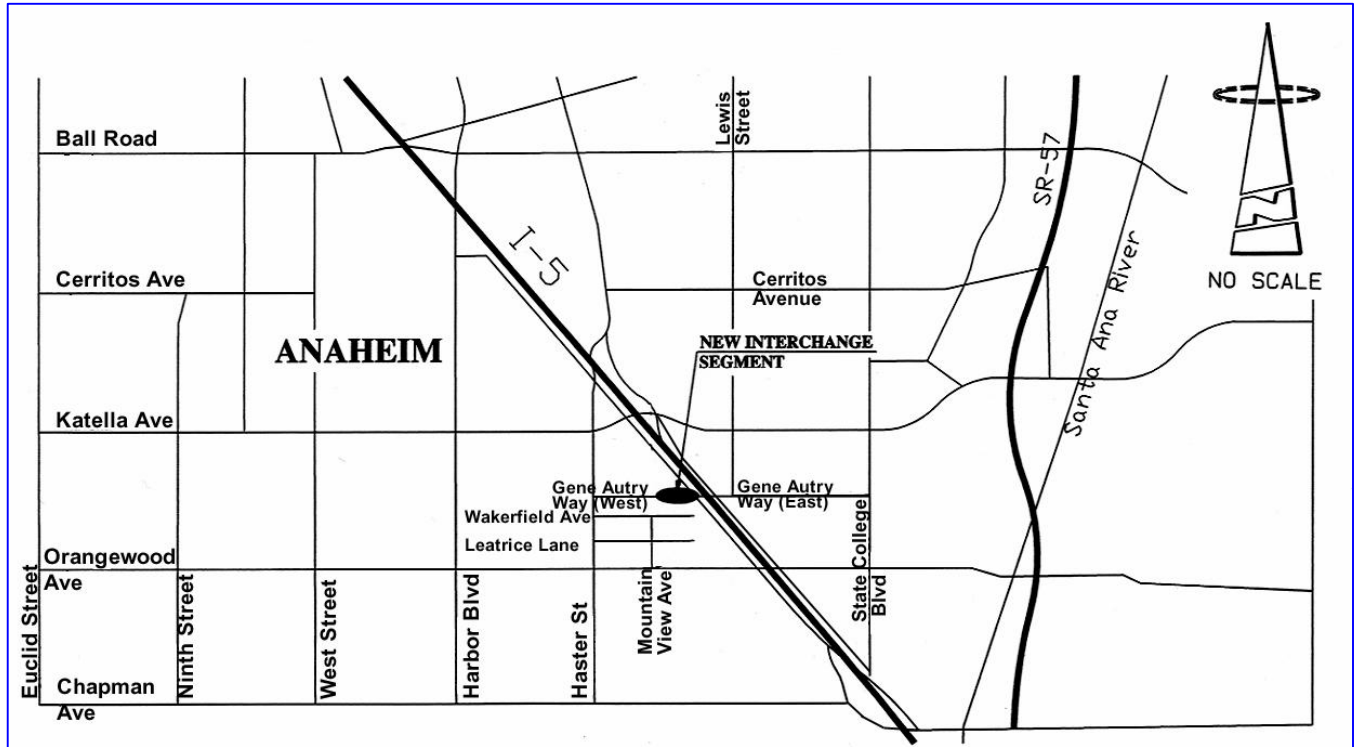


MODIFIED ACCESS REPORT



On Gene Autry Way at Route 5

This Modified Access Report has been prepared under the direction of the following Registered Civil Engineer. The Registered Civil Engineer attests to the technical information contained herein, and the engineering data upon which recommendations, conclusions, and decisions are based.



Chris Bretall, P.E. Date
Registered Civil Engineer

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1. Introduction

The proposed Gene Autry Way west extension project is the second phase of the Gene Autry Way (West) I-5 HOV Interchange project that was previously approved in Project Report No. 07-3264 (12-ORA-5 MP 34.0/42.1, Widen Freeway and Reconstruct Interchanges From Route 22 to Route 91, 20.50.010.300(HE13), 07208-101660), dated May 31, 1988, prepared by Caltrans District 12. The proposed project is consistent with the ultimate concept outlined in the said Project Report.

2. Proposed Project

A Project Report (No. 07-3264) for Santa Ana Transportation Corridor, for widening and reconstruct interchanges on Route 5 between Route 22 and Route 91, was approved by Caltrans District 12 on May 31, 1988. One of the Improvements included in the Project Report is to construct a new six-lane arterial street, Gene Autry Way (formerly known as Pacifico Avenue), overcrossing structure across the widened Route 5. Gene Autry Way overcrossing was divided into three separate contracts: Phase 1: Gene Autry Way East- Chris Lane to I-5 HOV interchange (including the Right Bridge), Phase 2: Gene Autry Way West- I-5 HOV interchange to 750 feet west of the westerly right of way of Manchester Avenue (including the Left Bridge), and Phase 3: Gene Autry Way from 750 feet west of the westerly right of way of Manchester Avenue to Haster Avenue.

This Modified Access Report addresses the construction of Gene Autry Way West (Phase 2) from the existing abutment of the right bridge at the I-5 HOV interchange to approximately 750 feet west of the westerly right of way of Manchester Avenue, including the left bridge over the Route 5 southbound lanes. This project proposes to extend the existing six-lanes of Gene Autry Way westerly. The proposed improvements include roadway paving, curb & gutter, sidewalk, raised median island, retaining walls, drainage and a cast-in-place box girder bridge. The construction of Phase 1 Gene Autry Way /I-5 HOV Interchange, which included the right bridge, was completed in the 1990's and opened to traffic on Gene Autry Way from the I-5 HOV interchange to State College Boulevard.

The City of Anaheim is lead agency for this project and has procured funding through a variety of sources including Federal TEA-21 Demonstration funds, Orange County Measure M funds and the City of Anaheim Capital Improvement Program. Integral to this project are the proposed improvements to Gene Autry Way between Haster Street and the westerly terminus of this proposed project (Highway Project). The Highway Project, also a City-led project, is currently under design and will proceed concurrently with the PS&E documents for this project. At this time, the City of Anaheim is planning to let both projects under one construction contract.

Bridge

The proposed left bridge was laid out during design of east/right bridge for the Phase 1 project. The abutment at I-5 transitway is currently serving as a portion of the transitway retaining wall but was designed to eventually support the east span of the proposed west bridge. Details were incorporated into the design to allow easy removal of the top portion to reveal the bearing seat for the future bridge.

The east/right bridge which extends from the I-5 HOV transitway to the east is already constructed and is open to traffic. The proposed west/left bridge will be very similar to the east/right bridge, only mirrored to accommodate the horizontal geometry necessary for the turning movements from the southbound HOV off ramp. The span lengths will be different from the east / right bridge to accommodate the roadways below. The west/left bridge will span the southbound I-5 lanes, the "OR-1" ramp, and Manchester Avenue. There will be sufficient clearance for the falsework necessary to span each of these roadways during construction.

Retaining Walls

The retaining walls to support the fill for Gene Autry Way west of the bridge will be as high as 30 feet and will be mechanically stabilized embankment (MSE) walls.

Project Staging

The project will be staged to minimize inconvenience to the motoring public. This will include ensuring that no streets are impacted by freeway bridge construction. Temporary access road to/from Manchester Avenue will be provided for the properties along the proposed Gene Autry during the construction of retaining walls. Any road closure required will be scheduled during off-peak periods only. No Mainline freeway closures are anticipated for the construction of the bent and the abutment.

Stage Construction / Traffic Handling

Detailed stage construction plans will be developed during the PS&E phase of the project. These plans will primarily address traffic handling and staging on the I-5 as they relate to the proposed bridge and retaining wall construction.

Another staging consideration is the construction of the new driveway connection from Manchester Avenue to the Del Ray Mobile Home Park. This driveway will need to be shifted to the south adjacent to the new retaining walls, which will support Gene Autry Way. These improvements will need to be constructed in a manner that minimizes traffic impacts and maintains adequate access to the residents during construction.

Temporary southbound mainline freeway closure will be required for the erection and removal of Gene Autry Way (west) bridge falsework. Such temporary closure will be conducted during off-peak hours and will be coordinated with Caltrans. During the falsework construction, the southbound freeway traffic will be detoured to exit at Katella Avenue off ramp. Traffic will be detoured through Manchester Avenue, which is a one way local street adjacent and parallel to I-5 Freeway. It will then be rerouted back to southbound I-5 freeway using southbound on ramp at Manchester Avenue.

Signalization

The existing I-5/HOV transitway is currently signalized. The proposed project will construct the traffic signal improvements at the east end of the proposed bridge that are necessary to complete the signalization of Gene Autry Way at the intersection with the HOV ramps.

Bike Facilities

At this time, Gene Autry Way is not on the City of Anaheim's Bikeway Master Plan. However, as an alternative route, the adjacent major east-west street to the south, Orangewood Avenue, is included in the master plan and accommodates bicycle circulation between Haster Street and State College Boulevard.

Pedestrian Facilities

When this section of Gene Autry Way is constructed it will accommodate pedestrian circulation between Haster Street and State College Boulevard. Pedestrian features include sidewalks on both sides on the street, crosswalks at the signalized intersections and Americans with Disabilities Act (ADA) compliant wheelchair access ramps.

Environmental Reevaluation

Due to the lapse in time between the original PR/ED, it was determined that an Environmental Re-evaluation is required for the project. This re-evaluation is currently underway.

Coordination with other Projects

The project will be coordinated with the Highway Project to the west of the Gene Autry Way (West) I-5 HOV Interchange Project.

3. Need and Purpose

Currently, access to I-5 is only gained from the east (right bridge). The purpose of the Gene Autry Way/I-5 Interchange Improvement project is to complete the planned west half the HOV transitway and provide access to motorists and pedestrians to and from the west side of the freeway.

When completed, Gene Autry Way will be an important east-west link within the City of Anaheim’s Resort Area. The proposed project will facilitate local traffic circulation by relieving congestion during peak hours on adjacent parallel arterial highways including Katella Avenue to the north and Orangewood Avenue to the south.

Gene Autry Way will also provide direct access to the I-5 freeway for motorists entering and leaving the area during special events. Major attractions within this portion of the Resort Area include Anaheim Stadium, The Grove, Disneyland and The California Adventure. These venues can generate short-term congestion at various times throughout the week. The construction of Gene Autry Way will facilitate freeway access to and from these attractions and provide relief to the roadway system in this area.

4. Traffic Analysis

This analysis presents the circulation analysis of the Gene Autry Way westerly extension from I-5 to Haster Street in the City of Anaheim. The land use plan includes development intensities identified in Scenario A2 of the Platinum Triangle Master Land Use Plan (MLUP) Phase 2 Traffic Analysis performed by Parsons Brinckerhoff (PB) in October 2007. The memorandum includes a brief introduction, methodology, and analysis results.

