

13925 BENSON AVENUE (PL23-0091)

TRAFFIC ANALYSIS

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LIST OF ABBREVIATED TERMS

(1)	Reference
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
CA MUTCD	California Manual on Uniform Traffic Control Devices
Caltrans	California Department of Transportation
CMP	Congestion Management Program
DIF	Development Impact Fee
E+P	Existing Plus Project
HCM	Highway Capacity Manual
ITE	Institute of Transportation Engineers
LOS	Level of Service
NCHRP	National Cooperative Highway Research Program
PCE	Passenger Car Equivalent
PHF	Peak Hour Factor
Project	13925 Benson Avenue
SBCTA	San Bernardino County Transportation Authority
SBTAM	San Bernardino Transportation Analysis Model
SCAG	Southern California Association of Governments
TA	Traffic Analysis
v/c	Volume to Capacity
VMT	Vehicle Miles Traveled
vphgpl	Vehicles per Hour Green per Lane

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1 INTRODUCTION

This report presents the results of the Traffic Analysis (TA) for 13925 Benson Avenue (Project), which is located in the City of Chino, as shown on Exhibit 1-1. The purpose of this TA is to evaluate the potential circulation system deficiencies that may result from the development of the proposed Project, and where necessary recommend improvements to achieve acceptable operations consistent with General Plan level of service goals and policies. This traffic study has been prepared in accordance with the City of Chino's Transportation Impact Study Guidelines, the San Bernardino County Congestion Management Program (CMP) Guidelines for CMP Traffic Impact Analysis Reports, and consultation with City staff during the traffic study scoping process. (1) (2) The approved Project Traffic Study Scoping agreement is provided in Appendix 1.1 of this TA.

1.1 SUMMARY OF FINDINGS

The Project is to construct the following improvements as design features in conjunction with development of the site:

- The proposed driveways will be stop controlled for exiting (egress) traffic and will serve both passenger cars and trucks. Driveway 1 will restrict trucks to inbound traffic only.

Additional details and intersection lane geometrics are provided in Section 1.6 *Recommendations* of this report. The proposed Project is not anticipated to require the construction of any off-site improvements.

1.2 PROJECT OVERVIEW

A preliminary site plan for the proposed Project is shown on Exhibit 1-2. The existing 6.62-acre site is currently occupied by AmCo Structures, a manufacturer of modular commercial and residential buildings. The Project is currently proposed to consist of the development of a 145,500 square foot warehouse building (includes the 6,000 square foot office). As indicated on Exhibit 1-2, vehicular access will be provided via two driveways on Benson Avenue. Driveway 1 is proposed to allow for full access (e.g., no turn restrictions) for passenger cars and will be restricted to inbound traffic only for trucks. Driveway 2 is proposed to allow for full access (e.g., no turn restrictions). Regional access to the Project site is accommodated from the SR-71 Freeway via Chino Avenue, Edison Avenue, and Ramona Avenue, and the SR-60 Freeway via Ramona Avenue. The Project is anticipated to have an opening year of 2026. It should be noted, Vehicle Miles Traveled (VMT) is addressed under a separate cover, as such, VMT is not evaluated as part of this traffic study.

In order to develop the traffic characteristics of the proposed project, trip-generation statistics published in the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition, 2021) have been utilized. (3) The Project is anticipated to generate a total of 332 actual two-way trips per day with 35 AM peak hour trips and 34 PM peak hour trips, in actual vehicles. The Project is anticipated to generate 460 two-way passenger car equivalent (PCE) trips per day with 38 PCE AM peak hour trips and 42 PCE PM peak hour trips. Consistent with the City's Guidelines, the peak hour intersection operations analyses utilize PCE-based traffic volumes. The assumptions and methods used to estimate the Project's trip generation characteristics are discussed in greater detail in Section 4.1 *Project Trip Generation* of this report.

EXHIBIT 1-1: LOCATION MAP

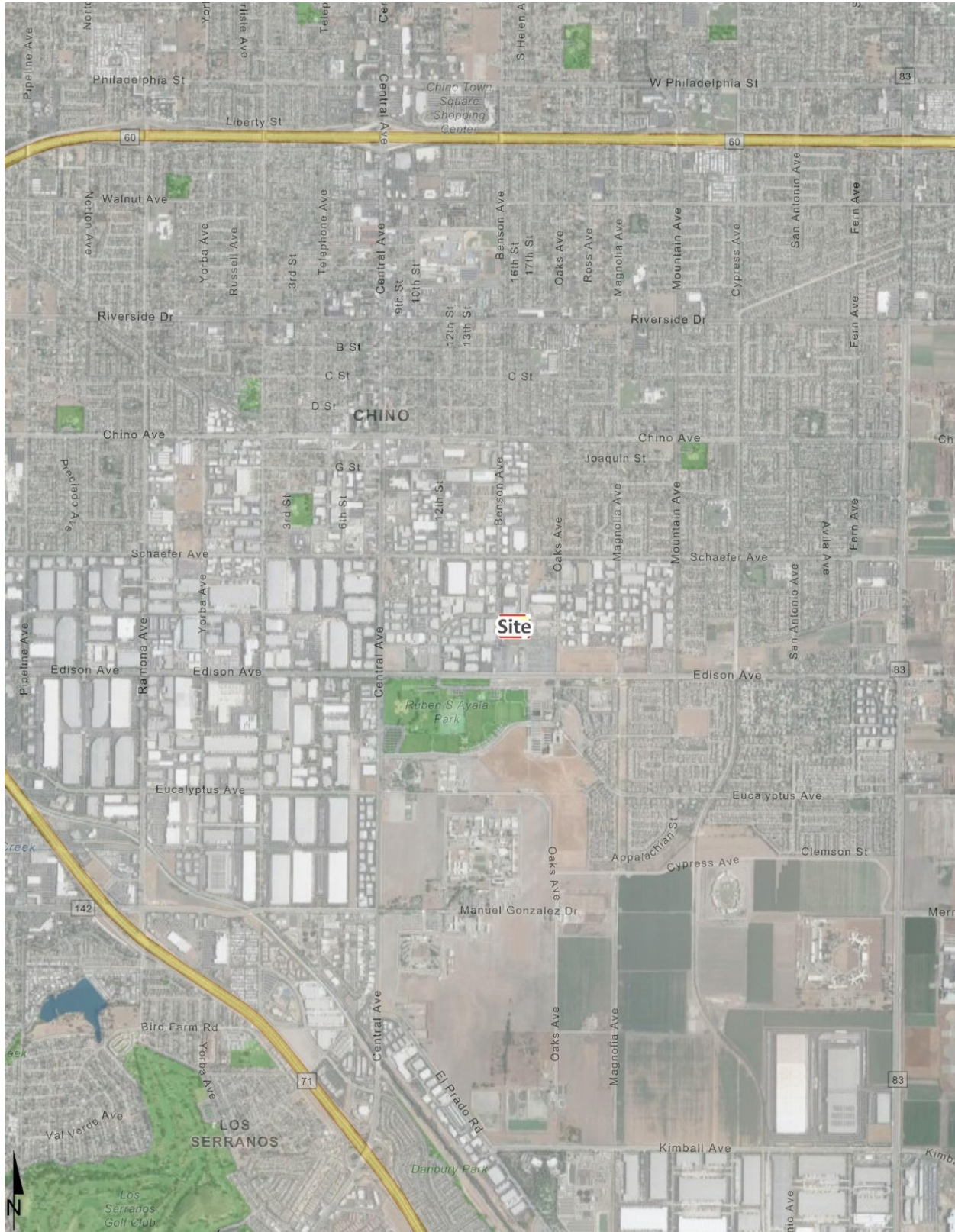
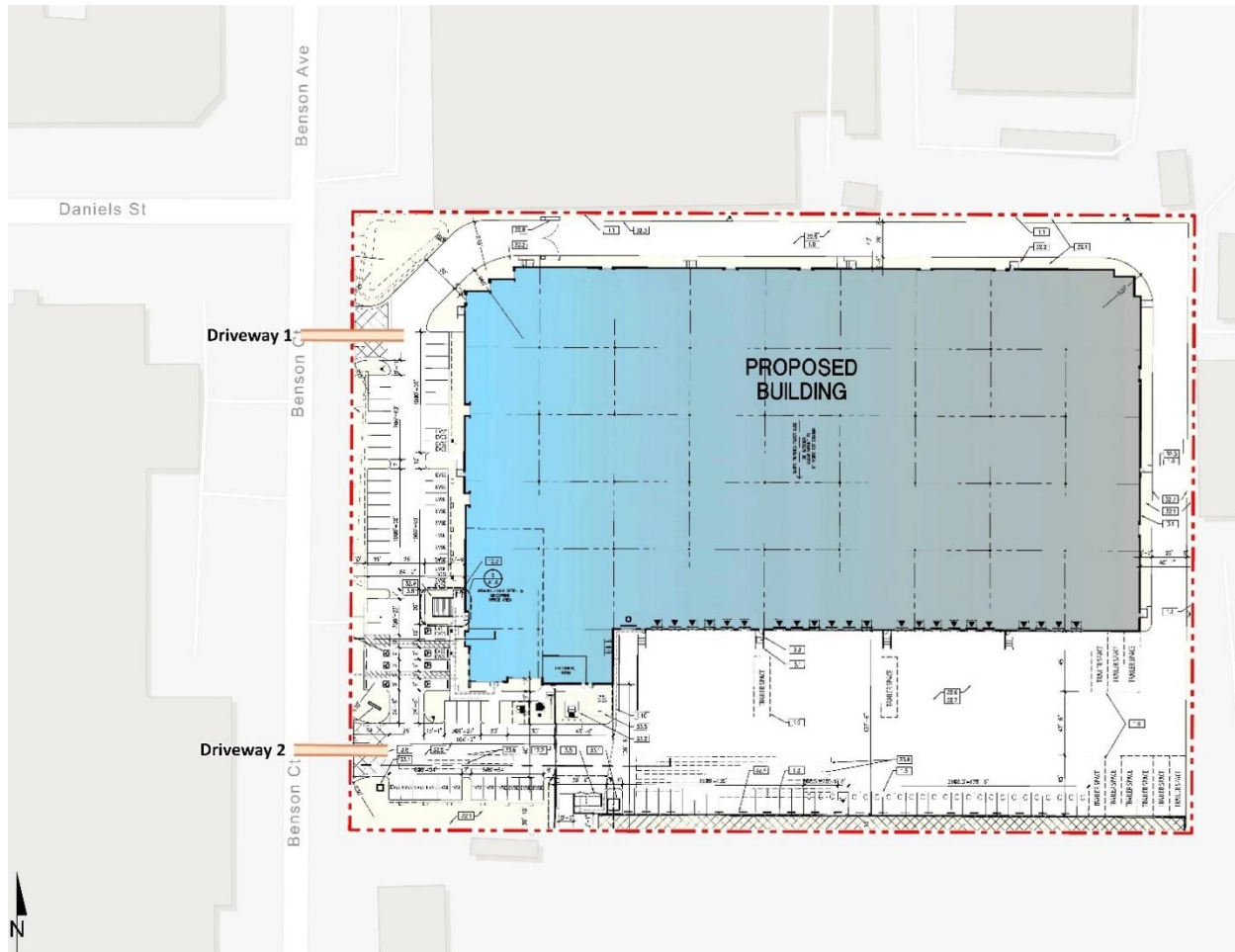


EXHIBIT 1-2: PRELIMINARY SITE PLAN



1.3 ANALYSIS SCENARIOS

For the purposes of this traffic study, potential deficiencies to traffic and circulation have been assessed for each of the following conditions:

- Existing (2023) Conditions
- Existing plus Project (E+P) Conditions
- Opening Year Cumulative (2026) Without Project Conditions
- Opening Year Cumulative (2026) With Project Conditions
- Horizon Year (2045) Without Project
- Horizon Year (2045) With Project

1.3.1 EXISTING (2023) CONDITIONS

Information for Existing (2023) conditions is disclosed to represent the baseline traffic conditions as they existed at the time this report was prepared. Local schools were in session and operating on normal bell schedules at the time traffic counts were collected. Traffic counts were conducted in August 2023 with vehicle classification, which were converted to PCE. Per the City's Guidelines, use of PCE in the operations analysis accounts for the effects of large trucks present within the existing study area. By their size alone, these vehicles occupy the same space as two or more passenger cars. In addition, the time it takes for them to accelerate and slow-down is also much longer than for passenger cars and varies depending on the type of vehicle and number of axles. The volumes shown within the TA are represented in actual vehicles, however, consistent with the City's Guidelines the peak hour intersection operations analyses have been conducted using PCE volumes.

1.3.2 E+P CONDITIONS

The E+P conditions analysis determines the potential circulation system deficiencies based on a comparison of the E+P traffic conditions to Existing conditions. The roadway network is similar to Existing conditions except for new connections to be constructed by the Project. Cumulative development projects and ambient growth are not included for E+P traffic conditions.

1.3.3 OPENING YEAR CUMULATIVE (2026) CONDITIONS

The Opening Year Cumulative (2026) traffic conditions analysis determines the potential near-term cumulative circulation system deficiencies. The roadway network is similar to Existing conditions except for new connections to be constructed by the Project. To account for background traffic growth, an ambient growth factor from Existing (2023) conditions of 6.12% (2% per year, compounded annually, over 3 years) is included for Opening Year Cumulative (2026) traffic conditions. Conservatively, this TA estimates the area ambient traffic growth and then adds traffic generated by other known or probable related projects. These related projects are at least in part already accounted for in the assumed ambient growth rates; and some of these related projects may not be implemented and operational within the 2026 Opening Year time frame assumed for the Project. The resulting traffic growth utilized in the TA (ambient growth factor plus traffic generated by related projects) would therefore tend to overstate rather than understate background cumulative traffic deficiencies under 2026 traffic conditions.

1.3.4 HORIZON YEAR (2045) CONDITIONS

Traffic projections for Horizon Year (2045) conditions were derived from the San Bernardino County Transportation Analysis Model (SBTAM) using accepted procedures for model forecast refinement and smoothing. The Horizon Year conditions analysis will be utilized to determine if improvements funded through regional transportation mitigation fee programs can accommodate the long-range cumulative traffic at the target Level of Service (LOS) identified in the City of Chino (lead agency) General Plan. Each of the applicable transportation fee programs are discussed in more detail in Section 8 *Local and Regional Funding Mechanisms*.

1.4 STUDY AREA

To ensure that this TA satisfies the City of Chino’s traffic study requirements, Urban Crossroads, Inc. prepared a Project traffic study scoping package for review by City of Chino staff prior to the preparation of this report. This agreement provides an outline of the Project study area, trip generation, trip distribution, and analysis methodology. The scoping agreement is included in Appendix 1.1 of this TA.

The 5 study area intersections shown on Exhibit 1-3 and listed in Table 1-1 were selected for evaluation in this TA based on consultation with City of Chino staff. At a minimum, a study area should include intersections where the Project is anticipated to contribute 50 or more peak hour trips per the City’s traffic study guidelines. (1) The “50 peak hour trip” criterion represents a minimum number of trips at which a typical intersection would have the potential to be affected by a given development proposal. The 50 peak hour trip criterion is a traffic engineering rule of thumb that is accepted and widely used within the City of Chino and San Bernardino County for estimating a potential area of influence (i.e., study area). The Project is anticipated to contribute fewer than 50 peak hour trips at all study area intersections. The study area has been defined based on coordination with City staff.

TABLE 1-1: INTERSECTION ANALYSIS LOCATIONS

#	Intersection	Jurisdiction	CMP?
1	12th St. & Edison Av.	City of Chino	No
2	Benson Av. & Schaefer Av.	City of Chino	No
3	Benson Av. & Daniels St.	City of Chino	No
4	Benson Av. & Driveway 1	City of Chino	No
5	Benson Av. & Driveway 2	City of Chino	No

The intent of a CMP is to link land use, transportation, and air quality, thereby prompting reasonable growth management programs that will effectively utilize new transportation funds, alleviate traffic congestion and related deficiencies, and improve air quality. The County of San Bernardino CMP became effective with the passage of Proposition 111 in 1990 with a 2021 Update to the Nexus Study. (2) There are no study area intersections identified as a San Bernardino County CMP intersection.

EXHIBIT 1-3: STUDY AREA



1.5 DEFICIENCIES

This section provides a summary of deficiencies by analysis scenario. Section 2 *Methodologies* provides information on the methodologies used in the analysis and Section 5 *E+P Traffic Conditions*, Section 6 *Opening Year Cumulative (2026) Traffic Conditions*, and Section 7 *Horizon Year (2045) Traffic Conditions* includes the detailed analysis. A summary of LOS results for all analysis scenarios is presented in Table 1-2.

TABLE 1-2: SUMMARY OF LOS

# Intersection	Existing		E+P		2026 Without Project		2026 With Project		2045 Without Project		2045 With Project	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1 12th St. & Edison Av.	●	●	●	●	●	●	●	●	●	●	●	●
2 Benson Av. & Schaefer Av.	●	●	●	●	●	●	●	●	●	●	●	●
3 Benson Av. & Daniels St.	●	●	●	●	●	●	●	●	●	●	●	●
4 Benson Av. & Driveway 1	N/A	N/A	●	●	N/A	N/A	●	●	N/A	N/A	●	●
5 Benson Av. & Driveway 2	N/A	N/A	●	●	N/A	N/A	●	●	N/A	N/A	●	●

● = A - D ● = E ● = F

1.5.1 EXISTING (2023) CONDITIONS

All of the study area intersections are currently operating at an acceptable LOS during the weekday AM and PM peak hours.

1.5.2 E+P CONDITIONS

All of the study area intersections are anticipated to continue to operate at an acceptable LOS under E+P traffic conditions with the addition of Project traffic.

1.5.3 OPENING YEAR CUMULATIVE (2026) CONDITIONS

All of the study area intersections are anticipated to continue to operate at an acceptable LOS under Opening Year Cumulative (2026) Without Project traffic conditions and would continue to operate at an acceptable LOS with the addition of Project traffic.

1.5.4 HORIZON YEAR (2045) CONDITIONS

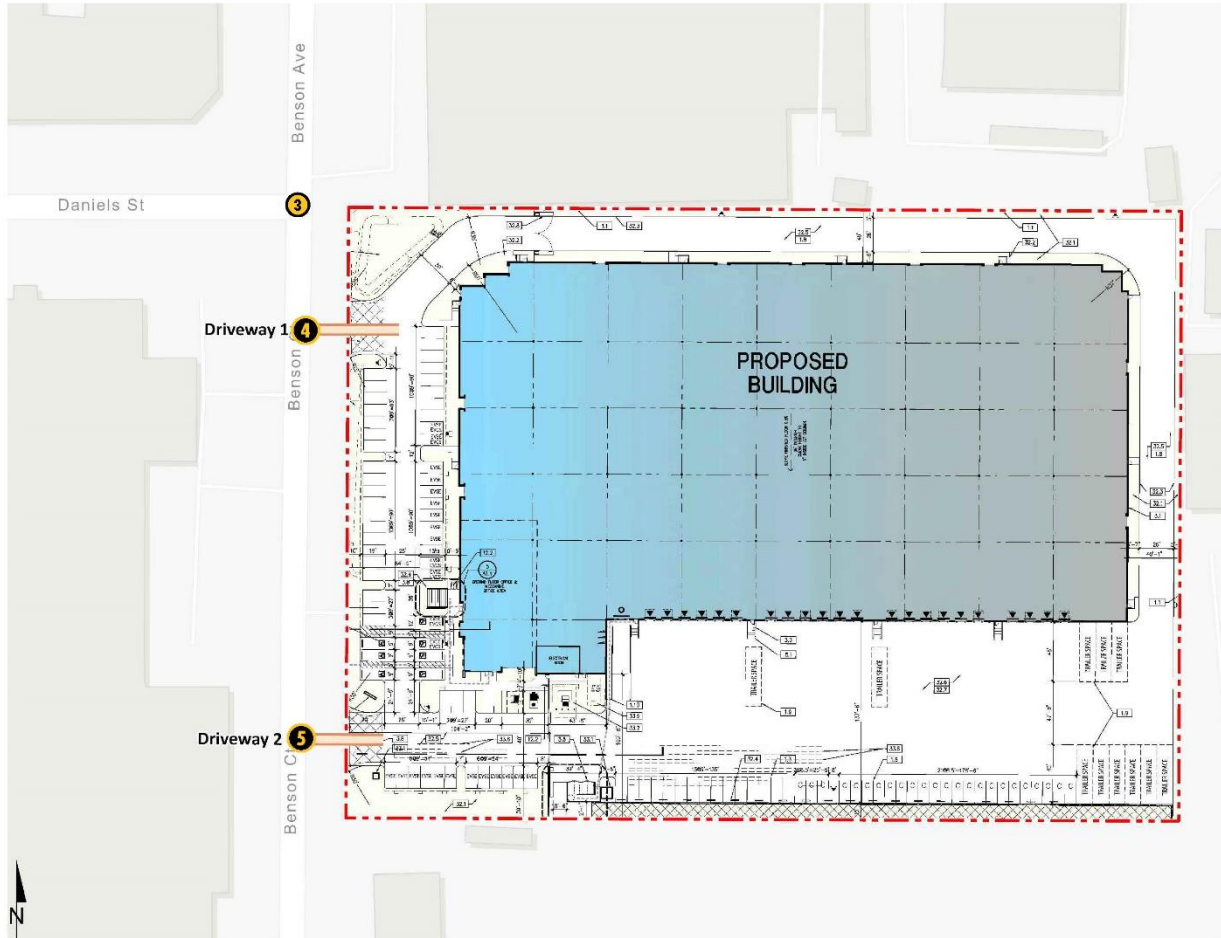
All of the study area intersections are anticipated to continue to operate at an acceptable LOS under Horizon Year (2045) Without Project traffic conditions and would continue to operate at an acceptable LOS with the addition of Project traffic.

1.6 RECOMMENDATIONS

1.6.1 SITE ADJACENT AND SITE ACCESS RECOMMENDATIONS

The following recommendations are based on the minimum improvements needed to accommodate site access and maintain acceptable peak hour operations for the proposed Project. The site adjacent recommendations are shown on Exhibits 1-4.

EXHIBIT 1-4: SITE ACCESS RECOMMENDATIONS



4 Benson Av. & Driveway 1	5 Benson Av. & Driveway 2

-  = Existing Intersection Analysis Location
-  = Future Intersection Analysis Location
-  = Stop Sign Improvement
-  = Existing Lane
-  = Lane Improvement
- DEF** = Defacto Left Turn

Recommendation 1 – Benson Avenue & Daniels Street (#3) – The following improvement is necessary to accommodate site access:

- Project to stripe a crosswalk on the southern side of the intersection.

Recommendation 2 – Benson Avenue & Driveway 1 (#4) – The following improvement is necessary to accommodate site access:

- Project to install a stop control on the westbound approach (Project driveway).

Recommendation 3 – Benson Avenue & Driveway 2 (#5) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the westbound approach (Project driveway).

Based on the peak hour intersection operations and the anticipated traffic volumes, no turn pockets are needed or have been recommended at the Project driveways or at the intersection of Benson Avenue and Daniels Street.

Recommendation 4 – Benson Avenue is a north-south oriented roadway located on the Project's eastern boundary. Benson Avenue appears to be built to its ultimate curb-to-curb width adjacent to the Project. However, the Project should improve the curb-and-gutter, sidewalks, and landscape along the frontage in addition to accommodating improvements to facilitate site access at the driveways.

On-site traffic signing and striping should be implemented agreeable with the provisions of the California Manual on Uniform Traffic Control Devices (CA MUTCD) and in conjunction with detailed construction plans for the Project site.

1.6.2 OFF-SITE RECOMMENDATIONS

There are no off-site improvements recommended as all study area intersections are anticipated to operate at an acceptable LOS for all analysis scenarios during the morning and evening peak hours. However, the Project Applicant shall pay requisite fees for the applicable pre-existing fee programs (see Section 8 *Local and Regional Funding Mechanisms*).

1.6.3 QUEUING ANALYSIS

A queuing analysis was conducted at the study area intersections for Horizon Year (2045) With Project traffic conditions to determine the turn pocket lengths necessary to accommodate 95th percentile queues. The analysis was conducted for the weekday AM and weekday PM peak hours. The results have been provided in Appendix 1.2 and a summary of the queuing analysis results is shown in Table 1-3. As shown in Table 1-3, no queuing issues are anticipated at the intersections of 12th Street at Edison Avenue, Benson Avenue at Schaefer Avenue, Benson Avenue at Daniels Street, and at the Project driveways. As such, the existing turn pockets at existing intersections are anticipated to accommodate the 95th percentile queues.

TABLE 1-3: PEAK HOUR QUEUING ANALYSIS FOR SITE ADJACENT INTERSECTIONS

Intersection	Movement	Available Stacking Distance (Feet)	95th Percentile Queue (Feet)		Acceptable? ¹	
			AM Peak	PM Peak	AM	PM
12th St. & Edison Av.	NBL/T/R	125	83	79	Yes	Yes
	SBL	100	68	71	Yes	Yes
	SBT/R	825	132	108	Yes	Yes
	EBL	150	150	77	Yes	Yes
	EBT/R	700	300	271	Yes	Yes
	WBL	100	82	74	Yes	Yes
	WBT	1,100	246	225	Yes	Yes
	WBR	270	41	24	Yes	Yes
Benson Av. & Schaefer Av.	NBL	50	61	82	Yes	Yes ²
	NBT/R	1,230	57	129	Yes	Yes
	SBL	35	79	77	Yes ²	Yes ²
	SBT	2,550	112	80	Yes	Yes
	SBR ³	150	92	63	Yes	Yes
	EBL	100	94	119	Yes	Yes
	EBT/R	1,240	159	239	Yes	Yes
	WBL	125	129	42	Yes	Yes
	WBT/R	1,230	320	203	Yes	Yes
Benson Av. & Daniels St.	NBL/T/R	18	15	10	Yes	Yes
	SBL/T/R	1,230	4	0	Yes	Yes
	EBL/T/R	1,400	74	56	Yes	Yes
Benson Av. & Driveway 1	NBT/R	275	0	0	Yes	Yes
	SBL ³	36	0	5	Yes	Yes
	SBT	36	0	0	Yes	Yes
Benson Av. & Driveway 2	NBT/R	200	0	0	Yes	Yes
	SBL/T	275	0	0	Yes	Yes

¹ Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 25 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

² Although 95th percentile queue is anticipated to exceed the available storage for the turn lane, the taper storage length and/or two-way left-turn lane has sufficient storage to accommodate any spillover without spilling back and affecting the through lanes.

³ Defacto Turn Lane

SimTraffic is designed to model networks of signalized and unsignalized intersections, with the primary purpose of checking and fine-tuning signal operations. SimTraffic uses the input parameters from Synchro to generate random simulations. The 95th percentile queue is derived from the average queue plus 1.65 standard deviations. The 95th percentile queue is not necessarily ever observed; it is simply based on statistical calculations (or Average Queue plus 1.65 standard deviations). Many agencies utilize the 95th percentile queues for design purposes. A vehicle is considered queued whenever it is traveling at less than 10 feet/second. The random simulations generated by SimTraffic have been utilized to determine the 95th percentile queue lengths observed for each turn movement. A SimTraffic simulation has been recorded five (5) times, during the weekday AM and weekday PM peak hours, and has been seeded for 30-minute periods with 60-minute recording intervals.

1.7 TRUCK ACCESS AND CIRCULATION

Due to the typical wide turning radius of large trucks, a truck turning template has been overlaid on the site plan at the Project driveways anticipated to be utilized by heavy trucks in order to determine appropriate curb radii and to verify that trucks will have sufficient space to execute turning maneuvers (see Exhibit 1-5). As shown on Exhibit 1-5, Driveway 1 and Driveway 2 are anticipated to accommodate the wide turning radius of heavy trucks as currently designed.

1.8 BICYCLE & PEDESTRIAN CIRCULATION

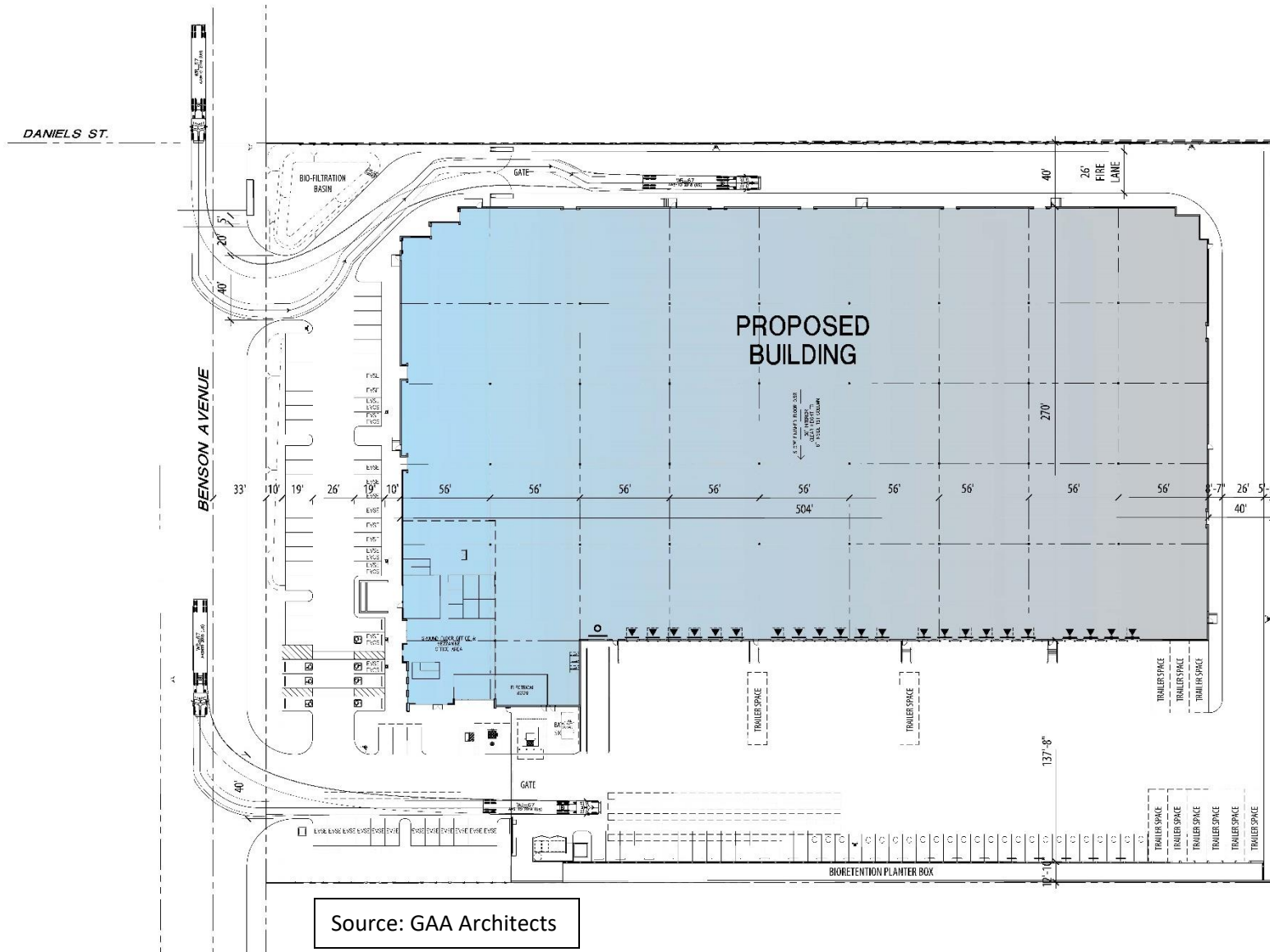
Per the request of the City of Chino, bicycle and pedestrian access has been evaluated for the proposed Project. As discussed previously in Section 1.6 *Recommendations*, the Project will construct sidewalk improvements on Benson Avenue along the Project's frontage and a crosswalk on the southern side of Benson Avenue at Daniels Street (#3). The sidewalks along the Project's frontage will connect to the crosswalk, providing pedestrian access to cross the intersection and to the surrounding area, via existing sidewalks along Daniels Street and the west of Benson Avenue. The pedestrian circulation is shown on Exhibit 1-6.

The proposed roadway improvements along the Project's frontage will also include a Class III on-street bicycle path along Benson Avenue. The project is to include signage or on-street striping indicating the Class III on-street bicycle path. The bike lanes will be striped in compliance with the Americans with Disabilities Act (ADA) and Chino's Policy on Accessible Pedestrian Facilities.

1.9 TRUCK ROUTING MANAGEMENT PLAN

The truck route management plan will include the installation of signage at all site access driveways to show the designated truck routes as illustrated on Exhibit 1-7. The sign shall be 24" x 24" and shall be mounted at a height that is readily visible to truck drivers. The proposed sign letter sizes shall conform to the requirements of the current CA MUTCD. Implementation of the truck management plan would require coordination between the tenant and its drivers via signage or handouts with information about the interim truck routes. In conjunction with the signage/handouts showing the interim truck route plan, it is recommended that the Project tenant implement an ongoing driver education program where the dispatchers inform the truck drivers about the approved truck route and reinforce that use of Chino Avenue by truck traffic is prohibited. The truck routes are provided in Section 4.2 *Project Trip Distribution*.

EXHIBIT 1-5: TRUCK ACCESS (1 OF 2)



Source: GAA Architects

EXHIBIT 1-5: TRUCK ACCESS (2 OF 2)

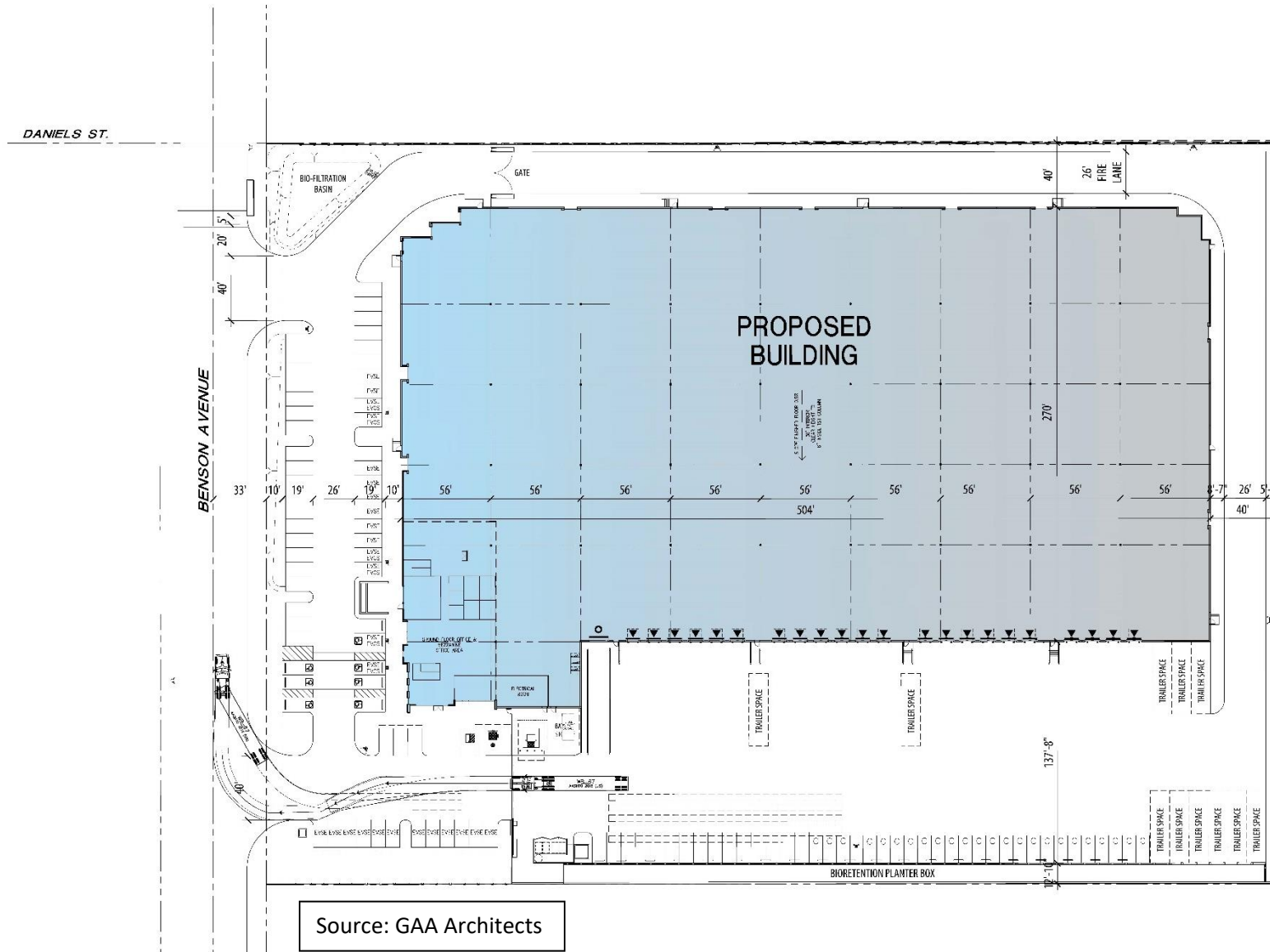


EXHIBIT 1-6: PROPOSED PROJECT PEDESTRIAN CIRCULATION

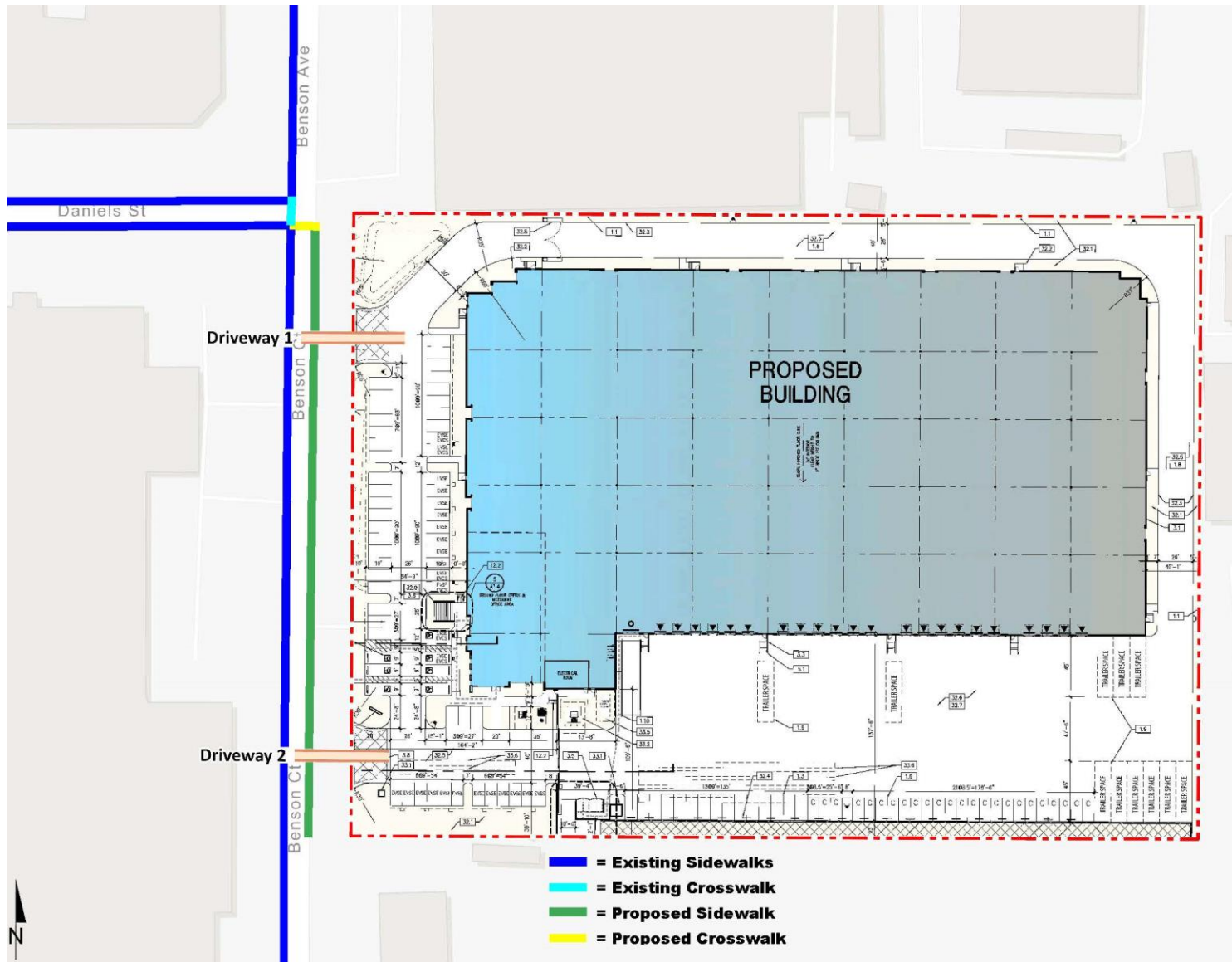
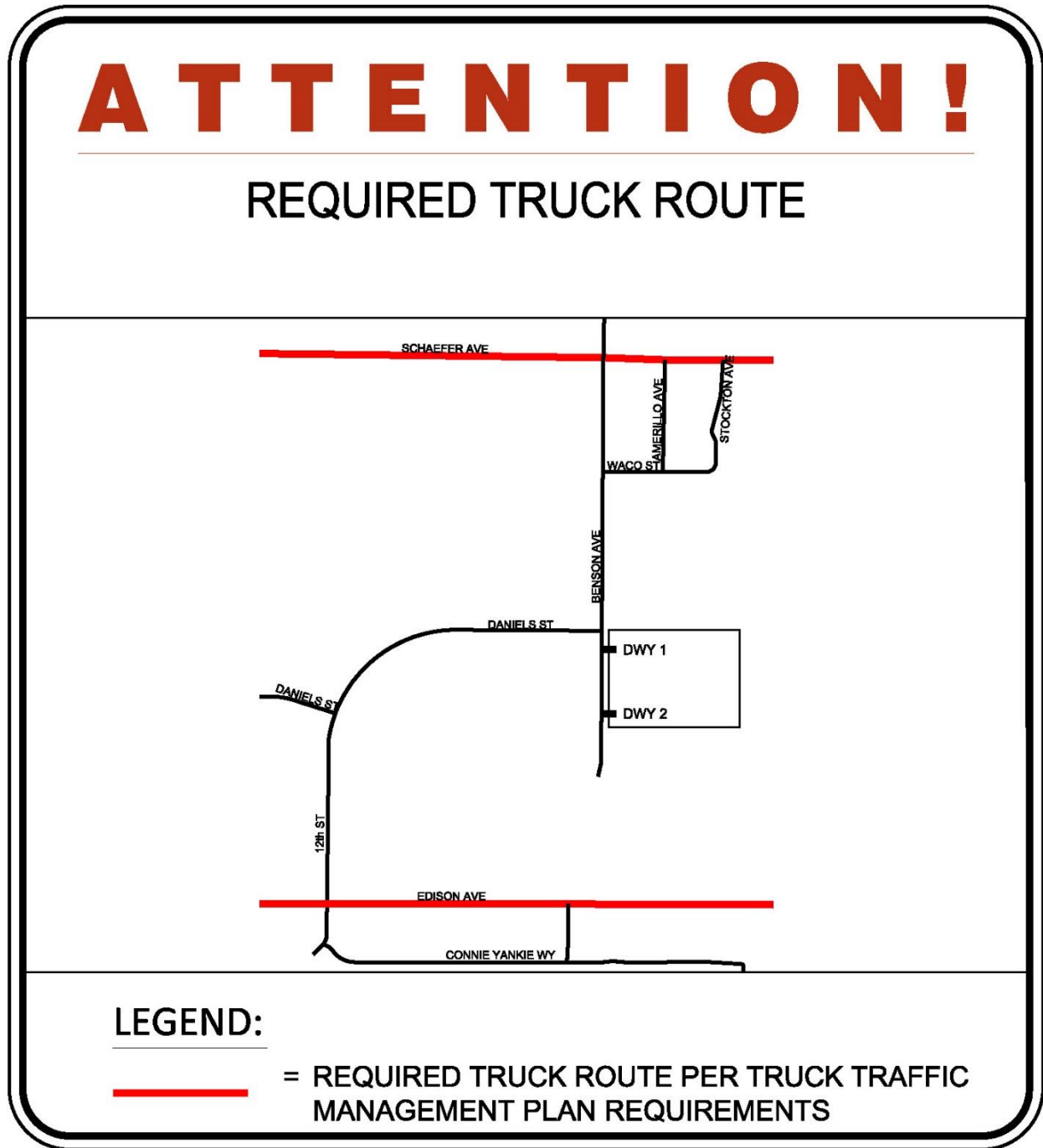


EXHIBIT 1-7: TRUCK ROUTE SIGN



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2 METHODOLOGIES

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report. The methodologies described are consistent with City of Chino's Traffic Study Guidelines.

2.1 LEVEL OF SERVICE

Traffic operations of roadway facilities are described using the term "Level of Service" (LOS). LOS is a qualitative description of traffic flow based on several factors, such as speed, travel time, delay, and freedom to maneuver. Six levels are typically defined ranging from LOS A, representing completely free-flow conditions, to LOS F, representing breakdown in flow resulting in stop-and-go conditions. LOS E represents operations at or near capacity, an unstable level where vehicles are operating with the minimum spacing for maintaining uniform flow.

2.2 INTERSECTION CAPACITY ANALYSIS

The definitions of LOS for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control. The LOS is typically dependent on the quality of traffic flow at the intersections along a roadway. The 6th Edition Highway Capacity Manual (HCM) methodology expresses the LOS at an intersection in terms of delay time for the various intersection approaches. (4) The HCM uses different procedures depending on the type of intersection control.

2.2.1 SIGNALIZED INTERSECTIONS

The City of Chino requires signalized intersection operations analysis based on the methodology described in the HCM. (4) Intersection LOS operations are based on an intersection's average control delay. Control delays include initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. For signalized intersections LOS is related to the average control delay per vehicle and is correlated to a LOS designation as described in Table 2-1.

Consistent with Appendix B of the San Bernardino County CMP, the following saturation flow rates, in vehicles per hour green per lane (vphgpl), will be utilized in the traffic analysis for signalized intersections:

Existing, E+P, and Opening Year Cumulative (2026) Traffic Conditions:

- Exclusive through: 1800 vphgpl
- Exclusive left: 1700 vphgpl
- Exclusive right: 1800 vphgpl
- Exclusive dual left: 1600 vphgpl
- Exclusive triple left: 1500 vphgpl

Horizon Year (2045) Traffic Conditions:

- Exclusive through: 1900 vphgpl
- Exclusive left: 1800 vphgpl
- Exclusive dual left: 1700 vphgpl
- Exclusive right: 1900 vphgpl
- Exclusive dual right: 1800 vphgpl
- Exclusive triple left: 1600 vphgpl or less

TABLE 2-1: SIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), $V/C \leq 1.0$	Level of Service, $V/C \leq 1.0^1$
Operations with very low delay occurring with favorable progression and/or short cycle length.	0 to 10.00	A
Operations with low delay occurring with good progression and/or short cycle lengths.	10.01 to 20.00	B
Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.01 to 35.00	C
Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.01 to 55.00	D
Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.01 to 80.00	E
Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	80.01 and up	F

Source: HCM, 6th Edition

¹ If V/C is greater than 1.0 then LOS is F per HCM.

The traffic modeling and signal timing optimization software package Synchro (Version 11) has been utilized to analyze signalized intersections. Synchro is a macroscopic traffic software program that is based on the signalized intersection capacity analysis as specified in the HCM. Macroscopic level models represent traffic in terms of aggregate measures for each movement at the study intersections. Equations are used to determine measures of effectiveness such as delay and queue length. The level of service and capacity analysis performed by Synchro takes into consideration optimization and coordination of signalized intersections within a network.

The peak hour traffic volumes have been adjusted using a peak hour factor (PHF) to reflect peak 15-minute volumes. Customary practice for LOS analysis is to use a peak 15-minute rate of flow. However, flow rates are typically expressed in vehicles per hour. The PHF is the relationship between the peak 15-minute flow rate and the full hourly volume (e.g., $PHF = \frac{[Hourly Volume]}{[4 \times Peak\ 15\text{-minute\ Flow\ Rate}]}$). The use of a 15-minute PHF produces a more detailed analysis as compared to analyzing vehicles per hour. Existing PHFs have been used for all analysis scenarios. Per the HCM, PHF values over 0.95 often are indicative of high traffic volumes with capacity constraints on peak hour flows while lower PHF values are indicative of greater variability of flow during the peak hour. (4)

2.2.2 UNSIGNALIZED INTERSECTIONS

The City of Chino requires the operations of unsignalized intersections be evaluated using the methodology described in the HCM. (4) The LOS rating is based on the weighted average control delay expressed in seconds per vehicle (see Table 2-2). At two-way or side-street stop-controlled intersections, LOS is calculated for each controlled movement and for the left turn movement from the major street, as well as for the intersection as a whole. For approaches composed of a single lane, the delay is computed as the average of all movements in that lane. Delay for the intersection is reported for the worst individual movement at a two-way stop-controlled intersection. For all-way stop controlled intersections, LOS is computed for the intersection as a whole (average delay).

TABLE 2-2: UNSIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), $V/C \leq 1.0$	Level of Service, $V/C \leq 1.0^1$
Little or no delays.	0 to 10.00	A
Short traffic delays.	10.01 to 15.00	B
Average traffic delays.	15.01 to 25.00	C
Long traffic delays.	25.01 to 35.00	D
Very long traffic delays.	35.01 to 50.00	E
Extreme traffic delays with intersection capacity exceeded.	> 50.00	F

Source: HCM, 6th Edition

¹ If V/C is greater than 1.0 then LOS is F per HCM.

2.3 TRAFFIC SIGNAL WARRANT ANALYSIS METHODOLOGY

The term "signal warrants" refers to the list of established criteria used by the California Department of Transportation (Caltrans) and other public agencies to quantitatively justify or determine the potential need for installation of a traffic signal at an otherwise unsignalized intersection. This TA uses the signal warrant criteria presented in the latest edition of the Caltrans California Manual on Uniform Traffic Control Devices (CA MUTCD). (5)

The signal warrant criteria for Existing study area intersections are based upon several factors, including volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas. The CA MUTCD indicates that the installation of a traffic signal should be considered if one or

more of the signal warrants are met. (5) Specifically, this TA utilizes the Peak Hour Volume-based Warrant 3 as the appropriate representative traffic signal warrant analysis for existing traffic conditions and for all future analysis scenarios for existing unsignalized intersections. Warrant 3 is appropriate to use for this TA because it provides specialized warrant criteria for intersections with rural characteristics. For the purposes of this study, the speed limit was the basis for determining whether Urban or Rural warrants were used for a given intersection. Urban warrants have been used as posted speed limits on the major roadways with existing unsignalized intersections that are 40 miles per hour or below where rural warrants are used for unsignalized intersections along roadways with speed limits in excess of 40 miles per hour.

Future intersections that do not currently exist have been assessed regarding the potential need for new traffic signals based on future Average Daily Traffic (ADT) volumes, using the Caltrans planning level ADT-based signal warrant analysis worksheets. Similarly, the speed limit has been used as the basis for determining the use of Urban and Rural warrants. Traffic signal warrant analyses were performed for the following study area intersection shown in Table 2-3:

TABLE 2-3: TRAFFIC SIGNAL WARRANT ANALYSIS LOCATIONS

#	Intersection
3	Benson Av. & Daniels St.
4	Benson Av. & Driveway 1
5	Benson Av. & Driveway 2

The Existing conditions traffic signal warrant analysis is presented in the subsequent section, Section 3 *Area Conditions* of this report. The traffic signal warrant analyses for future conditions are presented in Section 5 *E+P Traffic Conditions*, Section 6 *Opening Year Cumulative (2026) Traffic Conditions*, and Section 7 *Horizon Year (2045) Traffic Conditions* of this report. It is important to note that a signal warrant defines the minimum condition under which the installation of a traffic signal might be warranted. Meeting this threshold condition does not require that a traffic control signal be installed at a particular location, but rather, that other traffic factors and conditions be evaluated in order to determine whether the signal is truly justified. It should also be noted that signal warrants do not necessarily correlate with LOS. An intersection may satisfy a signal warrant condition and operate at or above acceptable LOS or operate below acceptable LOS and not meet a signal warrant.

2.4 ROADWAY SEGMENT CAPACITY ANALYSIS

Roadway segment operations have been evaluated using the City of Chino Roadway Capacity Thresholds provided in the City’s General Plan. (6) These roadway capacities are “rule of thumb” estimates for planning purposes and are affected by such factors as intersections (spacing, configuration and control features), degree of access control, roadway grades, design geometrics (horizontal and vertical alignment standards), sight distance, vehicle mix (truck and bus traffic) and pedestrian bicycle traffic. In other words, while using ADT for planning purposes is suitable with regards to evaluating potential volume to capacity with future forecasts, it is not suitable for operational analysis because it does not account for the factors listed previously. As such, where the ADT based roadway segment analysis indicates a deficiency (unacceptable LOS), a review of the more detailed peak hour intersection analysis and progression analysis are undertaken. The more detailed peak hour intersection analysis explicitly accounts for factors that affect roadway capacity.

2.5 MINIMUM ACCEPTABLE LEVELS OF SERVICE (LOS)

Minimum Acceptable LOS and associated definitions of intersection deficiencies have been obtained from each of the applicable surrounding jurisdictions.

2.5.1 CITY OF CHINO

According to the City of Chino's General Plan Objective TRA-1.2/Policy P1, LOS D is the minimum acceptable condition that should be maintained during the peak commute hours, where feasible. (6)

2.5.2 CMP

The CMP definition of deficiency is based on maintaining a level of service standard of LOS E or better, where feasible, except where an existing LOS F condition is identified in the CMP document. However, in an effort to overstate as opposed to understate potential deficiencies, LOS D has been utilized for the CMP intersections for the purposes of this analysis, unless the intersection is located in the City of Ontario (which uses LOS E). (2)

2.6 DEFICIENCY CRITERIA

To determine whether the addition of Project traffic at a study intersection would result in a traffic deficiency, the following will be utilized:

- When the Without Project condition is at or better than LOS D (or LOS E for CMP intersections) (i.e., acceptable LOS), and project-generated traffic causes deterioration below LOS D/LOS E (i.e., unacceptable LOS), a deficiency is deemed to occur.

When the Without Project condition is already below LOS D/LOS E (i.e., unacceptable LOS), the Project will be responsible for improving its deficiency to acceptable levels of service. Thus, for intersections operating at unacceptable LOS during either the AM and/or PM peak hour, improvements have been identified to improve the deficiencies of the Project to an intersection LOS that is equal to or better than Without Project conditions. The Project's contribution to a deficiency can be reduced if the Project is required to implement or fund its fair share of improvements designed to alleviate its contribution to the deficient condition.

In the event that an intersection is operating at or is forecast to operate at a deficient LOS, the CMP guidelines have defined a series of steps to be completed to determine the Project's contribution to the deficiency of intersections, which has been applied to both CMP and non-CMP study area intersections. The steps are as follows:

- Determine the improvements necessary to achieve an acceptable service level,
- Calculate the Project's share in the future traffic volume projections for the peak hours,
- Estimate the cost to implement recommended improvements, and
- Calculate the Project's fair-share contribution to improve the Project's traffic deficiencies

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3 AREA CONDITIONS

This section provides a summary of the existing circulation network, the City of Chino General Plan Circulation Network, and a review of existing peak hour intersection operations, traffic signal warrant, and roadway segment capacity analyses.

3.1 EXISTING CIRCULATION NETWORK

Pursuant to the agreement with City of Chino staff (Appendix 1.1), the study area includes a total of 5 existing and future intersections as shown previously on Exhibit 1-3. Exhibit 3-1 illustrates the study area intersections located near the proposed Project and identifies the number of through traffic lanes for existing roadways and intersection traffic controls.

3.2 CITY OF CHINO GENERAL PLAN CIRCULATION ELEMENT

As noted previously, the Project site is located within the City of Chino. The roadway classifications and planned (ultimate) roadway cross-sections of the major roadways within the study area, as identified on the City of Chino General Plan Circulation Element, are described subsequently. Exhibit 3-2 shows the City of Chino General Plan Circulation Element and Exhibit 3-3 illustrates the City of Chino General Plan roadway cross-sections. Table 3-1 provides the City of Chino's ultimate buildout for General Plan roadway cross-sections. The City of Chino General Plan does not include Benson Avenue, south of Daniels Street, in the General Plan roadway cross-section descriptions.

A Major Arterial is identified as having 120-foot right-of-way and 100-foot curb-to-curb measurement. Major Arterials include three lanes of travel in each direction and a 14-foot curbed and/or landscaped median. The following study area roadways within the City of Chino are classified as a Major Arterial:

- Edison Avenue
- Schaefer Avenue, between Central Avenue and Benson Avenue

A Primary Arterial is identified as having a 98-foot right-of-way and 74-foot curb-to-curb measurement. Primary Arterials include four lanes of travel in each direction and a 14-foot curbed and/or landscaped median. The following study area roadway within the City of Chino is classified as a Primary Arterial:

- Schaefer Avenue, east of Benson Avenue

A Secondary Arterial is identified as having an 88-foot right-of-way and 64-foot curb-to-curb measurement. Secondary Arterials include four lanes of travel. The following study area roadway within the City of Chino is classified as a Secondary Arterial:

- Benson Avenue, north of Daniels Street

EXHIBIT 3-1: EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS



1	12th St. & Edison Av.	2	Benson Av. & Schaefer Av.	3	Benson Av. & Daniels St.	4	Benson Av. & Driveway 1	5	Benson Av. & Driveway 2
			Future Intersection		Future Intersection				

- 4 = Number of Lanes
- D = Divided
- U = Undivided
- = Speed Limit (MPH)
- = Traffic Signal
- = Stop Sign
- = Traffic Lane
- DEF = Defacto Right Turn

EXHIBIT 3-2: CITY OF CHINO GENERAL PLAN CIRCULATION ELEMENT

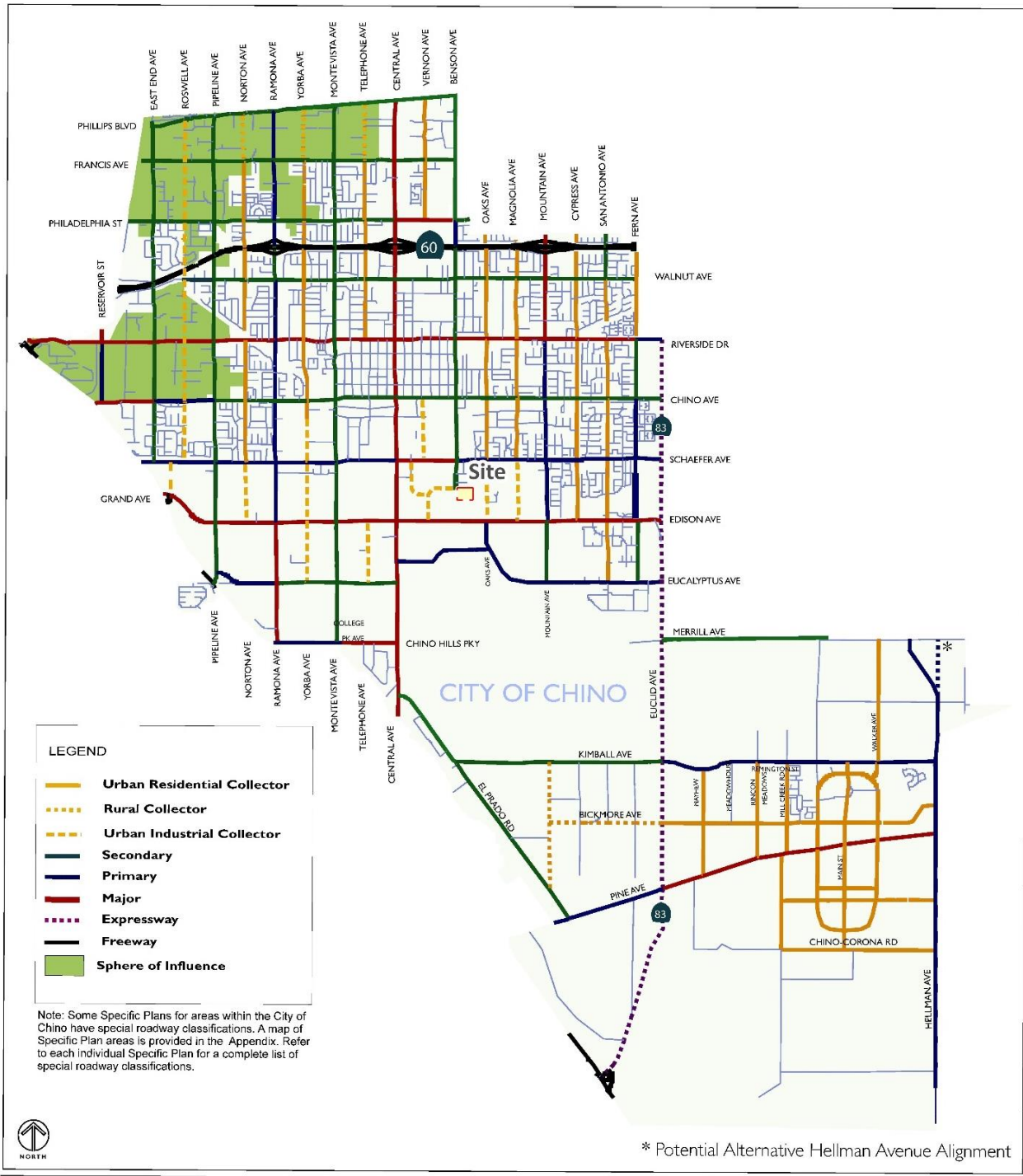


EXHIBIT 3-3: CITY OF CHINO GENERAL PLAN ROADWAY CROSS-SECTIONS (1 OF 3)

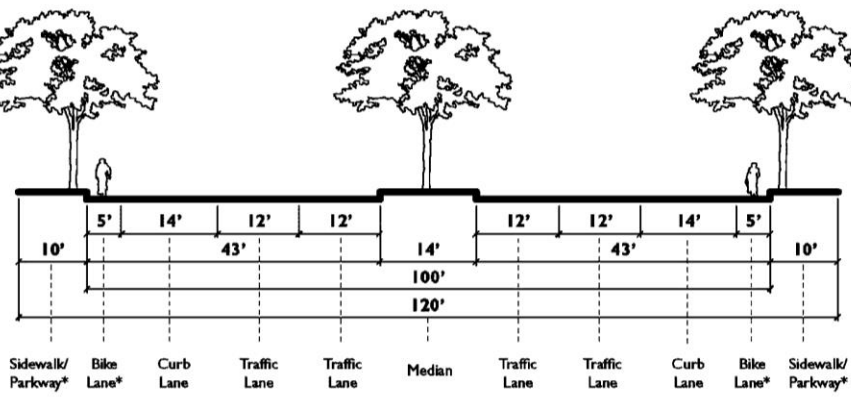
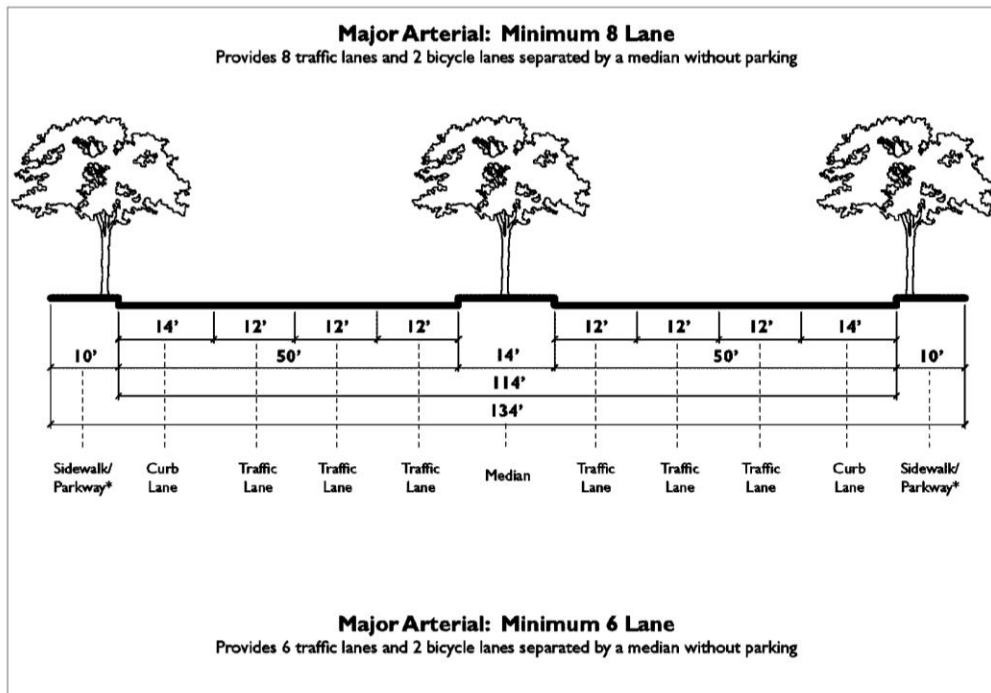
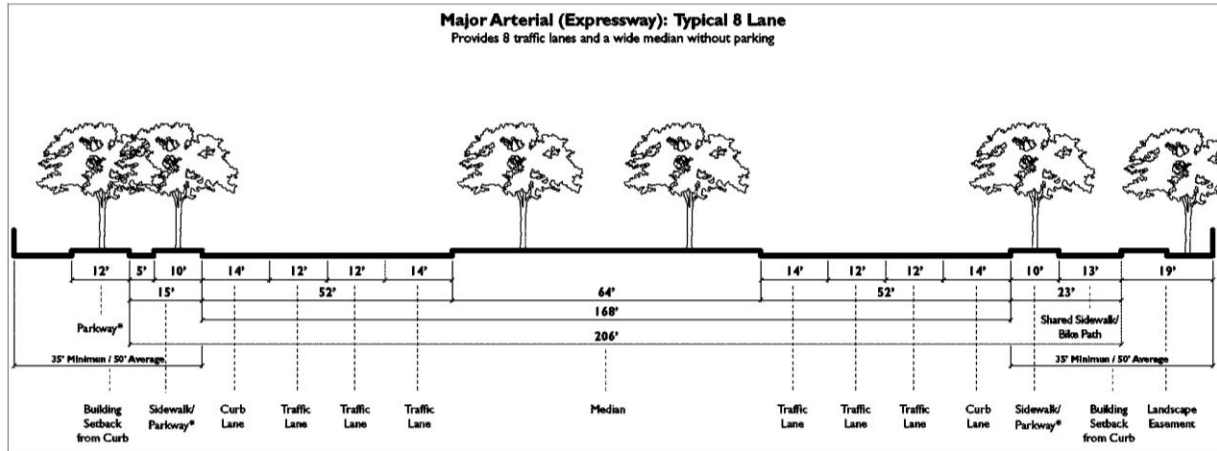


EXHIBIT 3-3: CITY OF CHINO GENERAL PLAN ROADWAY CROSS-SECTIONS (2 OF 3)

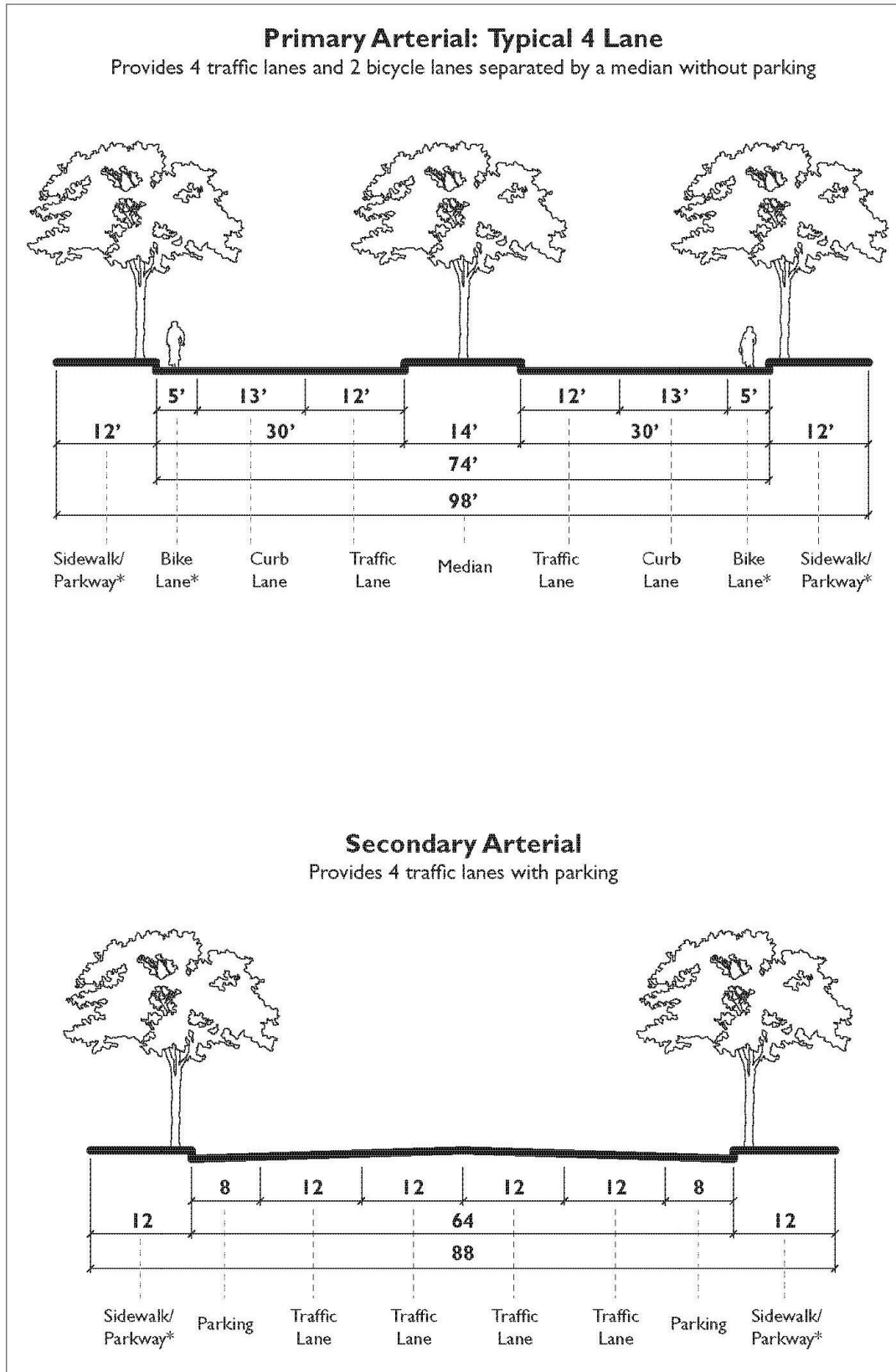


EXHIBIT 3-3: CITY OF CHINO GENERAL PLAN ROADWAY CROSS-SECTIONS (3 OF 3)

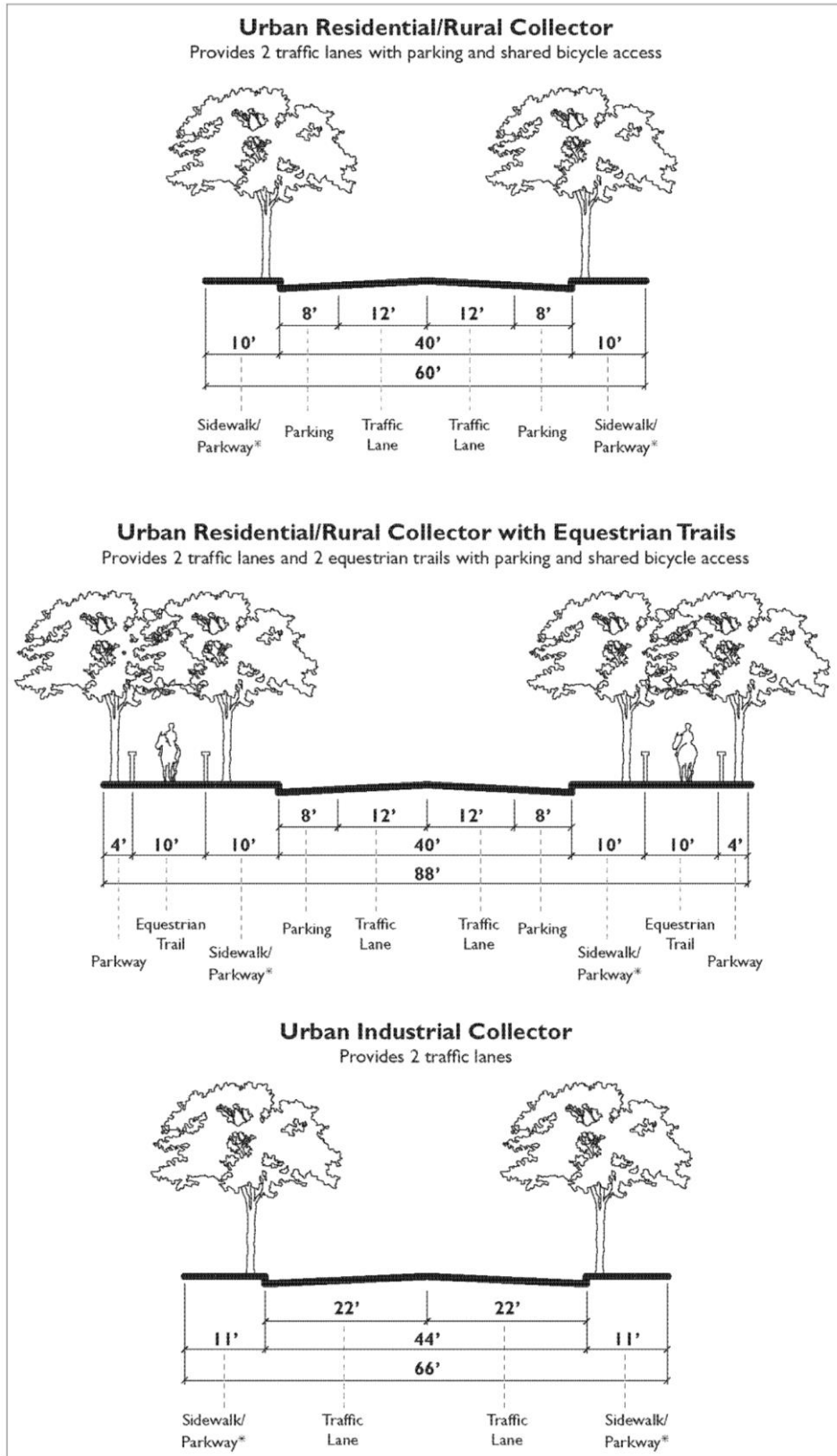


TABLE 3-1: CITY OF CHINO GENERAL PLAN ROADWAY CROSS-SECTION DESCRIPTIONS

TABLE TRA-5B **ULTIMATE BUILDOUT OF EAST-WEST ARTERIAL ROADWAYS** (CONTINUED)

Roadway Segment	No. of Lanes	Total R-O-W*	Curb-to-Curb*	Street Classification	Notes (See Legend)
San Antonio Ave to East City Limits	4	88	64	SA	B
Riverside Drive					
State Route 71 to Pipeline Ave	6	110	90	MA	LM
Pipeline Ave to Ramona Ave	6	110	90	MA	LM
Ramona Ave to Monte Vista Ave	6	110	90	MA	LM
Monte Vista Ave to Central Ave	6	110 ^e	90	MA	LM
Central Ave to Benson Ave	6	110	90	MA	LM
Benson Ave to Magnolia Ave	6	110	90	MA	LM
Magnolia Ave to Mountain Ave	6	110	90	MA	LM
Mountain Ave to San Antonio Ave	6	110	90	MA	LM
San Antonio Ave to Fern Ave	6	110	90	MA	LM
Fern Ave to Euclid Ave	6	110	80	PA	
Chino Avenue					
State Route 71 to East End Ave	6	122	102	MA	B
East End Ave to Pipeline Ave	4	100	70	PA	B
Pipeline Ave to Central Ave	4	88 ^e	64	SA	B
Central Ave to Mountain Ave	4	88	64	SA	B
Mountain Ave to Cypress Channel	4	88	64	SA	B
Cypress Channel to Euclid Ave	4	88	64	SA	B
Schaefer Avenue					
East End Ave to Rowell Ave	4	100	74	PA	B
Rosewell Ave to Pipeline Ave	4	100	74	PA	B
Pipeline Ave to Ramona Ave	4	100	74	PA	B
Ramona Ave to Monte Vista Ave	4	100	74	PA	B
Monte Vista Ave to Central Ave	4	100	74	PA	B
Central Ave to Benson Ave	6	122	102	MA	B
Benson Ave to Mountain Ave	4	100 ^a	74	PA	B, E

Roadway Segment	No. of Lanes	Total R-O-W*	Curb-to-Curb*	Street Classification	Notes (See Legend)
Mountain Ave to San Antonio Ave	4	100	64	PA	B
San Antonio Ave to Fern Ave	4	100	64	PA	B
Fern Ave to Euclid Ave	4	106	72	PA	B, LM
Edison Avenue / Grand Avenue^g					
State Route 71 to Pipeline Ave	8	132	112	MA	LM
Pipeline Ave to Norton Ave	6	108	84	MA	LM
Norton Ave to Ramona Ave	6	108	84	MA	LM
Ramona Ave to Yorba Ave	6	108	84	MA	LM
Yorba Ave to Monte Vista Ave	6	108	84	MA	LM
Monte Vista to Central Ave	6	110 ^d	90	MA	LM
Central Ave to Twelfth St	6	110	90	MA	LM
Twelfth St to Benson Ave	6	110	90	MA	LM
Benson Ave to Mountain Ave	6	110 ^e	84	MA	LM, B
Mountain Ave to Cypress Ave	6	110 ^{a,e}	84	MA	LM, B, E
Cypress Ave to San Antonio Ave	6	110	84	MA	LM
San Antonio Ave to Euclid Ave (SR-83)	6	110	84	MA	LM
Eucalyptus Avenue					
Pipeline Ave to Ramona Avenue	4	96	84	PA	B
Ramona Ave to Yorba Ave	4	88	64	SA	B
Yorba Ave to Monte Vista Ave	4	88	64	SA	B
Monte Vista Avenue to Central Ave	4	88	64	PA	B
Mountain Ave to Euclid Ave	4	88	64	PA	B
Chino Hills Pkwy^g					
State Route 71 to Ramona Ave	8	132	108	MA	PM
Ramona Ave to 600 feet e/o Ramona Ave	6	108	84	MA	PM
600 feet e/o Ramona Ave to Monte Vista Ave	4	88-98 ^f	74-84	PA	EBSP, PM
Monte Vista to Telephone Ave	6	88-98 ^f	74-84	MA	EBSP, PM, B

An Urban Industrial Collector is identified as having a 66-foot right-of-way and 44-foot curb-to-curb measurement. Urban Industrial Collectors include two lanes of travel. The following study area roadways within the City of Chino are classified as an Urban Industrial Collector:

- 12th Street
- Daniels Street

3.3 BICYCLE & PEDESTRIAN FACILITIES

Exhibit 3-4 illustrates the City of Chino future planned bicycle facilities per the City's Bicycle and Pedestrian Master Plan (2016), which shows a planned Class III bike route along Benson Avenue. (7) Existing pedestrian facilities within the study area are shown on Exhibit 3-5. As shown on Exhibit 3-5, pedestrian facilities are built out along Daniels Street and portions of Benson Avenue. Field observations and traffic counts conducted in August 2023 indicate nominal pedestrian and bicycle activity within the study area. All pedestrian facilities impacted by the proposed Project will be constructed in compliance with ADA and Chino's Policy on Accessible Pedestrian Facilities.

3.4 TRANSIT SERVICE

The study area within the City of Chino is currently served by Omnitrans, a public transit agency serving various jurisdictions within San Bernardino County. There are currently no existing transit routes within the vicinity of the proposed Project. Transit service is reviewed and updated by Omnitrans periodically to address ridership, budget, and community demand needs. Changes in land use can affect these periodic adjustments which may lead to either enhanced or reduced service where appropriate.

3.5 TRUCK ROUTES

The City of Chino's truck routes are shown on Exhibit 3-6. Trucks from the Project are to utilize Schaefer Avenue, Eison Avenue, and Central Avenue. Trucks are prohibited on certain City roadways through the Municipal Code through weight restrictions. Truck routes for the proposed Project have been determined based on discussions with City staff. These truck routes serve both the proposed Project and future cumulative development projects throughout the study area. Sensitive land uses have also been taken into consideration as part of determining the best routes for future trucks.

