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MEMORANDUM

DATE: December 15, 2023

TO: Alicia Velasco, City of Cypress

FROM: Ambarish Mukherjee, P.E., AICP

SUBJECT: 5665 Plaza Drive Project – Vehicle Miles Traveled (VMT) Analysis

LSA has prepared this memorandum documenting the methodology and findings of a vehicle miles traveled (VMT) analysis for the 5665 Plaza Drive Project (project) in the City of Cypress (City), California.

BACKGROUND

On December 28, 2018, the California Office of Administrative Law cleared the revised California Environmental Quality Act (CEQA) guidelines for use. Among the changes to the guidelines was the removal of vehicle delay and level of service (LOS) from consideration under CEQA. With the adopted guidelines, transportation impacts are to be evaluated based on a project's effect on VMT.

PROJECT DESCRIPTION

It is LSA's understanding that GLC Cypress LLC (Applicant) is proposing to demolish an approximately 150,626-square-foot (sf) office building (Assessor's Parcel Number 241-101-26) located at 5665 Plaza Drive and construct a 191,394 square foot warehouse building. The existing warehouse/office building is currently vacant and generating only nominal vehicle trips.

ANALYSIS METRICS

The City is yet to adopt the Senate Bill 743 (SB 743) guidelines; therefore, the VMT analysis has been based upon the methodology and significant threshold criteria identified in the Governor's Office of Planning and Research (OPR) *Technical Advisory* (TA), dated December 2018.

The project includes industrial land uses only. The OPR TA does not specifically recommend any VMT metric or threshold for industrial uses. However, since the land use is non-residential and could not be classified as retail land use, VMT-per-employee metric was used for purposes of evaluating the project.

Based on the OPR TA recommendations, the threshold for determining VMT impacts has been considered as 15 percent below the region's baseline VMT per capita for residential projects, and 15 percent below the region's baseline VMT per employee for non-residential/non-retail projects.

As per the OPR TA, a region should be defined based on where the majority of the project trips are contained. As such, the majority of project trips are estimated to start or end within the region defined for VMT analysis purposes. Typically, it is the county boundary within which a majority of those trips are contained. While the city boundary can also be considered as the region for residential uses, given that the project land use is non-residential and based on the understanding of the local trip patterns, it was determined that the entire Orange County would be the most appropriate region for the project for purposes of VMT analysis. As such, as recommended in the OPR Guidelines, if the project VMT per employee is greater than 85 percent of the existing countywide VMT per employee, the project constitutes a significant VMT impact.

METHODOLOGY

The OPR TA provides multiple screening criteria for land use projects. One of the screening criteria is a daily trip threshold. If the land use project generates less than 110 daily trips, the project can be screened from a detailed VMT analysis. The project includes demolition of existing office land uses and replaces them with industrial land uses. A trip generation analysis conducted by the traffic consultant looked at the difference in daily trips between the existing land uses and proposed land uses. It was observed that the proposed land uses produce 196 more daily trips than the existing office land uses. Since the difference in daily trips between the proposed and existing uses is greater than 110, it was concluded that a detailed VMT analysis using the regional travel demand model would be required to evaluate the project VMT impact. The Orange County Transportation Analysis Model (OCTAM) was used to determine the VMT impact of the project.

Project Traffic Analysis Zone Update

The first step in the preparation of this analysis was to update the Traffic Analysis Zones (TAZs) in the model that include the project area. The project needs to be isolated in a separate TAZ to estimate/determine the project VMT. OCTAM doesn't include the capability to split/add new TAZs, so a TAZ was borrowed for the project. That TAZ was used to estimate the project VMT and efficiency metric (i.e., VMT per employee).

OCTAM is a socioeconomic data-based model, hence project land uses were converted into model employment using land use-to-employment conversion factors. The project socioeconomic data were added to the project TAZ for the model run.

VMT Analysis

A baseline model run was conducted using socioeconomic data for the project and project location TAZs (as indicated above). No circulation/network modifications were identified for inclusion in the model network. The outputs from this updated model run were used to calculate the VMT per employee for the project.

As indicated before, VMT per employee metric is used to evaluate the project land use. The proposed project would constitute a significant impact if the project VMT metric is greater than 85 percent of the regional existing VMT metric. Hence the proposed project would constitute a significant impact if project VMT per employee is greater than 85 percent of the Orange County VMT

per employee (threshold). As can be seen from Table A, existing project VMT per employee is lower than the significant threshold; therefore, the project doesn't constitute any significant VMT impact.

Table A: Baseline Project and Regional VMT Per Employee Comparison

2016	5665 Plaza Drive (project)	Entire Orange County [1]	Threshold [2]	% Difference	Significant Impact
VMT per employee	20.3	24.1	20.5	-1%	No

Source: Compiled by LSA (2023).

[1] Obtained from Final Draft Guidelines For Evaluating Vehicle Miles Traveled Under CEQA for the County of Orange, September 17, 2020.

[2] 85% of the regional average (24.1*0.85=20.5) Baseline. Base year of the OCTAM model is 2016.

OCTAM = Orange County Transportation Analysis Model

VMT = vehicle miles traveled

CONCLUSIONS

Based on the recommendations from the OPR TA, the proposed 5665 Plaza Drive warehouse project was evaluated using VMT per employee metric. The project is not eligible to be screened out of a VMT analysis and therefore, a detailed VMT analysis was conducted for the project using the OCTAM model and using Orange County as the region. Based on the significance threshold criteria determined within the OPR TA, the project VMT per employee does not exceed the threshold. Therefore, the project will have a less than significant transportation impact.

Attachment: Vehicle Miles Traveled (VMT) Analysis Worksheet

LSA

Appendix A - VMT Calculation Worksheet

5665 Plaza Drive, City of Cypress - VMT Analysis

2016	5665 Plaza Drive (project)	Entire Orange County *	Threshold **
Total Employment	93	1,710,147	
Homebased Work (HBW) VMT	1,886	41,174,971	
HBW VMT per employee	**20.3**	**24.1**	**20.5**

**: Obtained from Final Draft Guidelines For Evaluating Vehicle Miles Traveled Under CEQA for the County of Orange, September 17, 2020*

***: 85% of the regional average (24.1*0.85=20.5)*

MEMORANDUM

URBAN | CROSSROADS

DATE: February 20, 2024
TO: Alicia Velasco, City of Cypress
FROM: Charlene So, Urban Crossroads, Inc.
JOB NO: 15593-06 TG Memo

GOODMAN COMMERCE CENTER TRIP GENERATION ASSESSMENT

Urban Crossroads, Inc. is pleased to provide the following Trip Generation Assessment that has been prepared for the Goodman Commerce Center development (referred to as Project), which is located at 5665 Plaza Drive in the City of Cypress. Specifically, the following trip generation assessment compares the Project to the existing 150,626 square foot office building assuming 100% occupancy.

BACKGROUND

For the purposes of the Goodman Commerce Center Traffic Analysis (dated January 11, 2024. Referred to as the 2024 Traffic Study), the existing office building was approximately 41% occupied, but to not overstate existing credit for the office use and conduct a conservative analysis for the 2024 Traffic Study, it was assumed that only 25% of the building space was occupied to account for the existing tenants that could be underutilizing their space. However, current entitlements for the office building would allow for 100% occupancy of the existing building without any further discretionary action by the City. As such, the following trip generation assessment compares the proposed Project (as evaluated in the 2024 Traffic Study) to 100% occupancy of the existing 150,626 square foot office building.

PROJECT TRIP GENERATION

Table 1 summarizes the Project trip generation as evaluated in the 2024 Traffic Study. The proposed Project is anticipated to generate 406 two-way trips per day with 21 AM peak hour trips and 24 PM peak hour trips (actual vehicles). Intersection operations analysis for an industrial project must be evaluated using the passenger car equivalent (PCE) trip generation consistent with the City's Guidelines. As such, the Project's trip generation in PCE is also summarized in Table 1. The Project is anticipated to generate 604 two-way PCE trips per day with 29 PCE AM peak hour trips and 32 PCE PM peak hour trips.

TABLE 1: PROJECT TRIP GENERATION

			AM Peak Hour			PM Peak Hour			
Land Use	Quantity	Units[1]	In	Out	Total	In	Out	Total	Daily
Actual Vehicles:									
High-Cube Cold Storage Warehouse	191.394	TSF							
Passenger Cars:			15	1	16	4	14	18	262
2-axle Trucks:			1	1	2	1	1	2	50
3-axle Trucks:			0	0	0	0	0	0	16
4+-axle Trucks:			1	2	3	2	2	4	78
Total Truck Trips (Actual Vehicles):			2	3	5	3	3	6	144
Total Trips (Actual Vehicles)[2]			**17**	**4**	**21**	**7**	**17**	**24**	**406**
Passenger Car Equivalent (PCE):									
High-Cube Cold Storage Warehouse	191.394	TSF							
Passenger Cars:			15	1	16	4	14	18	262
2-axle Trucks:			1	2	3	1	2	3	76
3-axle Trucks:			0	1	1	1	0	1	32
4+-axle Trucks:			3	6	9	5	5	10	234
Total Truck Trips (PCE):			4	9	13	7	7	14	342
Total Trips (PCE)[2]			**19**	**10**	**29**	**11**	**21**	**32**	**604**

Note: Due to rounding, some of the numbers reflected in the table to not reflect actual calculated amounts.

[1] TSF = Thousand Square Feet

[2] Total = Passenger Cars + Trucks

EXISTING TRIP GENERATION

In an effort to understand the existing traffic associated with 100% occupancy of the existing office use, the trip generation rates used for this assessment are based upon information collected by the Institute of Transportation Engineers (ITE) as provided in their Trip Generation Manual (11th Edition, 2021). General Office (ITE Land Use Code 710) land use category has been used to calculate the trip generation for the existing 150,626 square feet of available office space. The trip generation summary illustrating daily, and peak hour trip generation estimates for the existing uses are shown in Table 2 along with the applicable trip generation rates. As shown in Table 2, 150,626 square feet of general office use generates a total of 1,634 two-way trips per day with 228 AM peak hour trips and 217 PM peak hour trips.

TABLE 2: EXISTING TRIP GENERATION

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
General Office (based on average rates)	TSF	710	1.34	0.18	1.52	0.24	1.20	1.44	10.84

Land Use	Quantity	Units[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
General Office[3]	150.626	TSF	201	27	228	37	180	217	1,634

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

[2] TSF = Thousand Square Feet

[3] 100% occupancy of the 150,626 square foot office building.

TRIP GENERATION COMPARISON

Table 3 shows the trip generation comparison between the proposed Project uses and the existing office use (assuming 100% occupancy). The resulting net change in trips is identified in Table 3. As shown, the proposed Project is anticipated to generate 1,030 fewer two-way PCE trips per day with 199 fewer PCE AM peak hour trips and 185 fewer PCE PM peak hour trips as compared to the existing office use (resulting in a net reduction).

TABLE 3: TRIP GENERATION COMPARISON

Land Use	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Proposed Project							
Passenger Cars:	15	1	16	4	14	18	262
Total Truck Trips (PCE):	4	9	13	7	7	14	342
Total Trips (PCE)	**19**	**10**	**29**	**11**	**21**	**32**	**604**
Existing Use: General Office							
Passenger Cars:	201	27	228	37	180	217	1,634
Total Truck Trips (PCE):	0	0	0	0	0	0	0
Total Trips (PCE)	**201**	**27**	**228**	**37**	**180**	**217**	**1,634**
Variance							
Passenger Cars:	-186	-26	-212	-33	-166	-199	-1,372
Total Truck Trips (PCE):	4	9	13	7	7	14	342
Total Trips (PCE)	**-182**	**-17**	**-199**	**-26**	**-159**	**-185**	**-1,030**

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

URBAN | CROSSROADS

GOODMAN COMMERCE CENTER

TRAFFIC ANALYSIS

PREPARED BY: Charlene So | cso@urbanxroads.com
Aric Evatt | aevatt@urbanxroads.com

Reference Number	Agency	Date
15593-03 TA Report	City of Cypress	November 21, 2023

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APPENDICES

LIST OF EXHIBITS

LIST OF TABLES

LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
CAMUTCD	California Manual on Uniform Traffic Control Devices
Caltrans	California Department of Transportation
CMP	Congestion Management Program
E+P	Existing plus Project
HCM	Highway Capacity Manual
ICU	Intersection Capacity Utilization
ITE	Institute of Transportation Engineers
LOS	Level of Service
OCTA	Orange County Transit Authority
PCE	Passenger Car Equivalent
PHF	Peak Hour Factor
Project	Goodman Commerce Center
SCAQMD	South Coast Air Quality Management District
TA	Traffic Analysis
v/c	Volume to Capacity
vphgpl	Vehicles per Hour Green per Lane

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1 INTRODUCTION

This report presents the results of the Traffic Analysis (TA) for Goodman Commerce Center development ("Project"), which is located at 5665 Plaza Drive (Assessor's Parcel Number: 241-101-26) in the City of Cypress, 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 the City's General Plan level of service goals and policies. This TA has been prepared in accordance with the City's Transportation Operational Assessment (Level-Of-Service Traffic Study) Guidelines (dated April 2023) and through consultation with City of Cypress staff during the scoping process. (1) The Project traffic study scoping agreement is provided in Appendix 1.1 of this TA, which has been reviewed and approved by the City of Cypress.

1.1 SUMMARY OF FINDINGS

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

- Project to construct the site frontage improvements needed to accommodate site access along Plaza Drive/Douglas Drive.
- Project to install stop controls for all egress traffic from each Project driveway. All driveways along Plaza Drive/Douglas Drive will accommodate full access (no turn restrictions).

Additional details and intersection lane geometrics are provided in Section 1.6 *Recommendations* of this report. The Project is not anticipated to require the construction of any off-site improvements and would also contribute to improvement needs identified at off-site intersections for future cumulative traffic conditions.

1.2 PROJECT OVERVIEW

A preliminary site plan for the proposed Project is shown on Exhibit 1-2. The Project includes the development of a 191,394 square foot warehouse building. The TA evaluates 191,394 square feet of high-cube cold storage warehouse use. The proposed Project will replace an existing 150,626 square foot office building. The anticipated Opening Year for the proposed Project is 2025. Access to the site will be accommodated via two driveways at Plaza Drive and Douglas Drive. 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). (2) The Project is anticipated to generate a total of 406 two-way trips per day with 21 AM peak hour trips and 24 PM peak hour trips (actual vehicles). 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

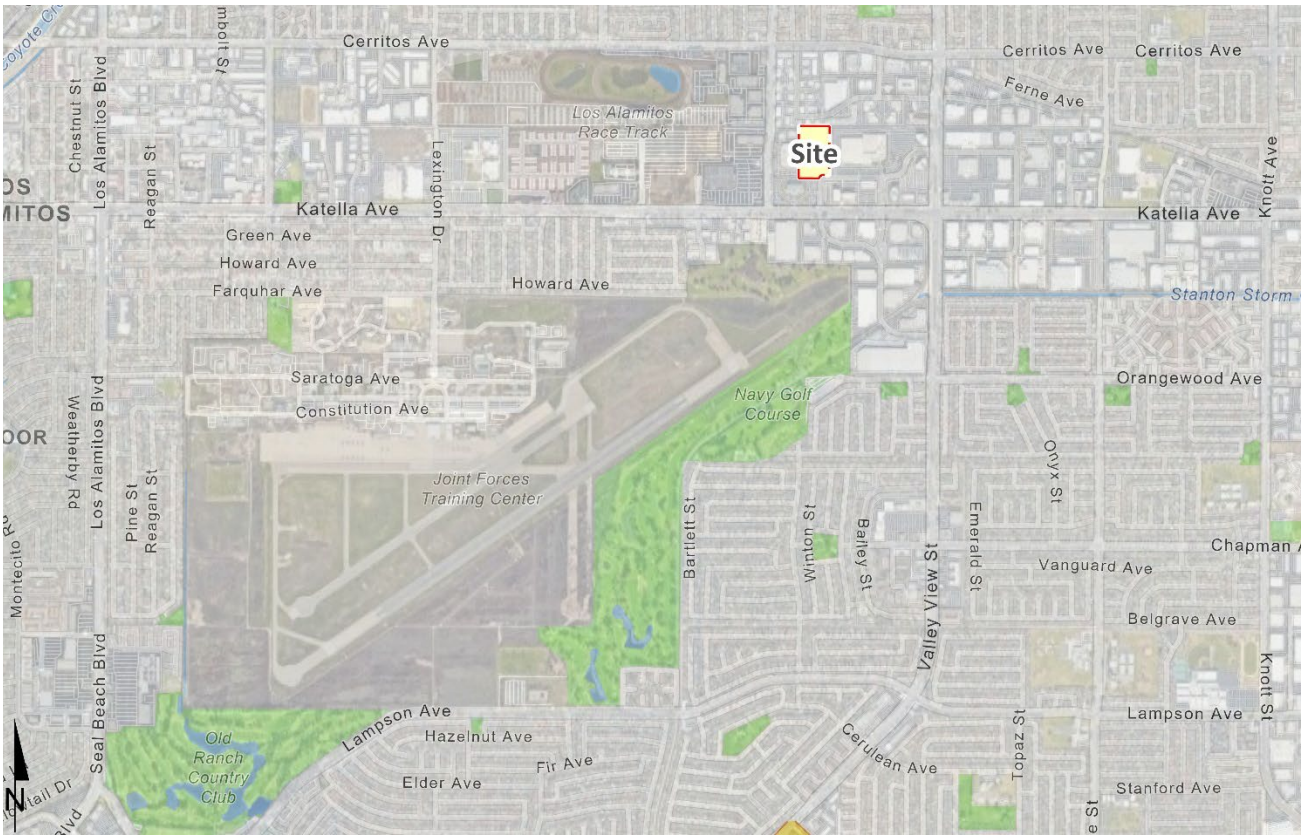
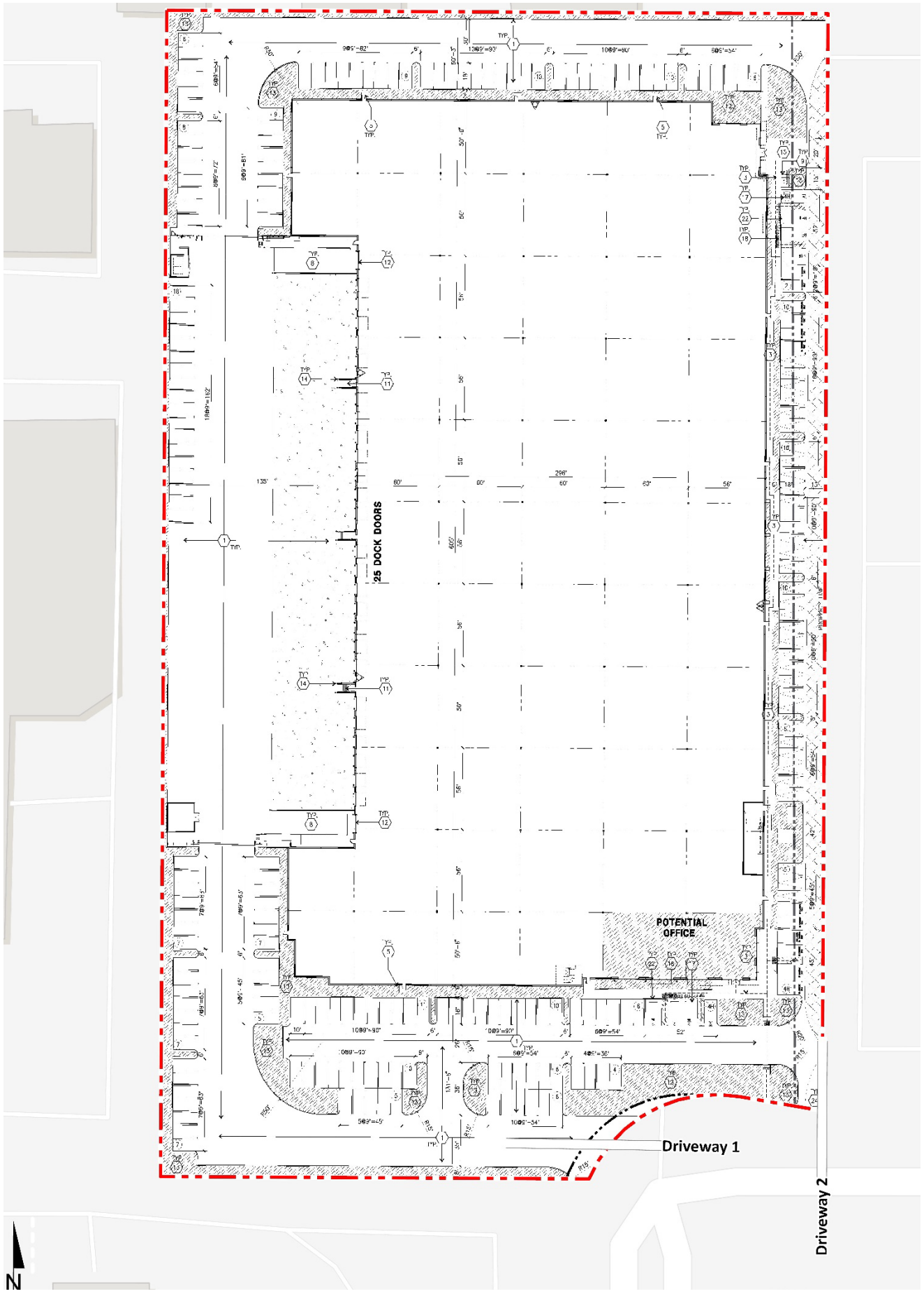


EXHIBIT 1-2: PRELIMINARY SITE PLAN



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)
- Future Year (2025) Without Project
- Future Year (2025) 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. Traffic volume utilized for the intersection operations analyses are based on 2022 traffic counts in conjunction with the application of a two percent adjustment/growth factor to reflect 2023 traffic conditions. For a detailed discussion on the existing traffic counts, see Section 3.6 *Existing Traffic Counts*.

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 FUTURE YEAR (2025) CONDITIONS

The Future Year (2025) 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 4.04% (2 percent per year, compounded over 2 years) is included for Future Year (2025) 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 2025 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 2025 conditions.

1.4 STUDY AREA

To ensure that this TA satisfies the City of Cypress's traffic study requirements, Urban Crossroads, Inc. prepared a Project traffic study scoping package for review by City of Cypress 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 agreement approved by the City is included in Appendix 1.1 of this TA.

The 4 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 Cypress staff. At a minimum, the study area includes intersections where the Project is anticipated to contribute 25 or more peak hour trips per the City's Guidelines. (1) The 25 peak hour trip criterion has been used for the purposes of estimating a potential area of influence (i.e., study area).

TABLE 1-1: INTERSECTION ANALYSIS LOCATIONS

#	Intersection	Jurisdiction	CMP?
1	Douglas Dr./Warland Dr. & Katella Av.	City of Cypress	No
2	Douglas Dr./Dwy. 2 & Dwy. 1/Plaza Dr.	City of Cypress	No
3	Existing Driveway/McDonnell Dr. & Plaza Dr.	City of Cypress	No
4	Valley View St. & Plaza Dr./Chip Av.	City of Cypress	No

The intent of a Congestion Management Program (CMP) is to more directly 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 Orange CMP became effective with the passage of Proposition 111 in 1990 and most recently updated in 2021. (3) There are no study area intersections identified as a CMP intersection.

1.5 DEFICIENCIES

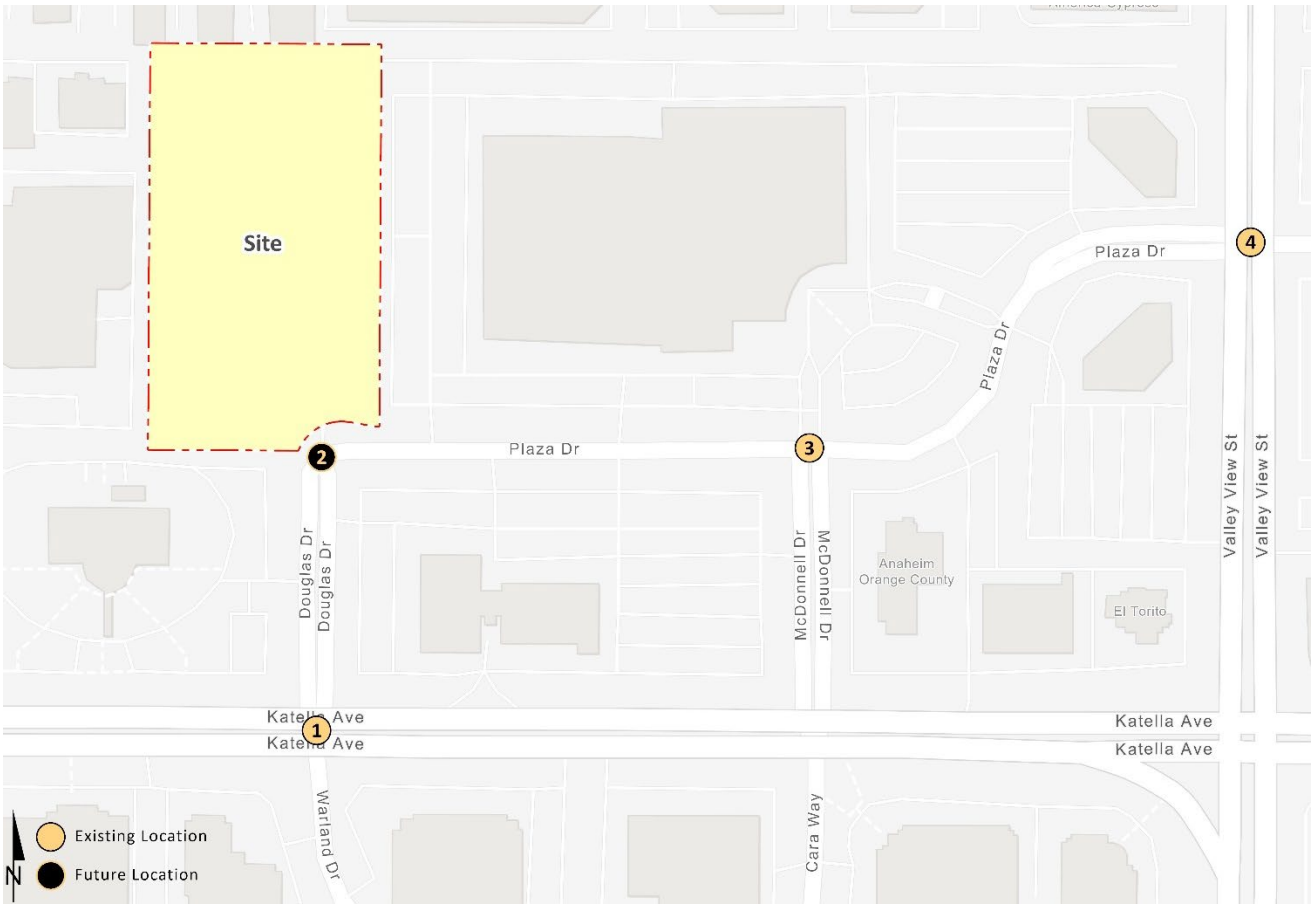
This section provides a summary of deficiencies by analysis scenario. Section 2 *Methodologies* provides information on the methodologies used in the analysis, Section 5 *Existing plus Project Traffic Conditions,* and Section 6 *Future Year (2025) Traffic Conditions* include the detailed analysis. A summary of level of service (LOS) results for all analysis scenarios is presented on Table 1-2.

TABLE 1-2: SUMMARY OF LOS

		Existing		E+P		2025 NP		2025 WP	
#	Intersection	AM	PM	AM	PM	AM	PM	AM	PM
1	Douglas Dr./Warland Dr. & Katella Av.	●	●	●	●	●	●	●	●
2	Douglas Dr./Dwy. 2 & Dwy. 1/Plaza Dr.	●	●	●	●	●	●	●	●
3	Existing Driveway/McDonnell Dr. & Plaza Dr.	●	●	●	●	●	●	●	●
4	Valley View St. & Plaza Dr./Chip Av.	●	●	●	●	●	●	●	●

● = A - D ● = E ● = F

EXHIBIT 1-3: STUDY AREA



1.5.1 EXISTING (2023) CONDITIONS

The study area intersections are currently operating at an acceptable LOS during the peak hours.

1.5.2 E+P CONDITIONS

The study area intersections are anticipated to continue to operate at an acceptable LOS during the peak hours with the addition of Project traffic.

1.5.3 FUTURE YEAR (2025) CONDITIONS

The study area intersections are anticipated to continue to operate at an acceptable LOS under Future Year (2025) Without and With Project traffic conditions.

1.6 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.

Recommendation 1 – Driveway 2/Douglas Drive & Driveway 1/Plaza Drive (#2) – The following improvements are necessary to accommodate site access:

- Project to install a stop control on the southbound approach and eastbound approach (egress Project traffic) to implement an all-way stop-controlled intersection. Driveway 1/Driveway 2 will accommodate site access for passenger cars and trucks and will accommodate full access (no turn restrictions).
- The northwest curb of Driveway 1 should be modified to accommodate a 25-foot curb radius to accommodate the egress of heavy trucks.

Recommendation 2 – Truck Access & Routing Plan – A revised truck access and routing plan should be prepared for the proposed Project identifying the proposed signage that needs to be implemented on-site to direct trucks per the proposed circulation of trucks as noted in this report.

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 in the master signing program and construction plans for the Project site.

Sight distance at each project access point should be reviewed with respect to standard Caltrans and City of Cypress sight distance standards at the time of preparation of final grading, landscape, and street improvement plans.

Recommendation 3 – Douglas Drive/Warland Drive & Katella Avenue – Install a new southbound signal head on the northwest corner for southbound approach vehicles in order to display the signal indication should a truck in the southbound lanes obstruct the existing signal heads on the mast arm. The new signal head is proposed to be mounted on the existing signal pole on the northwest corner.

1.7 TRUCK ACCESS

Due to the typical wide turning radius of large trucks, a truck turning template has been overlaid on the site plan at Driveway 1 and Driveway 2 (at the intersection of Douglas Drive and Plaza Drive) which is 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. A WB-67 truck (53-foot trailer) has been utilized for the purposes of this analysis. Driveway 1 on Douglas Drive is anticipated to accommodate the ingress and egress of heavy trucks as currently designed to and from the east on Plaza Drive and south on Douglas Drive, however, the northwest curb of Driveway 2 should be modified to accommodate a 25-foot curb radius to accommodate the egress of heavy trucks. Ingress and egress of heavy trucks will also be permitted at Driveway 2 on Plaza Drive.

Exhibit 1-4 and Exhibit 1-5 reflect the inbound and outbound truck access at Driveway 1, respectively. Exhibit 1-6 and Exhibit 1-7 reflect the inbound and outbound truck access at Driveway 2, respectively.

Exhibit 1-8 and Exhibit 1-9 show the inbound and outbound on-site circulation of trucks via Driveway 2 around the north side of the building, respectively. Inbound and outbound on-site circulation of trucks via Driveway 1 around the south side of the building was previously shown on Exhibit 1-4 and Exhibit 1-5. On-site signage will be provided to direct trucks per the proposed/allowable circulation. Trucks backing into the dock bay on-site within the truck court for the building is shown on Exhibit 1-10.

EXHIBIT 1-4: INBOUND TRUCK ACCESS AT DRIVEWAY 1

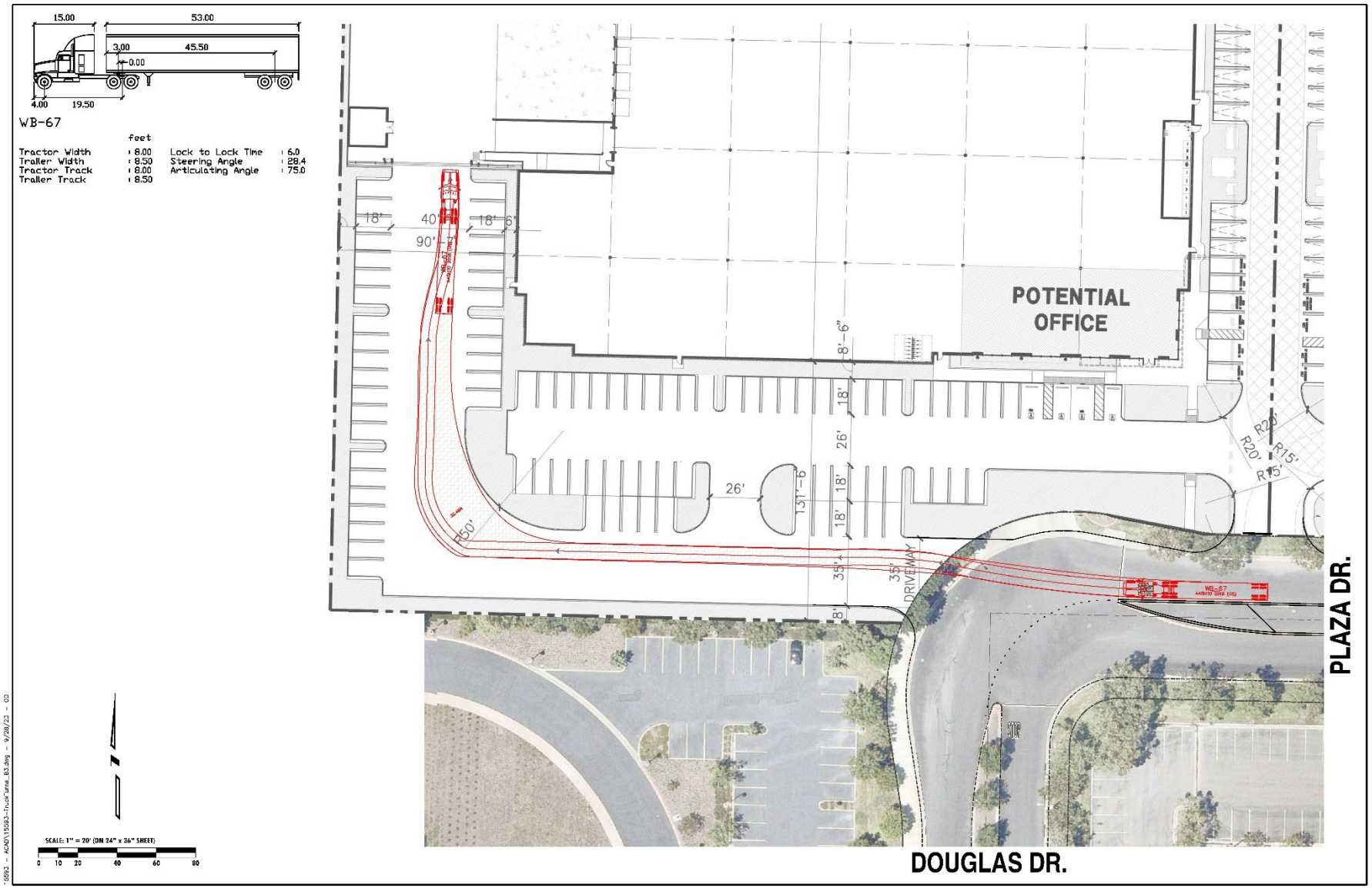


EXHIBIT 1-5: OUTBOUND TRUCK ACCESS AT DRIVEWAY 1

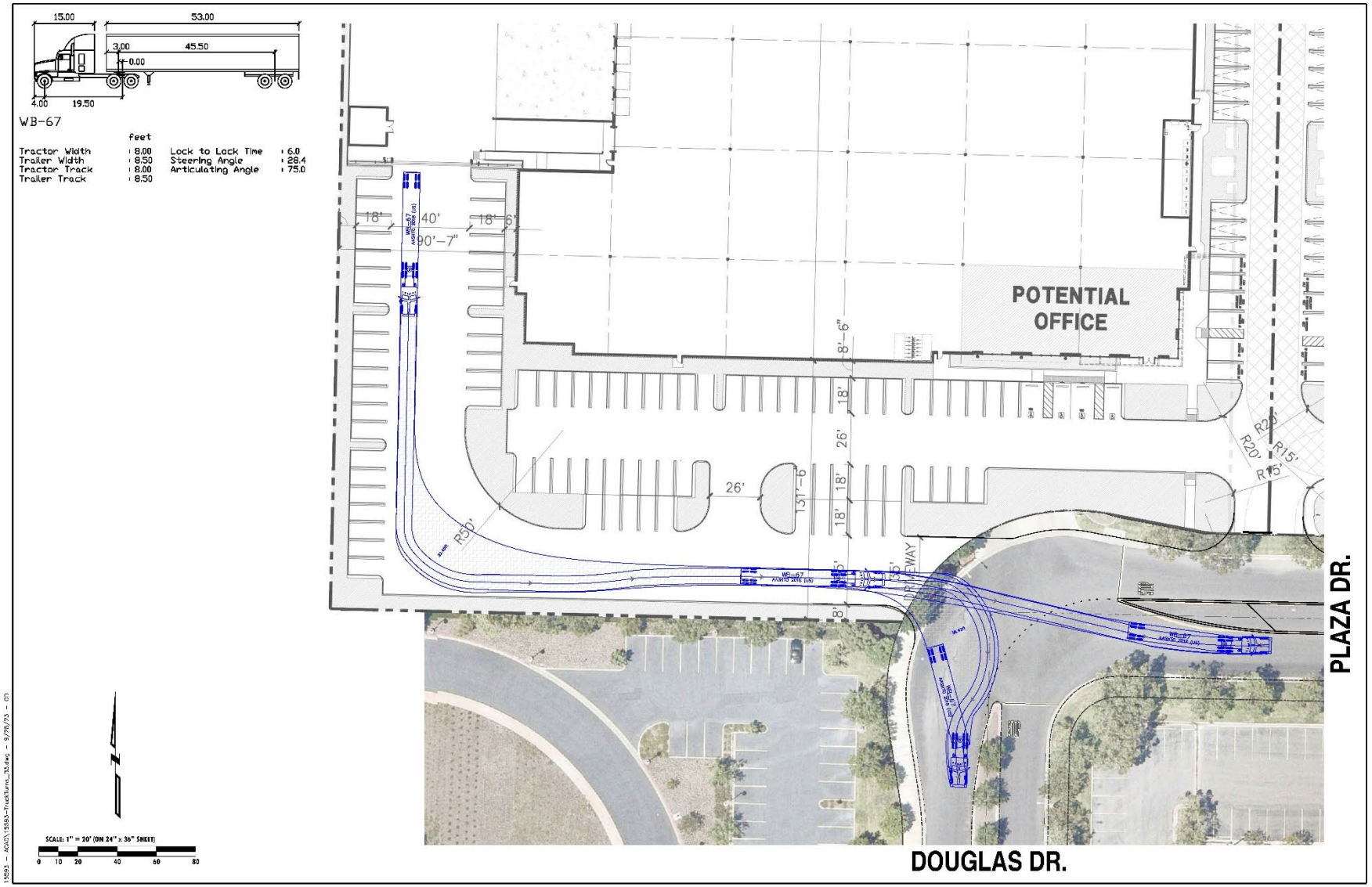


EXHIBIT 1-6: INBOUND TRUCK ACCESS AT DRIVEWAY 2

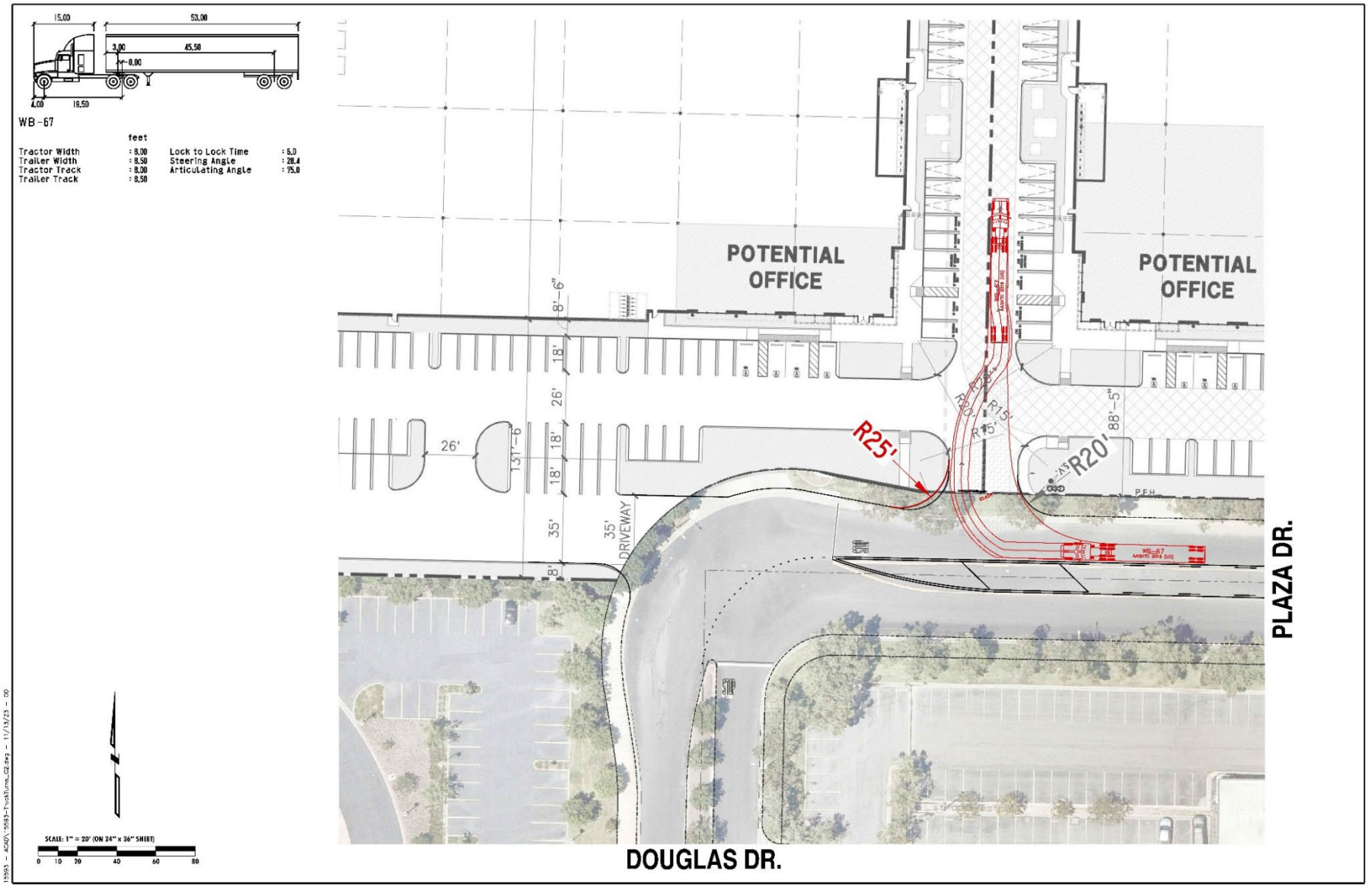


EXHIBIT 1-7: OUTBOUND TRUCK ACCESS AT DRIVEWAY 2

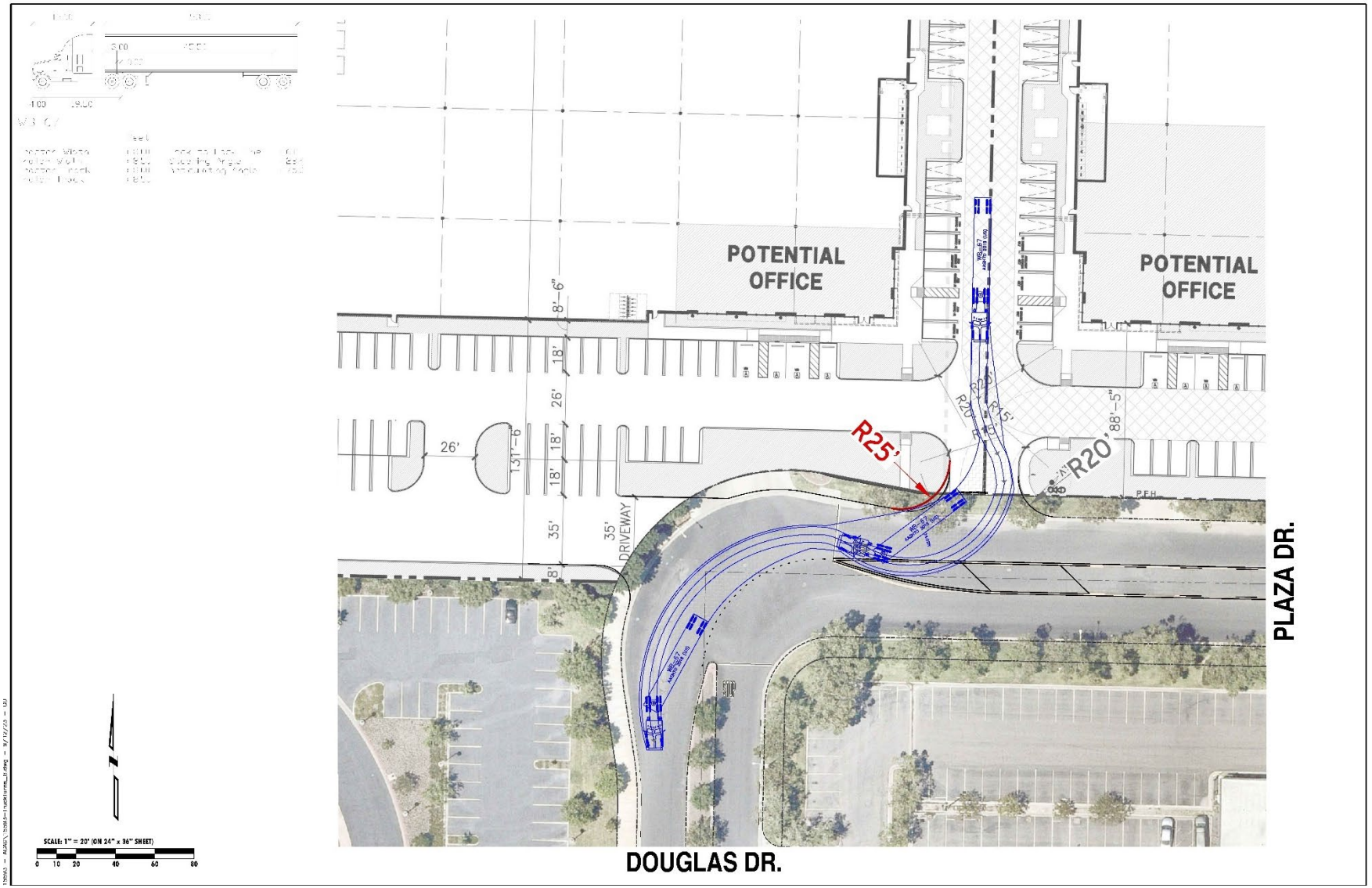


EXHIBIT 1-8: INBOUND ON-SITE TRUCK CIRCULATION VIA DRIVEWAY 2

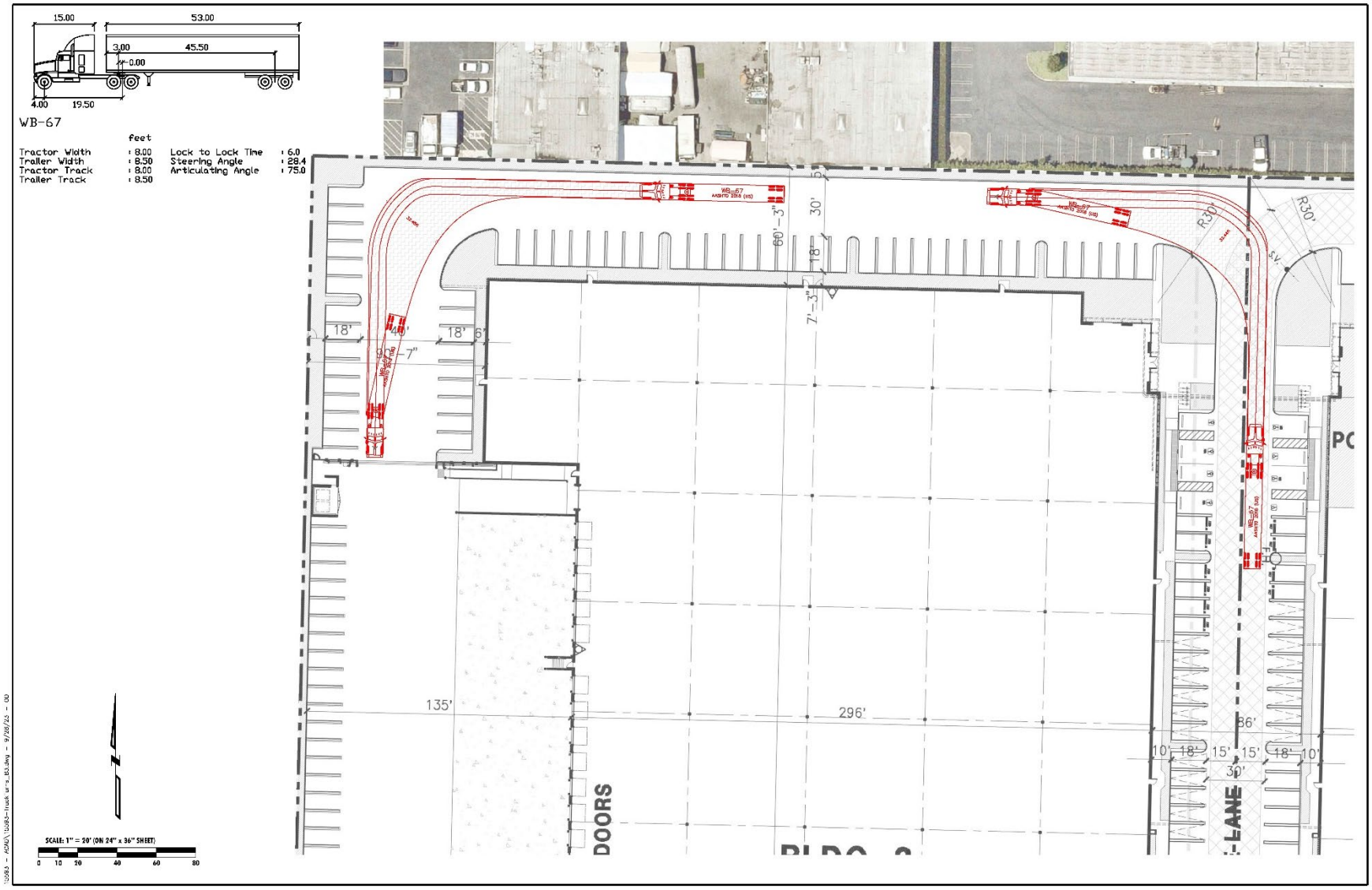


EXHIBIT 1-9: OUTBOUND ON-SITE TRUCK CIRCULATION VIA DRIVEWAY 2

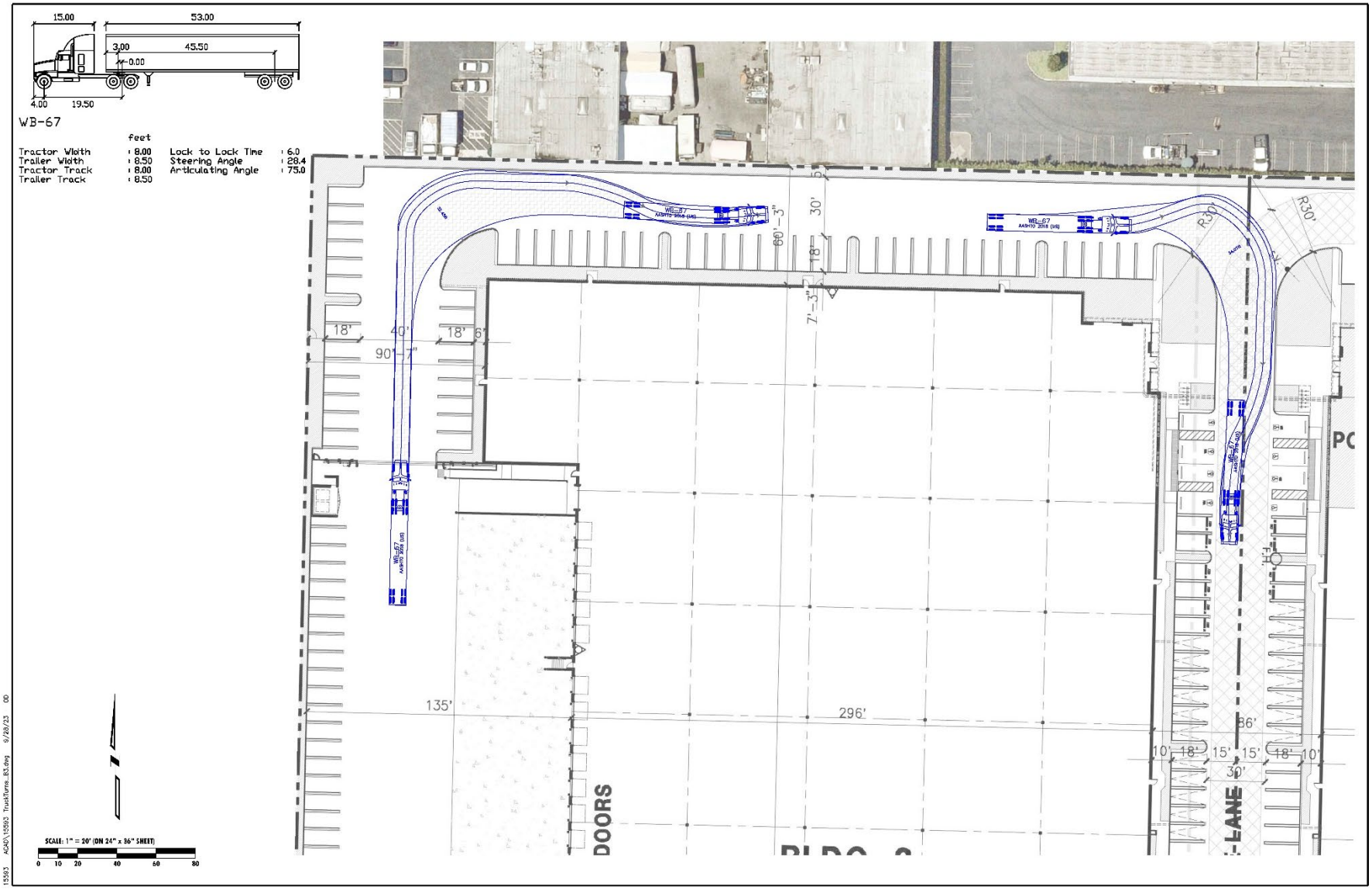
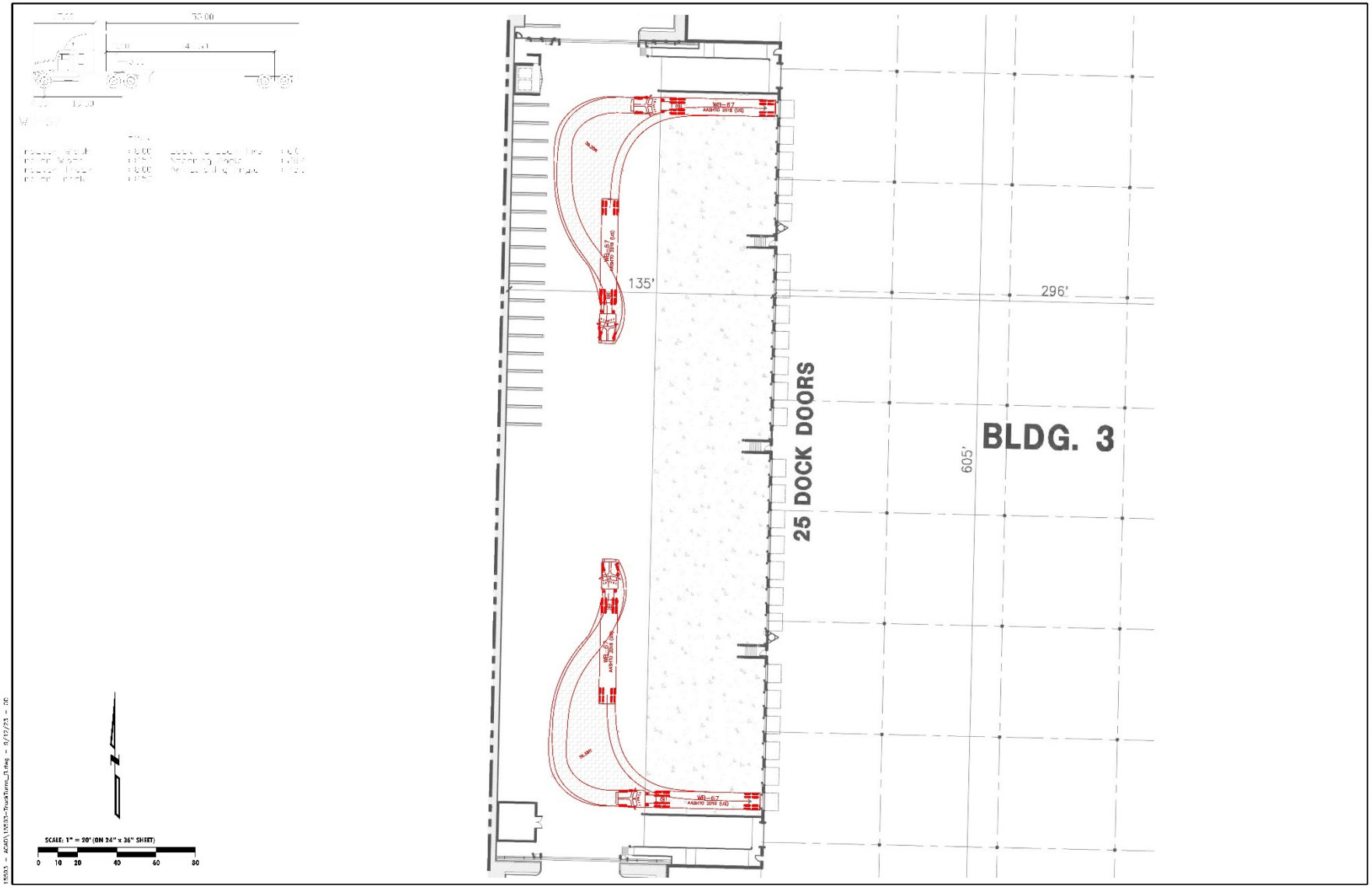


EXHIBIT 1-10: LOADING DOCK TRUCK CIRCULATION



1.8 QUEUING ANALYSIS

The traffic modeling and signal timing optimization software package SimTraffic has been utilized to assess the queues. 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. These random simulations generated by SimTraffic have been utilized to determine the 95th percentile queue lengths observed for each applicable turn lane. A SimTraffic simulation has been recorded up to 5 times, during the weekday AM and weekday PM peak hours, and has been seeded for 15-minute periods with 60-minute recording intervals.