The circulation analysis was performed based on revised land use developments in addition to previously approved developments for the Platinum Triangle area. Phase 2 includes implementation of MLUP representing the Mixed Use (MU) overlay sites and recommendations for additional development intensification throughout the Platinum Triangle. The MLUP represents buildout conditions of The Platinum Triangle per the City’s General Plan for Year 2035.

Table 1 shows total land use development intensities for residential, office, and commercial categories proposed to be implemented in Phase 2 for each Platinum Triangle District and for the area outside the five districts. **Figure 1** illustrates The Platinum Triangle Districts and boundaries. **Figure 2** on Page 4 presents the project location.

Table 1 - Phase 2 Land Use Development Intensities by District

A. Platinum Triangle	Residential (DU)	Office (TSF)	Commercial (TSF)
	Scenario A2		
Arena District Total	425	100	100
Orangewood District Total	1,771	1,403	130
Gateway District Total	3,546	681	132
Gene Autry District Total	2,362	219	237
Katella District Total	5,681	2,425	746
ARTIC District Total	0	2,953	358
Stadium District Total	5,175	4,525	3,177
<i>Mixed Use District Total</i>	18,960	12,306	4,880
Outside Districts	0	4,631	87
<i>Grand Total</i>	18,960	16,937	4,967

DU – Dwelling Units; TSF – Thousand Square Feet

Source: City of Anaheim

Based on the above land use assumptions, one specific build alternative for the extension of Gene Autry Way to Haster Street was evaluated:

- Alternative 1: 6-lane general purpose facility

In order to conduct a thorough examination of the proposed project impacts, analyses of existing (Year 2007) conditions and future No Project conditions were also performed. Alternative 1 is anticipated to be completed in Year 2011 and hence an opening year analyses of No Project and Alternative 1 scenarios were performed in this traffic study. Since this additional analysis is considered as a supplemental analysis to this traffic study, the results from that analysis are presented in a separate section of this report.

Figure 1 - The Platinum Triangle Districts

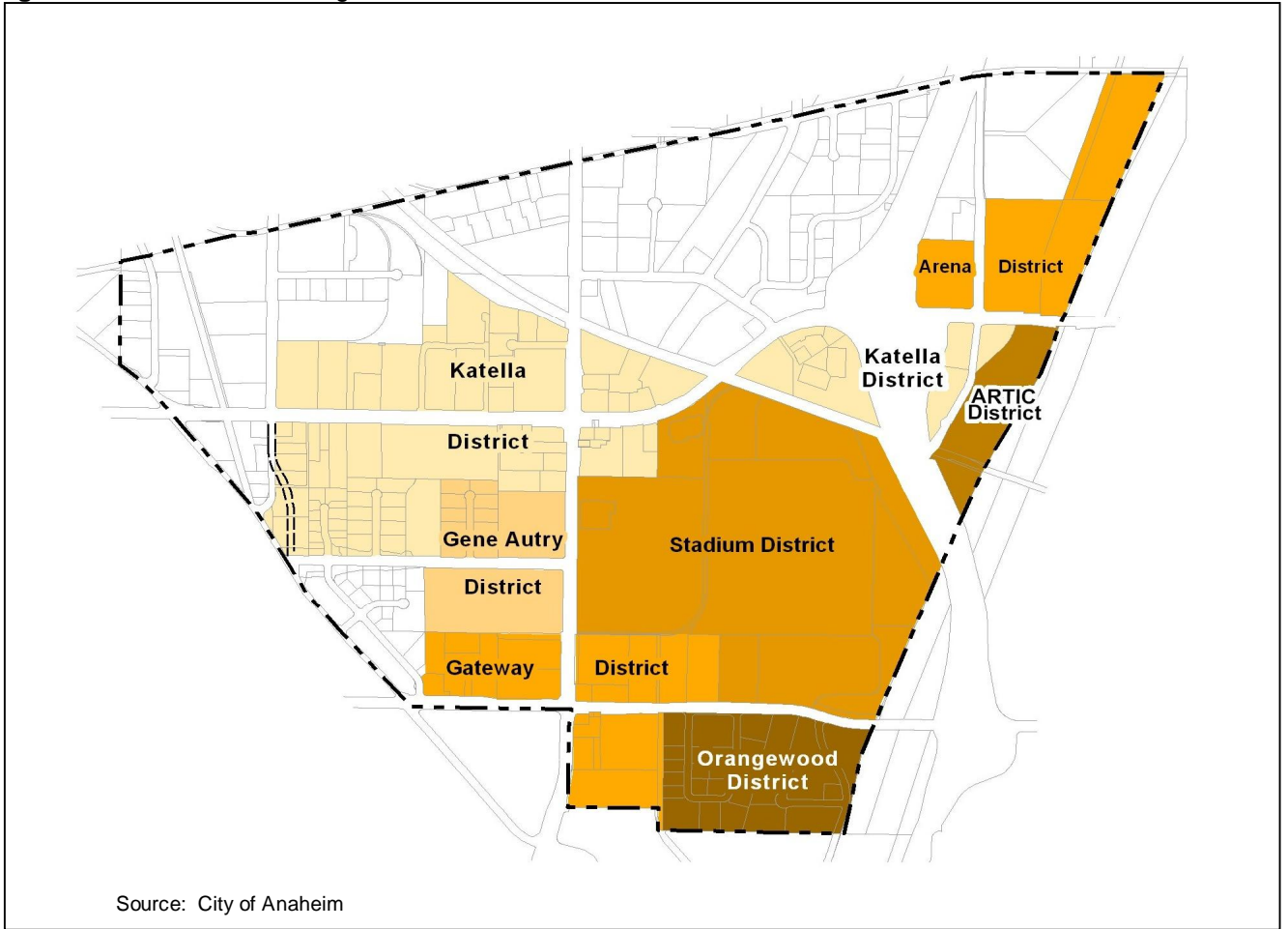
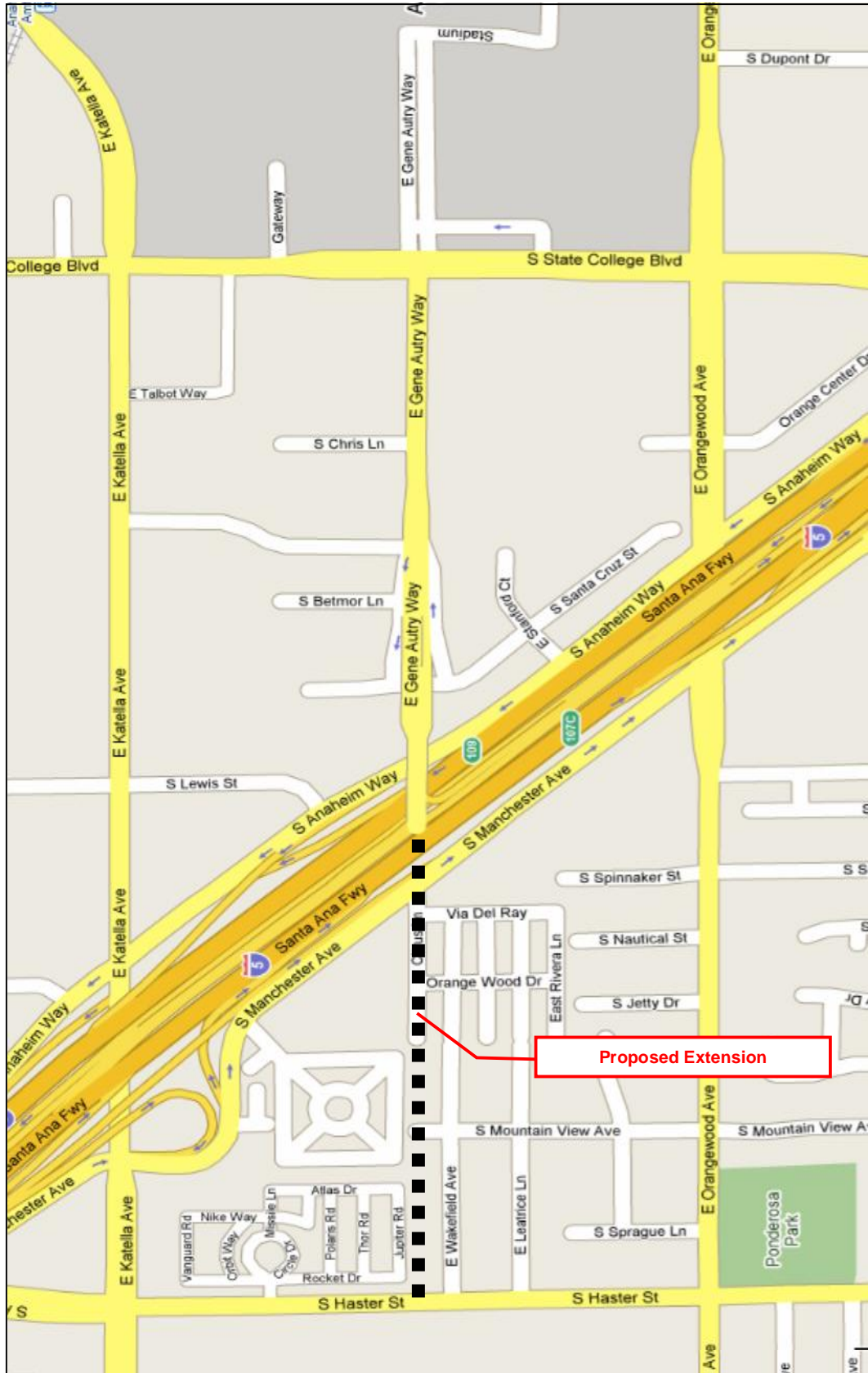


Figure 2 – Project Location

Map Source: Google, Inc.



METHODOLOGY

The analysis was performed by application of the Anaheim Traffic Analysis Model (ATAM) to develop traffic forecasts in the immediate vicinity of the project area. ATAM is the traffic forecasting modeling tool for the City of Anaheim and is consistent with the Orange County Transportation Analysis Model (OCTAM) developed by the Orange County Transportation Authority (OCTA). The highway network used in this analysis remains consistent with the networks adopted for various other traffic studies previously performed for the City of Anaheim within the project area. Traffic analysis zones (TAZs) also remain consistent with the zone structure adopted in the MLUP traffic analysis. In order to develop forecasts for the regional transportation system, specifically I-5 in the vicinity of Gene Autry Way, OCTAM was applied. OCTAM forecasts were used to perform Highway Capacity Manual (HCM) mainline analysis, ramp merge/diverge analysis and weaving analysis.