3.6 EXISTING (2023) TRAFFIC COUNTS

The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected in August 2023. The following peak hours were selected for analysis:

- Weekday AM Peak Hour (peak hour between 6:00 AM and 9:00 AM)
- Weekday PM Peak Hour (peak hour between 4:00 PM and 7:00 PM)

EXHIBIT 3-4: CITY OF CHINO FUTURE BICYCLE FACILITIES

CITY OF CHINO
GENERAL PLAN
TRANSPORTATION ELEMENT

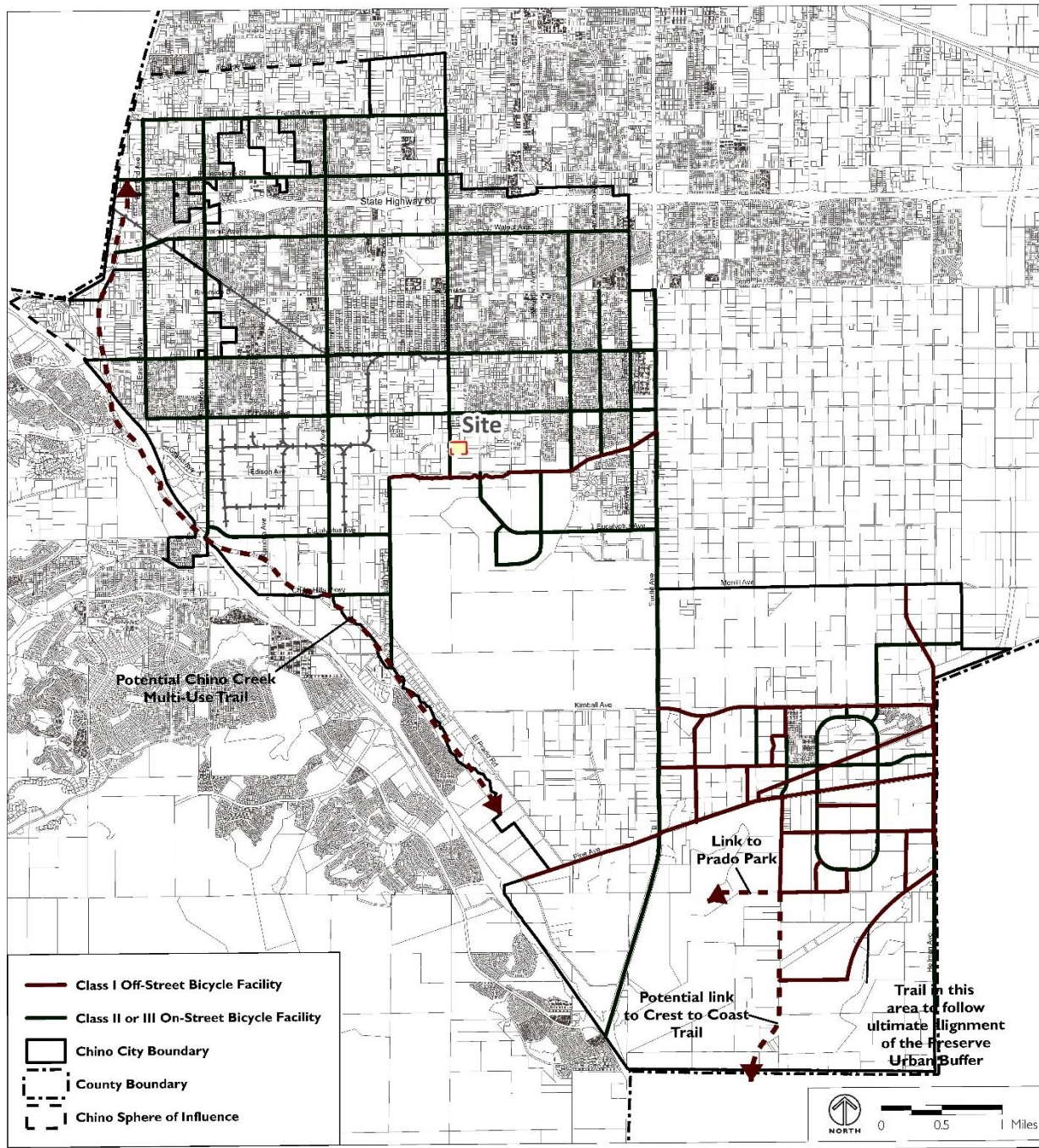


EXHIBIT 3-5: EXISTING PEDESTRIAN FACILITIES

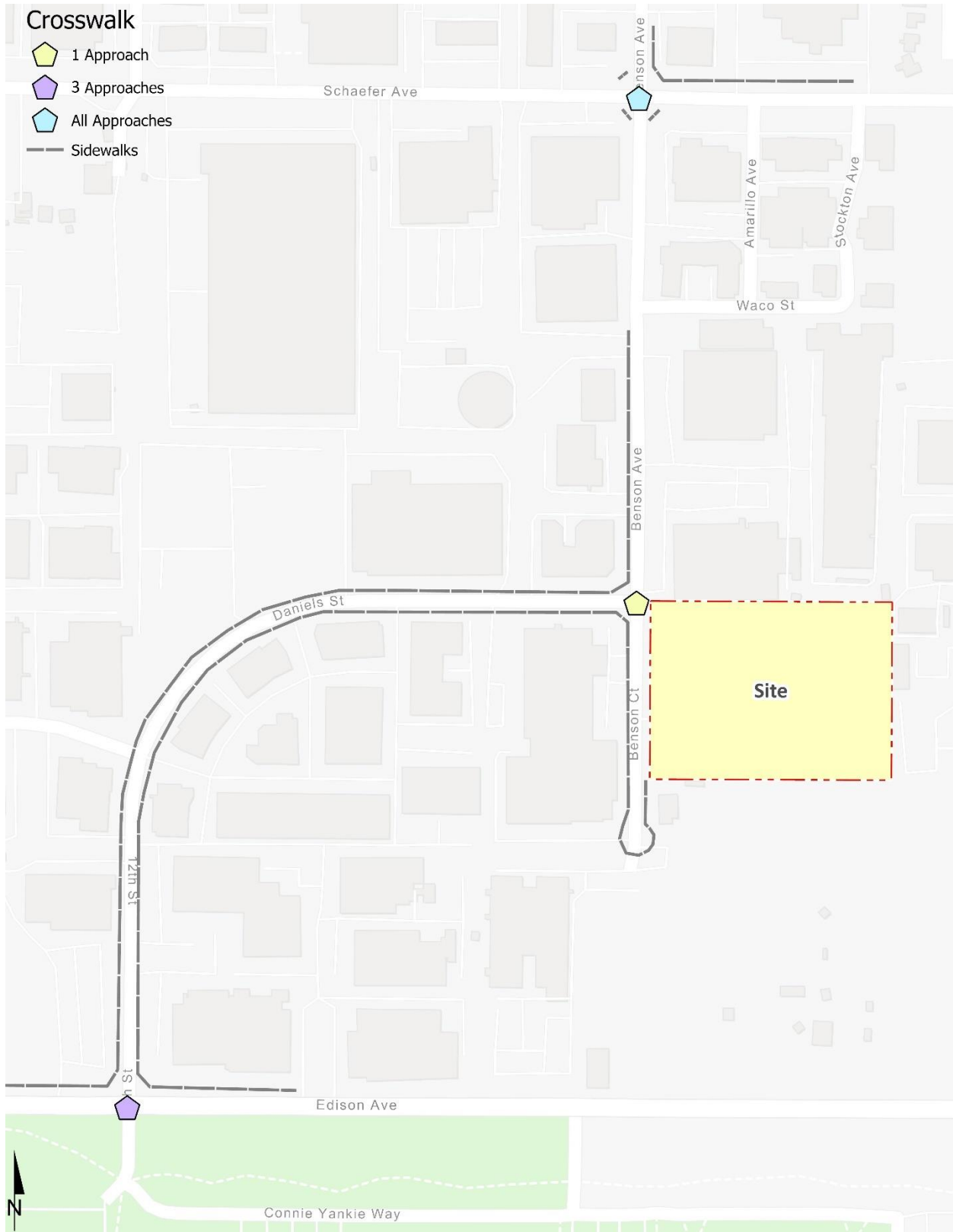
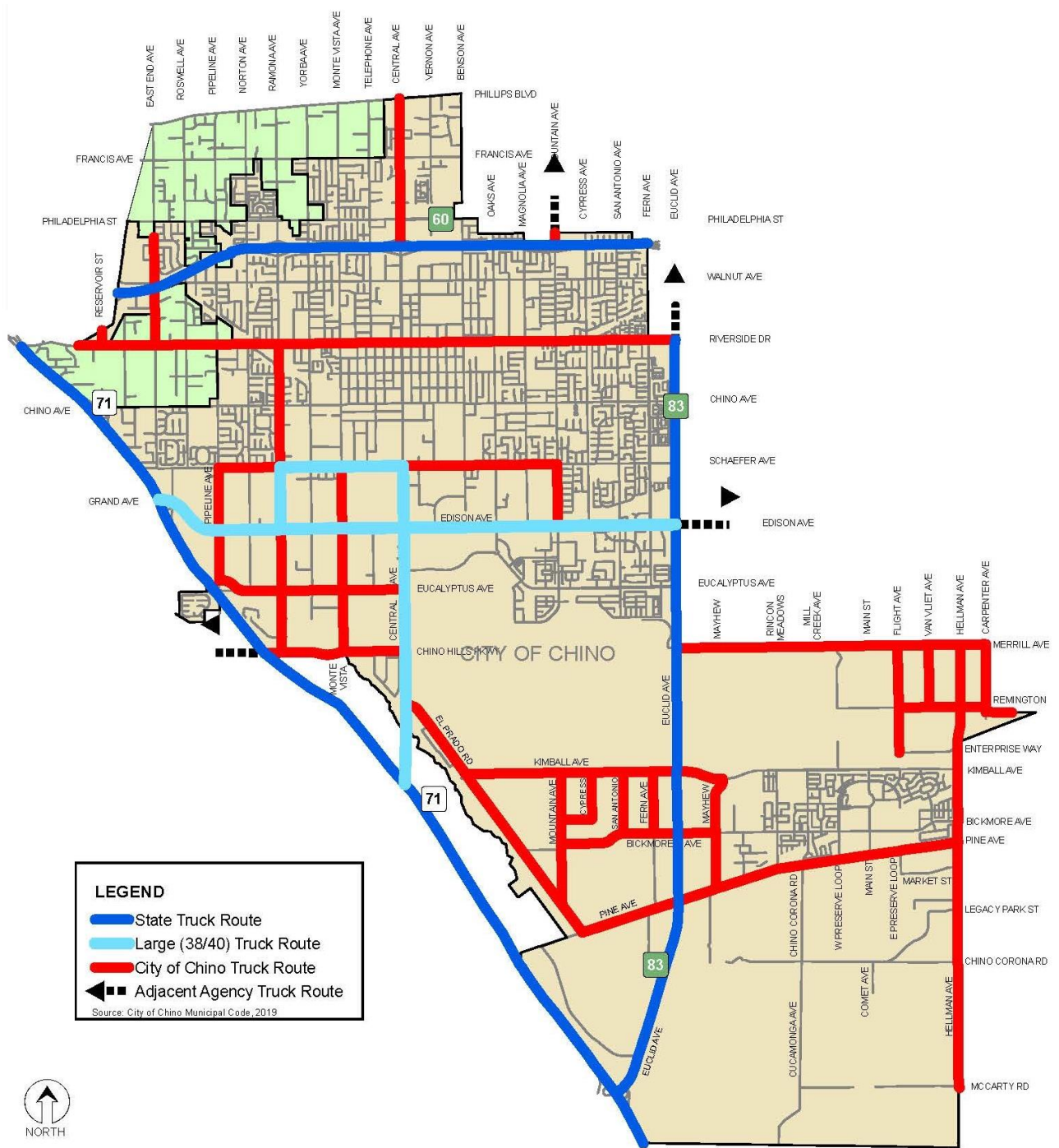


EXHIBIT 3-6: CITY OF CHINO TRUCK ROUTES



LEGEND

- █ State Truck Route
- █ Large (38/40) Truck Route
- █ City of Chino Truck Route
- Adjacent Agency Truck Route

Source: City of Chino Municipal Code, 2019

Updated: 03/17/2020

Local schools are back in session with in-person instruction, as such, no additional adjustments were made to the traffic counts for the purpose of establishing the existing baseline. The 2023 weekday AM and weekday PM peak hour count data is representative of typical weekday peak hour traffic conditions in the study area. There were no observations made in the field that would indicate atypical traffic conditions on the count dates, such as construction activity or detour routes and near-by schools were in session and operating on normal schedules. The raw manual peak hour turning movement traffic count data sheets are included in Appendix 3.1.

The traffic counts collected in August 2023 include the following vehicle classifications: Passenger Cars, 2-Axle Trucks, 3-Axle Trucks, and 4 or More Axle Trucks. To represent the effects large trucks, buses and recreational vehicles have on traffic flow; all trucks were converted into PCE. By their size alone, these vehicles occupy the same space as two or more passenger cars. In addition, the time it takes for them to accelerate and slow-down is much longer than for passenger cars and varies depending on the type of vehicle and number of axles. For the purpose of this analysis, a PCE factor of 1.5 has been applied to 2-axle trucks, 2.0 for 3-axle trucks, and 3.0 for 4+-axle trucks to estimate each turning movement. These factors are consistent with the values recommended for use in the CMP.

Existing weekday ADT volumes, in actual vehicles, are shown on Exhibit 3-7. Where actual 24-hour tube count data was not available, Existing ADT volumes were based upon factored intersection peak hour counts collected by Urban Crossroads, Inc. using the following formula for each intersection leg:

$$\text{Weekday PM Peak Hour (Approach Volume + Exit Volume)} \times 15.99 = \text{Leg Volume}$$

A comparison of the PM peak hour and daily traffic volumes of various roadway segments within the study area indicated that the peak-to-daily relationship is approximately 6.25 percent. As such, the above equation utilizing a factor of 15.99 estimates the ADT volumes on the study area roadway segments assuming a peak-to-daily relationship of approximately 6.25 percent (i.e., $1/0.0625 = 15.99$) and was assumed to sufficiently estimate ADT volumes for planning-level analyses. Existing weekday AM and weekday PM peak hour intersection volumes, in actual vehicles, are also shown on Exhibit 3-7.

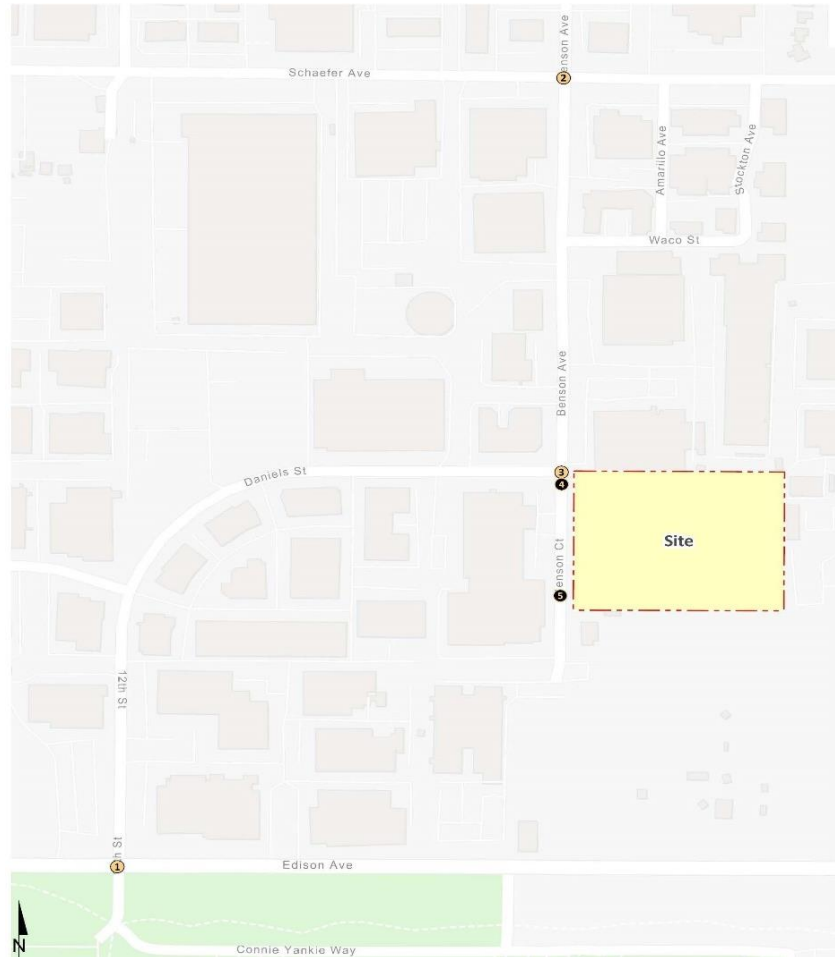
3.7 INTERSECTION OPERATIONS ANALYSIS

Existing peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2.2 *Intersection Capacity Analysis* of this report. The intersection operations analysis results are summarized in Table 3-2, which indicates that all existing study area intersections are currently operating at acceptable LOS during the peak hours. The intersection operations analysis worksheets are included in Appendix 3.2 of this TA.

3.8 TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants for Existing traffic conditions are based on existing peak hour intersection turning volumes. There are currently no study area intersections that meet a traffic signal warrant. Existing conditions traffic signal warrant analysis worksheets are provided in Appendix 3.3.

EXHIBIT 3-7: EXISTING (2023) TRAFFIC VOLUMES (ACTUAL VEHICLES)



1 12th St. & Edion Av.		2 Benson Av. & Schaefter Av.		3 Benson Av. & Danieli St.	
2,100		5,900		2,550	
21,000		28,350		100	
34(83) 14(35) 4(36)	40(12) 777(484) 11(30)	105(84) 53(32) 66(59)	88(35) 984(509) 38(10)	57(54) 12(4) 1(0)	0(3) 0(3)
61(20) 396(748) 17(87)	7(6) 2(4)	80(96) 464(1107) 43(18)	23(33) 18(63) 21(53)	17(92) 0(1) 47(0)	4(5) 5(8)
23,350	3,200	29,550	2,650	2,500	1,050
4 Benson Av. & Driveway 1		5 Benson Av. & Driveway 2			
1,050		650			
171(4)		159(1)			
9(13)		6(2)			
1,050		650			

##(##) AM(PM) Peak Hour Intersection Volumes
 ## Average Daily Trips

TABLE 3-2: INTERSECTION ANALYSIS FOR EXISTING (2023) CONDITIONS

# Intersection	Traffic Control ²	Delay ¹ (secs.)		Level of Service	
		AM	PM	AM	PM
1 12th St. & Edison Av.	TS	8.4	10.6	A	B
2 Benson Av. & Schaefer Av.	TS	16.7	15.9	B	B
3 Benson Av. & Daniels St.	CSS	10.1	9.7	B	A
4 Benson Av. & Driveway 1		Future Intersection			
5 Benson Av. & Driveway 2		Future Intersection			

¹ Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown. HCM delay reported in seconds.

² TS = Traffic Signal; CSS = Cross-street Stop

3.9 ROADWAY SEGMENT ANALYSIS

The roadway capacities utilized for the study area roadway segment analysis are obtained from the City’s General Plan. These roadway segment capacities are approximate figures only and are used at the General Plan level to assist in determining the roadway functional classification (number of through lanes) needed to meet traffic demand.

Table 3-3 provides a summary of the Existing (2023) traffic conditions roadway segment capacity analysis. As shown in Table 3-3, all study area roadway segments are currently operating at an acceptable LOS based on the daily roadway capacity thresholds and minimum LOS criteria.

TABLE 3-3: ROADWAY SEGMENT CAPACITY ANALYSIS FOR EXISTING (2023) CONDITIONS

#	Roadway	Segment Limits	Roadway Section	LOS Capacity ¹	Existing (2023)		
					Vol	V/C ²	LOS ³
1	Benson Avenue	Schaefer Av. to Daniels St.	2U	13,000	2,645	0.203	A
2	Benson Avenue	Daniels St. to southerly terminus	2U	13,000	1,046	0.080	A
3	Daniels Street/12th Street	Benson Av. to Edison Av.	2U	13,000	2,079	0.160	A

¹ These maximum roadway capacities are based on the City’s General Plan.

² V/C = Volume to Capacity Ratio

³ LOS = Level of Service

3.10 NEAR-TERM DEFICIENCIES AND IMPROVEMENTS

All study area intersections and roadway segments currently operate at an acceptable LOS during the AM and PM peak hours under Existing (2023) traffic conditions. As such, no improvements have been identified for Existing (2023) traffic conditions.

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4 PROJECTED FUTURE TRAFFIC

The existing 6.62-acre site is currently occupied by AmCo Structures, a manufacturer of modular commercial and residential buildings. The Project is currently proposed to consist of the development of a 145,500 square foot warehouse building (includes the 6,000 square foot office). A preliminary site plan for the proposed Project was previously shown on Exhibit 1-2. Vehicular access will be provided via two driveways on Benson Avenue. Driveway 1 is proposed to allow for full access (e.g., no turn restrictions) for passenger cars and will be restricted to inbound traffic only for trucks. Driveway 2 is proposed to allow for full access (e.g., no turn restrictions). Regional access to the Project site is accommodated from the SR-71 Freeway via Chino Avenue, Edison Avenue, and Ramona Avenue, and the SR-60 Freeway via Ramona Avenue. The Project is anticipated to have an opening year of 2026.

4.1 PROJECT TRIP GENERATION

Trip generation represents the amount of traffic which is both attracted to and produced by a development. Determining traffic generation for a specific project is therefore based upon forecasting the amount of traffic that is expected to be both attracted to and produced by the specific land uses being proposed for a given development. In order to develop the traffic characteristics of the proposed project, trip-generation statistics published in the ITE Trip Generation Manual (11th Edition, 2021) have been utilized. (3)

4.1.1 EXISTING TRAFFIC

As noted previously, the existing 6.62-acre site is currently occupied by AmCo Structures. In an effort to understand the existing traffic associated with the current use, traffic counts were collected at the driveways on Tuesday, March 7th through Thursday, March 9th, 2023. The driveway count data is included in Attachment A of the Scoping Agreement (see Appendix 1.1). Table 4-1 summarizes the trip generation by day and the average existing trip generation based on the count data collected over three days. The existing site currently generates an average of 96 two-way trips per day, with 8 trips during the AM peak hour and 6 trips during the PM peak hour (in actual vehicles).

PCE factors were applied to the trip generation rates for heavy trucks (large 2-axles, 3-axles, 4+-axles). PCEs allow the typical "real-world" mix of vehicle types to be represented as a single, standardized unit, such as the passenger car, to be used for the purposes of capacity and level of service analyses. The PCE factors are consistent with the recommended PCE factors in the City's Guidelines. The existing site currently generates an average of 105 two-way PCE trips per day, with 9 PCE trips during the AM peak hour and 6 PCE trips during the PM peak hour.

TABLE 4-1: EXISTING TRIP GENERATION SUMMARY

Land Use	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	
Actual Vehicles:							
Existing Use							
Passenger Cars:	5	2	7	1	5	6	87
2-axle Trucks:	0	0	0	0	0	0	4
3-axle Trucks:	1	0	1	0	0	0	3
4+-axle Trucks:	0	0	0	0	0	0	2
Total Truck Trips (Actual Vehicles):	1	0	1	0	0	0	9
Total Trips (Actual Vehicles)²	6	2	8	1	5	6	96
Passenger Car Equivalent (PCE):							
Existing Use							
Passenger Cars:	5	2	7	1	5	6	87
2-axle Trucks (PCE = 1.5):	0	0	0	0	0	0	6
3-axle Trucks (PCE = 2.0):	2	0	2	0	0	0	6
4+-axle Trucks (PCE = 3.0):	0	0	0	0	0	0	6
Total Truck Trips (PCE):	2	0	2	0	0	0	18
Total Trips (PCE)²	7	2	9	1	5	6	105

¹ TSF = thousand square feet

² Total Trips = Passenger Cars + Truck Trips.

4.1.2 PROPOSED PROJECT

The proposed Project is a single 145,500 square foot warehouse building. In order to develop the traffic characteristics of the proposed Project, trip-generation statistics published in the ITE Trip Generation Manual (11th Edition, 2021) has been used for the proposed Project. The Project has been evaluated assuming a mix of general light industrial and general warehousing use for the purpose of calculating a conservative (worst-case) trip generation for the proposed warehouse use. Table 4-2 summarizes the trip generation rates. For purposes of this assessment, the following land uses and vehicle mixes have been utilized:

- ITE land use code 110 (General Light Industrial) has been used to derive site specific trip generation estimates. A light industrial facility is a free-standing facility devoted to a single use that has an emphasis on activities other than manufacturing. Typically, there is minimum office space. The vehicle mix has also been obtained from the ITE's Trip Generation Manual. The truck percentages were further broken down by axle type per the following South Coast Air Quality Management District (SCAQMD) recommended truck mix: 2-Axle = 16.7%; 3-Axle = 20.7%; 4+-Axle = 62.6%.

TABLE 4-2: PROJECT TRIP GENERATION RATES

Land Use ¹	Units ²	ITE LU Code	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Actual Vehicle Trip Generation Rates									
General Light Industrial ³	TSF	110	0.651	0.089	0.740	0.091	0.559	0.650	4.870
Passenger Cars (AM=98.6%, PM=98.5%, Daily=94.9%)			0.645	0.085	0.730	0.086	0.554	0.640	4.620
2-Axle Trucks (AM=0.23%, PM=0.25%, Daily=0.85%)			0.001	0.001	0.002	0.001	0.001	0.002	0.042
3-Axle Trucks (AM=0.29%, PM=0.31%, Daily=1.05%)			0.001	0.001	0.002	0.001	0.001	0.002	0.052
4+-Axle Trucks (AM=0.88%, PM=0.94%, Daily=3.20%)			0.004	0.002	0.006	0.003	0.003	0.006	0.157
Warehousing ³	TSF	150	0.131	0.039	0.170	0.050	0.130	0.180	1.710
Passenger Cars (AM=88.2%, PM=83.3%, Daily=64.9%)			0.120	0.030	0.150	0.034	0.116	0.150	1.110
2-Axle Trucks (AM=1.97%, PM=2.79%, Daily=5.86%)			0.002	0.001	0.003	0.003	0.002	0.005	0.100
3-Axle Trucks (AM=2.44%, PM=3.46%, Daily=7.27%)			0.002	0.002	0.004	0.003	0.003	0.006	0.124
4+-Axle Trucks (AM=7.39%, PM=10.45%, Daily=21.97%)			0.007	0.006	0.013	0.010	0.009	0.019	0.376
High-Cube Cold Storage Warehouse ³	TSF	157	0.085	0.025	0.110	0.034	0.086	0.120	2.120
Passenger Cars (AM=72.7%, PM=75.0%, Daily=64.6%)			0.076	0.004	0.080	0.019	0.071	0.090	1.370
2-Axle Trucks (AM=9.5%, PM=8.7%, Daily=12.3%)			0.003	0.007	0.010	0.005	0.005	0.010	0.260
3-Axle Trucks (AM=3.0%, PM=2.8%, Daily=3.9%)			0.001	0.002	0.003	0.002	0.001	0.003	0.083
4+-Axle Trucks (AM=14.8%, PM=13.6%, Daily=19.2%)			0.005	0.011	0.016	0.008	0.008	0.016	0.407
Passenger Car Equivalent (PCE) Trip Generation Rates⁶									
General Light Industrial ³	TSF	110	0.651	0.089	0.740	0.091	0.559	0.650	4.870
Passenger Cars			0.645	0.085	0.730	0.086	0.554	0.640	4.620
2-Axle Trucks (PCE = 1.5)			0.002	0.001	0.003	0.002	0.001	0.003	0.063
3-Axle Trucks (PCE = 2.0)			0.002	0.002	0.004	0.002	0.002	0.004	0.104
4+-Axle Trucks (PCE = 3.0)			0.012	0.007	0.019	0.009	0.010	0.019	0.470
Warehousing ³	TSF	150	0.131	0.039	0.170	0.050	0.130	0.180	1.710
Passenger Cars			0.120	0.030	0.150	0.034	0.116	0.150	1.110
2-Axle Trucks (PCE = 1.5)			0.003	0.002	0.005	0.005	0.003	0.008	0.150
3-Axle Trucks (PCE = 2.0)			0.004	0.004	0.008	0.006	0.006	0.012	0.248
4+-Axle Trucks (PCE = 3.0)			0.021	0.017	0.038	0.030	0.026	0.056	1.127
High-Cube Cold Storage Warehouse ³	TSF	157	0.085	0.025	0.110	0.034	0.086	0.120	2.120
Passenger Cars			0.076	0.004	0.080	0.019	0.071	0.090	1.370
2-Axle Trucks (PCE = 1.5)			0.005	0.011	0.016	0.008	0.008	0.016	0.390
3-Axle Trucks (PCE = 2.0)			0.002	0.005	0.007	0.004	0.003	0.007	0.165
4+-Axle Trucks (PCE = 3.0)			0.015	0.034	0.049	0.024	0.025	0.049	1.222

¹ Trip Generation & Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

² TSF = thousand square feet

³ Truck Mix: South Coast Air Quality Management District's (SCAQMD) recommended truck mix, by axle type.

Normalized % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks.

Normalized % - With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks.

- ITE land use code 150 (Warehousing) has been used to derive site specific trip generation. The vehicle mix has been obtained from the ITE's Trip Generation Manual Supplement (dated February 2020). This study provides the following vehicle mix: AM Peak Hour: 87.0% passenger cars and 13.0% trucks; PM Peak Hour: 85.0% passenger cars and 15.0% trucks; Weekday Daily: 73.0% passenger cars and 27.0% trucks. The truck percentages were further broken down by axle type per the following SCAQMD recommended truck mix: 2-Axle = 16.7%; 3-Axle = 20.7%; 4+-Axle = 62.6%.
- ITE land use code 157 (High-Cube Cold Storage Warehouse) has been used to derive site specific trip generation estimates. High-cube cold storage warehouses include warehouses characterized by the storage and/or consolidation of manufactured goods (and to a lesser extent, raw materials) prior to their distribution to retail locations or other warehouses. High-cube cold storage warehouses are facilities typified by temperature-controlled environments for frozen food or other perishable products. The High-Cube Cold Storage Warehouse vehicle mix (passenger cars versus trucks) has been obtained from the ITE's Trip Generation Manual. The truck percentages were further broken down by axle type per the following SCAQMD recommended truck mix: 2-Axle = 34.7%; 3-Axle = 11.0%; 4+-Axle = 54.3%.

The trip generation summary illustrating daily and peak hour trip generation estimates for the proposed Project are summarized in Table 4-3 in actual vehicles. The proposed Project is anticipated to generate 332 two-way trips per day with 35 AM peak hour trips and 34 PM peak hour trips (actual vehicles). Any intersection operations analysis for a project would need to utilize the PCE trip generation consistent with the City's Guidelines. As such, the Project's trip generation in PCE has been provided in Table 4-4. The Project is anticipated to generate 460 two-way PCE trips per day with 38 PCE AM peak hour trips and 42 PCE PM peak hour trips.

4.1.3 TRIP GENERATION COMPARISON

Table 4-5 shows the trip generation comparison between the existing use and proposed Project and identifies the resulting net change in trips. As shown, the Project is anticipated to generate 236 additional two-way trips per day with 27 additional AM peak hour trips and 28 additional PM peak hour trips as compared to the existing use (in actual vehicles). The trip generation comparison has been presented in both actual vehicles and PCE as other technical studies require the use of the actual vehicles, while any peak hour intersection operations analysis utilizes the PCE-based trip generation.

4.2 PROJECT TRIP DISTRIBUTION

The Project trip distribution represents the directional orientation of traffic to and from the Project site. Trip distribution is the process of identifying the probable destinations, directions or traffic routes that will be utilized by Project traffic. The potential interaction between the planned land uses and surrounding regional access routes are considered to identify the route where the Project traffic would distribute. Truck distribution patterns are based on truck routes, the site's proximity to the regional freeway system and likely distribution of traffic if a future tenant is known. Passenger car distribution patterns are based on existing and planned land uses in the area along with the planned circulation system. Exhibits 4-1 and 4-2 illustrate the inbound and outbound truck trip distribution patterns for the Project, respectively, and Exhibit 4-3 illustrates the passenger car trip distribution patterns. Each of these distribution patterns is part of the TA scoping process (see Appendix 1.1).

TABLE 4-3: PROJECT TRIP GENERATION SUMMARY (ACTUAL VEHICLES)

Land Use	Quantity Units ¹	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Actual Vehicles:								
General Light Industrial (15%)	21.825 TSF							
Passenger Cars:		14	2	16	2	12	14	100
2-axle Trucks:		0	0	0	0	0	0	2
3-axle Trucks:		0	0	0	0	0	0	2
4+-axle Trucks:		0	0	0	0	0	0	4
Total Truck Trips (Actual Vehicles):		0	0	0	0	0	0	8
Total Trips (Actual Vehicles) ²		14	2	16	2	12	14	108
Warehousing (70%)	101.850 TSF							
Passenger Cars:		12	3	15	4	12	16	114
2-axle Trucks:		0	0	0	0	0	0	10
3-axle Trucks:		0	0	0	0	0	0	14
4+-axle Trucks:		1	1	2	1	1	2	38
Total Truck Trips (Actual Vehicles):		1	1	2	1	1	2	62
Total Trips (Actual Vehicles) ²		13	4	17	5	13	18	176
High-Cube Cold Storage Warehouse (15%)	21.825 TSF							
Passenger Cars:		2	0	2	0	2	2	30
2-axle Trucks:		0	0	0	0	0	0	6
3-axle Trucks:		0	0	0	0	0	0	2
4+-axle Trucks:		0	0	0	0	0	0	10
Total Truck Trips (Actual Vehicles):		0	0	0	0	0	0	18
Total Trips (Actual Vehicles) ²		2	0	2	0	2	2	48
Passenger Cars		28	5	33	6	26	32	244
Trucks		1	1	2	1	1	2	88
Total Trips (Actual Vehicles)²		29	6	35	7	27	34	332

¹ TSF = thousand square feet

² Total Trips = Passenger Cars + Truck Trips.

TABLE 4-4: PROJECT TRIP GENERATION SUMMARY (PCE)

Land Use	Quantity Units ¹	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Passenger Car Equivalent (PCE):								
General Light Industrial (15%)	21.825 TSF							
Passenger Cars:		14	2	16	2	12	14	102
2-axle Trucks:		0	0	0	0	0	0	2
3-axle Trucks:		0	0	0	0	0	0	2
4+-axle Trucks:		0	0	0	0	0	0	10
Total Truck Trips (PCE):		0	0	0	0	0	0	14
Total Trips (PCE) ²		14	2	16	2	12	14	116
Warehousing (70%)								
Passenger Cars:	101.850 TSF	12	3	15	4	12	16	114
2-axle Trucks:		0	0	0	0	0	0	16
3-axle Trucks:		0	0	0	1	1	2	26
4+-axle Trucks:		2	2	4	3	3	6	116
Total Truck Trips (PCE):		2	2	4	4	4	8	158
Total Trips (PCE) ²		14	5	19	8	16	24	272
High-Cube Cold Storage Warehouse (15%)								
Passenger Cars:	21.825 TSF	2	0	2	0	2	2	30
2-axle Trucks:		0	0	0	0	0	0	10
3-axle Trucks:		0	0	0	0	0	0	4
4+-axle Trucks:		0	1	1	1	1	2	28
Total Truck Trips (PCE):		0	1	1	1	1	2	42
Total Trips (PCE) ²		2	1	3	1	3	4	72
Passenger Cars		28	5	33	6	26	32	246
Trucks		2	3	5	5	5	10	214
Total Trips (PCE)²		30	8	38	11	31	42	460

¹ TSF = thousand square feet

² Total Trips = Passenger Cars + Truck Trips.

TABLE 4-5: TRIP GENERATION COMPARISON

Land Use	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	
Existing (Actual Vehicles)	6	2	8	1	5	6	96
Proposed (Actual Vehicles)	29	6	35	7	27	34	332
Net New Project Trips (Actual Vehicles)	23	4	27	6	22	28	236
Existing (PCE)	7	2	9	1	5	6	105
Proposed (PCE)	30	8	38	11	31	42	460
Net New Project Trips (PCE)	23	6	29	10	26	36	355

EXHIBIT 4-1: PROJECT (TRUCK) INBOUND TRIP DISTRIBUTION

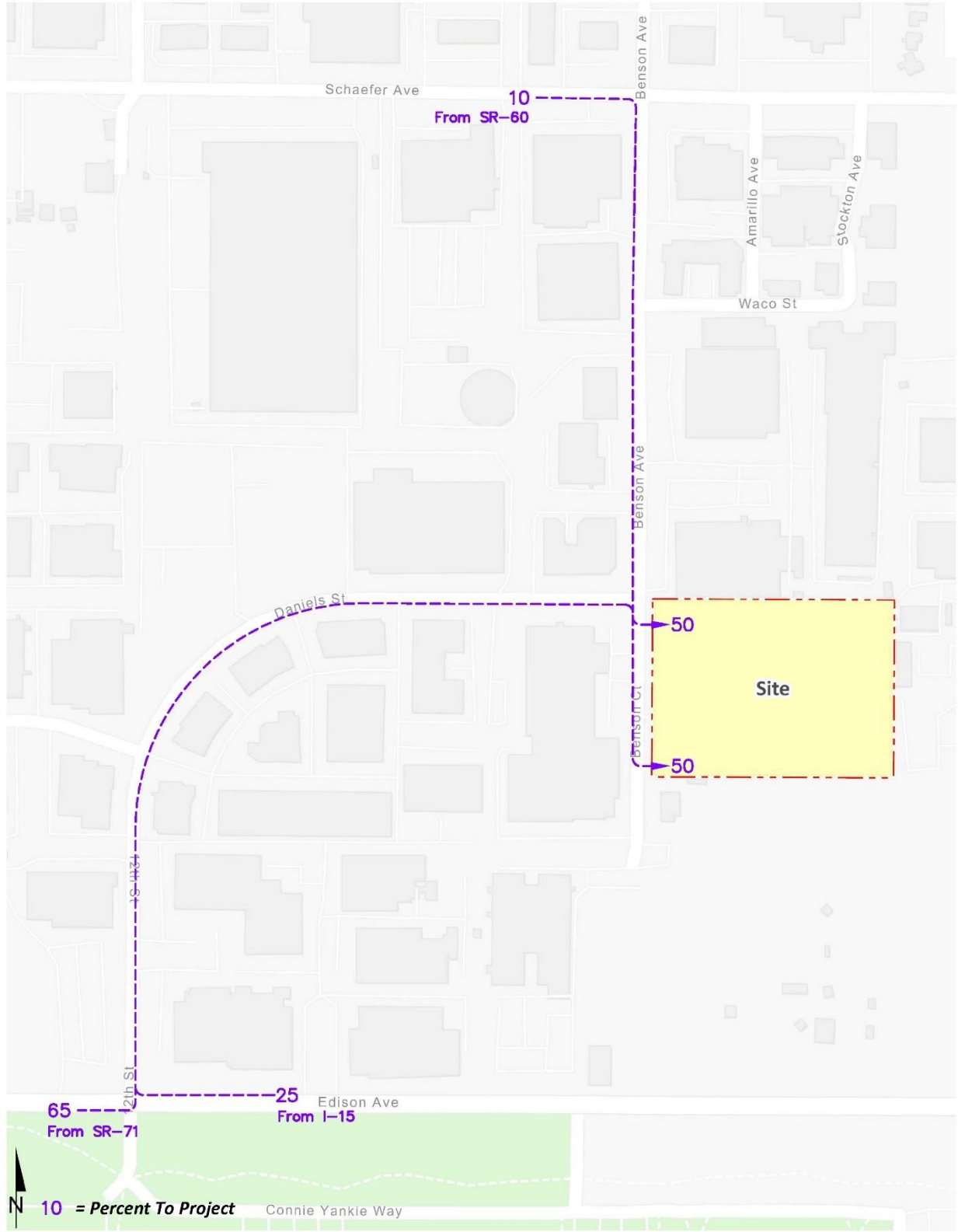


EXHIBIT 4-2: PROJECT (TRUCK) OUTBOUND TRIP DISTRIBUTION

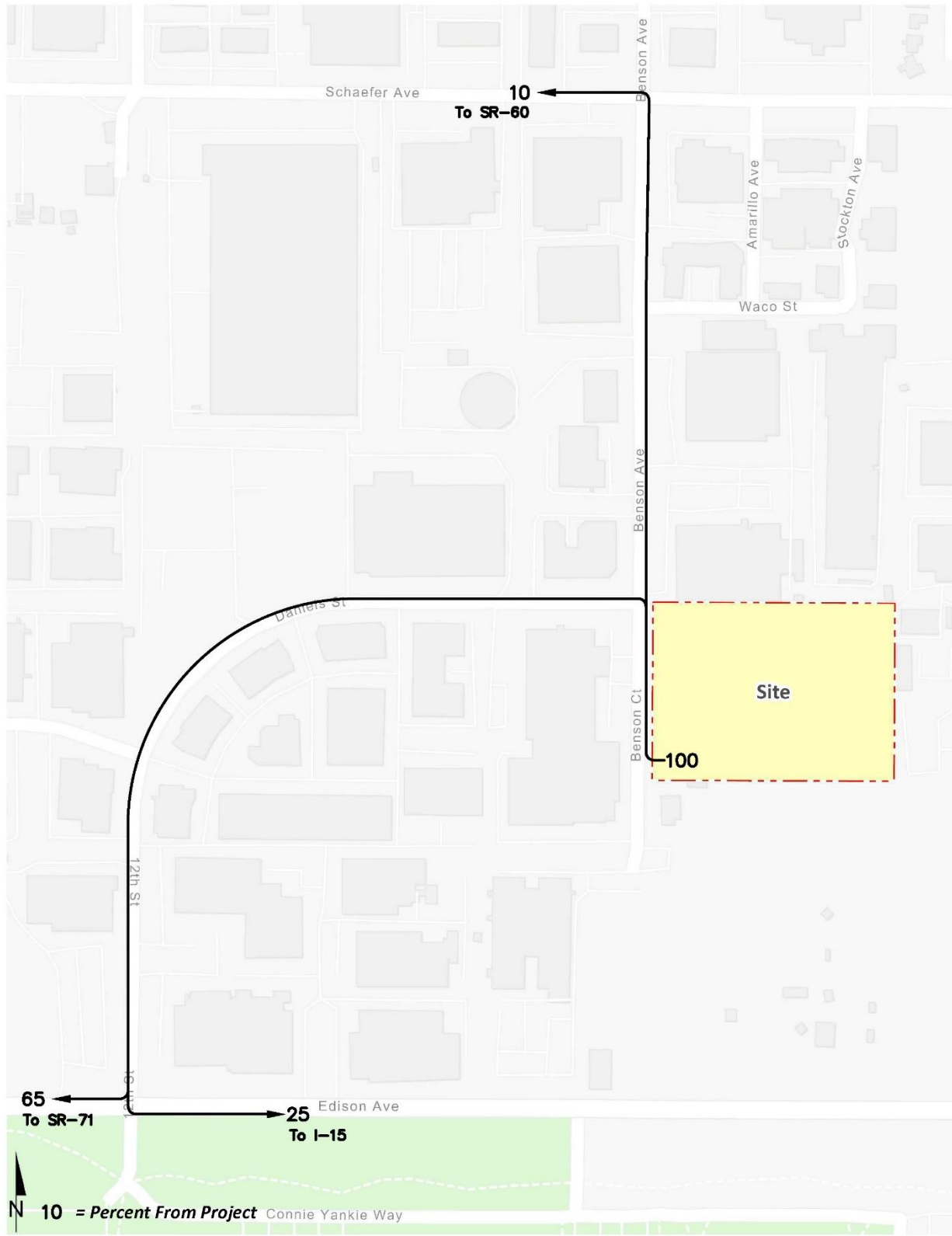
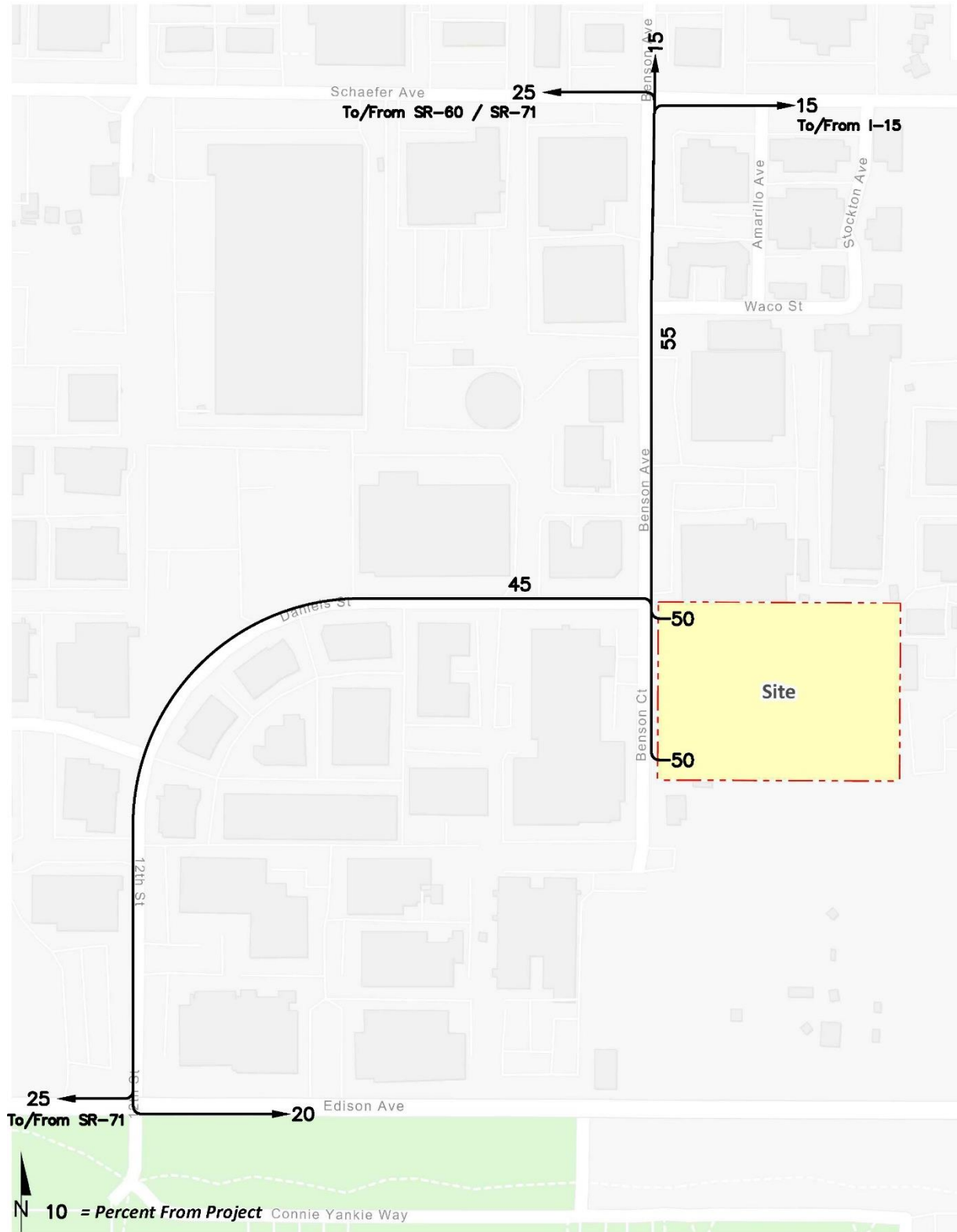


EXHIBIT 4-3: PROJECT (PASSENGER CAR) TRIP DISTRIBUTION



4.3 MODAL SPLIT

The potential for Project trips (non-truck) to be reduced by the use of public transit, walking or bicycling have not been included as part of the Project's estimated trip generation. Essentially, the Project's traffic projections are "conservative" in that these alternative travel modes would reduce the forecasted traffic volumes.

4.4 PROJECT TRIP ASSIGNMENT

The assignment of traffic from the Project area to the adjoining roadway system is based upon the trip generation, trip distribution, and the arterial highway and local street system improvements that would be in place by the time of initial occupancy of the Project. The trip generation comparison has been utilized for the assignment of traffic to account for the existing site's trips, which would be removed from the roadway system with the Project developed. However, the proposed Project trip generation has been utilized for the Project driveways to ensure that the trips entering and exiting the project site are equivalent to the entirety of the Project's trip generation. Based on the identified proposed Project traffic generation and trip distribution patterns, the Project weekday ADT and weekday peak hour intersection turning movement volumes, in actual vehicles, are shown on Exhibit 4-4. Based on the identified trip generation comparison and trip distribution patterns, the Project weekday ADT and weekday peak hour intersection turning movement volumes, in actual vehicles, are shown on Exhibit 4-5.

4.5 BACKGROUND TRAFFIC

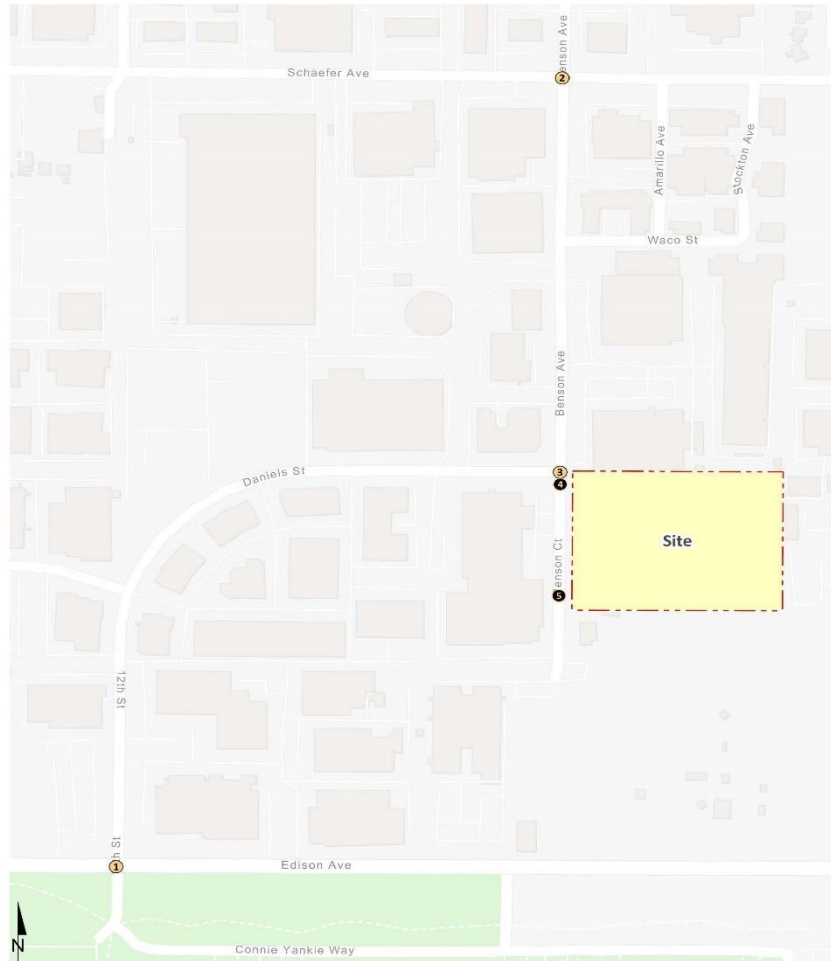
4.5.1 OPENING YEAR CUMULATIVE CONDITIONS

Traffic generated by the development of future projects that have been approved but not yet built and/or for which development applications have been filed and are under consideration by governing agencies have been added to daily and peak hour traffic volumes on surrounding roadways. Opening Year Cumulative (2026) traffic volumes are provided in Section 6 of this TA. The traffic generated by the proposed Project was then manually added to the base volume to determine Opening Year Cumulative "With Project" forecasts.

4.5.2 HORIZON YEAR (2045) CONDITIONS

The adopted Southern California Association of Governments (SCAG) Connect SoCal: Demographics and Growth Forecast (adopted September 3, 2020) growth forecasts for the City of Chino identifies projected growth in population of 86,900 in 2016 to 121,300 in 2045, or a 39.59% increase over the 29-year period (8). The change in population equates to roughly a 1.16% growth rate, compounded annually. Similarly, growth over the same 29-year period in households is projected to increase by 42.67%, or a 1.23% annual growth rate. Finally, growth in employment over the same 29-year period is projected to increase by 13.89%, or a 0.45% annual growth rate. Therefore, the annual growth rate utilized for the purposes of this analysis would appear to conservatively approximate the anticipated regional growth in traffic volumes in the City of Chino for Opening Year Cumulative and Horizon Year (2045) traffic conditions, especially when considered along with the addition of project-related traffic, which would tend to overstate as opposed to understate the potential impacts to traffic and circulation.

EXHIBIT 4-4: PROJECT ONLY TRAFFIC VOLUMES (ACTUAL VEHICLES)

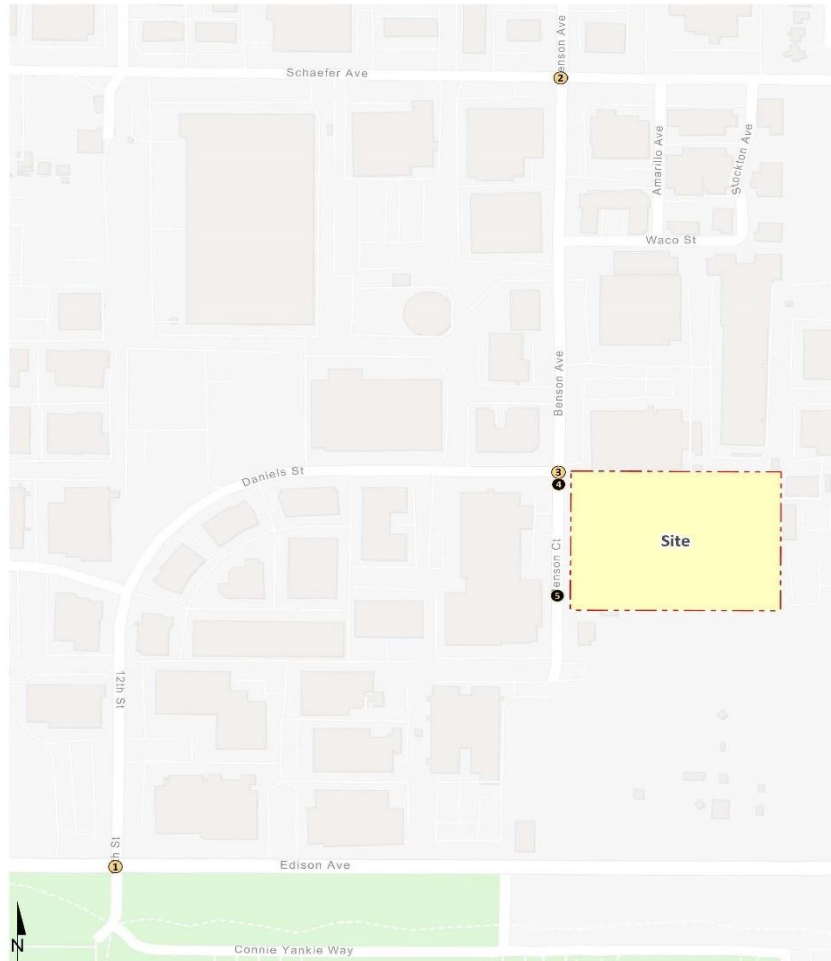


1 12th St. & Edison Av.		2 Benson Av. & Schaefer Av.		3 Benson Av. & Daniels St.	
200	<i>Nominal</i>	<i>Nominal</i>	<i>Nominal</i>	150	
↓ 2(7) ↑ 6(1) ← 8(2) → 1(5)		← 4(1) ↑ 4(1) ↓ 7(2) → 1(7) → 1(4) → 1(4)		↓ 16(3) ↓ 14(4) → 3(13) → 3(14)	
100		<i>Nominal</i>		150	350
4 Benson Av. & Driveway 1		5 Benson Av. & Driveway 2			
350	150	200	200		
↓ 15(4) ↓ 14(3) ↑ 3(13) → 4(14)		↓ 15(4) ↑ 4(14)			
	200				

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

EXHIBIT 4-5: PROJECT (NET DIFFERENCE) TRAFFIC VOLUMES (ACTUAL VEHICLES)



1 12th St. & Edison Av.		2 Benson Av. & Schaefer Av.		3 Benson Av. & Daniels St.	
200	<i>Nominal</i>	<i>Nominal</i>	<i>Nominal</i>	150	
↓ 2(7) ↑ 8(2) ← 1(5) → 6(1)		← 4(1) → 7(2) ↑ 1(7) ↓ 1(4) → 1(4)	↑ 4(1) ↓ 1(4) → 1(4)	↓ 16(3) → 14(4) ← 3(13) → 3(14)	350
100		<i>Nominal</i>		150	200
4 Benson Av. & Driveway 1		5 Benson Av. & Driveway 2			
350	150	200	200		
↓ 15(4) ↑ 14(3) → 3(13) ← 4(14)		↓ 15(4) ↑ 4(14)			
200					

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

4.6 CUMULATIVE DEVELOPMENT TRAFFIC

A cumulative project list was developed for the purposes of this analysis through consultation with planning and engineering staff from the City of Chino. The cumulative projects listed are those that would generate traffic and would contribute traffic to study area intersections. Exhibit 4-6 illustrates the cumulative development location map. A summary of cumulative development projects and their proposed land uses are shown in Table 4-6. If applicable, the traffic generated by individual cumulative projects was manually added to the Opening Year Cumulative forecasts to ensure that traffic generated by the listed cumulative development projects in Table 4-6 are reflected as part of the background traffic. In an effort to conduct a conservative analysis, the cumulative projects are added in conjunction with the ambient growth identified in Section 4.5 *Background Traffic*. Cumulative ADT and peak hour intersection turning movement volumes, in actual vehicles, are shown on Exhibit 4-7.

4.7 HORIZON YEAR (2045) VOLUME DEVELOPMENT

Traffic projections for Horizon Year (2045) without Project conditions were derived from the SBTAM using accepted procedures for model forecast refinement and smoothing for study area intersections located within the County of San Bernardino. The traffic forecasts reflect the area-wide growth anticipated between Existing (2023) conditions and Horizon Year (2045) traffic conditions. The 2040 SBTAM output was then extrapolated by movement from the Opening Year Cumulative (2026) volumes to reflect 2045 conditions. In most instances the traffic model zone structure is not designed to provide accurate turning movements along arterial roadways unless refinement and reasonableness checking is performed. Therefore, the Horizon Year (2045) peak hour forecasts were refined using the model derived long range forecasts, base (validation) year model forecasts, along with existing peak hour traffic count data collected at each analysis location in August 2023. The SBTAM has a base (validation) year of 2016 and a horizon (future forecast) year of 2040. The difference in model volumes (2040-2016) defines the growth in traffic over the 24-year period.

The refined future peak hour approach and departure volumes obtained from the model output data are then entered into a spreadsheet program consistent with the National Cooperative Highway Research Program (NCHRP Report 765), along with initial estimates of turning movement proportions. A linear programming algorithm is used to calculate individual turning movements which match the known directional roadway segment forecast volumes computed in the previous step. This program computes a likely set of intersection turning movements from intersection approach counts and the initial turning proportions from each approach leg.

The SBTAM uses an AM peak period-to-peak hour factor of 0.35 and a PM peak period-to-peak hour factor of 0.27. These factors represent the relationship of the highest single AM peak hour to the modeled 3-hour AM peak period (an even distribution would result in a factor of 0.33) and the highest single PM peak hour to the modeled 4-hour PM peak period (an even distribution would result in a factor of 0.25).

TABLE 4-6: CUMULATIVE DEVELOPMENT LAND USE SUMMARY

#	Project/Location	Land Use	Quantity Units ¹
City of Chino			
C1	4416 Riverside Drive	Fast-Food Restaurant with Drive-Thru	4.925 TSF
C2	PL18-0057	Assisted Living Facility	110.02 TSF
C3	NWC Eucalyptus Avenue and Central Avenue	General Light Industrial	49.592 TSF
C4	15022 La Palma	General Light Industrial	15.460 TSF
C5	East End and County Industrial	High-Cube Fulfillment Center Warehouse	212.251 TSF
		Industrial Park	55.534 TSF
C6	13404 Yorba Avenue	General Light Industrial	325.300 TSF
	13461 Ramona Avenue	Office Building	59.798 TSF
C7	5319 Anderson Street	Office Building	16.000 TSF
		Retail Building	6.435 TSF
C8	6132 Riverside Drive	Drive-Thru Car Wash	3.605 TSF
		Drive-Thru Restaurant	2.312 TSF
		Church	27.000 TSF
C9	The Campus at College Park	General Office	16.969 TSF
		Commercial Retail	17.785 TSF
		High Turnover (Sit-Down) Restaurant	15.876 TSF
C10	13610 Yorba Avenue	Warehousing	284.73 TSF
		Self-Storage Facility	145.000 TSF
C11	Eden Mixed-Use	Multifamily (Mid-Rise) Residential	282 DU
		Retail Shops	3.100 TSF
		Fast-Food Restaurant without Drive-Thru	9.400 TSF
		Fast-Food Restaurant with Drive-Thru	7.000 TSF
City of Ontario			
		Truck/Trailer Parking Lot	12.2 AC
		Warehousing	972.817 TSF
		Business Park	191.378 TSF
O1	Euclid Mixed-Use Specific Plan	Multifamily Housing	466 DU
		Fast-Food Restaurant without Drive-Thru	10.000 TSF
		Fast-Food Restaurant with Drive-Thru	10.000 TSF
		Shopping Center	10.225 TSF
City of Chino Hills			
CH1	The Common at Chino Hills - Farou Foods Restaurant	Restaurant	6.000 TSF
CH2	GoStoreIt Self-Storage	Self-Storage	106.315 TSF
CH3	Rancho Cielito	Multifamily Housing (Low-Rise)	166 DU
		Multifamily Housing (Mid-Rise)	188 DU
CH4	Reserve at Chino Hills Apartment Complex	Apartments	42 DU

¹ TSF = Thousand Square Feet; DU = Dwelling Unit; AC = Acres

EXHIBIT 4-6: CUMULATIVE DEVELOPMENT LOCATION MAP

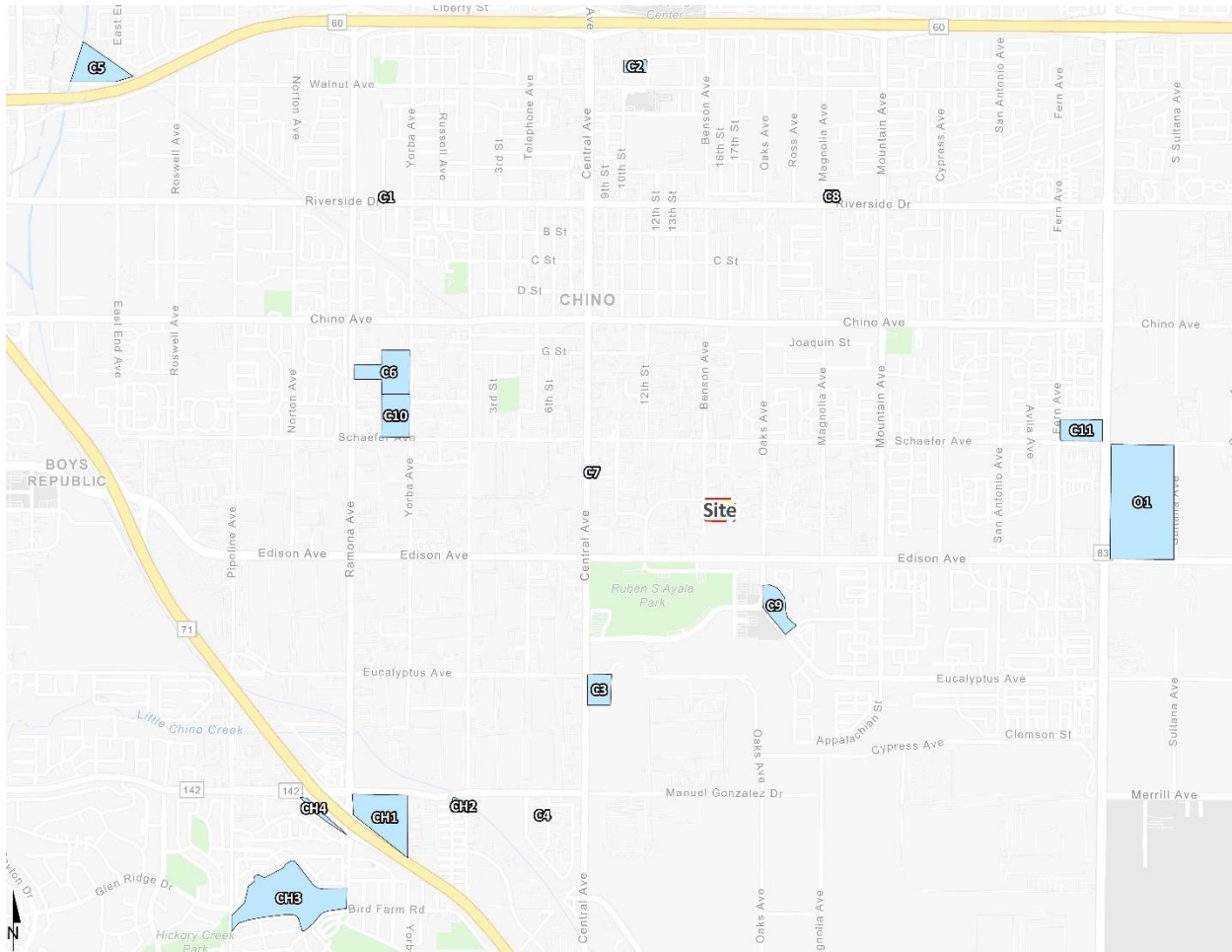
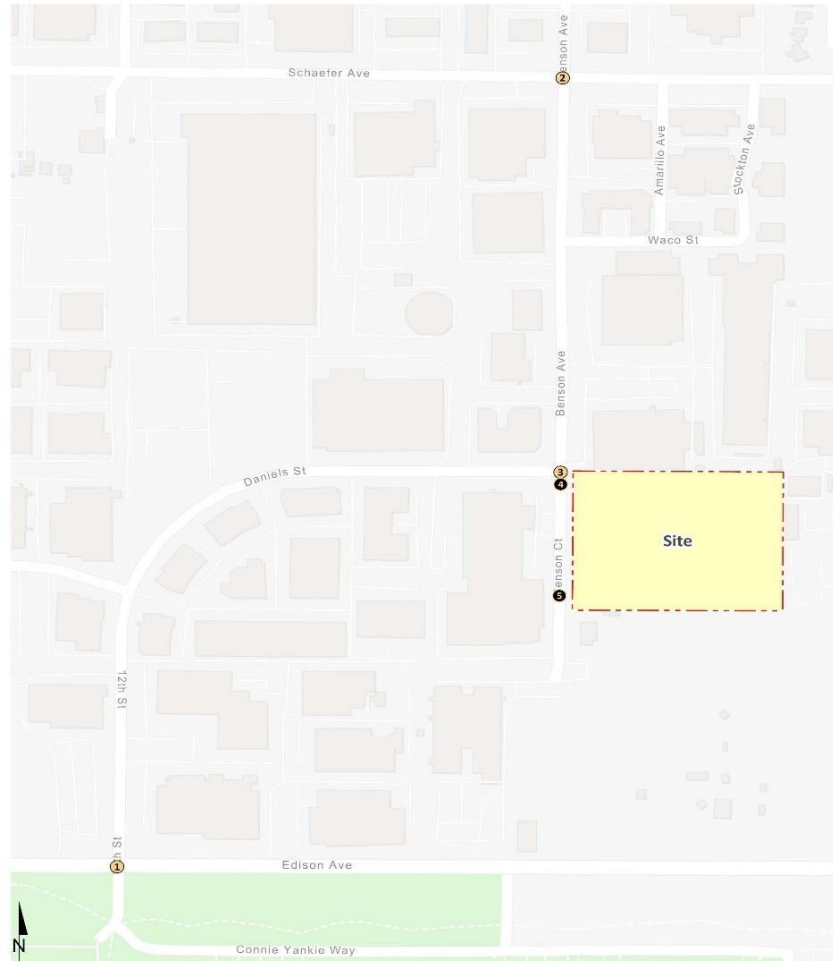


EXHIBIT 4-7: CUMULATIVE ONLY TRAFFIC VOLUMES (ACTUAL VEHICLES)



1 12th St. & Edison Av.		2 Benson Av. & Schaefer Av.		3 Benson Av. & Daniels St.	
3,550		3,650			
← 71(243)	225(95) →	1(0) ↓	← 154(166)	0(1) →	84(88) →
3,550		3,650			
4 Benson Av. & Driveway 1		5 Benson Av. & Driveway 2			

##(##) AM(PM) Peak Hour Intersection Volumes
 ## Average Daily Trips

Typically, the model growth is prorated and is subsequently added to the existing (base validation) traffic volumes to represent Horizon Year traffic conditions. In an effort to conduct a conservative analysis, reductions to traffic forecasts from either Existing or Opening Year Cumulative traffic conditions were not assumed as part of this analysis. As such, in conjunction with the addition of cumulative projects that are not consistent with the General Plan, additional growth has also been applied on a movement-by-movement basis, where applicable, to estimate reasonable Horizon Year (2045) forecasts. Horizon Year (2045) turning volumes were compared to Opening Year Cumulative (2026) volumes in order to ensure a minimum growth as a part of the refinement process. The minimum growth includes any additional growth between Opening Year Cumulative (2026) and Horizon Year (2045) traffic conditions that is not accounted for by the traffic generated by cumulative development projects and ambient growth rates assumed between Existing (2023) and Opening Year Cumulative (2026) conditions. Future estimated peak hour traffic data was used for new intersections and intersections with an anticipated change in travel patterns to further refine the Horizon Year (2045) peak hour forecasts.

The future Horizon Year (2045) Without Project peak hour turning movements were then reviewed by Urban Crossroads, Inc. for reasonableness, and in some cases, were adjusted to achieve flow conservation, reasonable growth, and reasonable diversion between parallel routes. Flow conservation checks ensure that traffic flow between two closely spaced intersections, such as two adjacent driveway locations, is verified in order to make certain that vehicles leaving one intersection are entering the adjacent intersection and that there is no unexplained loss of vehicles. The result of this traffic forecasting procedure is a series of traffic volumes which are suitable for traffic operations analysis. Post processing has been performed for the weekday AM and PM peak hours only as these are the only time periods where traffic model data was readily available. Project traffic was then added for all With Project traffic conditions. Post processing worksheets are included in Appendix 4.1.

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5 E+P TRAFFIC CONDITIONS

This section discusses the traffic forecasts for E+P conditions and the resulting intersection operations, traffic signal warrant, and roadway segment capacity analyses.

5.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for E+P conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for E+P conditions only (e.g., intersection and roadway improvements at the Project’s frontage and driveways).

5.2 E+P TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes plus Project traffic. The weekday ADT and weekday peak hour intersection turning movement volumes, in actual vehicles, which can be expected for E+P traffic conditions are shown on Exhibit 5-1.

5.3 INTERSECTION OPERATIONS ANALYSIS

E+P peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2 *Methodologies* of this TA. The intersection analysis results are summarized in Table 5-1 for E+P traffic conditions, which indicate that all of the study area intersections are anticipated to continue to operate at an acceptable LOS under E+P traffic conditions, consistent with Existing (2023) traffic conditions. The intersection operations analysis worksheets for E+P traffic conditions are included in Appendix 5.1 of this TA.

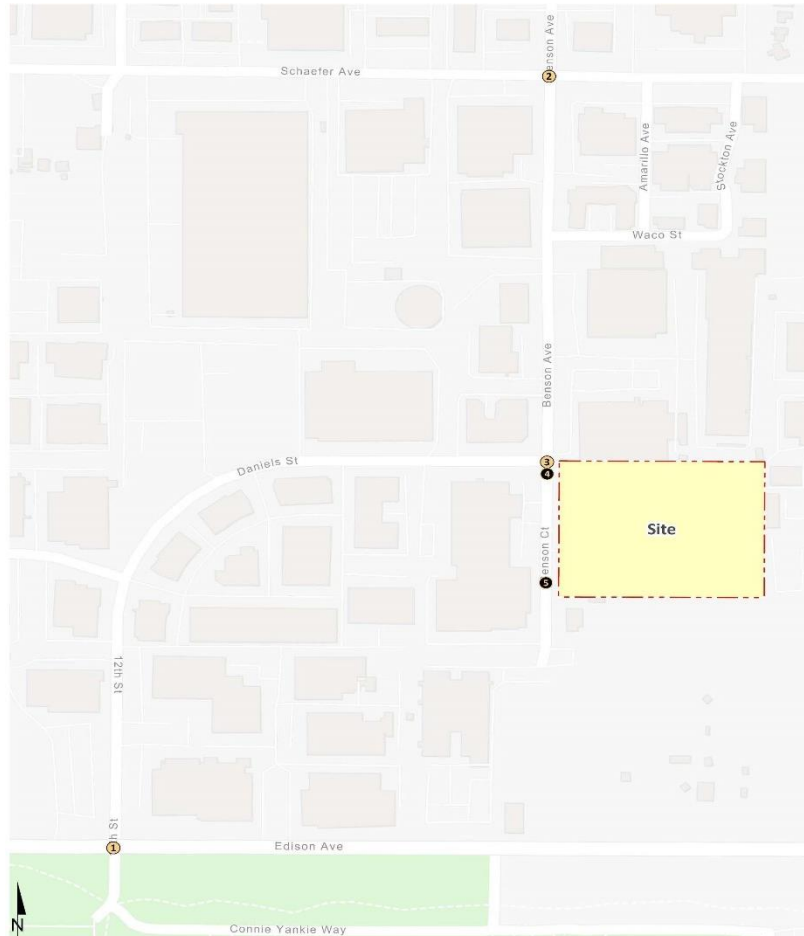
TABLE 5-1: INTERSECTION ANALYSIS FOR E+P CONDITIONS

#	Intersection	Traffic Control ²	Existing (2023)				E+P			
			Delay ¹ (secs.)		Level of Service		Delay ¹ (secs.)		Level of Service	
			AM	PM	AM	PM	AM	PM	AM	PM
1	12th St. & Edison Av.	TS	8.4	10.6	A	B	8.7	10.9	A	B
2	Benson Av. & Schaefer Av.	TS	16.7	15.9	B	B	16.0	15.3	B	B
3	Benson Av. & Daniels St.	CSS	10.1	9.7	B	A	10.4	10.3	B	B
4	Benson Av. & Driveway 1	CSS	Future Intersection				8.4	8.5	A	A
5	Benson Av. & Driveway 2	CSS	Future Intersection				8.4	8.4	A	A

Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown. HCM delay reported in seconds.

² TS = Traffic Signal; CSS = Cross-street Stop; **CSS** = Improvement

EXHIBIT 5-1: E+P TRAFFIC VOLUMES (ACTUAL VEHICLES)



1 12th St. & Edison Av.		2 Benson Av. & Schaefer Av.		3 Benson Av. & Daniels St.	
2,200	21,050	5,900	28,350	2,650	100
↓ 35(89) ↓ 14(35) ↓ 5(40) ↑ 45(13) ↑ 777(484) ↑ 11(30)	↑ 45(13) ↑ 777(484) ↑ 11(30)	↓ 105(84) ↓ 56(33) ↓ 66(59) ↑ 88(35) ↑ 984(509) ↑ 41(11)	↑ 88(35) ↑ 984(509) ↑ 41(11)	↓ 57(54) ↓ 137(6) ↓ 1(0) ↑ 0(3) ↑ 0(3)	↑ 0(3) ↑ 0(3)
67(22) →	↑ 11(39)	80(96) →	↑ 23(39)	17(92) →	↑ 6(16)
396(748) →	↑ 7(6)	464(1107) →	↑ 19(66)	0(1) →	↑ 7(19)
17(87) ↓	↑ 2(4)	49(20) ↓	↑ 22(56)	58(4) ↓	
23,450	3,200	29,600	2,750	2,600	1,300
4 Benson Av. & Driveway 1		5 Benson Av. & Driveway 2			
1,300	150	850	200		
↓ 180(6) ↓ 14(3) ↑ 3(13)	↑ 3(13)	↓ 159(1) ↓ 15(4)	↑ 4(14)		
	↑ 11(21) →		↑ 6(2) →		
	1,150		650		

##(##) AM(PM) Peak Hour Intersection Volumes
 ## Average Daily Trips

5.4 TRAFFIC SIGNAL WARRANTS ANALYSIS

The traffic signal warrant analysis for E+P traffic conditions is based on the peak hour volumes or planning level ADT volume-based traffic signal warrants. No study area intersections are anticipated to meet either peak hour volume or ADT volume-based warrants with the addition of Project traffic (see Appendix 5.2).

5.5 ROADWAY SEGMENT ANALYSIS

The roadway capacities utilized for the study area roadway segment analysis are obtained from the City's General Plan. These roadway segment capacities are approximate figures only and are used at the General Plan level to assist in determining the roadway functional classification (number of through lanes) needed to meet traffic demand. Table 5-2 provides a summary of the E+P traffic conditions roadway segment capacity analysis. As shown in Table 5-2, all study area roadway segments are anticipated to continue to operate at an acceptable LOS based on the daily roadway capacity thresholds and minimum LOS criteria.

TABLE 5-2: ROADWAY SEGMENT CAPACITY ANALYSIS FOR E+P CONDITIONS

#	Roadway	Segment Limits	Roadway Section	LOS Capacity ¹	Existing (2023)			E+P		
					Vol	V/C ²	LOS ³	Vol	V/C ²	LOS ³
1	Benson Avenue	Schaefer Av. to Daniels St.	2U	13,000	2,645	0.203	A	2,735	0.210	A
2	Benson Avenue	Daniels St. to southerly terminus	2U	13,000	1,046	0.080	A	1,282	0.099	A
3	Daniels Street/12th Street	Benson Av. to Edison Av.	2U	13,000	2,079	0.160	A	2,221	0.171	A

¹ These maximum roadway capacities are based on the City's General Plan.

² V/C = Volume to Capacity Ratio

³ LOS = Level of Service

5.6 NEAR-TERM DEFICIENCIES AND IMPROVEMENTS

All study area intersections and roadway segments are anticipated to continue to operate at an acceptable LOS during the AM and PM peak hours under E+P traffic conditions. As such, no improvements have been identified for E+P traffic conditions.

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6 OPENING YEAR CUMULATIVE (2026) TRAFFIC CONDITIONS

This section discusses the methods used to develop Opening Year Cumulative (2026) Without and With Project traffic forecasts, and the resulting intersection operations, traffic signal warrant, and roadway segment capacity analyses.

6.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Opening Year Cumulative (2026) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for Opening Year Cumulative conditions only (e.g., intersection and roadway improvements along the Project's frontage and driveways).
- If applicable, driveways and those facilities assumed to be constructed by cumulative developments to provide site access are also assumed to be in place for Opening Year Cumulative conditions only.

6.2 WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes, plus an ambient growth rate of 6.12%, plus traffic from pending and approved but not yet constructed known development projects in the area. The weekday ADT and weekday AM and PM peak hour volumes, in actual vehicles, which can be expected for Opening Year Cumulative (2026) Without Project traffic conditions are shown on Exhibit 6-1.

6.3 WITH PROJECT TRAFFIC VOLUME FORECASTS

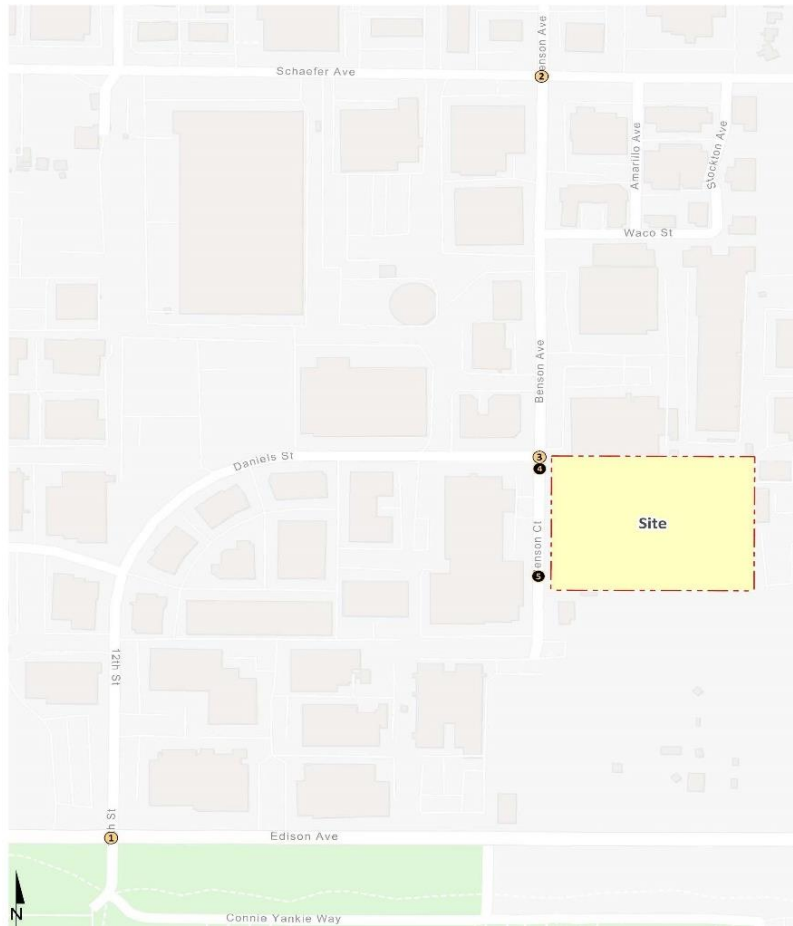
This scenario includes Opening Year Cumulative (2026) Without Project traffic in conjunction with the addition of Project traffic. The weekday ADT and weekday AM and PM peak hour volumes, in actual vehicles, which can be expected for Opening Year Cumulative (2026) With Project traffic conditions are shown on Exhibit 6-2.

