

Vehicle Miles Traveled [mph]		19.59	7.39	34.86	34.86	49.78	49.78
Stops [stops/h]		244.28	75.05	37.42	38.87	158.33	187.14
Fuel consumption [US gal/h]		4.54	1.38	2.09	2.12	5.73	6.56
CO [g/h]		317.30	96.26	145.85	148.41	400.45	458.50
NOx [g/h]		61.74	18.73	28.38	28.88	77.91	89.21
VOC [g/h]		73.54	22.31	33.80	34.40	92.81	106.26

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	444	1378	1378
d_b, Bicycle Delay [s]	45.00	27.22	4.36	4.36
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.038	2.882
Bicycle LOS	D	A	B	C

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)

Control Type:	Signalized	Delay (sec / veh):	34.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.965

Intersection Setup

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	No			No			No			No		

Volumes

Name	SR-14 NB Ramps			SR-14 NB Ramps			Avenue M			Avenue M		
Base Volume Input [veh/h]	80	0	441	0	0	0	0	580	32	0	2079	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	0	441	0	0	0	0	580	32	0	2079	0
Peak Hour Factor	0.9560	0.9500	0.9560	0.9500	0.9500	0.9500	0.9500	0.9560	0.9560	0.9500	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	0	115	0	0	0	0	152	8	0	544	0
Total Analysis Volume [veh/h]	84	0	461	0	0	0	0	607	33	0	2175	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Maximum Green [s]	29	0	0	0	0	0	0	83	0	0	83	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Walk [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
Pedestrian Clearance [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
Delayed Vehicle Green [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
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	40.0	0.0	0.0	0.0	0.0	0.0	0.0	80.0	0.0	0.0	80.0	0.0
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	6	0	0	6	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		C	C	C
C, Calculated Cycle Length [s]	120	120		120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	36.0	36.0		76.0	76.0	76.0
g / C, Green / Cycle	0.30	0.30		0.63	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate	0.05	0.29		0.17	0.17	0.61
s, saturation flow rate [veh/h]	1781	1589		1870	1837	3560
c, Capacity [veh/h]	534	477		1184	1163	2255
d1, Uniform Delay [s]	30.86	41.41		9.73	9.77	20.73
k, delay calibration	0.11	0.43		0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.14	31.01		0.56	0.59	12.27
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.16	0.97		0.27	0.28	0.96
d, Delay for Lane Group [s/veh]	30.99	72.42		10.29	10.36	33.00
Lane Group LOS	C	E		B	B	C
Critical Lane Group	No	Yes		No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.82	17.39		3.35	3.37	26.77
50th-Percentile Queue Length [ft/ln]	45.57	434.66		83.78	84.19	669.13
95th-Percentile Queue Length [veh/ln]	3.28	24.22		6.03	6.06	35.25
95th-Percentile Queue Length [ft/ln]	82.03	605.61		150.80	151.54	881.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	30.99	0.00	72.42	0.00	0.00	0.00	0.00	10.32	10.36	0.00	33.00	0.00
Movement LOS	C		E					B	B		C	
d_A, Approach Delay [s/veh]	66.04			0.00			10.32			33.00		
Approach LOS	E			A			B			C		
d_I, Intersection Delay [s/veh]	34.04											
Intersection LOS	C											
Intersection V/C	0.965											

Emissions

Vehicle Miles Traveled [mph]	5.68	31.17		22.06	22.06	151.33
Stops [stops/h]	54.69	521.59		100.53	101.03	1605.91
Fuel consumption [US gal/h]	1.07	10.96		3.28	3.29	49.50
CO [g/h]	74.49	766.00		228.96	229.89	3459.98
NOx [g/h]	14.49	149.04		44.55	44.73	673.19
VOC [g/h]	17.26	177.53		53.06	53.28	801.88

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	0	1267	1267
d_b, Bicycle Delay [s]	29.40	60.00	8.07	8.07
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.088	3.354
Bicycle LOS	A	D	B	C

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





Appendix J

CA MUTCD Peak Hour Traffic Signal Warrant Analysis Worksheets

Signal Warrants Report For Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	648	713	220
2	629	692	213
3	616	677	209
4	577	635	196
5	512	563	174
6	505	556	172
7	499	549	169
8	454	499	154
9	447	492	152
10	441	485	150
11	382	421	130
12	356	392	121
13	350	385	119
14	259	285	88
15	259	285	88
16	181	200	62
17	104	114	35
18	104	114	35
19	58	64	20
20	32	36	11
21	19	21	7
22	6	7	2
23	6	7	2
24	6	7	2

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	1361	2	220	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	1	1321	2	213	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	1	1293	2	209	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	1	1212	2	196	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	1	1075	2	174	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	1	1061	2	172	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	1	1048	2	169	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	1	953	2	154	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
9	1	939	2	152	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
10	1	926	2	150	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
11	1	803	2	130	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
12	1	748	2	121	No	No	No	Yes	No	Yes	Yes	Yes	Yes	No
13	1	735	2	119	No	No	No	Yes	No	Yes	Yes	Yes	Yes	No
14	1	544	2	88	No	No	No	No	No	No	Yes	Yes	No	No
15	1	544	2	88	No	No	No	No	No	No	Yes	Yes	No	No
16	1	381	2	62	No	No	No	No	No	No	No	No	No	No
17	1	218	2	35	No	No	No	No	No	No	No	No	No	No
18	1	218	2	35	No	No	No	No	No	No	No	No	No	No
19	1	122	2	20	No	No	No	No	No	No	No	No	No	No
20	1	68	2	11	No	No	No	No	No	No	No	No	No	No
21	1	40	2	7	No	No	No	No	No	No	No	No	No	No
22	1	13	2	2	No	No	No	No	No	No	No	No	No	No
23	1	13	2	2	No	No	No	No	No	No	No	No	No	No
24	1	13	2	2	No	No	No	No	No	No	No	No	No	No
Hours Met					3	7	10	13	11	13	15	15	13	7

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	134.3
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	8:12
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	220
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	1581
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	690	718	362
2	669	696	351
3	656	682	344
4	614	639	322
5	545	567	286
6	538	560	282
7	531	553	279
8	483	503	253
9	476	495	250
10	469	488	246
11	407	424	214
12	380	395	199
13	373	388	195
14	276	287	145
15	276	287	145
16	193	201	101
17	110	115	58
18	110	115	58
19	62	65	33
20	35	36	18
21	21	22	11
22	7	7	4
23	7	7	4
24	7	7	4

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	1408	2	362	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	1	1365	2	351	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	1	1338	2	344	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	1	1253	2	322	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	1	1112	2	286	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	1	1098	2	282	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	1	1084	2	279	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	1	986	2	253	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	1	971	2	250	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	1	957	2	246	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	1	831	2	214	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	1	775	2	199	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
13	1	761	2	195	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
14	1	563	2	145	No	No	Yes	Yes	No	No	Yes	Yes	Yes	No
15	1	563	2	145	No	No	Yes	Yes	No	No	Yes	Yes	Yes	No
16	1	394	2	101	No	No	No	No	No	No	No	No	No	No
17	1	225	2	58	No	No	No	No	No	No	No	No	No	No
18	1	225	2	58	No	No	No	No	No	No	No	No	No	No
19	1	127	2	33	No	No	No	No	No	No	No	No	No	No
20	1	71	2	18	No	No	No	No	No	No	No	No	No	No
21	1	43	2	11	No	No	No	No	No	No	No	No	No	No
22	1	14	2	4	No	No	No	No	No	No	No	No	No	No
23	1	14	2	4	No	No	No	No	No	No	No	No	No	No
24	1	14	2	4	No	No	No	No	No	No	No	No	No	No
Hours Met					11	13	15	15	13	13	15	15	15	11

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	60.7
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	6:06
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	362
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	1770
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	1299	530	205
2	1260	514	199
3	1234	504	195
4	1156	472	182
5	1026	419	162
6	1013	413	160
7	1000	408	158
8	909	371	144
9	896	366	141
10	883	360	139
11	766	313	121
12	714	292	113
13	701	286	111
14	520	212	82
15	520	212	82
16	364	148	57
17	208	85	33
18	208	85	33
19	117	48	18
20	65	27	10
21	39	16	6
22	13	5	2
23	13	5	2
24	13	5	2

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	1829	2	205	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	1	1774	2	199	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	1	1738	2	195	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	1	1628	2	182	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	1	1445	2	162	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	1	1426	2	160	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	1	1408	2	158	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	1	1280	2	144	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	1	1262	2	141	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	1	1243	2	139	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	1	1079	2	121	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
12	1	1006	2	113	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
13	1	987	2	111	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No
14	1	732	2	82	No	No	No	No	No	Yes	Yes	Yes	No	No
15	1	732	2	82	No	No	No	No	No	Yes	Yes	Yes	No	No
16	1	512	2	57	No	No	No	No	No	No	No	Yes	No	No
17	1	293	2	33	No	No	No	No	No	No	No	No	No	No
18	1	293	2	33	No	No	No	No	No	No	No	No	No	No
19	1	165	2	18	No	No	No	No	No	No	No	No	No	No
20	1	92	2	10	No	No	No	No	No	No	No	No	No	No
21	1	55	2	6	No	No	No	No	No	No	No	No	No	No
22	1	18	2	2	No	No	No	No	No	No	No	No	No	No
23	1	18	2	2	No	No	No	No	No	No	No	No	No	No
24	1	18	2	2	No	No	No	No	No	No	No	No	No	No
Hours Met					1	6	9	12	13	15	15	16	13	10

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	181.5
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	10:20
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	205
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	2034
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	1531	470	407
2	1485	456	395
3	1454	447	387
4	1363	418	362
5	1209	371	322
6	1194	367	317
7	1179	362	313
8	1072	329	285
9	1056	324	281
10	1041	320	277
11	903	277	240
12	842	259	224
13	827	254	220
14	612	188	163
15	612	188	163
16	429	132	114
17	245	75	65
18	245	75	65
19	138	42	37
20	77	24	20
21	46	14	12
22	15	5	4
23	15	5	4
24	15	5	4