This traffic analysis required generating AM and PM peak hour Intersection Capacity Utilization (ICU) and levels of service (LOS) under each project alternative for the following eight study intersections:

1. Haster Street / Oranewood Avenue
2. Haster Street / Katella Avenue
3. Katella Avenue / Anaheim Way (I-5 Northbound Ramp)
4. Katella Avenue / Lewis Street
5. Katella Avenue / Manchester Avenue (I-5 Southbound Ramp)
6. Gene Autry Way / I-5 HOV Ramps
7. Gene Autry Way / Haster Street
8. Gene Autry Way / Lewis Street

Table 2 presents the corresponding ICU level of service. Based on City traffic impact analysis guidelines, the City strives to maintain LOS D conditions throughout the City.

Table 2 - Intersection Level of Service Thresholds

LOS	ICU
A	< 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: City of Anaheim

In addition, daily segment analysis was performed for the following four key arterial segments:

1. Haster Street between Katella Avenue and Oranewood Avenue
2. Katella Avenue between Haster Street and Manchester Avenue
3. Katella Avenue between Anaheim Way and Lewis Street
4. Gene Autry Way between Haster Street and I-5

The segment analysis assumes roadway capacities as applied in the General Plan Update for the City as noted in **Table 3**.

Table 3 - Arterial Segment Capacity Assumptions

Facility Type	Daily Capacity	Hourly Capacity
8-lane Divided (8D)	60,000	12,800
6-lane Divided (6D)	45,000	9,600
4-lane Divided (4D)	30,000	6,400
4-lane Undivided (4U)	20,000	6,000
2-lane Undivided (2U)	10,000	3,000

Source: City of Anaheim

Three freeway ramp termini intersections were analyzed based on the Highway Capacity Manual (HCM) 2000 methodology per Caltrans requirements through the application of Synchro (Version 6.0). The intersections included Katella Avenue/Manchester Road (I-5 Southbound Ramps), Katella Avenue/Anaheim Way (I-5 Northbound Ramps), and Gene Autry Way/I-5 HOV Ramps. Lane configurations and various other parameters such as signal timing were maintained from previous analyses conducted for the Platinum Triangle MLUP Traffic Analysis. Future lane configurations were assumed for the scenarios per the General Plan. **Table 4** presents Caltrans intersection delay and LOS standards.

Table 4 – Caltrans Intersection LOS Criteria

LOS	Intersection Delay (in Seconds)
A	≤ 10.0
B	> 10.0 and ≤ 20.0
C	> 20.0 and ≤ 35.0
D	> 35.0 and ≤ 55.0
E	> 55.0 and ≤ 80.0
F	≥ 80.0

Source: Caltrans

In accordance with the National Cooperative Highway Research Program, a post-processing methodology was applied to traffic forecasts estimated by the model to achieve future traffic volumes which reasonably reflect appropriate growth consistent with existing traffic volumes. The methodology applies the model’s projected growth to existing traffic counts to estimate future daily segment and peak hour turning movement volumes. Actual ground counts from Year 2007 were used to post-process future traffic forecasts.

LOS analysis was performed on freeway mainline and ramp segments in the study area based on traffic density under future traffic conditions. **Table 5** presents the correlation between LOS and traffic density in terms of passenger cars per mile per lane (pc/mi/ln) for freeway mainline and ramp segments. LOS A through LOS F represents the level of flow from free flow to congested conditions. The Highway Capacity Software (HCS), which incorporates methodology consistent with the guidelines of HCM 2000, was utilized to evaluate traffic conditions and determine the LOS for each freeway segment.

Table 5 – Freeway LOS Criteria

LOS	Freeway Mainline Density (pc/mi/ln)	Freeway Ramp Density (pc/mi/ln)
A	0 - 11.0	≤ 10.0
B	11.0 – 18.0	> 10.0 and ≤ 20.0
C	18.0 – 26.0	> 20.0 and ≤ 28.0
D	26.0 – 35.0	> 28.0 and ≤ 35.0
E	35.0 – 45.0	> 35.0
F	>45.0	Exceeds Capacity

Source: HCM 2000, Exhibit 25-4, Exhibit 23-2

RESULTS

Intersection Analysis

Table 6 presents a summary of ICU and LOS results for each scenario during the AM peak hour and PM peak hour. The results under existing conditions are based on current intersection geometrics while the results for No Build and project scenarios are based on future geometrics per the 2035 General Plan Buildout conditions. The lane configuration for two new future intersections of Gene Autry Way/Haster Street and Gene Autry Way/Lewis Street are based upon geometrics presented in the Traffic Impact Study conducted by HDR Engineering, Inc. in July 2000.

From **Table 6**, it is observed that under existing conditions all study intersections operate at a satisfactory level of service during both peak hours. However, under No Project conditions Haster Street/Katella Avenue and Katella Avenue/Lewis Street intersections operate deficiently in the PM peak hour as a result of future background traffic in the Platinum Triangle area. With the implementation of the westerly extension of Gene Autry Way, the LOS at

these intersections is anticipated to considerably improve to acceptable levels during the two peak hours. However, in the PM peak hour, the Gene Autry Way/Haster Street intersection is projected to perform deficiently in Alternative 1 due to additional westbound traffic from the Platinum Triangle area and I-5. Re-striping the westbound approach to have two left turn lanes, a shared left-right turn lane, and a right turn lane would result in acceptable PM peak hour operations at this intersection for Alternative 1. The build scenario will incorporate these improvements as a project feature to mitigate the anticipated deficiency.

The mitigated ICU/LOS results for the deficient intersections are shown in the **Table 6**. The intersection of Gene Autry Way/Lewis Street also performs deficiently in the PM peak hour under Alternative 1 conditions. Widening the southbound approach to provide two left turn lanes and two right turn lanes would result in improved intersection performance at this location. Alternative 1 will provide a consistent capacity increase from the No Project scenario. **Figure 3, Figure 4, and Figure 5 present peak hour turning movement volumes at each study intersection for existing, 2035 No Project, and 2035 With Project scenarios, respectively.**

Table 6 – ICU and LOS by Scenario

ID	Intersection	2007 Existing				2035 No Project				2035 Alt.1 / 6-Lane			
		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
1	Haster St./ Orangewood Ave.	0.62	B	0.71	C	0.66	B	0.74	C	0.65	B	0.72	C
2	Haster St. / Katella Ave.	0.42	A	0.59	A	0.82	D	0.95	E	0.77	C	0.83	D
3	Katella Ave. / Anaheim Way	0.51	A	0.55	A	0.75	C	0.82	C	0.67	B	0.74	C
4	Katella Ave. / Lewis St.	0.48	A	0.55	A	0.83	D	0.92	E	0.82	D	0.90	D
5	Katella Ave. / Manchester Ave.	0.56	A	0.46	A	0.78	C	0.77	C	0.72	C	0.68	B
6	Gene Autry Way / I-5 HOV Ramps	0.09	A	0.08	A	0.37	A	0.42	A	0.61	B	0.78	C
7	Gene Autry Way / Haster St.	Not Applicable				Not Applicable				0.82	D	1.05	F
	Gene Autry Way / Haster St. (w/ Mitigation)	Not Applicable				Not Applicable				0.81	D	0.87	D
8	Gene Autry Way / Lewis St.	Not Applicable				0.42	A	0.66	B	0.67	B	0.91	E
	Gene Autry Way / Lewis St. (w/ Mitigation)	Not Applicable				Not Applicable				0.69	B	0.88	D

Deficient Intersection 

Figure 3 – Existing (Year 2007) Peak Hour Intersection Turning Movement Volumes

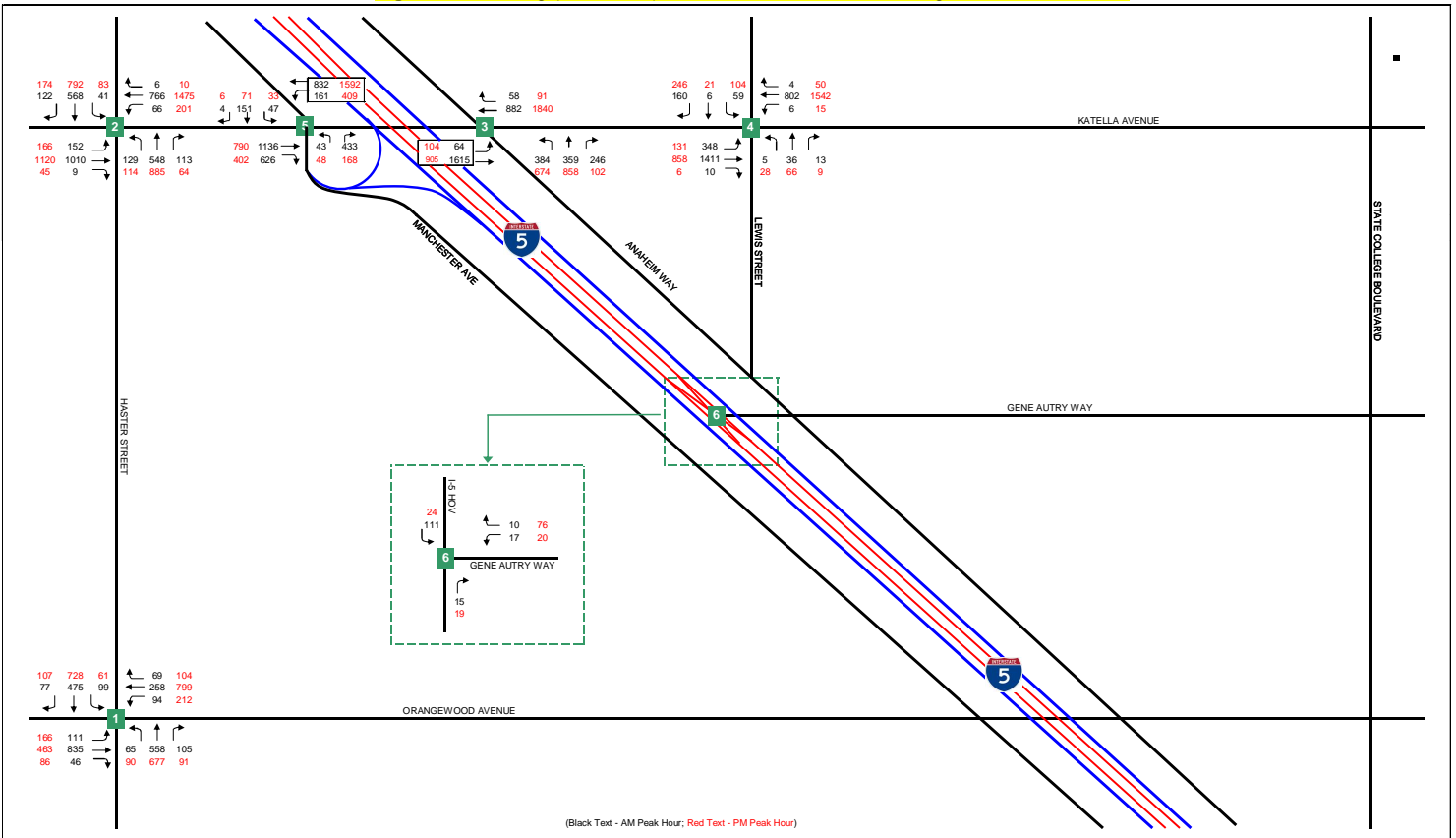


Figure 4 – Year 2035 Peak Hour Intersection Turning Movement Volumes under No Project Conditions