A queuing analysis has been conducted for all signalized study area intersections under Future Year (2025) With Project traffic conditions to ensure the existing and proposed left turn storage can accommodate the 95th percentile peak hour queues. The results of the queuing analysis are shown in Table 1-3 and the worksheets for the weekday AM and PM peak hours are provided in Appendix 1.2 of this report for Future Year (2025) With Project traffic conditions. As shown on Table 1-3, there are no improvements needed to the turn lane storage lengths.

TABLE 1-3: PEAK HOUR QUEUING ANALYSIS

Intersection	Movement	Available Stacking Distance (Feet)[3]	95th Percentile Queue (Feet) AM Peak	95th Percentile Queue (Feet) PM Peak	Acceptable? [1] AM	Acceptable? [1] PM
Douglas Dr./Warland Dr. & Katella Av.	NBL	115	47	80	Yes	Yes
	SBL	90	25	52	Yes	Yes
	SBR	90	35	44	Yes	Yes
	EBL	250	75	49	Yes	Yes
	EBR	100	52	35	Yes	Yes
	WBL	250	42	66	Yes	Yes
	WBR	130	88	52	Yes	Yes
Douglas Dr./Dwy. 2 & Dwy. 1/Plaza Dr.	NBL/T/R	185	51	48	Yes	Yes
	SBL/T/R	100	0	33	Yes	Yes
	EBL/T/R	100	32	34	Yes	Yes
	WBL/T/R	165	48	57	Yes	Yes
Valley View St. & Plaza Dr./Chip Av.	NBL	190	97	34	Yes	Yes
	SBL	160	121	70	Yes	Yes
	EBL	110	26	87	Yes	Yes
	WBL	65	20	71	Yes	Yes

NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound; L = Left; T = Through; R = Right

[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 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 the County's CMP Guidelines and the City's Transportation Operational Assessment (Level of Service 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

Intersection Capacity Utilization (ICU)

The City of Cypress requires signalized intersections to be evaluated through ICU analysis which compares the peak hour traffic volumes to intersection capacity. Lane capacities of 1,700 vehicles per hour of green time have been assumed for the ICU calculations. 0.05 of volume to capacity (V/C) has been assumed representing 5 percent for the yellow and all-red signal indication and inherent vehicle delay between cycles with an assumed signal cycle of 100 seconds. The ICU LOS definitions based on V/C ratio are presented in Table 2-1. The Traffix software package has been utilized to evaluate the signalized intersections using the ICU methodology with the analysis parameters discussed above.

TABLE 2-1 INTERSECTION CAPACITY UTILIZATION (ICU) LOS DEFINITIONS

Level of Service	Critical Volume to Capacity Ratio
A	0.00 - 0.60
B	0.61 - 0.70
C	0.71 - 0.80
D	0.81 - 0.90
E	0.91 - 1.00
F	>1.00

Source: 2019 Orange County Congestion Management Program (CMP)

Highway Capacity Analysis (HCM)

Intersection LOS operations have also been reported based on the HCM methodology which are based on an intersection's average control delay. (4) 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 on Table 2-2.

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.

TABLE 2-2: SIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 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.

A saturation flow rate of 1,700 has been utilized for all study area intersections. 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 = [Hourly Volume] / [4 x Peak 15-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 ICU methodology is not applicable to unsignalized intersections. As such, 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 2-3). 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 2-3: UNSIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 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. Rural warrants have been used where posted speed limits on the major roadways with unsignalized intersections that are over 40 miles per hour while urban warrants have been used where posted speeds are 40 miles per hour or below.

Traffic signal warrant analyses were performed for the following study area intersection shown on Table 2-4:

TABLE 2-4: TRAFFIC SIGNAL WARRANT ANALYSIS LOCATIONS

#	Intersection
2	Douglas Dr./Dwy. 2 & Dwy. 1/Plaza Dr.
3	Existing Driveway/McDonnell Dr. & Plaza Dr.

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 *Future Year (2025) 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 MINIMUM ACCEPTABLE LEVELS OF SERVICE (LOS)

The definition of an intersection deficiency has been obtained from the City's General Plan. The City of Cypress has adopted a LOS D or better as the desired citywide operating standard for most City streets. However, given the influence of regional traffic on Valley View Street, Lincoln Avenue, and Katella Avenue, which are beyond the control of the City of Cypress, LOS E or better has been adopted as the minimum operating LOS for street segments and intersections on the aforementioned arterials due to the high volume of traffic carried on these roadways.

2.5 DEFICIENCY CRITERIA

For the intersections that lie within the City of Cypress, determination of whether the Project has an adverse effect on intersection operations will be based on a comparison of without and with project levels of service.

For HCM Analysis: For signalized intersections, the traffic operations deficiency shall be determined in accordance with Table 2-5 below:

TABLE 2-5: HCM SIGNALIZED INTERSECTION DEFICIENCY CRITERIA

With Project LOS	Project-Related Increase in Delay (in seconds)
C or better	> 6.0 seconds
D	> 4.0 seconds
E, F	> 2.0 seconds

To determine whether a project's added traffic would result in a deficiency at a study area unsignalized intersection in accordance with the City's HCM methodology, the following criteria shall be applied:

a) Worsens the LOS at an unsignalized intersection from LOS D or better to LOS E or F;

b) Causes an increase in the delay equal to or more than three (3.0) seconds at an unsignalized intersection that operates at LOS E or F with project.

For ICU Analysis: a deficiency at both signalized study intersections will be determined in accordance with Table 2-6:

TABLE 2-6: ICU INTERSECTION DEFICIENCY CRITERIA

Without Project LOS	With Project Volume/Capacity (V/C) Ratio	With Project Level of Service
D	>0.900 or greater	LOS E or F
Without Project LOS	With Project Volume/Capacity (V/C) Ratio	Project-Related increase in V/C
E, F	>0.900 or greater	Equal to or greater than 0.03

Improvements: Any decrease beyond the minimum acceptable LOS due to the addition of project traffic requires alternative corrective measures to return the intersection to an acceptable LOS. For intersections operating below the minimum acceptable LOS prior to the addition of project traffic, and the LOS would be worsened with the addition of project traffic, corrective measures should be identified, if feasible, to return to "without project" condition LOS or V/C (volume/capacity ratio), whichever is greater. Alternative corrective measures to roadway widening which may include the reduction of project traffic volumes through application of signal system upgrades, phasing changes, synchronization, and/or project design improvements which are expected to improve capacity and/or efficiency within the transportation network (e.g., changes to a project's site access or internal circulation scheme) shall be identified with concurrence from the City Traffic Engineer.

3 AREA CONDITIONS

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

3.1 EXISTING CIRCULATION NETWORK

Pursuant to the scoping agreement with City of Cypress staff (Appendix 1.1), the study area includes a total of 4 existing and future intersections as shown previously on Exhibit 1-3, where the Project is anticipated to contribute 25 or more peak hour trips or were added at the City's request during the scoping process. 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 CYPRESS GENERAL PLAN CIRCULATION ELEMENT

As noted previously, the Project site is located within the City of Cypress. The roadway classifications and planned (ultimate) roadway cross-sections of the major roadways within the study area, as identified on City of Cypress General Plan Circulation Element, are described subsequently. Exhibit 3-2 shows the City of Cypress General Plan Circulation Element and Exhibit 3-3 illustrates the City of Cypress General Plan roadway cross-sections.

Major roadways are six-lane roadways and typically include a raised median. These roadways typically have a 120-foot right-of-way and a 104-foot curb-to-curb measurement. These roadways typically direct traffic through major development areas. The following study area roadways within the City are classified as a Major:

- Katella Avenue
- Valley View Street

Plaza Drive/Douglas Drive is not a classified General Plan roadway.

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

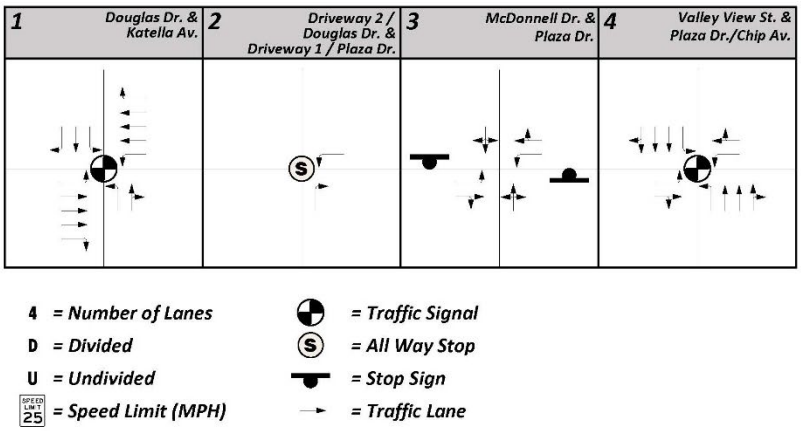
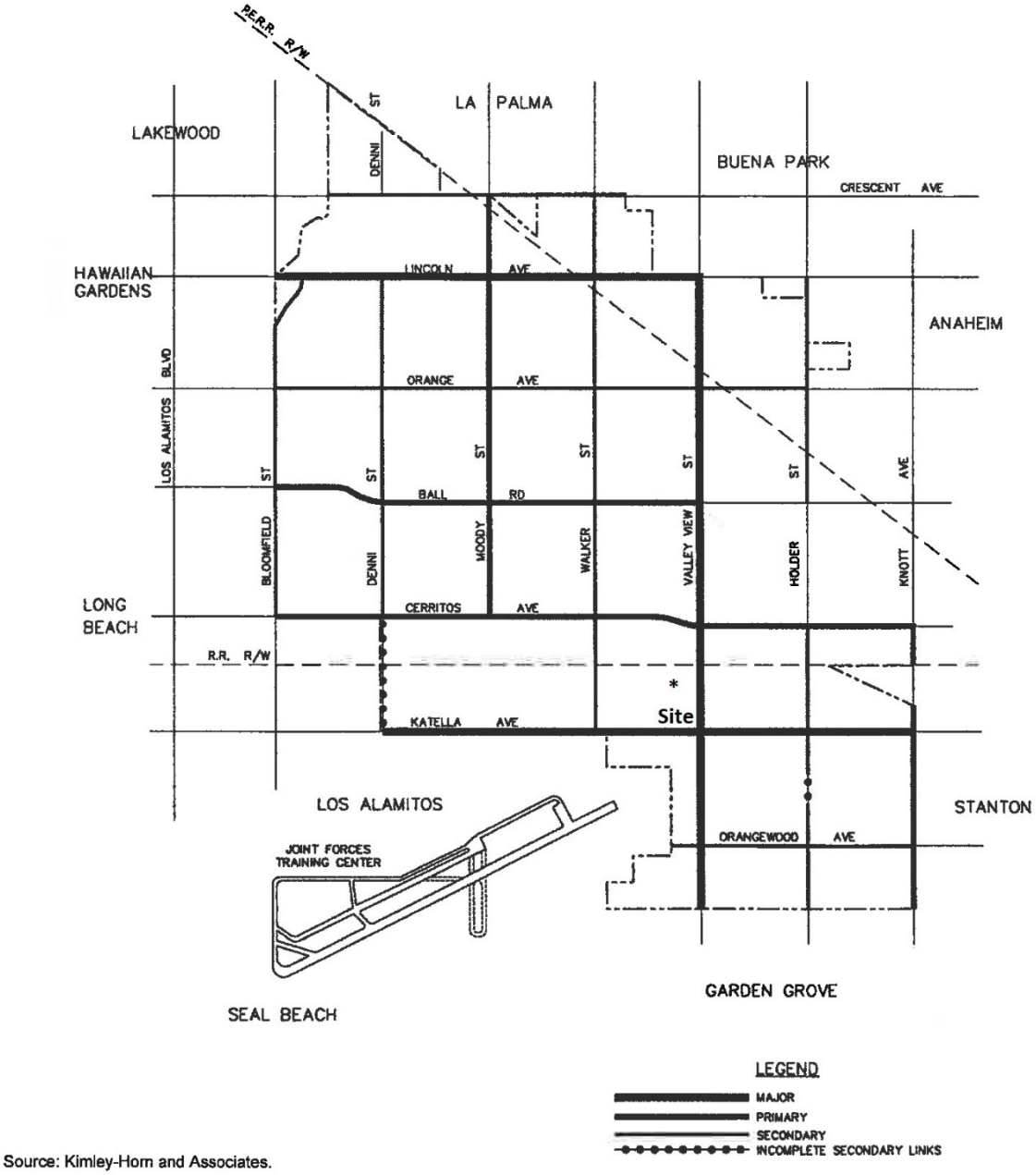


EXHIBIT 3-2: CITY OF CYPRESS GENERAL PLAN CIRCULATION ELEMENT



Source: Kimley-Horn and Associates.

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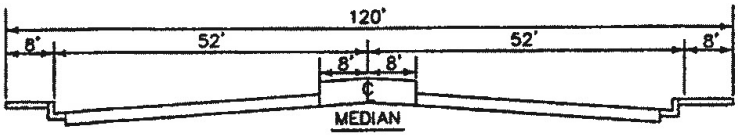
CITY OF CYPRESS GENERAL PLAN
General Plan Arterial System

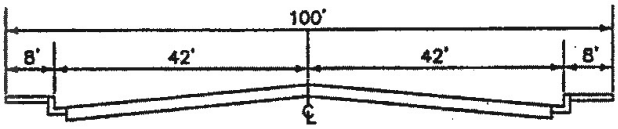
Exhibit CIR-7

EXHIBIT 3-3: CITY OF CYPRESS GENERAL PLAN ROADWAY CROSS-SECTIONS

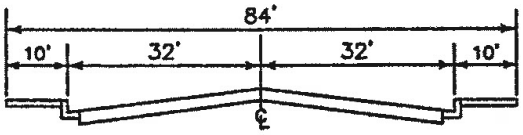
MAJOR STREET



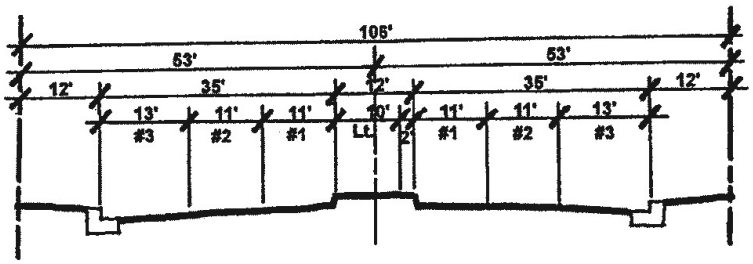
PRIMARY STREET



SECONDARY STREET



LINCOLN AVENUE TYPICAL STREET SECTION



Source: Kimley-Horn and Associates.

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CITY OF CYPRESS GENERAL PLAN
Standard Street Sections

RBF PLANNING ■ DESIGN ■ CONSTRUCTION

Exhibit CIR-6

3.3 BICYCLE & PEDESTRIAN FACILITIES

The City's bike network is shown on Exhibit 3-4. As shown on Exhibit 3-4, both Katella Avenue and Valley View Street currently accommodate off-street bike paths (there are no on-street bike lanes). Exhibit 3-5 illustrates the existing crosswalks and sidewalks throughout the study area. As shown on Exhibit 3-5, there are pedestrian facilities in place in the vicinity of the Project site along Douglas Drive, Katella Avenue, and Valley View Street. There is a 10-foot sidewalk along the west side of Douglas Drive between the proposed Project down to Katella Avenue to the south. Once completed by the adjacent development to the east, there will be a 5-foot sidewalk along the north side of Plaza Drive providing pedestrian connectivity between the proposed Project and approximately 450-feet west of Valley View Street. The signalized intersection of Douglas Drive at Katella Avenue has striped crosswalks on all approaches with push buttons. All four corners of the intersection of Douglas Drive at Katella Avenue have tactile warning strips and curb access ramps. The intersection of Valley View Street at Plaza Drive/Chip Avenue does not have a marked crosswalk across the north leg of the intersection. All other approaches include striped crosswalks with the appropriate pedestrian push buttons, tactile warning strip, and curb access ramps.

3.4 TRANSIT SERVICE

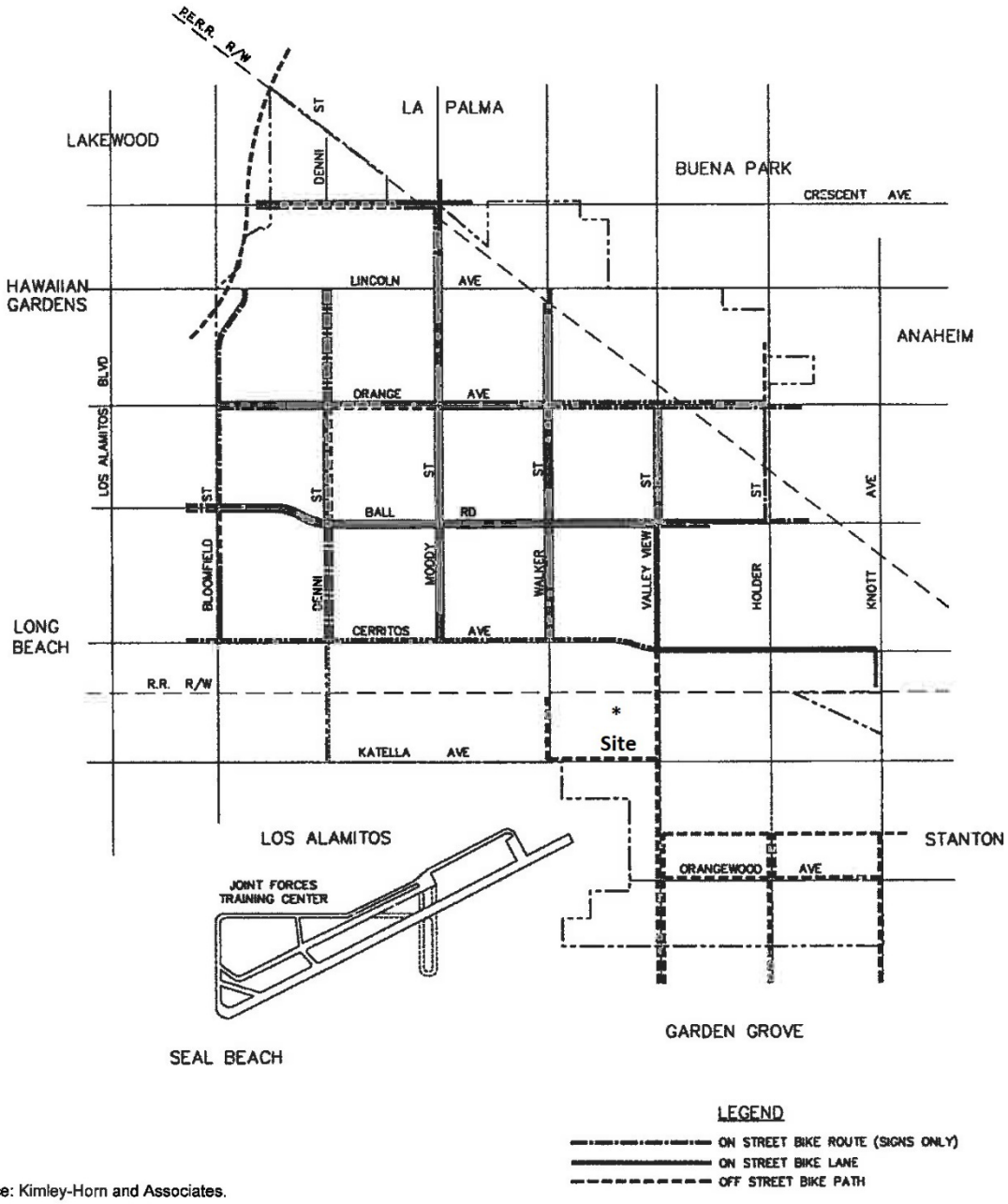
The study area is currently served by Orange County Transit Authority (OCTA) with bus service along Katella Avenue and Valley View Street. OCTA Route 50 runs along Katella Avenue and currently has existing bus stops just east of Douglas Drive and west of Valley View Street along the north side and operates seven days a week. Route 50 runs between Long Beach and Orange (including major stops at the Anaheim Regional Transportation Terminal Center and the VA Hospital in Long Beach). Buses stop approximately every 20-25 minutes during the morning and evening peak commute hours. OCTA Route 123 runs along Valley View Street and there are existing bus stops north of Plaza Drive and only operates Monday through Friday. Route 123 runs between Anaheim and Huntington Beach (including major stops at the Buena Park Metrolink Station, Fullerton Transportation Center, Anaheim Canyon Metrolink Station, and Goldenwest Transportation Center/Park and Ride). Buses stop approximately every hour (60 minutes) during the morning and evening commute hours (operational between 4:00 AM and 10:00 PM).

The existing transit stops are in close proximity to the Project site and could serve the site in the future. The transit services are illustrated on Exhibit 3-6. Transit service is reviewed and updated by OCTA 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's truck routes are shown on Exhibit 3-7. Both Katella Avenue and Valley View Street adjacent to the Project are identified as City truck routes. These truck routes serve both the proposed Project and future cumulative development projects throughout the study area.

EXHIBIT 3-4: CITY OF CYPRESS GENERAL PLAN BIKE NETWORK



Source: Kimley-Horn and Associates.

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CITY OF CYPRESS GENERAL PLAN
Existing Bikeways

Exhibit CIR-4

EXHIBIT 3-5: EXISTING PEDESTRIAN FACILITIES

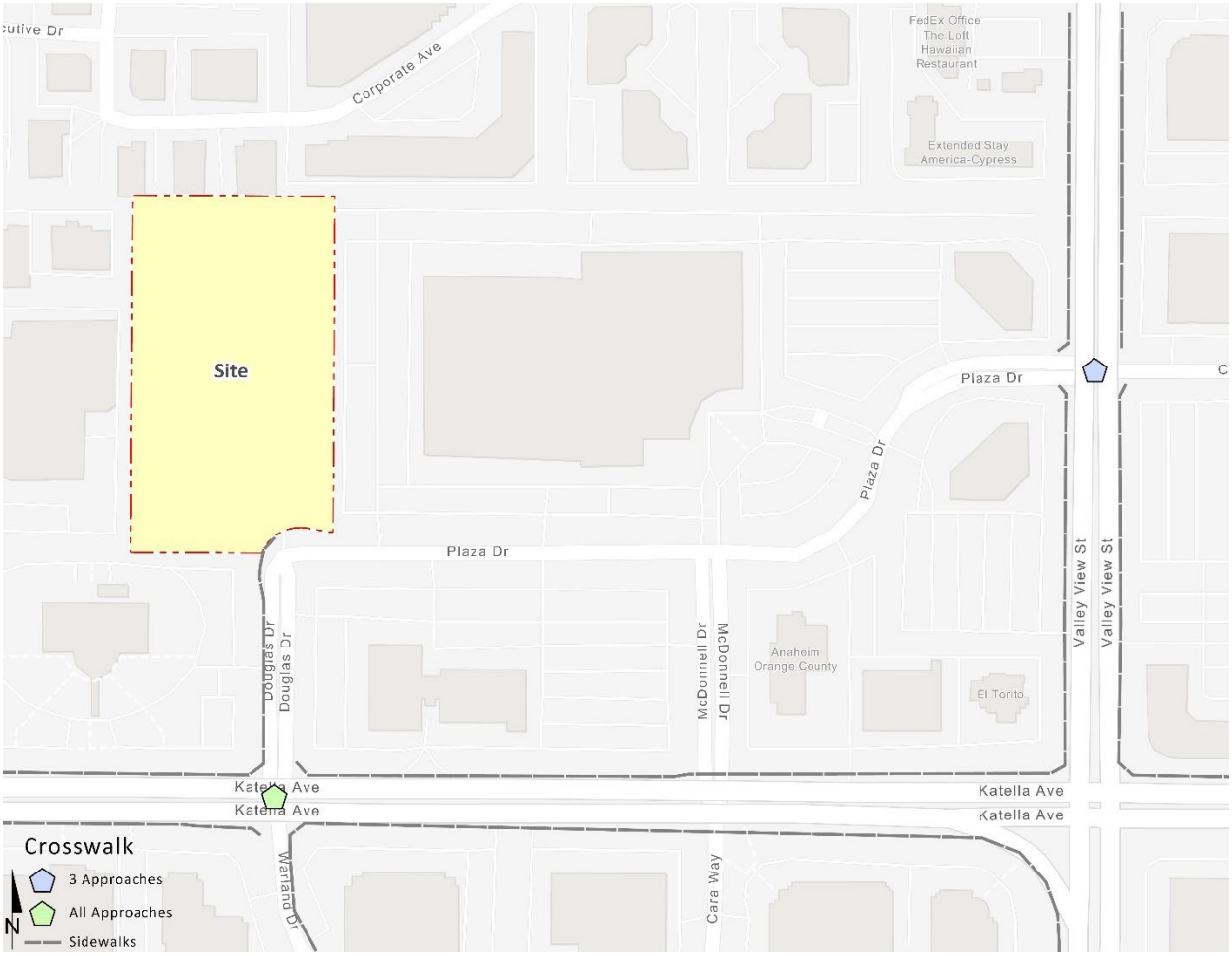


EXHIBIT 3-6: EXISTING TRANSIT ROUTES

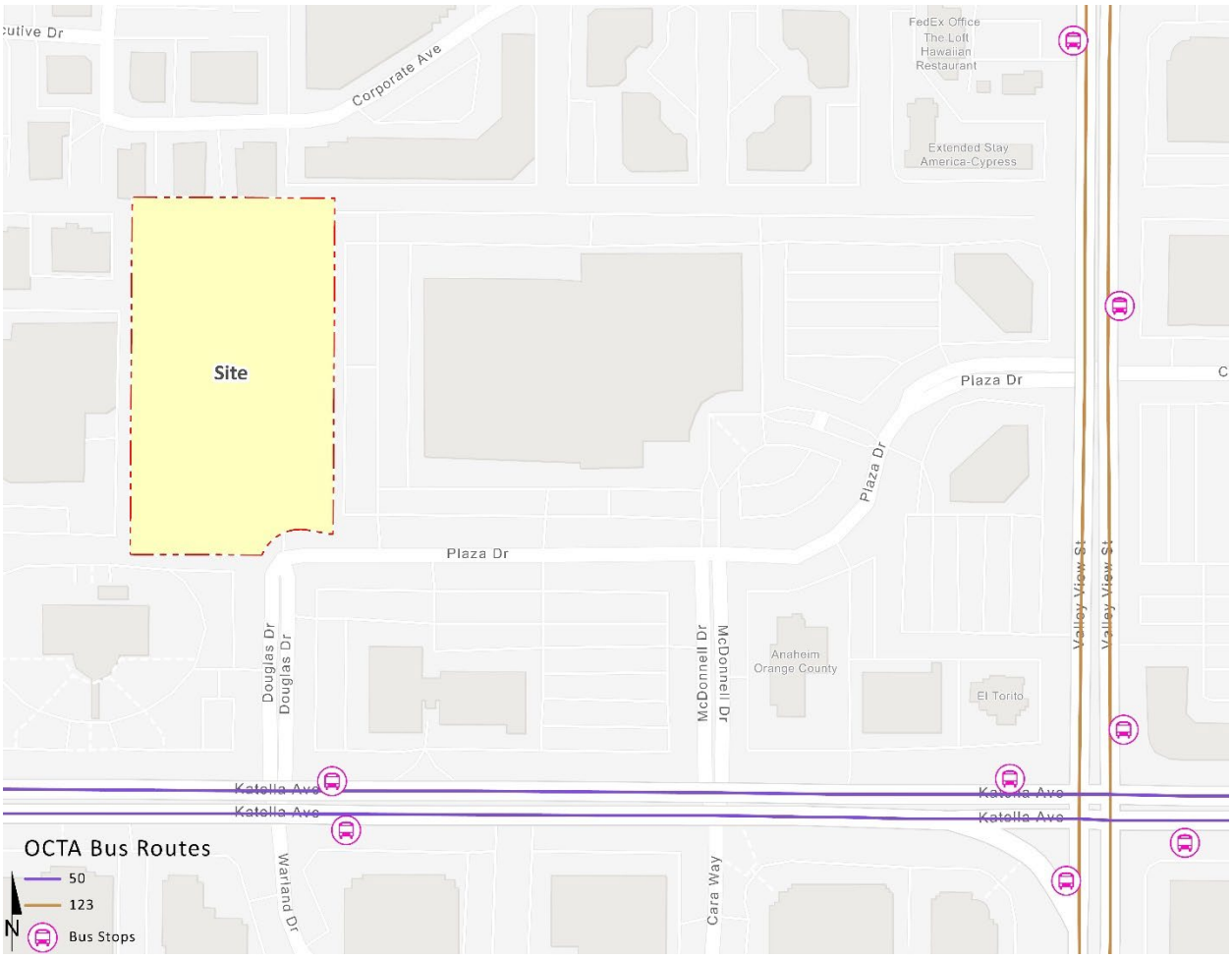
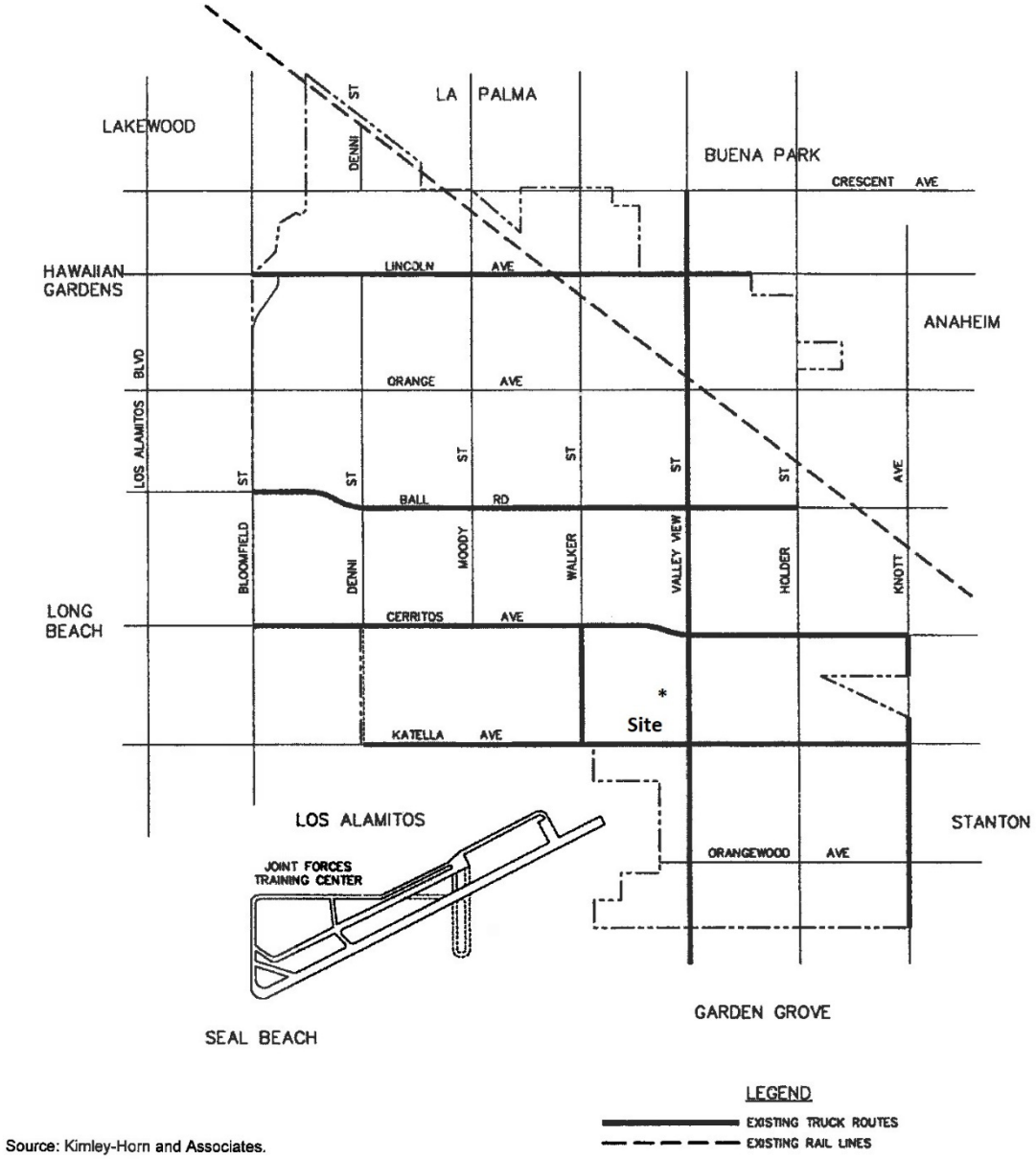


EXHIBIT 3-7: CITY OF CYPRESS TRUCK ROUTES



Source: Kimley-Horn and Associates.

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CITY OF CYPRESS GENERAL PLAN

Existing Truck Routes and Rail Lines

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Exhibit CIR-5

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 2022 when local schools were in session and operating on normal bell schedules. The following peak hours were selected for analysis:

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

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 2022 peak hour volumes have been adjusted to increase turning movements into low occupancy office uses in the surrounding area by 30 percent. Lastly, the volumes were then increased by an additional two percent for all movements in order to adjust the 2022 traffic counts to 2023. The raw manual peak hour turning movement traffic count data sheets are included in Appendix 3.1. In addition, volume worksheets have been included identifying the adjusted 2023 volumes along with the passenger car equivalent (PCE) calculations for all analysis scenarios.

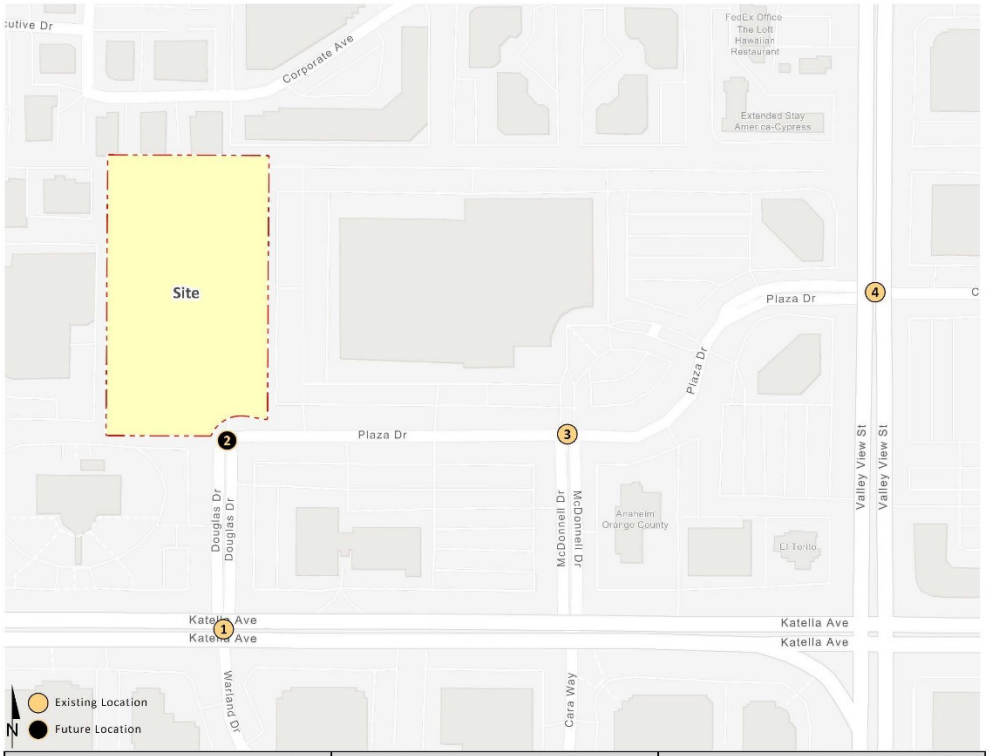
Existing weekday average daily traffic (ADT) volumes on arterial highways throughout the study area are shown on Exhibit 3-8. Existing ADT volumes were based upon factored intersection peak hour counts collected by Urban Crossroads, Inc. using the following formula for each intersection leg:

Weekday PM Peak Hour (Approach Volume + Exit Volume) x 11.3 = 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 8.9 percent. As such, the above equation utilizing a factor of 11.3 estimates the ADT volumes on the study area roadway segments assuming a peak-to-daily relationship of approximately 8.9 percent (i.e., 1/0.089 = 11.3) and was assumed to sufficiently estimate ADT volumes for planning-level analyses. This factor is consistent with that used for other traffic studies within the study area. Existing weekday AM and weekday PM peak hour intersection volumes are shown on Exhibit 3-8.

Volumes reported on the exhibits are expressed in passenger car equivalent (PCE) volumes as the intersection operations analysis utilizes PCE volumes. Note that only the intersection turning movement volumes are expressed in PCE and ADTs are presented as actual vehicles as used in other technical studies. 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.

EXHIBIT 3-8: EXISTING (2023) TRAFFIC VOLUMES (PCE)



1 Douglas Dr./Warland Dr. & Katella Av.

1,000 | 39,950
15(47) 1(2) 2(26) | 34(6) 1782(1608) 12(9)
27(11) 1702(1963) 72(32) | 26(83) 2(1) 5(7)
42,950 | 1,450

2 Douglas Dr./Dwy. 2 & Dwy. 1/Plaza Dr.

1,350
53(100) | 21(24)
1,350

3 McDonnell Dr. & Plaza Dr.

Nominal | 800
0(3) | 4(0) 104(80) 8(11)
23(86) 0(2) | 19(5) 2(0) 77(9)
1,900 | 350

4 Valley View St. & Plaza Dr./Chip Av.

42,050 | 6,750
154(23) 1551(1503) 254(52) | 39(355) 0(30) 12(162)
9(168) 9(0) 15(61) | 22(4) 1516(1967) 181(12)
3,200 | 41,150

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

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 on Table 3-1, 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.

TABLE 3-1: INTERSECTION ANALYSIS FOR EXISTING (2023) CONDITIONS

#	Intersection	Traffic Control[3]	Delay[1] (secs.) AM	Delay[1] (secs.) PM	Level of Service AM	Level of Service PM	ICU[2] (V/C) AM	ICU[2] (V/C) PM	Level of Service AM	Level of Service PM
1	Douglas Dr./Warland Dr. & Katella Av.	TS	5.4	8.2	A	A	0.44	0.52	A	A
2	Douglas Dr./Dwy. 2 & Dwy. 1/Plaza Dr.	AWS	7.2	7.7	A	A	--	--	--	--
3	Existing Driveway/McDonnell Dr. & Plaza Dr.	CSS	9.2	10.8	A	B	--	--	--	--
4	Valley View St. & Plaza Dr./Chip Av.	TS	15.4	35.7	B	D	0.56	0.79	A	C

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 ICU reported as a volume-to-capacity ratio and for signalized intersections only. ICU not applicable to unsignalized inspections.

3 TS = Traffic Signal; AWS = All-Way Stop; CSS = Cross-Street Stop

3.8 TRAFFIC SIGNAL WARRANTS ANALYSIS

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

4 PROJECTED FUTURE TRAFFIC

This section presents the traffic volumes estimated to be generated by the Project, as well as the Project's trip assignment onto the study area roadway network. The Project includes the development of a 191,394 square foot warehouse building. The TA evaluates 191,394 square feet of high-cube cold storage warehouse use. The proposed Project will replace an existing 150,626 square foot office building. The anticipated Opening Year for the proposed Project is 2025. Access to the site will be accommodated via two driveways at Plaza Drive and Douglas Drive.

4.1 PROJECT TRIP GENERATION

Trip generation represents the amount of traffic which is both attracted to and produced by a development.

4.1.1 EXISTING USE

The proposed Project will replace an existing 150,626 square foot office building. At the time traffic counts were conducted on August 30, 2022, the office building was 41% occupied, however, in an effort to recognize that leased tenants may have been underutilizing the office space, the building has been assumed to be 25% occupied for the purposes of the trip generation comparison. In an effort to understand the existing traffic associated with the current uses, the trip generation rates used for this analysis are based upon information collected by the ITE as provided in their Trip Generation Manual (11th Edition, 2021) for the existing general office (ITE Land Use Code 710) use (see Table 4-1).

General Office (ITE Land Use Code 710) has been used to calculate the trip generation for the existing 37,657 square feet of occupied office use (or 25% of 150,626 square feet). The trip generation summary illustrating daily, and peak hour trip generation estimates for the existing uses are also shown on Table 4-1. As shown on Table 4-1, the existing use generates a total of 408 two-way trips per day with 57 AM peak hour trips and 54 PM peak hour trips.

TABLE 4-1: EXISTING TRIP GENERATION SUMMARY

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
General Office (based on average rates)	TSF	710	1.34	0.18	1.52	0.24	1.20	1.44	10.84

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

[2] TSF = thousand square feet

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
General Office[2]	37.657	TSF	50	7	57	9	45	54	408

[1] TSF = Thousand Square Feet

[2] 25% of the 150,626 square foot office building was occupied in August 2022 (or 37,657 square feet).

4.1.2 PROPOSED PROJECT

The proposed Project consists of a single 191,394 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) was used for the proposed Project. Table 4-2 summarizes the trip generation rates. For purposes of this TA, the following land use and vehicle mix has been utilized:

- ITE land use code 157 (High-Cube Cold Storage Warehouse) has been used to derive site specific trip generation estimates for up to 191,394 square feet. 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 South Coast Air Quality Management District (SCAQMD) recommended truck mix: 2-Axle = 34.7%; 3-Axle = 11.0%; 4+-Axle = 54.3%.

TABLE 4-2: TRIP GENERATION RATES

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicle Trip Generation Rates									
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 Rates									
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 % - With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks.

PCE factors were applied to the trip generation rates for heavy trucks (2-axles, 3-axles, and 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 LOS analyses. The PCE factors are consistent with those used on other near-by projects.

The trip generation summary illustrating daily, and peak hour trip generation estimates for the proposed Project are summarized on Table 4-3 in actual vehicles. The proposed Project is anticipated to generate 406 two-way trips per day with 21 AM peak hour trips and 24 PM peak hour trips (actual vehicles). Intersection operations analysis for a truck-intensive project would be required to utilize the PCE trip generation consistent with the City's Guidelines. As such, the Project's trip generation in PCE is also shown on Table 4-3. The Project is anticipated to generate 604 two-way PCE trips per day with 29 PCE AM peak hour trips and 32 PCE PM peak hour trips.

TABLE 4-3: PROJECT TRIP GENERATION SUMMARY

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicles:									
High-Cube Cold Storage Warehouse	191.394	TSF							
Passenger Cars:			15	1	16	4	14	18	262
2-axle Trucks:			1	1	2	1	1	2	50
3-axle Trucks:			0	0	0	0	0	0	16
4+-axle Trucks:			1	2	3	2	2	4	78
Total Truck Trips (Actual Vehicles):			2	3	5	3	3	6	144
Total Trips (Actual Vehicles)[2]			**17**	**4**	**21**	**7**	**17**	**24**	**406**
Passenger Car Equivalent (PCE):									
High-Cube Cold Storage Warehouse	191.394	TSF							
Passenger Cars:			15	1	16	4	14	18	262
2-axle Trucks:			1	2	3	1	2	3	76
3-axle Trucks:			0	1	1	1	0	1	32
4+-axle Trucks:			3	6	9	5	5	10	234
Total Truck Trips (PCE):			4	9	13	7	7	14	342
Total Trips (PCE)[2]			**19**	**10**	**29**	**11**	**21**	**32**	**604**

Note: Due to rounding, some of the numbers reflected in the table to not reflect actual calculated amounts.

[1] TSF = Thousand Square Feet

[2] Total = Passenger Cars + Trucks

4.1.3 TRIP GENERATION COMPARISON

Table 4-4 shows the trip generation comparison between the existing and proposed use. It is our understanding that the existing warehouse/office building is currently vacant and generates only incidental vehicle trips, however, should the existing site be fully occupied, then it is anticipated there would be a net reduction in trips. The resulting net new trips are identified at the bottom of Table 4-4. The trip generation comparison is based on PCE as the existing and proposed uses are truck-intensive uses (any intersection operations analysis would use the PCE-based trip generation). As shown on Table 4-4, the Project is anticipated to generate a net increase of 196 two-way trips per day with a net reduction of 28 AM peak hour trips and net reduction of 22 PM peak hour trips (in PCE). For the purposes of the TA, the trip generation shown on Table 4-3 will be utilized for the intersection operations analyses (no credit for existing use).

TABLE 4-4: TRIP GENERATION COMPARISON

Land Use	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Proposed Project							
Passenger Cars:	15	1	16	4	14	18	262
Total Truck Trips (PCE):	4	9	13	7	7	14	342
Total Trips (PCE)	**19**	**10**	**29**	**11**	**21**	**32**	**604**
Existing Use: General Office							
Passenger Cars:	50	7	57	9	45	54	408
Total Truck Trips (PCE):	0	0	0	0	0	0	0
Total Trips (PCE)	**50**	**7**	**57**	**9**	**45**	**54**	**408**
Variance							
Passenger Cars:	-35	-6	-41	-5	-31	-36	-146
Total Truck Trips (PCE):	4	9	13	7	7	14	342
Total Trips (PCE)	**-31**	**3**	**-28**	**2**	**-24**	**-22**	**196**

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. The trip distribution pattern of passenger cars is heavily influenced by the geographical location of the site, the location of surrounding land uses, and the proximity to the regional freeway system.

The trip distribution pattern for truck traffic is also influenced by the local truck routes. Both Valley View Street and Katella Avenue are truck routes within the City of Cypress. Given the differences between the vehicle types, separate trip distributions were generated for both passenger cars and truck trips. Exhibits 4-1 and 4-2 show the Project truck and passenger car trip distribution patterns, respectively. Distributions of passenger cars and trucks have been determined based on traffic count data.

EXHIBIT 4-1: PROJECT (TRUCK) TRIP DISTRIBUTION

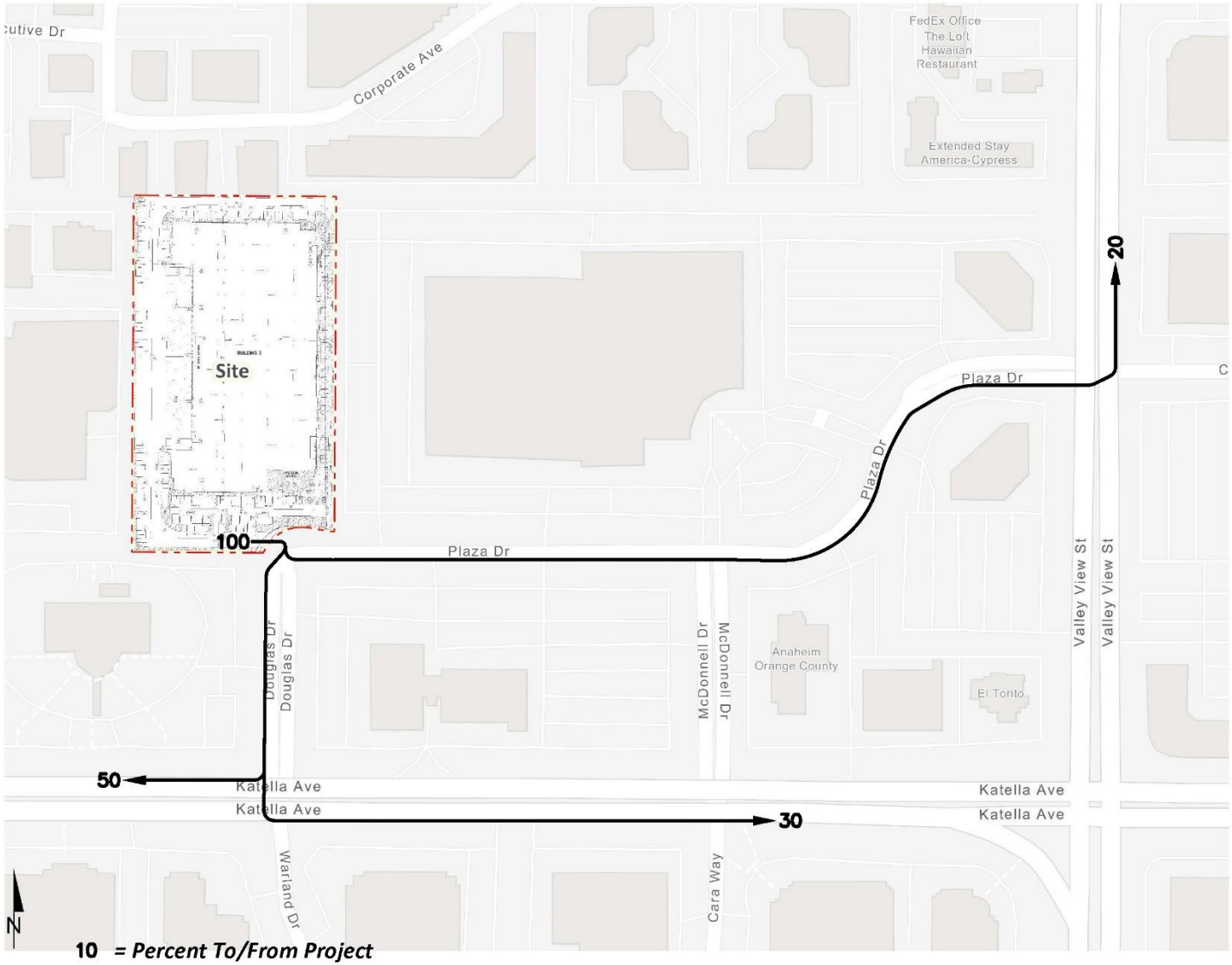
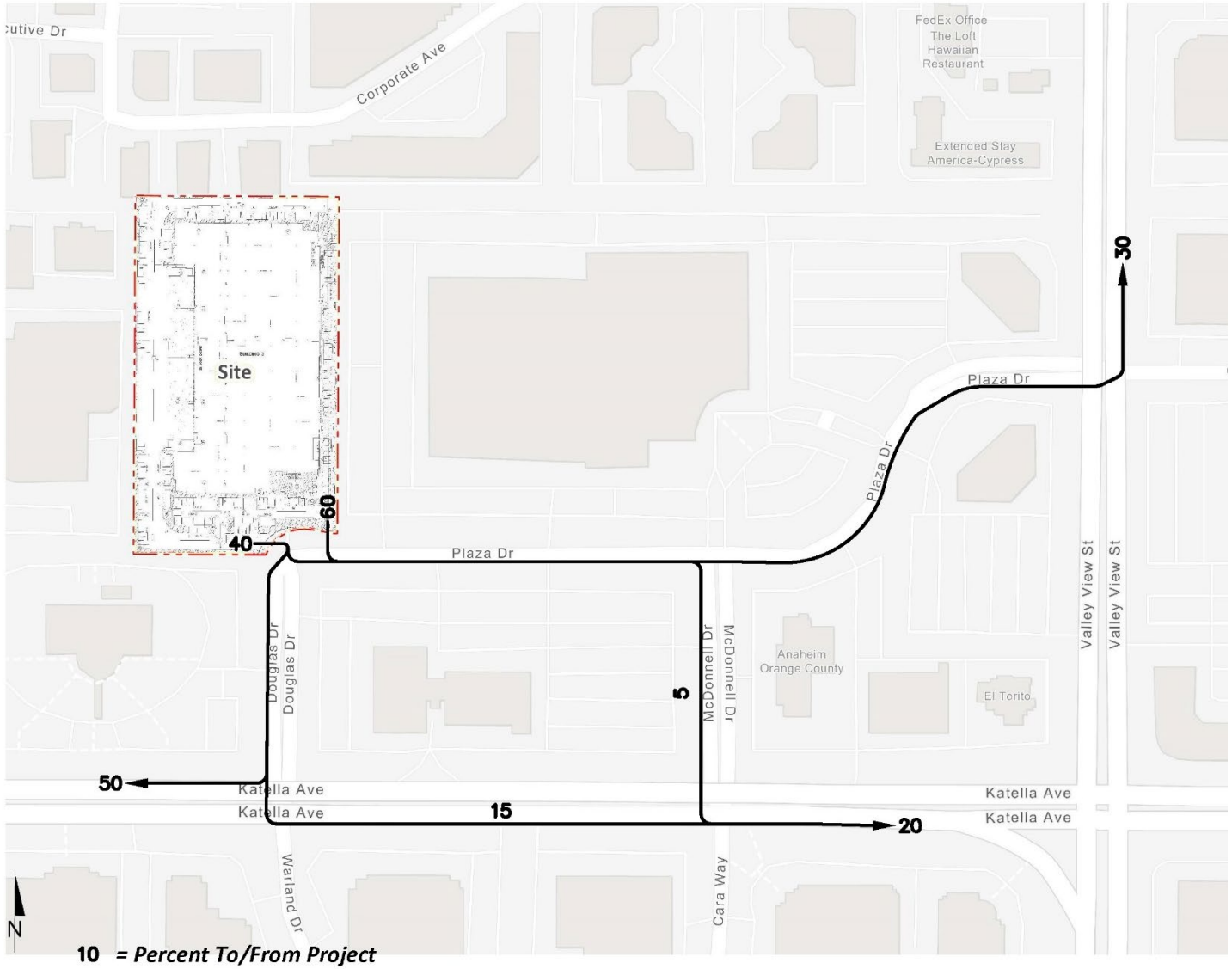


EXHIBIT 4-2: PROJECT (PASSENGER CAR) TRIP DISTRIBUTION



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 Project 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. Based on the identified Project traffic generation and trip distribution patterns, the Project only ADT and peak hour intersection turning movement volumes are shown on Exhibit 4-3.

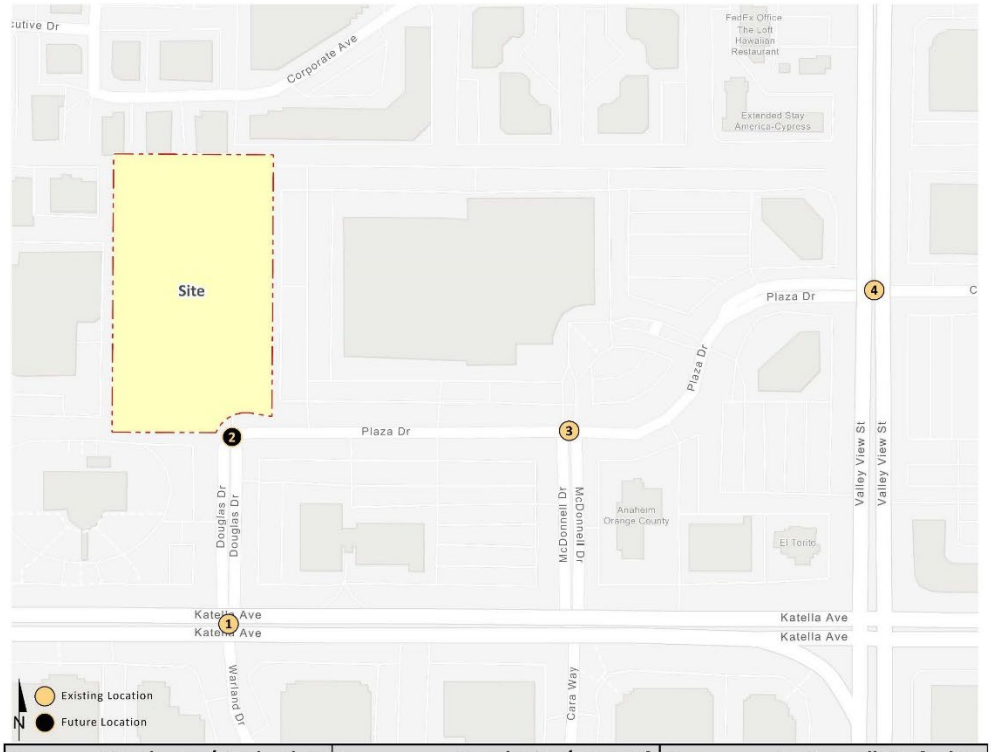
4.5 BACKGROUND TRAFFIC

Future year traffic forecasts have been based upon background (ambient) growth at 2% per year, compounded annually, for 2025 conditions. The total ambient growth is 4.04% for 2025 traffic conditions (compounded growth of 2 percent per year over 2 years or $1.02^{2\ years}$). The ambient growth factor is intended to approximate regional traffic growth. This ambient growth rate is added to existing traffic volumes to account for area-wide growth not reflected by cumulative development projects. Ambient growth has been added to daily and peak hour traffic volumes on surrounding roadways, in addition to 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.