6.4 INTERSECTION OPERATIONS ANALYSIS

6.4.1 OPENING YEAR CUMULATIVE (2026) WITHOUT PROJECT TRAFFIC CONDITIONS

LOS calculations were conducted for the study intersections to evaluate their operations under Opening Year Cumulative (2026) Without Project conditions with roadway and intersection geometrics consistent with Section 6.1 *Roadway Improvements*. The intersection analysis results are summarized in Table 6-1 for Opening Year Cumulative (2026) Without Project traffic conditions, which indicate that all of the study area intersections are anticipated to operate at an acceptable LOS under Opening Year Cumulative (2026) Without Project traffic conditions. The intersection operations analysis worksheets for Opening Year Cumulative (2026) Without Project traffic conditions are included in Appendix 6.1 of this TA.

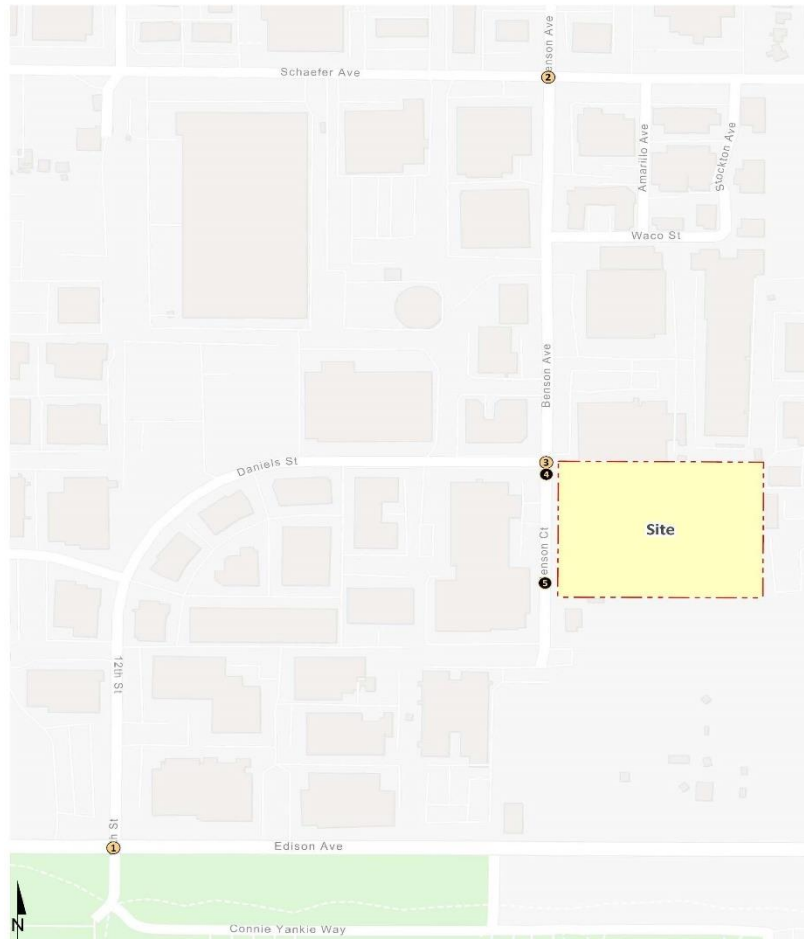
**EXHIBIT 6-1: OPENING YEAR CUMULATIVE (2026) WITHOUT PROJECT TRAFFIC VOLUMES
(ACTUAL VEHICLES)**



1 12th St. & Edison Av.		2 Benson Av. & Schaefer Av.		3 Benson Av. & Daniels St.	
2,200	25,850	6,250	33,700	2,750	100
36(88) ↓ 15(37) ↓ 4(38) ↓ 65(21) ↓ 645(889) ↓ 18(92)	↑ 42(13) ← 896(757) ↓ 12(32) ↑ 12(41) ↑ 7(6) ↑ 2(4)	112(89) ↓ 56(34) ↓ 70(63) ↓ 85(103) ↓ 576(1263) ↓ 46(19)	↑ 93(37) ← 1198(706) ↓ 40(11) ↑ 24(35) ↑ 19(67) ↓ 22(56)	60(57) ↓ 132(4) ↓ 1(0) ↓ 18(98) ↓ 0(1) ↓ 50(0)	↑ 0(3) ← 0(3) ↑ 4(5) ↑ 5(8)
28,350	3,400	35,000	2,800	2,650	1,100
4 Benson Av. & Driveway 1		5 Benson Av. & Driveway 2			
1,100		700			
← 181(4)	→ 10(14)	← 169(1)	→ 6(2)		
	1,100		700		

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

EXHIBIT 6-2: OPENING YEAR CUMULATIVE (2026) WITH PROJECT TRAFFIC VOLUMES (ACTUAL VEHICLES)



1 12th St. & Edson Av.		2 Benson Av. & Schaefer Av.		3 Benson Av. & Daniels St.	
2,350	25,900	6,300	33,750	2,850	100
37(94) ↓	↑ 47(14) ↑ 896(757)	112(89) ↓	↑ 93(37) ↑ 1198(706)	60(57) ↓	↑ 0(3) ↑ 0(3)
15(37) ↓	↓ 12(32)	59(35) ↓	↓ 43(12)	145(6) ↓	1(0) ↓
5(42) ↓	↑ 12(41) ↑ 7(6) ↑ 2(4)	70(63) ↓	↑ 24(41) ↑ 20(70) ↑ 23(59)	1(0) ↓	↑ 6(16) ↑ 7(19)
71(23) ↓	645(889) ↓	85(103) ↓	576(1263) ↓	18(98) ↓	0(1) ↓
18(92) ↓	12(32) ↓	52(21) ↓	24(41) ↓	61(4) ↓	6(16) ↓
28,450	3,400	35,050	2,900	2,750	1,350
4 Benson Av. & Driveway 1		5 Benson Av. & Driveway 2			
1,350	150	900	200		
190(6) ↓	↑ 3(13)	169(1) ↓	↑ 4(14)		
14(3) ↓	↑ 11(21)	15(4) ↓	6(2) ↓		
	1,200		700		

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

TABLE 6-1: INTERSECTION ANALYSIS FOR OPENING YEAR CUMULATIVE (2026) CONDITIONS

#	Intersection	Traffic Control ²	2026 Without Project				2026 With Project			
			Delay ¹ (secs.)		Level of Service		Delay ¹ (secs.)		Level of Service	
			AM	PM	AM	PM	AM	PM	AM	PM
1	12th St. & Edison Av.	TS	8.5	10.9	A	B	8.8	11.2	A	B
2	Benson Av. & Schaefer Av.	TS	17.1	16.2	B	B	17.1	16.4	B	B
3	Benson Av. & Daniels St.	CSS	10.3	9.8	B	A	10.5	10.4	B	B
4	Benson Av. & Driveway 1	CSS	Future Intersection				8.4	8.5	A	A
5	Benson Av. & Driveway 2	CSS	Future Intersection				8.4	8.4	A	A

¹ Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown. HCM delay reported in seconds.

² TS = Traffic Signal; CSS = Cross-street Stop; **CSS** = Improvement

6.4.2 OPENING YEAR CUMULATIVE (2026) WITH PROJECT TRAFFIC CONDITIONS

As shown in Table 6-1, with the addition of Project traffic, there are no study area intersections anticipated to operate at a deficient LOS for Opening Year Cumulative (2026) With Project traffic conditions. The intersection operations analysis worksheets for Opening Year Cumulative (2026) With Project traffic conditions are included in Appendix 6.2 of this TA.

6.5 TRAFFIC SIGNAL WARRANTS ANALYSIS

The traffic signal warrant analysis for Opening Year Cumulative (2026) traffic conditions are based on the peak hour volumes or planning level ADT volume-based traffic signal warrants. No study area intersections are anticipated to meet either peak hour volume or ADT volume-based warrants for Opening Year Cumulative (2026) Without and With Project traffic conditions (see Appendix 6.3 and Appendix 6.4).

6.6 ROADWAY SEGMENT ANALYSIS

The roadway capacities utilized for the study area roadway segment analysis are obtained from the City’s General Plan. These roadway segment capacities are approximate figures only and are used at the General Plan level to assist in determining the roadway functional classification (number of through lanes) needed to meet traffic demand. Table 6-2 provides a summary of the Opening Year Cumulative (2026) traffic conditions roadway segment capacity analysis. As shown in Table 6-2, all study area roadway segments are anticipated to continue to operate at an acceptable LOS based on the daily roadway capacity thresholds and minimum LOS criteria.

TABLE 6-2: ROADWAY SEGMENT CAPACITY ANALYSIS FOR OPENING YEAR CUMULATIVE (2026) CONDITIONS

#	Roadway	Segment Limits	Roadway Section	LOS Capacity ¹	2026 Without Project			2026 With Project		
					Vol	V/C ²	LOS ³	Vol	V/C ²	LOS ³
1	Benson Avenue	Schaefer Av. to Daniels St.	2U	13,000	2,807	0.216	A	2,897	0.223	A
2	Benson Avenue	Daniels St. to southerly terminus	2U	13,000	1,110	0.085	A	1,346	0.104	A
3	Daniels Street/12th Street	Benson Av. to Edison Av.	2U	13,000	2,206	0.170	A	2,348	0.181	A

¹ These maximum roadway capacities are based on the City's General Plan.

² V/C = Volume to Capacity Ratio

³ LOS = Level of Service

6.7 NEAR-TERM DEFICIENCIES AND IMPROVEMENTS

The study area intersections and roadway segments are anticipated to operate at an acceptable LOS for Opening Year Cumulative (2026) Without and With Project traffic conditions. As such, no improvements have been identified.

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7 HORIZON YEAR (2045) TRAFFIC CONDITIONS

This section discusses the methods used to develop Horizon Year (2045) Without and With Project traffic forecasts, and the resulting intersection operations, traffic signal warrant, and roadway segment capacity analyses.

7.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Horizon Year (2045) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for Horizon Year conditions only (e.g., intersection and roadway improvements along the Project's frontage and driveways).
- If applicable, driveways and those facilities assumed to be constructed by cumulative developments to provide site access are also assumed to be in place for Horizon Year conditions only.

7.2 WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes the refined post-process volumes obtained from the SBTAM (see Section 4.7 *Horizon Year (2045) Volume Development* of this TA for a detailed discussion on the post-processing methodology). The weekday ADT and weekday AM and PM peak hour volumes, in actual vehicles, which can be expected for Horizon Year (2045) Without Project traffic conditions are shown on Exhibit 7-1.

7.3 WITH PROJECT TRAFFIC VOLUME FORECASTS

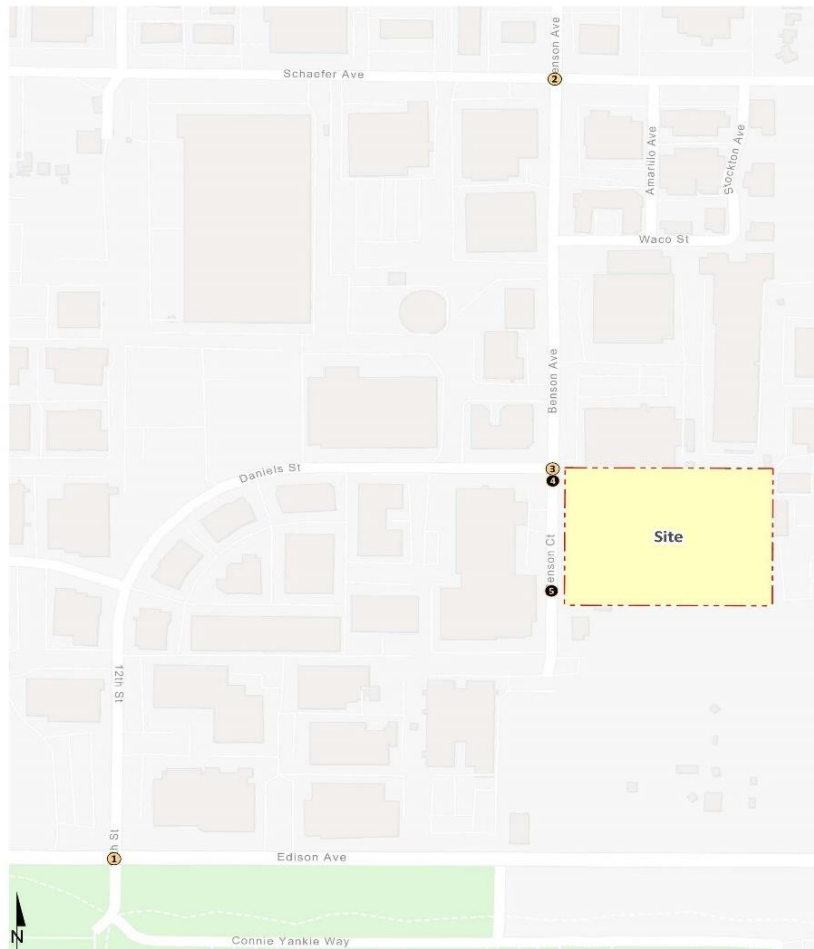
This scenario includes the refined post-process volumes obtained from the SBTAM, plus the traffic generated by the proposed Project. The weekday ADT and weekday AM and PM peak hour volumes, in actual vehicles, which can be expected for Horizon Year (2045) With Project traffic conditions are shown on Exhibit 7-2.

7.4 INTERSECTION OPERATIONS ANALYSIS

7.4.1 HORIZON YEAR (2045) WITHOUT PROJECT TRAFFIC CONDITIONS

LOS calculations were conducted for the study intersections to evaluate their operations under Horizon Year (2045) Without Project conditions with roadway and intersection geometrics consistent with Section 7.1 *Roadway Improvements*. The intersection analysis results are summarized in Table 7-1 for Horizon Year (2045) Without Project traffic conditions, which indicate that all of the study area intersections are anticipated to operate at an acceptable LOS under Horizon Year (2045) Without Project traffic conditions. The intersection operations analysis worksheets for Horizon Year (2045) Without Project traffic conditions are included in Appendix 7.1 of this TA.

EXHIBIT 7-1: HORIZON YEAR (2045) WITHOUT PROJECT TRAFFIC VOLUMES (ACTUAL VEHICLES)

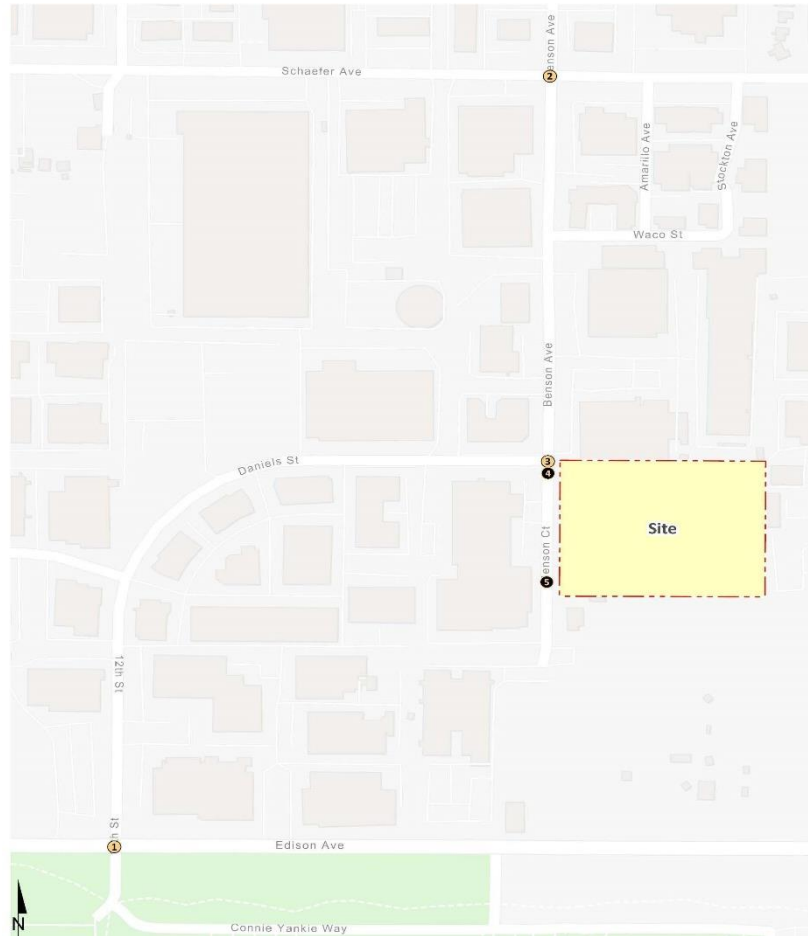


1 12th St. & Edison Av.		2 Benson Av. & Schaefer Av.		3 Benson Av. & Daniels St.	
2,700	37,300	9,800	45,800	3,000	150
↓ 123(106) ← 27(41) ↖ 47(42) ↑ 47(19) ↗ 985(857) ↘ 31(35)	↑ 47(19) ↗ 985(857) ↘ 31(35)	↓ 113(98) ← 56(37) ↖ 77(68) ↑ 97(72) ↗ 1318(741) ↘ 44(18)	↑ 97(72) ↗ 1318(741) ↘ 44(18)	↓ 67(63) ← 145(5) ↖ 1(0) ↑ 0(4) ↗ 0(4)	↑ 0(4) ↗ 0(4)
↖ 71(29) ↗ 1425(1335) ↘ 129(103)	↗ 31(35) ↘ 54(44) ↙ 8(7) ↘ 3(5)	↖ 98(110) ↗ 634(1390) ↘ 46(20)	↗ 44(18) ↘ 25(39) ↙ 21(70) ↘ 24(58)	↖ 20(107) ↗ 0(1) ↘ 55(0)	↖ 5(6) ↗ 6(9)
41,750	3,750	47,750	3,100	2,900	1,200
4 Benson Av. & Driveway 1		5 Benson Av. & Driveway 2			
1,200		750			
← 200(5)	→ 11(15)	← 186(1)	→ 7(2)		
	1,200		750		

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

EXHIBIT 7-2: HORIZON YEAR (2045) WITH PROJECT TRAFFIC VOLUMES (ACTUAL VEHICLES)



1 12th St. & Edison Av.		2 Benson Av. & Schaefer Av.		3 Benson Av. & Daniels St.	
2,850	37,350	9,800	45,850	3,100	150
↓ 124(112) ↓ 27(41) ↓ 48(46) ↑ 52(20) ← 985(857) ↑ 31(35)	↑ 52(20) ← 985(857) ↑ 31(35)	↓ 113(98) ↓ 59(38) ↓ 77(68) ↑ 97(72) ← 1318(741) ↑ 47(19)	↑ 97(72) ← 1318(741) ↑ 47(19)	↓ 67(63) ↓ 158(7) ↓ 1(0) ↑ 0(4) ← 0(4)	↑ 0(4) ← 0(4)
77(31) → 1425(1335) → 129(103) ↓	↑ 54(44) 8(7) 3(5)	98(110) ↓ 634(1390) → 52(22) ↓	↑ 25(45) 22(73) 25(61)	20(107) ↓ 0(1) → 66(4) ↓	↑ 7(17) 8(20)
41,850	3,750	47,800	3,200	3,050	1,450
4 Benson Av. & Driveway 1		5 Benson Av. & Driveway 2			
1,450	150	900	150		
↓ 208(6) ↓ 14(3)	↑ 3(13)	↓ 186(1) ↓ 15(4)	↑ 4(14)		
	12(22) →		7(2) →		
	1,300		750		

##(###) AM(PM) Peak Hour Intersection Volumes
 ## Average Daily Trips

TABLE 7-1: INTERSECTION ANALYSIS FOR HORIZON YEAR (2045) CONDITIONS

#	Intersection	Traffic Control ²	2045 Without Project				2045 With Project			
			Delay ¹ (secs.)		Level of Service		Delay ¹ (secs.)		Level of Service	
			AM	PM	AM	PM	AM	PM	AM	PM
1	12th St. & Edison Av.	TS	12.7	11.3	B	B	12.8	11.6	B	B
2	Benson Av. & Schaefer Av.	TS	17.7	16.8	B	B	17.7	17.0	B	B
3	Benson Av. & Daniels St.	CSS	10.5	10.0	B	B	10.8	10.6	B	B
4	Benson Av. & Driveway 1	CSS	Future Intersection				8.4	8.5	A	A
5	Benson Av. & Driveway 2	CSS	Future Intersection				8.4	8.4	A	A

Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown. HCM delay reported in seconds.

² TS = Traffic Signal; CSS = Cross-street Stop; **CSS** = Improvement

7.4.2 HORIZON YEAR (2045) WITH PROJECT TRAFFIC CONDITIONS

As shown in Table 7-1, with the addition of Project traffic, there are no study area intersections anticipated to operate at a deficient LOS for Horizon Year (2045) With Project traffic conditions. The intersection operations analysis worksheets for Horizon Year (2045) With Project traffic conditions are included in Appendix 7.2 of this TA.

7.5 TRAFFIC SIGNAL WARRANTS ANALYSIS

The traffic signal warrant analysis for Horizon Year (2045) traffic conditions are based on the peak hour volumes or planning level ADT volume-based traffic signal warrants. No study area intersections are anticipated to meet either peak hour volume or ADT volume-based warrants for Horizon Year (2045) Without and With Project traffic conditions (see Appendix 7.3 and Appendix 7.4).

7.6 ROADWAY SEGMENT ANALYSIS

The roadway capacities utilized for the study area roadway segment analysis are obtained from the City’s General Plan. These roadway segment capacities are approximate figures only and are used at the General Plan level to assist in determining the roadway functional classification (number of through lanes) needed to meet traffic demand. Table 7-2 provides a summary of the Horizon Year (2045) traffic conditions roadway segment capacity analysis. As shown in Table 7-2, all study area roadway segments are anticipated to continue to operate at an acceptable LOS based on the daily roadway capacity thresholds and minimum LOS criteria.

TABLE 7-2: ROADWAY SEGMENT CAPACITY ANALYSIS FOR HORIZON YEAR (2045) CONDITIONS

#	Roadway	Segment Limits	Roadway Section	LOS Capacity ¹	2045 Without Project			2045 With Project		
					Vol	V/C ²	LOS ³	Vol	V/C ²	LOS ³
1	Benson Avenue	Schaefer Av. to Daniels St.	2U	13,000	3,088	0.238	A	3,178	0.244	A
2	Benson Avenue	Daniels St. to southerly terminus	2U	13,000	1,221	0.094	A	1,457	0.112	A
3	Daniels Street/12th Street	Benson Av. to Edison Av.	2U	13,000	2,716	0.209	A	2,858	0.220	A

¹ These maximum roadway capacities are based on the City's General Plan.

² V/C = Volume to Capacity Ratio

³ LOS = Level of Service

7.7 LONG-TERM DEFICIENCIES AND IMPROVEMENTS

The study area intersections and roadway segments are anticipated to operate at an acceptable LOS for Horizon Year (2045) Without and With Project traffic conditions. As such, no improvements have been identified.

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8 LOCAL AND REGIONAL FUNDING MECHANISMS

Transportation improvements within the City of Chino are funded through a combination of project mitigation, development impact fee programs or fair share contributions, such as the City of Chino Development Impact Fee (DIF) program. Identification and timing of needed improvements is generally determined through local jurisdictions based upon a variety of factors.

8.1 CITY OF CHINO DEVELOPMENT IMPACT FEE PROGRAM

The City of Chino has created its own local DIF program to impose and collect fees from new residential, commercial, and industrial development for the purpose of funding roadways and intersections necessary to accommodate City growth as identified in the City's General Plan Circulation Element. The City's DIF includes regional improvements to comply with Measure "I". The fee schedule was adopted in February 2022. The fee schedule and project transportation impacts fees are shown in Table 8-1. Under the City's DIF program, the City may grant developers a credit against specific components of fees when those developers construct certain facilities and landscaped medians identified in the list of improvements funded by the DIF program.

TABLE 8-1: CURRENT DEVELOPMENT IMPACT FEES

Fee Reference	Cost
Circulation (Streets, Signals, and Bridges) System:	
Industrial Uses	2.31/SF

The timing to use the DIF fees is established through periodic capital improvement programs which are overseen by the City's Public Works Department. Periodic traffic counts, review of traffic accidents, and a review of traffic trends throughout the City are also periodically performed by City staff and consultants. The City uses this data to determine the timing of implementing the improvements listed in its facilities list. The City also uses this data to ensure that the improvements listed on the facilities list are constructed before the LOS falls below the LOS performance standards adopted by the City. In this way, the improvements are constructed before the LOS falls below the City's LOS performance thresholds.

The Project Applicant will be subject to the City's DIF fee program and will pay the requisite City DIF fees at the rates in effect at the time the vesting map is deemed complete. The Project Applicant's payment of the requisite DIF at the rates, pursuant to the City DIF Program, would satisfy the Project's proportional mitigation requirements at potentially affected DIF-funded facilities.

8.2 MEASURE "I" FUNDS

In 2004, the voters of San Bernardino County approved the 30-year extension of Measure "I", a one-half of one percent sales tax on retail transactions, through the year 2045, for transportation projects including, but not limited to, infrastructure improvements, commuter rail, public transit, and other identified improvements. The Measure "I" extension requires that a regional traffic impact fee be created to ensure development is paying its fair share. A regional Nexus study was prepared by San Bernardino County Transportation Authority (SBCTA) and concluded that each jurisdiction should include a regional fee component in their local programs in order to meet the Measure "I" requirement. The regional component assigns specific facilities and cost sharing formulas to each jurisdiction and was most recently updated in March 2021. Revenues collected through these programs are used in tandem with Measure "I" funds to deliver projects identified in the Nexus Study. While Measure "I" is a self-executing sales tax administered by SBCTA, it bears discussion here because the funds raised through Measure "I" have funded in the past and will continue to fund new transportation facilities in San Bernardino County.

9 REFERENCES

1. **City of Chino.** *City of Chino Traffic Impact Analysis Guidelines*. Chino : s.n., December 2020.
2. **San Bernardino Associated Governments.** *County of San Bernardino Congestion Management Program*. County of San Bernardino : s.n., June 2016, 2021 Update.
3. **Institute of Transportation Engineers.** *Trip Generation Manual*. 11th Edition. 2021.
4. **Transportation Research Board.** *Highway Capacity Manual (HCM)*. 6th Edition. s.l. : National Academy of Sciences, 2016.
5. **California Department of Transportation.** California Manual on Uniform Traffic Control Devices (CA MUTCD). [book auth.] California Department of Transportation. *California Manual on Uniform Traffic Control Devices (CA MUTCD)*. 2014, Updated March 30, 2021 (Revision 6).
6. **City of Chino.** *Envision Chino: General Plan 2025*. City of Chino : Design, Community & Environment, July 2010.
7. —. *City of Chino Bicycle and Pedestrian Master Plan*. Chino : s.n., Final Report 2016 (Adopted January 2016).
8. **Southern California Association of Governments.** *Demographics and Growth Forecast Technical Report*. SCAG : s.n., Adopted on September 3, 2020.

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APPENDIX 1.1: APPROVED TRAFFIC STUDY SCOPING AGREEMENT

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DATE: August 3, 2023
TO: Dennis Ralls, City of Chino
FROM: Charlene So, Urban Crossroads
JOB NO: 15460-01 TA Scope

13925 BENSON AVENUE TRAFFIC STUDY SCOPING AGREEMENT

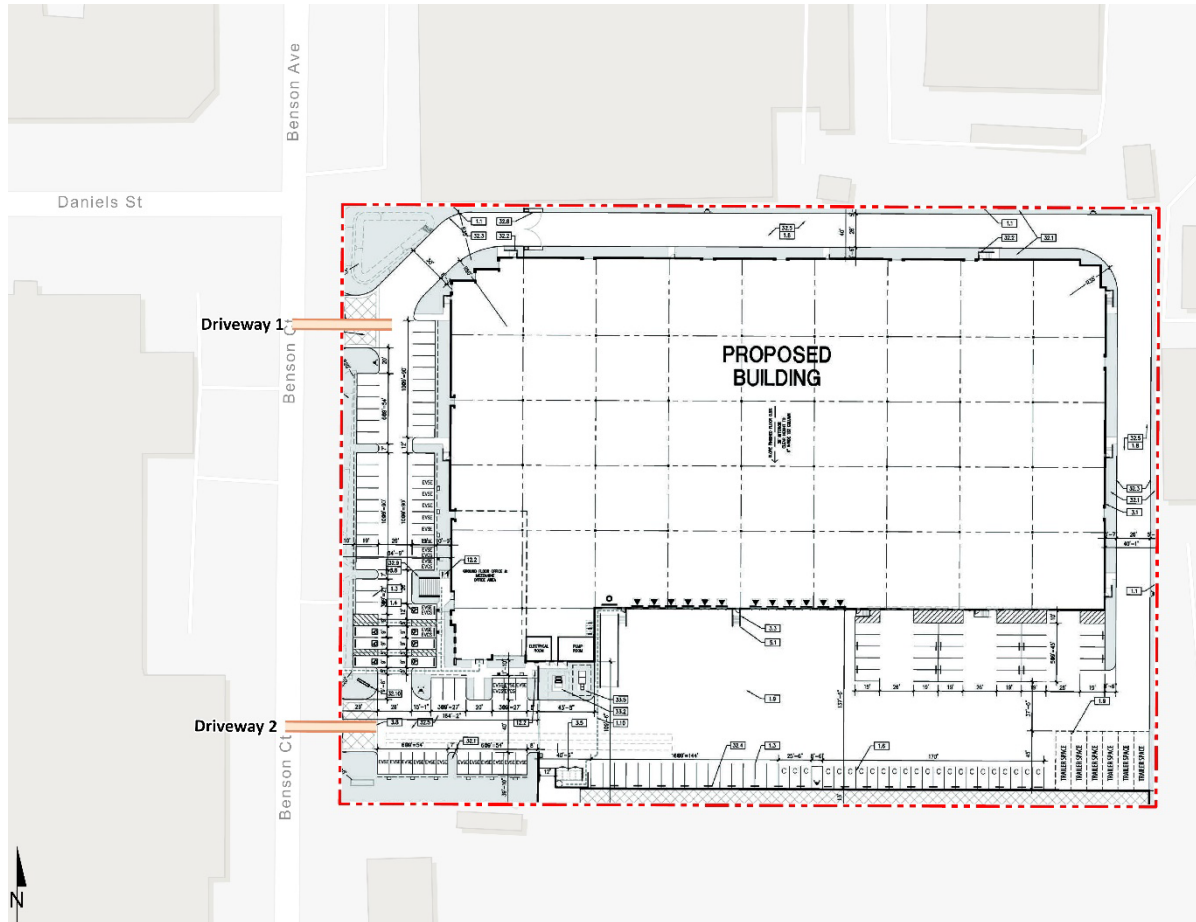
Urban Crossroads, Inc. is pleased to submit the following Traffic Study Scoping Agreement for the proposed 13925 Benson Avenue development (**Project**), which is located in the City of Chino. This letter describes the proposed Project trip generation, trip distribution, and analysis methodology, which have been used to establish the draft proposed Project study area and analysis locations. The following scope of work is based on the City of Chino's Traffic Impact Analysis Guidelines (dated December 2020) (**City Guidelines**).

EXISTING USE & PROPOSED PROJECT

The existing 6.62-acre site is currently occupied by AmCo Structures, a manufacturer of modular commercial and residential buildings. It is our understanding that the Project includes the development of a 145,500 square foot warehouse building (includes the 6,000 square foot office). There are two driveways on Benson Avenue for site access similar to the existing use. All driveways are proposed to have full access. A preliminary site plan for the proposed Project is shown in Exhibit 1. The Project is anticipated to have an opening year of 2026.



EXHIBIT 1: PRELIMINARY SITE PLAN



TRIP GENERATION

EXISTING TRAFFIC

As noted previously, the existing 6.62-acre site is currently occupied by AmCo Structures. In an effort to understand the existing traffic associated with the current use, traffic counts were collected at the driveways on Tuesday, March 7th through Thursday, March 9th, 2023. Attachment A includes the driveway count data. Table 1 summarizes the trip generation by day and the average existing trip generation based on the count data collected over three days. The existing site currently generates an average of 96 two-way trips per day, with 8 trips during the AM peak hour and 6 trips during the PM peak hour (in actual vehicles).

Passenger car equivalent (PCE) factors were applied to the trip generation rates for heavy trucks (large 2-axes, 3-axes, 4+-axes). PCEs allow the typical “real-world” mix of vehicle types to be represented as a single, standardized unit, such as the passenger car, to be used for the purposes of capacity and level of service analyses. The PCE factors are consistent with the recommended PCE factors in the City’s Guidelines. The existing site currently generates an average of 105 two-way PCE trips per day, with 9 PCE trips during the AM peak hour and 6 PCE trips during the PM peak hour.

TABLE 1: EXISTING TRIP GENERATION SUMMARY

Land Use	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	
Actual Vehicles:							
Existing Use							
Passenger Cars:	5	2	7	1	5	6	87
2-axle Trucks:	0	0	0	0	0	0	4
3-axle Trucks:	1	0	1	0	0	0	3
4+-axle Trucks:	0	0	0	0	0	0	2
Total Truck Trips (Actual Vehicles):	1	0	1	0	0	0	9
Total Trips (Actual Vehicles)²	6	2	8	1	5	6	96
Passenger Car Equivalent (PCE):							
Existing Use							
Passenger Cars:	5	2	7	1	5	6	87
2-axle Trucks (PCE = 1.5):	0	0	0	0	0	0	6
3-axle Trucks (PCE = 2.0):	2	0	2	0	0	0	6
4+-axle Trucks (PCE = 3.0):	0	0	0	0	0	0	6
Total Truck Trips (PCE):	2	0	2	0	0	0	18
Total Trips (PCE)²	7	2	9	1	5	6	105

¹ TSF = thousand square feet

² Total Trips = Passenger Cars + Truck Trips.

PROPOSED PROJECT

The proposed Project is a single 145,500 square foot warehouse building. In order to develop the traffic characteristics of the proposed Project, trip-generation statistics published in the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition, 2021) was used for the proposed Project. The Project has been evaluated assuming a mix of general light industrial and general warehousing use for the purpose of calculating a conservative (worst-case) trip generation for the proposed warehouse use. Table 2 summarizes the trip generation rates. For purposes of this assessment, the following land uses and vehicle mixes have been utilized:

- ITE land use code 110 (General Light Industrial) has been used to derive site specific trip generation estimates for up to 21,825 square feet of the proposed Project (or 15% of the total building square footage). A light industrial facility is a free-standing facility devoted to a single use that has an emphasis on activities other than manufacturing. Typically, there is minimum office space. The vehicle mix has also been obtained from the ITE's Trip Generation Manual. The truck percentages were further broken down by axle type per the following South Coast Air Quality Management District (SCAQMD) recommended truck mix: 2-Axle = 16.7%; 3-Axle = 20.7%; 4+-Axle = 62.6%.
- ITE land use code 150 (Warehousing) has been used to derive site specific trip generation estimates for up to 101,850 square feet of the proposed Project (or 15% of the total building square footage). A warehouse is primarily devoted to the storage of materials but may also include office and maintenance areas. The vehicle mix has been obtained from the ITE's Trip Generation Manual. The truck percentages were further broken down by axle type per the following SCAQMD recommended truck mix: 2-Axle = 16.7%; 3-Axle = 20.7%; 4+-Axle = 62.6%.
- ITE land use code 157 (High-Cube Cold Storage Warehouse) has been used to derive site specific trip generation estimates for up to 21,825 square feet (remaining 15% of the total building square footage). High-cube cold storage warehouses include warehouses characterized by the storage and/or consolidation of manufactured goods (and to a lesser extent, raw materials) prior to their distribution to retail locations or other warehouses. High-cube cold storage warehouses are facilities typified by temperature-controlled environments for frozen food or other perishable products. The High-Cube Cold Storage Warehouse vehicle mix (passenger cars versus trucks) has been obtained from the ITE's Trip Generation Manual. The truck percentages were further broken down by axle type per the following SCAQMD recommended truck mix: 2-Axle = 34.7%; 3-Axle = 11.0%; 4+-Axle = 54.3%.

TABLE 2: TRIP GENERATION RATES

Land Use ¹	Units ²	ITE LU Code	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Actual Vehicle Trip Generation Rates									
General Light Industrial ³	TSF	110	0.651	0.089	0.740	0.091	0.559	0.650	4.870
Passenger Cars (AM=98.6%, PM=98.5%, Daily=94.9%)			0.645	0.085	0.730	0.086	0.554	0.640	4.620
2-Axle Trucks (AM=0.23%, PM=0.25%, Daily=0.85%)			0.001	0.001	0.002	0.001	0.001	0.002	0.042
3-Axle Trucks (AM=0.29%, PM=0.31%, Daily=1.05%)			0.001	0.001	0.002	0.001	0.001	0.002	0.052
4+-Axle Trucks (AM=0.88%, PM=0.94%, Daily=3.20%)			0.004	0.002	0.006	0.003	0.003	0.006	0.157
Warehousing ³	TSF	150	0.131	0.039	0.170	0.050	0.130	0.180	1.710
Passenger Cars (AM=88.2%, PM=83.3%, Daily=64.9%)			0.120	0.030	0.150	0.034	0.116	0.150	1.110
2-Axle Trucks (AM=1.97%, PM=2.79%, Daily=5.86%)			0.002	0.001	0.003	0.003	0.002	0.005	0.100
3-Axle Trucks (AM=2.44%, PM=3.46%, Daily=7.27%)			0.002	0.002	0.004	0.003	0.003	0.006	0.124
4+-Axle Trucks (AM=7.39%, PM=10.45%, Daily=21.97%)			0.007	0.006	0.013	0.010	0.009	0.019	0.376
High-Cube Cold Storage Warehouse ³	TSF	157	0.085	0.025	0.110	0.034	0.086	0.120	2.120
Passenger Cars (AM=72.7%, PM=75.0%, Daily=64.6%)			0.076	0.004	0.080	0.019	0.071	0.090	1.370
2-Axle Trucks (AM=9.5%, PM=8.7%, Daily=12.3%)			0.003	0.007	0.010	0.005	0.005	0.010	0.260
3-Axle Trucks (AM=3.0%, PM=2.8%, Daily=3.9%)			0.001	0.002	0.003	0.002	0.001	0.003	0.083
4+-Axle Trucks (AM=14.8%, PM=13.6%, Daily=19.2%)			0.005	0.011	0.016	0.008	0.008	0.016	0.407
Passenger Car Equivalent (PCE) Trip Generation Rates⁶									
General Light Industrial ³	TSF	110	0.651	0.089	0.740	0.091	0.559	0.650	4.870
Passenger Cars			0.645	0.085	0.730	0.086	0.554	0.640	4.620
2-Axle Trucks (PCE = 1.5)			0.002	0.001	0.003	0.002	0.001	0.003	0.063
3-Axle Trucks (PCE = 2.0)			0.002	0.002	0.004	0.002	0.002	0.004	0.104
4+-Axle Trucks (PCE = 3.0)			0.012	0.007	0.019	0.009	0.010	0.019	0.470
Warehousing ³	TSF	150	0.131	0.039	0.170	0.050	0.130	0.180	1.710
Passenger Cars			0.120	0.030	0.150	0.034	0.116	0.150	1.110
2-Axle Trucks (PCE = 1.5)			0.003	0.002	0.005	0.005	0.003	0.008	0.150
3-Axle Trucks (PCE = 2.0)			0.004	0.004	0.008	0.006	0.006	0.012	0.248
4+-Axle Trucks (PCE = 3.0)			0.021	0.017	0.038	0.030	0.026	0.056	1.127
High-Cube Cold Storage Warehouse ³	TSF	157	0.085	0.025	0.110	0.034	0.086	0.120	2.120
Passenger Cars			0.076	0.004	0.080	0.019	0.071	0.090	1.370
2-Axle Trucks (PCE = 1.5)			0.005	0.011	0.016	0.008	0.008	0.016	0.390
3-Axle Trucks (PCE = 2.0)			0.002	0.005	0.007	0.004	0.003	0.007	0.165
4+-Axle Trucks (PCE = 3.0)			0.015	0.034	0.049	0.024	0.025	0.049	1.222

¹ Trip Generation & Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

² TSF = thousand square feet

³ Truck Mix: South Coast Air Quality Management District's (SCAQMD) recommended truck mix, by axle type.

Normalized % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks.

Normalized % - With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks.

The trip generation summary illustrating daily and peak hour trip generation estimates for the proposed Project are summarized on Table 3 in actual vehicles. The proposed Project is anticipated to generate 332 two-way trips per day with 35 AM peak hour trips and 34 PM peak hour trips (actual vehicles). Any intersection operations analysis for a project would need to utilize the PCE trip generation consistent with the City's Guidelines. As such, the Project's trip generation in PCE has been provided on Table 4. The Project is anticipated to generate 460 two-way PCE trips per day with 38 PCE AM peak hour trips and 42 PCE PM peak hour trips.

TABLE 3: PROJECT TRIP GENERATION SUMMARY (ACTUAL VEHICLES)

Land Use	Quantity Units ¹	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Actual Vehicles:								
General Light Industrial (15%)	21.825 TSF							
Passenger Cars:		14	2	16	2	12	14	100
2-axle Trucks:		0	0	0	0	0	0	2
3-axle Trucks:		0	0	0	0	0	0	2
4+-axle Trucks:		0	0	0	0	0	0	4
Total Truck Trips (Actual Vehicles):		0	0	0	0	0	0	8
Total Trips (Actual Vehicles) ²		14	2	16	2	12	14	108
Warehousing (70%)	101.850 TSF							
Passenger Cars:		12	3	15	4	12	16	114
2-axle Trucks:		0	0	0	0	0	0	10
3-axle Trucks:		0	0	0	0	0	0	14
4+-axle Trucks:		1	1	2	1	1	2	38
Total Truck Trips (Actual Vehicles):		1	1	2	1	1	2	62
Total Trips (Actual Vehicles) ²		13	4	17	5	13	18	176
High-Cube Cold Storage Warehouse (15%)	21.825 TSF							
Passenger Cars:		2	0	2	0	2	2	30
2-axle Trucks:		0	0	0	0	0	0	6
3-axle Trucks:		0	0	0	0	0	0	2
4+-axle Trucks:		0	0	0	0	0	0	10
Total Truck Trips (Actual Vehicles):		0	0	0	0	0	0	18
Total Trips (Actual Vehicles) ²		2	0	2	0	2	2	48
Passenger Cars		28	5	33	6	26	32	244
Trucks		1	1	2	1	1	2	88
Total Trips (Actual Vehicles)²		29	6	35	7	27	34	332

¹ TSF = thousand square feet

² Total Trips = Passenger Cars + Truck Trips.

TABLE 4: PROJECT TRIP GENERATION SUMMARY (PCE)

Land Use	Quantity Units ¹	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Passenger Car Equivalent (PCE):								
General Light Industrial (15%)	21.825 TSF							
Passenger Cars:		14	2	16	2	12	14	102
2-axle Trucks:		0	0	0	0	0	0	2
3-axle Trucks:		0	0	0	0	0	0	2
4+-axle Trucks:		0	0	0	0	0	0	10
Total Truck Trips (PCE):		0	0	0	0	0	0	14
Total Trips (PCE) ²		14	2	16	2	12	14	116
Warehousing (70%)								
Passenger Cars:	101.850 TSF	12	3	15	4	12	16	114
2-axle Trucks:		0	0	0	0	0	0	16
3-axle Trucks:		0	0	0	1	1	2	26
4+-axle Trucks:		2	2	4	3	3	6	116
Total Truck Trips (PCE):		2	2	4	4	4	8	158
Total Trips (PCE) ²		14	5	19	8	16	24	272
High-Cube Cold Storage Warehouse (15%)								
Passenger Cars:	21.825 TSF	2	0	2	0	2	2	30
2-axle Trucks:		0	0	0	0	0	0	10
3-axle Trucks:		0	0	0	0	0	0	4
4+-axle Trucks:		0	1	1	1	1	2	28
Total Truck Trips (PCE):		0	1	1	1	1	2	42
Total Trips (PCE) ²		2	1	3	1	3	4	72
Passenger Cars		28	5	33	6	26	32	246
Trucks		2	3	5	5	5	10	214
Total Trips (PCE)²		30	8	38	11	31	42	460

¹ TSF = thousand square feet

² Total Trips = Passenger Cars + Truck Trips.

TRIP GENERATION COMPARISON

Table 5 shows the trip generation comparison between the existing use and proposed Project and identifies the resulting net change in trips. As shown, the Project is anticipated to generate 355 additional two-way PCE trips per day with 29 net new PCE AM peak hour trips and 36 net new PCE PM peak hour trips as compared to the existing use. The trip generation comparison has been presented in both actual vehicles and PCE as other technical studies require the use of the actual vehicles, while any peak hour intersection operations analysis would be required to use the PCE-based trip generation.

TABLE 5: TRIP GENERATION COMPARISON

Land Use	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	
Existing (Actual Vehicles)	6	2	8	1	5	6	96
Proposed (Actual Vehicles)	29	6	35	7	27	34	332
Net New Project Trips (Actual Vehicles)	23	4	27	6	22	28	236
Existing (PCE)	7	2	9	1	5	6	105
Proposed (PCE)	30	8	38	11	31	42	460
Net New Project Trips (PCE)	23	6	29	10	26	36	355

TRIP DISTRIBUTION

The Project trip distribution represents the directional orientation of traffic to and from the Project site. Trip distribution is the process of identifying the probable destinations, directions or traffic routes that will be utilized by Project traffic. The potential interaction between the planned land uses and surrounding regional access routes are considered, to identify the route where the Project traffic would distribute. Exhibits 2 and 3 show the Project truck and passenger car trip distribution patterns, respectively. The truck trip distribution patterns utilize the surrounding City truck routes: Schaefer Avenue, Edison Avenue, and Central Avenue.

EXHIBIT 2: PROJECT (TRUCK) TRIP DISTRIBUTION

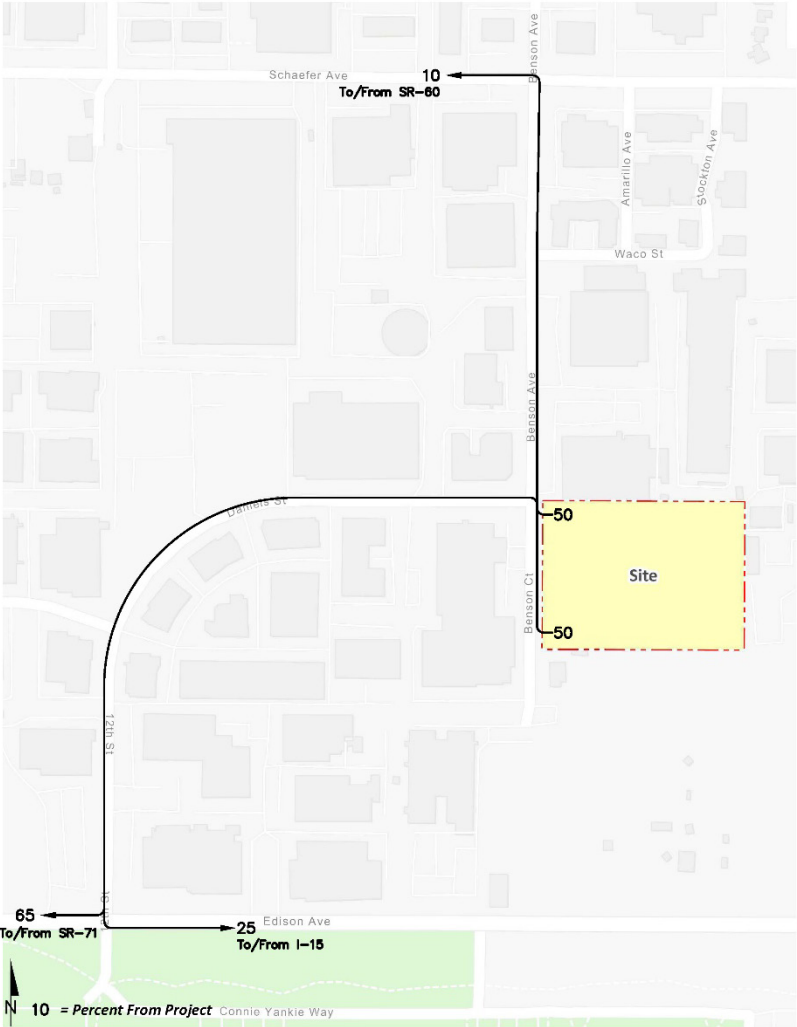
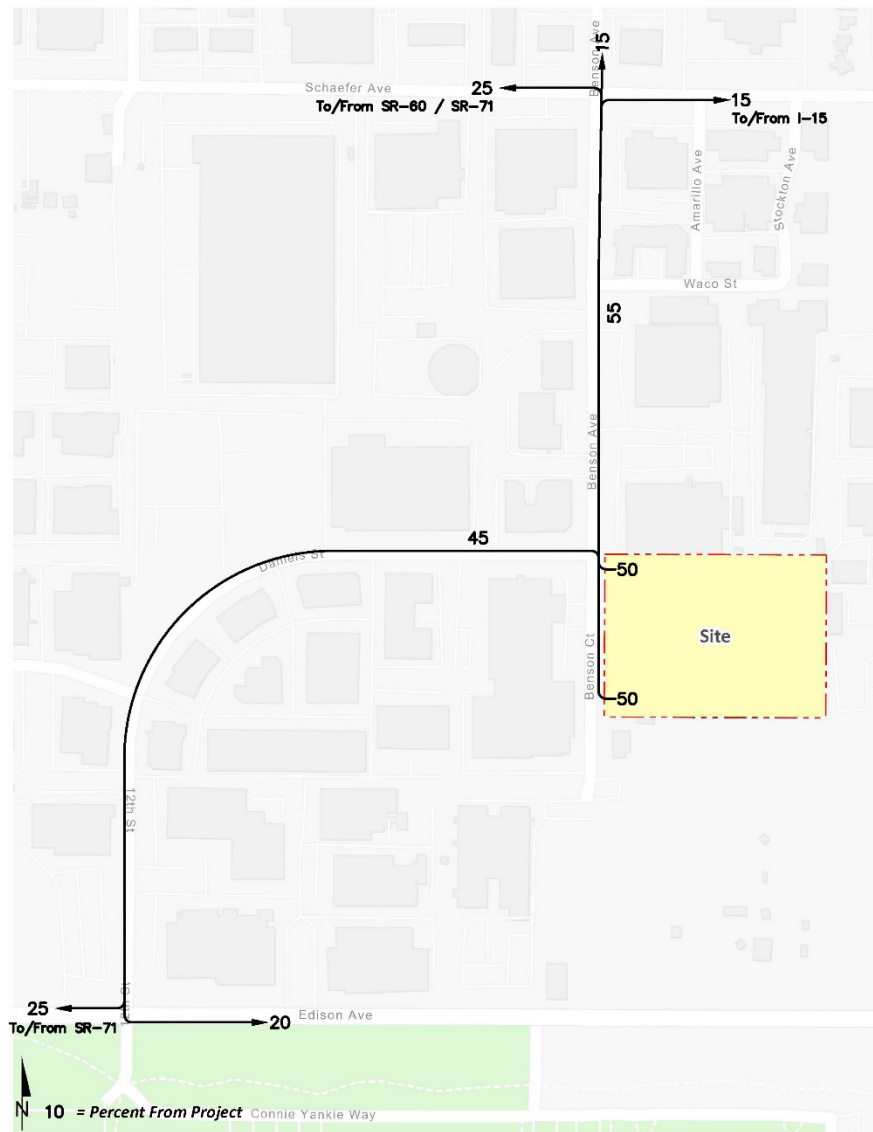


EXHIBIT 3: PROJECT (PASSENGER CAR) TRIP DISTRIBUTION



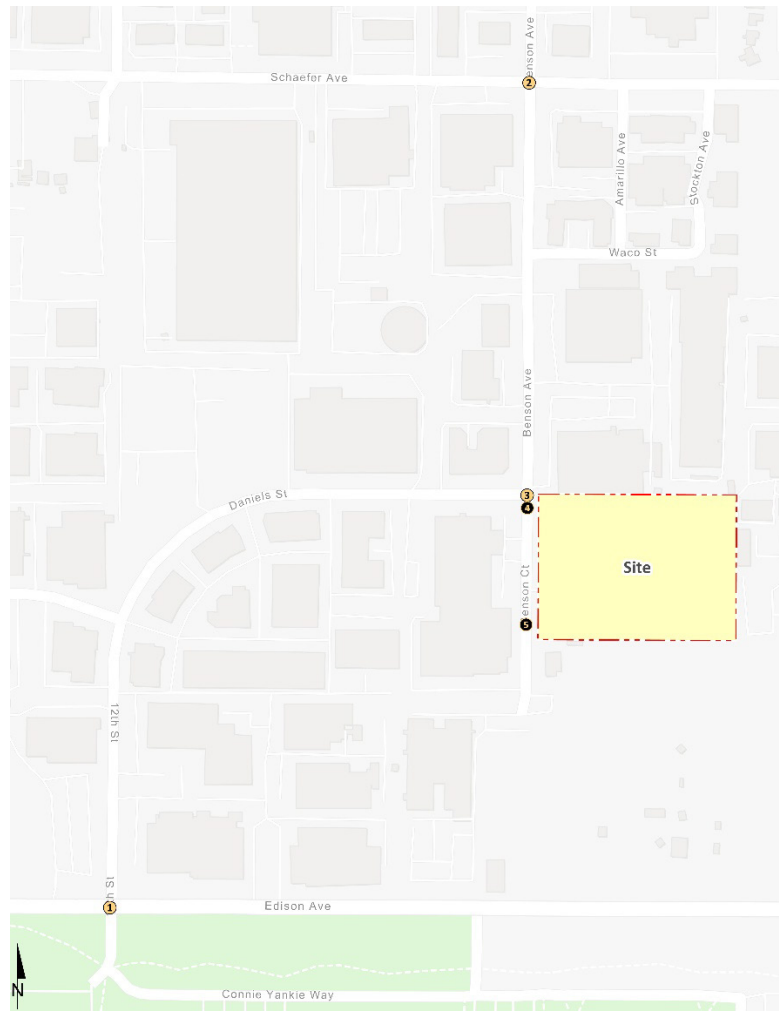
ANALYSIS SCENARIOS

Consistent with the City's Guidelines, intersection analysis will be provided for the following analysis scenarios:

- Existing (2023) Conditions
- Existing plus Project Conditions
- Opening Year Cumulative (2026) Without Project Conditions
- Opening Year Cumulative (2026) With Project conditions
- Horizon Year (2045) Without Project Conditions
- Horizon Year (2045) With Project Conditions

All study area intersections will be evaluated using the Highway Capacity Manual (HCM) 6th Edition analysis methodology. The study area that is proposed to be evaluated is shown on Exhibit 4. The study area intersections are based on input from City staff.

EXHIBIT 4: STUDY AREA



#	Intersection
1	12th St. & Edison Av.
2	Benson Av. & Schaefer Av.
3	Benson Av. & Daniels St.
4	Benson Av. & Driveway 1
5	Benson Av. & Driveway 2

Roadway segment analysis will also be evaluated for the following locations:

- Benson Avenue, Schaefer Avenue to Daniels Street
- Benson Avenue, Daniels Street to southerly terminus
- Daniels Street/12th Street, Benson Avenue to Edison Avenue

AMBIENT GROWTH

Pursuant to discussion with City staff and consistent with other studies performed in the area, an ambient growth rate of 2% per year is proposed for the study area intersection to approximate background growth not identified by nearby cumulative development projects. As such, a total of 6.12% will be applied to the baseline.

EXISTING COUNT DATA

We are proposing to conduct new traffic counts on a typical weekday when local schools are back in session for the 2023-2024 School Year and operating on normal bell schedules. The local schools are anticipated to be back after August 7, 2023. No additional adjustments are proposed for the purpose of establishing the existing baseline conditions. The traffic counts will be collected once the scoping agreement has been approved by City staff and will be collected for the following peak hours:

- Weekday AM Peak Hour (6-9 AM)
- Weekday PM Peak Hour (4-7 PM)

CUMULATIVE PROJECTS

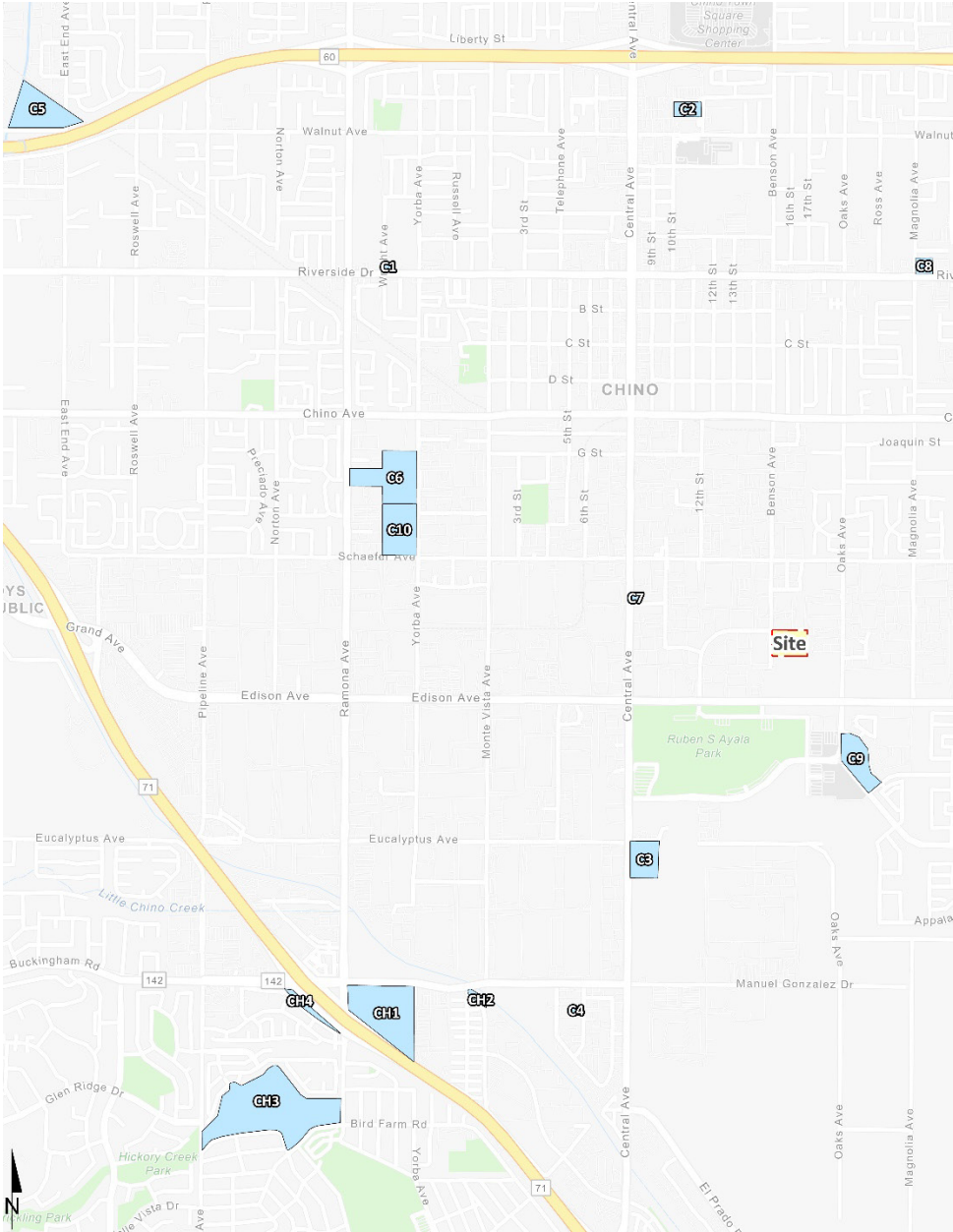
It is requested that the City provide a list of cumulative projects in the immediate vicinity with applicable land use and intensity information for inclusion in our traffic study. A preliminary list of cumulative development projects is provided on Table 6 and the locations are depicted on Exhibit 5.

TABLE 6: SUMMARY OF CUMULATIVE DEVELOPMENT PROJECTS

#	Project/Location	Land Use	Quantity Units ¹
City of Chino			
C1	4416 Riverside Drive	Fast-Food Restaurant with Drive-Thru	4.925 TSF
C2	PL18-0057	Assisted Living Facility	110.02 TSF
C3	NWC Eucalyptus Avenue and Central Avenue	General Light Industrial	49.592 TSF
C4	15022 La Palma	General Light Industrial	15.460 TSF
C5	East End and County Industrial	High-Cube Fulfillment Center Warehouse	212.251 TSF
		Industrial Park	55.534 TSF
C6	13404 Yorba Avenue	General Light Industrial	325.300 TSF
	13461 Ramona Avenue	Office Building	59.798 TSF
C7	5319 Anderson Street	Office Building	16.000 TSF
		Retail Building	6.435 TSF
C8	6132 Riverside Drive	Drive-Thru Car Wash	3.605 TSF
		Drive-Thru Restaurant	2.312 TSF
		Church	27.000 TSF
C9	The Campus at College Park	General Office	16.969 TSF
		Commercial Retail	17.785 TSF
		High Turnover (Sit-Down) Restaurant	15.876 TSF
		Warehousing	284.73 TSF
C10	13610 Yorba Avenue	Warehousing	284.73 TSF
City of Chino Hills			
CH1	The Common at Chino Hills - Farou Foods Restaurant	Restaurant	6.000 TSF
CH2	GoStoreIt Self-Storage	Self-Storage	106.315 TSF
CH3	Rancho Cielito	Multifamily Housing (Low-Rise)	166 DU
		Multifamily Housing (Mid-Rise)	188 DU
CH4	Reserve at Chino Hills Apartment Complex	Apartments	42 DU

¹ TSF = Thousand Square Feet; DU = Dwelling Unit

EXHIBIT 5: CUMULATIVE DEVELOPMENT PROJECT LOCATION MAP



SPECIAL ISSUES

The following special issues will also be addressed:

- Traffic Signal Warrant Analysis: Traffic signal warrant analysis will be performed for all full-access unsignalized study area intersections utilizing the California MUTCD peak-hour warrants for existing intersections, and the Caltrans daily (Planning level) warrant for new intersections.

- Site Access Evaluation: The turn pocket lengths will be determined through peak hour traffic simulations developed using Synchro and SimTraffic software in an effort to identify the required storage capacity for turn lanes at each Project driveway. Queuing analysis will also include the intersection of Benson Avenue and Daniels Street.
- Queuing Analysis: In addition to the queuing analysis at the Project driveways identified above, queuing will also be evaluated at the intersections of Benson Avenue at Schaefer Avenue and 12th Street at Edison Avenue to ensure turn pocket lengths can accommodate the 95th percentile peak hour queues.
- Non-Vehicular Circulation: Include a discussion of bicycle and pedestrian connectivity and will be implemented with the development of the Project.
- Truck Turn Movements: Truck turning movements at applicable project driveways that will be utilized by heavy trucks will be included in the Traffic Study.
- Truck Route Management: Discuss how the Project will help to ensure trucks to and from the Project will be informed of official truck routes to reduce impacts to surrounding sensitive land uses.
- Vehicle Miles Traveled (VMT): A VMT analysis will be prepared under separate cover.

If you have any questions or comments, I can be reached at cs@urbanxroads.com.

ATTACHMENT A: EXISTING DRIVEWAY COUNTS

Land Use	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	
Day 1: March 7, 2023							
Passenger Cars:	7	2	9	1	4	5	90
2-axle Trucks:	0	0	0	0	0	0	4
3-axle Trucks:	1	1	2	0	0	0	4
4+-axle Trucks:	0	0	0	0	0	0	2
Total Truck Trips:	1	1	2	0	0	0	10
Total Trips ¹	8	3	11	1	4	5	100
Day 2: March 8, 2023							
Passenger Cars:	4	1	5	1	5	6	83
2-axle Trucks:	0	1	1	0	0	0	5
3-axle Trucks:	1	0	1	0	0	0	2
4+-axle Trucks:	0	0	0	0	0	0	2
Total Truck Trips:	1	1	2	0	0	0	9
Total Trips ¹	5	2	7	1	5	6	92
Day 3: March 9, 2023							
Passenger Cars:	4	2	6	0	5	5	87
2-axle Trucks:	0	0	0	0	0	0	4
3-axle Trucks:	1	0	1	0	0	0	2
4+-axle Trucks:	0	0	0	0	0	0	2
Total Truck Trips:	1	0	1	0	0	0	8
Total Trips ¹	5	2	7	0	5	5	95
3-Day Average Trip Generation:							
Passenger Cars:	5	2	7	1	5	6	87
2-axle Trucks:	0	0	0	0	0	0	4
3-axle Trucks:	1	0	1	0	0	0	3
4+-axle Trucks:	0	0	0	0	0	0	2
Total Truck Trips:	1	0	1	0	0	0	9
Total Trips¹	6	2	8	1	5	6	96

* Note: data collected on March 7 - 9, 2023

¹ Total Trips = Passenger Cars + Total Truck Trips.



City: Chino
 Location: 13925 Benson Ave
 Date: Tuesday, March 7, 2023
 Count Type: 24 Hour Classified Driveway Count

	Entering				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
0:00	0	0	0	0	0
0:15	0	0	0	0	0
0:30	0	0	0	0	0
0:45	0	0	0	0	0
1:00	0	0	0	0	0
1:15	0	0	0	0	0
1:30	0	0	0	0	0
1:45	0	0	0	0	0
2:00	0	0	0	0	0
2:15	0	0	0	0	0
2:30	1	0	0	0	1
2:45	0	0	0	0	0
3:00	0	0	0	0	0
3:15	0	0	0	0	0
3:30	0	0	0	0	0
3:45	1	0	0	0	1
4:00	0	0	0	0	0
4:15	0	0	0	0	0
4:30	0	0	0	0	0
4:45	0	0	0	0	0
5:00	0	0	0	0	0
5:15	0	0	0	0	0
5:30	0	0	0	0	0
5:45	12	0	0	0	12
6:00	1	0	0	0	1
6:15	1	0	0	0	1
6:30	0	0	0	0	0
6:45	0	0	0	0	0
7:00	1	0	0	0	1
7:15	1	0	0	0	1
7:30	1	0	0	0	1
7:45	3	0	0	0	3
8:00	2	0	0	0	2
8:15	2	0	0	0	2
8:30	0	0	1	0	1
8:45	3	0	0	0	3
9:00	0	0	0	0	0
9:15	0	0	0	0	0
9:30	2	0	0	0	2
9:45	2	0	0	0	2
10:00	0	0	0	0	0
10:15	0	0	0	0	0
10:30	0	0	0	0	0
10:45	0	0	0	0	0
11:00	1	0	0	0	1
11:15	1	1	0	0	2
11:30	0	0	0	0	0
11:45	0	0	0	0	0

	Exiting				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
0:00	0	0	0	0	0
0:15	0	0	0	0	0
0:30	0	0	0	0	0
0:45	0	0	0	0	0
1:00	0	0	0	0	0
1:15	0	0	0	0	0
1:30	0	0	0	0	0
1:45	0	0	0	0	0
2:00	0	0	0	0	0
2:15	0	0	0	0	0
2:30	0	0	0	1	1
2:45	0	0	0	0	0
3:00	0	0	0	0	0
3:15	0	0	0	0	0
3:30	0	0	0	0	0
3:45	0	0	0	0	0
4:00	0	0	0	0	0
4:15	0	0	0	0	0
4:30	0	0	0	0	0
4:45	0	0	0	0	0
5:00	0	0	0	0	0
5:15	0	0	0	0	0
5:30	0	0	0	0	0
5:45	0	0	0	0	0
6:00	0	0	0	0	0
6:15	0	0	0	0	0
6:30	0	0	0	0	0
6:45	0	0	0	0	0
7:00	0	0	0	0	0
7:15	0	0	0	0	0
7:30	1	0	0	0	1
7:45	0	0	0	0	0
8:00	0	0	0	0	0
8:15	1	0	0	0	1
8:30	1	0	1	0	2
8:45	0	0	0	0	0
9:00	2	0	0	0	2
9:15	0	0	0	0	0
9:30	1	0	0	0	1
9:45	0	0	0	0	0
10:00	0	0	0	0	0
10:15	0	0	0	0	0
10:30	0	0	0	0	0
10:45	1	0	0	0	1
11:00	1	0	0	0	1
11:15	2	0	0	0	2
11:30	0	1	0	0	1
11:45	3	0	0	0	3



City: Chino
 Location: 13925 Benson Ave
 Date: Tuesday, March 7, 2023
 Count Type: 24 Hour Classified Driveway Count

	Entering				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
12:00	0	0	0	0	0
12:15	1	0	0	0	1
12:30	0	0	0	0	0
12:45	1	1	1	0	3
13:00	1	0	0	1	2
13:15	1	0	1	0	2
13:30	1	0	0	0	1
13:45	0	0	0	0	0
14:00	0	0	0	0	0
14:15	0	0	0	0	0
14:30	0	0	0	0	0
14:45	1	0	0	0	1
15:00	0	0	0	0	0
15:15	0	0	0	0	0
15:30	1	0	0	0	1
15:45	0	0	0	0	0
16:00	0	0	0	0	0
16:15	0	0	0	0	0
16:30	0	0	0	0	0
16:45	0	0	0	0	0
17:00	0	0	0	0	0
17:15	0	0	0	0	0
17:30	0	0	0	0	0
17:45	0	0	0	0	0
18:00	0	0	0	0	0
18:15	0	0	0	0	0
18:30	0	0	0	0	0
18:45	1	0	0	0	1
19:00	0	0	0	0	0
19:15	0	0	0	0	0
19:30	0	0	0	0	0
19:45	0	0	0	0	0
20:00	0	0	0	0	0
20:15	0	0	0	0	0
20:30	0	0	0	0	0
20:45	0	0	0	0	0
21:00	0	0	0	0	0
21:15	0	0	0	0	0
21:30	0	0	0	0	0
21:45	0	0	0	0	0
22:00	0	0	0	0	0
22:15	0	0	0	0	0
22:30	0	0	0	0	0
22:45	0	0	0	0	0
23:00	0	0	0	0	0
23:15	0	0	0	0	0
23:30	0	0	0	0	0
23:45	0	0	0	0	0
TOTAL	43	2	3	1	49

	Exiting				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
12:00	2	0	0	0	2
12:15	1	0	0	0	1
12:30	2	0	0	0	2
12:45	0	1	0	0	1
13:00	2	0	0	0	2
13:15	3	0	0	0	3
13:30	0	0	0	0	0
13:45	1	0	0	0	1
14:00	1	0	0	0	1
14:15	2	0	0	0	2
14:30	14	0	0	0	14
14:45	0	0	0	0	0
15:00	2	0	0	0	2
15:15	1	0	0	0	1
15:30	2	0	0	0	2
15:45	1	0	0	0	1
16:00	0	0	0	0	0
16:15	0	0	0	0	0
16:30	0	0	0	0	0
16:45	0	0	0	0	0
17:00	0	0	0	0	0
17:15	0	0	0	0	0
17:30	0	0	0	0	0
17:45	0	0	0	0	0
18:00	0	0	0	0	0
18:15	0	0	0	0	0
18:30	0	0	0	0	0
18:45	0	0	0	0	0
19:00	0	0	0	0	0
19:15	0	0	0	0	0
19:30	0	0	0	0	0
19:45	0	0	0	0	0
20:00	0	0	0	0	0
20:15	0	0	0	0	0
20:30	0	0	0	0	0
20:45	0	0	0	0	0
21:00	0	0	0	0	0
21:15	0	0	0	0	0
21:30	0	0	0	0	0
21:45	0	0	0	0	0
22:00	0	0	0	0	0
22:15	0	0	0	0	0
22:30	0	0	0	0	0
22:45	0	0	0	0	0
23:00	0	0	0	0	0
23:15	0	0	0	0	0
23:30	0	0	0	0	0
23:45	0	0	0	0	0
	47	2	1	1	51



City: Chino
 Location: 13925 Benson Ave
 Date: Wednesday, March 8, 2023
 Count Type: 24 Hour Classified Driveway Count

	Entering				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
0:00	0	0	0	0	0
0:15	0	0	0	0	0
0:30	0	0	0	0	0
0:45	0	0	0	0	0
1:00	0	0	0	0	0
1:15	0	0	0	0	0
1:30	0	0	0	0	0
1:45	0	0	0	0	0
2:00	0	0	0	0	0
2:15	0	0	0	0	0
2:30	1	0	0	0	1
2:45	0	0	0	0	0
3:00	0	0	0	0	0
3:15	0	0	0	0	0
3:30	0	0	0	0	0
3:45	0	0	0	0	0
4:00	0	0	0	0	0
4:15	0	0	0	0	0
4:30	0	0	0	1	1
4:45	0	0	0	0	0
5:00	0	0	0	0	0
5:15	0	0	0	0	0
5:30	4	0	0	0	4
5:45	8	0	0	0	8
6:00	3	0	0	0	3
6:15	1	0	0	0	1
6:30	0	0	0	0	0
6:45	0	0	0	0	0
7:00	0	0	0	0	0
7:15	2	0	0	0	2
7:30	1	0	0	0	1
7:45	1	0	0	0	1
8:00	0	0	1	0	1
8:15	1	0	0	0	1
8:30	0	0	0	0	0
8:45	1	1	0	0	2
9:00	2	0	0	0	2
9:15	0	1	0	0	1
9:30	0	0	0	0	0
9:45	0	0	0	0	0
10:00	2	0	0	0	2
10:15	1	0	0	0	1
10:30	0	0	0	0	0
10:45	1	0	0	0	1
11:00	1	0	0	0	1
11:15	2	0	0	0	2
11:30	0	0	0	0	0
11:45	0	0	0	0	0

	Exiting				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
0:00	0	0	0	0	0
0:15	0	0	0	0	0
0:30	0	0	0	0	0
0:45	0	0	0	0	0
1:00	0	0	0	0	0
1:15	0	0	0	0	0
1:30	0	0	0	0	0
1:45	0	0	0	0	0
2:00	0	0	0	0	0
2:15	0	0	0	0	0
2:30	0	0	0	1	1
2:45	0	0	0	0	0
3:00	0	0	0	0	0
3:15	0	0	0	0	0
3:30	0	0	0	0	0
3:45	0	0	0	0	0
4:00	0	0	0	0	0
4:15	0	0	0	0	0
4:30	0	0	0	0	0
4:45	0	0	1	0	1
5:00	0	0	0	0	0
5:15	0	0	0	0	0
5:30	0	0	0	0	0
5:45	0	0	0	0	0
6:00	0	0	0	0	0
6:15	0	0	0	0	0
6:30	1	0	0	0	1
6:45	0	0	0	0	0
7:00	0	0	0	0	0
7:15	1	0	0	0	1
7:30	0	1	0	0	1
7:45	0	0	0	0	0
8:00	0	0	0	0	0
8:15	0	0	0	0	0
8:30	0	0	0	0	0
8:45	0	0	0	0	0
9:00	3	0	0	0	3
9:15	1	0	0	0	1
9:30	1	1	0	0	2
9:45	0	0	0	0	0
10:00	3	0	0	0	3
10:15	3	0	0	0	3
10:30	0	0	0	0	0
10:45	0	0	0	0	0
11:00	0	0	0	0	0
11:15	1	0	0	0	1
11:30	2	0	0	0	2
11:45	0	0	0	0	0



City: Chino
 Location: 13925 Benson Ave
 Date: Wednesday, March 8, 2023
 Count Type: 24 Hour Classified Driveway Count

	Entering				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
12:00	1	0	0	0	1
12:15	0	0	0	0	0
12:30	0	1	0	0	1
12:45	1	0	0	0	1
13:00	1	0	0	0	1
13:15	3	0	0	0	3
13:30	0	0	0	0	0
13:45	0	0	0	0	0
14:00	0	0	0	0	0
14:15	0	0	0	0	0
14:30	0	0	0	0	0
14:45	1	0	0	0	1
15:00	0	0	0	0	0
15:15	0	0	0	0	0
15:30	0	0	0	0	0
15:45	0	0	0	0	0
16:00	1	0	0	0	1
16:15	0	0	0	0	0
16:30	0	0	0	0	0
16:45	0	0	0	0	0
17:00	0	0	0	0	0
17:15	0	0	0	0	0
17:30	0	0	0	0	0
17:45	0	0	0	0	0
18:00	0	0	0	0	0
18:15	0	0	0	0	0
18:30	0	0	0	0	0
18:45	0	0	0	0	0
19:00	0	0	0	0	0
19:15	1	0	0	0	1
19:30	0	0	0	0	0
19:45	0	0	0	0	0
20:00	0	0	0	0	0
20:15	0	0	0	0	0
20:30	0	0	0	0	0
20:45	0	0	0	0	0
21:00	0	0	0	0	0
21:15	0	0	0	0	0
21:30	0	0	0	0	0
21:45	0	0	0	0	0
22:00	0	0	0	0	0
22:15	0	0	0	0	0
22:30	0	0	0	0	0
22:45	0	0	0	0	0
23:00	0	0	0	0	0
23:15	0	0	0	0	0
23:30	0	0	0	0	0
23:45	0	0	0	0	0
TOTAL	41	3	1	1	46

	Exiting				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
12:00	0	0	0	0	0
12:15	2	0	0	0	2
12:30	2	0	0	0	2
12:45	1	0	0	0	1
13:00	1	0	0	0	1
13:15	3	0	0	0	3
13:30	0	0	0	0	0
13:45	1	0	0	0	1
14:00	1	0	0	0	1
14:15	2	0	0	0	2
14:30	4	0	0	0	4
14:45	1	0	0	0	1
15:00	2	0	0	0	2
15:15	1	0	0	0	1
15:30	2	0	0	0	2
15:45	2	0	0	0	2
16:00	0	0	0	0	0
16:15	0	0	0	0	0
16:30	1	0	0	0	1
16:45	0	0	0	0	0
17:00	0	0	0	0	0
17:15	0	0	0	0	0
17:30	0	0	0	0	0
17:45	0	0	0	0	0
18:00	0	0	0	0	0
18:15	0	0	0	0	0
18:30	0	0	0	0	0
18:45	0	0	0	0	0
19:00	0	0	0	0	0
19:15	0	0	0	0	0
19:30	0	0	0	0	0
19:45	0	0	0	0	0
20:00	0	0	0	0	0
20:15	0	0	0	0	0
20:30	0	0	0	0	0
20:45	0	0	0	0	0
21:00	0	0	0	0	0
21:15	0	0	0	0	0
21:30	0	0	0	0	0
21:45	0	0	0	0	0
22:00	0	0	0	0	0
22:15	0	0	0	0	0
22:30	0	0	0	0	0
22:45	0	0	0	0	0
23:00	0	0	0	0	0
23:15	0	0	0	0	0
23:30	0	0	0	0	0
23:45	0	0	0	0	0
TOTAL	42	2	1	1	46



City: Chino
 Location: 13925 Benson Ave
 Date: Thursday, March 9, 2023
 Count Type: 24 Hour Classified Driveway Count

	Entering				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
0:00	0	0	0	0	0
0:15	0	0	0	0	0
0:30	0	0	0	0	0
0:45	0	0	0	0	0
1:00	0	0	0	0	0
1:15	0	0	0	0	0
1:30	0	0	0	0	0
1:45	0	0	0	0	0
2:00	0	0	0	0	0
2:15	0	0	0	0	0
2:30	0	0	0	0	0
2:45	0	0	0	0	0
3:00	0	0	0	0	0
3:15	1	0	0	0	1
3:30	0	0	0	0	0
3:45	0	0	0	0	0
4:00	0	0	0	0	0
4:15	0	0	0	0	0
4:30	2	0	0	0	2
4:45	0	0	0	0	0
5:00	0	0	0	0	0
5:15	0	0	0	0	0
5:30	5	0	0	0	5
5:45	5	0	0	0	5
6:00	4	0	0	0	4
6:15	0	0	0	0	0
6:30	0	0	0	0	0
6:45	0	0	0	0	0
7:00	2	0	0	0	2
7:15	1	0	0	0	1
7:30	1	0	0	0	1
7:45	0	0	1	0	1
8:00	1	0	0	0	1
8:15	0	0	0	0	0
8:30	0	0	0	0	0
8:45	1	0	0	0	1
9:00	0	0	0	0	0
9:15	1	0	0	0	1
9:30	2	0	0	0	2
9:45	1	0	0	0	1
10:00	3	0	0	0	3
10:15	1	0	0	0	1
10:30	0	0	0	0	0
10:45	0	0	0	0	0
11:00	0	0	0	0	0
11:15	1	0	0	0	1
11:30	1	0	0	1	2
11:45	0	0	0	0	0

	Exiting				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
0:00	0	0	0	0	0
0:15	0	0	0	0	0
0:30	0	0	0	0	0
0:45	0	0	0	0	0
1:00	0	0	0	0	0
1:15	0	0	0	0	0
1:30	0	0	0	0	0
1:45	0	0	0	0	0
2:00	0	0	0	0	0
2:15	0	0	0	0	0
2:30	0	0	0	0	0
2:45	0	0	0	0	0
3:00	0	0	0	0	0
3:15	1	0	0	0	1
3:30	0	0	0	0	0
3:45	0	0	0	0	0
4:00	0	0	0	0	0
4:15	0	0	0	0	0
4:30	0	1	0	0	1
4:45	0	0	0	0	0
5:00	0	0	0	0	0
5:15	0	0	0	0	0
5:30	0	0	0	0	0
5:45	0	0	0	0	0
6:00	0	0	0	0	0
6:15	0	0	0	0	0
6:30	0	0	0	0	0
6:45	0	0	0	0	0
7:00	0	0	0	0	0
7:15	1	0	0	0	1
7:30	1	0	0	0	1
7:45	0	0	0	0	0
8:00	0	0	1	0	1
8:15	0	0	0	0	0
8:30	0	0	0	0	0
8:45	0	0	0	0	0
9:00	1	0	0	0	1
9:15	1	0	0	0	1
9:30	0	0	0	0	0
9:45	2	0	0	0	2
10:00	1	0	0	0	1
10:15	3	0	0	0	3
10:30	1	0	0	0	1
10:45	0	0	0	0	0
11:00	0	0	0	0	0
11:15	0	0	0	0	0
11:30	0	0	0	1	1
11:45	0	0	0	0	0



City: Chino
 Location: 13925 Benson Ave
 Date: Thursday, March 9, 2023
 Count Type: 24 Hour Classified Driveway Count

	Entering				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
12:00	1	0	0	0	1
12:15	2	0	0	0	2
12:30	1	0	0	0	1
12:45	2	0	0	0	2
13:00	0	1	0	0	1
13:15	0	0	0	0	0
13:30	2	0	0	0	2
13:45	1	0	0	0	1
14:00	0	0	0	0	0
14:15	1	0	0	0	1
14:30	1	0	0	0	1
14:45	0	0	0	0	0
15:00	0	0	0	0	0
15:15	0	0	0	0	0
15:30	0	0	0	0	0
15:45	0	0	0	0	0
16:00	0	0	0	0	0
16:15	0	0	0	0	0
16:30	0	0	0	0	0
16:45	0	0	0	0	0
17:00	0	0	0	0	0
17:15	0	0	0	0	0
17:30	0	0	0	0	0
17:45	0	0	0	0	0
18:00	0	0	0	0	0
18:15	0	0	0	0	0
18:30	0	0	0	0	0
18:45	0	0	0	0	0
19:00	0	0	0	0	0
19:15	0	0	0	0	0
19:30	0	0	0	0	0
19:45	0	0	0	0	0
20:00	0	0	0	0	0
20:15	1	0	0	0	1
20:30	0	0	0	0	0
20:45	0	0	0	0	0
21:00	0	0	0	0	0
21:15	0	0	0	0	0
21:30	0	0	0	0	0
21:45	0	0	0	0	0
22:00	0	0	0	0	0
22:15	0	0	0	0	0
22:30	0	0	0	0	0
22:45	0	0	0	0	0
23:00	0	0	0	0	0
23:15	0	0	0	0	0
23:30	0	0	0	0	0
23:45	0	0	0	0	0
TOTAL	45	1	1	1	48

	Exiting				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
12:00	0	0	0	0	0
12:15	0	0	0	0	0
12:30	1	0	0	0	1
12:45	0	0	0	0	0
13:00	2	1	0	0	3
13:15	0	0	0	0	0
13:30	1	0	0	0	1
13:45	0	0	0	0	0
14:00	0	0	0	0	0
14:15	2	1	0	0	3
14:30	16	0	0	0	16
14:45	1	0	0	0	1
15:00	0	0	0	0	0
15:15	1	0	0	0	1
15:30	3	0	0	0	3
15:45	0	0	0	0	0
16:00	1	0	0	0	1
16:15	1	0	0	0	1
16:30	0	0	0	0	0
16:45	0	0	0	0	0
17:00	1	0	0	0	1
17:15	0	0	0	0	0
17:30	0	0	0	0	0
17:45	0	0	0	0	0
18:00	0	0	0	0	0
18:15	0	0	0	0	0
18:30	0	0	0	0	0
18:45	0	0	0	0	0
19:00	0	0	0	0	0
19:15	0	0	0	0	0
19:30	0	0	0	0	0
19:45	0	0	0	0	0
20:00	0	0	0	0	0
20:15	0	0	0	0	0
20:30	0	0	0	0	0
20:45	0	0	0	0	0
21:00	0	0	0	0	0
21:15	0	0	0	0	0
21:30	0	0	0	0	0
21:45	0	0	0	0	0
22:00	0	0	0	0	0
22:15	0	0	0	0	0
22:30	0	0	0	0	0
22:45	0	0	0	0	0
23:00	0	0	0	0	0
23:15	0	0	0	0	0
23:30	0	0	0	0	0
23:45	0	0	0	0	0
TOTAL	42	3	1	1	47

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APPENDIX 1.2: SITE ADJACENT QUEUES

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Intersection: 1: 12th St. & Edison Av.