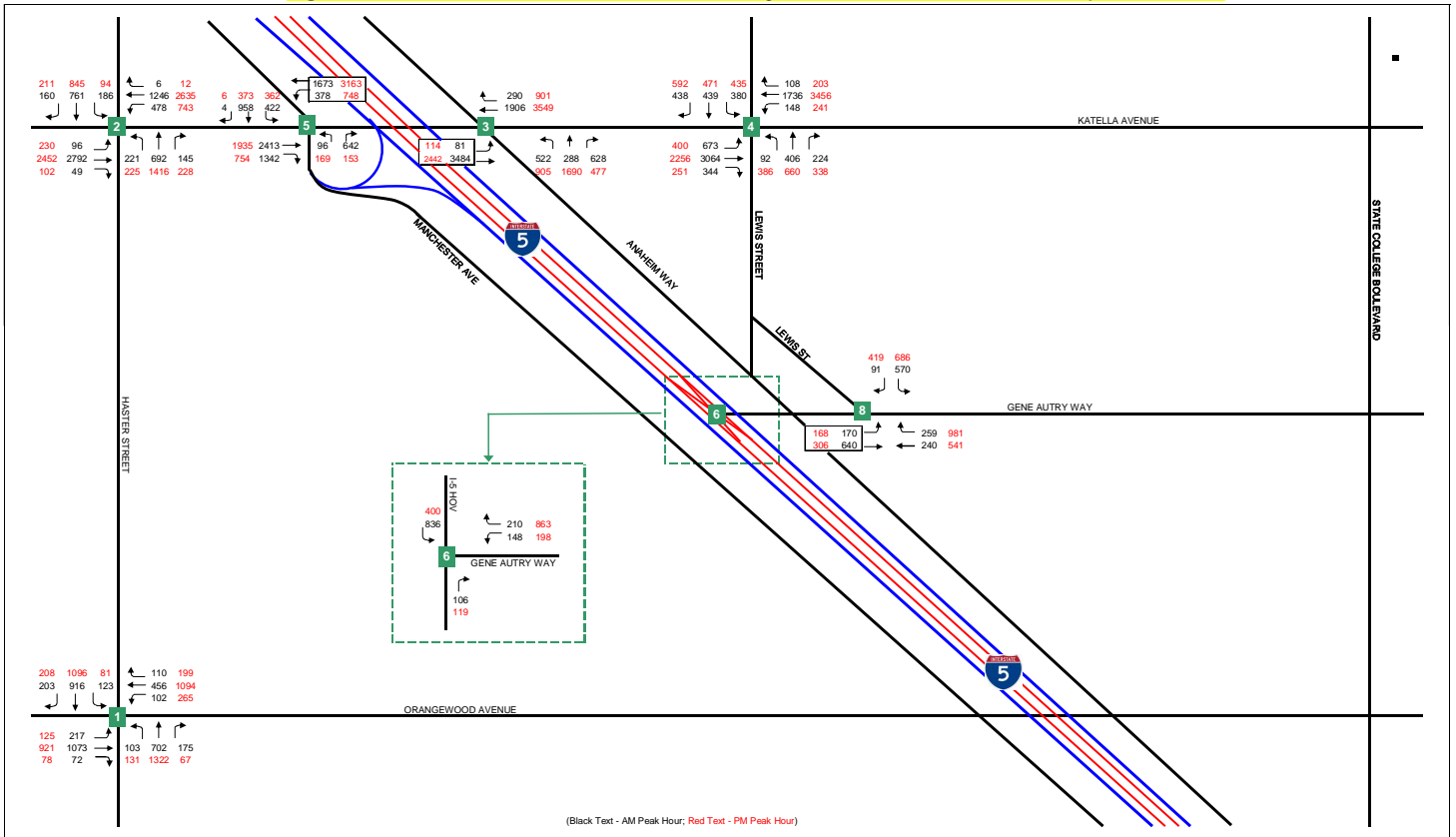
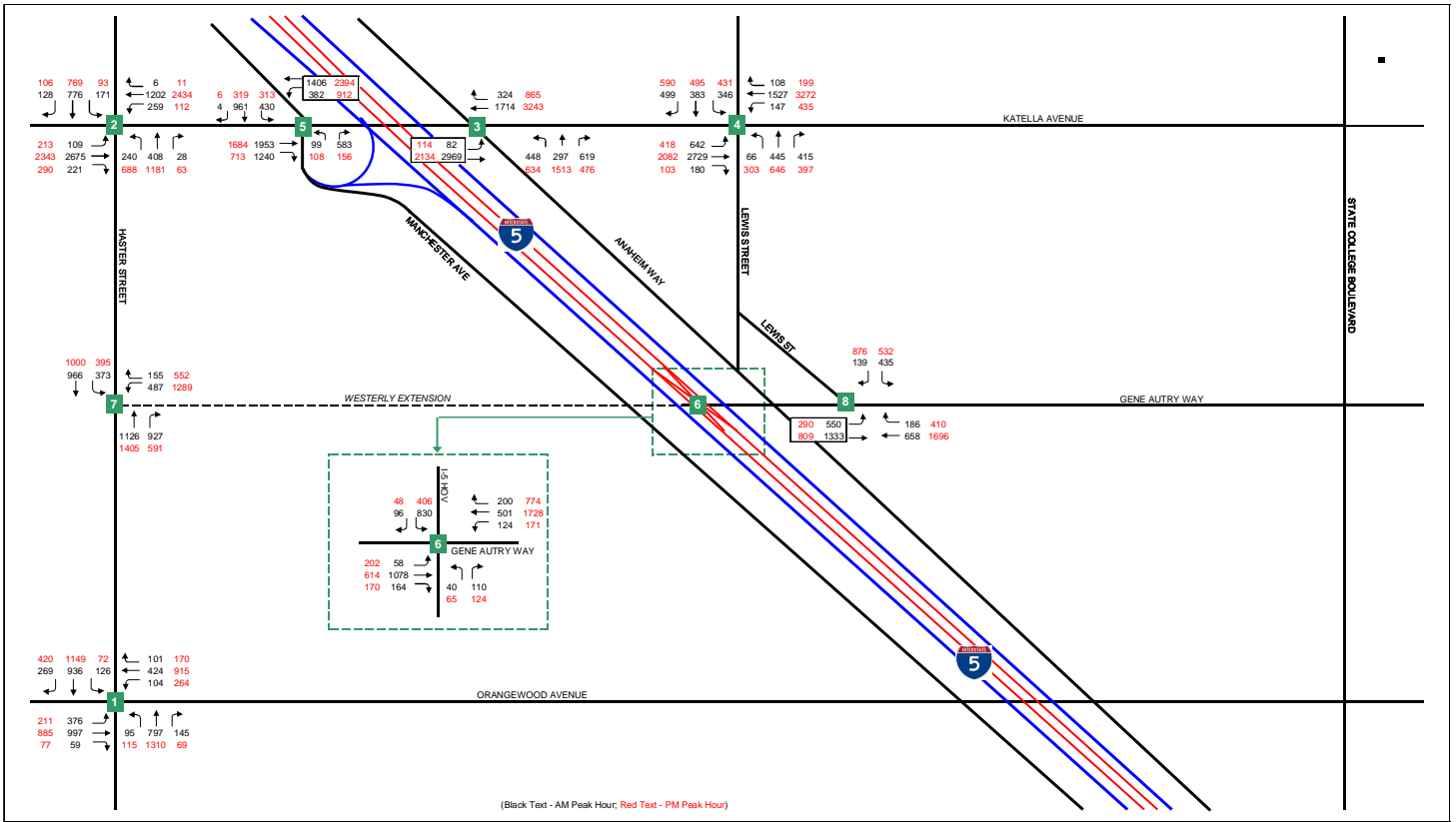


Figure 5 – Year 2035 Peak Hour Intersection Turning Movement Volumes under With Project Conditions



Caltrans Ramp Termini Intersection Analysis

Table 7 summarizes the Synchro results of peak hour delays and levels of service for the study intersections in each scenario. The interchange of I-5 freeway and Gene Autry Way HOV ramps is currently signalized. All intersections operate at an acceptable LOS under existing conditions. However under future conditions, it is observed that the Katella Avenue/Anaheim Way intersection operates at an unsatisfactory level of service in the AM peak hour under No Project conditions and also in the PM peak hour under all future scenarios. The Katella Avenue/Manchester Avenue intersection which performs deficiently in the AM peak hour under No Project condition operates at an acceptable LOS D under both the future With Project conditions.

Table 7 – Ramp-Termini Intersection Delay and LOS by Scenario

ID	Intersection	2007 Existing				2035 No Project				2035 Alt.1 / 6-Lane			
		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
		Del	LOS	Del	LOS	Del	LOS	Del	LOS	Del	LOS	Del	LOS
3	Katella Ave. / Anaheim Way	20.1	C	30.8	C	73.1	E	91.7	F	32.6	C	59.3	E
5	Katella Ave. / Manchester Ave.	35.2	D	26.7	C	57.8	E	34.8	C	45.1	D	36.0	D
6	Gene Autry Way / I-5 HOV Ramps	13.3	B	12.9	B	11.6	B	4.9	A	20.3	C	34.9	C

Deficient Intersection



Arterial Segment Analysis

Table 8 presents total number of lanes under existing and future scenario conditions for key arterial segments in the vicinity of the project area. A level of service analysis was carried out on the arterial volumes by computing the volume-to-capacity (V-C) ratio for each segment.

Table 8 – Existing and Future Number of Lanes

ID	Arterial	From	To	Existing	No Project	Alt. 1
1	Haster Street	Katella Avenue	Orangewood Avenue	4D	6D	6D
2	Katella Avenue	Haster St./Anaheim Blvd.	Manchester Avenue	6D	8D	8D
3	Katella Avenue	Anaheim Way	Lewis Street	6D	8D	8D
4	Gene Autry Way	Haster Street	Interstate 5	NA	NA	6D

NA – Not Applicable

Table 9 presents a summary of segment V/C and LOS results for each scenario. All segments operate at acceptable daily levels of service under existing conditions. It is observed that the two Katella Avenue segments perform deficiently under daily conditions in all future scenarios. Per the City's guidelines, if the daily V/C for a segment is equal to 1.00 or greater, then a peak hour analysis for that segment must be carried out to determine if there are any peak hour deficiencies. No peak hour deficiencies on either segment in all the future scenarios are observed. **Table 10** shows a summary of segment volumes and growth in traffic compared to existing volumes for each segment.