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	2001	2	407	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	1	1941	2	395	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	1	1901	2	387	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	1	1781	2	362	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	1	1580	2	322	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	1	1561	2	317	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	1	1541	2	313	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	1	1401	2	285	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	1	1380	2	281	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	1	1361	2	277	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	1	1180	2	240	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	1	1101	2	224	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	1	1081	2	220	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	1	800	2	163	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
15	1	800	2	163	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
16	1	561	2	114	No	No	No	Yes	No	No	Yes	Yes	No	No
17	1	320	2	65	No	No	No	No	No	No	No	No	No	No
18	1	320	2	65	No	No	No	No	No	No	No	No	No	No
19	1	180	2	37	No	No	No	No	No	No	No	No	No	No
20	1	101	2	20	No	No	No	No	No	No	No	No	No	No
21	1	60	2	12	No	No	No	No	No	No	No	No	No	No
22	1	20	2	4	No	No	No	No	No	No	No	No	No	No
23	1	20	2	4	No	No	No	No	No	No	No	No	No	No
24	1	20	2	4	No	No	No	No	No	No	No	No	No	No
Hours Met					13	15	15	16	15	15	16	16	15	13

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	113.8
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	12:51
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	407
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	2408
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	668	716	289
2	648	695	280
3	635	680	275
4	595	637	257
5	528	566	228
6	521	558	225
7	514	551	223
8	468	501	202
9	461	494	199
10	454	487	197
11	394	422	171
12	367	394	159
13	361	387	156
14	267	286	116
15	267	286	116
16	187	200	81
17	107	115	46
18	107	115	46
19	60	64	26
20	33	36	14
21	20	21	9
22	7	7	3
23	7	7	3
24	7	7	3

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	1384	2	289	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	1	1343	2	280	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	1	1315	2	275	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	1	1232	2	257	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	1	1094	2	228	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	1	1079	2	225	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	1	1065	2	223	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	1	969	2	202	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	1	955	2	199	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	1	941	2	197	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	1	816	2	171	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
12	1	761	2	159	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
13	1	748	2	156	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	No
14	1	553	2	116	No	No	No	Yes	No	No	Yes	Yes	No	No
15	1	553	2	116	No	No	No	Yes	No	No	Yes	Yes	No	No
16	1	387	2	81	No	No	No	No	No	No	No	No	No	No
17	1	222	2	46	No	No	No	No	No	No	No	No	No	No
18	1	222	2	46	No	No	No	No	No	No	No	No	No	No
19	1	124	2	26	No	No	No	No	No	No	No	No	No	No
20	1	69	2	14	No	No	No	No	No	No	No	No	No	No
21	1	41	2	9	No	No	No	No	No	No	No	No	No	No
22	1	14	2	3	No	No	No	No	No	No	No	No	No	No
23	1	14	2	3	No	No	No	No	No	No	No	No	No	No
24	1	14	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					8	11	13	15	12	13	15	15	13	10

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	317.8
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	25:30
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	289
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	1673
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	731	790	408
2	709	766	396
3	694	751	388
4	651	703	363
5	577	624	322
6	570	616	318
7	563	608	314
8	512	553	286
9	504	545	282
10	497	537	277
11	431	466	241
12	402	435	224
13	395	427	220
14	292	316	163
15	292	316	163
16	205	221	114
17	117	126	65
18	117	126	65
19	66	71	37
20	37	40	20
21	22	24	12
22	7	8	4
23	7	8	4
24	7	8	4

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	1521	2	408	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	1	1475	2	396	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	1	1445	2	388	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	1	1354	2	363	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	1	1201	2	322	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	1	1186	2	318	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	1	1171	2	314	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	1	1065	2	286	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	1	1049	2	282	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	1	1034	2	277	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	1	897	2	241	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	1	837	2	224	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	1	822	2	220	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	1	608	2	163	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
15	1	608	2	163	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
16	1	426	2	114	No	No	No	Yes	No	No	No	Yes	No	No
17	1	243	2	65	No	No	No	No	No	No	No	No	No	No
18	1	243	2	65	No	No	No	No	No	No	No	No	No	No
19	1	137	2	37	No	No	No	No	No	No	No	No	No	No
20	1	77	2	20	No	No	No	No	No	No	No	No	No	No
21	1	46	2	12	No	No	No	No	No	No	No	No	No	No
22	1	15	2	4	No	No	No	No	No	No	No	No	No	No
23	1	15	2	4	No	No	No	No	No	No	No	No	No	No
24	1	15	2	4	No	No	No	No	No	No	No	No	No	No
Hours Met					13	15	15	16	13	15	15	16	15	13

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	91.8
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	10:24
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	408
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	1929
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	1351	531	236
2	1310	515	229
3	1283	504	224
4	1202	473	210
5	1067	419	186
6	1054	414	184
7	1040	409	182
8	946	372	165
9	932	366	163
10	919	361	160
11	797	313	139
12	743	292	130
13	730	287	127
14	540	212	94
15	540	212	94
16	378	149	66
17	216	85	38
18	216	85	38
19	122	48	21
20	68	27	12
21	41	16	7
22	14	5	2
23	14	5	2
24	14	5	2

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1882	2	236	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	2	1825	2	229	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	2	1787	2	224	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	2	1675	2	210	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	2	1486	2	186	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	2	1468	2	184	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	2	1449	2	182	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	2	1318	2	165	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	2	1298	2	163	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	2	1280	2	160	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	2	1110	2	139	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	2	1035	2	130	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
13	2	1017	2	127	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
14	2	752	2	94	No	No	No	No	No	Yes	Yes	Yes	No	No
15	2	752	2	94	No	No	No	No	No	Yes	Yes	Yes	No	No
16	2	527	2	66	No	No	No	No	No	No	No	Yes	No	No
17	2	301	2	38	No	No	No	No	No	No	No	No	No	No
18	2	301	2	38	No	No	No	No	No	No	No	No	No	No
19	2	170	2	21	No	No	No	No	No	No	No	No	No	No
20	2	95	2	12	No	No	No	No	No	No	No	No	No	No
21	2	57	2	7	No	No	No	No	No	No	No	No	No	No
22	2	19	2	2	No	No	No	No	No	No	No	No	No	No
23	2	19	2	2	No	No	No	No	No	No	No	No	No	No
24	2	19	2	2	No	No	No	No	No	No	No	No	No	No
Hours Met					4	10	10	13	13	15	15	16	13	11

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	126.8
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	8:18
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	236
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	2118
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	1652	502	434
2	1602	487	421
3	1569	477	412
4	1470	447	386
5	1305	397	343
6	1289	392	339
7	1272	387	334
8	1156	351	304
9	1140	346	299
10	1123	341	295
11	975	296	256
12	909	276	239
13	892	271	234
14	661	201	174
15	661	201	174
16	463	141	122
17	264	80	69
18	264	80	69
19	149	45	39
20	83	25	22
21	50	15	13
22	17	5	4
23	17	5	4
24	17	5	4

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	2154	2	434	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	2	2089	2	421	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	2	2046	2	412	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	2	1917	2	386	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	2	1702	2	343	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	2	1681	2	339	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	2	1659	2	334	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	2	1507	2	304	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	2	1486	2	299	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	2	1464	2	295	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	2	1271	2	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	2	1185	2	239	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	2	1163	2	234	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	2	862	2	174	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
15	2	862	2	174	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
16	2	604	2	122	No	No	No	Yes	No	No	No	Yes	No	No
17	2	344	2	69	No	No	No	No	No	No	No	No	No	No
18	2	344	2	69	No	No	No	No	No	No	No	No	No	No
19	2	194	2	39	No	No	No	No	No	No	No	No	No	No
20	2	108	2	22	No	No	No	No	No	No	No	No	No	No
21	2	65	2	13	No	No	No	No	No	No	No	No	No	No
22	2	22	2	4	No	No	No	No	No	No	No	No	No	No
23	2	22	2	4	No	No	No	No	No	No	No	No	No	No
24	2	22	2	4	No	No	No	No	No	No	No	No	No	No
Hours Met					13	15	15	16	13	15	15	16	15	13

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	140.1
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	16:53
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	434
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	2588
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	729	757	489
2	707	734	474
3	693	719	465
4	649	674	435
5	576	598	386
6	569	590	381
7	561	583	377
8	510	530	342
9	503	522	337
10	496	515	333
11	430	447	289
12	401	416	269
13	394	409	264
14	292	303	196
15	292	303	196
16	204	212	137
17	117	121	78
18	117	121	78
19	66	68	44
20	36	38	24
21	22	23	15
22	7	8	5
23	7	8	5
24	7	8	5

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	1486	2	489	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	1	1441	2	474	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	1	1412	2	465	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	1	1323	2	435	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	1	1174	2	386	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	1	1159	2	381	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	1	1144	2	377	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	1	1040	2	342	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	1	1025	2	337	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	1	1011	2	333	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	1	877	2	289	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	1	817	2	269	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	1	803	2	264	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	1	595	2	196	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
15	1	595	2	196	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
16	1	416	2	137	No	No	No	Yes	No	No	No	No	No	No
17	1	238	2	78	No	No	No	No	No	No	No	No	No	No
18	1	238	2	78	No	No	No	No	No	No	No	No	No	No
19	1	134	2	44	No	No	No	No	No	No	No	No	No	No
20	1	74	2	24	No	No	No	No	No	No	No	No	No	No
21	1	45	2	15	No	No	No	No	No	No	No	No	No	No
22	1	15	2	5	No	No	No	No	No	No	No	No	No	No
23	1	15	2	5	No	No	No	No	No	No	No	No	No	No
24	1	15	2	5	No	No	No	No	No	No	No	No	No	No
Hours Met					13	15	15	16	13	13	15	15	15	13