Movement	EB	EB	EB	WB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	T	R	LTR	L	TR
Maximum Queue (ft)	226	364	357	128	278	249	44	111	72	166
Average Queue (ft)	73	168	155	33	155	129	16	44	31	63
95th Queue (ft)	150	300	291	82	246	222	41	83	68	132
Link Distance (ft)		1210	1210		1275	1275		1307		806
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	150			100			270		100	
Storage Blk Time (%)	0	8		0	16	0			0	4
Queuing Penalty (veh)	1	7		0	5	0			0	2

Intersection: 2: Benson Av. & Schaefer Av.

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	T	R
Maximum Queue (ft)	119	183	172	199	341	316	72	73	79	157	121
Average Queue (ft)	49	96	69	41	220	204	24	24	44	48	48
95th Queue (ft)	94	159	136	129	320	307	61	57	79	112	92
Link Distance (ft)		1271	1271		1278	1278		1232		880	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	100			125			50		35		155
Storage Blk Time (%)	1	6			21		7	2	34	26	
Queuing Penalty (veh)	2	6			10		4	1	65	52	

Intersection: 3: Benson Av. & Daniels St.

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	96	33	8
Average Queue (ft)	39	2	0
95th Queue (ft)	74	15	4
Link Distance (ft)	1401	36	1232
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Benson Av. & Driveway 1

Movement	WB
Directions Served	R
Maximum Queue (ft)	19
Average Queue (ft)	3
95th Queue (ft)	15
Link Distance (ft)	593
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Benson Av. & Driveway 2

Movement	WB
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	6
95th Queue (ft)	25
Link Distance (ft)	603
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 155

Intersection: 1: 12th St. & Edison Av.

Movement	EB	EB	EB	WB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	T	R	LTR	L	TR
Maximum Queue (ft)	119	315	307	123	308	295	27	94	85	144
Average Queue (ft)	31	161	145	27	121	91	6	39	32	53
95th Queue (ft)	77	271	263	74	225	204	24	79	71	108
Link Distance (ft)		1210	1210		1275	1275		1307		806
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	150			100			270		100	
Storage Blk Time (%)		7			11	1		0		2
Queuing Penalty (veh)		2			4	0		0		1

Intersection: 2: Benson Av. & Schaefer Av.

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	T	R
Maximum Queue (ft)	184	270	266	52	236	220	102	148	78	106	74
Average Queue (ft)	50	167	151	14	128	98	40	70	42	30	36
95th Queue (ft)	119	246	239	42	203	185	82	129	77	80	63
Link Distance (ft)		1271	1271		1278	1278		1232		880	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	100			125			50		35		155
Storage Blk Time (%)	0	16			7		10	20	33	14	
Queuing Penalty (veh)	1	18			1		15	10	47	24	

Intersection: 3: Benson Av. & Daniels St.

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	54	28	18
Average Queue (ft)	36	6	1
95th Queue (ft)	56	25	10
Link Distance (ft)	1401	251	36
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Benson Av. & Driveway 1

Movement	WB	SB
Directions Served	R	L
Maximum Queue (ft)	25	7
Average Queue (ft)	9	0
95th Queue (ft)	27	5
Link Distance (ft)	593	36
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Benson Av. & Driveway 2

Movement	WB
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	13
95th Queue (ft)	37
Link Distance (ft)	603
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 123

APPENDIX 3.1: TRAFFIC COUNTS – AUGUST 2023

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City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison AM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 1

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

Start Time	12th Street Southbound					Edison Avenue Westbound					12th Street Northbound					Edison Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
06:00 AM	8	3	7	3	18	2	92	7	6	101	1	0	0	0	1	11	24	1	1	36	10	156	166
06:15 AM	6	1	8	4	15	2	127	4	2	133	2	1	1	1	4	12	45	2	0	59	7	211	218
06:30 AM	6	3	7	4	16	1	123	5	2	129	0	0	0	0	0	7	48	6	0	61	6	206	212
06:45 AM	7	1	11	7	19	0	157	6	2	163	2	3	1	1	6	19	62	7	2	88	12	276	288
Total	27	8	33	18	68	5	499	22	12	526	5	4	2	2	11	49	179	16	3	244	35	849	884
07:00 AM	2	2	14	10	18	2	214	5	4	221	4	0	1	1	5	14	58	3	2	75	17	319	336
07:15 AM	3	1	7	3	11	1	211	8	0	220	3	5	0	0	8	8	66	8	3	82	6	321	327
07:30 AM	1	2	5	2	8	1	183	5	0	189	1	3	1	1	5	13	84	1	0	98	3	300	303
07:45 AM	0	0	7	4	7	3	227	13	3	243	2	1	0	0	3	19	92	2	0	113	7	366	373
Total	6	5	33	19	44	7	835	31	7	873	10	9	2	2	21	54	300	14	5	368	33	1306	1339
08:00 AM	1	4	8	5	13	2	199	12	2	213	4	1	1	1	6	10	105	4	1	119	9	351	360
08:15 AM	3	5	15	10	23	3	180	6	1	189	2	2	1	0	5	13	80	5	1	98	12	315	327
08:30 AM	0	5	4	3	9	3	171	9	3	183	3	3	0	0	6	19	119	6	0	144	6	342	348
08:45 AM	2	1	12	3	15	3	129	10	6	142	1	3	1	1	5	24	101	8	1	133	11	295	306
Total	6	15	39	21	60	11	679	37	12	727	10	9	3	2	22	66	405	23	3	494	38	1303	1341
Grand Total	39	28	105	58	172	23	2013	90	31	2126	25	22	7	6	54	169	884	53	11	1106	106	3458	3564
Apprch %	22.7	16.3	61			1.1	94.7	4.2			46.3	40.7	13			15.3	79.9	4.8					
Total %	1.1	0.8	3		5	0.7	58.2	2.6		61.5	0.7	0.6	0.2		1.6	4.9	25.6	1.5		32	3	97	
Passenger Vehicles	5	26	71		143	21	1754	80		1885	23	19	6		53	156	732	50		949	0	0	3030
% Passenger Vehicles	12.8	92.9	67.6	70.7	62.2	91.3	87.1	88.9	96.8	87.4	92	86.4	85.7	83.3	88.3	92.3	82.8	94.3	100	85	0	0	85
Large 2 Axle Vehicles	18	1	14		42	1	86	5		92	2	2	1		6	4	47	2		53	0	0	193
% Large 2 Axle Vehicles	46.2	3.6	13.3	15.5	18.3	4.3	4.3	5.6	0	4.3	8	9.1	14.3	16.7	10	2.4	5.3	3.8	0	4.7	0	0	5.4
3 Axle Vehicles	12	1	14		34	1	32	0		33	0	1	0		1	2	27	1		30	0	0	98
% 3 Axle Vehicles	30.8	3.6	13.3	12.1	14.8	4.3	1.6	0	0	1.5	0	4.5	0	0	1.7	1.2	3.1	1.9	0	2.7	0	0	2.7
4+ Axle Trucks	4	0	6		11	0	141	5		147	0	0	0		0	7	78	0		85	0	0	243
% 4+ Axle Trucks	10.3	0	5.7	1.7	4.8	0	7	5.6	3.2	6.8	0	0	0	0	0	4.1	8.8	0	0	7.6	0	0	6.8

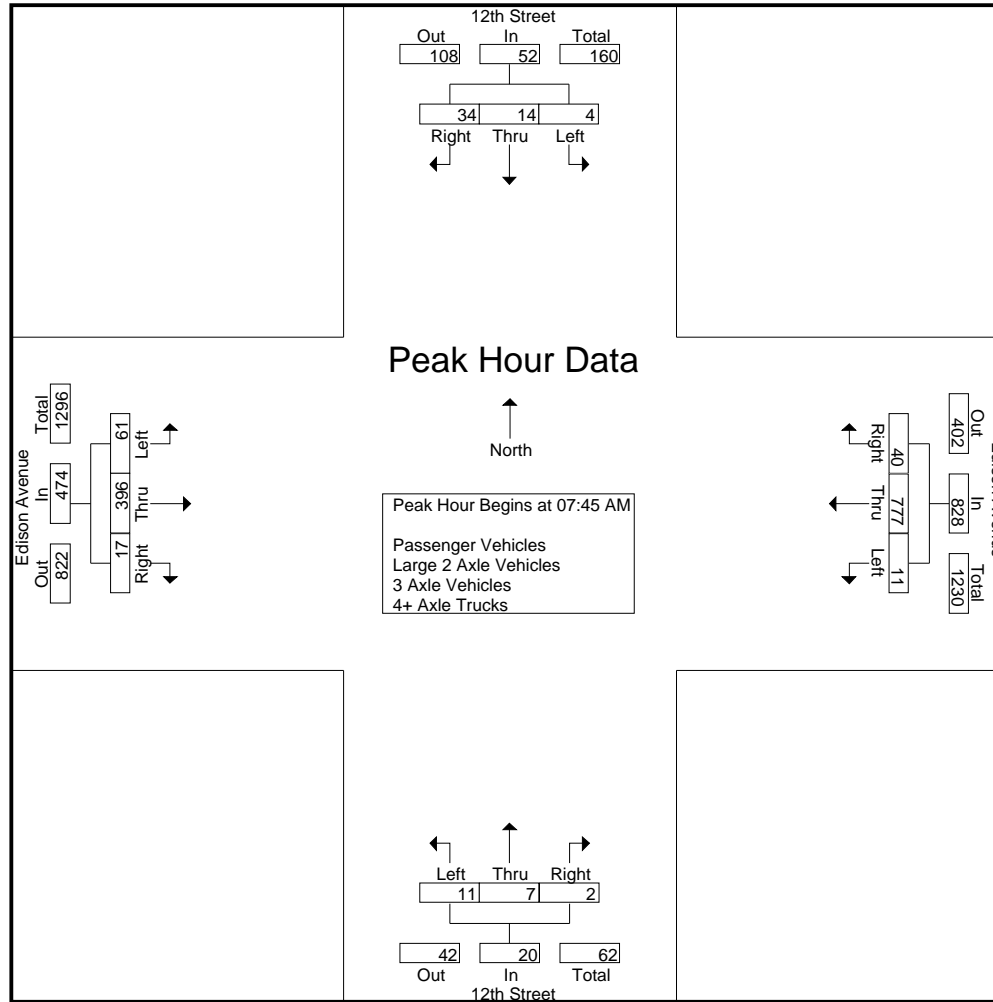
City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison AM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 2

Start Time	12th Street Southbound				Edison Avenue Westbound				12th Street Northbound				Edison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	7	7	3	227	13	243	2	1	0	3	19	92	2	113	366
08:00 AM	1	4	8	13	2	199	12	213	4	1	1	6	10	105	4	119	351
08:15 AM	3	5	15	23	3	180	6	189	2	2	1	5	13	80	5	98	315
08:30 AM	0	5	4	9	3	171	9	183	3	3	0	6	19	119	6	144	342
Total Volume	4	14	34	52	11	777	40	828	11	7	2	20	61	396	17	474	1374
% App. Total	7.7	26.9	65.4		1.3	93.8	4.8		55	35	10		12.9	83.5	3.6		
PHF	.333	.700	.567	.565	.917	.856	.769	.852	.688	.583	.500	.833	.803	.832	.708	.823	.939

City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison AM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 3



City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison AM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 1

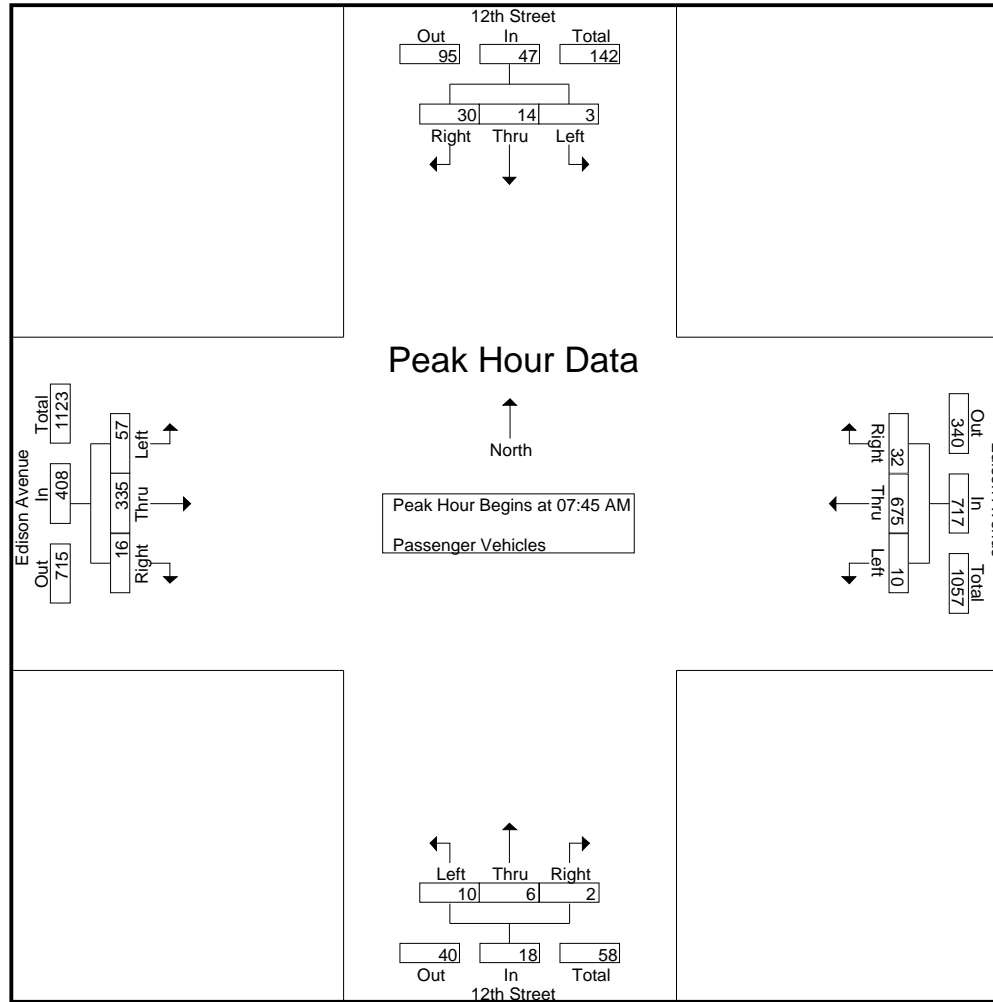
Groups Printed- Passenger Vehicles

Start Time	12th Street Southbound					Edison Avenue Westbound					12th Street Northbound					Edison Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
06:00 AM	0	2	5	2	7	1	82	7	6	90	1	0	0	0	1	10	17	1	1	28	9	126	135
06:15 AM	0	1	2	1	3	2	108	4	2	114	1	0	0	0	1	10	36	2	0	48	3	166	169
06:30 AM	0	3	2	2	5	1	107	5	2	113	0	0	0	0	0	7	35	5	0	47	4	165	169
06:45 AM	0	1	9	6	10	0	138	6	2	144	2	2	1	1	5	17	56	6	2	79	11	238	249
Total	0	7	18	11	25	4	435	22	12	461	4	2	1	1	7	44	144	14	3	202	27	695	722
07:00 AM	0	2	5	4	7	2	185	4	4	191	4	0	1	1	5	14	43	3	2	60	11	263	274
07:15 AM	1	0	6	3	7	1	187	8	0	196	3	5	0	0	8	6	54	8	3	68	6	279	285
07:30 AM	0	2	4	2	6	1	162	5	0	168	1	3	1	1	5	12	69	1	0	82	3	261	264
07:45 AM	0	0	7	4	7	2	195	10	3	207	2	1	0	0	3	18	77	2	0	97	7	314	321
Total	1	4	22	13	27	6	729	27	7	762	10	9	2	2	21	50	243	14	5	307	27	1117	1144
08:00 AM	1	4	7	4	12	2	170	9	1	181	4	1	1	1	6	9	93	3	1	105	7	304	311
08:15 AM	2	5	13	9	20	3	161	5	1	169	1	2	1	0	4	13	68	5	1	86	11	279	290
08:30 AM	0	5	3	2	8	3	149	8	3	160	3	2	0	0	5	17	97	6	0	120	5	293	298
08:45 AM	1	1	8	2	10	3	110	9	6	122	1	3	1	1	5	23	87	8	1	118	10	255	265
Total	4	15	31	17	50	11	590	31	11	632	9	8	3	2	20	62	345	22	3	429	33	1131	1164
Grand Total	5	26	71	41	102	21	1754	80	30	1855	23	19	6	5	48	156	732	50	11	938	87	2943	3030
Apprch %	4.9	25.5	69.6			1.1	94.6	4.3			47.9	39.6	12.5			16.6	78	5.3					
Total %	0.2	0.9	2.4		3.5	0.7	59.6	2.7		63	0.8	0.6	0.2		1.6	5.3	24.9	1.7		31.9	2.9	97.1	

Start Time	12th Street Southbound				Edison Avenue Westbound				12th Street Northbound				Edison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	7	7	2	195	10	207	2	1	0	3	18	77	2	97	314
08:00 AM	1	4	7	12	2	170	9	181	4	1	1	6	9	93	3	105	304
08:15 AM	2	5	13	20	3	161	5	169	1	2	1	4	13	68	5	86	279
08:30 AM	0	5	3	8	3	149	8	160	3	2	0	5	17	97	6	120	293
Total Volume	3	14	30	47	10	675	32	717	10	6	2	18	57	335	16	408	1190
% App. Total	6.4	29.8	63.8		1.4	94.1	4.5		55.6	33.3	11.1		14	82.1	3.9		
PHF	.375	.700	.577	.588	.833	.865	.800	.866	.625	.750	.500	.750	.792	.863	.667	.850	.947

City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison AM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 2



City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison AM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 3

Start Time	12th Street Southbound				Edison Avenue Westbound				12th Street Northbound				Edison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 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	7	7	2	195	10	207	2	1	0	3	18	77	2	97	
+15 mins.	1	4	7	12	2	170	9	181	4	1	1	6	9	93	3	105	
+30 mins.	2	5	13	20	3	161	5	169	1	2	1	4	13	68	5	86	
+45 mins.	0	5	3	8	3	149	8	160	3	2	0	5	17	97	6	120	
Total Volume	3	14	30	47	10	675	32	717	10	6	2	18	57	335	16	408	
% App. Total	6.4	29.8	63.8		1.4	94.1	4.5		55.6	33.3	11.1		14	82.1	3.9		
PHF	.375	.700	.577	.588	.833	.865	.800	.866	.625	.750	.500	.750	.792	.863	.667	.850	

City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison AM
 Site Code : 05123746
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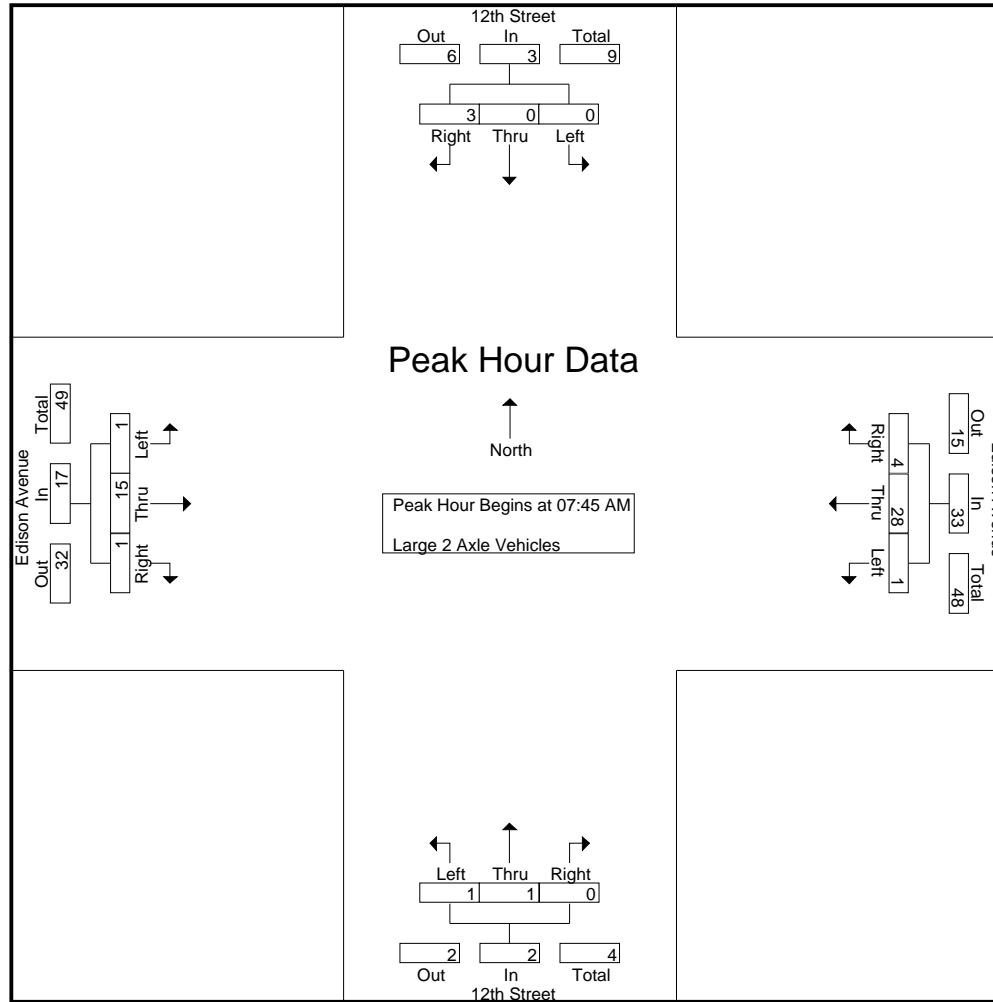
Groups Printed- Large 2 Axle Vehicles

Start Time	12th Street Southbound					Edison Avenue Westbound					12th Street Northbound					Edison Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
06:00 AM	3	0	2	1	5	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	1	9	10
06:15 AM	3	0	3	2	6	0	5	0	0	5	1	0	1	1	2	0	1	0	0	1	3	14	17
06:30 AM	5	0	2	2	7	0	11	0	0	11	0	0	0	0	0	0	7	0	0	7	2	25	27
06:45 AM	5	0	1	1	6	0	5	0	0	5	0	1	0	0	1	1	3	1	0	5	1	17	18
Total	16	0	8	6	24	0	23	0	0	23	1	1	1	1	3	1	13	1	0	15	7	65	72
07:00 AM	0	0	1	0	1	0	9	1	0	10	0	0	0	0	0	0	6	0	0	6	0	17	17
07:15 AM	1	1	1	0	3	0	8	0	0	8	0	0	0	0	0	1	6	0	0	7	0	18	18
07:30 AM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	3	0	0	3	0	13	13
07:45 AM	0	0	0	0	0	1	12	2	0	15	0	0	0	0	0	0	2	0	0	2	0	17	17
Total	1	1	2	0	4	1	39	3	0	43	0	0	0	0	0	1	17	0	0	18	0	65	65
08:00 AM	0	0	0	0	0	0	7	1	0	8	0	0	0	0	0	1	4	1	0	6	0	14	14
08:15 AM	0	0	2	1	2	0	2	1	0	3	1	0	0	0	1	0	3	0	0	3	1	9	10
08:30 AM	0	0	1	1	1	0	7	0	0	7	0	1	0	0	1	0	6	0	0	6	1	15	16
08:45 AM	1	0	1	1	2	0	8	0	0	8	0	0	0	0	0	1	4	0	0	5	1	15	16
Total	1	0	4	3	5	0	24	2	0	26	1	1	0	0	2	2	17	1	0	20	3	53	56
Grand Total	18	1	14	9	33	1	86	5	0	92	2	2	1	1	5	4	47	2	0	53	10	183	193
Apprch %	54.5	3	42.4			1.1	93.5	5.4			40	40	20			7.5	88.7	3.8					
Total %	9.8	0.5	7.7		18	0.5	47	2.7		50.3	1.1	1.1	0.5		2.7	2.2	25.7	1.1		29	5.2	94.8	

Start Time	12th Street Southbound				Edison Avenue Westbound				12th Street Northbound				Edison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 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	12	2	15	0	0	0	0	0	2	0	2	17
08:00 AM	0	0	0	0	0	7	1	8	0	0	0	0	1	4	1	6	14
08:15 AM	0	0	2	2	0	2	1	3	1	0	0	1	0	3	0	3	9
08:30 AM	0	0	1	1	0	7	0	7	0	1	0	1	0	6	0	6	15
Total Volume	0	0	3	3	1	28	4	33	1	1	0	2	1	15	1	17	55
% App. Total	0	0	100		3	84.8	12.1		50	50	0		5.9	88.2	5.9		
PHF	.000	.000	.375	.375	.250	.583	.500	.550	.250	.250	.000	.500	.250	.625	.250	.708	.809

City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison AM
 Site Code : 05123746
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City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison AM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 3

Start Time	12th Street Southbound				Edison Avenue Westbound				12th Street Northbound				Edison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 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	12	2	15	0	0	0	0	0	2	0	2	
+15 mins.	0	0	0	0	0	7	1	8	0	0	0	0	1	4	1	6	
+30 mins.	0	0	2	2	0	2	1	3	1	0	0	1	0	3	0	3	
+45 mins.	0	0	1	1	0	7	0	7	0	1	0	1	0	6	0	6	
Total Volume	0	0	3	3	1	28	4	33	1	1	0	2	1	15	1	17	
% App. Total	0	0	100		3	84.8	12.1		50	50	0		5.9	88.2	5.9		
PHF	.000	.000	.375	.375	.250	.583	.500	.550	.250	.250	.000	.500	.250	.625	.250	.708	

City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison AM
 Site Code : 05123746
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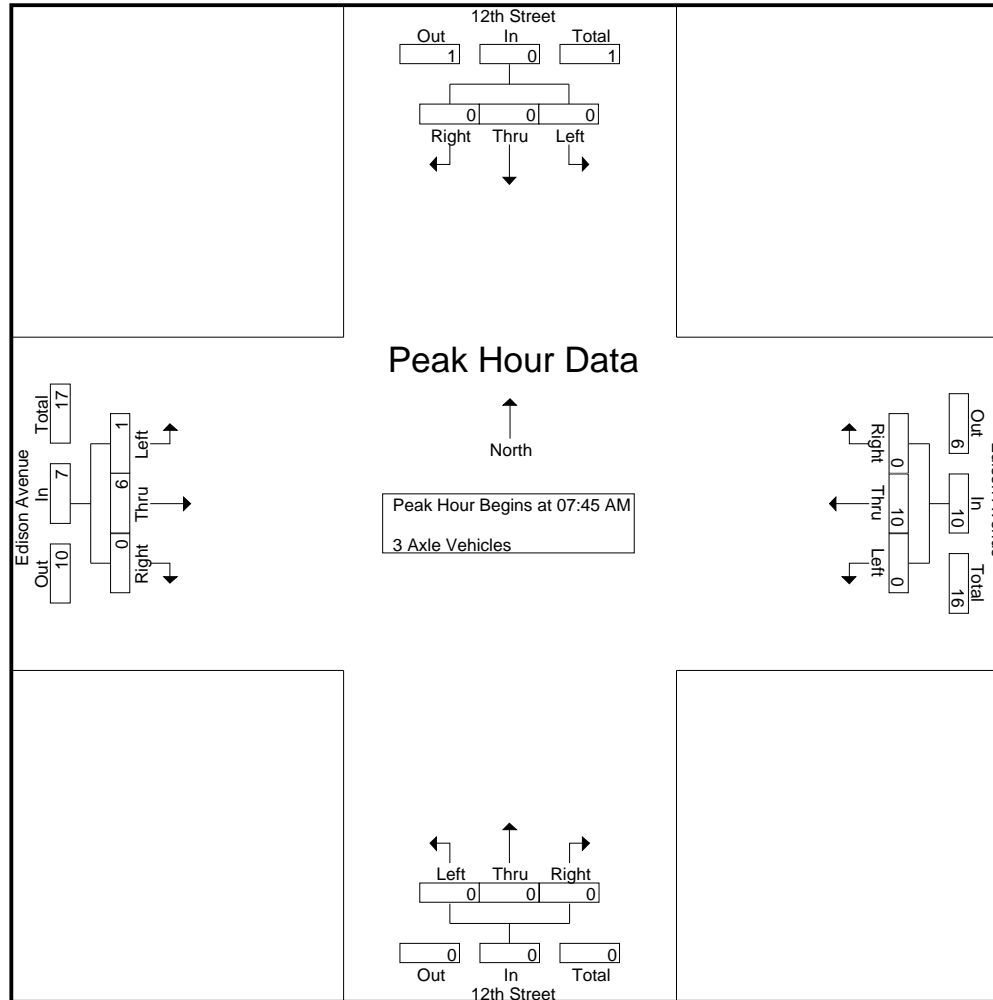
Groups Printed- 3 Axle Vehicles

Start Time	12th Street Southbound					Edison Avenue Westbound					12th Street Northbound					Edison Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total				
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total							
06:00 AM	4	1	0	0	5	1	2	0	0	3	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	10	10
06:15 AM	3	0	2	1	5	0	6	0	0	6	0	1	0	0	1	0	5	0	0	5	1	17	18				
06:30 AM	1	0	1	0	2	0	2	0	0	2	0	0	0	0	0	0	4	1	0	5	0	9	9				
06:45 AM	2	0	1	0	3	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	7	7				
Total	10	1	4	1	15	1	13	0	0	14	0	1	0	0	1	1	11	1	0	13	1	43	44				
07:00 AM	0	0	8	6	8	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	6	19	25				
07:15 AM	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	3	3				
07:30 AM	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	4	4				
07:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	3	3				
Total	2	0	9	6	11	0	9	0	0	9	0	0	0	0	0	0	9	0	0	9	6	29	35				
08:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	5	5				
08:15 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	0	5	5				
08:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	2	0	0	3	0	4	4				
08:45 AM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	5	5				
Total	0	0	1	0	1	0	10	0	0	10	0	0	0	0	0	1	7	0	0	8	0	19	19				
Grand Total	12	1	14	7	27	1	32	0	0	33	0	1	0	0	1	2	27	1	0	30	7	91	98				
Apprch %	44.4	3.7	51.9			3	97	0			0	100	0			6.7	90	3.3									
Total %	13.2	1.1	15.4		29.7	1.1	35.2	0		36.3	0	1.1	0		1.1	2.2	29.7	1.1		33	7.1	92.9					

Start Time	12th Street Southbound				Edison Avenue Westbound				12th Street Northbound				Edison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:45 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
08:00 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	2	0	2	5
08:15 AM	0	0	0	0	0	4	0	4	0	0	0	0	0	1	0	1	5
08:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	1	2	0	3	4
Total Volume	0	0	0	0	0	10	0	10	0	0	0	0	1	6	0	7	17
% App. Total	0	0	0		0	100	0		0	0	0		14.3	85.7	0		
PHF	.000	.000	.000	.000	.000	.625	.000	.625	.000	.000	.000	.000	.250	.750	.000	.583	.850

City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison AM
 Site Code : 05123746
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City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison AM
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 Start Date : 8/17/2023
 Page No : 3

Start Time	12th Street Southbound				Edison Avenue Westbound				12th Street Northbound				Edison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 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	2	0	2	0	0	0	0	0	1	0	1	
+15 mins.	0	0	0	0	0	3	0	3	0	0	0	0	0	2	0	2	
+30 mins.	0	0	0	0	0	4	0	4	0	0	0	0	0	1	0	1	
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	1	2	0	3	
Total Volume	0	0	0	0	0	10	0	10	0	0	0	0	1	6	0	7	
% App. Total	0	0	0	0	0	100	0	100	0	0	0	0	14.3	85.7	0	100	
PHF	.000	.000	.000	.000	.000	.625	.000	.625	.000	.000	.000	.000	.250	.750	.000	.583	

City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison AM
 Site Code : 05123746
 Start Date : 8/17/2023
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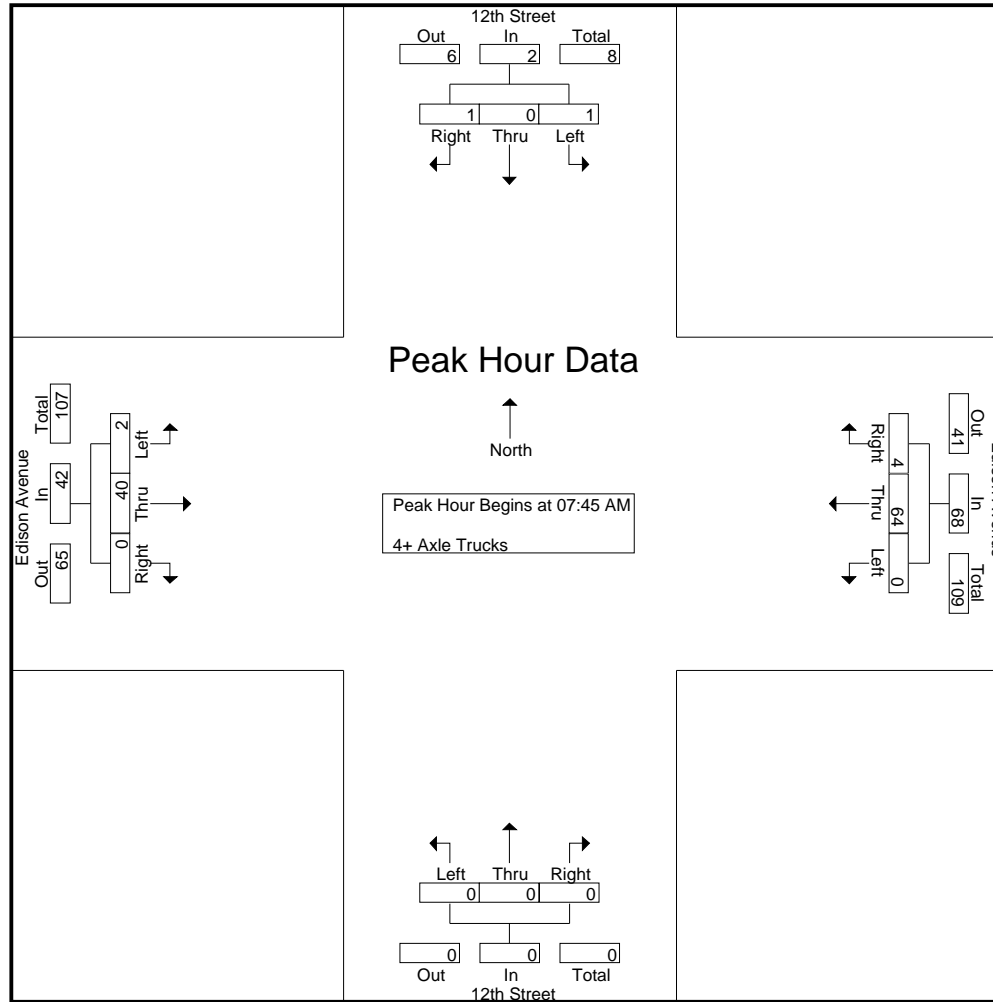
Groups Printed- 4+ Axle Trucks

Start Time	12th Street Southbound					Edison Avenue Westbound					12th Street Northbound					Edison Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total	
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total				
06:00 AM	1	0	0	0	1	0	6	0	0	6	0	0	0	0	0	0	4	0	0	4	0	0	11	11
06:15 AM	0	0	1	0	1	0	8	0	0	8	0	0	0	0	0	2	3	0	0	5	0	0	14	14
06:30 AM	0	0	2	0	2	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	7	7
06:45 AM	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	1	2	0	0	3	0	0	14	14
Total	1	0	3	0	4	0	28	0	0	28	0	0	0	0	0	3	11	0	0	14	0	0	46	46
07:00 AM	2	0	0	0	2	0	15	0	0	15	0	0	0	0	0	0	3	0	0	3	0	0	20	20
07:15 AM	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	1	6	0	0	7	0	0	21	21
07:30 AM	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	1	10	0	0	11	0	0	22	22
07:45 AM	0	0	0	0	0	0	18	1	0	19	0	0	0	0	0	1	12	0	0	13	0	0	32	32
Total	2	0	0	0	2	0	58	1	0	59	0	0	0	0	0	3	31	0	0	34	0	0	95	95
08:00 AM	0	0	1	1	1	0	19	2	1	21	0	0	0	0	0	0	6	0	0	6	2	0	28	30
08:15 AM	1	0	0	0	1	0	13	0	0	13	0	0	0	0	0	0	8	0	0	8	0	0	22	22
08:30 AM	0	0	0	0	0	0	14	1	0	15	0	0	0	0	0	1	14	0	0	15	0	0	30	30
08:45 AM	0	0	2	0	2	0	9	1	0	10	0	0	0	0	0	0	8	0	0	8	0	0	20	20
Total	1	0	3	1	4	0	55	4	1	59	0	0	0	0	0	1	36	0	0	37	2	0	100	102
Grand Total	4	0	6	1	10	0	141	5	1	146	0	0	0	0	0	7	78	0	0	85	2	0	241	243
Apprch %	40	0	60			0	96.6	3.4			0	0	0			8.2	91.8	0						
Total %	1.7	0	2.5		4.1	0	58.5	2.1		60.6	0	0	0		0	2.9	32.4	0		35.3	0.8		99.2	

Start Time	12th Street Southbound				Edison Avenue Westbound				12th Street Northbound				Edison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 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	18	1	19	0	0	0	0	1	12	0	13	32
08:00 AM	0	0	1	1	0	19	2	21	0	0	0	0	0	6	0	6	28
08:15 AM	1	0	0	1	0	13	0	13	0	0	0	0	0	8	0	8	22
08:30 AM	0	0	0	0	0	14	1	15	0	0	0	0	1	14	0	15	30
Total Volume	1	0	1	2	0	64	4	68	0	0	0	0	2	40	0	42	112
% App. Total	50	0	50		0	94.1	5.9		0	0	0		4.8	95.2	0		
PHF	.250	.000	.250	.500	.000	.842	.500	.810	.000	.000	.000	.000	.500	.714	.000	.700	.875

City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison AM
 Site Code : 05123746
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City of Chino
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 Page No : 3

Start Time	12th Street Southbound				Edison Avenue Westbound				12th Street Northbound				Edison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 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	18	1	19	0	0	0	0	1	12	0	13	
+15 mins.	0	0	1	1	0	19	2	21	0	0	0	0	0	6	0	6	
+30 mins.	1	0	0	1	0	13	0	13	0	0	0	0	0	8	0	8	
+45 mins.	0	0	0	0	0	14	1	15	0	0	0	0	1	14	0	15	
Total Volume	1	0	1	2	0	64	4	68	0	0	0	0	2	40	0	42	
% App. Total	50	0	50		0	94.1	5.9		0	0	0		4.8	95.2	0		
PHF	.250	.000	.250	.500	.000	.842	.500	.810	.000	.000	.000	.000	.500	.714	.000	.700	

City of Chino
 N/S: 12th Street
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 Weather: Clear

File Name : 01_CHN_12th_Edison PM
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

Start Time	12th Street Southbound					Edison Avenue Westbound					12th Street Northbound					Edison Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
04:00 PM	6	1	17	14	24	1	108	2	0	111	2	1	2	1	5	5	211	2	0	218	15	358	373
04:15 PM	2	1	12	10	15	1	126	7	1	134	4	0	2	0	6	0	182	4	0	186	11	341	352
04:30 PM	9	3	19	15	31	3	113	6	1	122	4	0	1	1	5	3	193	4	0	200	17	358	375
04:45 PM	12	1	14	8	27	5	107	5	1	117	4	1	2	2	7	6	191	10	0	207	11	358	369
Total	29	6	62	47	97	10	454	20	3	484	14	2	7	4	23	14	777	20	0	811	54	1415	1469
05:00 PM	11	2	23	15	36	5	131	2	0	138	6	0	1	1	7	5	210	8	0	223	16	404	420
05:15 PM	7	7	24	18	38	7	120	5	0	132	10	0	0	0	10	5	177	14	0	196	18	376	394
05:30 PM	8	12	19	4	39	5	107	2	0	114	12	0	0	0	12	5	198	32	5	235	9	400	409
05:45 PM	10	14	17	6	41	13	126	3	0	142	11	6	3	3	20	5	163	33	7	201	16	404	420
Total	36	35	83	43	154	30	484	12	0	526	39	6	4	4	49	20	748	87	12	855	59	1584	1643
06:00 PM	4	0	7	5	11	5	120	3	0	128	18	0	2	1	20	3	186	35	3	224	9	383	392
06:15 PM	2	6	5	2	13	4	107	2	0	113	15	1	2	2	18	1	154	18	2	173	6	317	323
06:30 PM	6	5	5	0	16	1	99	2	0	102	6	0	0	0	6	1	142	16	1	159	1	283	284
06:45 PM	3	0	7	5	10	4	99	3	1	106	4	5	2	0	11	2	160	17	1	179	7	306	313
Total	15	11	24	12	50	14	425	10	1	449	43	6	6	3	55	7	642	86	7	735	23	1289	1312
Grand Total	80	52	169	102	301	54	1363	42	4	1459	96	14	17	11	127	41	2167	193	19	2401	136	4288	4424
Apprch %	26.6	17.3	56.1			3.7	93.4	2.9			75.6	11	13.4			1.7	90.3	8					
Total %	1.9	1.2	3.9		7	1.3	31.8	1		34	2.2	0.3	0.4		3	1	50.5	4.5		56	3.1	96.9	
Passenger Vehicles	73	52	167		393	54	1231	15		1303	96	14	17		138	38	1978	191		2226	0	0	4060
% Passenger Vehicles	91.2	100	98.8	99	97.5	100	90.3	35.7	75	89.1	100	100	100	100	100	92.7	91.3	99	100	92	0	0	91.8
Large 2 Axle Vehicles	1	0	0		1	0	22	12		35	0	0	0		0	1	26	2		29	0	0	65
% Large 2 Axle Vehicles	1.2	0	0	0	0.2	0	1.6	28.6	25	2.4	0	0	0	0	0	2.4	1.2	1	0	1.2	0	0	1.5
3 Axle Vehicles	1	0	1		2	0	34	13		47	0	0	0		0	1	39	0		40	0	0	89
% 3 Axle Vehicles	1.2	0	0.6	0	0.5	0	2.5	31	0	3.2	0	0	0	0	0	2.4	1.8	0	0	1.7	0	0	2
4+ Axle Trucks	5	0	1		7	0	76	2		78	0	0	0		0	1	124	0		125	0	0	210
% 4+ Axle Trucks	6.2	0	0.6	1	1.7	0	5.6	4.8	0	5.3	0	0	0	0	0	2.4	5.7	0	0	5.2	0	0	4.7

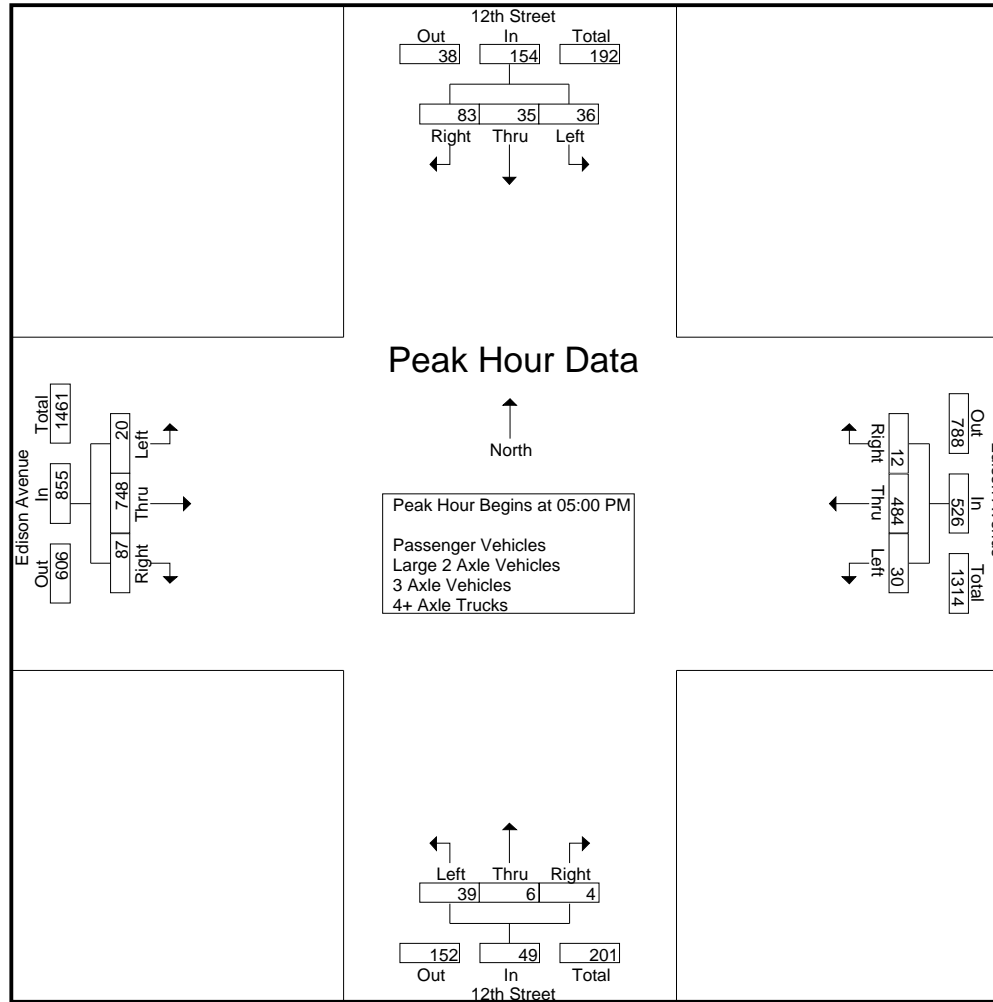
City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison PM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 2

Start Time	12th Street Southbound				Edison Avenue Westbound				12th Street Northbound				Edison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	11	2	23	36	5	131	2	138	6	0	1	7	5	210	8	223	404
05:15 PM	7	7	24	38	7	120	5	132	10	0	0	10	5	177	14	196	376
05:30 PM	8	12	19	39	5	107	2	114	12	0	0	12	5	198	32	235	400
05:45 PM	10	14	17	41	13	126	3	142	11	6	3	20	5	163	33	201	404
Total Volume	36	35	83	154	30	484	12	526	39	6	4	49	20	748	87	855	1584
% App. Total	23.4	22.7	53.9		5.7	92	2.3		79.6	12.2	8.2		2.3	87.5	10.2		
PHF	.818	.625	.865	.939	.577	.924	.600	.926	.813	.250	.333	.613	1.00	.890	.659	.910	.980

City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison PM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 3



City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison PM
 Site Code : 05123746
 Start Date : 8/17/2023
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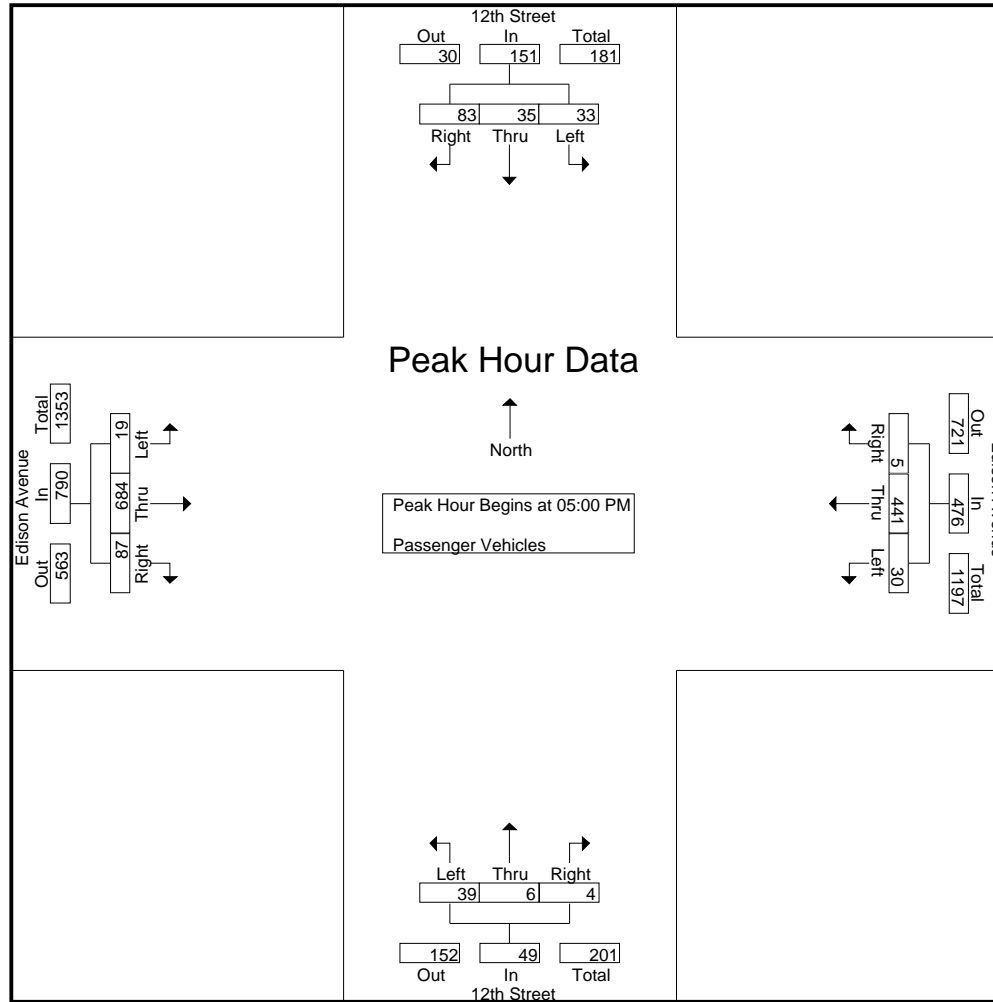
Groups Printed- Passenger Vehicles

Start Time	12th Street Southbound					Edison Avenue Westbound					12th Street Northbound					Edison Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
04:00 PM	5	1	16	13	22	1	86	1	0	88	2	1	2	1	5	5	197	2	0	204	14	319	333
04:15 PM	2	1	12	10	15	1	107	1	0	109	4	0	2	0	6	0	157	4	0	161	10	291	301
04:30 PM	8	3	19	15	30	3	100	3	1	106	4	0	1	1	5	3	172	4	0	179	17	320	337
04:45 PM	12	1	14	8	27	5	96	2	1	103	4	1	2	2	7	4	173	8	0	185	11	322	333
Total	27	6	61	46	94	10	389	7	2	406	14	2	7	4	23	12	699	18	0	729	52	1252	1304
05:00 PM	9	2	23	15	34	5	121	0	0	126	6	0	1	1	7	5	192	8	0	205	16	372	388
05:15 PM	7	7	24	18	38	7	108	1	0	116	10	0	0	0	10	4	161	14	0	179	18	343	361
05:30 PM	7	12	19	4	38	5	94	1	0	100	12	0	0	0	12	5	181	32	5	218	9	368	377
05:45 PM	10	14	17	6	41	13	118	3	0	134	11	6	3	3	20	5	150	33	7	188	16	383	399
Total	33	35	83	43	151	30	441	5	0	476	39	6	4	4	49	19	684	87	12	790	59	1466	1525
06:00 PM	3	0	7	5	10	5	115	0	0	120	18	0	2	1	20	3	172	35	3	210	9	360	369
06:15 PM	2	6	5	2	13	4	98	1	0	103	15	1	2	2	18	1	147	18	2	166	6	300	306
06:30 PM	5	5	5	0	15	1	95	0	0	96	6	0	0	0	6	1	129	16	1	146	1	263	264
06:45 PM	3	0	6	5	9	4	93	2	1	99	4	5	2	0	11	2	147	17	1	166	7	285	292
Total	13	11	23	12	47	14	401	3	1	418	43	6	6	3	55	7	595	86	7	688	23	1208	1231
Grand Total	73	52	167	101	292	54	1231	15	3	1300	96	14	17	11	127	38	1978	191	19	2207	134	3926	4060
Apprch %	25	17.8	57.2			4.2	94.7	1.2			75.6	11	13.4			1.7	89.6	8.7					
Total %	1.9	1.3	4.3		7.4	1.4	31.4	0.4		33.1	2.4	0.4	0.4		3.2	1	50.4	4.9		56.2	3.3	96.7	

Start Time	12th Street Southbound				Edison Avenue Westbound				12th Street Northbound				Edison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	9	2	23	34	5	121	0	126	6	0	1	7	5	192	8	205	372
05:15 PM	7	7	24	38	7	108	1	116	10	0	0	10	4	161	14	179	343
05:30 PM	7	12	19	38	5	94	1	100	12	0	0	12	5	181	32	218	368
05:45 PM	10	14	17	41	13	118	3	134	11	6	3	20	5	150	33	188	383
Total Volume	33	35	83	151	30	441	5	476	39	6	4	49	19	684	87	790	1466
% App. Total	21.9	23.2	55		6.3	92.6	1.1		79.6	12.2	8.2		2.4	86.6	11		
PHF	.825	.625	.865	.921	.577	.911	.417	.888	.813	.250	.333	.613	.950	.891	.659	.906	.957

City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison PM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 2



City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison PM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 3

Start Time	12th Street Southbound				Edison Avenue Westbound				12th Street Northbound				Edison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				05:00 PM				05:00 PM				05:00 PM				
+0 mins.	9	2	23	34	5	121	0	126	6	0	1	7	5	192	8	205	
+15 mins.	7	7	24	38	7	108	1	116	10	0	0	10	4	161	14	179	
+30 mins.	7	12	19	38	5	94	1	100	12	0	0	12	5	181	32	218	
+45 mins.	10	14	17	41	13	118	3	134	11	6	3	20	5	150	33	188	
Total Volume	33	35	83	151	30	441	5	476	39	6	4	49	19	684	87	790	
% App. Total	21.9	23.2	55		6.3	92.6	1.1		79.6	12.2	8.2		2.4	86.6	11		
PHF	.825	.625	.865	.921	.577	.911	.417	.888	.813	.250	.333	.613	.950	.891	.659	.906	

City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison PM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 1

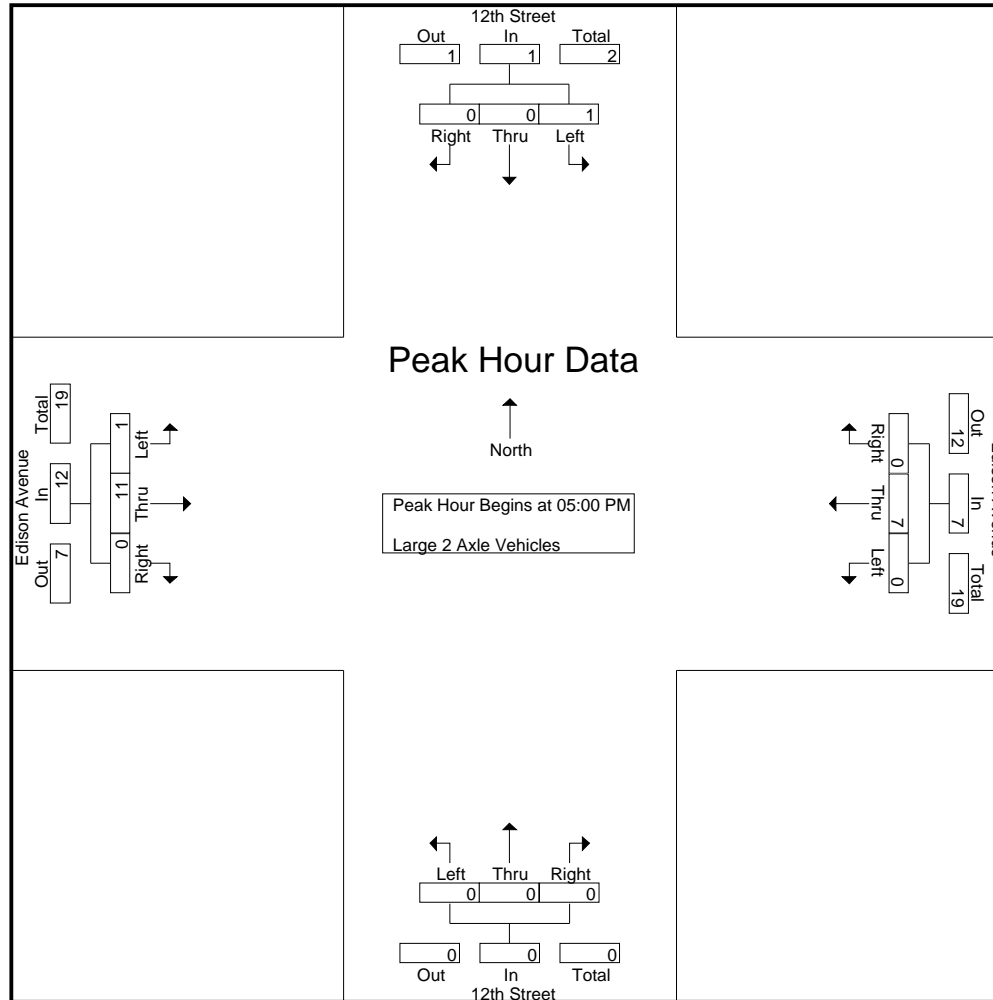
Groups Printed- Large 2 Axle Vehicles

Start Time	12th Street Southbound					Edison Avenue Westbound					12th Street Northbound					Edison Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
04:00 PM	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	0	4	0	0	4	0	0	8
04:15 PM	0	0	0	0	0	0	5	5	1	10	0	0	0	0	0	0	1	0	0	1	1	11	12
04:30 PM	0	0	0	0	0	0	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	3	3
04:45 PM	0	0	0	0	0	0	2	3	0	5	0	0	0	0	0	0	1	2	0	3	0	8	8
Total	0	0	0	0	0	0	11	11	1	22	0	0	0	0	0	0	6	2	0	8	1	30	31
05:00 PM	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	6	6
05:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	1	4	0	0	5	0	7	7
05:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	3	3
05:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	4	4
Total	1	0	0	0	1	0	7	0	0	7	0	0	0	0	0	1	11	0	0	12	0	20	20
06:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	0	5	5
06:15 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	4	4
06:30 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	2	2
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	3	3
Total	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	0	9	0	0	9	0	14	14
Grand Total	1	0	0	0	1	0	22	12	1	34	0	0	0	0	0	1	26	2	0	29	1	64	65
Apprch %	100	0	0			0	64.7	35.3			0	0	0			3.4	89.7	6.9					
Total %	1.6	0	0		1.6	0	34.4	18.8		53.1	0	0	0		0	1.6	40.6	3.1		45.3	1.5	98.5	

Start Time	12th Street Southbound				Edison Avenue Westbound				12th Street Northbound				Edison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	1	0	0	1	0	2	0	2	0	0	0	0	0	3	0	3	6
05:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	1	4	0	5	7
05:30 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
05:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3	4
Total Volume	1	0	0	1	0	7	0	7	0	0	0	0	1	11	0	12	20
% App. Total	100	0	0		0	100	0		0	0	0		8.3	91.7	0		
PHF	.250	.000	.000	.250	.000	.875	.000	.875	.000	.000	.000	.000	.250	.688	.000	.600	.714

City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison PM
 Site Code : 05123746
 Start Date : 8/17/2023
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City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison PM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 3

Start Time	12th Street Southbound				Edison Avenue Westbound				12th Street Northbound				Edison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				05:00 PM				05:00 PM				05:00 PM				
+0 mins.	1	0	0	1	0	2	0	2	0	0	0	0	0	3	0	3	
+15 mins.	0	0	0	0	0	2	0	2	0	0	0	0	1	4	0	5	
+30 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3	
Total Volume	1	0	0	1	0	7	0	7	0	0	0	0	1	11	0	12	
% App. Total	100	0	0		0	100	0		0	0	0		8.3	91.7	0		
PHF	.250	.000	.000	.250	.000	.875	.000	.875	.000	.000	.000	.000	.250	.688	.000	.600	

City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison PM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 1

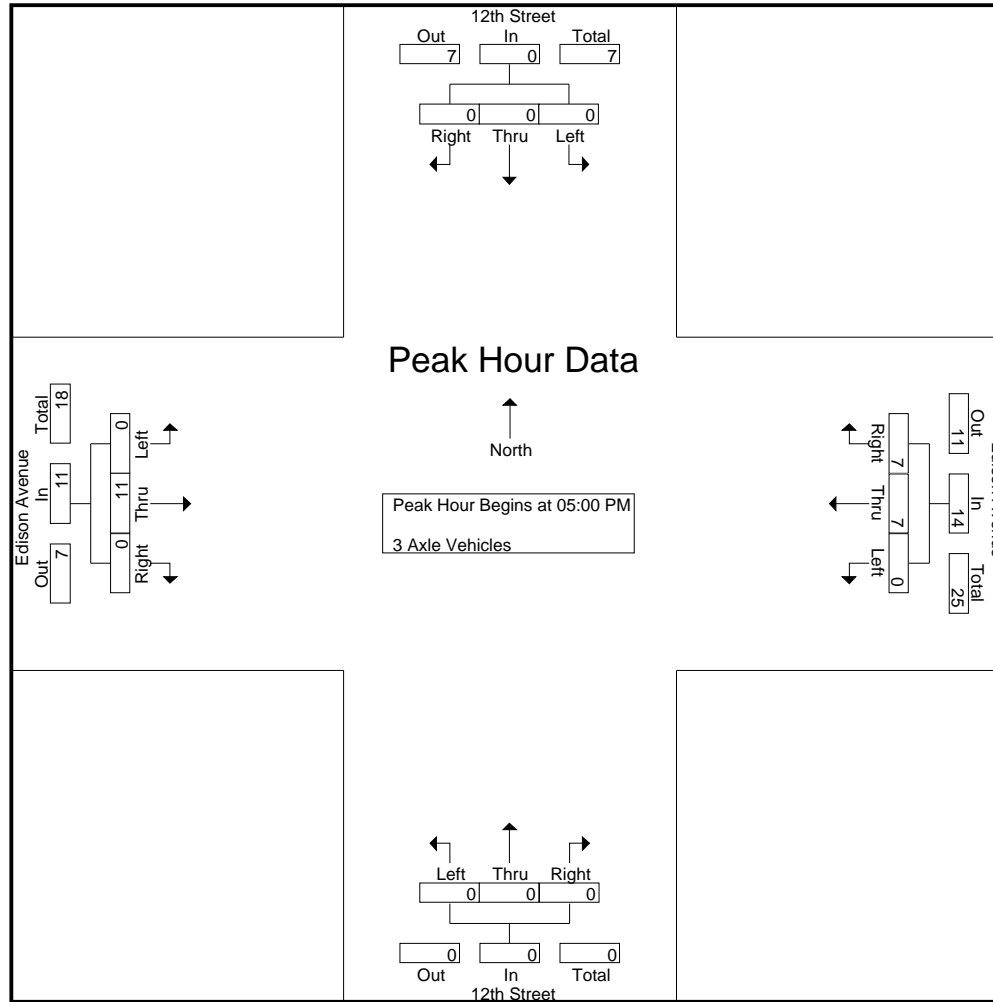
Groups Printed- 3 Axle Vehicles

Start Time	12th Street Southbound					Edison Avenue Westbound					12th Street Northbound					Edison Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total	
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total				
04:00 PM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	4	0	0	4	0	0	12	12
04:15 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	7	0	0	7	0	0	12	12
04:30 PM	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	0	7	0	0	7	0	0	11	11
04:45 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	1	3	0	0	4	0	0	8	8
Total	0	0	0	0	0	0	20	1	0	21	0	0	0	0	0	1	21	0	0	22	0	0	43	43
05:00 PM	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	3	0	0	3	0	0	5	5
05:15 PM	0	0	0	0	0	0	3	4	0	7	0	0	0	0	0	0	4	0	0	4	0	0	11	11
05:30 PM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	3	0	0	3	0	0	5	5
05:45 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	4	4
Total	0	0	0	0	0	0	7	7	0	14	0	0	0	0	0	0	11	0	0	11	0	0	25	25
06:00 PM	0	0	0	0	0	0	2	2	0	4	0	0	0	0	0	0	3	0	0	3	0	0	7	7
06:15 PM	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	4
06:30 PM	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	2	0	0	2	0	0	4	4
06:45 PM	0	0	1	0	1	0	2	1	0	3	0	0	0	0	0	0	2	0	0	2	0	0	6	6
Total	1	0	1	0	2	0	7	5	0	12	0	0	0	0	0	0	7	0	0	7	0	0	21	21
Grand Total	1	0	1	0	2	0	34	13	0	47	0	0	0	0	0	1	39	0	0	40	0	0	89	89
Apprch %	50	0	50			0	72.3	27.7			0	0	0			2.5	97.5	0			0	0		
Total %	1.1	0	1.1		2.2	0	38.2	14.6		52.8	0	0	0		0	1.1	43.8	0		44.9	0	0	100	

Start Time	12th Street Southbound				Edison Avenue Westbound				12th Street Northbound				Edison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	2	2	0	0	0	0	0	3	0	3	5
05:15 PM	0	0	0	0	0	3	4	7	0	0	0	0	0	4	0	4	11
05:30 PM	0	0	0	0	0	1	1	2	0	0	0	0	0	3	0	3	5
05:45 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	1	0	1	4
Total Volume	0	0	0	0	0	7	7	14	0	0	0	0	0	11	0	11	25
% App. Total	0	0	0		0	50	50		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.583	.438	.500	.000	.000	.000	.000	.000	.688	.000	.688	.568

City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison PM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 2



City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison PM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 3

Start Time	12th Street Southbound				Edison Avenue Westbound				12th Street Northbound				Edison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				05:00 PM				05:00 PM				05:00 PM				
+0 mins.	0	0	0	0	0	0	2	2	0	0	0	0	0	3	0	3	
+15 mins.	0	0	0	0	0	3	4	7	0	0	0	0	0	4	0	4	
+30 mins.	0	0	0	0	0	1	1	2	0	0	0	0	0	3	0	3	
+45 mins.	0	0	0	0	0	3	0	3	0	0	0	0	0	1	0	1	
Total Volume	0	0	0	0	0	7	7	14	0	0	0	0	0	11	0	11	
% App. Total	0	0	0	0	0	50	50		0	0	0	0	0	100	0		
PHF	.000	.000	.000	.000	.000	.583	.438	.500	.000	.000	.000	.000	.000	.688	.000	.688	

City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison PM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 1

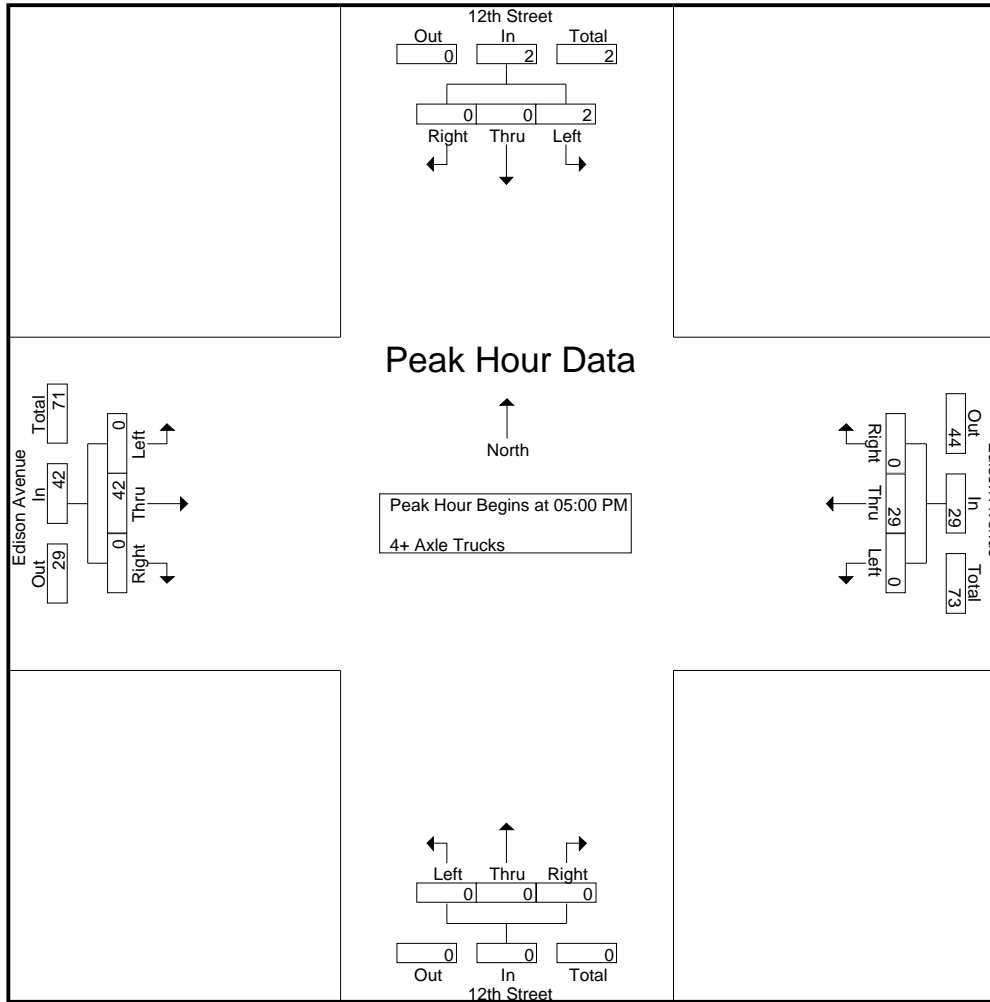
Groups Printed- 4+ Axle Trucks

Start Time	12th Street Southbound					Edison Avenue Westbound					12th Street Northbound					Edison Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
04:00 PM	1	0	1	1	2	0	11	0	0	11	0	0	0	0	0	0	6	0	0	6	1	19	20
04:15 PM	0	0	0	0	0	0	9	1	0	10	0	0	0	0	0	0	17	0	0	17	0	27	27
04:30 PM	1	0	0	0	1	0	9	0	0	9	0	0	0	0	0	0	14	0	0	14	0	24	24
04:45 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	1	14	0	0	15	0	20	20
Total	2	0	1	1	3	0	34	1	0	35	0	0	0	0	0	1	51	0	0	52	1	90	91
05:00 PM	1	0	0	0	1	0	8	0	0	8	0	0	0	0	0	0	12	0	0	12	0	21	21
05:15 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	8	0	0	8	0	15	15
05:30 PM	1	0	0	0	1	0	10	0	0	10	0	0	0	0	0	0	13	0	0	13	0	24	24
05:45 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	9	0	0	9	0	13	13
Total	2	0	0	0	2	0	29	0	0	29	0	0	0	0	0	0	42	0	0	42	0	73	73
06:00 PM	1	0	0	0	1	0	2	1	0	3	0	0	0	0	0	0	7	0	0	7	0	11	11
06:15 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	0	9	9
06:30 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	10	0	0	10	0	14	14
06:45 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	8	0	0	8	0	12	12
Total	1	0	0	0	1	0	13	1	0	14	0	0	0	0	0	0	31	0	0	31	0	46	46
Grand Total	5	0	1	1	6	0	76	2	0	78	0	0	0	0	0	1	124	0	0	125	1	209	210
Apprch %	83.3	0	16.7			0	97.4	2.6			0	0	0			0.8	99.2	0					
Total %	2.4	0	0.5		2.9	0	36.4	1		37.3	0	0	0		0	0.5	59.3	0		59.8	0.5	99.5	

Start Time	12th Street Southbound				Edison Avenue Westbound				12th Street Northbound				Edison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	1	0	0	1	0	8	0	8	0	0	0	0	0	12	0	12	21
05:15 PM	0	0	0	0	0	7	0	7	0	0	0	0	0	8	0	8	15
05:30 PM	1	0	0	1	0	10	0	10	0	0	0	0	0	13	0	13	24
05:45 PM	0	0	0	0	0	4	0	4	0	0	0	0	0	9	0	9	13
Total Volume	2	0	0	2	0	29	0	29	0	0	0	0	0	42	0	42	73
% App. Total	100	0	0		0	100	0		0	0	0		0	100	0		
PHF	.500	.000	.000	.500	.000	.725	.000	.725	.000	.000	.000	.000	.000	.808	.000	.808	.760

City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison PM
 Site Code : 05123746
 Start Date : 8/17/2023
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City of Chino
 N/S: 12th Street
 E/W: Edison Avenue
 Weather: Clear

File Name : 01_CHN_12th_Edison PM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 3

Start Time	12th Street Southbound				Edison Avenue Westbound				12th Street Northbound				Edison Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				05:00 PM				05:00 PM				05:00 PM				
+0 mins.	1	0	0	1	0	8	0	8	0	0	0	0	0	12	0	12	
+15 mins.	0	0	0	0	0	7	0	7	0	0	0	0	0	8	0	8	
+30 mins.	1	0	0	1	0	10	0	10	0	0	0	0	0	13	0	13	
+45 mins.	0	0	0	0	0	4	0	4	0	0	0	0	0	9	0	9	
Total Volume	2	0	0	2	0	29	0	29	0	0	0	0	0	42	0	42	
% App. Total	100	0	0		0	100	0		0	0	0		0	100	0		
PHF	.500	.000	.000	.500	.000	.725	.000	.725	.000	.000	.000	.000	.000	.808	.000	.808	

Location: Chino
 N/S: 12th Street
 E/W: Edison Avenue



Date: 8/17/2023
 Day: Thursday

PEDESTRIANS

	North Leg 12th Street	East Leg Edison Avenue	South Leg 12th Street	West Leg Edison Avenue	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
6:00 AM	1	0	1	0	2
6:15 AM	0	0	2	0	2
6:30 AM	0	0	0	0	0
6:45 AM	0	0	0	0	0
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	1	0	0	0	1
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	2	0	3	0	5

	North Leg 12th Street	East Leg Edison Avenue	South Leg 12th Street	West Leg Edison Avenue	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	1	1
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
6:00 PM	0	0	0	0	0
6:15 PM	0	0	0	0	0
6:30 PM	0	0	0	0	0
6:45 PM	0	0	0	1	1
TOTAL VOLUMES:	0	0	0	2	2

Location: Chino
 N/S: 12th Street
 E/W: Edison Avenue



Date: 8/17/2023
 Day: Thursday

BICYCLES

	Southbound 12th Street			Westbound Edison Avenue			Northbound 12th Street			Eastbound Edison Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
8:45 AM	0	0	0	1	0	0	0	0	1	0	0	0	2
TOTAL VOLUMES:	0	0	0	1	0	0	0	0	6	0	0	0	7

	Southbound 12th Street			Westbound Edison Avenue			Northbound 12th Street			Eastbound Edison Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	0	0	0	0	0	0	0	0	1

City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch AM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 1