Table 9 – Arterial Segment V/C and LOS by Scenario

ID	Arterial	From	To	2007 Existing		2035 No Project		2035 Alt.1/ 6-Lane	
				V/C	LOS	V/C	LOS	V/C	LOS
DAILY									
1	Haster Street	Katella Avenue	Orangewood Avenue	0.62	B	0.67	B	0.58	A
2	Katella Avenue	Haster Street/Anaheim Boulevard	Manchester Avenue	0.85	D	1.17	F	1.02	F
3	Katella Avenue	Anaheim Way	Lewis Street	0.88	D	1.48	F	1.38	F
4	Gene Autry Way	Haster Street	Interstate 5	NA	NA	NA	NA	0.55	A
AM PEAK HOUR*									
2	Katella Avenue	Haster Street//Anaheim Boulevard	Manchester Avenue	NA	NA	0.32	A	0.28	A
3	Katella Avenue	Anaheim Way	Lewis Street	NA	NA	0.37	A	0.33	A

Table 9 – Arterial Segment V/C and LOS by Scenario (Continued)

ID	Arterial	From	To	2007 Existing		2035 No Project		2035 Alt.1/ 6-Lane	
				V/C	LOS	V/C	LOS	V/C	LOS
PM PEAK HOUR*									
2	Katella Avenue	Haster Street/Anaheim Boulevard	Manchester Avenue	NA	NA	0.40	A	0.34	A
3	Katella Avenue	Anaheim Way	Lewis Street	NA	NA	0.49	A	0.46	A

* Segments deficient under daily conditions only; NA – Not Applicable

Deficient Segment



Table 10 – Arterial Segment Volumes and Traffic Growth by Scenario

ID	Arterial	From	To	Existing	No Project	Traffic Growth	Alt.1 6-Lane	Traffic Growth	Traffic Growth
DAILY									
1	Haster Street	Katella Avenue	Orangewood Avenue	18,641	30,020	61.0%	25,920	39.0%	40.8%
2	Katella Avenue	Haster St./Anaheim Blvd.	Manchester Avenue	38,152	70,080	83.7%	61,400	60.9%	61.5%
3	Katella Avenue	Anaheim Way	Lewis Street	39,668	88,760	123.8%	82,530	108.1%	108.1%
4	Gene Autry Way	Haster Street	Interstate 5	NA	NA	NA	24,660	NA	NA
AM PEAK HOUR*									
2	Katella Avenue	Haster St./Anaheim Blvd.	Manchester Avenue	2,324	4,120	77.3%	3,620	55.8%	55.8%
3	Katella Avenue	Anaheim Way	Lewis Street	2,372	4,700	98.1%	4,250	79.2%	80.4%
PM PEAK HOUR*									
2	Katella Avenue	Haster St./Anaheim Blvd.	Manchester Avenue	2,891	5,080	75.7%	4,330	49.8%	51.2%
3	Katella Avenue	Anaheim Way	Lewis Street	3,155	6,290	99.4%	5,900	87.0%	86.7%

* Segments deficient under daily conditions only; NA – Not Applicable

Freeway Mainline Analysis

Table 11 presents 2035 forecast volumes derived from OCTAM. Mainline analysis was performed from Harbor Boulevard to SR-55 for I-5. Implementation of the Gene Autry Extension does not significantly impact mainline forecast traffic volumes.

Table 11 – Year 2035 Freeway Mainline Traffic Volumes on Interstate 5

ID	Freeway Segment	AM Peak Hour		PM Peak Hour		Daily	
		Mainline	HOV	Mainline	HOV	Mainline	HOV
Northbound - Without Gene Autry Extension (No Project)							
1	Harbor to S Anaheim	8,631	2,220	13,382	3,817	120,921	39,968
2	S Anaheim to Katella	8,124	2,491	12,584	4,277	113,802	44,545
3	Katella to Orangewood	9,284	1,651	14,108	2,680	123,769	32,341
4	Orangewood to St. College	8,813	1,516	13,419	2,112	117,769	28,374
5	St. College to Chapman	10,191	1,516	15,050	2,112	136,075	28,374
6	Chapman to SR-22	10,155	1,516	15,232	2,112	139,634	33,561
7	SR-22 to Main	13,092	1,760	19,294	2,274	193,128	31,527
8	Main to 17th	13,564	1,760	19,983	2,274	200,247	31,527
9	17th to Grand	13,781	2,030	18,568	2,978	193,027	40,070
10	Grand to 4th	13,962	2,301	18,822	3,222	195,671	43,121
11	1st to SR-55	14,325	2,301	19,366	3,222	201,061	43,121
Southbound - Without Gene Autry Extension (No Project)							
1	Harbor to S Anaheim	10,408	3,005	11,714	3,601	121,735	45,155
2	S Anaheim to Katella	9,719	2,978	11,315	3,330	113,396	40,273
3	Katella to Orangewood	10,481	2,572	12,222	3,330	122,345	40,273
4	Orangewood to St. College	10,009	2,761	12,113	3,547	117,158	43,121
5	St. College to Chapman	10,263	2,761	12,403	3,547	119,803	43,121
6	Chapman to SR-22	10,445	1,191	12,693	1,218	127,227	11,492
7	SR-22 to Main	8,196	1,841	10,408	2,328	104,344	30,002
8	Main to 17th	14,942	1,841	19,221	2,328	199,637	30,002
9	17th to Grand	14,289	2,166	18,387	2,816	190,891	40,578

Table 11 – Year 2035 Freeway Mainline Traffic Volumes on Interstate 5 (Continued)

ID	Freeway Segment	AM Peak Hour		PM Peak Hour		Daily	
		Mainline	HOV	Mainline	HOV	Mainline	HOV
Southbound - Without Gene Autry Extension (No Project)							
10	Grand to 4th	13,999	2,437	18,895	3,005	196,179	43,324
11	1st to SR-55	13,672	2,437	18,460	3,005	191,806	43,324
Northbound - With Gene Autry Extension (With Project)							
1	Harbor to S Anaheim	8,631	2,355	13,346	3,871	120,820	40,375
2	S Anaheim to Katella	8,124	2,626	12,584	4,305	113,701	44,951
3	Katella to Orangewood	9,284	1,733	14,108	2,707	123,769	32,747
4	Orangewood to St. College	8,813	1,516	13,455	2,112	117,565	28,476
5	St. College to Chapman	10,191	1,516	15,050	2,112	136,278	28,476
6	Chapman to SR-22	10,481	1,516	15,232	2,112	139,838	33,459
7	SR-22 to Main	13,092	1,868	19,294	2,274	193,128	31,730
8	Main to 17th	13,600	1,868	19,983	2,274	200,044	31,730
9	17th to Grand	13,817	2,112	18,641	2,843	193,535	39,460
10	Grand to 4th	14,071	2,382	18,895	3,059	196,281	42,511
11	1st to SR-55	14,361	2,382	19,402	3,059	201,569	42,511
Southbound - With Gene Autry Extension (With Project)							
1	Harbor to S Anaheim	10,408	3,032	11,714	3,628	121,532	45,358
2	S Anaheim to Katella	9,683	3,086	11,315	3,222	113,192	40,375
3	Katella to Orangewood	10,445	2,680	12,185	3,222	122,142	40,375
4	Orangewood to St. College	10,009	2,761	12,077	3,574	116,955	43,223
5	St. College to Chapman	10,227	2,761	12,367	3,574	119,701	43,223
6	Chapman to SR-22	10,408	1,218	13,128	1,299	127,125	11,899
7	SR-22 to Main	8,160	1,841	10,009	2,328	104,039	30,103
8	Main to 17th	14,942	1,841	19,221	2,328	199,535	30,103
9	17th to Grand	14,253	2,274	18,351	2,816	190,688	40,578
10	Grand to 4th	13,999	2,437	18,895	3,005	196,078	43,324
11	1st to SR-55	13,672	2,437	18,242	3,005	191,603	43,324

Table 12 presents the mainline A.M. peak hour and P.M. peak hour HCM level of service analysis. The results reveal that the extension of Gene Autry Way slightly improves southbound mainline levels of service between Harbor and Anaheim Boulevards and between State College and Main in the AM peak hour.

Table 12 – Year 2035 Freeway Mainline LOS on Interstate 5

ID	Mainline Segment	Northbound				Southbound			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
Without Gene Autry Extension (No Project)									
1	Harbor to S Anaheim	41.6	E	> 45.0	F	42.8	E	> 45.0	F
2	S Anaheim to Katella	36.3	E	> 45.0	F	> 45.0	F	> 45.0	F
3	Katella to Orangewood	> 45.0	F	> 45.0	F	> 45.0	F	> 45.0	F
4	Orangewood to St. College	28.6	D	> 45.0	F	> 45.0	F	> 45.0	F
5	St. College to Chapman	36.6	E	> 45.0	F	27.4	D	37.7	E
6	Chapman to SR-22	27.0	D	> 45.0	F	38.5	E	> 45.0	F
7	SR-22 to Main	> 45.0	F	> 45.0	F	37.0	E	> 45.0	F
8	Main to 17th	> 45.0	F	> 45.0	F	> 45.0	F	> 45.0	F
9	17th to Grand	> 45.0	F	> 45.0	F	> 45.0	F	> 45.0	F
10	Grand to 4th	> 45.0	F	> 45.0	F	> 45.0	F	> 45.0	F
11	1st to SR-55	> 45.0	F	> 45.0	F	> 45.0	F	> 45.0	F

Table 12 – Year 2035 Freeway Mainline LOS on Interstate 5 (Continued)

ID	Mainline Segment	Northbound				Southbound			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
With Gene Autry Extension (With Project)									
1	Harbor to S Anaheim	41.6	E	> 45.0	F	38.2	E	> 45.0	F
2	S Anaheim to Katella	36.3	E	> 45.0	F	> 45.0	F	> 45.0	F
3	Katella to Orangewood	> 45.0	F	> 45.0	F	> 45.0	F	> 45.0	F
4	Orangewood to St. College	28.6	D	> 45.0	F	> 45.0	F	> 45.0	F
5	St. College to Chapman	36.6	E	> 45.0	F	27.3	D	37.4	E
6	Chapman to SR-22	28.2	D	> 45.0	F	38.2	E	> 45.0	F
7	SR-22 to Main	> 45.0	F	> 45.0	F	36.6	E	> 45.0	F
8	Main to 17th	> 45.0	F	> 45.0	F	> 45.0	F	> 45.0	F
9	17th to Grand	> 45.0	F	> 45.0	F	> 45.0	F	> 45.0	F
10	Grand to 4th	> 45.0	F	> 45.0	F	> 45.0	F	> 45.0	F
11	1st to SR-55	> 45.0	F	> 45.0	F	> 45.0	F	> 45.0	F

Deficient Segment

Freeway Ramp Analysis

Table 13 presents 2035 ramp peak hour forecast volumes derived from OCTAM in the vicinity of the Gene Autry Way HOV interchange. Ramp analysis was performed on I-5 from The City Drive/Chapman Avenue to Anaheim Boulevard. Implementation of the Gene Autry Extension does not significantly impact ramp volumes in the vicinity of Gene Autry Way with the exception of the HOV ramp forecast traffic volumes at Gene Autry Way.