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	1117.7
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	151:49
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	489
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	1975
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	828	1022	508
2	803	991	493
3	787	971	483
4	737	910	452
5	654	807	401
6	646	797	396
7	638	787	391
8	580	715	356
9	571	705	351
10	563	695	345
11	489	603	300
12	455	562	279
13	447	552	274
14	331	409	203
15	331	409	203
16	232	286	142
17	132	164	81
18	132	164	81
19	75	92	46
20	41	51	25
21	25	31	15
22	8	10	5
23	8	10	5
24	8	10	5

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	1850	2	508	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	1	1794	2	493	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	1	1758	2	483	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	1	1647	2	452	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	1	1461	2	401	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	1	1443	2	396	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	1	1425	2	391	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	1	1295	2	356	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	1	1276	2	351	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	1	1258	2	345	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	1	1092	2	300	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	1	1017	2	279	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	1	999	2	274	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	1	740	2	203	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
15	1	740	2	203	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
16	1	518	2	142	No	No	Yes	Yes	No	No	No	Yes	No	No
17	1	296	2	81	No	No	No	No	No	No	No	No	No	No
18	1	296	2	81	No	No	No	No	No	No	No	No	No	No
19	1	167	2	46	No	No	No	No	No	No	No	No	No	No
20	1	92	2	25	No	No	No	No	No	No	No	No	No	No
21	1	56	2	15	No	No	No	No	No	No	No	No	No	No
22	1	18	2	5	No	No	No	No	No	No	No	No	No	No
23	1	18	2	5	No	No	No	No	No	No	No	No	No	No
24	1	18	2	5	No	No	No	No	No	No	No	No	No	No
Hours Met					15	15	16	16	13	15	15	16	15	13

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	371.3
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	52:23
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	508
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	2358
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	1484	554	301
2	1439	537	292
3	1410	526	286
4	1321	493	268
5	1172	438	238
6	1158	432	235
7	1143	427	232
8	1039	388	211
9	1024	382	208
10	1009	377	205
11	876	327	178
12	816	305	166
13	801	299	163
14	594	222	120
15	594	222	120
16	416	155	84
17	237	89	48
18	237	89	48
19	134	50	27
20	74	28	15
21	45	17	9
22	15	6	3
23	15	6	3
24	15	6	3

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	2038	2	301	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	1	1976	2	292	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	1	1936	2	286	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	1	1814	2	268	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	1	1610	2	238	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	1	1590	2	235	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	1	1570	2	232	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	1	1427	2	211	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	1	1406	2	208	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	1	1386	2	205	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	1	1203	2	178	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	1	1121	2	166	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	1	1100	2	163	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	1	816	2	120	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
15	1	816	2	120	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
16	1	571	2	84	No	No	No	No	No	No	Yes	Yes	No	No
17	1	326	2	48	No	No	No	No	No	No	No	No	No	No
18	1	326	2	48	No	No	No	No	No	No	No	No	No	No
19	1	184	2	27	No	No	No	No	No	No	No	No	No	No
20	1	102	2	15	No	No	No	No	No	No	No	No	No	No
21	1	62	2	9	No	No	No	No	No	No	No	No	No	No
22	1	21	2	3	No	No	No	No	No	No	No	No	No	No
23	1	21	2	3	No	No	No	No	No	No	No	No	No	No
24	1	21	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					10	13	13	15	15	15	16	16	15	13

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	751.4
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	62:49
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	301
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	2339
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	1958	580	494
2	1899	563	479
3	1860	551	469
4	1743	516	440
5	1547	458	390
6	1527	452	385
7	1508	447	380
8	1371	406	346
9	1351	400	341
10	1331	394	336
11	1155	342	291
12	1077	319	272
13	1057	313	267
14	783	232	198
15	783	232	198
16	548	162	138
17	313	93	79
18	313	93	79
19	176	52	44
20	98	29	25
21	59	17	15
22	20	6	5
23	20	6	5
24	20	6	5

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	2538	2	494	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	1	2462	2	479	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	1	2411	2	469	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	1	2259	2	440	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	1	2005	2	390	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	1	1979	2	385	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	1	1955	2	380	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	1	1777	2	346	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	1	1751	2	341	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	1	1725	2	336	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	1	1497	2	291	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	1	1396	2	272	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	1	1370	2	267	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	1	1015	2	198	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
15	1	1015	2	198	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
16	1	710	2	138	No	No	No	Yes	No	Yes	Yes	Yes	Yes	No
17	1	406	2	79	No	No	No	No	No	No	No	No	No	No
18	1	406	2	79	No	No	No	No	No	No	No	No	No	No
19	1	228	2	44	No	No	No	No	No	No	No	No	No	No
20	1	127	2	25	No	No	No	No	No	No	No	No	No	No
21	1	76	2	15	No	No	No	No	No	No	No	No	No	No
22	1	26	2	5	No	No	No	No	No	No	No	No	No	No
23	1	26	2	5	No	No	No	No	No	No	No	No	No	No
24	1	26	2	5	No	No	No	No	No	No	No	No	No	No
Hours Met					13	15	15	16	15	16	16	16	16	15

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	272.2
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	37:21
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	494
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	3032
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	749	760	558
2	727	737	541
3	712	722	530
4	667	676	497
5	592	600	441
6	584	593	435
7	577	585	430
8	524	532	391
9	517	524	385
10	509	517	379
11	442	448	329
12	412	418	307
13	404	410	301
14	300	304	223
15	300	304	223
16	210	213	156
17	120	122	89
18	120	122	89
19	67	68	50
20	37	38	28
21	22	23	17
22	7	8	6
23	7	8	6
24	7	8	6

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1509	2	558	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	2	1464	2	541	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	2	1434	2	530	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	2	1343	2	497	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	2	1192	2	441	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	2	1177	2	435	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	2	1162	2	430	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	2	1056	2	391	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	2	1041	2	385	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	2	1026	2	379	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	2	890	2	329	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
12	2	830	2	307	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
13	2	814	2	301	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
14	2	604	2	223	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	No
15	2	604	2	223	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	No
16	2	423	2	156	No	No	Yes	Yes	No	No	No	No	No	No
17	2	242	2	89	No	No	No	No	No	No	No	No	No	No
18	2	242	2	89	No	No	No	No	No	No	No	No	No	No
19	2	135	2	50	No	No	No	No	No	No	No	No	No	No
20	2	75	2	28	No	No	No	No	No	No	No	No	No	No
21	2	45	2	17	No	No	No	No	No	No	No	No	No	No
22	2	15	2	6	No	No	No	No	No	No	No	No	No	No
23	2	15	2	6	No	No	No	No	No	No	No	No	No	No
24	2	15	2	6	No	No	No	No	No	No	No	No	No	No
Hours Met					15	15	16	16	10	13	13	15	15	13

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	1035.4
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]:mm)	160:29
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	558
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	2067
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	869	1094	554
2	843	1061	537
3	826	1039	526
4	773	974	493
5	687	864	438
6	678	853	432
7	669	842	427
8	608	766	388
9	600	755	382
10	591	744	377
11	513	645	327
12	478	602	305
13	469	591	299
14	348	438	222
15	348	438	222
16	243	306	155
17	139	175	89
18	139	175	89
19	78	98	50
20	43	55	28
21	26	33	17
22	9	11	6
23	9	11	6
24	9	11	6

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1963	2	554	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	2	1904	2	537	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	2	1865	2	526	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	2	1747	2	493	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	2	1551	2	438	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	2	1531	2	432	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	2	1511	2	427	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	2	1374	2	388	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	2	1355	2	382	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	2	1335	2	377	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	2	1158	2	327	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	2	1080	2	305	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	2	1060	2	299	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	2	786	2	222	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
15	2	786	2	222	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
16	2	549	2	155	No	No	Yes	Yes	No	No	No	Yes	No	No
17	2	314	2	89	No	No	No	No	No	No	No	No	No	No
18	2	314	2	89	No	No	No	No	No	No	No	No	No	No
19	2	176	2	50	No	No	No	No	No	No	No	No	No	No
20	2	98	2	28	No	No	No	No	No	No	No	No	No	No
21	2	59	2	17	No	No	No	No	No	No	No	No	No	No
22	2	20	2	6	No	No	No	No	No	No	No	No	No	No
23	2	20	2	6	No	No	No	No	No	No	No	No	No	No
24	2	20	2	6	No	No	No	No	No	No	No	No	No	No
Hours Met					15	15	16	16	13	15	15	16	15	13

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	482.2
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	74:12
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	554
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	2517
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 1: SR -14 SB Ramps (N/S) at Avenue M (E/W)

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	1536	555	332
2	1490	538	322
3	1459	527	315
4	1367	494	295
5	1213	438	262
6	1198	433	259
7	1183	427	256
8	1075	389	232
9	1060	383	229
10	1044	377	226
11	906	327	196
12	845	305	183
13	829	300	179
14	614	222	133
15	614	222	133
16	430	155	93
17	246	89	53
18	246	89	53
19	138	50	30
20	77	28	17
21	46	17	10
22	15	6	3
23	15	6	3
24	15	6	3

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	2091	2	332	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	1	2028	2	322	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	1	1986	2	315	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	1	1861	2	295	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	1	1651	2	262	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	1	1631	2	259	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	1	1610	2	256	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	1	1464	2	232	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	1	1443	2	229	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	1	1421	2	226	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	1	1233	2	196	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	1	1150	2	183	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	1	1129	2	179	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	1	836	2	133	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
15	1	836	2	133	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
16	1	585	2	93	No	No	No	No	No	No	Yes	Yes	No	No
17	1	335	2	53	No	No	No	No	No	No	No	No	No	No
18	1	335	2	53	No	No	No	No	No	No	No	No	No	No
19	1	188	2	30	No	No	No	No	No	No	No	No	No	No
20	1	105	2	17	No	No	No	No	No	No	No	No	No	No
21	1	63	2	10	No	No	No	No	No	No	No	No	No	No
22	1	21	2	3	No	No	No	No	No	No	No	No	No	No
23	1	21	2	3	No	No	No	No	No	No	No	No	No	No
24	1	21	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					10	13	13	15	15	15	16	16	15	13