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

Start Time	Benson Avenue Southbound					Schaefer Avenue Westbound					Benson Avenue Northbound					Schaefer Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
06:00 AM	2	9	13	8	24	19	100	2	1	121	0	4	3	2	7	6	52	4	0	62	11	214	225
06:15 AM	5	6	13	10	24	13	135	7	0	155	1	1	0	0	2	4	44	6	0	54	10	235	245
06:30 AM	5	7	20	15	32	22	141	6	0	169	3	1	1	0	5	6	48	11	1	65	16	271	287
06:45 AM	6	15	17	12	38	44	184	7	0	235	2	1	2	1	5	8	61	13	1	82	14	360	374
Total	18	37	63	45	118	98	560	22	1	680	6	7	6	3	19	24	205	34	2	263	51	1080	1131
07:00 AM	10	9	28	14	47	23	159	9	0	191	4	2	1	1	7	10	55	9	2	74	17	319	336
07:15 AM	14	4	18	11	36	28	251	13	3	292	1	1	3	3	5	19	67	12	2	98	19	431	450
07:30 AM	9	4	31	22	44	8	216	24	3	248	2	1	3	2	6	17	93	2	0	112	27	410	437
07:45 AM	19	15	44	22	78	11	268	21	2	300	7	5	3	0	15	34	96	6	1	136	25	529	554
Total	52	32	121	69	205	70	894	67	8	1031	14	9	10	6	33	80	311	29	5	420	88	1689	1777
08:00 AM	12	19	31	14	62	8	280	28	2	316	7	5	9	4	21	15	112	14	4	141	24	540	564
08:15 AM	16	10	14	9	40	14	245	28	1	287	1	1	6	2	8	16	114	13	0	143	12	478	490
08:30 AM	19	9	16	10	44	5	191	11	1	207	8	7	3	3	18	15	142	10	1	167	15	436	451
08:45 AM	3	13	20	16	36	11	186	10	0	207	6	6	2	0	14	9	110	6	1	125	17	382	399
Total	50	51	81	49	182	38	902	77	4	1017	22	19	20	9	61	55	478	43	6	576	68	1836	1904
Grand Total	120	120	265	163	505	206	2356	166	13	2728	42	35	36	18	113	159	994	106	13	1259	207	4605	4812
Apprch %	23.8	23.8	52.5			7.6	86.4	6.1			37.2	31	31.9			12.6	79	8.4					
Total %	2.6	2.6	5.8		11	4.5	51.2	3.6		59.2	0.9	0.8	0.8		2.5	3.5	21.6	2.3		27.3	4.3	95.7	
Passenger Vehicles	116	117	244		633	199	2290	158		2660	32	33	32		114	144	892	99		1148	0	0	4555
% Passenger Vehicles	96.7	97.5	92.1	95.7	94.8	96.6	97.2	95.2	100	97	76.2	94.3	88.9	94.4	87	90.6	89.7	93.4	100	90.3	0	0	94.7
Large 2 Axle Vehicles	3	2	19		31	6	37	5		48	2	2	1		5	9	48	1		58	0	0	142
% Large 2 Axle Vehicles	2.5	1.7	7.2	4.3	4.6	2.9	1.6	3	0	1.8	4.8	5.7	2.8	0	3.8	5.7	4.8	0.9	0	4.6	0	0	3
3 Axle Vehicles	0	0	1		1	0	10	1		11	1	0	0		1	5	17	3		25	0	0	38
% 3 Axle Vehicles	0	0	0.4	0	0.1	0	0.4	0.6	0	0.4	2.4	0	0	0	0.8	3.1	1.7	2.8	0	2	0	0	0.8
4+ Axle Trucks	1	1	1		3	1	19	2		22	7	0	3		11	1	37	3		41	0	0	77
% 4+ Axle Trucks	0.8	0.8	0.4	0	0.4	0.5	0.8	1.2	0	0.8	16.7	0	8.3	5.6	8.4	0.6	3.7	2.8	0	3.2	0	0	1.6

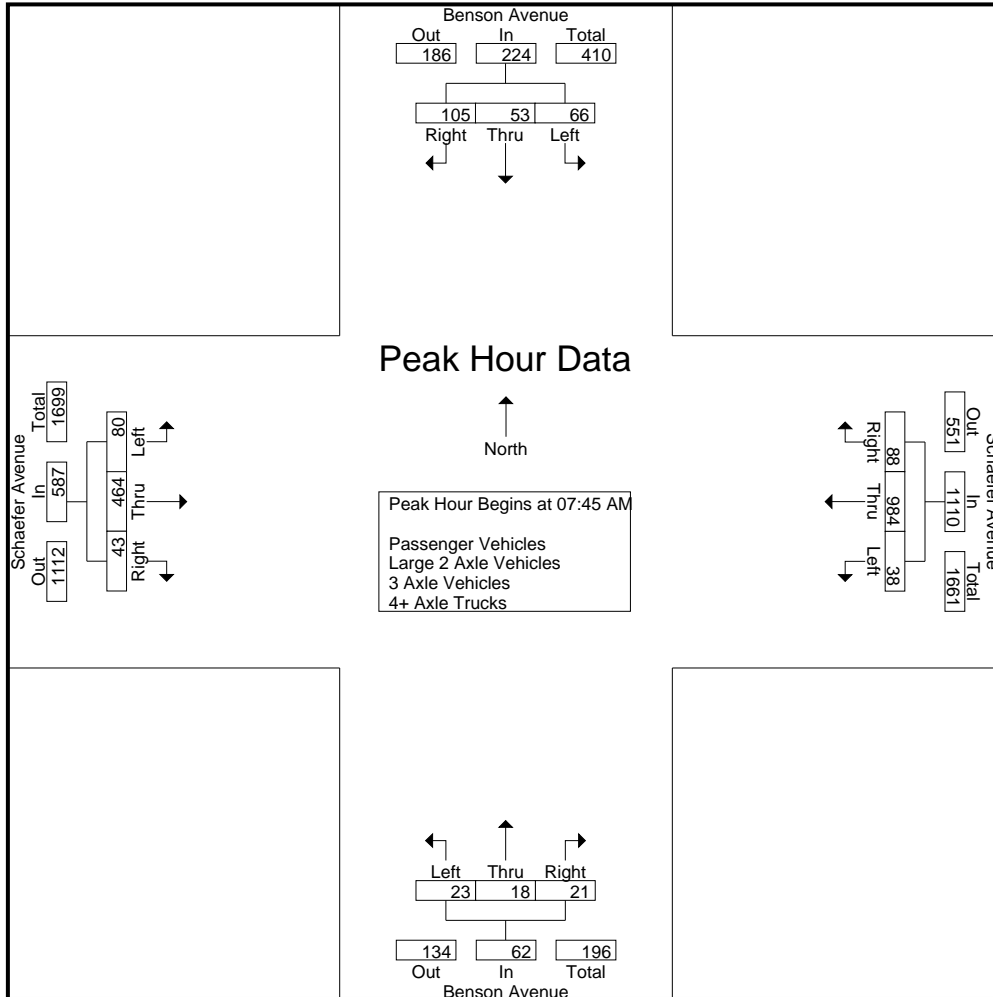
City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch AM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 2

Start Time	Benson Avenue Southbound				Schaefer Avenue Westbound				Benson Avenue Northbound				Schaefer Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	19	15	44	78	11	268	21	300	7	5	3	15	34	96	6	136	529
08:00 AM	12	19	31	62	8	280	28	316	7	5	9	21	15	112	14	141	540
08:15 AM	16	10	14	40	14	245	28	287	1	1	6	8	16	114	13	143	478
08:30 AM	19	9	16	44	5	191	11	207	8	7	3	18	15	142	10	167	436
Total Volume	66	53	105	224	38	984	88	1110	23	18	21	62	80	464	43	587	1983
% App. Total	29.5	23.7	46.9		3.4	88.6	7.9		37.1	29	33.9		13.6	79	7.3		
PHF	.868	.697	.597	.718	.679	.879	.786	.878	.719	.643	.583	.738	.588	.817	.768	.879	.918

City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch AM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 3



City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch AM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 1

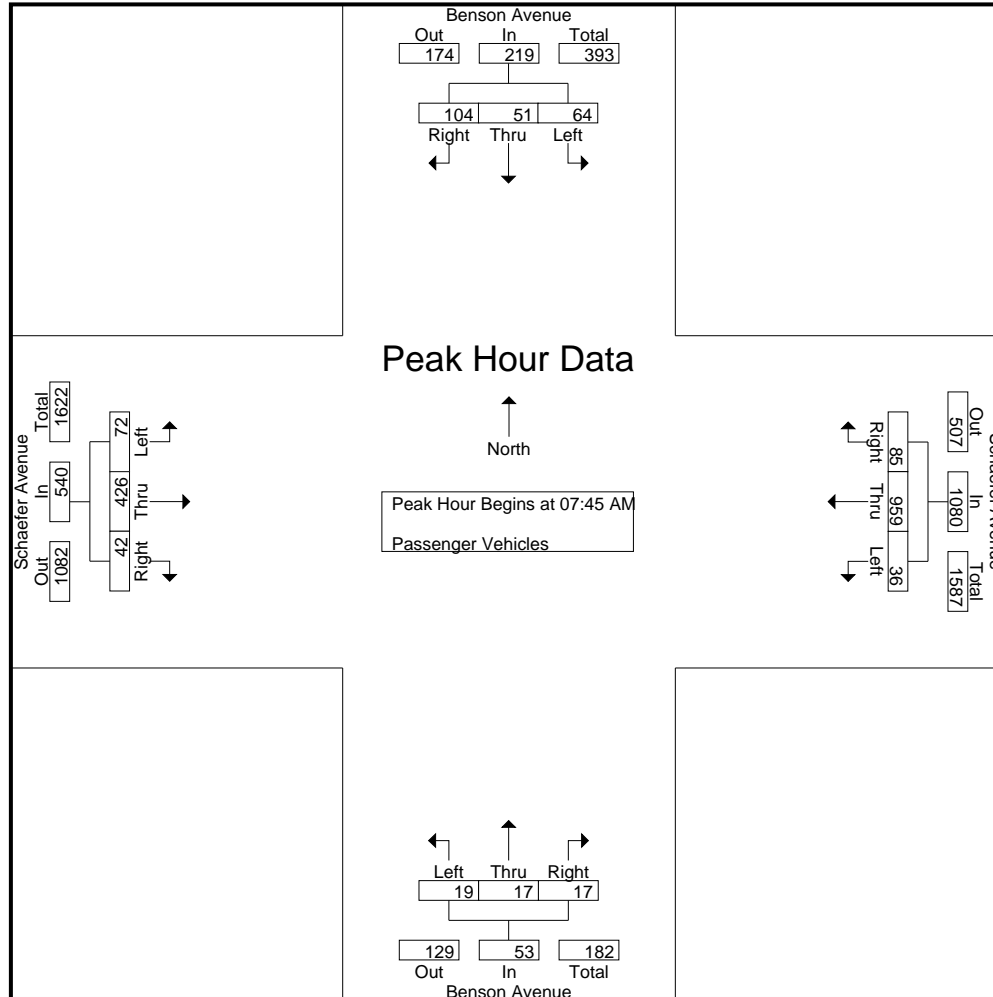
Groups Printed- Passenger Vehicles

Start Time	Benson Avenue Southbound					Schaefer Avenue Westbound					Benson Avenue Northbound					Schaefer Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
06:00 AM	2	8	13	8	23	19	99	2	1	120	0	4	3	2	7	4	46	4	0	54	11	204	215
06:15 AM	5	6	13	10	24	13	128	7	0	148	1	0	0	0	1	3	34	5	0	42	10	215	225
06:30 AM	4	7	20	15	31	21	140	5	0	166	2	1	1	0	4	5	39	10	1	54	16	255	271
06:45 AM	5	15	14	11	34	43	178	7	0	228	1	1	2	1	4	8	56	12	1	76	13	342	355
Total	16	36	60	44	112	96	545	21	1	662	4	6	6	3	16	20	175	31	2	226	50	1016	1066
07:00 AM	10	9	18	11	37	22	155	9	0	186	2	2	1	1	5	8	47	9	2	64	14	292	306
07:15 AM	14	4	16	10	34	28	242	13	3	283	1	1	3	3	5	19	56	10	2	85	18	407	425
07:30 AM	9	4	28	21	41	7	212	23	3	242	1	1	3	2	5	16	84	1	0	101	26	389	415
07:45 AM	19	15	44	22	78	11	266	21	2	298	7	5	1	0	13	32	85	5	1	122	25	511	536
Total	52	32	106	64	190	68	875	66	8	1009	11	9	8	6	28	75	272	25	5	372	83	1599	1682
08:00 AM	11	17	31	14	59	7	273	28	2	308	5	5	9	4	19	14	105	14	4	133	24	519	543
08:15 AM	15	10	13	8	38	13	240	25	1	278	1	1	5	2	7	16	109	13	0	138	11	461	472
08:30 AM	19	9	16	10	44	5	180	11	1	196	6	6	2	2	14	10	127	10	1	147	14	401	415
08:45 AM	3	13	18	16	34	10	177	7	0	194	5	6	2	0	13	9	104	6	1	119	17	360	377
Total	48	49	78	48	175	35	870	71	4	976	17	18	18	8	53	49	445	43	6	537	66	1741	1807
Grand Total	116	117	244	156	477	199	2290	158	13	2647	32	33	32	17	97	144	892	99	13	1135	199	4356	4555
Apprch %	24.3	24.5	51.2			7.5	86.5	6			33	34	33			12.7	78.6	8.7					
Total %	2.7	2.7	5.6		11	4.6	52.6	3.6		60.8	0.7	0.8	0.7		2.2	3.3	20.5	2.3		26.1	4.4	95.6	

Start Time	Benson Avenue Southbound				Schaefer Avenue Westbound				Benson Avenue Northbound				Schaefer Avenue Eastbound				Int. Total		
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total			
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 07:45 AM																			
07:45 AM	19	15	44	78	11	266	21	298	7	5	1	13	32	85	5	122	511		
08:00 AM	11	17	31	59	7	273	28	308	5	5	9	19	14	105	14	133	519		
08:15 AM	15	10	13	38	13	240	25	278	1	1	5	7	16	109	13	138	461		
08:30 AM	19	9	16	44	5	180	11	196	6	6	2	14	10	127	10	147	401		
Total Volume	64	51	104	219	36	959	85	1080	19	17	17	53	72	426	42	540	1892		
% App. Total	29.2	23.3	47.5		3.3	88.8	7.9		35.8	32.1	32.1		13.3	78.9	7.8				
PHF	.842	.750	.591	.702	.692	.878	.759	.877	.679	.708	.472	.697	.563	.839	.750	.918	.911		

City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch AM
 Site Code : 05123746
 Start Date : 8/17/2023
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City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch AM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 3

Start Time	Benson Avenue Southbound				Schaefer Avenue Westbound				Benson Avenue Northbound				Schaefer Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 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.	19	15	44	78	11	266	21	298	7	5	1	13	32	85	5	122	
+15 mins.	11	17	31	59	7	273	28	308	5	5	9	19	14	105	14	133	
+30 mins.	15	10	13	38	13	240	25	278	1	1	5	7	16	109	13	138	
+45 mins.	19	9	16	44	5	180	11	196	6	6	2	14	10	127	10	147	
Total Volume	64	51	104	219	36	959	85	1080	19	17	17	53	72	426	42	540	
% App. Total	29.2	23.3	47.5		3.3	88.8	7.9		35.8	32.1	32.1		13.3	78.9	7.8		
PHF	.842	.750	.591	.702	.692	.878	.759	.877	.679	.708	.472	.697	.563	.839	.750	.918	

City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

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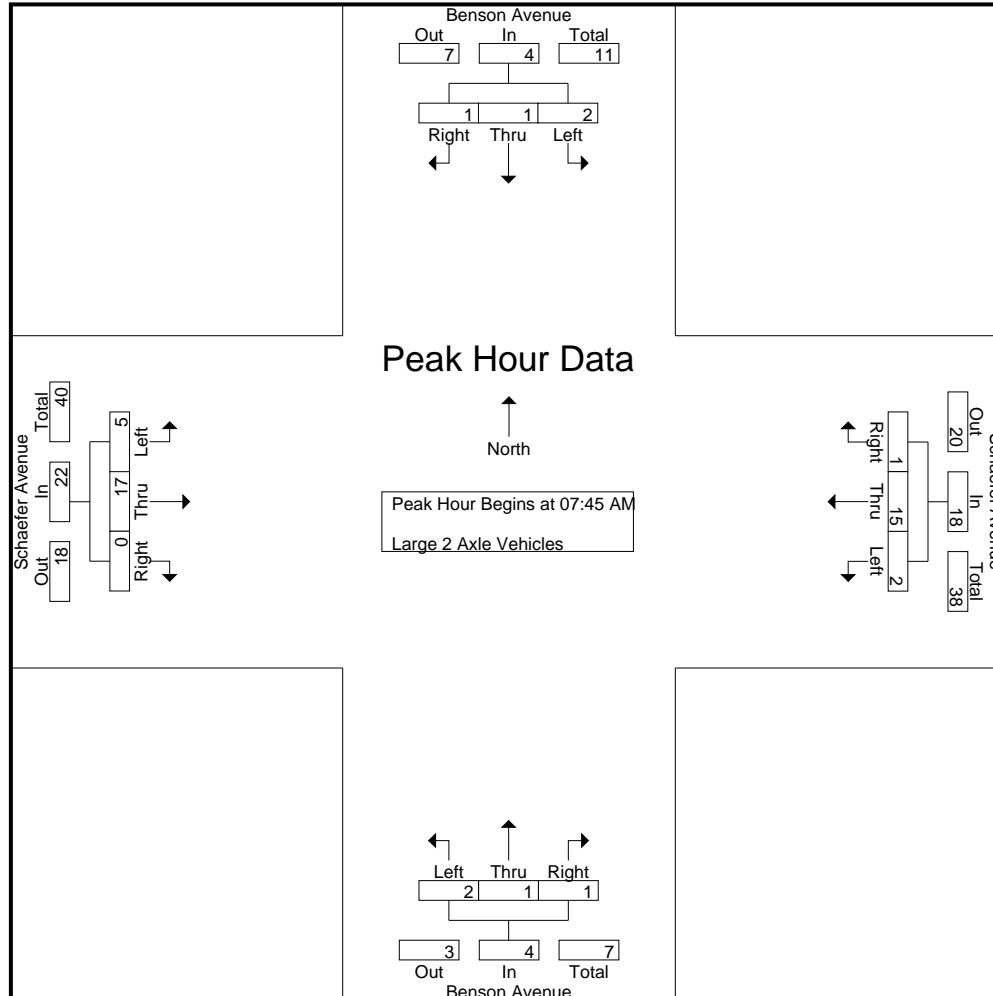
Groups Printed- Large 2 Axle Vehicles

Start Time	Benson Avenue Southbound					Schaefer Avenue Westbound					Benson Avenue Northbound					Schaefer Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
06:00 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	2	3	0	0	5	0	7	7
06:15 AM	0	0	0	0	0	0	5	0	0	5	0	1	0	0	1	1	7	0	0	8	0	14	14
06:30 AM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	1	7	0	0	8	0	10	10
06:45 AM	1	0	3	1	4	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	1	7	8
Total	1	1	3	1	5	1	9	1	0	11	0	1	0	0	1	4	17	0	0	21	1	38	39
07:00 AM	0	0	9	3	9	1	2	0	0	3	0	0	0	0	0	0	4	0	0	4	3	16	19
07:15 AM	0	0	2	1	2	0	4	0	0	4	0	0	0	0	0	0	4	1	0	5	1	11	12
07:30 AM	0	0	3	1	3	1	3	0	0	4	0	0	0	0	0	0	4	0	0	4	1	11	12
07:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	5	0	0	5	0	7	7
Total	0	0	14	5	14	2	10	0	0	12	0	0	1	0	1	0	17	1	0	18	5	45	50
08:00 AM	1	1	0	0	2	1	5	0	0	6	1	0	0	0	1	0	3	0	0	3	0	12	12
08:15 AM	1	0	1	1	2	1	3	1	0	5	0	0	0	0	0	0	3	0	0	3	1	10	11
08:30 AM	0	0	0	0	0	0	6	0	0	6	1	1	0	0	2	5	6	0	0	11	0	19	19
08:45 AM	0	0	1	0	1	1	4	3	0	8	0	0	0	0	0	0	2	0	0	2	0	11	11
Total	2	1	2	1	5	3	18	4	0	25	2	1	0	0	3	5	14	0	0	19	1	52	53
Grand Total	3	2	19	7	24	6	37	5	0	48	2	2	1	0	5	9	48	1	0	58	7	135	142
Apprch %	12.5	8.3	79.2			12.5	77.1	10.4			40	40	20			15.5	82.8	1.7					
Total %	2.2	1.5	14.1		17.8	4.4	27.4	3.7		35.6	1.5	1.5	0.7		3.7	6.7	35.6	0.7		43	4.9	95.1	

Start Time	Benson Avenue Southbound				Schaefer Avenue Westbound				Benson Avenue Northbound				Schaefer Avenue Eastbound				Int. Total		
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total			
Peak Hour Analysis From 07:45 AM to 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	0	1	0	0	1	1	0	5	0	5	7		
08:00 AM	1	1	0	2	1	5	0	6	1	0	0	1	0	3	0	3	12		
08:15 AM	1	0	1	2	1	3	1	5	0	0	0	0	0	3	0	3	10		
08:30 AM	0	0	0	0	0	6	0	6	1	1	0	2	5	6	0	11	19		
Total Volume	2	1	1	4	2	15	1	18	2	1	1	4	5	17	0	22	48		
% App. Total	50	25	25		11.1	83.3	5.6		50	25	25		22.7	77.3	0				
PHF	.500	.250	.250	.500	.500	.625	.250	.750	.500	.250	.250	.500	.250	.708	.000	.500	.632		

City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

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City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch AM
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Start Time	Benson Avenue Southbound				Schaefer Avenue Westbound				Benson Avenue Northbound				Schaefer Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 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	0	1	0	0	1	1	0	5	0	5	
+15 mins.	1	1	0	2	1	5	0	6	1	0	0	1	0	3	0	3	
+30 mins.	1	0	1	2	1	3	1	5	0	0	0	0	0	3	0	3	
+45 mins.	0	0	0	0	0	6	0	6	1	1	0	2	5	6	0	11	
Total Volume	2	1	1	4	2	15	1	18	2	1	1	4	5	17	0	22	
% App. Total	50	25	25		11.1	83.3	5.6		50	25	25		22.7	77.3	0		
PHF	.500	.250	.250	.500	.500	.625	.250	.750	.500	.250	.250	.500	.250	.708	.000	.500	

City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch AM
 Site Code : 05123746
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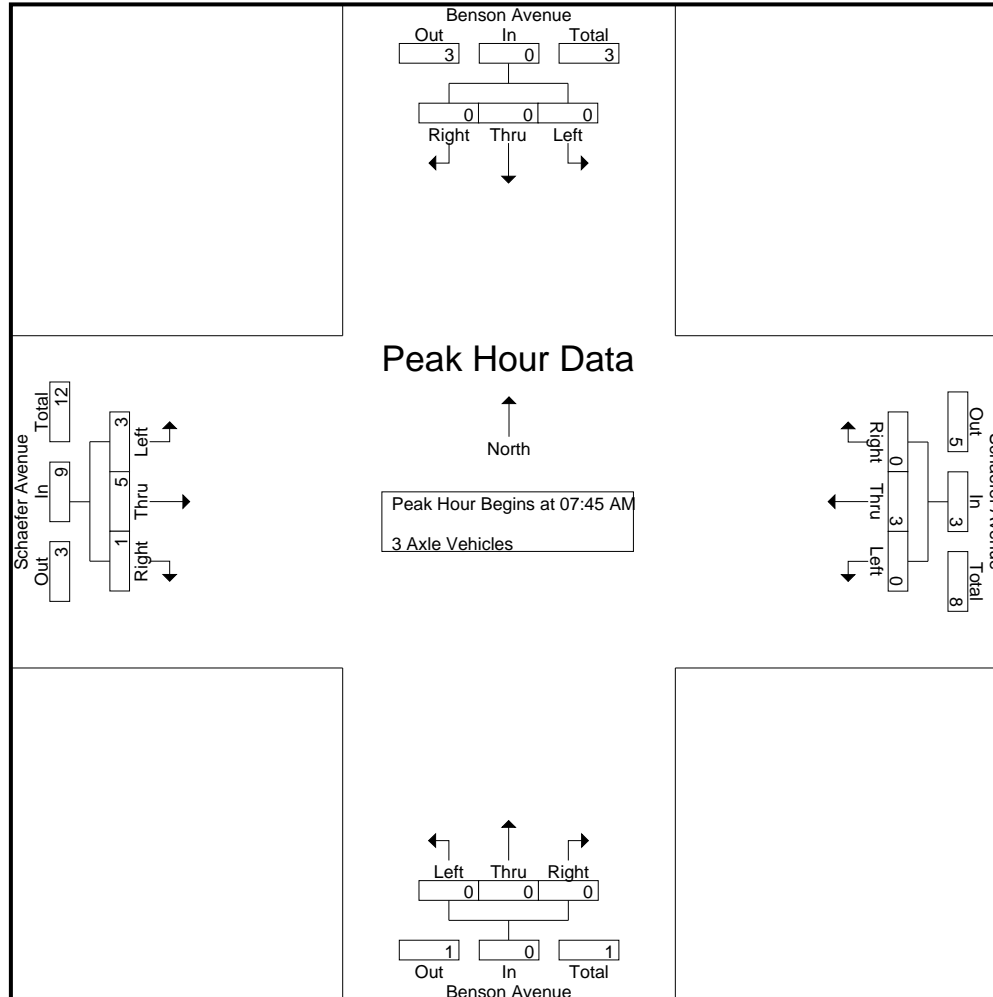
Groups Printed- 3 Axle Vehicles

Start Time	Benson Avenue Southbound					Schaefer Avenue Westbound					Benson Avenue Northbound					Schaefer Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total	
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total				
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	2	2
06:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	1	0	3	0	0	4	4
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	4	4
Total	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	5	1	0	6	0	0	10	10
07:00 AM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	1	4	0	0	5	0	0	7	7
07:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	5	5
07:30 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	2	0	0	3	3
07:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	1	1	0	4	0	0	5	5
Total	0	0	1	0	1	0	4	1	0	5	0	0	0	0	0	4	8	2	0	14	0	0	20	20
08:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	1	0	0	2	0	0	3	3
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	4	4
08:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	1	4	0	0	5	0	0	8	8
Grand Total	0	0	1	0	1	0	10	1	0	11	1	0	0	0	1	5	17	3	0	25	0	0	38	38
Apprch %	0	0	100			0	90.9	9.1			100	0	0			20	68	12						
Total %	0	0	2.6		2.6	0	26.3	2.6		28.9	2.6	0	0		2.6	13.2	44.7	7.9		65.8	0	0	100	

Start Time	Benson Avenue Southbound				Schaefer Avenue Westbound				Benson Avenue Northbound				Schaefer Avenue Eastbound				Int. Total		
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total			
Peak Hour Analysis From 07:45 AM to 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	0	1	0	0	0	0	2	1	1	4	5		
08:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	1	1	0	2	3		
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
08:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3	4		
Total Volume	0	0	0	0	0	3	0	3	0	0	0	0	3	5	1	9	12		
% App. Total	0	0	0		0	100	0		0	0	0		33.3	55.6	11.1				
PHF	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000	.375	.417	.250	.563	.600		

City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch AM
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City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch AM
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Start Time	Benson Avenue Southbound				Schaefer Avenue Westbound				Benson Avenue Northbound				Schaefer Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 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	0	1	0	0	0	0	2	1	1	4	
+15 mins.	0	0	0	0	0	1	0	1	0	0	0	0	1	1	0	2	
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3	
Total Volume	0	0	0	0	0	3	0	3	0	0	0	0	3	5	1	9	
% App. Total	0	0	0	0	0	100	0	0	0	0	0	0	33.3	55.6	11.1	0	
PHF	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000	.375	.417	.250	.563	

City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch AM
 Site Code : 05123746
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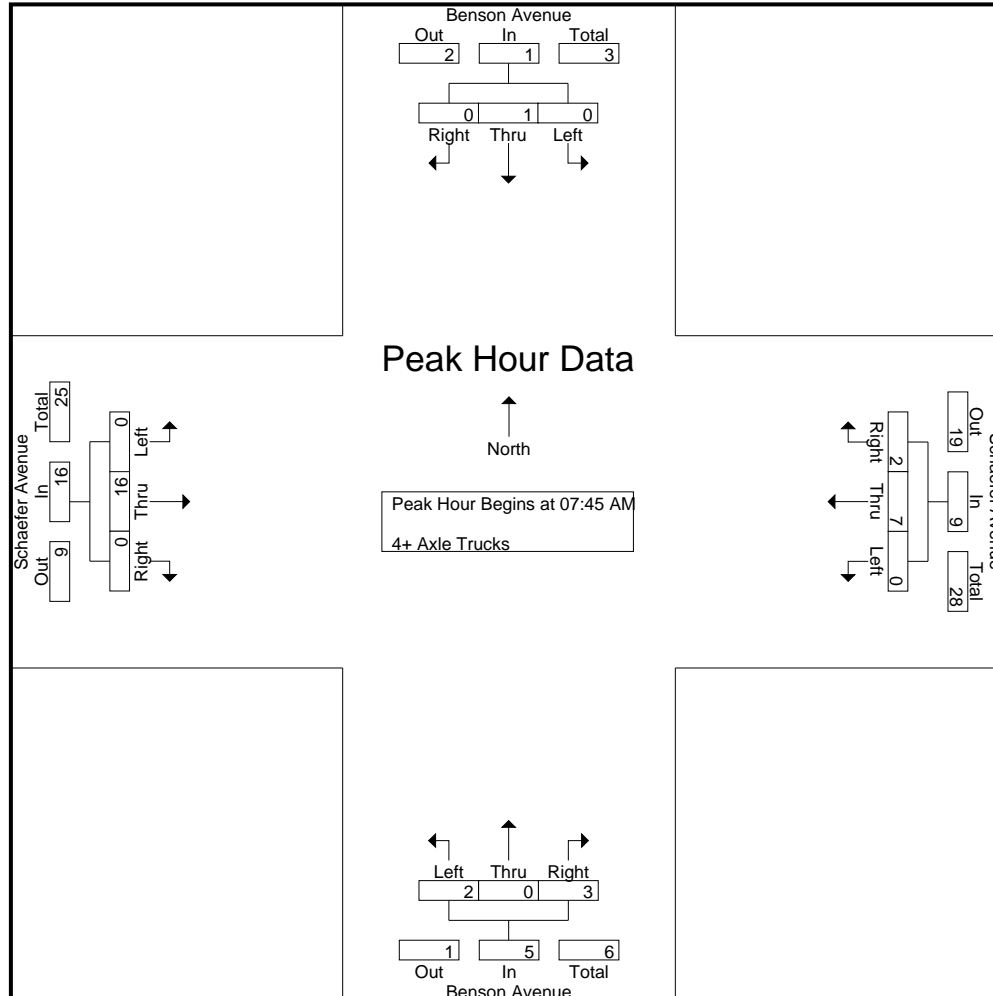
Groups Printed- 4+ Axle Trucks

Start Time	Benson Avenue Southbound					Schaefer Avenue Westbound					Benson Avenue Northbound					Schaefer Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total	
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total				
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1
06:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	2	2
06:30 AM	1	0	0	0	1	1	0	0	0	1	1	0	0	0	1	0	2	1	0	3	0	0	6	6
06:45 AM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	4	1	0	5	0	0	7	7
Total	1	0	0	0	1	1	2	0	0	3	2	0	0	0	2	0	8	2	0	10	0	0	16	16
07:00 AM	0	0	0	0	0	0	1	0	0	1	2	0	0	0	2	1	0	0	0	1	0	0	4	4
07:15 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	4	1	0	5	0	0	8	8
07:30 AM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	5	0	0	5	0	0	7	7
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	5	0	0	5	0	0	6	6
Total	0	0	0	0	0	0	5	0	0	5	3	0	1	0	4	1	14	1	0	16	0	0	25	25
08:00 AM	0	1	0	0	1	0	1	0	0	1	1	0	0	0	1	0	3	0	0	3	0	0	6	6
08:15 AM	0	0	0	0	0	0	2	2	0	4	0	0	1	0	1	0	2	0	0	2	0	0	7	7
08:30 AM	0	0	0	0	0	0	4	0	0	4	1	0	1	1	2	0	6	0	0	6	1	0	12	13
08:45 AM	0	0	1	0	1	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	0	0	10	10
Total	0	1	1	0	2	0	12	2	0	14	2	0	2	1	4	0	15	0	0	15	1	0	35	36
Grand Total	1	1	1	0	3	1	19	2	0	22	7	0	3	1	10	1	37	3	0	41	1	0	76	77
Apprch %	33.3	33.3	33.3			4.5	86.4	9.1			70	0	30			2.4	90.2	7.3						
Total %	1.3	1.3	1.3		3.9	1.3	25	2.6		28.9	9.2	0	3.9		13.2	1.3	48.7	3.9		53.9	1.3	0	98.7	

Start Time	Benson Avenue Southbound				Schaefer Avenue Westbound				Benson Avenue Northbound				Schaefer Avenue Eastbound				Int. Total		
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total			
Peak Hour Analysis From 07:45 AM to 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	0	0	0	0	0	1	1	0	5	0	5	6		
08:00 AM	0	1	0	1	0	1	0	1	1	0	0	1	0	3	0	3	6		
08:15 AM	0	0	0	0	0	2	2	4	0	0	1	1	0	2	0	2	7		
08:30 AM	0	0	0	0	0	4	0	4	1	0	1	2	0	6	0	6	12		
Total Volume	0	1	0	1	0	7	2	9	2	0	3	5	0	16	0	16	31		
% App. Total	0	100	0		0	77.8	22.2		40	0	60		0	100	0				
PHF	.000	.250	.000	.250	.000	.438	.250	.563	.500	.000	.750	.625	.000	.667	.000	.667	.646		

City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

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City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch AM
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Start Time	Benson Avenue Southbound				Schaefer Avenue Westbound				Benson Avenue Northbound				Schaefer Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 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	0	0	0	0	0	1	1	0	5	0	5	
+15 mins.	0	1	0	1	0	1	0	1	1	0	0	1	0	3	0	3	
+30 mins.	0	0	0	0	0	2	2	4	0	0	1	1	0	2	0	2	
+45 mins.	0	0	0	0	0	4	0	4	1	0	1	2	0	6	0	6	
Total Volume	0	1	0	1	0	7	2	9	2	0	3	5	0	16	0	16	
% App. Total	0	100	0		0	77.8	22.2		40	0	60		0	100	0		
PHF	.000	.250	.000	.250	.000	.438	.250	.563	.500	.000	.750	.625	.000	.667	.000	.667	

City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch PM
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

Start Time	Benson Avenue Southbound					Schaefer Avenue Westbound					Benson Avenue Northbound					Schaefer Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
04:00 PM	18	8	19	10	45	4	152	11	1	167	3	8	18	4	29	34	283	1	0	318	15	559	574
04:15 PM	7	6	16	9	29	3	123	7	2	133	2	7	2	1	11	23	264	4	0	291	12	464	476
04:30 PM	11	6	16	11	33	6	138	8	3	152	9	20	10	0	39	27	289	3	0	319	14	543	557
04:45 PM	14	7	15	7	36	1	122	7	1	130	4	12	11	3	27	23	287	5	1	315	12	508	520
Total	50	27	66	37	143	14	535	33	7	582	18	47	41	8	106	107	1123	13	1	1243	53	2074	2127
05:00 PM	19	10	29	19	58	3	128	10	3	141	18	15	20	7	53	29	280	5	0	314	29	566	595
05:15 PM	15	9	24	15	48	0	121	10	2	131	2	16	12	3	30	17	251	5	2	273	22	482	504
05:30 PM	6	9	18	13	33	2	103	9	0	114	1	7	8	3	16	18	289	4	1	311	17	474	491
05:45 PM	16	13	14	10	43	5	125	7	0	137	2	0	5	3	7	19	261	4	0	284	13	471	484
Total	56	41	85	57	182	10	477	36	5	523	23	38	45	16	106	83	1081	18	3	1182	81	1993	2074
06:00 PM	7	11	20	12	38	3	106	4	0	113	1	10	6	3	17	19	232	0	0	251	15	419	434
06:15 PM	11	8	14	11	33	3	103	8	0	114	2	3	4	1	9	16	233	1	0	250	12	406	418
06:30 PM	8	5	11	11	24	0	92	6	0	98	4	4	6	3	14	19	192	1	0	212	14	348	362
06:45 PM	9	6	10	7	25	0	107	10	0	117	1	4	8	3	13	16	154	2	0	172	10	327	337
Total	35	30	55	41	120	6	408	28	0	442	8	21	24	10	53	70	811	4	0	885	51	1500	1551
Grand Total	141	98	206	135	445	30	1420	97	12	1547	49	106	110	34	265	260	3015	35	4	3310	185	5567	5752
Apprch %	31.7	22	46.3			1.9	91.8	6.3			18.5	40	41.5			7.9	91.1	1.1					
Total %	2.5	1.8	3.7		8	0.5	25.5	1.7		27.8	0.9	1.9	2		4.8	4.7	54.2	0.6		59.5	3.2	96.8	
Passenger Vehicles	138	95	200		564	27	1369	93		1501	43	104	104		285	246	2932	25		3206	0	0	5556
% Passenger Vehicles	97.9	96.9	97.1	97	97.2	90	96.4	95.9	100	96.3	87.8	98.1	94.5	100	95.3	94.6	97.2	71.4	75	96.7	0	0	96.6
Large 2 Axle Vehicles	2	3	1		7	1	17	2		20	2	2	1		5	11	31	5		47	0	0	79
% Large 2 Axle Vehicles	1.4	3.1	0.5	0.7	1.2	3.3	1.2	2.1	0	1.3	4.1	1.9	0.9	0	1.7	4.2	1	14.3	0	1.4	0	0	1.4
3 Axle Vehicles	0	0	4		6	1	17	2		20	2	0	1		3	1	16	1		18	0	0	47
% 3 Axle Vehicles	0	0	1.9	1.5	1	3.3	1.2	2.1	0	1.3	4.1	0	0.9	0	1	0.4	0.5	2.9	0	0.5	0	0	0.8
4+ Axle Trucks	1	0	1		3	1	17	0		18	2	0	4		6	2	36	4		43	0	0	70
% 4+ Axle Trucks	0.7	0	0.5	0.7	0.5	3.3	1.2	0	0	1.2	4.1	0	3.6	0	2	0.8	1.2	11.4	25	1.3	0	0	1.2

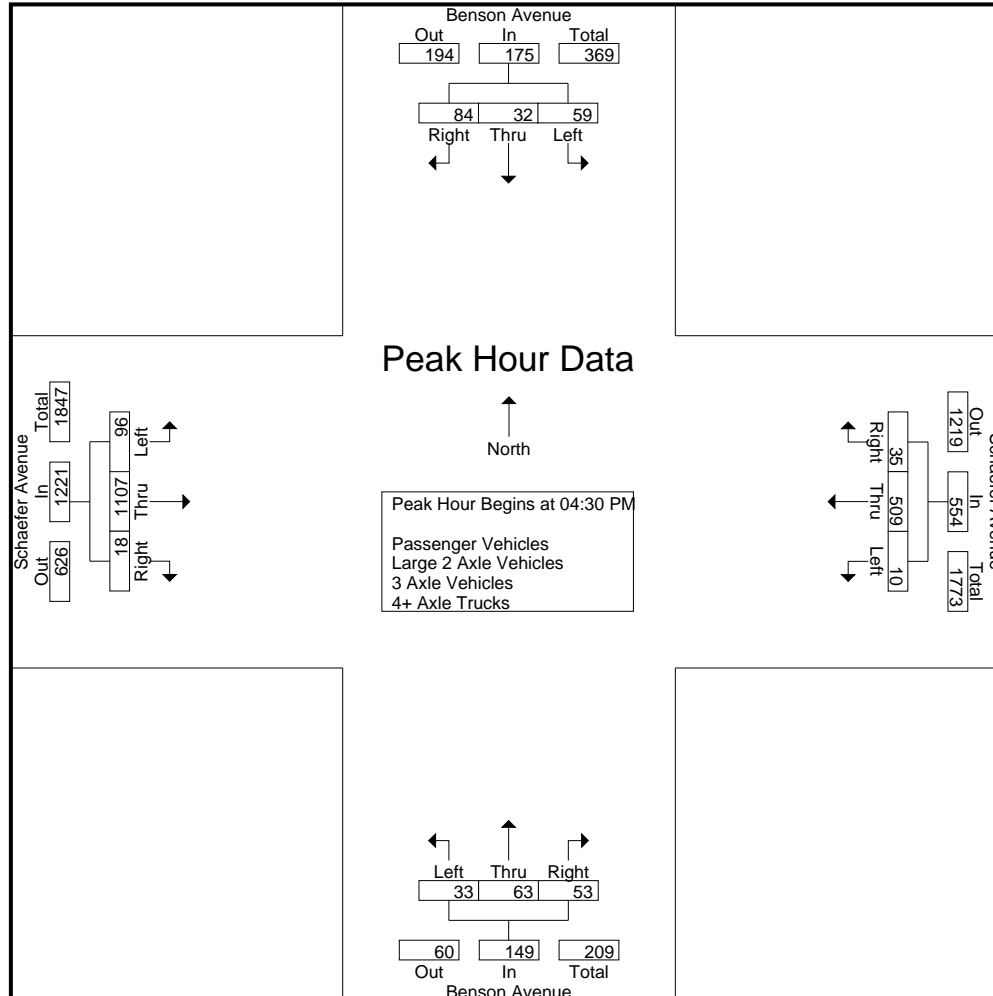
City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch PM
 Site Code : 05123746
 Start Date : 8/17/2023
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Start Time	Benson Avenue Southbound				Schaefer Avenue Westbound				Benson Avenue Northbound				Schaefer Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	11	6	16	33	6	138	8	152	9	20	10	39	27	289	3	319	543
04:45 PM	14	7	15	36	1	122	7	130	4	12	11	27	23	287	5	315	508
05:00 PM	19	10	29	58	3	128	10	141	18	15	20	53	29	280	5	314	566
05:15 PM	15	9	24	48	0	121	10	131	2	16	12	30	17	251	5	273	482
Total Volume	59	32	84	175	10	509	35	554	33	63	53	149	96	1107	18	1221	2099
% App. Total	33.7	18.3	48		1.8	91.9	6.3		22.1	42.3	35.6		7.9	90.7	1.5		
PHF	.776	.800	.724	.754	.417	.922	.875	.911	.458	.788	.663	.703	.828	.958	.900	.957	.927

City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch PM
 Site Code : 05123746
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City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch PM
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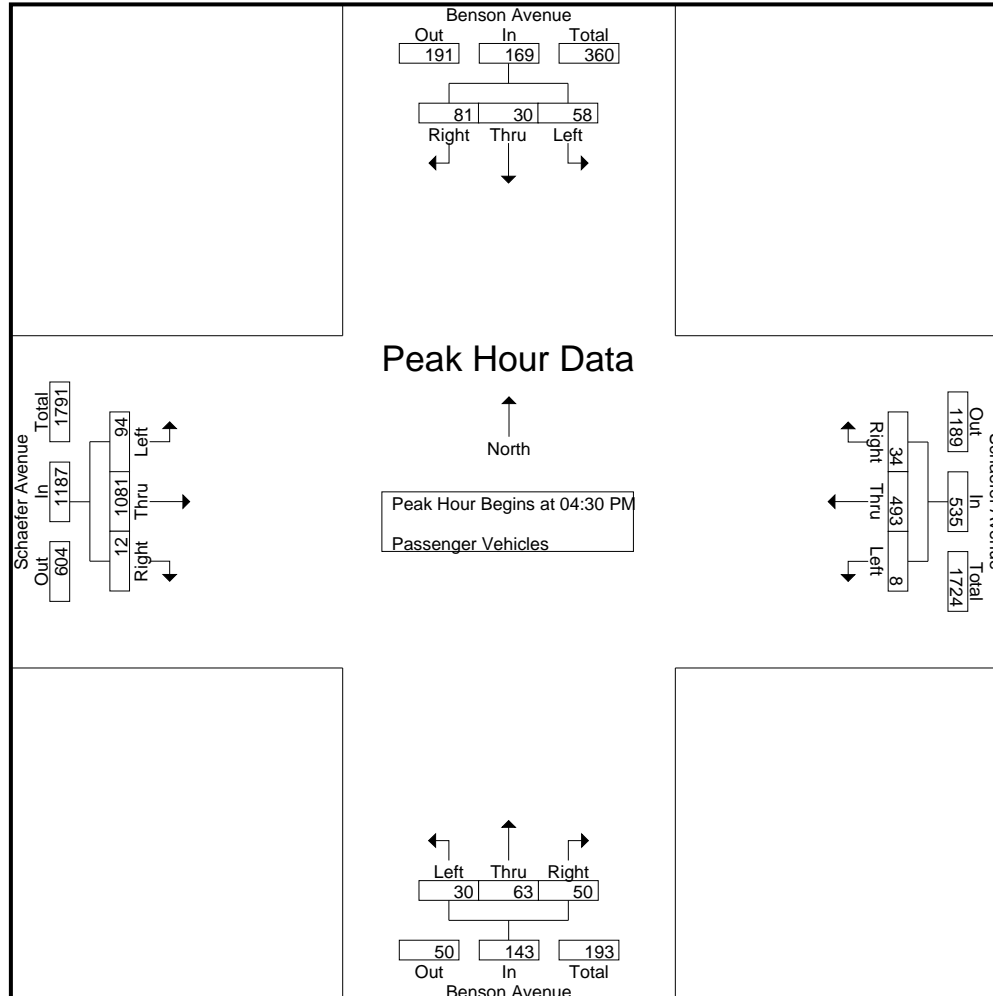
Groups Printed- Passenger Vehicles

Start Time	Benson Avenue Southbound					Schaefer Avenue Westbound					Benson Avenue Northbound					Schaefer Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
04:00 PM	18	8	18	10	44	4	145	10	1	159	1	7	18	4	26	34	272	1	0	307	15	536	551
04:15 PM	6	5	15	8	26	3	119	7	2	129	2	7	2	1	11	23	254	2	0	279	11	445	456
04:30 PM	11	5	16	11	32	5	135	8	3	148	9	20	9	0	38	26	280	0	0	306	14	524	538
04:45 PM	14	6	14	7	34	1	117	6	1	124	4	12	10	3	26	22	282	5	1	309	12	493	505
Total	49	24	63	36	136	13	516	31	7	560	16	46	39	8	101	105	1088	8	1	1201	52	1998	2050
05:00 PM	18	10	27	17	55	2	125	10	3	137	15	15	19	7	49	29	273	4	0	306	27	547	574
05:15 PM	15	9	24	15	48	0	116	10	2	126	2	16	12	3	30	17	246	3	1	266	21	470	491
05:30 PM	6	9	18	13	33	2	101	8	0	111	1	6	8	3	15	15	278	3	1	296	17	455	472
05:45 PM	16	13	14	10	43	4	121	7	0	132	2	0	5	3	7	15	252	4	0	271	13	453	466
Total	55	41	83	55	179	8	463	35	5	506	20	37	44	16	101	76	1049	14	2	1139	78	1925	2003
06:00 PM	7	11	19	11	37	3	102	4	0	109	1	10	4	3	15	15	223	0	0	238	14	399	413
06:15 PM	11	8	14	11	33	3	100	7	0	110	2	3	3	1	8	16	230	1	0	247	12	398	410
06:30 PM	7	5	11	11	23	0	89	6	0	95	4	4	6	3	14	18	189	1	0	208	14	340	354
06:45 PM	9	6	10	7	25	0	99	10	0	109	0	4	8	3	12	16	153	1	0	170	10	316	326
Total	34	30	54	40	118	6	390	27	0	423	7	21	21	10	49	65	795	3	0	863	50	1453	1503
Grand Total	138	95	200	131	433	27	1369	93	12	1489	43	104	104	34	251	246	2932	25	3	3203	180	5376	5556
Apprch %	31.9	21.9	46.2			1.8	91.9	6.2			17.1	41.4	41.4			7.7	91.5	0.8					
Total %	2.6	1.8	3.7		8.1	0.5	25.5	1.7		27.7	0.8	1.9	1.9		4.7	4.6	54.5	0.5		59.6	3.2	96.8	

Start Time	Benson Avenue Southbound				Schaefer Avenue Westbound				Benson Avenue Northbound				Schaefer Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	11	5	16	32	5	135	8	148	9	20	9	38	26	280	0	306	524
04:45 PM	14	6	14	34	1	117	6	124	4	12	10	26	22	282	5	309	493
05:00 PM	18	10	27	55	2	125	10	137	15	15	19	49	29	273	4	306	547
05:15 PM	15	9	24	48	0	116	10	126	2	16	12	30	17	246	3	266	470
Total Volume	58	30	81	169	8	493	34	535	30	63	50	143	94	1081	12	1187	2034
% App. Total	34.3	17.8	47.9		1.5	92.1	6.4		21	44.1	35		7.9	91.1	1		
PHF	.806	.750	.750	.768	.400	.913	.850	.904	.500	.788	.658	.730	.810	.958	.600	.960	.930

City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

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City of Chino
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 Weather: Clear

File Name : 02_CHN_Ben_Sch PM
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Start Time	Benson Avenue Southbound				Schaefer Avenue Westbound				Benson Avenue Northbound				Schaefer Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 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.	11	5	16	32	5	135	8	148	9	20	9	38	26	280	0	306	
+15 mins.	14	6	14	34	1	117	6	124	4	12	10	26	22	282	5	309	
+30 mins.	18	10	27	55	2	125	10	137	15	15	19	49	29	273	4	306	
+45 mins.	15	9	24	48	0	116	10	126	2	16	12	30	17	246	3	266	
Total Volume	58	30	81	169	8	493	34	535	30	63	50	143	94	1081	12	1187	
% App. Total	34.3	17.8	47.9		1.5	92.1	6.4		21	44.1	35		7.9	91.1	1		
PHF	.806	.750	.750	.768	.400	.913	.850	.904	.500	.788	.658	.730	.810	.958	.600	.960	

City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch PM
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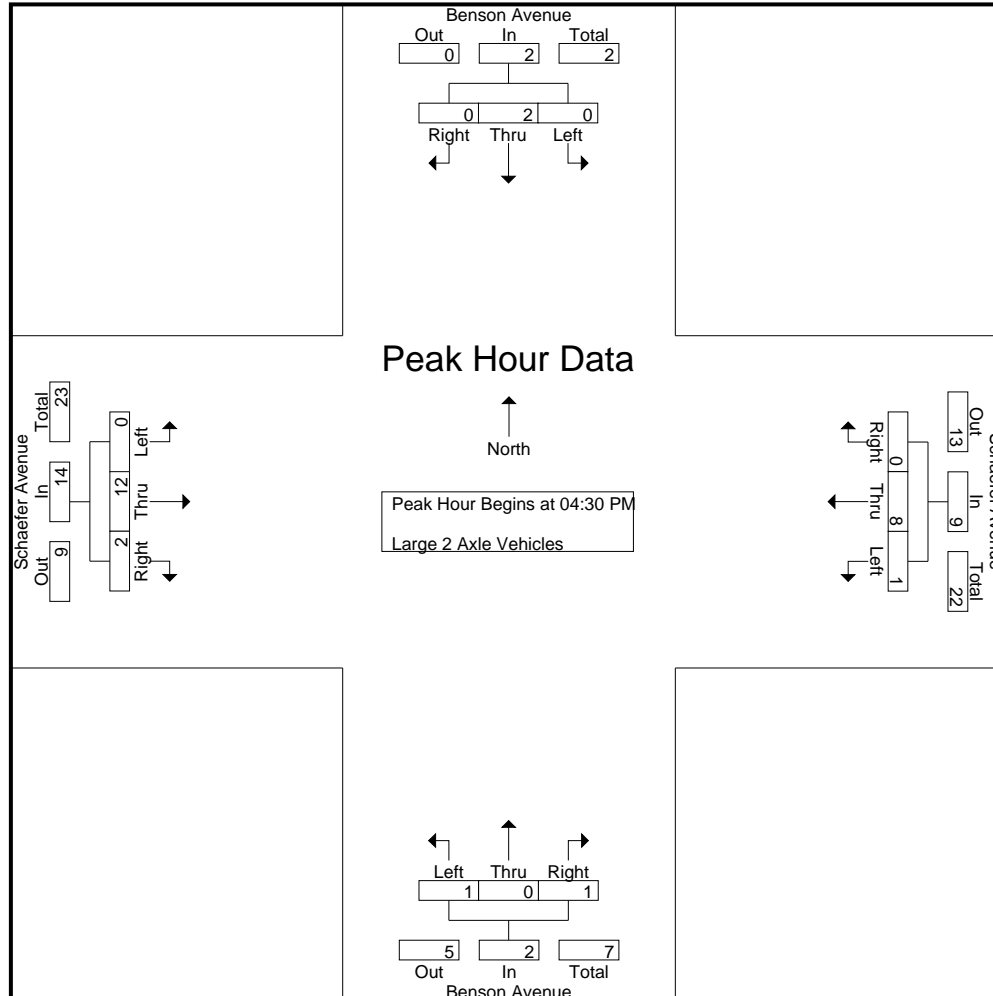
Groups Printed- Large 2 Axle Vehicles

Start Time	Benson Avenue Southbound					Schaefer Avenue Westbound					Benson Avenue Northbound					Schaefer Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
04:00 PM	0	0	0	0	0	0	4	1	0	5	0	1	0	0	1	0	4	0	0	4	0	10	10
04:15 PM	1	1	1	1	3	0	1	0	0	1	0	0	0	0	0	0	6	2	0	8	1	12	13
04:30 PM	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	4	2	0	6	0	9	9
04:45 PM	0	1	0	0	1	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	0	8	8
Total	1	3	1	1	5	0	10	1	0	11	0	1	1	0	2	0	17	4	0	21	1	39	40
05:00 PM	0	0	0	0	0	1	1	0	0	2	1	0	0	0	1	0	4	0	0	4	0	7	7
05:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	3	3
05:30 PM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2	4	0	0	6	0	8	8
05:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4	1	0	0	5	0	7	7
Total	0	0	0	0	0	1	6	0	0	7	1	1	0	0	2	6	10	0	0	16	0	25	25
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	0	0	7	0	7	7
06:15 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
06:30 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	2
06:45 PM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	1	1	0	2	0	4	4
Total	1	0	0	0	1	0	1	1	0	2	1	0	0	0	1	5	4	1	0	10	0	14	14
Grand Total	2	3	1	1	6	1	17	2	0	20	2	2	1	0	5	11	31	5	0	47	1	78	79
Apprch %	33.3	50	16.7			5	85	10			40	40	20			23.4	66	10.6					
Total %	2.6	3.8	1.3		7.7	1.3	21.8	2.6		25.6	2.6	2.6	1.3		6.4	14.1	39.7	6.4		60.3	1.3	98.7	

Start Time	Benson Avenue Southbound				Schaefer Avenue Westbound				Benson Avenue Northbound				Schaefer Avenue Eastbound				Int. Total				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total					
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	1	0	1	0	1	0	1	0	0	1	1	0	4	2	6	9				
04:45 PM	0	1	0	1	0	4	0	4	0	0	0	0	0	3	0	3	8				
05:00 PM	0	0	0	0	1	1	0	2	1	0	0	1	0	4	0	4	7				
05:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3				
Total Volume	0	2	0	2	1	8	0	9	1	0	1	2	0	12	2	14	27				
% App. Total	0	100	0		11.1	88.9	0		50	0	50		0	85.7	14.3						
PHF	.000	.500	.000	.500	.250	.500	.000	.563	.250	.000	.250	.500	.000	.750	.250	.583	.750				

City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

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City of Chino
 N/S: Benson Avenue
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 Weather: Clear

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Start Time	Benson Avenue Southbound				Schaefer Avenue Westbound				Benson Avenue Northbound				Schaefer Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 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	1	0	1	0	1	0	1	0	0	1	1	0	4	2	6	
+15 mins.	0	1	0	1	0	4	0	4	0	0	0	0	0	3	0	3	
+30 mins.	0	0	0	0	1	1	0	2	1	0	0	1	0	4	0	4	
+45 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	
Total Volume	0	2	0	2	1	8	0	9	1	0	1	2	0	12	2	14	
% App. Total	0	100	0		11.1	88.9	0		50	0	50		0	85.7	14.3		
PHF	.000	.500	.000	.500	.250	.500	.000	.563	.250	.000	.250	.500	.000	.750	.250	.583	

City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch PM
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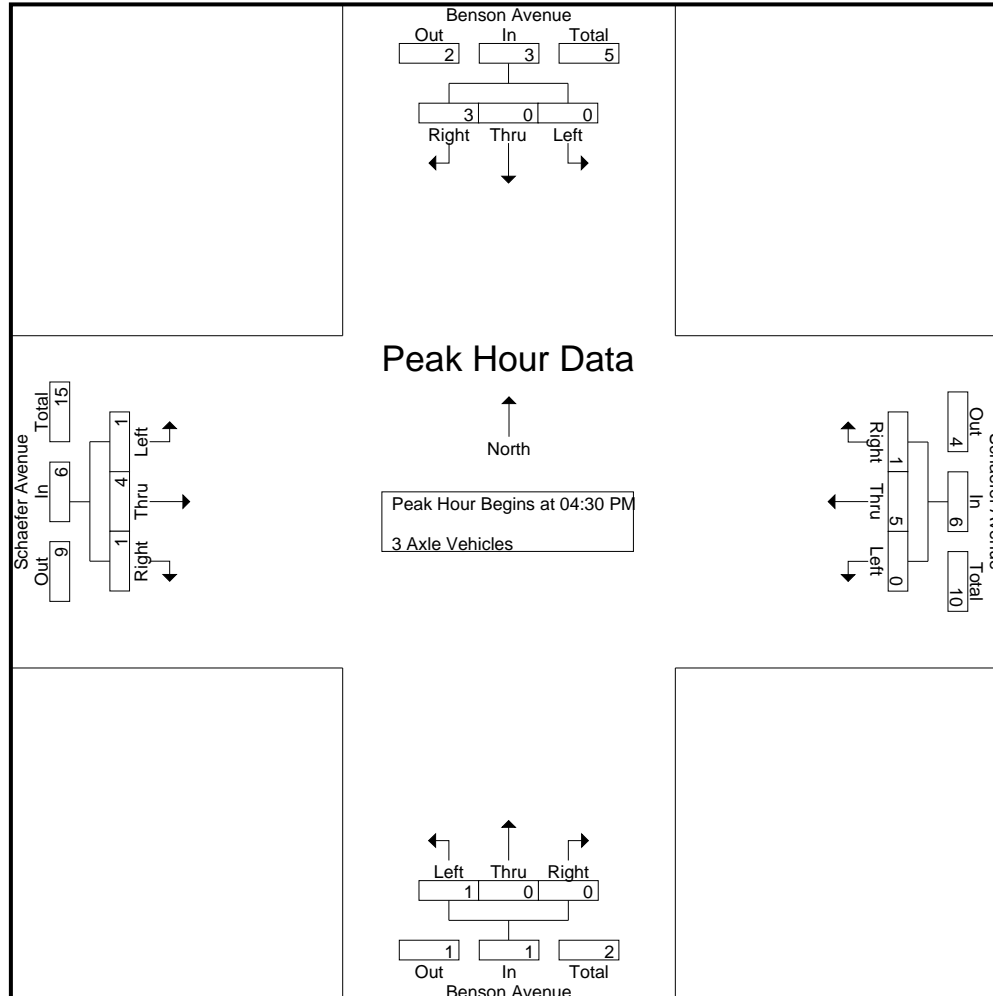
Groups Printed- 3 Axle Vehicles

Start Time	Benson Avenue Southbound					Schaefer Avenue Westbound					Benson Avenue Northbound					Schaefer Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total	
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total				
04:00 PM	0	0	1	0	1	0	2	0	0	2	1	0	0	0	1	0	0	0	0	0	0	0	4	4
04:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	4	4	4
04:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	2	0	0	3	0	4	4	4
04:45 PM	0	0	1	0	1	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	3	3	3
Total	0	0	2	0	2	0	6	1	0	7	1	0	0	0	1	1	4	0	0	5	0	15	15	15
05:00 PM	0	0	2	2	2	0	1	0	0	1	1	0	0	0	1	0	1	0	0	1	2	5	7	7
05:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	1	0	2	0	4	4	4
05:30 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2	0	0	2	0	3	3	3
05:45 PM	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	4	0	0	4	0	7	7	7
Total	0	0	2	2	2	1	5	1	0	7	1	0	0	0	1	0	8	1	0	9	2	19	21	21
06:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	1	0	0	1	0	3	3	3
06:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	2	2	2
06:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	3	3	3
06:45 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3	3	3
Total	0	0	0	0	0	0	6	0	0	6	0	0	1	0	1	0	4	0	0	4	0	11	11	11
Grand Total	0	0	4	2	4	1	17	2	0	20	2	0	1	0	3	1	16	1	0	18	2	45	47	47
Apprch %	0	0	100			5	85	10			66.7	0	33.3			5.6	88.9	5.6						
Total %	0	0	8.9		8.9	2.2	37.8	4.4		44.4	4.4	0	2.2		6.7	2.2	35.6	2.2		40	4.3	95.7		

Start Time	Benson Avenue Southbound				Schaefer Avenue Westbound				Benson Avenue Northbound				Schaefer Avenue Eastbound				Int. Total		
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total			
Peak Hour Analysis From 04:30 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	1	0	1	0	0	0	0	1	2	0	3	4		
04:45 PM	0	0	1	1	0	1	1	2	0	0	0	0	0	0	0	0	3		
05:00 PM	0	0	2	2	0	1	0	1	1	0	0	1	0	1	0	1	5		
05:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	1	2	4		
Total Volume	0	0	3	3	0	5	1	6	1	0	0	1	1	4	1	6	16		
% App. Total	0	0	100		0	83.3	16.7		100	0	0		16.7	66.7	16.7				
PHF	.000	.000	.375	.375	.000	.625	.250	.750	.250	.000	.000	.250	.250	.500	.250	.500	.800		

City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

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City of Chino
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 Weather: Clear

File Name : 02_CHN_Ben_Sch PM
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Start Time	Benson Avenue Southbound				Schaefer Avenue Westbound				Benson Avenue Northbound				Schaefer Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 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	1	0	1	0	0	0	0	1	2	0	3	
+15 mins.	0	0	1	1	0	1	1	2	0	0	0	0	0	0	0	0	
+30 mins.	0	0	2	2	0	1	0	1	1	0	0	1	0	1	0	1	
+45 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	1	1	2	
Total Volume	0	0	3	3	0	5	1	6	1	0	0	1	1	4	1	6	
% App. Total	0	0	100		0	83.3	16.7		100	0	0		16.7	66.7	16.7		
PHF	.000	.000	.375	.375	.000	.625	.250	.750	.250	.000	.000	.250	.250	.500	.250	.500	

City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch PM
 Site Code : 05123746
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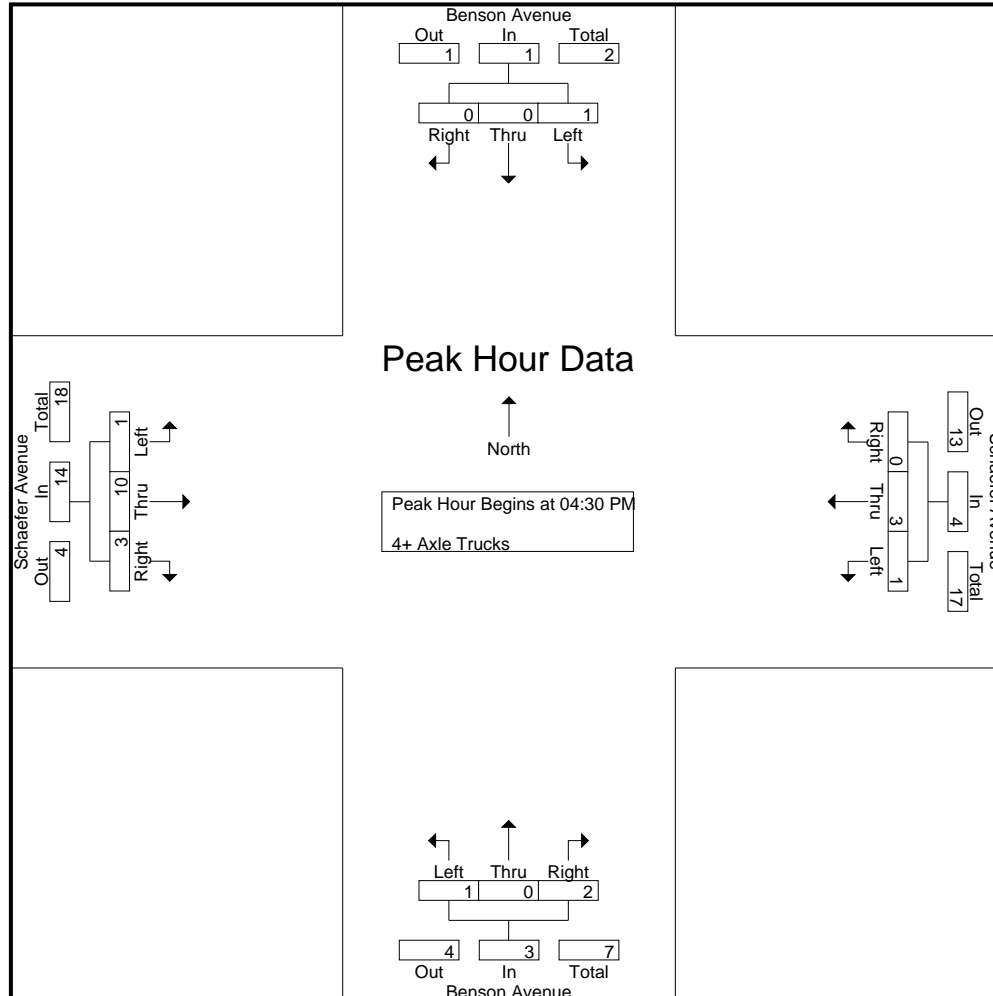
Groups Printed- 4+ Axle Trucks

Start Time	Benson Avenue Southbound					Schaefer Avenue Westbound					Benson Avenue Northbound					Schaefer Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
04:00 PM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	7	0	0	7	0	9	9
04:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	3	3
04:30 PM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	3	1	0	4	0	6	6
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	2	0	0	3	0	4	4
Total	0	0	0	0	0	1	3	0	0	4	1	0	1	0	2	1	14	1	0	16	0	22	22
05:00 PM	1	0	0	0	1	0	1	0	0	1	1	0	1	0	2	0	2	1	0	3	0	7	7
05:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	1	1	4	1	5	6
05:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	5	1	0	7	0	8	8
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	4	4
Total	1	0	0	0	1	0	3	0	0	3	1	0	1	0	2	1	14	3	1	18	1	24	25
06:00 PM	0	0	1	1	1	0	3	0	0	3	0	0	1	0	1	0	5	0	0	5	1	10	11
06:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	0	2	0	0	2	0	5	5
06:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	3	3
06:45 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4
Total	0	0	1	1	1	0	11	0	0	11	0	0	2	0	2	0	8	0	0	8	1	22	23
Grand Total	1	0	1	1	2	1	17	0	0	18	2	0	4	0	6	2	36	4	1	42	2	68	70
Apprch %	50	0	50			5.6	94.4	0			33.3	0	66.7			4.8	85.7	9.5					
Total %	1.5	0	1.5		2.9	1.5	25	0		26.5	2.9	0	5.9		8.8	2.9	52.9	5.9		61.8	2.9	97.1	

Start Time	Benson Avenue Southbound				Schaefer Avenue Westbound				Benson Avenue Northbound				Schaefer Avenue Eastbound				Int. Total		
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total			
Peak Hour Analysis From 04:30 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	1	1	0	2	0	0	0	0	0	3	1	4	6		
04:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	1	2	0	3	4		
05:00 PM	1	0	0	1	0	1	0	1	1	0	1	2	0	2	1	3	7		
05:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	3	1	4	5		
Total Volume	1	0	0	1	1	3	0	4	1	0	2	3	1	10	3	14	22		
% App. Total	100	0	0		25	75	0		33.3	0	66.7		7.1	71.4	21.4				
PHF	.250	.000	.000	.250	.250	.750	.000	.500	.250	.000	.500	.375	.250	.833	.750	.875	.786		

City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch PM
 Site Code : 05123746
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City of Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue
 Weather: Clear

File Name : 02_CHN_Ben_Sch PM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 3

Start Time	Benson Avenue Southbound				Schaefer Avenue Westbound				Benson Avenue Northbound				Schaefer Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 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	1	1	0	2	0	0	0	0	0	3	1	4	
+15 mins.	0	0	0	0	0	0	0	0	0	0	1	1	1	2	0	3	
+30 mins.	1	0	0	1	0	1	0	1	1	0	1	2	0	2	1	3	
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	3	1	4	
Total Volume	1	0	0	1	1	3	0	4	1	0	2	3	1	10	3	14	
% App. Total	100	0	0		25	75	0		33.3	0	66.7		7.1	71.4	21.4		
PHF	.250	.000	.000	.250	.250	.750	.000	.500	.250	.000	.500	.375	.250	.833	.750	.875	

Location: Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue



Date: 8/17/2023
 Day: Thursday

PEDESTRIANS

	North Leg Benson Avenue Pedestrians	East Leg Schaefer Avenue Pedestrians	South Leg Benson Avenue Pedestrians	West Leg Schaefer Avenue Pedestrians	
6:00 AM	0	1	0	0	1
6:15 AM	0	1	0	0	1
6:30 AM	0	0	0	0	0
6:45 AM	0	0	0	0	0
7:00 AM	1	0	0	0	1
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	1	0	0	1
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	1	1
TOTAL VOLUMES:	1	3	0	1	5

	North Leg Benson Avenue Pedestrians	East Leg Schaefer Avenue Pedestrians	South Leg Benson Avenue Pedestrians	West Leg Schaefer Avenue Pedestrians	
4:00 PM	0	0	2	1	3
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	1	0	0	1
5:30 PM	0	0	0	0	0
5:45 PM	1	0	0	0	1
6:00 PM	0	0	0	0	0
6:15 PM	0	0	0	0	0
6:30 PM	0	0	0	0	0
6:45 PM	0	0	0	1	1
TOTAL VOLUMES:	1	1	2	2	6

Location: Chino
 N/S: Benson Avenue
 E/W: Schaefer Avenue



Date: 8/17/2023
 Day: Thursday

BICYCLES

	Southbound Benson Avenue			Westbound Schaefer Avenue			Northbound Benson Avenue			Eastbound Schaefer Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
7:00 AM	0	0	0	1	0	0	0	0	0	0	1	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	2	0	0	0	0	0	2	0	4
8:00 AM	0	1	0	0	1	0	0	0	0	0	2	0	4
8:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
8:30 AM	0	0	1	0	0	0	0	0	0	0	1	0	2
8:45 AM	0	0	0	0	1	0	0	0	0	0	3	0	4
TOTAL VOLUMES:	0	1	1	1	6	1	0	0	0	0	10	0	20

	Southbound Benson Avenue			Westbound Schaefer Avenue			Northbound Benson Avenue			Eastbound Schaefer Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	1	0	1	2	0	4
5:00 PM	0	0	0	0	1	1	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:45 PM	0	0	1	0	0	0	0	0	0	0	1	0	2
6:00 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
6:15 PM	0	0	0	0	2	0	0	0	0	0	1	0	3
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	1	0	5	1	0	1	0	1	6	0	15

City of Chino
 N/S: Benson Avenue
 E/W: Daniels Street
 Weather: Clear

File Name : 03_CHN_Ben_Dan AM
 Site Code : 05123746
 Start Date : 8/17/2023
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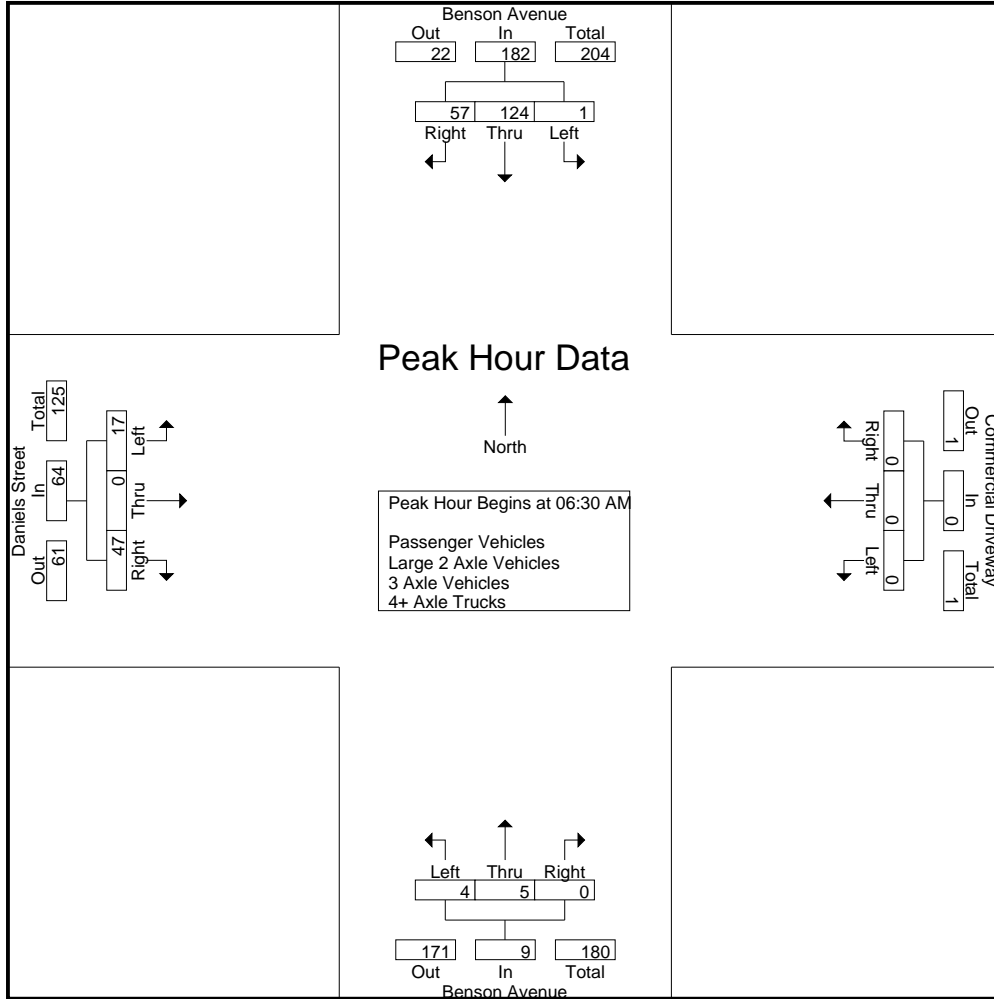
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

Start Time	Benson Avenue Southbound				Commercial Driveway Westbound				Benson Avenue Northbound				Daniels Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:00 AM	0	6	27	33	0	0	0	0	0	0	0	0	7	0	6	13	46
06:15 AM	0	13	11	24	0	0	0	0	1	0	0	1	2	0	8	10	35
06:30 AM	0	25	14	39	0	0	0	0	2	1	0	3	4	0	14	18	60
06:45 AM	1	35	24	60	0	0	0	0	2	2	0	4	5	0	16	21	85
Total	1	79	76	156	0	0	0	0	5	3	0	8	18	0	44	62	226
07:00 AM	0	29	11	40	0	0	0	0	0	0	0	0	6	0	8	14	54
07:15 AM	0	35	8	43	0	0	0	0	0	2	0	2	2	0	9	11	56
07:30 AM	0	1	8	9	0	0	0	0	0	2	0	2	2	0	7	9	20
07:45 AM	0	8	18	26	0	0	0	0	1	9	0	10	9	0	1	10	46
Total	0	73	45	118	0	0	0	0	1	13	0	14	19	0	25	44	176
08:00 AM	0	5	21	26	0	0	0	0	2	5	0	7	11	0	1	12	45
08:15 AM	2	3	20	25	0	0	0	0	1	2	0	3	9	0	0	9	37
08:30 AM	1	3	16	20	0	0	0	0	1	8	0	9	9	1	5	15	44
08:45 AM	0	7	19	26	0	0	0	0	2	2	0	4	9	0	3	12	42
Total	3	18	76	97	0	0	0	0	6	17	0	23	38	1	9	48	168
Grand Total	4	170	197	371	0	0	0	0	12	33	0	45	75	1	78	154	570
Apprch %	1.1	45.8	53.1		0	0	0		26.7	73.3	0		48.7	0.6	50.6		
Total %	0.7	29.8	34.6	65.1	0	0	0	0	2.1	5.8	0	7.9	13.2	0.2	13.7	27	
Passenger Vehicles	4	164	190	358	0	0	0	0	10	29	0	39	67	1	75	143	540
% Passenger Vehicles	100	96.5	96.4	96.5	0	0	0	0	83.3	87.9	0	86.7	89.3	100	96.2	92.9	94.7
Large 2 Axle Vehicles	0	4	4	8	0	0	0	0	1	3	0	4	3	0	3	6	18
% Large 2 Axle Vehicles	0	2.4	2	2.2	0	0	0	0	8.3	9.1	0	8.9	4	0	3.8	3.9	3.2
3 Axle Vehicles	0	1	1	2	0	0	0	0	1	0	0	1	1	0	0	1	4
% 3 Axle Vehicles	0	0.6	0.5	0.5	0	0	0	0	8.3	0	0	2.2	1.3	0	0	0.6	0.7
4+ Axle Trucks	0	1	2	3	0	0	0	0	0	1	0	1	4	0	0	4	8
% 4+ Axle Trucks	0	0.6	1	0.8	0	0	0	0	0	3	0	2.2	5.3	0	0	2.6	1.4

Start Time	Benson Avenue Southbound				Commercial Driveway Westbound				Benson Avenue Northbound				Daniels Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 06:30 AM																	
06:30 AM	0	25	14	39	0	0	0	0	2	1	0	3	4	0	14	18	60
06:45 AM	1	35	24	60	0	0	0	0	2	2	0	4	5	0	16	21	85
07:00 AM	0	29	11	40	0	0	0	0	0	0	0	0	6	0	8	14	54
07:15 AM	0	35	8	43	0	0	0	0	0	2	0	2	2	0	9	11	56
Total Volume	1	124	57	182	0	0	0	0	4	5	0	9	17	0	47	64	255
% App. Total	0.5	68.1	31.3		0	0	0		44.4	55.6	0		26.6	0	73.4		
PHF	.250	.886	.594	.758	.000	.000	.000	.000	.500	.625	.000	.563	.708	.000	.734	.762	.750

City of Chino
 N/S: Benson Avenue
 E/W: Daniels Street
 Weather: Clear

File Name : 03_CHN_Ben_Dan AM
 Site Code : 05123746
 Start Date : 8/17/2023
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City of Chino
 N/S: Benson Avenue
 E/W: Daniels Street
 Weather: Clear

File Name : 03_CHN_Ben_Dan AM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 1

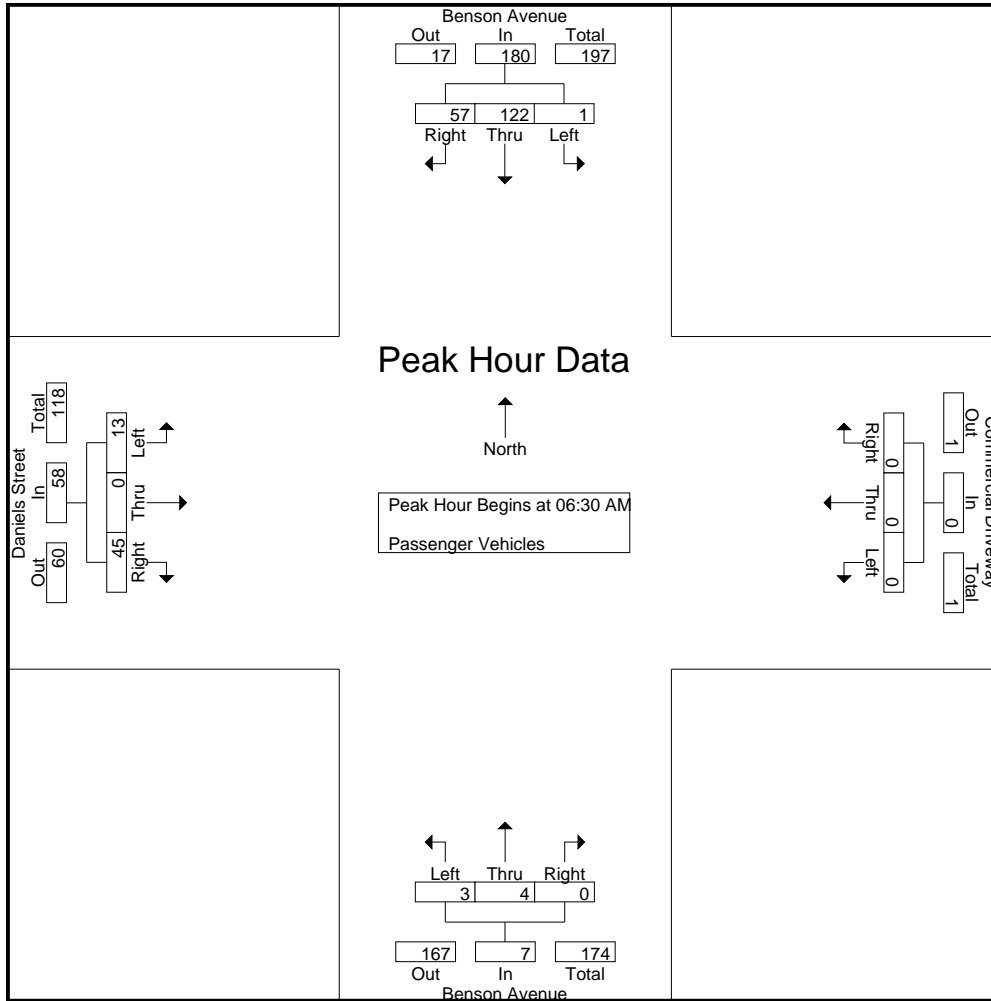
Groups Printed- Passenger Vehicles

Start Time	Benson Avenue Southbound				Commercial Driveway Westbound				Benson Avenue Northbound				Daniels Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:00 AM	0	6	26	32	0	0	0	0	0	0	0	0	7	0	6	13	45
06:15 AM	0	13	10	23	0	0	0	0	1	0	0	1	1	0	8	9	33
06:30 AM	0	25	14	39	0	0	0	0	2	1	0	3	3	0	13	16	58
06:45 AM	1	34	24	59	0	0	0	0	1	1	0	2	5	0	15	20	81
Total	1	78	74	153	0	0	0	0	4	2	0	6	16	0	42	58	217
07:00 AM	0	29	11	40	0	0	0	0	0	0	0	0	3	0	8	11	51
07:15 AM	0	34	8	42	0	0	0	0	0	2	0	2	2	0	9	11	55
07:30 AM	0	1	7	8	0	0	0	0	0	2	0	2	2	0	7	9	19
07:45 AM	0	7	17	24	0	0	0	0	1	8	0	9	8	0	1	9	42
Total	0	71	43	114	0	0	0	0	1	12	0	13	15	0	25	40	167
08:00 AM	0	3	20	23	0	0	0	0	1	4	0	5	11	0	1	12	40
08:15 AM	2	2	20	24	0	0	0	0	1	1	0	2	8	0	0	8	34
08:30 AM	1	3	16	20	0	0	0	0	1	8	0	9	8	1	5	14	43
08:45 AM	0	7	17	24	0	0	0	0	2	2	0	4	9	0	2	11	39
Total	3	15	73	91	0	0	0	0	5	15	0	20	36	1	8	45	156
Grand Total	4	164	190	358	0	0	0	0	10	29	0	39	67	1	75	143	540
Apprch %	1.1	45.8	53.1		0	0	0		25.6	74.4	0		46.9	0.7	52.4		
Total %	0.7	30.4	35.2	66.3	0	0	0	0	1.9	5.4	0	7.2	12.4	0.2	13.9	26.5	