Table 13 – Year 2035 Freeway Ramp Traffic Volumes on Interstate 5

ID	Ramp Segment	AM Peak Hour		PM Peak Hour	
		Mainline	HOV	Mainline	HOV
Northbound - Without Gene Autry Extension (No Project)					
1	On - Anaheim Blvd	544	-	677	-
2	On - Katella Ave	399	-	487	-
3	Off - Anaheim Way/Katella	1,088	-	1,029	-
4	On - Anaheim Way	653	-	866	-
5	On - Gene Autry Way	-	210	-	863
6	Off - Gene Autry Way	-	106	-	119
7	On - City Dr/State College/Chapman	762	-	975	-
8	Off - City Dr/State College	689	-	623	-
Southbound - Without Gene Autry Extension (No Project)					
1	Off - Disney Way	363	-	298	-
2	On - Disney Way	399	-	379	-
3	Off - Katella Ave/S Manchester	738	-	322	-
4	On - Katella Ave/S Manchester	798	-	731	-
5	Off - Gene Autry Way	-	836	-	400
6	On - Gene Autry Way	-	148	-	198
7	On - Orangewood	580	-	541	-
8	Off - City Dr	907	-	623	-
9	On - City Dr	36	-	569	-

Table 13 – Year 2035 Freeway Ramp Traffic Volumes on Interstate 5 (Continued)

ID	Ramp Segment	AM Peak Hour		PM Peak Hour	
		Mainline	HOV	Mainline	HOV
Northbound - With Gene Autry Extension (With Project)					
1	On - Anaheim Blvd	508	-	677	-
2	On - Katella Ave	399	-	487	-
3	Off - Anaheim Way/Katella	1,088	-	1,083	-
4	On - Anaheim Way	653	-	893	-
5	On - Gene Autry Way	-	258	-	975
6	Off - Gene Autry Way	-	150	-	189
7	On - City Dr/State College/Chapman	798	-	893	-
8	Off - City Dr/State College	725	-	623	-
Southbound - With Gene Autry Extension (With Project)					
1	Off - Disney Way	399	-	298	-
2	On - Disney Way	363	-	379	-
3	Off - Katella Ave/S Manchester	682	-	264	-
4	On - Katella Ave/S Manchester	798	-	731	-
5	Off - Gene Autry Way	-	926	-	454
6	On - Gene Autry Way	-	186	-	341
7	On - Oranewood	544	-	541	-
8	Off - City Dr	870	-	623	-
9	On - City Dr	36	-	623	-

Table 14 presents the ramp AM peak hour and PM peak hour HCM level of service merge and diverge analysis. The results reveal that the extension of Gene Autry Way does not adversely impact ramp levels of service. As expected, the Gene Autry Way HOV ramps deteriorate slightly with increases in peak hour traffic volumes.

Table 14 – Year 2035 Freeway Ramp LOS on Interstate 5

ID	Ramp Segment	AM Peak Hour		PM Peak Hour	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
Northbound - Without Gene Autry Extension (No Project)					
1	On - Anaheim Blvd	27.4	C	> Capacity	F
2	On - Katella Ave	23.7	C	> Capacity	F
3	Off - Anaheim Way/Katella	> Capacity	F	> Capacity	F
4	On - Anaheim Way	> Capacity	F	> Capacity	F
5	On - Gene Autry Way	5.4	A	11.2	B
6	Off - Gene Autry Way	< 1.0	A	2.1	A
7	On - City Dr/State College/Chapman	23.1	C	25.7	C
8	Off - City Dr/State College	12.4	B	14.3	B
Southbound - Without Gene Autry Extension (No Project)					
1	Off - Disney Way	> Capacity	F	34.8	D
2	On - Disney Way	> Capacity	F	23.2	C
3	Off - Katella Ave/S Manchester	> Capacity	F	19.8	B
4	On - Katella Ave/S Manchester	> Capacity	F	> Capacity	F
5	Off - Gene Autry Way	9.2	A	8.0	A
6	On - Gene Autry Way	21.7	C	18.5	B
7	On - Oranewood	> Capacity	F	27.9	C
8	Off - City Dr	> Capacity	F	> Capacity	F
9	On - City Dr	26.7	C	23.8	C

Table 14 – Year 2035 Freeway Ramp LOS on Interstate 5 (Continued)

ID	Ramp Segment	AM Peak Hour		PM Peak Hour	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
Northbound - With Gene Autry Extension (With Project)					
1	On - Anaheim Blvd	27.5	C	> Capacity	F
2	On - Katella Ave	23.7	C	> Capacity	F
3	Off - Anaheim Way/Katella	> Capacity	F	> Capacity	F
4	On - Anaheim Way	> Capacity	F	> Capacity	F
5	On - Gene Autry Way	5.8	A	12.1	B
6	Off - Gene Autry Way	< 1.0	A	2.4	A
7	On - City Dr/State College/Chapman	23.2	C	25.8	C
8	Off - City Dr/State College	12.7	B	14.4	B
Southbound - With Gene Autry Extension (With Project)					
1	Off - Disney Way	> Capacity	F	34.7	D
2	On - Disney Way	> Capacity	F	24.5	C
3	Off - Katella Ave/S Manchester	> Capacity	F	19.4	B
4	On - Katella Ave/S Manchester	> Capacity	F	> Capacity	F
5	Off - Gene Autry Way	15.1	B	7.1	A
6	On - Gene Autry Way	22.3	C	19.9	B
7	On - Orangewood	> Capacity	F	27.8	C
8	Off - City Dr	> Capacity	F	> Capacity	F
9	On - City Dr	26.7	C	23.8	C

Deficient Ramp

Freeway Weaving Analysis

Weaving analysis was performed for two weaving areas in the immediate vicinity of the Gene Autry Way HOV interchange. The implementation of the interchange does not have an adverse impact on the weaving area operations as noted in **Table 15**.

Table 15 – Year 2035 Freeway Weaving Density and LOS on Interstate 5

ID	Weaving Area	AM Peak Hour		PM Peak Hour	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
Without Gene Autry Extension (No Project)					
1	Between State College NB On-Ramp & Anaheim Way NB Off-ramp	36.0	E	59.7	F
2	Between Katella SB on-ramp & City Drive SB Off-ramp	43.0	E	50.1	F
With Gene Autry Extension (With Project)					
1	Between State College NB On-Ramp & Anaheim Way NB Off-ramp	36.1	E	60.0	F
2	Between Katella SB on-ramp & City Drive SB Off-ramp	42.7	E	49.9	F

Deficient Area

Opening Year 2011 Analysis

Table 16 summarizes ICU and LOS results for **No Project** and With Project scenarios under Year 2011 traffic conditions. The results under opening year conditions are based on assuming current intersection lane configurations for the study intersections with the exception of Gene Autry Way at I-5 HOV ramps and Haster Street. All study intersections are anticipated to operate at acceptable levels of service in Year 2011 in both No Project and With Project scenarios. **Figure 6 and Figure 7 present intersection turning movement volumes for No Project and With Project scenarios under opening year traffic conditions.** **Table 17** presents results of peak hour delays and corresponding levels of service from Synchro analysis by scenario for the three ramp-termini intersections falling under Caltrans jurisdiction. These intersections are also expected to operate satisfactorily at LOS D or better in 2011 under both the future conditions.

Table 16 – Year 2011 ICU and LOS

ID	Intersection	No Project				With Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
1	Haster Street / Orangewood Avenue	0.68	B	0.73	C	0.67	B	0.75	C
2	Haster Street / Katella Avenue	0.49	A	0.66	B	0.47	A	0.64	B
3	Katella Avenue / Anaheim Way	0.61	B	0.62	B	0.59	A	0.61	B
4	Katella Avenue / Lewis Street	0.61	B	0.74	C	0.63	B	0.74	C
5	Katella Avenue / Manchester Avenue	0.63	B	0.50	A	0.62	B	0.49	A
6	Gene Autry Way / I-5 HOV Ramps	0.18	A	0.20	A	0.27	A	0.33	A
7	Gene Autry Way / Haster Street	Not Applicable				0.34	A	0.43	A
8	Gene Autry Way / Lewis Street	Not Applicable				Not Applicable			

Table 17 – Year 2011 Ramp-Termini Intersection Delay (in Seconds) and LOS

ID	Intersection	No Project				With Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
3	Katella Avenue / Anaheim Way	19.2	B	33.0	C	19.5	B	32.0	C
5	Katella Avenue / Manchester Avenue	42.1	D	30.0	C	40.3	D	28.8	C
6	Gene Autry Way / I-5 HOV Ramps	10.5	B	9.1	A	12.6	B	20.8	C

Queuing analysis was performed for the intersection of Gene Autry Way and I-5 HOV ramps by estimating turn lane queues in year 2011 using Synchro software. The queue represents the maximum back distance where vehicles stop during a signal cycle. The 95th percentile queue length represents the queue distance in feet which will not be exceeded 95 percent of the time. For a conservative analysis, the proposed storage length is based on 95th percentile queues. **Table 18** and **Table 19** indicate the storage length (in feet) for each turn lane movement under No Project and With Project conditions.