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	991.2
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	91:24
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	332
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	2423
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 2: SR-14 NB Ramps (N/S) at Avenue M (E/W)

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	2079	612	521
2	2017	594	505
3	1975	581	495
4	1850	545	464
5	1642	483	412
6	1622	477	406
7	1601	471	401
8	1455	428	365
9	1435	422	359
10	1414	416	354
11	1227	361	307
12	1143	337	287
13	1123	330	281
14	832	245	208
15	832	245	208
16	582	171	146
17	333	98	83
18	333	98	83
19	187	55	47
20	104	31	26
21	62	18	16
22	21	6	5
23	21	6	5
24	21	6	5

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	2691	2	521	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	1	2611	2	505	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	1	2556	2	495	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	1	2395	2	464	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	1	2125	2	412	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	1	2099	2	406	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	1	2072	2	401	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	1	1883	2	365	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	1	1857	2	359	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	1	1830	2	354	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	1	1588	2	307	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	1	1480	2	287	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	1	1453	2	281	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	1	1077	2	208	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
15	1	1077	2	208	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
16	1	753	2	146	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
17	1	431	2	83	No	No	No	No	No	No	No	Yes	No	No
18	1	431	2	83	No	No	No	No	No	No	No	Yes	No	No
19	1	242	2	47	No	No	No	No	No	No	No	No	No	No
20	1	135	2	26	No	No	No	No	No	No	No	No	No	No
21	1	80	2	16	No	No	No	No	No	No	No	No	No	No
22	1	27	2	5	No	No	No	No	No	No	No	No	No	No
23	1	27	2	5	No	No	No	No	No	No	No	No	No	No
24	1	27	2	5	No	No	No	No	No	No	No	No	No	No
Hours Met					15	15	16	16	16	16	16	18	16	15

Warrant 3 Condition A

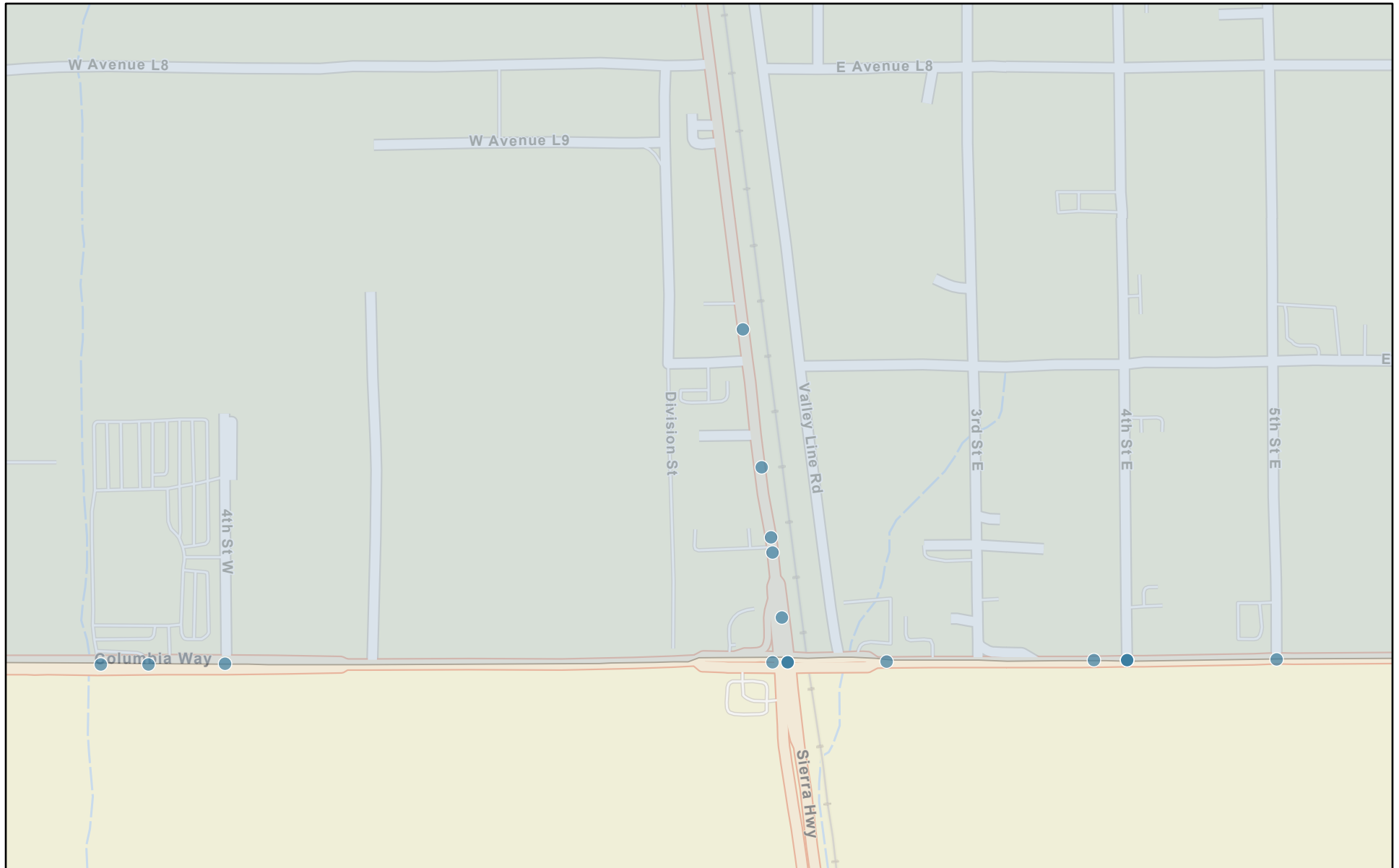
Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	341.3
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	49:23
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	521
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	3212
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes



Appendix K

Transportation Injury Mapping System (TIMS) Accident Collisions Data

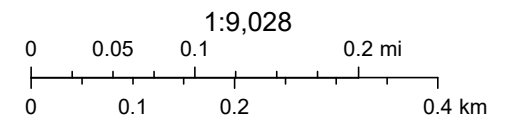
SWITRS GIS Map: Los Angeles, Lancaster 01/01/2019 - 12/31/2019



10/9/2024

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● Crashes



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Crash Details for: Case ID 8965848

Crash Information

County	Los Angeles		
City	Lancaster		
Date & Time (M/D/Y)	09/15/2019 21:07		
Location (Intersection)	Sierra Hwy & Avenue L 12		
Dist. & Dir. from Intersection	150.00 ft North		
State Highway	No		
Geocoded Location	34.649929, -118.1289139		
Type of Crash	G - Vehicle/Pedestrian		
Motor Vehicle Involved With	B - Pedestrian		
Crash Severity	4 - Injury (Complaint of Pain)		
PCF Violation Category	03 - Unsafe Speed		
Weather	A - Clear		
Alcohol Involved	No		
Pedestrian Crash	Yes	Bicycle Crash	No
Motorcycle Crash	No	Truck Crash	No

Map View



Street View



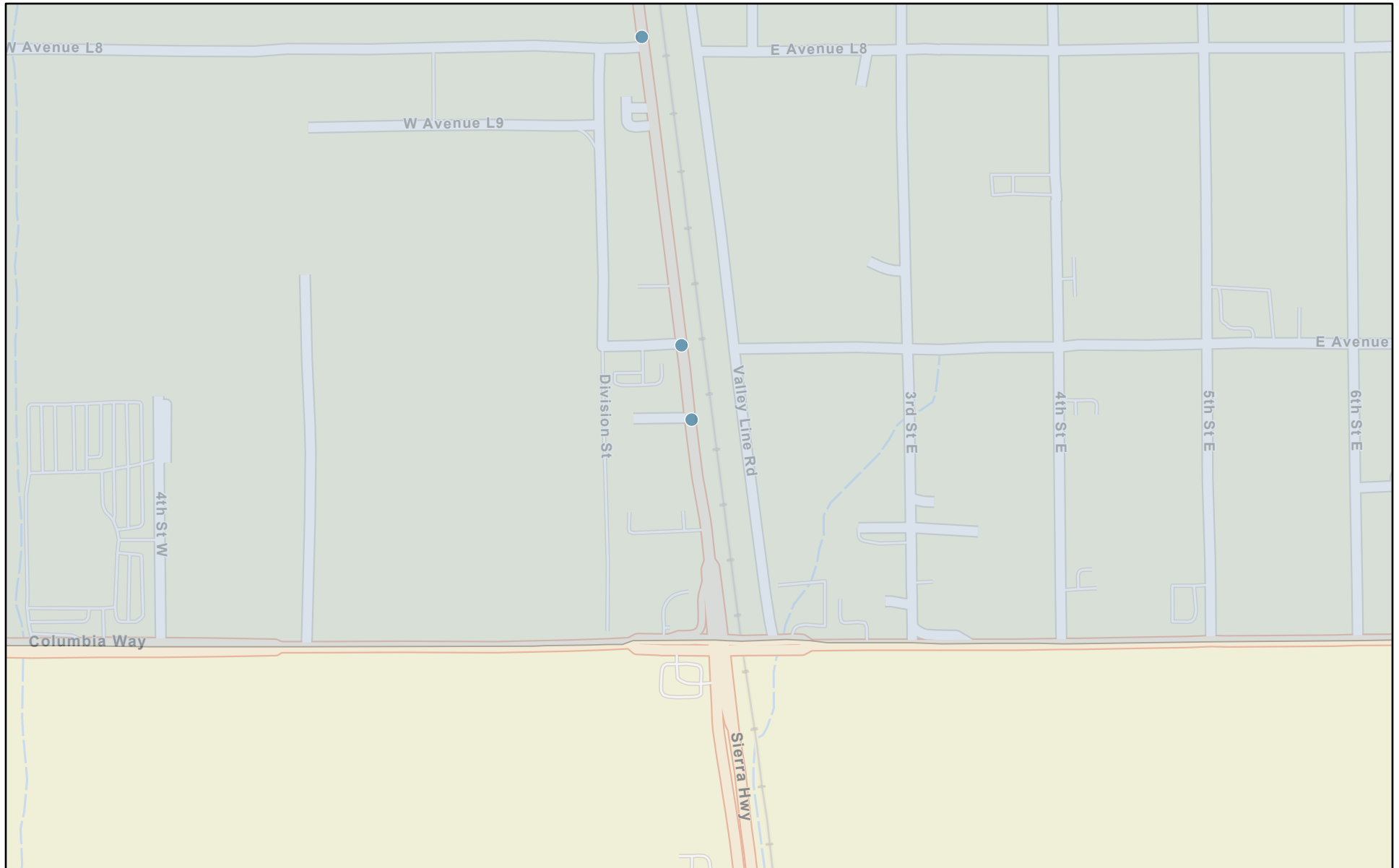
Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	- - Not Stated	Yes	South	B - Proceeding Straight
2	2 - Pedestrian	N - Pedestrian	No	North	- - Not Stated