Start Time	Benson Avenue Southbound				Commercial Driveway Westbound				Benson Avenue Northbound				Daniels Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:30 AM to 07:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 06:30 AM																	
06:30 AM	0	25	14	39	0	0	0	0	2	1	0	3	3	0	13	16	58
06:45 AM	1	34	24	59	0	0	0	0	1	1	0	2	5	0	15	20	81
07:00 AM	0	29	11	40	0	0	0	0	0	0	0	0	3	0	8	11	51
07:15 AM	0	34	8	42	0	0	0	0	0	2	0	2	2	0	9	11	55
Total Volume	1	122	57	180	0	0	0	0	3	4	0	7	13	0	45	58	245
% App. Total	0.6	67.8	31.7		0	0	0		42.9	57.1	0		22.4	0	77.6		
PHF	.250	.897	.594	.763	.000	.000	.000	.000	.375	.500	.000	.583	.650	.000	.750	.725	.756

City of Chino
 N/S: Benson Avenue
 E/W: Daniels Street
 Weather: Clear

File Name : 03_CHN_Ben_Dan AM
 Site Code : 05123746
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Peak Hour Analysis From 06:30 AM to 07:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	06:30 AM				06:30 AM				06:30 AM							
+0 mins.	0	25	14	39	0	0	0	0	2	1	0	3	3	0	13	16
+15 mins.	1	34	24	59	0	0	0	0	1	1	0	2	5	0	15	20
+30 mins.	0	29	11	40	0	0	0	0	0	0	0	0	3	0	8	11
+45 mins.	0	34	8	42	0	0	0	0	0	2	0	2	2	0	9	11
Total Volume	1	122	57	180	0	0	0	0	3	4	0	7	13	0	45	58
% App. Total	0.6	67.8	31.7		0	0	0	0	42.9	57.1	0		22.4	0	77.6	
PHF	.250	.897	.594	.763	.000	.000	.000	.000	.375	.500	.000	.583	.650	.000	.750	.725

City of Chino
 N/S: Benson Avenue
 E/W: Daniels Street
 Weather: Clear

File Name : 03_CHN_Ben_Dan AM
 Site Code : 05123746
 Start Date : 8/17/2023
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Groups Printed- Large 2 Axle Vehicles

Start Time	Benson Avenue Southbound				Commercial Driveway Westbound				Benson Avenue Northbound				Daniels Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
06:45 AM	0	1	0	1	0	0	0	0	1	1	0	2	0	0	1	1	4
Total	0	1	1	2	0	0	0	0	1	1	0	2	1	0	2	3	7
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
Total	0	0	1	1	0	0	0	0	0	0	0	0	2	0	0	2	3
08:00 AM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
08:15 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	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	2	2	0	0	0	0	0	0	0	0	0	0	1	1	3
Total	0	3	2	5	0	0	0	0	0	2	0	2	0	0	1	1	8
Grand Total	0	4	4	8	0	0	0	0	1	3	0	4	3	0	3	6	18
Apprch %	0	50	50		0	0	0		25	75	0		50	0	50		
Total %	0	22.2	22.2	44.4	0	0	0	0	5.6	16.7	0	22.2	16.7	0	16.7	33.3	

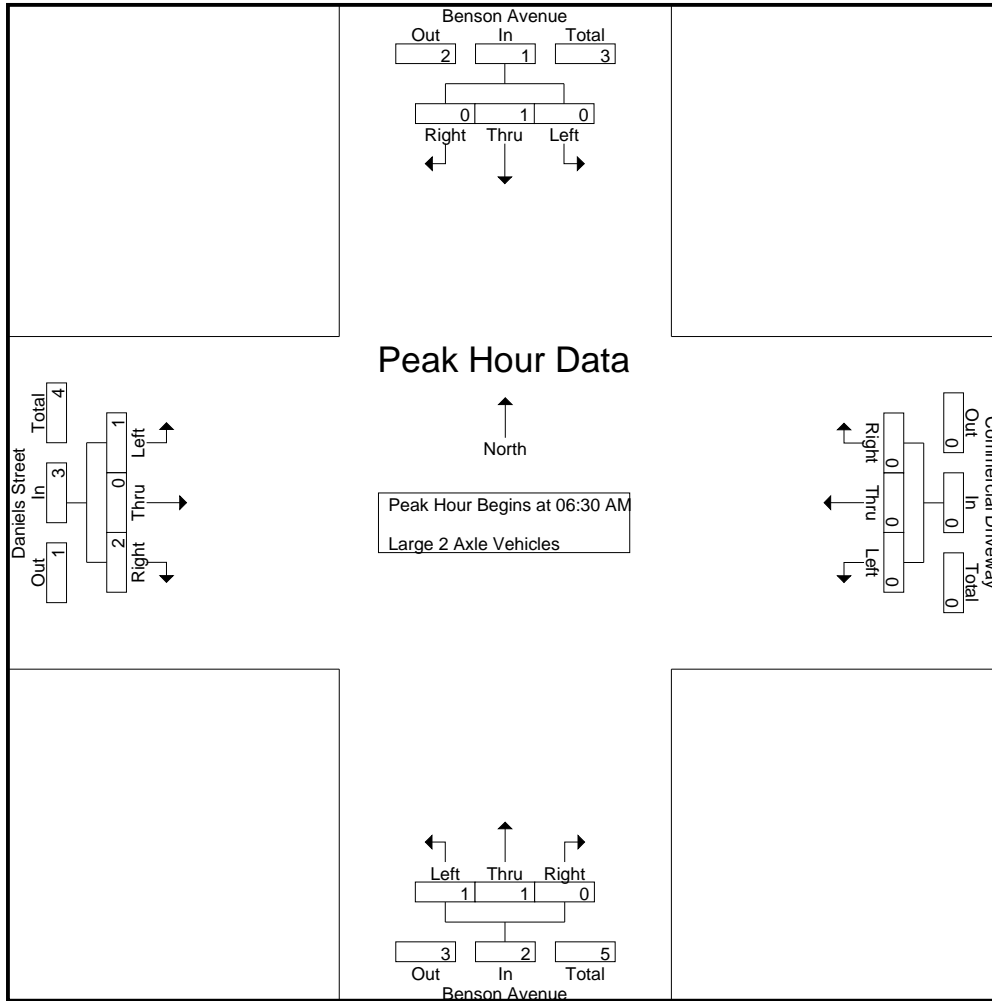
Start Time	Benson Avenue Southbound				Commercial Driveway Westbound				Benson Avenue Northbound				Daniels Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
06:45 AM	0	1	0	1	0	0	0	0	1	1	0	2	0	0	1	1	4
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	1	1	0	2	1	0	2	3	6
% App. Total	0	100	0		0	0	0		50	50	0		33.3	0	66.7		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.250	.250	.000	.250	.250	.000	.500	.750	.375

Peak Hour Analysis From 06:30 AM to 07:15 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 06:30 AM

City of Chino
 N/S: Benson Avenue
 E/W: Daniels Street
 Weather: Clear

File Name : 03_CHN_Ben_Dan AM
 Site Code : 05123746
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Peak Hour Analysis From 06:30 AM to 07:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	06:30 AM				06:30 AM				06:30 AM				06:30 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
+15 mins.	0	1	0	1	0	0	0	0	1	1	0	2	0	0	1	1
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	1	1	0	2	1	0	2	3
% App. Total	0	100	0	0	0	0	0	0	50	50	0	0	33.3	0	66.7	0
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.250	.250	.000	.250	.250	.000	.500	.750

City of Chino
 N/S: Benson Avenue
 E/W: Daniels Street
 Weather: Clear

File Name : 03_CHN_Ben_Dan AM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 1

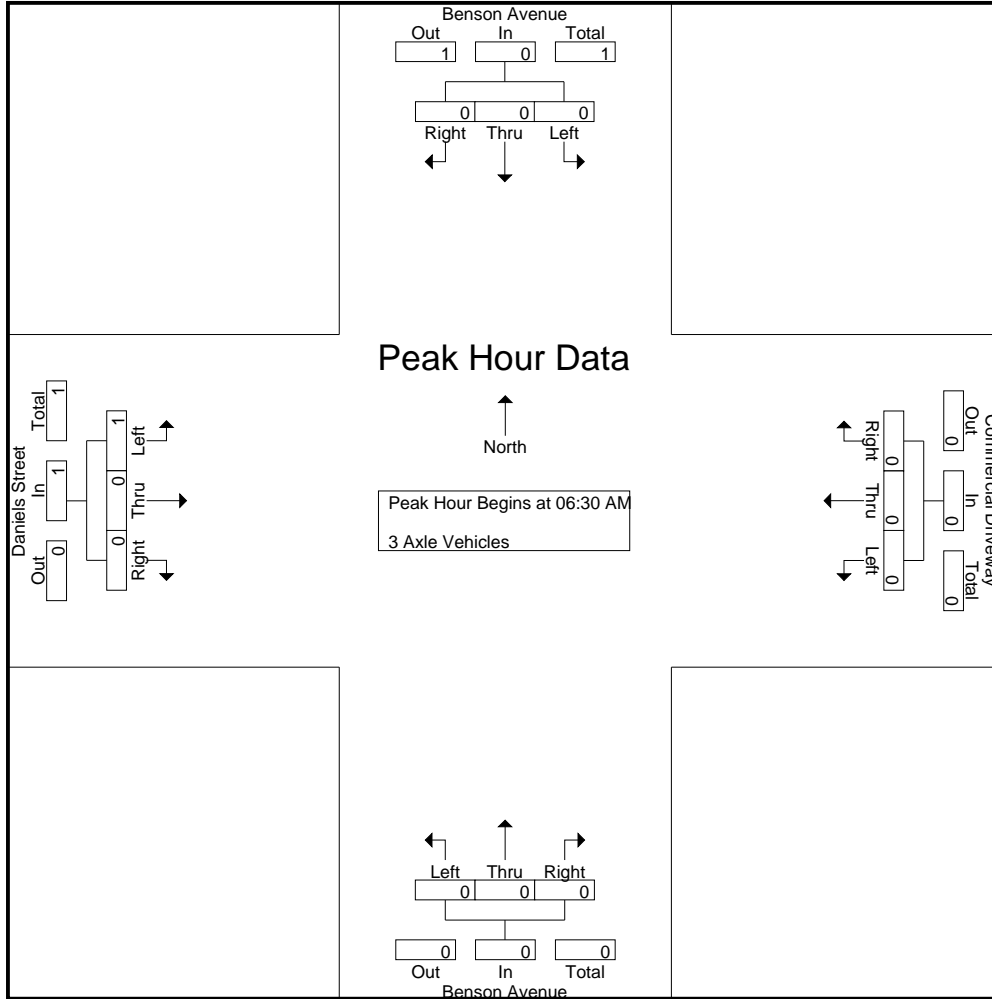
Groups Printed- 3 Axle Vehicles

Start Time	Benson Avenue Southbound				Commercial Driveway Westbound				Benson Avenue Northbound				Daniels Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
Grand Total	0	1	1	2	0	0	0	0	1	0	0	1	1	0	0	1	4
Apprch %	0	50	50		0	0	0		100	0	0		100	0	0		
Total %	0	25	25	50	0	0	0	0	25	0	0	25	25	0	0	25	

Start Time	Benson Avenue Southbound				Commercial Driveway Westbound				Benson Avenue Northbound				Daniels Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:30 AM to 07:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 06:30 AM																	
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% App. Total	0	0	0		0	0	0		0	0	0		100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.250

City of Chino
 N/S: Benson Avenue
 E/W: Daniels Street
 Weather: Clear

File Name : 03_CHN_Ben_Dan AM
 Site Code : 05123746
 Start Date : 8/17/2023
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Peak Hour Analysis From 06:30 AM to 07:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	06:30 AM				06:30 AM				06:30 AM				06:30 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250

City of Chino
 N/S: Benson Avenue
 E/W: Daniels Street
 Weather: Clear

File Name : 03_CHN_Ben_Dan AM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 1

Groups Printed- 4+ Axle Trucks

Start Time	Benson Avenue Southbound				Commercial Driveway Westbound				Benson Avenue Northbound				Daniels Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
07:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	1	1	2	0	0	0	0	0	1	0	1	2	0	0	2	5
08:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	0	0	0	0	0	0	0	2	0	0	2	3
Grand Total	0	1	2	3	0	0	0	0	0	1	0	1	4	0	0	4	8
Apprch %	0	33.3	66.7		0	0	0		0	100	0		100	0	0		
Total %	0	12.5	25	37.5	0	0	0	0	0	12.5	0	12.5	50	0	0	50	

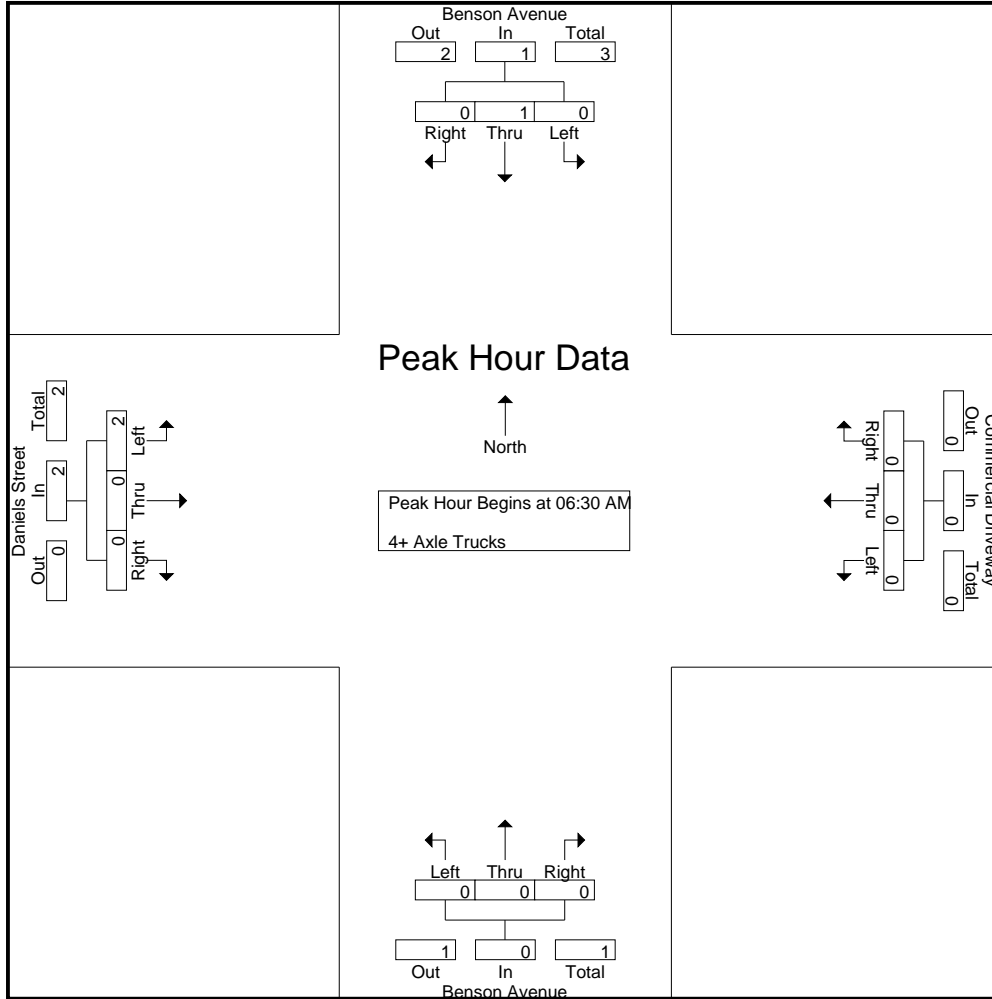
Start Time	Benson Avenue Southbound				Commercial Driveway Westbound				Benson Avenue Northbound				Daniels Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
07:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	2	0	0	2	3
% App. Total	0	100	0		0	0	0		0	0	0		100	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.375

Peak Hour Analysis From 06:30 AM to 07:15 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 06:30 AM

City of Chino
 N/S: Benson Avenue
 E/W: Daniels Street
 Weather: Clear

File Name : 03_CHN_Ben_Dan AM
 Site Code : 05123746
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Peak Hour Analysis From 06:30 AM to 07:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	06:30 AM				06:30 AM				06:30 AM				06:30 AM			
+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	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	2	0	0	2
+45 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	2	0	0	2
% App. Total	0	100	0	0	0	0	0	0	0	0	0	0	100	0	0	0
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250

City of Chino
 N/S: Benson Avenue
 E/W: Daniels Street
 Weather: Clear

File Name : 03_CHN_Ben_Dan PM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 1

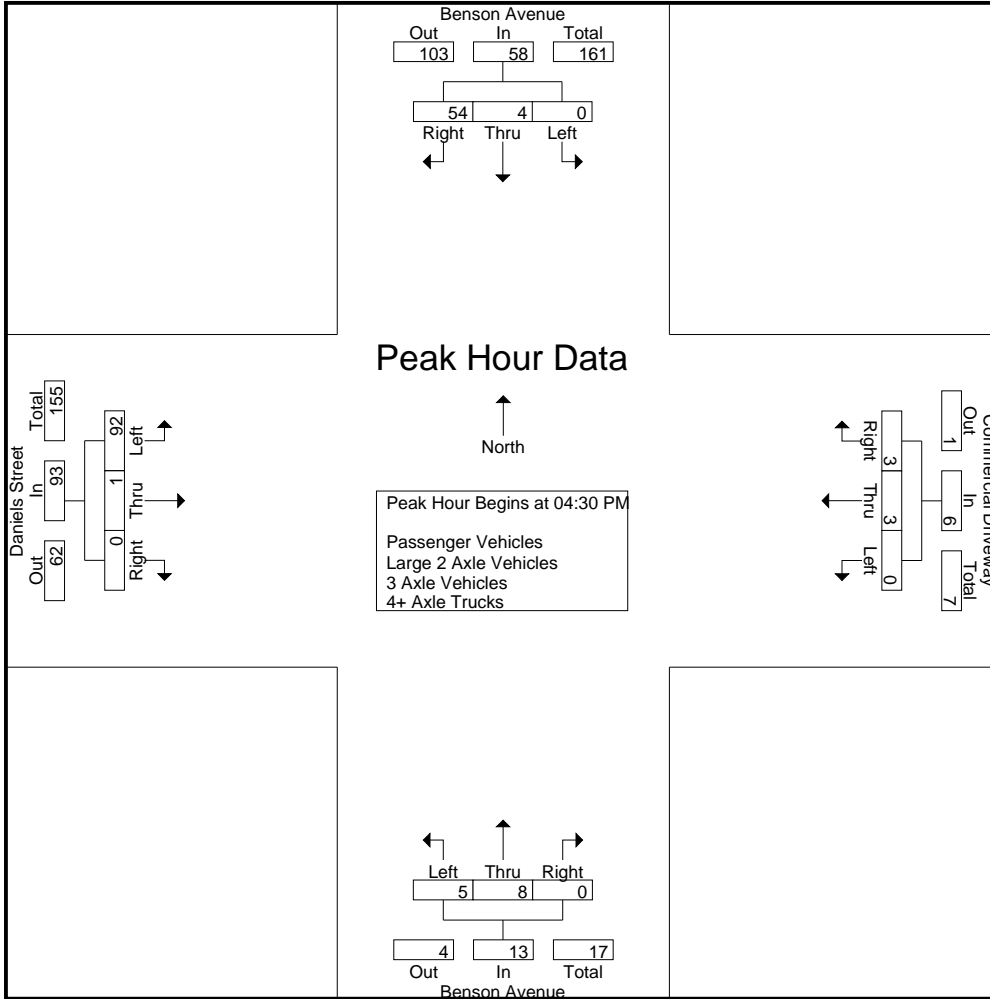
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

Start Time	Benson Avenue Southbound				Commercial Driveway Westbound				Benson Avenue Northbound				Daniels Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	1	12	13	0	0	0	0	3	5	0	8	18	0	2	20	41
04:15 PM	0	5	7	12	0	0	0	0	1	3	0	4	8	0	0	8	24
04:30 PM	0	2	11	13	0	0	0	0	1	2	0	3	25	0	0	25	41
04:45 PM	0	1	8	9	0	0	0	0	1	1	0	2	21	0	0	21	32
Total	0	9	38	47	0	0	0	0	6	11	0	17	72	0	2	74	138
05:00 PM	0	1	21	22	0	3	3	6	1	4	0	5	27	1	0	28	61
05:15 PM	0	0	14	14	0	0	0	0	2	1	0	3	19	0	0	19	36
05:30 PM	0	2	19	21	0	1	0	1	0	2	0	2	14	0	1	15	39
05:45 PM	0	0	17	17	0	0	0	0	3	1	0	4	2	0	0	2	23
Total	0	3	71	74	0	4	3	7	6	8	0	14	62	1	1	64	159
06:00 PM	0	1	14	15	0	0	0	0	2	0	0	2	13	0	1	14	31
06:15 PM	0	2	9	11	0	0	0	0	1	1	0	2	7	0	0	7	20
06:30 PM	0	0	5	5	0	0	0	0	1	0	0	1	8	0	0	8	14
06:45 PM	0	0	6	6	0	0	0	0	0	1	0	1	11	0	0	11	18
Total	0	3	34	37	0	0	0	0	4	2	0	6	39	0	1	40	83
Grand Total	0	15	143	158	0	4	3	7	16	21	0	37	173	1	4	178	380
Apprch %	0	9.5	90.5		0	57.1	42.9		43.2	56.8	0		97.2	0.6	2.2		
Total %	0	3.9	37.6	41.6	0	1.1	0.8	1.8	4.2	5.5	0	9.7	45.5	0.3	1.1	46.8	
Passenger Vehicles	0	14	137	151	0	4	3	7	16	19	0	35	166	0	3	169	362
% Passenger Vehicles	0	93.3	95.8	95.6	0	100	100	100	100	90.5	0	94.6	96	0	75	94.9	95.3
Large 2 Axle Vehicles	0	1	4	5	0	0	0	0	0	1	0	1	2	1	0	3	9
% Large 2 Axle Vehicles	0	6.7	2.8	3.2	0	0	0	0	0	4.8	0	2.7	1.2	100	0	1.7	2.4
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	1.2	0	0	1.1	0.5
4+ Axle Trucks	0	0	2	2	0	0	0	0	0	1	0	1	3	0	1	4	7
% 4+ Axle Trucks	0	0	1.4	1.3	0	0	0	0	0	4.8	0	2.7	1.7	0	25	2.2	1.8

Start Time	Benson Avenue Southbound				Commercial Driveway Westbound				Benson Avenue Northbound				Daniels Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	2	11	13	0	0	0	0	1	2	0	3	25	0	0	25	41
04:45 PM	0	1	8	9	0	0	0	0	1	1	0	2	21	0	0	21	32
05:00 PM	0	1	21	22	0	3	3	6	1	4	0	5	27	1	0	28	61
05:15 PM	0	0	14	14	0	0	0	0	2	1	0	3	19	0	0	19	36
Total Volume	0	4	54	58	0	3	3	6	5	8	0	13	92	1	0	93	170
% App. Total	0	6.9	93.1		0	50	50		38.5	61.5	0		98.9	1.1	0		
PHF	.000	.500	.643	.659	.000	.250	.250	.250	.625	.500	.000	.650	.852	.250	.000	.830	.697

City of Chino
 N/S: Benson Avenue
 E/W: Daniels Street
 Weather: Clear

File Name : 03_CHN_Ben_Dan PM
 Site Code : 05123746
 Start Date : 8/17/2023
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City of Chino
 N/S: Benson Avenue
 E/W: Daniels Street
 Weather: Clear

File Name : 03_CHN_Ben_Dan PM
 Site Code : 05123746
 Start Date : 8/17/2023
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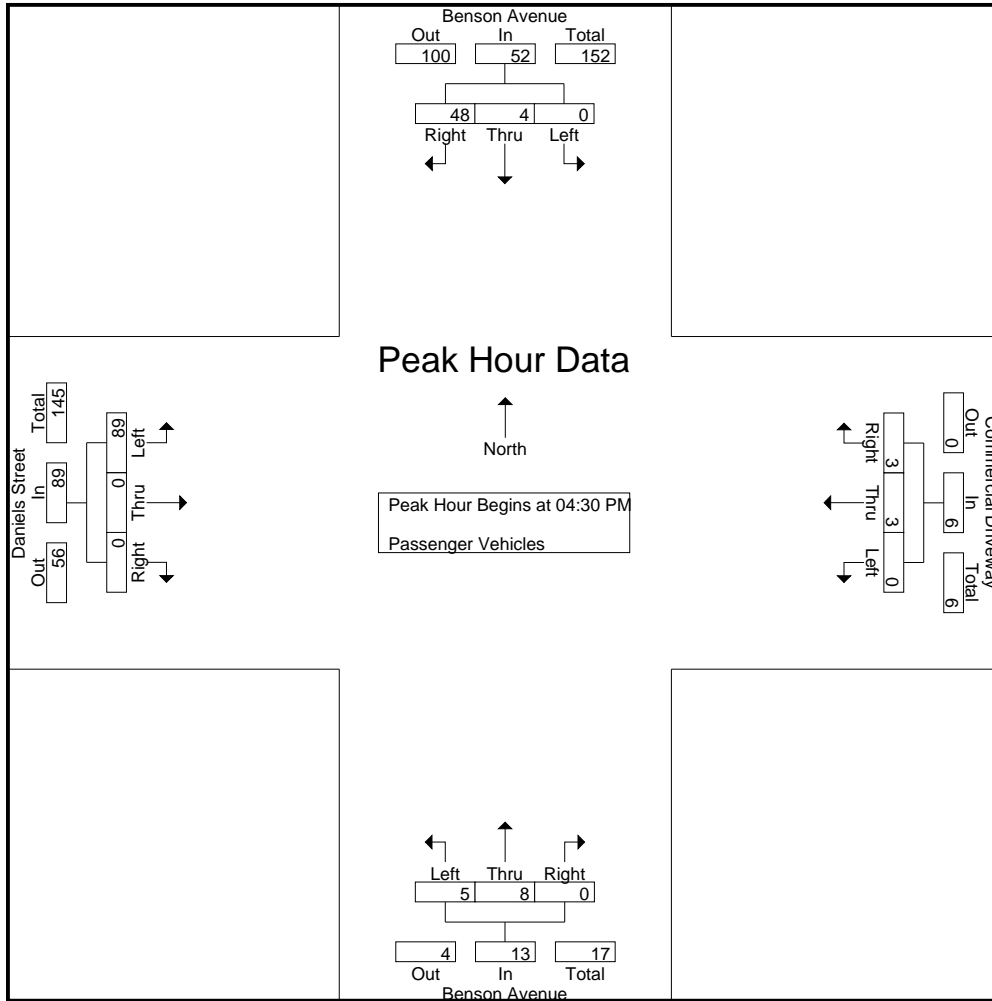
Groups Printed- Passenger Vehicles

Start Time	Benson Avenue Southbound				Commercial Driveway Westbound				Benson Avenue Northbound				Daniels Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	1	12	13	0	0	0	0	3	5	0	8	16	0	2	18	39
04:15 PM	0	4	7	11	0	0	0	0	1	2	0	3	8	0	0	8	22
04:30 PM	0	2	8	10	0	0	0	0	1	2	0	3	24	0	0	24	37
04:45 PM	0	1	7	8	0	0	0	0	1	1	0	2	19	0	0	19	29
Total	0	8	34	42	0	0	0	0	6	10	0	16	67	0	2	69	127
05:00 PM	0	1	20	21	0	3	3	6	1	4	0	5	27	0	0	27	59
05:15 PM	0	0	13	13	0	0	0	0	2	1	0	3	19	0	0	19	35
05:30 PM	0	2	19	21	0	1	0	1	0	2	0	2	13	0	0	13	37
05:45 PM	0	0	17	17	0	0	0	0	3	1	0	4	2	0	0	2	23
Total	0	3	69	72	0	4	3	7	6	8	0	14	61	0	0	61	154
06:00 PM	0	1	14	15	0	0	0	0	2	0	0	2	13	0	1	14	31
06:15 PM	0	2	9	11	0	0	0	0	1	0	0	1	7	0	0	7	19
06:30 PM	0	0	5	5	0	0	0	0	1	0	0	1	8	0	0	8	14
06:45 PM	0	0	6	6	0	0	0	0	0	1	0	1	10	0	0	10	17
Total	0	3	34	37	0	0	0	0	4	1	0	5	38	0	1	39	81
Grand Total	0	14	137	151	0	4	3	7	16	19	0	35	166	0	3	169	362
Apprch %	0	9.3	90.7		0	57.1	42.9		45.7	54.3	0		98.2	0	1.8		
Total %	0	3.9	37.8	41.7	0	1.1	0.8	1.9	4.4	5.2	0	9.7	45.9	0	0.8	46.7	

Start Time	Benson Avenue Southbound				Commercial Driveway Westbound				Benson Avenue Northbound				Daniels Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	2	8	10	0	0	0	0	1	2	0	3	24	0	0	24	37
04:45 PM	0	1	7	8	0	0	0	0	1	1	0	2	19	0	0	19	29
05:00 PM	0	1	20	21	0	3	3	6	1	4	0	5	27	0	0	27	59
05:15 PM	0	0	13	13	0	0	0	0	2	1	0	3	19	0	0	19	35
Total Volume	0	4	48	52	0	3	3	6	5	8	0	13	89	0	0	89	160
% App. Total	0	7.7	92.3		0	50	50		38.5	61.5	0		100	0	0		
PHF	.000	.500	.600	.619	.000	.250	.250	.250	.625	.500	.000	.650	.824	.000	.000	.824	.678

City of Chino
 N/S: Benson Avenue
 E/W: Daniels Street
 Weather: Clear

File Name : 03_CHN_Ben_Dan PM
 Site Code : 05123746
 Start Date : 8/17/2023
 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	2	8	10	0	0	0	0	1	2	0	3	24	0	0	24
+15 mins.	0	1	7	8	0	0	0	0	1	1	0	2	19	0	0	19
+30 mins.	0	1	20	21	0	3	3	6	1	4	0	5	27	0	0	27
+45 mins.	0	0	13	13	0	0	0	0	2	1	0	3	19	0	0	19
Total Volume	0	4	48	52	0	3	3	6	5	8	0	13	89	0	0	89
% App. Total	0	7.7	92.3		0	50	50		38.5	61.5	0		100	0	0	
PHF	.000	.500	.600	.619	.000	.250	.250	.250	.625	.500	.000	.650	.824	.000	.000	.824

City of Chino
 N/S: Benson Avenue
 E/W: Daniels Street
 Weather: Clear

File Name : 03_CHN_Ben_Dan PM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 1

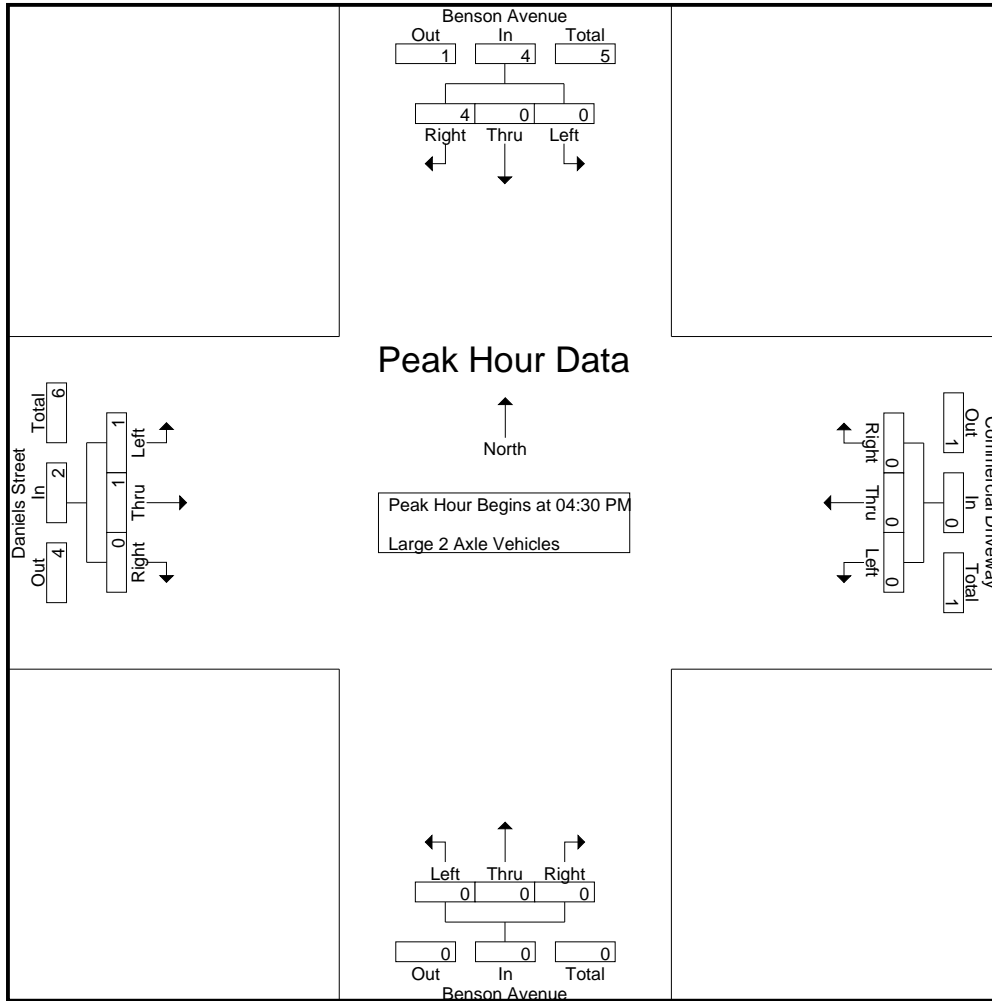
Groups Printed- Large 2 Axle Vehicles

Start Time	Benson Avenue Southbound				Commercial Driveway Westbound				Benson Avenue Northbound				Daniels Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:15 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
04:30 PM	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	3
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	1	3	4	0	0	0	0	0	1	0	1	2	0	0	2	7
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	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1	2
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 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	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	4	5	0	0	0	0	0	1	0	1	2	1	0	3	9
Apprch %	0	20	80		0	0	0		0	100	0		66.7	33.3	0		
Total %	0	11.1	44.4	55.6	0	0	0	0	0	11.1	0	11.1	22.2	11.1	0	33.3	

Start Time	Benson Avenue Southbound				Commercial Driveway Westbound				Benson Avenue Northbound				Daniels Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:30 PM	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	3
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
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	0	0	0	0
Total Volume	0	0	4	4	0	0	0	0	0	0	0	0	1	1	0	2	6
% App. Total	0	0	100		0	0	0		0	0	0		50	50	0		
PHF	.000	.000	.333	.333	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.000	.500	.500

City of Chino
 N/S: Benson Avenue
 E/W: Daniels Street
 Weather: Clear

File Name : 03_CHN_Ben_Dan PM
 Site Code : 05123746
 Start Date : 8/17/2023
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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	3	3	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
+30 mins.	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	4	4	0	0	0	0	0	0	0	0	1	1	0	2
% App. Total	0	0	100		0	0	0		0	0	0		50	50	0	
PHF	.000	.000	.333	.333	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.000	.500

City of Chino
 N/S: Benson Avenue
 E/W: Daniels Street
 Weather: Clear

File Name : 03_CHN_Ben_Dan PM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 1

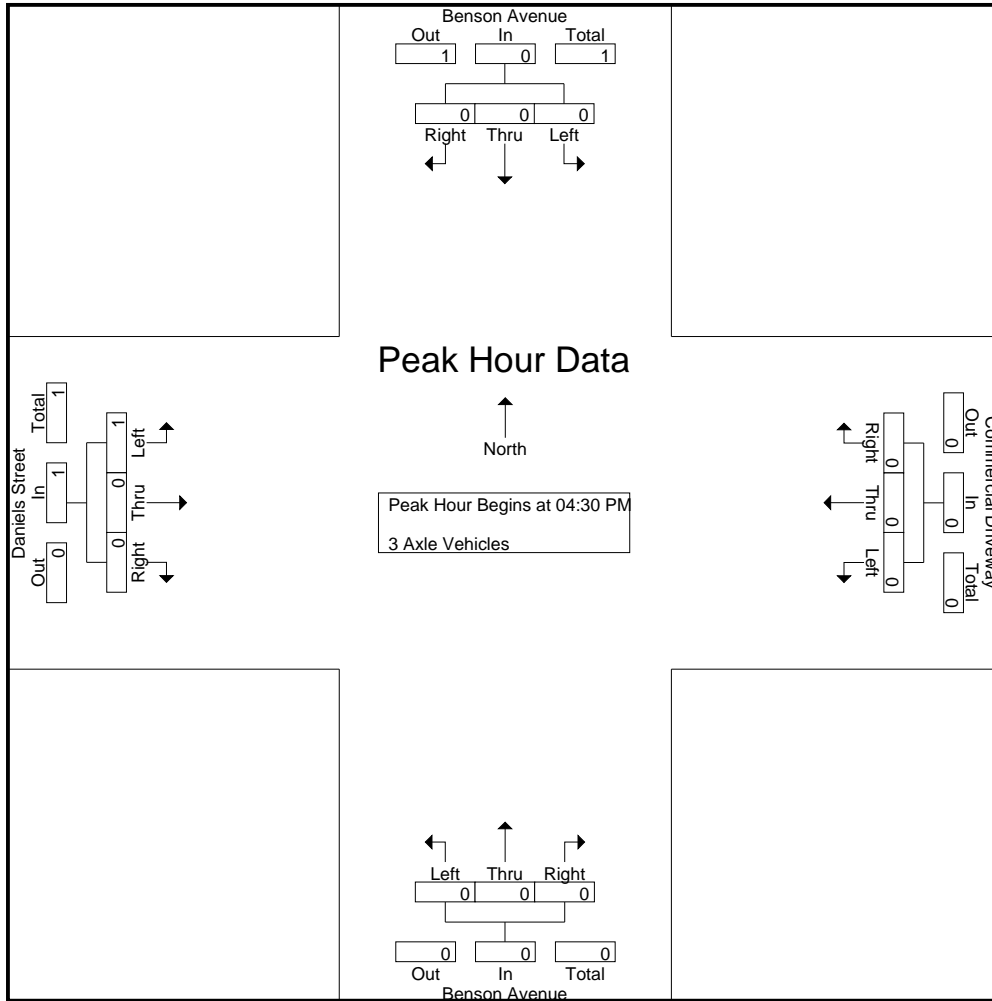
Groups Printed- 3 Axle Vehicles

Start Time	Benson Avenue Southbound				Commercial Driveway Westbound				Benson Avenue Northbound				Daniels Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
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	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
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	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 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	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
Apprch %	0	0	0		0	0	0		0	0	0		100	0	0		
Total %	0	0	0		0	0	0		0	0	0		100	0	0	100	

Start Time	Benson Avenue Southbound				Commercial Driveway Westbound				Benson Avenue Northbound				Daniels Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 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	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% App. Total	0	0	0		0	0	0		0	0	0		100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.250

City of Chino
 N/S: Benson Avenue
 E/W: Daniels Street
 Weather: Clear

File Name : 03_CHN_Ben_Dan PM
 Site Code : 05123746
 Start Date : 8/17/2023
 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	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250

City of Chino
 N/S: Benson Avenue
 E/W: Daniels Street
 Weather: Clear

File Name : 03_CHN_Ben_Dan PM
 Site Code : 05123746
 Start Date : 8/17/2023
 Page No : 1

Groups Printed- 4+ Axle Trucks

Start Time	Benson Avenue Southbound				Commercial Driveway Westbound				Benson Avenue Northbound				Daniels Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	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	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:45 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
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	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
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	0	0	0	0	0	0	1	0	1	2	3
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	2
Grand Total	0	0	2	2	0	0	0	0	0	1	0	1	3	0	1	4	7
Apprch %	0	0	100		0	0	0		0	100	0		75	0	25		
Total %	0	0	28.6	28.6	0	0	0	0	0	14.3	0	14.3	42.9	0	14.3	57.1	

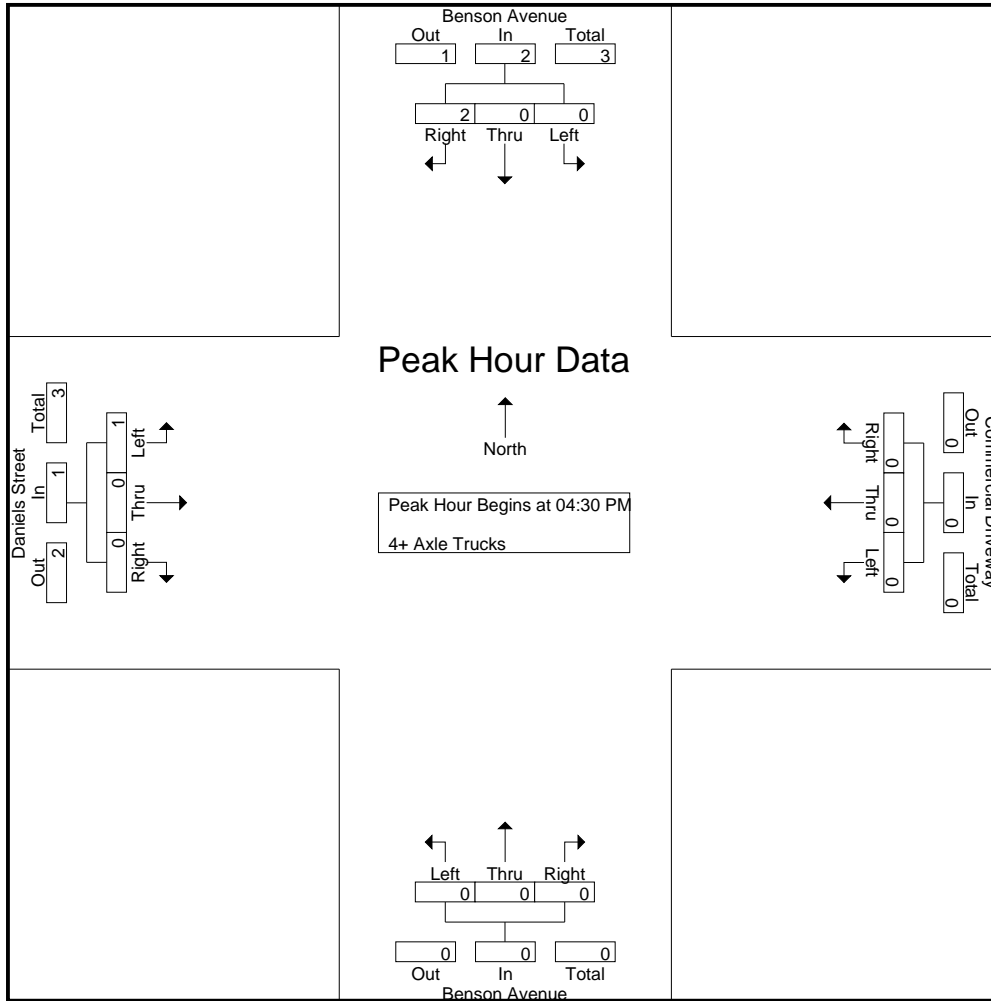
Start Time	Benson Avenue Southbound				Commercial Driveway Westbound				Benson Avenue Northbound				Daniels Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:45 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
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	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	2	2	0	0	0	0	0	0	0	0	1	0	0	1	3
% App. Total	0	0	100		0	0	0		0	0	0		100	0	0		
PHF	.000	.000	.500	.500	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.750

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

City of Chino
 N/S: Benson Avenue
 E/W: Daniels Street
 Weather: Clear

File Name : 03_CHN_Ben_Dan PM
 Site Code : 05123746
 Start Date : 8/17/2023
 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	1	0	0	1
+15 mins.	0	0	1	1	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	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	2	2	0	0	0	0	0	0	0	0	1	0	0	1
% App. Total	0	0	100		0	0	0		0	0	0		100	0	0	
PHF	.000	.000	.500	.500	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250

Location: Chino
 N/S: Benson Avenue
 E/W: Daniels Street



Date: 8/17/2023
 Day: Thursday

PEDESTRIANS

	North Leg Benson Avenue	East Leg Commercial Driveway	South Leg Benson Avenue	West Leg Daniels Street	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
6:00 AM	0	1	0	1	2
6:15 AM	0	0	0	0	0
6:30 AM	0	0	0	0	0
6:45 AM	0	0	0	0	0
7:00 AM	0	1	0	0	1
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	2	0	1	3

	North Leg Benson Avenue	East Leg Commercial Driveway	South Leg Benson Avenue	West Leg Daniels Street	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	1	0	0	0	1
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
6:00 PM	0	0	0	0	0
6:15 PM	0	0	0	0	0
6:30 PM	0	0	0	0	0
6:45 PM	0	0	0	1	1
TOTAL VOLUMES:	1	0	0	1	2

Location: Chino
 N/S: Benson Avenue
 E/W: Daniels Street



Date: 8/17/2023
 Day: Thursday

BICYCLES

	Southbound Benson Avenue			Westbound Commercial Driveway			Northbound Benson Avenue			Eastbound Daniels Street			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	0	0	0	0	0	0	0	0	1

	Southbound Benson Avenue			Westbound Commercial Driveway			Northbound Benson Avenue			Eastbound Daniels Street			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878

Phone: (951) 268-6268

email: counts@countsunlimited.com

CHN001

Site Code: 051-23746

City of Chino
12th Street
N/ Edison Avenue
24 Hour Directional Classification Count
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
08/17/23	0	1	1	0	0	0	0	0	0	0	0	0	0	2
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
04:00	0	13	2	1	1	0	0	0	0	0	0	0	0	17
05:00	1	34	16	2	2	0	0	0	3	0	0	0	0	58
06:00	0	37	21	0	12	1	0	2	0	0	0	0	0	73
07:00	0	43	11	2	8	2	0	0	1	0	0	0	0	67
08:00	0	44	18	1	5	1	0	2	3	0	0	0	0	74
09:00	1	40	15	4	10	1	0	0	5	0	0	0	0	76
10:00	0	14	12	2	10	1	0	4	9	0	0	0	1	53
11:00	1	23	13	2	2	3	0	2	4	0	0	0	0	50
12 PM	1	30	12	5	9	4	0	0	7	0	0	0	0	68
13:00	1	24	7	6	4	4	0	2	2	0	0	0	0	50
14:00	0	26	15	3	11	1	0	2	0	0	0	0	0	58
15:00	0	20	6	2	5	1	0	6	2	0	0	0	0	42
16:00	0	20	4	2	5	2	0	0	4	0	0	0	0	37
17:00	1	18	7	0	7	2	0	3	3	0	0	0	0	41
18:00	1	22	6	0	2	1	1	0	0	0	0	0	0	33
19:00	1	15	9	0	2	2	2	1	1	0	0	0	0	33
20:00	1	21	5	0	6	0	0	0	1	0	0	0	0	34
21:00	0	9	2	0	1	1	0	0	1	0	0	0	0	14
22:00	0	4	0	0	0	0	0	0	1	0	0	0	0	5
23:00	0	3	1	0	1	0	0	0	1	0	0	0	0	6
Total	9	464	184	32	103	27	3	24	48	0	0	0	1	895
Percent	1.0%	51.8%	20.6%	3.6%	11.5%	3.0%	0.3%	2.7%	5.4%	0.0%	0.0%	0.0%	0.1%	
AM Peak	05:00	08:00	06:00	09:00	06:00	11:00		10:00	10:00				10:00	09:00
Vol.	1	44	21	4	12	3		4	9				1	76
PM Peak	12:00	12:00	14:00	13:00	14:00	12:00	19:00	15:00	12:00					12:00
Vol.	1	30	15	6	11	4	2	6	7					68
Grand Total	9	464	184	32	103	27	3	24	48	0	0	0	1	895
Percent	1.0%	51.8%	20.6%	3.6%	11.5%	3.0%	0.3%	2.7%	5.4%	0.0%	0.0%	0.0%	0.1%	

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878

Phone: (951) 268-6268

email: counts@countsunlimited.com

CHN001

Site Code: 051-23746

City of Chino
12th Street
N/ Edison Avenue
24 Hour Directional Classification Count
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
08/17/23	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
04:00	0	4	1	0	1	0	0	0	0	0	0	0	0	6
05:00	0	11	3	0	0	0	0	2	0	0	0	0	0	16
06:00	0	24	8	2	17	17	0	6	6	0	0	0	0	80
07:00	0	29	8	0	3	15	0	1	1	0	0	0	0	57
08:00	1	36	13	1	3	4	0	0	1	0	0	0	0	59
09:00	0	16	8	7	6	2	0	1	0	0	0	0	0	40
10:00	2	32	13	4	7	2	0	1	1	0	0	0	0	62
11:00	1	45	23	4	10	1	0	1	3	0	0	0	0	88
12 PM	2	47	14	3	3	3	0	2	4	0	0	0	0	78
13:00	0	38	17	3	13	2	0	2	2	0	0	0	0	77
14:00	1	67	30	1	9	3	0	2	3	0	0	0	0	116
15:00	0	62	17	5	3	1	0	1	2	0	0	0	0	91
16:00	2	66	15	2	10	2	0	2	1	0	0	1	0	101
17:00	2	131	24	1	4	1	0	0	0	0	0	0	0	163
18:00	0	53	22	0	3	0	0	0	0	0	0	0	0	78
19:00	0	28	4	1	2	0	0	1	0	0	0	0	0	36
20:00	0	9	1	0	2	0	0	0	0	0	0	0	0	12
21:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
22:00	0	7	2	0	0	0	0	0	1	0	0	0	0	10
23:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
Total	11	716	226	34	96	53	0	22	25	0	0	1	0	1184
Percent	0.9%	60.5%	19.1%	2.9%	8.1%	4.5%	0.0%	1.9%	2.1%	0.0%	0.0%	0.1%	0.0%	
AM Peak	10:00	11:00	11:00	09:00	06:00	06:00		06:00	06:00					11:00
Vol.	2	45	23	7	17	17		6	6					88
PM Peak	12:00	17:00	14:00	15:00	13:00	12:00		12:00	12:00			16:00		17:00
Vol.	2	131	30	5	13	3		2	4			1		163
Grand Total	11	716	226	34	96	53	0	22	25	0	0	1	0	1184
Percent	0.9%	60.5%	19.1%	2.9%	8.1%	4.5%	0.0%	1.9%	2.1%	0.0%	0.0%	0.1%	0.0%	

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878

Phone: (951) 268-6268

email: counts@countsunlimited.com

CHN001

Site Code: 051-23746

City of Chino
12th Street
N/ Edison Avenue
24 Hour Directional Classification Count
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
08/17/23	0	3	1	0	0	0	0	0	0	0	0	0	0	4
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
04:00	0	17	3	1	2	0	0	0	0	0	0	0	0	23
05:00	1	45	19	2	2	0	0	2	3	0	0	0	0	74
06:00	0	61	29	2	29	18	0	8	6	0	0	0	0	153
07:00	0	72	19	2	11	17	0	1	2	0	0	0	0	124
08:00	1	80	31	2	8	5	0	2	4	0	0	0	0	133
09:00	1	56	23	11	16	3	0	1	5	0	0	0	0	116
10:00	2	46	25	6	17	3	0	5	10	0	0	0	1	115
11:00	2	68	36	6	12	4	0	3	7	0	0	0	0	138
12 PM	3	77	26	8	12	7	0	2	11	0	0	0	0	146
13:00	1	62	24	9	17	6	0	4	4	0	0	0	0	127
14:00	1	93	45	4	20	4	0	4	3	0	0	0	0	174
15:00	0	82	23	7	8	2	0	7	4	0	0	0	0	133
16:00	2	86	19	4	15	4	0	2	5	0	0	1	0	138
17:00	3	149	31	1	11	3	0	3	3	0	0	0	0	204
18:00	1	75	28	0	5	1	1	0	0	0	0	0	0	111
19:00	1	43	13	1	4	2	2	2	1	0	0	0	0	69
20:00	1	30	6	0	8	0	0	0	1	0	0	0	0	46
21:00	0	15	3	0	1	1	0	0	1	0	0	0	0	21
22:00	0	11	2	0	0	0	0	0	2	0	0	0	0	15
23:00	0	5	2	0	1	0	0	0	1	0	0	0	0	9
Total	20	1180	410	66	199	80	3	46	73	0	0	1	1	2079
Percent	1.0%	56.8%	19.7%	3.2%	9.6%	3.8%	0.1%	2.2%	3.5%	0.0%	0.0%	0.0%	0.0%	
AM Peak	10:00	08:00	11:00	09:00	06:00	06:00		06:00	10:00				10:00	06:00
Vol.	2	80	36	11	29	18		8	10				1	153
PM Peak	12:00	17:00	14:00	13:00	14:00	12:00	19:00	15:00	12:00			16:00		17:00
Vol.	3	149	45	9	20	7	2	7	11			1		204
Grand Total	20	1180	410	66	199	80	3	46	73	0	0	1	1	2079
Percent	1.0%	56.8%	19.7%	3.2%	9.6%	3.8%	0.1%	2.2%	3.5%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

City of Chino
 Benson Avenue
 S/ Daniels Street
 24 Hour Directional Classification Count

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

CHN003
 Site Code: 051-23746

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
08/17/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	2	0	0	1	0	0	0	0	0	3
06:00	0	3	1	0	1	1	0	1	0	0	0	0	0	7
07:00	0	9	4	0	0	0	0	0	1	0	0	0	0	14
08:00	0	14	7	0	3	1	0	0	0	0	0	0	0	25
09:00	0	17	11	1	1	0	0	0	0	0	0	0	0	30
10:00	0	36	25	1	11	0	0	0	1	0	0	0	0	74
11:00	0	40	21	0	10	0	0	0	1	0	0	0	0	72
12 PM	0	10	6	0	3	0	0	0	2	0	0	0	0	21
13:00	0	21	17	1	8	0	0	0	0	0	0	0	0	47
14:00	1	42	28	0	13	0	0	0	0	0	0	0	0	84
15:00	0	76	27	1	3	1	0	2	0	0	0	0	1	111
16:00	0	12	3	0	1	0	0	0	0	0	0	0	0	16
17:00	1	8	4	0	1	0	0	0	0	0	0	0	0	14
18:00	0	4	1	0	0	0	0	1	0	0	0	0	0	6
19:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
20:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
21:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Total	2	297	155	4	58	3	0	5	5	0	0	0	1	530
Percent	0.4%	56.0%	29.2%	0.8%	10.9%	0.6%	0.0%	0.9%	0.9%	0.0%	0.0%	0.0%	0.2%	
AM Peak		11:00	10:00	09:00	10:00	06:00		05:00	07:00					10:00
Vol.		40	25	1	11	1		1	1					74
PM Peak	14:00	15:00	14:00	13:00	14:00	15:00		15:00	12:00				15:00	15:00
Vol.	1	76	28	1	13	1		2	2				1	111
Grand Total	2	297	155	4	58	3	0	5	5	0	0	0	1	530
Percent	0.4%	56.0%	29.2%	0.8%	10.9%	0.6%	0.0%	0.9%	0.9%	0.0%	0.0%	0.0%	0.2%	

Counts Unlimited, Inc.

City of Chino
 Benson Avenue
 S/ Daniels Street
 24 Hour Directional Classification Count
 Southbound

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

CHN003
 Site Code: 051-23746

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
08/17/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:00	0	2	0	0	2	0	0	0	0	0	0	0	0	4
05:00	0	15	7	0	1	0	0	0	0	0	0	0	0	23
06:00	0	56	44	0	22	0	0	1	0	0	0	0	0	123
07:00	1	59	25	0	6	2	0	0	0	0	0	0	0	93
08:00	0	13	9	1	2	0	0	0	0	0	0	0	0	25
09:00	0	14	8	0	4	0	0	0	0	0	0	0	0	26
10:00	0	11	8	1	6	0	0	0	1	0	0	0	0	27
11:00	0	43	28	0	11	1	0	0	0	0	0	0	0	83
12 PM	0	22	6	0	6	1	0	0	0	0	0	0	0	35
13:00	1	17	9	0	2	0	0	0	0	0	0	0	0	29
14:00	0	4	4	0	3	0	0	1	0	0	0	0	0	12
15:00	0	6	0	2	2	1	0	1	0	0	0	0	0	12
16:00	0	6	0	0	2	0	0	0	0	0	0	0	0	8
17:00	0	3	0	0	1	0	0	0	0	0	0	0	0	4
18:00	0	2	1	0	1	0	0	0	0	0	0	0	0	4
19:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
20:00	0	2	2	0	1	0	0	0	0	0	0	0	0	5
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	277	152	4	72	5	0	3	1	0	0	0	0	516
Percent	0.4%	53.7%	29.5%	0.8%	14.0%	1.0%	0.0%	0.6%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	07:00	06:00	08:00	06:00	07:00		06:00	10:00					06:00
Vol.	1	59	44	1	22	2		1	1					123
PM Peak	13:00	12:00	13:00	15:00	12:00	12:00		14:00						12:00
Vol.	1	22	9	2	6	1		1						35
Grand Total	2	277	152	4	72	5	0	3	1	0	0	0	0	516
Percent	0.4%	53.7%	29.5%	0.8%	14.0%	1.0%	0.0%	0.6%	0.2%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

City of Chino
 Benson Avenue
 S/ Daniels Street
 24 Hour Directional Classification Count
 Northbound, Southbound

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

CHN003
 Site Code: 051-23746

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
08/17/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
04:00	0	2	0	0	2	0	0	0	0	0	0	0	0	4
05:00	0	15	7	0	3	0	0	1	0	0	0	0	0	26
06:00	0	59	45	0	23	1	0	2	0	0	0	0	0	130
07:00	1	68	29	0	6	2	0	0	1	0	0	0	0	107
08:00	0	27	16	1	5	1	0	0	0	0	0	0	0	50
09:00	0	31	19	1	5	0	0	0	0	0	0	0	0	56
10:00	0	47	33	2	17	0	0	0	2	0	0	0	0	101
11:00	0	83	49	0	21	1	0	0	1	0	0	0	0	155
12 PM	0	32	12	0	9	1	0	0	2	0	0	0	0	56
13:00	1	38	26	1	10	0	0	0	0	0	0	0	0	76
14:00	1	46	32	0	16	0	0	1	0	0	0	0	0	96
15:00	0	82	27	3	5	2	0	3	0	0	0	0	1	123
16:00	0	18	3	0	3	0	0	0	0	0	0	0	0	24
17:00	1	11	4	0	2	0	0	0	0	0	0	0	0	18
18:00	0	6	2	0	1	0	0	1	0	0	0	0	0	10
19:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
20:00	0	3	2	0	1	0	0	0	0	0	0	0	0	6
21:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Total	4	574	307	8	130	8	0	8	6	0	0	0	1	1046
Percent	0.4%	54.9%	29.3%	0.8%	12.4%	0.8%	0.0%	0.8%	0.6%	0.0%	0.0%	0.0%	0.1%	
AM Peak	07:00	11:00	11:00	10:00	06:00	07:00		06:00	10:00					11:00
Vol.	1	83	49	2	23	2		2	2					155
PM Peak	13:00	15:00	14:00	15:00	14:00	15:00		15:00	12:00				15:00	15:00
Vol.	1	82	32	3	16	2		3	2				1	123
Grand Total	4	574	307	8	130	8	0	8	6	0	0	0	1	1046
Percent	0.4%	54.9%	29.3%	0.8%	12.4%	0.8%	0.0%	0.8%	0.6%	0.0%	0.0%	0.0%	0.1%	

Counts Unlimited, Inc.

City of Chino
 Benson Avenue
 S/ Schaefer Avenue
 24 Hour Directional Classification Count

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

CHN002
 Site Code: 051-23746

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
08/17/23	0	1	1	0	0	0	0	0	0	0	0	0	0	2
01:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
04:00	0	1	0	1	0	0	0	0	0	0	0	0	0	2
05:00	1	9	2	0	2	0	0	0	0	0	0	0	0	14
06:00	0	11	4	0	3	0	0	1	1	0	0	0	0	20
07:00	0	19	8	1	0	0	0	0	4	0	0	0	0	32
08:00	1	31	25	1	5	2	0	0	2	0	0	0	0	67
09:00	0	26	15	3	7	0	0	0	0	0	0	0	0	51
10:00	0	34	33	2	14	1	0	1	2	0	0	0	0	87
11:00	0	59	28	3	11	0	0	2	1	0	0	0	0	104
12 PM	1	48	22	1	7	1	0	3	5	0	0	0	0	88
13:00	1	39	24	5	11	0	0	2	2	0	0	0	0	84
14:00	2	120	43	3	12	1	0	2	0	3	0	0	0	186
15:00	2	122	44	6	12	1	0	3	3	0	0	0	0	193
16:00	0	78	17	0	5	0	0	1	2	0	0	0	0	103
17:00	1	82	13	1	8	1	0	0	2	0	0	0	0	108
18:00	0	49	3	1	0	1	0	2	0	0	0	0	0	56
19:00	0	31	10	0	2	0	0	0	1	0	0	0	0	44
20:00	0	23	6	0	2	0	0	0	1	0	0	0	0	32
21:00	0	9	2	0	1	1	0	0	0	0	0	0	0	13
22:00	0	7	1	0	0	0	0	1	0	0	0	0	0	9
23:00	0	9	0	0	1	0	0	0	0	0	0	0	0	10
Total	9	810	303	28	103	9	0	18	26	3	0	0	0	1309
Percent	0.7%	61.9%	23.1%	2.1%	7.9%	0.7%	0.0%	1.4%	2.0%	0.2%	0.0%	0.0%	0.0%	
AM Peak	05:00	11:00	10:00	09:00	10:00	08:00		11:00	07:00					11:00
Vol.	1	59	33	3	14	2		2	4					104
PM Peak	14:00	15:00	15:00	15:00	14:00	12:00		12:00	12:00	14:00				15:00
Vol.	2	122	44	6	12	1		3	5	3				193
Grand Total	9	810	303	28	103	9	0	18	26	3	0	0	0	1309
Percent	0.7%	61.9%	23.1%	2.1%	7.9%	0.7%	0.0%	1.4%	2.0%	0.2%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

City of Chino
 Benson Avenue
 S/ Schaefer Avenue
 24 Hour Directional Classification Count
 Southbound

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

CHN002
 Site Code: 051-23746

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
08/17/23	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	3	3	0	0	0	0	0	0	0	0	0	0	6
04:00	0	26	9	0	0	0	0	0	0	0	0	0	0	35
05:00	0	108	29	0	2	0	0	0	0	0	0	0	0	139
06:00	2	109	37	0	20	3	0	0	1	0	0	0	0	172
07:00	1	103	26	1	7	3	0	0	0	0	0	0	0	141
08:00	0	97	31	0	5	0	0	1	1	0	0	0	0	135
09:00	0	48	15	3	7	0	0	1	1	0	0	0	0	75
10:00	0	30	21	2	5	1	0	0	1	0	0	0	0	60
11:00	1	73	30	1	14	3	0	1	0	0	0	0	0	123
12 PM	0	46	15	4	5	2	0	3	0	0	0	0	0	75
13:00	0	42	13	3	8	0	0	1	0	0	0	0	1	68
14:00	1	40	12	2	6	1	0	1	1	0	0	0	0	64
15:00	0	23	3	3	2	2	0	0	1	0	0	0	0	34
16:00	0	30	14	0	6	0	0	1	1	0	0	0	0	52
17:00	0	46	13	0	4	1	0	2	1	0	0	0	0	67
18:00	0	30	10	1	3	0	0	0	0	0	0	0	0	44
19:00	0	16	2	1	1	0	0	0	0	0	0	0	0	20
20:00	0	6	0	0	3	0	0	0	0	0	0	0	0	9
21:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
22:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Total	5	891	285	21	98	16	0	11	8	0	0	0	1	1336
Percent	0.4%	66.7%	21.3%	1.6%	7.3%	1.2%	0.0%	0.8%	0.6%	0.0%	0.0%	0.0%	0.1%	
AM Peak	06:00	06:00	06:00	09:00	06:00	06:00		08:00	06:00					06:00
Vol.	2	109	37	3	20	3		1	1					172
PM Peak	14:00	12:00	12:00	12:00	13:00	12:00		12:00	14:00				13:00	12:00
Vol.	1	46	15	4	8	2		3	1				1	75
Grand Total	5	891	285	21	98	16	0	11	8	0	0	0	1	1336
Percent	0.4%	66.7%	21.3%	1.6%	7.3%	1.2%	0.0%	0.8%	0.6%	0.0%	0.0%	0.0%	0.1%	

Counts Unlimited, Inc.

City of Chino
 Benson Avenue
 S/ Schaefer Avenue
 24 Hour Directional Classification Count
 Northbound, Southbound

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

CHN002
 Site Code: 051-23746

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
08/17/23	0	3	1	0	0	0	0	0	0	0	0	0	0	4
01:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	4	4	0	0	0	0	0	0	0	0	0	0	8
04:00	0	27	9	1	0	0	0	0	0	0	0	0	0	37
05:00	1	117	31	0	4	0	0	0	0	0	0	0	0	153
06:00	2	120	41	0	23	3	0	1	2	0	0	0	0	192
07:00	1	122	34	2	7	3	0	0	4	0	0	0	0	173
08:00	1	128	56	1	10	2	0	1	3	0	0	0	0	202
09:00	0	74	30	6	14	0	0	1	1	0	0	0	0	126
10:00	0	64	54	4	19	2	0	1	3	0	0	0	0	147
11:00	1	132	58	4	25	3	0	3	1	0	0	0	0	227
12 PM	1	94	37	5	12	3	0	6	5	0	0	0	0	163
13:00	1	81	37	8	19	0	0	3	2	0	0	0	1	152
14:00	3	160	55	5	18	2	0	3	1	3	0	0	0	250
15:00	2	145	47	9	14	3	0	3	4	0	0	0	0	227
16:00	0	108	31	0	11	0	0	2	3	0	0	0	0	155
17:00	1	128	26	1	12	2	0	2	3	0	0	0	0	175
18:00	0	79	13	2	3	1	0	2	0	0	0	0	0	100
19:00	0	47	12	1	3	0	0	0	1	0	0	0	0	64
20:00	0	29	6	0	5	0	0	0	1	0	0	0	0	41
21:00	0	15	3	0	1	1	0	0	0	0	0	0	0	20
22:00	0	12	2	0	0	0	0	1	0	0	0	0	0	15
23:00	0	11	0	0	1	0	0	0	0	0	0	0	0	12
Total	14	1701	588	49	201	25	0	29	34	3	0	0	1	2645
Percent	0.5%	64.3%	22.2%	1.9%	7.6%	0.9%	0.0%	1.1%	1.3%	0.1%	0.0%	0.0%	0.0%	
AM Peak	06:00	11:00	11:00	09:00	11:00	06:00		11:00	07:00					11:00
Vol.	2	132	58	6	25	3		3	4					227
PM Peak	14:00	14:00	14:00	15:00	13:00	12:00		12:00	12:00	14:00			13:00	14:00
Vol.	3	160	55	9	19	3		6	5	3			1	250
Grand Total	14	1701	588	49	201	25	0	29	34	3	0	0	1	2645
Percent	0.5%	64.3%	22.2%	1.9%	7.6%	0.9%	0.0%	1.1%	1.3%	0.1%	0.0%	0.0%	0.0%	

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**APPENDIX 3.2: EXISTING (2023) CONDITIONS INTERSECTION
OPERATIONS ANALYSIS WORKSHEETS**

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Timings
1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)

10/25/2023

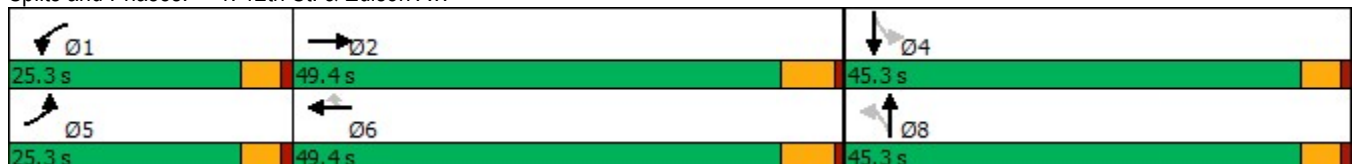


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↙	↕	↙	↕	↙		↕	↙	↕
Traffic Volume (vph)	67	490	12	929	50	12	8	6	14
Future Volume (vph)	67	490	12	929	50	12	8	6	14
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2	1	6			8		4
Permitted Phases					6	8		4	
Detector Phase	5	2	1	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.6	38.8	11.6	23.8	23.8	15.2	15.2	31.7	31.7
Total Split (s)	25.3	49.4	25.3	49.4	49.4	45.3	45.3	45.3	45.3
Total Split (%)	21.1%	41.2%	21.1%	41.2%	41.2%	37.8%	37.8%	37.8%	37.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8		4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	9.6	40.8	7.5	30.7	30.7		16.2	16.2	16.2
Actuated g/C Ratio	0.18	0.76	0.14	0.57	0.57		0.30	0.30	0.30
v/c Ratio	0.25	0.21	0.06	0.51	0.06		0.06	0.02	0.11
Control Delay	31.4	6.5	34.7	13.9	4.2		22.9	23.7	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	31.4	6.5	34.7	13.9	4.2		22.9	23.7	12.3
LOS	C	A	C	B	A		C	C	B
Approach Delay		9.3		13.7			22.9		13.4
Approach LOS		A		B			C		B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 53.7
 Natural Cycle: 85
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.51
 Intersection Signal Delay: 12.3
 Intersection LOS: B
 Intersection Capacity Utilization 52.2%
 ICU Level of Service A
 Analysis Period (min) 15

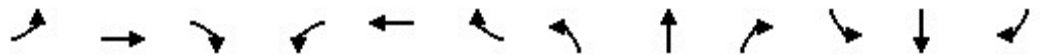
Splits and Phases: 1: 12th St. & Edison Av.



HCM 6th Signalized Intersection Summary
 1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)

10/25/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↖		↕		↖	↕	
Traffic Volume (veh/h)	67	490	18	12	929	50	12	8	2	6	14	38
Future Volume (veh/h)	67	490	18	12	929	50	12	8	2	6	14	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	71	521	17	13	988	43	13	9	1	6	15	17
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	111	1738	57	27	1582	705	202	69	6	304	66	75
Arrive On Green	0.07	0.51	0.51	0.02	0.46	0.46	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1619	3380	110	1619	3420	1524	686	799	68	1348	770	873
Grp Volume(v), veh/h	71	263	275	13	988	43	23	0	0	6	0	32
Grp Sat Flow(s),veh/h/ln	1619	1710	1780	1619	1710	1524	1553	0	0	1348	0	1643
Q Serve(g_s), s	1.7	3.5	3.5	0.3	8.6	0.6	0.0	0.0	0.0	0.0	0.0	0.7
Cycle Q Clear(g_c), s	1.7	3.5	3.5	0.3	8.6	0.6	0.7	0.0	0.0	0.1	0.0	0.7
Prop In Lane	1.00		0.06	1.00		1.00	0.57		0.04	1.00		0.53
Lane Grp Cap(c), veh/h	111	879	915	27	1582	705	277	0	0	304	0	142
V/C Ratio(X)	0.64	0.30	0.30	0.48	0.62	0.06	0.08	0.00	0.00	0.02	0.00	0.23
Avail Cap(c_a), veh/h	849	1889	1967	849	3778	1683	1726	0	0	1574	0	1690
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.9	5.5	5.5	19.2	8.0	5.9	16.7	0.0	0.0	16.5	0.0	16.8
Incr Delay (d2), s/veh	2.3	0.2	0.2	4.7	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.6	0.6	0.1	1.7	0.1	0.2	0.0	0.0	0.0	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.2	5.7	5.7	24.0	8.4	5.9	16.8	0.0	0.0	16.6	0.0	17.6
LnGrp LOS	C	A	A	C	A	A	B	A	A	B	A	B
Approach Vol, veh/h		609			1044			23				38
Approach Delay, s/veh		7.4			8.5			16.8				17.4
Approach LOS		A			A			B				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	26.1		8.1	7.3	24.1		8.1				
Change Period (Y+Rc), s	4.6	5.8		* 4.7	4.6	5.8		* 4.7				
Max Green Setting (Gmax), s	20.7	43.6		* 41	20.7	43.6		* 41				
Max Q Clear Time (g_c+I1), s	2.3	5.5		2.7	3.7	10.6		2.7				
Green Ext Time (p_c), s	0.0	3.1		0.2	0.1	7.6		0.1				

Intersection Summary

HCM 6th Ctrl Delay	8.4
HCM 6th LOS	A

Notes

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

Timings
2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

10/25/2023

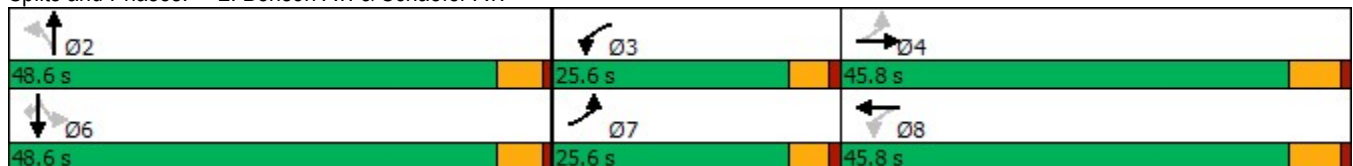


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	86	510	39	1009	28	19	67	56	106
Future Volume (vph)	86	510	39	1009	28	19	67	56	106
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	32.1	32.1	32.1	32.1	32.1
Total Split (s)	25.6	45.8	25.6	45.8	48.6	48.6	48.6	48.6	48.6
Total Split (%)	21.3%	38.2%	21.3%	38.2%	40.5%	40.5%	40.5%	40.5%	40.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.1	5.1	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	50.6	44.4	45.6	40.2	13.1	13.1	13.1	13.1	13.1
Actuated g/C Ratio	0.68	0.60	0.61	0.54	0.18	0.18	0.18	0.18	0.18
v/c Ratio	0.30	0.30	0.08	0.66	0.14	0.16	0.34	0.19	0.34
Control Delay	7.4	9.5	5.7	16.6	27.7	15.7	31.9	28.1	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.4	9.5	5.7	16.6	27.7	15.7	31.9	28.1	8.5
LOS	A	A	A	B	C	B	C	C	A
Approach Delay		9.2		16.2		20.1		20.1	
Approach LOS		A		B		C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 74.4
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 14.7
 Intersection Capacity Utilization 75.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D

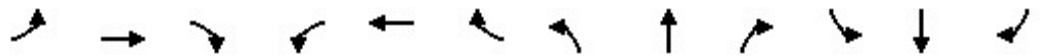
Splits and Phases: 2: Benson Av. & Schaefer Av.



HCM 6th Signalized Intersection Summary
 2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

10/25/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	510	44	39	1009	93	28	19	28	67	56	106
Future Volume (veh/h)	86	510	44	39	1009	93	28	19	28	67	56	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.95		0.98	0.99		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	93	554	43	42	1097	97	30	21	30	73	61	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	271	1470	114	445	1385	122	377	177	252	422	481	383
Arrive On Green	0.06	0.46	0.46	0.04	0.44	0.44	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1619	3214	249	1619	3177	281	1107	661	944	1287	1800	1431
Grp Volume(v), veh/h	93	294	303	42	590	604	30	0	51	73	61	114
Grp Sat Flow(s),veh/h/ln	1619	1710	1753	1619	1710	1747	1107	0	1604	1287	1800	1431
Q Serve(g_s), s	2.0	7.4	7.5	0.9	19.6	19.7	1.4	0.0	1.6	3.0	1.7	4.2
Cycle Q Clear(g_c), s	2.0	7.4	7.5	0.9	19.6	19.7	3.1	0.0	1.6	4.6	1.7	4.2
Prop In Lane	1.00		0.14	1.00		0.16	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	271	782	802	445	745	762	377	0	429	422	481	383
V/C Ratio(X)	0.34	0.38	0.38	0.09	0.79	0.79	0.08	0.00	0.12	0.17	0.13	0.30
Avail Cap(c_a), veh/h	686	1036	1062	894	1036	1059	810	0	1057	926	1186	943
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.5	11.7	11.8	9.6	16.0	16.0	19.5	0.0	18.3	20.0	18.3	19.3
Incr Delay (d2), s/veh	0.3	0.3	0.3	0.0	2.9	2.9	0.1	0.0	0.1	0.2	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.3	2.4	0.3	6.7	6.9	0.3	0.0	0.6	0.9	0.7	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.8	12.0	12.0	9.6	18.9	18.9	19.6	0.0	18.4	20.2	18.5	19.7
LnGrp LOS	B	B	B	A	B	B	B	A	B	C	B	B
Approach Vol, veh/h		690			1236			81				248
Approach Delay, s/veh		12.1			18.6			18.9				19.5
Approach LOS		B			B			B				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.7	7.3	36.0		22.7	8.7	34.6				
Change Period (Y+Rc), s		5.1	4.6	5.8		5.1	4.6	5.8				
Max Green Setting (Gmax), s		43.5	21.0	40.0		43.5	21.0	40.0				
Max Q Clear Time (g_c+I1), s		5.1	2.9	9.5		6.6	4.0	21.7				
Green Ext Time (p_c), s		0.4	0.0	3.4		1.0	0.1	7.1				
Intersection Summary												
HCM 6th Ctrl Delay				16.7								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	23	0	48	0	0	0	5	6	0	1	127	57
Future Vol, veh/h	23	0	48	0	0	0	5	6	0	1	127	57
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	92	75	92	92	92	75	75	92	92	75	75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	31	0	64	0	0	0	7	8	0	1	169	76

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	232	232	208	263	270	8	246	0	0	8	0	0
Stage 1	210	210	-	22	22	-	-	-	-	-	-	-
Stage 2	22	22	-	241	248	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	727	672	837	694	640	1080	1332	-	-	1625	-	-
Stage 1	797	732	-	1002	881	-	-	-	-	-	-	-
Stage 2	1002	881	-	767	705	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	723	667	836	638	636	1080	1331	-	-	1625	-	-
Mov Cap-2 Maneuver	723	667	-	638	636	-	-	-	-	-	-	-
Stage 1	792	731	-	997	877	-	-	-	-	-	-	-
Stage 2	997	877	-	708	704	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	10.1		0			3.5			0		
HCM LOS	B		A								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1331	-	-	796	-	1625	-	-
HCM Lane V/C Ratio	0.005	-	-	0.119	-	0.001	-	-
HCM Control Delay (s)	7.7	0	-	10.1	0	7.2	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	-	0	-	-

Timings
1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)

10/25/2023

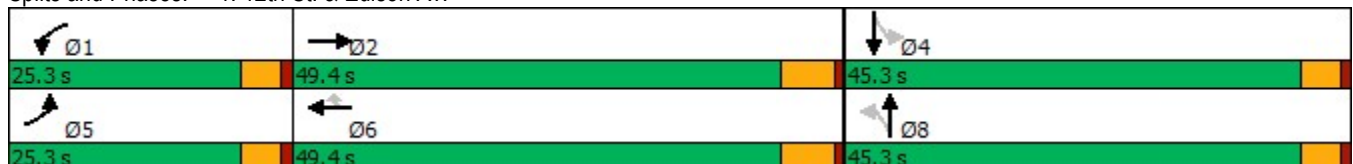


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↙	↕	↙	↕	↙		↕	↙	↕
Traffic Volume (vph)	21	849	30	553	19	39	6	41	35
Future Volume (vph)	21	849	30	553	19	39	6	41	35
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2	1	6			8		4
Permitted Phases					6	8		4	
Detector Phase	5	2	1	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.6	38.8	11.6	23.8	23.8	15.2	15.2	31.7	31.7
Total Split (s)	25.3	49.4	25.3	49.4	49.4	45.3	45.3	45.3	45.3
Total Split (%)	21.1%	41.2%	21.1%	41.2%	41.2%	37.8%	37.8%	37.8%	37.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8		4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	7.0	26.9	7.3	29.0	29.0		14.8	14.8	14.8
Actuated g/C Ratio	0.15	0.56	0.15	0.60	0.60		0.31	0.31	0.31
v/c Ratio	0.09	0.50	0.13	0.27	0.02		0.13	0.11	0.22
Control Delay	30.0	12.6	29.3	8.8	0.1		18.9	20.0	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	30.0	12.6	29.3	8.8	0.1		18.9	20.0	9.7
LOS	C	B	C	A	A		B	B	A
Approach Delay		12.9		9.6			18.9		12.4
Approach LOS		B		A			B		B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 48.1
 Natural Cycle: 85
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.50
 Intersection Signal Delay: 11.9
 Intersection LOS: B
 Intersection Capacity Utilization 46.2%
 ICU Level of Service A
 Analysis Period (min) 15

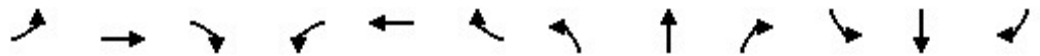
Splits and Phases: 1: 12th St. & Edison Av.