Table 18 – Year 2011 Queuing Analysis Results for No Project Scenario

ID	Intersection	Turn	Lane	Existing Storage Length (Feet)	AM Peak Hour		PM Peak Hour		Sufficient Storage Length (Feet)
					50 th Queue (Feet)	95 th Queue (Feet)	50 th Queue (Feet)	95 th Queue (Feet)	
6	Gene Autry Way / I-5 HOV Ramps	SBL	2	288	36	55	18	31	Yes
		WBL	2.5	320	2	10	3	14	Yes
		WBR	1.5	320	0	16	0	34	Yes

Table 19 – Year 2011 Queuing Analysis Results for With Project Scenario

ID	Intersection	Turn	Lane	Existing Storage Length (Feet)	AM Peak Hour		PM Peak Hour		Sufficient Storage Length (Feet)
					50 th Queue (Feet)	95 th Queue (Feet)	50 th Queue (Feet)	95 th Queue (Feet)	
6	Gene Autry Way / I-5 HOV Ramps	NBL	1	1,500	2	11	5	20	Yes
		NBR	2	1,500	0	10	0	11	Yes
		SBL	2	1,500	27	56	17	40	Yes
		SBR	1	1,500	0	18	0	12	Yes
		EBL	1	320	5	20	17	44	Yes
		WBL	1	580	11	33	15	41	Yes

Figure 6 – Year 2011 Peak Hour Intersection Turning Movement Volumes under No Project Conditions

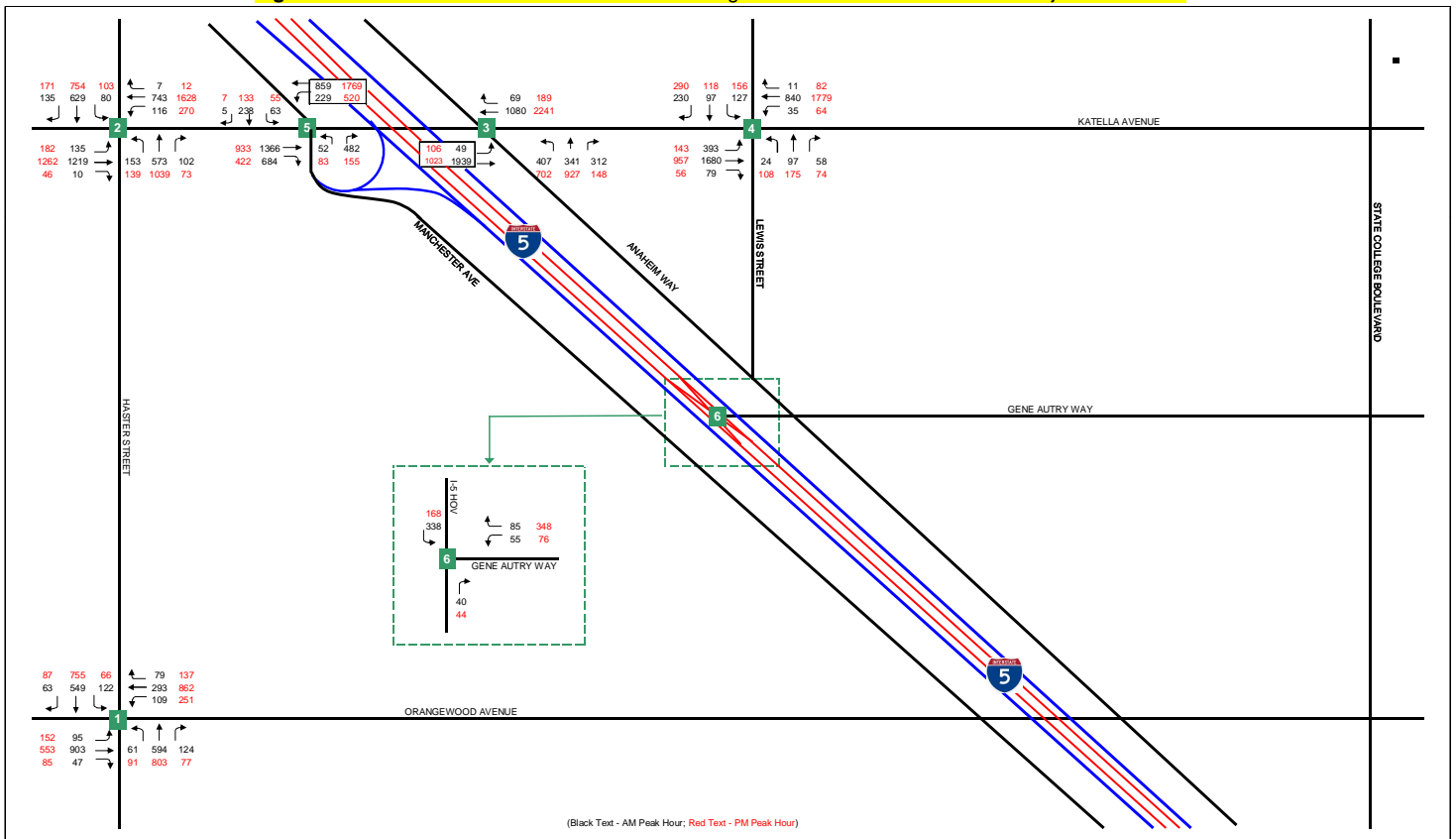


Figure 7 – Year 2011 Peak Hour Intersection Turning Movement Volumes under With Project Conditions

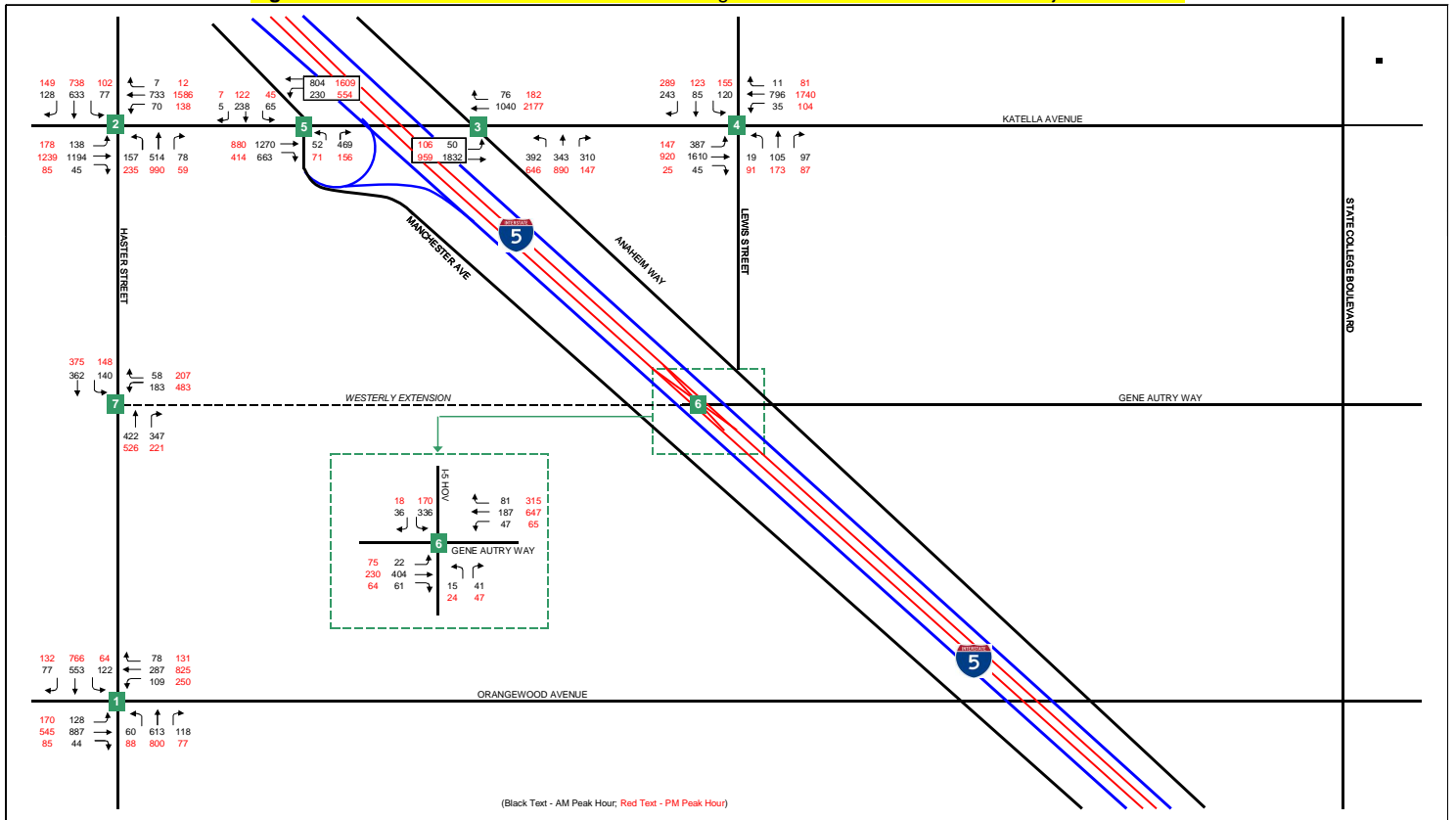


Table 20 presents a summary of LOS results and traffic volumes for arterial segments under 2011 traffic conditions for No Project and With Project scenarios.

Table 20 – Year 2011 Arterial Segment V/C and LOS

ID	Arterial	From	To	Existing	2011	Growt h	V/C	LOS	
No Project									
Daily									
1	Haster Street	Katella Avenue	Orangewood Avenue	18,640	20,850	11.9%	0.70	B	
2	Katella Avenue	Haster St / Anaheim Blvd	Manchester Avenue	38,150	42,150	10.5%	0.94	E	
3	Katella Avenue	Anaheim Way	Lewis Street	39,670	47,120	18.8%	1.05	F	
4	Gene Autry Way	Haster Street	Interstate 5	Not Applicable					
AM Peak Hour*									
2	Katella Avenue	Haster St / Anaheim Blvd	Manchester Avenue	2,320	2,350	1.3%	0.49	A	
3	Katella Avenue	Anaheim Way	Lewis Street	2,370	2,540	7.2%	0.53	A	
PM Peak Hour*									
2	Katella Avenue	Haster St / Anaheim Blvd	Manchester Avenue	2,890	3,010	4.2%	0.63	B	
3	Katella Avenue	Anaheim Way	Lewis Street	3,160	3,460	9.5%	0.72	C	
With Project									
Daily									
1	Haster Street	Katella Avenue	Orangewood Avenue	18,640	19,910	6.8%	0.66	B	
2	Katella Avenue	Haster St / Anaheim Blvd	Manchester Avenue	38,150	40,350	5.8%	0.90	D	
3	Katella Avenue	Anaheim Way	Lewis Street	39,670	45,830	15.5%	1.02	F	
4	Gene Autry Way	Haster Street	Interstate 5	NA	9,230	NA	0.21	A	
AM Peak Hour*									
3	Katella Avenue	Anaheim Way	Lewis Street	2,370	2,590	9.3%	0.35	A	
PM Peak Hour*									
3	Katella Avenue	Anaheim Way	Lewis Street	3,160	3,230	2.2%	0.25	A	

* Segments deficient under daily conditions only; NA – Not Applicable

Deficient Segment █

From **Table 20**, it is observed that the segment on Katella Avenue between Anaheim Way and Lewis Street is projected to experience the highest daily traffic growth between existing and opening year traffic conditions and is anticipated to perform deficiently under both the future scenarios. In addition, under No Project conditions the segment on Katella Avenue between Haster Street / Anaheim Boulevard and Manchester Avenue is projected to operate at a congested level with a V/C in excess of 1.05. However, a peak hour analysis of the deficient segments showed them to perform at an acceptable LOS during both the peak periods.

Table 21 and **Table 22** present 2011 forecast volumes and traffic densities by direction on I-5 freeway mainline segments during AM peak hour and PM peak hour for No Project and With Project scenarios. Existing capacities on the freeway were assumed for the mainline analysis.