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	3 - Pedestrian	F - Female	34	7 - Possible Injury

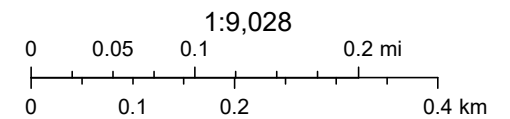
SWITRS GIS Map: Los Angeles, Lancaster 01/01/2020 - 12/31/2020



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SWITRS

● Crashes



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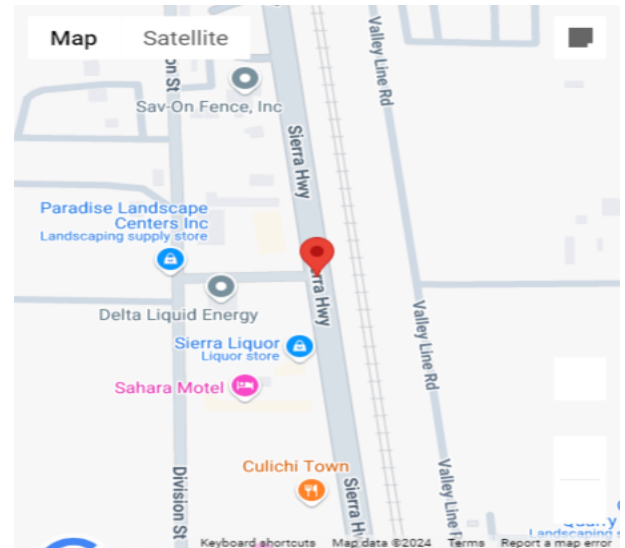
TIMS (<https://tims.berkeley.edu>), SafeTREC, UC Berkeley
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Crash Details for: Case ID 9140554

Crash Information

County	Los Angeles		
City	Lancaster		
Date & Time (M/D/Y)	07/25/2020 14:30		
Location (Intersection)	Sierra Hwy & Avenue L-12		
Dist. & Dir. from Intersection	At Intersection		
State Highway	No		
Geocoded Location	34.6495209, -118.1288528		
Type of Crash	A - Head-On		
Motor Vehicle Involved With	C - Other Motor Vehicle		
Crash Severity	3 - Injury (Other Visible)		
PCF Violation Category	07 - Unsafe Lane Change		
Weather	A - Clear		
Alcohol Involved	No		
Pedestrian Crash	No	Bicycle Crash	No
Motorcycle Crash	No	Truck Crash	No

Map View



Street View



Parties: 3

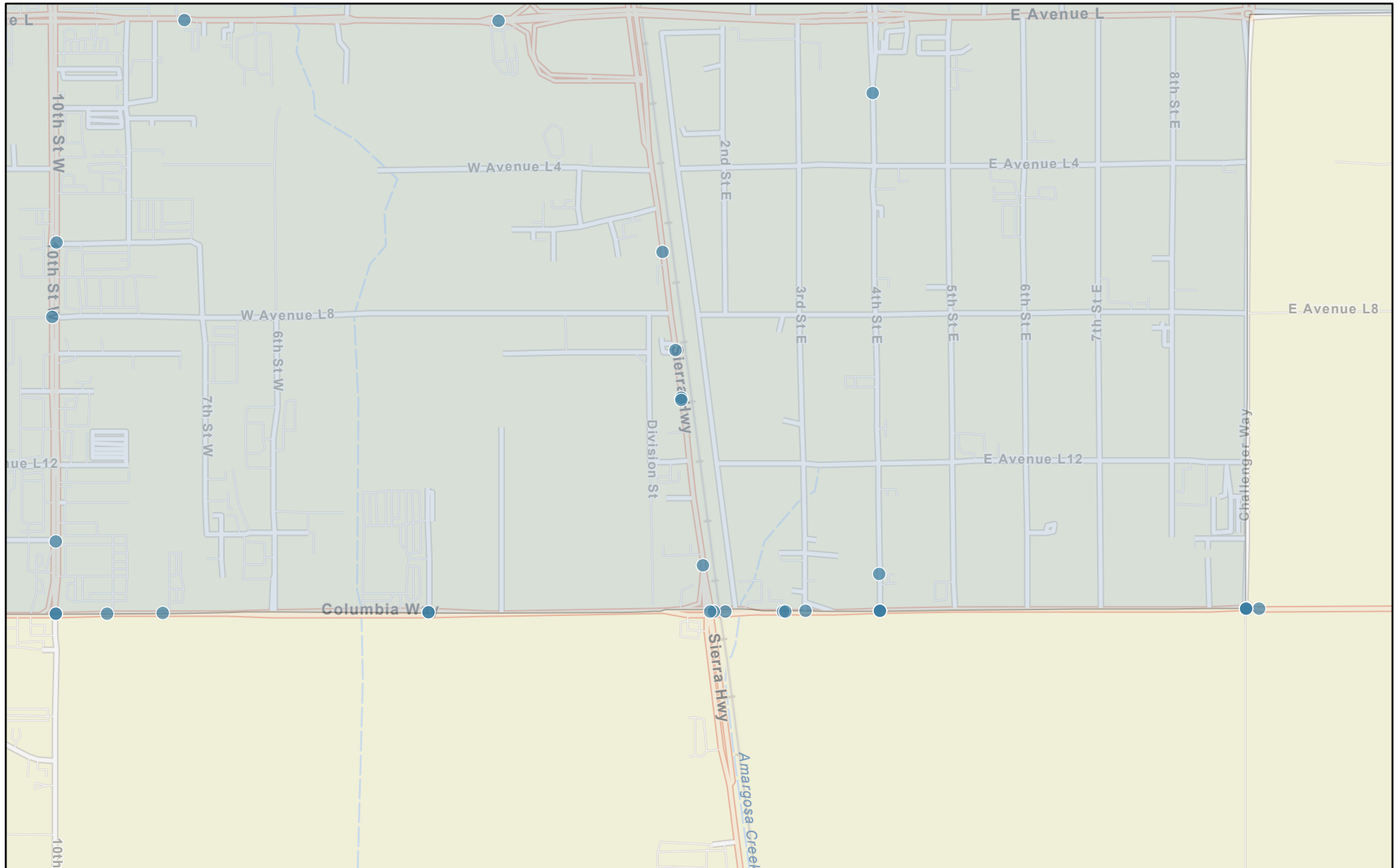
Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	- - Not Stated	Yes	North	J - Changing Lanes
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	North	B - Proceeding Straight
3	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	South	B - Proceeding Straight

Victims: 3

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	1 - Driver	M - Male	51	6 - Suspected Minor Injury

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
3	1 - Driver	M - Male	20	7 - Possible Injury
3	2 - Passenger	F - Female	18	7 - Possible Injury

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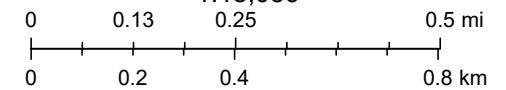