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. The cumulative project list includes known and foreseeable projects that are anticipated to contribute traffic to the study area intersections. For the purposes of this analysis, the cumulative projects that were determined to affect one or more of the study area intersections are shown on Exhibit 4-4, listed in Table 4-5, and have been considered for inclusion. Any additional traffic generated by other projects not on the cumulative projects list is likely accounted for through background ambient growth factors that have been applied to the peak hour volumes at study area intersections as discussed in Section 4.5 *Background Traffic*. Cumulative development projects are shown in Exhibit 4-4 and listed in Table 4-5. Cumulative Only ADT and peak hour intersection turning movement volumes are shown on Exhibit 4-5. Table 4-6 summarizes the tri generation for each of the cumulative development projects.

EXHIBIT 4-3: PROJECT ONLY TRAFFIC VOLUMES (PCE)



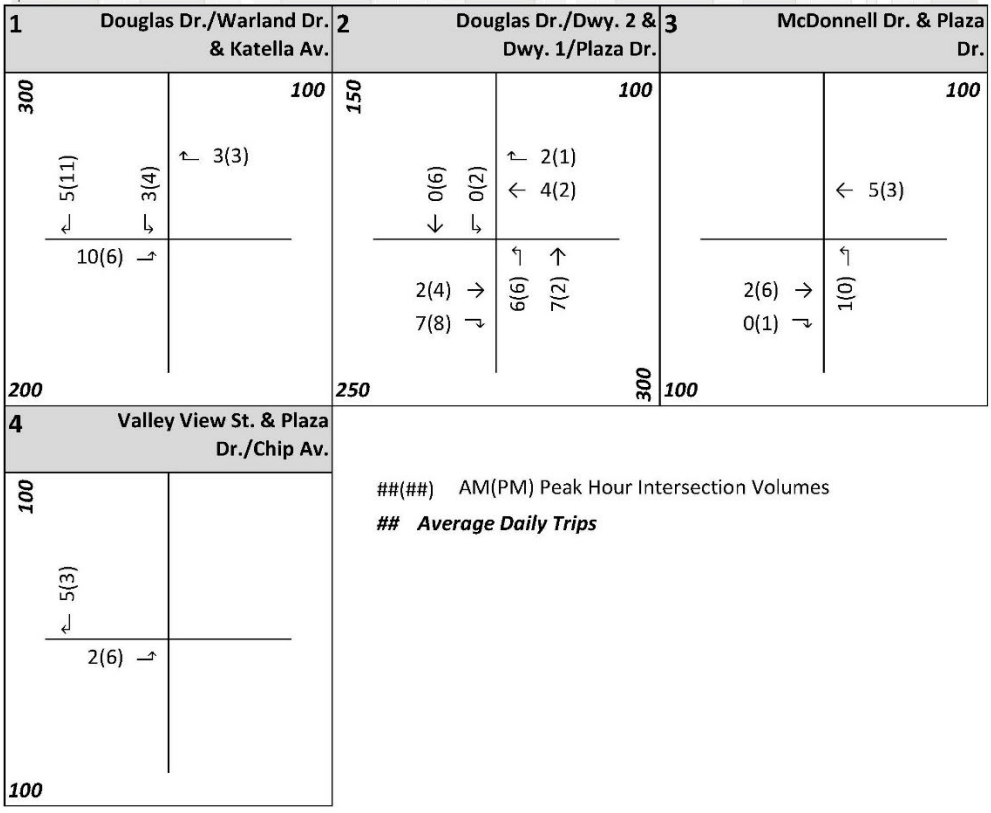


EXHIBIT 4-4: CUMULATIVE DEVELOPMENT LOCATION MAP

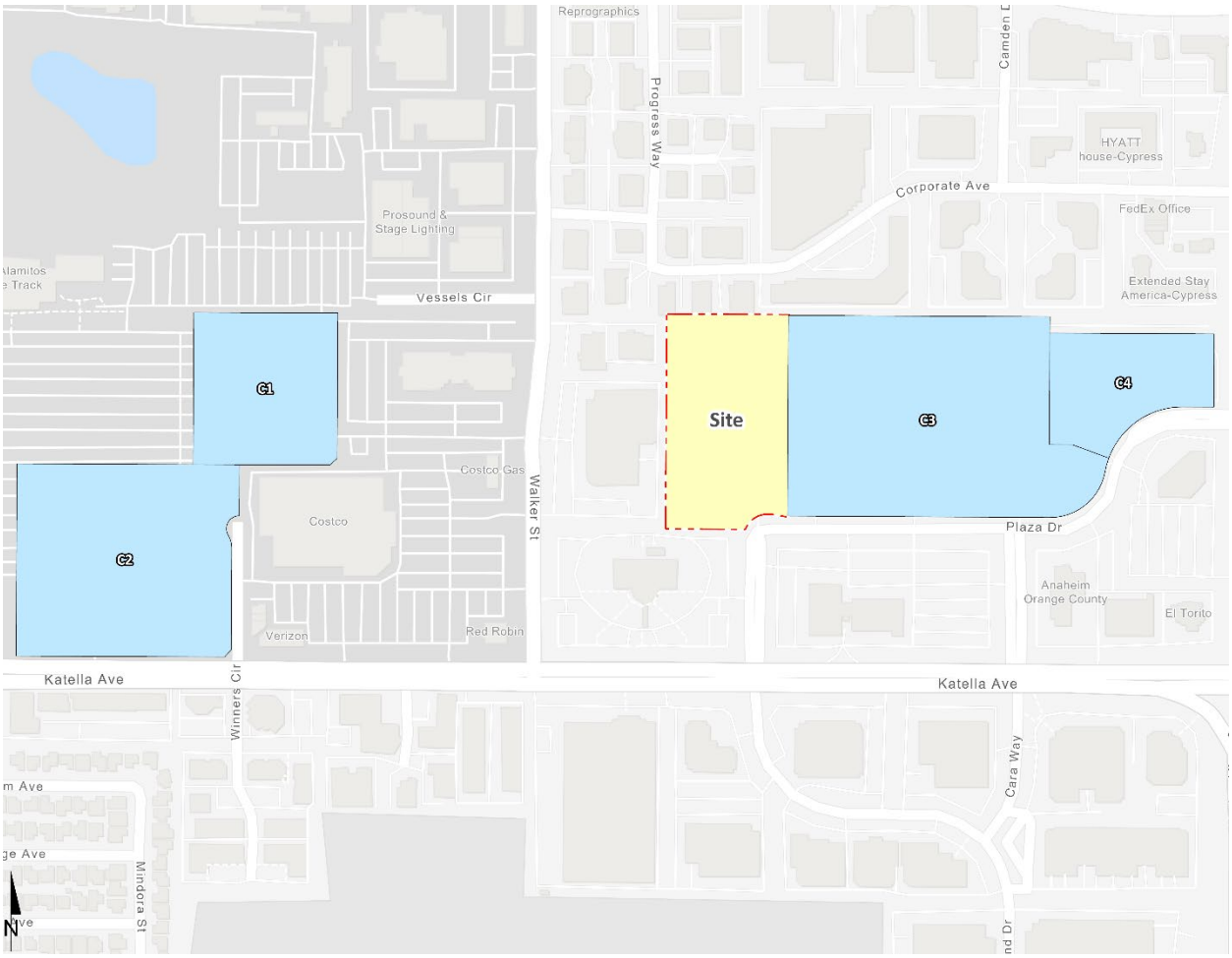
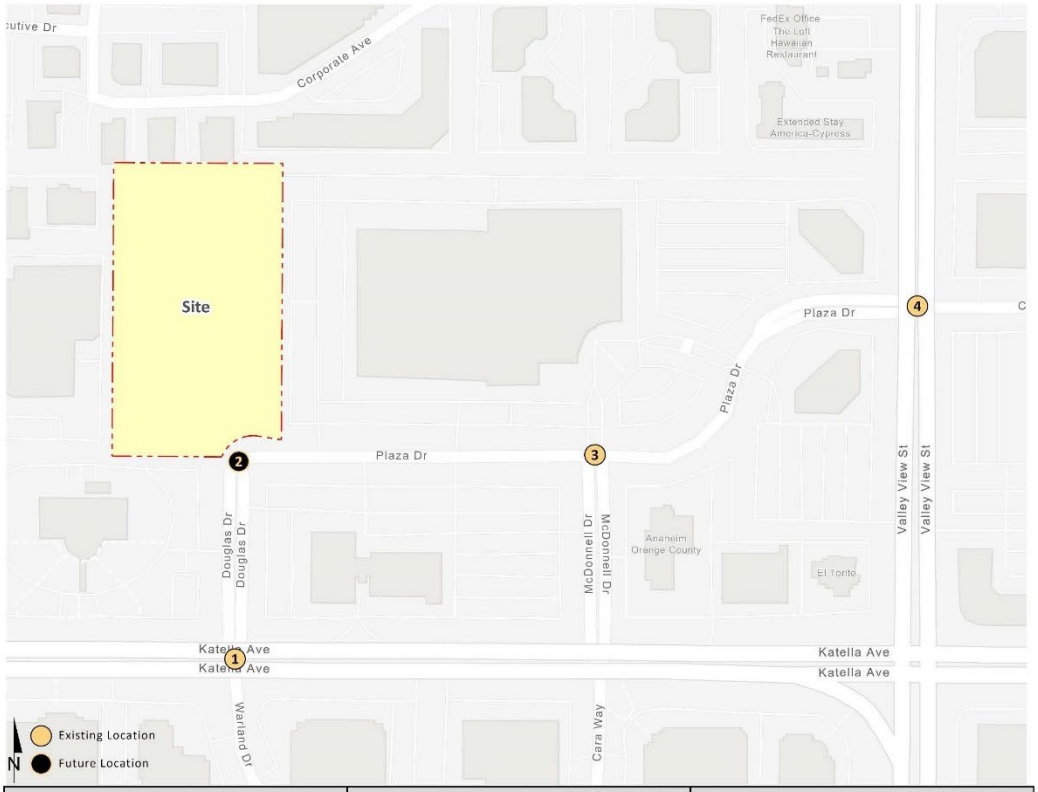


EXHIBIT 4-5: CUMULATIVE ONLY TRAFFIC VOLUMES (PCE)



1 Douglas Dr./Warland Dr. & Katella Av.

250 | 2,150
7(21) ↲ | ← 32(83)
21(7) ⇁
58(62) →
2,450

2 Douglas Dr./Dwy. 2 & Dwy. 1/Plaza Dr.

100 | 250
0(4) ↓ | 0(3) ↳ | ↼ 3(1) | ↰ 7(17)
4(1) ↑ | 17(5) ↱
200 | 100

3 McDonnell Dr. & Plaza Dr.

150 | 450
0(1) ↓ | 1(7) ↳ | ↽ 6(2) | ← 14(19) | ↰ 6(32)
23(14) → | 1(0) ↑ | 35(7) ↱
350

4 Valley View St. & Plaza Dr./Chip Av.

1,050 | 550
54(13) ↲ | 7(18) ↓
12(51) ⇁
12(39) ↲
40(12) ↰ | 10(15) ↑
850 | 350

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

TABLE 4-5: CUMULATIVE DEVELOPMENT LAND USE SUMMARY

No.	Project Name	Land Use[1]	Quantity Units[2]
C1	Cypress Town Center 7-AC Residential	Multifamily (Low Rise) Housing	135 DU
C2	The Square	Shopping Center	20.800 TSF
		Multifamily (Mid-Rise) Housing	251 DU
		Hotel	120 Rooms
		Medical Office Building	31.585 TSF
C3	Goodman Commerce Center	High-Cube Warehousing	390.264 TSF
C4	5995 Plaza Drive	General Office	104.734 TSF

[1] TSF = Thousand Square Feet; DU = Dwelling Units

TABLE 4-6: CUMULATIVE DEVELOPMENT TRIP GENERATION SUMMARY

	AM Peak Hour			PM Peak Hour			
Land Use	In	Out	Total	In	Out	Total	Daily
C1: Cypress Town Center	14	48	62	48	28	76	988
C2: The Square	68	96	164	176	147	323	4,978
C3: Goodman Commerce Center	35	18	53	17	37	54	956
C4: 5995 Plaza Drive	140	19	159	26	125	151	1,135
Total	**257**	**181**	**438**	**267**	**337**	**604**	**8,057**

4.7 NEAR-TERM TRAFFIC CONDITIONS

The "buildup" approach combines existing traffic counts with a background ambient growth factor to forecast Future Year (2025) traffic conditions. An ambient growth factor accounts for background (area-wide) traffic increases that occur over time up to the year 2025 from the year 2023. Traffic volumes generated by the Project are then added to assess the near-term traffic conditions. The 2025 roadway network is similar to the Existing conditions roadway network, with the exception of future driveways proposed to be developed by the Project. The near-term traffic analysis includes the following traffic conditions, with the various traffic components:

- Future Year (2025) Without Project
  - Existing 2022 counts + Adjustment (30% for existing offices, and 2% overall to reflect 2023)
  - Ambient growth traffic (4.04%)
  - Cumulative Development traffic
- Future Year (2025) With Project
  - Existing 2022 counts + Adjustment (30% for existing offices, and 2% overall to reflect 2023)
  - Ambient growth traffic (4.04%)
  - Cumulative Development traffic
  - Project traffic

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5 E+P TRAFFIC CONDITIONS

This section discusses the traffic forecasts for E+P conditions and the resulting intersection operations and traffic signal warrant 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 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 on 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.

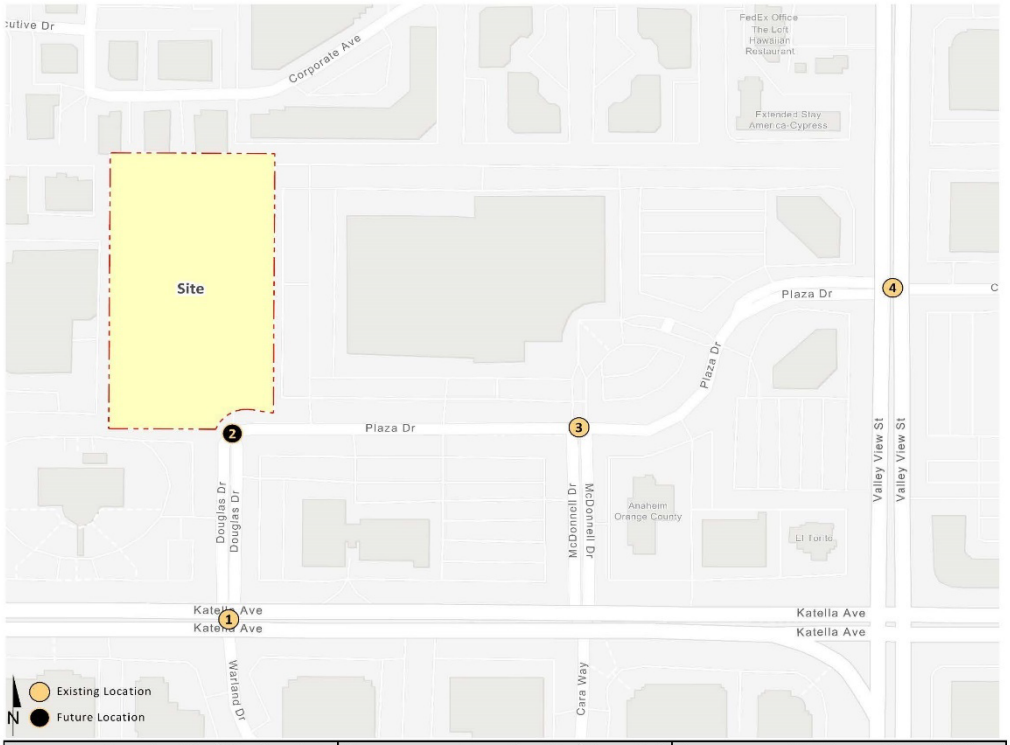
5.4 TRAFFIC SIGNAL WARRANTS ANALYSIS

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

5.5 NEAR-TERM DEFICIENCIES AND IMPROVEMENTS

All study area intersections are anticipated to continue to operate at an acceptable LOS during the AM and PM peak hours under E+P traffic conditions and below the City's thresholds for change in delay and V/C (see Table 5-1). As such, no improvements, aside from those that are needed to facilitate site access, have been identified for E+P traffic conditions.

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



1 Douglas Dr./Warland Dr. & Katella Av.

								40,050
1,300							↱	37(9)
	20(58)	1(2)	5(30)				←	1782(1608)
	↲	↓	↳				↰	12(9)
	37(17)	→		↰	↑	↱		
	1702(1963)	→		26(83)	2(1)	5(7)		
	72(32)	↴						
43,200								1,450

2 Douglas Dr./Dwy. 2 & Dwy. 1/Plaza Dr.

								1,500
150							↰	2(1)
	0(6)	0(2)					←	4(2)
	↓	↳					↰	53(100)
	2(4)	→		↰	↑	↱		
	7(8)	↴		6(6)	7(2)	21(24)		
250								1,650

3 McDonnell Dr. & Plaza Dr.

								900
Nominal							↰	4(0)
	0(3)						←	109(83)
	↓						↰	8(11)
	25(92)	→		↰	↑	↱		
	0(3)	↴		20(5)	2(0)	77(9)		
2,050								350

4 Valley View St. & Plaza Dr./Chip Av.

								6,750
42,200							↱	39(355)
	159(26)	1551(1503)	254(52)				←	0(30)
	↲	↓	↳				↰	12(162)
	11(174)	→		↰	↑	↱		
	9(0)	→		22(4)	1516(1967)	181(12)		
	15(61)	↴						
3,300								41,150

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

Average Daily Trips

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

#	Intersection	Traffic Control[3]	Existing								Existing plus Project								Net Change in Delay/ICU			
			Delay[1] (secs.)		Level of Service		ICU[2] (V/C)		Level of Service		Delay[1] (secs.)		Level of Service		ICU[2] (V/C)		Level of Service		Delay[1] (secs.)		ICU[2] (V/C)	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	Douglas Dr./Warland Dr. & Katella Av.	TS	5.4	8.2	A	A	0.439	0.517	A	A	6.0	8.7	A	A	0.448	0.523	A	A	0.6	0.5	0.009	0.006
2	Douglas Dr./Dwy. 2 & Dwy. 1/Plaza Dr.	AWS	7.2	7.7	A	A	--	--	--	--	7.2	7.7	A	A	--	--			0.0	0.0	--	--
3	Existing Driveway/McDonnell Dr. & Plaza Dr.	CSS	9.2	10.8	A	B	--	--	--	--	9.2	10.9	A	B	--	--			0.0	0.1	--	--
4	Valley View St. & Plaza Dr./Chip Av.	TS	15.4	35.7	B	D	0.560	0.794	A	C	15.5	36.1	B	D	0.562	0.797	A	C	0.1	0.4	0.002	0.003

[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] ICU reported as a volume-to-capacity ratio and for signalized intersections only. ICU not applicable to unsignalized inspections.

[3] TS = Traffic Signal; AWS = All-Way Stop; CSS = Cross-Street Stop

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6 FUTURE YEAR (2025) TRAFFIC CONDITIONS

This section discusses the traffic forecasts for Future Year (2025) conditions and the resulting intersection operations and traffic signal warrant analyses.

6.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Future Year (2025) 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 Future Year (2025) conditions only (e.g., intersection and roadway improvements at the Project's frontage and driveways).
- Driveways and those facilities assumed to be constructed by cumulative developments to provide site access are also assumed to be in place for Future Year (2025) conditions only (e.g., intersection and roadway improvements along the cumulative development's frontages).

6.2 WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing (2023) traffic volumes plus an ambient growth factor of 4.04% and traffic from pending and approved cumulative development projects. The weekday ADT volumes and peak hour volumes which can be expected for Future Year (2025) Without Project traffic conditions are shown on Exhibit 6-1.

6.3 WITH PROJECT TRAFFIC VOLUME FORECASTS

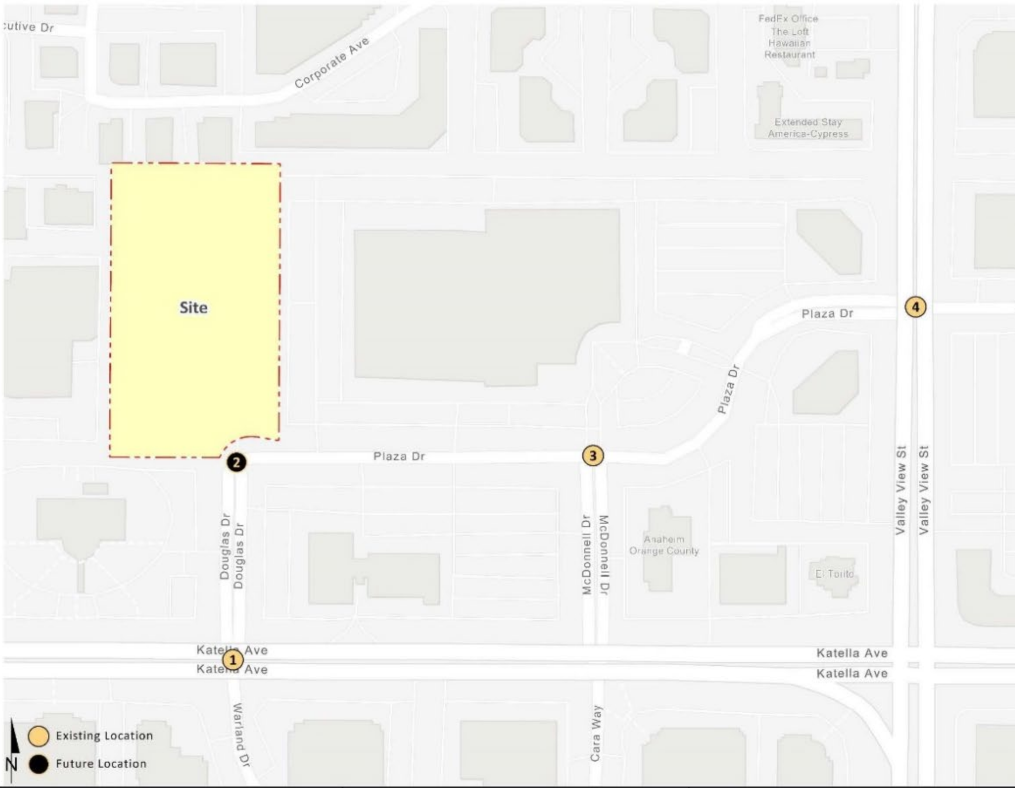
This scenario includes Existing (2023) traffic volumes plus an ambient growth factor of 4.04%, traffic from pending and approved cumulative development projects, and the addition of Project traffic. The weekday ADT volumes and peak hour volumes which can be expected for Future Year (2025) With Project traffic conditions are shown on Exhibit 6-2. Traffic volumes on the north leg of Driveway 1/Douglas Drive and Driveway 2/Plaza Drive include the traffic associated with the adjacent cumulative project.

6.4 INTERSECTION OPERATIONS ANALYSIS

Future Year (2025) 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 on Table 6-1 for Future Year traffic conditions, which indicate the study area intersections are anticipated to continue to operate at an acceptable LOS under Future Year (2025) Without and With Project traffic conditions. The intersection operations analysis worksheets for Future Year (2025) Without and With Project traffic conditions are included in Appendix 6.1 and Appendix 6.2 of this TA, respectively.

Install a new southbound signal head on the northwest corner of Douglas Drive/Warland Drive at Katella Avenue for southbound approach vehicles in order to display the signal indication should a truck in the southbound lanes obstruct the existing signal heads on the mast arm. The new signal head will be installed on the existing pole on the northwest corner.

EXHIBIT 6-1: FUTURE YEAR (2025) WITHOUT PROJECT TRAFFIC VOLUMES (PCE)


Corporate Ave
FedEx Office
The Loft Hawaiian Restaurant
Extended Stay America-Cypress
Site
Plaza Dr
Plaza Dr
Plaza Dr
Douglas Dr
McDonnell Dr
Valley View St
Anaheim Orange County
El Torito
Katella Ave
Warland Dr
Cara Way
Existing Location
Future Location
N

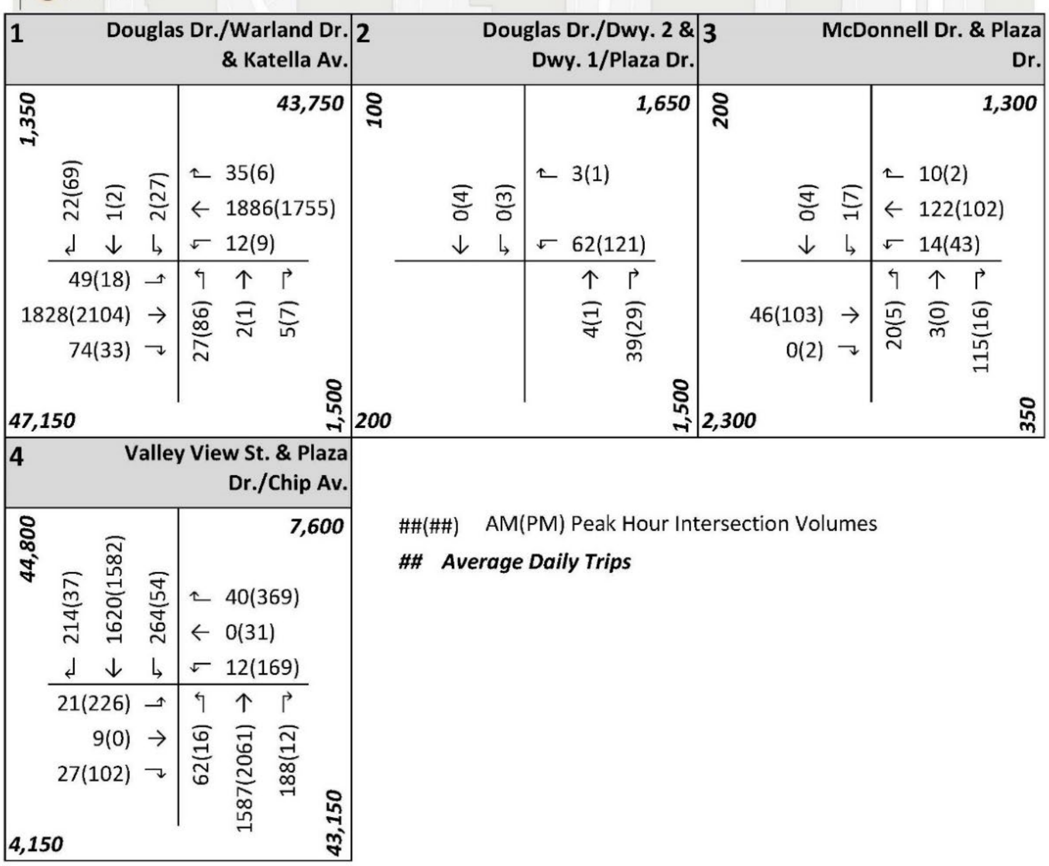

1 Douglas Dr./Warland Dr. & Katella Av.
1,350
43,750
22(69)
1(2)
2(27)
35(6)
1886(1755)
12(9)
49(18)
1828(2104)
74(33)
27(86)
2(1)
5(7)
47,150
1,500
2 Douglas Dr./Dwy. 2 & Dwy. 1/Plaza Dr.
100
1,650
0(4)
0(3)
3(1)
62(121)
4(1)
39(29)
200
1,500
3 McDonnell Dr. & Plaza Dr.
200
1,300
0(4)
1(7)
10(2)
122(102)
14(43)
46(103)
0(2)
20(5)
3(0)
115(16)
2,300
350
4 Valley View St. & Plaza Dr./Chip Av.
44,800
7,600
214(37)
1620(1582)
264(54)
40(369)
0(31)
12(169)
21(226)
9(0)
27(102)
62(16)
1587(2061)
188(12)
4,150
43,150
##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

EXHIBIT 6-2: FUTURE YEAR (2025) WITH PROJECT TRAFFIC VOLUMES (PCE)

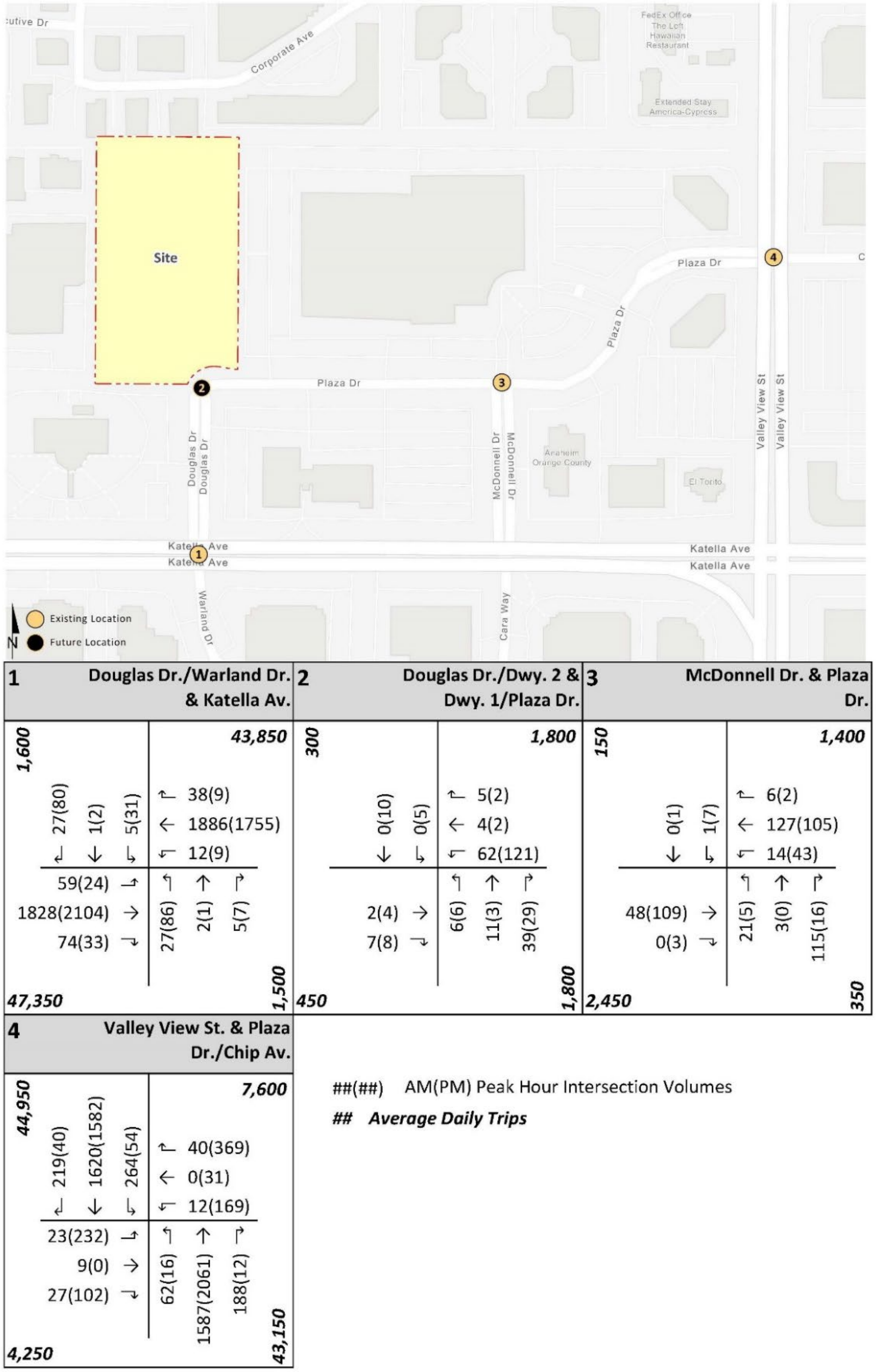

Site
Corporate Ave
Plaza Dr
Plaza Dr
Plaza Dr
Douglas Dr
McDonnell Dr
Valley View St
Katella Ave
Warland Dr
Cara Way
Existing Location
Future Location
N
1 Douglas Dr./Warland Dr. & Katella Av.
1,600
43,850
27(80) 1(2) 5(31)
38(9)
1886(1755)
12(9)
59(24)
1828(2104)
74(33)
27(86) 2(1) 5(7)
47,350
1,500
2 Douglas Dr./Dwy. 2 & Dwy. 1/Plaza Dr.
300
1,800
0(10) 0(5)
5(2)
4(2)
62(121)
2(4)
7(8)
6(6) 11(3) 39(29)
450
1,800
3 McDonnell Dr. & Plaza Dr.
150
1,400
0(1) 1(7)
6(2)
127(105)
14(43)
48(109)
0(3)
21(5) 3(0) 115(16)
2,450
350
4 Valley View St. & Plaza Dr./Chip Av.
44,950
7,600
219(40) 1620(1582) 264(54)
40(369)
0(31)
12(169)
23(232)
9(0)
27(102)
62(16) 1587(2061) 188(12)
4,250
43,150
##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

TABLE 6-1: INTERSECTION ANALYSIS FOR FUTURE YEAR (2025) CONDITIONS

#	Intersection	Traffic Control[3]	2025 Without Project								2025 With Project								Net Change in Delay/ICU			
			Delay[1] (secs.)		Level of Service		ICU[2] (V/C)		Level of Service		Delay[1] (secs.)		Level of Service		ICU[2] (V/C)		Level of Service		Delay[1] (secs.)		ICU[2] (V/C)	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	Douglas Dr./Warland Dr. & Katella Av.	TS	6.8	9.4	A	A	0.477	0.559	A	A	7.7	9.8	A	A	0.486	0.565	A	A	0.9	0.4	0.009	0.006
2	Douglas Dr./Dwy. 2 & Dwy. 1/Plaza Dr.	AWS	7.2	7.8	A	A	--	--	--	--	7.3	7.9	A	A	--	--	--	--	0.1	0.1	--	--
3	Existing Driveway/McDonnell Dr. & Plaza Dr.	CSS	10.9	12.0	B	B	--	--	--	--	10.9	11.9	B	B	--	--	--	--	0.0	-0.1	--	--
4	Valley View St. & Plaza Dr./Chip Av.	TS	18.6	45.7	B	D	0.582	0.856	A	D	18.7	46.8	B	D	0.582	0.860	A	D	0.1	1.1	0.000	0.004

[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] ICU reported as a volume-to-capacity ratio and for signalized intersections only. ICU not applicable to unsignalized inspections.

[3] TS = Traffic Signal; AWS = All-Way Stop; CSS = Cross-Street Stop

6.5 TRAFFIC SIGNAL WARRANTS ANALYSIS

The traffic signal warrant analysis for Future Year (2025) traffic conditions are based on the peak hour volume-based traffic signal warrants. There are no study area intersections anticipated to meet traffic signal warrants for both Future Year (2025) Without and With Project traffic conditions (see Appendix 6.3 and Appendix 6.4, respectively).

6.6 PROJECT DEFICIENCIES AND RECOMMENDED IMPROVEMENTS

This section provides a summary of Project deficiencies and recommended improvements. There are no study area intersections anticipated to operate at an unacceptable LOS under Future Year (2025) traffic conditions and below the City's thresholds for change in delay and V/C (see Table 6-1). However, a new southbound signal head on the northwest corner of Douglas Drive/Warland Drive at Katella Avenue for southbound approach vehicles is recommended. The new signal head will be installed on the existing pole on the northwest corner. The purpose of the new signal head is to display the signal indication should a truck in the southbound lanes obstruct the existing signal heads on the mast arm.

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7 LOCAL AND REGIONAL FUNDING MECHANISMS

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

7.1 DEVELOPMENT IMPACT FEE PROGRAM

Per the City of Cypress Master Fee Schedule Resolution No. 6118 (adopted March 8, 2010), the Project is subject to pay a City-wide Traffic Improvement Fee of $0.65 per square foot and a Regional Traffic Improvement Fee of $0.06 per square foot (for light industrial development). These Development Impact Fees (DIF) are collected from new residential, commercial, and industrial development for the purpose of funding roadway and intersection improvements necessary to accommodate City growth as identified in the City's General Plan Circulation Element. The Project's transportation impacts fee calculations are shown on Table 7-1.

TABLE 7-1: ESTIMATED FEE OBLIGATION

Fee	Land Use Category	Unit Cost	Project Units	Fee
City-Wide Traffic Improvement Fee	Light Industrial	$0.65	191,394 SF	$124,406.10
Regional Traffic Improvement Fee	Light Industrial	$0.06	191,394 SF	$11,483.64
Total				**$135,889.74**

Note: Rates adopted March 8, 2010.

The Project Applicant will be subject to the City's DIF fee program and will pay the requisite City DIF fees at the rates then in effect pursuant to the City's ordinance. The Project Applicant's payment of the requisite DIF at the rates then in effect, pursuant to the City DIF Program, would satisfy the Project's proportional contribution at potentially affected DIF-funded facilities.

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8 REFERENCES

1. **City of Cypress.** *Transportation Operational Assessment (Level-Of-Service Traffic Study) Guidelines.* City of Cypress : s.n., April 2023.
2. **Institute of Transportation Engineers.** *Trip Generation Manual.* 11th Edition. 2021.
3. **Orange County Transportation Authority.** *2021 Orange county Congestion Management Program Report.* County of Orange : s.n., November 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).

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APPENDIX 1.1: APPROVED TRAFFIC STUDY SCOPING AGREEMENT

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City of CYPRESS

Attachment A

TRANSPORTATION ASSESSMENT SCOPING FORM

This Transportation Assessment Scoping Form acknowledges that the transportation assessment for the following project will be prepared in accordance with the latest version of City's Transportation Operational Assessment Guidelines. **The completed form must be submitted via the City's online portal at:** https://cypressca.viewpointcloud.com/categories/1092/record-types/6520

Project Name: Goodman Commerce Center

Project Address: 5665 Plaza Drive

Project Description: 191,394 square feet of warehouse use

Project Trip Generation Rate(s): ITE 11th Edition / Other ITE 11th Edition, Code 157

The project trip generation table with a summary of the proposed and existing land uses, ITE trip rates and forecast morning and afternoon peak hour trips are attached.

	IN	OUT	TOTAL
Net AM Trips	-31	+3	-28
Net PM Trips	+2	-24	-22

TOTAL Net Daily Trips: +196

Net Change in PCE

Trip Generation Adjustments: Exact amount of credit subject to acceptance by the City of Cypress Traffic Engineer.

	Yes (% applied)	No	Existing/Prior Use Counts Collected?
Existing/Prior Active Land Use	25% occupied		Yes / No (No)
Internal Trip Capture		X	
Pass-By Trip		X	

Project Geographic Distribution: N 30 C 20 T % S 0 % E 20 C 30 T % W 50 C 50 T %

Attach graphic illustrating project trip distribution (inbound and outbound) percentages at the studied intersections.

Project Buildout Year: 2025 **Ambient Growth Rate**: 2.0 % Per Yr.

Related Projects: To be researched by the consultant. The related projects trip generation table and map are attached as part of the TAS.

Proposed Study Intersections: (May be subject to revision after initial impact analysis.)

1. Douglas Dr. & Katella Av.	4. Valley View St. & Plaza Dr.
2. Douglas Dr./Dwy. 2 & Dwy. 1/Plaza Dr.	5.
3 McDonnell Dr./Cara Way & Plaza Dr.	6.

Other Analysis/Assumptions or Exceptions:

See Special Issues of attached Scoping Memo

Consultant Name: Charlene So, Urban Crossroads, Inc.

Submitted by: Charlene So 08/17/2023

Consultant Signature / Date

Phone: 949-861-0177

E-Mail: cso@urbanxroads.com

MEMORANDUM

URBAN CROSSROADS

DATE: August 17, 2023
TO: Dave Roseman, City of Cypress
FROM: Charlene So, Urban Crossroads, Inc.
JOB NO: 15593-01 TA Scope

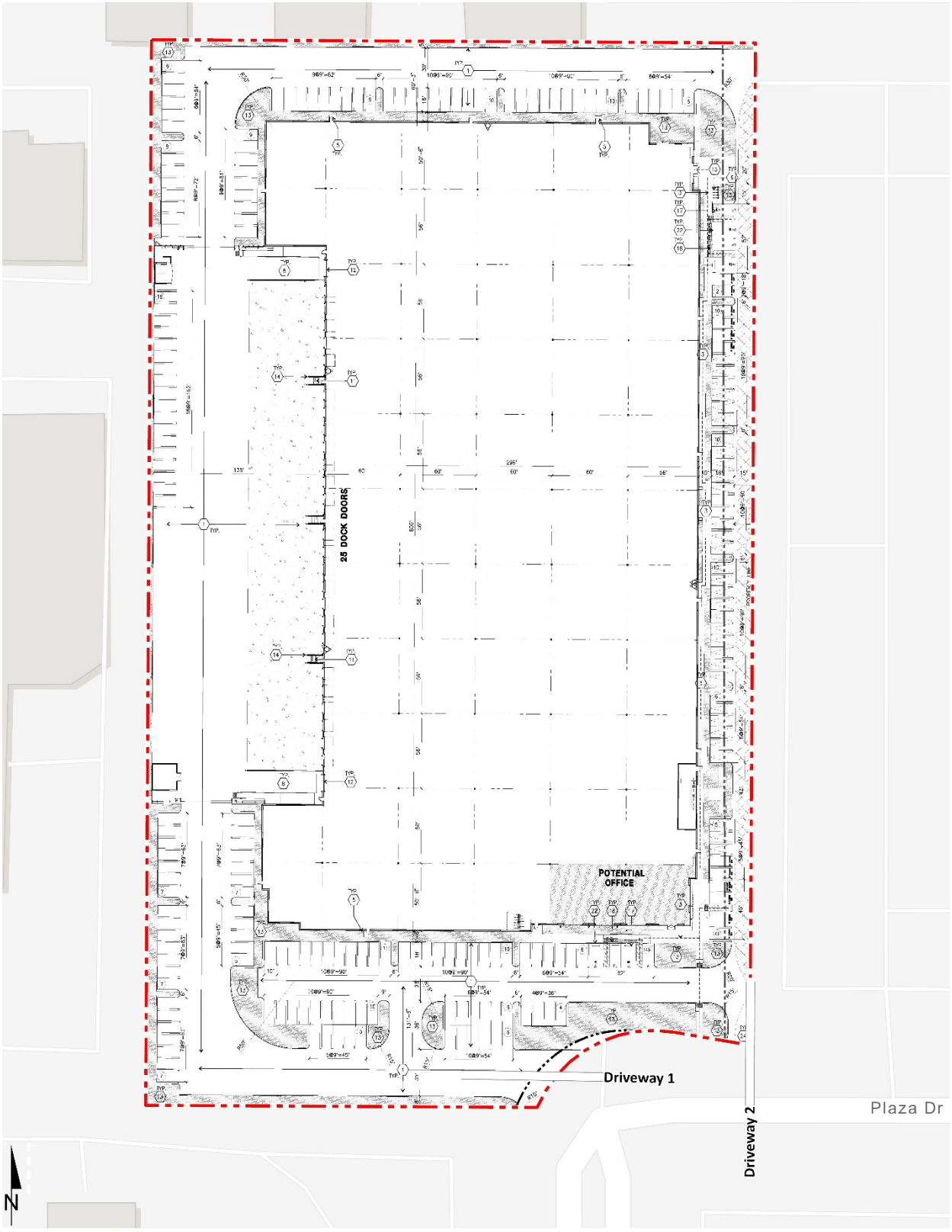
GOODMAN COMMERCE CENTER TRAFFIC ANALYSIS SCOPING AGREEMENT (REVISED)

Urban Crossroads, Inc. is pleased to submit this scoping letter to City of Cypress for the proposed Goodman Commerce Center development (**Project**), which is located at 5665 Plaza Drive in the City of Cypress. This letter describes the draft proposed Project trip generation, trip distribution, and analysis methodology, which have been used to establish the proposed Project study area and analysis locations. The purpose of this work effort is to determine whether additional traffic analysis is necessary for the proposed Project based on the City of Cypress's Transportation Operational Assessment (Level of Service Traffic Study) Guidelines (April 2023) (**City Guidelines**). Our goal is to obtain comments from City of Cypress staff, to ensure that the traffic study fully addresses the potential impacts of the proposed Project.

PROPOSED PROJECT

The Project consists of the development of a 191,394 square foot warehouse building. The Traffic Study will evaluate 95,697 square feet of high-cube transload/short-term storage warehouse use and 95,697 square feet of high-cube cold storage warehouse use. A preliminary site plan for the proposed Project is shown on Exhibit 1. The Project will provide access to Plaza Drive via a new driveway within the westerly end of Plaza Drive and a shared driveway with the proposed industrial building to the east. The westerly driveway (Driveway 1) will serve passenger cars and trucks while the easterly driveway will serve passenger cars only. The Project is anticipated to have an opening year of 2025. The proposed Project will replace an existing 150,626 square foot office building.

EXHIBIT 1: PRELIMINARY SITE PLAN



TRIP GENERATION

EXISTING TRAFFIC

The proposed Project will replace an existing 150,626 square foot office building. At the time traffic counts were conducted on August 30, 2022, the office building was 41% occupied, however, in an effort to recognize that leased tenants may have been underutilizing the space, the building has been assumed to be 25% occupied. In an effort to understand the existing traffic associated with the current uses, the trip generation rates used for this analysis are based upon information collected by the Institute of Transportation Engineers (**ITE**) as provided in their Trip Generation Manual (11th Edition, 2021) for the existing general office (ITE Land Use Code 710) use (see Table 1).

General Office (ITE Land Use Code 710) has been used to calculate the trip generation for the existing 37,657 square feet of occupied office use (25% of 150,626 square feet). The trip generation summary illustrating daily, and peak hour trip generation estimates for the existing uses are shown on Table 1. As shown on Table 1, the existing use generates a total of 408 two-way trips per day with 57 AM peak hour trips and 54 PM peak hour trips.

TABLE 1: EXISTING TRIP GENERATION SUMMARY

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
General Office (based on average rates)	TSF	710	1.34	0.18	1.52	0.24	1.20	1.44	10.84

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

[2] TSF = thousand square feet

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
General Office[2]	37.657	TSF	50	7	57	9	45	54	408

[1] TSF = Thousand Square Feet

[2] 25% of the 150,626 square foot office building was occupied in August 2022 (or 37,657 square feet).

PROPOSED PROJECT

The proposed Project consists of a single 191,394 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) was used for the proposed Project. Table 2 summarizes the trip generation rates. For purposes of this assessment, the following land use and vehicle mix has been utilized:

- ITE land use code 157 (High-Cube Cold Storage Warehouse) has been used to derive site specific trip generation estimates for up to 191,394 square feet. 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 South Coast Air Quality Management District (**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 In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicle Trip Generation Rates									
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 Rates[6]									
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 % - With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks.

Passenger car equivalent (**PCE**) factors were applied to the trip generation rates for heavy trucks (2-axles, 3-axles, and 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 LOS analyses. The PCE factors are consistent with those used on other near-by projects.

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 406 two-way trips per day with 21 AM peak hour trips and 24 PM peak hour trips (actual vehicles). Intersection operations analysis for a truck-intensive project would be required to utilize the PCE trip generation consistent with the City's Guidelines. As such, the Project's trip generation in PCE is also shown on Table 3. The Project is anticipated to generate 604 two-way PCE trips per day with 29 PCE AM peak hour trips and 32 PCE PM peak hour trips.

TABLE 3: PROJECT TRIP GENERATION SUMMARY

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicles:									
High-Cube Cold Storage Warehouse	191.394	TSF							
Passenger Cars:			15	1	16	4	14	18	262
2-axle Trucks:			1	1	2	1	1	2	50
3-axle Trucks:			0	0	0	0	0	0	16
4+-axle Trucks:			1	2	3	2	2	4	78
Total Truck Trips (Actual Vehicles):			2	3	5	3	3	6	144
Total Trips (Actual Vehicles)[2]			**17**	**4**	**21**	**7**	**17**	**24**	**406**
Passenger Car Equivalent (PCE):									
High-Cube Cold Storage Warehouse	191.394	TSF							
Passenger Cars:			15	1	16	4	14	18	262
2-axle Trucks:			1	2	3	1	2	3	76
3-axle Trucks:			0	1	1	1	0	1	32
4+-axle Trucks:			3	6	9	5	5	10	234
Total Truck Trips (PCE):			4	9	13	7	7	14	342
Total Trips (PCE)[2]			**19**	**10**	**29**	**11**	**21**	**32**	**604**

[1] TSF = Thousand Square Feet

[2] Total = Passenger Cars + Trucks

TRIP GENERATION COMPARISON

Table 4 shows the trip generation comparison between the existing and proposed use. It is our understanding that the existing warehouse/office building is currently vacant and generates only incidental vehicle trips, however, should the existing site be fully occupied, then it is anticipated there would be a net reduction in trips. The resulting net new trips are identified at the bottom of Table 4. The trip generation comparison is based on PCE as the existing and proposed uses are truck-intensive uses (any intersection operations analysis would use the PCE-based trip generation). As shown on Table 4, the Project is anticipated to generate a net increase of 196 two-way trips per day with a net reduction of 28 AM peak hour trips and net reduction of 22 PM peak hour trips (in PCE). Trip generation shown on Table 3 will be utilized for the intersection operations analyses.

TABLE 4: TRIP GENERATION COMPARISON

	AM Peak Hour			PM Peak Hour			
Land Use	In	Out	Total	In	Out	Total	Daily
Proposed Project							
Passenger Cars:	15	1	16	4	14	18	262
Total Truck Trips (PCE):	4	9	13	7	7	14	342
Total Trips (PCE)	**19**	**10**	**29**	**11**	**21**	**32**	**604**
Existing Use: General Office							
Passenger Cars:	50	7	57	9	45	54	408
Total Truck Trips (PCE):	0	0	0	0	0	0	0
Total Trips (PCE)	**50**	**7**	**57**	**9**	**45**	**54**	**408**
Variance							
Passenger Cars:	-35	-6	-41	-5	-31	-36	-146
Total Truck Trips (PCE):	4	9	13	7	7	14	342
Total Trips (PCE)	**-31**	**3**	**-28**	**2**	**-24**	**-22**	**196**

PROJECT TRIP DISTRIBUTION

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. The Project trip distribution and assignment process represents the directional orientation of traffic to and from the Project site. The trip distribution pattern of passenger cars is heavily influenced by the geographical location of the site, the location of surrounding land uses, and the proximity to the regional freeway system.

The trip distribution pattern for truck traffic is also influenced by the local truck routes. Both Valley View Street and Katella Avenue are truck routes within the City of Cypress. Given the differences between the vehicle types, separate trip distributions were generated for both passenger cars and truck trips. The Project passenger car and truck trip distribution patterns are graphically depicted on Exhibits 2 and 3, respectively. Distributions of passenger cars and trucks have been determined based on traffic count data.

EXHIBIT 2: PROJECT (PASSENGER CAR) TRIP DISTRIBUTION

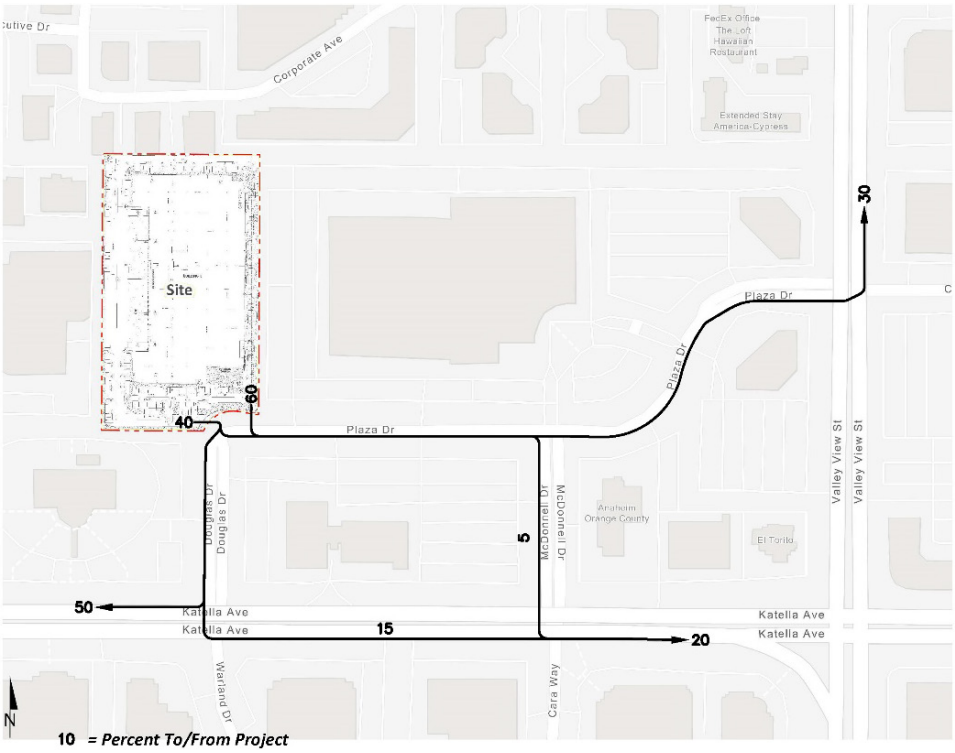
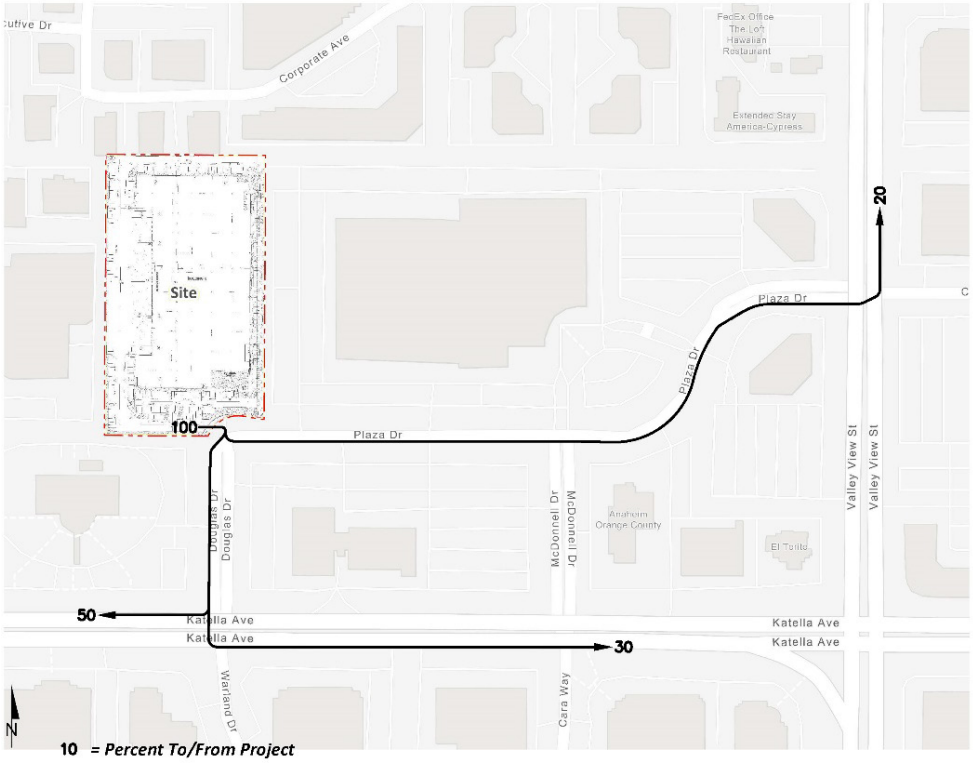


EXHIBIT 3: PROJECT (TRUCK) TRIP DISTRIBUTION



ANALYSIS SCENARIOS

Peak hour operations at each of the study area intersections and site access driveways will be assessed based on the HCM 6th Edition methodology and the ICU methodology results will be reported for signalized intersections under the following analysis scenarios:

- Existing (2023) Conditions
- Existing plus Project (E+P) Conditions
- Opening Year Cumulative (2025) Without Project Conditions: existing traffic, ambient growth, and traffic associated with the two large development projects currently under construction near the Costco
- Opening Year Cumulative (2025) With Project Conditions: existing traffic, ambient growth, traffic associated with the two large development projects currently under construction near the Costco, and proposed Project traffic

The following parameters will be utilized in determining the LOS at the study area intersections:

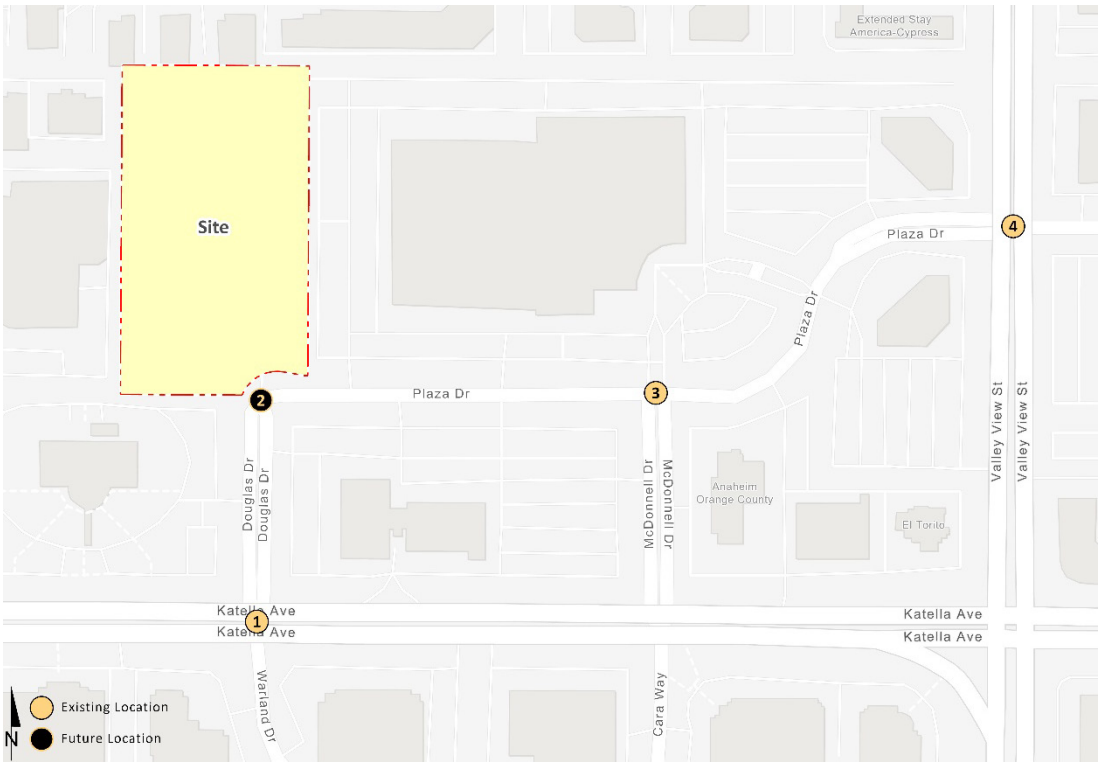
- Saturation flow rate of 1,700 vehicles per hour per lane or 2,880 vehicles per hour of green for dual-turning lanes.
- The adjustment for lost time shall be 0.05.