Table 21 – Year 2011 Freeway Mainline LOS on Interstate 5 under No Project Conditions

ID	Freeway Segment	Northbound						Southbound					
		A.M. Peak Hour			P.M. Peak Hour			A.M. Peak Hour			P.M. Peak Hour		
		Volume*	Density (pc/mi/ln)	LOS	Volume	Density (pc/mi/ln)	LOS	Volume	Density (pc/mi/ln)	LOS	Volume	Density (pc/mi/ln)	LOS
1	Harbor Boulevard - S. Anaheim Boulevard	5,630	17.3	B	9,230	30.6	D	8,080	25.5	C	9,990	35.2	E
2	S Anaheim Boulevard - Katella Avenue	5,460	21.1	C	9,400	>45.0	F	9,090	>45.0	F	11,050	>45.0	F
3	Katella Avenue - Orangewood Avenue	6,610	20.4	C	10,470	38.6	E	7,840	24.6	C	8,860	28.8	D
4	Orangewood Avenue - State College Boulevard	7,130	22.1	C	10,980	43.4	E	8,880	28.9	D	10,000	35.2	E
5	State College Boulevard - Chapman Avenue	7,170	18.4	C	11,060	30.5	D	8,690	22.4	C	9,820	25.9	C
6	Chapman Avenue - State Route 22	5,830	15.0	B	9,270	24.1	C	6,610	17.0	B	7,770	20.0	C
7	State Route 22 - Main Street	11,540	>45.0	F	14,910	>45.0	F	8,930	29.1	C	11,350	>45.0	F
8	Main Street - 17th Street	11,640	>45.0	F	14,740	>45.0	F	11,520	>45.0	F	14,790	>45.0	F
9	17th Street - Grand Avenue	11,700	>45.0	F	14,020	>45.0	F	10,980	43.4	E	14,170	>45.0	F
10	Grand Avenue - 4th Street	11,830	>45.0	F	13,540	>45.0	F	10,850	42.1	E	14,700	>45.0	F
11	1st Street - State Route 55	12,000	>45.0	F	14,080	>45.0	F	10,450	38.5	E	13,310	>45.0	F

* Volume represents general purpose lane traffic only

Deficient Segment █

Table 22 – Year 2011 Freeway Mainline LOS on Interstate 5 under With Project Conditions

ID	Freeway Segment	Northbound						Southbound					
		A.M. Peak Hour			P.M. Peak Hour			A.M. Peak Hour			P.M. Peak Hour		
		Volume*	Density (pc/mi/ln)	LOS	Volume	Density (pc/mi/ln)	LOS	Volume	Density (pc/mi/ln)	LOS	Volume	Density (pc/mi/ln)	LOS
1	Harbor Boulevard - S. Anaheim Boulevard	5,630	17.3	B	9,220	30.6	D	8,080	25.5	C	9,990	35.2	E
2	S Anaheim Boulevard - Katella Avenue	5,460	21.1	C	9,400	>45.0	F	9,080	>45.0	F	11,050	>45.0	F
3	Katella Avenue - Orangewood Avenue	6,610	20.4	C	10,470	38.6	E	7,830	24.5	C	8,850	28.7	D
4	Orangewood Avenue - State College Boulevard	7,130	22.1	C	10,990	43.5	E	8,880	28.9	D	9,990	35.1	E
5	State College Boulevard - Chapman Avenue	7,170	18.4	C	11,060	30.5	D	8,680	22.4	C	9,810	25.8	C
6	Chapman Avenue - State Route 22	5,920	15.2	B	9,270	24.1	C	6,600	17.0	B	7,890	20.3	C
7	State Route 22 - Main Street	11,540	>45.0	F	14,910	>45.0	F	8,920	29.1	C	11,240	>45.0	F
8	Main Street - 17th Street	11,650	>45.0	F	14,740	>45.0	F	11,520	>45.0	F	14,790	>45.0	F
9	17th Street - Grand Avenue	11,710	>45.0	F	14,040	>45.0	F	10,970	43.3	E	14,160	>45.0	F
10	Grand Avenue - 4th Street	11,860	>45.0	F	13,560	>45.0	F	10,850	42.1	E	14,700	>45.0	F
11	1st Street - State Route 55	12,010	>45.0	F	14,090	>45.0	F	10,450	38.5	E	13,250	>45.0	F

* Volume represents general purpose lane traffic only

Deficient Segment ■

Freeway ramp analysis was performed on I-5 freeway ramps using HCS. **Table 23** present 2011 traffic volumes while **Table 24** presents traffic densities and levels of service during the two peak periods for each scenario. No significant traffic impacts are foreseen at the Gene Autry Way ramps in either direction under the future scenarios.

Weaving analysis was also performed for freeway segments between State College Boulevard northbound on-ramp and Anaheim Way northbound off-ramp, and Katella Avenue Southbound on-ramp and The City Drive southbound off-ramp. **Table 25** presents results from the HCS weaving analysis. Both the weaving areas are anticipated to operate at acceptable LOS without causing any adverse traffic impacts in the immediate vicinity.

Table 23 – Year 2011 Freeway Ramp Traffic Volumes on Interstate 5

ID	Ramp Segment	No Project				With Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		ML	HOV	ML	HOV	ML	HOV	ML	HOV
Northbound									
1	On - Anaheim Blvd	342	-	903	-	338	-	903	-
2	On - Katella Ave	229	-	369	-	229	-	369	-
3	Off - Anaheim Way/Katella	935	-	1,065	-	935	-	1,079	-
4	On - Anaheim Way	385	-	527	-	385	-	534	-
5	On - Gene Autry Way	-	85	-	348	-	103	-	390
6	Off - Gene Autry Way	-	40	-	44	-	56	-	71
7	On - City Dr/State College/Chapman	316	-	530	-	326	-	626	-
8	Off - City Dr/State College	535	-	429	-	539	-	429	-
Southbound									
1	Off - Disney Way	439	-	424	-	443	-	424	-
2	On - Disney Way	253	-	335	-	249	-	335	-
3	Off - Katella Ave/S Manchester	607	-	267	-	607	-	267	-
4	On - Katella Ave/S Manchester	774	-	912	-	774	-	912	-
5	Off - Gene Autry Way	-	338	-	168	-	372	-	188
6	On - Gene Autry Way	-	55	-	76	-	108	-	129
7	On - Orangewood	304	-	351	-	294	-	351	-
8	Off - City Dr	718	-	617	-	708	-	617	-
9	On - City Dr	93	-	316	-	93	-	330	-

ML – Mainline (General Purpose); HOV – High Occupancy Vehicle

Table 24 – Year 2011 Freeway Ramp Density and LOS on Interstate 5

ID	Ramp Segment	No Project				With Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS
Northbound									
1	On - Anaheim Blvd	20.2	C	> Cap	F	20.2	C	> Cap	F
2	On - Katella Ave	18.1	B	25.5	C	18.1	B	25.5	C
3	Off - Anaheim Way/Katella	10.7	B	15.7	B	10.3	B	15.8	B
4	On - Anaheim Way	19.4	B	> Cap	F	21.5	C	> Cap	F
5	On - Gene Autry Way	< 1.0	A	< 1.0	A	< 1.0	A	< 1.0	A
6	Off - Gene Autry Way	< 1.0	A	< 1.0	A	< 1.0	A	< 1.0	B
7	On - City Dr/State College/Chapman	17.8	B	23.6	C	17.8	B	23.6	C
8	Off - City Dr/State College	10.7	B	14.6	B	15.4	B	15.4	B
Southbound									
1	Off - Disney Way	27.0	C	30.5	D	27.1	C	30.5	D
2	On - Disney Way	27.9	C	> Cap	F	27.4	C	> Cap	F
3	Off - Katella Ave/S Manchester	> Cap	F	12.0	B	> Cap	F	12.0	B
4	On - Katella Ave/S Manchester	> Cap	F	> Cap	F	> Cap	F	> Cap	F
5	Off - Gene Autry Way	< 1.0	A	< 1.0	A	< 1.0	A	< 1.0	A
6	On - Gene Autry Way	< 1.0	A	< 1.0	A	< 1.0	A	< 1.0	A
7	On - Orangewood	27.6	C	28.2	D	27.6	D	28.2	D
8	Off - City Dr	7.8	A	7.7	A	7.7	A	7.7	A
9	On - City Dr	19.9	B	21.2	C	19.9	B	21.2	C

pc/mi/ln – Passenger Cars per Mile per Lane; > Cap – Exceeds Capacity

Deficient Ramp ■

Table 25 – Year 2011 Freeway Weaving Density and LOS on Interstate 5

ID	Weaving Area	No Project				With Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS
1	Between State College NB On-Ramp & Anaheim Way NB Off-Ramp	23.8	C	40.7	E	23.8	C	33.3	D
2	Between Katella SB On-Ramp & City Drive SB Off-Ramp	28.8	D	32.9	D	35.8	E	32.8	D

pc/mi/ln – Passenger Cars per Mile per Lane

5. Accident Analysis

The Caltrans Traffic Accident Surveillance and Analysis System (TASAS) provides detailed accident data for all highways in the State. District 12 provided accident data for the northbound and southbound HOV on and off ramps at I-5 and Gene Autry Way for the time period of January 1, 2005 through December 31, 2007. A summary of this accident data is provided in Appendix A.

A review of the TASAS accident data revealed that there were only two accidents on the ramps during the three-year period of January 1, 2005 through December 31, 2007. One accident was on the southbound off ramp and the other on the southbound on ramp. Both occurred in 2005. The accident on the southbound off ramp involved an injury while the accident on the on ramp did not.

The total accident rate for both the southbound HOV on and off ramps during this period is higher than the statewide average. The rate is 4.57 for the on ramp (versus a statewide average of 0.80) and 2.69 for the off ramp (versus a statewide average of 1.5). However, this can be attributed to the fact that the existing interchange is only partially constructed and does not experience the volume of traffic it will receive once the I-5/Gene Autry Way Project (EA 0C5101) is constructed.

Because the accident rates (per million vehicles) are based on the number of vehicles using the facility, they are artificially high due to the relatively low volumes and do not reflect what the conditions will be when the interchange is built-out. Currently, the existing interchange primarily handles special event traffic associated with Anaheim Stadium (e.g., Angels baseball games) on the east side of the I-5. The overall accident rate is expected to fall within the range of the statewide averages once the interchange is fully operational.

6. Alternatives

No-Build Alternative

The No-Build Alternative would maintain the existing condition. While this alternative would require no capital investment, the operational aspects of the interchange would maintain the current condition and would not address the needs for providing HOV access to and from the west side of I-5.

Other Alternatives

Since Alternative 1 (Build Alternative) is consistent with the overall planning of the I-5 in this area, no other alternatives were considered.

7. Conclusions and Recommendations

The traffic analysis shows, in general, that the proposed project will not adversely affect the traffic circulation/operations of the freeway at this location.

8. Reviews

This Modified Access Report will be submitted to Caltrans District 12 Project Management, Project Design and FHWA for review and concurrence.