10/9/2024

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● Crashes

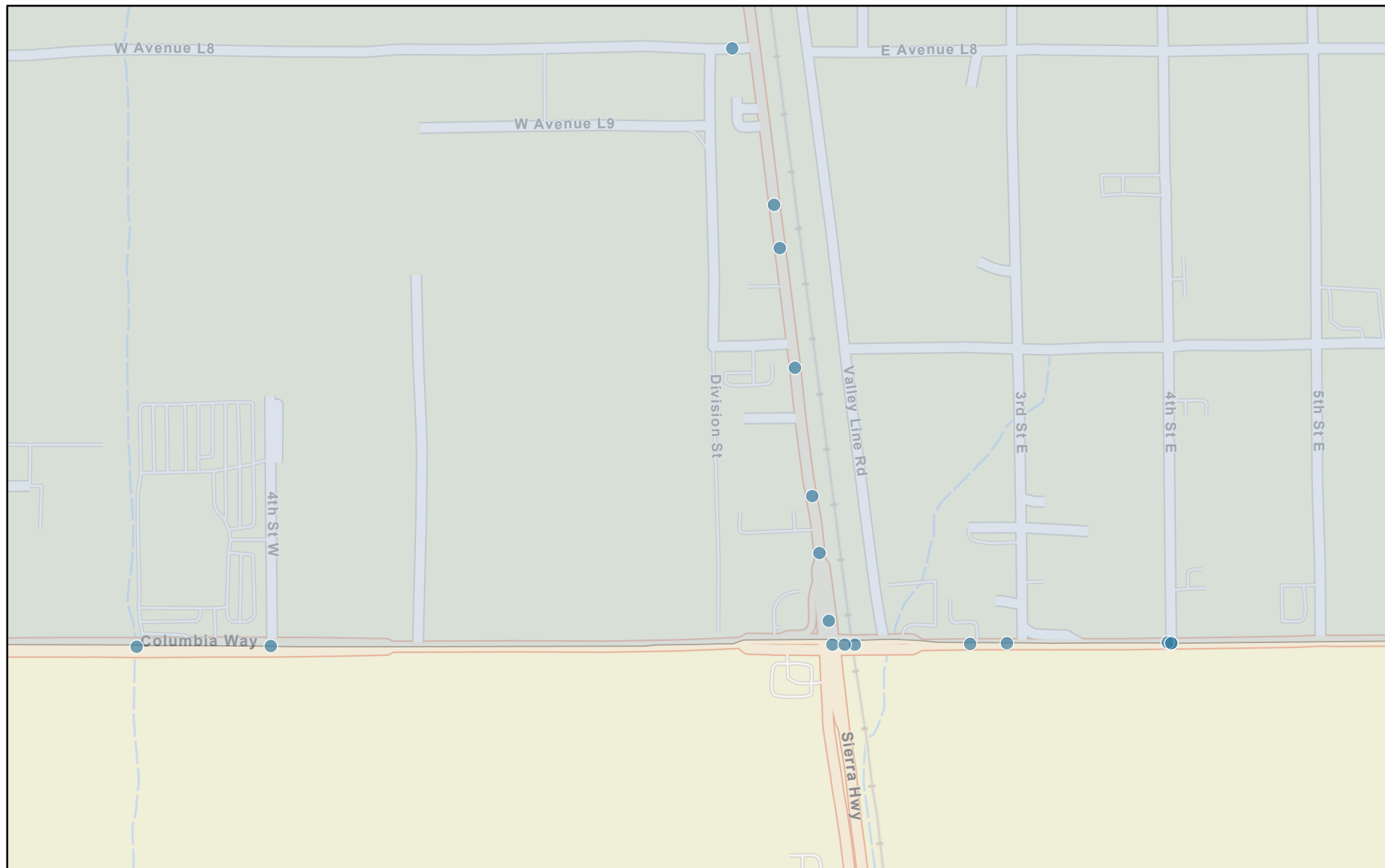
1:18,056



County of Los Angeles, California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land

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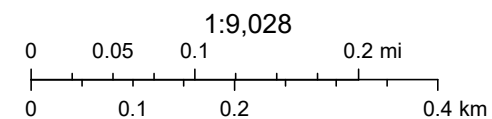
SWITRS GIS Map: Los Angeles, Lancaster 01/01/2022 - 12/31/2022



10/9/2024

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Crash Details for: Case ID 9426613

Crash Information

County	Los Angeles		
City	Lancaster		
Date & Time (M/D/Y)	01/08/2022 20:00		
Location (Intersection)	Sierra Hwy & Avenue M		
Dist. & Dir. from Intersection	1245.00 ft North		
State Highway	No		
Geocoded Location	34.6492424, -118.1288071		
Type of Crash	A - Head-On		
Motor Vehicle Involved With	B - Pedestrian		
Crash Severity	4 - Injury (Complaint of Pain)		
PCF Violation Category	11 - Pedestrian Violation		
Weather	A - Clear		
Alcohol Involved	No		
Pedestrian Crash	Yes	Bicycle Crash	No
Motorcycle Crash	No	Truck Crash	No

Map View



Street View



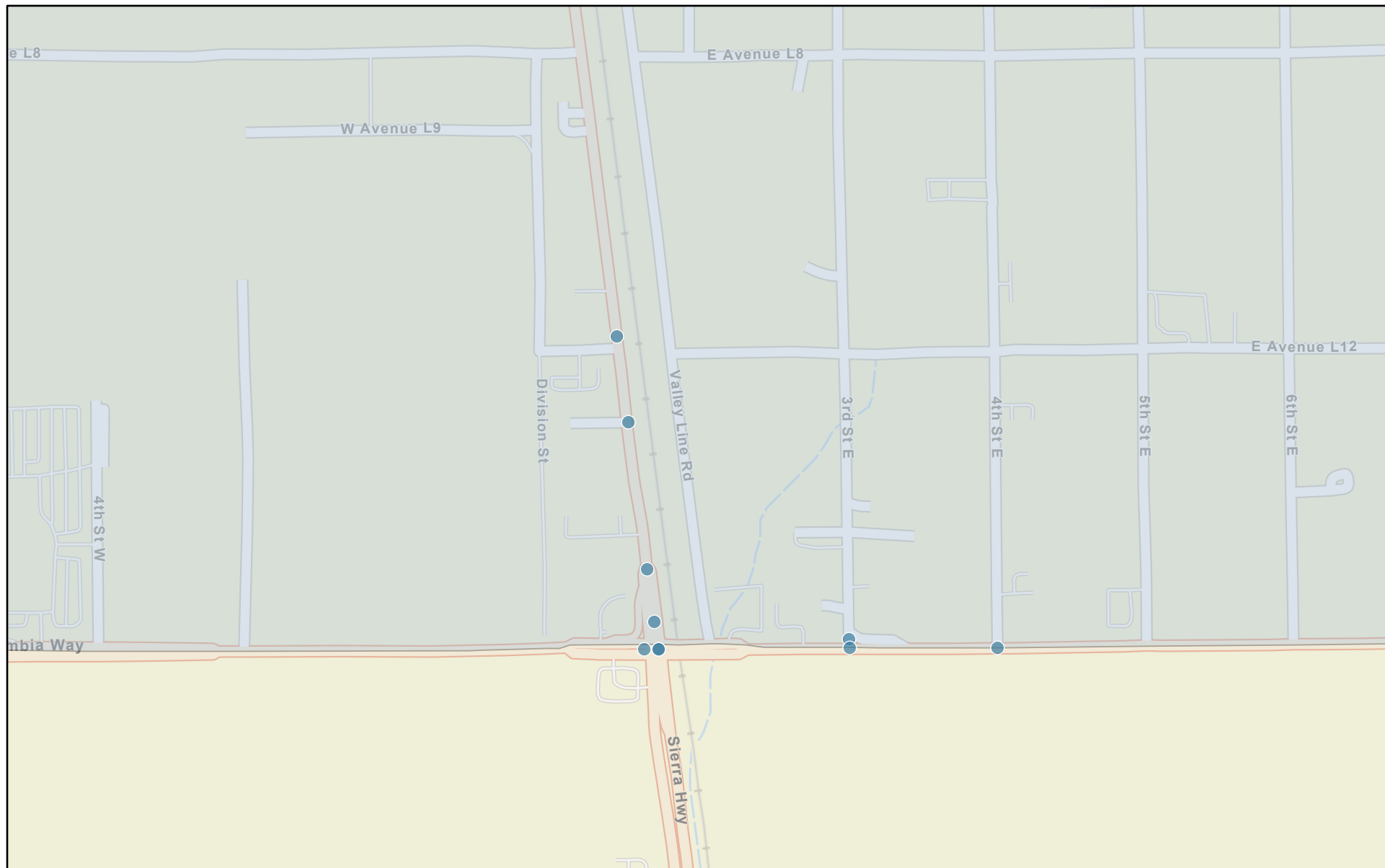
Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	South	B - Proceeding Straight
2	2 - Pedestrian	N - Pedestrian	Yes	East	- - Not Stated

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	2 - Passenger	F - Female	16	7 - Possible Injury

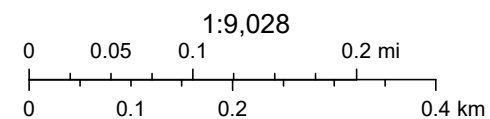
SWITRS GIS Map: Los Angeles, Lancaster 01/01/2023 - 12/31/2023



10/9/2024

SWITRS

● Crashes



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Crash Details for: Case ID 9582321

Crash Information

County	Los Angeles		
City	Lancaster		
Date & Time (M/D/Y)	05/12/2023 14:31		
Location (Intersection)	Sierra Hwy & Avenue L-12		
Dist. & Dir. from Intersection	60.00 ft North		
State Highway	No		
Geocoded Location	34.6496849, -118.1288757		
Type of Crash	C - Rear End		
Motor Vehicle Involved With	C - Other Motor Vehicle		
Crash Severity	4 - Injury (Complaint of Pain)		
PCF Violation Category	04 - Following Too Closely		
Weather	A - Clear		
Alcohol Involved	No		
Pedestrian Crash	No	Bicycle Crash	No
Motorcycle Crash	No	Truck Crash	No

Map View



Street View



Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	South	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	South	H - Slowing/Stopping

Victims: 3

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	F - Female	30	7 - Possible Injury
2	2 - Passenger	M - Male	3	0 - No Injury
2	1 - Driver	F - Female	22	7 - Possible Injury



Appendix L

**CA MUTCD Full Traffic Signal Warrant Analysis Worksheets for
Intersection 6: Sierra Highway (N/S) at Avenue L-12 (E/W)**

**California MUTCD 2014 Edition
Traffic Signal Warrant Worksheets**

Jurisdiction: **City of Lancaster**

Prepared by: **NL**

Date: 10/9/2024

Checked by: **JT**

Date: 10/9/2024

Major Street: **Sierra Highway (N/S)**

Number of Lanes: **2 or more**

Roadway

Minor Street: **Avenue L-12 (E/W)**

Number of Lanes: **1**

Classification

Traffic Condition: **Existing (2024)**

Rural

- Volume Level Criteria:
1. Is the posted speed limit of 85th percentile speed on major road exceeds 40 mph?
 2. Does the intersection lie within the built-area of an isolated community having a population of less than 10,000?
 3. Have adequate trials of other remedial measures been performed?