STUDY AREA

Based upon the Project trip generation and trip distribution patterns included as part of this letter, the proposed study area intersections are identified on Exhibit 4.

#	Intersection
1	Douglas Dr. & Katella Av.
2	Douglas Dr./Dwy. 2 & Dwy. 1/Plaza Dr.
3	McDonnell Dr./Cara Wy. & Plaza Dr.
4	Valley View St. & Plaza Dr.

EXHIBIT 4: STUDY AREA



EXISTING COUNT DATA

Traffic counts (classified by vehicle type) conducted on August 30, 2022, when local schools were in session and operating on a typical bell schedule are proposed to be utilized for the purposes of the traffic study. An adjustment factor of 2% will be applied to the 2022 traffic counts for 2023 baseline conditions. Time periods counted were from 7:00-9:00 AM and 4:00-6:00 PM and include pedestrian and bicycle counts at each analysis location. No adjustments are proposed to the new traffic counts for the baseline traffic condition as traffic counts with the exception of volume balancing that would be necessary between closely spaced intersections.

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, the ambient growth used will be 4.04% (2% per year compounded over 2 years).

CUMULATIVE DEVELOPMENT PROJECTS

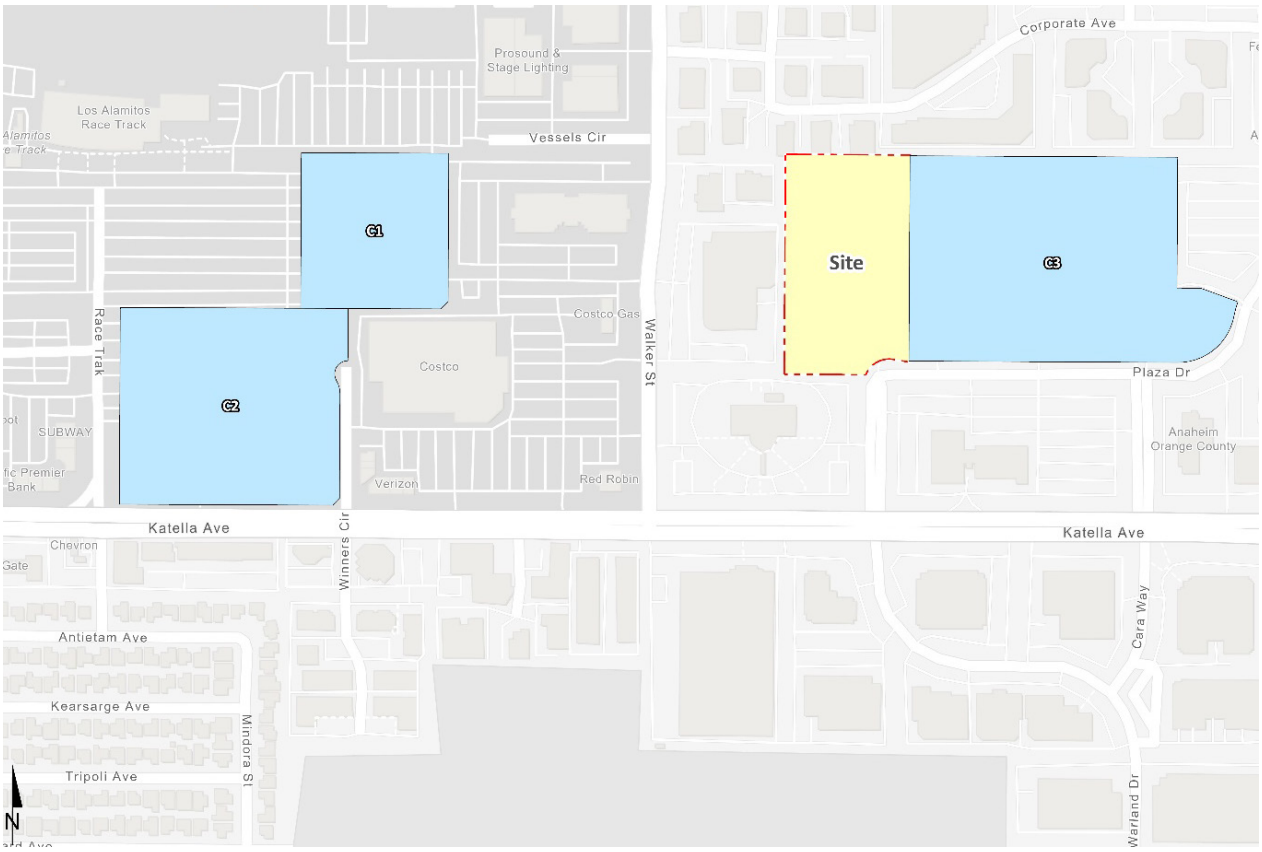
It is requested that the City provide a list of cumulative projects that need to be considered for the focused traffic analysis if there are projects that need to be included in conjunction with the ambient growth rate. A preliminary cumulative project list is provided on Table 5 and the locations are graphically shown on Exhibit 5.

TABLE 5: CUMULATIVE DEVELOPMENT LAND USE SUMMARY

No.	Project Name	Land Use[1]	Quantity	Units[2]
C1	Cypress Town Center 7-AC Residential	Multifamily (Low Rise) Housing	135	DU
C2	The Square	Shopping Center	20.800	TSF
		Multifamily (Mid-Rise) Housing	251	DU
		Hotel	120	Rooms
		Medical Office Building	31.585	TSF
C3	Goodman Commerce Center	High-Cube Warehousing	390.264	TSF

[1] TSF = Thousand Square Feet; DU = Dwelling Units

EXHIBIT 5: CUMULATIVE DEVELOPMENT PROJECT LOCATION MAP



LEVEL OF SERVICE (LOS) METHDOLOGY

The City of Cypress requires signalized intersections to be evaluated through Intersection Capacity Utilization (ICU) analysis which compares the peak hour traffic volumes to intersection capacity (v/c). The ICU methodology is not applicable to unsignalized intersections. Intersection LOS operations will also be reported based on the Highway Capacity Manual (HCM) methodology which are based on an intersection's average control delay (in seconds) for both signalized and unsignalized intersections.

LEVEL OF SERVICE (LOS) CRITERIA

The definition of an intersection deficiency has been obtained from the City's General Plan. The City of Cypress has adopted a level of service (**LOS**) D or better as the desired citywide operating standard for most City streets. However, given the influence of regional traffic on Valley View Street, Lincoln Avenue, and Katella Avenue, which are beyond the control of the City of Cypress, LOS E or better has been adopted as the minimum operating LOS for street segments and intersections on the aforementioned arterials due to the high volume of traffic carried on these roadways.

THRESHOLDS OF DEFICIENCY

For the intersections that lie within the City of Cypress, determination of whether the Project has an adverse effect on intersection operations will be based on a comparison of without and with project levels of service.

For HCM Analysis: For signalized intersections, the traffic operations deficiency shall be determined in accordance with Table 6 below:

TABLE 6: HCM SIGNALIZED INTERSECTION DEFICIENCY CRITERIA

With Project LOS	Project-Related Increase in Delay (in seconds)
C or better	> 6.0 seconds
D	> 4.0 seconds
E, F	> 2.0 seconds

To determine whether a project's added traffic would result in a deficiency at a study area unsignalized intersection in accordance with the City's HCM methodology, the following criteria shall be applied:

a) Worsens the LOS at an unsignalized intersection from LOS D or better to LOS E or F;

b) Causes an increase in the delay equal to or more than three (3.0) seconds at an unsignalized intersection that operates at LOS E or F with project.

For ICU Analysis: a deficiency at both signalized study intersections will be determined in accordance with Table 7:

TABLE 7: ICU INTERSECTION DEFICIENCY CRITERIA

Without Project LOS	With Project Volume/Capacity (V/C) Ratio	With Project Level of Service
D	>0.900 or greater	LOS E or F
Without Project LOS	With Project Volume/Capacity (V/C) Ratio	Project-Related increase in V/C
E, F	>0.900 or greater	Equal to or greater than 0.03

Improvements: Any decrease beyond the minimum acceptable LOS due to the addition of project traffic requires alternative corrective measures to return the intersection to an acceptable LOS. For intersections operating below the minimum acceptable LOS prior to the addition of project traffic, and the LOS would be worsened with the addition of project traffic, corrective measures should be identified, if feasible, to return to "without project" condition LOS or V/C (volume/capacity ratio), whichever is greater. Alternative corrective measures to roadway widening which may include the reduction of project traffic volumes through application of signal system upgrades, phasing changes, synchronization, and/or project design improvements which are expected to improve capacity and/or efficiency withing the transportation network (e.g., changes to a project's site access or internal circulation scheme) shall be identified with concurrence from the City Traffic Engineer.

SPECIAL ISSUES

The following special issues will also be addressed as part of the focused traffic analysis:

- **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.
- **Left Turn Phasing:** The Traffic Study will also assess the north/south left-turn phasing at the intersection of Douglas Drive and Katella Avenue.
- **Site Access Evaluation/Queuing Analysis:** 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 all Project driveways on Plaza Drive.
    - Site access evaluation will also identify the number of access points, on-site stacking distance, shared access with other adjacent property, potential turn restrictions (if applicable), adequate sight distance, driveway aisle widths, and any operational characteristics.
- **Left Turn Queuing Analysis:** For any study intersection where the project is anticipated to contribute 25 or more net new trips during the AM or PM peak hour, a left-turn queuing analysis shall be prepared for the subject study intersection to evaluate the project's potential effects on queuing in the public right-of-way with respect to safety and the overall intersection operations. The queuing analysis will be based on the project's peak hour vehicular trip generation forecasts and shall be prepared based on the HCM method. The 95th percentile queue for the left-turn movement at the study intersection will need to be identified during the peak hour time periods included in the LOS analysis.

The analysis will need to identify the length of the left-turn storage and evaluate if an adequate storage area exists to accommodate the maximum forecast back of queue for the future with project condition. Proposed development projects which are expected to cause or contribute towards exclusive turn-lane queuing which spills back into adjacent travel lanes or blocks adjacent intersections should identify corrective measures to improve queue management and/or storage, if feasible. For intersections which experience excessive exclusive turn-lane queuing prior to the addition of project traffic, and the queuing would be worsened with the addition of project traffic, corrective measures shall be identified, if feasible, including measures to reduce vehicle trips.

  - The Project will be required to evaluate the peak hour queues for the southbound left turn and right turn pockets at Douglas Drive on Katella Avenue (regardless of the project-related peak hour trip contribution to these movements).

- **Truck Access:** Prepare truck turn templates at the applicable Project driveways for the appropriate turning movements to ensure driveways are designed to accommodate the turning radius of heavy trucks. Truck turns will be assessed at the driveways on Plaza Drive but also will include internal circulation identifying the truck route/access to the truck docks.
  - Truck turn templates will be provided in the Traffic Study for the intersection of Plaza Drive/Douglas Drive knuckle with the Project driveways.
  - Truck turn templates will also be applied to the intersection of Douglas Drive and Katella Avenue for the eastbound left, southbound left, and southbound right turn lanes to identify if there are any modifications necessary to the infrastructure (e.g., median, etc.) to accommodate truck turns. If the analysis finds that protected left-turn phasing is required at the intersection Douglas Drive and Katella Avenue, the truck turn templates should account for simultaneous turns from the northbound and southbound left turn lanes (or make other applicable recommendations).
- **Active Transportation Network Review:** Potential impacts to public transit, pedestrian and bicycle facilities and travel will be identified. Inventory of the pedestrian infrastructure will include within ¼ mile radius: sidewalk and widths, crosswalks, crosswalk markings, pedestrian push-button, curb access ramps, tactile warning strips, curb extensions, pedestrian amenities, pedestrian lighting. Existing bicycle facilities will be identified including bicycle parking, amenities, etc. Inventory of the existing transit lines, bus stops, transit stations/facilities will also be identified. Transit route discussion will identify the hours of service, peak period headways, route number, and service provider.
- **Safety Analysis:** A safety assessment will be conducted for the signalized study intersections. Safety review will include:
  - Collection of collision history at the intersection and near-by roadway segments to identify crash trends (obtained through Statewide Integrated Traffic Records System). If there are 5 or more accidents per year within any of the last 3 years at the intersection, in person field observations will be conducted as part of the intersection safety review.
  - In field review will include, but is not limited to: qualitative descriptions of traffic flows during the peak and off-peak time periods, documentation of repeated violations of existing restrictions, documentation of any safety concerns at the intersection for

other non-motorized users (minors/children, seniors, pedestrians, bicyclists, handicap accessible, etc.), and will propose safety improvements/corrective measures.

- Evaluate the degradation of pedestrian and bicycle facilities due to the Project.
- Evaluation of multi-model conflict points due to the Project.
- Potential for increase in vehicular speeds.
- Project driveway sight distance evaluation.
- It is our understanding that the Project will be conditioned to eliminate the gap in the sidewalk between the sidewalk on the west side of Douglas Drive to the future sidewalk along the north side of Plaza Drive.
- Due to the added truck volumes on Douglas Drive the Project is likely to be conditioned as a safety measure (to be assessed as part of the Safety Analysis) to add a southbound near-side signal indication to improve visibility of the traffic signal modifications for auto drivers.

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

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APPENDIX 1.2: SITE ADJACENT QUEUES

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Intersection: 1: Douglas Dr. & Katella Av.

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	TR
Maximum Queue (ft)	96	413	386	305	106	47	440	396	319	163	61	21
Average Queue (ft)	35	200	175	110	13	14	218	189	139	19	18	5
95th Queue (ft)	75	363	331	249	52	42	398	369	310	88	47	18
Link Distance (ft)		785	785	785			922	922	922			367
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250				100	250				130	115	
Storage Blk Time (%)		5		6			8		7			
Queuing Penalty (veh)		3		4			1		3			

Intersection: 1: Douglas Dr. & Katella Av.

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (ft)	37	18	51
Average Queue (ft)	6	1	14
95th Queue (ft)	25	9	35
Link Distance (ft)		458	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	90		90
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Douglas Dr./Driveway 1 & Driveway 2/Plaza Dr.

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	31	55	55
Average Queue (ft)	9	30	27
95th Queue (ft)	32	48	51
Link Distance (ft)	164	191	458
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 11

Intersection: 1: Douglas Dr. & Katella Av.

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	TR
Maximum Queue (ft)	64	453	422	342	62	123	403	369	313	119	92	21
Average Queue (ft)	19	229	200	142	8	12	209	182	129	6	41	5
95th Queue (ft)	49	394	360	284	35	66	359	330	267	52	80	18
Link Distance (ft)		785	785	785			922	922	922			367
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250				100	250				130	115	
Storage Blk Time (%)		7		9			6		5		0	
Queuing Penalty (veh)		2		3			1		0		0	

Intersection: 1: Douglas Dr. & Katella Av.

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (ft)	68	6	52
Average Queue (ft)	21	1	23
95th Queue (ft)	52	7	44
Link Distance (ft)		458	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	90		90
Storage Blk Time (%)	0		
Queuing Penalty (veh)	0		

Intersection: 2: Douglas Dr./Driveway 1 & Driveway 2/Plaza Dr.

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	63	54	31
Average Queue (ft)	10	37	24	10
95th Queue (ft)	34	57	48	33
Link Distance (ft)	164	191	458	176
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 6

APPENDIX 3.1: TRAFFIC COUNTS

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Volume Development
AM Peak Hour

1. Douglas Dr. & Katella Av.

PHF: 0.962 **7:00** Count Date: 8/30/2022

	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
Existing 2023:	17	2	5	2	1	12	27	1,653	61	9	1,684	34	3,507
2-Axle:	2	0	0	0	0	1	0	63	1	1	78	0	146
3-Axle:	0	0	0	0	0	0	0	3	2	0	13	0	18
4+-Axle:	4	0	0	0	0	1	0	7	4	1	23	0	40
2023 Trucks:	6	0	0	0	0	2	0	73	7	2	114	0	204
2023 PCE:	**26**	**2**	**5**	**2**	**1**	**15**	**27**	**1,702**	**72**	**12**	**1,782**	**34**	**3,678**
2023 ADT:		1,432			1,015			42,972			39,960		
2023 Pk-Daily:		8%			8%			8%			9%		
Project:	0	0	0	1	0	2	9	0	0	0	0	3	15
Project PCE:	0	0	0	3	0	5	10	0	0	0	0	3	21
Project ADT:		0			286			204			82		
Cumulative:	0	0	0	0	0	4	19	58	0	0	32	0	113
Cumulative PCE	0	0	0	0	0	7	21	58	0	0	32	0	118
Cumulative ADT:		0			272			2,440			2,168		
E+P:	17	2	5	3	1	14	36	1,653	61	9	1,684	37	3,522
E+P PCE:	26	2	5	5	1	20	37	1,702	72	12	1,782	37	3,699
E+P ADT:		1,432			1,301			43,176			40,042		
2025 NP:	18	2	5	2	1	16	47	1,778	63	9	1,784	35	3,762
2025 NP PCE:	27	2	5	2	1	22	49	1,828	74	12	1,886	35	3,945
2025 NP ADT:		1,490			1,328			47,148			43,743		
2025 WP:	18	2	5	3	1	18	56	1,778	63	9	1,784	38	3,777
2025 WP PCE:	27	2	5	5	1	27	59	1,828	74	12	1,886	38	3,966
2025 WP ADT:		1,490			1,614			47,352			43,825		

2. Driveway 2/Douglas Dr. & Driveway 1/Plaza Dr.

PHF: 0.864 **8:00** Count Date: 8/30/2022

	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
Existing 2023:	0	0	21	0	0	0	0	0	0	45	0	0	66
2-Axle:	0	0	0	0	0	0	0	0	0	1	0	0	1
3-Axle:	0	0	0	0	0	0	0	0	0	1	0	0	1
4+-Axle:	0	0	0	0	0	0	0	0	0	3	0	0	3
2023 Trucks:	0	0	0	0	0	0	0	0	0	5	0	0	5
2023 PCE:	**0**	**0**	**21**	**0**	**0**	**0**	**0**	**0**	**0**	**53**	**0**	**0**	**74**
2023 ADT:		1,365			0			0			1,365		
2023 Pk-Daily:		5%			0%			0%			5%		
Project:	5	7	0	0	0	0	0	1	3	0	3	2	21
Project PCE:	6	7	0	0	0	0	0	2	7	0	4	2	28
Project ADT:		286			158			250			122		
Cumulative:	0	4	15	0	0	0	0	0	0	3	0	3	25
Cumulative PCE	0	4	17	0	0	0	0	0	0	7	0	3	31
Cumulative ADT:		90			124			182			248		
E+P:	5	7	21	0	0	0	0	1	3	45	3	2	87
E+P PCE:	6	7	21	0	0	0	0	2	7	53	4	2	102
E+P ADT:		1,651			158			250			1,487		
2025 NP:	0	4	37	0	0	0	0	0	0	50	0	3	94
2025 NP PCE:	0	4	39	0	0	0	0	0	0	62	0	3	107
2025 NP ADT:		1,510			124			182			1,668		
2025 WP:	5	11	37	0	0	0	0	1	3	50	3	5	115
2025 WP PCE:	6	11	39	0	0	0	0	2	7	62	4	5	135
2025 WP ADT:		1,796			282			432			1,790		

Volume Development
AM Peak Hour

3. McDonnell Dr./Cara Wy. & Plaza Dr.

PHF: 0.852 **7:45** Count Date: 8/30/2022

	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
Existing 2023:	19	2	72	0	0	0	0	21	0	6	102	3	225
2-Axle:	0	0	0	0	0	0	0	3	0	0	1	1	5
3-Axle:	0	0	3	0	0	0	0	0	0	0	1	0	4
4+-Axle:	0	0	1	0	0	0	0	0	0	1	0	0	2
2023 Trucks:	0	0	4	0	0	0	0	3	0	1	2	1	11
2023 PCE:	**19**	**2**	**77**	**0**	**0**	**0**	**0**	**23**	**0**	**8**	**104**	**4**	**236**
2023 ADT:		338			34			1,917			802		
2023 Pk-Daily:		31%			16%			8%			27%		
Project:	1	0	0	0	0	0	0	1	0	0	5	0	7
Project PCE:	1	0	0	0	0	0	0	2	0	0	5	0	8
Project ADT:		14			0			122			108		
Cumulative:	0	1	35	1	0	0	0	15	0	6	9	6	73
Cumulative PCE	0	1	35	1	0	0	0	23	0	6	14	6	86
Cumulative ADT:		0			150			326			450		
E+P:	20	2	72	0	0	0	0	22	0	6	107	3	232
E+P PCE:	20	2	77	0	0	0	0	25	0	8	109	4	244
E+P ADT:		352			34			2,039			910		
2025 NP:	20	3	110	1	0	0	0	37	0	12	115	9	307
2025 NP PCE:	20	3	115	1	0	0	0	46	0	14	122	10	331
2025 NP ADT:		352			185			2,321			1,284		
2025 WP:	21	3	110	1	0	0	0	38	0	12	120	6	311
2025 WP PCE:	21	3	115	1	0	0	0	48	0	14	127	6	335
2025 WP ADT:		366			150			2,443			1,392		

4. Valley View St. & Plaza Dr.

PHF: 0.988 **7:45** Count Date: 8/30/2022

	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
Existing 2023:	21	1,473	181	254	1,487	150	9	3	14	12	0	37	3,641
2-Axle:	1	52	0	0	63	1	0	2	1	0	0	3	123
3-Axle:	0	1	0	0	14	1	0	3	0	0	0	0	19
4+-Axle:	0	8	0	0	9	1	0	1	0	0	0	0	19
2023 Trucks:	1	61	0	0	86	3	0	6	1	0	0	3	161
2023 PCE:	**22**	**1,516**	**181**	**254**	**1,551**	**154**	**9**	**9**	**15**	**12**	**0**	**39**	**3,760**
2023 ADT:		41,145			42,071			3,192			6,767		
2023 Pk-Daily:		8%			8%			7%			7%		
Project:	0	0	0	0	0	5	1	0	0	0	0	0	6
Project PCE:	0	0	0	0	0	5	2	0	0	0	0	0	7
Project ADT:		0			108			108			0		
Cumulative:	37	10	0	0	7	52	10	0	7	0	0	0	123
Cumulative PCE	40	10	0	0	7	54	12	0	12	0	0	0	135
Cumulative ADT:		336			1,054			846			544		
E+P:	21	1,473	181	254	1,487	155	10	3	14	12	0	37	3,647
E+P PCE:	22	1,516	181	254	1,551	159	11	9	15	12	0	39	3,767
E+P ADT:		41,145			42,179			3,300			6,767		
2025 NP:	59	1,543	188	264	1,554	208	19	3	22	12	0	38	3,911
2025 NP PCE:	62	1,587	188	264	1,620	214	21	9	27	12	0	40	4,046
2025 NP ADT:		43,143			44,825			4,167			7,585		
2025 WP:	59	1,543	188	264	1,554	213	20	3	22	12	0	38	3,917
2025 WP PCE:	62	1,587	188	264	1,620	219	23	9	27	12	0	40	4,053
2025 WP ADT:		43,143			44,933			4,275			7,585		

Volume Development
PM Peak Hour

1. Douglas Dr. & Katella Av.

		PHF:	0.894		4:30					Count Date:	8/30/2022		
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
Existing 2023:	81	1	7	24	2	46	11	1,926	28	8	1,572	6	3,712
2-Axle:	0	0	0	0	0	1	0	50	0	1	35	0	87
3-Axle:	0	0	0	0	0	0	0	6	0	0	4	0	10
4+-Axle:	1	0	0	1	0	0	0	3	2	0	7	0	14
2023 Trucks:	1	0	0	1	0	1	0	59	2	1	46	0	111
2023 PCE:	**83**	**1**	**7**	**26**	**2**	**47**	**11**	**1,963**	**32**	**9**	**1,608**	**6**	**3,794**
2023 ADT:		1,432			1,015			**42,972**			39,960		
2023 Pk-Daily:		9%			9%			9%			9%		
Project:	0	0	0	3	0	9	4	0	0	0	0	2	18
Project PCE:	0	0	0	4	0	11	6	0	0	0	0	3	24
Project ADT:		0			286			204			82		
Cumulative:	0	0	0	0	0	19	5	62	0	0	83	0	169
Cumulative PCE	0	0	0	0	0	21	7	62	0	0	83	0	173
Cumulative ADT:		0			272			2,440			2,168		
E+P:	81	1	7	27	2	55	15	1,926	28	8	1,572	8	3,730
E+P PCE:	83	1	7	30	2	58	17	1,963	32	9	1,608	9	3,818
E+P ADT:		1,432			1,301			43,176			40,042		
2025 NP:	84	1	7	25	2	67	16	2,066	29	8	1,719	6	4,031
2025 NP PCE:	86	1	7	27	2	69	18	2,104	33	9	1,755	6	4,120
2025 NP ADT:		1,490			1,328			47,148			43,743		
2025 WP:	84	1	7	28	2	76	20	2,066	29	8	1,719	8	4,049
2025 WP PCE:	86	1	7	31	2	80	24	2,104	33	9	1,755	9	4,144
2025 WP ADT:		1,490			1,614			47,352			43,825		

2. Driveway 2/Douglas Dr. & Driveway 1/Plaza Dr.

		PHF:	0.750		5:00					Count Date:	8/30/2022		
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
Existing 2023:	0	0	23	0	0	0	0	0	0	98	0	0	121
2-Axle:	0	0	1	0	0	0	0	0	0	3	0	0	4
3-Axle:	0	0	0	0	0	0	0	0	0	0	0	0	0
4+-Axle:	0	0	0	0	0	0	0	0	0	0	0	0	0
2023 Trucks:	0	0	1	0	0	0	0	0	0	3	0	0	4
2023 PCE:	**0**	**0**	**24**	**0**	**0**	**0**	**0**	**0**	**0**	**100**	**0**	**0**	**123**
2023 ADT:		1,365			0			0			1,365		
2023 Pk-Daily:		9%			0%			0%			9%		
Project:	3	2	0	2	6	0	0	3	5	0	1	1	23
Project PCE:	6	2	0	2	6	0	0	4	8	0	2	1	31
Project ADT:		286			158			250			122		
Cumulative:	0	1	4	3	4	0	0	0	0	15	0	1	28
Cumulative PCE	0	1	5	3	4	0	0	0	0	17	0	1	31
Cumulative ADT:		90			124			182			248		
E+P:	3	2	23	2	6	0	0	3	5	98	1	1	144
E+P PCE:	6	2	24	2	6	0	0	4	8	100	2	1	154
E+P ADT:		1,651			158			250			1,487		
2025 NP:	0	1	28	3	4	0	0	0	0	117	0	1	154
2025 NP PCE:	0	1	29	3	4	0	0	0	0	121	0	1	159
2025 NP ADT:		1,510			124			182			1,668		
2025 WP:	3	3	28	5	10	0	0	3	5	117	1	2	177
2025 WP PCE:	6	3	29	5	10	0	0	4	8	121	2	2	190
2025 WP ADT:		1,796			282			432			1,790		

Volume Development
PM Peak Hour

3. McDonnell Dr./Cara Wy. & Plaza Dr.

PHF: 0.625 4:45 Count Date: 8/30/2022

	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
Existing 2023:	5	0	9	0	3	0	0	85	2	11	78	0	193
2-Axle:	0	0	0	0	0	0	0	1	0	0	3	0	4
3-Axle:	0	0	0	0	0	0	0	0	0	0	0	0	0
4+-Axle:	0	0	0	0	0	0	0	0	0	0	0	0	0
2023 Trucks:	0	0	0	0	0	0	0	1	0	0	3	0	4
2023 PCE:	**5**	**0**	**9**	**0**	**3**	**0**	**0**	**86**	**2**	**11**	**80**	**0**	**195**
2023 ADT:		338			34			1,917			**802**		
2023 Pk-Daily:		9%			9%			9%			23%		
Project:	0	0	0	0	0	0	0	5	1	0	2	0	8
Project PCE:	0	0	0	0	0	0	0	6	1	0	3	0	10
Project ADT:		14			0			122			108		
Cumulative:	0	0	7	7	1	0	0	10	0	32	15	2	74
Cumulative PCE	0	0	7	7	1	0	0	14	0	32	19	2	82
Cumulative ADT:		0			150			326			450		
E+P:	5	0	9	0	3	0	0	90	3	11	80	0	201
E+P PCE:	5	0	9	0	3	0	0	92	3	11	83	0	205
E+P ADT:		352			34			2,039			910		
2025 NP:	5	0	16	7	4	0	0	98	2	43	96	2	275
2025 NP PCE:	5	0	16	7	4	0	0	103	2	43	102	2	285
2025 NP ADT:		352			185			2,321			1,284		
2025 WP:	5	0	16	7	1	0	0	103	3	43	98	2	280
2025 WP PCE:	5	0	16	7	1	0	0	109	3	43	105	2	292
2025 WP ADT:		366			150			2,443			1,392		

4. Valley View St. & Plaza Dr.

PHF: 0.957 4:30 Count Date: 8/30/2022

	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
Existing 2023:	4	1,932	12	49	1,484	23	168	0	60	156	28	355	4,271
2-Axle:	0	34	0	6	18	0	0	0	1	0	3	0	62
3-Axle:	0	6	0	0	4	0	0	0	0	0	0	0	10
4+-Axle:	0	6	0	0	3	0	0	0	0	3	0	0	12
2023 Trucks:	0	46	0	6	25	0	0	0	1	3	3	0	84
2023 PCE:	**4**	**1,967**	**12**	**52**	**1,503**	**23**	**168**	**0**	**61**	**162**	**30**	**355**	**4,336**
2023 ADT:		41,145			**42,071**			3,192			6,767		
2023 Pk-Daily:		9%			10%			9%			9%		
Project:	0	0	0	0	0	2	5	0	0	0	0	0	7
Project PCE:	0	0	0	0	0	3	6	0	0	0	0	0	9
Project ADT:		0			108			108			0		
Cumulative:	10	15	0	0	18	12	49	0	36	0	0	0	140
Cumulative PCE	12	15	0	0	18	13	51	0	39	0	0	0	148
Cumulative ADT:		336			1,054			846			544		
E+P:	4	1,932	12	49	1,484	25	173	0	60	156	28	355	4,278
E+P PCE:	4	1,967	12	52	1,503	26	174	0	61	162	30	355	4,345
E+P ADT:		41,145			42,179			3,300			6,767		
2025 NP:	14	2,025	12	51	1,562	36	224	0	98	162	29	369	4,584
2025 NP PCE:	16	2,061	12	54	1,582	37	226	0	102	169	31	369	4,659
2025 NP ADT:		43,143			44,825			4,167			7,585		
2025 WP:	14	2,025	12	51	1,562	38	229	0	98	162	29	369	4,591
2025 WP PCE:	16	2,061	12	54	1,582	40	232	0	102	169	31	369	4,668
2025 WP ADT:		43,143			44,933			4,275			7,585		

INTERSECTION TURNING MOVEMENT COUNTS

T42321

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Aug 30, 22

LOCATION: Cypress
NORTH & SOUTH: Douglas
EAST & WEST: Katella

PROJECT #: SC3604
LOCATION #: 1
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — N / W / E / S

Add U-Turns to Left Turns

		NORTHBOUND Douglas			SOUTHBOUND Douglas			EASTBOUND Katella			WESTBOUND Katella			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 1	EL 1	ET 3	ER 1	WL 1	WT 3	WR 1	TOTAL
AM	7:00 AM	5	0	1	0	0	3	8	293	15	1	275	1	602
AM	7:15 AM	4	1	0	2	1	3	2	318	20	2	402	3	758
AM	7:30 AM	3	0	0	0	0	1	2	385	8	3	415	5	822
AM	7:45 AM	6	0	2	0	0	2	5	419	15	2	429	5	885
AM	8:00 AM	6	2	2	1	1	2	6	427	27	4	404	12	894
AM	8:15 AM	2	0	1	1	0	7	13	390	10	0	403	11	838
AM	8:30 AM	7	0	0	1	0	2	10	339	10	6	374	9	758
AM	8:45 AM	5	1	0	0	0	2	4	324	16	4	332	5	693
AM	VOLUMES	38	4	6	5	2	22	50	2,895	121	22	3,034	51	6,250
AM	APPROACH %	79%	8%	13%	17%	7%	76%	2%	94%	4%	1%	98%	2%	
AM	APP/DEPART	48	/	101	29	/	142	3,066	/	2,909	3,107	/	3,098	0
AM	BEGIN PEAK HR		7:30 AM											
AM	VOLUMES	17	2	5	2	1	12	26	1,621	60	9	1,651	33	3,439
AM	APPROACH %	71%	8%	21%	13%	7%	80%	2%	95%	4%	1%	98%	2%	
AM	PEAK HR FACTOR		0.600			0.469			0.928			0.971		0.962
AM	APP/DEPART	24	/	59	15	/	69	1,707	/	1,629	1,693	/	1,682	0
PM	4:00 PM	24	0	4	9	0	10	3	451	5	1	333	0	838
PM	4:15 PM	14	1	3	4	0	8	4	476	6	3	305	1	825
PM	4:30 PM	23	1	2	6	0	9	2	449	7	0	375	2	876
PM	4:45 PM	20	0	2	6	0	5	3	432	9	2	378	0	857
PM	5:00 PM	16	0	3	5	1	22	5	522	4	5	433	2	1,018
PM	5:15 PM	20	0	0	7	1	9	1	485	7	1	355	2	888
PM	5:30 PM	8	1	2	4	0	14	3	452	4	3	378	1	870
PM	5:45 PM	9	0	0	5	0	6	3	426	7	0	334	1	791
PM	VOLUMES	134	3	16	46	2	83	24	3,693	47	15	2,891	9	6,963
PM	APPROACH %	88%	2%	10%	35%	2%	63%	1%	98%	1%	1%	99%	0%	
PM	APP/DEPART	153	/	19	131	/	57	3,764	/	3,762	2,915	/	3,125	0
PM	BEGIN PEAK HR		4:30 PM											
PM	VOLUMES	79	1	7	24	2	45	11	1,888	27	8	1,541	6	3,639
PM	APPROACH %	91%	1%	8%	34%	3%	63%	1%	98%	1%	1%	99%	0%	
PM	PEAK HR FACTOR		0.837			0.634			0.907			0.884		0.894
PM	APP/DEPART	87	/	8	71	/	32	1,926	/	1,924	1,555	/	1,675	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	2	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	2	0	2
0	0	0	2	2
0	0	4	3	7
0	0	2	0	2
0	0	1	0	1
0	0	2	0	2
0	0	3	1	4
0	0	4	4	8
0	0	1	0	1
0	0	2	2	4
0	0	2	0	2
0	0	17	7	24

RTOR

NRR	SRR	ERR	WRR
1	3	0	1
0	3	3	0
0	1	1	1
1	2	3	0
2	1	3	4
0	6	1	0
0	1	0	0
0	2	0	0
4	19	11	6
3	10	8	5
2	4	0	0
3	8	0	0
1	6	1	0
2	5	3	0
1	13	1	0
0	6	0	0
1	12	0	0
0	4	0	1
10	58	5	1
4	30	5	0

Douglas

NORTH SIDE

Katella WEST SIDE EAST SIDE **Katella**

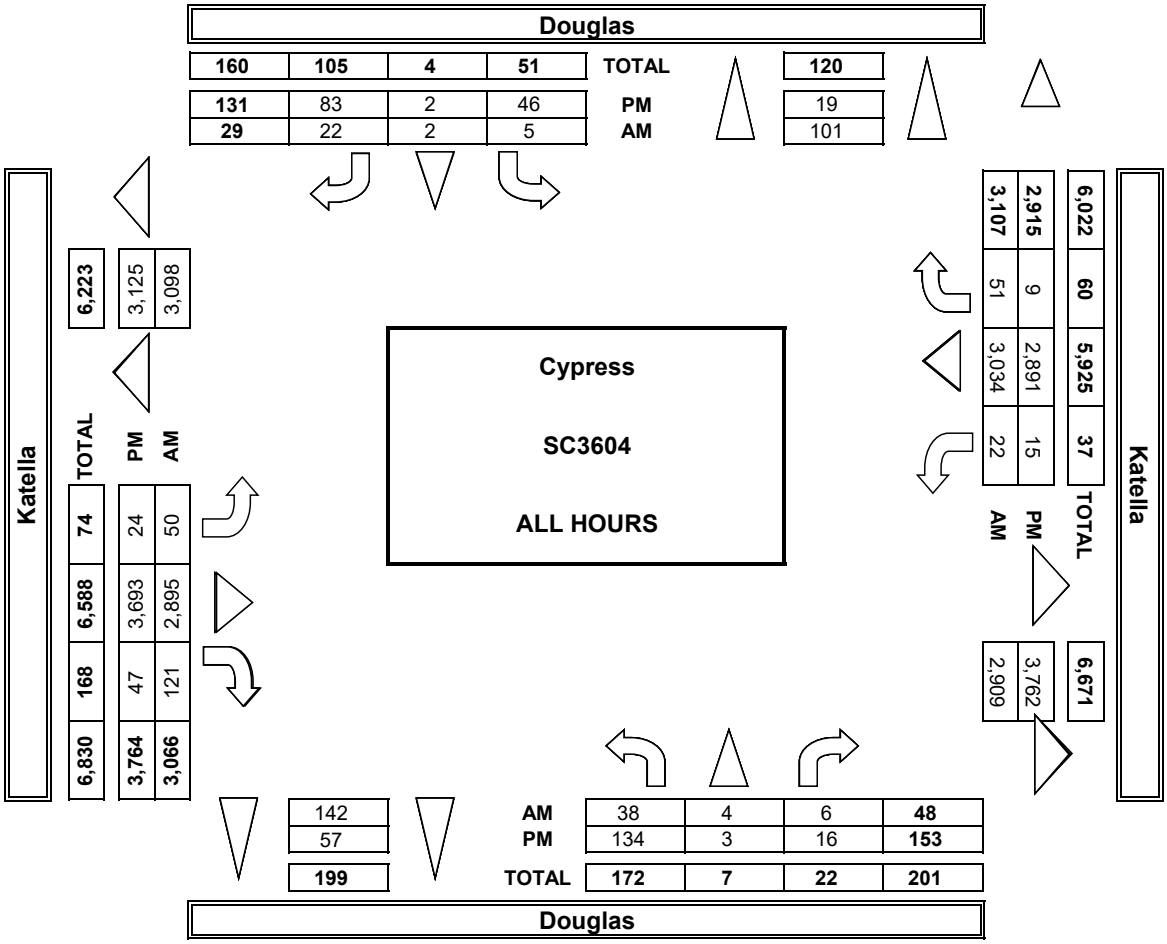
SOUTH SIDE

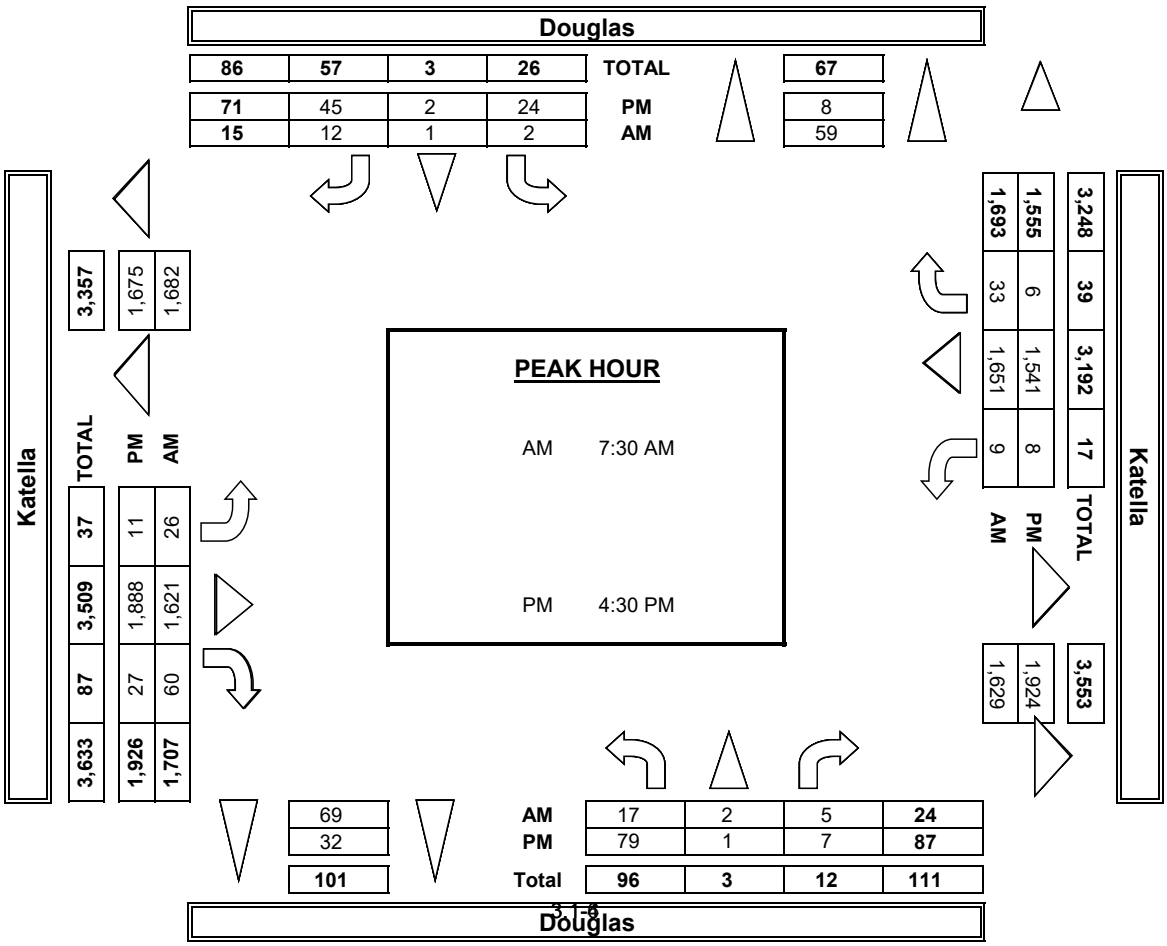
Douglas

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
AM	7:15 AM	1	0	0	1	2	1	0	0	1	2	0	0	0	0	0
AM	7:30 AM	3	1	2	3	9	0	0	0	0	0	3	1	2	3	9
AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:00 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
AM	8:15 AM	0	0	1	1	2	0	0	0	0	0	0	0	1	1	2
AM	8:30 AM	0	0	3	0	3	0	0	2	0	2	0	0	1	0	1
AM	8:45 AM	0	0	1	1	2	0	0	0	0	0	0	0	1	1	2
AM	TOTAL	4	2	8	6	20	1	1	3	1	6	3	1	5	5	14
PM	4:00 PM	1	0	0	1	2	1	0	0	0	1	0	0	0	1	1
PM	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	0	2	0	2	0	0	1	0	1	0	0	1	0	1
PM	4:45 PM	0	0	2	0	2	0	0	0	0	0	0	0	2	0	2
PM	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:15 PM	0	1	0	2	3	0	0	0	1	1	0	1	0	1	2
PM	5:30 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
PM	5:45 PM	0	0	2	0	2	0	0	1	0	1	0	0	1	0	1
	TOTAL	2	1	6	3	12	1	0	2	1	4	1	1	4	2	8

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Cypress	PROJECT #:	SC3604
8/30/22	NORTH & SOUTH:	Douglas	LOCATION #:	1
TUESDAY	EAST & WEST:	Katella	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

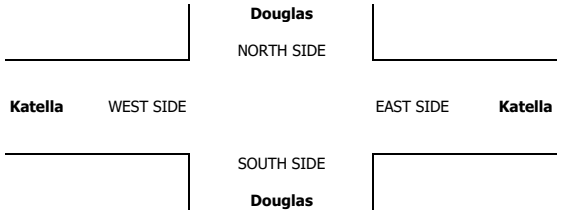
	NORTHBOUND (Douglas)			SOUTHBOUND (Douglas)			EASTBOUND (Katella)			WESTBOUND (Katella)			
LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 1	EL 1	ET 3	ER 1	WL 1	WT 3	WR 1	TOTAL
7:00 AM	1	0	0	0	0	0	2	17	0	0	12	0	32
7:15 AM	0	0	0	1	0	0	0	11	2	0	20	0	34
7:30 AM	0	0	0	0	0	1	0	14	0	1	31	0	47
7:45 AM	2	0	0	0	0	0	0	14	0	0	13	0	29
8:00 AM	0	0	0	0	0	0	0	19	1	0	18	0	38
8:15 AM	0	0	0	0	0	0	1	15	0	0	14	0	30
8:30 AM	0	0	0	0	0	0	0	16	1	0	21	0	38
8:45 AM	1	0	0	0	0	0	0	16	2	0	19	0	38
VOLUMES	4	0	0	1	0	1	3	122	6	1	148	0	286
APPROACH %	100%	0%	0%	50%	0%	50%	2%	93%	5%	1%	99%	0%	
APP/DEPART	4	/	2	2	/	7	131	/	123	149	/	154	0
BEGIN PEAK HR	7:30 AM												
VOLUMES	2	0	0	0	0	1	0	62	1	1	76	0	144
APPROACH %	100%	0%	0%	0%	0%	100%	0%	97%	2%	1%	99%	0%	
PEAK HR FACTOR	0.250			0.250			0.800			0.602			0.766
APP/DEPART	2	/	0	1	/	2	64	/	62	77	/	80	0
4:00 PM	0	0	0	0	0	0	1	17	0	0	9	0	27
4:15 PM	0	0	0	0	0	0	0	13	0	0	9	1	23
4:30 PM	0	0	0	0	0	0	0	9	0	0	12	0	21
4:45 PM	0	0	0	0	0	0	0	7	0	0	4	0	11
5:00 PM	0	0	0	0	0	1	0	16	0	1	10	0	28
5:15 PM	0	0	0	0	0	0	0	17	0	0	8	0	25
5:30 PM	0	0	0	0	0	0	0	9	0	0	2	0	11
5:45 PM	0	0	0	0	0	0	0	6	0	0	5	0	11
VOLUMES	0	0	0	0	0	1	1	94	0	1	59	1	157
APPROACH %	0%	0%	0%	0%	0%	100%	1%	99%	0%	2%	97%	2%	
APP/DEPART	0	/	1	1	/	1	95	/	94	61	/	61	0
BEGIN PEAK HR	4:30 PM												
VOLUMES	0	0	0	0	0	1	0	49	0	1	34	0	85
APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	3%	97%	0%	
PEAK HR FACTOR	0.000			0.250			0.721			0.729			0.759
APP/DEPART	0	/	0	1	/	1	49	/	49	35	/	35	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	1	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	1	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Cypress	PROJECT #:	SC3604
8/30/22	NORTH & SOUTH:	Douglas	LOCATION #:	1
TUESDAY	EAST & WEST:	Katella	CONTROL:	SIGNAL

CLASS 3:	NOTES:	AM PM MD OTHER OTHER	▲ N ◄ W E ► S ▼
3-AXLE TRUCKS			

		NORTHBOUND Douglas			SOUTHBOUND Douglas			EASTBOUND Katella			WESTBOUND Katella			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	1	1	0	1	1	1	1	3	1	1	3	1	
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
AM	7:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
AM	7:30 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
AM	7:45 AM	0	0	0	0	0	0	0	1	0	0	4	0	5
AM	8:00 AM	0	0	0	0	0	0	0	1	2	0	6	0	9
AM	8:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
AM	8:30 AM	0	0	0	0	0	0	0	1	0	0	3	0	4
AM	8:45 AM	1	0	0	0	0	0	0	11	0	0	2	0	14
AM	VOLUMES	1	0	0	0	0	0	0	15	2	0	21	0	39
AM	APPROACH %	100%	0%	0%	0%	0%	0%	0%	88%	12%	0%	100%	0%	
AM	APP/DEPART	1	/	0	0	/	2	17	/	15	21	/	22	0
AM	BEGIN PEAK HR		7:30 AM											
AM	VOLUMES	0	0	0	0	0	0	0	3	2	0	13	0	18
AM	APPROACH %	0%	0%	0%	0%	0%	0%	0%	60%	40%	0%	100%	0%	
AM	PEAK HR FACTOR		0.000			0.000			0.417			0.542		0.500
AM	APP/DEPART	0	/	0	0	/	2	5	/	3	13	/	13	0
PM	4:00 PM	0	0	0	0	0	0	0	5	0	0	1	0	6
PM	4:15 PM	0	0	0	0	0	0	0	3	0	0	1	0	4
PM	4:30 PM	0	0	0	0	0	0	0	1	0	0	2	0	3
PM	4:45 PM	0	0	0	0	0	0	0	3	0	0	2	0	5
PM	5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
PM	5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
PM	5:30 PM	0	0	0	0	0	0	0	3	0	0	0	0	3
PM	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	VOLUMES	0	0	0	0	0	0	0	17	0	0	6	0	23
PM	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
PM	APP/DEPART	0	/	0	0	/	0	17	/	17	6	/	6	0
PM	BEGIN PEAK HR		4:30 PM											
PM	VOLUMES	0	0	0	0	0	0	0	6	0	0	4	0	10
PM	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
PM	PEAK HR FACTOR		0.000			0.000			0.500			0.500		0.500
PM	APP/DEPART	0	/	0	0	/	0	6	/	6	4	/	4	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:						0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
AM PEAK HR VOLUMES						0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PM PEAK HR VOLUMES						0	0	0	0

Douglas

NORTH SIDE

Katella WEST SIDE

EAST SIDE **Katella**

SOUTH SIDE

Douglas

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Cypress	PROJECT #:	SC3604
8/30/22	NORTH & SOUTH:	Douglas	LOCATION #:	1
TUESDAY	EAST & WEST:	Katella	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND Douglas			SOUTHBOUND Douglas			EASTBOUND Katella			WESTBOUND Katella			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	1	1	0	1	1	1	1	3	1	1	3	1	
AM	7:00 AM	3	0	0	0	0	0	0	2	2	0	5	0	12
AM	7:15 AM	0	0	0	0	0	0	0	2	2	0	2	0	6
AM	7:30 AM	1	0	0	0	0	0	0	2	1	1	5	0	10
AM	7:45 AM	1	0	0	0	0	0	0	2	1	0	5	0	9
AM	8:00 AM	2	0	0	0	0	0	0	1	1	0	9	0	13
AM	8:15 AM	0	0	0	0	0	1	0	2	1	0	4	0	8
AM	8:30 AM	2	0	0	0	0	0	0	6	1	0	7	0	16
AM	8:45 AM	1	0	0	0	0	0	0	6	0	0	5	0	12
AM	VOLUMES	10	0	0	0	0	1	0	23	9	1	42	0	86
AM	APPROACH %	100%	0%	0%	0%	0%	100%	0%	72%	28%	2%	98%	0%	
AM	APP/DEPART	10	/	0	1	/	10	32	/	23	43	/	53	0
AM	BEGIN PEAK HR		7:30 AM											
AM	VOLUMES	4	0	0	0	0	1	0	7	4	1	23	0	40
AM	APPROACH %	100%	0%	0%	0%	0%	100%	0%	64%	36%	4%	96%	0%	
AM	PEAK HR FACTOR		0.500			0.250			0.917			0.667		0.769
AM	APP/DEPART	4	/	0	1	/	5	11	/	7	24	/	28	0
PM	4:00 PM	0	0	0	0	0	0	0	2	0	1	5	0	8
PM	4:15 PM	0	0	0	0	0	0	0	1	0	1	2	0	4
PM	4:30 PM	1	0	0	0	0	0	0	0	0	0	3	0	4
PM	4:45 PM	0	0	0	1	0	0	0	1	2	0	4	0	8
PM	5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
PM	5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
PM	5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
PM	5:45 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
PM	VOLUMES	1	0	0	1	0	0	0	8	2	2	16	0	30
PM	APPROACH %	100%	0%	0%	100%	0%	0%	0%	80%	20%	11%	89%	0%	
PM	APP/DEPART	1	/	0	1	/	4	10	/	9	18	/	17	0
PM	BEGIN PEAK HR		4:30 PM											
PM	VOLUMES	1	0	0	1	0	0	0	3	2	0	7	0	14
PM	APPROACH %	100%	0%	0%	100%	0%	0%	0%	60%	40%	0%	100%	0%	
PM	PEAK HR FACTOR		0.250			0.250			0.417			0.438		0.438
PM	APP/DEPART	1	/	0	1	/	2	5	/	4	7	/	8	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:						0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
AM PEAK HR VOLUMES						0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PM PEAK HR VOLUMES						0	0	0	0

Douglas

NORTH SIDE

Katella WEST SIDE

EAST SIDE **Katella**

SOUTH SIDE

Douglas

INTERSECTION TURNING MOVEMENT COUNTS

T42321

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Cypress	PROJECT #:	SC3604
Tue, Aug 30, 22	NORTH & SOUTH:	Driveway 1	LOCATION #:	2
	EAST & WEST:	Plaza	CONTROL:	NO CONTROL

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

		NORTHBOUND Driveway 1			SOUTHBOUND Driveway 1			EASTBOUND Plaza			WESTBOUND Plaza			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	X	X	X	0	X	0	0	1	X	X	1	0	
AM	7:00 AM	0	0	0	1	0	0	0	0	0	0	4	1	6
AM	7:15 AM	0	0	0	1	0	0	1	0	0	0	5	0	7
AM	7:30 AM	0	0	0	0	0	1	0	0	0	0	3	0	4
AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	5	0	5
AM	8:00 AM	0	0	0	0	0	0	0	1	0	0	10	0	11
AM	8:15 AM	0	0	0	0	0	2	1	0	0	0	6	0	9
AM	8:30 AM	0	0	0	0	0	0	1	1	0	0	6	0	8
AM	8:45 AM	0	0	0	0	0	0	0	1	0	0	9	0	10
AM	VOLUMES	0	0	0	2	0	3	3	3	0	0	48	1	60
AM	APPROACH %	0%	0%	0%	40%	0%	60%	50%	50%	0%	0%	98%	2%	
AM	APP/DEPART	0	/	4	5	/	0	6	/	5	49	/	51	0
AM	BEGIN PEAK HR		8:00 AM											
AM	VOLUMES	0	0	0	0	0	2	2	3	0	0	31	0	38
AM	APPROACH %	0%	0%	0%	0%	0%	100%	40%	60%	0%	0%	100%	0%	
AM	PEAK HR FACTOR		0.000			0.250			0.625			0.775		0.864
AM	APP/DEPART	0	/	2	2	/	0	5	/	3	31	/	33	0
PM	4:00 PM	0	0	0	0	0	0	0	1	0	0	9	0	10
PM	4:15 PM	0	0	0	0	0	2	0	6	0	0	2	0	10
PM	4:30 PM	0	0	0	0	0	0	0	2	0	0	5	0	7
PM	4:45 PM	0	0	0	0	0	1	0	0	0	0	5	0	6
PM	5:00 PM	0	0	0	0	0	2	0	6	0	0	7	1	16
PM	5:15 PM	0	0	0	0	0	1	0	8	0	0	3	0	12
PM	5:30 PM	0	0	0	0	0	1	0	4	0	0	5	1	11
PM	5:45 PM	0	0	0	1	0	1	0	5	0	0	2	0	9
PM	VOLUMES	0	0	0	1	0	8	0	32	0	0	38	2	81
PM	APPROACH %	0%	0%	0%	11%	0%	89%	0%	100%	0%	0%	95%	5%	
PM	APP/DEPART	0	/	2	9	/	0	32	/	33	40	/	46	0
PM	BEGIN PEAK HR		5:00 PM											
PM	VOLUMES	0	0	0	1	0	5	0	23	0	0	17	2	48
PM	APPROACH %	0%	0%	0%	17%	0%	83%	0%	100%	0%	0%	89%	11%	
PM	PEAK HR FACTOR		0.000			0.750			0.719			0.594		0.750
PM	APP/DEPART	0	/	2	6	/	0	23	/	24	19	/	22	0