HCM 6th Signalized Intersection Summary
 1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)

10/25/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↖		↕		↖	↕	
Traffic Volume (veh/h)	21	849	87	30	553	19	39	6	4	41	35	83
Future Volume (veh/h)	21	849	87	30	553	19	39	6	4	41	35	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	21	866	77	31	564	19	40	6	0	42	36	41
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	42	1325	118	59	1461	652	333	38	0	435	139	158
Arrive On Green	0.03	0.42	0.42	0.04	0.43	0.43	0.18	0.18	0.00	0.18	0.18	0.18
Sat Flow, veh/h	1619	3177	282	1619	3420	1525	938	213	0	1353	768	875
Grp Volume(v), veh/h	21	466	477	31	564	19	46	0	0	42	0	77
Grp Sat Flow(s),veh/h/ln	1619	1710	1749	1619	1710	1525	1151	0	0	1353	0	1643
Q Serve(g_s), s	0.5	9.0	9.0	0.8	4.7	0.3	0.8	0.0	0.0	0.0	0.0	1.7
Cycle Q Clear(g_c), s	0.5	9.0	9.0	0.8	4.7	0.3	2.5	0.0	0.0	0.9	0.0	1.7
Prop In Lane	1.00		0.16	1.00		1.00	0.87		0.00	1.00		0.53
Lane Grp Cap(c), veh/h	42	713	729	59	1461	652	371	0	0	435	0	296
V/C Ratio(X)	0.50	0.65	0.65	0.53	0.39	0.03	0.12	0.00	0.00	0.10	0.00	0.26
Avail Cap(c_a), veh/h	813	1809	1850	813	3617	1613	1488	0	0	1523	0	1618
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.8	9.6	9.6	19.5	8.1	6.8	15.0	0.0	0.0	14.2	0.0	14.5
Incr Delay (d2), s/veh	3.4	1.0	1.0	2.7	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.2	2.2	0.3	1.0	0.1	0.3	0.0	0.0	0.3	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	10.7	10.6	22.2	8.3	6.9	15.2	0.0	0.0	14.3	0.0	15.0
LnGrp LOS	C	B	B	C	A	A	B	A	A	B	A	B
Approach Vol, veh/h		964			614			46				119
Approach Delay, s/veh		10.9			8.9			15.2				14.7
Approach LOS		B			A			B				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	23.0		12.1	5.7	23.4		12.1				
Change Period (Y+Rc), s	4.6	5.8		* 4.7	4.6	5.8		* 4.7				
Max Green Setting (Gmax), s	20.7	43.6		* 41	20.7	43.6		* 41				
Max Q Clear Time (g_c+I1), s	2.8	11.0		3.7	2.5	6.7		4.5				
Green Ext Time (p_c), s	0.0	6.2		0.6	0.0	3.8		0.2				

Intersection Summary

HCM 6th Ctrl Delay	10.6
HCM 6th LOS	B

Notes

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

Timings
2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

10/25/2023

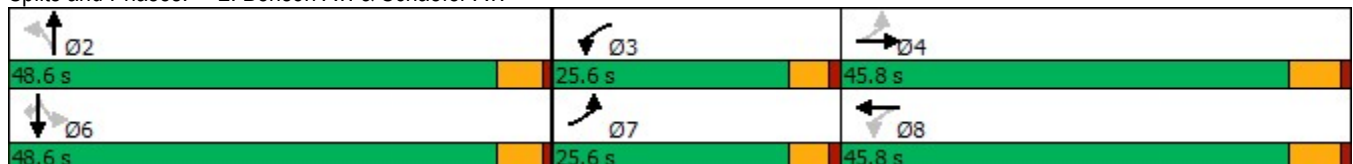


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	99	1137	13	524	37	63	61	33	87
Future Volume (vph)	99	1137	13	524	37	63	61	33	87
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	32.1	32.1	32.1	32.1	32.1
Total Split (s)	25.6	45.8	25.6	45.8	48.6	48.6	48.6	48.6	48.6
Total Split (%)	21.3%	38.2%	21.3%	38.2%	40.5%	40.5%	40.5%	40.5%	40.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.1	5.1	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	41.1	38.5	36.1	30.7	12.8	12.8	12.8	12.8	12.8
Actuated g/C Ratio	0.64	0.60	0.56	0.48	0.20	0.20	0.20	0.20	0.20
v/c Ratio	0.22	0.61	0.05	0.37	0.16	0.36	0.29	0.10	0.26
Control Delay	6.6	11.7	6.5	13.1	22.3	17.9	24.8	21.0	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	11.7	6.5	13.1	22.3	17.9	24.8	21.0	7.4
LOS	A	B	A	B	C	B	C	C	A
Approach Delay		11.3		12.9		18.9		15.7	
Approach LOS		B		B		B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 64
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 12.7
 Intersection LOS: B
 Intersection Capacity Utilization 83.7%
 ICU Level of Service E
 Analysis Period (min) 15

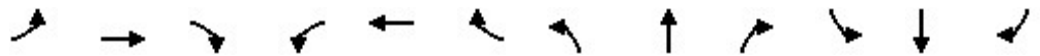
Splits and Phases: 2: Benson Av. & Schaefer Av.



HCM 6th Signalized Intersection Summary
 2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

10/25/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	1137	26	13	524	36	37	63	58	61	33	87
Future Volume (veh/h)	99	1137	26	13	524	36	37	63	58	61	33	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.95		0.97	0.99		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	106	1223	28	14	563	39	40	68	61	66	35	94
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	444	1560	36	208	1317	91	420	240	215	374	501	401
Arrive On Green	0.07	0.46	0.46	0.02	0.41	0.41	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1619	3415	78	1619	3237	224	1155	862	774	1197	1800	1440
Grp Volume(v), veh/h	106	612	639	14	297	305	40	0	129	66	35	94
Grp Sat Flow(s),veh/h/ln	1619	1710	1784	1619	1710	1751	1155	0	1636	1197	1800	1440
Q Serve(g_s), s	2.3	19.0	19.0	0.3	7.8	7.8	1.7	0.0	3.9	2.9	0.9	3.2
Cycle Q Clear(g_c), s	2.3	19.0	19.0	0.3	7.8	7.8	2.5	0.0	3.9	6.7	0.9	3.2
Prop In Lane	1.00		0.04	1.00		0.13	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	444	781	815	208	696	712	420	0	456	374	501	401
V/C Ratio(X)	0.24	0.78	0.78	0.07	0.43	0.43	0.10	0.00	0.28	0.18	0.07	0.23
Avail Cap(c_a), veh/h	878	1092	1139	723	1092	1118	901	0	1136	873	1250	1000
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.6	14.4	14.4	12.6	13.3	13.3	17.6	0.0	17.7	20.3	16.6	17.4
Incr Delay (d2), s/veh	0.1	2.5	2.4	0.0	0.4	0.4	0.1	0.0	0.3	0.2	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	6.2	6.4	0.1	2.5	2.6	0.4	0.0	1.4	0.8	0.3	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.7	16.9	16.8	12.6	13.7	13.8	17.7	0.0	18.0	20.6	16.7	17.7
LnGrp LOS	A	B	B	B	B	B	B	A	B	C	B	B
Approach Vol, veh/h		1357			616			169				195
Approach Delay, s/veh		16.3			13.7			17.9				18.5
Approach LOS		B			B			B				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.5	5.7	34.4		22.5	8.8	31.3				
Change Period (Y+Rc), s		5.1	4.6	5.8		5.1	4.6	5.8				
Max Green Setting (Gmax), s		43.5	21.0	40.0		43.5	21.0	40.0				
Max Q Clear Time (g_c+I1), s		5.9	2.3	21.0		8.7	4.3	9.8				
Green Ext Time (p_c), s		0.9	0.0	7.6		0.7	0.1	3.5				
Intersection Summary												
HCM 6th Ctrl Delay				15.9								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	5.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	96	2	0	0	3	3	5	8	0	0	4	60
Future Vol, veh/h	96	2	0	0	3	3	5	8	0	0	4	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	92	70	92	92	92	70	70	92	92	70	70
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	137	2	0	0	3	3	7	11	0	0	6	86

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	77	74	49	75	117	11	92	0	0	11	0	0
Stage 1	49	49	-	25	25	-	-	-	-	-	-	-
Stage 2	28	25	-	50	92	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	917	820	1025	920	777	1076	1515	-	-	1621	-	-
Stage 1	969	858	-	998	878	-	-	-	-	-	-	-
Stage 2	994	878	-	968	823	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	908	816	1025	914	773	1076	1515	-	-	1621	-	-
Mov Cap-2 Maneuver	908	816	-	914	773	-	-	-	-	-	-	-
Stage 1	964	858	-	993	874	-	-	-	-	-	-	-
Stage 2	982	874	-	966	823	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.7		9		2.8		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1515	-	-	906	900	1621	-
HCM Lane V/C Ratio	0.005	-	-	0.154	0.007	-	-
HCM Control Delay (s)	7.4	0	-	9.7	9	0	-
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0	0	-

**APPENDIX 3.3: EXISTING (2023) CONDITIONS TRAFFIC SIGNAL
WARRANT ANALYSIS WORKSHEETS**

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Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Existing (2023) Conditions - Weekday PM Peak Hour**

Major Street Name = **Daniels Street**

Total of Both Approaches (VPH) = **103**

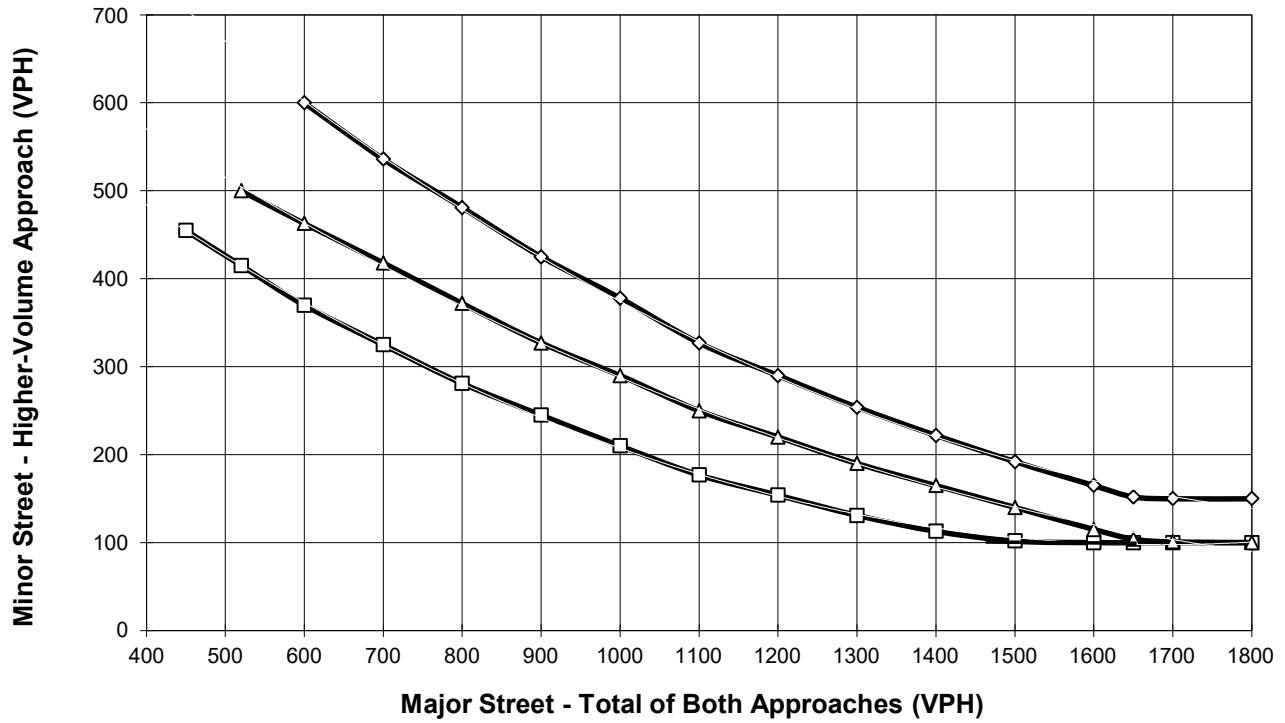
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Benson Avenue**

High Volume Approach (VPH) = **64**

Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



- 1 Lane (Major) & 1 Lane (Minor)
- △— 2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
- ◇— 2+ Lanes (Major) & 2+ Lanes (Minor)
- x— Major Street Approaches
- x— Minor Street Approaches

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

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APPENDIX 4.1: POST PROCESSING WORKSHEETS

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Project: 13925 Benson Avenue
 Scenario: Horizon Year (2045) Without Project

Job #: 15460
 Analyst: JB
 Date: 10/25/23

LOCATION: 12th St. & Edison Av.
 FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW									
APPROACH	TURNING MOVEMENT	AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
		EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	12	13	2	13%	39	43	4	10%
	Through	8	5	-3	-33%	6	4	-2	-33%
	Right	2	2	0	0%	4	3	-1	-25%
	NB Total	21	20	-1	-5%	49	50	1	2%
SOUTH BOUND	Left	6	6	0	0%	41	36	-5	-11%
	Through	14	10	-4	-29%	35	24	-11	-31%
	Right	38	44	7	17%	83	101	18	22%
	SB Total	58	60	3	4%	159	161	3	2%
EAST BOUND	Left	67	77	11	16%	21	27	7	32%
	Through	490	840	351	72%	849	1,246	398	47%
	Right	18	21	4	20%	87	100	13	15%
	EB Total	574	938	365	64%	956	1,373	417	44%
WEST BOUND	Left	12	10	-2	-13%	30	26	-4	-13%
	Through	929	1,311	382	41%	553	850	298	54%
	Right	50	40	-10	-20%	19	19	0	0%
	WB Total	991	1,361	371	37%	602	895	294	49%
TOTAL ENTERING VOLUME		1,643	2,379	736.5	45%	1,765	2,479	714	40%

FORECAST PEAK HOUR TO ADT COMPARISON						
		VOLUMES		PERCENT OF ADT		ADT
		AM	PM	AM	PM	
North Leg	Inbound	60	161			
North Leg	Outbound	122	50			
North Leg	TOTAL	182	211	7%	8%	2,582
South Leg	Inbound	20	50			
South Leg	Outbound	41	150			
South Leg	TOTAL	61	200	#DIV/0!	#DIV/0!	-
East Leg	Inbound	1,361	895			
East Leg	Outbound	848	1,285			
East Leg	TOTAL	2,209	2,180	6%	6%	34,296
West Leg	Inbound	938	1,373			
West Leg	Outbound	1,368	994			
West Leg	TOTAL	2,306	2,367	6%	6%	38,226
OVERALL TOTAL		4,758	4,958	6%	7%	75,104

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Project: 13925 Benson Avenue
 Scenario: Horizon Year (2045) Without Project

Job #: 15460
 Analyst: JB
 Date: 10/25/23

LOCATION: Benson Av. & Schaefer Av.
 FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW									
APPROACH	TURNING MOVEMENT	AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
		EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	28	26	-2	-7%	37	32	-5	-12%
	Through	19	18	-1	-3%	63	69	6	10%
	Right	28	25	-3	-9%	58	59	2	3%
	NB Total	74	69	-5	-7%	157	160	3	2%
SOUTH BOUND	Left	67	70	3	4%	61	67	6	10%
	Through	56	57	2	3%	33	30	-3	-9%
	Right	106	113	8	7%	87	82	-5	-6%
	SB Total	228	240	12	5%	181	179	-2	-1%
EAST BOUND	Left	86	96	11	12%	99	109	10	10%
	Through	510	528	19	4%	1,137	1,174	37	3%
	Right	44	46	2	5%	26	22	-4	-15%
	EB Total	639	670	31	5%	1,262	1,305	43	3%
WEST BOUND	Left	39	38	-1	-3%	13	17	5	36%
	Through	1,009	1,006	-3	0%	524	736	212	40%
	Right	93	97	5	5%	36	63	27	75%
	WB Total	1,140	1,141	1	0%	573	816	244	43%
TOTAL ENTERING VOLUME		2,081	2,120	39	2%	2,173	2,460	288	13%

FORECAST PEAK HOUR TO ADT COMPARISON						
		VOLUMES		PERCENT OF ADT		ADT
		AM	PM	AM	PM	
North Leg	Inbound	240	179			
North Leg	Outbound	211	241			
North Leg	TOTAL	451	420	5%	5%	8,871
South Leg	Inbound	69	160			
South Leg	Outbound	141	69			
South Leg	TOTAL	210	229	#DIV/0!	#DIV/0!	-
East Leg	Inbound	1,141	816			
East Leg	Outbound	623	1,300			
East Leg	TOTAL	1,764	2,116	4%	5%	42,624
West Leg	Inbound	670	1,305			
West Leg	Outbound	1,145	850			
West Leg	TOTAL	1,815	2,155	4%	5%	44,404
OVERALL TOTAL		4,240	4,920	4%	5%	95,899

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APPENDIX 5.1: E+P CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Timings
1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)

11/20/2023

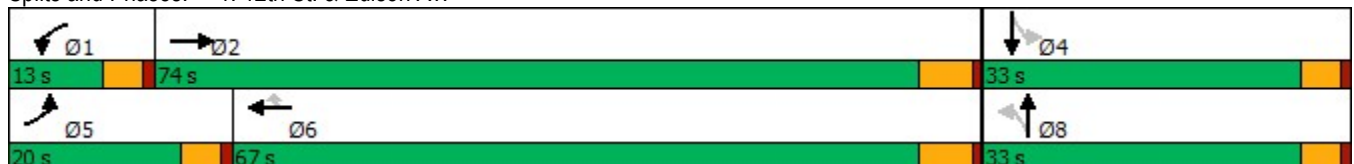


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↙	↕	↙	↕	↙		↕	↙	↕
Traffic Volume (vph)	72	490	12	929	54	12	8	8	14
Future Volume (vph)	72	490	12	929	54	12	8	8	14
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2	1	6			8		4
Permitted Phases					6	8		4	
Detector Phase	5	2	1	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.6	38.8	11.6	23.8	23.8	15.2	15.2	31.7	31.7
Total Split (s)	20.0	74.0	13.0	67.0	67.0	33.0	33.0	33.0	33.0
Total Split (%)	16.7%	61.7%	10.8%	55.8%	55.8%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8		4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	9.7	41.2	7.5	31.0	31.0		16.3	16.3	16.3
Actuated g/C Ratio	0.18	0.76	0.14	0.57	0.57		0.30	0.30	0.30
v/c Ratio	0.27	0.21	0.06	0.50	0.06		0.06	0.02	0.11
Control Delay	31.7	6.4	35.2	14.0	1.0		23.2	24.1	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	31.7	6.4	35.2	14.0	1.0		23.2	24.1	12.2
LOS	C	A	D	B	A		C	C	B
Approach Delay		9.5		13.5			23.2		13.8
Approach LOS		A		B			C		B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 54.1
 Natural Cycle: 85
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.50
 Intersection Signal Delay: 12.3
 Intersection LOS: B
 Intersection Capacity Utilization 52.5%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 1: 12th St. & Edison Av.



HCM 6th Signalized Intersection Summary
 1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)

11/20/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↖		↕		↖	↕	
Traffic Volume (veh/h)	72	490	18	12	929	54	12	8	2	8	14	40
Future Volume (veh/h)	72	490	18	12	929	54	12	8	2	8	14	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	77	521	17	13	988	47	13	9	1	9	15	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	115	1753	57	27	1587	707	199	86	7	308	67	90
Arrive On Green	0.07	0.52	0.52	0.02	0.46	0.46	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1619	3380	110	1619	3420	1524	638	893	70	1348	699	933
Grp Volume(v), veh/h	77	263	275	13	988	47	23	0	0	9	0	35
Grp Sat Flow(s),veh/h/ln	1619	1710	1780	1619	1710	1524	1601	0	0	1348	0	1632
Q Serve(g_s), s	1.9	3.6	3.6	0.3	8.9	0.7	0.0	0.0	0.0	0.0	0.0	0.8
Cycle Q Clear(g_c), s	1.9	3.6	3.6	0.3	8.9	0.7	0.5	0.0	0.0	0.2	0.0	0.8
Prop In Lane	1.00		0.06	1.00		1.00	0.57		0.04	1.00		0.57
Lane Grp Cap(c), veh/h	115	887	923	27	1587	707	291	0	0	308	0	157
V/C Ratio(X)	0.67	0.30	0.30	0.48	0.62	0.07	0.08	0.00	0.00	0.03	0.00	0.22
Avail Cap(c_a), veh/h	608	2846	2962	332	5107	2276	1204	0	0	1110	0	1127
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.6	5.6	5.6	20.0	8.3	6.1	17.0	0.0	0.0	16.8	0.0	17.1
Incr Delay (d2), s/veh	2.5	0.2	0.2	4.8	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.6	0.7	0.1	1.9	0.1	0.2	0.0	0.0	0.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.0	5.8	5.8	24.7	8.7	6.1	17.1	0.0	0.0	16.9	0.0	17.8
LnGrp LOS	C	A	A	C	A	A	B	A	A	B	A	B
Approach Vol, veh/h		615			1048			23				44
Approach Delay, s/veh		7.7			8.8			17.1				17.6
Approach LOS		A			A			B				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	27.1		8.6	7.5	24.8		8.6				
Change Period (Y+Rc), s	4.6	5.8		* 4.7	4.6	5.8		* 4.7				
Max Green Setting (Gmax), s	8.4	68.2		* 28	15.4	61.2		* 28				
Max Q Clear Time (g_c+I1), s	2.3	5.6		2.8	3.9	10.9		2.5				
Green Ext Time (p_c), s	0.0	3.1		0.2	0.1	8.1		0.1				

Intersection Summary

HCM 6th Ctrl Delay	8.7
HCM 6th LOS	A

Notes

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

Timings
2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

11/20/2023

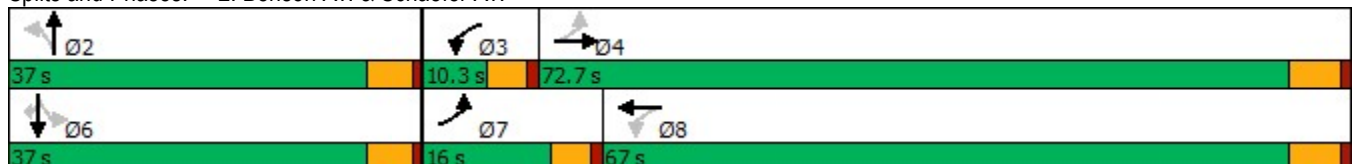


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	86	510	42	1009	29	20	67	59	106
Future Volume (vph)	86	510	42	1009	29	20	67	59	106
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	32.1	32.1	32.1	32.1	32.1
Total Split (s)	16.0	72.7	10.3	67.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	13.3%	60.6%	8.6%	55.8%	30.8%	30.8%	30.8%	30.8%	30.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.1	5.1	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	43.1	37.1	37.8	32.4	13.5	13.5	13.5	13.5	13.5
Actuated g/C Ratio	0.64	0.55	0.56	0.48	0.20	0.20	0.20	0.20	0.20
v/c Ratio	0.30	0.33	0.10	0.74	0.13	0.16	0.30	0.18	0.31
Control Delay	7.4	9.7	5.7	18.6	28.4	16.3	31.0	28.0	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.4	9.7	5.7	18.6	28.4	16.3	31.0	28.0	8.7
LOS	A	A	A	B	C	B	C	C	A
Approach Delay		9.4		18.1		20.8		20.1	
Approach LOS		A		B		C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 67.8
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 15.7
 Intersection LOS: B
 Intersection Capacity Utilization 75.0%
 ICU Level of Service D
 Analysis Period (min) 15

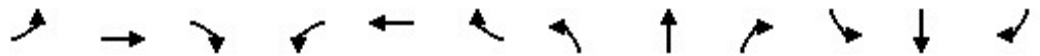
Splits and Phases: 2: Benson Av. & Schaefer Av.



HCM 6th Signalized Intersection Summary
 2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

11/20/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	510	50	42	1009	93	29	20	29	67	59	106
Future Volume (veh/h)	86	510	50	42	1009	93	29	20	29	67	59	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.95		0.98	0.99		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	93	554	49	46	1097	97	32	22	32	73	64	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	276	1491	132	453	1434	127	363	171	248	407	470	373
Arrive On Green	0.06	0.47	0.47	0.04	0.45	0.45	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1619	3177	280	1619	3177	281	1103	653	950	1283	1800	1429
Grp Volume(v), veh/h	93	298	305	46	590	604	32	0	54	73	64	114
Grp Sat Flow(s),veh/h/ln	1619	1710	1747	1619	1710	1747	1103	0	1603	1283	1800	1429
Q Serve(g_s), s	2.0	7.6	7.7	1.0	19.8	19.8	1.6	0.0	1.8	3.2	1.9	4.4
Cycle Q Clear(g_c), s	2.0	7.6	7.7	1.0	19.8	19.8	3.4	0.0	1.8	4.9	1.9	4.4
Prop In Lane	1.00		0.16	1.00		0.16	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	276	803	820	453	772	789	363	0	419	407	470	373
V/C Ratio(X)	0.34	0.37	0.37	0.10	0.76	0.77	0.09	0.00	0.13	0.18	0.14	0.31
Avail Cap(c_a), veh/h	448	1675	1711	519	1532	1565	591	0	748	672	841	667
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.2	11.6	11.7	9.3	15.7	15.7	20.6	0.0	19.3	21.2	19.3	20.3
Incr Delay (d2), s/veh	0.3	0.3	0.3	0.0	1.6	1.6	0.1	0.0	0.1	0.2	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.4	2.5	0.3	6.5	6.7	0.4	0.0	0.6	0.9	0.7	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.5	11.9	11.9	9.4	17.3	17.3	20.7	0.0	19.4	21.4	19.5	20.7
LnGrp LOS	B	B	B	A	B	B	C	A	B	C	B	C
Approach Vol, veh/h		696			1240			86			251	
Approach Delay, s/veh		12.0			17.0			19.9			20.6	
Approach LOS		B			B			B			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.9	7.5	37.9		22.9	8.7	36.6				
Change Period (Y+Rc), s		5.1	4.6	5.8		5.1	4.6	5.8				
Max Green Setting (Gmax), s		31.9	5.7	66.9		31.9	11.4	61.2				
Max Q Clear Time (g_c+I1), s		5.4	3.0	9.7		6.9	4.0	21.8				
Green Ext Time (p_c), s		0.4	0.0	3.6		0.9	0.0	9.0				
Intersection Summary												
HCM 6th Ctrl Delay			16.0									
HCM 6th LOS			B									

Intersection												
Int Delay, s/veh	3.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	23	0	58	0	0	0	9	8	0	1	140	57
Future Vol, veh/h	23	0	58	0	0	0	9	8	0	1	140	57
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	92	75	92	92	92	75	75	92	92	75	75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	31	0	77	0	0	0	12	11	0	1	187	76

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	263	263	226	301	301	11	264	0	0	11	0	0
Stage 1	228	228	-	35	35	-	-	-	-	-	-	-
Stage 2	35	35	-	266	266	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	694	646	818	655	615	1076	1312	-	-	1621	-	-
Stage 1	779	719	-	986	870	-	-	-	-	-	-	-
Stage 2	986	870	-	744	692	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	688	639	817	588	608	1076	1311	-	-	1621	-	-
Mov Cap-2 Maneuver	688	639	-	588	608	-	-	-	-	-	-	-
Stage 1	771	718	-	977	862	-	-	-	-	-	-	-
Stage 2	977	862	-	673	691	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.4		0		4.1		0	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1311	-	-	776	-	1621	-	-
HCM Lane V/C Ratio	0.009	-	-	0.139	-	0.001	-	-
HCM Control Delay (s)	7.8	0	-	10.4	0	7.2	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	-	0	-	-

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↘		↖	↗
Traffic Vol, veh/h	0	3	14	0	15	183
Future Vol, veh/h	0	3	14	0	15	183
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	3	15	0	16	199

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	15	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.2	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.3	-
Pot Cap-1 Maneuver	0	1070	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1070	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1070	1616
HCM Lane V/C Ratio	-	-	0.003	0.01
HCM Control Delay (s)	-	-	8.4	7.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↘			↖
Traffic Vol, veh/h	0	6	7	0	15	162
Future Vol, veh/h	0	6	7	0	15	162
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	7	8	0	16	176

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	8	0	0	8	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	1080	-	-	1625	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	1080	-	-	1625	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	0.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 1080	1625	-
HCM Lane V/C Ratio	-	- 0.006	0.01	-
HCM Control Delay (s)	-	- 8.4	7.2	0
HCM Lane LOS	-	- A	A	A
HCM 95th %tile Q(veh)	-	- 0	0	-

Timings
1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)

11/20/2023

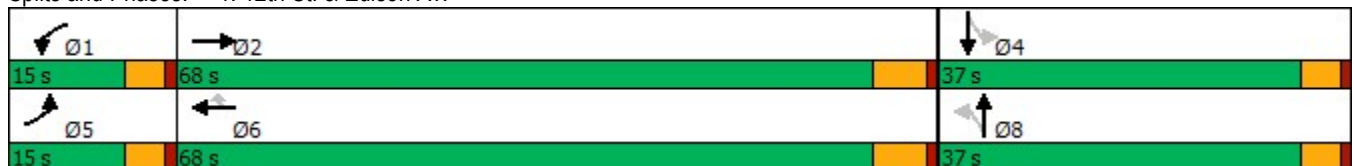


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	26	849	30	553	21	39	6	46	35
Future Volume (vph)	26	849	30	553	21	39	6	46	35
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2	1	6			8		4
Permitted Phases					6	8		4	
Detector Phase	5	2	1	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.6	38.8	11.6	23.8	23.8	15.2	15.2	31.7	31.7
Total Split (s)	15.0	68.0	15.0	68.0	68.0	37.0	37.0	37.0	37.0
Total Split (%)	12.5%	56.7%	12.5%	56.7%	56.7%	30.8%	30.8%	30.8%	30.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8		4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	7.1	27.1	7.2	27.1	27.1		14.8	14.8	14.8
Actuated g/C Ratio	0.15	0.56	0.15	0.56	0.56		0.31	0.31	0.31
v/c Ratio	0.11	0.50	0.13	0.29	0.02		0.13	0.12	0.23
Control Delay	29.8	12.4	29.6	10.5	0.2		19.0	20.1	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	29.8	12.4	29.6	10.5	0.2		19.0	20.1	9.5
LOS	C	B	C	B	A		B	C	A
Approach Delay		12.9		11.1			19.0		12.3
Approach LOS		B		B			B		B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 48.2
 Natural Cycle: 85
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.50
 Intersection Signal Delay: 12.4
 Intersection Capacity Utilization 57.2%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

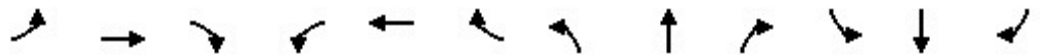
Splits and Phases: 1: 12th St. & Edison Av.



HCM 6th Signalized Intersection Summary
 1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)

11/20/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↖		↕		↖	↕	
Traffic Volume (veh/h)	26	849	87	30	553	21	39	6	4	46	35	92
Future Volume (veh/h)	26	849	87	30	553	21	39	6	4	46	35	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	27	866	77	31	564	21	40	6	0	47	36	50
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	52	1329	118	58	1445	644	330	38	0	441	128	177
Arrive On Green	0.03	0.42	0.42	0.04	0.42	0.42	0.19	0.19	0.00	0.19	0.19	0.19
Sat Flow, veh/h	1619	3177	282	1619	3420	1525	909	205	0	1353	682	947
Grp Volume(v), veh/h	27	466	477	31	564	21	46	0	0	47	0	86
Grp Sat Flow(s),veh/h/ln	1619	1710	1749	1619	1710	1525	1114	0	0	1353	0	1629
Q Serve(g_s), s	0.7	9.2	9.2	0.8	4.8	0.3	0.8	0.0	0.0	0.0	0.0	1.9
Cycle Q Clear(g_c), s	0.7	9.2	9.2	0.8	4.8	0.3	2.8	0.0	0.0	1.0	0.0	1.9
Prop In Lane	1.00		0.16	1.00		1.00	0.87		0.00	1.00		0.58
Lane Grp Cap(c), veh/h	52	716	732	58	1445	644	368	0	0	441	0	305
V/C Ratio(X)	0.52	0.65	0.65	0.53	0.39	0.03	0.12	0.00	0.00	0.11	0.00	0.28
Avail Cap(c_a), veh/h	399	2523	2581	399	5046	2250	1166	0	0	1224	0	1248
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.1	9.8	9.8	20.0	8.4	7.1	15.3	0.0	0.0	14.3	0.0	14.7
Incr Delay (d2), s/veh	3.0	1.0	1.0	2.8	0.2	0.0	0.2	0.0	0.0	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.3	2.3	0.3	1.1	0.1	0.4	0.0	0.0	0.3	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	10.8	10.8	22.7	8.6	7.1	15.4	0.0	0.0	14.4	0.0	15.2
LnGrp LOS	C	B	B	C	A	A	B	A	A	B	A	B
Approach Vol, veh/h		970			616			46				133
Approach Delay, s/veh		11.1			9.3			15.4				14.9
Approach LOS		B			A			B				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	23.4		12.6	6.0	23.6		12.6				
Change Period (Y+Rc), s	4.6	5.8		* 4.7	4.6	5.8		* 4.7				
Max Green Setting (Gmax), s	10.4	62.2		* 32	10.4	62.2		* 32				
Max Q Clear Time (g_c+I1), s	2.8	11.2		3.9	2.7	6.8		4.8				
Green Ext Time (p_c), s	0.0	6.5		0.6	0.0	3.9		0.2				

Intersection Summary

HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

Notes

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

Timings
2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

11/20/2023

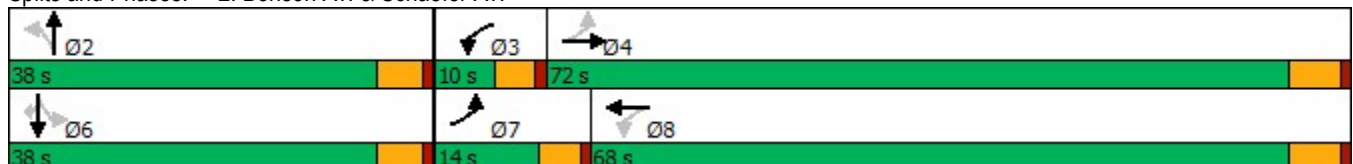


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↕	↖	↕	↖	↕	↖	↕	↖
Traffic Volume (vph)	99	1137	14	524	43	66	61	34	87
Future Volume (vph)	99	1137	14	524	43	66	61	34	87
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	32.1	32.1	32.1	32.1	32.1
Total Split (s)	14.0	72.0	10.0	68.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	11.7%	60.0%	8.3%	56.7%	31.7%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.1	5.1	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	34.9	35.1	29.4	26.6	14.6	14.6	14.6	14.6	14.6
Actuated g/C Ratio	0.64	0.64	0.54	0.49	0.27	0.27	0.27	0.27	0.27
v/c Ratio	0.20	0.57	0.05	0.37	0.14	0.29	0.22	0.08	0.21
Control Delay	6.4	10.8	6.3	13.8	23.3	18.9	24.4	22.4	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.4	10.8	6.3	13.8	23.3	18.9	24.4	22.4	7.6
LOS	A	B	A	B	C	B	C	C	A
Approach Delay		10.5		13.6		20.0		16.0	
Approach LOS		B		B		B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 54.7
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.57
 Intersection Signal Delay: 12.5
 Intersection LOS: B
 Intersection Capacity Utilization 83.8%
 ICU Level of Service E
 Analysis Period (min) 15






















Splits and Phases: 2: Benson Av. & Schaefer Av.



HCM 6th Signalized Intersection Summary
 2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	1137	28	14	524	36	43	66	61	61	34	87
Future Volume (veh/h)	99	1137	28	14	524	36	43	66	61	61	34	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.95		0.97	0.99		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	106	1223	30	15	563	39	46	71	65	66	37	94
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	455	1619	40	216	1385	96	404	231	211	353	487	389
Arrive On Green	0.07	0.47	0.47	0.02	0.43	0.43	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1619	3409	84	1619	3237	224	1152	853	781	1190	1800	1438
Grp Volume(v), veh/h	106	613	640	15	297	305	46	0	136	66	37	94
Grp Sat Flow(s),veh/h/ln	1619	1710	1782	1619	1710	1751	1152	0	1634	1190	1800	1438
Q Serve(g_s), s	2.3	19.3	19.3	0.3	7.9	7.9	2.0	0.0	4.3	3.1	1.0	3.3
Cycle Q Clear(g_c), s	2.3	19.3	19.3	0.3	7.9	7.9	3.0	0.0	4.3	7.4	1.0	3.3
Prop In Lane	1.00		0.05	1.00		0.13	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	455	812	846	216	732	749	404	0	442	353	487	389
V/C Ratio(X)	0.23	0.76	0.76	0.07	0.41	0.41	0.11	0.00	0.31	0.19	0.08	0.24
Avail Cap(c_a), veh/h	582	1725	1798	320	1621	1660	669	0	819	628	903	721
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.4	14.1	14.1	12.2	13.0	13.0	18.9	0.0	19.0	22.0	17.8	18.7
Incr Delay (d2), s/veh	0.1	1.5	1.4	0.0	0.4	0.4	0.1	0.0	0.4	0.3	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	6.1	6.3	0.1	2.5	2.6	0.5	0.0	1.6	0.8	0.4	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.5	15.6	15.5	12.3	13.4	13.4	19.1	0.0	19.4	22.2	17.9	19.0
LnGrp LOS	A	B	B	B	B	B	B	A	B	C	B	B
Approach Vol, veh/h		1359			617			182				197
Approach Delay, s/veh		15.1			13.3			19.3				19.9
Approach LOS		B			B			B				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.9	5.8	37.0		22.9	8.9	33.9				
Change Period (Y+Rc), s		5.1	4.6	5.8		5.1	4.6	5.8				
Max Green Setting (Gmax), s		32.9	5.4	66.2		32.9	9.4	62.2				
Max Q Clear Time (g_c+I1), s		6.3	2.3	21.3		9.4	4.3	9.9				
Green Ext Time (p_c), s		0.9	0.0	9.9		0.7	0.0	3.6				
Intersection Summary												
HCM 6th Ctrl Delay				15.3								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	96	2	7	0	3	3	19	20	0	0	7	60
Future Vol, veh/h	96	2	7	0	3	3	19	20	0	0	7	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	92	70	92	92	92	70	70	92	92	70	70
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	137	2	10	0	3	3	27	29	0	0	10	86

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	139	136	53	142	179	29	96	0	0	29	0	0
Stage 1	53	53	-	83	83	-	-	-	-	-	-	-
Stage 2	86	83	-	59	96	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	836	759	1020	832	718	1052	1510	-	-	1597	-	-
Stage 1	965	855	-	930	830	-	-	-	-	-	-	-
Stage 2	927	830	-	958	819	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	819	745	1020	810	705	1052	1510	-	-	1597	-	-
Mov Cap-2 Maneuver	819	745	-	810	705	-	-	-	-	-	-	-
Stage 1	948	855	-	913	815	-	-	-	-	-	-	-
Stage 2	904	815	-	946	819	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.3		9.3		3.6		0	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1510	-	-	829	844	1597	-	-
HCM Lane V/C Ratio	0.018	-	-	0.18	0.008	-	-	-
HCM Control Delay (s)	7.4	0	-	10.3	9.3	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0	0	-	-

Intersection						
Int Delay, s/veh	2.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↖		↘	↙
Traffic Vol, veh/h	0	13	25	0	5	8
Future Vol, veh/h	0	13	25	0	5	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	14	27	0	5	9

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	27	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.2	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.3	-
Pot Cap-1 Maneuver	0	1054	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1054	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	2.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1054	1600
HCM Lane V/C Ratio	-	-	0.013	0.003
HCM Control Delay (s)	-	-	8.5	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection						
Int Delay, s/veh	7.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↘			↖
Traffic Vol, veh/h	0	18	2	0	6	1
Future Vol, veh/h	0	18	2	0	6	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	20	2	0	7	1

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	2	0	0	2	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	1088	-	-	1634	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	1088	-	-	1634	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	6.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 1088	1634	-
HCM Lane V/C Ratio	-	- 0.018	0.004	-
HCM Control Delay (s)	-	- 8.4	7.2	0
HCM Lane LOS	-	- A	A	A
HCM 95th %tile Q(veh)	-	- 0.1	0	-

**APPENDIX 5.2: E+P CONDITIONS TRAFFIC SIGNAL WARRANT
ANALYSIS WORKSHEETS**

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Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **E+P Conditions - Weekday PM Peak Hour**

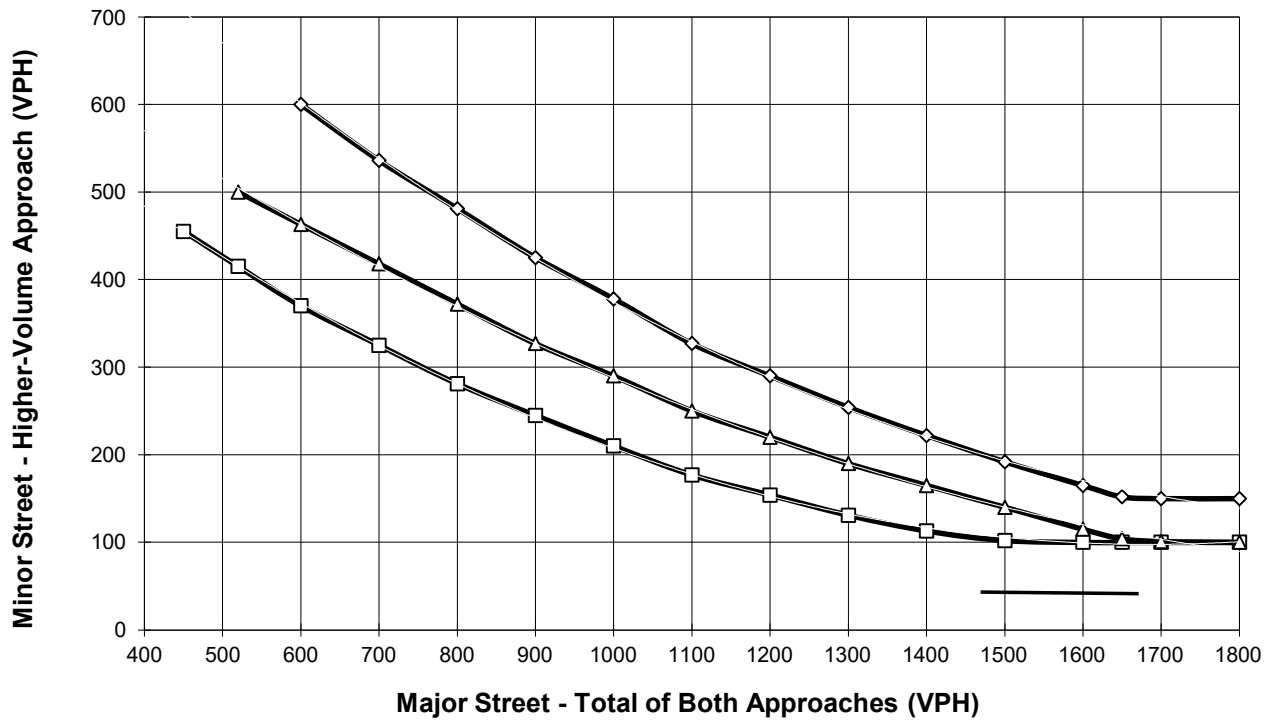
Major Street Name = **Daniels Street**

Total of Both Approaches (VPH) = **106**
 Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Benson Avenue**

High Volume Approach (VPH) = **67**
 Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



- 1 Lane (Major) & 1 Lane (Minor)
- △— 2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
- ◇— 2+ Lanes (Major) & 2+ Lanes (Minor)
- x— Major Street Approaches
- *— Minor Street Approaches

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

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

<u>DIST</u>	<u>CO</u>	<u>RTE</u>	<u>PM</u>	TRAFFIC CONDITIONS	<u>E+P</u>
Jurisdiction: <u>City of Chino</u>				CALC <u>JB</u>	DATE <u>12/14/11</u>
Major Street: <u>Benson Avenue</u>				CHK <u>JB</u>	DATE <u>12/14/11</u>
Minor Street: <u>Driveway 1</u>				Critical Approach Speed (Major)	<u>35</u> mph
				Critical Approach Speed (Minor)	<u>25</u> mph
Major Street Approach Lanes =		<u>1</u>	lane	Minor Street Approach Lanes	<u>1</u> lane
Major Street Future ADT =		<u>1,208</u>	vpd	Minor Street Future ADT =	<u>72</u> vpd
Speed limit or critical speed on major street traffic > 64 km/h (40 mph);					<input type="checkbox"/>
					or
In built up area of isolated community of < 10,000 population					<input type="checkbox"/>

URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

<u>URBAN</u>	<u>RURAL</u>	Minimum Requirements EADT			
XX		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
CONDITION A - Minimum Vehicular Volume	Not Satisfied				
<u>Satisfied</u>	XX				
Number of lanes for moving traffic on each approach		<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
<u>Major Street</u>	<u>Minor Street</u>				
1 1,208	1 72				
2 +	1	8,000	5,600	2,400	1,680
2 +	2 +	9,600	6,720	2,400	1,680
1	2 +	9,600	6,720	3,200	2,240
1	2 +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
<u>Satisfied</u>	XX				
Number of lanes for moving traffic on each approach		<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
<u>Major Street</u>	<u>Minor Street</u>				
1 1,208	1 72	12,000	8,400	1,200	850
2 +	1	14,400	10,080	1,200	850
2 +	2 +	14,400	10,080	1,600	1,120
1	2 +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B		2 CONDITIONS		2 CONDITIONS	
<u>Satisfied</u>	XX	80%		80%	
No one condition satisfied, but following conditions fulfilled 80% of more					
	<u>A</u>				
	3%				
	<u>B</u>				
	6%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

<u>DIST</u>	<u>CO</u>	<u>RTE</u>	<u>PM</u>	TRAFFIC CONDITIONS	<u>E+P</u>
Jurisdiction: <u>City of Chino</u>				CALC <u>JB</u>	DATE <u>12/14/11</u>
Major Street: <u>Benson Avenue</u>				CHK <u>JB</u>	DATE <u>12/14/11</u>
Minor Street: <u>Driveway 2</u>				Critical Approach Speed (Major)	<u>35</u> mph
				Critical Approach Speed (Minor)	<u>25</u> mph
Major Street Approach Lanes =		<u>1</u>	lane	Minor Street Approach Lanes =	<u>1</u> lane
Major Street Future ADT =		<u>742</u>	vpd	Minor Street Future ADT =	<u>94</u> vpd
Speed limit or critical speed on major street traffic > 64 km/h (40 mph);					<input type="checkbox"/>
					or
In built up area of isolated community of < 10,000 population					<input type="checkbox"/>

URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

<u>URBAN</u>	<u>RURAL</u>	Minimum Requirements EADT			
XX		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
CONDITION A - Minimum Vehicular Volume	Not Satisfied				
<u>Satisfied</u>	XX				
Number of lanes for moving traffic on each approach		<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
<u>Major Street</u>	<u>Minor Street</u>				
1 742	1 94				
2 +	1	8,000	5,600	2,400	1,680
2 +	2 +	9,600	6,720	2,400	1,680
1	2 +	9,600	6,720	3,200	2,240
1	2 +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
<u>Satisfied</u>	XX	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach		<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
<u>Major Street</u>	<u>Minor Street</u>				
1 742	1 94	12,000	8,400	1,200	850
2 +	1	14,400	10,080	1,200	850
2 +	2 +	14,400	10,080	1,600	1,120
1	2 +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
<u>Satisfied</u>	XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more					
	<u>A</u>				
	4%				
	<u>B</u>				
	6%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



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**APPENDIX 6.1: OPENING YEAR CUMULATIVE (2026) WITHOUT
PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS
WORKSHEETS**

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Timings
1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)

10/25/2023

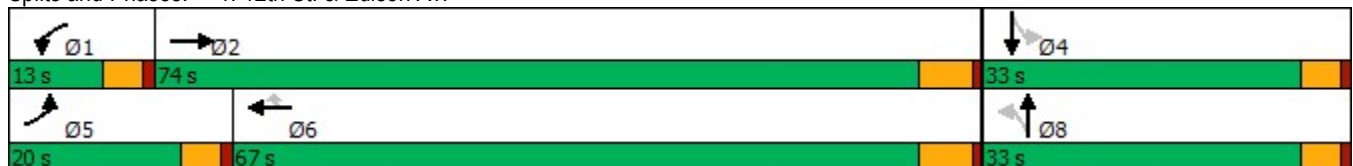


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	71	744	12	1057	53	12	8	6	15
Future Volume (vph)	71	744	12	1057	53	12	8	6	15
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2	1	6			8		4
Permitted Phases					6	8		4	
Detector Phase	5	2	1	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.6	38.8	11.6	23.8	23.8	15.2	15.2	31.7	31.7
Total Split (s)	20.0	74.0	13.0	67.0	67.0	33.0	33.0	33.0	33.0
Total Split (%)	16.7%	61.7%	10.8%	55.8%	55.8%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8		4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	10.0	45.4	7.7	35.0	35.0		16.6	16.6	16.6
Actuated g/C Ratio	0.17	0.78	0.13	0.60	0.60		0.28	0.28	0.28
v/c Ratio	0.28	0.31	0.06	0.55	0.06		0.06	0.02	0.12
Control Delay	34.5	6.5	38.2	14.0	0.8		26.2	27.3	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	34.5	6.5	38.2	14.0	0.8		26.2	27.3	13.7
LOS	C	A	D	B	A		C	C	B
Approach Delay		8.9		13.7			26.2		15.0
Approach LOS		A		B			C		B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 58.3
 Natural Cycle: 85
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 11.9
 Intersection LOS: B
 Intersection Capacity Utilization 56.2%
 ICU Level of Service B
 Analysis Period (min) 15

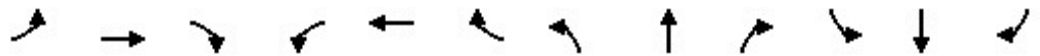
Splits and Phases: 1: 12th St. & Edison Av.



HCM 6th Signalized Intersection Summary
 1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)

10/25/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗		↕		↖	↗	
Traffic Volume (veh/h)	71	744	19	12	1057	53	12	8	2	6	15	40
Future Volume (veh/h)	71	744	19	12	1057	53	12	8	2	6	15	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	76	791	18	13	1124	46	13	9	1	6	16	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	110	1901	43	27	1726	769	183	82	6	286	66	83
Arrive On Green	0.07	0.56	0.56	0.02	0.50	0.50	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1619	3418	78	1619	3420	1524	633	899	70	1348	727	909
Grp Volume(v), veh/h	76	396	413	13	1124	46	23	0	0	6	0	36
Grp Sat Flow(s),veh/h/ln	1619	1710	1786	1619	1710	1524	1602	0	0	1348	0	1636
Q Serve(g_s), s	2.1	6.0	6.0	0.4	10.9	0.7	0.0	0.0	0.0	0.0	0.0	0.9
Cycle Q Clear(g_c), s	2.1	6.0	6.0	0.4	10.9	0.7	0.5	0.0	0.0	0.2	0.0	0.9
Prop In Lane	1.00		0.04	1.00		1.00	0.57		0.04	1.00		0.56
Lane Grp Cap(c), veh/h	110	951	993	27	1726	769	271	0	0	286	0	149
V/C Ratio(X)	0.69	0.42	0.42	0.48	0.65	0.06	0.08	0.00	0.00	0.02	0.00	0.24
Avail Cap(c_a), veh/h	555	2598	2714	303	4663	2078	1099	0	0	1013	0	1032
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.4	5.8	5.8	21.9	8.2	5.7	18.8	0.0	0.0	18.6	0.0	19.0
Incr Delay (d2), s/veh	2.8	0.3	0.3	4.9	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.1	1.1	0.2	2.3	0.1	0.2	0.0	0.0	0.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	6.0	6.0	26.8	8.6	5.7	18.9	0.0	0.0	18.7	0.0	19.8
LnGrp LOS	C	A	A	C	A	A	B	A	A	B	A	B
Approach Vol, veh/h		885			1183			23				42
Approach Delay, s/veh		7.5			8.7			18.9				19.6
Approach LOS		A			A			B				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	30.8		8.8	7.7	28.5		8.8				
Change Period (Y+Rc), s	4.6	5.8		* 4.7	4.6	5.8		* 4.7				
Max Green Setting (Gmax), s	8.4	68.2		* 28	15.4	61.2		* 28				
Max Q Clear Time (g_c+I1), s	2.4	8.0		2.9	4.1	12.9		2.5				
Green Ext Time (p_c), s	0.0	5.2		0.1	0.0	9.8		0.1				

Intersection Summary

HCM 6th Ctrl Delay	8.5
HCM 6th LOS	A

Notes

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

Timings
2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

10/25/2023

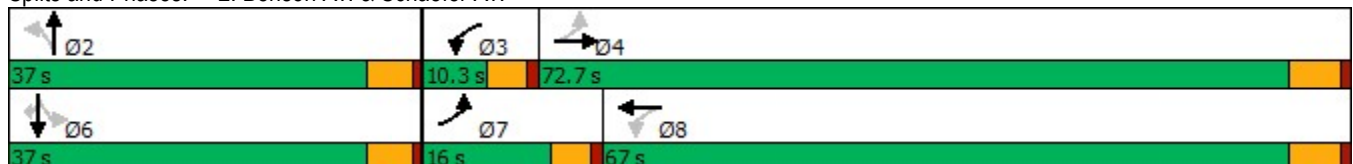


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↕	↖	↕	↖	↕	↖	↕	↖
Traffic Volume (vph)	91	625	41	1225	30	20	71	59	113
Future Volume (vph)	91	625	41	1225	30	20	71	59	113
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	32.1	32.1	32.1	32.1	32.1
Total Split (s)	16.0	72.7	10.3	67.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	13.3%	60.6%	8.6%	55.8%	30.8%	30.8%	30.8%	30.8%	30.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.1	5.1	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	53.4	47.0	46.9	41.6	14.0	14.0	14.0	14.0	14.0
Actuated g/C Ratio	0.68	0.60	0.60	0.53	0.18	0.18	0.18	0.18	0.18
v/c Ratio	0.37	0.36	0.10	0.80	0.15	0.17	0.35	0.20	0.35
Control Delay	10.6	9.2	5.4	20.0	34.0	19.1	37.8	33.6	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.6	9.2	5.4	20.0	34.0	19.1	37.8	33.6	9.9
LOS	B	A	A	C	C	B	D	C	A
Approach Delay		9.3		19.6		24.8		23.8	
Approach LOS		A		B		C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 78.1
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 17.0
 Intersection LOS: B
 Intersection Capacity Utilization 81.5%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 2: Benson Av. & Schaefer Av.



HCM 6th Signalized Intersection Summary
 2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

10/25/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	625	47	41	1225	98	30	20	29	71	59	113
Future Volume (veh/h)	91	625	47	41	1225	98	30	20	29	71	59	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.95		0.98	0.99		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	99	679	46	45	1332	103	33	22	32	77	64	122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	241	1724	117	438	1654	128	316	153	223	358	423	334
Arrive On Green	0.06	0.53	0.53	0.04	0.51	0.51	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1619	3249	220	1619	3216	248	1090	652	949	1282	1800	1418
Grp Volume(v), veh/h	99	357	368	45	706	729	33	0	54	77	64	122
Grp Sat Flow(s),veh/h/ln	1619	1710	1759	1619	1710	1754	1090	0	1601	1282	1800	1418
Q Serve(g_s), s	2.2	9.9	9.9	1.0	27.2	27.5	2.0	0.0	2.1	4.0	2.2	5.7
Cycle Q Clear(g_c), s	2.2	9.9	9.9	1.0	27.2	27.5	4.2	0.0	2.1	6.2	2.2	5.7
Prop In Lane	1.00		0.13	1.00		0.14	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	241	907	933	438	880	902	316	0	377	358	423	334
V/C Ratio(X)	0.41	0.39	0.39	0.10	0.80	0.81	0.10	0.00	0.14	0.22	0.15	0.37
Avail Cap(c_a), veh/h	383	1436	1477	490	1313	1347	496	0	641	569	721	568
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.4	11.1	11.1	8.6	16.0	16.1	25.8	0.0	24.1	26.5	24.2	25.5
Incr Delay (d2), s/veh	0.4	0.3	0.3	0.0	2.2	2.3	0.1	0.0	0.2	0.3	0.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.1	3.2	0.3	9.2	9.5	0.5	0.0	0.8	1.2	0.9	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.8	11.4	11.4	8.7	18.2	18.4	26.0	0.0	24.3	26.8	24.3	26.2
LnGrp LOS	B	B	B	A	B	B	C	A	C	C	C	C
Approach Vol, veh/h		824			1480			87			263	
Approach Delay, s/veh		11.8			18.0			24.9			25.9	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.8	7.8	48.1		23.8	9.0	46.8				
Change Period (Y+Rc), s		5.1	4.6	5.8		5.1	4.6	5.8				
Max Green Setting (Gmax), s		31.9	5.7	66.9		31.9	11.4	61.2				
Max Q Clear Time (g_c+I1), s		6.2	3.0	11.9		8.2	4.2	29.5				
Green Ext Time (p_c), s		0.4	0.0	4.5		1.0	0.1	11.5				
Intersection Summary												
HCM 6th Ctrl Delay				17.1								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	24	0	51	0	0	0	5	6	0	1	134	60
Future Vol, veh/h	24	0	51	0	0	0	5	6	0	1	134	60
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	92	75	92	92	92	75	75	92	92	75	75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	32	0	68	0	0	0	7	8	0	1	179	80

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	244	244	220	277	284	8	260	0	0	8	0	0
Stage 1	222	222	-	22	22	-	-	-	-	-	-	-
Stage 2	22	22	-	255	262	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	714	661	825	679	628	1080	1316	-	-	1625	-	-
Stage 1	785	723	-	1002	881	-	-	-	-	-	-	-
Stage 2	1002	881	-	754	695	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	710	656	824	620	624	1080	1315	-	-	1625	-	-
Mov Cap-2 Maneuver	710	656	-	620	624	-	-	-	-	-	-	-
Stage 1	780	722	-	997	877	-	-	-	-	-	-	-
Stage 2	997	877	-	691	694	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	10.3		0			3.5			0		
HCM LOS	B		A								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1315	-	-	784	-	1625	-	-
HCM Lane V/C Ratio	0.005	-	-	0.128	-	0.001	-	-
HCM Control Delay (s)	7.8	0	-	10.3	0	7.2	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	-	0	-	-

Timings
1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)

10/25/2023

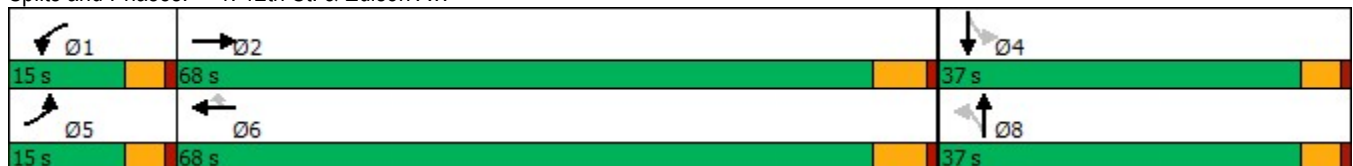


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	22	995	32	829	20	41	6	43	37
Future Volume (vph)	22	995	32	829	20	41	6	43	37
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2	1	6			8		4
Permitted Phases					6	8		4	
Detector Phase	5	2	1	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.6	38.8	11.6	23.8	23.8	15.2	15.2	31.7	31.7
Total Split (s)	15.0	68.0	15.0	68.0	68.0	37.0	37.0	37.0	37.0
Total Split (%)	12.5%	56.7%	12.5%	56.7%	56.7%	30.8%	30.8%	30.8%	30.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8		4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	7.0	32.0	7.4	34.1	34.1		14.7	14.7	14.7
Actuated g/C Ratio	0.13	0.60	0.14	0.64	0.64		0.28	0.28	0.28
v/c Ratio	0.10	0.55	0.15	0.39	0.02		0.15	0.13	0.25
Control Delay	33.7	12.3	33.0	8.9	0.1		22.9	23.7	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	33.7	12.3	33.0	8.9	0.1		22.9	23.7	11.4
LOS	C	B	C	A	A		C	C	B
Approach Delay		12.7		9.6			22.9		14.6
Approach LOS		B		A			C		B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 53.4
 Natural Cycle: 85
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 11.9
 Intersection LOS: B
 Intersection Capacity Utilization 61.5%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 1: 12th St. & Edison Av.



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 1: 12th St. & Edison Av.

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10/25/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↖		↕		↖	↕	
Traffic Volume (veh/h)	22	995	92	32	829	20	41	6	4	43	37	88
Future Volume (veh/h)	22	995	92	32	829	20	41	6	4	43	37	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	22	1015	82	33	846	20	42	6	0	44	38	46
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	43	1489	120	60	1626	725	301	33	0	408	129	156
Arrive On Green	0.03	0.46	0.46	0.04	0.48	0.48	0.17	0.17	0.00	0.17	0.17	0.17
Sat Flow, veh/h	1619	3205	259	1619	3420	1525	897	192	0	1353	741	897
Grp Volume(v), veh/h	22	542	555	33	846	20	48	0	0	44	0	84
Grp Sat Flow(s),veh/h/ln	1619	1710	1753	1619	1710	1525	1088	0	0	1353	0	1638
Q Serve(g_s), s	0.6	11.6	11.6	0.9	8.0	0.3	1.1	0.0	0.0	0.0	0.0	2.1
Cycle Q Clear(g_c), s	0.6	11.6	11.6	0.9	8.0	0.3	3.2	0.0	0.0	1.1	0.0	2.1
Prop In Lane	1.00		0.15	1.00		1.00	0.87		0.00	1.00		0.55
Lane Grp Cap(c), veh/h	43	795	815	60	1626	725	334	0	0	408	0	285
V/C Ratio(X)	0.51	0.68	0.68	0.55	0.52	0.03	0.14	0.00	0.00	0.11	0.00	0.30
Avail Cap(c_a), veh/h	362	2284	2342	362	4568	2038	1051	0	0	1111	0	1137
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.4	9.8	9.8	22.0	8.5	6.5	17.6	0.0	0.0	16.3	0.0	16.8
Incr Delay (d2), s/veh	3.5	1.0	1.0	2.8	0.3	0.0	0.2	0.0	0.0	0.1	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.9	3.0	0.3	1.9	0.1	0.4	0.0	0.0	0.4	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.8	10.8	10.8	24.9	8.8	6.5	17.8	0.0	0.0	16.5	0.0	17.3
LnGrp LOS	C	B	B	C	A	A	B	A	A	B	A	B
Approach Vol, veh/h		1119			899			48			128	
Approach Delay, s/veh		11.1			9.3			17.8			17.0	
Approach LOS		B			A			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	27.4		12.8	5.8	27.9		12.8				
Change Period (Y+Rc), s	4.6	5.8		* 4.7	4.6	5.8		* 4.7				
Max Green Setting (Gmax), s	10.4	62.2		* 32	10.4	62.2		* 32				
Max Q Clear Time (g_c+I1), s	2.9	13.6		4.1	2.6	10.0		5.2				
Green Ext Time (p_c), s	0.0	8.1		0.6	0.0	6.4		0.2				

Intersection Summary

HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

Notes

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

Timings
2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

10/25/2023

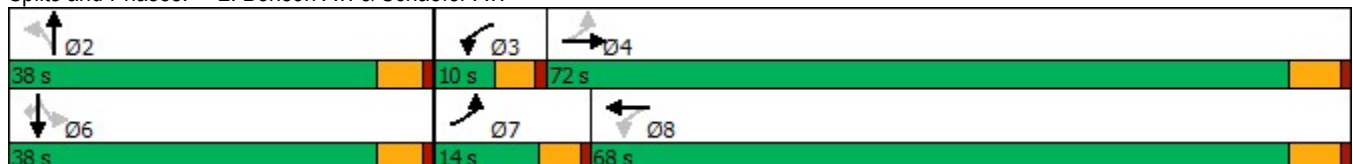


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↕	↖	↕	↖	↕	↖	↕	↖
Traffic Volume (vph)	106	1297	13	723	39	67	65	35	93
Future Volume (vph)	106	1297	13	723	39	67	65	35	93
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	32.1	32.1	32.1	32.1	32.1
Total Split (s)	14.0	72.0	10.0	68.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	11.7%	60.0%	8.3%	56.7%	31.7%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.1	5.1	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	39.8	37.3	33.7	28.1	13.9	13.9	13.9	13.9	13.9
Actuated g/C Ratio	0.62	0.58	0.52	0.43	0.21	0.21	0.21	0.21	0.21
v/c Ratio	0.28	0.72	0.06	0.55	0.16	0.36	0.29	0.10	0.26
Control Delay	6.8	12.9	6.0	15.3	27.9	23.1	29.9	26.7	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.8	12.9	6.0	15.3	27.9	23.1	29.9	26.7	8.9
LOS	A	B	A	B	C	C	C	C	A
Approach Delay		12.5		15.1		24.2		19.2	
Approach LOS		B		B		C		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 64.7
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 14.6
 Intersection LOS: B
 Intersection Capacity Utilization 88.5%
 ICU Level of Service E
 Analysis Period (min) 15






















Splits and Phases: 2: Benson Av. & Schaefer Av.



HCM 6th Signalized Intersection Summary
 2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

10/25/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	1297	28	13	723	38	39	67	61	65	35	93
Future Volume (veh/h)	106	1297	28	13	723	38	39	67	61	65	35	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.95		0.97	0.99		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	114	1395	30	14	777	41	42	72	65	70	38	100
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	395	1775	38	191	1567	83	372	221	200	321	463	369
Arrive On Green	0.06	0.52	0.52	0.02	0.48	0.48	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1619	3421	74	1619	3298	174	1142	859	775	1188	1800	1433
Grp Volume(v), veh/h	114	697	728	14	403	415	42	0	137	70	38	100
Grp Sat Flow(s),veh/h/ln	1619	1710	1785	1619	1710	1762	1142	0	1634	1188	1800	1433
Q Serve(g_s), s	2.6	24.8	24.9	0.3	12.1	12.1	2.2	0.0	5.1	3.8	1.2	4.2
Cycle Q Clear(g_c), s	2.6	24.8	24.9	0.3	12.1	12.1	3.4	0.0	5.1	8.9	1.2	4.2
Prop In Lane	1.00		0.04	1.00		0.10	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	395	887	926	191	812	837	372	0	421	321	463	369
V/C Ratio(X)	0.29	0.79	0.79	0.07	0.50	0.50	0.11	0.00	0.33	0.22	0.08	0.27
Avail Cap(c_a), veh/h	500	1511	1577	280	1420	1463	579	0	718	537	791	629
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.7	14.6	14.7	13.0	13.5	13.5	22.4	0.0	22.5	26.1	21.1	22.2
Incr Delay (d2), s/veh	0.1	1.6	1.5	0.1	0.5	0.5	0.1	0.0	0.4	0.3	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	8.0	8.3	0.1	4.0	4.1	0.6	0.0	1.9	1.1	0.5	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.8	16.2	16.2	13.0	14.0	14.0	22.5	0.0	23.0	26.5	21.2	22.6
LnGrp LOS	A	B	B	B	B	B	C	A	C	C	C	C
Approach Vol, veh/h		1539			832			179			208	
Approach Delay, s/veh		15.7			13.9			22.9			23.6	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.4	5.9	44.7		24.4	9.1	41.4				
Change Period (Y+Rc), s		5.1	4.6	5.8		5.1	4.6	5.8				
Max Green Setting (Gmax), s		32.9	5.4	66.2		32.9	9.4	62.2				
Max Q Clear Time (g_c+I1), s		7.1	2.3	26.9		10.9	4.6	14.1				
Green Ext Time (p_c), s		0.9	0.0	12.0		0.7	0.0	5.3				
Intersection Summary												
HCM 6th Ctrl Delay			16.2									
HCM 6th LOS			B									

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	101	2	0	0	3	3	5	8	0	0	4	64
Future Vol, veh/h	101	2	0	0	3	3	5	8	0	0	4	64
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	92	70	92	92	92	70	70	92	92	70	70
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	144	2	0	0	3	3	7	11	0	0	6	91

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	80	77	52	78	122	11	97	0	0	11	0	0
Stage 1	52	52	-	25	25	-	-	-	-	-	-	-
Stage 2	28	25	-	53	97	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	913	817	1021	916	772	1076	1509	-	-	1621	-	-
Stage 1	966	856	-	998	878	-	-	-	-	-	-	-
Stage 2	994	878	-	965	819	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	904	813	1021	911	768	1076	1509	-	-	1621	-	-
Mov Cap-2 Maneuver	904	813	-	911	768	-	-	-	-	-	-	-
Stage 1	961	856	-	993	874	-	-	-	-	-	-	-
Stage 2	982	874	-	963	819	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.8		9			2.8			0			
HCM LOS	A		A									

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1509	-	-	903	896	1621	-	-
HCM Lane V/C Ratio	0.005	-	-	0.162	0.007	-	-	-
HCM Control Delay (s)	7.4	0	-	9.8	9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0	0	-	-

**APPENDIX 6.2: OPENING YEAR CUMULATIVE (2026) WITH PROJECT
CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS**

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Timings
1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)

11/20/2023

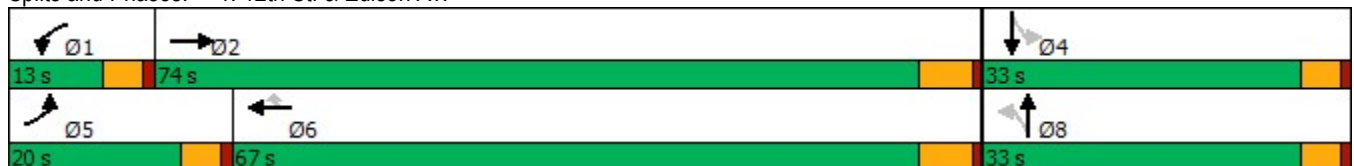


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↙	↕	↙	↕	↙		↕	↙	↕
Traffic Volume (vph)	76	744	12	1057	57	12	8	8	15
Future Volume (vph)	76	744	12	1057	57	12	8	8	15
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2	1	6			8		4
Permitted Phases					6	8		4	
Detector Phase	5	2	1	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.6	38.8	11.6	23.8	23.8	15.2	15.2	31.7	31.7
Total Split (s)	20.0	74.0	13.0	67.0	67.0	33.0	33.0	33.0	33.0
Total Split (%)	16.7%	61.7%	10.8%	55.8%	55.8%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8		4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	10.2	46.2	7.7	35.7	35.7		16.6	16.6	16.6
Actuated g/C Ratio	0.17	0.78	0.13	0.60	0.60		0.28	0.28	0.28
v/c Ratio	0.29	0.30	0.06	0.54	0.06		0.06	0.03	0.13
Control Delay	34.8	6.4	38.8	14.0	1.1		26.7	27.8	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	34.8	6.4	38.8	14.0	1.1		26.7	27.8	13.7
LOS	C	A	D	B	A		C	C	B
Approach Delay		9.0		13.7			26.7		15.5
Approach LOS		A		B			C		B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 59.1
 Natural Cycle: 85
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.54
 Intersection Signal Delay: 11.9
 Intersection LOS: B
 Intersection Capacity Utilization 56.5%
 ICU Level of Service B
 Analysis Period (min) 15

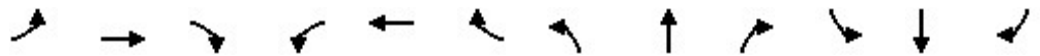
Splits and Phases: 1: 12th St. & Edison Av.



HCM 6th Signalized Intersection Summary
 1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)

11/20/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗		↕		↖	↗	
Traffic Volume (veh/h)	76	744	19	12	1057	57	12	8	2	8	15	42
Future Volume (veh/h)	76	744	19	12	1057	57	12	8	2	8	15	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	81	791	18	13	1124	51	13	9	1	9	16	22
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	114	1897	43	27	1715	764	184	90	7	293	67	93
Arrive On Green	0.07	0.56	0.56	0.02	0.50	0.50	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1619	3418	78	1619	3420	1524	615	920	70	1348	686	944
Grp Volume(v), veh/h	81	396	413	13	1124	51	23	0	0	9	0	38
Grp Sat Flow(s),veh/h/ln	1619	1710	1786	1619	1710	1524	1605	0	0	1348	0	1630
Q Serve(g_s), s	2.2	6.1	6.1	0.4	11.2	0.8	0.0	0.0	0.0	0.0	0.0	1.0
Cycle Q Clear(g_c), s	2.2	6.1	6.1	0.4	11.2	0.8	0.5	0.0	0.0	0.2	0.0	1.0
Prop In Lane	1.00		0.04	1.00		1.00	0.57		0.04	1.00		0.58
Lane Grp Cap(c), veh/h	114	949	991	27	1715	764	281	0	0	293	0	160
V/C Ratio(X)	0.71	0.42	0.42	0.48	0.66	0.07	0.08	0.00	0.00	0.03	0.00	0.24
Avail Cap(c_a), veh/h	545	2548	2662	297	4574	2038	1078	0	0	994	0	1008
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.8	5.9	5.9	22.3	8.5	5.9	18.8	0.0	0.0	18.7	0.0	19.0
Incr Delay (d2), s/veh	3.1	0.3	0.3	4.9	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.1	1.2	0.2	2.4	0.2	0.2	0.0	0.0	0.1	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.9	6.2	6.2	27.2	8.9	5.9	19.0	0.0	0.0	18.8	0.0	19.8
LnGrp LOS	C	A	A	C	A	A	B	A	A	B	A	B
Approach Vol, veh/h		890			1188			23				47
Approach Delay, s/veh		7.8			9.0			19.0				19.6
Approach LOS		A			A			B				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	31.2		9.2	7.8	28.8		9.2				
Change Period (Y+Rc), s	4.6	5.8		* 4.7	4.6	5.8		* 4.7				
Max Green Setting (Gmax), s	8.4	68.2		* 28	15.4	61.2		* 28				
Max Q Clear Time (g_c+I1), s	2.4	8.1		3.0	4.2	13.2		2.5				
Green Ext Time (p_c), s	0.0	5.2		0.2	0.1	9.8		0.1				

Intersection Summary

HCM 6th Ctrl Delay	8.8
HCM 6th LOS	A

Notes

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

Timings
2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

11/20/2023

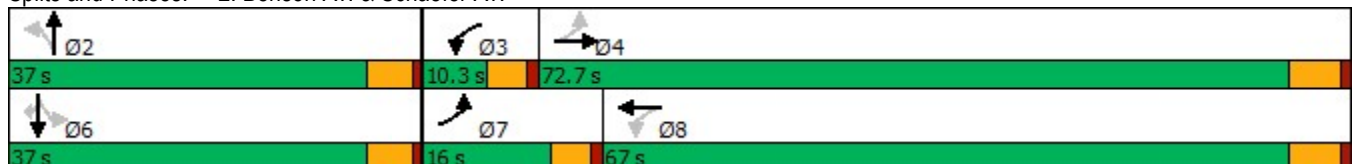


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↕	↖	↕	↖	↕	↖	↕	↖
Traffic Volume (vph)	91	625	44	1225	31	21	71	62	113
Future Volume (vph)	91	625	44	1225	31	21	71	62	113
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	32.1	32.1	32.1	32.1	32.1
Total Split (s)	16.0	72.7	10.3	67.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	13.3%	60.6%	8.6%	55.8%	30.8%	30.8%	30.8%	30.8%	30.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.1	5.1	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	53.3	47.0	46.9	41.6	14.0	14.0	14.0	14.0	14.0
Actuated g/C Ratio	0.68	0.60	0.60	0.53	0.18	0.18	0.18	0.18	0.18
v/c Ratio	0.37	0.36	0.11	0.80	0.16	0.18	0.35	0.21	0.35
Control Delay	10.6	9.2	5.4	20.0	34.1	19.1	37.8	33.7	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.6	9.2	5.4	20.0	34.1	19.1	37.8	33.7	9.9
LOS	B	A	A	C	C	B	D	C	A
Approach Delay		9.4		19.6		24.8		23.9	
Approach LOS		A		B		C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 78.1
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 17.0
 Intersection LOS: B
 Intersection Capacity Utilization 81.5%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 2: Benson Av. & Schaefer Av.



HCM 6th Signalized Intersection Summary
 2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

11/20/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	625	53	44	1225	98	31	21	30	71	62	113
Future Volume (veh/h)	91	625	53	44	1225	98	31	21	30	71	62	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.95		0.98	0.99		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	99	679	53	48	1332	103	34	23	33	77	67	122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	241	1700	133	436	1654	128	314	155	222	356	423	334
Arrive On Green	0.06	0.53	0.53	0.04	0.51	0.51	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1619	3213	251	1619	3216	248	1088	658	944	1280	1800	1418
Grp Volume(v), veh/h	99	361	371	48	706	729	34	0	56	77	67	122
Grp Sat Flow(s),veh/h/ln	1619	1710	1753	1619	1710	1754	1088	0	1602	1280	1800	1418
Q Serve(g_s), s	2.2	10.0	10.1	1.1	27.2	27.5	2.0	0.0	2.2	4.0	2.4	5.7
Cycle Q Clear(g_c), s	2.2	10.0	10.1	1.1	27.2	27.5	4.4	0.0	2.2	6.2	2.4	5.7
Prop In Lane	1.00		0.14	1.00		0.14	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	241	905	928	436	880	902	314	0	377	356	423	334
V/C Ratio(X)	0.41	0.40	0.40	0.11	0.80	0.81	0.11	0.00	0.15	0.22	0.16	0.37
Avail Cap(c_a), veh/h	383	1436	1472	486	1313	1347	494	0	642	567	721	568
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.4	11.2	11.2	8.6	16.0	16.1	25.9	0.0	24.1	26.6	24.2	25.5
Incr Delay (d2), s/veh	0.4	0.3	0.3	0.0	2.2	2.3	0.2	0.0	0.2	0.3	0.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.2	3.3	0.3	9.2	9.5	0.5	0.0	0.8	1.2	1.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.8	11.5	11.5	8.7	18.2	18.4	26.1	0.0	24.3	26.9	24.4	26.2
LnGrp LOS	B	B	B	A	B	B	C	A	C	C	C	C
Approach Vol, veh/h		831			1483			90			266	
Approach Delay, s/veh		11.9			18.0			25.0			25.9	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.8	7.9	48.0		23.8	9.0	46.8				
Change Period (Y+Rc), s		5.1	4.6	5.8		5.1	4.6	5.8				
Max Green Setting (Gmax), s		31.9	5.7	66.9		31.9	11.4	61.2				
Max Q Clear Time (g_c+I1), s		6.4	3.1	12.1		8.2	4.2	29.5				
Green Ext Time (p_c), s		0.4	0.0	4.6		1.0	0.1	11.5				
Intersection Summary												
HCM 6th Ctrl Delay				17.1								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	3.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	24	0	61	0	0	0	9	8	0	1	147	60
Future Vol, veh/h	24	0	61	0	0	0	9	8	0	1	147	60
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	92	75	92	92	92	75	75	92	92	75	75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	32	0	81	0	0	0	12	11	0	1	196	80

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	274	274	237	314	314	11	277	0	0	11	0	0
Stage 1	239	239	-	35	35	-	-	-	-	-	-	-
Stage 2	35	35	-	279	279	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	683	637	807	643	605	1076	1298	-	-	1621	-	-
Stage 1	769	711	-	986	870	-	-	-	-	-	-	-
Stage 2	986	870	-	732	683	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	677	630	806	574	598	1076	1297	-	-	1621	-	-
Mov Cap-2 Maneuver	677	630	-	574	598	-	-	-	-	-	-	-
Stage 1	761	710	-	977	862	-	-	-	-	-	-	-
Stage 2	977	862	-	657	682	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.5		0		4.1		0	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1297	-	-	765	-	1621	-	-
HCM Lane V/C Ratio	0.009	-	-	0.148	-	0.001	-	-
HCM Control Delay (s)	7.8	0	-	10.5	0	7.2	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	-	0	-	-

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↘		↖	↗
Traffic Vol, veh/h	0	3	14	0	15	193
Future Vol, veh/h	0	3	14	0	15	193
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	3	15	0	16	210

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	15	0	0	15
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2
Pot Cap-1 Maneuver	0	1070	-	-	1616
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	-	1070	-	-	1616
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1070	1616
HCM Lane V/C Ratio	-	-	0.003	0.01
HCM Control Delay (s)	-	-	8.4	7.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↘			↖
Traffic Vol, veh/h	0	6	7	0	15	172
Future Vol, veh/h	0	6	7	0	15	172
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	7	8	0	16	187

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	8	0	0	8	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	1080	-	-	1625	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	1080	-	-	1625	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	0.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 1080	1625	-
HCM Lane V/C Ratio	-	- 0.006	0.01	-
HCM Control Delay (s)	-	- 8.4	7.2	0
HCM Lane LOS	-	- A	A	A
HCM 95th %tile Q(veh)	-	- 0	0	-

Timings
1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)

11/20/2023

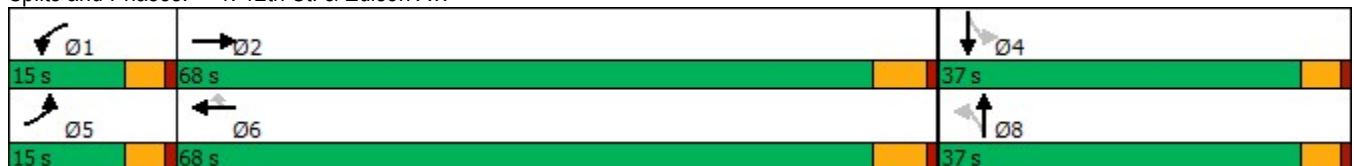


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	27	995	32	829	22	41	6	48	37
Future Volume (vph)	27	995	32	829	22	41	6	48	37
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2	1	6			8		4
Permitted Phases					6	8		4	
Detector Phase	5	2	1	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.6	38.8	11.6	23.8	23.8	15.2	15.2	31.7	31.7
Total Split (s)	15.0	68.0	15.0	68.0	68.0	37.0	37.0	37.0	37.0
Total Split (%)	12.5%	56.7%	12.5%	56.7%	56.7%	30.8%	30.8%	30.8%	30.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8		4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	7.2	32.0	7.4	32.1	32.1		14.7	14.7	14.7
Actuated g/C Ratio	0.13	0.60	0.14	0.60	0.60		0.28	0.28	0.28
v/c Ratio	0.13	0.55	0.15	0.41	0.02		0.15	0.14	0.27
Control Delay	33.4	12.3	33.0	10.6	0.1		22.9	23.9	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	33.4	12.3	33.0	10.6	0.1		22.9	23.9	11.1
LOS	C	B	C	B	A		C	C	B
Approach Delay		12.8		11.2			22.9		14.4
Approach LOS		B		B			C		B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 53.4
 Natural Cycle: 85
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 12.5
 Intersection LOS: B
 Intersection Capacity Utilization 61.5%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 1: 12th St. & Edison Av.