Y
N

N

**Warrant 1 - Eight Hour Vehicular Volume
(Condition A or Condition B or Combination of A and B Must Be Satisfied)**

Warrant Satisfied? N

Condition A Major Street Volume (70%): **420**
 Condition A Minor Street Volume (70%): **105**
 Combination Condition A Major Street Volume (56%): **336**
 Combination Condition A Minor Street Volume (56%): **84**

Condition B Major Street Volume (70%): **630**
 Condition B Minor Street Volume (70%): **53**
 Combination Condition B Major Street Volume (56%): **504**
 Combination Condition B Minor Street Volume (56%): **42**

Time Period		Major Street Volume (Both Approaches)	Minor Street Volumes (Higher Approach)	Condition A Met?	Condition B Met?	Combination of Conditions A & B Met?
Hour 1	12-1	398	8	N	N	N
Hour 2	1-2	279	6	N	N	N
Hour 3	2-3	219	5	N	N	N
Hour 4	3-4	285	7	N	N	N
Hour 5	4-5	551	4	N	N	N
Hour 6	5-6	761	4	N	N	N
Hour 7	6-7	805	9	N	N	N
Hour 8	7-8	1420	29	N	N	N
Hour 9	8-9	1544	25	N	N	N
Hour 10	9-10	1249	23	N	N	N
Hour 11	10-11	1324	30	N	N	N
Hour 12	11-12	1404	20	N	N	N
Hour 13	12-1	1325	30	N	N	N
Hour 14	1-2	1574	30	N	N	N
Hour 15	2-3	1805	42	N	N	N
Hour 16	3-4	1936	35	N	N	N
Hour 17	4-5	2129	45	N	N	N
Hour 18	5-6	1866	43	N	N	N
Hour 19	6-7	1481	31	N	N	N
Hour 20	7-8	973	21	N	N	N
Hour 21	8-9	985	27	N	N	N
Hour 22	9-10	914	11	N	N	N
Hour 23	10-11	917	14	N	N	N
Hour 24	11-12	508	9	N	N	N
Satisfied?				N	N	N

California MUTCD 2014 Edition Traffic Signal Warrant Worksheets

Jurisdiction: **City of Lancaster**

Prepared by: **NL**

Date: 10/9/2024

Checked by: **JT**

Date: 10/9/2024

Major Street: **Sierra Highway (N/S)**

Number of Lanes: **2 or more**

Roadway

Minor Street: **Avenue L-12 (E/W)**

Number of Lanes: **1**

Classification

Traffic Condition: **Existing (2024)**

Rural

- Volume Level Criteria:
1. Is the posted speed limit of 85th percentile speed on major road exceeds 40 mph? **Y**
 2. Does the intersection lie within the built-area of an isolated community having a population of less than 10,000? **N**
 3. Have adequate trials of other remedial measures been performed? **N**

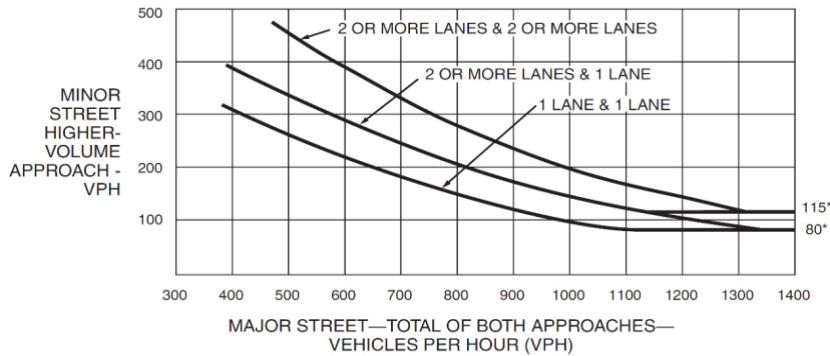
Warrant 2 - Four Hour Vehicular Volume

Warrant Satisfied? N

Record hourly vehicular volumes for any four hours of an average day.

Approach Lanes	Time Period			
	Hour 14	Hour 15	Hour 16	Hour 17
Both Approaches - Major Street	1574	1805	1936	2129
Higher Approach - Minor Street	30	42	35	45

Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



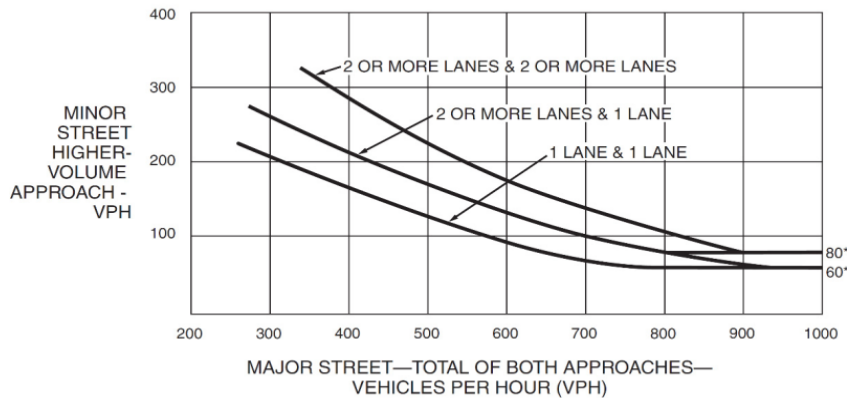
*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

All plotted points falls above the applicable curve in Figure 4C-1 (Urban Areas)?

N

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

All plotted points fall above the applicable curve in Figure 4C-2 (Rural Areas)?

N

California MUTCD 2014 Edition
Traffic Signal Warrant Worksheets

Jurisdiction: **City of Lancaster**

Prepared by: **NL**

Date: 10/9/2024

Checked by: **JT**

Date: 10/9/2024

Major Street: **Sierra Highway (N/S)**

Number of Lanes: **2 or more**

Roadway

Minor Street: **Avenue L-12 (E/W)**

Number of Lanes: **1**

Classification

Traffic Condition: **Existing (2024)**

Rural

- Volume Level Criteria:
1. Is the posted speed limit of 85th percentile speed on major road exceeds 40 mph?
 2. Does the intersection lie within the built-area of an isolated community having a population of less than 10,000?
 3. Have adequate trials of other remedial measures been performed?

Y

N

N

Warrant 3 - Peak Hour

Warrant Satisfied?

N

(Part A or Part B must be Satisfied)

Part A

Part A Satisfied?

N

(All parts 1, 2, and 3 below must be satisfied the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street-approach (one-direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two lane approach; AND
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane or traffic of 150 vph for two moving lanes; AND
3. The total entering volume serviced during the hour equals or exceeds 800vph for intersections with four or more approaches or 650 vph for intersections with three approaches.

N

N

Y

California MUTCD 2014 Edition Traffic Signal Warrant Worksheets

Jurisdiction: **City of Lancaster**

Prepared by: **NL**

Date: 10/9/2024

Checked by: **JT**

Date: 10/9/2024

Major Street: **Sierra Highway (N/S)**

Number of Lanes: **2 or more**

Roadway
Classification

Minor Street: **Avenue L-12 (E/W)**

Number of Lanes: **1**

Rural

Traffic Condition: **Existing (2024)**

- Volume Level Criteria:
1. Is the posted speed limit of 85th percentile speed on major road exceeds 40 mph?
 2. Does the intersection lie within the built-area of an isolated community having a population of less than 10,000?
 3. Have adequate trials of other remedial measures been performed?

Y

N

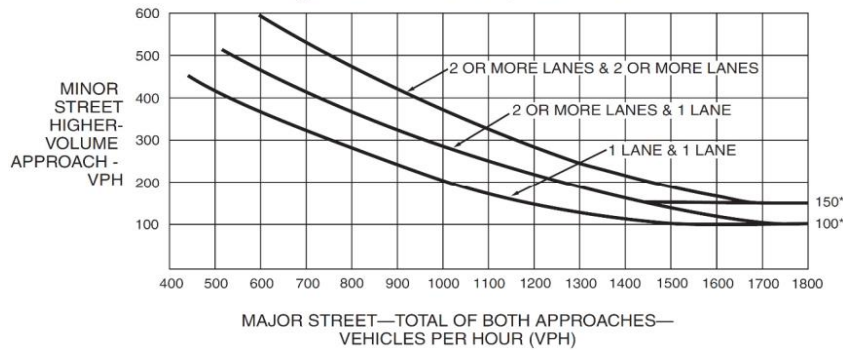
N

Part B

Part B Satisfied? N

Approach Lanes	Time Period
	Hour 17
Both Approaches - Major Street	4-5
Higher Approach - Minor Street	2129
Higher Approach - Minor Street	45

Figure 4C-3. Warrant 3, Peak Hour

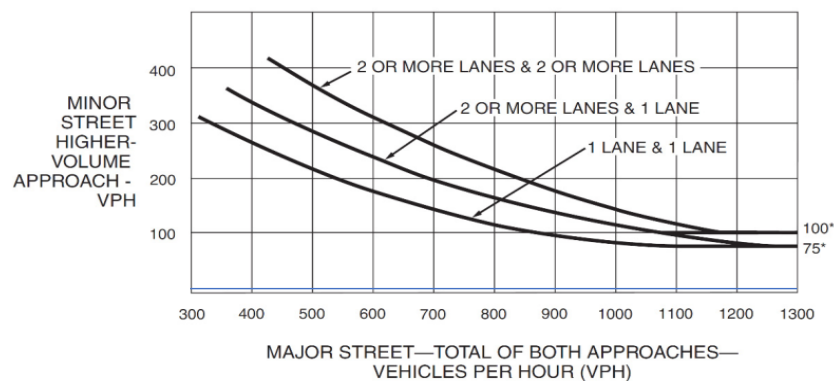


*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

The plotted point falls above the applicable curve in Figure 4C-3 (Urban Areas)?

N

**Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)**



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

The plotted point falls above the applicable curve in Figure 4C-4 (Rural Areas)?

N

California MUTCD 2014 Edition Traffic Signal Warrant Worksheets

Jurisdiction: **City of Lancaster**

Prepared by: **NL**

Date: 10/9/2024

Checked by: **JT**

Date: 10/9/2024

Major Street: **Sierra Highway (N/S)**

Number of Lanes: **2 or more**

Roadway
Classification

Minor Street: **Avenue L-12 (E/W)**

Number of Lanes: **1**

Rural

Traffic Condition: **Existing (2024)**

- Volume Level Criteria:
1. Is the posted speed limit of 85th percentile speed on major road exceeds 40 mph?
 2. Does the intersection lie within the built-area of an isolated community having a population of less than 10,000?
 3. Have adequate trials of other remedial measures been performed?