U-TURNS						RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
	0	0	0	0		X	X	X	X
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PEAK HR VOLUMES						0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PEAK HR VOLUMES						0	0	0	0

Driveway 1

NORTH SIDE

Plaza WEST SIDE EAST SIDE **Plaza**

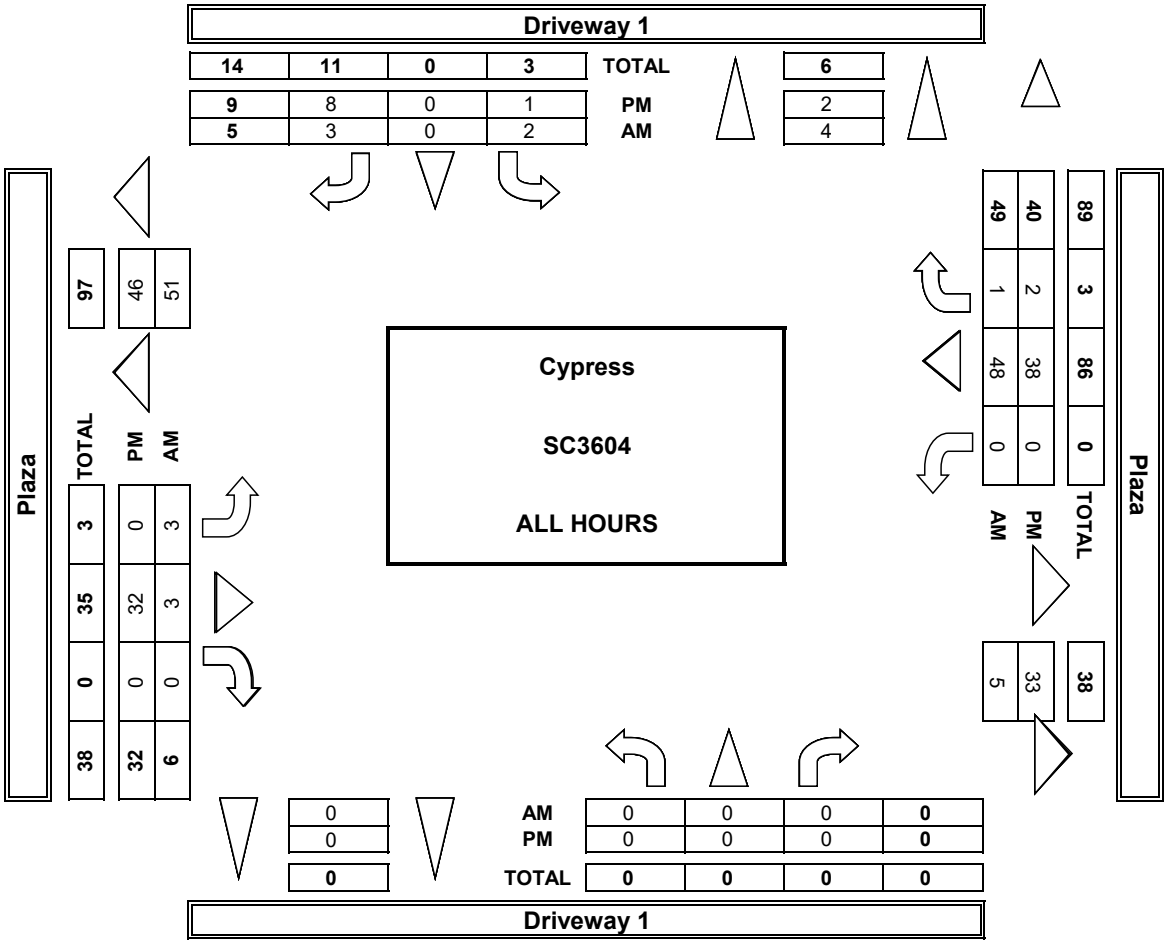
SOUTH SIDE

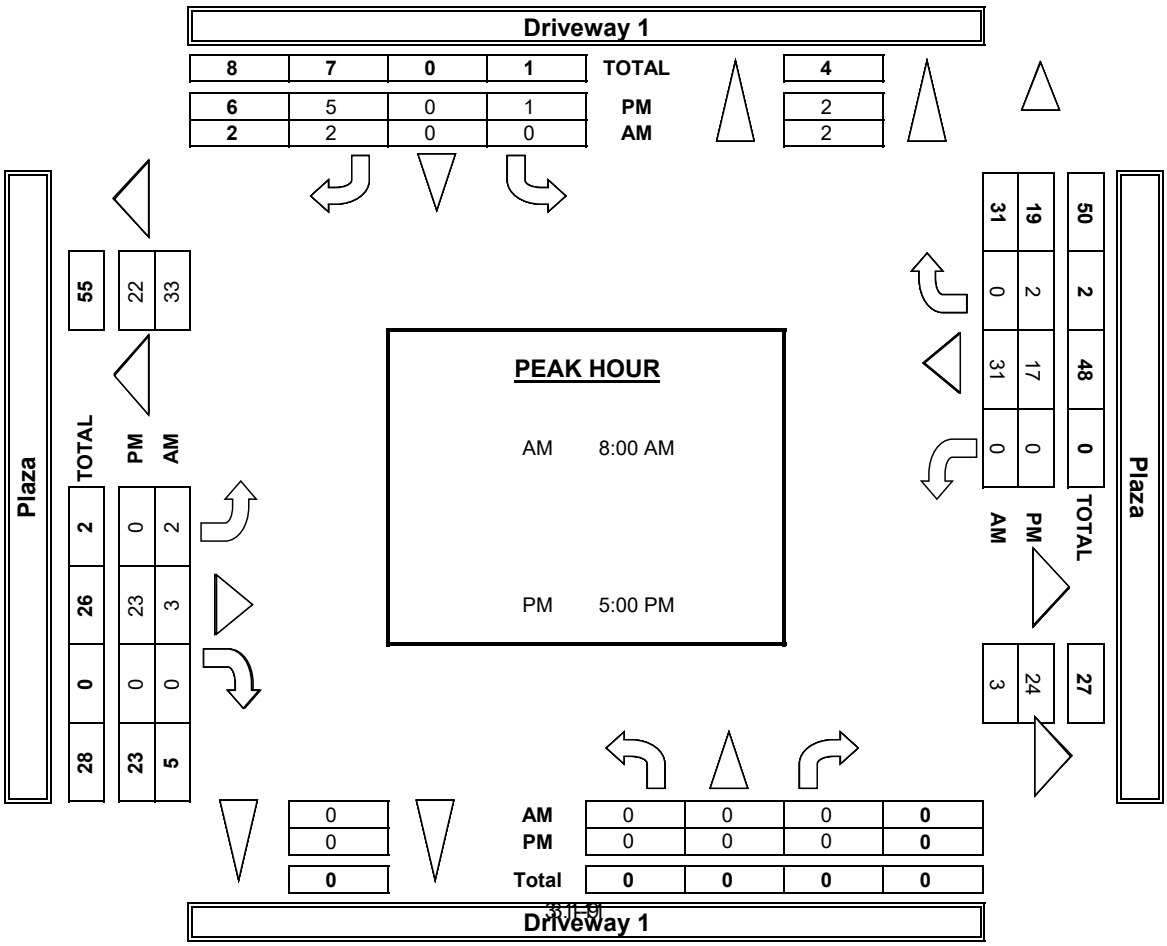
Driveway 1

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Cypress	PROJECT #:	SC3604
8/30/22	NORTH & SOUTH:	Driveway 1	LOCATION #:	2
TUESDAY	EAST & WEST:	Plaza	CONTROL:	NO CONTROL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND (Driveway 1)			SOUTHBOUND (Driveway 1)			EASTBOUND (Plaza)			WESTBOUND (Plaza)			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	X	X	X	0	X	0	0	1	X	X	1	0	
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	1
AM	7:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	VOLUMES	0	0	0	0	0	1	1	0	0	0	0	0	2
AM	APPROACH %	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	
AM	APP/DEPART	0	/	1	1	/	0	1	/	0	0	/	1	0
AM	BEGIN PEAK HR		8:00 AM											
AM	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
AM	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
AM	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
PM	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
PM	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	VOLUMES	0	0	0	0	0	0	0	1	0	0	1	0	2
PM	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
PM	APP/DEPART	0	/	0	0	/	0	1	/	1	1	/	1	0
PM	BEGIN PEAK HR		5:00 PM											
PM	VOLUMES	0	0	0	0	0	0	0	0	0	0	1	0	1
PM	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	
PM	PEAK HR FACTOR		0.000			0.000			0.000			0.250		0.250
PM	APP/DEPART	0	/	0	0	/	0	0	/	0	1	/	1	0

U-TURNS

	NB	SB	EB	WB	TTL
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	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
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	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0

RTOR

	NRR	SRR	ERR	WRR
LANES:	X	X	X	X
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0

Driveway 1

NORTH SIDE

Plaza WEST SIDE

EAST SIDE **Plaza**

SOUTH SIDE

Driveway 1

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Cypress	PROJECT #:	SC3604
8/30/22	NORTH & SOUTH:	Driveway 1	LOCATION #:	2
TUESDAY	EAST & WEST:	Plaza	CONTROL:	NO CONTROL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND Driveway 1			SOUTHBOUND Driveway 1			EASTBOUND Plaza			WESTBOUND Plaza			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	X	X	X	0	X	0	0	1	X	X	1	0	
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
AM	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
AM	BEGIN PEAK HR		8:00 AM											
AM	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
AM	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
AM	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PM	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	BEGIN PEAK HR		5:00 PM											
PM	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PM	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
PM	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

	NB	SB	EB	WB	TTL
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	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
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	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0

RTOR

	NRR	SRR	ERR	WRR
LANES	X	X	X	X
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0

Driveway 1

NORTH SIDE

Plaza WEST SIDE

EAST SIDE **Plaza**

SOUTH SIDE

Driveway 1

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Cypress	PROJECT #:	SC3604
8/30/22	NORTH & SOUTH:	Driveway 1	LOCATION #:	2
TUESDAY	EAST & WEST:	Plaza	CONTROL:	NO CONTROL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	Driveway 1			Driveway 1			Plaza			Plaza			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	X	X	X	0	X	0	0	1	X	X	1	0	
AM 7:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
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	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	1	0	0	0	0	0	0	1
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
VOLUMES	0	0	0	1	0	1	0	0	0	0	0	0	2
APPROACH %	0%	0%	0%	50%	0%	50%	0%	0%	0%	0%	0%	0%	
APP/DEPART	0	/	0	2	/	0	0	/	1	0	/	1	0
BEGIN PEAK HR		8:00 AM											
VOLUMES	0	0	0	0	0	1	0	0	0	0	0	0	1
APPROACH %	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.000			0.250			0.000			0.000		0.250
APP/DEPART	0	/	0	1	/	0	0	/	0	0	/	1	0
PM 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	1	0	0	0	0	0	0	1
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
VOLUMES	0	0	0	0	0	1	0	0	0	0	0	0	1
APPROACH %	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	
APP/DEPART	0	/	0	1	/	0	0	/	0	0	/	1	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
LANES:						X	X	X	X
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PEAK HR VOLUMES						0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0
PEAK HR VOLUMES						0	0	0	0

Driveway 1

NORTH SIDE

Plaza WEST SIDE

EAST SIDE **Plaza**

SOUTH SIDE

Driveway 1

T42321

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Aug 30, 22

LOCATION: Cypress
NORTH & SOUTH: McDonnell
EAST & WEST: Plaza
PROJECT #: SC3604
LOCATION #: 4
CONTROL: STOP N

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND McDonnell			SOUTHBOUND McDonnell			EASTBOUND Plaza			WESTBOUND Plaza			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	4	1	5	0	0	0	0	2	0	1	10	0	23
	7:15 AM	7	0	2	0	0	0	0	0	0	1	7	0	17
	7:30 AM	2	0	2	0	0	0	0	1	0	0	5	0	10
	7:45 AM	4	0	10	0	0	0	0	0	0	3	9	1	27
	8:00 AM	8	1	6	0	0	0	0	1	0	2	14	0	32
	8:15 AM	3	0	9	0	0	0	0	0	0	1	15	0	28
	8:30 AM	4	1	7	0	0	0	0	2	0	0	8	0	22
	8:45 AM	1	0	5	0	0	0	0	2	0	0	8	0	16
	VOLUMES	33	3	46	0	0	0	0	8	0	8	76	1	175
	APPROACH %	40%	4%	56%	0%	0%	0%	0%	100%	0%	9%	89%	1%	
	APP/DEPART	82	/	4	0	/	23	8	/	54	85	/	94	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	19	2	32	0	0	0	0	3	0	6	46	1	109
	APPROACH %	36%	4%	60%	0%	0%	0%	0%	100%	0%	11%	87%	2%	
	PEAK HR FACTOR		0.883			0.000			0.375			0.828		0.852
	APP/DEPART	53	/	3	0	/	12	3	/	35	53	/	59	0
PM	4:00 PM	3	0	0	1	0	0	0	9	1	0	6	0	20
	4:15 PM	2	0	1	0	0	0	1	8	2	1	1	0	16
	4:30 PM	0	0	4	0	0	0	0	10	0	1	1	0	16
	4:45 PM	1	0	0	0	0	0	0	4	0	1	5	0	11
	5:00 PM	1	0	0	0	1	0	0	22	1	5	4	0	34
	5:15 PM	1	0	2	0	0	0	0	8	0	1	5	0	17
	5:30 PM	3	0	4	0	0	0	0	8	0	3	5	0	23
	5:45 PM	0	0	3	0	0	0	0	5	1	2	0	0	11
	VOLUMES	11	0	14	1	1	0	1	74	5	14	27	0	148
	APPROACH %	44%	0%	56%	50%	50%	0%	1%	93%	6%	34%	66%	0%	
	APP/DEPART	25	/	1	2	/	26	80	/	89	41	/	32	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	5	0	9	0	1	0	0	43	2	11	14	0	85
	APPROACH %	36%	0%	64%	0%	100%	0%	0%	96%	4%	44%	56%	0%	
	PEAK HR FACTOR		0.500			0.250			0.489			0.694		0.625
	APP/DEPART	14	/	0	1	/	19	45	/	52	25	/	14	0

U-TURNS

NB 0	SB 0	EB 0	WB 0	TTL
3	0	0	0	3
4	0	0	0	4
2	0	0	0	2
1	0	0	0	1
1	0	0	0	1
2	0	0	0	2
2	0	0	0	2
0	0	0	0	0
15	0	0	0	15
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
1	0	0	0	1
3	0	0	0	3
0	0	0	0	0
6	0	0	0	6

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

McDonnell
NORTH SIDE

Plaza WEST SIDE — EAST SIDE **Plaza**

SOUTH SIDE
McDonnell

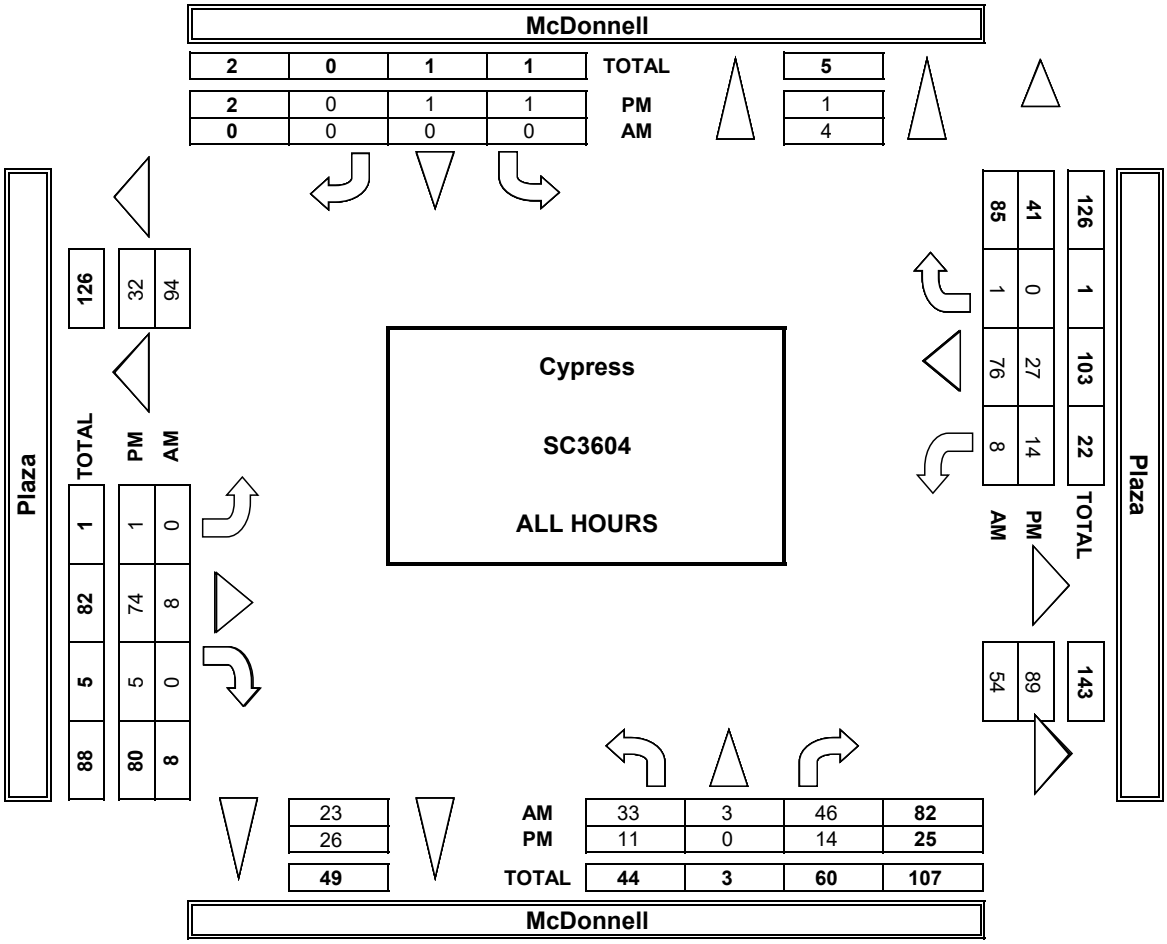
		ALL PED AND BIKE				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
AM	7:00 AM	0	0	0	0	0
	7:15 AM	0	0	0	0	0
	7:30 AM	0	0	0	0	0
	7:45 AM	0	0	0	0	0
	8:00 AM	0	0	0	0	0
	8:15 AM	0	0	0	0	0
	8:30 AM	0	0	0	0	0
	8:45 AM	0	0	0	0	0
	TOTAL	0	0	0	0	0
PM	4:00 PM	1	0	0	0	1
	4:15 PM	0	0	0	0	0
	4:30 PM	0	0	0	0	0
	4:45 PM	0	0	0	0	0
	5:00 PM	0	0	0	0	0
	5:15 PM	0	0	1	0	1
	5:30 PM	0	0	0	0	0
	5:45 PM	0	0	0	0	0
	TOTAL	1	0	1	0	2

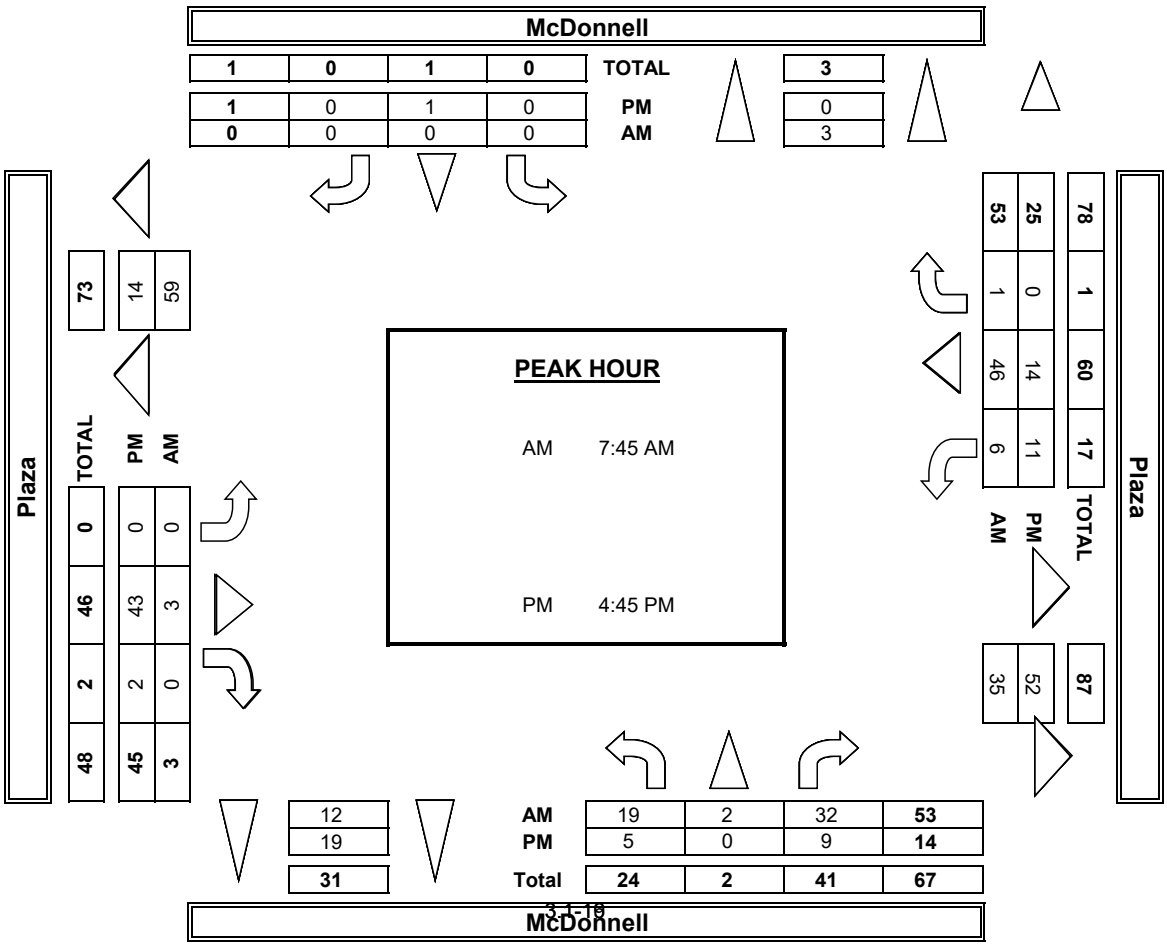
		PEDESTRIAN CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
AM	7:00 AM	0	0	0	0	0
	7:15 AM	0	0	0	0	0
	7:30 AM	0	0	0	0	0
	7:45 AM	0	0	0	0	0
	8:00 AM	0	0	0	0	0
	8:15 AM	0	0	0	0	0
	8:30 AM	0	0	0	0	0
	8:45 AM	0	0	0	0	0
	TOTAL	0	0	0	0	0
PM	4:00 PM	1	0	0	0	1
	4:15 PM	0	0	0	0	0
	4:30 PM	0	0	0	0	0
	4:45 PM	0	0	0	0	0
	5:00 PM	0	0	0	0	0
	5:15 PM	0	0	0	0	0
	5:30 PM	0	0	0	0	0
	5:45 PM	0	0	0	0	0
	TOTAL	1	0	0	0	1

		BICYCLE CROSSINGS				
		ES	WS	SS	NS	TOTAL
AM	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	0	0	0	0	0
	8:30 AM	0	0	0	0	0
	8:45 AM	0	0	0	0	0
	TOTAL	0	0	0	0	0
PM	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	0	0	1	0	1
	5:30 PM	0	0	0	0	0
	5:45 PM	0	0	0	0	0
	TOTAL	0	0	1	0	1

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 8/30/22 TUESDAY	LOCATION:	Cypress	PROJECT #:	SC3604
	NORTH & SOUTH:	McDonnell	LOCATION #:	4
	EAST & WEST:	Plaza	CONTROL:	STOP N

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND McDonnell			SOUTHBOUND McDonnell			EASTBOUND Plaza			WESTBOUND Plaza			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
AM	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
AM	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	VOLUMES	0	0	0	0	0	0	0	1	0	1	0	0	2
AM	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	
AM	APP/DEPART	0	/	0	0	/	1	1	/	1	1	/	0	0
AM	BEGIN PEAK HR		7:45 AM											
AM	VOLUMES	0	0	0	0	0	0	0	1	0	0	0	0	1
AM	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	
AM	PEAK HR FACTOR		0.000			0.000			0.250			0.000		0.250
AM	APP/DEPART	0	/	0	0	/	0	1	/	1	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
PM	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
PM	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	VOLUMES	0	0	0	0	0	0	1	0	0	0	1	0	2
PM	APPROACH %	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	
PM	APP/DEPART	0	/	1	0	/	0	1	/	0	1	/	1	0
PM	BEGIN PEAK HR		4:45 PM											
PM	VOLUMES	0	0	0	0	0	0	0	0	0	0	1	0	1
PM	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	
PM	PEAK HR FACTOR		0.000			0.000			0.000			0.250		0.250
PM	APP/DEPART	0	/	0	0	/	0	0	/	0	1	/	1	0

U-TURNS

	NB	SB	EB	WB	TTL
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	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
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	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0

RTOR

	NRR	SRR	ERR	WRR
LANES	X	X	X	X
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0

McDonnell

NORTH SIDE

Plaza WEST SIDE

EAST SIDE **Plaza**

SOUTH SIDE

McDonnell

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Cypress	PROJECT #:	SC3604
8/30/22	NORTH & SOUTH:	McDonnell	LOCATION #:	4
TUESDAY	EAST & WEST:	Plaza	CONTROL:	STOP N

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND McDonnell			SOUTHBOUND McDonnell			EASTBOUND Plaza			WESTBOUND Plaza			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
AM 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	0	0	0	0	0
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
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
BEGIN PEAK HR		7:45 AM											
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM 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
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
BEGIN PEAK HR		4:45 PM											
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

	U-TURNS				
	NB	SB	EB	WB	TTL
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	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
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	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0

	RTOR			
	NRR	SRR	ERR	WRR
LANES	X	X	X	X
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0

McDonnell

NORTH SIDE

Plaza WEST SIDE

EAST SIDE **Plaza**

SOUTH SIDE

McDonnell

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Cypress	PROJECT #:	SC3604
8/30/22	NORTH & SOUTH:	McDonnell	LOCATION #:	4
TUESDAY	EAST & WEST:	Plaza	CONTROL:	STOP N

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND McDonnell			SOUTHBOUND McDonnell			EASTBOUND Plaza			WESTBOUND Plaza			TOTAL
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
AM	7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
AM	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:15 AM	0	0	1	0	0	0	0	0	0	1	0	0	2
AM	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	VOLUMES	0	0	1	0	0	0	0	1	0	1	0	0	3
AM	APPROACH %	0%	0%	100%	0%	0%	0%	0%	100%	0%	100%	0%	0%	
AM	APP/DEPART	1	/	0	0	/	1	1	/	2	1	/	0	0
AM	BEGIN PEAK HR		7:45 AM											
AM	VOLUMES	0	0	1	0	0	0	0	0	0	1	0	0	2
AM	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	
AM	PEAK HR FACTOR		0.250			0.000			0.000			0.250		0.250
AM	APP/DEPART	1	/	0	0	/	1	0	/	1	1	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PM	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	BEGIN PEAK HR		4:45 PM											
PM	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PM	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
PM	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

	NB	SB	EB	WB	TTL
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	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
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	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0

RTOR

	NRR	SRR	ERR	WRR
LANES:	X	X	X	X
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0

McDonnell

NORTH SIDE

Plaza WEST SIDE

EAST SIDE **Plaza**

SOUTH SIDE

McDonnell

T42321

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Aug 30, 22	LOCATION:	Cypress	PROJECT #: SC3604
	NORTH & SOUTH:	Valley View	LOCATION #: 7
	EAST & WEST:	Plaza	CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

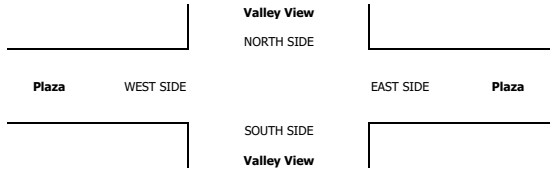
		NORTHBOUND Valley View			SOUTHBOUND Valley View			EASTBOUND Plaza			WESTBOUND Plaza			
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL
AM	7:00 AM	4	236	14	19	353	12	2	1	0	0	0	1	642
AM	7:15 AM	1	297	9	23	347	12	3	1	0	0	0	1	694
AM	7:30 AM	3	336	16	26	383	9	2	0	2	0	0	1	778
AM	7:45 AM	2	363	10	25	366	17	2	0	4	0	0	5	794
AM	8:00 AM	3	377	17	30	339	17	0	1	5	3	0	0	792
AM	8:15 AM	5	344	16	16	366	26	0	0	3	0	0	2	778
AM	8:30 AM	1	360	16	12	387	16	1	0	2	1	0	5	801
AM	8:45 AM	1	293	11	21	310	13	2	1	1	2	0	3	658
AM	VOLUMES	20	2,606	109	172	2,851	122	12	4	17	6	0	18	5,937
AM	APPROACH %	1%	95%	4%	5%	91%	4%	36%	12%	52%	25%	0%	75%	
AM	APP/DEPART	2,735	/	2,640	3,145	/	2,879	33	/	281	24	/	137	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	11	1,444	59	83	1,458	76	3	1	14	4	0	12	3,165
	APPROACH %	1%	95%	4%	5%	90%	5%	17%	6%	78%	25%	0%	75%	
	PEAK HR FACTOR		0.953			0.974			0.750			0.667		0.988
	APP/DEPART	1,514	/	1,462	1,617	/	1,479	18	/	140	16	/	84	0
PM	4:00 PM	3	422	1	6	358	10	18	0	6	10	1	17	852
PM	4:15 PM	1	465	5	1	299	2	12	1	6	6	0	22	820
PM	4:30 PM	0	457	2	5	393	5	14	0	7	14	0	32	929
PM	4:45 PM	0	477	0	4	349	8	10	0	6	13	2	16	885
PM	5:00 PM	3	490	2	3	363	4	34	0	12	17	6	27	961
PM	5:15 PM	1	470	0	4	350	6	21	0	3	7	1	41	904
PM	5:30 PM	1	439	0	1	342	8	20	0	4	10	0	48	873
PM	5:45 PM	1	527	0	0	325	4	6	0	6	3	0	20	892
PM	VOLUMES	10	3,747	10	24	2,779	47	135	1	50	80	10	223	7,116
PM	APPROACH %	0%	99%	0%	1%	98%	2%	73%	1%	27%	26%	3%	71%	
PM	APP/DEPART	3,767	/	4,110	2,850	/	2,913	186	/	30	313	/	63	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	4	1,894	4	16	1,455	23	79	0	28	51	9	116	3,679
	APPROACH %	0%	100%	0%	1%	97%	2%	74%	0%	26%	29%	5%	66%	
	PEAK HR FACTOR		0.961			0.927			0.582			0.880		0.957
	APP/DEPART	1,902	/	2,092	1,494	/	1,535	107	/	17	176	/	35	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
1	0	0	0	1
0	0	0	0	0
1	1	0	0	2
0	0	0	0	0
1	1	0	0	2
2	1	0	0	3
0	1	0	0	1
0	0	0	0	0
5	4	0	0	9
1	2	0	0	3
0	0	0	0	0
0	3	0	0	3
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
4	5	0	0	9

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
3	1	0	0
2	0	0	0
1	0	2	1
0	1	1	2
1	0	2	0
0	1	1	1
1	1	1	3
0	0	1	1
8	4	8	8
2	3	5	6
0	0	4	8
0	0	5	15
0	0	4	18
0	2	4	11
0	0	9	9
0	1	2	19
0	1	3	27
0	0	6	16
0	4	37	123
0	3	19	57



ALL PED AND BIKE

	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	4	1	1	0	6
7:15 AM	1	1	0	0	2
7:30 AM	1	0	0	0	1
7:45 AM	2	2	1	0	5
8:00 AM	0	0	1	0	1
8:15 AM	1	0	0	0	1
8:30 AM	2	0	1	0	3
8:45 AM	2	0	0	0	2
TOTAL	13	4	4	0	21
4:00 PM	0	3	0	0	3
4:15 PM	1	0	0	0	1
4:30 PM	1	0	0	0	1
4:45 PM	0	4	1	0	5
5:00 PM	1	3	0	0	4
5:15 PM	0	1	0	0	1
5:30 PM	1	1	1	0	3
5:45 PM	0	0	0	0	0
TOTAL	4	12	2	0	18

PEDESTRIAN CROSSINGS

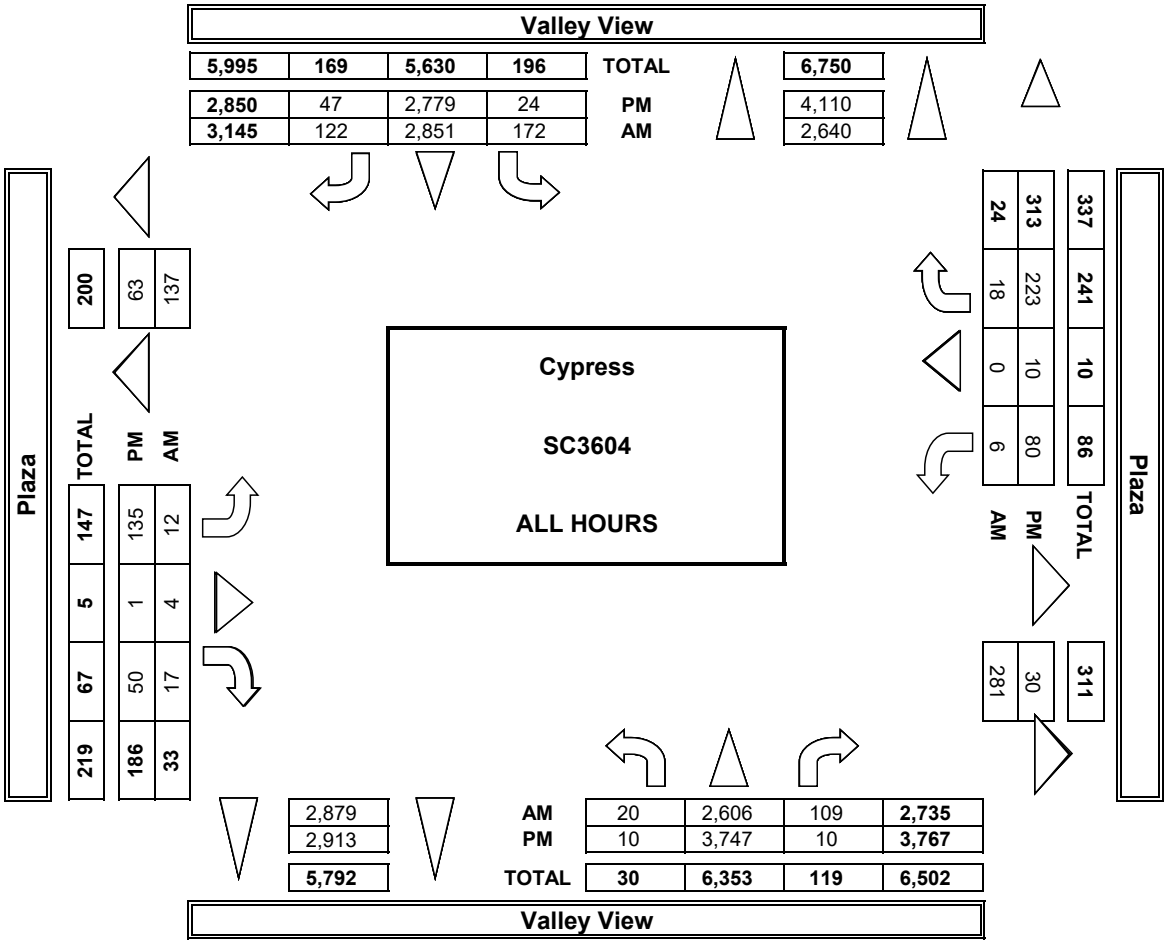
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
3	1	1	0	5
0	1	0	0	1
1	0	0	0	1
0	2	1	0	3
0	0	1	0	1
1	0	0	0	1
2	0	1	0	3
2	0	0	0	2
9	4	4	0	17
0	0	0	0	0
1	0	0	0	1
1	0	0	0	1
0	2	1	0	3
0	2	0	0	2
0	1	0	0	1
0	1	0	0	1
0	0	0	0	0
2	6	1	0	9

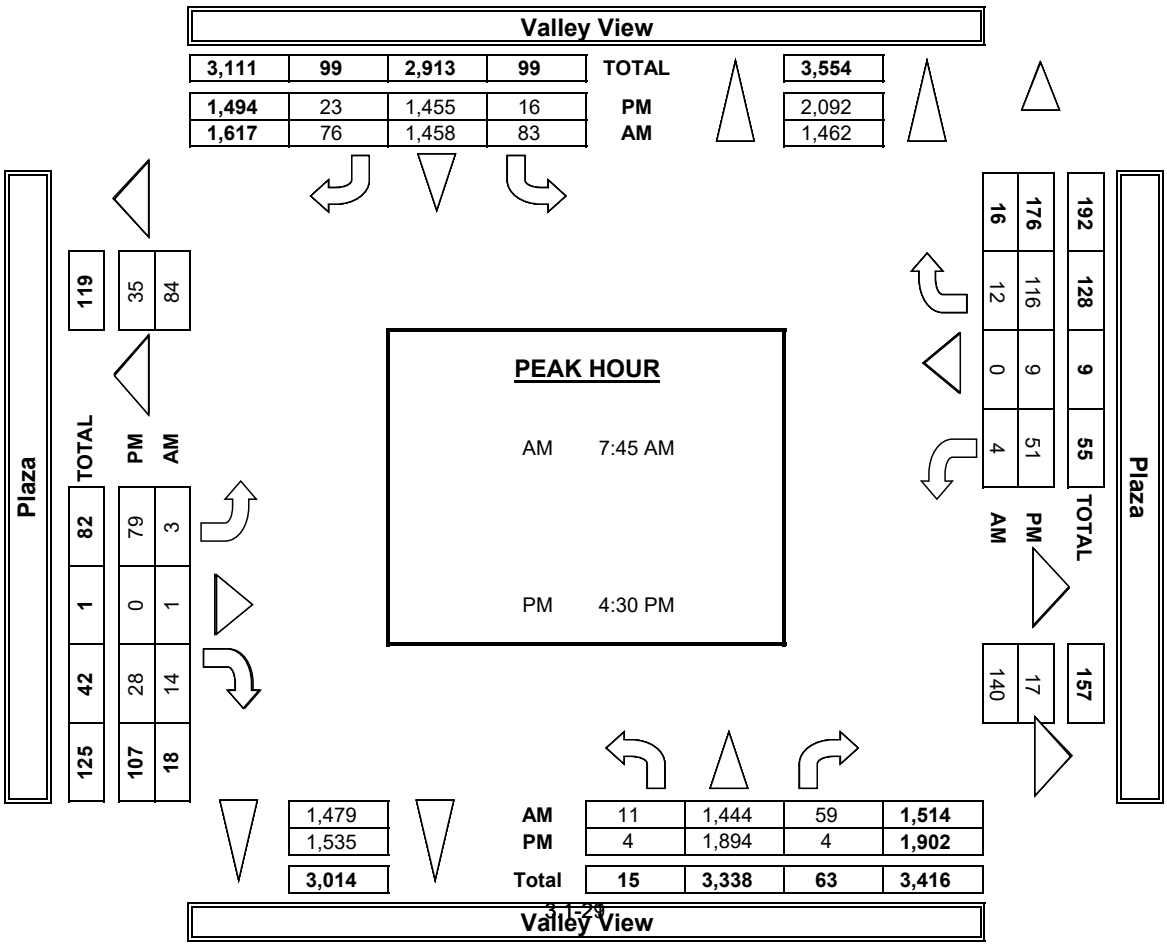
BICYCLE CROSSINGS

ES	WS	SS	NS	TOTAL
1	0	0	0	1
1	0	0	0	1
0	0	0	0	0
2	0	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
4	0	0	0	4
0	3	0	0	3
0	0	0	0	0
0	0	0	0	0
0	2	0	0	2
1	1	0	0	2
0	0	0	0	0
1	0	1	0	2
0	0	0	0	0
2	6	1	0	9

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Cypress	PROJECT #:	SC3604
8/30/22	NORTH & SOUTH:	Valley View	LOCATION #:	7
TUESDAY	EAST & WEST:	Plaza	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

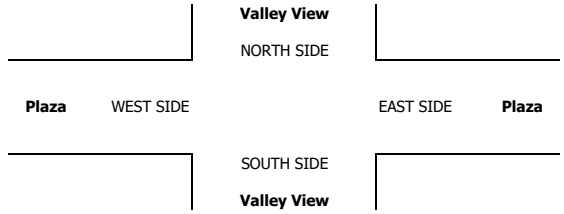
		NORTHBOUND Valley View			SOUTHBOUND Valley View			EASTBOUND Plaza			WESTBOUND Plaza			
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL
AM	7:00 AM	0	6	0	0	17	1	0	0	0	0	0	0	24
	7:15 AM	0	11	0	1	17	1	0	0	0	0	0	0	30
	7:30 AM	0	10	0	0	22	0	0	0	0	0	0	0	32
	7:45 AM	0	12	0	0	11	0	0	0	0	0	0	0	23
	8:00 AM	0	12	0	0	18	0	0	0	0	0	0	0	30
	8:15 AM	2	10	0	0	15	0	0	0	1	0	0	1	29
	8:30 AM	0	17	0	0	18	1	0	0	0	0	0	0	36
	8:45 AM	0	9	1	2	16	0	0	0	0	0	0	0	28
	VOLUMES	2	87	1	3	134	3	0	0	1	0	0	1	232
	APPROACH %	2%	97%	1%	2%	96%	2%	0%	0%	100%	0%	0%	100%	
	APP/DEPART	90	/	88	140	/	136	1	/	4	1	/	4	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	1	51	0	0	62	1	0	0	1	0	0	1	118
	APPROACH %	2%	96%	0%	0%	98%	2%	0%	0%	100%	0%	0%	100%	
	PEAK HR FACTOR		0.779			0.829			0.250			0.250		0.819
	APP/DEPART	53	/	52	63	/	64	1	/	0	1	/	2	0
PM	4:00 PM	1	12	0	1	10	1	0	0	0	0	0	0	25
	4:15 PM	0	12	2	0	7	0	0	1	0	0	0	1	23
	4:30 PM	0	11	0	0	7	0	0	0	0	0	0	0	18
	4:45 PM	0	10	0	0	5	0	0	0	1	0	1	0	17
	5:00 PM	0	7	0	0	1	0	0	0	0	0	0	0	8
	5:15 PM	0	5	0	2	5	0	0	0	0	0	0	0	12
	5:30 PM	0	6	0	0	8	0	0	0	0	0	0	0	14
	5:45 PM	0	11	0	0	5	0	0	0	0	0	0	0	16
	VOLUMES	1	74	2	3	48	1	0	1	1	0	1	1	133
	APPROACH %	1%	96%	3%	6%	92%	2%	0%	50%	50%	0%	50%	50%	
	APP/DEPART	77	/	75	52	/	49	2	/	6	2	/	3	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	33	0	2	18	0	0	0	1	0	1	0	55
	APPROACH %	0%	100%	0%	10%	90%	0%	0%	0%	100%	0%	100%	0%	
	PEAK HR FACTOR		0.750			0.714			0.250			0.250		0.764
	APP/DEPART	33	/	33	20	/	19	1	/	2	1	/	1	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	1



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Cypress	PROJECT #:	SC3604
8/30/22	NORTH & SOUTH:	Valley View	LOCATION #:	7
TUESDAY	EAST & WEST:	Plaza	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

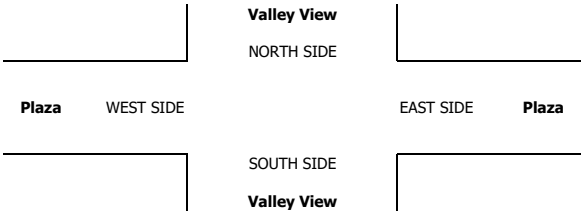
		NORTHBOUND Valley View			SOUTHBOUND Valley View			EASTBOUND Plaza			WESTBOUND Plaza			
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL
AM	7:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
	7:45 AM	0	0	0	0	2	1	0	0	0	0	0	0	3
	8:00 AM	0	0	0	0	6	0	0	1	0	0	0	0	7
	8:15 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
	8:30 AM	0	1	0	0	4	0	0	0	0	0	0	0	5
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
	VOLUMES	0	3	0	0	15	1	0	1	0	0	0	1	21
	APPROACH %	0%	100%	0%	0%	94%	6%	0%	100%	0%	0%	0%	100%	
	APP/DEPART	3	/	4	16	/	15	1	/	1	1	/	1	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	1	0	0	14	1	0	1	0	0	0	0	17
	APPROACH %	0%	100%	0%	0%	93%	7%	0%	100%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.250			0.625			0.250			0.000		0.607
	APP/DEPART	1	/	1	15	/	14	1	/	1	0	/	1	0
PM	4:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
	4:15 PM	0	5	0	0	1	0	0	0	0	0	0	0	6
	4:30 PM	0	1	0	0	2	0	0	0	0	0	0	0	3
	4:45 PM	0	1	0	0	2	0	0	0	0	0	0	0	3
	5:00 PM	0	3	0	0	0	0	0	0	0	0	0	0	3
	5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
	5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
	5:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
	VOLUMES	0	13	0	0	7	0	0	0	0	0	0	0	20
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	13	/	13	7	/	7	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	6	0	0	4	0	0	0	0	0	0	0	10
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.500			0.500			0.000			0.000		0.833
	APP/DEPART	6	/	6	4	/	4	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
				0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
				0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Cypress	PROJECT #:	SC3604
8/30/22	NORTH & SOUTH:	Valley View	LOCATION #:	7
TUESDAY	EAST & WEST:	Plaza	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

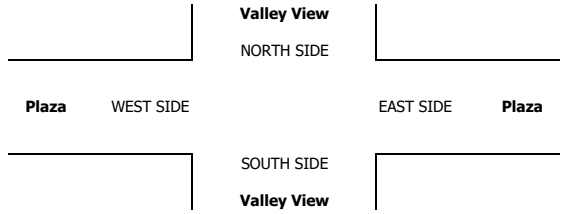
NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Valley View			SOUTHBOUND Valley View			EASTBOUND Plaza			WESTBOUND Plaza			
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL
AM	7:00 AM	0	1	0	0	1	0	1	0	0	0	0	0	3
	7:15 AM	0	1	0	0	2	0	0	0	0	0	0	0	3
	7:30 AM	0	0	0	0	3	0	0	0	0	0	0	0	3
	7:45 AM	0	2	0	0	1	0	0	0	0	0	0	0	3
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	2	0	0	2	0	0	0	0	0	0	0	4
	8:30 AM	0	4	0	0	6	0	0	0	0	0	0	0	10
	8:45 AM	0	2	0	0	2	0	0	0	0	0	0	0	4
	VOLUMES	0	12	0	0	17	0	1	0	0	0	0	0	30
	APPROACH %	0%	100%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	
	APP/DEPART	12	/	13	17	/	17	1	/	0	0	/	0	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	8	0	0	9	0	0	0	0	0	0	0	17
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.500			0.375			0.000			0.000		0.425
	APP/DEPART	8	/	8	9	/	9	0	/	0	0	/	0	0
PM	4:00 PM	0	1	0	0	2	0	0	0	0	0	0	0	3
	4:15 PM	0	3	0	0	0	0	0	0	0	0	0	0	3
	4:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
	4:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
	5:00 PM	0	3	0	0	0	0	0	0	0	0	0	0	3
	5:15 PM	0	1	0	0	1	0	0	0	0	1	0	0	3
	5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
	5:45 PM	0	3	0	0	2	0	0	0	0	0	0	0	5
	VOLUMES	0	14	0	0	7	0	0	0	0	1	0	0	22
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	APP/DEPART	14	/	14	7	/	8	0	/	0	1	/	0	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	6	0	0	3	0	0	0	0	1	0	0	10
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.500			0.750			0.000			0.250		0.833
	APP/DEPART	6	/	6	3	/	4	0	/	0	1	/	0	0

U-TURNS					
	NB	SB	EB	WB	TTL
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	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
PM	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0

RTOR				
	NRR	SRR	ERR	WRR
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
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
PM	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0



A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tuesday, August 30, 2022
JOB #: SC3604

CITY: Cypress
LOCATION: CLASS2 Plaza east of McDonnell

AM	EASTBOUND														PM	EASTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL	Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	17	3	1	0	0	0	0	0	0	0	0	0	21	12:00	5	315	43	3	13	1	0	0	2	0	0	0	0	382
0:15	0	17	0	0	0	0	0	0	1	0	0	0	0	18	12:15	2	280	38	0	18	1	0	0	3	0	0	0	0	342
0:30	1	27	4	0	0	0	0	0	1	0	0	0	0	33	12:30	0	296	33	1	9	0	0	0	5	0	0	0	0	344
0:45	0	18	1	0	0	0	0	0	0	0	0	0	0	19	12:45	0	291	51	0	10	4	0	0	4	0	0	0	0	360
1:00	0	7	2	1	0	0	0	0	0	0	0	0	0	10	13:00	0	301	29	1	9	2	0	0	2	0	0	0	0	344
1:15	0	15	3	0	0	0	0	0	1	0	0	0	0	19	13:15	0	289	37	1	11	1	0	1	2	0	0	0	0	342
1:30	0	21	3	0	1	0	0	0	0	0	0	0	0	25	13:30	1	278	46	2	13	0	0	0	2	0	0	0	0	342
1:45	0	8	2	0	0	0	0	0	0	0	0	0	0	10	13:45	1	263	32	1	6	3	0	2	0	0	0	0	0	308
2:00	0	11	1	0	0	0	0	0	0	0	0	0	0	12	14:00	0	310	50	0	12	3	0	1	3	0	0	0	0	379
2:15	0	19	0	0	0	0	0	0	0	0	0	0	0	19	14:15	2	303	46	1	14	3	0	0	2	0	0	0	0	371
2:30	0	7	3	0	0	0	0	0	0	0	0	0	0	10	14:30	0	342	64	1	14	1	0	0	1	0	0	0	0	423
2:45	0	17	3	0	0	0	0	0	1	0	0	0	0	21	14:45	0	332	46	1	12	5	0	1	3	0	0	0	0	400
3:00	0	20	5	0	0	0	0	0	1	0	0	0	0	26	15:00	2	315	62	0	15	6	0	1	1	0	0	0	0	402
3:15	2	21	2	0	0	0	0	0	0	0	0	0	0	25	15:15	1	337	69	2	9	5	0	1	2	0	0	0	0	426
3:30	0	14	2	0	0	0	0	0	0	0	0	0	0	16	15:30	2	399	54	3	11	1	0	0	1	0	0	0	0	471
3:45	0	27	7	0	0	0	0	0	0	0	0	0	0	34	15:45	2	392	68	3	16	2	0	0	3	0	0	0	0	486
4:00	1	20	6	0	0	0	0	0	0	0	0	0	0	27	16:00	3	382	53	0	10	4	0	0	1	0	0	0	0	453
4:15	0	42	6	1	1	0	0	0	1	0	0	0	0	51	16:15	2	415	54	2	8	3	0	0	0	0	0	0	0	484
4:30	0	54	8	0	0	1	0	0	2	0	0	0	0	65	16:30	2	391	53	1	7	1	0	0	0	0	0	0	0	455
4:45	1	72	9	1	3	0	0	0	1	0	0	0	0	87	16:45	1	381	47	1	6	3	0	2	0	0	0	0	0	441
5:00	1	42	8	1	1	0	0	0	2	0	0	0	0	55	17:00	1	484	45	0	6	1	0	0	0	0	0	0	0	537
5:15	0	78	11	1	1	2	0	0	3	2	0	0	0	98	17:15	5	429	49	1	8	1	0	0	0	0	0	0	0	493
5:30	2	103	17	1	3	1	0	0	2	0	0	0	0	129	17:30	4	413	41	1	1	2	0	0	0	0	0	0	0	462
5:45	0	164	29	0	5	0	0	0	6	0	0	0	0	204	17:45	0	382	51	0	4	0	0	0	2	0	0	0	0	439
6:00	1	125	35	1	3	0	0	0	3	0	0	0	0	168	18:00	0	370	52	1	5	0	0	0	0	0	0	0	0	428
6:15	0	147	23	1	5	0	0	0	2	0	0	0	0	178	18:15	5	366	48	0	1	1	0	0	4	0	0	0	0	425
6:30	1	188	46	1	3	2	0	0	1	0	0	0	0	242	18:30	1	284	27	1	5	1	0	0	1	0	0	0	0	320
6:45	0	239	49	0	4	2	0	1	3	1	0	0	0	299	18:45	0	310	32	0	10	0	0	0	0	0	0	0	0	352
7:00	1	263	41	1	9	0	0	0	3	0	0	0	0	318	19:00	0	264	33	1	4	0	0	0	0	0	0	0	0	302
7:15	1	282	46	1	6	2	0	0	1	1	0	0	0	340	19:15	1	265	32	0	3	0	0	0	2	0	0	0	0	303
7:30	3	341	39	2	7	2	0	0	1	1	0	0	0	396	19:30	1	263	25	1	7	0	0	0	0	0	0	0	0	297
7:45	1	385	38	1	9	1	0	0	3	0	0	0	0	438	19:45	0	240	19	0	0	0	0	0	1	0	0	0	0	260
8:00	2	393	46	0	11	2	0	0	2	0	0	0	0	456	20:00	1	246	18	1	2	0	0	0	0	0	0	0	0	268
8:15	1	355	43	1	10	0	0	1	2	0	0	0	0	413	20:15	0	207	15	0	1	0	0	0	1	0	0	0	0	224
8:30	1	306	37	1	9	0	0	0	6	1	0	0	0	361	20:30	0	165	10	0	2	0	0	0	1	0	0	0	0	178
8:45	1	269	49	1	12	6	1	1	4	0	0	0	0	344	20:45	1	158	9	0	2	0	0	0	0	0	0	0	0	170
9:00	1	239	30	0	11	2	4	0	4	0	0	0	0	291	21:00	1	134	8	1	0	1	0	0	0	0	0	0	0	145
9:15	0	240	28	1	6	2	0	1	0	0	0	0	0	278	21:15	0	136	10	0	0	1	0	0	0	0	0	0	0	147
9:30	1	225	26	0	8	1	1	1	4	1	0	0	0	268	21:30	1	121	4	0	1	0	0	0	0	0	0	0	0	127
9:45	3	226	40	1	6	4	2	3	0	0	0	0	0	285	21:45	0	75	6	0	1	0	0	0	1	0	0	0	0	83
10:00	0	215	38	1	10	2	0	1	1	0	0	0	0	268	22:00	0	72	1	1	2	0	0	0	0	0	0	0	0	76
10:15	0	215	44	0	8	2	0	0	3	0	0	0	0	272	22:15	1	70	4	0	0	0	0	0	0	0	0	0	0	75
10:30	0	214	41	0	12	2	0	0	1	0	0	0	0	270	22:30	0	68	6	0	0	0	0	0	1	0	0	0	0	75
10:45	0	243	45	1	10	0	2	0	1	1	0	0	0	303	22:45	1	53	7	1	0	0	0	0	0	0	0	0	0	62
11:00	2	277	43	1	6	3	0	1	2	0	0	0	0	335	23:00	0	55	3	2	0	0	0	0	0	0	0	0	0	60
11:15	1	254	45	0	4	4	1	0	3	0	0	0	0	312	23:15	0	38	6	0	0	0	0	0	0	0	0	0	0	44
11:30	0	280	51	1	9	4	0	0	4	0	0	0	0	349	23:30	1	53	1	0	2	0	0	0	1	0	0	0	0	58
11:45	0	229	47	0	7	2	1	0	3	1	0	0	0	290	23:45	0	31	5	0	1	0	0	0	0	0	0	0	0	37
TOTAL	29	6,991	1,105	24	200	49	12	10	79	9	0	0	0	8,508	TOTAL	51	12,364	1,542	36	291	57	0	9	52	0	0	0	0	14,402