HCM 6th Signalized Intersection Summary
 1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)
 11/20/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↗↘		↗	↗↘	↗		↕		↗	↘	
Traffic Volume (veh/h)	27	995	92	32	829	22	41	6	4	48	37	97
Future Volume (veh/h)	27	995	92	32	829	22	41	6	4	48	37	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	28	1015	82	33	846	22	42	6	0	49	38	55
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	53	1484	120	60	1599	713	298	33	0	415	119	172
Arrive On Green	0.03	0.46	0.46	0.04	0.47	0.47	0.18	0.18	0.00	0.18	0.18	0.18
Sat Flow, veh/h	1619	3205	259	1619	3420	1525	865	185	0	1353	665	962
Grp Volume(v), veh/h	28	542	555	33	846	22	48	0	0	49	0	93
Grp Sat Flow(s),veh/h/ln	1619	1710	1753	1619	1710	1525	1050	0	0	1353	0	1627
Q Serve(g_s), s	0.8	11.7	11.7	0.9	8.2	0.4	1.1	0.0	0.0	0.0	0.0	2.3
Cycle Q Clear(g_c), s	0.8	11.7	11.7	0.9	8.2	0.4	3.4	0.0	0.0	1.2	0.0	2.3
Prop In Lane	1.00		0.15	1.00		1.00	0.87		0.00	1.00		0.59
Lane Grp Cap(c), veh/h	53	792	812	60	1599	713	331	0	0	415	0	292
V/C Ratio(X)	0.53	0.68	0.68	0.55	0.53	0.03	0.14	0.00	0.00	0.12	0.00	0.32
Avail Cap(c_a), veh/h	358	2258	2316	358	4517	2015	1025	0	0	1100	0	1116
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.4	9.9	9.9	22.3	8.9	6.8	17.7	0.0	0.0	16.4	0.0	16.8
Incr Delay (d2), s/veh	3.1	1.1	1.0	2.9	0.3	0.0	0.2	0.0	0.0	0.1	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.0	3.0	0.4	2.0	0.1	0.4	0.0	0.0	0.4	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.5	11.0	11.0	25.1	9.1	6.8	17.9	0.0	0.0	16.5	0.0	17.5
LnGrp LOS	C	B	B	C	A	A	B	A	A	B	A	B
Approach Vol, veh/h		1125			901			48			142	
Approach Delay, s/veh		11.3			9.7			17.9			17.1	
Approach LOS		B			A			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	27.6		13.1	6.1	27.8		13.1				
Change Period (Y+Rc), s	4.6	5.8		* 4.7	4.6	5.8		* 4.7				
Max Green Setting (Gmax), s	10.4	62.2		* 32	10.4	62.2		* 32				
Max Q Clear Time (g_c+I1), s	2.9	13.7		4.3	2.8	10.2		5.4				
Green Ext Time (p_c), s	0.0	8.1		0.7	0.0	6.4		0.2				

Intersection Summary

HCM 6th Ctrl Delay	11.2
HCM 6th LOS	B

Notes

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

Timings

13925 Benson Avenue (JN 15460)

2: Benson Av. & Schaefer Av.

11/20/2023

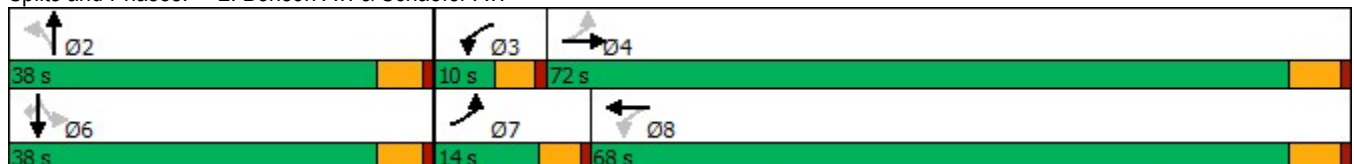


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↕	↖	↕	↖	↕	↖	↕	↖
Traffic Volume (vph)	106	1297	14	723	45	70	65	36	93
Future Volume (vph)	106	1297	14	723	45	70	65	36	93
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	32.1	32.1	32.1	32.1	32.1
Total Split (s)	14.0	72.0	10.0	68.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	11.7%	60.0%	8.3%	56.7%	31.7%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.1	5.1	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	39.8	37.4	33.7	28.2	14.0	14.0	14.0	14.0	14.0
Actuated g/C Ratio	0.61	0.58	0.52	0.44	0.22	0.22	0.22	0.22	0.22
v/c Ratio	0.28	0.73	0.06	0.55	0.18	0.38	0.29	0.10	0.26
Control Delay	6.9	13.0	6.1	15.3	28.1	23.5	30.0	26.7	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.9	13.0	6.1	15.3	28.1	23.5	30.0	26.7	8.9
LOS	A	B	A	B	C	C	C	C	A
Approach Delay		12.5		15.2		24.6		19.3	
Approach LOS		B		B		C		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 64.8
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 14.7
 Intersection LOS: B
 Intersection Capacity Utilization 88.5%
 ICU Level of Service E
 Analysis Period (min) 15

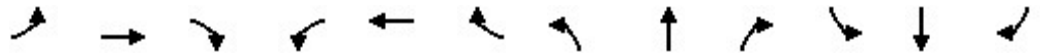
Splits and Phases: 2: Benson Av. & Schaefer Av.



HCM 6th Signalized Intersection Summary
 2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

11/20/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	1297	30	14	723	38	45	70	64	65	36	93
Future Volume (veh/h)	106	1297	30	14	723	38	45	70	64	65	36	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.95		0.97	0.99		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	114	1395	32	15	777	41	48	75	68	70	39	100
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	394	1771	41	191	1571	83	371	221	201	317	465	370
Arrive On Green	0.06	0.52	0.52	0.02	0.48	0.48	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1619	3415	78	1619	3298	174	1141	857	777	1182	1800	1433
Grp Volume(v), veh/h	114	698	729	15	403	415	48	0	143	70	39	100
Grp Sat Flow(s),veh/h/ln	1619	1710	1784	1619	1710	1762	1141	0	1634	1182	1800	1433
Q Serve(g_s), s	2.6	25.1	25.1	0.4	12.2	12.2	2.5	0.0	5.4	3.9	1.2	4.2
Cycle Q Clear(g_c), s	2.6	25.1	25.1	0.4	12.2	12.2	3.8	0.0	5.4	9.2	1.2	4.2
Prop In Lane	1.00		0.04	1.00		0.10	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	394	887	925	191	814	839	371	0	422	317	465	370
V/C Ratio(X)	0.29	0.79	0.79	0.08	0.49	0.49	0.13	0.00	0.34	0.22	0.08	0.27
Avail Cap(c_a), veh/h	498	1499	1564	278	1409	1452	574	0	712	526	784	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.7	14.8	14.8	13.1	13.5	13.5	22.7	0.0	22.8	26.5	21.2	22.3
Incr Delay (d2), s/veh	0.1	1.6	1.5	0.1	0.5	0.5	0.2	0.0	0.5	0.3	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	8.1	8.5	0.1	4.0	4.1	0.7	0.0	2.0	1.1	0.5	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.9	16.4	16.3	13.1	14.0	14.0	22.8	0.0	23.2	26.9	21.3	22.7
LnGrp LOS	A	B	B	B	B	B	C	A	C	C	C	C
Approach Vol, veh/h		1541			833			191			209	
Approach Delay, s/veh		15.9			14.0			23.1			23.8	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.6	5.9	45.0		24.6	9.1	41.8				
Change Period (Y+Rc), s		5.1	4.6	5.8		5.1	4.6	5.8				
Max Green Setting (Gmax), s		32.9	5.4	66.2		32.9	9.4	62.2				
Max Q Clear Time (g_c+I1), s		7.4	2.4	27.1		11.2	4.6	14.2				
Green Ext Time (p_c), s		1.0	0.0	12.0		0.7	0.0	5.3				
Intersection Summary												
HCM 6th Ctrl Delay			16.4									
HCM 6th LOS			B									

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	101	2	7	0	3	3	19	20	0	0	7	64
Future Vol, veh/h	101	2	7	0	3	3	19	20	0	0	7	64
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	92	70	92	92	92	70	70	92	92	70	70
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	144	2	10	0	3	3	27	29	0	0	10	91

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	142	139	56	145	184	29	101	0	0	29	0	0
Stage 1	56	56	-	83	83	-	-	-	-	-	-	-
Stage 2	86	83	-	62	101	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	832	756	1016	828	714	1052	1504	-	-	1597	-	-
Stage 1	961	852	-	930	830	-	-	-	-	-	-	-
Stage 2	927	830	-	954	815	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	815	742	1016	806	701	1052	1504	-	-	1597	-	-
Mov Cap-2 Maneuver	815	742	-	806	701	-	-	-	-	-	-	-
Stage 1	944	852	-	913	815	-	-	-	-	-	-	-
Stage 2	904	815	-	942	815	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.4		9.3		3.6		0	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1504	-	-	824	841	1597	-
HCM Lane V/C Ratio	0.018	-	-	0.19	0.008	-	-
HCM Control Delay (s)	7.4	0	-	10.4	9.3	0	-
HCM Lane LOS	A	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0	0	-

Intersection						
Int Delay, s/veh	2.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↖		↘	↙
Traffic Vol, veh/h	0	13	25	0	5	8
Future Vol, veh/h	0	13	25	0	5	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	14	27	0	5	9

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	27	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.2	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.3	-
Pot Cap-1 Maneuver	0	1054	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1054	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	2.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1054	1600
HCM Lane V/C Ratio	-	-	0.013	0.003
HCM Control Delay (s)	-	-	8.5	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection						
Int Delay, s/veh	7.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↘			↖
Traffic Vol, veh/h	0	18	2	0	6	1
Future Vol, veh/h	0	18	2	0	6	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	20	2	0	7	1

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	2	0	0	2	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	1088	-	-	1634	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	1088	-	-	1634	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	6.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 1088	1634	-
HCM Lane V/C Ratio	-	- 0.018	0.004	-
HCM Control Delay (s)	-	- 8.4	7.2	0
HCM Lane LOS	-	- A	A	A
HCM 95th %tile Q(veh)	-	- 0.1	0	-

**APPENDIX 6.3: OPENING YEAR CUMULATIVE (2026) WITHOUT
PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS
WORKSHEETS**

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Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Opening Year Cumulative (2026) Without Project - Weekday PM Peak Hour**

Major Street Name = **Daniels Street**

Total of Both Approaches (VPH) = **109**

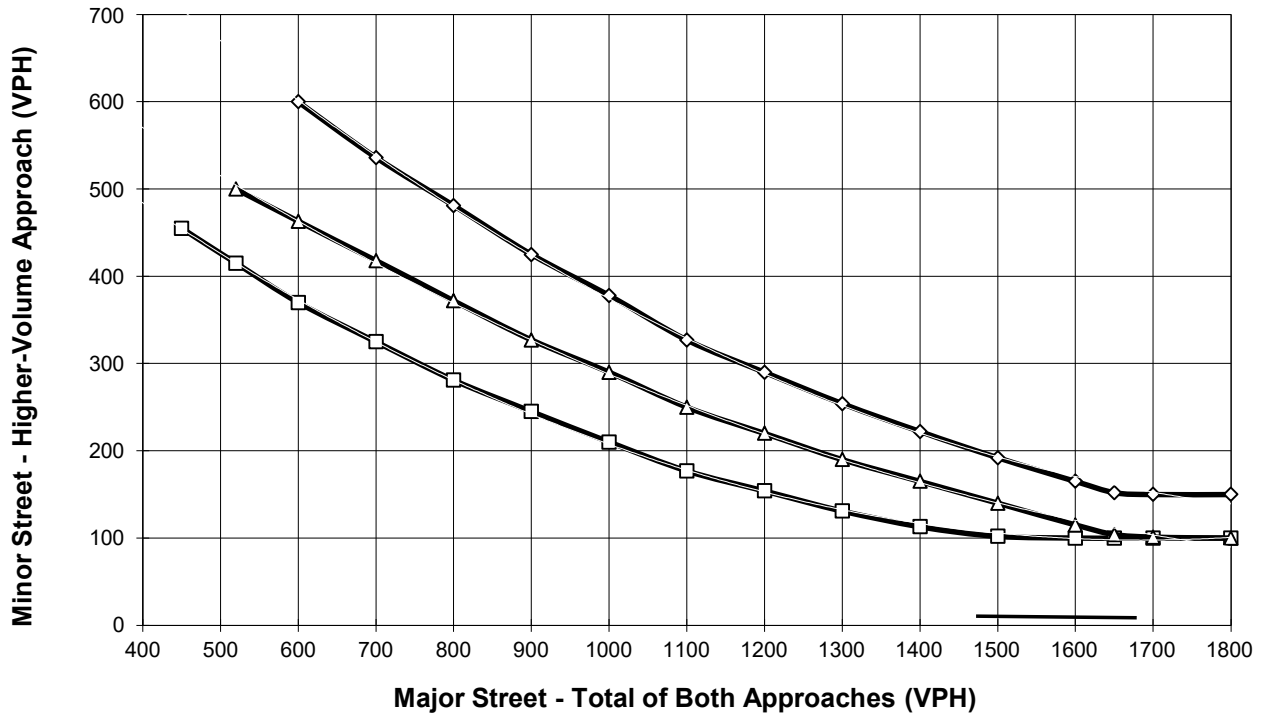
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Benson Avenue**

High Volume Approach (VPH) = **68**

Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



- 1 Lane (Major) & 1 Lane (Minor)
- △— 2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
- ◇— 2+ Lanes (Major) & 2+ Lanes (Minor)
- x— Major Street Approaches
- x— Minor Street Approaches

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

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**APPENDIX 6.4: OPENING YEAR CUMULATIVE (2026) WITH PROJECT
CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS**

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Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Opening Year Cumulative (2026) With Project - Weekday PM Peak Hour**

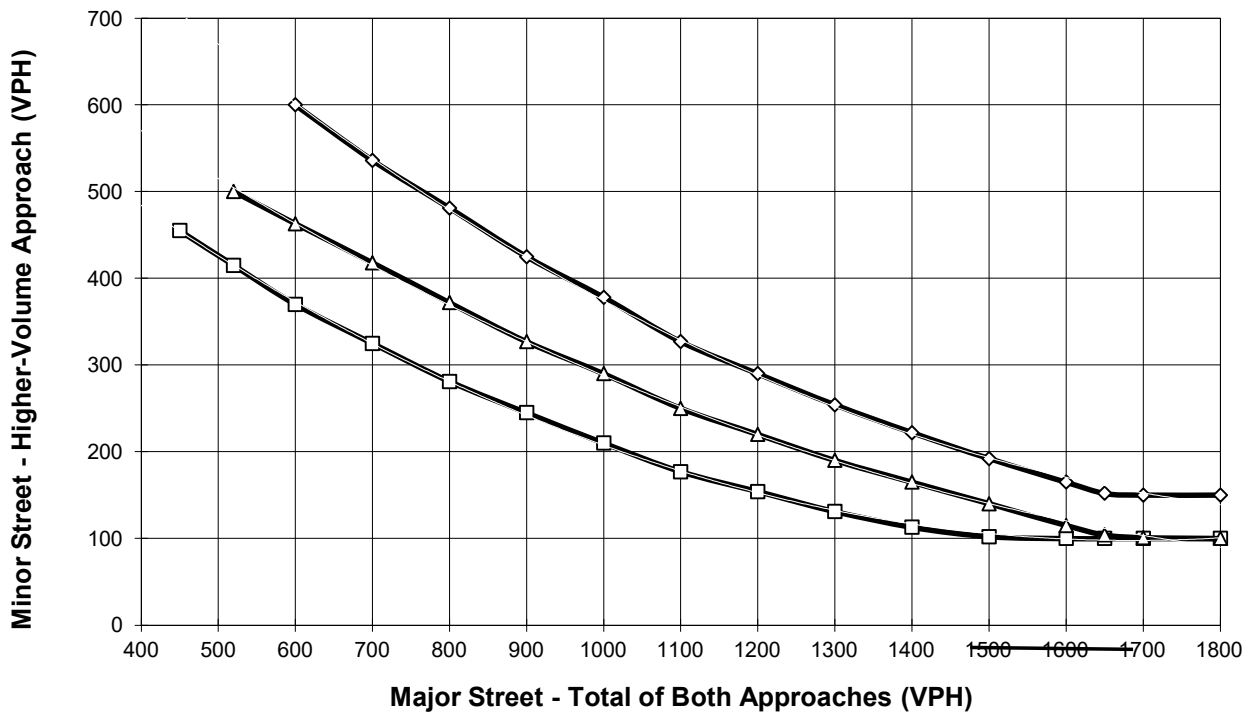
Major Street Name = **Daniels Street**

Total of Both Approaches (VPH) = **116**
 Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Benson Avenue**

High Volume Approach (VPH) = **71**
 Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



- 1 Lane (Major) & 1 Lane (Minor)
- △— 2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
- ◇— 2+ Lanes (Major) & 2+ Lanes (Minor)
- x— Major Street Approaches
- x— Minor Street Approaches

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

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

<u>DIST</u>	<u>CO</u>	<u>RTE</u>	<u>PM</u>	TRAFFIC CONDITIONS	OYC (2026) WP
Jurisdiction: <u>City of Chino</u>				CALC <u>JB</u>	DATE <u>12/14/11</u>
Major Street: <u>Benson Avenue</u>				CHK <u>JB</u>	DATE <u>12/14/11</u>
Minor Street: <u>Driveway 1</u>				Critical Approach Speed (Major) <u>35</u> mph	
				Critical Approach Speed (Minor) <u>25</u> mph	
Major Street Approach Lanes =	<u>1</u>	lane	Minor Street Approach Lanes =	<u>1</u>	lane
Major Street Future ADT =	<u>1,266</u>	vpd	Minor Street Future ADT =	<u>72</u>	vpd
Speed limit or critical speed on major street traffic > 64 km/h (40 mph);	<input type="checkbox"/>		or	<input type="checkbox"/>	
In built up area of isolated community of < 10,000 population	<input type="checkbox"/>			URBAN (U)	

(Based on Estimated Average Daily Traffic - See Note)

<u>URBAN</u> XX	<u>RURAL</u>	Minimum Requirements EADT			
<u>CONDITION A - Minimum Vehicular Volume Satisfied</u>	<u>Not Satisfied</u> XX	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
<u>Major Street</u>	<u>Minor Street</u>	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
1 1,266	1 72	8,000	5,600	2,400	1,680
2 +	1	9,600	6,720	2,400	1,680
2 +	2 +	9,600	6,720	3,200	2,240
1	2 +	8,000	5,600	3,200	2,240
<u>CONDITION B - Interruption of Continuous Traffic Satisfied</u>	<u>Not Satisfied</u> XX	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
<u>Major Street</u>	<u>Minor Street</u>	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
1 1,266	1 72	12,000	8,400	1,200	850
2 +	1	14,400	10,080	1,200	850
2 +	2 +	14,400	10,080	1,600	1,120
1	2 +	12,000	8,400	1,600	1,120
<u>Combination of CONDITIONS A + B Satisfied</u>	<u>Not Satisfied</u> XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more	A 3%			B 6%	

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

<u>DIST</u>	<u>CO</u>	<u>RTE</u>	<u>PM</u>	<u>CALC</u>	<u>TRAFFIC CONDITIONS</u>	<u>OYC (2026) WP</u>
Jurisdiction: <u>City of Chino</u>				<u>JB</u>		<u>DATE</u> <u>12/14/11</u>
Major Street: <u>Benson Avenue</u>				<u>CHK</u> <u>JB</u>		<u>DATE</u> <u>12/14/11</u>
Minor Street: <u>Driveway 2</u>					Critical Approach Speed (Major) <u>35</u> mph	
					Critical Approach Speed (Minor) <u>25</u> mph	
Major Street Approach Lanes =			<u>1</u> lane		Minor Street Approach Lanes =	<u>1</u> lane
Major Street Future ADT =			<u>781</u> vpd		Minor Street Future ADT =	<u>94</u> vpd
Speed limit or critical speed on major street traffic > 64 km/h (40 mph);						<input type="checkbox"/>
						or
In built up area of isolated community of < 10,000 population						<input type="checkbox"/>

URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

<u>URBAN</u>	<u>RURAL</u>	Minimum Requirements EADT			
XX					
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street		Vehicles Per Day on Higher-Volume Minor Street Approach	
<u>Satisfied</u>	<u>Not Satisfied</u>	(Total of Both Approaches)		(One Direction Only)	
	XX	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
Number of lanes for moving traffic on each approach	Number of lanes for moving traffic on each approach				
<u>Major Street</u>	<u>Minor Street</u>				
1 781	1 94	8,000	5,600	2,400	1,680
2 +	1	9,600	6,720	2,400	1,680
2 +	2 +	9,600	6,720	3,200	2,240
1	2 +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street		Vehicles Per Day on Higher-Volume Minor Street Approach	
<u>Satisfied</u>	<u>Not Satisfied</u>	(Total of Both Approaches)		(One Direction Only)	
	XX	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
Number of lanes for moving traffic on each approach	Number of lanes for moving traffic on each approach				
<u>Major Street</u>	<u>Minor Street</u>				
1 781	1 94	12,000	8,400	1,200	850
2 +	1	14,400	10,080	1,200	850
2 +	2 +	14,400	10,080	1,600	1,120
1	2 +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B		2 CONDITIONS		2 CONDITIONS	
<u>Satisfied</u>	<u>Not Satisfied</u>	80%		80%	
No one condition satisfied, but following conditions fulfilled 80% of more	XX				
	A				
	4%				
	B				
	7%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



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**APPENDIX 7.1: HORIZON YEAR (2045) WITHOUT PROJECT
CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS**

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Timings
1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)

10/26/2023

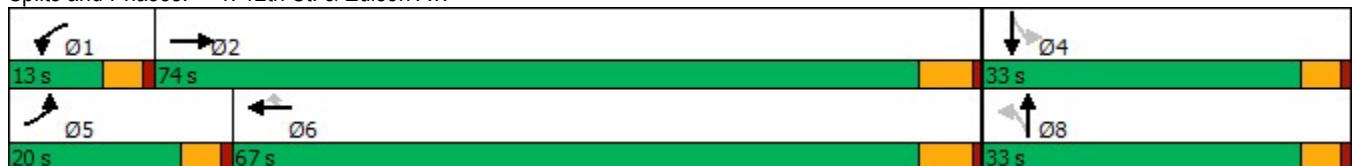


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↙	↕	↙	↕	↙		↕	↙	↕
Traffic Volume (vph)	78	1425	31	1163	58	54	9	47	27
Future Volume (vph)	78	1425	31	1163	58	54	9	47	27
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2	1	6			8		4
Permitted Phases					6	8		4	
Detector Phase	5	2	1	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.6	38.8	11.6	23.8	23.8	15.2	15.2	31.7	31.7
Total Split (s)	20.0	74.0	13.0	67.0	67.0	33.0	33.0	33.0	33.0
Total Split (%)	16.7%	61.7%	10.8%	55.8%	55.8%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8		4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	9.2	46.4	6.7	41.3	41.3		13.9	13.9	13.9
Actuated g/C Ratio	0.12	0.59	0.09	0.53	0.53		0.18	0.18	0.18
v/c Ratio	0.41	0.78	0.22	0.65	0.07		0.33	0.20	0.40
Control Delay	45.5	16.1	47.0	15.9	1.0		38.2	35.9	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	45.5	16.1	47.0	15.9	1.0		38.2	35.9	13.5
LOS	D	B	D	B	A		D	D	B
Approach Delay		17.5		16.0			38.2		18.9
Approach LOS		B		B			D		B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 78
 Natural Cycle: 85
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 17.4
 Intersection LOS: B
 Intersection Capacity Utilization 81.5%
 ICU Level of Service D
 Analysis Period (min) 15

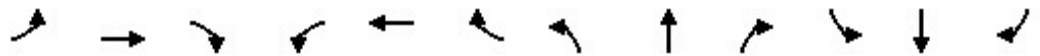
Splits and Phases: 1: 12th St. & Edison Av.



HCM 6th Signalized Intersection Summary
 1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)

10/26/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↖		↕		↖	↗	
Traffic Volume (veh/h)	78	1425	129	31	1163	58	54	9	3	47	27	123
Future Volume (veh/h)	78	1425	129	31	1163	58	54	9	3	47	27	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	83	1516	135	33	1237	52	57	10	2	50	29	108
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	106	2019	178	58	2073	924	169	24	3	318	50	187
Arrive On Green	0.06	0.60	0.60	0.03	0.57	0.57	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1714	3355	297	1714	3610	1609	511	169	20	1350	352	1312
Grp Volume(v), veh/h	83	810	841	33	1237	52	69	0	0	50	0	137
Grp Sat Flow(s),veh/h/ln	1714	1805	1847	1714	1805	1609	700	0	0	1350	0	1664
Q Serve(g_s), s	3.3	22.1	22.7	1.3	15.1	1.0	2.8	0.0	0.0	0.0	0.0	5.2
Cycle Q Clear(g_c), s	3.3	22.1	22.7	1.3	15.1	1.0	8.1	0.0	0.0	2.0	0.0	5.2
Prop In Lane	1.00		0.16	1.00		1.00	0.83		0.03	1.00		0.79
Lane Grp Cap(c), veh/h	106	1086	1111	58	2073	924	196	0	0	318	0	237
V/C Ratio(X)	0.78	0.75	0.76	0.56	0.60	0.06	0.35	0.00	0.00	0.16	0.00	0.58
Avail Cap(c_a), veh/h	387	1807	1849	211	3243	1445	563	0	0	686	0	691
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.5	9.8	9.9	32.4	9.4	6.4	30.0	0.0	0.0	25.9	0.0	27.3
Incr Delay (d2), s/veh	4.8	1.0	1.1	3.2	0.3	0.0	1.1	0.0	0.0	0.2	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	6.2	6.5	0.5	4.3	0.2	1.1	0.0	0.0	0.7	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.3	10.8	11.0	35.6	9.7	6.4	31.0	0.0	0.0	26.1	0.0	29.5
LnGrp LOS	D	B	B	D	A	A	C	A	A	C	A	C
Approach Vol, veh/h		1734			1322			69				187
Approach Delay, s/veh		12.1			10.2			31.0				28.6
Approach LOS		B			B			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.9	46.8		14.4	8.8	44.9		14.4				
Change Period (Y+Rc), s	4.6	5.8		* 4.7	4.6	5.8		* 4.7				
Max Green Setting (Gmax), s	8.4	68.2		* 28	15.4	61.2		* 28				
Max Q Clear Time (g_c+I1), s	3.3	24.7		7.2	5.3	17.1		10.1				
Green Ext Time (p_c), s	0.0	16.3		0.9	0.1	11.2		0.3				

Intersection Summary

HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B

Notes

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

Timings
2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

10/26/2023

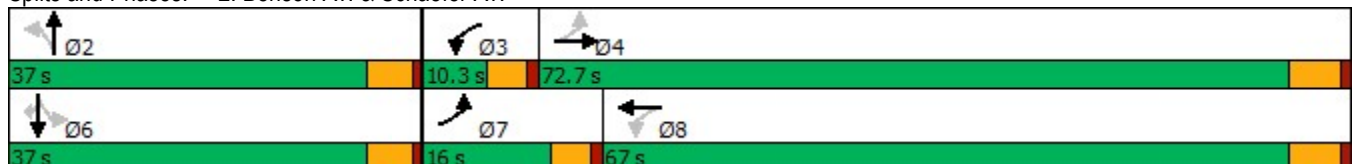


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↕	↖	↕	↖	↕	↖	↕	↖
Traffic Volume (vph)	98	688	46	1347	33	22	78	65	124
Future Volume (vph)	98	688	46	1347	33	22	78	65	124
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	32.1	32.1	32.1	32.1	32.1
Total Split (s)	16.0	72.7	10.3	67.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	13.3%	60.6%	8.6%	55.8%	30.8%	30.8%	30.8%	30.8%	30.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.1	5.1	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	57.5	51.1	50.8	45.5	14.2	14.2	14.2	14.2	14.2
Actuated g/C Ratio	0.70	0.62	0.62	0.55	0.17	0.17	0.17	0.17	0.17
v/c Ratio	0.39	0.36	0.11	0.80	0.16	0.18	0.38	0.22	0.38
Control Delay	12.3	9.0	5.3	19.8	35.6	19.5	40.0	35.3	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.3	9.0	5.3	19.8	35.6	19.5	40.0	35.3	11.0
LOS	B	A	A	B	D	B	D	D	B
Approach Delay		9.3		19.4		25.6		25.4	
Approach LOS		A		B		C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 82.2
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 17.1
 Intersection LOS: B
 Intersection Capacity Utilization 83.2%
 ICU Level of Service E
 Analysis Period (min) 15






















Splits and Phases: 2: Benson Av. & Schaefer Av.



HCM 6th Signalized Intersection Summary
 2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

10/26/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	688	51	46	1347	108	33	22	32	78	65	124
Future Volume (veh/h)	98	688	51	46	1347	108	33	22	32	78	65	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.95		0.98	0.99		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	107	748	50	50	1464	113	36	24	35	85	71	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	234	1879	126	431	1813	139	298	157	228	341	433	340
Arrive On Green	0.05	0.55	0.55	0.04	0.53	0.53	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1714	3433	229	1714	3396	261	1075	687	1002	1280	1900	1493
Grp Volume(v), veh/h	107	393	405	50	775	802	36	0	59	85	71	134
Grp Sat Flow(s),veh/h/ln	1714	1805	1857	1714	1805	1851	1075	0	1690	1280	1900	1493
Q Serve(g_s), s	2.3	10.6	10.6	1.1	29.5	30.0	2.3	0.0	2.4	4.8	2.5	6.4
Cycle Q Clear(g_c), s	2.3	10.6	10.6	1.1	29.5	30.0	4.9	0.0	2.4	7.1	2.5	6.4
Prop In Lane	1.00		0.12	1.00		0.14	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	234	988	1017	431	964	988	298	0	385	341	433	340
V/C Ratio(X)	0.46	0.40	0.40	0.12	0.80	0.81	0.12	0.00	0.15	0.25	0.16	0.39
Avail Cap(c_a), veh/h	373	1433	1475	477	1311	1345	460	0	640	534	719	566
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.8	11.0	11.0	8.4	16.0	16.2	28.1	0.0	26.0	28.9	26.1	27.6
Incr Delay (d2), s/veh	0.5	0.3	0.3	0.0	2.7	2.8	0.2	0.0	0.2	0.4	0.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.6	3.7	0.3	10.7	11.2	0.6	0.0	0.9	1.5	1.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.3	11.3	11.3	8.5	18.7	19.0	28.2	0.0	26.2	29.3	26.3	28.3
LnGrp LOS	B	B	B	A	B	B	C	A	C	C	C	C
Approach Vol, veh/h		905			1627			95			290	
Approach Delay, s/veh		11.9			18.5			27.0			28.1	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.3	8.0	51.9		24.3	9.2	50.8				
Change Period (Y+Rc), s		5.1	4.6	5.8		5.1	4.6	5.8				
Max Green Setting (Gmax), s		31.9	5.7	66.9		31.9	11.4	61.2				
Max Q Clear Time (g_c+I1), s		6.9	3.1	12.6		9.1	4.3	32.0				
Green Ext Time (p_c), s		0.4	0.0	5.1		1.1	0.1	12.9				
Intersection Summary												
HCM 6th Ctrl Delay				17.7								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	26	0	56	0	0	0	5	6	0	1	148	67
Future Vol, veh/h	26	0	56	0	0	0	5	6	0	1	148	67
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	92	75	92	92	92	75	75	92	92	75	75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	35	0	75	0	0	0	7	8	0	1	197	89

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	267	267	243	303	311	8	287	0	0	8	0	0
Stage 1	245	245	-	22	22	-	-	-	-	-	-	-
Stage 2	22	22	-	281	289	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	690	642	801	653	607	1080	1287	-	-	1625	-	-
Stage 1	763	707	-	1002	881	-	-	-	-	-	-	-
Stage 2	1002	881	-	730	677	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	686	638	800	590	603	1080	1286	-	-	1625	-	-
Mov Cap-2 Maneuver	686	638	-	590	603	-	-	-	-	-	-	-
Stage 1	758	706	-	997	877	-	-	-	-	-	-	-
Stage 2	997	877	-	661	676	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.5	0	3.6	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1286	-	-	760	-	1625	-
HCM Lane V/C Ratio	0.005	-	-	0.144	-	0.001	-
HCM Control Delay (s)	7.8	0	-	10.5	0	7.2	0
HCM Lane LOS	A	A	-	B	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0.5	-	0	-

Timings
1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)

10/26/2023

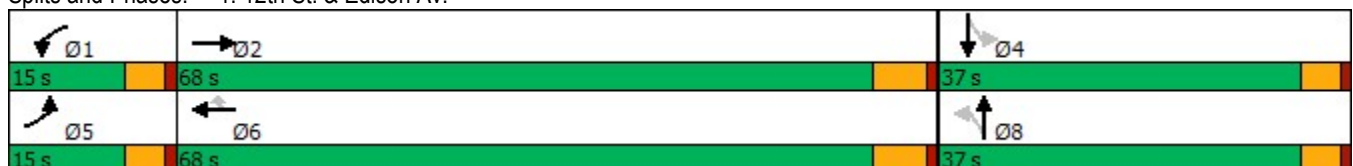


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	29	1335	35	857	22	44	7	47	41
Future Volume (vph)	29	1335	35	857	22	44	7	47	41
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2	1	6			8		4
Permitted Phases					6	8		4	
Detector Phase	5	2	1	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.6	38.8	11.6	23.8	23.8	15.2	15.2	31.7	31.7
Total Split (s)	15.0	68.0	15.0	68.0	68.0	37.0	37.0	37.0	37.0
Total Split (%)	12.5%	56.7%	12.5%	56.7%	56.7%	30.8%	30.8%	30.8%	30.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8		4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	6.7	37.7	7.0	40.0	40.0		13.5	13.5	13.5
Actuated g/C Ratio	0.10	0.54	0.10	0.58	0.58		0.20	0.20	0.20
v/c Ratio	0.18	0.75	0.21	0.42	0.02		0.22	0.19	0.36
Control Delay	41.6	16.0	41.4	9.7	0.0		30.6	32.1	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	41.6	16.0	41.4	9.7	0.0		30.6	32.1	14.9
LOS	D	B	D	A	A		C	C	B
Approach Delay		16.5		10.7			30.6		19.1
Approach LOS		B		B			C		B

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 69.2	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 14.9	Intersection LOS: B
Intersection Capacity Utilization 69.9%	ICU Level of Service C
Analysis Period (min) 15	

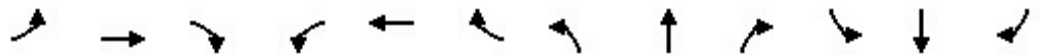
Splits and Phases: 1: 12th St. & Edison Av.



HCM 6th Signalized Intersection Summary
 1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)

10/26/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↖		↕		↖	↕	
Traffic Volume (veh/h)	29	1335	103	35	857	22	44	7	5	47	41	106
Future Volume (veh/h)	29	1335	103	35	857	22	44	7	5	47	41	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	30	1362	93	36	874	22	45	7	1	48	42	64
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	56	1884	128	65	2001	892	230	29	3	359	106	162
Arrive On Green	0.03	0.55	0.55	0.04	0.55	0.55	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1714	3429	234	1714	3610	1610	749	188	18	1354	679	1035
Grp Volume(v), veh/h	30	715	740	36	874	22	53	0	0	48	0	106
Grp Sat Flow(s),veh/h/ln	1714	1805	1858	1714	1805	1610	955	0	0	1354	0	1714
Q Serve(g_s), s	1.0	17.4	17.6	1.2	8.4	0.4	1.6	0.0	0.0	0.0	0.0	3.3
Cycle Q Clear(g_c), s	1.0	17.4	17.6	1.2	8.4	0.4	4.9	0.0	0.0	1.5	0.0	3.3
Prop In Lane	1.00		0.13	1.00		1.00	0.85		0.02	1.00		0.60
Lane Grp Cap(c), veh/h	56	992	1021	65	2001	892	262	0	0	359	0	268
V/C Ratio(X)	0.53	0.72	0.72	0.56	0.44	0.02	0.20	0.00	0.00	0.13	0.00	0.40
Avail Cap(c_a), veh/h	303	1908	1964	303	3816	1702	800	0	0	891	0	941
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.0	9.9	9.9	27.8	7.7	5.9	23.7	0.0	0.0	21.6	0.0	22.3
Incr Delay (d2), s/veh	2.9	1.0	1.0	2.7	0.2	0.0	0.4	0.0	0.0	0.2	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	4.8	5.0	0.5	2.2	0.1	0.7	0.0	0.0	0.6	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.9	10.9	10.9	30.6	7.9	5.9	24.1	0.0	0.0	21.7	0.0	23.3
LnGrp LOS	C	B	B	C	A	A	C	A	A	C	A	C
Approach Vol, veh/h		1485			932			53				154
Approach Delay, s/veh		11.3			8.7			24.1				22.8
Approach LOS		B			A			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.8	38.1		13.9	6.5	38.4		13.9				
Change Period (Y+Rc), s	4.6	5.8		* 4.7	4.6	5.8		* 4.7				
Max Green Setting (Gmax), s	10.4	62.2		* 32	10.4	62.2		* 32				
Max Q Clear Time (g_c+I1), s	3.2	19.6		5.3	3.0	10.4		6.9				
Green Ext Time (p_c), s	0.0	12.8		0.7	0.0	6.7		0.2				

Intersection Summary

HCM 6th Ctrl Delay	11.3
HCM 6th LOS	B

Notes

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

Timings
2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

10/26/2023

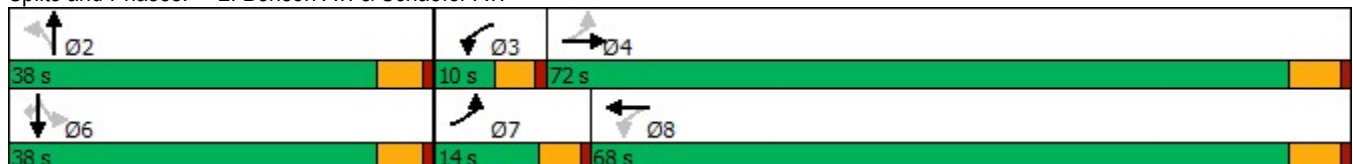


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↕	↖	↕	↖	↕	↖	↕	↖
Traffic Volume (vph)	110	1426	18	741	43	70	68	39	102
Future Volume (vph)	110	1426	18	741	43	70	68	39	102
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	32.1	32.1	32.1	32.1	32.1
Total Split (s)	14.0	72.0	10.0	68.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	11.7%	60.0%	8.3%	56.7%	31.7%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.1	5.1	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	43.6	39.8	38.0	32.5	14.2	14.2	14.2	14.2	14.2
Actuated g/C Ratio	0.63	0.58	0.55	0.47	0.21	0.21	0.21	0.21	0.21
v/c Ratio	0.29	0.76	0.08	0.52	0.17	0.38	0.30	0.11	0.28
Control Delay	6.6	14.5	5.9	14.0	30.5	25.0	32.7	29.2	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	14.5	5.9	14.0	30.5	25.0	32.7	29.2	9.2
LOS	A	B	A	B	C	C	C	C	A
Approach Delay		14.0		13.8		26.3		20.5	
Approach LOS		B		B		C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 69.1
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 15.2
 Intersection Capacity Utilization 90.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service E

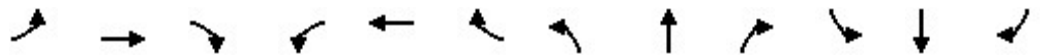
Splits and Phases: 2: Benson Av. & Schaefer Av.



HCM 6th Signalized Intersection Summary
 2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

10/26/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	1426	30	18	741	72	43	70	67	68	39	102
Future Volume (veh/h)	110	1426	30	18	741	72	43	70	67	68	39	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.95		0.97	0.99		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	118	1533	32	19	797	77	46	75	71	73	42	110
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	397	1941	40	187	1662	161	352	221	209	302	475	377
Arrive On Green	0.06	0.54	0.54	0.02	0.50	0.50	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1714	3614	75	1714	3315	320	1131	884	837	1182	1900	1510
Grp Volume(v), veh/h	118	764	801	19	434	440	46	0	146	73	42	110
Grp Sat Flow(s),veh/h/ln	1714	1805	1884	1714	1805	1831	1131	0	1721	1182	1900	1510
Q Serve(g_s), s	2.6	27.6	27.7	0.4	12.8	12.8	2.6	0.0	5.6	4.4	1.4	4.8
Cycle Q Clear(g_c), s	2.6	27.6	27.7	0.4	12.8	12.8	4.0	0.0	5.6	10.0	1.4	4.8
Prop In Lane	1.00		0.04	1.00		0.17	1.00		0.49	1.00		1.00
Lane Grp Cap(c), veh/h	397	970	1012	187	905	918	352	0	430	302	475	377
V/C Ratio(X)	0.30	0.79	0.79	0.10	0.48	0.48	0.13	0.00	0.34	0.24	0.09	0.29
Avail Cap(c_a), veh/h	497	1474	1539	265	1385	1405	529	0	699	487	771	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.6	15.1	15.1	13.4	13.3	13.3	24.8	0.0	24.9	29.0	23.3	24.6
Incr Delay (d2), s/veh	0.2	1.7	1.6	0.1	0.4	0.4	0.2	0.0	0.5	0.4	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	9.6	10.0	0.1	4.5	4.5	0.7	0.0	2.2	1.2	0.6	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.8	16.7	16.7	13.5	13.7	13.7	25.0	0.0	25.4	29.4	23.4	25.0
LnGrp LOS	A	B	B	B	B	B	C	A	C	C	C	C
Approach Vol, veh/h		1683			893			192			225	
Approach Delay, s/veh		16.2			13.7			25.3			26.1	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.4	6.3	49.3		25.4	9.2	46.4				
Change Period (Y+Rc), s		5.1	4.6	5.8		5.1	4.6	5.8				
Max Green Setting (Gmax), s		32.9	5.4	66.2		32.9	9.4	62.2				
Max Q Clear Time (g_c+I1), s		7.6	2.4	29.7		12.0	4.6	14.8				
Green Ext Time (p_c), s		1.0	0.0	13.8		0.8	0.1	5.8				
Intersection Summary												
HCM 6th Ctrl Delay			16.8									
HCM 6th LOS			B									

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	111	2	0	0	4	4	6	9	0	0	5	70
Future Vol, veh/h	111	2	0	0	4	4	6	9	0	0	5	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	92	70	92	92	92	70	70	92	92	70	70
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	159	2	0	0	4	4	9	13	0	0	7	100

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	92	88	57	89	138	13	107	0	0	13	0	0
Stage 1	57	57	-	31	31	-	-	-	-	-	-	-
Stage 2	35	31	-	58	107	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	897	806	1015	901	757	1073	1497	-	-	1619	-	-
Stage 1	960	851	-	991	873	-	-	-	-	-	-	-
Stage 2	986	873	-	959	811	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	885	801	1015	895	752	1073	1497	-	-	1619	-	-
Mov Cap-2 Maneuver	885	801	-	895	752	-	-	-	-	-	-	-
Stage 1	954	851	-	985	868	-	-	-	-	-	-	-
Stage 2	971	868	-	957	811	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10		9.1		3		0	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1497	-	-	884	884	1619	-	-
HCM Lane V/C Ratio	0.006	-	-	0.182	0.01	-	-	-
HCM Control Delay (s)	7.4	0	-	10	9.1	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0	0	-	-

**APPENDIX 7.2: HORIZON YEAR (2045) WITH PROJECT CONDITIONS
INTERSECTION OPERATIONS ANALYSIS WORKSHEETS**

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Timings
1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)
11/20/2023

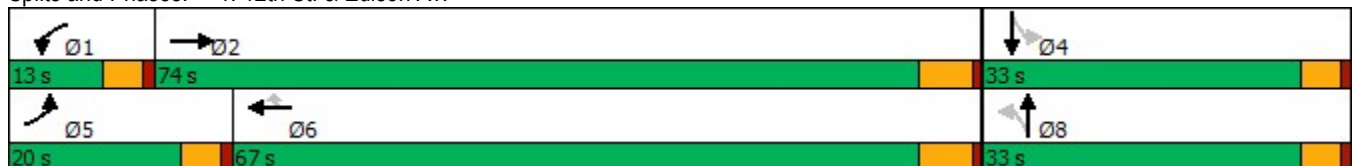


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	83	1425	31	1163	62	54	9	49	27
Future Volume (vph)	83	1425	31	1163	62	54	9	49	27
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2	1	6			8		4
Permitted Phases					6	8		4	
Detector Phase	5	2	1	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.6	38.8	11.6	23.8	23.8	15.2	15.2	31.7	31.7
Total Split (s)	20.0	74.0	13.0	67.0	67.0	33.0	33.0	33.0	33.0
Total Split (%)	16.7%	61.7%	10.8%	55.8%	55.8%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8		4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	9.5	46.5	6.7	41.2	41.2		13.9	13.9	13.9
Actuated g/C Ratio	0.12	0.60	0.09	0.53	0.53		0.18	0.18	0.18
v/c Ratio	0.43	0.78	0.22	0.65	0.08		0.34	0.21	0.40
Control Delay	45.3	16.1	47.1	16.1	1.2		38.4	36.0	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	45.3	16.1	47.1	16.1	1.2		38.4	36.0	13.5
LOS	D	B	D	B	A		D	D	B
Approach Delay		17.6		16.2			38.4		19.0
Approach LOS		B		B			D		B

Intersection Summary

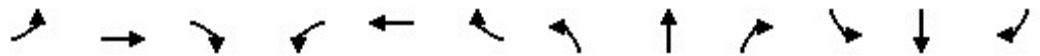
Cycle Length: 120
 Actuated Cycle Length: 78.1
 Natural Cycle: 85
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 17.5
 Intersection LOS: B
 Intersection Capacity Utilization 81.6%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 1: 12th St. & Edison Av.



HCM 6th Signalized Intersection Summary
 1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)
 11/20/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↖		↕		↖	↕	
Traffic Volume (veh/h)	83	1425	129	31	1163	62	54	9	3	49	27	125
Future Volume (veh/h)	83	1425	129	31	1163	62	54	9	3	49	27	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	88	1516	135	33	1237	56	57	10	2	52	29	110
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	112	2019	178	58	2059	917	168	24	3	318	50	188
Arrive On Green	0.07	0.60	0.60	0.03	0.57	0.57	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1714	3355	297	1714	3610	1609	501	167	20	1350	347	1316
Grp Volume(v), veh/h	88	810	841	33	1237	56	69	0	0	52	0	139
Grp Sat Flow(s),veh/h/ln	1714	1805	1847	1714	1805	1609	689	0	0	1350	0	1663
Q Serve(g_s), s	3.4	22.1	22.7	1.3	15.3	1.1	2.8	0.0	0.0	0.0	0.0	5.3
Cycle Q Clear(g_c), s	3.4	22.1	22.7	1.3	15.3	1.1	8.2	0.0	0.0	2.1	0.0	5.3
Prop In Lane	1.00		0.16	1.00		1.00	0.83		0.03	1.00		0.79
Lane Grp Cap(c), veh/h	112	1086	1111	58	2059	917	195	0	0	318	0	237
V/C Ratio(X)	0.78	0.75	0.76	0.56	0.60	0.06	0.35	0.00	0.00	0.16	0.00	0.59
Avail Cap(c_a), veh/h	387	1806	1847	211	3241	1444	560	0	0	686	0	690
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.4	9.8	9.9	32.4	9.6	6.5	30.0	0.0	0.0	25.9	0.0	27.3
Incr Delay (d2), s/veh	4.5	1.0	1.1	3.2	0.3	0.0	1.1	0.0	0.0	0.2	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	6.2	6.5	0.5	4.4	0.3	1.1	0.0	0.0	0.7	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.8	10.9	11.0	35.6	9.9	6.5	31.1	0.0	0.0	26.2	0.0	29.6
LnGrp LOS	D	B	B	D	A	A	C	A	A	C	A	C
Approach Vol, veh/h		1739			1326			69				191
Approach Delay, s/veh		12.2			10.4			31.1				28.7
Approach LOS		B			B			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.9	46.8		14.4	9.1	44.7		14.4				
Change Period (Y+Rc), s	4.6	5.8		* 4.7	4.6	5.8		* 4.7				
Max Green Setting (Gmax), s	8.4	68.2		* 28	15.4	61.2		* 28				
Max Q Clear Time (g_c+I1), s	3.3	24.7		7.3	5.4	17.3		10.2				
Green Ext Time (p_c), s	0.0	16.3		0.9	0.1	11.2		0.3				

Intersection Summary

HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

Notes

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

Timings
2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

11/20/2023

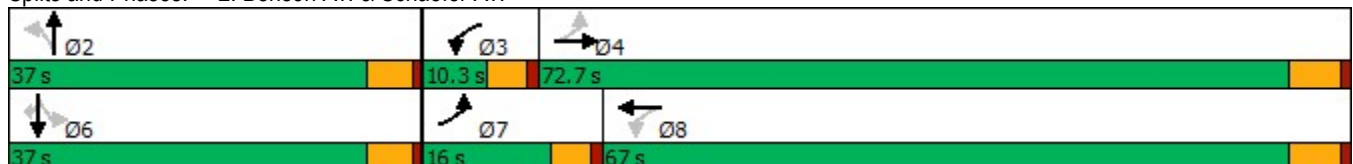


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↕	↖	↕	↖	↕	↖	↕	↖
Traffic Volume (vph)	98	688	49	1347	34	23	78	68	124
Future Volume (vph)	98	688	49	1347	34	23	78	68	124
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	32.1	32.1	32.1	32.1	32.1
Total Split (s)	16.0	72.7	10.3	67.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	13.3%	60.6%	8.6%	55.8%	30.8%	30.8%	30.8%	30.8%	30.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.1	5.1	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	56.8	48.7	50.8	45.5	14.2	14.2	14.2	14.2	14.2
Actuated g/C Ratio	0.69	0.59	0.62	0.55	0.17	0.17	0.17	0.17	0.17
v/c Ratio	0.39	0.38	0.12	0.80	0.17	0.19	0.38	0.23	0.37
Control Delay	11.4	9.8	5.4	19.7	35.7	19.5	40.0	35.5	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	9.8	5.4	19.7	35.7	19.5	40.0	35.5	11.0
LOS	B	A	A	B	D	B	D	D	B
Approach Delay		10.0		19.3		25.6		25.5	
Approach LOS		A		B		C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 82.1
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 17.2
 Intersection LOS: B
 Intersection Capacity Utilization 83.2%
 ICU Level of Service E
 Analysis Period (min) 15






















Splits and Phases: 2: Benson Av. & Schaefer Av.



HCM 6th Signalized Intersection Summary
 2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

11/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	688	57	49	1347	108	34	23	33	78	68	124
Future Volume (veh/h)	98	688	57	49	1347	108	34	23	33	78	68	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.95		0.98	0.99		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	107	748	57	53	1464	113	37	25	36	85	74	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	234	1855	141	429	1812	139	297	158	228	340	433	341
Arrive On Green	0.05	0.55	0.55	0.04	0.53	0.53	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1714	3398	259	1714	3396	261	1073	693	998	1278	1900	1494
Grp Volume(v), veh/h	107	397	408	53	775	802	37	0	61	85	74	134
Grp Sat Flow(s),veh/h/ln	1714	1805	1852	1714	1805	1851	1073	0	1691	1278	1900	1494
Q Serve(g_s), s	2.3	10.8	10.8	1.1	29.6	30.1	2.4	0.0	2.4	4.8	2.6	6.4
Cycle Q Clear(g_c), s	2.3	10.8	10.8	1.1	29.6	30.1	5.1	0.0	2.4	7.2	2.6	6.4
Prop In Lane	1.00		0.14	1.00		0.14	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	234	985	1011	429	963	988	297	0	386	340	433	341
V/C Ratio(X)	0.46	0.40	0.40	0.12	0.80	0.81	0.12	0.00	0.16	0.25	0.17	0.39
Avail Cap(c_a), veh/h	372	1432	1469	473	1310	1343	458	0	639	532	719	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.8	11.1	11.2	8.4	16.1	16.2	28.2	0.0	26.1	29.0	26.1	27.6
Incr Delay (d2), s/veh	0.5	0.3	0.3	0.0	2.7	2.8	0.2	0.0	0.2	0.4	0.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.7	3.8	0.4	10.7	11.2	0.6	0.0	1.0	1.5	1.2	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.3	11.4	11.4	8.5	18.7	19.0	28.4	0.0	26.3	29.3	26.3	28.3
LnGrp LOS	B	B	B	A	B	B	C	A	C	C	C	C
Approach Vol, veh/h		912			1630			98			293	
Approach Delay, s/veh		12.0			18.5			27.0			28.1	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.3	8.2	51.8		24.3	9.2	50.8				
Change Period (Y+Rc), s		5.1	4.6	5.8		5.1	4.6	5.8				
Max Green Setting (Gmax), s		31.9	5.7	66.9		31.9	11.4	61.2				
Max Q Clear Time (g_c+I1), s		7.1	3.1	12.8		9.2	4.3	32.1				
Green Ext Time (p_c), s		0.4	0.0	5.2		1.1	0.1	12.9				
Intersection Summary												
HCM 6th Ctrl Delay				17.7								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	26	0	66	0	0	0	9	8	0	1	161	67
Future Vol, veh/h	26	0	66	0	0	0	9	8	0	1	161	67
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	92	75	92	92	92	75	75	92	92	75	75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	35	0	88	0	0	0	12	11	0	1	215	89

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	298	298	261	341	342	11	305	0	0	11	0	0
Stage 1	263	263	-	35	35	-	-	-	-	-	-	-
Stage 2	35	35	-	306	307	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	658	617	783	617	583	1076	1267	-	-	1621	-	-
Stage 1	747	694	-	986	870	-	-	-	-	-	-	-
Stage 2	986	870	-	708	665	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	652	610	782	543	576	1076	1266	-	-	1621	-	-
Mov Cap-2 Maneuver	652	610	-	543	576	-	-	-	-	-	-	-
Stage 1	739	693	-	976	861	-	-	-	-	-	-	-
Stage 2	976	861	-	628	664	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1266	-	-	740	-	1621	-	-
HCM Lane V/C Ratio	0.009	-	-	0.166	-	0.001	-	-
HCM Control Delay (s)	7.9	0	-	10.8	0	7.2	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.6	-	0	-	-

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↘		↖	↗
Traffic Vol, veh/h	0	3	15	0	15	211
Future Vol, veh/h	0	3	15	0	15	211
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	3	16	0	16	229

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	16	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.2	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.3	-
Pot Cap-1 Maneuver	0	1069	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	-	1069	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1069	1615
HCM Lane V/C Ratio	-	-	0.003	0.01
HCM Control Delay (s)	-	-	8.4	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↘			↖
Traffic Vol, veh/h	0	6	8	0	15	189
Future Vol, veh/h	0	6	8	0	15	189
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	7	9	0	16	205

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	9	0	0	9	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	1079	-	-	1624	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	1079	-	-	1624	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 1079	1624	-
HCM Lane V/C Ratio	-	- 0.006	0.01	-
HCM Control Delay (s)	-	- 8.4	7.2	0
HCM Lane LOS	-	- A	A	A
HCM 95th %tile Q(veh)	-	- 0	0	-

Timings
1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)

11/20/2023

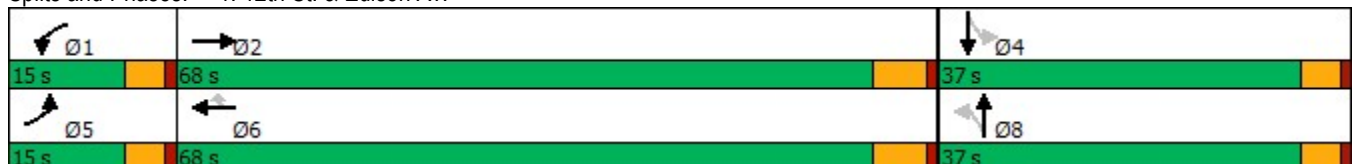


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	34	1335	35	857	24	44	7	52	41
Future Volume (vph)	34	1335	35	857	24	44	7	52	41
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2	1	6			8		4
Permitted Phases					6	8		4	
Detector Phase	5	2	1	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.6	38.8	11.6	23.8	23.8	15.2	15.2	31.7	31.7
Total Split (s)	15.0	68.0	15.0	68.0	68.0	37.0	37.0	37.0	37.0
Total Split (%)	12.5%	56.7%	12.5%	56.7%	56.7%	30.8%	30.8%	30.8%	30.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8		4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	6.9	37.7	7.0	37.7	37.7		13.5	13.5	13.5
Actuated g/C Ratio	0.10	0.54	0.10	0.54	0.54		0.20	0.20	0.20
v/c Ratio	0.20	0.75	0.21	0.45	0.03		0.22	0.21	0.38
Control Delay	41.5	16.0	41.4	11.1	0.2		30.6	32.3	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	41.5	16.0	41.4	11.1	0.2		30.6	32.3	14.7
LOS	D	B	D	B	A		C	C	B
Approach Delay		16.6		11.9			30.6		19.1
Approach LOS		B		B			C		B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 69.2
 Natural Cycle: 85
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 15.5
 Intersection LOS: B
 Intersection Capacity Utilization 70.4%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 1: 12th St. & Edison Av.



HCM 6th Signalized Intersection Summary
 1: 12th St. & Edison Av.

13925 Benson Avenue (JN 15460)

11/20/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↖		↕		↖	↕	
Traffic Volume (veh/h)	34	1335	103	35	857	24	44	7	5	52	41	115
Future Volume (veh/h)	34	1335	103	35	857	24	44	7	5	52	41	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	35	1362	93	36	874	24	45	7	1	53	42	73
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	63	1881	128	65	1983	885	225	29	3	361	99	171
Arrive On Green	0.04	0.55	0.55	0.04	0.55	0.55	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1714	3429	234	1714	3610	1610	711	181	17	1354	623	1082
Grp Volume(v), veh/h	35	715	740	36	874	24	53	0	0	53	0	115
Grp Sat Flow(s),veh/h/ln	1714	1805	1858	1714	1805	1610	909	0	0	1354	0	1705
Q Serve(g_s), s	1.2	17.5	17.7	1.2	8.5	0.4	1.6	0.0	0.0	0.0	0.0	3.6
Cycle Q Clear(g_c), s	1.2	17.5	17.7	1.2	8.5	0.4	5.2	0.0	0.0	1.7	0.0	3.6
Prop In Lane	1.00		0.13	1.00		1.00	0.85		0.02	1.00		0.63
Lane Grp Cap(c), veh/h	63	990	1019	65	1983	885	257	0	0	361	0	270
V/C Ratio(X)	0.55	0.72	0.73	0.56	0.44	0.03	0.21	0.00	0.00	0.15	0.00	0.43
Avail Cap(c_a), veh/h	301	1898	1954	301	3797	1693	784	0	0	886	0	931
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.0	10.0	10.0	28.0	7.9	6.1	23.9	0.0	0.0	21.6	0.0	22.5
Incr Delay (d2), s/veh	2.8	1.0	1.0	2.8	0.2	0.0	0.4	0.0	0.0	0.2	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.8	5.0	0.5	2.3	0.1	0.7	0.0	0.0	0.6	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.8	11.0	11.0	30.7	8.1	6.1	24.3	0.0	0.0	21.8	0.0	23.5
LnGrp LOS	C	B	B	C	A	A	C	A	A	C	A	C
Approach Vol, veh/h		1490			934			53				168
Approach Delay, s/veh		11.5			8.9			24.3				23.0
Approach LOS		B			A			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.8	38.2		14.1	6.8	38.3		14.1				
Change Period (Y+Rc), s	4.6	5.8		* 4.7	4.6	5.8		* 4.7				
Max Green Setting (Gmax), s	10.4	62.2		* 32	10.4	62.2		* 32				
Max Q Clear Time (g_c+I1), s	3.2	19.7		5.6	3.2	10.5		7.2				
Green Ext Time (p_c), s	0.0	12.8		0.8	0.0	6.7		0.2				

Intersection Summary

HCM 6th Ctrl Delay	11.6
HCM 6th LOS	B

Notes

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

Timings
2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

11/20/2023

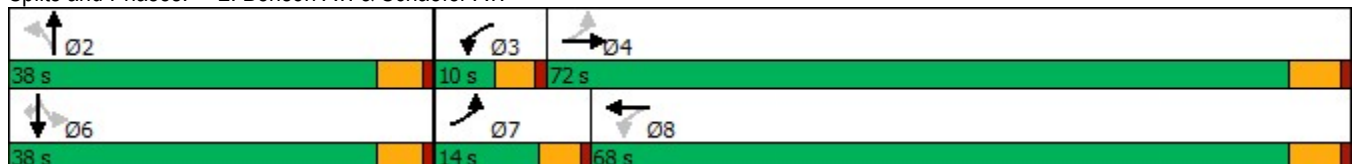


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↕	↖	↕	↖	↕	↖	↕	↖
Traffic Volume (vph)	110	1426	19	741	49	73	68	40	102
Future Volume (vph)	110	1426	19	741	49	73	68	40	102
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	29.8	9.6	29.8	32.1	32.1	32.1	32.1	32.1
Total Split (s)	14.0	72.0	10.0	68.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	11.7%	60.0%	8.3%	56.7%	31.7%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.1	5.1	5.1	5.1	5.1
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	43.7	39.8	38.1	32.6	14.2	14.2	14.2	14.2	14.2
Actuated g/C Ratio	0.63	0.58	0.55	0.47	0.21	0.21	0.21	0.21	0.21
v/c Ratio	0.29	0.76	0.08	0.52	0.20	0.39	0.30	0.11	0.28
Control Delay	6.7	14.6	5.9	14.0	30.8	25.4	32.9	29.2	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.7	14.6	5.9	14.0	30.8	25.4	32.9	29.2	9.2
LOS	A	B	A	B	C	C	C	C	A
Approach Delay		14.0		13.8		26.8		20.6	
Approach LOS		B		B		C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 69.2
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 15.3
 Intersection LOS: B
 Intersection Capacity Utilization 90.1%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 2: Benson Av. & Schaefer Av.



HCM 6th Signalized Intersection Summary
 2: Benson Av. & Schaefer Av.

13925 Benson Avenue (JN 15460)

11/20/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	1426	32	19	741	72	49	73	70	68	40	102
Future Volume (veh/h)	110	1426	32	19	741	72	49	73	70	68	40	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.95		0.97	0.99		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Adj Flow Rate, veh/h	118	1533	34	20	797	77	53	78	74	73	43	110
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	396	1938	43	188	1665	161	352	221	210	298	476	379
Arrive On Green	0.06	0.54	0.54	0.02	0.50	0.50	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1714	3608	80	1714	3315	320	1130	883	838	1176	1900	1510
Grp Volume(v), veh/h	118	766	801	20	434	440	53	0	152	73	43	110
Grp Sat Flow(s),veh/h/ln	1714	1805	1883	1714	1805	1831	1130	0	1721	1176	1900	1510
Q Serve(g_s), s	2.6	27.8	28.0	0.5	12.9	12.9	3.1	0.0	5.9	4.4	1.4	4.8
Cycle Q Clear(g_c), s	2.6	27.8	28.0	0.5	12.9	12.9	4.5	0.0	5.9	10.4	1.4	4.8
Prop In Lane	1.00		0.04	1.00		0.17	1.00		0.49	1.00		1.00
Lane Grp Cap(c), veh/h	396	969	1011	188	907	919	352	0	432	298	476	379
V/C Ratio(X)	0.30	0.79	0.79	0.11	0.48	0.48	0.15	0.00	0.35	0.25	0.09	0.29
Avail Cap(c_a), veh/h	496	1464	1527	263	1376	1395	524	0	694	477	766	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.7	15.2	15.2	13.5	13.3	13.3	25.2	0.0	25.1	29.4	23.4	24.7
Incr Delay (d2), s/veh	0.2	1.7	1.7	0.1	0.4	0.4	0.2	0.0	0.5	0.4	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	9.7	10.1	0.2	4.5	4.6	0.8	0.0	2.4	1.2	0.6	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.9	16.9	16.9	13.6	13.7	13.7	25.4	0.0	25.6	29.8	23.5	25.1
LnGrp LOS	A	B	B	B	B	B	C	A	C	C	C	C
Approach Vol, veh/h		1685			894			205				226
Approach Delay, s/veh		16.4			13.7			25.5				26.3
Approach LOS		B			B			C				C
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.6	6.4	49.6		25.6	9.3	46.8				
Change Period (Y+Rc), s		5.1	4.6	5.8		5.1	4.6	5.8				
Max Green Setting (Gmax), s		32.9	5.4	66.2		32.9	9.4	62.2				
Max Q Clear Time (g_c+I1), s		7.9	2.5	30.0		12.4	4.6	14.9				
Green Ext Time (p_c), s		1.0	0.0	13.8		0.8	0.1	5.8				
Intersection Summary												
HCM 6th Ctrl Delay				17.0								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	111	2	7	0	4	4	20	21	0	0	8	70
Future Vol, veh/h	111	2	7	0	4	4	20	21	0	0	8	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	92	70	92	92	92	70	70	92	92	70	70
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	159	2	10	0	4	4	29	30	0	0	11	100

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	153	149	61	155	199	30	111	0	0	30	0	0
Stage 1	61	61	-	88	88	-	-	-	-	-	-	-
Stage 2	92	88	-	67	111	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	819	746	1010	816	700	1050	1492	-	-	1596	-	-
Stage 1	955	848	-	925	826	-	-	-	-	-	-	-
Stage 2	920	826	-	948	807	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	799	731	1010	794	686	1050	1492	-	-	1596	-	-
Mov Cap-2 Maneuver	799	731	-	794	686	-	-	-	-	-	-	-
Stage 1	936	848	-	907	809	-	-	-	-	-	-	-
Stage 2	893	809	-	936	807	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	9.4	3.6	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1492	-	-	808	830	1596	-
HCM Lane V/C Ratio	0.019	-	-	0.211	0.01	-	-
HCM Control Delay (s)	7.5	0	-	10.6	9.4	0	-
HCM Lane LOS	A	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0	0	-

Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↖		↘	↙
Traffic Vol, veh/h	0	13	26	0	5	8
Future Vol, veh/h	0	13	26	0	5	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	14	28	0	5	9

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	28	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.2	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.3	-
Pot Cap-1 Maneuver	0	1053	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1053	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	2.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1053	1599
HCM Lane V/C Ratio	-	-	0.013	0.003
HCM Control Delay (s)	-	-	8.5	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection						
Int Delay, s/veh	7.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↘			↖
Traffic Vol, veh/h	0	18	2	0	6	1
Future Vol, veh/h	0	18	2	0	6	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	20	2	0	7	1

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	2	0	0	2	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	1088	-	-	1634	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	1088	-	-	1634	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	6.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 1088	1634	-
HCM Lane V/C Ratio	-	- 0.018	0.004	-
HCM Control Delay (s)	-	- 8.4	7.2	0
HCM Lane LOS	-	- A	A	A
HCM 95th %tile Q(veh)	-	- 0.1	0	-

**APPENDIX 7.3: HORIZON YEAR (2045) WITHOUT PROJECT
CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS**

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Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Horizon Year (2045) Without Project - Weekday PM Peak Hour**

Major Street Name = **Daniels Street**

Total of Both Approaches (VPH) = **121**

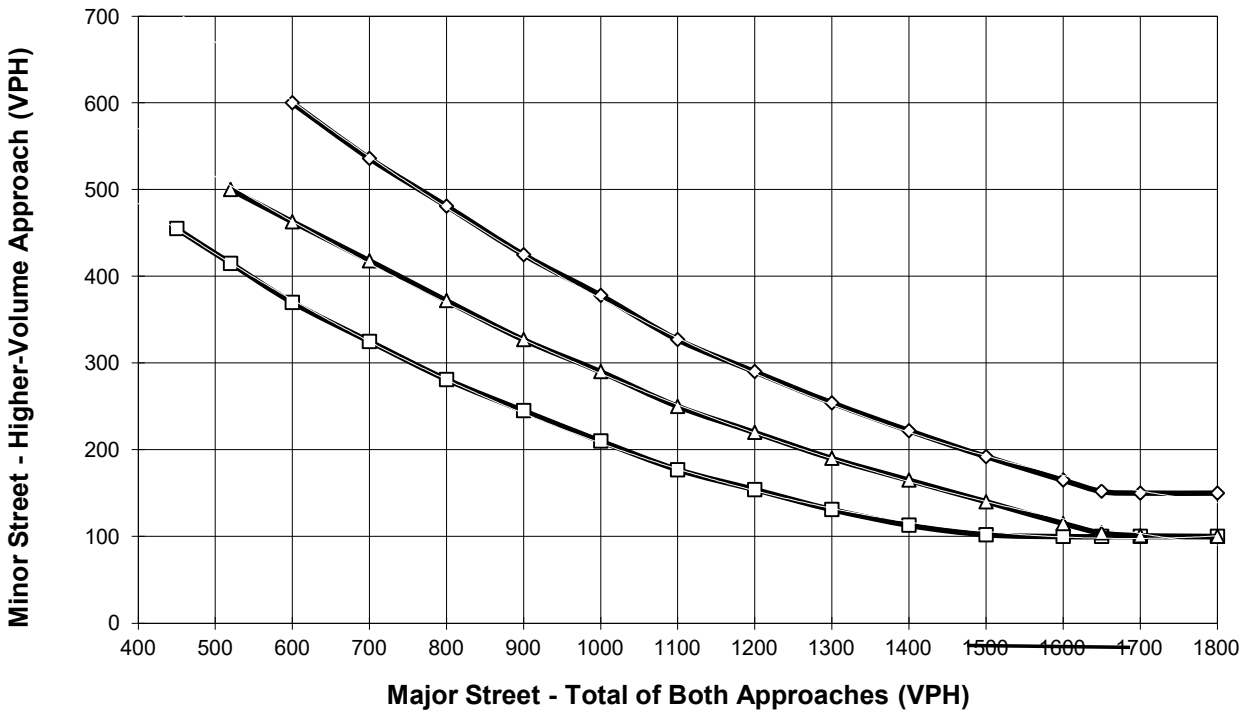
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Benson Avenue**

High Volume Approach (VPH) = **75**

Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



- 1 Lane (Major) & 1 Lane (Minor)
- △— 2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
- ◇— 2+ Lanes (Major) & 2+ Lanes (Minor)
- x— Major Street Approaches
- x— Minor Street Approaches

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

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**APPENDIX 7.4: HORIZON YEAR (2045) WITH PROJECT CONDITIONS
TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS**

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Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Horizon Year (2045) With Project - Weekday PM Peak Hour**

Major Street Name = **Daniels Street**

Total of Both Approaches (VPH) = **128**

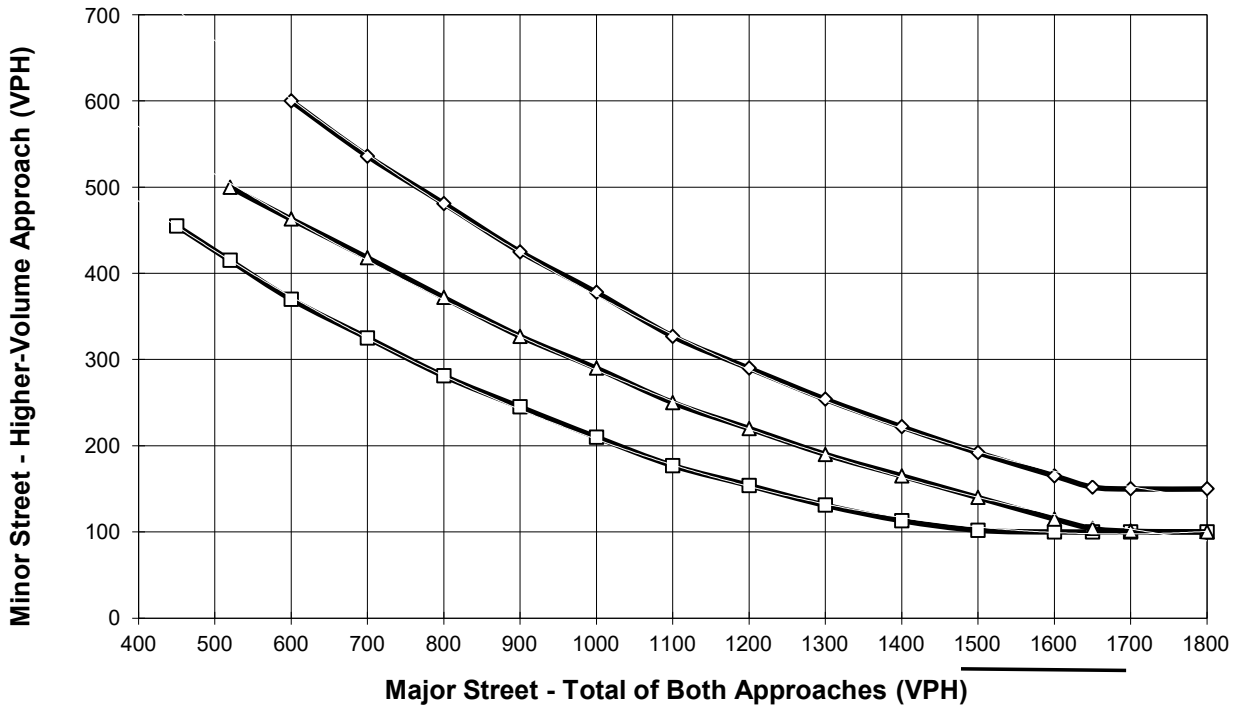
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Benson Avenue**

High Volume Approach (VPH) = **78**

Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



- 1 Lane (Major) & 1 Lane (Minor)
- △— 2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
- ◇— 2+ Lanes (Major) & 2+ Lanes (Minor)
- x— Major Street Approaches
- *— Minor Street Approaches

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

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

<u>DIST</u>	<u>CO</u>	<u>RTE</u>	<u>PM</u>	CALC <u>JB</u>	TRAFFIC CONDITIONS	HY (2045) WP
Jurisdiction: <u>City of Chino</u>				CHK <u>JB</u>		DATE <u>12/14/11</u>
Major Street: <u>Benson Avenue</u>					Critical Approach Speed (Major) <u>35</u> mph	DATE <u>12/14/11</u>
Minor Street: <u>Driveway 1</u>					Critical Approach Speed (Minor) <u>25</u> mph	
Major Street Approach Lanes = <u>1</u>	lane	Minor Street Approach Lanes = <u>1</u>	lane			
Major Street Future ADT = <u>1,367</u>	vpd	Minor Street Future ADT = <u>72</u>	vpd			
Speed limit or critical speed on major street traffic > 64 km/h (40 mph);						
						or
In built up area of isolated community of < 10,000 population						

URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

<u>URBAN</u>	<u>RURAL</u>	Minimum Requirements EADT			
XX					
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
<u>Satisfied</u>	<u>Not Satisfied</u>				
	XX				
Number of lanes for moving traffic on each approach		<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
<u>Major Street</u>	<u>Minor Street</u>				
1 1,367	1 72				
2 +	1	8,000	5,600	2,400	1,680
2 +	2 +	9,600	6,720	2,400	1,680
1	2 +	9,600	6,720	3,200	2,240
1	2 +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
<u>Satisfied</u>	<u>Not Satisfied</u>				
	XX				
Number of lanes for moving traffic on each approach		<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
<u>Major Street</u>	<u>Minor Street</u>				
1 1,367	1 72	12,000	8,400	1,200	850
2 +	1	14,400	10,080	1,200	850
2 +	2 +	14,400	10,080	1,600	1,120
1	2 +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B		2 CONDITIONS 80%		2 CONDITIONS 80%	
<u>Satisfied</u>	<u>Not Satisfied</u>				
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more					
	<u>A</u>				
	3%				
	<u>B</u>				
	6%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

<u>DIST</u>	<u>CO</u>	<u>RTE</u>	<u>PM</u>	TRAFFIC CONDITIONS	HY (2045) WP
Jurisdiction: <u>City of Chino</u>				CALC <u>JB</u>	DATE <u>12/14/11</u>
Major Street: <u>Benson Avenue</u>				CHK <u>JB</u>	DATE <u>12/14/11</u>
Minor Street: <u>Driveway 2</u>				Critical Approach Speed (Major) <u>35</u> mph	
				Critical Approach Speed (Minor) <u>25</u> mph	
Major Street Approach Lanes =	<u>1</u>	lane	Minor Street Approach Lanes =	<u>1</u>	lane
Major Street Future ADT =	<u>850</u>	vpd	Minor Street Future ADT =	<u>94</u>	vpd
Speed limit or critical speed on major street traffic > 64 km/h (40 mph);	<input type="checkbox"/>		or	<input type="checkbox"/>	
In built up area of isolated community of < 10,000 population	<input type="checkbox"/>			URBAN (U)	

(Based on Estimated Average Daily Traffic - See Note)

	<u>URBAN</u>	<u>RURAL</u>	Minimum Requirements EADT			
CONDITION A - Minimum Vehicular Volume	XX		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	<u>Satisfied</u>	<u>Not Satisfied</u>				
Number of lanes for moving traffic on each approach		XX				
<u>Major Street</u>		<u>Minor Street</u>	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
1 850		1 94	8,000	5,600	2,400	1,680
2 +		1	9,600	6,720	2,400	1,680
2 +		2 +	9,600	6,720	3,200	2,240
1		2 +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic	XX		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	<u>Satisfied</u>	<u>Not Satisfied</u>				
Number of lanes for moving traffic on each approach		XX				
<u>Major Street</u>		<u>Minor Street</u>	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
1 850		1 94	12,000	8,400	1,200	850
2 +		1	14,400	10,080	1,200	850
2 +		2 +	14,400	10,080	1,600	1,120
1		2 +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B	XX		2 CONDITIONS 80%		2 CONDITIONS 80%	
	<u>Satisfied</u>	<u>Not Satisfied</u>				
No one condition satisfied, but following conditions fulfilled 80% of more		XX				
	<u>A</u>	<u>B</u>				
	4%	7%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

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