Y

N

N

Warrant 4 - Pedestrian Volume (Parts 1 and 2 Must Be Satisfied)

Warrant Satisfied? **N**

Part 1 (Part A or B Must Be Satisfied)

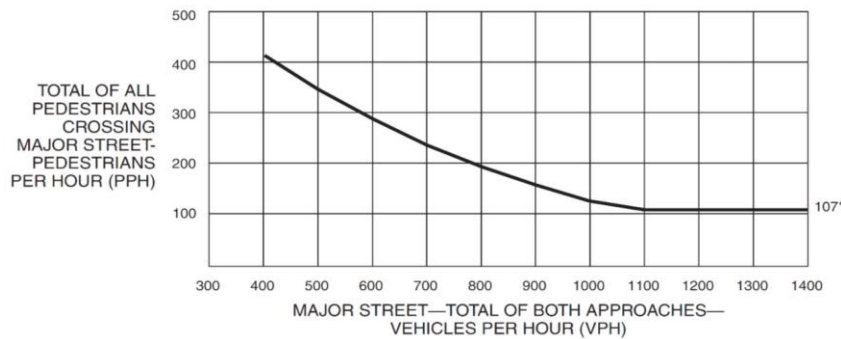
Part 1 Satisfied? **N**

Part A

Part A Satisfied? **N**

Approach Lanes	Time Period			
	Hour 14	Hour 15	Hour 16	Hour 17
Vehicles				
Both Approaches - Major Street	1574	1805	1936	2129
Pedestrians				
Crossing the Major Street	1	0	0	0

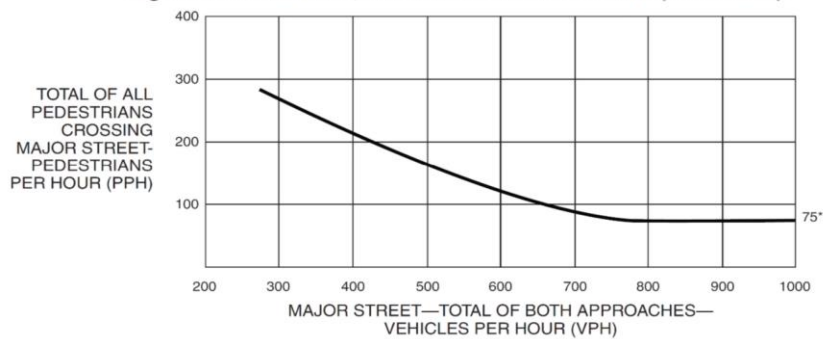
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



The plotted points fall above the curve in Figure 4C-5 (Urban Areas)?

N

Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



The plotted points fall above the curve in Figure 4C-5 (Rural Areas)?

N

California MUTCD 2014 Edition Traffic Signal Warrant Worksheets

Jurisdiction: **City of Lancaster**

Prepared by: **NL**

Date: 10/9/2024

Checked by: **JT**

Date: 10/9/2024

Major Street: **Sierra Highway (N/S)**

Number of Lanes: **2 or more**

Roadway
Classification

Minor Street: **Avenue L-12 (E/W)**

Number of Lanes: **1**

Rural

Traffic Condition: **Existing (2024)**

- Volume Level Criteria:
1. Is the posted speed limit of 85th percentile speed on major road exceeds 40 mph?
 2. Does the intersection lie within the built-area of an isolated community having a population of less than 10,000?
 3. Have adequate trials of other remedial measures been performed?

Y

N

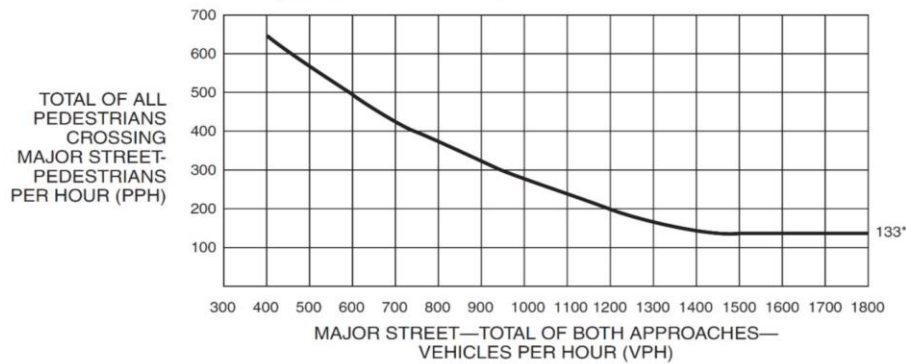
N

Part B

Part B Satisfied? **N**

Approach Lanes	Time Period
	Hour 16
Vehicles	3-4
Both Approaches - Major Street	1936
Pedestrians	0
Crossing the Major Street	0

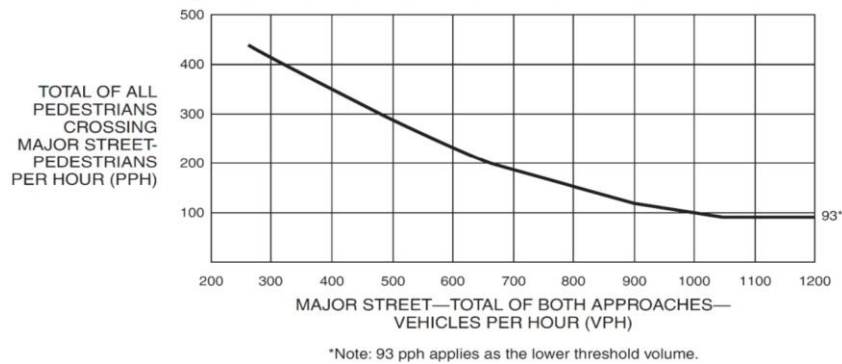
Figure 4C-7. Warrant 4, Pedestrian Peak Hour



The plotted points fall above the curve in Figure 4C-7 (Urban Areas)?

N

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



The plotted points fall above the curve in Figure 4C-8 (Rural Areas)?

N

Part 2

Part 2 Satisfied? **Y**

AND, The distance to the nearest traffic signal along the major street is greater than 300 feet?

Y

OR, The proposed traffic signal will not restrict progressive traffic flow along the major street?

Y

**California MUTCD 2014 Edition
Traffic Signal Warrant Worksheets**

Jurisdiction: **City of Lancaster**

Prepared by: **NL**

Date: 10/9/2024

Checked by: **JT**

Date: 10/9/2024

Major Street: **Sierra Highway (N/S)**

Number of Lanes: **2 or more**

Roadway

Minor Street: **Avenue L-12 (E/W)**

Number of Lanes: **1**

Classification

Traffic Condition: **Existing (2024)**

Rural

- Volume Level Criteria:
1. Is the posted speed limit of 85th percentile speed on major road exceeds 40 mph?
 2. Does the intersection lie within the built-area of an isolated community having a population of less than 10,000?
 3. Have adequate trials of other remedial measures been performed?

Y

N

N

**Warrant 5 - School Crossing
(Parts A and B Must Be Satisfied)**

Warrant Satisfied? **N**

**Part A
Gap/Minutes and # of Children**

Part A Satisfied? **N**

Gaps VS Minutes	Minutes Children Using Crossing	N/A
	Number of Adequate Gaps	N/A
School Age Pedestrian Crossing Street / Hr		N/A

Gaps < Minutes? **N**
AND Children >20/Hr? **N**

AND, Consideration has been given to less restrictive remedial measures?

N

Part B

Part B Satisfied? **Y**

The distance to the nearest traffic signal along the major street is greater than 300 feet?
OR, The proposed signal will not restrict the progressive movement of traffic?

Y

Y

**Warrant 6 - Coordinated Signal System
(All Parts Must Be Satisfied)**

Warrant Satisfied? **N**

Minimum Requirements	DISTANCE TO NEAREST SIGNAL	
≥ 1000 ft	North: ft, South: 1300 ft, East: ft, West: ft.	Y
On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning?		N
<u>OR</u> , On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.		

**Warrant 7 - Crash Experience Warrant
(All Parts Must Be Satisfied)**

Warrant Satisfied? **N**

Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency?			N
REQUIREMENTS	Number of crashes reported within a 12 month period susceptible to correction by a traffic signal, and involving injury or damage exceeding the requirements for a reportable crash?	N	
5 OR MORE			
REQUIREMENTS	CONDITIONS		N
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume	N	
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	N	
	OR, Warrant 4, Pedestrian Volume Condition Ped Vol ≥ 80% of Figure 4C-5 through Figure 4C-8	N	

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Jurisdiction: **City of Lancaster**

Prepared by: **NL**

Date: 10/9/2024

Checked by: **JT**

Date: 10/9/2024

Major Street: **Sierra Highway (N/S)**

Number of Lanes: **2 or more**

Roadway

Minor Street: **Avenue L-12 (E/W)**

Number of Lanes: **1**

Classification

Traffic Condition: **Existing (2024)**

Rural

- Volume Level Criteria:
1. Is the posted speed limit of 85th percentile speed on major road exceeds 40 mph? **Y**
 2. Does the intersection lie within the built-area of an isolated community having a population of less than 10,000? **N**
 3. Have adequate trials of other remedial measures been performed? **N**

Warrant 8 - Roadway Network
(All Parts Must Be Satisfied)

Warrant Satisfied? N

Minimum Volume Requirements	Entering Volumes - All Approaches		Fulfilled
1000 Veh/Hr	During Typical Weekday Peak Hour (1512) Veh/Hr and has 5-year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday.	N	N
	OR During Each of any 5Hrs. Of a Sat. or Sun (0) Veh/Hr?	N	
CHARACTERISTICS OF MAJOR ROUTES		Major Route A	Major Route B
Hwy. System Serving as Principal Network for Through Traffic?		Y	N
Rural or Suburban Highway Outside Of, Entering, or Traversing a City?		Y	N
Appears as Major Route on an Official Plan?		Y	N
Any Major Route Characteristics Met, Both Streets?			N