AM PEAK HOUR	7:30 AM
AM PEAK VOLUME	1,703

PM PEAK HOUR	4:45 PM
PM PEAK VOLUME	1,933

CLASS 1	Class 1 — Motorcycles	**CLASS 8**	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	**CLASS 9**	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	**CLASS 10**	6 or More Axles, Single Trailer
CLASS 4	Buses	**CLASS 11**	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	**CLASS 12**	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	**CLASS 13**	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	80	19,355	2,647	60	491	106	12	19	131	9	0	0	0	22,910
% OF TOTAL	0.3%	84.5%	11.6%	0.3%	2.1%	0.5%	0.1%	0.1%	0.6%	0.0%	0.0%	0.0%	0.0%	100.0%
Class	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	
TOTAL: ALL	142	36,433	4,785	118	949	197	19	40	267	22	0	0	0	42,972
% OF TOTAL	0.6%	159.0%	20.9%	0.5%	4.1%	0.9%	0.1%	0.2%	1.2%	0.1%	0.0%	0.0%	0.0%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tuesday, August 30, 2022
JOB #: SC3604

CITY: Cypress
LOCATION: CLASS2 Plaza east of McDonnell

AM	WESTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	25	2	1	0	0	0	0	0	0	0	0	0	28
0:15	0	24	1	0	1	0	0	0	0	0	0	0	0	26
0:30	0	22	3	0	0	0	0	0	0	0	0	0	0	25
0:45	0	16	0	0	0	0	0	0	0	0	0	0	0	16
1:00	0	22	0	1	0	0	0	0	0	0	0	0	0	23
1:15	0	11	4	0	2	0	0	0	0	0	0	0	0	17
1:30	1	6	1	0	0	0	0	0	1	0	0	0	0	9
1:45	0	16	0	0	2	0	0	0	0	0	0	0	0	18
2:00	0	18	2	0	0	0	0	0	0	0	0	0	0	20
2:15	0	9	2	0	0	0	0	0	1	0	0	0	0	12
2:30	0	5	1	0	0	0	0	0	2	0	0	0	0	8
2:45	0	13	2	0	0	0	0	0	1	0	0	0	0	16
3:00	0	10	1	0	0	0	0	0	1	0	0	0	0	12
3:15	0	21	2	0	1	0	0	0	0	0	0	0	0	24
3:30	0	28	3	0	1	0	0	0	0	0	0	0	0	32
3:45	0	38	3	0	1	0	0	0	0	0	0	0	0	42
4:00	0	16	1	0	0	1	0	0	1	0	0	0	0	19
4:15	0	32	6	0	3	0	0	0	0	0	0	0	0	41
4:30	0	45	4	1	1	2	0	0	1	0	0	0	0	54
4:45	0	59	8	1	2	1	0	0	0	0	0	0	0	71
5:00	0	63	13	1	2	1	0	0	5	0	0	0	0	85
5:15	0	64	11	0	2	4	0	0	4	1	0	0	0	86
5:30	1	85	12	1	2	4	0	0	1	0	0	0	0	106
5:45	0	107	24	0	7	0	0	0	1	0	0	0	0	139
6:00	1	97	23	1	3	0	0	1	1	0	0	0	0	127
6:15	1	123	38	1	2	2	0	0	3	0	0	0	0	170
6:30	0	173	49	2	10	1	0	0	0	1	0	0	0	236
6:45	1	210	44	1	8	0	0	0	5	0	0	0	0	269
7:00	0	236	35	2	6	4	0	1	3	0	0	0	0	287
7:15	1	340	49	1	7	4	0	0	2	0	0	0	0	404
7:30	2	347	50	0	20	0	1	0	1	1	0	0	0	422
7:45	1	374	46	1	11	4	0	1	2	0	0	0	0	440
8:00	1	336	47	1	7	4	0	1	5	2	0	0	0	404
8:15	1	351	46	1	8	2	0	0	3	0	0	0	0	412
8:30	3	328	37	0	10	3	2	0	6	0	0	0	0	389
8:45	2	283	34	1	11	3	0	1	4	1	0	0	0	340
9:00	1	253	29	1	13	1	0	1	1	0	0	0	0	300
9:15	3	198	30	1	6	0	0	0	4	1	0	0	0	243
9:30	0	226	31	1	7	0	0	0	3	0	0	0	0	268
9:45	0	216	32	0	12	1	0	0	2	0	0	0	0	263
10:00	0	213	28	1	8	2	0	0	7	0	0	0	0	259
10:15	1	240	33	0	15	1	0	1	1	0	0	0	0	292
10:30	0	227	26	1	8	0	2	1	1	1	0	0	0	267
10:45	1	235	32	0	12	1	2	2	1	0	0	0	0	286
11:00	0	199	35	1	9	1	0	0	3	0	0	0	0	248
11:15	0	242	48	0	25	0	0	0	3	1	0	0	0	319
11:30	0	255	35	0	8	1	0	0	2	0	0	0	0	301
11:45	1	256	49	1	9	0	0	1	4	0	0	0	0	321
TOTAL	23	6,713	1,012	25	262	48	7	11	86	9	0	0	0	8,196

AM PEAK HOUR	7:30 AM
AM PEAK VOLUME	1,678

PM	WESTBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	0	241	43	0	9	0	0	0	1	0	0	0	0	294
12:15	0	284	36	2	4	1	0	0	2	0	0	0	0	329
12:30	4	272	31	0	6	4	0	0	4	0	0	0	0	321
12:45	1	288	27	1	7	3	0	1	3	1	0	0	0	332
13:00	1	255	42	0	18	0	0	1	0	0	0	0	0	317
13:15	2	247	32	2	11	1	0	0	4	0	0	0	0	299
13:30	1	296	35	1	12	2	0	0	1	1	0	0	0	349
13:45	3	267	37	2	9	3	0	0	4	0	0	0	0	325
14:00	3	235	32	1	18	1	0	0	3	0	0	0	0	293
14:15	0	264	32	0	11	2	0	0	2	0	0	0	0	311
14:30	1	313	39	1	3	3	0	2	1	1	0	0	0	364
14:45	2	333	45	2	8	1	0	1	1	0	0	0	0	393
15:00	1	293	37	1	0	2	0	0	1	0	0	0	0	335
15:15	0	267	36	2	9	1	0	3	0	1	0	0	0	319
15:30	0	288	37	1	10	5	0	1	1	0	0	0	0	343
15:45	0	290	38	2	10	2	0	0	0	0	0	0	0	342
16:00	2	312	38	1	6	3	0	0	3	0	0	0	0	365
16:15	2	291	26	1	3	2	0	0	1	0	0	0	0	326
16:30	1	354	44	0	5	3	0	0	2	0	0	0	0	409
16:45	3	361	35	1	3	2	0	0	1	0	0	0	0	406
17:00	2	431	45	0	6	0	0	0	0	0	0	0	0	484
17:15	0	351	29	1	5	0	0	0	0	0	0	0	0	386
17:30	1	351	41	0	3	0	0	0	1	0	0	0	0	397
17:45	0	324	25	1	2	0	0	0	0	0	0	0	0	352
18:00	0	322	32	1	2	0	0	0	1	0	0	0	0	358
18:15	0	248	21	1	0	0	0	0	0	0	0	0	0	270
18:30	0	283	14	0	1	0	0	0	0	0	0	0	0	298
18:45	0	216	15	1	2	0	0	0	1	0	0	0	0	235
19:00	1	226	14	0	3	1	0	1	1	0	0	0	0	247
19:15	0	210	22	0	0	0	0	0	1	0	0	0	0	233
19:30	0	206	16	1	3	0	0	0	1	0	0	0	0	227
19:45	0	197	15	1	1	0	0	0	2	0	0	0	0	216
20:00	2	169	16	1	0	0	0	0	0	0	0	0	0	188
20:15	1	126	14	0	0	1	0	0	1	0	0	0	0	143
20:30	1	125	10	1	2	0	0	0	1	0	0	0	0	140
20:45	0	107	8	0	0	0	0	0	0	0	0	0	0	115
21:00	0	118	9	1	0	0	0	0	1	0	0	0	0	129
21:15	0	101	9	0	0	0	0	0	0	0	0	0	0	110
21:30	0	72	11	0	0	0	0	0	0	0	0	0	0	83
21:45	1	67	3	0	1	0	0	0	1	0	0	0	0	73
22:00	1	51	8	1	0	0	0	0	2	0	0	0	0	63
22:15	0	54	6	0	0	0	0	0	0	0	0	0	0	60
22:30	0	57	6	0	0	0	0	0	1	0	0	0	0	64
22:45	1	47	5	0	1	0	0	0	0	0	0	0	0	54
23:00	0	38	1	1	2	0	0	0	0	0	0	0	0	42
23:15	0	41	1	0	0	0	0	0	0	0	0	0	0	42
23:30	1	47	4	0	0	0	0	0	0	0	0	0	0	52
23:45	0	29	4	0	0	0	0	0	0	0	0	0	0	33
TOTAL	39	####	1,126	33	196	43	0	10	50	4	0	0	0	11,866

PM PEAK HOUR	4:30 PM
PM PEAK VOLUME	1,685

CLASS 1	Class 1 — Motorcycles	**CLASS 8**	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	**CLASS 9**	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	**CLASS 10**	6 or More Axles, Single Trailer
CLASS 4	Buses	**CLASS 11**	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	**CLASS 12**	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	**CLASS 13**	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	62	####	2,138	58	458	91	7	21	136	13	0	0	0	20,062
% OF TOTAL	0.3%	85.1%	10.7%	0.3%	2.3%	0.5%	0.0%	0.1%	0.7%	0.1%	0.0%	0.0%	0.0%	100.0%

Class	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tuesday, August 30, 2022
JOB #: SC3604

CITY: Cypress
LOCATION: CLASS3 Valley View north of Plaza

AM	EASTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
0:15	0	0	1	0	0	0	0	0	0	0	0	0	0	1
0:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30	0	1	1	0	0	0	0	0	0	0	0	0	0	2
1:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30	0	0	0	0	0	0	0	0	1	0	0	0	0	1
4:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
5:15	0	3	1	0	0	0	0	0	0	0	0	0	0	4
5:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:45	0	0	1	0	1	0	0	0	0	0	0	0	0	2
6:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
6:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30	0	3	1	0	0	0	0	0	0	0	0	0	0	4
6:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
7:00	0	4	1	0	0	0	0	0	1	0	0	0	0	6
7:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
7:30	0	3	0	0	0	0	0	0	0	0	0	0	0	3
7:45	0	10	0	0	0	0	0	0	0	0	0	0	0	10
8:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
8:15	0	8	0	0	0	0	0	0	1	0	0	0	0	9
8:30	0	7	2	0	0	0	0	0	0	0	0	0	0	9
8:45	0	6	2	0	0	0	0	0	0	0	0	0	0	8
9:00	0	6	1	0	0	0	0	0	1	0	0	0	0	8
9:15	0	4	0	0	0	0	0	0	0	0	0	0	0	4
9:30	0	4	1	0	0	0	0	0	0	0	0	0	0	5
9:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
10:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
10:15	0	2	0	0	0	0	0	0	1	0	0	0	0	3
10:30	0	4	1	0	0	0	0	0	0	0	0	0	0	5
10:45	0	5	0	0	1	0	0	0	0	0	0	0	0	6
11:00	0	7	0	0	1	0	0	0	0	0	0	0	0	8
11:15	0	7	0	0	0	0	0	0	0	0	0	0	0	7
11:30	0	7	1	0	0	0	0	0	0	0	0	0	0	8
11:45	0	7	1	0	0	0	0	0	0	0	0	0	0	8
TOTAL	0	121	16	0	3	0	0	0	5	0	0	0	0	145

AM PEAK HOUR	7:45 AM
AM PEAK VOLUME	35

PM	EASTBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	0	11	1	0	0	0	0	0	0	0	0	0	0	12
12:15	0	19	2	0	1	0	0	0	1	0	0	0	0	23
12:30	0	8	1	0	0	0	0	1	0	0	0	0	0	10
12:45	0	5	1	0	0	0	0	0	0	0	0	0	0	6
13:00	0	7	0	0	1	0	0	0	0	0	0	0	0	8
13:15	0	6	1	0	1	0	0	0	1	0	0	0	0	9
13:30	0	7	1	0	0	0	0	0	1	0	0	0	0	9
13:45	0	3	0	0	0	0	0	0	1	0	0	0	0	4
14:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
14:15	0	4	0	0	0	0	0	0	0	0	0	0	0	4
14:30	0	6	1	0	0	0	0	0	0	0	0	0	0	7
14:45	0	2	3	0	0	0	0	0	1	0	0	0	0	6
15:00	0	8	1	0	0	0	0	0	1	0	0	0	0	10
15:15	0	7	1	0	0	0	0	0	2	0	0	0	0	10
15:30	0	7	0	0	0	0	0	0	1	0	0	0	0	8
15:45	0	9	0	0	0	0	0	0	0	0	0	0	0	9
16:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
16:15	0	7	2	0	0	0	0	0	0	0	0	0	0	9
16:30	0	13	1	0	0	0	0	0	0	0	0	0	0	14
16:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
17:00	0	17	4	0	0	0	0	0	0	0	0	0	0	21
17:15	0	10	1	0	0	0	0	0	0	0	0	0	0	11
17:30	0	12	0	0	0	0	0	0	0	0	0	0	0	12
17:45	0	8	0	0	0	0	0	0	0	0	0	0	0	8
18:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
18:15	0	7	1	0	0	0	0	0	0	0	0	0	0	8
18:30	0	5	1	0	0	0	0	0	0	0	0	0	0	6
18:45	0	6	0	0	0	0	0	0	0	0	0	0	0	6
19:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
19:15	0	3	0	0	0	0	0	0	0	0	0	0	0	3
19:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
19:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
20:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
20:15	0	1	1	0	0	1	0	0	0	0	0	0	0	3
20:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
20:45	0	6	0	0	0	0	0	0	0	0	0	0	0	6
21:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
21:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:45	0	3	1	0	0	0	0	0	0	0	0	0	0	4
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:30	0	1	1	0	0	1	0	0	0	0	0	0	0	3
22:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	245	31	0	3	2	0	1	9	0	0	0	0	291

PM PEAK HOUR	5:00 PM
PM PEAK VOLUME	52

CLASS 1	Class 1 — Motorcycles	**CLASS 8**	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	**CLASS 9**	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	**CLASS 10**	6 or More Axles, Single Trailer
CLASS 4	Buses	**CLASS 11**	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	**CLASS 12**	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	**CLASS 13**	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	0	366	47	0	6	2	0	1	14	0	0	0	0	436
% OF TOTAL	0.0%	83.9%	10.8%	0.0%	1.4%	0.5%	0.0%	0.2%	3.2%	0.0%	0.0%	0.0%	0.0%	100.0%
Class	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	
TOTAL: ALL	0	673	78	0	17	5	0	3	26	0	0	0	0	802
% OF TOTAL	0.0%	154.4%	17.9%	0.0%	3.9%	1.1%	0.0%	0.7%	6.0%	0.0%	0.0%	0.0%	0.0%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tuesday, August 30, 2022
JOB #: SC3604

CITY: Cypress
LOCATION: CLASS3 Valley View north of Plaza

AM	WESTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0:15	0	0	1	0	0	0	0	0	0	0	0	0	0	1
0:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15	0	0	0	0	0	0	0	0	1	0	0	0	0	1
4:30	0	0	0	0	0	0	0	0	1	0	0	0	0	1
4:45	0	3	0	0	0	0	0	0	0	0	0	0	0	3
5:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
5:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
5:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
6:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
6:15	0	2	0	0	0	0	0	0	1	0	0	0	0	3
6:30	0	1	0	0	0	1	0	0	1	0	0	0	0	3
6:45	0	4	1	0	0	0	0	0	0	0	0	0	0	5
7:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
7:15	0	6	2	0	0	0	0	0	0	0	0	0	0	8
7:30	0	6	0	0	0	0	0	0	0	0	0	0	0	6
7:45	0	12	0	0	0	0	0	0	0	0	0	0	0	12
8:00	0	16	0	0	0	0	0	0	0	0	0	0	0	16
8:15	0	13	2	0	0	0	0	1	0	0	0	0	0	16
8:30	0	9	0	0	0	0	0	0	0	0	0	0	0	9
8:45	0	8	0	0	0	0	0	0	0	0	0	0	0	8
9:00	0	8	0	0	1	0	0	0	0	0	0	0	0	9
9:15	0	4	1	0	0	0	0	0	0	0	0	0	0	5
9:30	0	6	0	0	0	0	0	0	0	0	0	0	0	6
9:45	0	2	1	0	0	0	0	0	0	0	0	0	0	3
10:00	0	7	1	0	1	0	0	0	0	0	0	0	0	9
10:15	0	3	2	0	2	0	0	0	0	0	0	0	0	7
10:30	0	4	0	0	1	0	0	0	1	0	0	0	0	6
10:45	0	2	0	0	0	0	0	0	1	0	0	0	0	3
11:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
11:15	0	3	0	0	0	0	0	0	1	0	0	0	0	4
11:30	0	5	0	0	0	0	0	0	0	0	0	0	0	5
11:45	0	1	0	0	1	0	0	0	0	0	0	0	0	2
TOTAL	0	152	13	0	6	1	0	1	7	0	0	0	0	180

AM PEAK HOUR	7:45 AM
AM PEAK VOLUME	53

PM	WESTBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	0	5	0	0	1	0	0	1	0	0	0	0	0	7
12:15	0	7	2	0	0	0	0	0	1	0	0	0	0	10
12:30	0	6	2	0	1	0	0	0	0	0	0	0	0	9
12:45	0	9	1	0	1	0	0	0	2	0	0	0	0	13
13:00	0	11	1	0	0	0	0	0	0	0	0	0	0	12
13:15	0	8	0	0	0	0	0	0	0	0	0	0	0	8
13:30	0	4	0	0	0	0	0	0	1	0	0	0	0	5
13:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5
14:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
14:15	0	1	1	0	0	0	0	0	1	0	0	0	0	3
14:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
14:45	0	7	0	0	0	0	0	0	0	0	0	0	0	7
15:00	0	3	1	0	0	2	0	0	0	0	0	0	0	6
15:15	0	2	3	0	0	0	0	0	0	0	0	0	0	5
15:30	0	3	0	0	1	0	0	0	0	0	0	0	0	4
15:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
16:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
16:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
16:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
16:45	0	4	1	0	1	0	0	0	0	0	0	0	0	6
17:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
17:15	0	7	0	0	0	0	0	0	0	0	0	0	0	7
17:30	0	8	0	0	0	0	0	0	0	0	0	0	0	8
17:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
18:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
18:15	0	3	0	0	0	0	0	0	0	0	0	0	0	3
18:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
18:45	0	3	0	0	0	0	0	0	0	0	0	0	0	3
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:15	0	5	0	0	0	0	0	0	0	0	0	0	0	5
19:30	0	5	1	0	0	0	0	0	0	0	0	0	0	6
19:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
20:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
20:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:30	0	0	1	0	0	0	0	0	0	0	0	0	0	1
20:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
21:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
22:15	0	0	1	0	0	0	0	0	0	0	0	0	0	1
22:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
23:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
TOTAL	0	155	18	0	5	2	0	1	5	0	0	0	0	186

PM PEAK HOUR	12:15 PM
PM PEAK VOLUME	44

CLASS 1	Class 1 — Motorcycles	**CLASS 8**	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	**CLASS 9**	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	**CLASS 10**	6 or More Axles, Single Trailer
CLASS 4	Buses	**CLASS 11**	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	**CLASS 12**	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	**CLASS 13**	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	0	307	31	0	11	3	0	2	12	0	0	0	0	366
% OF TOTAL	0.0%	83.9%	8.5%	0.0%	3.0%	0.8%	0.0%	0.5%	3.3%	0.0%	0.0%	0.0%	0.0%	100.0%

Class	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tuesday, August 30, 2022
JOB #: SC3604

CITY: Cypress
LOCATION: TMC1 Douglas and Katella

AM	NORTHBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	1	31	2	0	0	0	0	0	0	0	0	0	0	34
0:15	1	18	4	0	0	0	0	0	1	0	0	0	0	24
0:30	0	29	1	0	0	0	0	0	2	0	0	0	0	32
0:45	0	19	1	0	0	0	0	0	0	0	0	0	0	20
1:00	0	29	3	0	0	0	0	0	1	0	0	0	0	33
1:15	0	16	1	0	0	0	0	0	1	0	0	0	0	18
1:30	0	17	2	0	0	0	0	0	0	0	0	0	0	19
1:45	0	4	1	0	1	0	0	0	1	0	0	0	0	7
2:00	0	13	1	0	0	0	0	0	0	0	0	0	0	14
2:15	0	13	0	0	0	0	0	0	2	0	0	0	0	15
2:30	0	8	0	0	0	0	0	0	0	0	0	0	0	8
2:45	0	9	0	0	0	0	0	0	1	0	0	0	0	10
3:00	0	13	1	0	0	0	0	0	1	0	0	0	0	15
3:15	0	5	1	0	0	0	0	0	0	0	0	0	0	6
3:30	0	15	2	0	0	0	0	0	0	0	0	0	0	17
3:45	0	11	1	0	0	0	0	0	0	0	0	0	0	12
4:00	0	14	2	0	0	0	0	0	1	0	0	0	0	17
4:15	0	31	1	1	2	0	0	0	0	0	0	0	0	35
4:30	0	26	3	0	0	0	0	0	1	0	0	0	0	30
4:45	0	45	6	0	1	0	0	0	1	0	0	0	0	53
5:00	0	35	7	0	2	0	0	0	1	0	0	0	0	45
5:15	0	44	10	0	1	1	0	1	2	0	0	0	0	59
5:30	0	66	10	0	1	0	0	1	1	0	0	0	0	79
5:45	0	80	13	1	2	0	0	0	2	0	0	0	0	98
6:00	0	78	15	0	3	0	0	0	0	0	0	0	0	96
6:15	1	95	14	0	3	2	0	0	2	0	0	0	0	117
6:30	0	125	26	1	6	1	0	1	3	0	0	0	0	163
6:45	1	177	12	1	4	1	0	0	1	0	0	0	0	197
7:00	0	211	22	0	1	3	0	1	1	0	0	0	0	239
7:15	1	260	37	0	5	0	0	0	1	0	0	0	0	304
7:30	0	313	29	2	5	0	0	0	0	0	0	0	0	349
7:45	0	325	27	2	7	0	0	0	2	0	0	0	0	363
8:00	1	326	45	0	7	0	0	0	0	0	0	0	0	379
8:15	0	299	40	1	4	0	0	0	2	0	0	0	0	346
8:30	0	302	45	0	8	1	0	0	4	0	0	0	0	360
8:45	0	250	40	1	6	1	0	0	2	0	0	0	0	300
9:00	1	212	35	0	12	2	0	0	1	0	0	0	0	263
9:15	0	194	26	0	5	1	0	1	3	0	0	0	0	230
9:30	0	178	30	1	9	0	0	1	1	0	0	0	0	220
9:45	0	207	42	1	10	1	0	1	2	0	0	0	0	264
10:00	1	178	27	0	13	0	0	1	2	0	0	0	0	222
10:15	1	185	31	0	13	0	0	0	3	0	0	0	0	233
10:30	0	200	48	0	12	0	0	0	2	0	0	0	0	262
10:45	0	226	33	1	15	0	0	0	2	0	0	0	0	277
11:00	1	190	48	1	18	0	0	1	1	0	0	0	0	260
11:15	0	228	46	1	9	1	0	0	5	0	0	0	0	290
11:30	1	237	35	0	10	1	0	0	5	0	0	0	0	289
11:45	1	253	38	1	15	3	0	1	1	0	0	0	0	313
TOTAL	12	5,840	864	16	210	19	0	10	65	0	0	0	0	7,036

AM PEAK HOUR	7:45 AM
AM PEAK VOLUME	1,448

PM	NORTHBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	2	314	46	3	10	0	0	0	1	0	0	0	0	376
12:15	3	313	30	0	11	0	0	0	3	0	0	0	0	360
12:30	0	280	45	1	12	0	0	1	1	0	0	0	0	340
12:45	1	268	42	1	10	0	0	0	1	0	0	0	0	323
13:00	0	244	42	0	10	1	0	0	4	0	0	0	0	301
13:15	1	221	40	0	18	2	0	1	4	0	0	0	0	287
13:30	0	276	39	1	12	1	0	1	2	0	0	0	0	332
13:45	1	276	43	2	13	0	0	0	1	0	0	0	0	336
14:00	1	279	46	2	8	0	0	1	0	0	0	0	0	337
14:15	1	318	37	0	16	0	0	0	1	0	0	0	0	373
14:30	0	338	49	1	11	0	0	0	2	0	0	0	0	401
14:45	0	375	66	1	6	2	0	1	2	0	0	0	0	453
15:00	1	351	55	1	4	0	0	1	3	0	0	0	0	416
15:15	3	347	61	2	9	3	0	1	2	0	0	0	0	428
15:30	0	372	50	4	10	0	0	0	5	0	0	0	0	441
15:45	1	403	59	1	9	0	0	0	2	0	0	0	0	475
16:00	0	376	63	0	8	1	0	0	1	0	0	0	0	449
16:15	2	413	54	1	14	4	0	0	3	0	0	0	0	491
16:30	4	429	61	0	4	1	0	0	1	0	0	0	0	500
16:45	1	440	66	1	4	1	1	0	1	0	0	0	0	515
17:00	1	479	61	1	8	3	0	1	3	0	0	0	0	557
17:15	1	472	51	0	5	1	0	0	1	0	0	0	0	531
17:30	2	457	42	0	6	0	0	2	0	0	0	0	0	509
17:45	2	497	47	1	8	0	0	1	2	0	0	0	0	558
18:00	2	399	43	0	2	0	0	0	0	0	0	0	0	446
18:15	1	437	35	0	3	0	0	0	0	0	0	0	0	476
18:30	2	322	23	0	6	0	0	0	1	0	0	0	0	354
18:45	1	279	31	1	1	0	0	1	2	0	0	0	0	316
19:00	1	255	21	1	4	0	0	1	1	0	0	0	0	284
19:15	1	270	23	0	4	0	0	1	0	0	0	0	0	299
19:30	2	243	20	0	2	0	0	0	0	0	0	0	0	267
19:45	0	211	19	0	3	0	0	1	1	0	0	0	0	235
20:00	1	201	15	1	3	0	0	0	2	0	0	0	0	223
20:15	0	183	12	0	3	3	0	0	1	0	0	0	0	202
20:30	0	172	8	0	0	0	0	0	0	0	0	0	0	180
20:45	0	161	5	0	0	0	0	0	2	0	0	0	0	168
21:00	0	145	2	1	0	0	0	0	0	0	0	0	0	148
21:15	0	142	8	0	2	0	0	0	1	0	0	0	0	153
21:30	0	130	4	0	0	1	0	0	1	0	0	0	0	136
21:45	0	118	8	0	1	0	0	0	1	0	0	0	0	128
22:00	1	110	6	0	0	0	0	0	0	0	0	0	0	117
22:15	0	86	7	0	0	0	0	0	0	0	0	0	0	93
22:30	0	75	11	0	0	1	0	0	2	0	0	0	0	89
22:45	1	76	5	0	0	0	0	0	0	0	0	0	0	82
23:00	0	76	3	0	0	0	0	0	0	0	0	0	0	79
23:15	0	64	4	0	0	0	0	0	0	0	0	0	0	68
23:30	0	61	2	1	0	1	0	0	0	0	0	0	0	65
23:45	0	54	1	0	0	0	0	0	0	0	0	0	0	55
TOTAL	41	12,808	1,511	29	260	26	1	15	61	0	0	0	0	14,752

PM PEAK HOUR	5:00 PM
PM PEAK VOLUME	2,155

CLASS 1	Class 1 — Motorcycles	**CLASS 8**	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	**CLASS 9**	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	**CLASS 10**	6 or More Axles, Single Trailer
CLASS 4	Buses	**CLASS 11**	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	**CLASS 12**	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	**CLASS 13**	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	53	18,648	2,375	45	470	45	1	25	126	0	0	0	0	21,788
% OF TOTAL	0.2%	85.6%	10.9%	0.2%	2.2%	0.2%	0.0%	0.1%	0.6%	0.0%	0.0%	0.0%	0.0%	100.0%
Class	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	
TOTAL: ALL	105	35,765	4,738	91	985	88	4	51	244	0	0	0	0	42,071
% OF TOTAL	0.5%	164.1%	21.7%	0.4%	4.5%	0.4%	0.0%	0.2%	1.1%	0.0%	0.0%	0.0%	0.0%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tuesday, August 30, 2022
JOB #: SC3604

CITY: Cypress
LOCATION: TMC1 Douglas and Katella

AM	SOUTHBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	23	4	0	0	0	0	0	0	0	0	0	0	27
0:15	0	14	3	0	0	0	0	0	0	0	0	0	0	17
0:30	0	20	2	0	0	0	0	0	1	0	0	0	0	23
0:45	0	7	1	0	0	0	0	0	0	0	0	0	0	8
1:00	0	7	3	0	0	0	0	0	1	0	0	0	0	11
1:15	0	13	1	0	0	0	0	0	1	0	0	0	0	15
1:30	0	13	0	0	0	0	0	0	1	0	0	0	0	14
1:45	0	10	3	0	0	0	0	0	0	0	0	0	0	13
2:00	0	11	1	0	1	1	0	0	0	0	0	0	0	14
2:15	0	5	0	0	0	0	0	0	1	0	0	0	0	6
2:30	0	6	2	0	0	0	0	0	1	0	0	0	0	9
2:45	0	15	1	0	0	0	0	0	1	0	0	0	0	17
3:00	0	13	8	0	2	0	0	0	0	0	0	0	0	23
3:15	0	16	1	0	1	0	0	0	1	0	0	0	0	19
3:30	0	14	4	0	1	0	0	0	0	0	0	0	0	19
3:45	0	28	2	0	2	0	0	0	0	0	0	0	0	32
4:00	0	21	3	0	2	0	0	0	2	0	0	0	0	28
4:15	0	28	8	0	4	1	0	1	1	0	0	0	0	43
4:30	0	61	10	0	3	0	0	1	1	0	0	0	0	76
4:45	1	95	9	0	8	0	0	0	0	0	0	0	0	113
5:00	0	80	15	0	6	0	0	1	1	0	0	0	0	103
5:15	1	90	24	0	3	1	0	0	1	0	0	0	0	120
5:30	0	139	31	1	5	1	0	0	2	0	0	0	0	179
5:45	0	141	32	0	8	0	0	0	2	0	0	0	0	183
6:00	0	151	27	0	7	0	0	0	2	0	0	0	0	187
6:15	1	183	46	0	5	0	0	1	3	0	0	0	0	239
6:30	2	204	44	0	11	2	0	1	3	0	0	0	0	267
6:45	2	270	53	1	9	1	0	0	0	0	0	0	0	336
7:00	0	337	31	0	11	3	0	0	1	0	0	0	0	383
7:15	1	327	45	0	7	1	0	0	2	0	0	0	0	383
7:30	3	348	53	0	12	0	0	0	3	0	0	0	0	419
7:45	2	352	43	2	6	3	0	0	1	0	0	0	0	409
8:00	1	335	39	0	11	6	0	0	0	0	0	0	0	392
8:15	0	362	38	0	6	1	0	1	1	0	0	0	0	409
8:30	2	352	32	1	12	4	0	1	5	0	0	0	0	409
8:45	1	277	55	1	5	0	0	2	0	0	0	0	0	341
9:00	1	216	45	3	5	1	0	0	2	0	0	0	0	273
9:15	0	224	37	1	15	1	0	0	1	0	0	0	0	279
9:30	0	271	53	0	17	1	0	0	0	0	0	0	0	342
9:45	0	231	42	1	11	0	0	0	3	0	0	0	0	288
10:00	0	245	44	1	9	1	0	0	2	0	0	0	0	302
10:15	2	192	35	0	15	0	0	0	1	0	0	0	0	245
10:30	1	237	34	1	15	1	0	0	4	0	0	0	0	293
10:45	0	207	44	0	13	1	0	0	4	0	0	0	0	269
11:00	0	225	42	0	15	0	0	0	2	0	0	0	0	284
11:15	0	200	38	1	19	0	0	0	3	0	0	0	0	261
11:30	0	233	43	1	8	1	0	0	5	0	0	0	0	291
11:45	1	231	34	0	8	0	0	0	3	0	0	0	0	277
TOTAL	22	7,080	1,165	15	298	32	0	9	69	0	0	0	0	8,690

AM PEAK HOUR	7:30 AM
AM PEAK VOLUME	1,629

PM	SOUTHBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	0	265	32	0	9	0	0	1	1	0	0	0	0	308
12:15	2	280	32	1	14	0	0	0	2	0	0	0	0	331
12:30	5	262	33	0	10	0	0	0	3	0	0	0	0	313
12:45	0	258	42	1	12	1	0	0	0	0	0	0	0	314
13:00	0	292	44	1	6	0	0	0	1	0	0	0	0	344
13:15	1	259	29	0	10	0	0	0	4	0	0	0	0	303
13:30	0	257	32	1	12	1	0	1	1	0	0	0	0	305
13:45	0	271	36	1	5	1	0	0	1	0	0	0	0	315
14:00	0	212	38	0	10	0	0	1	1	0	0	0	0	262
14:15	0	269	49	0	7	0	0	1	3	0	0	0	0	329
14:30	0	310	41	2	5	0	0	0	2	0	0	0	0	360
14:45	1	260	33	2	5	2	0	1	0	0	0	0	0	304
15:00	1	329	30	2	6	1	0	0	2	0	0	0	0	371
15:15	0	293	40	1	8	0	0	1	1	0	0	0	0	344
15:30	0	339	43	3	7	1	0	2	1	0	0	0	0	396
15:45	0	282	42	2	8	0	0	2	1	0	0	0	0	337
16:00	1	314	43	3	7	0	0	1	2	0	0	0	0	371
16:15	1	259	32	2	3	1	0	0	0	0	0	0	0	298
16:30	1	344	44	1	6	0	2	0	1	0	0	0	0	399
16:45	2	304	49	1	4	0	1	1	1	0	0	0	0	363
17:00	0	331	36	0	3	0	0	0	0	0	0	0	0	370
17:15	2	312	38	1	5	0	0	0	1	0	0	0	0	359
17:30	1	315	33	0	7	0	0	0	0	0	0	0	0	356
17:45	0	293	34	1	3	0	0	1	2	0	0	0	0	334
18:00	0	280	26	0	6	0	0	0	0	0	0	0	0	312
18:15	0	280	38	0	6	0	0	1	2	0	0	0	0	327
18:30	0	274	26	0	2	1	0	2	2	0	0	0	0	307
18:45	1	225	29	1	2	0	0	0	0	0	0	0	0	258
19:00	2	201	20	0	3	0	0	0	0	0	0	0	0	226
19:15	2	212	13	0	7	0	0	0	1	0	0	0	0	235
19:30	0	184	18	0	2	0	0	1	1	0	0	0	0	206
19:45	0	160	11	1	3	0	0	0	1	0	0	0	0	176
20:00	2	151	17	0	3	1	0	0	1	0	0	0	0	175
20:15	0	130	24	0	2	1	0	0	1	0	0	0	0	158
20:30	2	123	11	0	2	0	0	0	2	0	0	0	0	140
20:45	0	126	13	1	3	0	0	0	0	0	0	0	0	143
21:00	0	101	6	0	0	0	0	0	2	0	0	0	0	109
21:15	0	97	11	0	1	0	0	0	0	0	0	0	0	109
21:30	1	83	4	0	1	0	0	0	3	0	0	0	0	92
21:45	0	80	3	1	0	0	0	0	0	0	0	0	0	84
22:00	2	81	2	0	0	0	0	0	0	0	0	0	0	85
22:15	0	72	6	0	0	0	0	0	0	0	0	0	0	78
22:30	0	65	3	0	0	0	0	0	0	0	0	0	0	68
22:45	0	52	4	0	1	0	0	0	1	0	0	0	0	58
23:00	0	42	3	0	0	0	0	0	0	0	0	0	0	45
23:15	0	39	2	1	0	0	0	0	1	0	0	0	0	43
23:30	0	36	1	0	1	0	0	0	0	0	0	0	0	38
23:45	0	33	2	0	0	0	0	0	0	0	0	0	0	35
TOTAL	30	####	1,198	31	217	11	3	17	49	0	0	0	0	11,593

PM PEAK HOUR	4:30 PM
PM PEAK VOLUME	1,491

TOTAL: AM+PM	52	####	2,363	46	515	43	3	26	118	0	0	0	0	20,283
% OF TOTAL	0.3%	84.4%	11.7%	0.2%	2.5%	0.2%	0.0%	0.1%	0.6%	0.0%	0.0%	0.0%	0.0%	100.0%

Class	1	2	3	4	5	6	7	8	9	10	11	12	13

CLASS 1	Class 1 — Motorcycles	**CLASS 8**	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	**CLASS 9**	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	**CLASS 10**	6 or More Axles, Single Trailer
CLASS 4	Buses	**CLASS 11**	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	**CLASS 12**	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	**CLASS 13**	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

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

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	27	1702	72	12	1782	34	26	2	2	1	15
Future Volume (vph)	27	1702	72	12	1782	34	26	2	2	1	15
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases			2			6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	40.6	40.6	40.6	40.6	40.6
Total Split (s)	10.0	78.0	78.0	10.0	78.0	78.0	42.0	42.0	42.0	42.0	42.0
Total Split (%)	7.7%	60.0%	60.0%	7.7%	60.0%	60.0%	32.3%	32.3%	32.3%	32.3%	32.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	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	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	6.2	102.9	102.9	5.7	100.5	100.5	20.4	20.4	20.4	20.4	20.4
Actuated g/C Ratio	0.05	0.79	0.79	0.04	0.77	0.77	0.16	0.16	0.16	0.16	0.16
v/c Ratio	0.37	0.48	0.07	0.18	0.52	0.03	0.13	0.03	0.01	0.00	0.06
Control Delay	73.3	10.9	4.8	65.4	12.1	1.7	42.7	24.3	36.5	36.0	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.3	10.9	4.8	65.4	12.1	1.7	42.7	24.3	36.5	36.0	0.4
LOS	E	B	A	E	B	A	D	C	D	D	A
Approach Delay		11.6			12.3			38.9		6.1	
Approach LOS		B			B			D		A	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 12.1	Intersection LOS: B
Intersection Capacity Utilization 68.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Douglas Dr. & Katella Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	1702	72	12	1782	34	26	2	5	2	1	15
Future Volume (veh/h)	27	1702	72	12	1782	34	26	2	5	2	1	15
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		0.98	0.99		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adj Flow Rate, veh/h	28	1773	67	12	1856	30	27	2	2	2	1	6
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	40	3802	1155	22	3751	1139	121	40	40	119	88	73
Arrive On Green	0.02	0.82	0.82	0.01	0.81	0.81	0.05	0.05	0.05	0.05	0.05	0.05
Sat Flow, veh/h	1619	4641	1410	1619	4641	1409	1273	771	771	1284	1700	1414
Grp Volume(v), veh/h	28	1773	67	12	1856	30	27	0	4	2	1	6
Grp Sat Flow(s),veh/h/ln	1619	1547	1410	1619	1547	1409	1273	0	1542	1284	1700	1414
Q Serve(g_s), s	2.2	14.5	1.2	1.0	16.6	0.5	2.7	0.0	0.3	0.2	0.1	0.5
Cycle Q Clear(g_c), s	2.2	14.5	1.2	1.0	16.6	0.5	2.7	0.0	0.3	0.5	0.1	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	40	3802	1155	22	3751	1139	121	0	80	119	88	73
V/C Ratio(X)	0.71	0.47	0.06	0.55	0.49	0.03	0.22	0.00	0.05	0.02	0.01	0.08
Avail Cap(c_a), veh/h	67	3802	1155	67	3751	1139	421	0	444	422	489	407
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	62.9	3.4	2.2	63.7	4.0	2.4	59.8	0.0	58.6	58.8	58.5	58.7
Incr Delay (d2), s/veh	8.3	0.4	0.1	7.7	0.5	0.0	0.9	0.0	0.3	0.1	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	1.0	3.0	0.2	0.4	3.7	0.1	0.9	0.0	0.1	0.1	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.2	3.8	2.3	71.4	4.4	2.5	60.7	0.0	58.8	58.9	58.5	59.2
LnGrp LOS	E	A	A	E	A	A	E	A	E	E	E	E
Approach Vol, veh/h		1868			1898			31			9	
Approach Delay, s/veh		4.8			4.8			60.5			59.0	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	112.3		11.3	7.8	110.9		11.3				
Change Period (Y+Rc), s	4.6	5.8		4.6	4.6	5.8		4.6				
Max Green Setting (Gmax), s	5.4	72.2		37.4	5.4	72.2		37.4				
Max Q Clear Time (g_c+I1), s	3.0	16.5		2.5	4.2	18.6		4.7				
Green Ext Time (p_c), s	0.0	20.4		0.0	0.0	21.5		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		5.4	
HCM 6th LOS		A	

Notes

User approved pedestrian interval to be less than phase max green.

Goodman Commerce Center (JN 15593)
Existing (2023)
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Douglas Dr. & Katella Av.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.439
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	21	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	1 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	26	2	5	2	1	15	27	1702	72	12	1782	34
Growth 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
Initial Bse:	26	2	5	2	1	15	27	1702	72	12	1782	34
User 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
PHF 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
PHF Volume:	26	2	5	2	1	15	27	1702	72	12	1782	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	2	5	2	1	15	27	1702	72	12	1782	34
PCE 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
MLF 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
FinalVolume:	26	2	5	2	1	15	27	1702	72	12	1782	34
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.29	0.71	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1700	486	1214	1700	1700	1700	1700	5100	1700	1700	5100	1700
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.00	0.00	0.00	0.01	0.02	0.33	0.04	0.01	0.35	0.01
Crit Moves:	****					****	****				****	

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	53	0	0	0	0	21	0	0	0
Future Vol, veh/h	0	0	0	53	0	0	0	0	21	0	0	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	62	0	0	0	0	24	0	0	0
Number of Lanes	0	0	0	1	0	0	0	0	1	0	0	0

Approach	WB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	NB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		WB
Conflicting Lanes Right	0	1
HCM Control Delay	7.5	6.5
HCM LOS	A	A

Lane	NBLn1	WBLn1
Vol Left, %	0%	100%
Vol Thru, %	0%	0%
Vol Right, %	100%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	21	53
LT Vol	0	53
Through Vol	0	0
RT Vol	21	0
Lane Flow Rate	24	62
Geometry Grp	1	1
Degree of Util (X)	0.023	0.071
Departure Headway (Hd)	3.408	4.143
Convergence, Y/N	Yes	Yes
Cap	1047	870
Service Time	1.439	2.145
HCM Lane V/C Ratio	0.023	0.071
HCM Control Delay	6.5	7.5
HCM Lane LOS	A	A
HCM 95th-tile Q	0.1	0.2

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	23	0	8	104	4	19	2	77	0	0	0
Future Vol, veh/h	0	23	0	8	104	4	19	2	77	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	27	0	9	122	5	22	2	91	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	127	0	0	27	0	0	170	172	27	217	170	125
Stage 1	-	-	-	-	-	-	27	27	-	143	143	-
Stage 2	-	-	-	-	-	-	143	145	-	74	27	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1472	-	-	1600	-	-	798	725	1054	744	727	931
Stage 1	-	-	-	-	-	-	996	877	-	865	782	-
Stage 2	-	-	-	-	-	-	865	781	-	940	877	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1472	-	-	1600	-	-	795	721	1054	676	723	931
Mov Cap-2 Maneuver	-	-	-	-	-	-	771	695	-	699	696	-
Stage 1	-	-	-	-	-	-	996	877	-	865	777	-
Stage 2	-	-	-	-	-	-	860	776	-	857	877	-

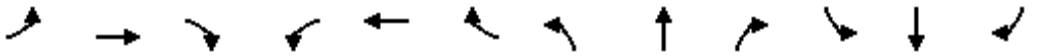
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.5	9.2	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	974	1472	-	-	1600	-	-	-
HCM Lane V/C Ratio	0.118	-	-	-	0.006	-	-	-
HCM Control Delay (s)	9.2	0	-	-	7.3	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	9	9	12	0	22	1516	254	1551
Future Volume (vph)	9	9	12	0	22	1516	254	1551
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	37.6	37.6	14.6	14.6	9.6	22.8	9.6	22.8
Total Split (s)	38.0	38.0	38.0	38.0	11.0	61.0	31.0	81.0
Total Split (%)	29.2%	29.2%	29.2%	29.2%	8.5%	46.9%	23.8%	62.3%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	5.8	4.6	5.8
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	19.2	19.2	19.2	19.2	6.0	75.0	23.7	97.8
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.05	0.58	0.18	0.75
v/c Ratio	0.05	0.10	0.06	0.08	0.30	0.65	0.87	0.50
Control Delay	40.8	23.4	41.4	0.3	70.0	23.8	79.8	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.8	23.4	41.4	0.3	70.0	23.8	79.8	10.9
LOS	D	C	D	A	E	C	E	B
Approach Delay		28.1		10.0		24.4		19.9
Approach LOS		C		A		C		B

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 21.9	Intersection LOS: C
Intersection Capacity Utilization 75.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Valley View St. & Plaza Dr./Chip Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	9	15	12	0	39	22	1516	181	254	1551	154
Future Volume (veh/h)	9	9	15	12	0	39	22	1516	181	254	1551	154
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	0.99		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	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adj Flow Rate, veh/h	9	9	10	12	0	33	22	1531	181	257	1567	153
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	105	45	50	118	0	89	34	2728	322	279	3446	336
Arrive On Green	0.06	0.06	0.06	0.06	0.00	0.06	0.02	0.65	0.65	0.17	0.80	0.80
Sat Flow, veh/h	1251	731	812	1250	0	1441	1619	4195	495	1619	4299	419
Grp Volume(v), veh/h	9	0	19	12	0	33	22	1129	583	257	1127	593
Grp Sat Flow(s),veh/h/ln	1251	0	1543	1250	0	1441	1619	1547	1597	1619	1547	1624
Q Serve(g_s), s	0.9	0.0	1.5	1.2	0.0	2.9	1.8	26.1	26.2	20.3	14.8	14.8
Cycle Q Clear(g_c), s	3.8	0.0	1.5	2.7	0.0	2.9	1.8	26.1	26.2	20.3	14.8	14.8
Prop In Lane	1.00		0.53	1.00		1.00	1.00		0.31	1.00		0.26
Lane Grp Cap(c), veh/h	105	0	95	118	0	89	34	2012	1038	279	2481	1302
V/C Ratio(X)	0.09	0.00	0.20	0.10	0.00	0.37	0.64	0.56	0.56	0.92	0.45	0.46
Avail Cap(c_a), veh/h	349	0	396	362	0	370	80	2012	1038	329	2481	1302
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.4	0.0	57.9	59.2	0.0	58.6	63.1	12.5	12.5	52.9	4.0	4.0
Incr Delay (d2), s/veh	0.3	0.0	1.0	0.4	0.0	2.6	7.3	1.1	2.2	25.8	0.6	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	0.3	0.0	0.6	0.4	0.0	1.1	0.8	8.4	9.0	10.0	3.4	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.7	0.0	58.9	59.6	0.0	61.1	70.5	13.7	14.7	78.7	4.6	5.2
LnGrp LOS	E	A	E	E	A	E	E	B	B	E	A	A
Approach Vol, veh/h		28			45			1734			1977	
Approach Delay, s/veh		59.5			60.7			14.7			14.4	
Approach LOS		E			E			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.0	90.3		12.6	7.3	110.0		12.6				
Change Period (Y+Rc), s	4.6	5.8		4.6	4.6	5.8		4.6				
Max Green Setting (Gmax), s	26.4	55.2		33.4	6.4	75.2		33.4				
Max Q Clear Time (g_c+I1), s	22.3	28.2		5.8	3.8	16.8		4.9				
Green Ext Time (p_c), s	0.1	13.4		0.1	0.0	17.6		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		15.4	
HCM 6th LOS		B	

Goodman Commerce Center (JN 15593)
Existing (2023)
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Valley View St. & Plaza Dr.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.560
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	22	1516	181	254	1551	154	9	9	15	12	0	39
Growth 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
Initial Bse:	22	1516	181	254	1551	154	9	9	15	12	0	39
User 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
PHF 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
PHF Volume:	22	1516	181	254	1551	154	9	9	15	12	0	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	22	1516	181	254	1551	154	9	9	15	12	0	39
PCE 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
MLF 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
FinalVolume:	22	1516	181	254	1551	154	9	9	15	12	0	39
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.68	0.32	1.00	2.73	0.27	1.00	0.38	0.62	1.00	0.00	1.00
Final Sat.:	1700	4556	544	1700	4639	461	1700	638	1063	1700	0	1700
Capacity Analysis Module:												
Vol/Sat:	0.01	0.33	0.33	0.15	0.33	0.33	0.01	0.01	0.01	0.01	0.00	0.02
Crit Moves:		****			****			****				****

Goodman Commerce Center (JN 15593)
Existing (2023)
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Douglas Dr. & Katella Av.

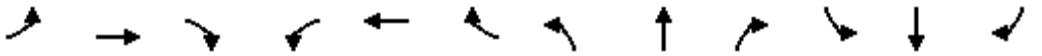
Cycle (sec):	100	Critical Vol./Cap.(X):	0.517
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	24	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	1 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	83	1	7	26	2	47	11	1963	32	9	1608	6
Growth 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
Initial Bse:	83	1	7	26	2	47	11	1963	32	9	1608	6
User 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
PHF 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
PHF Volume:	83	1	7	26	2	47	11	1963	32	9	1608	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	1	7	26	2	47	11	1963	32	9	1608	6
PCE 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
MLF 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
FinalVolume:	83	1	7	26	2	47	11	1963	32	9	1608	6
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.12	0.88	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1700	213	1488	1700	1700	1700	1700	5100	1700	1700	5100	1700
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.00	0.02	0.00	0.03	0.01	0.38	0.02	0.01	0.32	0.00
Crit Moves:	****					****		****		****		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	11	1963	32	9	1608	6	83	1	26	2	47
Future Volume (vph)	11	1963	32	9	1608	6	83	1	26	2	47
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases			2			6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	40.6	40.6	40.6	40.6	40.6
Total Split (s)	10.0	78.0	78.0	10.0	78.0	78.0	42.0	42.0	42.0	42.0	42.0
Total Split (%)	7.7%	60.0%	60.0%	7.7%	60.0%	60.0%	32.3%	32.3%	32.3%	32.3%	32.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	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	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	5.7	95.6	95.6	5.6	93.4	93.4	21.8	21.8	21.8	21.8	21.8
Actuated g/C Ratio	0.04	0.74	0.74	0.04	0.72	0.72	0.17	0.17	0.17	0.17	0.17
v/c Ratio	0.17	0.65	0.03	0.14	0.54	0.01	0.43	0.04	0.14	0.01	0.18
Control Delay	65.0	13.0	1.8	64.1	12.4	0.0	51.5	19.6	41.8	36.0	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.0	13.0	1.8	64.1	12.4	0.0	51.5	19.6	41.8	36.0	8.1
LOS	E	B	A	E	B	A	D	B	D	D	A
Approach Delay		13.1			12.6			48.7		20.4	
Approach LOS		B			B			D		C	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 13.9	Intersection LOS: B
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Douglas Dr. & Katella Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1963	32	9	1608	6	83	1	7	26	2	47
Future Volume (veh/h)	11	1963	32	9	1608	6	83	1	7	26	2	47
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		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adj Flow Rate, veh/h	12	2206	30	10	1807	7	93	1	4	29	2	19
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	22	3641	1105	19	3632	1104	166	26	105	165	150	126
Arrive On Green	0.01	0.78	0.78	0.01	0.78	0.78	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1619	4641	1409	1619	4641	1410	1264	297	1189	1283	1700	1420
Grp Volume(v), veh/h	12	2206	30	10	1807	7	93	0	5	29	2	19
Grp Sat Flow(s),veh/h/ln	1619	1547	1409	1619	1547	1410	1264	0	1486	1283	1700	1420
Q Serve(g_s), s	1.0	25.4	0.6	0.8	18.0	0.1	9.4	0.0	0.4	2.8	0.1	1.6
Cycle Q Clear(g_c), s	1.0	25.4	0.6	0.8	18.0	0.1	9.6	0.0	0.4	3.2	0.1	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.80	1.00		1.00
Lane Grp Cap(c), veh/h	22	3641	1105	19	3632	1104	166	0	132	165	150	126
V/C Ratio(X)	0.55	0.61	0.03	0.53	0.50	0.01	0.56	0.00	0.04	0.18	0.01	0.15
Avail Cap(c_a), veh/h	67	3641	1105	67	3632	1104	418	0	428	420	489	408
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	63.7	5.8	3.1	63.9	5.0	3.1	58.4	0.0	54.2	55.6	54.1	54.7
Incr Delay (d2), s/veh	7.7	0.8	0.0	8.3	0.5	0.0	2.9	0.0	0.1	0.5	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	0.4	6.2	0.1	0.4	4.4	0.0	3.2	0.0	0.2	0.9	0.1	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.4	6.5	3.1	72.2	5.5	3.1	61.4	0.0	54.3	56.1	54.1	55.3
LnGrp LOS	E	A	A	E	A	A	E	A	D	E	D	E
Approach Vol, veh/h		2248			1824			98			50	
Approach Delay, s/veh		6.8			5.9			61.0			55.7	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	107.8		16.1	6.4	107.5		16.1				
Change Period (Y+Rc), s	4.6	5.8		4.6	4.6	5.8		4.6				
Max Green Setting (Gmax), s	5.4	72.2		37.4	5.4	72.2		37.4				
Max Q Clear Time (g_c+I1), s	2.8	27.4		5.2	3.0	20.0		11.6				
Green Ext Time (p_c), s	0.0	26.4		0.1	0.0	20.2		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		8.2	
HCM 6th LOS		A	

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	100	0	0	0	0	24	0	0	0
Future Vol, veh/h	0	0	0	100	0	0	0	0	24	0	0	0
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	133	0	0	0	0	32	0	0	0
Number of Lanes	0	0	0	1	0	0	0	0	1	0	0	0

Approach	WB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	NB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		WB
Conflicting Lanes Right	0	1
HCM Control Delay	7.9	6.7
HCM LOS	A	A

Lane	NBLn1	WBLn1
Vol Left, %	0%	100%
Vol Thru, %	0%	0%
Vol Right, %	100%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	24	100
LT Vol	0	100
Through Vol	0	0
RT Vol	24	0
Lane Flow Rate	32	133
Geometry Grp	1	1
Degree of Util (X)	0.031	0.154
Departure Headway (Hd)	3.533	4.155
Convergence, Y/N	Yes	Yes
Cap	1000	867
Service Time	1.601	2.161
HCM Lane V/C Ratio	0.032	0.153
HCM Control Delay	6.7	7.9
HCM Lane LOS	A	A
HCM 95th-tile Q	0.1	0.5

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	86	2	11	80	0	5	0	9	0	3	0
Future Vol, veh/h	0	86	2	11	80	0	5	0	9	0	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	63	63	63	63	63	63	63	63	63
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	137	3	17	127	0	8	0	14	0	5	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	127	0	0	140	0	0	303	300	139	307	301	127
Stage 1	-	-	-	-	-	-	139	139	-	161	161	-
Stage 2	-	-	-	-	-	-	164	161	-	146	140	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1472	-	-	1456	-	-	653	616	915	649	615	929
Stage 1	-	-	-	-	-	-	869	785	-	846	769	-
Stage 2	-	-	-	-	-	-	843	769	-	861	785	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1472	-	-	1456	-	-	643	609	915	633	608	929
Mov Cap-2 Maneuver	-	-	-	-	-	-	680	630	-	671	626	-
Stage 1	-	-	-	-	-	-	869	785	-	846	760	-
Stage 2	-	-	-	-	-	-	828	760	-	848	785	-

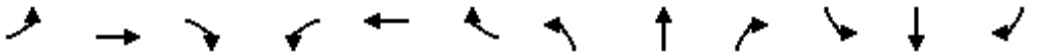
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.9	9.5	10.8
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	814	1472	-	-	1456	-	-	626
HCM Lane V/C Ratio	0.027	-	-	-	0.012	-	-	0.008
HCM Control Delay (s)	9.5	0	-	-	7.5	-	-	10.8
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	168	0	162	30	4	1967	52	1503
Future Volume (vph)	168	0	162	30	4	1967	52	1503
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	37.6	37.6	14.6	14.6	9.6	22.8	9.6	22.8
Total Split (s)	50.0	50.0	50.0	50.0	11.0	69.0	11.0	69.0
Total Split (%)	38.5%	38.5%	38.5%	38.5%	8.5%	53.1%	8.5%	53.1%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	5.8	4.6	5.8
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	45.4	45.4	45.4	45.4	5.2	65.4	6.2	72.1
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.04	0.50	0.05	0.55
v/c Ratio	0.99	0.11	0.40	0.69	0.06	0.88	0.71	0.62
Control Delay	107.9	0.9	35.5	33.8	62.0	35.2	104.3	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	107.9	0.9	35.5	33.8	62.0	35.2	104.3	21.4
LOS	F	A	D	C	E	D	F	C
Approach Delay		79.2		34.3		35.2		24.1
Approach LOS		E		C		D		C

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 33.4	Intersection LOS: C
Intersection Capacity Utilization 97.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 4: Valley View St. & Plaza Dr./Chip Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	0	61	162	30	355	4	1967	12	52	1503	23
Future Volume (veh/h)	168	0	61	162	30	355	4	1967	12	52	1503	23
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		0.97
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	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adj Flow Rate, veh/h	175	0	44	169	31	311	4	2049	12	54	1566	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	197	0	503	462	46	464	8	2351	14	67	2501	34
Arrive On Green	0.35	0.00	0.35	0.35	0.35	0.35	0.01	0.49	0.49	0.04	0.53	0.53
Sat Flow, veh/h	944	0	1439	1237	132	1328	1619	4760	28	1619	4717	63
Grp Volume(v), veh/h	175	0	44	169	0	342	4	1331	730	54	1027	560
Grp Sat Flow(s),veh/h/ln	944	0	1439	1237	0	1461	1619	1547	1694	1619	1547	1687
Q Serve(g_s), s	19.5	0.0	2.7	13.8	0.0	25.9	0.3	49.7	49.8	4.3	30.3	30.4
Cycle Q Clear(g_c), s	45.4	0.0	2.7	16.5	0.0	25.9	0.3	49.7	49.8	4.3	30.3	30.4
Prop In Lane	1.00		1.00	1.00		0.91	1.00		0.02	1.00		0.04
Lane Grp Cap(c), veh/h	197	0	503	462	0	510	8	1528	837	67	1640	894
V/C Ratio(X)	0.89	0.00	0.09	0.37	0.00	0.67	0.48	0.87	0.87	0.80	0.63	0.63
Avail Cap(c_a), veh/h	197	0	503	462	0	510	80	1528	837	80	1640	894
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	0.0	28.4	33.9	0.0	35.9	64.5	29.2	29.2	61.8	21.5	21.5
Incr Delay (d2), s/veh	35.0	0.0	0.1	0.5	0.0	3.4	14.8	7.1	12.1	32.4	1.8	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	1.0	4.3	0.0	9.8	0.2	18.7	21.7	2.3	10.7	12.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.0	0.0	28.5	34.4	0.0	39.3	79.3	36.3	41.4	94.2	23.3	24.8
LnGrp LOS	F	A	C	C	A	D	E	D	D	F	C	C
Approach Vol, veh/h		219			511			2065			1641	
Approach Delay, s/veh		79.3			37.7			38.2			26.1	
Approach LOS		E			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	70.0		50.0	5.3	74.7		50.0				
Change Period (Y+Rc), s	4.6	5.8		4.6	4.6	5.8		4.6				
Max Green Setting (Gmax), s	6.4	63.2		45.4	6.4	63.2		45.4				
Max Q Clear Time (g_c+I1), s	6.3	51.8		47.4	2.3	32.4		27.9				
Green Ext Time (p_c), s	0.0	8.8		0.0	0.0	12.6		2.8				

Intersection Summary			
HCM 6th Ctrl Delay		35.7	
HCM 6th LOS		D	

Goodman Commerce Center (JN 15593)
Existing (2023)
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Valley View St. & Plaza Dr.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.794
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	51	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	4	1967	12	52	1503	23	168	0	61	162	30	355
Growth 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
Initial Bse:	4	1967	12	52	1503	23	168	0	61	162	30	355
User 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
PHF 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
PHF Volume:	4	1967	12	52	1503	23	168	0	61	162	30	355
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	1967	12	52	1503	23	168	0	61	162	30	355
PCE 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
MLF 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
FinalVolume:	4	1967	12	52	1503	23	168	0	61	162	30	355
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.98	0.02	1.00	2.95	0.05	1.00	0.00	1.00	1.00	0.08	0.92
Final Sat.:	1700	5069	31	1700	5023	77	1700	0	1700	1700	132	1568
Capacity Analysis Module:												
Vol/Sat:	0.00	0.39	0.39	0.03	0.30	0.30	0.10	0.00	0.04	0.10	0.23	0.23
Crit Moves:		****			****			****			****	

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

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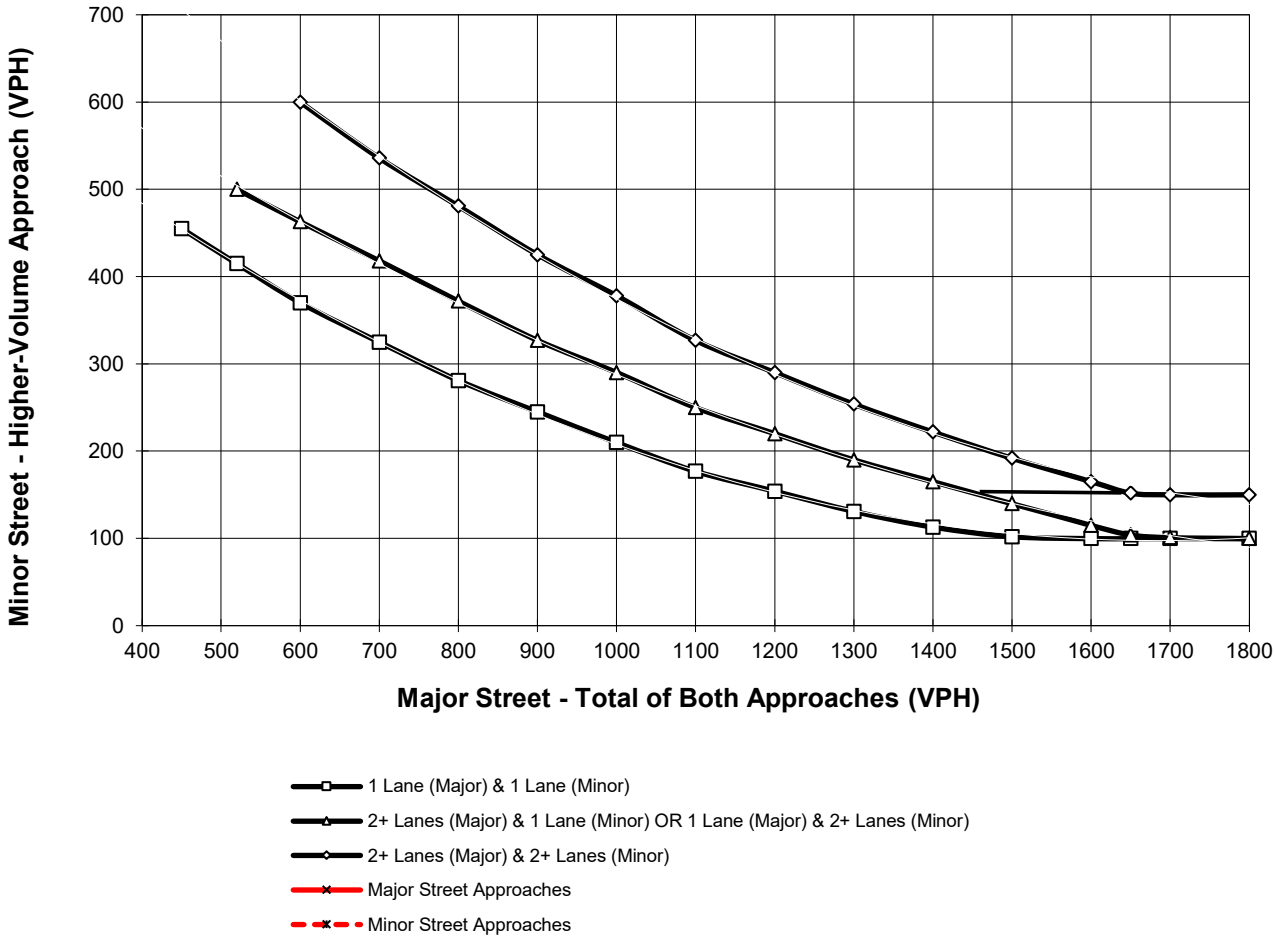
Figure 4C-3. Warrant 3, Peak Hour

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

Major Street Name = **Plaza Dr.**
Total of Both Approaches (VPH) = **53**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Douglas Dr.**
High Volume Approach (VPH) = **21**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*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

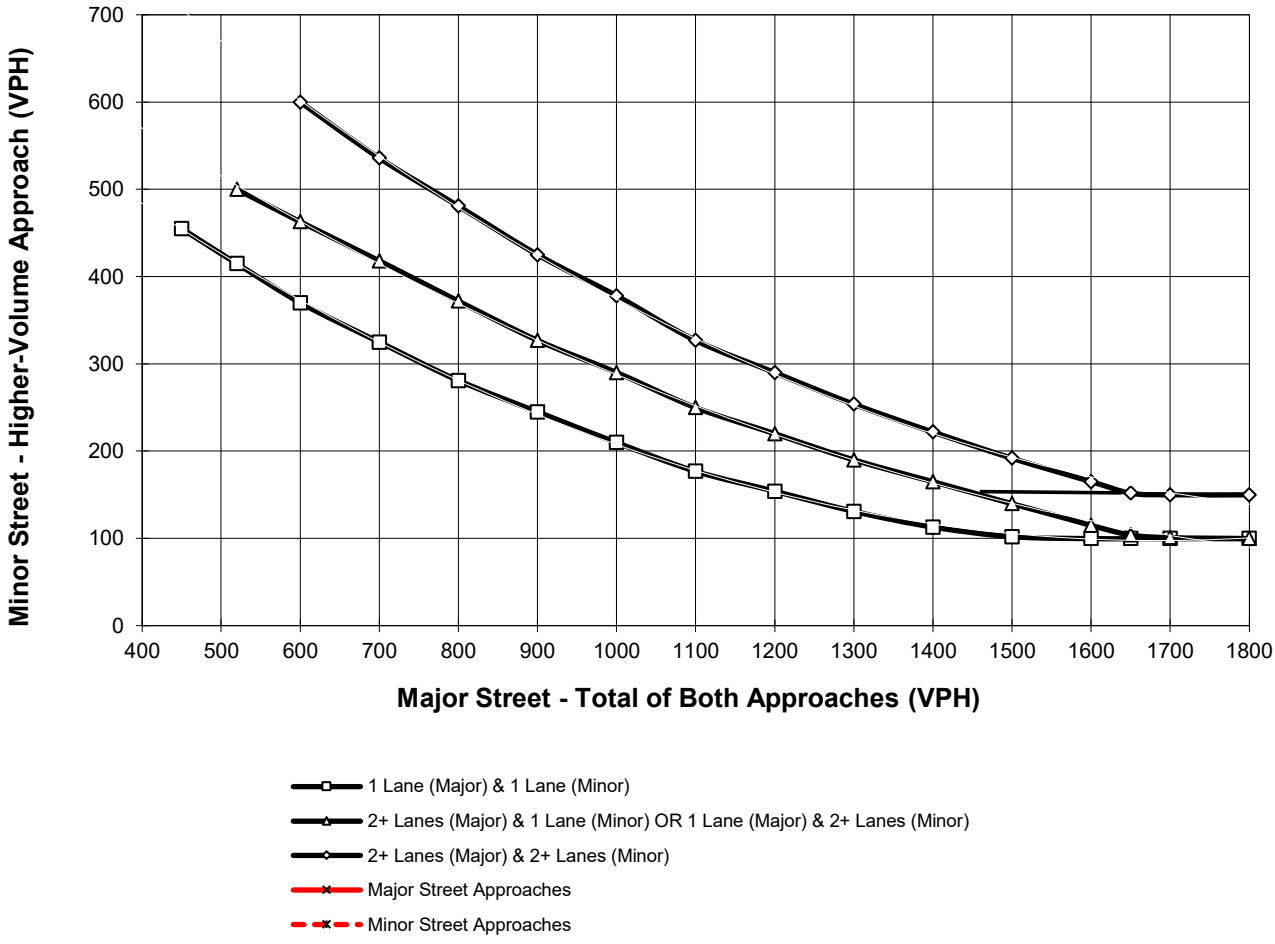
Figure 4C-3. Warrant 3, Peak Hour

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

Major Street Name = **Plaza Dr.**
Total of Both Approaches (VPH) = **179**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **McDonnell Dr.**
High Volume Approach (VPH) = **14**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*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

APPENDIX 5.1: EXISING PLUS PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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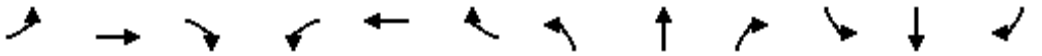
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	37	1702	72	12	1782	37	26	2	5	1	20
Future Volume (vph)	37	1702	72	12	1782	37	26	2	5	1	20
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases			2			6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	40.6	40.6	40.6	40.6	40.6
Total Split (s)	10.0	78.0	78.0	10.0	78.0	78.0	42.0	42.0	42.0	42.0	42.0
Total Split (%)	7.7%	60.0%	60.0%	7.7%	60.0%	60.0%	32.3%	32.3%	32.3%	32.3%	32.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	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	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	6.6	102.9	102.9	5.7	96.9	96.9	20.4	20.4	20.4	20.4	20.4
Actuated g/C Ratio	0.05	0.79	0.79	0.04	0.75	0.75	0.16	0.16	0.16	0.16	0.16
v/c Ratio	0.48	0.48	0.07	0.18	0.54	0.04	0.13	0.03	0.03	0.00	0.08
Control Delay	79.4	10.9	4.8	65.4	12.6	2.2	42.7	24.3	37.6	36.0	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.4	10.9	4.8	65.4	12.6	2.2	42.7	24.3	37.6	36.0	0.6
LOS	E	B	A	E	B	A	D	C	D	D	A
Approach Delay		12.0			12.7			38.9		8.7	
Approach LOS		B			B			D		A	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay: 12.6	Intersection LOS: B
Intersection Capacity Utilization 68.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Douglas Dr. & Katella Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	1702	72	12	1782	37	26	2	5	5	1	20
Future Volume (veh/h)	37	1702	72	12	1782	37	26	2	5	5	1	20
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		0.98	0.99		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adj Flow Rate, veh/h	39	1773	67	12	1856	34	27	2	2	5	1	11
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	48	3802	1155	22	3727	1132	120	40	40	119	88	73
Arrive On Green	0.03	0.82	0.82	0.01	0.80	0.80	0.05	0.05	0.05	0.05	0.05	0.05
Sat Flow, veh/h	1619	4641	1410	1619	4641	1409	1267	771	771	1284	1700	1414
Grp Volume(v), veh/h	39	1773	67	12	1856	34	27	0	4	5	1	11
Grp Sat Flow(s),veh/h/ln	1619	1547	1410	1619	1547	1409	1267	0	1542	1284	1700	1414
Q Serve(g_s), s	3.1	14.5	1.2	1.0	17.1	0.6	2.7	0.0	0.3	0.5	0.1	1.0
Cycle Q Clear(g_c), s	3.1	14.5	1.2	1.0	17.1	0.6	2.8	0.0	0.3	0.8	0.1	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	48	3802	1155	22	3727	1132	120	0	80	119	88	73
V/C Ratio(X)	0.81	0.47	0.06	0.55	0.50	0.03	0.22	0.00	0.05	0.04	0.01	0.15
Avail Cap(c_a), veh/h	67	3802	1155	67	3727	1132	419	0	444	422	489	407
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	62.7	3.4	2.2	63.7	4.2	2.6	59.8	0.0	58.6	59.0	58.5	58.9
Incr Delay (d2), s/veh	27.5	0.4	0.1	7.7	0.5	0.0	0.9	0.0	0.3	0.1	0.1	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	1.6	3.0	0.2	0.4	3.8	0.1	0.9	0.0	0.1	0.2	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.2	3.8	2.3	71.4	4.7	2.6	60.7	0.0	58.8	59.1	58.5	59.8
LnGrp LOS	F	A	A	E	A	A	E	A	E	E	E	E
Approach Vol, veh/h		1879			1902			31			17	
Approach Delay, s/veh		5.6			5.1			60.5			59.5	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	112.3		11.3	8.5	110.2		11.3				
Change Period (Y+Rc), s	4.6	5.8		4.6	4.6	5.8		4.6				
Max Green Setting (Gmax), s	5.4	72.2		37.4	5.4	72.2		37.4				
Max Q Clear Time (g_c+I1), s	3.0	16.5		3.0	5.1	19.1		4.8				
Green Ext Time (p_c), s	0.0	20.4		0.0	0.0	21.5		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			6.0									
HCM 6th LOS			A									

Goodman Commerce Center (JN 15593)
E+P
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Douglas Dr. & Katella Av.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.448
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	22	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	1	0 1	1 0	3	0 1	1 0	3	0 1
Volume Module:												
Base Vol:	26	2	5	2	1	15	27	1702	72	12	1782	37
Growth 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
Initial Bse:	26	2	5	2	1	15	27	1702	72	12	1782	34
Added Vol:	0	0	0	3	0	5	10	0	0	0	0	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	26	2	5	5	1	20	37	1702	72	12	1782	37
User 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
PHF 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
PHF Volume:	26	2	5	5	1	20	37	1702	72	12	1782	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	2	5	5	1	20	37	1702	72	12	1782	37
PCE 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
MLF 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
FinalVolume:	26	2	5	5	1	20	37	1702	72	12	1782	37
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.29	0.71	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1700	486	1214	1700	1700	1700	1700	5100	1700	1700	5100	1700
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.00	0.00	0.00	0.01	0.02	0.33	0.04	0.01	0.35	0.02
Crit Moves:	****					****	****				****	

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	7	53	4	2	6	7	21	0	0	0
Future Vol, veh/h	0	2	7	53	4	2	6	7	21	0	0	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	2	8	62	5	2	7	8	24	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.6	7.5	6.9	0
HCM LOS	A	A	A	-

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	0%	90%	0%
Vol Thru, %	21%	22%	7%	100%
Vol Right, %	62%	78%	3%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	34	9	59	0
LT Vol	6	0	53	0
Through Vol	7	2	4	0
RT Vol	21	7	2	0
Lane Flow Rate	40	10	69	0
Geometry Grp	1	1	1	1
Degree of Util (X)	0.041	0.01	0.079	0
Departure Headway (Hd)	3.701	3.553	4.136	4.067
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	964	1005	869	0
Service Time	1.738	1.581	2.149	2.11
HCM Lane V/C Ratio	0.041	0.01	0.079	0
HCM Control Delay	6.9	6.6	7.5	7.1
HCM Lane LOS	A	A	A	N
HCM 95th-tile Q	0.1	0	0.3	0

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	25	0	8	109	4	20	2	77	0	0	0
Future Vol, veh/h	0	25	0	8	109	4	20	2	77	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	29	0	9	128	5	24	2	91	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	133	0	0	29	0	0	178	180	29	225	178	131
Stage 1	-	-	-	-	-	-	29	29	-	149	149	-
Stage 2	-	-	-	-	-	-	149	151	-	76	29	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1464	-	-	1597	-	-	789	717	1052	735	719	924
Stage 1	-	-	-	-	-	-	993	875	-	858	778	-
Stage 2	-	-	-	-	-	-	858	776	-	938	875	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1464	-	-	1597	-	-	786	713	1052	667	715	924
Mov Cap-2 Maneuver	-	-	-	-	-	-	764	690	-	693	691	-
Stage 1	-	-	-	-	-	-	993	875	-	858	773	-
Stage 2	-	-	-	-	-	-	853	771	-	855	875	-

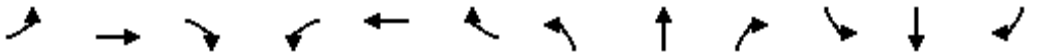
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.5	9.2	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	968	1464	-	-	1597	-	-	-
HCM Lane V/C Ratio	0.12	-	-	-	0.006	-	-	-
HCM Control Delay (s)	9.2	0	-	-	7.3	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	11	9	12	0	22	1516	254	1551
Future Volume (vph)	11	9	12	0	22	1516	254	1551
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	37.6	37.6	14.6	14.6	9.6	22.8	9.6	22.8
Total Split (s)	38.0	38.0	38.0	38.0	11.0	61.0	31.0	81.0
Total Split (%)	29.2%	29.2%	29.2%	29.2%	8.5%	46.9%	23.8%	62.3%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	5.8	4.6	5.8
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	19.2	19.2	19.2	19.2	6.0	75.0	23.7	97.8
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.05	0.58	0.18	0.75
v/c Ratio	0.06	0.10	0.06	0.08	0.30	0.65	0.87	0.50
Control Delay	41.4	23.4	41.4	0.3	70.0	23.8	79.8	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.4	23.4	41.4	0.3	70.0	23.8	79.8	10.9
LOS	D	C	D	A	E	C	E	B
Approach Delay		29.0		10.0		24.4		19.9
Approach LOS		C		A		C		B

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 21.9	Intersection LOS: C
Intersection Capacity Utilization 75.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Valley View St. & Plaza Dr./Chip Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	9	15	12	0	39	22	1516	181	254	1551	159
Future Volume (veh/h)	11	9	15	12	0	39	22	1516	181	254	1551	159
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		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	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adj Flow Rate, veh/h	11	9	10	12	0	33	22	1531	181	257	1567	158
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	105	45	50	118	0	89	34	2728	322	279	3435	346
Arrive On Green	0.06	0.06	0.06	0.06	0.00	0.06	0.02	0.65	0.65	0.17	0.80	0.80
Sat Flow, veh/h	1251	731	812	1250	0	1441	1619	4195	495	1619	4284	431
Grp Volume(v), veh/h	11	0	19	12	0	33	22	1129	583	257	1131	594
Grp Sat Flow(s),veh/h/ln	1251	0	1543	1250	0	1441	1619	1547	1597	1619	1547	1622
Q Serve(g_s), s	1.1	0.0	1.5	1.2	0.0	2.9	1.8	26.1	26.2	20.3	14.9	14.9
Cycle Q Clear(g_c), s	4.0	0.0	1.5	2.7	0.0	2.9	1.8	26.1	26.2	20.3	14.9	14.9
Prop In Lane	1.00		0.53	1.00		1.00	1.00		0.31	1.00		0.27
Lane Grp Cap(c), veh/h	105	0	95	118	0	89	34	2012	1038	279	2481	1300
V/C Ratio(X)	0.10	0.00	0.20	0.10	0.00	0.37	0.64	0.56	0.56	0.92	0.46	0.46
Avail Cap(c_a), veh/h	349	0	396	362	0	370	80	2012	1038	329	2481	1300
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.5	0.0	57.9	59.2	0.0	58.6	63.1	12.5	12.5	52.9	4.0	4.0
Incr Delay (d2), s/veh	0.4	0.0	1.0	0.4	0.0	2.5	7.3	1.1	2.2	25.8	0.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.6	0.4	0.0	1.1	0.8	8.4	9.0	10.0	3.4	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.9	0.0	58.9	59.6	0.0	61.1	70.5	13.7	14.7	78.7	4.6	5.2
LnGrp LOS	E	A	E	E	A	E	E	B	B	E	A	A
Approach Vol, veh/h		30			45			1734			1982	
Approach Delay, s/veh		59.7			60.7			14.7			14.4	
Approach LOS		E			E			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.0	90.3		12.6	7.3	110.0		12.6				
Change Period (Y+Rc), s	4.6	5.8		4.6	4.6	5.8		4.6				
Max Green Setting (Gmax), s	26.4	55.2		33.4	6.4	75.2		33.4				
Max Q Clear Time (g_c+I1), s	22.3	28.2		6.0	3.8	16.9		4.9				
Green Ext Time (p_c), s	0.1	13.4		0.1	0.0	17.7		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		15.5	
HCM 6th LOS		B	

Goodman Commerce Center (JN 15593)
E+P
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Valley View St. & Plaza Dr.

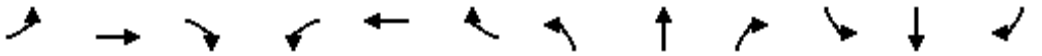
Cycle (sec):	100	Critical Vol./Cap.(X):	0.562
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	22	1516	181	254	1551	154	9	9	15	12	0	39
Growth 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
Initial Bse:	22	1516	181	254	1551	154	9	9	15	12	0	39
Added Vol:	0	0	0	0	0	5	2	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	22	1516	181	254	1551	159	11	9	15	12	0	39
User 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
PHF 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
PHF Volume:	22	1516	181	254	1551	159	11	9	15	12	0	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	22	1516	181	254	1551	159	11	9	15	12	0	39
PCE 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
MLF 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
FinalVolume:	22	1516	181	254	1551	159	11	9	15	12	0	39
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.68	0.32	1.00	2.72	0.28	1.00	0.38	0.62	1.00	0.00	1.00
Final Sat.:	1700	4556	544	1700	4626	474	1700	638	1063	1700	0	1700
Capacity Analysis Module:												
Vol/Sat:	0.01	0.33	0.33	0.15	0.34	0.34	0.01	0.01	0.01	0.01	0.00	0.02
Crit Moves:		****			****			****				****

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	17	1963	32	9	1608	9	83	1	30	2	58
Future Volume (vph)	17	1963	32	9	1608	9	83	1	30	2	58
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases			2			6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	40.6	40.6	40.6	40.6	40.6
Total Split (s)	10.0	78.0	78.0	10.0	78.0	78.0	42.0	42.0	42.0	42.0	42.0
Total Split (%)	7.7%	60.0%	60.0%	7.7%	60.0%	60.0%	32.3%	32.3%	32.3%	32.3%	32.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	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	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	5.9	95.6	95.6	5.6	93.3	93.3	21.8	21.8	21.8	21.8	21.8
Actuated g/C Ratio	0.05	0.74	0.74	0.04	0.72	0.72	0.17	0.17	0.17	0.17	0.17
v/c Ratio	0.26	0.65	0.03	0.14	0.54	0.01	0.43	0.04	0.16	0.01	0.22
Control Delay	68.3	13.0	1.8	64.1	12.5	0.0	51.5	19.6	42.5	36.0	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	13.0	1.8	64.1	12.5	0.0	51.5	19.6	42.5	36.0	10.0
LOS	E	B	A	E	B	A	D	B	D	D	A
Approach Delay		13.3			12.7			48.7		21.4	
Approach LOS		B			B			D		C	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 14.1	Intersection LOS: B
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Douglas Dr. & Katella Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	1963	32	9	1608	9	83	1	7	30	2	58
Future Volume (veh/h)	17	1963	32	9	1608	9	83	1	7	30	2	58
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		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adj Flow Rate, veh/h	19	2206	30	10	1807	10	93	1	4	34	2	31
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	31	3637	1104	19	3602	1095	166	27	106	166	152	127
Arrive On Green	0.02	0.78	0.78	0.01	0.78	0.78	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1619	4641	1409	1619	4641	1410	1251	297	1189	1283	1700	1420
Grp Volume(v), veh/h	19	2206	30	10	1807	10	93	0	5	34	2	31
Grp Sat Flow(s),veh/h/ln	1619	1547	1409	1619	1547	1410	1251	0	1486	1283	1700	1420
Q Serve(g_s), s	1.5	25.5	0.6	0.8	18.5	0.2	9.5	0.0	0.4	3.2	0.1	2.6
Cycle Q Clear(g_c), s	1.5	25.5	0.6	0.8	18.5	0.2	9.7	0.0	0.4	3.6	0.1	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.80	1.00		1.00
Lane Grp Cap(c), veh/h	31	3637	1104	19	3602	1095	166	0	133	166	152	127
V/C Ratio(X)	0.61	0.61	0.03	0.53	0.50	0.01	0.56	0.00	0.04	0.20	0.01	0.24
Avail Cap(c_a), veh/h	67	3637	1104	67	3602	1095	414	0	428	420	489	408
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	63.3	5.8	3.1	63.9	5.3	3.3	58.4	0.0	54.1	55.8	54.0	55.1
Incr Delay (d2), s/veh	7.2	0.8	0.0	8.3	0.5	0.0	3.0	0.0	0.1	0.6	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	6.2	0.1	0.4	4.6	0.1	3.2	0.0	0.2	1.1	0.1	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.4	6.6	3.2	72.2	5.8	3.3	61.3	0.0	54.2	56.4	54.0	56.1
LnGrp LOS	E	A	A	E	A	A	E	A	D	E	D	E
Approach Vol, veh/h		2255			1827			98			67	
Approach Delay, s/veh		7.1			6.2			61.0			56.2	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	107.7		16.2	7.1	106.7		16.2				
Change Period (Y+Rc), s	4.6	5.8		4.6	4.6	5.8		4.6				
Max Green Setting (Gmax), s	5.4	72.2		37.4	5.4	72.2		37.4				
Max Q Clear Time (g_c+I1), s	2.8	27.5		5.6	3.5	20.5		11.7				
Green Ext Time (p_c), s	0.0	26.4		0.2	0.0	20.1		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		8.7
HCM 6th LOS		A

Goodman Commerce Center (JN 15593)
E+P
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Douglas Dr. & Katella Av.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.523
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	25	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	1 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	83	1	7	26	2	47	11	1963	32	9	1608	6
Growth 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
Initial Bse:	83	1	7	26	2	47	11	1963	32	9	1608	6
Added Vol:	0	0	0	4	0	11	6	0	0	0	0	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	1	7	30	2	58	17	1963	32	9	1608	9
User 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
PHF 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
PHF Volume:	83	1	7	30	2	58	17	1963	32	9	1608	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	1	7	30	2	58	17	1963	32	9	1608	9
PCE 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
MLF 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
FinalVolume:	83	1	7	30	2	58	17	1963	32	9	1608	9
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.12	0.88	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1700	213	1488	1700	1700	1700	1700	5100	1700	1700	5100	1700
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.00	0.02	0.00	0.03	0.01	0.38	0.02	0.01	0.32	0.01
Crit Moves:	****					****		****		****		

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	4	8	100	2	1	6	2	24	2	6	0
Future Vol, veh/h	0	4	8	100	2	1	6	2	24	2	6	0
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	5	11	133	3	1	8	3	32	3	8	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.8	8	7	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	19%	0%	97%	25%
Vol Thru, %	6%	33%	2%	75%
Vol Right, %	75%	67%	1%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	32	12	103	8
LT Vol	6	0	100	2
Through Vol	2	4	2	6
RT Vol	24	8	1	0
Lane Flow Rate	43	16	137	11
Geometry Grp	1	1	1	1
Degree of Util (X)	0.045	0.016	0.16	0.013
Departure Headway (Hd)	3.76	3.695	4.192	4.249
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	938	960	856	831
Service Time	1.841	1.75	2.216	2.334
HCM Lane V/C Ratio	0.046	0.017	0.16	0.013
HCM Control Delay	7	6.8	8	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0	0.6	0

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	92	3	11	83	0	5	0	9	0	3	0
Future Vol, veh/h	0	92	3	11	83	0	5	0	9	0	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	63	63	63	63	63	63	63	63	63
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	146	5	17	132	0	8	0	14	0	5	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	132	0	0	151	0	0	318	315	149	322	317	132
Stage 1	-	-	-	-	-	-	149	149	-	166	166	-
Stage 2	-	-	-	-	-	-	169	166	-	156	151	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1466	-	-	1442	-	-	639	604	903	635	602	923
Stage 1	-	-	-	-	-	-	858	778	-	841	765	-
Stage 2	-	-	-	-	-	-	838	765	-	851	776	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1466	-	-	1442	-	-	629	597	903	619	595	923
Mov Cap-2 Maneuver	-	-	-	-	-	-	670	622	-	662	617	-
Stage 1	-	-	-	-	-	-	858	778	-	841	756	-
Stage 2	-	-	-	-	-	-	823	756	-	838	776	-

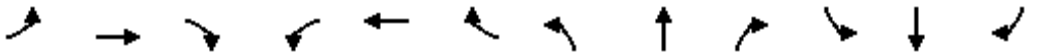
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.9	9.6	10.9
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	803	1466	-	-	1442	-	-	617
HCM Lane V/C Ratio	0.028	-	-	-	0.012	-	-	0.008
HCM Control Delay (s)	9.6	0	-	-	7.5	-	-	10.9
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	174	0	162	30	4	1967	52	1503
Future Volume (vph)	174	0	162	30	4	1967	52	1503
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	37.6	37.6	14.6	14.6	9.6	22.8	9.6	22.8
Total Split (s)	50.0	50.0	50.0	50.0	11.0	69.0	11.0	69.0
Total Split (%)	38.5%	38.5%	38.5%	38.5%	8.5%	53.1%	8.5%	53.1%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	5.8	4.6	5.8
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	45.4	45.4	45.4	45.4	5.2	65.4	6.2	72.1
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.04	0.50	0.05	0.55
v/c Ratio	1.02	0.11	0.40	0.69	0.06	0.88	0.71	0.62
Control Delay	116.2	0.9	35.5	33.8	62.0	35.2	104.3	21.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	116.2	0.9	35.5	33.8	62.0	35.2	104.3	21.5
LOS	F	A	D	C	E	D	F	C
Approach Delay		86.1		34.3		35.2		24.2
Approach LOS		F		C		D		C

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 33.8	Intersection LOS: C
Intersection Capacity Utilization 97.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 4: Valley View St. & Plaza Dr./Chip Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	0	61	162	30	355	4	1967	12	52	1503	26
Future Volume (veh/h)	174	0	61	162	30	355	4	1967	12	52	1503	26
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		0.97
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	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adj Flow Rate, veh/h	181	0	44	169	31	311	4	2049	12	54	1566	24
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	197	0	503	462	46	464	8	2351	14	67	2495	38
Arrive On Green	0.35	0.00	0.35	0.35	0.35	0.35	0.01	0.49	0.49	0.04	0.53	0.53
Sat Flow, veh/h	944	0	1439	1237	132	1328	1619	4760	28	1619	4707	72
Grp Volume(v), veh/h	181	0	44	169	0	342	4	1331	730	54	1029	561
Grp Sat Flow(s),veh/h/ln	944	0	1439	1237	0	1461	1619	1547	1694	1619	1547	1685
Q Serve(g_s), s	19.5	0.0	2.7	13.8	0.0	25.9	0.3	49.7	49.8	4.3	30.5	30.5
Cycle Q Clear(g_c), s	45.4	0.0	2.7	16.5	0.0	25.9	0.3	49.7	49.8	4.3	30.5	30.5
Prop In Lane	1.00		1.00	1.00		0.91	1.00		0.02	1.00		0.04
Lane Grp Cap(c), veh/h	197	0	503	462	0	510	8	1528	837	67	1640	893
V/C Ratio(X)	0.92	0.00	0.09	0.37	0.00	0.67	0.48	0.87	0.87	0.80	0.63	0.63
Avail Cap(c_a), veh/h	197	0	503	462	0	510	80	1528	837	80	1640	893
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.3	0.0	28.4	33.9	0.0	35.9	64.5	29.2	29.2	61.8	21.5	21.5
Incr Delay (d2), s/veh	41.6	0.0	0.1	0.5	0.0	3.4	14.8	7.1	12.1	32.4	1.8	3.3
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	8.3	0.0	1.0	4.3	0.0	9.8	0.2	18.7	21.7	2.3	10.7	12.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	99.0	0.0	28.5	34.4	0.0	39.3	79.3	36.3	41.4	94.2	23.3	24.8
LnGrp LOS	F	A	C	C	A	D	E	D	D	F	C	C
Approach Vol, veh/h		225			511			2065			1644	
Approach Delay, s/veh		85.2			37.7			38.2			26.2	
Approach LOS		F			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	70.0		50.0	5.3	74.7		50.0				
Change Period (Y+Rc), s	4.6	5.8		4.6	4.6	5.8		4.6				
Max Green Setting (Gmax), s	6.4	63.2		45.4	6.4	63.2		45.4				
Max Q Clear Time (g_c+I1), s	6.3	51.8		47.4	2.3	32.5		27.9				
Green Ext Time (p_c), s	0.0	8.8		0.0	0.0	12.7		2.8				

Intersection Summary			
HCM 6th Ctrl Delay		36.1	
HCM 6th LOS		D	

Goodman Commerce Center (JN 15593)
E+P
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Valley View St. & Plaza Dr.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.797
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	51	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	4	1967	12	52	1503	23	168	0	61	162	30	355
Growth 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
Initial Bse:	4	1967	12	52	1503	23	168	0	61	162	30	355
Added Vol:	0	0	0	0	0	3	6	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	1967	12	52	1503	26	174	0	61	162	30	355
User 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
PHF 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
PHF Volume:	4	1967	12	52	1503	26	174	0	61	162	30	355
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	1967	12	52	1503	26	174	0	61	162	30	355
PCE 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
MLF 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
FinalVolume:	4	1967	12	52	1503	26	174	0	61	162	30	355
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.98	0.02	1.00	2.95	0.05	1.00	0.00	1.00	1.00	0.08	0.92
Final Sat.:	1700	5069	31	1700	5013	87	1700	0	1700	1700	132	1568
Capacity Analysis Module:												
Vol/Sat:	0.00	0.39	0.39	0.03	0.30	0.30	0.10	0.00	0.04	0.10	0.23	0.23
Crit Moves:		****			****			****			****	

APPENDIX 5.2: EXISTING PLUS PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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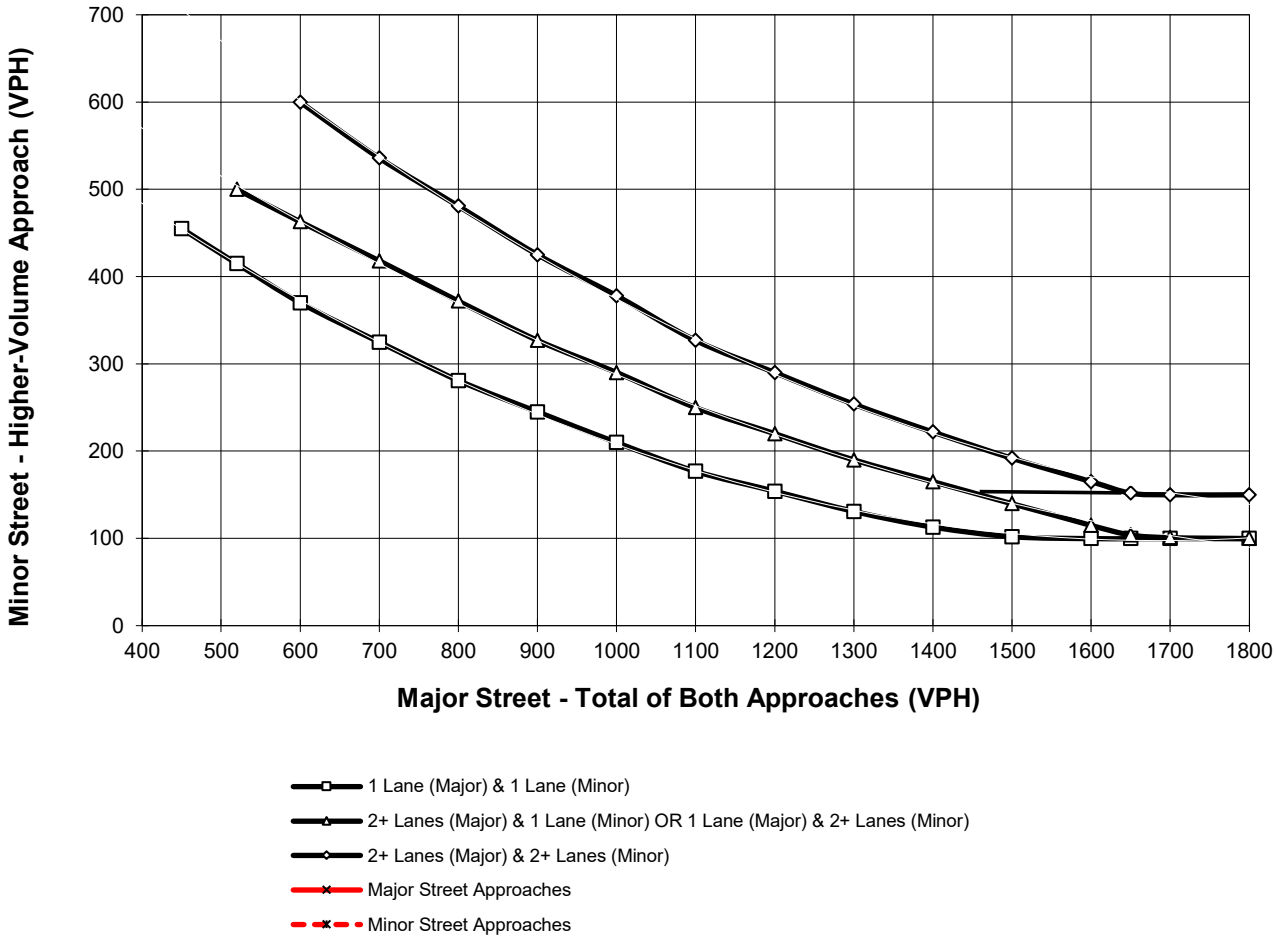
Figure 4C-3. Warrant 3, Peak Hour

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

Major Street Name = **Plaza Dr.**
Total of Both Approaches (VPH) = **68**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Douglas Dr.**
High Volume Approach (VPH) = **34**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*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

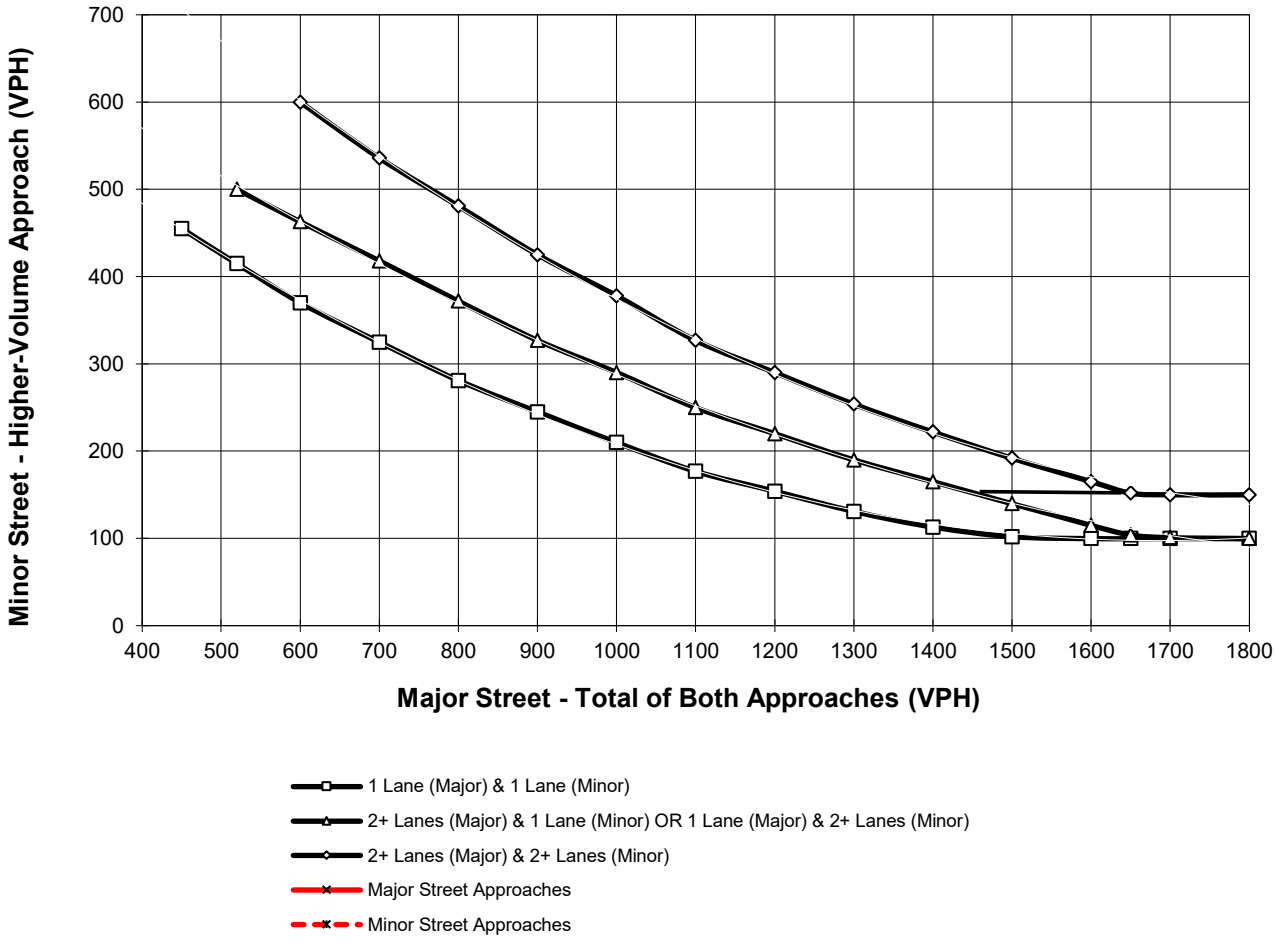
Figure 4C-3. Warrant 3, Peak Hour

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

Major Street Name = **Plaza Dr.**
Total of Both Approaches (VPH) = **189**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **McDonnell Dr.**
High Volume Approach (VPH) = **14**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*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

APPENDIX 6.1: FUTURE YEAR (2025) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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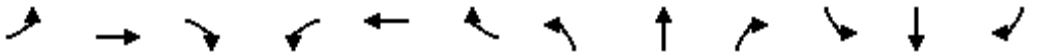
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	49	1828	74	12	1886	35	27	2	2	1	22
Future Volume (vph)	49	1828	74	12	1886	35	27	2	2	1	22
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases			2			6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	40.6	40.6	40.6	40.6	40.6
Total Split (s)	10.0	78.0	78.0	10.0	78.0	78.0	42.0	42.0	42.0	42.0	42.0
Total Split (%)	7.7%	60.0%	60.0%	7.7%	60.0%	60.0%	32.3%	32.3%	32.3%	32.3%	32.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	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	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	7.3	102.9	102.9	5.7	96.3	96.3	20.4	20.4	20.4	20.4	20.4
Actuated g/C Ratio	0.06	0.79	0.79	0.04	0.74	0.74	0.16	0.16	0.16	0.16	0.16
v/c Ratio	0.56	0.52	0.07	0.18	0.57	0.03	0.14	0.03	0.01	0.00	0.08
Control Delay	82.9	11.5	4.9	65.4	13.4	1.8	42.7	24.3	36.5	36.0	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.9	11.5	4.9	65.4	13.4	1.8	42.7	24.3	36.5	36.0	0.6
LOS	F	B	A	E	B	A	D	C	D	D	A
Approach Delay		13.0			13.5			39.0		4.7	
Approach LOS		B			B			D		A	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 13.4	Intersection LOS: B
Intersection Capacity Utilization 70.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Douglas Dr. & Katella Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	1828	74	12	1886	35	27	2	5	2	1	22
Future Volume (veh/h)	49	1828	74	12	1886	35	27	2	5	2	1	22
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		0.98	0.99		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adj Flow Rate, veh/h	51	1904	69	12	1965	31	28	2	2	2	1	13
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	64	3798	1154	22	3679	1117	121	41	41	120	90	75
Arrive On Green	0.04	0.82	0.82	0.01	0.79	0.79	0.05	0.05	0.05	0.05	0.05	0.05
Sat Flow, veh/h	1619	4641	1410	1619	4641	1409	1265	771	771	1284	1700	1414
Grp Volume(v), veh/h	51	1904	69	12	1965	31	28	0	4	2	1	13
Grp Sat Flow(s),veh/h/ln	1619	1547	1410	1619	1547	1409	1265	0	1542	1284	1700	1414
Q Serve(g_s), s	4.1	16.4	1.2	1.0	19.8	0.6	2.8	0.0	0.3	0.2	0.1	1.1
Cycle Q Clear(g_c), s	4.1	16.4	1.2	1.0	19.8	0.6	2.9	0.0	0.3	0.5	0.1	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	64	3798	1154	22	3679	1117	121	0	81	120	90	75
V/C Ratio(X)	0.80	0.50	0.06	0.55	0.53	0.03	0.23	0.00	0.05	0.02	0.01	0.17
Avail Cap(c_a), veh/h	67	3798	1154	67	3679	1117	419	0	444	422	489	407
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	62.0	3.6	2.3	63.7	4.8	2.9	59.7	0.0	58.5	58.7	58.4	58.9
Incr Delay (d2), s/veh	43.1	0.5	0.1	7.7	0.6	0.0	1.0	0.0	0.2	0.1	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	3.4	0.2	0.4	4.6	0.1	0.9	0.0	0.1	0.1	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	105.1	4.1	2.4	71.4	5.4	2.9	60.7	0.0	58.7	58.8	58.4	60.0
LnGrp LOS	F	A	A	E	A	A	E	A	E	E	E	E
Approach Vol, veh/h		2024			2008			32			16	
Approach Delay, s/veh		6.6			5.8			60.4			59.7	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	112.2		11.5	9.7	108.8		11.5				
Change Period (Y+Rc), s	4.6	5.8		4.6	4.6	5.8		4.6				
Max Green Setting (Gmax), s	5.4	72.2		37.4	5.4	72.2		37.4				
Max Q Clear Time (g_c+I1), s	3.0	18.4		3.1	6.1	21.8		4.9				
Green Ext Time (p_c), s	0.0	22.9		0.0	0.0	23.3		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			6.8									
HCM 6th LOS			A									

Goodman Commerce Center (JN 15593)
Opening Year (2025) Without Project
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Douglas Dr. & Katella Av.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.477
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	23	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	1 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	27	2	5	2	1	22	49	1828	74	12	1886	35
Growth 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
Initial Bse:	27	2	5	2	1	22	49	1828	74	12	1886	35
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	2	5	2	1	22	49	1828	74	12	1886	35
User 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
PHF 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
PHF Volume:	27	2	5	2	1	22	49	1828	74	12	1886	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	2	5	2	1	22	49	1828	74	12	1886	35
PCE 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
MLF 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
FinalVolume:	27	2	5	2	1	22	49	1828	74	12	1886	35
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.29	0.71	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1700	486	1214	1700	1700	1700	1700	5100	1700	1700	5100	1700
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.00	0.00	0.00	0.01	0.03	0.36	0.04	0.01	0.37	0.02
Crit Moves:	****					****	****				****	

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	62	0	3	0	4	39	0	0	0
Future Vol, veh/h	0	0	0	62	0	3	0	4	39	0	0	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	72	0	3	0	5	45	0	0	0
Number of Lanes	0	0	0	1	0	0	0	0	1	0	0	0

Approach	WB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	NB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		WB
Conflicting Lanes Right	0	1
HCM Control Delay	7.6	6.7
HCM LOS	A	A

Lane	NBLn1	WBLn1
Vol Left, %	0%	95%
Vol Thru, %	9%	0%
Vol Right, %	91%	5%
Sign Control	Stop	Stop
Traffic Vol by Lane	43	65
LT Vol	0	62
Through Vol	4	0
RT Vol	39	3
Lane Flow Rate	50	76
Geometry Grp	1	1
Degree of Util (X)	0.048	0.087
Departure Headway (Hd)	3.487	4.15
Convergence, Y/N	Yes	Yes
Cap	1022	867
Service Time	1.526	2.158
HCM Lane V/C Ratio	0.049	0.088
HCM Control Delay	6.7	7.6
HCM Lane LOS	A	A
HCM 95th-tile Q	0.2	0.3

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	46	0	14	122	10	20	3	115	1	0	0
Future Vol, veh/h	0	46	0	14	122	10	20	3	115	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	54	0	16	144	12	24	4	135	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	156	0	0	54	0	0	236	242	54	306	236	150
Stage 1	-	-	-	-	-	-	54	54	-	182	182	-
Stage 2	-	-	-	-	-	-	182	188	-	124	54	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1436	-	-	1564	-	-	723	663	1019	650	668	902
Stage 1	-	-	-	-	-	-	963	854	-	824	753	-
Stage 2	-	-	-	-	-	-	824	748	-	885	854	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1436	-	-	1564	-	-	717	656	1019	557	661	902
Mov Cap-2 Maneuver	-	-	-	-	-	-	719	653	-	610	655	-
Stage 1	-	-	-	-	-	-	963	854	-	824	745	-
Stage 2	-	-	-	-	-	-	816	741	-	764	854	-

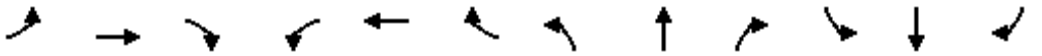
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	9.6	10.9
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	950	1436	-	-	1564	-	-	610
HCM Lane V/C Ratio	0.171	-	-	-	0.011	-	-	0.002
HCM Control Delay (s)	9.6	0	-	-	7.3	-	-	10.9
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	21	9	12	0	62	1587	264	1620
Future Volume (vph)	21	9	12	0	62	1587	264	1620
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	37.6	37.6	14.6	14.6	9.6	22.8	9.6	22.8
Total Split (s)	38.0	38.0	38.0	38.0	11.0	61.0	31.0	81.0
Total Split (%)	29.2%	29.2%	29.2%	29.2%	8.5%	46.9%	23.8%	62.3%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	5.8	4.6	5.8
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	19.2	19.2	19.2	19.2	7.9	74.5	24.3	90.8
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.06	0.57	0.19	0.70
v/c Ratio	0.11	0.15	0.07	0.08	0.65	0.69	0.89	0.58
Control Delay	43.5	19.2	41.4	0.3	88.6	24.9	81.2	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	19.2	41.4	0.3	88.6	24.9	81.2	13.1
LOS	D	B	D	A	F	C	F	B
Approach Delay		28.1		9.8		27.0		21.7
Approach LOS		C		A		C		C

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 24.1	Intersection LOS: C
Intersection Capacity Utilization 78.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Valley View St. & Plaza Dr./Chip Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	9	27	12	0	40	62	1587	188	264	1620	214
Future Volume (veh/h)	21	9	27	12	0	40	62	1587	188	264	1620	214
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	0.99		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	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adj Flow Rate, veh/h	21	9	22	12	0	34	63	1603	188	267	1636	213
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	122	33	80	124	0	108	78	2649	310	289	3163	411
Arrive On Green	0.08	0.08	0.08	0.08	0.00	0.08	0.05	0.63	0.63	0.18	0.76	0.76
Sat Flow, veh/h	1249	434	1060	1240	0	1441	1619	4200	491	1619	4157	540
Grp Volume(v), veh/h	21	0	31	12	0	34	63	1180	611	267	1217	632
Grp Sat Flow(s),veh/h/ln	1249	0	1494	1240	0	1441	1619	1547	1598	1619	1547	1602
Q Serve(g_s), s	2.1	0.0	2.5	1.2	0.0	2.9	5.0	29.6	29.7	21.1	20.1	20.3
Cycle Q Clear(g_c), s	5.0	0.0	2.5	3.7	0.0	2.9	5.0	29.6	29.7	21.1	20.1	20.3
Prop In Lane	1.00		0.71	1.00		1.00	1.00		0.31	1.00		0.34
Lane Grp Cap(c), veh/h	122	0	113	124	0	108	78	1951	1008	289	2354	1219
V/C Ratio(X)	0.17	0.00	0.28	0.10	0.00	0.31	0.80	0.60	0.61	0.92	0.52	0.52
Avail Cap(c_a), veh/h	348	0	384	350	0	370	80	1951	1008	329	2354	1219
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.3	0.0	56.8	58.5	0.0	56.9	61.2	14.3	14.4	52.5	6.1	6.1
Incr Delay (d2), s/veh	0.7	0.0	1.3	0.3	0.0	1.6	40.0	1.4	2.7	27.4	0.8	1.6
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	0.7	0.0	1.0	0.4	0.0	1.1	2.9	9.7	10.4	10.5	5.3	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.0	0.0	58.1	58.9	0.0	58.6	101.2	15.7	17.1	79.9	6.9	7.7
LnGrp LOS	E	A	E	E	A	E	F	B	B	E	A	A
Approach Vol, veh/h		52			46			1854			2116	
Approach Delay, s/veh		58.8			58.6			19.1			16.4	
Approach LOS		E			E			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.8	87.8		14.4	10.9	104.7		14.4				
Change Period (Y+Rc), s	4.6	5.8		4.6	4.6	5.8		4.6				
Max Green Setting (Gmax), s	26.4	55.2		33.4	6.4	75.2		33.4				
Max Q Clear Time (g_c+I1), s	23.1	31.7		7.0	7.0	22.3		5.7				
Green Ext Time (p_c), s	0.1	13.1		0.2	0.0	19.7		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		18.6	
HCM 6th LOS		B	

Goodman Commerce Center (JN 15593)
Opening Year (2025) Without Project
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Valley View St. & Plaza Dr.

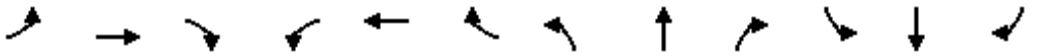
Cycle (sec):	100	Critical Vol./Cap.(X):	0.582
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	28	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	62	1587	188	264	1620	214	21	9	27	12	0	40
Growth 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
Initial Bse:	62	1587	188	264	1620	214	21	9	27	12	0	40
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	62	1587	188	264	1620	214	21	9	27	12	0	40
User 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
PHF 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
PHF Volume:	62	1587	188	264	1620	214	21	9	27	12	0	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	62	1587	188	264	1620	214	21	9	27	12	0	40
PCE 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
MLF 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
FinalVolume:	62	1587	188	264	1620	214	21	9	27	12	0	40
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.68	0.32	1.00	2.65	0.35	1.00	0.25	0.75	1.00	0.00	1.00
Final Sat.:	1700	4560	540	1700	4505	595	1700	425	1275	1700	0	1700
Capacity Analysis Module:												
Vol/Sat:	0.04	0.35	0.35	0.16	0.36	0.36	0.01	0.02	0.02	0.01	0.00	0.02
Crit Moves:		****			****			****			****	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	18	2104	33	9	1755	6	86	1	27	2	69
Future Volume (vph)	18	2104	33	9	1755	6	86	1	27	2	69
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases			2			6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	40.6	40.6	40.6	40.6	40.6
Total Split (s)	10.0	78.0	78.0	10.0	78.0	78.0	42.0	42.0	42.0	42.0	42.0
Total Split (%)	7.7%	60.0%	60.0%	7.7%	60.0%	60.0%	32.3%	32.3%	32.3%	32.3%	32.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	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	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	5.9	95.4	95.4	5.6	91.0	91.0	21.9	21.9	21.9	21.9	21.9
Actuated g/C Ratio	0.05	0.73	0.73	0.04	0.70	0.70	0.17	0.17	0.17	0.17	0.17
v/c Ratio	0.27	0.69	0.04	0.14	0.61	0.01	0.45	0.04	0.14	0.01	0.26
Control Delay	68.9	14.1	1.9	64.1	14.4	0.0	52.0	19.6	41.8	36.0	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.9	14.1	1.9	64.1	14.4	0.0	52.0	19.6	41.8	36.0	9.6
LOS	E	B	A	E	B	A	D	B	D	D	A
Approach Delay		14.4			14.6			49.2		18.9	
Approach LOS		B			B			D		B	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 15.4	Intersection LOS: B
Intersection Capacity Utilization 67.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Douglas Dr. & Katella Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	2104	33	9	1755	6	86	1	7	27	2	69
Future Volume (veh/h)	18	2104	33	9	1755	6	86	1	7	27	2	69
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		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adj Flow Rate, veh/h	20	2364	31	10	1972	7	97	1	4	30	2	44
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	32	3617	1098	19	3579	1087	170	28	111	172	159	133
Arrive On Green	0.02	0.78	0.78	0.01	0.77	0.77	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1619	4641	1409	1619	4641	1410	1236	297	1189	1283	1700	1420
Grp Volume(v), veh/h	20	2364	31	10	1972	7	97	0	5	30	2	44
Grp Sat Flow(s),veh/h/ln	1619	1547	1409	1619	1547	1410	1236	0	1486	1283	1700	1420
Q Serve(g_s), s	1.6	29.8	0.6	0.8	22.0	0.1	10.0	0.0	0.4	2.8	0.1	3.8
Cycle Q Clear(g_c), s	1.6	29.8	0.6	0.8	22.0	0.1	10.2	0.0	0.4	3.2	0.1	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.80	1.00		1.00
Lane Grp Cap(c), veh/h	32	3617	1098	19	3579	1087	170	0	139	172	159	133
V/C Ratio(X)	0.62	0.65	0.03	0.53	0.55	0.01	0.57	0.00	0.04	0.17	0.01	0.33
Avail Cap(c_a), veh/h	67	3617	1098	67	3579	1087	410	0	428	420	489	409
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	63.2	6.5	3.2	63.9	5.9	3.4	58.1	0.0	53.6	55.0	53.5	55.1
Incr Delay (d2), s/veh	7.2	0.9	0.0	8.3	0.6	0.0	3.0	0.0	0.1	0.5	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	7.4	0.2	0.4	5.6	0.0	3.3	0.0	0.2	1.0	0.1	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.4	7.4	3.3	72.2	6.5	3.4	61.1	0.0	53.7	55.5	53.5	56.5
LnGrp LOS	E	A	A	E	A	A	E	A	D	E	D	E
Approach Vol, veh/h		2415			1989			102			76	
Approach Delay, s/veh		7.9			6.9			60.7			56.1	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	107.1		16.8	7.2	106.0		16.8				
Change Period (Y+Rc), s	4.6	5.8		4.6	4.6	5.8		4.6				
Max Green Setting (Gmax), s	5.4	72.2		37.4	5.4	72.2		37.4				
Max Q Clear Time (g_c+I1), s	2.8	31.8		5.8	3.6	24.0		12.2				
Green Ext Time (p_c), s	0.0	27.3		0.2	0.0	22.8		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		9.4	
HCM 6th LOS		A	

Goodman Commerce Center (JN 15593)
Opening Year (2025) Without Project
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Douglas Dr. & Katella Av.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.559
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	1 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	86	1	7	27	2	69	18	2104	33	9	1755	6
Growth 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
Initial Bse:	86	1	7	27	2	69	18	2104	33	9	1755	6
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	86	1	7	27	2	69	18	2104	33	9	1755	6
User 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
PHF 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
PHF Volume:	86	1	7	27	2	69	18	2104	33	9	1755	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	86	1	7	27	2	69	18	2104	33	9	1755	6
PCE 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
MLF 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
FinalVolume:	86	1	7	27	2	69	18	2104	33	9	1755	6
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.12	0.88	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1700	213	1488	1700	1700	1700	1700	5100	1700	1700	5100	1700
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.00	0.02	0.00	0.04	0.01	0.41	0.02	0.01	0.34	0.00
Crit Moves:	****					****		****		****		

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	121	0	1	0	1	29	3	4	0
Future Vol, veh/h	0	0	0	121	0	1	0	1	29	3	4	0
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	161	0	1	0	1	39	4	5	0
Number of Lanes	0	0	0	1	0	0	0	0	1	0	0	0

Approach	WB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	NB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		WB
Conflicting Lanes Right	0	1
HCM Control Delay	8.1	6.8
HCM LOS	A	A

Lane	NBLn1	WBLn1
Vol Left, %	0%	99%
Vol Thru, %	3%	0%
Vol Right, %	97%	1%
Sign Control	Stop	Stop
Traffic Vol by Lane	30	122
LT Vol	0	121
Through Vol	1	0
RT Vol	29	1
Lane Flow Rate	40	163
Geometry Grp	1	1
Degree of Util (X)	0.04	0.188
Departure Headway (Hd)	3.604	4.164
Convergence, Y/N	Yes	Yes
Cap	977	865
Service Time	1.688	2.172
HCM Lane V/C Ratio	0.041	0.188
HCM Control Delay	6.8	8.1
HCM Lane LOS	A	A
HCM 95th-tile Q	0.1	0.7

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	103	2	43	102	2	5	0	16	7	4	0
Future Vol, veh/h	0	103	2	43	102	2	5	0	16	7	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	63	63	63	63	63	63	63	63	63
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	163	3	68	162	3	8	0	25	11	6	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	165	0	0	166	0	0	468	466	165	477	466	164
Stage 1	-	-	-	-	-	-	165	165	-	300	300	-
Stage 2	-	-	-	-	-	-	303	301	-	177	166	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1426	-	-	1424	-	-	509	497	885	502	497	886
Stage 1	-	-	-	-	-	-	842	766	-	713	669	-
Stage 2	-	-	-	-	-	-	711	669	-	829	765	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1426	-	-	1424	-	-	486	473	885	470	473	886
Mov Cap-2 Maneuver	-	-	-	-	-	-	554	528	-	545	518	-
Stage 1	-	-	-	-	-	-	842	766	-	713	637	-
Stage 2	-	-	-	-	-	-	670	637	-	805	765	-

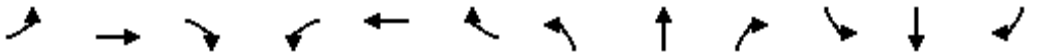
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.2	9.9	12
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	775	1426	-	-	1424	-	-	535
HCM Lane V/C Ratio	0.043	-	-	-	0.048	-	-	0.033
HCM Control Delay (s)	9.9	0	-	-	7.7	-	-	12
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.2	-	-	0.1

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	226	0	169	31	16	2061	54	1582
Future Volume (vph)	226	0	169	31	16	2061	54	1582
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	37.6	37.6	14.6	14.6	9.6	22.8	9.6	22.8
Total Split (s)	50.0	50.0	50.0	50.0	11.0	69.0	11.0	69.0
Total Split (%)	38.5%	38.5%	38.5%	38.5%	8.5%	53.1%	8.5%	53.1%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	5.8	4.6	5.8
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	45.4	45.4	45.4	45.4	5.7	65.4	6.2	69.8
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.04	0.50	0.05	0.54
v/c Ratio	1.42	0.19	0.44	0.72	0.24	0.93	0.73	0.68
Control Delay	252.2	5.7	36.8	35.5	68.0	38.7	106.6	24.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	252.2	5.7	36.8	35.5	68.0	38.7	106.6	24.4
LOS	F	A	D	D	E	D	F	C
Approach Delay		175.5		35.9		39.0		27.1
Approach LOS		F		D		D		C

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.42	
Intersection Signal Delay: 43.9	Intersection LOS: D
Intersection Capacity Utilization 104.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 4: Valley View St. & Plaza Dr./Chip Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	226	0	102	169	31	369	16	2061	12	54	1582	37
Future Volume (veh/h)	226	0	102	169	31	369	16	2061	12	54	1582	37
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		0.97
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	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adj Flow Rate, veh/h	235	0	86	176	32	325	17	2147	12	56	1648	36
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	185	0	503	422	46	464	29	2344	13	70	2418	53
Arrive On Green	0.35	0.00	0.35	0.35	0.35	0.35	0.02	0.49	0.49	0.04	0.52	0.52
Sat Flow, veh/h	931	0	1439	1191	131	1330	1619	4762	27	1619	4670	102
Grp Volume(v), veh/h	235	0	86	176	0	357	17	1395	764	56	1092	592
Grp Sat Flow(s),veh/h/ln	931	0	1439	1191	0	1461	1619	1547	1695	1619	1547	1678
Q Serve(g_s), s	18.0	0.0	5.4	15.6	0.0	27.4	1.4	54.2	54.2	4.5	34.2	34.2
Cycle Q Clear(g_c), s	45.4	0.0	5.4	21.0	0.0	27.4	1.4	54.2	54.2	4.5	34.2	34.2
Prop In Lane	1.00		1.00	1.00		0.91	1.00		0.02	1.00		0.06
Lane Grp Cap(c), veh/h	185	0	503	422	0	510	29	1523	834	70	1602	869
V/C Ratio(X)	1.27	0.00	0.17	0.42	0.00	0.70	0.60	0.92	0.92	0.80	0.68	0.68
Avail Cap(c_a), veh/h	185	0	503	422	0	510	80	1523	834	80	1602	869
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.7	0.0	29.3	36.5	0.0	36.4	63.4	30.5	30.5	61.7	23.4	23.4
Incr Delay (d2), s/veh	158.3	0.0	0.2	0.7	0.0	4.2	7.1	10.1	16.4	34.3	2.4	4.3
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	14.3	0.0	1.9	4.7	0.0	10.4	0.6	20.9	24.4	2.5	12.2	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	217.0	0.0	29.4	37.2	0.0	40.7	70.5	40.6	47.0	95.9	25.7	27.7
LnGrp LOS	F	A	C	D	A	D	E	D	D	F	C	C
Approach Vol, veh/h		321			533			2176			1740	
Approach Delay, s/veh		166.8			39.5			43.1			28.6	
Approach LOS		F			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.2	69.8		50.0	6.9	73.1		50.0				
Change Period (Y+Rc), s	4.6	5.8		4.6	4.6	5.8		4.6				
Max Green Setting (Gmax), s	6.4	63.2		45.4	6.4	63.2		45.4				
Max Q Clear Time (g_c+I1), s	6.5	56.2		47.4	3.4	36.2		29.4				
Green Ext Time (p_c), s	0.0	5.9		0.0	0.0	12.9		2.9				

Intersection Summary			
HCM 6th Ctrl Delay		45.7	
HCM 6th LOS		D	

Goodman Commerce Center (JN 15593)
Opening Year (2025) Without Project
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Valley View St. & Plaza Dr.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.856
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	67	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	16	2061	12	54	1582	37	226	0	102	169	31	369
Growth 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
Initial Bse:	16	2061	12	54	1582	37	226	0	102	169	31	369
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	16	2061	12	54	1582	37	226	0	102	169	31	369
User 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
PHF 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
PHF Volume:	16	2061	12	54	1582	37	226	0	102	169	31	369
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	2061	12	54	1582	37	226	0	102	169	31	369
PCE 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
MLF 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
FinalVolume:	16	2061	12	54	1582	37	226	0	102	169	31	369
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.98	0.02	1.00	2.93	0.07	1.00	0.00	1.00	1.00	0.08	0.92
Final Sat.:	1700	5070	30	1700	4983	117	1700	0	1700	1700	132	1568
Capacity Analysis Module:												
Vol/Sat:	0.01	0.41	0.41	0.03	0.32	0.32	0.13	0.00	0.06	0.10	0.24	0.24
Crit Moves:		****			****			****			****	

APPENDIX 6.2: FUTURE YEAR (2025) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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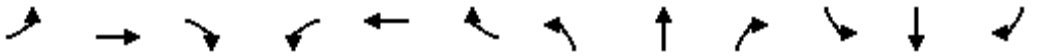
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	59	1828	74	12	1886	38	27	2	5	1	27
Future Volume (vph)	59	1828	74	12	1886	38	27	2	5	1	27
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases			2			6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	40.6	40.6	40.6	40.6	40.6
Total Split (s)	10.0	78.0	78.0	10.0	78.0	78.0	42.0	42.0	42.0	42.0	42.0
Total Split (%)	7.7%	60.0%	60.0%	7.7%	60.0%	60.0%	32.3%	32.3%	32.3%	32.3%	32.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	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	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	8.4	102.9	102.9	5.7	92.1	92.1	20.4	20.4	20.4	20.4	20.4
Actuated g/C Ratio	0.06	0.79	0.79	0.04	0.71	0.71	0.16	0.16	0.16	0.16	0.16
v/c Ratio	0.59	0.52	0.07	0.18	0.60	0.04	0.14	0.03	0.03	0.00	0.10
Control Delay	82.2	11.5	4.9	65.4	14.1	2.4	42.7	24.3	37.6	36.0	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.2	11.5	4.9	65.4	14.1	2.4	42.7	24.3	37.6	36.0	1.2
LOS	F	B	A	E	B	A	D	C	D	D	A
Approach Delay		13.3			14.2			39.0		7.6	
Approach LOS		B			B			D		A	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 13.9	Intersection LOS: B
Intersection Capacity Utilization 70.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Douglas Dr. & Katella Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	1828	74	12	1886	38	27	2	5	5	1	27
Future Volume (veh/h)	59	1828	74	12	1886	38	27	2	5	5	1	27
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		0.98	0.99		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adj Flow Rate, veh/h	61	1904	69	12	1965	35	28	2	2	5	1	18
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	67	3798	1154	22	3668	1114	121	41	41	120	90	75
Arrive On Green	0.04	0.82	0.82	0.01	0.79	0.79	0.05	0.05	0.05	0.05	0.05	0.05
Sat Flow, veh/h	1619	4641	1410	1619	4641	1409	1260	771	771	1284	1700	1414
Grp Volume(v), veh/h	61	1904	69	12	1965	35	28	0	4	5	1	18
Grp Sat Flow(s),veh/h/ln	1619	1547	1410	1619	1547	1409	1260	0	1542	1284	1700	1414
Q Serve(g_s), s	4.9	16.4	1.2	1.0	20.0	0.7	2.8	0.0	0.3	0.5	0.1	1.6
Cycle Q Clear(g_c), s	4.9	16.4	1.2	1.0	20.0	0.7	2.9	0.0	0.3	0.8	0.1	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	67	3798	1154	22	3668	1114	121	0	81	120	90	75
V/C Ratio(X)	0.91	0.50	0.06	0.55	0.54	0.03	0.23	0.00	0.05	0.04	0.01	0.24
Avail Cap(c_a), veh/h	67	3798	1154	67	3668	1114	417	0	444	422	489	407
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	62.0	3.6	2.3	63.7	5.0	2.9	59.7	0.0	58.5	58.9	58.4	59.1
Incr Delay (d2), s/veh	76.5	0.5	0.1	7.7	0.6	0.1	1.0	0.0	0.2	0.1	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	3.4	0.2	0.4	4.7	0.2	0.9	0.0	0.1	0.2	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	138.6	4.1	2.4	71.4	5.5	3.0	60.7	0.0	58.7	59.0	58.4	60.7
LnGrp LOS	F	A	A	E	A	A	E	A	E	E	E	E
Approach Vol, veh/h		2034			2012			32			24	
Approach Delay, s/veh		8.1			5.9			60.4			60.3	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	112.2		11.5	10.0	108.5		11.5				
Change Period (Y+Rc), s	4.6	5.8		4.6	4.6	5.8		4.6				
Max Green Setting (Gmax), s	5.4	72.2		37.4	5.4	72.2		37.4				
Max Q Clear Time (g_c+I1), s	3.0	18.4		3.6	6.9	22.0		4.9				
Green Ext Time (p_c), s	0.0	22.9		0.0	0.0	23.3		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		7.7	
HCM 6th LOS		A	

Goodman Commerce Center (JN 15593)
Opening Year (2025) With Project
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Douglas Dr. & Katella Av.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.486
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	23	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	1 0	1	0 1	1 0	3	0 1	1 0	3	0 1
Volume Module:												
Base Vol:	27	2	5	2	1	22	49	1828	74	12	1886	35
Growth 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
Initial Bse:	27	2	5	2	1	22	49	1828	74	12	1886	35
Added Vol:	0	0	0	3	0	5	10	0	0	0	0	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	2	5	5	1	27	59	1828	74	12	1886	38
User 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
PHF 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
PHF Volume:	27	2	5	5	1	27	59	1828	74	12	1886	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	2	5	5	1	27	59	1828	74	12	1886	38
PCE 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
MLF 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
FinalVolume:	27	2	5	5	1	27	59	1828	74	12	1886	38
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.29	0.71	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1700	486	1214	1700	1700	1700	1700	5100	1700	1700	5100	1700
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.00	0.00	0.00	0.02	0.03	0.36	0.04	0.01	0.37	0.02
Crit Moves:	****					****	****				****	

Goodman Commerce Center (JN 15593)
Opening Year (2025) With Project WITH IMPROVEMENTS
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Douglas Dr. & Katella Av.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.494
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	23	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	1 0	1	1 0	3 0	1	1 0	2 1	0
Volume Module:												
Base Vol:	27	2	5	2	1	22	49	1828	74	12	1886	35
Growth 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
Initial Bse:	27	2	5	2	1	22	49	1828	74	12	1886	35
Added Vol:	0	0	0	3	0	5	10	0	0	0	0	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	2	5	5	1	27	59	1828	74	12	1886	38
User 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
PHF 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
PHF Volume:	27	2	5	5	1	27	59	1828	74	12	1886	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	2	5	5	1	27	59	1828	74	12	1886	38
PCE 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
MLF 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
FinalVolume:	27	2	5	5	1	27	59	1828	74	12	1886	38
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.29	0.71	1.00	1.00	1.00	1.00	3.00	1.00	1.00	2.94	0.06
Final Sat.:	1700	486	1214	1700	1700	1700	1700	5100	1700	1700	4999	101
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.00	0.00	0.00	0.02	0.03	0.36	0.04	0.01	0.38	0.38
Crit Moves:	****					****	****				****	

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	7	62	4	5	6	11	39	0	0	0
Future Vol, veh/h	0	2	7	62	4	5	6	11	39	0	0	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	2	8	72	5	6	7	13	45	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.7	7.6	7	0
HCM LOS	A	A	A	-

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	0%	87%	0%
Vol Thru, %	20%	22%	6%	100%
Vol Right, %	70%	78%	7%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	56	9	71	0
LT Vol	6	0	62	0
Through Vol	11	2	4	0
RT Vol	39	7	5	0
Lane Flow Rate	65	10	83	0
Geometry Grp	1	1	1	1
Degree of Util (X)	0.066	0.01	0.095	0
Departure Headway (Hd)	3.663	3.609	4.155	4.111
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	972	988	864	0
Service Time	1.707	1.644	2.171	2.163
HCM Lane V/C Ratio	0.067	0.01	0.096	0
HCM Control Delay	7	6.7	7.6	7.2
HCM Lane LOS	A	A	A	N
HCM 95th-tile Q	0.2	0	0.3	0

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	48	0	14	127	6	21	3	115	1	0	0
Future Vol, veh/h	0	48	0	14	127	6	21	3	115	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	56	0	16	149	7	25	4	135	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	156	0	0	56	0	0	241	244	56	311	241	153
Stage 1	-	-	-	-	-	-	56	56	-	185	185	-
Stage 2	-	-	-	-	-	-	185	188	-	126	56	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1436	-	-	1562	-	-	717	661	1016	645	664	898
Stage 1	-	-	-	-	-	-	961	852	-	821	751	-
Stage 2	-	-	-	-	-	-	821	748	-	883	852	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1436	-	-	1562	-	-	711	654	1016	553	657	898
Mov Cap-2 Maneuver	-	-	-	-	-	-	715	652	-	607	653	-
Stage 1	-	-	-	-	-	-	961	852	-	821	743	-
Stage 2	-	-	-	-	-	-	813	741	-	762	852	-

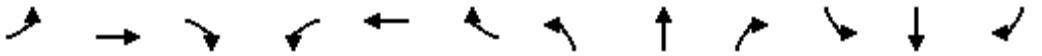
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	9.6	10.9
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	945	1436	-	-	1562	-	-	607
HCM Lane V/C Ratio	0.173	-	-	-	0.011	-	-	0.002
HCM Control Delay (s)	9.6	0	-	-	7.3	-	-	10.9
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	23	9	12	0	62	1587	264	1620
Future Volume (vph)	23	9	12	0	62	1587	264	1620
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	37.6	37.6	14.6	14.6	9.6	22.8	9.6	22.8
Total Split (s)	38.0	38.0	38.0	38.0	11.0	61.0	31.0	81.0
Total Split (%)	29.2%	29.2%	29.2%	29.2%	8.5%	46.9%	23.8%	62.3%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	5.8	4.6	5.8
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	19.2	19.2	19.2	19.2	7.9	74.5	24.3	90.8
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.06	0.57	0.19	0.70
v/c Ratio	0.13	0.15	0.07	0.08	0.65	0.69	0.89	0.58
Control Delay	44.0	19.2	41.4	0.3	88.6	24.9	81.2	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.0	19.2	41.4	0.3	88.6	24.9	81.2	13.2
LOS	D	B	D	A	F	C	F	B
Approach Delay		28.8		9.8		27.0		21.7
Approach LOS		C		A		C		C

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 24.1	Intersection LOS: C
Intersection Capacity Utilization 78.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Valley View St. & Plaza Dr./Chip Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	9	27	12	0	40	62	1587	188	264	1620	219
Future Volume (veh/h)	23	9	27	12	0	40	62	1587	188	264	1620	219
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	0.99		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	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adj Flow Rate, veh/h	23	9	22	12	0	34	63	1603	188	267	1636	218
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	123	33	81	125	0	110	78	2646	310	289	3150	418
Arrive On Green	0.08	0.08	0.08	0.08	0.00	0.08	0.05	0.63	0.63	0.18	0.76	0.76
Sat Flow, veh/h	1249	434	1060	1240	0	1441	1619	4200	491	1619	4144	550
Grp Volume(v), veh/h	23	0	31	12	0	34	63	1180	611	267	1220	634
Grp Sat Flow(s),veh/h/ln	1249	0	1494	1240	0	1441	1619	1547	1598	1619	1547	1600
Q Serve(g_s), s	2.3	0.0	2.5	1.2	0.0	2.9	5.0	29.7	29.8	21.1	20.3	20.4
Cycle Q Clear(g_c), s	5.2	0.0	2.5	3.7	0.0	2.9	5.0	29.7	29.8	21.1	20.3	20.4
Prop In Lane	1.00		0.71	1.00		1.00	1.00		0.31	1.00		0.34
Lane Grp Cap(c), veh/h	123	0	114	125	0	110	78	1949	1006	289	2352	1216
V/C Ratio(X)	0.19	0.00	0.27	0.10	0.00	0.31	0.80	0.61	0.61	0.92	0.52	0.52
Avail Cap(c_a), veh/h	348	0	384	350	0	370	80	1949	1006	329	2352	1216
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.3	0.0	56.7	58.4	0.0	56.8	61.2	14.4	14.4	52.5	6.2	6.2
Incr Delay (d2), s/veh	0.7	0.0	1.3	0.3	0.0	1.6	40.0	1.4	2.7	27.4	0.8	1.6
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	0.8	0.0	1.0	0.4	0.0	1.1	2.9	9.8	10.5	10.5	5.4	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.0	0.0	57.9	58.8	0.0	58.4	101.2	15.8	17.1	79.9	7.0	7.8
LnGrp LOS	E	A	E	E	A	E	F	B	B	E	A	A
Approach Vol, veh/h		54			46			1854			2121	
Approach Delay, s/veh		58.8			58.5			19.1			16.4	
Approach LOS		E			E			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.8	87.7		14.5	10.9	104.6		14.5				
Change Period (Y+Rc), s	4.6	5.8		4.6	4.6	5.8		4.6				
Max Green Setting (Gmax), s	26.4	55.2		33.4	6.4	75.2		33.4				
Max Q Clear Time (g_c+I1), s	23.1	31.8		7.2	7.0	22.4		5.7				
Green Ext Time (p_c), s	0.1	13.1		0.2	0.0	19.8		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			18.7									
HCM 6th LOS			B									

Goodman Commerce Center (JN 15593)
Opening Year (2025) With Project
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Valley View St. & Plaza Dr.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.582
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	28	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	62	1587	188	264	1620	214	21	9	27	12	0	40
Growth 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
Initial Bse:	62	1587	188	264	1620	214	21	9	27	12	0	40
Added Vol:	0	0	0	0	0	5	2	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	62	1587	188	264	1620	219	23	9	27	12	0	40
User 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
PHF 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
PHF Volume:	62	1587	188	264	1620	219	23	9	27	12	0	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	62	1587	188	264	1620	219	23	9	27	12	0	40
PCE 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
MLF 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
FinalVolume:	62	1587	188	264	1620	219	23	9	27	12	0	40
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.68	0.32	1.00	2.64	0.36	1.00	0.25	0.75	1.00	0.00	1.00
Final Sat.:	1700	4560	540	1700	4493	607	1700	425	1275	1700	0	1700
Capacity Analysis Module:												
Vol/Sat:	0.04	0.35	0.35	0.16	0.36	0.36	0.01	0.02	0.02	0.01	0.00	0.02
Crit Moves:		****		****				****		****		

Goodman Commerce Center (JN 15593)
Opening Year (2025) With Project
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Douglas Dr. & Katella Av.

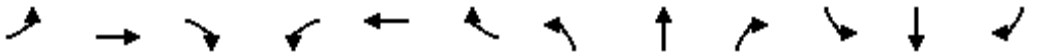
Cycle (sec):	100	Critical Vol./Cap.(X):	0.565
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	1 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	86	1	7	27	2	69	18	2104	33	9	1755	6
Growth 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
Initial Bse:	86	1	7	27	2	69	18	2104	33	9	1755	6
Added Vol:	0	0	0	4	0	11	6	0	0	0	0	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	86	1	7	31	2	80	24	2104	33	9	1755	9
User 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
PHF 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
PHF Volume:	86	1	7	31	2	80	24	2104	33	9	1755	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	86	1	7	31	2	80	24	2104	33	9	1755	9
PCE 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
MLF 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
FinalVolume:	86	1	7	31	2	80	24	2104	33	9	1755	9
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.12	0.88	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1700	213	1488	1700	1700	1700	1700	5100	1700	1700	5100	1700
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.00	0.02	0.00	0.05	0.01	0.41	0.02	0.01	0.34	0.01
Crit Moves:	****					****		****		****		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	24	2104	33	9	1755	9	86	1	31	2	80
Future Volume (vph)	24	2104	33	9	1755	9	86	1	31	2	80
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases			2			6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	22.8	9.6	22.8	22.8	40.6	40.6	40.6	40.6	40.6
Total Split (s)	11.0	77.0	77.0	11.0	77.0	77.0	42.0	42.0	42.0	42.0	42.0
Total Split (%)	8.5%	59.2%	59.2%	8.5%	59.2%	59.2%	32.3%	32.3%	32.3%	32.3%	32.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	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	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	6.5	95.4	95.4	5.6	90.5	90.5	21.9	21.9	21.9	21.9	21.9
Actuated g/C Ratio	0.05	0.73	0.73	0.04	0.70	0.70	0.17	0.17	0.17	0.17	0.17
v/c Ratio	0.34	0.69	0.04	0.14	0.61	0.01	0.45	0.04	0.16	0.01	0.29
Control Delay	70.4	14.1	2.0	64.0	14.9	0.0	52.0	19.6	42.5	36.0	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.4	14.1	2.0	64.0	14.9	0.0	52.0	19.6	42.5	36.0	9.3
LOS	E	B	A	E	B	A	D	B	D	D	A
Approach Delay		14.6			15.0			49.2		18.9	
Approach LOS		B			B			D		B	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 15.7	Intersection LOS: B
Intersection Capacity Utilization 67.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Douglas Dr. & Katella Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	2104	33	9	1755	9	86	1	7	31	2	80
Future Volume (veh/h)	24	2104	33	9	1755	9	86	1	7	31	2	80
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		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adj Flow Rate, veh/h	27	2364	31	10	1972	10	97	1	4	35	2	56
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	39	3613	1097	19	3556	1080	170	28	112	173	161	134
Arrive On Green	0.02	0.78	0.78	0.01	0.77	0.77	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1619	4641	1409	1619	4641	1410	1223	297	1189	1283	1700	1420
Grp Volume(v), veh/h	27	2364	31	10	1972	10	97	0	5	35	2	56
Grp Sat Flow(s),veh/h/ln	1619	1547	1409	1619	1547	1410	1223	0	1486	1283	1700	1420
Q Serve(g_s), s	2.2	29.9	0.6	0.8	22.5	0.2	10.2	0.0	0.4	3.3	0.1	4.8
Cycle Q Clear(g_c), s	2.2	29.9	0.6	0.8	22.5	0.2	10.3	0.0	0.4	3.7	0.1	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.80	1.00		1.00
Lane Grp Cap(c), veh/h	39	3613	1097	19	3556	1080	170	0	141	173	161	134
V/C Ratio(X)	0.70	0.65	0.03	0.53	0.55	0.01	0.57	0.00	0.04	0.20	0.01	0.42
Avail Cap(c_a), veh/h	80	3613	1097	80	3556	1080	406	0	428	420	489	409
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	63.0	6.5	3.3	63.9	6.2	3.6	58.0	0.0	53.5	55.2	53.4	55.5
Incr Delay (d2), s/veh	8.1	0.9	0.0	8.3	0.6	0.0	3.0	0.0	0.1	0.6	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	7.5	0.2	0.4	5.8	0.1	3.3	0.0	0.2	1.1	0.1	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.0	7.4	3.3	72.2	6.8	3.6	61.0	0.0	53.6	55.7	53.4	57.5
LnGrp LOS	E	A	A	E	A	A	E	A	D	E	D	E
Approach Vol, veh/h		2422			1992			102			93	
Approach Delay, s/veh		8.1			7.1			60.7			56.8	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	107.0		16.9	7.7	105.4		16.9				
Change Period (Y+Rc), s	4.6	5.8		4.6	4.6	5.8		4.6				
Max Green Setting (Gmax), s	6.4	71.2		37.4	6.4	71.2		37.4				
Max Q Clear Time (g_c+I1), s	2.8	31.9		6.8	4.2	24.5		12.3				
Green Ext Time (p_c), s	0.0	26.8		0.3	0.0	22.5		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			9.8									
HCM 6th LOS			A									

Goodman Commerce Center (JN 15593)
Opening Year (2025) With Project WITH IMPROVEMENTS
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Douglas Dr. & Katella Av.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.565
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	1 0	1	1 0	3 0	1	1 0	2 1	0
Volume Module:												
Base Vol:	86	1	7	27	2	69	18	2104	33	9	1755	6
Growth 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
Initial Bse:	86	1	7	27	2	69	18	2104	33	9	1755	6
Added Vol:	0	0	0	4	0	11	6	0	0	0	0	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	86	1	7	31	2	80	24	2104	33	9	1755	9
User 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
PHF 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
PHF Volume:	86	1	7	31	2	80	24	2104	33	9	1755	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	86	1	7	31	2	80	24	2104	33	9	1755	9
PCE 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
MLF 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
FinalVolume:	86	1	7	31	2	80	24	2104	33	9	1755	9
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.12	0.88	1.00	1.00	1.00	1.00	3.00	1.00	1.00	2.98	0.02
Final Sat.:	1700	213	1488	1700	1700	1700	1700	5100	1700	1700	5074	26
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.00	0.02	0.00	0.05	0.01	0.41	0.02	0.01	0.35	0.35
Crit Moves:	****					****		****		****		

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	4	8	121	2	2	6	3	29	5	10	0
Future Vol, veh/h	0	4	8	121	2	2	6	3	29	5	10	0
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	5	11	161	3	3	8	4	39	7	13	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.9	8.3	7.1	7.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	0%	97%	33%
Vol Thru, %	8%	33%	2%	67%
Vol Right, %	76%	67%	2%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	38	12	125	15
LT Vol	6	0	121	5
Through Vol	3	4	2	10
RT Vol	29	8	2	0
Lane Flow Rate	51	16	167	20
Geometry Grp	1	1	1	1
Degree of Util (X)	0.055	0.017	0.195	0.025
Departure Headway (Hd)	3.908	3.749	4.219	4.43
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	922	942	848	813
Service Time	1.908	1.824	2.255	2.431
HCM Lane V/C Ratio	0.055	0.017	0.197	0.025
HCM Control Delay	7.1	6.9	8.3	7.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0.7	0.1

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	109	3	43	105	2	5	0	16	7	1	0
Future Vol, veh/h	0	109	3	43	105	2	5	0	16	7	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	63	63	63	63	63	63	63	63	63
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	173	5	68	167	3	8	0	25	11	2	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	170	0	0	178	0	0	482	482	176	493	483	169
Stage 1	-	-	-	-	-	-	176	176	-	305	305	-
Stage 2	-	-	-	-	-	-	306	306	-	188	178	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1420	-	-	1410	-	-	498	487	872	490	486	880
Stage 1	-	-	-	-	-	-	831	757	-	709	666	-
Stage 2	-	-	-	-	-	-	708	665	-	818	756	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1420	-	-	1410	-	-	479	464	872	458	463	880
Mov Cap-2 Maneuver	-	-	-	-	-	-	551	521	-	536	511	-
Stage 1	-	-	-	-	-	-	831	757	-	709	634	-
Stage 2	-	-	-	-	-	-	672	633	-	794	756	-

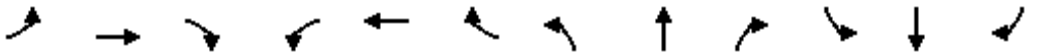
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.2	9.9	11.9
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	766	1420	-	-	1410	-	-	533
HCM Lane V/C Ratio	0.044	-	-	-	0.048	-	-	0.024
HCM Control Delay (s)	9.9	0	-	-	7.7	-	-	11.9
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.2	-	-	0.1

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	232	0	169	31	16	2061	54	1582
Future Volume (vph)	232	0	169	31	16	2061	54	1582
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	37.6	37.6	14.6	14.6	9.6	22.8	9.6	22.8
Total Split (s)	50.0	50.0	50.0	50.0	11.0	69.0	11.0	69.0
Total Split (%)	38.5%	38.5%	38.5%	38.5%	8.5%	53.1%	8.5%	53.1%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	5.8	4.6	5.8
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	45.4	45.4	45.4	45.4	5.7	65.4	6.2	69.8
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.04	0.50	0.05	0.54
v/c Ratio	1.46	0.19	0.44	0.72	0.24	0.93	0.73	0.68
Control Delay	268.9	5.7	36.8	35.5	68.0	38.7	106.6	24.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	268.9	5.7	36.8	35.5	68.0	38.7	106.6	24.5
LOS	F	A	D	D	E	D	F	C
Approach Delay		188.7		35.9		39.0		27.1
Approach LOS		F		D		D		C

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.46	
Intersection Signal Delay: 45.0	Intersection LOS: D
Intersection Capacity Utilization 104.3%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 4: Valley View St. & Plaza Dr./Chip Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	232	0	102	169	31	369	16	2061	12	54	1582	40
Future Volume (veh/h)	232	0	102	169	31	369	16	2061	12	54	1582	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		0.97
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	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adj Flow Rate, veh/h	242	0	86	176	32	325	17	2147	12	56	1648	39
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	185	0	503	422	46	464	29	2344	13	70	2413	57
Arrive On Green	0.35	0.00	0.35	0.35	0.35	0.35	0.02	0.49	0.49	0.04	0.52	0.52
Sat Flow, veh/h	931	0	1439	1191	131	1330	1619	4762	27	1619	4660	110
Grp Volume(v), veh/h	242	0	86	176	0	357	17	1395	764	56	1094	593
Grp Sat Flow(s),veh/h/ln	931	0	1439	1191	0	1461	1619	1547	1695	1619	1547	1677
Q Serve(g_s), s	18.0	0.0	5.4	15.6	0.0	27.4	1.4	54.2	54.2	4.5	34.3	34.3
Cycle Q Clear(g_c), s	45.4	0.0	5.4	21.0	0.0	27.4	1.4	54.2	54.2	4.5	34.3	34.3
Prop In Lane	1.00		1.00	1.00		0.91	1.00		0.02	1.00		0.07
Lane Grp Cap(c), veh/h	185	0	503	422	0	510	29	1523	834	70	1602	868
V/C Ratio(X)	1.31	0.00	0.17	0.42	0.00	0.70	0.60	0.92	0.92	0.80	0.68	0.68
Avail Cap(c_a), veh/h	185	0	503	422	0	510	80	1523	834	80	1602	868
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.7	0.0	29.3	36.5	0.0	36.4	63.4	30.5	30.5	61.7	23.4	23.4
Incr Delay (d2), s/veh	173.3	0.0	0.2	0.7	0.0	4.2	7.1	10.1	16.4	34.3	2.4	4.3
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	15.1	0.0	1.9	4.7	0.0	10.4	0.6	20.9	24.4	2.5	12.2	13.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	232.0	0.0	29.4	37.2	0.0	40.7	70.5	40.6	47.0	95.9	25.8	27.7
LnGrp LOS	F	A	C	D	A	D	E	D	D	F	C	C
Approach Vol, veh/h		328			533			2176			1743	
Approach Delay, s/veh		178.9			39.5			43.1			28.7	
Approach LOS		F			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.2	69.8		50.0	6.9	73.1		50.0				
Change Period (Y+Rc), s	4.6	5.8		4.6	4.6	5.8		4.6				
Max Green Setting (Gmax), s	6.4	63.2		45.4	6.4	63.2		45.4				
Max Q Clear Time (g_c+I1), s	6.5	56.2		47.4	3.4	36.3		29.4				
Green Ext Time (p_c), s	0.0	5.9		0.0	0.0	12.9		2.9				

Intersection Summary			
HCM 6th Ctrl Delay		46.8	
HCM 6th LOS		D	

Goodman Commerce Center (JN 15593)
Opening Year (2025) With Project
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Valley View St. & Plaza Dr.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.860
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	68	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	16	2061	12	54	1582	37	226	0	102	169	31	369
Growth 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
Initial Bse:	16	2061	12	54	1582	37	226	0	102	169	31	369
Added Vol:	0	0	0	0	0	3	6	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	16	2061	12	54	1582	40	232	0	102	169	31	369
User 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
PHF 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
PHF Volume:	16	2061	12	54	1582	40	232	0	102	169	31	369
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	2061	12	54	1582	40	232	0	102	169	31	369
PCE 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
MLF 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
FinalVolume:	16	2061	12	54	1582	40	232	0	102	169	31	369
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.98	0.02	1.00	2.93	0.07	1.00	0.00	1.00	1.00	0.08	0.92
Final Sat.:	1700	5070	30	1700	4974	126	1700	0	1700	1700	132	1568
Capacity Analysis Module:												
Vol/Sat:	0.01	0.41	0.41	0.03	0.32	0.32	0.14	0.00	0.06	0.10	0.24	0.24
Crit Moves:		****			****			****			****	

APPENDIX 6.3: FUTURE YEAR (2025) WITHOUT PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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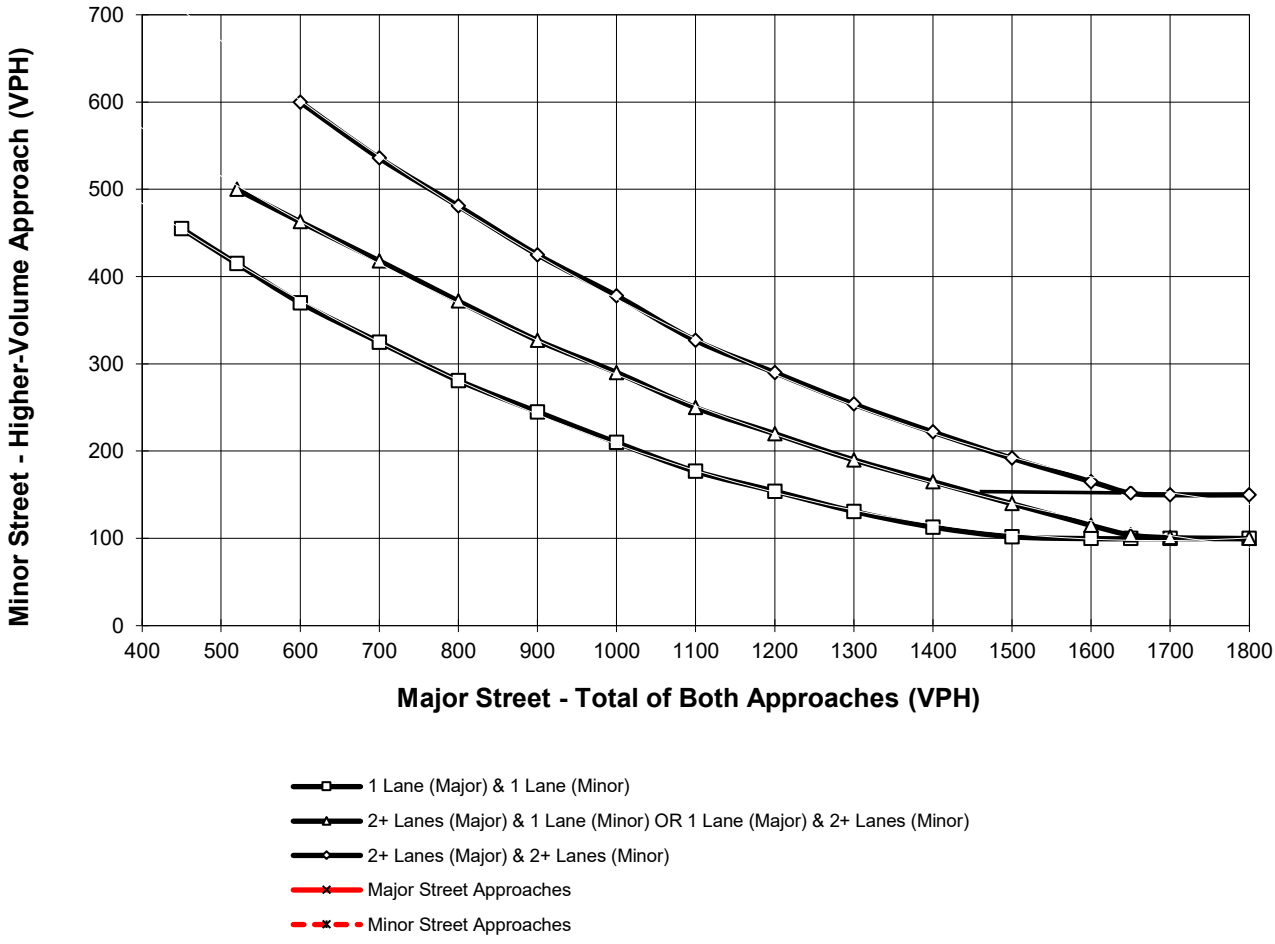
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **2025 Without Project Conditions - Weekday AM Peak Hour**

Major Street Name = **Plaza Dr.**
Total of Both Approaches (VPH) = **65**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Douglas Dr.**
High Volume Approach (VPH) = **43**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*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

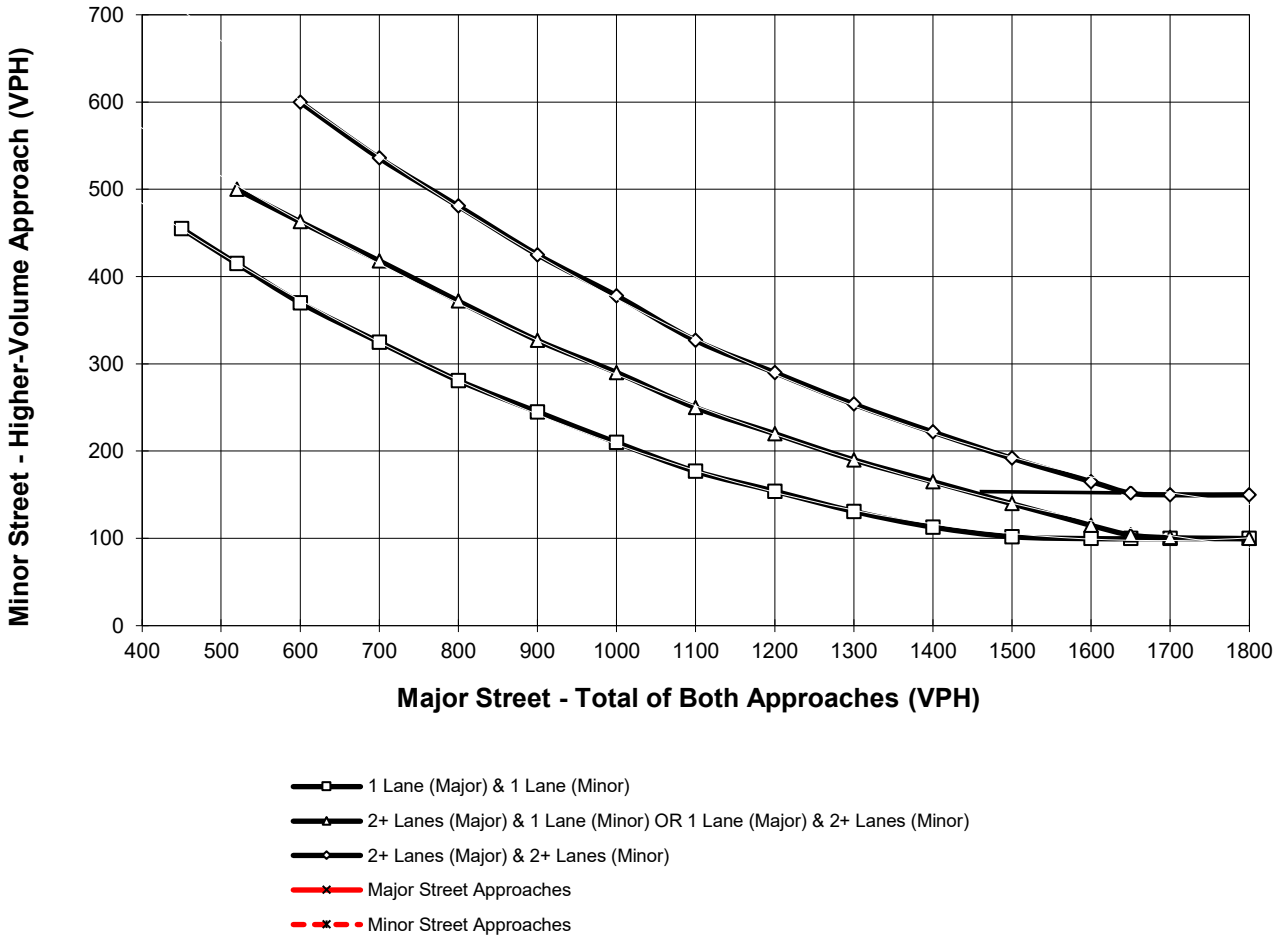
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **2025 Without Project Conditions - Weekday PM Peak Hour**

Major Street Name = **Plaza Dr.**
Total of Both Approaches (VPH) = **252**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **McDonnell Dr.**
High Volume Approach (VPH) = **21**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*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

APPENDIX 6.4: FUTURE YEAR (2025) WITH PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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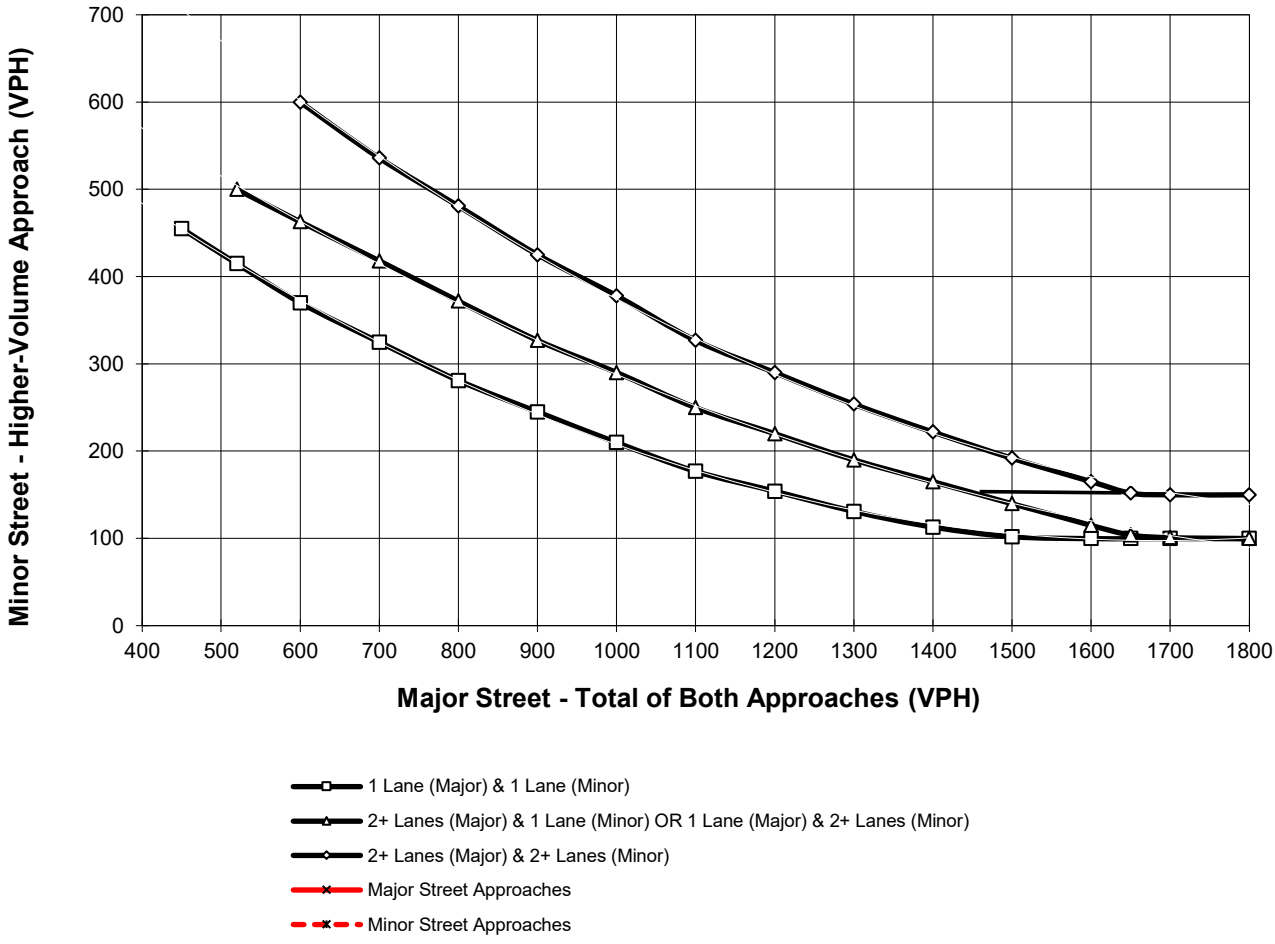
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **2025 With Project Conditions - Weekday AM Peak Hour**

Major Street Name = **Plaza Dr.**
Total of Both Approaches (VPH) = **80**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Douglas Dr.**
High Volume Approach (VPH) = **56**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*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

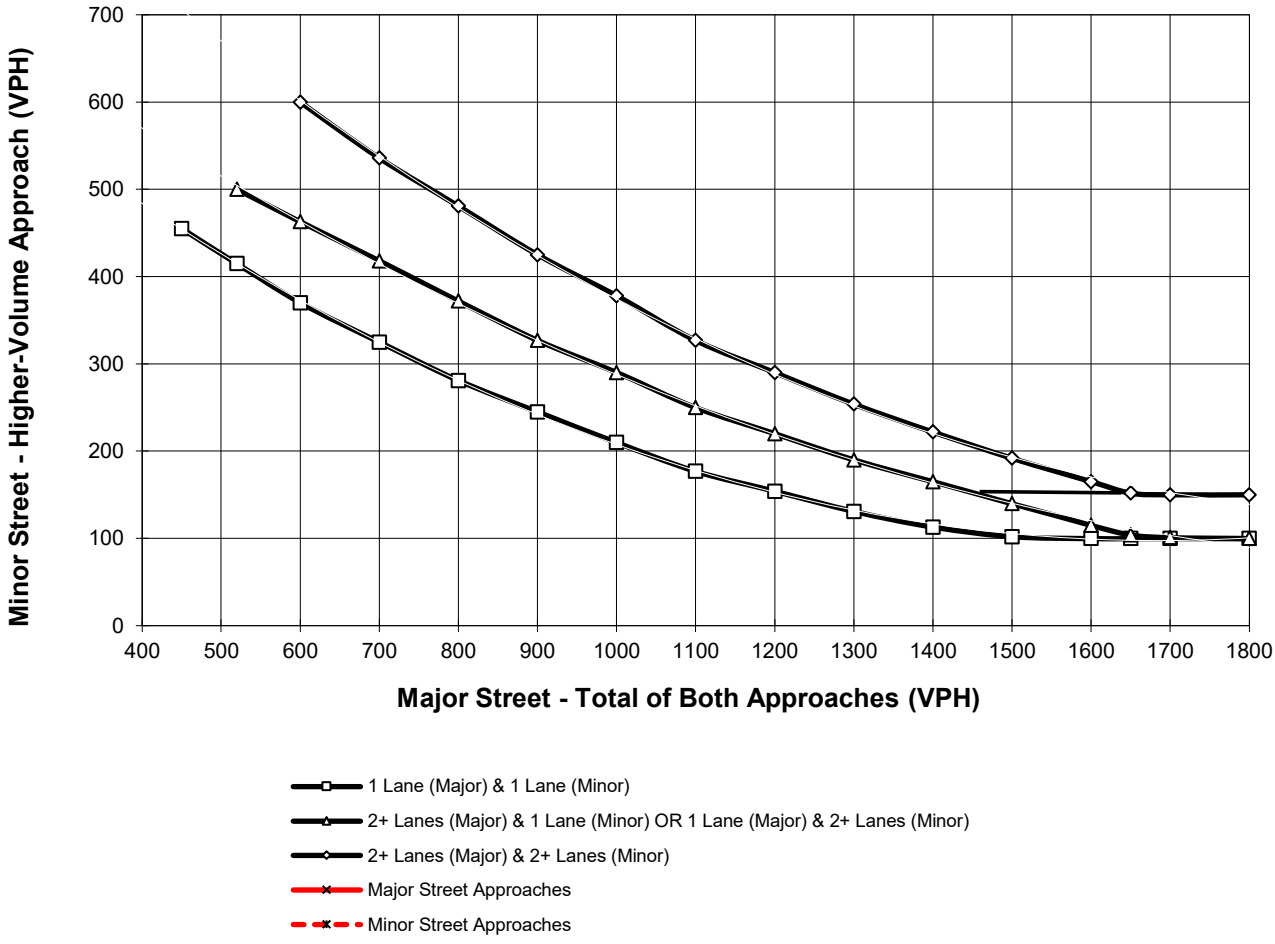
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **2025 With Project Conditions - Weekday PM Peak Hour**

Major Street Name = **Plaza Dr.**
Total of Both Approaches (VPH) = **253**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **McDonnell Dr.**
High Volume Approach (VPH) = **21**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*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